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Section 1.1 Welcome:

We welcome you to the exciting world of image processing and morphing with WinImages:F/x for Windows and Windows NT based systems.

Our first product in the series, **WinImages:morph,** brought the magic of morphing to the desktop personal computer.   With F/x, we bring you the power of professional special effects and easy to use animation capabilities. F/x also offers all of the standard photometric adjustments (i.e., contrast and brightness), so that you never have to leave the program.


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                        WinImages:F/x
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Copyright (c) 1992-1996 Black Belt Systems **ALL RIGHTS RESERVED**
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Requires: 386 processor or higher, Windows 3.1, 8 Mb memory.
Recommended: accelerated display, FPU or 486, 12 Mb memory.
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```
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Section 1.4 Whats New in WinImages?

New Operations

Kaleidoscope

Mirror

Add Texture

Combine

Extend

Build Palette

Gouache

Oil Painting

Pseudo Color

False Color

Solarize

Blue Print

Monochrome

Negative

Adjust Hue

Saturation

Adjust Value

Glare

Antique

Color Gel

NTSC Filter

Frame Rate Conversion

Film Grain

Aspect Ratio

DPI

Author Name

Annotation

Copyright

Enhanced Operations

Dither

Add Images

Clip

Balance

Make Alpha

Clip Alpha

New Image Formats

RGB

PPM

RAW

Toaster Framestore

Timeline Enhancements

Timeline Cell Sizing

Auto-Loading of Action and Source Images

Auto-Loading and Area Selection Creation

Splined Area Tweening

Timeline Included in Project Files

Setup Button and Hot Key

Palette Enhancements

Full View Palette Display

Reverse Range or Palette

New Area Selection Modes

Key on Color Space

Interface and Other Enhancements

Unlimited Undo Levels

Modal Zooming

Execute Operation Command

WinImages:F/x requires:

Intel Machines:

- a Windows compatible computer
- with a 386 or higher processor
- the Windows 3.1 (or higher) operating system
- 6 Mb of RAM memory
- Win32S (Supplied on the installation disks)

  Even though WinImages:F/x has a relatively simple interface, the morphing operation itself is complex and resource intensive.   Also, working with full color images itself is a task requiring substantial computer resources.

We therefore recommend that WinImages be used on the following hardware:

- an accelerated graphics display able to show 256 or more colors
- a 486 processor or better *with* a math coprocessor or activated FPU
- 8 Mb or more of RAM memory.

MIPS Machines

- The Windows NT 3.1 (or higher) operating system
- 16 Mb of RAM memory
- 6 Mb of hard drive space

Alpha Machines

- The Windows NT 3.1 (or higher) operating system
- 16 Mb of RAM memory
- 6 Mb of hard drive space

  In general, more on board memory will always assist the running of   more intensive applications like morph.

Installing WinImages:F/x

Please follow the provided installation sheet for full details on installing WinImages.   If you have any problems with the installation, <u>Press Here</u> to view an installation trouble-shooting guide.

De-Installing WinImages:F/x

WinImages:F/x can be de-installed by following these steps:

1. Start by looking through the WinImages:F/x directories.   Make sure that all image files that you wish to keep are copied or moved to another directory.   You will have no need for files that have the following extensions: **.FXP, .ASF, .SEF** and **.FXS.**   These files are only used by F/x, and can not be used with other programs.

2. After moving or copying the image files that you wish to keep, delete the WinImages:F/x directory and all associated subdirectories.   This will remove F/x from you hard drive.

3. You should also remove the F/x program and help icons from the program group that they have been placed in. If you left the icons in their original program group, you will want to delete the program group as well.

The Basics

The **Getting started** tutorial will introduce you to the basics of using WinImages:F/x.   This tutorial is not intended to be a comprehensive overview of the program, or a substitute for reading the other sections of the manual.   Its main purpose is to give you a feel for how really easy the program is to use.   Throughout the tutorial there will be references to topics that are covered in greater detail elsewhere in the manual.   These sections can be reached by clicking on their name in the **See Also:** list at the bottom of this topic.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File Manager's **Run** command with the **FX.EXE** file selected, or <u>Press Here</u>.   Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen.   This way you can perform the operations and view the tutorial at the same time.   In some cases you may need to use the Switch To (**Ctrl+Esc**) control or **Alt+Tab** to **flip** between WinImages:F/x and the F/x Help document.   You may also want to use the **Always on Top** option in the help documentation's **Help** pull down menu.

2 - The next step is to customize F/x to your system.   Remember, these are things that will generally only have to be done once.   Click on the **Display** menu option in the Pull Down Menu bar at the top of the program window.   This menu contains options for altering the display mode of the program to best fit your system.   Select the **Info on Display...** option.   This will display the current settings of F/x, and will also tell you the display mode that the program suggests for your system.   Once you have reviewed the information in this panel, click **OK.** WinImages:F/x will automatically start in the suggested display mode unless you have changed it.   If you do need to alter the display mode, simply click on the appropriate mode in the **Display** menu.   You may also wish to alter the background color of the program window.   This is changed by selecting the **Display** menu, and then altering the **Dark Background** control.   The background will be black when this control is selected, and gray when it is not selected.

The next step in customizing F/x is to select the way that you would like area selections and operations to work.   This selection is known as the ***Working Method.***   F/x has two separate working methods: **Immediate Painting** and **Draw First**.   The Immediate Painting method is the original operating style that was designed for F/x.   This method works like many paint programs in that the area selection is created, and then the current operation is immediately applied to the specified region.   This method allows the user to quickly select areas, and have the current operation applied immediately after the area is completed.   The Draw First method allows you to make an area selection, alter it to your specifications, and then apply an operation to the area.   This working method is similar to the way that many image processing programs work.   Area selection is carried out in exactly the same way, but the current operation is not applied until the operation icon is clicked on.   This allows you to alter and refine an area selection until it meets your specific needs.   The area selection will appear as a dashed marquee outline of the selected region.   You can then apply the default (or last) operation settings to the region by left clicking on the operation icon.   The operation settings can be changed by right clicking on the operation icon, and then altering the operation parameters.   After you have made the desired changes, you can apply the effect to the currently selected area by left clicking on the operation icon.   This particular tutorial was designed for use with the Immediate Painting working method.   You can use the Draw First method for this tutorial, but some of the steps discussed in the tutorial, but some of the steps may be different.

3 - Now, we'll set the length of the animation and the filmstrip.   The animation/filmstrip length is set using the **Sequence Controls** option in the **Time Line** menu.   The Sequence Controls dialog allows you to set the length of the animation/filmstrip as well as the output file type and path.   Set the **Total Frames** control to 10 by entering the number in the provided text entry field.   This sets the length of the animation (and the filmstrip) to 10 frames.   For this tutorial we will want to turn the **Save Result** control *off.*   When this control is *on*, all of the frames will be

saved as the file format specified in the **Output Format** drop done list.   This selection is completely independent of the file type specified in the **Save File as Type:** option in the **Save Image As...** file option.   This allows you to save the resultant frames as any of the available file formats including FLI/FLC and AVI animations.   After setting the animation/filmstrip length and turning the Save Results control *off*, press **OK.**   You will also want to make sure that the filmstrip is currently visible.   The filmstrip is turned on by using the **Show Filmstrip** control in the **Filmstrip** pull down menu, or by clicking on the Filmstrip icon located at the end of the tool bar.   You must have the filmstrip *on* if you wish to view the animation in WinImages:F/x.

4 - You are now ready to load the sample image and create an animation.   A file is loaded using the **Load Image...** option in the **File** menu.   Select the **Load Image..** option and specify   the WinImages:F/x sub-directory called **Images**.   In this directory is a file called **litlflwr.jpg**.   The file is loaded by simply double clicking on the file name. Note: The **Images** directory is the default installation directory for all WinImages:F/x images.   If you have selected to place these images in a directory other than the Images directory, the litlflwr.jpg file will be found in the directory you specified during installation.

5 - Now that the file is loaded we will create the animation.   Select the **Standard** operations group by clicking on it. The entire Standard operations group will move to the far left of the icon bar.   Now, select the Contrast function. Its icon is the third   from the left, and looks like this: 🔵 .   You will also notice that the name of the function appears in the Status Bar's **Op** display area.   The Contrast operation can also be accessed by selecting the **Operations** pull down menu.   This menu will provide you with a list of all of the operation groups in the program. The Contrast function is found in the **Standard Adjustments** group, and is selected by clicking on it.

6 - The Contrast operation allows you to adjust the light and dark regions of an image.   We are going to create an animation that goes from a contrast adjustment of -100% to 100% of the original <u>pixel</u> values in the region.   This can be accomplished through F/x's powerful Time Line.   The Time Line allows you to create animated effects by dragging and dropping the desired operation into the time line.   The Time Line can be opened by clicking on its icon (), or by selecting the **Show Time Line** option from the Time Line pull down menu.   Once the Time Line has opened, you should see the contrast operation's icon in the first level of the time line dialog.
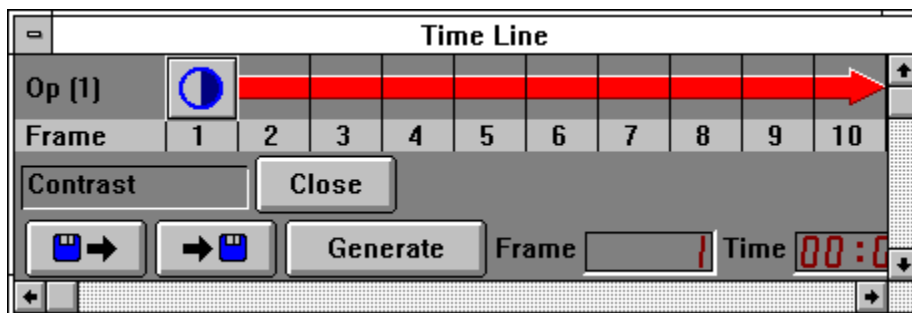

 You should also see an arrow that stretches to the end of the time line.   This arrow specifies the duration of the operation, and any interpolation.   Interpolation is the modification of a variable from one setting to another over time.   In this case it will be the interpolation of the contrast operation from -100 to 100.   Since we want to interpolate from -100 to 100, we will need to set these values.   This can be done by specifying the value in the operation dialog before placing it in the time line, or by "grabbing" the values from the dialog after the operation has been placed in the time line.   Since we already have the first contrast operation in the time line, we will use the second method of setting operation values.   Set the slider for the Contrast amount to -100 %, and then double click on the contrast icon in the time line.   This will access the time line operations dialog.   This dialog can be used to specify or obtain the parameters for an operation, or to specify action and <u>source images</u>.   For this example we will want to select the **Get Current Settings** option.   This will take all of the current settings for this operation directly

from the dialog.   So, in this case it will "grab" -100 as the contrast value for this <u>key frame</u>.

Next we want to specify the contrast value of 100 as a key frame.   Let's use another method of placing values in a key frame.   Scroll the time line to the right using the scroll bar at the bottom of the time line.   Scroll until frame 10 is visible. Note: If your time line is opened to a large enough size, frame 10 already be visible.)   Now, set the contrast dialog to 100. (Note: On low <u>resolution</u> displays the time line may actually cover a dialog.   In some cases it will be necessary to move the time line to "find" the contrast dialog.)   Once you have set the contrast setting to 100, grab the contrast icon from the tool bar and place it in frame 10.   After you have completed this, the time line should look like the following:
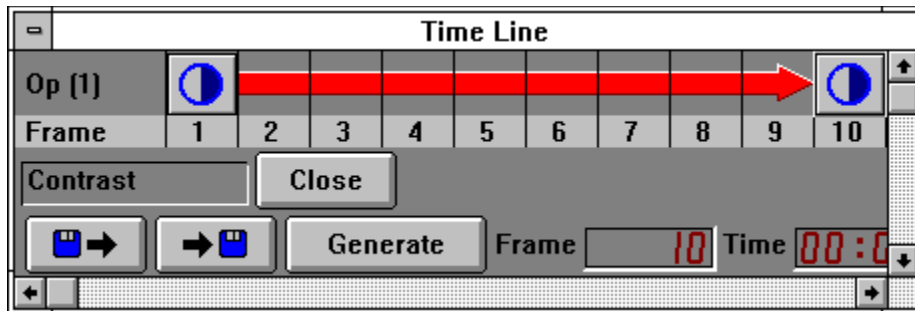
7 -   At this point we have specified an animation that goes from -100 to 100% contrast.   The next step in creating an animation is to specify an area selection.   This area selection will tell F/x where to apply the specified operation. For this example we will specify an ellipse which will interpolate into the entire image.   Begin by grabbing the ellipse icon from the tool box, and then place it in frame 1 of the time line above the contrast icon for that frame. At this point the time line should look like this:
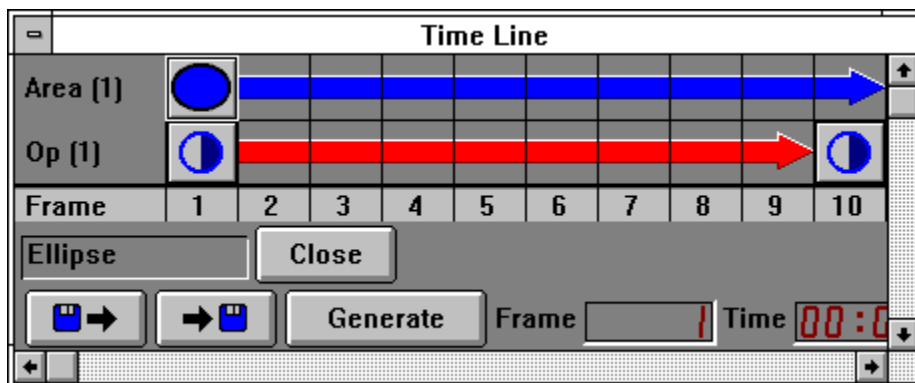
Now, we will set the area selection that we want to have the ellipse interpolate or change into (entire).   This is done by dragging an dropping the Entire image area selection icon (■) into frame 10.   The time line should now look like this:
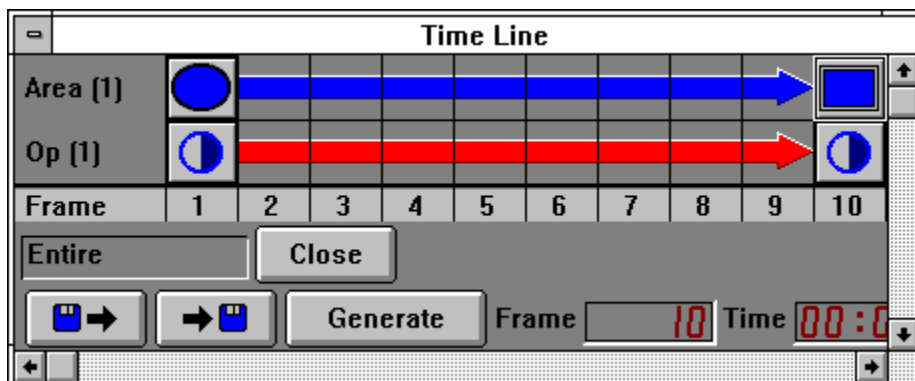
The final step is to specify the initial elliptical area.   This is done by double clicking on the ellipse icon in the time line.   This will open the time line's area selection dialog.   One of the options is to **Make the area selection now**. Pressing this button will bring the **litlflwr.jpg** image to the front.   You can now specify the ellipse by clicking and holding the left mouse button near the center of the image.   You can now move the mouse to size the ellipse. Pressing the right mouse button in conjunction with the left allows you to change the position of the ellipse. Releasing the left mouse button at any time will select the area, and will place it into the time line.   If the area selection is not the correct size or is not in the proper position, re-select the **Make the area selection now** option, and make a new area selection.   You will want to make the area selection about the size of the inner portion of the flower near the center of the image.   This completes all of the setup for creating the animation.

8 - You are now ready to generate the animation.   This is done by pressing the **Generate** button on the time line dialog.   The sequence will be generated based on the area selection and operation parameters that we specified. The generation time of an animation can vary from system to system.   This time is also dependent on the type of operation or operations selected and the number of frames in the animation.   The tutorial animation takes about 2 minutes on a 486 - 25MHz with 16 Megs of RAM (this can take even less time if you turn on the **Inhibit Display** option in the Time Line menu.

The animation can be played once it has finished generating.   The animation is played by pressing the **Play** button, ▶ , on the filmstrip.   The Speed control allows you to adjust the rate of playback for the animation.   The animation can be stopped at any time by pressing the **Stop** button,

■ .   The final results should look like this:

Play Example Animation

These basic steps can be followed to create an animation using any of the operations and area selection tools.   You also have the option of applying the operations to only a single image.   This is done by simply setting the controls for an operation, selecting an area selection method, and then applying the area selection to the desired image. Remember this was only a simplified example of how to use some of the tools available in WinImages:F/x.   Further review of this manual will be necessary to fully utilize all of the power of the program.

See Also: The Area Menu
The Display Menu
The File Menu
The FilmStrip
The FilmStrip Menu
The TimeLine Menu
The Operations Menu
The Settings Menu
The Area Selection Tool Box
WinImages F/x Operations

Advanced Getting Started Tutorial

The Advanced Getting Started Tutorial is designed to reinforce concepts presented in the previous tutorial, and to also present more advanced time line and program topics.   This tutorial relies heavily on information presented in the previous tutorial.   If you have not completed that tutorial, please do so at this time.   Press Here to return to the previous tutorial section.   It is very important to remember that this tutorial is **not** a replacement for reading he rest of the manual.   The manual contains extremely specific documentation for each operation and dialog.   This information can make the difference between a blasé and a spectacular animation effect.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File Manager's **Run** command with the **FX.EXE** file selected, or Press Here.   If F/x is already running, please close all existing images and time lines.   Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen.   This way you can perform the operations and view the tutorial at the same time.   In some cases you may need to use the Switch To (**Ctrl+Esc**) control or **Alt+Tab** to **flip** between WinImages:F/x and the F/x Help document.   You may also want to use the **Always on Top** option in the help documentation's **Help** pull down menu.   (**Note:** This tutorial was designed for use with the Immediate Painting Working Method.   If your working Method is set to the Draw First mode, you should change it at this time.)

2 - The animation that we will be creating contains two separate effects.   The first effect is the perspective placement of an FLC animation file into a static action image.   The second operation is a radial wave in the static action image that starts at a point, and then ripples outward.   The overall effect will be an image rotating backwards into the action image, and then "hitting" the image to create a wave.   The completed time line file (**EXAMPLE.TML**) can be loaded and reviewed by selecting the load option from the time line dialog.   It is suggested that you do not load this file until you have completed this tutorial section.

The first thing that we will need to do is open the time line.   The time line is opened by selecting the time line icon from the tool bar, or by selecting the **Show TimeLine** option from the Time Line pull down menu.   At this time you will want to eliminate any icons that are in the time line, and also close all of the image views that are currently open.   Icons can be deleted from the time line by selecting the icon with the left mouse button, and then pressing the **Delete** or **DEL** key on your keyboard.   You also have the option of eliminating all of the icons in the time line by pressing the **Erase Time Line** button in the time line dialog.   Now that we have a fresh time line, let's load the two image files that we will be using.   The first file is called **ATIGER.jpg**, and should be located in the **C:\IMAGES** directory.   If you do not remember how to load a file, please review the previous tutorial.   The second image we will need is the first frame from the FLC animation sequence that will be placed into the tiger image. This file is called **LADYFROG.FLC**, and is located in the **C:\WINIMAGE** directory.   You will be asked which frame of the sequence you wish to load.   For this example select frame 1.

3 - Now that we have the images loaded, let's set up the length of the time line, output file type, and frame rate.   The **Sequence Controls** dialog allows you to specify the animation length and output format.   This dialog is accessed by selecting the Sequence Controls option from the Time Line pull down menu.   The first thing that we will want to change is the **Total Frames** control.   This numeric entry filed displays the current number of frames in the time line and filmstrip.   This value can be changed by simply entering the desired frame number, and then pressing the **Tab** button to confirm the change.   For this animation, you will want to set the number of frames to 30.   After you have done this, select the **Save File as Type:** drop down box.   This box contains a list of all of the available file and animation formats in F/x.   You can select a file format by double clicking on its name.   For this sequence you should select the **Video for Windows AVI** option.   You will now want to set the type of AVI that you want to create. This is done by selecting **Color Depth** option, and setting it to **8-bit 256 colors**.   The next control to set is the

output path and file name.   For this example you should set this to: **C:\IMAGES\EXAMPLE**.   (You do not have to select this as your output directory and file name.   You may select any valid directory and file name.)   The final step is to select the **Save Results** check box.   Do not select this option if you do not want to generate a AVI animation.   Press the **Ok** button to confirm the changes and exit the dialog.

The next step is to set the animation's **Frame Rate**.   The frame rate sets the speed that the animation is displayed on screen.   This frame rate is set using the Frame Rate option in the Time Line pull down menu.   This dialog contains three interrelated controls that set the frame rate for the animation.   You can set the frame rate in milliseconds per frame, frames per second, or jiffies.   For this example let's set the frame rate to 10 frames per second.   This will reset the other controls to the appropriate values.   After you have set the proper frame rate, select the **Ok** button to confirm the change and close the dialog.

   4 - The next step is to set up the perspective placement section of the animation.   The perspective operation will place the current source image into the action image in a "3-D" manner.   This operation also allows you to rotate the image based on its X, Y, and Z axes.   The perspective operation can be accessed by pressing the **Geometric** button, and then selecting the perspective icon (   ).   You can also select this operation through the Operation menu's **Geometric** option.   We will want to set the perspective dialog to some particular settings before we place the operation in the time line.   The X, Y, and Z rotation values should all be set to zero, X and Y position should be zero, Z position should be 100, and the H and V zoom level should be at 200.   Once you have made any necessary changes to the perspective settings, place the perspective icon in frame one of the time line using the <u>drag and drop</u> method. (If you do not know how to use the drag and drop method for placing objects in the time line, please review the previous section's tutorial.)

The perspective portion of the animation has two separate parameters to be adjusted.   The X Rotation parameter will allow us to create a vertically rotating object, and the Z Position allows us to move the source image from the "front" of the action image to the "back".   We will use trends for these parameters to simplify the creation of the animated effect.   Trends are a graph showing a parameter's setting over the sequence of frames.   Each frame in the sequence is represented with a vertical line.   A control point or <u>key frame</u> value can be placed for some or all of the frames in the sequence.   F/x will automatically specify a control point for the first and the last frame of the sequence.   The trend curves can be accessed through the **Time Line Operation** dialog.   You can select this dialog by double clicking on the perspective icon in the first frame of the time line.   The dialog that appears allows you to specify operation parameter and trend settings, as well as the source and <u>action images</u> for a sequence.   Select the **Set Trends** option to specify the parameters that we want to trend.   This will open a dialog with a list of all of the available trends.   Click on the **X Rot** option, and then press the **Adjust this trend** button.   You should notice that a trend has opened for that parameter.   Now select the **Z Dist** parameter, and press the **Adjust this trend** option to open the Z distance trend for manipulation.   After you have opened both of these trends, select the Ok button to close the dialog.

5 - The next step is to set the rotation trend.   The initial trend should look something like this:
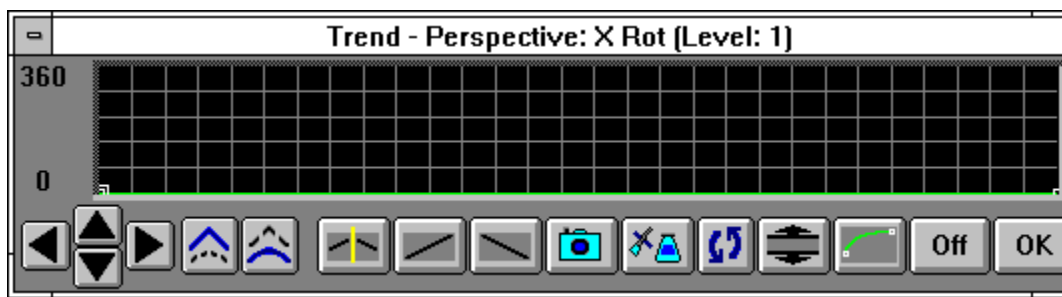

We want to create an animation which flips vertically twice.   This can be done by changing the **Extents** of the

rotation value.   Rotation is measured in degrees ranging from 0 to 360, where 0 and 360 are the same value.
Rotation is considered to be a cyclic or repeating operation.   This means that after a certain value, the operation will
repeat itself.   For example, a setting of 180 degrees is the same as a setting of 540 degrees.   Since this is true, we
can create a larger range of values between the maximum and minimum extant, and still have the operation repeat.
(If this concept is still not clear, don't worry about it.   After the trend is set up it will become clearer.)   We will
want to change the maximum value for the X rotation from 360 to 720 (twice 360).   This is done by clicking on the
extents button located in the trend dialog.   This will open a screen describing the maximum and minimum values
possible for the parameter, and its current settings.   You will want to change the **Upper Extent** control to 720, and
leave the **Lower Extent** at its current value.   Press the **Ok** button to confirm the changes and close the dialog.   You
should notice that the maximum value marker on the left has changed from 360 to 720, and the original trend graph
has changed position to reflect the change in scale.

We are now ready to draw the trend graph for the X rotation.   Press the **Rising Slope** button in the trend dialog.
This will create a diagonal line going from the minimum value of 0 in frame one to the maximum value of 720 in
frame 30.   This is close to what we want, but the perspective portion of the animation only takes place in frames
one through nineteen.   This means that we should specify a third control point in frame nineteen, so that the X
rotation will reach 720 in frame nineteen.   This can be done by placing the pointer over the trend, and then finding
frame nineteen with the **At** control in the Status Bar.   Now click on frame nineteen with the left mouse button.
Drag the control point to the top of the trend graph, until the **At** display reads: **F:19; Y:720**.   Release the left mouse
button to drop the control point.   The final X rotation trend should look like this:
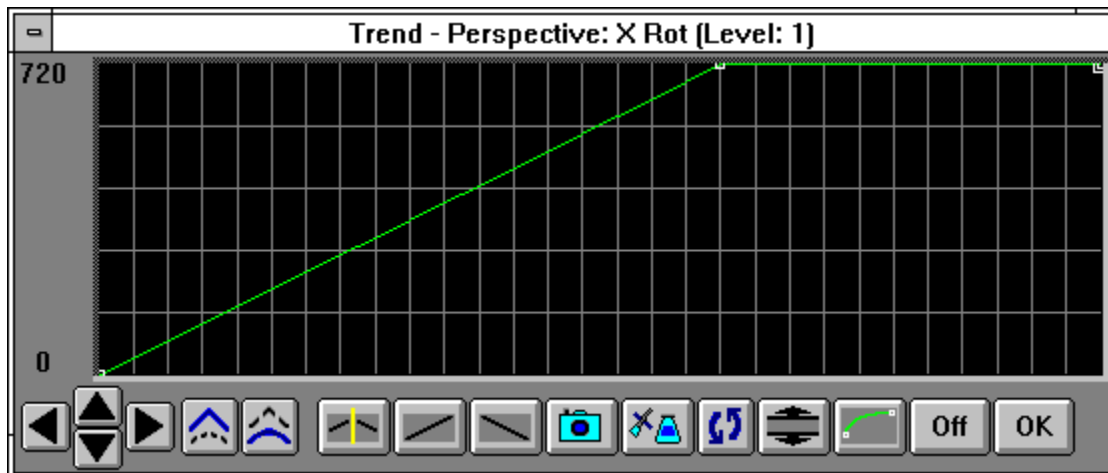
Now that you have done this you can close the X rotation trend by selecting the Ok button.

You can set the Z Position trend using the same steps.   First, change the extents to 2000 for the Upper extant, and
100 for the lower extent.   Now, press the Rising Slope button to create a line between the minimum and the
maximum extents.   The final step is to specify another control point in frame 19 that is at the maximum value of
2000 (**F:19; Y:2000**).   The resulting trend should look like this:

Trend - Perspective: Z Dist (Level: 1)

2000

100

Off   OK
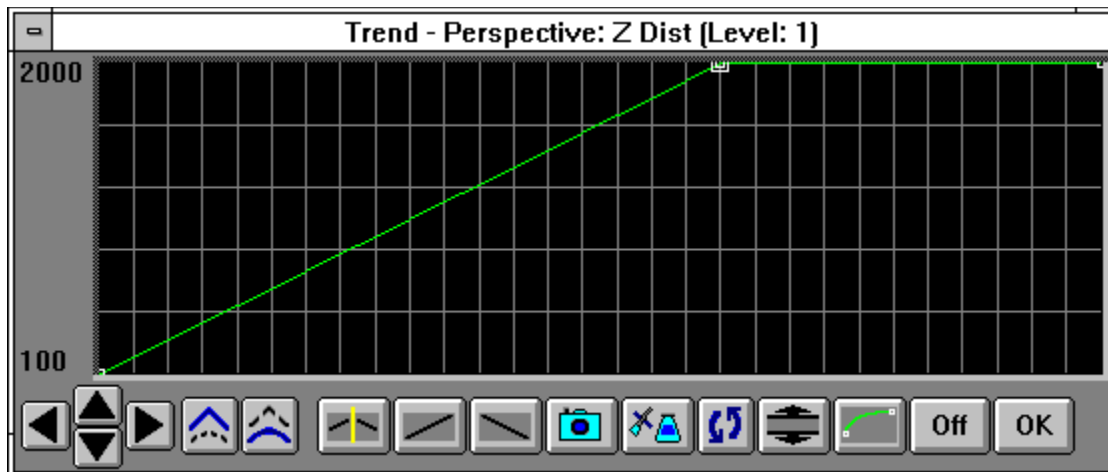
Select the **Ok** button to close the dialog.

6 - Now we will set the parameters for the Radial Wave operation.   Open the radial wave dialog by clicking on its icon in the Geometric group, or by selecting it from the operations menu.   Once the dialog is open we will want to set the parameters to the following values: Distortion:25, Frequency:5, Half Waves:1, Radius:0, Phase:0, Shading:20.   Once you have adjusted the parameters to these settings, you will be ready to place the first radial wave icon in the time line.   (Before you try to place the radial wave operation into the time line, make sure that frame 20 - 30 are visible.)   Now, use the drag and drop method to place an icon in frame 20 and 30.   If we were to generate the radial wave with these settings, there would be no movement in the wave.   This is due to the fact that frame 20 and frame 30 have the exact same settings.   We want to create a rippling splash effect, so we will have to change the settings for frame 30.   This can be done by double clicking on the radial wave operation icon in frame 30.   Now, select the **Set Current Settings** option.   This will access the Radial Wave dialog so that you can alter or view the key frame's current settings.   You will want to change the following parameters: Half Waves:15, and Phase:360.   These changes will result in a wave which starts at the center of the area selection, and then radiates outward over the remaining ten frames.   Click on the time line dialog to confirm these settings.   F/x will automatically place the new values into the key frame.

7 - The next step in creating this animation is to specify an area selection for the Radial Wave operation.   (You do not need to specify an area selection for the perspective operation because it creates its own custom area selection based on the parameters in the dialog.) We will want to specify two area selections.   The first is an ellipse located near the center of the **atiger.jpg** image, and the second is another ellipse placed around the original area selection.   This will allow the wave to "grow" in size as the sequence progresses.   Place an ellipse area selection icon in frames 20 and 30 using the drag and drop method.   The area selections for these icons can be made using the Area Selection Object dialog.   This dialog allows you to specify the area selection method, and then actually make the area selection for that key frame.   The dialog is accessed by double clicking on an area selection icon in the time line.   Double click on the ellipse icon in frame 20.   Now, select the **Make the area selection now** option.   This allows you to make an area selection on the current action image.   If the current action image is not the **tiger.jpg** image, select the area on the image that is presented.   F/x will automatically size the area selection to the action image in the sequence.   The elliptical area should be near the center of the image, and should be about one quarter of the image size.   After you have made the area selection, F/x will automatically update the area selection key frame with the appropriate settings.   Now, use the same steps to create the area selection for frame 30.   This area selection should also be near the center, but it should be almost the size of the entire image.   This will cause the wave to spread out over the image as the sequence progresses.   If you want to insure that the two ellipses have the same center position, select the **Edit Area** option from the tool box before selecting the area for frame 30.

8 - The next step is to specify the image to be used as the action image for the sequence.   Double click on the

perspective icon in frame 1 of the time line to open the Time Line Operation dialog. This dialog contains two options for specifying time line images. The first option is the **Specify Source Image** button. This allows you to specify the source image or images for an animation sequence. The second image option is the **Specify Action Image** button. Selecting this button will access the **Time Line Action Image** dialog. This dialog allows you to specify action image sequences or image files. Select the **Specify Image File** button located at the top of the dialog. This will open a file requester for selecting the image or image sequence to load. Select the **atiger.jpg** image from the **C:\IMAGES** directory, and then select the **Ok** button to confirm the file selection. F/x will place the image file into the time line with a continuance arrow from frame 1 to frame 30.

Now, we will specify the source image animation file. This file can be specified in the same manner described above. Open the Time Line Operation dialog by double clicking on the perspective operation icon in frame one of the time line. Now, select the **Specify Source Image** button. Select the **ladyfrog.flc** animation file from the **C:\WINIMAGE** directory using the **Specify Image File** option. Select the **Ok** button to confirm the settings and exit the dialog. You should see a set of icons that look like filmstrip frames in the source image area of the time line. These icons are numbered from 1 to 30, and represent each of the frames in the animation. For this example, we will only need the source image for frames 1 -19. We will decrease the size of the source image animation file by clicking on frame 30 with the left mouse button. This will "grab" the end of the animation file, and allows us to alter its size. Drag the file back to frame 19, and then release the left mouse button. You should notice that the last visible source image frame is frame 19. This will speed up the overall generation time.

9 - The final step is to select the **Generate** button from the Time Line dialog. F/x will now begin to process the animation using the settings, area selections, and images you specified. If you would like to decrease the time needed to complete the animation, you should select the **Inhibit Display** option from the Time Line pull down menu. This will prevent F/x from rendering each operation on screen, and can save a great deal of time. The final result should look some thing like this:

Play Example Animation

WinImages:F/x Tools

There are five groups of tools in WinImages:F/x.   Each of these groups contributes to the process of image processing and creating animations.   These groups are: The Area Selection Tool Box, The Operations, The Pull Down Menus, The Time Line and The Filmstrip.   Each of these tools are described below, and each section contains a jump to that tools detailed documentation.

WinImages:F/x now offers users a choice of how they would like the program to operate.   There are two separate Working Methods available in F/x: **Immediate Painting** and **Draw First**.   The Immediate Painting method is the original operating style that was designed for F/x.   This method works like many paint programs in that the area selection is created, and then the current operation is immediately applied to the specified region.   This method allows the user to quickly select areas, and have the current operation applied immediately after the area is completed.   The Draw First method allows you to make an area selection, alter it to your specifications, and then apply an operation to the area.   This working method is similar to the way that many image processing programs work.   Area selection is carried out in exactly the same way, but the current operation is not applied until the operation icon is clicked on.   This allows you to alter and refine an area selection until it meets your specific needs. The area selection will appear as a dashed marquee outline of the selected region.   You can then apply the default (or last) operation settings to the region by left clicking on the operation icon.   The operation settings can be changed by right clicking on the operation icon, and then altering the operation parameters.   After you have made the desired changes, you can apply the effect to the currently selected area by left clicking on the operation icon.

The Area Selection Tool Box:

The Area Selection Tool Box contains all of the area selection modes and modifiers for the program.   An area select defines where the operation will occur.   F/x's area selection method can work in one of two ways:

Method 1 - Immediate Painting Method:

1.   Select an area selection method (i.e., ellipse)

2.   Select the effect (this can also be done prior to selecting the area selection   tool)

3.   Alter the settings of the operation to your own specifications

4.   Select the area on the image you are working with

5.   You may now select to repeat the operation with the same area selection tool or a new tool based on your specific needs.

These same basic guidelines can be used for animation sequences as well.   For an animation sequence you would:

1.   Select an operation by clicking and holding the left mouse button while over its icon.   Drag this icon to the Time Line, and place it in the desired frame location.   This technique of selecting and placing the operation in the Time Line is known as Drag and Drop.

2.   Select the area selection for the operation using the same Drag and Drop method.

3.   Choose the appropriate settings for this operation (see the Time Line section for more information).

4.   Select Generate to create the animation.

Method 2 - Draw First Method:

1.   Select an area selection method (i.e., ellipse)

2.	Select the area on the image that you are working with (the area will appear as a dashed marquee outlining the selected region)

3.	Alter the area selection to best suit your needs (this is explained in greater detail below)

4.	Select the operation that you would like to apply to the current area selection by left clicking the mouse on the operation's icon. F/x will automatically apply the operation with the current settings in the specified region. These settings can be changed prior to application by right clicking on the operation icon, and then altering the settings to the desired values. After the proper values have been set, you may left click on the icon to carry out the operation in the selected region.

5.	A new operation can then be applied to the same region by left clicking on the operation icon, or a new are can be selected by following the steps above for each new area.

WinImages:F/x uses a modal area selection method.   This means that every area selection tool is maintained as the current mode until changed by the user.   Each of the area selection modes is used in the same relative manner.   For most of the area selection methods the left mouse button sizes the area and the left and right   mouse buttons pressed together move the area select.   Both Working Methods (Immediate Painting and Draw First) can have area selections add or subtracted from the original area.   Areas may be added by pressing the SHIFT key while making the area selection, and areas may be subtracted from the area selection by pressing the CTRL key while making the area selection.   This allows you the greatest amount of freedom in creating complex area selections in an image.   All of the area selection modes, and how they are used can be found in the Tool Box documentation.

See Also: The Area Selection Tool Box

The Operations:

The Operation Groups contain the individual effects in the program.   The operation groups are: Lighting, Motion, Geometric, Pattern, Texture, Mathematical, Collage, Standard Adjustments, Alpha, and Morph.   Each of these groups contains a number of effects that are interrelated.   Each individual operation can be selected using the Operations Tool Bar or the Operations Pull Down Menu.   The Operations Tool Bar has an icon for each of the effects.   There are also buttons for each of the operation groups.   Pressing one of the operation group buttons will move that group of icons to the far left of the Tool Bar.   The name of the current operation is found in the Op section of the Status Bar, or on the operation icon.   Individual operations can also be selected using the Operations Pull Down Menu.   An operation can be selected from the menu by clicking on the name of its group, and then on the specific operation.   (**Note:** This is only true for the Immediate Painting working method.   If you are using the Draw First method, then the operation can be selected and altered by right clicking on the icon.   The operation will be applied to the selected region when the operation icon is clicked on with the left mouse button.)   Selecting the operations this way will also move the group's icons to the far left of the Tool Bar.

You will notice that almost all of the controls in the operation dialogs have a Trend button next to them.   The trend button allows you to set that variable over a sequence of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables of an operation for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... option in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

See Also: WinImages:F/x Operations

Pull Down Menus:

The Pull Down Menus contain the settings and controls for file manipulation, animation creation, the filmstrip, display, and many others.   The pull down menus are: File, Generate, Display, Settings, Area, Filmstrip, Operations, View, and Help.   Clicking on any of the menu titles will bring up the underlying menu.   Each of these menus, and their contents, are discussed in detail in the sections on pull down menus.

See Also: Pull Down Menus

The Time Line:

The Time Line allows you to create animation sequences by simply dragging and dropping the effects and area selections into the time line.   For example, if you wanted to do a Relief effect in a rectangular region, you would simply click on the Relief icon and drag it to the time line.   You can then place the area selection using the same method of clicking on the rectangle icon, and then placing it in the time line.   Using the time line is as simple as that, but it doesn't end there.   The time line can also do some very powerful operations like changing the amount of an effect over time (this process is also known as interpolation or tweening), processing multiple action and source images, multiple effects in the same animation, area selection interpolation, and much more.

See Also: The Time Line

The Filmstrip:

The Filmstrip controls allow you to view animations that you have created or to keep a visual record of the changes made to an image.   The filmstrip controls are very similar to the controls of a VCR.   The filmstrip will load WinImages:F/x and Morph FLM files and FLI/FLC animations.   The filmstrip is not intended to be an editing tool for filmstrips.

See Also: The FilmStrip

Section 5.1 Pull Down Menus Section

5.1.1 The File Menu

Open Project...

The Open Project option is used to load a previously saved WinImages:F/x project file.   This file will contain all of the images files that were loaded when the project was last saved using the Save Project As... control.   As of Release 4.0, F/x project files also contain timeline file information.

Save Project As...

This control will save the current project.   The project save will include all of the image files that are currently loaded.   This project file can then be reloaded using the Open Project option.   If you are working with a timeline, F/x will ask you for a save name and path for the timeline file, and will include this information as part of the project file.

Close Project

If a current project has been set up, the program will ask whether the project should be saved.   Note, that the filmstrip is not saved with the project but should be saved separately if desired.   If the settings files have changed, the program will save them before saving the project file.

New Image

This option will create a new image and place it in a view.   The New Image dialog allows you to specify the name, dimensions, dots per inch (DPI) setting, and the color of the new buffer.

The Name setting allows you to specify a name for the new image. The name of the new image will be provided by the program if you do not specify one.   The Pixel Size setting allows you to specify the size of the new image in pixels.   This setting will default to the last values that were entered.   The DPI setting allows you to alter the Dots per Inch of the new image.   You will notice that as the Pixel Size and the DPI are altered, the size in inches and millimeters will change to reflect the new size of the image.   The Specify Initial Color allows you to select the color of the new image.   The control, when pressed, will provide you with a palette of colors to choose as the new image color.   The color will default to the last selected color.

Load Image...

This option will load an image into a view.   WinImages:F/x loads several file types which are listed below.

NOTE!! When loading any image file, the type of file is automatically identified by the program by looking into the file itself.   The file extension is not   significant in this identification.

The image types that are presently loaded are as follows:

Windows Bitmap Files (BMPs or DIBs)

Windows BMP (or DIB, Device Independent Bitmaps) can be from 1 bit (2 colors) through to 24 bits (16.8 million colors) and may be compressed or uncompressed.

Targa (TGA) files

Targa files can have up to 16.8 million colors and may include an alpha channel (or transparency mask).   F/x also

supports the loading and saving of Targa 2 files.   These files are <u>24 bit</u> Targa files that also contain a full color postage stamp sized representation of the image file.   This thumbnail image is saved as part of the Targa 2 files, and is used in the exposure Sheet.   These files also contain any annotation or author information specified prior to saving.   This information is specified in the View menu's **Change image information** option.

TIFFs

The TIFF (Tag Image File Format) has a very broad range of possible types. The program loads all the TIFF types we have been able to find, including 1 to   24 bit RGB images, CMYK (Cyan, Magenta, Yellow, Black) color separations, Intel and Motorola formats and images directly from Macintosh computers.

PCX

PCX images are typically created by Paint programs on the PC. The format was originally introduced by Zsoft for their PC Paintbrush program.   We read from 1 (2 color) to 8 bit (256 color) PCX images.

GIF

The GIF format, originating from Compuserve, is no longer supported by Black   Belt Systems.   UniSys who owns the patent on the compression in GIF and TIFF has placed new restrictions on the format that limit its use.   We suggest that you use another image format like Targa or TRIM.

Amiga IFF/ILBM

The program loads   24 bit IFF/ILBM images.   IFF is a file format used on   Amiga computers.

I-raw graphics /RAW

I-raw is a simple 24 bit image format.

RGB

This is a SGI based image format for full color images.

PPM

PPM is an intermediate format used in the conversion of many formats via the Portable Bitmaps Utilities.

Toaster Framestores (.FS)

The Framestore format is a 16bit image format used on the Amiga in conjunction with the Video Toaster hardware. WinImages supports both compressed and un-compressed Framestores.

Animator FLI and FLC

Any frame within an Animator FLI or FLC animation file can be loaded as the view. FLI/FLC sequences use up to 256 colors per pixel.

AVI

The AVI format (Video for Windows) can be loaded in the Windows 95 and Windows NT versions of WinImages. Saving of this format is available to all versions of WinImages.   AVI files can be loaded as a single image view, or processed through the timeline.   WinImages can load and save both 8-bit and 24-bit AVI files.

WinImages FiLMstrip frames

WinImages programs save filmstrips as a 24 bit (16.8 million color) sequence.   You may load one of the frames as your current view.

TRIM image format

The TRIM image format was developed here at Black Belt Systems.   It is a <u>lossless</u>, <u>high compression</u>, 24-bit / full color format for <u>continuous tone</u> images.   Typically, 24-bit images saved in this format will yield smaller file sizes than any other lossless image format we know of.

JFIF/JPEG

F/x loads and saves JPEG files that are in JFIF format. JPEG is a file format which is ``lossy", which means that when the image is changed into JPEG format, some of the image information is lost. For this reason, JPEG images may not be of as high a quality as you usually expect from a 24-bit file format. Note that the compression used by the JPEG process is extremely effective; so much so that images may be only 1/50th of their uncompressed size. Because of this, you may find that a JPEG file which appears to be quite small uncompresses to a very large image, which you may not be able to load into F/x without having additional RAM memory available.

The JPEG (Joint Photographic Experts Group) format images are highly compressed, 24-bit color accurate images. No mask or alpha channel information is saved; the image compression method used is ``lossy". This save module provides you with the ability to set the compression used from light to heavy. More compression results in more loss of image detail.

JPEG is great for some things... and absolutely the worst thing to use for others. Consider: JPEG loses some quality when it compresses an image. Not a lot, if you use minimum compression, but still, some loss of quality occurs.   If you're a scientist or a doctor, don't think "loses quality", instead think "loses and changes data"!   Consider what happens if you're working on this image over a number of   sessions. Each time you save and load the image in JPEG format, it deteriorates a little more (or a lot, if you compress it a great deal). The lesson, and the rule that comes from it, is obvious: Don't ever use JPEG as a storage format for an image you're working on, or for an image that will be used in another image (unless you positively know that the loss of quality won't matter, for whatever reason).   JPEG is really good for archival storage of images you like, but aren't "serious" about. On minimum compression, a single use of the JPEG technique on an image will not seriously degrade it. And that's what you'd normally do with an archived image. Store it once, then load it as you please to view it, as many times as you like.   If you will be doing multiple loading and saving of a particular image, you should use our TRIM format. TRIM will give you twice the compression of a standard IFF24 or TIFF with absolutely no image loss.

The JPEG file saver has an option at the bottom of the Save Image dialog called JPEG Quality.   This control allows you to specify the quality of the resulting saved image.   The quality is measured on a scale from 0 (worst quality) to 100 (best quality).   Increasing the quality will increase the size of the output file (less compression), and decreasing the quality will decrease the size of the output file (more compression).   Remember, the lower the quality the more compression you will achieve, but this will be at the expense of losing image information.

Loading an Image File

Loading a file in WinImages:F/x is very simple.   First, select the Load Image... option in the File pull down menu. This will present you with a file requester which allows you to specify the file's path and name.   The file will be loaded when the file name is clicked on twice or when the file is selected and the OK button is pressed.

NOTE!! When loading any image file, the type of file is automatically identified by the program by looking into the file itself.   The file extension is not   significant in this identification.

Image files can also be loaded by using <u>Drag and Drop</u> from the file manager.   Drag and Drop is a means of loading files into a program directly from the File Manager. In WinImages:F/x image files can be dragged into the view windows.

To load an image using Drag and Drop:

(1) With the WinImages:F/x program opened, open the file manager.   Make sure that there is at least one image view open in Winimages.

(2) Make sure that both the File Manager and a View window are visible.

(3) Click down on the image file you want loaded.

(4) With the mouse button still down, move the pointer to the image view in F/x.

(5) Release the mouse button over the window.   When dragging files, the pointer will look like if the   file can be dropped into the underlying window, and

 if it cannot be dropped there.   You can also load a group of files by first selecting the files, and then using the above steps load the files into WinImages:F/x.

If a file is not identified as a known image type, the message: "Image file type is not recognized." is displayed.   If you should encounter an image file that we do not read, send it to us (we suggest you use the Black Belt Systems Bulletin Board at 1(406) 367-2227) with an explanation and we will endeavor to extend the program to handle it.

Save Image...

The Save Image option will save an image in the format that it was originally loaded in.   For example, if the file was loaded as a JPEG, F/x will automatically re-save the image using the JPEG format.   If you would like to change the output format, you should select the Save Image As option.   This option allows you to save an image with a different file format and bit depth.   If multiple images are loaded, F/x will present you with a list requester for selecting the image to be saved.

Save image as...

The Save Image as... control allows you to save an image.   The image will be saved in the format specified in the Save File as Type option in the Save Image dialog.   WinImages:F/x will present you with a list of the current images in the program.   After you have selected an image from the list you can then specify the directory path and file name to be used for saving the image.   There are also controls to alter the file format, color depth, and compression.   After you have specified the desired file format, set the color depth, and compression if any is available for the current file format.   The Output Color Reduction (Color Selection and Dithering methods) can be set before saving an image in the Output Color Reduction option in this menu.

Current save format options include:

- Full color Windows Bitmap

- 256 color Windows Bitmap

- 16 color Windows Bitmap

- 2 color Windows Bitmap

- TIFF (full color - uncompressed)

- Amiga IFF/ILBM (full color)

- 256 color PCX

- 16 color PCX

- 2 color PCX

- JFIF/JPEG

- Animator FLIC animation

- Targa 24/32 bit (full color with alpha)/ Targa 2

- Uncompressed or Compressed Targa

- Toaster Framestore

- TRIM (full color)

- 256 color AVI

- 24-bit AVI

 NOTE!   If you load and save using an image format with less than 24 bit, full (16.8 million) color, your image quality will always be compromised.

Black Belt Systems has removed the GIF and compressed TIFF image savers.   UniSys who owns the patent on the compression in GIF and TIFF has placed new restrictions on the format that limit its use.   We suggest that you select to save in an other compression format like Targa or TRIM.

To save to an Animator FLIC or Video for Windows AVI animation, each frame must be saved in sequence. Therefore, you must set the Save Result option in the Sequence Controls so that each frame gets saved into the animation file as it is created.   This means that you will also need to specify that the file type to be saved as an FLI/FLC or AVI.

Clone Image

The Clone Image option will copy or clone any image that you select.   Cloned images will have the same aspect ratio, pixel resolution, and DPI as the original image.   Remember that this clone is an exact copy of the original, and therefore requires the same amount of memory.

See Also: Making More Memory Available

Capture Screen

The screen capture option allows you to set up a screen capture from within F/x.   The screen capture utilities can be used to capture F/x's screen immediately, or it can be delayed so that you may capture the screen of another application.   You also have the option of capturing into memory (an image view in F/x), or capturing into an image file.   Once a screen has been captured, it can be treated like any other image in F/x.   This means that you can apply a Color Fill to a selected region, or apply a Dome to the Tool Bar.   Once you have made any needed modifications, the image can be saved using the **File** menu's **Save Image As...** option.

Step by Step Instructions for Capturing Screens:

- Enter the File menu and select **Capture Screen**, or press the F9 key (Quick Capture) to capture the current F/x program screen using the default screen capture settings.

- If you open the Screen Capture Control dialog, then specify any needed time delay, where the image is to be captured (image view or image file), and any other file related details.

- Select the **Capture Now** option to capture F/x's screen using the current screen capture settings, or to use the time delay to capture another application's screen.   Pressing the Ok button will not capture the screen.   This will instead confirm any changes that you made to the screen capture dialog, and save them for use with the Quick Capture keystroke (F9).

- If you are capturing F/x's screen, simply wait until the screen capture has completed (watch the progress bar),   If you are capturing another program's screen with a time delay, use ALT+TAB switching to bring the application to be captured to the front.   You will need to wait until the timer has elapsed, and the screen has been captured.   You can then switch back to F/x, and view the newly created capture.
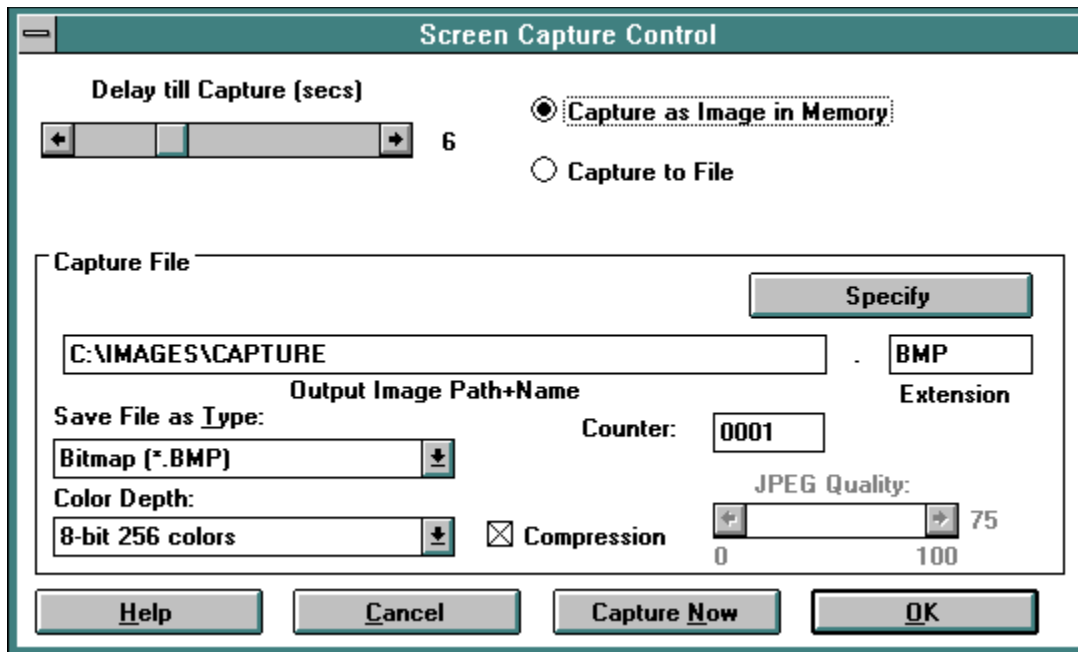
Screen Capture Controls:

Delay till Capture: This control allows you to specify the delay time (in seconds) before the screen capture occurs.   This allows you time to switch to another application, or to rearrange F/x's screen elements.   The delay can range from 0 (no delay) to 15 seconds.

Capture to Memory/File: These radio buttons allow you to select if the file will be captured and placed into an image view in F/x, or saved to an image file.   If **Capture as Image in Memory** is selected, then the screen capture will be placed into an image view in F/x.   If **Capture to File** is selected, then the screen capture will be saved into the specified file name and format located in the **Capture File** section of the dialog.

Specify: Pressing this button will access a standard file requester which can be use for setting the image path, image name, file type, and file type options.   After you have set these parameters, press the **Ok** button to confirm the changes and return to the dialog.   You can alter any of these parameters from within the Screen Capture dialog by changing the appropriate text entry field, or drop down box entry.

Output Image Path+Name/Ext: This text entry field is used to specify the image path and file name for the screen capture.   This information will be used to determine where the capture will be saved on your hard drive, and the image file name.   The extension is automatically determined by the file type.   For example, Targa files are saved with a .TGA extension by default.   This can be changed to any extension by entering in the desired extension in the **Extension** box.   It is important to remember that you are required to have a complete path and file name for any file that is to be saved.   If you are unsure about the image path or name, you should use the **Specify** button to select a path and file name.

Save File as Type: This drop down box contains a list of all of the available save types in F/x.   The file type that is selected will be used as the file format for the screen capture.   This save type is changed by simply double clicking on a new file type.   Each new file type will have various options associated with it.   These options are controlled

through the Color Depth and Compression controls.   For example,   if your Save Type was set to Bitmap, then you would have the option to save it as 24 bit, 16 bit, 8 bit, 4 bit, or 1 bit bitmap that can be compressed or uncompressed.

Color Depth: This drop down box contains all of the available bit depth (number of possible colors) for a file type. Each file format in the **Save File as Type** drop down box has different bit depths associated with it.   Some formats (like JPEG) only have one bit depth (24 bit). Other formats (like Bitmap) have multiple bit depths for saving.   In most cases you will want to select a 24 bit depth for high quality screen captures.

Compression: The compression check box allows you to select compressed or uncompressed for an image file format.   It is important to remember that not all image file formats support compression.   If the file format does support compression, then the check box will be available.   If no compression method is available for the current file type, then the compression check box will not be available.

JPEG Quality: The slider is only available for JPEG image files.   This control allows you to specify the quality of the resulting saved image.   The quality is measured on a scale from 0 (worst quality) to 100 (best quality). Increasing the quality will increase the size of the output file (less compression), and decreasing the quality will decrease the size of the output file (more compression).   Remember, the lower the quality the more compression you will achieve, but this will be at the expense of losing image information.

Counter: The counter will put an automatic four digit extension on to the current capture file name.   This allows you to capture a number of sequential screens that have an identifying number.   This number is automatically incremented whenever a new screen is captured.   This counter can only be reset by entering a zero value.

Related Topics:

Output Color Reduction...

Which Color Reduction Method is Best?

Output Color Reduction...

The Output Color Reduction Controls allow you to specify how the color palette will be selected for any output format with less than full color.   This dialog contains a full range of palette and dither option that are used to specify the type of color reduction for your output needs.   These color reductions can be used for single output images as well as entire sequences of animation frames.   It is important to remember that color reduction is only valid for formats that are less than 24 bit color (256 or 16 color formats).   There are two types of palettes in F/x.   There is the render palette which can be determined by color selection processes, it can be a default palette, or it can be an effects palette.   The effects palette is the current palette in the actual effects palette control dialog.   This dialog can be accessed by selecting the Edit Palette option.   The dialog below shows all of the Color Reduction tools.

The output color reduction panel now has a new area in the middle of the dialog which allows the user to select which colors will be used for the next output render (see dialog above).   Each color in the current palette will appear as a color cell with a colored button located beneath it.   This colored gadget is a three state button that is used for determining how that color will be used during the color reduction process.   The first state (represented by a gray button and the letter **p** for Pick) will result in that color position being reselected by the spectral color selection process.   This color will then be used in the actual output render.   This state is the default, and all new palettes will open with all color cells in this state.   The next state is represented by a white button and the letter **u** for Use, and it will ignore the color (leave it unchanged), and then will use the color in the rendered output.   This allows you to keep any number of colors that you do not wish to have re-selected by the spectral color analysis. The last state is the ignore or skip option, and it is represented by a black button and the letter **s** for Skip.   This tells F/x that this color position should not change, and that it should not be used in the rendered output.   This means that you can maintain a color in the palette, but then not have it alter the actual rendered output.

The actual dialog is very simple to use, and takes advantage of multiple cell selection for ease of use.   To alter the "state" of the currently highlighted or selected color position, simply click on the color bar directly below its cell. This will alter the color bar from it current state, and change it to the next state.   These buttons are cyclic in nature which allows you to cycle through all of the option, and then returns you back to the original option.   You have the ability to alter entire groups of colors using the standard shift-click method of selecting multiple objects.   This is

done by left clicking on the first color to change, and then pressing the Shift key and left clicking on the last color to change.   This will alter the state of all of the colors between the first and last color to the new state of the first color cell.   If you do not wish to change the initial color's selection status, right click to select the cell without alteration.   After you have done this you can use the shift click method to select the last color cell, and all cells in between.   In this way you can alter the selection state of many colors with only a few simple mouse clicks.

After you have made all of the desired changes to the color selection or usage states of the colors in the palette, you can save the information using the **Save Usage** button.   This will save all of the color and usage data for the current set of colors.   The usage file can be re-loaded at any time for use with any sequence of images.

The final new addition to the Output Color Reduction panel is the **Number of Colors** slider located at the top of the dialog.   This slider allows you to select how many colors will be available in the palette.   For example, if you wanted to create a 64 color render, you would set the number of colors option to 64.   You could then render the image using the current palette's first 64 colors, or create a new palette using the Build Palette operation.

Output Color Reduction Controls

Use Default Palette: This option, when selected, will render the image using a default set of colors.   These colors are predetermined for both 16 and 256 color renders.   A 16 color render will use the default Windows palette for rendering, and a 256 color render will use a preset palette designed at Black Belt Systems to produce high quality renders without any color selection.   This method is the fastest render method, but also has the lowest quality.

Use Gray Scale Palette: The Gray Scale Palette render option will render the output in either 16 or 256 gray levels.   The gray scale palettes are predetermined which makes the gray scale render very fast.

Use Loaded Effects Palette: This option will use the range of colors which is currently loaded into the effects palette.   This range of colors can be specified manually or by loading a specific effects palette file.   The render operation will then use the colors in the effect palette as the render palette for the output files.   This option is ideal for using a very specific palette for an output animation or sequence of files.   F/x will only use the number of colors specified in the effects palette.   For example, if you were doing a 256 color Bitmap render with only 240 colors in the effects palette, the rendered bitmap would only use the available 240 colors.   The same is true for any number of colors.   This means that it is possible to render a 256 color output with only 2 colors in the effects palette.   If you were to create a 16 color bitmap with 256 colors in the effects palette, only the first 16 would be used.

The effects palette can be altered by selecting the Edit Palette option located to the right of this control.   Pressing the Edit Palette button will access the palette controls.   You then have the option to load or manipulate a palette in any manner that you like (see the Palette Controls for more details).   Once you have the desired output palette, select the Close button.   This will place you back in the main F/x workspace.   If you have any further color reductions to make, select the Output Color Reductions option again to make your adjustments.   After you are satisfied with your selection, select the Ok button to exit the dialog.   These changes will remain valid until they are changed by you.   All non-24bit files saved will use the specified color reduction method.

Choose Palette Colors: This option will allow F/x to use its custom color selection process to select the best colors possible for the output image.   The Spectral Color Selection process will determine the output colors which best represent the colors in the actual image.   This format is valid for both 16 and 256 color render modes.   This option also has two special selection that can modify the way the colors are selected.   The first is Update Palette from Render.   This control will automatically update the effects palette with the colors selected for the output render palette.   You can then save this effects palette for latter use.   The second option allows you to lock the color selection after the first frame of a sequence is generated.   This means that the render palette that is selected for the first frame in the sequence will be used for all remaining frames.   This is useful for creating animations that contain a single render palette for all of the frames.   These two options can be used together, or independent of one another.

Please refer to the documentation below for more details on these two options.

Edit Palette: The Edit Palette button will access F/x's effects palette.   This palette can then be adjusted, altered, or a new palette can be loaded for use as the render palette.   Once you have the desired palette, select the Close button to exit the palette.   You can then use the Use Loaded Effects Palette to generate a frame or sequence of frames which use the effects palette as the output render palette.   This is very useful for creating output files or animations that use the same exact palette for each file or frame.   It is important to remember that the last set of colors in the effects palette will be the one that is used for all renders that use the effects palette.   This palette can be changed at any time, and is saved upon exiting the effects palette.

Update Effects Palette from Render: This option, when selected, will update the current effects palette with the colors selected by the spectral color selection process.   This will only occur if the Choose Palette Colors option is also selected, and can only be used with that option.   This feature is nice for "grabbing" the palette from an image. This palette is automatically placed into the effects palette, and will remain their until a new palette is loaded or F/x is closed.   You then have the option to save the palette that was created as a regular palette file.   This allows you to load the palette whenever it is needed for operations or rendering.

Lock Palette after First Frame: This option, when selected, will determine the render palette from the first frame of the animation sequence.   This control is used in conjunction with the Choose Palette Colors option, and is only really useful for batch processing files or animation files.   Once selected, F/x will determine the render palette from the first frame in the sequence.   This render palette is then used for all of the remaining frames.   This method is nice because it allows you to use F/x's superior spectral color selection technology, while keeping the total render time to a minimum.   This is due to the fact that the render palette is only selected for the first frame.   All frames after that will use the same render palette as the first frame.   This will decrease the total amount of time needed to finish rendering the remaining frames.

<u>Ordered Dither</u>: Ordered Dither will dither the image based on the current <u>pixel</u>, and that pixels location in the actual image.   This type of dithering will generally produce a lower quality image, but is necessary for animation that will be using any type of compression.   The ordered dither allows for a great deal of <u>interframe compression</u>, which is needed to compress animation files.   This type of dithering should only be used for the output of animation files.   If you want to produce higher quality output images (not animations), you should use the EDD dither method.   If you want to produce even higher quality render, you should use 24bit file or animation formats. Remember, the quality of the final result is directly related to the quality of the initial image.

<u>Error Diffusion Dither</u>: Error Diffusion Dither (or EDD) will dither the image based on the specific pixel colors, and the colors of neighboring pixels.   This will generally produce the highest quality dithering in the image, with the best possible colors being represented by the dither.   This is done at the expense of adding more "noise" to the image.   This means that in some cases the dither is easier to perceive.   This type of situation can by remedied by decreasing the dither amount, or by always working with 24bit files and output images.   Remember, the quality of the final result is directly related to the initial image quality.

Dither Amount: The Dither Amount control is used to specify the percentage amount of dither in a render.   This amount can range from 0 (no dither) to 100 (maximum dither).   The dither amount can effect the amount of <u>intraframe compression</u> over the sequence.   This can reduce the overall size of the animation frame.   You can achieve greater interframe compression by selecting the ordered dither option instead of the EDD dither.   Ordered dither, by nature, will give you more interframe compression in animation formats like AVI.

Note: Due to the superb color selection technology in F/x, some animation that use low amounts or no dither will look nearly identical to animations using a high amounts of dither.   This is especially true with the Choose Palette Colors render option.   Generally a reduction in the dither amount can result in a loss in quality, but F/x's color selection chooses colors that will minimize this quality loss.   If you are trying to reduce the size of an animation, it

is suggested that you use a dither setting of about 50%, and Ordered Dither.   This will give you a large amount of interframe and intraframe compression.

Which Color Reduction Method is Best?

Each of the available <u>color reduction</u> methods and <u>dither</u> techniques have certain applications for which they are best suited.   If you are producing single frames are images that are less than <u>24 bit</u>, you should use the Choose <u>palette</u> colors option with an EDD dither set to 90 - 100%.   This will allow F/x to select the best possible colors and dithering for the output image.   If you are creating animations with multiple palettes, you should also use the Choose palette colors option.   If you are creating an animation that has a single specific palette, you should use the Use loaded effects palette option, or the Choose palette colors selection with the lock control on.   The loaded effects palette method allows you complete control over the colors in the output animation.   This means that you can maintain a previous palette, or you can create your own <u>render</u> palette.   The Choose palette colors option allows F/x to select the best possible render colors for the first frame of the animation.   This render palette is then locked and used for all subsequent animation frames.   Animations should almost always be dithered using the <u>Ordered Dither</u> option.   The amount of dither depends on the output format, and the quality of the colors in the animation.   Some experimentation may be necessary to determine the proper dither amount for your particular animation sequence.

Section 5.1.2 The Time Line Menu

Show Time Line...

The Show Time Line control will access WinImages:F/x's powerful time line dialog.   This dialog can be used to create animation sequences by simply dragging and dropping the effects and area selections into the time line.   For example, if you wanted to do a Relief effect in a rectangular region, you would simply click on the Relief icon and drag it to the time line.   You can then place the area selection using the same method of clicking on the rectangle icon, and then placing it in the time line.   Using the time line is as simple as that, but it doesn't end there.   The time line can also do some very powerful operations like changing the amount of an effect over time (this process is also known as tweening), processing multiple action and source images, multiple effects in the same animation, area selection interpolation, and much more.

The documentation topics for the Time Line are broken into four separate portions for each topic.   The first section gives a brief explanation of the how the dialog, and its controls, are used.   The next section is an interactive image of the actual dialog.   You can access more information about a control by clicking on that control or option.   Some dialogs have a sub dialog which allows you to specify a greater amount of detail.   Each dialog will be documented in sequence of appearance.   The third section takes you through a step by step tutorial designed to familiarize you with the dialog and its operations.   The final section will answer some commonly asked questions about the dialog or its operation.   There are four main sections of the Time Line documentation which include the basic Time Line operation and controls, the Area Selection dialogs, the Operation dialog, and the Source and Action Image dialogs.

These section (Sections 5.1.2.1 - 5.1.2.4) can be accessed by pressing the browse button ( ), or by selecting the related icon below.   It is important to review all of the sections related to the Time Line to develop a good basis for using the Time Line to its fullest.

It is important to remember that these are probably the most important sections of the documentation. Our suggestion is to read these sections, and then read them again.   If you still do not grasp the concepts of these sections, review the Getting Started Tutorial and other tutorials in Appendix E.   This tutorial will give you more experience with the time line, and its interaction with the rest of the program.   If you still are having a problem understanding a topic, please contact technical support at (406) 367-5509, where we will be happy to give you further assistance. (Note: You must be registered to receive technical support.)

Sequence Controls...

The Sequence Controls dialog allows you to specify the number of frames in an animation/filmstrip/time line and the output file type and path.   The top portion of the dialog deals with the length of the animation filmstrip and time line.   The length can be set by altering the Total Frames control.   The length must be at least two frames.   You also have control over which frames are the start and end frames, and which frame is the current frame.   The current frame is used for the Place Updates in Current Frame selection in the Filmstrip menu..

The bottom portion of the dialog allows you to Specify Output File name, extension, file type, and path.   The file type specified in this panel is completely independent of the setting in the Save File As Type: option in the Save Image As dialog.   The Save Result check box must be selected to save the frames as they are generated by the time line.   This allows you to create FLI/FLC and AVI animations while the sequence is generating.   This method of creating the animation files is preferred over saving the filmstrip as an animation file because it saves time and memory.

See Also: Save Image As...

Accumulate Changes

WinImages:F/x applies effects in a sequence based on the original image.   This means that after an operation is performed in a sequence generation, the operation is undone and the effect is applied on the original image.   This control allows you to turn that aspect of the program off.   Doing this will force the application of multiple effects to the same region in the altered image, not the original.   For example, a sequence that does an increasing Dome effect would normally apply the increasing distortion to the original image for each frame.   With this option selected, the Dome would be carried out on each successive altered frame.   This will effectively increase the effect in the area, but the animation may not be as smooth.

Inhibit Display

The Inhibit Display mode will keep the Time Line from rendering each image that is loaded during the sequence.   This will also prevent the rendering of an image after an application has been applied, or after an Undo.   This will generally increase the speed of the sequence generation.   We suggest that you always use this control for large Time Lines to decrease the time needed for generation, or on any 386 based machine.   This control will not prevent the rendering of the filmstrip, but this can be turned off by closing the filmstrip controls.

Hide Op Controls

This option allows you to hide the operation control dialogs during a time line generation.   This means that when the time line is generated, the operation dialogs will not be visible.   If this option is not selected, then the operation dialogs will appear for each operation in the time line.   This control will default to on.

Animation (File) Frame Rate...

This opens a dialog for setting the frame rate that is saved with animation files such as FLI or AVI animations.   The playback speed for the filmstrip is independent of this setting.   This dialog shows the frame rate in three interdependent ways.   Changing one of the setting will alter the others.

Milliseconds per frame - This is the way the frame rate is held inside the program.   This is the number of 1/1000 seconds between frames. It is 1000 times the value of microseconds per frame that .AVI files use.

Frames per second - A value of 10 f.p.s. would mean 100 milliseconds per frame.

Jiffies (per frame) - A jiffy is 1/70 th of a second.   So a value of seven (7) would represent 10 frames per second.

Generate...

The Generate button will start the processing of the current Time Line.   The Time Line will be created based on the current operations, area selections, and image files.   Once you have started the generation of a time line, you can pause or stop the operation by selecting the pause or stop button on the Status Bar.   If a time line generation is paused, it can be restarted by pressing the pause button a second time.   Once a time line generation has been stopped, it will have to be regenerated from the beginning.   This option has the same effect as pushing the Generate button on the Time Line dialog.

Section 5.1.2.1 The Time Line Controls - The Basics

Part 1 - An Overview - Controls

Part 2 - The Time Line Dialog Controls

Part 3 - Time Line Controls Basic Tutorial

Part 4 - Time Line Controls: How do I ...?

Part 1 - An Overview - Controls

The diagram below shows a typical time line based operation.   There is a selection of source and action files, area selection methods, and an operation.   F/x uses a <u>Key Frame</u> based time line.   This means that action will take place from key frame to key frame.   This allows for interpolation, which is also known as tweening.   For example, the time line below depicts three separate area selections.   The first is a rectangle, next is a polygon, and the last is an IShape   The first area selection is set to tween (interpolate) into the second area selection (see the description below on how to determine if an operation is using interpolation).   The second area selection does not interpolate, and the final area selection interpolates back to the initial area selection.   This allows you to create animations with moving area selections, and effects.   A key frame is specified by the <u>drag and drop</u> method.   This means that operations and area selections are placed in the time line by clicking on, and then dragging the desired icon into the time line.   You can also specify a key frame by double clicking on an empty cell in the time line, or by pressing the Enter key over an empty cell.   A cell (or frame) is considered to be empty if there is not an icon in that cell.   If you are specifying images, then an empty cell is considered to be any cell that does not contain an image file icon, or any cell beyond the first frame of a video sequence.   Double clicking or pressing Enter over an already specified key frame will bring up that key frames specific control dialog.   These dialogs area discussed over the next five sections.
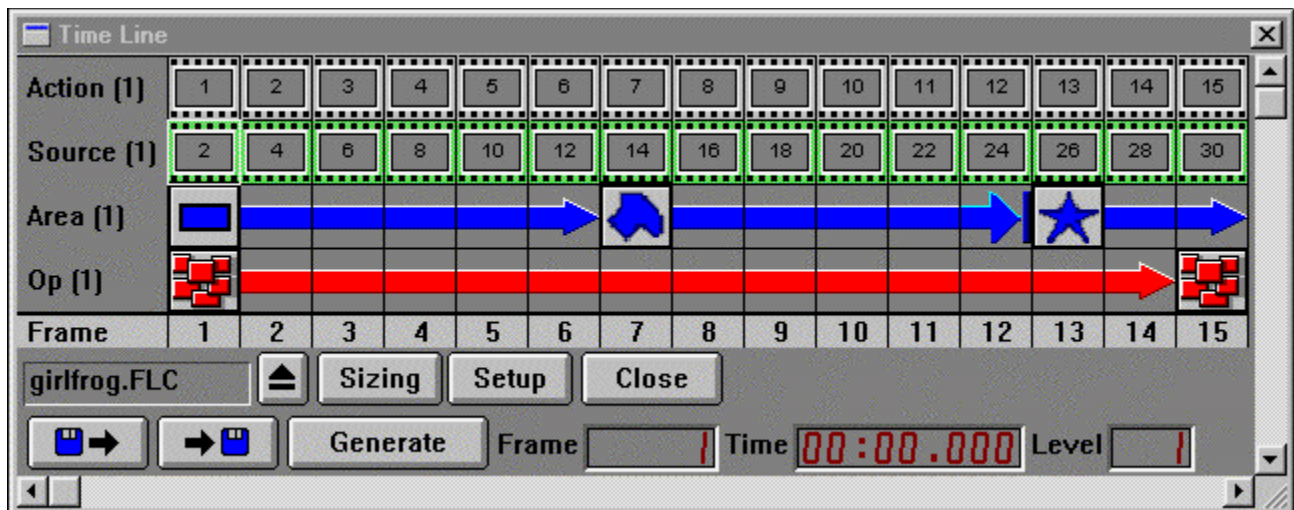
You should notice that there are two different types of time line arrows.   The first type of arrow ( ) shows that there is an interpolation from area select to area select (the same arrow is used for operation interpolation).   Interpolating an area select or an operation means that the area (or operation) in the first key frame will change or alter it shape or settings to match the settings in the next specified key frame.   For example, in the time line above the original area selection is a rectangle.   This rectangle is then interpolated into a polygon over a course of seven frames.   The polygon is then interpolated into an IShape over the next six frames.   The same is true for operations.   The second type of time line arrow (

) will simply complete the area selection or operation as specified from the initial key frame.   This means that the effect will not be interpolated from key frame to key frame.   The effect will be generated until a new operation is specified, or the end of the sequence is reached.

You can interpolate the settings of an operations by:

• Setting the options for the first key frame.

• Dragging and dropping the operation icon into the time line.

• Setting the second key frame's options.

- Dragging and dropping the operation icon into the appropriate time line position.

That is all there is to creating an animated effect, but it doesn't end there.   You can have multiple key frames, operations, area selections, and source and action files.   You also have the option to use trends instead of interpolation.   The trends allow you to specify the value of any operation parameter over the entire sequence.   This means that all of the values for each frame in the sequence will be determined by the settings in the trend graph. The use of trends reduces the necessity of multiple interpolations for complex animation effects.

All of the operations and area selections can be placed using the Drag and Drop method.   All action and source images are specified by double clicking on an operation, or by pressing the Enter key while over a non-key frame area.   This will access the operation controls for setting sequences of action and source images.   F/x also allows you to apply various effects on separate Levels.   A Level can be defined as the order of   application for operations and area selections.   Each level of the time line can contain separate operations, area selections, and image files (generally you will only want to specify action and source files in the first level).   Each level is executed in order for each frame.   For example, if you had a time line which had ten frames and three levels, the level one frame one operation would be applied first, the level two frame one operation would be next, and the level three frame one operation would be the last operation for that frame.   The frame would then be saved in the desired file format (set in Sequence Controls).

F/x uses three separate frame classifications for a time line frame.   These classifications are Key Frame, Continuance Frame, and Empty Frame.   A Key Frame specifies the beginning of an operation, area selection, or image file.   A Continuance Frame is any frame that contains a portion of a key frame interpolation arrow.   These frames specify the continuance or interpolation of an operation, area selection, or image file.   The Empty Frame is the final frame type.   An empty frame is any frame that is not a key frame or continuance frame.   The rest of the controls and icons are explained in the detailed documentation below, or it can be accessed by clicking on the item for more information.
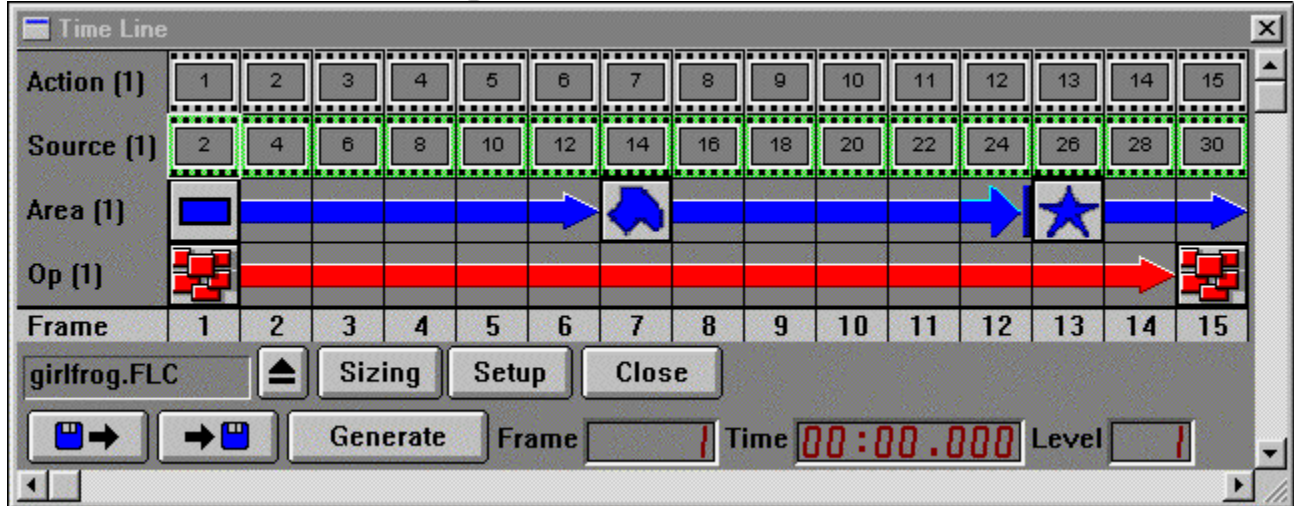
Time Line Controls:

Source Images: Source images are mainly used for operations which combine two images.   F/x allows you to specify multiple files as the source image, or a video sequence as a stream of source images.   A single source image is represented by green outlined frame with no associated number.   This frame will also have an arrow associated with it which shows how long the single frame is to be used.   You can reposition the single frame on the same level of the time line by grabbing the outlined key frame box, or by grabbing the end of the arrow.   Once you have grabbed the box or arrow, you can resize the length by moving the mouse to the left or right.   After you have specified the desired length for the source image, release the left mouse button.   A sequence of video frames (FLI/FLC or FLM files) will appear as a green filmstrip with numbers representing the frame number under each frame.   This frame value is determined by the starting frame value and the increment value (these two values are described in greater detail in the Specify Source and Action Image documentation).   Remember, source frames will only be used if the operation requires a source.   The source images will remain valid until a new source image is specified.   This means that you can specify a sequence of source images in level one, and use them for a level three or level four operation.

Note: You can automatically load a source image in the timeline by Ctrl+Clicking on the desired Source Image icon.

Area Selections: The area selections define where the specified operation will occur in the image or image sequence.   The example time line above has a total of three area selections.   Each of these area selections has its own key frame represented by the area selection's icon.   The first area selection is a rectangle.   You should notice that the rectangle has an associated interpolation arrow to the next key frame.   This means that over the first seven frames the rectangle will alter its shape to become the polygon.   The next area selection is a polygon.   Its arrow specified that there is to be no interpolation.   The final area selection is an IShape, and it is set to interpolate back to the original area selection (the rectangle).

These area selections can be placed into the time line in one of three ways.   The first method is to use the Drag and Drop method to place the desired area selection into the time line.   The second method of area selection placement is to simply double click on an empty time line cell.   This will bring up the Add to Time Line dialog which can be used to specify an area selection method.   The final method is to add the new key frame by **Ctrl+Clicking** on the area selection position where you would like the new key frame to appear.   This will place the currently selected area mode into the timeline, load or front the appropriate action image, and allow you to make an area selection for that key frame.   It is important to note that the area selection for any area selection key frame should be made prior

to generation.   The next paragraph describes how you can make area selections for these key frames.   You should notice that when an area selection is place into the time line that the associated arrow will always go to the last frame in the time line, or will go until another key frame is reached.   The number of frames that an area selection is used can be altered grabbing the area selection's icon, or by grabbing the end of the arrow and resizing the length. Placing one area selection icon on top of another will result in the loss of the bottom icon and all associated information.

The rectangle, and all other area selections, can be specified in one of two ways.   The first way is to double click on the area selection key frame icon, and then select the Make the area selection now button.   After selecting this button, F/x   will bring the last current action image to the front so that you can select the desired area for application of the operation.   You do not need to worry about using images that are in the sequence for selecting area because F/x   will automatically scale any area selection to fit any size image that you specify.   The second method of specifying an area selection for a key frame is to Ctrl+Click on the desired area key frame icon.   This will load or front the appropriate action image, and wait for you to make an area selection.   This area selection is then stored into that key frame position. If you do not specify a area selection in one of those two ways, F/x   will automatically use the last area selection that was made.   F/x   will use the Entire area selection if no area has be selected in this program session.   You can access the area selection control dialogs by double clicking on the desired area selection frame, or by pressing the Enter key while the key frame is highlighted with the Current Key Frame marker (this is a white outline marker which shows the current time line position).

Operations: The Operations line can contain any operation or operations that you would like to have occur on that level.   F/x   has no limit on the number of levels of operations, but time lines with a large number of levels can take large amounts of time to generate.   We suggest that you use the Inhibit Display option in the Time Line menu for time lines with a large number of levels.   This option will prevent F/x   from rendering each image, and will speed up the process.   An operation can be specified using the two methods described in the previous topic.   The manipulation of operations are very similar to area selections.   The operation dialog can be accessed by double clicking on an operation icon, or by pressing the Enter key while the operation is highlighted.   This will bring up the operations dialog.   This can be used to set the parameters for the current operation.   This includes using presaved operation files, editing the operation's settings, or using the current operation settings.

Operations can also use interpolation to alter operation parameters over time.   You can only interpolate between two operations that are the same.   The example time line above does an interpolation between two Random Tile operation settings.   However, it would not be possible to interpolate between a Merge and a Random Tile.   The Operation dialog documentation explains this process in greater detail.

<u>**Action Images:**</u> Action Images are used for all F/x   operations.   F/x   allows you to specify multiple files as the action image, or a video sequence as a stream of action images.   A single action image is represented by gray outlined frame with no associated number.   This frame will also have an arrow associated with it which shows how long the single frame is to be used.   You can reposition the single frame on the same level of the time line by grabbing the outlined key frame box, or by grabbing the end of the arrow.   Once you have grabbed the box or arrow, you can resize the length by moving the mouse to the left or right.   After you have specified the desired length for the source image, release the left mouse button.   A sequence of video frames (FLI/FLC or FLM files) will appear as a gray filmstrip with numbers representing the frame number under each frame.   This frame value is determined by the starting frame value and the increment value.   Remember, an action image (or image sequence) can be specified on any level in the timeline.   This allows you to process multiple images with separate action images, and then use the result as a source or action image foe another operation level.   F/x   will always save the last action image as the output image.

Note: You can automatically load an action image in the timeline by Ctrl+Clicking on the desired Action Image icon.

Load TimeLine: This control will present you with a file requester for loading previously saved time lines.   The time line file that is selected (a .TML file) will contain all of the operation ,area selection, and image information that was available when the file is saved.   A time line file contains all of the operation, area selection, and file information that has been place into the time line.   If you alter the time line, and would like to save the changes, select the Save Time Line option.

Save TimeLine: This control will save the current time line and all of its components.   This includes all operations, area selections, images, and related settings files.   This is not the same as saving a project.   Saving a project will only save the currently loaded image files into a project format.   Saving a project will have no effect on the time line, or any of its components.   The time line file will be saved with a .TML extension, and can be reloaded using the Load Time Line option.   Saving a time line allows you to use a time line multiple times without having to recreate the entire time line.

The .TML files can be edited using a standard <u>text editor</u>.   The TML file will contain all of the area selection, operation, and action/source image information.   You can edit these values, but illegal or ambiguous values can cause a sequence to not generate correctly.   If you would like more information on editing these files please contact technical support.

Generate Sequence: This control, when pressed, will start the generation of the time line using the specified operations, area selections, and image files.   The file will only be saved if the Save Results option in the Sequence Controls dialog is selected.   The time line will be generated in the file format specified, and the results will also be displayed in the Filmstrip if it has been activated.   You can pause the time line generation by pressing the Pause button located at the end of the Status Bar.   The generation can be restarted by pressing the pause button again. You can also cancel the time line generation by selecting the Stop button which is also located at the end of the Status Bar.

TimeLine Frame: The Frame value will display the currently highlighted frame number.   This frame number corresponds to the current frame value.   The current frame can be selected by moving the outline through the time line with the arrow keys, or by clicking on the desired frame with the left mouse button.   This will then alter the value that is displayed in the Frame area.

Time (MM:SS.): The Time control displays the animation time for the current frame.   This display is directly related to the setting of the Frame Rate option in the Time Line pull down menu.   The Frame Rate dialog allows you to specify the playback speed or rate for the animation sequence you are generating (this only applies to AVI and FLI/FLC animation formats).   You can specify the frame rate in one of three methods: milliseconds per frame, frames per second, and jiffies.   Altering one of these values will automatically adjust the other two to the proper values.   Once the frame rate has been set, the Time control will display the current frame's time position in the sequence.   The time is displayed as follows: Minutes : Seconds . Milliseconds.   As you move from frame to frame the time value will change to reflect the new current frame's time position.

Level: The Level area displays the Time Line's current operation level.   This level relates to when an operation is carried out or performed.   The time line can have multiple levels with a wide range of operations, area selections, and image files for each level.   The levels start at the top of the time line display with one, and increase sequentially downward.   Each level is carried out in sequential order for each frame in the sequence.   For example, a three level, ten frame time line would be created as follows: Frame 1/Level 1, Frame 1/Level 2, Frame 1/Level 3 (The current action image is saved after this level), Frame2/Level 1, and so on until it reaches Frame 10/Level 3.   It is important to remember that higher numbered levels will be placed on top of any previous level's changes.   For example, you could cover a contrast adjustment mad in level one with a color fill in level two.

Time Object: The Time Object displays the currently active object in the time line.   An object can be defined as any area selection, operation, or image file.   This area of the time line will display the name of the area selection

method, the operation, or image file name that is currently highlighted.   The highlight box is a simple white outline around the icon of the cell that was last clicked on.   If there is not an area selection, operation, or image icon in a cell, then area will say that it is a continuation of the last object.   In the dialog above a source image frame is the current object, and the Time Object display is showing the source image's file name.   If you were to move the current frame right one cell, the time object display would show that this frame should re-load a file.   If you were to double click on this cell, the Add to Time Line dialog would appear.   This allows you to add a new source or action image, operation or area selection to the current time line level.

Erase TimeLine: The Erase TimeLine control allows you to eject all of the objects that are currently in the timeline.   F/x will ask you if you would like to save the changes that you have made to the timeline. or if you would like to eliminate the changes.   You also have the option of canceling   the erase without any alteration to the existing timeline.   You can delete the currently highlighted object icon by pressing the **Ctrl+Delete** keystroke, or you can erase an entire level by pressing **Ctrl+d**.

Sizing: The Sizing control allows you to alter the size of the individual timeline cells.   The default resolution of each cell is 36x32.   You can select to make each cell in the timeline a size between 24 and 64.   The dialog that appears when this option is selected has several preset resolutions to chose from, or you can specify your own setting.

Setup: This selection will bring up the Sequence Controls dialog. The Sequence Controls dialog allows you to specify the number of frames in an animation/filmstrip/time line and the output file type and path.   The top portion of the dialog deals with the length of the animation filmstrip and time line.   The length can be set by altering the Total Frames control.   The length must be at least two frames.   You also have control over which frames are the start and end frames, and which frame is the current frame.   The current frame is used for the Place Updates in Current Frame selection in the Filmstrip menu..

The bottom portion of the dialog allows you to Specify Output File name, extension, file type, and path.   The file type specified in this panel is completely independent of the setting in the Save File As Type: option in the Save Image As dialog.   The Save Result check box must be selected to save the frames as they are generated by the time line.

Note: The Sequence Controls dialog can also be accessed by **Right Clicking** on the timeline dialog away from any timeline objects (icons).

Close TimeLine: The Close TimeLine button can be pressed to close the timeline window.   The contents of the timeline will remain intact until the timeline is re-opened and edited, or the program is closed.   We suggest the you leave the timeline closed if you are not generating a sequence of images.   This will reduce the number of open window in the main program window.

Part 3 - Time Line Controls Basic Tutorial

This tutorial is designed to show you how to place objects in a time line.   It will cover placing operations, area selections, and image files.   More in depth tutorials for each type of time line object are available in the next four sections.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File Manager's Run command with the FX.EXE file selected, or <u>Press Here</u>.   If F/x   is already running, please close all existing images and time lines.   Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen.   This way you can perform the operations and view the tutorial at the same time.   In some cases you may need to use the Switch To (Ctrl+Esc) control or Alt+Tab to flip between WinImages:F/x and the F/x   Help document.   You may also want to use the Always on Top option in the help documentation's Help pull down menu.

2 - This tutorial will demonstrate how to place objects in the timeline, and other time line basics.   We will be recreating the time line example from above.   The first thing that we will want to do is set the number of frames in the time line.   This can be done by adjusting the Sequence Controls option in the Time Line menu.   The Total Frames value specifies how many frames are in the time line.   For this example, let's set this to ten.   After you have made this change, select the Ok button to confirm the change and exit the dialog.   You will now want to open the time line dialog.   This can be done by selecting the Show Time Line option in the Time Line menu, or by pressing the time line icon.   The time line will initially open with the current operation in the first level.   You will want to delete this operation icon so that we can start with a fresh time line.   An operation is deleted by selecting the icon with a left mouse click, and then pressing the Delete key on the keyboard to eliminate the operation icon.   You can also press the Erase Time Line button located to the right of the Time Line Object Display.   This button will delete all icons (key frames) in the current time line.

3 - The first thing that we will specify is an operation.   The operation depicted in the example time line is Contrast. The Contrast icon is found in the Process group, or it can be accessed by selecting the Process selection from the Operations pull down menu.   Once the contrast icon is visible, you will be able to place it in the time line.   This is done by clicking and holding the left mouse button while over the contrast icon.   You can now move the icon into the time line.   You should notice that the contrast icon changes into an operations icon that looks like this: . This icon can then be placed into the time line in any frame location.   For this example, you will want to place the icon into frame one.   After you have placed the icon, make sure that frame ten is visible on the time line.   If it is not, use the scroll bar at the bottom to bring frame ten into view.   Once frame ten is visible use the same method to place another contrast icon into frame ten of the time line.

Note: We did not specify any settings for these operations.   The operation icons have related settings which can be interpolated over time.   For example, we could have specified for the contrast amount to steadily increase over the ten frames.   This level of the time line has been eliminated from this example to make it as simple as possible.   The following documentation sections, and the Getting Started tutorial sections cover this aspect of the time line in greater detail.

4 - We will now place the area selections for the contrast operation.   The first area selection is a rectangle.   You can use the same method for specifying area selection as was used for the operation specification.   The rectangle is placed by clicking and holding the left mouse button while over the rectangle area selection icon.   The icon will immediately change into an area selection icon () until it is placed in the time line.   You will want to place the area selection icon over the contrast icon in the first frame of the time line.   The area selection will be placed above the operation, and the time line should look like this:
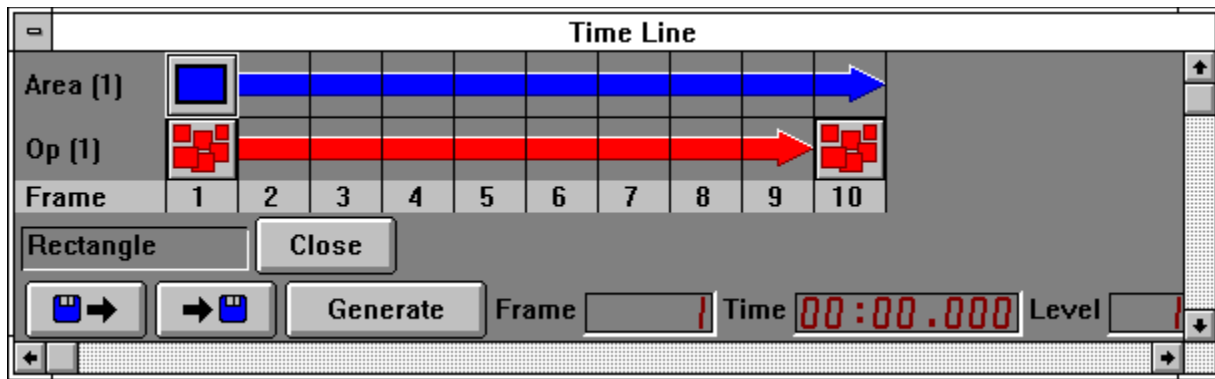
You should now place the remainder of the icons using the same procedure.   You will place a polygon in frame five, and an IShape in frame nine.   We will now set the interpolation for these frames.   Since the default is to have the area selection interpolate, the only area selection icon that will need to be changed is the polygon area.   You can access the interpolation control by double clicking on the polygon icon.   This will access the Area Selection dialog for the time line.   You will want to click on the interpolation check box to turn it off.   After you have made this change, select the Ok button to confirm the selection and close the dialog.   You should notice that the interpolation arrow has been turned off for the polygon area selection.   This means that the polygon area selection will remain static over the sequence of frames.   All of the other area selection have the interpolation "on" which means they will change from one area selection to another area selection over the sequence of frames.

5 - The next step in specifying a time line is the action image.   An action image is any image that an operation is applied to.   F/x   allows you to specify a single image, a sequence of images, or an animation file.   If no file is specified, F/x   will automatically use the last active image as the action image for all of the frames.   You can specify an action image for a frame by double clicking on the operation icon for that frame, or by double clicking on an empty or continuance frame.   We will use the first method for this example.   Double click on the first Contrast key frame.   This will present you with the Operation dialog for the time line.   This dialog allows you to specify an operations settings, and any related action and source images.   You should notice that the Specify Source Image option is unavailable for this operation.   This button is only available for operations that require a source image file.   Press the Specify Action Image button.   This will access the action image dialog.   This dialog can be used to specify a sequence of action images or a single action image file.   Press the Specify Image File button, and use the file requester to select the ladyfrog.flc animation located in the Images directory.   After you have selected this file, press the Ok button to confirm the selection and exit the file requester.   You should notice that the This is a video sequence check box is selected.   This means that the video frame controls below the check box are active.   For this animation sequence, we will not need to change any other settings.   Select the OK button to confirm the file settings and exit the dialog.

6 - The final step for creating the example time line is to specify a sequence of source images.   The Contrast operation does not require a source image, so the source image specification is intended to simply familiarize you with specifying source images.   The Source image file can be specified or this level of the time line by double clicking on any continuance frame on level one.   This will present you with the Add to Time Line dialog.   Select the Source Image option.   This will open the source image specification dialog.   Follow the steps from step 5 to specify the ladyfrog.flc image as the source image.   After you have selected the file, set the Start Frame control to two, and the Frame Increment to two.   This will place the sequence into the time line beginning with frame two, and it will then use every other frame in the animation file.   The final step is to resize the source image file so that it goes from frame one to frame ten.   This can be done by clicking and holding the left mouse button while the cursor is over the first frame of the source image file (frame two in this case).   You can then use the mouse to increase the source image animation length.   After you have moved the cursor to the appropriate frame position, release the left mouse button.

That is all there is to creating a basic time line.   The tutorials in the following sections will address the issues of setting operation parameters and making area selections.

Part 4 - Time Line Controls: How do I ...?

Q: How do I set the number of frames in the time line?

A: The Sequence controls panel in the Time Line pull down menu allows you to set the total number of frames in the sequence.   This dialog is also used to specify the output format and file name.

Q: How do I alter the animation frame rate of an AVI or FLI/FLC generated sequence?

A: You can alter the frame rate for any animation format by selecting the Animation Frame Rate option in the TimeLine menu.   This will open a dialog for setting the number of frames per second, jiffies, or Milliseconds per Frame.

Q: How do I specify the output file format?

A: The output file format can be set through the Sequence Controls panel in the Time Line pull down menu.   This panel contains an Output Format drop down box.   This list contains all of the available file formats for output.   This includes FLI/FLC and AVI animations.   This panel also contains the Output image name and path specification, and the Save Result option.

Q: How do I place an area selection, operation, or image file into the time line?

A: Area Selection and Operation objects or key frames are placed in the time line by the <u>Drag and Drop</u> method. Drag and Drop allows you to place any operation or area selection icon into any time line frame.   Image files are place into the time line by the Add to Time Line option, or by selecting the Specify Action Image or Specify Source Image in an Operation <u>Key Frame</u> dialog (described in Section 5.4.2.4).   The Add to Time Line dialog can be accessed by double clicking on any empty or continuance frame in the time line.   This dialog is described in further detail in the next section.

You can also add a new area selection key frame by pressing **Ctrl + Left Click** this will place the currently selected area mode into that frame of the timeline.   It will also automatically load the image view for that frame, and wait for you to make the area selection that will be associated with that key frame.

Q: How Do I increase or decrease the duration of a Time Line object?

A: Any Time Line Object (operation, area selection, or image file) can have its duration increased or decreased by clicking on and moving the object's icon or arrow head.   This allows you to set the duration and frame location for any object.   After you have clicked on the icon or arrow head, the cursor should change to the movement cursor ( ).   After you have moved the movement cursor to the correct frame, release the left mouse button.   This will place the icon in that frame, and resize the duration or continuance arrow accordingly.   Video Sequences can be treated in the same manner.   You can also swap time line levels by clicking on the first level, and the dragging it to the level it is to be swapped with.   Time Line objects can be copied by clicking on them with the right mouse button, and then moving the object to the desired location.   This will copy all of the object's settings information to the specified location.   This does not include trend information.

Section 5.1.2.2 The Time Line - Add to Time Line

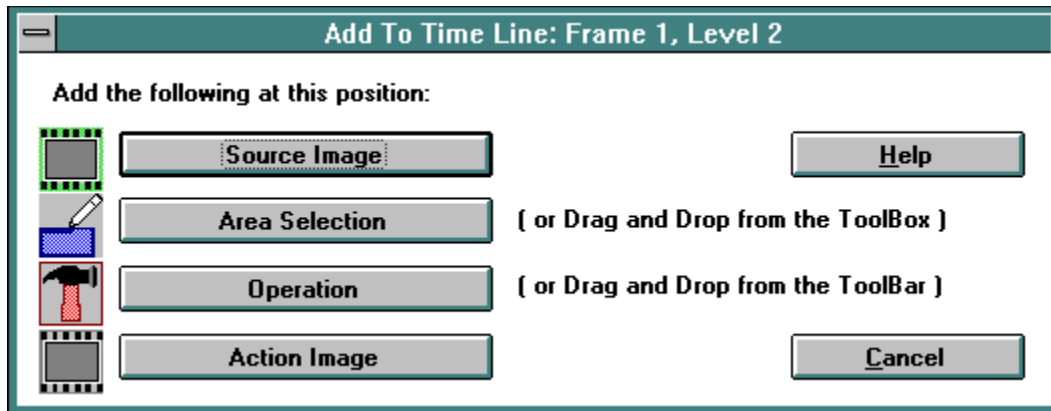[Part 1 - The Add to Time Line Dialog - An Overview](#)

[Part 2 - The Add to Time Line Dialog - The Dialog](#)

[Part 3 - The Add to Time Line Tutorial](#)

[Part 4 - Add to Time Line: How do I ...?](#)

Part 1 - The Add to Time Line Dialog   - An Overview

The Add to Time Line dialog will only appear when you double click on an empty or repeated frame.   An empty frame will have no icon, or continuance (repeat) arrow in it.   The time line object display will not contain any information for an empty frame.   A repeated frame is any frame that contains a portion of a continuance arrow in it. These frames show interpolation or progress of an operation, area select, or image file.   The time line object display will specify a repeated frame as a Repeat Op., as a Re-apply Area, or as a   Reload File.   After you have double clicked on the desired frame, the dialog below will appear.   It allows you to specify an operation, an area selection method, an action image, or a source image.   Once you have selected the option you would like to insert, the appropriate icon will appear in the time line.

Click on any of the functions for quick help or look below for more documentation.

Click on any of the functions for quick help or look below for more documentation.

The Add to Time Line Dialog Controls:

Add Source Images: This option allows you to add a sequence of source image files for the currently selected key frame.   Source image files are used for all composition based operations in the program.   Selecting this option will bring the Source Image Dialog to the front.   This dialog is used to specify the desired source file or files, and other related animation sequence parameters.   You can also place a source image in a key frame by double clicking on the operation icon for that frame.   This will bring the Operation Dialog to the front.   This dialog allows you to specify operation settings which include action and source images.   If the current operation does not require a source image file, the Specify Source Image button will appear ghosted (unavailable).   This button will only be available for operations that require a source image.   After a source image has been specified, the image file or files can be manipulated like any other time line object.

Add an Area Selection: This option will add the current area selection mode to the time line.   The area selection mode can be determined by viewing the Tool Box.   The Tool Box will display the name of the current area selection mode.   Once it has been placed in the time line, the area selection can be manipulated like any other time line object.   You can also alter the area selection mode by double clicking on the area selection's icon.   This will open the Area Selection Dialog.   This dialog allows you to specify the area selection method, and other area selection parameters.

Add an Operation: This selection will add the currently selected operation to the time line.   The current operation name will always be displayed in the Op portion of the Status Bar.   The operation that is placed will contain the current settings for that operation.   Once an operation has been placed in the time line, it can be manipulated like any other time line object.   You can also specify an operation by dragging the operation icon into the time line.

Add Action Images: This option allows you to add a sequence of action image files for the currently selected key frame.   Action image files are used for all operations in the program.   An action image is the target or destination for an operation.   Selecting this option will bring the Action Image Dialog to the front.   This dialog is used to specify the desired action image file or files, and other related animation sequence parameters.   You can also place an action image in a key frame by double clicking on the operation icon for that frame.   This will bring the Operation Dialog to the front.   This dialog allows you to specify operation settings which include action and source images.   After an action image has been specified, the image file or files can be manipulated like any other time line object.

Part 3 - The Add to Time Line Tutorial

This tutorial is designed to familiarize you with the Add to Time Line Dialog.   This dialog is used to specify a new operation, area selection, or image <u>key frame</u> in any continuance or empty time line frame.   More in depth tutorials for each type of time line object are available in the next three sections.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File Manager's Run command with the FX.EXE file selected, or <u>Press Here</u>.   If F/x   is already running, please close all existing images and time lines.   Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen.   This way you can perform the operations and view the tutorial at the same time.   In some cases you may need to use the Switch To (Ctrl+Esc) control or Alt+Tab to flip between WinImages:F/x and the F/x   Help document.   You may also want to use the Always on Top option in the help documentation's Help pull down menu.

2 - Open the time line by pressing the time line icon, or by selecting the Show Time Line option from the Time Line pull down menu.   After the time line is visible, select the Erase Time Line button ( ).   This will clear all of the icons from the time line.   Now, double click on the top left frame of the time line (Frame:1, Level:1).   This will access the Add to Time Line Dialog.   This dialog has four separate options.   These options are Add Source Image, Add Area Selection, Add Operation, or Add Action Image.   Selecting the Add Area Selection or Add Operation options will simply place the currently selected area selection or operation into this frame.   Select the Add Operation option by clicking the button marked Operation.   You should see the current operation inserted in frame one of the time line.   The operation will contain the operation's current settings.   These settings can be altered by double clicking on the operation icon, and then selecting one of the operation settings buttons (explained in Section 5.1.2.4).   For this example we will not be specifying any operation settings.   The same method is used for specifying an area selection.   You can use the <u>Drag and Drop</u> method to place any area selection or operation into the time line.

3 -   Image files can also be specified using the Add to Time Line dialog.   Double click on another empty frame, or select a continuance frame in level one.   The same add to time line dialog should appear.   This time select the Action Image button.   This allows you to add an action image to the current frame position.   The next dialog allows you to select an image from a file requester, or use an already loaded image.   Select the Specify Image File option, and select the ladyfrog.flc animation file from the **C:\Images** directory.   You should notice that the **This is a Video Sequence** check box is now selected.   This means that the file we selected will be treated as an animation file.   This means that you can specify the starting frame position, and the frame increment for the <u>action images</u>. Select the Ok button to confirm the image file selection and exit the dialog.   You should notice that the animation file has now been placed into the time line.   These same steps can be used to specify a source image, source sequence, or source animation file.   Image files can also be placed into the time line by double clicking on an operation key frame.   This will access the operation control dialog which has options for specifying action and <u>source images</u>.   Source images can only be specified for operations that require a source image file.

Part 4 - Add to Time Line: How do I ...?

Q: How do I specify a new operation, area selection, or image key frame?

A: A new operation, area selection, or image key frame can be specified using the Add to Time Line dialog.   This dialog will place the currently selected operation or area selection into the current frame position, or it will allow you to specify an action or source image sequence.

You can also specify a new area selection key frame by pressing **CTRL + Click** in an empty area selection frame. This will add the currently selected are mode to the timeline, load the action image which is associated with that frame, and waits for you to make the area selection for the key frame.

Section 5.1.2.3 The Time Line - Area Selection Dialog

Part 1 - The Area Selection Dialog   - An Overview

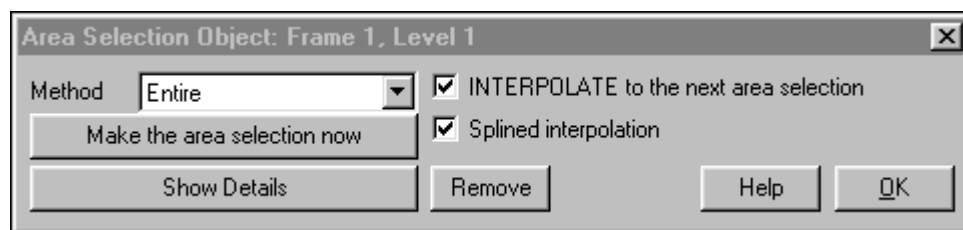Part 2 - The Time Line Area Selection Dialog

Part 3 - Time Line Area Selection Dialog Tutorial

Part 4 - Time Line Area Selection: How do I ...?

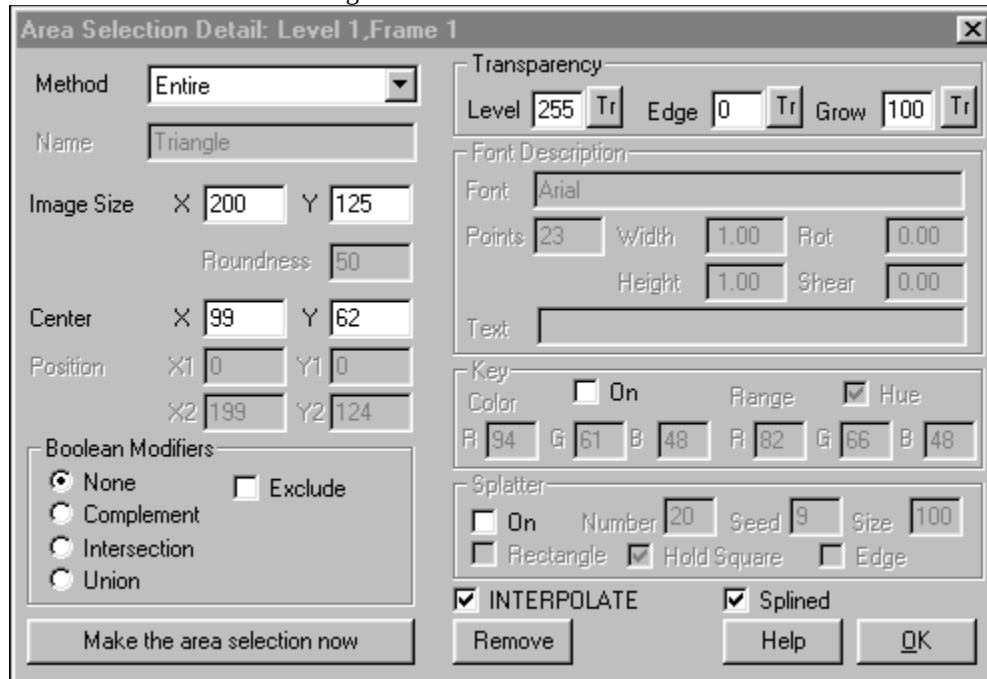## Part 1 - The Area Selection Dialog   - An Overview

The main area selection dialog allows you to alter any area selections that have been place into the time line.   Each area selection that is placed will represent an area selection Key Frame.   Once an area is placed in the time line, you can access this dialog by double clicking on the area selection icon.   Doing this will open the dialog you see below.   This dialog allows you to alter the type of area selection and interpolation.   You can select to use an existing area selection, or make the area selection at that time using the Make the area selection now option.   There is also a more advanced control dialog for area selections which is accessed through the **Show Details** dialog.   That dialog and its controls are documented after the main area selection dialog controls.   It is important to note that you can automatically load the action image for a key frame, and specify an area selection for that key frame by Ctrl+Clicking on an area selection key frame icon.   If there is no area icon for the current key frame, one can be created by using the same method.

Main Area Selection Dialog

Click on any of the functions for quick help or look below for more documentation.
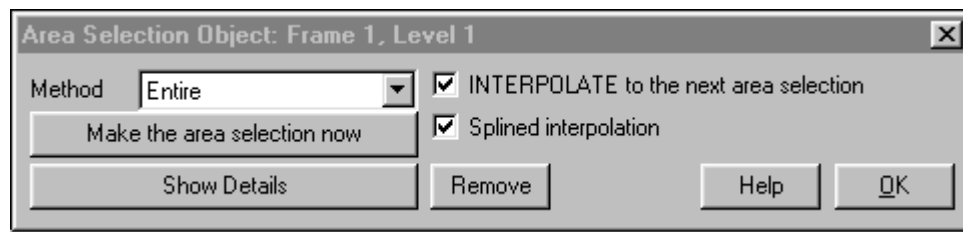
Advanced Area Selection Dialog

Click on any of the functions for quick help or look below for more documentation.

Main Area Selection Dialog

Click on any of the functions for quick help or look below for more documentation.

Area Selection Dialog Controls:

Method: The method drop down box allows you to alter the current area selection method.   The method box will display the area selection method that was initially selected for that <u>key frame</u>. This area selection method can then be changes to another area selection type by selecting a new method from the drop down box list.   Changing the area selection mode in this manner will also change the actual area selection mode that will be used, and the icon that is displayed in the timeline.   You can select to make the area selection at this time by selecting the Make the area selection now option.   This will bring the last action image to the front.   You can then select the desired region for application of the operation.   If you do not select to make the area selection at this time, the last area selection that was made will be used for that key frame.   This means that regardless of where or when the last area selection was made, the effect will be applied in that area.   This would allow for application of an effect in several separate locations in the image, many which you may not have wanted.   You will almost always want to avoid this type of situation by making the area selection before generating the Time Line.

Interpolate: The interpolate option allows you to have the current area selection interpolate into the next area selection that is encountered for this level of the time line.   Interpolation means that the first area selection will modify its shape to become the second area selection.   For example, you could interpolate a rectangular area selection into an elliptical area frames.   This also allows you to alter an area selection position over time.   If the rectangle and the ellipse area selections in the above example were made in separate locations in the image, then F/x would not only interpolate the shape of the area selection, but also the position of the area select.   If this control is not selected, the area selection that is made will remain in the same shape and position until another area selection is encountered for that level, or the end of the sequence is reached.   Area selection interpolation is available between font styles or text strings, but the interpolation is based on the exterior outline of the fonts and text.   For example, you could interpolate between a text string of *The Beginning* in an Arial font to *The End* in a Courier font, but only the outline of the text and font style would be used.   This would result in the outside edges slowly changing into the next key frame.   For a more accurate type of   font interpolation, you could produce a morphing sequence in WinImages:F/x.   The morphed sequence could then be merged into the sequence that you are creating in F/x .   The interpolation option will always default `to the "on" position.

Note: You can tell if an area selection is interpolative or not by the type of progression arrow that it uses.   If the area or operation is to interpolate the progression arrow will look like this: .   If the area selection or operation is not to interpolate, the progression arrow will look like this:

.   It is also important to remember that turning off the interpolation will turn off all of the interpolative features of an area selection.   An operation's interpolation can remain "on" even if the area selection's interpolation is "off".

Make the Area Selection now: This button, when pressed will allow you to make the area selection for the current key frame.   This area selection is then saved for use in the time line sequence.   F/x   will automatically bring the

last Action image to front.   At this point you should make the area selection.   The area selection will be scaled to fit any underline resolution image that is used in the sequence.   Making the area selection will close this dialog, but it can be re-opened after the area has been selected.   After an area selection is made, it is then associated with that key frame and level.   If you wanted to view more information on the area selection that you made, you could open the Show Details dialog.   This dialog will give a full description of the area selection including size, center position, transparency, and other related information.   You have the option of altering these settings to more specific values, or simply leaving them alone.   The Show Details dialog and controls are discussed in further detail below.   You should consider always making an area selection for each key frame.   If you do not make an area selection for a key frame, the last area selection that was made will be used for that frame.   This can lead to highly undesirable results in your animation sequence.

Note: You can automatically make the area selection for a key frame by Ctrl+Clicking on the area selection icon in timeline.   This will load or front the appropriate action image, and wait for you to make the area selection.   Using this method is especially effect for long sequences of images using many area key frames.

Delete: This option will delete the area selection from the time line.   You then have the option of replacing the area selection with another selection method from the tool box, or having no associated area selection for the operation. If there is no area selection associated with an operation, the last selected region will be used as the area selection. You can avoid this by simply altering the Method control to display the desired area selection.   F/x   will automatically interpolate any previously associated area selections to fit the selection mode.   You always have the option of re-selecting the region by pressing the **Make area selection now** button.   Once an area select is deleted, all of the area selection information will be lost.

Spline Interpolation: This option allows you to select how area selections will be tweened by the program.   If this option is selected, the program will create a spline (curve) based path between the area selections.   If this option is not selected, a linear path will be used to interpolate between the area selections.   We suggest that you use Splined Interpolation for all area selection key frames in a level, but it is not required.

Show Details: The Show Details option will access the Detailed Area Selection controls.   These controls are used to alter or specify specific details for an area selection.   Included in this dialog are controls to manipulate the area selection size, center position, transparency, and other area selection values.   It is important to remember that these are considered to be advanced controls, and they should not be manipulated by a novice user.   All of the controls and options for this dialog are documented below in the **Detailed Area Selection Controls** section.

The Area Selection Detail Dialog

The Detailed Area Selection Dialog allows you to fine tune specific settings for an area selection.   This dialog is accessed by pressing the Show Details button in the main area selection dialog.   The controls in this dialog can be used to alter and control all aspects of an area selection including its size, center position, and transparency level. Each area selection mode   has different adjustable details.   For example, The Color Key area selection modifier will access different option than the Font area selection method.   Only the controls which apply to the current area selection method will be displayed.   All other controls will appear ghosted, and can not be manipulated.   You can alter the area selection type by selecting the Method option.   If no area selection has been made for this key frame, the Make the area selection now control allows you to select a region on any of the currently loaded images.   All of the controls for this dialog are detailed below.

Advanced Area Selection Dialog

Click on any of the functions for quick help or look below for more documentation.

Detailed Area Selection Controls:

Method: The method drop down box allows you to alter the current area selection method.   The method box will display the area selection method that was initially selected for that key frame. This area selection method can then be changes to another area selection type by selecting a new method from the drop down box list.   Changing the area selection mode in this manner will also change the actual area selection mode that will be used, and the icon that is displayed in the timeline.   You can select to make the area selection at this time by selecting the Make the area selection now option.   This will bring the last action image to the front.   You can then select the desired region for application of the operation.   If you do not select to make the area selection at this time, the last area selection that was made will be used for that key frame.   This means that regardless of where or when the last area selection was made, the effect will be applied in that area.   This would allow for application of an effect in several separate locations in the image, many which you may not have wanted.   You will almost always want to avoid this type of situation by making the area selection before generating the Time Line.

Name: The Name control is a simple informational area that allows you to see the name of the currently loaded IShape.   You can not alter this name from this dialog.   If you want to change the IShape that is to be used for this key frame, then you will need to use the Load IShape control from the ToolBox.

Image Size: This control will display the size of the image that this key frame's area selection was made on.   This value is then used to scale the area selection up or down based on the size of the actual action image or images.   For example, if the area selection was made on an image that was 320 by 200, this value would read 320 by 200.   The area selection associated with this key frame, and made on the 320 x 200 image would then be scaled to fit any size action image that was specified in the time line.   Due to the fact that this value is used to resize the area selection for any size action frames, it is strongly suggested that you do not alter this value.   Doing so could result in area selections that are not properly scaled for the selected action frames.

Roundness: The roundness control displays the amount of roundness that was set for the Rounded Rectangle area selection method.   The roundness value that is displayed here will be the roundness value that is set in the Area menu's Roundness... option.   For example, if the roundness control is set to 20%, then this control will read 20.   You can alter this control to any roundness percentage that you like, but it will change any area selections that have

already been made for this key frame.   The area selection will be modified to reflect the new roundness setting. This option is only available for the rounded rectangle area selection method.   If you have any further questions on this area selection method, please refer to Section 5.1.5 for more information.

Center: The center position numeric entry fields will display the current center of the area selection that is associated with this key frame.   If no area selection has been made for this key frame, then this control will default to 320 by 320.   If you select the Make the area selection now button and make an area selection, then the center control will display the center of that area selection.   The center control is available for all area selection modes in F/x .   You can also alter the center value of the area selection by simply entering the desired X and Y image coordinate values into the numeric entry fields.   This can be particularly useful for slight adjustments to the placement of an area selection, or for altering the center position for a center based operation like Radial Wave. Altering this value after an area selection has been made for this key frame will result in a change in the area selection made for the sequence.   Note: Any erroneous or illegal value entries will be automatically reset to 0.

Position: The position controls (X1, Y1, X2, and Y2) will display the X and Y image coordinates for an IShape, Rectangle, Rounded Rectangle, Ellipse, Numeric Rectangle, and Font area selection modes.   These coordinates are not available for Freehand, Polygon, Poly-arc, Spline, Bezier Curve, Color Wand, Entire, or Redo.   If an area selection has not been made for the current key frame, then the coordinate values will default to the entire image size.   For example, if the Image Size control is set to 320 by 200, then the default position is X1=0, Y1=0, X2=319, and Y2=199.   After an area selection has been specified for this key frame, the position values will display the X and Y extreme position values.   X1 will specify the top of the area, Y1 will specify the left-hand side of the area, X2 will specify the bottom, and Y2 will specify the right-hand side.   The Font area selection method is lightly different.   It will only use X1 and Y1 to specify the origin point for the text string.   It will not use the X2 and Y2 values, and they will not be available.   It is important to remember that these are extreme values, or the edge points of the area selection.   These values can be altered to make an adjustment to the size of the area selection, or to alter the area selection position.   Altering this value after an area selection has been made for this key frame will result in a change in the area selection made for the sequence.   *Note:* Any erroneous or illegal value entries will be automatically reset to 0.

Boolean Modifiers: The Boolean Modifiers allow you to specify specific area selection modifiers to a key frame area selection.   These modifiers are located at the bottom of the area selection ToolBox, and include Complement, Intersection, Union, and Exclude.   These modifiers can be added to an area selection by using the drag and drop method, or by selecting them through this dialog.   This allows you to create complex area selection that are based on previous area selections.   In F/x   a Time Line level does not need to contain an operation.   It can instead contain only an area selection.   For example, if you wanted a cutout of the word End to appear inside of a solid filled ellipse, you would set the first level of the time line to a Font area selection only.   The second level would contain an Ellipse that has Complement control selected, and color fill as the operation.   You can specify the complement modifier by turning it on before you place the icon, turning it on before you select the area, by dragging the complement icon to the desired key frame, or by turning it on in this dialog.   The final time line would look like this:

The same is true for all of the modifiers in F/x   including union, intersection, and exclude.   The use of these modifiers can aid in the creation of complex and unusual area selections.

Make the Area Selection now: This button, when pressed will allow you to make the area selection for the current key frame.   This area selection is then saved for use in the time line sequence.   F/x   will automatically bring the last Action image to front.   At this point you should make the area selection.   The area selection will be scaled to fit any resolution image that is used in the sequence.   Making the area selection will close this dialog, but it can be re-opened after the area has been chosen.   After an area selection is made, it is then associated with that key frame and level.   If you wanted to view more information on the area selection that you made, you could open the Show Details dialog.   This dialog will give a full description of the area selection including size, center position, transparency, and other related information.   You have the option of altering these settings to more specific values, or simply leaving them alone.   The Show Details dialog and controls are discussed in further detail below.   You should consider always making an area selection for each key frame.   If you do not make an area selection for a key frame, the last area selection that was made will be used for that frame.   This can lead to highly undesirable results in your animation sequence.

Note: You can automatically make the area selection for a key frame by Ctrl+Clicking on the area selection icon in timeline.   This will load or front the appropriate action image, and wait for you to make the area selection.   Using this method is especially effect for long sequences of images using many area key frames..

Transparency: The Transparency controls allow you to alter the transparency and blending level of the area selection over the sequence of frames.   The transparency controls consist of three separate values: Level, Edge, and Grow.   These values and their interrelations are discussed in <u>Section 5.1.5</u> under **Transparency Controls**.   These controls specify how the area selection will be placed in the action image.   The Level control deals with the transparency level, or opaqueness, of the area selection.   The Edge control is used to specify the amount of edge blending, or gradual transparency, for the area selection.   The Grow control is used to specify the effective size of the area selection as a percentage value.   Each of these values can be trended over the sequence of frames by selecting the associated trend button.   This allows you to create effects that fade in and out, or fade to a center point and then disappear.   The trend graph that is present will be the same length (number of frames) that the area selection is valid.   Remember an area selection remains valid until a new area selection is encountered on the same level, or the end of the sequence is reached.   For example, it is possible to trend the Level value so that an effect would fade in over the first five frames, and then fade out over the last five frames.   A further explanation of trends is available in any of the operation documentation sections.

Font Description: The font controls allow you to adjust every aspect of a font area selection.   The font controls include the font name, point size, width, height, rotation, shear, and the text that is to be used for the area selection.   If you alter the font name or type, F/x   will automatically find the font type on your system that is closest alphabetically to the name you entered.   This change will be reflected in the final output of the font.   It is important to remember that interpolating fonts with other area selection, or one font style into another can produce unexpected

or undesirable area selections.   This is due to the complex nature of fonts.   Interpolation of fonts, and other complex areas, uses an outline interpolation.   This means that the basic outline of the first area will be interpolated into the basic outline of the next area selection.   If you want to create an effect where one font style or text string changes into another font style or text string, you should use WinImages:F/x to create a morph sequence that alters from one style to the next.   The other controls allow you to alter the size, shear, and rotation values for the font area selection.   Adjusting any of these values will alter the area selection file that is associated with this key frame.

Key Color: This control allows you to specify the key color (Color Key only), and the key color range (Color Key and Color Wand).   There is also an option to specify a color selection based Hue, Saturation, and Luminance values instead of the RGB settings.   These controls allow you to make slight adjustments to your color keyed or Color Wand area selections.   The key color controls are used for the Color Key area selection only.   The range controls are used to specify the color range or variance for both the Color Key and Color Wand area selection modes. Adjusting any of these values can significantly alter the area that is selected.

Splatter: The Splatter controls allow you to manipulate the Splatter area selection modifier, and its associated controls.   The Splatter modifier will produce multiple sub-regions within the main area selection, and then apply the selected operation in those sub-regions.   This allows you to create random star fields, domes, or merges.   You have the option of turning splatter on or off, altering the total number of splatters, altering the maximum splatter size, and changing how the sub-regions will be created.   Altering the Seed value will significantly change where the sub-regions occur and their size.

Interpolate: The interpolate option allows you to have the current area selection interpolate into the next area selection that is encountered for this level of the time line.   Interpolation means that the first area selection will modify its shape to become the second area selection.   For example, you could interpolate a rectangular area selection into an elliptical area frames.   This also allows you to alter an area selection position over time.   If the rectangle and the ellipse area selections in the above example were made in separate locations in the image, then F/x would not only interpolate the shape of the area selection, but also the position of the area select.   If this control is not selected, the area selection that is made will remain in the same shape and position until another area selection is encountered for that level, or the end of the sequence is reached.   Area selection interpolation is available between font styles or text strings, but the interpolation is based on the exterior outline of the fonts and text.   For example, you could interpolate between a text string of The Beginning in an Arial font to The End in a Courier font, but only the outline of the text and font style would be used.   This would result in the outside edges slowly changing into the next key frame.   For a more accurate type of   font interpolation, you could produce a morphing sequence in WinImages:F/x.   The morphed sequence could then be merged into the sequence that you are creating in F/x .   The interpolation option will always default `to the "on" position.

Note: You can tell if an area selection is interpolative or not by the type of progression arrow that it uses.   If the area or operation is to interpolate the progression arrow will look like this: ▬▬▬▶.   If the area selection or operation is not to interpolate, the progression arrow will look like this:

▬▬▶▐.   It is also important to remember that turning off the interpolation will turn off all of the interpolative features of an area selection.   An operation's interpolation can remain "on" even if the area selection's interpolation is "off".

Delete: This option will delete the area selection from the time line.   You then have the option of replacing the area selection with another selection method from the tool box, or having no associated area selection for the operation. If there is no area selection associated with an operation, the last selected region will be used as the area selection. You can avoid this by simply altering the Method control to display the desired area selection.   F/x will automatically interpolate any previously associated area selections to fit the selection mode.   You always have the option of reselecting the region by pressing the Make area selection now button.   Once an area select is deleted, all of the area selection information will be lost.

Part 3 - Time Line Area Selection Dialog Tutorial

This tutorial will introduce you to the area selection dialog, and some of its controls.   This tutorial will not cover every possible scenario, but it will give you a good working background with these dialogs.   This tutorial will rely heavily on information presented in the previous sections.   If you have not already done so, complete those tutorials now.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File manager's Run command with the FX.EXE file selected, or <u>Press Here</u>.   If F/x   is already running, please close all existing images and time lines.   Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen.   This way you can perform the operations and view the tutorial at the same time.   In some cases you may need to use the Switch To (Ctrl+Esc) control or Alt+Tab to flip between WinImages:F/x and the F/x Help document.   You may also want to use the Always on Top option in the help documentation's Help pull down menu.

2 - We will be setting up two separate animations that will use tweening area selections, and the color fill operation. Please open the time line dialog, and delete any existing time line objects.   You can delete an object by pressing the Delete key with the time line object selected, or by pressing the Erase Time Line button.   Once the time line is completely empty, you will be ready to begin.   The first sequence will use the Area Selection Object dialog to make area selections, and to tween from one area selection to another.   The second area selection tutorial will introduce the Area Selection Detail dialog, and <u>transparency</u> controls.   You will want to load the atiger.jpg image into F/x   at this time.   You will also want to set the Sequence Controls' Total Frames option to ten.   This will make the time line and the filmstrip a total of ten frames long.

3 - <u>Drag and drop</u> a color fill icon into frame one of the time line.   Now, drag an IShape area selection into frame one, and another IShape area selection icon into frame ten.   F/x   will automatically specify an interpolation between those two area selections.   We will need to specify the IShape that we want to use before specifying the area.   Select the Load IShape icon from the Tool Box, and select the Africa.ish IShape file from the **C:\Data** directory.   We must now specify the first area selection.   This is done by double clicking on the area selection icon in frame one of the time line.   This will open the   area selection object dialog.   This dialog can be used to alter the area selection method, interpolation, and to create the area selection for this <u>key frame</u>.   Select the Make the area selection now option.   This will bring the atiger.jpg image to the front.   Use the left and right mouse buttons to create an area selection in the top left hand corner of the image.   If you are unclear on how the IShape area selection tool works, please review that section (Section 5.2.3) of the documentation.   The area selection should take up approximately 25% of the image.   After you have sized and positioned the area selection release the mouse buttons. This will automatically place the area selection into the key frame.

4 - Change the IShape from Africa.ish to Australi.ish by following the procedure described above.   After you have made this change, Ctrl+Click on the area selection icon in frame ten.   This will automatically bring the atiger.jpg image to the front, and will then wait for you to make the area selection. This is a shortcut method of specifying the area selection for a key frame.   Place this area selection in the bottom right hand corner of the image.   After you have sized and positioned the area selection, release the left mouse button.   Once again F/x   will automatically place the area selection into the key frame.

5 - Make sure that the filmstrip is visible, and then press the Generate button.   The resulting animation will show a filled shape of Africa moving from the top right corner to the bottom left corner.   Over the sequence of frames the shape of Africa will change into the shape of Australia.   If you have questions about this process, please contact technical support.

6 - The second portion of this tutorial will introduce you to some of the controls in the Area Selection Detail dialog.

These controls give you a greater range of control over the area selections, and their modifiers. We will use the time line that was just generated for this example. Double click on the first IShape area selection in frame one of the time line. Now, select the Show Details button. This will bring the Area Selection Detail dialog to the front. Let's alter the area selection method for this frame. This can be done by selecting the Method drop down box. This will give you a list of all of the available area selection modes in the program. Let's change this area selection from an IShape to an Ellipse. After you have selected Ellipse from the list, select the Ok button to exit the dialog. The elliptical area selection will use the maximum width settings from the IShape as the size for the ellipse.

7 - Now, we will alter the transparency level of the second area selection frame so that the second area selection will fade out. This can be done by double clicking on the IShape icon in frame ten of the time line. This will open the Area Selection Object dialog. Now, select the Show Details button to access the Area Selection Detail dialog. The top right corner of the dialog contains a set of transparency controls. For this example, you will want to reset the Level amount to zero. This will result in the shape changing from an ellipse into th outline of Australia, as well as the color fill fading out by the last frame. Select the Ok button to confirm this change and exit the dialog. Now, select the Generate button. The resulting animation should show the ellipse moving from the top left of the image into the bottom right of the image. The ellipse should change into the shape of Australia, and by frame ten the outline of Australia should be transparent.

As you can see F/x 's area selection interpolation is very powerful. These are two simple examples of effects that can be created by altering the area selection over the frame sequence. You should take the time to review and explore the other area selection dialog tools and functions.

Part 4 - Time Line Area Selection: How do I ...?

Q: How do I specify an area selection Key Frame?

A: Area Selection Key Frames can be specified by dropping an area selection method into the time line using Drag and Drop, or by using the Add to Time Line dialog.   You can also a dd a new area selection keyframe by pressing CTRL + Click.   This will add a new area selection key frame to the timeline, load the image that is associated with that frame, and waits for you to make the area selection for the area selection key frame.

Q: How do I make an area selection for a key frame?

A: Area selections can be made for a key frame by double clicking on the key frame's area selection icon.   This will open the Area Selection Object dialog.   This dialog contains an option called Make the area selection now. Selecting this option will automatically bring the last action image to the front, and change the area selection method to the one specified in the key frame.   The area selection can then be made in the action image in the desired size and location.   You do not need to worry about image resolution since the area selection will be automatically scaled to fit any image size.

Q: How do I alter an existing area selection key frame?

A: An area selection key frame can be altered in one of three ways.   The first method is to simply specify a new area selection key frame by dragging the desired area method from the tool box, and placing it over the key frame you wish to replace or alter.   You can then select to make a new area selection for that key frame.   Optionally you could also Ctrl+Click on the area selection icon to automatically load the appropriate key frame, and specify the area selection.   The second method is to make a new area selection for the existing key frame.   This can be done by double clicking on the key frame's icon, and then selecting the Make the area selection now option.   This allows you to make a new area selection for the current key frame. Optionally you could also Ctrl+Click on the area selection icon to automatically load the appropriate key frame, and specify the area selection.   The final method is to leave the area selection as it is, but change the area selection method used for the key frame.   This can be done by double clicking the area selection icon, and then selecting the Method drop down list.   This list contains all of the available area selection modes in F/x .   Select the area selection mode that you would like to change to, and F/x will automatically adjust the area selection for that area selection mode.

Q: How do I turn Interpolation "on" or "off"?

A: Interpolation of area selections will automatically default to on.   This means that the area selection specified in the first key frame will alter its shape and transparency settings over the sequence of frames to match the next key frame's area selection settings.   Interpolation can be turned on or off using the Interpolation check box found in both the Area Selection Object and Area Selection Details dialogs.

Q: How do I make an area selection interpolate back to the first area selection key frame?

A: Area selections can be interpolated back to the original area selection by setting up a time line that has a continuance arrow for the last frame of the entire sequence.   This will force F/x   to interpolate the last area selection key frame back to the first area selection key frame.   There is an example of this in the Time Line Basics section of the documentation (Section 5.1.2.1).

Section 5.1.2.4 The Time Line Menu Controls -Operation Dialog

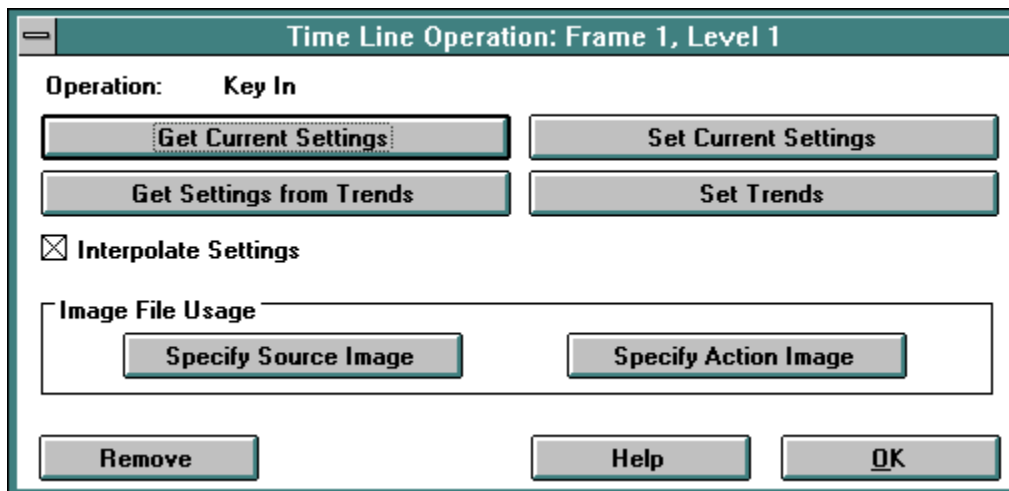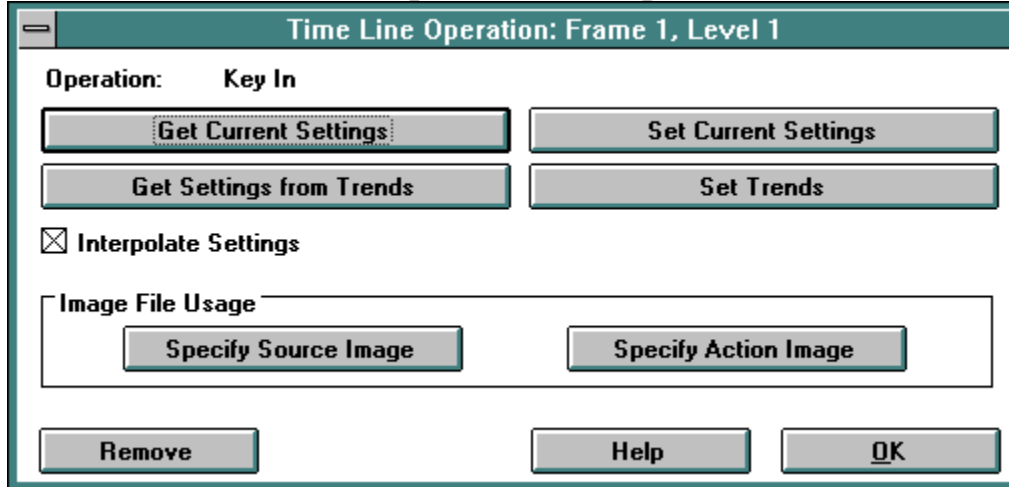## Part 1 - Time Line Operation Dialog - An Overview

The Operation dialog allows you to specify or alter the settings or trends for an operation.   F/x   allows you to use current settings found in the dialog, or you can select to replace those settings with new values.   There are two types of settings: static and trend.   A static setting means that there is no change in that parameter over time.   A trend setting means that there is some sort of change in one of the operation parameters over the sequence of frames.   You can specify a trend for the entire sequence with one <u>key frame</u>, or by specifying multiple key frames with different values.   The second method will automatically create a trend curve using the frame and settings information found in the time line.   It is important to remember that trends are directly linked to the time line.   This means that any changes made in a trend will automatically be reflected in the time line.   This does not include the specification of new control points (key frames).   For example, it is possible to specify a single operation icon that has an associated trend.   This trend could contain any number of control points that would only be visible from the trend curve. Please <u>Press Here</u> for more information on trend curves and trend manipulation.

The Operations dialog also allows you to specify sequences of action and source image files.   An Action image is any image that an operation is applied to.   this includes all of the operations in the program.   The action image can be thought of as your target or canvas for the operations you are applying.   You may specify a single file, a sequence of files, a previous time line level, or an animation file as the action image for a level.   The final action image in the time line will be the output frame for the sequence.   F/x   also allows for the specification of multiple source image files.   A source image is any image that is composed or placed into an action image.   F/x   has seven operations that require a source image.   These operations include: Apply Canvas, Merge, Place, and Key In.   If the operation does not require a source image, F/x   will automatically ghost the Specify Source option in this dialog.

Click on any of the functions for quick help or look below for more documentation.

Part 2 - The Time Line Operation Dialog

```
┌─────────────────────────────────────────────────┐
│ ▬          Time Line Operation: Frame 1, Level 1  │
├─────────────────────────────────────────────────┤
│  Operation:     Key In                            │
│  ┌──────────────────────┐  ┌──────────────────┐  │
│  │  Get Current Settings│  │ Set Current Settings│ │
│  └──────────────────────┘  └──────────────────┘  │
│  ┌──────────────────────┐  ┌──────────────────┐  │
│  │ Get Settings from Trends│ │    Set Trends    │  │
│  └──────────────────────┘  └──────────────────┘  │
│  ⊠ Interpolate Settings                           │
│  ┌─Image File Usage─────────────────────────────┐ │
│  │ ┌──────────────────┐  ┌──────────────────┐   │ │
│  │ │Specify Source Image│ │Specify Action Image│  │ │
│  │ └──────────────────┘  └──────────────────┘   │ │
│  └───────────────────────────────────────────────┘│
│  ┌──────────┐        ┌────────┐  ┌──────────┐    │
│  │  Remove  │        │  Help  │  │    OK    │    │
│  └──────────┘        └────────┘  └──────────┘    │
└─────────────────────────────────────────────────┘
```

Click on any of the functions for quick help or look below for more documentation.

Time Line Operation Dialog Controls:

Get Current Settings: This selection will "grab" the current operation settings from the operation's dialog. This allows you to alter the settings of an operation in the dialog, and then place them into the current operation <u>key frame</u> without having to replace the current operation in the time line. This will only replace the current settings with the operation dialog's settings. It will not grab any trend information that has been specified for that dialog. If you want to place trend information into the current operation key frame, you should select the Get Settings from Trends option.

Get Settings from Trends: This option will take the current trend graphs from the operation's dialog. This means that you can set the trends for a time line operation even after the operation's icon has been placed into the time line. This selection will treat each of the operation's settings or parameters as trends. This means that even if a parameter remains constant over a sequence of frames, it will have an associated trend for this operation key frame. Trend curves do require more memory, but in most cases it is negligible. Trend curves allow for more precise control over an operation's parameters over time. If you would like to view further information on trends, please <u>Press Here</u>.

Set Current Settings: This option allows you to alter an operation's parameters, and have the alterations transferred directly into the time line. This means that any alterations made in the operation dialog will automatically be placed into the time line. F/x will continue to update the current operation key frame until a new operation or area selection is placed into the time line, until the current frame position is altered, or until you click in the time line dialog. Once one of these has occurred, F/x will break the link between the key frame and the dialog. The final adjusted settings for all of the parameters in an operation will be placed into that key frame's operation settings file. This option allows you to adjust and change the parameters of an operation without replacing it with another operation icon. Once this button has been pressed, the operation's dialog will be called to the front. At that point you should make the desired adjustments to the dialog. These adjustments will be saved when you close the dialog, or select a new key frame using one of the three methods described above.

Set Trend: The Set Trend option allows you to create a dynamic link between this time line level and an operation's trend settings. This means that any changes made to an operation on this level will be immediately reflected in the trend graph. For example, let's say you have a single operation icon on the current level, and you have selected the Set Trends option. You will then be allowed to set any or all of the desired parameter trends for that operation. If you were to then drop the same operation into the same level of the time line, the trends would be altered to reflect the changes in settings data. Changes made in the trends will not create new operation key frames. An operation

key frame can only be created by placing the operation into the time line, or by copying an existing operation key frame from another position in the time line.

Selecting this option will present you with the Set Trend selection dialog. This dialog will contain a list of all of the trends available for that operation. A trend can be selected for manipulation by highlighting the trend name, and then selecting the Adjust this Trend button. You can then select another trend for adjustment by following the same procedure. Once you have all of the desired trends open, select the Ok button to confirm the selection and close the dialog. You can then draw the desired trend curves. Once you have finished drawing a curve, select the Ok button to close the trend graph and place the trend information into the time line.

Interpolate Settings: This control will turn the interpolation of operation settings on or off. When the control is on, the current operation settings will interpolate or tween their values over the specified number of frames to the next operation key frame. Operation interpolation is only available between the same operation. For example, it is possible to interpolate from one contrast setting to another, but it is not possible to interpolate between a contrast setting and a brightness setting.

Remove Operation: The Remove option will remove the current operation key frame from the time line. It will remove all associated settings, trends, and interpolation for that operation. The operation and its continuance arrow will be replaced by blank time line frames. A new operation can be copied or placed into those frames, or they can remain empty. It is important to remember that if an operation is removed, all of the associated settings will be lost. An operation key frame can also be removed by selecting the Delete key while the operation key frame is selected (highlighted).

Specify Source Image: This selection will open the Time Line Source Image dialog for the current frame. This dialog is used to specify a file, sequence of files, or an animation file to be used as the source image. This Specify Source Image option is only available for operations that require a source image. For example, this button will be unavailable for color fill operation because that operation does not require a source image. You can also specify a source image by double clicking on a time line frame that does not contain a key frame icon. This will open the Add to Time Line dialog. This dialog allows you to specify an operation, area selection, source image, or action image for the current level and frame position. Selecting the source option will present you with the same source image dialog described above.

Specify Action Image: This selection will open the Time Line Action Image dialog for the current frame. This dialog is used to specify a file, sequence of files, or an animation file to be used as the action image. This Specify Action Image option is available for all operations in F/x . You can also specify an action image by double clicking on a time line frame that does not contain a key frame icon. This will open the Add to Time Line dialog. This dialog allows you to specify an operation, area selection, source image, or action image for the current level and frame position. Selecting the action image option will present you with the same action image dialog described above. You can have multiple action image files on separate levels of the time line. This allows you to process a sequence of images, and then use the result as a source file for another operation.

Part 3 - Time Line Operations Dialog Tutorial

This tutorial is designed to familiarize you with some of the controls and options found in the Time Line Operation dialog, and the flexibility of F/x 's operation settings controls.   This tutorial will rely heavily on information presented in the previous tutorials.   If you have not completed all of the tutorials in the previous sections, please do so before continuing.   The tutorial presented here will use a simple operation, but the same techniques can be used with all of F/x 's operations.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File manager's Run command with the FX.EXE file selected, or <u>Press Here</u>.   If F/x   is already running, please close all existing images and time lines.   Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen.   This way you can perform the operations and view the tutorial at the same time.   In some cases you may need to use the Switch To (Ctrl+Esc) control or Alt+Tab to flip between WinImages:F/x and the F/x   Help document.   You may also want to use the Always on Top option in the help documentation's Help pull down menu.

2 - This tutorial will cover setting up two similar animations using static and trend based settings.   Please open the time line dialog, and delete any existing time line objects.   You can delete an object by pressing the Delete key with the time line object selected, or by pressing the Erase Time Line button.   Once the time line is completely empty, you will be ready to begin.   The first tutorial will use static operation settings and interpolation to create an animated effect.   The second tutorial will use trend settings to create a more complex animated effect.   You will want to load the atiger.jpg image into F/x   at this time.   You will also want to set the Sequence Controls' Total Frames option to ten.   This will make the time line and the filmstrip a total of ten frames long.

3 - We will be using the Color Fill operation for this tutorial.   Open the color fill operation dialog by selecting the color fill icon from the Standard operations group, or by selecting the Color Fill option from the Standard group in the Operations pull down menu.   This dialog contains three slide bars which allow you to adjust the Red, Green, and Blue (RGB) components of the fill color.   For this example, you will want to set Red = 0, G = 0, and B = 255. This will make the initial color fill color primary blue.   Now, drag the Color Fill icon into frame one of the time line.   You have just specified the initial frame for color fill operation.

4 - Drag another color fill operation icon and place it in frame ten of the time line.   This will place the exact same operation settings information from frame one into frame ten.   The overall result would be no change in the operation.   This can be changed by entering the Time Line Operation dialog for the color fill operation in frame ten. This dialog is accessed just like all of the other time line dialogs - double clicking on the operation, area selection, or image icon of the <u>key frame</u> you would like to adjust.   Once the dialog is open you should notice that it is broken up into two major sections - settings information and image file usage.   For this example we will be primarily concerned with the settings section of the dialog.   Select the Set Current Settings option.   This will access the color fill dialog, and bring it to the front of the display.   You can then adjust the controls to the settings you desire.   In this case you will want to set R = 255, G = 0, and B = 0.   This will make the fill color a primary red.   Now, click any where on the time line dialog, or close the color fill dialog by double clicking the close gadget in the top left corner of the dialog.   This will place the information from the dialog into the operation key frame that you selected. If you were to view the settings information for frame one's color fill operation (select the Set Current Settings option), you should notice that the original settings for frame one have remained unchanged (it should still be primary blue).

5 - The final requirement for this animation is an area selection.   <u>Drag and Drop</u> an ellipse area selection into frame one of the time line.   Now, double click on the area selection key frame, and select the Make the area selection now option.   Draw an ellipse on the atiger.jpg image that is near the center, and takes up about half of the image.   Select the Generate button to create the animation.   The resulting animation should have an ellipse changing from blue to

red over the sequence of frames.

6 - The second tutorial will use trends to set up a more detailed color fill operation.   Trends allow you to specify an operation parameter to specific values for each frame in the sequence.   For example, the sequence that was just created simply changed color from blue to red using linear settings.   If you open the trend graphs for those operations (select the operation key frame icon and select the Set Trends option), you would see to linear lines that go from a maximum of 255 to a minimum of 0 for the blue trend.   The same would be true for the red trend, except that it would go from a minimum of 0 to a maximum of 255.   The result is an animation that has blue change into red.   Trends allow you more control over the animation for each frame in the sequence.   If you are unhappy with the result of frame "n" then you would adjust the appropriate parameter's trend for frame "n".   Trends also allow for curves instead of simple linear settings.   This animation will start with a color fill that is black, becomes blue, and the goes back to black.   You   will want to delete all of the objects in the time line before continuing with this tutorial section.

7 - Drag a color fill icon into frame one of the time line.   Now, place an ellipse area selection into frame one of the time line, and select a region for the application of the color fill on the atiger.jpg image using the procedure described above.   Open the key frame operation dialog for frame one, and select the Set Trends option.   This will open the trend selection dialog.   The left hand side of the dialog contains a list of all of the available trends for the current operation.   A trend graph can be opened for manipulation by selecting the name of the trend to be opened with the left mouse button, and then pressing the Adjust this trend button.   Open the Blue trend now using the method that was just described.   After you have pressed the Adjust this trend button, you should see a trend open behind the dialog.   You could continue to open all of the trends that you would like to adjust in the same manner, but for this example you will only need to open the Blue trend.   Th trend graph will be broken up into ten equal segments including the left and right edges of the graph.   Each of these vertical segments represents a frame.   You have the option of specifying a point for some or all of the frames in the sequence.   In most cases you will not have to specify a control point for each frame.   There will always be a minimum of two control or key frames in the trend.   These frames will always be the first frame in the trend, and the last frame in the trend.   For this example, we will want to set the start and end frame to zero.   This is done by clicking on the control points in frame one and ten, and then pulling the point down to zero.   There is frame and value information displayed in the At position of the status bar.   After you have set the first and last frames to zero, set frame five to 255.   This is the maximum value for the blue component.   Select the Ok button on the trend to confirm the trend and close the trend graph.

8 - Generate this animation by pressing the Generate button on the time line.   The animation should show your ellipse changing from black to blue, and then back to black again.   That is all there is to interpolating effects for an animation.   We can create almost any type of animated effect using these simple steps: 1. Decide which parameters will be altered over the sequence,   2. Decide if the parameter should be linear (static settings) or if the parameter should use a trend, 3. Make the appropriate changes to the settings or trends, and 4. Generate the sequence.   If you do not get the desired results the first time, attempt the animation again with different operation or tend settings.

Part 4 - TIme Line Operation: How do I ...?

Q: How do I specify an operation key frame?

A: Operation Key Frames can be specified by dropping an operation into the time line using <u>Drag and Drop</u>, or by using the Add to Time Line dialog.

Q: How do I specify an operation's settings for a key frame?

A: You can alter or specify an operation key frame's settings by selecting the Set Current Settings or Set Trends. These two options will open the operation dialog or trend curve, and allows you to specify the desired values.   This will create a dynamic link between the settings in the key frame, and the settings in the dialog or trend.

Q: How do I turn Interpolation "on" or "off"?

A: Interpolation of operations will automatically default to on when it is valid to do so.   This means that the operation specified in the first key frame will alter its settings over the sequence of frames to match the next key frame's operation settings.   Interpolation can be turned on or off using the Interpolation check box found in the Time Line Operation dialog.

Q: How do I generate a single frame from the time line?

A: A single frame can be created by setting the Begin Frame and Finish Frame values, in the Sequence Controls dialog, to the same value.   For example, if you wanted to generate frame 10 of a 30 frame sequence, you would set both the Begin and Finish frame controls to ten.   F/x   would then generate the frame, and save it in the specified file format.

Section 5.1.2.5 The Time Line Menu Controls - Action and Source Image Dialogs

Part 1 - Time Line Action and Source Image Dialogs - An Overview

Part 2 - Time Line Action Image and Time Line Source Image Dialog Controls:

Part 3 - Time Line Source and Action Image Dialog Tutorial

Part 4 - Time Line Image: How do I ...?

Part 1 - Time Line Action and Source Image Dialogs - An Overview

F/x has two separate image designations - <u>Action Images</u> and <u>Source Images</u>. Action images specify the destination of an effect or operation. These images can be placed on multiple levels, and then respecified as source images for a final output. This gives you the ability to build a action image on the first few levels of the animation, and then place those action images into yet another action image sequence as source images. Source images are images which are placed into action images. F/x has only seven operations which require a source image. Source images should only be specified when they are required for an operation. Specifying unnecessary source images will increase the time needed to generate the animation.

Note: You can automatically load an action or source image from the timeline by Ctrl+Clicking on the action or source image icon. This will load that image into the program as an image file. If you Ctrl+Click on an animation file, the appropriate animation frame will be loaded.

There are four methods of specifying an action or source image. The first method is to specify a single image file as the action or source image. This means that the same image will be used for all of the operations on that level, and any following level that does not have a new action or source image specified. The next method is to specify a sequence of files as a source or action image sequence. This sequence is different from a video sequence in that each frame is an independent image instead of a frame from an animation. Each image that is specified can be treated as a separate image file, and can be used for any number of frames. The third method of specifying images is to specify an animation file or files. Animation files (FLI/FLC and FLM) can be treated as video sequences. This allows you to specify the frame number that will be loaded first, and the increment to be used for loading each subsequent frame. The final method of specifying a source or action image is to select an image that was generated from a previous level as the source or target image. This allows you to generate several pieces to an animation, and then use them in the same time line as an action or source image.
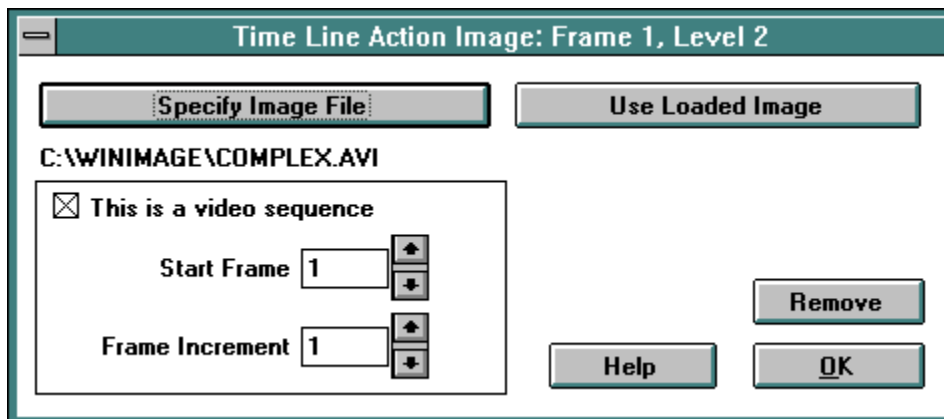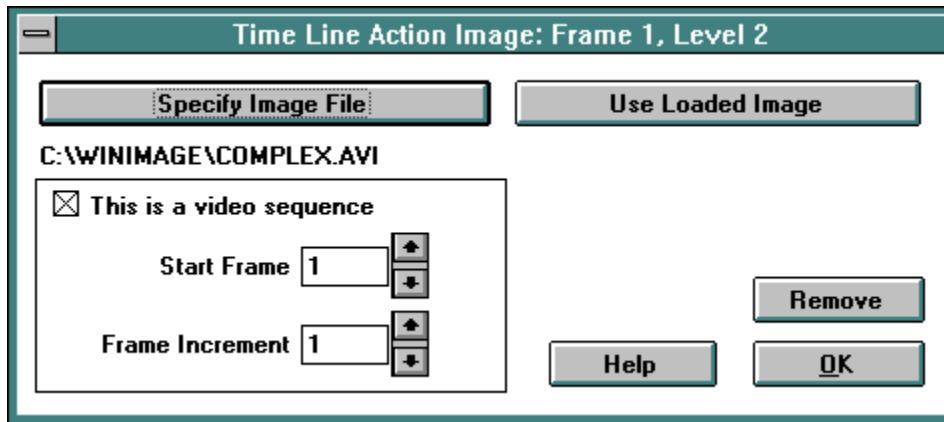

Click on any of the functions for quick help or look below for more documentation.

WARNING: There is a limitation to the number of files that can be specified at one time. Due to a limitation in Microsoft's file requester, you may only specify 150 files at a time using the file requester. Selecting more files than this may cause the entire system to crash. Microsoft has been made aware of this problem, and we hope that it will be fixed soon. You can circumvent this problem by specifying files in groups of 150 files or less. This allows you to specify all of the needed files with out crashing the system.

Part 2 - Time Line Action Image and Time Line Source Image Dialog Controls:

Click on any of the functions for quick help or look below for more documentation.

Specify Image File: Pressing this button will access a file requester for selecting the image files or animation file to be used as a source or action image.   Image files can be selected in many different ways.   You can select a single file from the requester to be processed as an action or source image, you could select multiple files to be processed as a sequence of action and source images, or you could select to load an animation file.   Multiple files can be selected by clicking on the first file in the sequence, using the scroll bar to locate the last file in the sequence, and then pressing the Shift key and clicking on the final file name.   This will select all of the files between the first and last file that you specified.   Once you have the desired files selected, press the OK button to place the files into the time line.   You can select multiple files that are not in sequence by holding down the Ctrl key while selecting the desired image files.   Once the files are placed into he time line, they are treated like any other time line object.   This allows you to increase or decrease the number of frames that the image will be used, alter its position, or delete it from the time line.

Use Loaded Image: This option allows you to select an image that is already loaded as the source or action image for an operation.   You also have the option of selecting a file from a previous time line level.   This allows you to process multiple sets of action images, and then place them into another action image sequence as source files.   For example, you could process action image sequence A on levels one and two of the time line, and then use those images from sequence A as source images for action image sequence B.   The dialog allows you to select the level that the source or action image will come from.   You can also specify an image which is already loaded into memory as the source or action image fro a time line operation.

This is a Video Sequence: This check box denotes that the file or files you have selected are video sequence.   A video sequence is any supported animation format (FLI/FLC, AVI, and FLM).   It is possible to specify a non-animation file as a video sequence, but the file specified will only be used the specified number of frames.   Real animation files can be placed into the time line at any frame number, and with any frame increment (see below for more details).   It is suggested that you do not specify non-animation files as video sequences.

Start Frame: The Start Frame control allows you to specify the beginning frame number for a video sequence.   This allows you to specify any value as the initial frame for the animation sequence.   For example,   you could start an FLC animation file on frame 3 instead of frame 1.   If you specify a value that is beyond the total number of frames in the animation sequence, F/x   will automatically use the last frame in the sequence for the entire specified length.

Frame Increment: The Frame Increment control allows you to specify the way F/x   will load files from a video sequence.   A setting of one will load every frame in the sequence (1, 2, 3...), a setting of two will load every other

frame (1, 3, 5...), and a setting of three will load every third frame (1, 4 , 7...).   This control can be set to any value you like up to a setting of every 1000th frame being used.   The default setting for this control is one.   You can also alter the starting frame value by adjusting the Start Frame control.

Remove: The Remove option will remove the current action or source image file from the time line.   An action or source image can also be removed by selecting the Delete key while the file is selected (highlighted) in the time line.

## Part 3 - Time Line Source and Action Image Dialog Tutorial

The Action and Source image tutorial is designed to introduce you to the action and source image specification dialogs. This tutorial will rely heavily on information presented in earlier sections. If you have not already completed the previous tutorials, do so at this time. This tutorial will do a merge operation using a single action image, and a video sequence as the source images.

1 - If you have not already done so, start WinImages:F/x by clicking on its icon, use the File manager's Run command with the FX.EXE file selected, or Press Here. If F/x is already running, please close all existing images and time lines. Once the program is running, you may wish to open the WinImages:F/x Help file to this section, and resize both the program and help file to fit on the same screen. This way you can perform the operations and view the tutorial at the same time. In some cases you may need to use the Switch To (Ctrl+Esc) control or Alt+Tab to flip between WinImages:F/x and the F/x Help document. You may also want to use the Always on Top option in the help documentation's Help pull down menu.

2 - Open the time line dialog, and delete its contents using the Erase Time Line control. Now, load the atiger.jpg image into F/x using the Load Image option in the File pull down menu. This image will be used as the action or target image for the sequence. Enter the Sequence Controls dialog and set the Total Frames control to ten. After you have made this change, select the Ok button to confirm the changes and exit the dialog.

3 - The next step is to specify the operation and the area selection that will be used for the animation sequence. This example will use the Merge operation, and the rectangle area selection. Drag a Merge operation icon into frame one of the time line. Now, place a rectangle area selection icon into frame one of the same level. Enter the Area Selection Object dialog by double clicking on the rectangle area selection icon in frame one. Select the Make the area selection now option, and place a rectangle in the atiger.jpg image. The area selection should be near the center, and should take up about one quarter of the total image size.

4 - Now, we will specify the action image to be used for this sequence. Enter the Time Line Operation dialog by double clicking on the merge operation icon in frame one. Select the button marked Specify Action Image. The dialog that appears allows you to specify an action image file, file sequence, loaded images, or an animation file. In this case we will be using an already loaded image as the action image. This means that we will need to select the Use Loaded Image option. This dialog allows you to specify an image which has already been loaded into memory, or the result off a previous levels operation. Select the Use image currently in memory option, and the atiger.jpg image from the available images. Press the Ok button to confirm the file selection and to close the dialog. At this time your time line should look something like this:
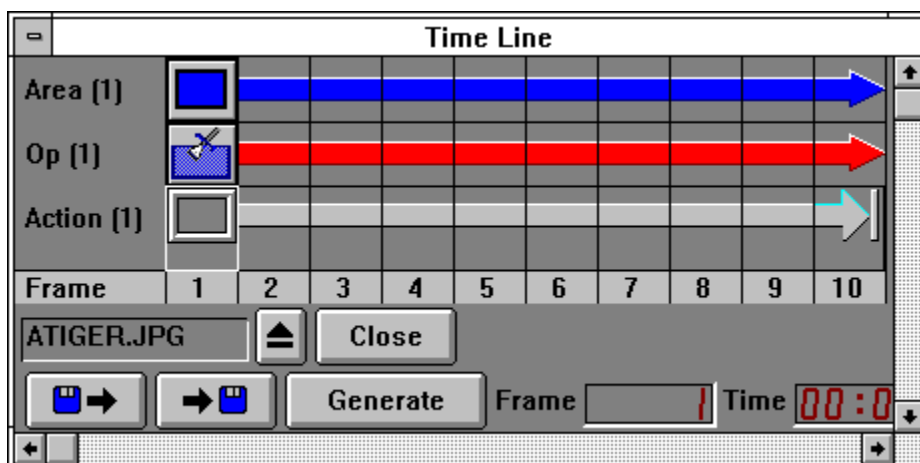
5 - The final step to preparing our animation is to specify a sequence of source images. Enter the Time Line

Operation dialog for the merge operation using the method described in step 4.   Now, select the Specify Source Image button.   The dialog that appears is extremely similar to the action image dialog.   In this case you will want to select the Specify Image File option.   Use the provided file requester to load the ladyfrog.flc animation.   This file should be located in the C:\WINIMAGE directory.   After the animation has been selected, press the Ok button to confirm the file selection and close the file requester.   This will take you back to the Time Line Source Image dialog.   You should notice that the This is a video sequence check box is now selected.   This means that the Start Frame and Frame Increment controls are now active.   We will not need to adjust these for this animation.   View the definitions above for more details on these controls.   Select the Ok button to close this dialog.

6 - Select the Generate button on the time line dialog to create the animation.   This is only one

example of using action and source image files in the time line.   It is possible to set up complex time lines that use multiple levels to create intricate animation sequences.   If you have further questions on the time line, please review the time line documentation sections.   You should also complete all of the available tutorials.

Part 4 - Time Line Image: How do I ...?

Q: How do I specify an action or source image for a time line level?

A: Action and Source images can be specified using the Time Line Operation dialog's Specify Source Image or Specify Action image controls.   Both of these options will open the Time Line Image dialog.   You can then use the provided file requester to select an image, or use an image from a previous level.   Action and Source images can also be specified by opening the Add to Time Line dialog.

Q: How do I generate a single frame from the time line?

A: A single frame can be created by setting the Begin Frame and Finish Frame values, in the Sequence Controls dialog, to the same value.   For example, if you wanted to generate frame 10 of a 30 frame sequence, you would set both the Begin and Finish frame controls to ten.   F/x   would then generate the frame, and save it in the specified file format.

Section 5.1.3 The Display Menu

RGB 32-bit - 2 level B+W

The display mode controls allow you to specify the format the images will be displayed in.   You may select display modes ranging from full color 32-bit to a 2 color Black and White display.   This flexibility allows you to alter your display mode to best fit your computer system and any display hardware.   A display mode is selected by simply clicking it with the left mouse button.   After you have selected the display mode to be used with your system, WinImages:F/x will redraw any and all views to reflect the changes made to the display mode.   This setting will be saved as the default display mode when you exit the program.

Info on Display...

The Display Information panel allows you to view the display status of your system, and the display mode that WinImages:F/x recommends for you system.   The Info panel displays the bits/<u>pixel</u>, <u>palette</u> depth, and the screen <u>resolution</u> that you are using.   WinImages:F/x also provides you with a suggested display mode to be used based on this information.   The display mode can be altered using the Display pull down menu, and then selecting the proper display mode from the provided list.

Show Tool Bar Text

This option, when selected, allows you to alter the way the tool bar icons are displayed.   This option will display the name of the operation below the operation's icon.   This will enlarge all of the icons slightly to compensate for the size of the text.   With this option selected some of the icons in a group will not be visible.   These icons can be accessed by using the left and right arrow keys to scroll through the operations.   If this option is not selected, the icons will not display the text.

Light Progress Bar

The light progress bar option, when selected, will make the operation and rendering progression bars white instead of the standard blue.   This feature is particularly useful for laptop computer users.

Size Windows...

This control allows you to specify the resolution of the current views and the filmstrip.   The values specified in this dialog will relate to the size and aspect of image views in the program.   All images are displayed in a 1:1 mode by default.   This means that the size of the image on the monitor is the actual image size.   You can select the actual X and Y display resolution for each image view that is open.   The images will simply be strecthed to fit inside the specified dimensions.   F/x will place the image display ration information in the title bar of each image view.   The panel contains several preset resolutions (in the form of ratios) for the view windows (ratios include - 1:1, 1:2, 2:1, etc).   F/x also gives you the option of specifying a image view size in the provided text entry field.

This dialog also contains controls for sizing the filmstrip control window.   Selecting the Match Image control will cause the filmstrip window to be the same resolution as the last sized image.   This is not the same as having the actual filmstrip the same resolution as the current action image.   In this case we are only changing the size of the window, not the resolution of the contents.   This can be changed through the Filmstrip menu's Filmstrip Pixel Resolution control.   (Note: Using large filmstrip pixel resolution can cause memory shortages.)   The filmstrip, and its controls, are always aspect correct.

The Rescale with Main window control will force all of the views to resize if the Main program window is resized. The Maintain <u>Aspect Ratio</u> button allows you to have all of the current views maintain their aspect ratio when resized.   This control is also available in the Display pull down menu.

Maintain Aspect Ratio

The Maintain Aspect Ratio control, when selected, will maintain the image aspect for all of the views. This means that when an image is resized the image will be forced to maintain its aspect ratio. This is true for both vertical and horizontal resizing of a view. When this control is not selected, views can be resized to any dimensions regardless of their aspect ratio.

Show Alpha in Views

This option, when selected, will display an images <u>alpha channel</u> in the same view as the image. The alpha channel will appear as a variable <u>transparency</u> overlay in a set color. This allows you to view the image's alpha channel over the actual image. Any operations that are applied to an image in this mode will be applied using the alpha channel information. The image below shows an example image with it's alpha channel in the same image view.

Set View Colors...

The Set View Colors dialog allows you to select different colors for various image view related objects. Each of these items is defined using the Color Selection dialog. Once the desired color has been specified, select the Ok button in the color selection dialog to accept the selection. You should see the selected color in the color preview window associated with the control object. After you have adjusted all of the desired color selections, press the Ok button in the Set View Color dialog to accept and use the changed colors. Below is a complete list of all of the various control objects, and their function.

Set Alpha View Color...

This option is used to specify the alpha channels color for the **Show Alpha in Views** option. Selecting this option will bring F/x's color selection dialog to the front. You should use the provided color selection tools to select the desired alpha channel color, and then press the **Done** button. In the example image below, the Alpha View color has been set to a green color. If you would like to view more information on the Color Selection dialog, <u>Press Here</u>.

Set Off Image Color...

The Set Off Image Color option is used to specify the color that will appear at the image's edge in maximized or full screen mode.   This color is set using the Color Selection dialog.   This dialog has a wide range of tools, and preset colors which can be used as the "off image" color.   If you would like to view more information on the Color Selection dialog, Press Here.

Set Line Color 1...

The Set Line Color 1 option is used to specify the color that will appear as the longer dash for the marquee display. This color is set using the Color Selection dialog.   This dialog has a wide range of tools, and preset colors which can be used as the "off image" color.   If you would like to view more information on the Color Selection dialog, Press Here.

Set Line Color 2...

The Set Line Color 2 option is used to specify the color that will appear as the shorter dash for the marquee display. This color is set using the Color Selection dialog.   This dialog has a wide range of tools, and preset colors which can be used as the "off image" color.   If you would like to view more information on the Color Selection dialog, Press Here.

Set Previous Color 1...

The Set Previous Color 2 option is used to specify the color that will appear as the longer dash for the marquee of an existing area selection.   This color is set using the Color Selection dialog.   This dialog has a wide range of tools, and preset colors which can be used as the "Previous" color.   If you would like to view more information on the Color Selection dialog, Press Here.

Set Previous Color 2...

The Set Previous Color 2 option is used to specify the color that will appear as the shorter dash for the marquee of an existing area selection.   This color is set using the Color Selection dialog.   This dialog has a wide range of tools, and preset colors which can be used as the "Previous" color.   If you would like to view more information on the Color Selection dialog, Press Here.

Set Handle Color...

The Set Handle Color option is used to specify the color that will appear as the movement handles for the area selection editing tool.   This color is set using the Color Selection dialog.   This dialog has a wide range of tools, and preset colors which can be used as the "off image" color.   If you would like to view more information on the Color Selection dialog, Press Here.

Beep when Palette Changes

This option, when selected, will notify you, by beeping, that the palette of the image is changing.   The palette is usually only altered when the display type is changed.

Section 5.1.4 The Settings Menu

Change Working Method

WinImages:F/x uses two separate working methods in the program.   The first method is similar to the way a paint program works.   The area selection is made, and then the current operation is carried out in that area.   The second method is similar to the way that some image processing applications (Photoshop, Photostyler, etc.) operate.   In this working mode the area selection is created, and then an effect is selected for application.   Black Belt Systems has made an extra effort with this release to make the program as easy to use as possible for users of both paint and image processing applications.   The working method that you select will be determined by the type of work you intend to do with F/x, and your previous experience with this and other image processing packages.   Each method has its particular merits with certain types of tasks.   You may also find that you will switch between the two methods as different tasks are simplified by one working method or the other.

The Working Method will default to the **Immediate Painting Method** where operations are applied immediately after an area selection.   The Immediate Painting method is the original operating style that was designed for F/x. This method works like many paint programs in that the area selection is created, and then the current operation is immediately applied to the specified region.   This method allows the user to quickly select areas, and have the current operation applied immediately after the area is completed.   This method is the preferred method for selecting areas for a time line, or for applying the same effect to many areas in an image.

The **Draw First Method** allows you to make an area selection, alter it to your specifications, and then apply an operation to the area.   This working method is similar to the way that many image processing programs work.   An area selection is created in exactly the same way, but the current operation is not applied until the operation icon is clicked on with the left mouse button.   This allows you to alter and refine an area selection until it meets your specific needs.   The area selection will appear as a dashed marquee outline of the selected region.   You can then apply the default (or last) operation settings to the region by left clicking on the operation icon.   The operation settings can be changed by right clicking on the operation icon, and then altering the operation parameters.   After you have made the desired changes, you can apply the effect to the currently selected area by left clicking on the operation icon.   This method is ideal for selecting very specific selections of the image, and then altering them to best suit your needs.   F/x also allows you to add and subtract regions from the area selection through the use of keystrokes.   Holding down the SHIFT key while making an area selection, will add that area to the previous area selection.   Holding down the CTRL key while making an area will subtract the new area selection from the previous area.   (**Note:** These same keystrokes can be used for the Immediate Painting method, but you will be applying the current operation in the previous area selection as well as the new area.)

Affect Alpha in View

The Affect Alpha in View control allows you to apply effects to the alpha channel and the alpha channel's RGB image independently.   If you would like to apply an effect to the alpha channel in a transparent area (a completely Black area), you must turn the Mask with Alpha control *off*.   The same is true if you would like to alter the RGB image without using the current alpha channel.   All operations applied to the alpha will be used as part of the alpha channel, and applied to the RGB image if the Mask with Alpha control is selected.

Affect RGB Only

This control will cause all operations to affect only the RGB image, and not the alpha channel.   This means that the area selection could be made in the image's alpha channel view, and it will only alter the RGB image based on the current alpha channel and transparency settings.

Affect Alpha Only

This control will force all of the operations, regardless of image view type, to be carried out in the alpha channel. This means that alpha channel can be altered using either the RGB image view or the alpha channel view.   It is important to remember that you must turn the Mask with Alpha control *off* if you want to apply an effect to an opaque region of the alpha.

See Also: Masking with an Alpha Channel

Number of Undo Levels...

This control allows you to specify the number of undo levels that are to be kept by the program.   You can have up to 32,000 separate levels of undo.   The Undo control is explained in further detail in the section on the Zoom and Undo Tools.

WARNING: Remember that each level of undo will require the area selects width x height x 4.   This means that with 20 levels of undo, and an area select that is 20 pixels x 30 pixels, you would need 48,000 bytes of memory. Some of the operations in WinImages will require an undo buffer that is the size of the entire image.

See Also: The Zoom and Undo Tools

Modal Zoom

This option allows you to select how the zoom control will function.   If this option is not selected (default) the zoom will behave as follows:

1. Once the Zoom icon has been selected, place the Zoom pointer over the view to be zoomed.

2. Press and hold the left mouse button to select the zoom area.   The zoom region rectangle is sized with the left mouse button, and is repositioned using both mouse buttons.   Release both mouse buttons once the zoom rectangle is the desired size and position.   This will zoom the area based on the size of the rectangle, and its relative position. A zoom will always occur with the center of the zoom being the center of the rectangle.

3. Once an image is zoomed it can be zoomed any number of levels, down to 1 pixel filling the view.   This is done by simply following the above procedure as many times as necessary.   A simple 2x zoom can be accomplished by just clicking on the view with the zoom pointer.   You also have the capability to scroll a zoomed area using the provided scroll bars.

If this control is selected, the zoom tool will behave as follows:

1. Press the zoom icon.   You should notice that the zoom icon is now pressed in.   This means that you are in zoom mode, and no other action will occur in the image views except zooming.

2. To zoom in on an image left click the over the area you wish to zoom.   To zoom in further left click again.   You can continue to zoom in by left clicking, or you may select to zoom out by right clicking.

3. After you have finished zooming or de-zooming the image, double click the zoom icon on the tool bar to turn zooming off.

Keep a log file

The log file contains all of the information about a session in WinImages:F/x.   This information includes files that were loaded and operations that were applied to images.   This is a nice way of keeping track of what has happened to a particular image so that it can be reproduced.   The log file will be saved in the root directory of the F/x program.   A log file will be replaced if a new session is started.

Show Chronograph

The Show Chronograph option will turn Winimages Action Chronograph on or off.   If the control is selected or on, the chronograph will be displayed.   Once displayed the chronograph will list each action (Load Image, Save Image, Apply Operation, etc.) as it occurs, and will also list how long the action took.   If this control is not selected or off, no times for operations will be shown or recorded.

Section 5.1.5 The Area Menu

Undo Last Selection

This selection will undo the last area that was selected.   This can be very useful when you are selecting multiple regions using the add area keystroke modifier, and would like to eliminate the last area that you selected.   Once an area selection is undone, it can not be retrieved.

Clear Area Selection

This option will clear the current area selection from the image.

Show Area Tool Box

This control, when selected, will display the Area Selection Tool Box.   If it is not selected, then the Tool Box will not be available.   The tool box can also be opened or forced to the front by pressing the '**a**' key, and the '**Shift A**' key stroke can be used to close the area tool box.

Load Area Select File...

The Load Area Select File control allows you   to load a previously saved area selection mode.   The file, which has a .ASF extension, will contain the area select mode, dimensions of the area select, and transparency information.   These files can be altered using a text editor, but the addition of irrelevant or incorrect data in an edited file can cause the area select to not load.   The loaded area select will only be applied to an image if the Redo area selection tool is selected.   Area selection files can be used in lists to specify various area selects for multiple operation animations.   Files are saved using the Save Area Select File option in this menu.   It is important   to remember that a loaded area select file is only valid for one use.   This may have no consequence with area selection modes like ellipse and rectangle, but it can have a great effect with the Color Wand and color keyed tools.

Save Area Select File...

This option allows you to save the current area select.   The file will contain the area select mode, dimensions, and transparency information.   These files can be altered using a text editor, but the addition of irrelevant or incorrect data in an edited file can cause the area select to not load.   Area selection files can be used in lists to specify various area selects for multiple operation animations.   You also have the option of simply saving area selects for future use.   These area selects can be retrieved with the Load Area Select File option and the Redo area selection mode.

Font Style...

The Font Style requester allows you to select the font to be used with the Font Area Selection mode.   The requester allows you to select the font type, font style, and point size of the font to be used.   After selecting the desired font, style, and point size you   may then select the OK button and enter the text to be used with the Font Tool.   The color selection in the font requester has no effect on the font that is placed in the image.   This dialog can also be accessed by right clicking over the Font area selection mode in the tool box.

Shape from Corner

This option allows you to toggle the IShape area selection from center to corner based area selections.   Both methods work in the same manner, but have different *anchor point* (center or corner).   If this option is selected, the area selection will be made using a corner anchor point.   This means that the shape will "grow" from the initial mouse click which specifies the top left corner of the area selection.   If this option is not selected, then the area selection will "grow" from a center anchor point.   You can change this mode while making an area selection by holding down the **ALT** key while sizing the area.   If you wish to return to the alternate mode, simply release the

ALT button.

Note: It is important to remember that F/x uses the center position of an area selection as the center of effect for many of the operations.

Rectangle from Corner

This option allows you to toggle the Rectangle area selection from center to corner based area selections.   Both methods work in the same manner, but have different *anchor point* (center or corner).   If this option is selected, the area selection will be made using a corner anchor point.   This means that the shape will "grow" from the initial mouse click which specifies the top left corner of the area selection.   If this option is not selected, then the area selection will "grow" from a center anchor point.   You can change this mode while making an area selection by holding down the **ALT** key while sizing the area.   If you wish to return to the alternate mode, simply release the **ALT** button.

Rounded Rectangle from Corner

This option allows you to toggle the Rounded Rectangle area selection from center to corner based area selections.   Both methods work in the same manner, but have different *anchor point* (center or corner).   If this option is selected, the area selection will be made using a corner anchor point.   This means that the shape will "grow" from the initial mouse click which specifies the top left corner of the area selection.   If this option is not selected, then the area selection will "grow" from a center anchor point.   You can change this mode while making an area selection by holding down the **ALT** key while sizing the area.   If you wish to return to the alternate mode, simply release the **ALT** button.

Ellipse from Corner

This option allows you to toggle the Ellipse area selection from center to corner based area selection.   Both methods work in the same manner, but have different *anchor point* (center or corner).   If this option is selected, the area selection will be made using a corner anchor point.   This means that the shape will "grow" from the initial mouse click which specifies the top left corner of the area selection.   If this option is not selected, then the area selection will "grow" from a center anchor point.   You can change this mode while making an area selection by holding down the **ALT** key while sizing the area.   If you wish to return to the alternate mode, simply release the **ALT** button.

Roundness...

This control allows you to specify the percentage of roundness for the Rounded Rectangle area selection mode.   The control ranges from 0% roundness (a rectangle) to 100% roundness (an ellipse).   The default of this control is 50% roundness.   This control can also be accessed by right clicking over Rounded Rectangle icon.

Color Wand Controls...

The Color Wand dialog allows you to specify the variance that is to be used for the Color Wand area selection mode.   It is important to remember that with 24-bit images a variance must be specified for color fill modes.   The variance specifies the allowable amount of change in the RGB or HSL values that are to be used to determine the area.   This dialog contains six separate sliders for controlling the variance of RGB or HSL colors.   This information is used to determine which areas adjacent to the initial click of the color wand will also be selected.   Increasing and decreasing the RGB or HSL variance values will result in more area or less area being selected by the color wand.   These controls can also be accessed by right clicking over the Color Wand icon in the Tool Box.
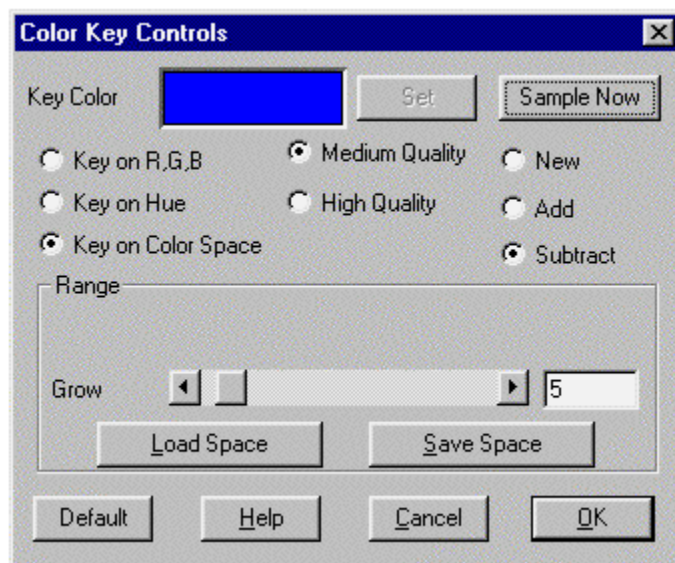
Color Key Controls...

The Color Key dialog allows you to select the color key method, color, and variance to be used for the Color Keyed

Area Selection modifier.   The top of the dialog is devoted to selecting the type of color key you wish to perform. You can select to key on RGB, Hue (HSV), or Color Space.   As you select any of these options the controls will be altered to suit the key type selected.   For example, if you select RGB as the key mode, the key color selection and RGB variance controls will be available.

The remainder of the dialog is devoted to specifying options and setting for the three keying modes.   All three modes allow you to select any of the predefined colors or specify your own color to be used for color keying.   The specified color and variance are then used inside the area selection to select the desired colors.   These colors are selected on the basis of the initial area selection (boundary), the key color, and any associated variance.   After all of this has been determined, F/x will outline the area and perform the operation on only the specified colors.

Keying on Color Space is handled differently from the other two keying modes.   This method creates a color space based on the color that is specified by the user by pressing the Set button (for a specific color value), or by selecting the Sample Now option.   Pressing the Sample Now button allows you to select from an image the colors you wish to key on.   Once the key space is specified, you can then key on the colors in that space.   The major difference between this type of keying and range based keying is the accuracy of the color key.   With range based keying you can key on colors that you did not want to key on due to their RGB values.   With space keying you will only be keying on the colors you specify.

Another nice option related to space keying is the ability to add or remove a color/colors from the key space.   You also have the option of expanding or contracting the key space based on the existing key space.   This means that if your key space is made up of blues, you can increase the number of blues selected by the space by simply expanding the color space.

Each control in the dialog is described below in greater detail:

Key on: RGB, Hue, or Color Space: This control allows you to select the color key method that you will be using for the key selection.   You may select an RGB based key, and Hue based key, or a color space key. By selecting any of these options the dialog will automatically change the controls to the proper settings for that key mode.   Please review the documentation for further information on how color keying works for each of the methods.

Medium/High Quality: This control alters the quality of the color key space.   A medium quality space will produce fairly good results with low memory usage, and a high quality space will produce excellent results with higher memory requirements.   Remember, it is possible to alter from one quality of key space to the other, but their will be some minor reduction in quality the more times you switch quality to quality.   These options are only

available of the Key on Color Space option is selected.

New/Add/Subtract: These controls allow you to specify how the next sample area will be used by the key color space.   You can select to Add the new colors to the current color space, subtract the new colors from the existing space, or create a new color space.   These options are only available if the Key on Color Space option is selected.

RGB/HSV Range: These two sets of slider gadgets allow you to specify the specific RGB or HSV ranges for a RGB or Hue based color key.   Please review the above documentation and the documentation in Color Key section for further details on how color ranges influence a color key area selection.   These options are only available if the Key on RGB or Key on Hue selection has been made.

Grow: The Grow slider allows you to increase the range of a color within the key color space.   For example, if you have a key space comprised entirely of pure blue (0,0,255) and you grow the color space by 10, your new space would include colors from (0,0,255) to (10,10,245).   It is important to remember to reset this control to 0 if you are going to make further adjustments to the color space.   If you do not, the program will continue to grow the color space by the specified value each time it is used.   This option is only available if the Key on Color Space option is selected.

Load/Save Space: These controls allow you to load or save a color space to file.   Once the color space has been saved, it can be recalled and used by selecting the load space button in this dialog.

Transparency Controls...

The Transparency controls are used to specify the amount of transparency and edge blending level.   The Transparency is the amount that a source, <u>alpha channel</u>, or even an effect will show through the current or action image.   The edge blending percentage is the amount of allowable blending on the edge of the area select.

The Transparency level slider allows you to specify the transparency as a value that ranges between 0 and 255.   A setting of 0 will result in the effect being completely transparent, and a setting of 255 will make the effect opaque.   The specified transparency level will be applied to all of the effects in WinImages.

The **Edge Blending** control allows you to specify the percentage value of the entire area select that is to be used for edge blending.   The control can range from 0% to 100%, and effects the horizontal slope of the graph.   A setting of 0% will result in there being no edge blending, and a setting of 100% will result in an edge blend that extends from the edge of the area select to the center.   You can also perform an anti-aliasing operation by setting this control to 1%.   This setting will not perform a true edge blend.

There are several preset edge blending levels.   These presets are: Flat, Soft Edges, Broad Edge Fade, and Conical Fade.   The Flat preset has an edge blending percentage of 0% which will simply place the effect in the selected area with no blending.   Soft Edges will perform an anti-aliasing at the edge of the area select.   The Broad Edge Fade has an edge blending level of 50% that produces a nice fading effect.   Conical Fade has 100% edge blending.

This dialog also contains a control to alter the width of the area selection.   This means that you can specify exactly where the edge blending is to begin.   The control ranges from 0 to 100%, and effects the width of the transparency graph.   For example, a setting of 50% would result in the edge blending beginning 50% into the area selection.   It is important to remember that image information outside of this radius will be lost.

There are also trend graphs for each of these transparency modifiers.   Setting the trends for an operations will allow you to create effects that fade in and then fade out or even transitions from one image to another.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the

animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Mask with Alpha

This control, when selected, will force all of the operations to use any available alpha channels.   An Alpha channel can be thought of as a digital mask that contains transparency values.   Alpha channels are displayed in a gray scale format with Black being opaque and White being transparent.   Alpha channels can be created or altered using the alpha channel options in the Settings menu or the Make Alpha operation.   As with all operations in F/x , alpha channels can also use the Transparency and blending settings to create soft edged masks.

Section 5.1.6 The Filmstrip Menu

Show Filmstrip

If Show Filmstrip is selected each frame of the filmstrip will display the frames of the animation sequence as they are generated.   The filmstrip will be automatically turned on when an animation sequence is started.

Filmstrip Pixel Resolution...

This sets the resolution of each frame in the filmstrip.   Unlike the shots taken with a camera, the filmstrip frames can be any rectangular shape.

You should take care not to make the filmstrip too large.   This will slow down the program and use memory.   As a rule, the memory usage for the   filmstrip is -

Frame Width x Frame Height x 4 x Number Of Frames .

So, a 200 x 100 filmstrip of 15 frames will require 1,200,000 bytes, and a   large 320 x 200 filmstrip of 30 frames will require almost 8 megabytes!

Users should not confuse filmstrip resolution with display size.   **The filmstrip window can be scaled to any size independent of the filmstrip resolution.**

See Also: Making More Memory Available

Animate Film

This will Play the current filmstrip.   This selection is the equivalent of pressing the play button on the filmstrip controls.

See Also: Filmstrip Controls

Animation Settings

This switches the animation methods -

Pong: The Pong setting runs through the sequence beginning to finish to beginning.   If Pong is not selected, then the filmstrip will run forwards beginning to finish and then repeat itself.

Reverse: This will run through the sequence from the end frame to the start frame.

Load Filmstrip...

This function provides you with a file requester for loading a filmstrip from disk.   The type of files WinImages:F/x will load into the filmstrip are .FLM FiLMstrip files saved from this program (as well as WinImages: Morph

FiLMstrips) and Animator (Pro) FLIC animation files.

It is important to remember that the filmstrip will not automatically change its size to match the length of the filmstrip being loaded.   The length of the filmstrip is altered in the Sequence Controls dialog in the Time Line pull down menu.

Save Filmstrip...

This will save the current filmstrip to disk.   The filmstrip will be saved using the Aspect Ratio and Resolution settings found in the Filmstrip Resolution dialog in the Filmstrip pull down menu.

Save Filmstrip as FLIC...

This saves each frame of the filmstrip into an FLI or FLC animation file. If the filmstrip has a resolution per frame of 320 x 200, then an FLI will be created, otherwise an FLC will be created.   The filmstrip will be saved using the information from the Filmstrip Resolution and the Frame Rate dialogs.   Remember that using the filmstrip to hold many large output frames will   require a lot of memory, and that an AVI file can be created during   the animation process instead.   See the Sequence Controls menu control for more details.

Save Filmstrip as 8-Bit AVI...

This saves each frame of the filmstrip into an 8-bit 256 color AVI animation.   Remember that using the filmstrip to hold many large output frames will   require a lot of memory, and that an AVI file can be created during   the animation process instead.

Save Filmstrip as 24-Bit AVI...

This saves each frame of the filmstrip into a 24-bit   full color AVI animation.   The filmstrip is always held internally as 24-bit images and this option   will retain all the information in the sequence, but will require more advanced hardware to play and more space to store.   Remember that using the filmstrip to hold many large output frames will   require a lot of memory, and that an AVI file can be created during   the animation process instead.

Scroll Updates onto Filmstrip

This selection will scroll all changes made to any of the views onto the filmstrip.   This is a nice way of keeping a visual record of changes made to an image.

Place Updates in Current Frame

This selection will place all of the updates into the current frame.   The current frame is set in the Sequence Controls dialog.   All changes made to any of the views will be placed into the current frame.   Once another change occurs, the original frame will be replaced with the new one.

Do not Update Filmstrip

This control will eliminate all updates to the filmstrip.   This control will automatically be turned off when a sequence is generated.

Section 5.1.7 The Operations Menu

The Operations menu contains a list of all of the operation groups, and all of the operations available in each group. An operation is selected by simply clicking on its name.   Doing this will move group icons to the far left of the tool bar, and bring up the selected operation's dialog.   Operations can also be selected using the icons in the tool bar.

Load Op. Settings File...

The Load Op Setting File control allows you   to load a previously saved operation settings file.   The file, which has a .FXS extension, will contain all of the trend and settings information for the saved operation.   These files can be altered using a <u>text editor</u>, but the addition of irrelevant or incorrect data in an edited file may cause the operations file to not load.   Operation settings files can be used in lists to specify various settings for multiple operation animations.   Files are saved using the Save Op. Settings File option in this menu.   These settings will only be valid for the proper dialog, and can not be interchanged between operations.   Specifying improper operations files for a sequence could cause the sequence to fail.

Save Op. Settings File...

This option allows you to save the current operation settings.   The file will contain all of the trend and settings information.   These files can be altered using a text editor, but the addition of irrelevant or incorrect data in an edited file can cause the operation settings file to not load.   Operation Settings files can be used in lists to specify various settings for multiple operation animations.   You also have the option of simply saving the operation settings for future use.   These settings can be retrieved with the Load Op. Settings File option in this menu.

Show Operation Controls

This control, when selected, will display all of the control dialogs for the various operations in F/x.   You also have the option of not viewing the dialogs.   Using the icon scroll buttons, that are to the right of the icon tool bar,   will allow you to scroll through the operations without seeing the controls for each operation.   The controls will be available by selecting this control or by simply clicking on any of the operation icons.

Execute Operation

This control, when selected, will execute the current operation in the last area selection that was made using the current operation settings.

Section 5.1.8 The View Menu

Open Another View...

Opening another view will create a new view window into the same image.   This means that all changes made to one view will be reflected in both, regardless of the view that the changes are made to.   This differs from cloned images in that clones are independent of changes made to the parent after cloning.   Opening another view on an image allows you to zoom into an area, make a change or apply an effect, and see how it looks both zoomed and unzoomed.   You may open as many views on the same image as you like, but new view will require the same amount of memory as the original image.   Each view will be numbered sequentially with the original being number one.   If you close the views, you will only be asked if you wish to save the original.

You also have the option of opening a view with the image's <u>alpha channel</u> in the view.   Doing this will allow you to alter an alpha channel and an image at the same time.   Alpha channels can be altered using the Alpha Channel controls in the Settings menu.

Display Alpha View

This control will place an alpha channel into the image view of the image selected.   This allows you to alter the alpha channel without opening another view.   Alpha channels can be altered using the Alpha Channel controls in the Settings menu, and created using the Make Alpha operation.

Play AVI...

This option will play any AVI animation file that was just created using the Time Line, or WinImages:morph.   The AVI will automatically be opened by F/x, but must be closed by the user.   This option will only play AVI files.   If you would like to animate any other file type in the program, you should select the play option on the filmstrip.

Image Information...

This panel displays image information about the current views.   This information includes the image name, <u>pixel</u> size, DPI, size (inches), size (millimeters), source file, image format or file type, bit depth, the parent image, and Alpha channel if it exists.

Change Image Information...

This dialog allows you to alter the Name, DPI setting, Parent Image, and if the image has an alpha channel for all of the current images.   These changes are only temporary, and will be lost if the image is not saved.   An image can be changed as many times as you like.

Section 5.1.9 The Help Menu

About WinImages:F/x...

This selection will display the current version number of WinImages:F/x and the Technical Support number.   Black Belt Systems Technical Support office is open from 9 - 11:45 am and 1:15 - 5 PM Mountain Standard Time (-7 UCT). You MUST be registered to receive technical support.

Getting Started...

This will access the Getting Started section of the manual.   This section contains a brief tutorial to introduce new users to WinImages:F/x.

Display Quality...

This will access the Display Quality section of the manual.   This section contains information on displays and display quality issues.

Keystrokes...

This will access Section 5.8 in the documentation.   This section contains a complete listing of all available program keystrokes.

Manual...

This will access the main Table of Contents for the WinImages:F/x help manual.

System Information and Memory Info...

This panel contains information about your system and current memory usage.   The system info includes your CPU type, Math Co-processor, Windows mode information, and the number of processors.   The memory information tells you the amount of total memory, free memory, and the largest free block of memory.
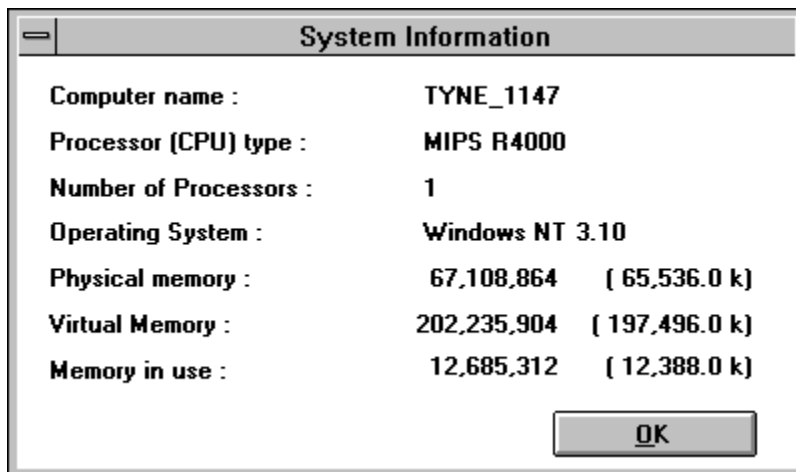
An example System Information panel

Section 5.2 Area Tools

Click on the specific Area Selection Tool for detailed help.

The Area Selection Tool Box contains all of the area selection modes and modifiers for the program.   An area select defines where the operation will occur.   F/x's area selection method can work in one of two ways:

Method 1 - Immediate Painting Method:

1. Select an area selection method (i.e., ellipse)

2. Select the effect (this can also be done prior to selecting the area selection   tool)

3. Alter the settings of the operation to your own specifications

4. Select the area on the image you are working with

5. You may now select to repeat the operation with the same area selection tool or a new tool based on your specific needs.

These same basic guidelines can be used for animation sequences as well.   For an animation sequence you would:

1. Select an operation by clicking and holding the left mouse button while over its icon.   Drag this icon to the Time Line, and place it in the desired frame location.   This technique of selecting and placing the operation in the Time Line is known as <u>Drag and Drop</u>.

2. Select the area selection for the operation using the same Drag and Drop method.

3. Choose the appropriate settings for this operation (see the <u>Time Line</u> section for more information).

4. Select Generate to create the animation.

Method 2 - Draw First Method:

1. Select an area selection method (i.e., ellipse)

2. Select the area on the image that you are working with (the area will appear as a dashed marquee outlining the selected region)

3.　　　Alter the area selection to best suit your needs (this is explained in greater detail below)

4.　　　Select the operation that you would like to apply to the current area selection by left clicking the mouse on the operation's icon.   F/x will automatically apply the operation with the current settings in the specified region. These settings can be changed prior to application by right clicking on the operation icon, and then altering the settings to the desired values.   After the proper values have been set, you may left click on the icon to carry out the operation in the selected region.

5.　　　A new operation can then be applied to the same region by left clicking on the operation icon, or a new are can be selected by following the steps above for each new area.

WinImages:F/x uses a modal area selection method.   This means that every area selection tool is maintained as the current mode until changed by the user.   An area selection mode or modifier is selected by left clicking on the desired mode's icon.   This will cause the icon to look like it has been pressed into the tool box.   At this point all area selections made on any image view will use the selected area mode and any associated modifiers.   Some area selection modes have specific settings associated with them (i.e. Rounded Rectangle).   These extra settings or controls can be accessed through the Area pull down menu, or by right clicking over the area selection mode's icon. This will cause F/x to bring up the appropriate controls for that area mode.   After you have made the desired changes, you may select the Ok button, and then continue making area selections.

Each of the area selection modes is used in the same relative manner.   For most of the area selection methods the left mouse button sizes the area and the left and right   mouse buttons pressed together move the area select.   Both Working Methods (Immediate Painting and Draw First) can have area selections add or subtracted from the original area.   Areas may be added by pressing the SHIFT key while making the area selection, and areas may be subtracted from the area selection by pressing the CTRL key while making the area selection.   This allows you the greatest amount of freedom in creating complex area selections in an image.

There are two types of area selection devices in F/x.   The first is an area selection tool or mode.   The area selection tools allow you to specify where the current operation is to be applied.   These tools include: Freehand,   Polygon, IShapes, Rectangle, Rounded Rectangle, Ellipse, Polyarc, Spline, Numeric Rectangle, Color Wand, Bezier Curve, and the Entire Image.   These tools can be altered through use of the area selection modifiers.   The modifiers are: Color Key, Splatter, Exclusive Or, Intersection, Union, Hold Aspect Square, Exclude or Complement, and Hold Aspect to Image (Action or Source).   These modifiers can be applied to the various tools to create new and unusual areas for application of the many operations.

Area Selections and Transparency:

F/x allows you to specify a specific transparency or <u>alpha channel</u> for each area selection in addition to the image's alpha channel.   The transparency can be set prior to making the area selection, or by editing the transparency values in the **Area Selection Detail** dialog if the area has already been placed into the time line.   The transparency dialog can be accessed prior to making an area selection by pressing the F3 key, or by selecting the **Transparency Controls** option from the **Area** pull down menu.   The sections below discuss the various transparency dialog controls, and their effect on an area selection.

The Transparency controls are used to specify the amount of transparency and the edge blending level for an area selection.   The Transparency is the amount that a source, alpha channel, or even an effect will **show through** the current or action image.   The edge blending percentage is the amount of allowable blending on the edge of the area select.

The Transparency level slider allows you to specify the transparency as a value that ranges between 0 and 255.   A setting of 0 will result in the effect being completely transparent, and a setting of 255 will make the effect opaque. The specified transparency level can be applied to **all** of the effects in F/x.

The Edge Blending control allows you to specify the percentage value of the entire area select that is to be used for edge blending.   The control can range from 0% to 100%, and effects the horizontal slope of the graph.   A setting of 0% will result in there being no edge blending, and a setting of 100% will result in an edge blend that extends from the edge of the area select to the center.   You can also perform an anti-aliasing operation by setting this control to 1%.   This setting will not perform a true edge blend.

There are several preset edge blending levels.   These presets are: **Flat, Soft Edges, Broad Edge Fade,** and **Conical Fade.**   The Flat preset has an edge blending percentage of 0% which will simply place the effect in the selected area with no blending.   Soft Edges will perform an anti-aliasing at the edge of the area select.   The Broad Edge Fade has an edge blending level of 50% that produces a nice fading effect.   Conical Fade has 100% edge blending.

This dialog also contains a control to alter the width of the area selection.   This means that you can specify exactly where the edge blending is to begin.   The control ranges from 0 to 100%, and effects the width of the transparency graph.   For example, a setting of 50% would result in the edge blending beginning 50% into the area selection.   It is important to remember that image information outside of this radius will be lost.

There are also trend graphs for each of these transparency modifiers.   Setting the trends for an operations will allow you to create effects that fade in and then fade out or even transitions from one image to another.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu. Click Here to view further information on trends.

Related Topics:

Section 5.2.1 - The Freehand Tool

Freehand:

The freehand area selection tool allows you to select a free form area to apply the selected operation to.   The area is selected by holding down the left mouse button and drawing the desired region.   After the freehand area is set to the desired shape, release the left mouse button.   At this time the selected operation will be performed on the specified freehand area.   The area can be repositioned by pressing both the left and right mouse buttons while drawing.   After the freehand area is in the correct position you may continue drawing by releasing the right mouse button or close the shape by releasing both buttons.

See Also: Editing Area Selections

Section 5.2.2 - The Polygon Tool

Polygon:

The polygon area selection tool allows you to create multiple sided geometric figures as the area for application of the current operation. The left mouse button is used to create all of the sides except the final side.   The polygon is closed by simply pressing the right mouse button.   You may move the polygon at any time prior to closing it by pressing both the left and right mouse buttons at the same time.   Once you have repositioned the polygon, you may continue drawing sides or close the shape.   There is no limit to the number of sides for a polygon area selection.

See Also: Editing Area Selections

Section 5.2.3 - The I-shape Tool

I-shape:

IShapes are custom area selects ranging from the outline of North America to the skyline of London. The IShape area selection works like this:

(1) Select the IShape to be used by clicking on the Load IShape icon in the Tool Box.

(2) Select the IShape area selection tool.

(3) Use the left mouse button to size the shape, and both left and right mouse buttons to move the shape's position on the image.

(4) When the IShape is the proper size and in the proper position, release the left mouse button and the current operation will be applied to the selected area.

F/x also gives you the ability to create your own custom IShapes. The procedure is extremely simple. First, outline the area that you wish to be an IShape using one of the area selection tools (preferably polygon). For example, if you wanted to create an IShape of North America, you would use the polygon tool to trace the coastlines of the continent. After you have completed the shape, select the Save IShape option from the Area menu. After this has been selected you can then specify a name for your IShape and where it is to be stored. You can then call your new IShape at any time by selecting the Load IShape option from the Area menu, and specifying the proper name and path for the IShape. IShapes can also be loaded by right clicking over the IShape icon, and then selecting the desired IShape file.

It is important to remember that an IShape can not be created using the Color Wand or Color Keyed area modes because they are not bounded shapes. You may use any of the other area selection modes to create custom IShapes.

See Also: Editing Area Selections

Section 5.2.4 - The Rectangle Tool

Rectangle:

The rectangle area selection tool allows you to select rectangular regions for application of the current operation. The rectangle is sized by pressing the left mouse button, and is moved by pressing both the left and right mouse buttons.   When the left mouse button is released, the current selected operation will be performed in the rectangular area.

See Also: Editing Area Selections

Section 5.2.5 - The Rounded Rectangle Tool

Rounded Rectangle:

The Rounded Rectangle area selection mode allows you to create areas that vary from rectangular to ellipsoid.   The amount of roundness of the corners is set using the Area menu's Roundness control.   Selecting this will bring up the Rounded Rectangle Roundness control which contains a slide gadget that allows you to specify the roundness of the corners of the rectangle.   Setting the gadget to 0% will produce a rectangle, and setting the slide to 100% will produce an ellipse.   This dialog can also be accessed by pressing the right mouse button while over the Rounded Rectangle icon.   The Rounded Rectangle is sized using the left mouse button and its position is altered using both mouse buttons.   The current selected operation will be applied to the area when the left mouse button is released.

See Also: Editing Area Selections

Specifying the Roundness

Section 5.2.6 - The Ellipse Tool

 Ellipse:

The ellipse area selection tool allows you to draw an elliptical shape for the application of the current operation. The ellipse is sized using the left mouse button, and its position is manipulated by using both mouse buttons at the same time.   The operation will take place in the specified ellipsoid when the left mouse button is released.

See Also: Editing Area Selections

Section 5.2.7 - The Polyarc Tool

Polyarc:

The Polyarc area selection tool allows you to develop figures similar to polygons, but it will use arcs as the sides of the figure instead of line segments.   The polyarc is created by first selecting a starting point for the arc with the left mouse button.   Next, select the end of the arc using the left mouse button.   Now, alter the arc by pressing and holding the left mouse button and moving the mouse.   The apex of the arc can be placed by releasing the left mouse button.   These steps are used for all other sides except the final side.   The final side uses the right mouse button to close the shape and set the apex of the arc.   The polyarc can be moved at any time by pressing both the left and right mouse buttons together.   It is important to remember that the start of each arc, after the first, will be the end of the previous arc.

See Also: Editing Area Selections

Section 5.2.8 - The Spline Tool

Spline Curve:

The Spline Curve area selection mode allows you to create curved areas that use Bezier polynomials to produce a smoothly flowing curved region.   The spline curve is drawn using the left mouse button to specify the points, and the right mouse button to close the shape.   Holding down both the left and right mouse buttons allows you to reposition the spline shape.   You will find that a greater number of points will produce a smoother curve.

See Also: Editing Area Selections

Section 5.2.9 - The Bezier Curve Tool

 Bezier Curve:

The Bezier Curve area selection mode can be used to create complex curved regions in a few simple steps.   A Bezier curve is a tangential based spline curve.   This means that the curve from point one to point three (see diagram below) is based on a tangent to the original line.   Bezier curves have four separate control points.   The initial position, the end position, and two middle curvature points.   These two middle points determine the curvature between the initial and terminating points of the curve.   Below is a step by step guide to using the bezier tool.

1.   Select the Bezier Curve tool from the Tool Box.

2.   Move the cursor into one of the available image views .

3.   Press the left mouse button to place one end of the curve, and then drag the cursor. A line will stretch from the first point to the mouse position.   When the line is the length you want, release the left the mouse button.

4.   Click the left mouse button somewhere along the new line.   This will access the first control handle (Point 3). Drag the cursor away from the specified line.   You should notice that a curve will appear.   When the curve is the desired shape, press the left mouse button to place the third control point.

5.   Now, follow the procedure in step four to place and shape the 4th control point.   When the curve is in the desired position and shape. place the final control point with the left mouse button.   If you continue to draw with this tool on the current image, the curve will be continued from the second point specified (end of the line).   The bezier shape is closed by right clicking when specifying any point.   This can become confusing if you right click while specifying the 3rd or 4th points.   It is for this reason that we strongly suggest only closing a bezier on the first point.   This will automatically close the shape, and allow you to finish manipulating the last "side" of the curve. The diagram below shows an example bezier curve:
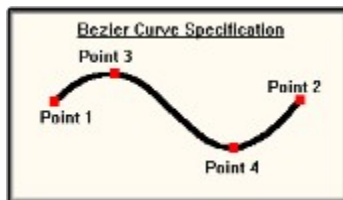
It is important to remember that the right mouse button can be used in conjunction with the left mouse button to move the entire curve.   Pressing the right mouse button without the left button pressed will signal F/x that you are finished drawing the curve.   F/x will then allow you to finish the curve (based on which step you are on), and then will perform the current operation in the specified region.

This area selection mode can be edited by selecting the Edit area selection icon from the area tool box.   Once you are in edit mode, no new points may be added to the Bezier curve.   You may only adjust the existing points position and the lines' curvature settings.   If you drag a point you will simply be moving the points position which can effect the overall curvature of the line.   If you would like to alter only that points curvature, press the **CTRL** key after right clicking on the desired point.   This will allow you to alter the curvature of that point without eliminating the overall curvature of the entire line.   If you would like to increase or decrease the curvature of an entire group of points, press the **Shift** key while editing the points.   By doing this, you will be editing the whole curve while maintaining the overall curvature of the line.   You also have the option of moving the curve while leaving the current points curvature angle.   This means that only the angle at the initial point will remain the same, and the curvature of the rest of the line will be altered.   The keystroke for this type of Bezier editing is CTRL and Shift after you have right clicked on the desired point.

Section 5.2.10 - The Numeric Rectangle Tool

Numeric Rectangle:

The Numeric Rectangle area selection mode allows you to select a rectangle of exact dimensions and location.   The Numeric Rectangle area selection dialog will appear when a view is clicked on.   The dialog allows you to set the Left, Right, Top, and Bottom dimensions of the rectangle.   All values are in pixels, and are measured from the top left corner of the view.

The only way to alter the size or position of the numeric rectangle is to alter the proper settings in the numeric rectangle dialog.   The dialog will appear when you click on an image.

Section 5.2.11 - The Color Wand Tool

Color Wand:

The Color Wand area selection mode allows you to select areas in the image that are similar in color to the area you clicked on.   This is similar to a flood fill operation in paint programs, but with 24 bits you need to specify a variance.   The specified variance will tell F/x the amount of difference that is allowed between the selected color and surrounding colors for carrying out the current operation.   The variance values can be specified for RGB or HSL by right clicking on the Color Wand icon in the tool box, or by selecting the Color Wand Controls... option from the Area menu.   This will present you a set of RGB and HSL variance sliders.   Once you have selected the desired <u>color space</u> (RGB or HSL), and their associated variances, select the Ok button to close the dialog.   The fill region will then be selected based on the Hue or RGB values of the selected color and the specified variance value. F/x also allows you to add and subtract flood regions with previous selected flood regions and other area selections. This is particularly useful in the **Draw First Working Method** for selecting complex regions in an image for the application of a single or multiple effects.   In the Draw First Working Method area are selected, and then an effect or filter is selected for application to that region.   The area that has been selected appears as a dashed outline.   In the case of the Color Wand tool, the area of similar colors will be outlined with the dashed marquee.   You could then apply any operation that you like to that area by left clicking on the operation icon.   This will cause F/x to carry out the operation in the highlighted region using the current operation settings.   These operation settings can be changed by right clicking on the operation icon.   This will bring up the operation control dialog.   You could at this point alter the settings, and then apply the effect to the selected region by left clicking on the operation icon. An area can be added to the first color wand area by holding down the shift key and then left clicking on the color in the image that you would like to add.   This can be done an unlimited number of times to add many portions of the image to the area selection.   F/x also gives you the option of removing areas from the area selection by holding down the CTRL key, and then left clicking on the region you would like to remove.   Once an area has been removed, no effect will happen in that portion of the image.

Section 5.2.12 - The Font Tool

A **The Font Area Selection Tool:**

The Font Area Selection Tool allows you to select a region that is actually text.   F/x will only use True Type fonts, and these are the only fonts that will appear in the requester.   The Font Style dialog allows you to specify the font, font style, and the starting size of the font.   The other controls in the dialog are not applicable. The font style dialog can also be accessed by right clicking on the Font area selection mode icon in the tool box.   The Font is placed in the image by clicking the image with the left mouse button.   This will bring up the font area selection control.   The control allows you to set the horizontal and vertical size, rotation, and shear amounts.   Each of these controls can be manipulated by simply clicking on the control with the right mouse button, and then dragging the control to the desired position.   The diagram below shows the position and function of all of the font controls.
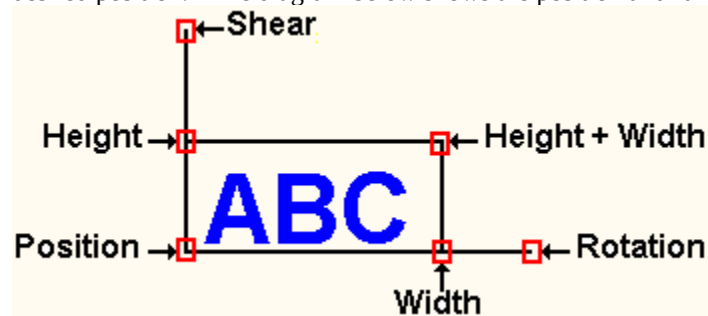
You may type in the text at any time, and continue to make adjustments to the area select.   Clicking the left mouse button, at any time, will cause the current operation to be carried out in the selected area.

See Also: Editing Area Selections

Font Style

Section 5.2.13 - The Entire Image Tool

 Entire Image:

The Entire area selection mode will apply the current operation to the entire image.   It is important to remember that all of the image will be altered by the selected operation.   Selecting the entire image as the area select can greatly increase the computational time needed to complete an operation.

Section 5.2.14 - Redo the Last Area Selection

Redo the Last Area Selection:

The Redo area selection mode allows you to apply an operation to the last area selected.   This mode will work with any of the other area selection tools and area selection modifiers.

It is important to remember that you can only Redo the last area selection that was made.   You also have the ability of using the Redo function on other images that are currently loaded.   F/x will automatically scale and position the last area selection on the new image when it is clicked on.

Section 5.2.15 - Edit the Last Area Selection

Edit Area Selection:

The **Edit** modifier allows you to alter the previous area select with the same area selection mode, or even with an alternate area selection method. This means that an elliptical area select could be edited with the rectangular area selection mode. You can not edit the Color Wand, Color Keyed, Numeric Rectangle, or Entire Image area selection modes. All of the other modes can be edited by using the original area selection method, or by using one of the other acceptable area selection modes.

The area select is edited by selecting the tool that you are going to edit with and the Edit button in the Area Selection Tool Box. After doing this, simply click in the view that is to be edited with the left mouse button. This will activate the edit tool. You will be presented with a series of control boxes that will appear on the corners, and in the center of original area select. (**Note:** The Polygon, Polyarc, Bezier Curve, and Spline tools are special in that they will have a control box for every point that was specified in the original area select.) The control boxes and the right mouse button can then be used to size the area select to the desired dimensions. Each area select will also contain a center control box for altering the relative position of the area select. Once the area select is in the proper position and the desired shape, press the left mouse button. Doing this will execute the current operation in the newly edited area select. It is important to remember that any editable area select can be edited using any of the other accepted area selection methods. This will give you full control over the areas that effects are to be applied to. You can also edit an area select in another view by following the above steps. (**Note:** If you are using the Draw First Method, then the control handles will appear around the selected region immediately.)

Section 5.2.16 - The Color Keyed Modifier

Color Keyed:

The Color Keyed area selection modifier allows you to select sub-regions in a selected area based upon the Hue value of the color you initially select using the **Color Sample** operation. This modifier requires the use of an area selection mode such as entire or rectangle. The color keyed selection is also based upon a variance that is set by you. A large variance means that a greater number of colors will be selected in the Area Selection. This tool differs from the Color Wand tool because the areas selected using the Color Keyed modifier can be discontinuous areas in the image.

Step by Step Use of the Color Keyed Area Selection Tool:

1 Select the **Color Sample** tool from the **Standard Adjustments** group, and an area selection tool (i.e., Rectangle).

2 Use an area selection tool (like freehand or rectangle) to **sample** the color that you wish to key on. (Note: Make sure that the **Make This the Key Color** option is selected.) The Color Sample dialog will then adjust its RGB and variance sliders to match the sampled color. In some cases you will be keying on a specific color in the area selection. In these cases you can access the Color Key Control dialog from the Area menu or by right clicking over the Color Key icon. This dialog allows you to specify a color and a specific variance for the key color.

3 Select the **Key Color...** option in the **Area** menu or right click on the Color Key icon in the tool box. The color that was sampled will now appear at the top of the Color Key Control dialog. You will now want to edit this color by selecting the **Set** button, or accept the color by doing nothing. You will also want to select a <u>color space</u> (RGB or HSL) and a variance setting. After you have made these adjustments, select the **Ok** button to confirm the color selection and variance values.

4 The Color Keyed region is now ready to be selected. This is done by selecting the Color Keyed area selection modifier, selecting the desired area selection mode (entire, rectangle, etc.), specifying the parameters for the desired operation, and then simply drawing the desired area on the image using that area modes specific controls. F/x will then create an area selection mask based on the selected region (boundary), selected color, color space (RGB or HSL), and the specified variance. The area can be fine tuned by altering the variance to increase or decrease the selected area.

This tool can be used with the **Exclusive OR, Exclude, Intersection,** and **Union** area selection modifiers to create extremely complex area selects based on color.

This area selection mode can be used in conjunction with the **Union** modifier to create multiple color keyed area selections. For example, you would like to create a mask that contains all of the Blue and Magenta in the image. This is done by first keying on the blue using the Entire area selection mode and the Color Key modifier set to a key color of Cyan. Next, you would need to select the **Union** modifier, and reset the **Key Color** controls to the desired Magenta color. The area select will be completed when you click on the image. The mask that is created will contain all of the Blue and Magenta from every portion of the image. Creating masks based on a single or multiple colors is sometimes called Blue Screening instead of Color Keying. This comes from the use of "Blue Screens" as color keys in video for creating effects like a space craft moving through a star field or the projection of weather maps for the evening news.

Keying on Color Space is handled differently from the other two keying modes. This method creates a color space based on the color that is specified by the user by pressing the Set button (for a specific color value), or by selecting the Sample Now option. Pressing the Sample Now button allows you to select from an image the colors you wish to key on. Once the key space is specified, you can then key on the colors in that space. The major difference

between this type of keying and range based keying is the accuracy of the color key.   With range based keying you can key on colors that you did not want to key on due to their RGB values.   With space keying you will only be keying on the colors you specify.

Another nice option related to space keying is the ability to add or remove a color/colors from the key space.   You also have the option of expanding or contracting the key space based on the existing key space.   This means that if your key space is made up of blues, you can increase the number of blues selected by the space by simply expanding the color space.

Each control in the dialog is described below in greater detail:

Key on: RGB, Hue, or Color Space: This control allows you to select the color key method that you will be using for the key selection.   You may select an RGB based key, and Hue based key, or a color space key. By selecting any of these options the dialog will automatically change the controls to the proper settings for that key mode.   Please review the documentation for further information on how color keying works for each of the methods.

Medium/High Quality: This control alters the quality of the color key space.   A medium quality space will produce fairly good results with low memory usage, and a high quality space will produce excellent results with higher memory requirements.   Remember, it is possible to alter from one quality of key space to the other, but their will be some minor reduction in quality the more times you switch quality to quality.   These options are only available of the Key on Color Space option is selected.

New/Add/Subtract: These controls allow you to specify how the next sample area will be used by the key color space.   You can select to Add the new colors to the current color space, subtract the new colors from the existing space, or create a new color space.   These options are only available if the Key on Color Space option is selected.

RGB/HSV Range: These two sets of slider gadgets allow you to specify the specific RGB or HSV ranges for a RGB or Hue based color key.   Please review the above documentation and the documentation in Color Key section for further details on how color ranges influence a color key area selection.   These options are only available if the Key on RGB or Key on Hue selection has been made.

Grow: The Grow slider allows you to increase the range of a color within the key color space.   For example, if you have a key space comprised entirely of pure blue (0,0,255) and you grow the color space by 10, your new space would include colors from (0,0,255) to (10,10,245).   It is important to remember to reset this control to 0 if you are going to make further adjustments to the color space.   If you do not, the program will continue to grow the color space by the specified value each time it is used.   This option is only available if the Key on Color Space option is selected.

Load/Save Space: These controls allow you to load or save a color space to file.   Once the color space has been saved, it can be recalled and used by selecting the load space button in this dialog.

**See Also:** Exclusive Or

Exclude

Color Wand

Intersection

Key Color

Key Range

Section 5.2.17 - The Splatter Modifier

Splatter:

The Splatter area selection modifier allows you to "randomly" apply an operation multiple times within a single area selection.   Since the Splatter operation is a modifier, an area selection method is also required.   For example, you might select the splatter modifier with the Entire area selection mode and the asterize operation to create a star field of similar asterizations.   The Splatter control dialog is accessed by right clicking on the splatter icon.   The Splatter Controls contain several settings that allow you to control the maximum size of one of the splatter sub-regions, the number of effects to be created within the original area, and a random seed number.   Each of these controls are explained below.
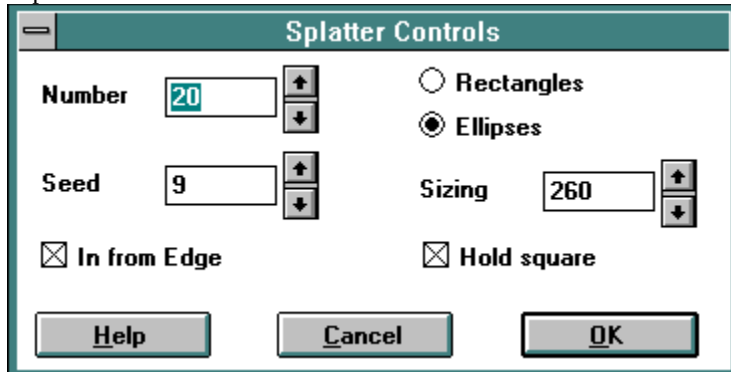
Splatter Controls:

Number: The number control allows you to specify the number of splatters or sub-regions that will be created in the specified area selection.   This value also determines how many operation will be performed in the specified splatter region.   Increasing this value will increase the number of random sized splatters, but it will also increase the amount of time need to generate the effect.

Seed: The seed number is a value between 0 and 32,000 that determines where and how the random splatters are created.   The seed values allow you to continue to have random splatters that are repeatable based on a specific seed number.   This means that seed number 5 will place splatters in exactly the same place for consecutive applications of the area as long as none of the other settings change.   This allows you to apply multiple effects to the same splatter regions.   For example, you can create a pseudo rain drop effect by applying a semi-transparent color fill, a radial wave, and a dome to the same splatter region.   Altering the seed value will also alter the random pattern of the previous seed.

In from Edge: This control, when selected, will cause all of the splatters to appear on the image.   If this control is not selected, then splatter regions can be placed off of the image.

Rectangles: The Rectangle setting will make all of the splatter sub-regions rectangular in shape.   These rectangles will vary in size based on the Sizing setting.

Ellipses: The Ellipse setting will make all of the splatter sub-regions elliptical in shape.   These ellipses will vary in size based on the Sizing setting.

Sizing: The Sizing control allows you to select the maximum possible size for a splatter region.   This value is only the maximum setting, and splatter regions can and will be smaller than this value.   The regions can have a random width and height, or can be forced to be square by selecting the Hold Square option.

Hold Square: The Hold Square option, when selected, will force the random width and height setting to be the same value.   This will make all splatter regions square or circular.   If this control is not selected, then the splatter sub-regions will be of random width and height.

Section 5.2.18 - Hold the Aspect Square

Hold Square: The Hold Aspect Square modifier will force the non-freehand area selection modes to a square aspect ratio.   This means that all rectangle will become squares and all ellipses will be circles based on the width and height of the area selected.   The modifier will only be active when the Hold Aspect Square icon is selected. This will only alter the Rectangle, Rounded Rectangle, Ellipse, and IShapes area selection modes.
See Also: Hold Aspect to Image

Section 5.2.19 - Hold Aspect to Action Image

 Hold to Aspect:

The Hold Aspect to Image modifier will force the non-freehand area selection modes to maintain the <u>aspect ratio</u> of the current image.   This modifier is only used with the Ellipse, IShapes, Rectangle, and Rounded Rectangle area selection modes.

See Also: <u>Hold Aspect Square</u>

Section 5.2.20 - Hold Aspect to Source Image

 Hold to Source:

The Hold Aspect to Image modifier will force the non-freehand area selection modes to maintain the <u>aspect ratio</u> of the current source image.   This is useful especially for composition operations where you would like to maintain the aspect ratio of the source image when it is placed into the action image.   This modifier is only used with the Ellipse, IShapes, Rectangle, and Rounded Rectangle area selection modes.

Section 5.2.21 - The Exclusive OR Modifier

Exclusive OR:
The Exclusive OR (also   called an area Complement) area selection modifier will XOR the newly selected region and the previous region.   The operation will occur where the first selection exists and the second does not, and where the second selection exists and the first does not.   Any areas where both the first and second selection exist or both do not exist will not have the current operation applied to them.

This modifier will only be active when the Exclusive OR button is selected, and it can be used in conjunction with both of the aspect modifiers and the exclude modifier.

See Also: Hold Aspect to Image

Hold Aspect Square

Intersection

Exclude

Union

Section 5.2.22 - The Intersection Modifier

 Intersection:

The Intersection area selection modifier will **AND** the newly selected area with the previous area.   The operation will only occur where both the first and second area selections are both defined.

See Also: Exclude

Exclusive OR
Hold Aspect to Image
Hold Aspect Square
Union

Section 5.2.23 - The Union Modifier

Union:

The Union area selection modifier will add the next region that is selected with previously selected region.   This is known as a Logical OR, and both the first and second region will have the current operation applied to them.

See Also: Exclude

Exclusive OR

Hold Aspect to Image

Hold Aspect Square

Intersection

Section 5.2.24 - The Exclude Modifier

 Exclude:

The exclude area selection modifier will select an area based on where the first and second area selections **do not** exist.   If this is the first area select, then only the current selected area will be excluded.   This modifier can be used in conjunction with all of the area selection modes and modifiers.

Section 5.3 Operations

The Lighting Group

Asterize	Annular	Refract	Shine

The Plasma Group

Lightning	Aura	Fire

The Motion Group

Motion Blur	Spiral Blur	Explode

The Geometric Group

Dome	Caricature	Swirl	Waves	Radial Wave	Turbulence	Surface Warp
Kaleidoscope	Perspective	Mirror	Rotate	Flip	Turn 90	

The Pattern Group

3-D Net	Random Tile	Pixelize	Cellular
Lined	Linear Fill	Concentric	Radiating	Outline

The Texture Group

Relief	Dither	Elevations	Sharpen	Blur
Remove	Shave	Apply Canvas	Add Texture	Contour

The Math Group

Derivative	Variance	Add Images	Subtract	Combine

The Collage Group

Clip	Merge	Key In	Place	Extend	Enlarge	Reduce

The Standard Group

| Color Fill | Colorize | Contrast | Brightness | Gamma |
| Balance | Histogram | Sample | Remap | Build Palette |

The Alpha Group

| Make Alpha | Key to Alpha | Invert Alpha | Harden Alpha |
| Soften Alpha | Shave Alpha | Clip Alpha | Make Area |

The Morph Group

| Distortion | Transition |

The Art Group

| Gouache | Oil Painting | Pseudo Color | False Color | Solarize | Blue Print |

The Photo Group

| Monochrome | Negative | Adjust Hue | Saturation | Adjust Value | Glare | Antique | Color Gel |

The Video Group

| NTSC Filter | Frame Rate | Film Grain |

The Attributes Group

| Aspect Ratio | DPI | Author Name | Annotation | Copyright |

Click on the operation group or a specific operation for detailed help.

WinImages:F/x has 94 classes of special effects and operations (with an almost limitless number of different configurations) in fifteen distinct categories.   These Categories are **Lighting, Plasma, Motion, Geometric, Pattern, Filter, Math, Collage, Standard, Alpha Channel, Morph, Art, Photo, Video, and Attributes Operations.**   There are several methods of selecting the categories and the specific operations.   The first method is to simply click on the operations icon.   You should notice that the name of the current operation appears at the far left of the *Status Bar* in the **Op** section.   Clicking on an icon will bring up that operation's specific controls.   Each operation has its own controls that are discussed in detail in the individual sections on the specific operations.   Once the controls have been altered to the desired settings, you may select the area that the operation is to be applied to.
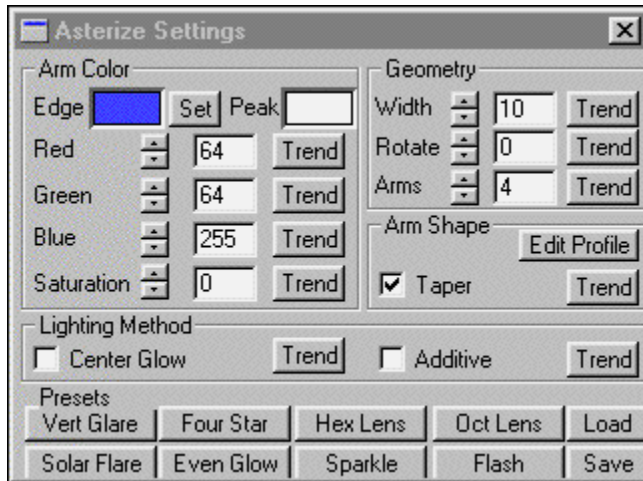
The operation icons can be moved by groups by clicking on the Category names.   This will shift the appropriate group all of the way to the left.   You can also use the left and right operation select buttons.   They are located between the operations and the Filmstrip icon.   These buttons will move and select one operation to the left or right. As you move through the operations, the controls will remain hidden until an operation is selected by clicking on it.

You also have the option of using the pull down menus to select an operation.   Simply click on **Operations** in the menu title bar.   This will bring up a menu with all of the categories.   Clicking on a specific category will bring up

a list of the available operations in that category.   The operation is then selected by simply clicking on it.

Section 5.3.1.1 - The Asterize Operation

The Asterize operation allows you to place a star-shaped element into the current image. This effect is nice for putting a **glint** in a person's eye, or a glare on a metallic surface. There are several controls in the asterize dialog that allow you to alter the color, rotation, number of arms, and several other aspects of an asterization. Below is the detailed documentation for all of the asterize controls.

Click on any of the functions for quick help or look below for detailed documentation.
The Controls:

Edit Profile: The **Edit Profile** control allows you to alter the arm profile of the asterize operation. The arm profile is the color and width of each arm in the asterization. The graph is read from left to right (Clockwise along the arm). The vertical axis of the graph is the **brightness** or color of each portion of the arm, and the horizontal axis determines the length of each portion of the arm. You will notice that as the graph increases vertically that the color of the arm is getting closer to the **peak color,** and that as the graph decreases vertically that the color of the arm is approaching the **edge color.** It is important to remember that the arm profile that is specified will be used for all of the arms in the asterism. The profile is altered by simply **drawing** the desired profile using the left mouse button. There are several tools to aid in the creation of new profiles.

 The directional arrows will move the curve the specified direction. This allows you to move the curve left, right, up, or down. Moving the curve up or down will flatten the top or bottom edge. Moving the curve left or right will simply shift the graph horizontally left or right. All changes to the arm profile can be saved using the **Save** option in the main asterize dialog.

 The enhance option will increase the **peaks** and **valleys** in the curve. If you click on the enhance option the graph will then be amplified at its low and high points.

 The smooth option will smooth any **rough edges** that are detected in the graph. This option will create a smoother graph with fewer rough edges.

 This option, when pressed, will make the graph have reflective symmetry. This means that any changes made to the left side of the graph are **reflected** to the right side of the graph. This option simplifies creating Asterizations that look smooth and even.

 The close button will close the arm profile. The newly created profile will then be used in the

next asterize operation, unless one of the preset asterize operations is selected first.   Selecting one of the presets will alter the profile to fit the preset's specifications.   This dialog can also be closed by double clicking on the System Menu box or by pressing **Alt F4.**

Trend: You will notice that most of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   You could have the rotation change from 0 to 180 degrees, have the Taper turn on and off, or even have the asterization change colors from red to blue.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   Variables that have multiple states (Saturation, Width, and Rotation) can be set to any of a number of values in the trend.   Variables that are either on or off (Taper, Center Glow, and Additive) can only have an on or off value in the trend.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Edge Color Preview Window: The Edge color preview window allows you to view the color of the edge of the asterization.   This color will change as the Red, Green, and Blue values are altered.   The edge color along with the **saturation** settings will determine the **Peak** color of the asterization.   As the RGB controls are altered the Edge color preview will be updated to reflect the changes.

Peak Color Preview Window: The Peak color preview allows you to view the color of the center of the asterization.   The peak color will be the edge color, but can be altered using the saturation control.   Increasing the saturation will cause the edge and peak colors to become similar.   If the saturation is set to 100% then the peak and the edge color will be the same.   A saturation value of zero will set the peak color to white.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Saturation: The saturation control allows you to adjust the amount of saturation applied to the edge color.   The value for saturation and the value for the edge color will determine the peak color.   Saturation is the perception received as more white light is added to a pure color.   At 0% saturation the peak color will be white, but as the saturation increases the peak color will become more and more similar to the edge color.   Then, at 100% saturation the edge and peak colors are the same.   The saturation value is set using the slide control or by entering the values. The saturation values can range from 0% to 100%.

Width: This control sets the width of the **center hot spot.** The center hot spot is center of the peak color areas of the asterization.   The width will also control when the arms will begin to taper, if the taper option is selected.   The width is measured as a percentage of the entire area selection.
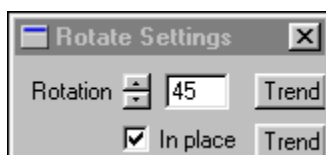
Rotate: This control allows you to set the rotation angle of the asterization.   The angle can range from 0 to 360 degrees, and the rotation angle is measured from vertical moving clockwise (please refer to the diagram on the left.).   The angle of rotation can be set using the slide gadget or by entering the appropriate value for the angle.

Arms: This control allows you to specify the number of arms that the asterization is to have.   You may specify between 1 and 100 arms for an asterization.   It is important to remember that **each** of the arms will follow the current arm profile.   The number of arms can be set using the slide gadget or by entering the appropriate value.

Center Glow: This control will allow you to turn the center glow effect on or off.   The diameter of the center glow is related to the **Width** setting.   If the Width control is set to 0% there will be no center glow, but if width is set to 100% the entire asterization will be covered be the center glow.   The center glow is enabled by clicking the center glow check box.

Additive: The additive option, when selected, will place the asterization into the image using no blending.   If the asterization is applied to the same area with additive on, then the edge color will become less and less saturated with each application.   If applied to the same area enough times the asterization would become white.   A non-additive asterization will be blended onto the image using the   edge and peak colors and the colors in the image itself.   This will give the asterization a **softer** look.

Taper: The taper option, when selected, will force each of the arms to taper.   The arms will taper based on the arm profile graph.   For example, with a square arm profile and taper selected each arm would gradually taper using the square arm profile.   If taper is not selected then the arms will follow the arm profile and not taper the ends.   The **Width** control allows you to set when the arms will begin to taper.   The taper option is selected by clicking on its check box.

Presets:

Vertical Glare: The Vertical Glare preset will produce an asterization with two vertically placed arms.   This effect is similar to what you see when moonlight is reflecting on water.   As with all of the presets, you can alter any of the controls that you like.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Four Star: This preset will produce a simple four armed star.   As with all of the presets, you can alter any of the controls that you like.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Hex Lens: The Hex Lens preset creates a six armed asterization.   This is similar to light reflecting of the edges of a hexagonal lens.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Oct Lens: This preset creates an eight armed asterization.   This is similar to light reflecting of the edges of an octagonal lens.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Solar Flare: This preset will produce a asterization with only one arm, but the arm profile is very random.   The effect is similar to a solar flare.   As with all of the presets, you can alter any of the controls that you like.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These setting files will have to be loaded to be used.

Even Glow: This asterism will produce a soft glowing effect.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Sparkle: This asterization is similar to the sparkle from a gem.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Flash: This asterization preset is similar to the flash of a camera or any other sudden, bright light source.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.
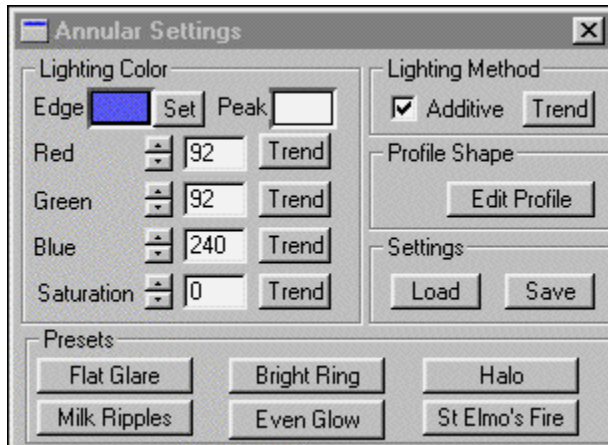
Load: This control allows you to load previously saved asterization settings files.

Save: This control allows you to save the current asterize settings files for later use.

See Also: <u>Asterize Tutorial</u>

Section 5.3.1.2 - The Annular Operation

The Annular operation allows you to create concentric rings that follow a pattern determined by the Radial Profile. Using the Radial Profile, and other controls, you can create effects ranging from Milk Ripples to St. Elmo's Fire. The controls in the Annular dialog allow you to alter the color, saturation, and radial profile of each annular effect that you create.   This operation is best suited for use with the ellipse area selection tool due to its circular nature.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Edit Profile: The Edit Profile control allows you to alter the radial profile of the annular operation.   The radial profile is the color and width of each ring in the annular effect.   The graph is read from left (center of the annular rings) to right (edge of the annular rings).   The vertical axis of the graph is the brightness or color of the ring, and the horizontal axis determines the number of rings and each rings width.   You will notice that as the graph increases vertically the color of the ring is getting closer to the peak color, and as the graph decreases vertically the color of the ring is approaching the edge color.   The profile is altered by simply drawing the desired profile using the left mouse button.   There are several tools to aid in the creation of new profiles.

The directional arrows will move the curve the specified direction.   This allows you to move the curve left, right, up, or down.   Moving the curve up or down will flatten the top or bottom edge.   Moving the curve left or right will simply shift the graph horizontally left or right.   All changes to the arm profile can be saved using the Save option in the main annular dialog.

The enhance option will increase the peaks and valleys in the curve.   If you click on the enhance option the graph will then be amplified at its low and high points.

The smooth option will smooth any rough edges that are detected in the graph.   This option will create a smoother graph with fewer rough edges.

This option, when pressed, will make the graph have reflective symmetry.   This means that any changes made to the left side of the graph are reflected to the right side of the graph.   This option simplifies creating "annularization" that look smooth and even.

The close button will close the radial profile.   The newly created profile will then be used in the next annular operation, unless one of the preset annular operations is selected first.   Selecting one of the presets will alter the profile to fit the preset's specifications.   This dialog can also be closed by double clicking on the System Menu box

or by pressing Alt F4.

Trend: You will notice that most of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   Variables that have multiple states (Saturation and the RGB sliders) can be set to any of a number of values in the trend.   Variables that are either on or off (Additive) can only have an on or off value in the trend.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Edge Color Preview Window: The Edge color preview window allows you to view the color of the edge of the annular effect.   This color will change as the Red, Green, and Blue values are altered.   The edge color along with the saturation settings will determine the Peak color of the annularization.   As the RGB controls are altered the Edge color preview will be updated to reflect the changes.

Peak Color Preview Window: The Peak color preview allows you to view the saturated peak color.   The peak color can be the edge color, or can be altered using the saturation control.   Increasing the saturation will cause the edge and peak colors to become similar.   If the saturation is set to 100% then the peak and the edge color will be the same.   A saturation value of zero will set the peak color to white.

Red: This slide gadget allows you to specify the Red component of the RGB value for the Edge color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the Edge color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the Edge color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Saturation: The saturation control allows you to adjust the amount of saturation applied to the edge color.   The value for saturation and the value for the edge color will determine the peak color.   Saturation is the perception received as more white light is added to a pure color.   At 0% saturation the peak color will be white, but as the saturation increases the peak color will become more and more similar to the edge color.   Then, at 100% saturation the edge and peak colors are the same.   The saturation value is set using the slide control or by entering the values. The saturation values can range from 0% to 100%.

Additive: The additive option, when selected, will place the annularization into the image using no blending.   If the annular effect is applied to the same area with additive on, then the edge color will become less and less saturated with each application.   If applied to the same area enough times the annularization would become white.   A non-additive annular effect will be blended onto the image using the   edge and peak colors and the colors in the image itself.   This will give the annular effect a softer look.

Presets:

Flat Glare: The Flat Glare preset creates an annular effect that has a flat radial arm profile, and a saturation value of 50%.   These settings will produce an even toned glare in the selected area.

Milk Ripples: The Milk Ripples preset uses a multiple ringed profile that has a decreasing amount of saturation in each ring.   This preset is similar to waves or ripples in a liquid medium.

Bright Ring: This preset will produce a bright ring that is almost entirely composed of the Peak color. The saturation is set to 0 to create the bright glare like effect in the ring.

Even Glow: This preset will produce a soft glowing effect that slowly gradients from the Peak to the Edge color. This preset has a linearly decreasing radial profile.

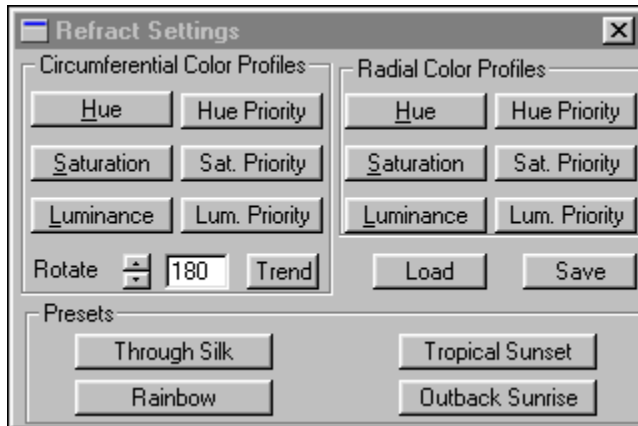**Halo:** The Halo preset is similar to the Bright Ring preset, except that the edges of the halo are very smooth.

St. Elmo's Fire: This preset will give a soft glowing effect that is similar to the natural phenomena of St. Elmo's Fire.

Load: This tool allows you to load previously saved sets of annular settings. These settings are saved using the Save option on this dialog. All of the settings will be loaded when a file is selected.

Save: This tool allows you to save the current annular settings into an annular settings file. This file can then be loaded at a later time to reproduce the current annular effect. All of the settings in the annular dialog will be saved into the settings file.

Section 5.3.1.3 - The Refract Operation

The Refract operation uses both radial and circumferential profiles to create effects that are similar to refractions and interference patterns.   Refraction is the bending of light as it passes from one medium to another.   Refraction of light is a very common occurrence in nature, and can be seen in rainbows, sunrises, sunsets, and glass prisms.   The Refract effect can also be used to create interference patterns such as light passing through silk.   The best way to become familiar with this function is to read the descriptions of the controls below, and then apply and view the profiles of one of the provided presets.   Doing this will help you to better visualize circumferential and radial change.   This operation is best suited for use with the Ellipse area selection tool.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Circumferential H,S,L Profiles: The Circumferential profiles allow you to specify the Hue, Saturation, and Luminance along the circumference of the selected area.   The Hue profile is used to specify the color to be placed circumferentially.   Hue can be thought of as the **basic** colors of the rainbow.   Other colors are created by altering the Saturation and Luminosity.   The hue can range from 0 to 360 degrees.   The vertical axis of the Hue trend is the Hue value, and the horizontal axis is the circumferential position measured counterclockwise from vertical.   The Saturation profile allows you to specify the purity of the current hue.   The Luminosity is the brightness of the current hue.   These settings are used in conjunction with the **Priority** profiles to create colors along the circumference of the selected area.   These colors can then be **mixed** with the settings of the radial colors to create refraction effects.   You will notice that the presets for the Tropical Sunset and Outback Sunrise are primarily Circumferential settings.

Each of the profiles contain tools for creating new profiles.   These tool are:

 The directional arrows will move the curve the specified direction.   This allows you to move the

curve left, right, up, or down.   Moving the curve up or down will flatten the top or bottom edge.   Moving the curve left or right will simply shift the graph horizontally left or right.   All changes to the arm profile can be saved using the **Save** option in the main asterize dialog.

   The enhance option will increase the **peaks** and **valleys** in the curve.   If you click on the enhance option the graph will then be amplified at its low and high points.

 The smooth option will smooth any **rough** edges that are detected in the graph.   This option will create a smoother graph with fewer rough edges.

   This option, when pressed, will make the graph have reflective symmetry.   This means that any changes made to the left side of the graph are **reflected** to the right side of the graph.   This option simplifies creating annularization that look smooth and even.

 The close button will close the arm profile.   The newly created profile will then be used in the next annular operation, unless one of the preset annular operations is selected first.   Selecting one of the presets will alter the profile to fit the preset's specifications.   This dialog can also be closed by double clicking on the System Menu box or by pressing **Alt F4**.

Circumferential H,S,L Priority Profiles: The priority profile allows you to specify which component (circumferential or radial) will have the priority at a given position.   Setting the Circumferential Hue Priority to the very top of the profile graph means that only the Hue settings of the Circumferential Hue profile will be used.   The same is true for Saturation and Luminosity.   At this time you may wish to view the profile and priority profile graphs of one of the presets.

Radial H,S,L Profiles: The Radial profiles allow you to specify the Hue, Saturation, and Luminance along the radius of the selected area.   The Hue profile is used to specify the color to be placed radially.   Hue can be thought of as the **basic** colors of the rainbow.   Other colors are created by altering the Saturation and Luminosity.   The hue can range from 0 to 360 degrees.   The vertical axis of the Hue trend is the Hue value, and the horizontal axis is the radial position measured from the center of the area select to the edge.   The Saturation profile allows you to specify the purity of the current hue.   The Luminosity is the brightness of the current hue.   These settings are used in conjunction with the **Priority** profiles to create colors along the radius of the selected area.   These colors can then be **mixed** with the settings of the circumferential colors to create refraction effects.   You will notice that the preset for the Rainbow is primarily Radial settings.

Radial H,S,L Priority Profiles: The priority profile allows you to specify which component (radial or circumferential) will have the priority at a given position.   Setting the Radial Hue Priority to the very top of the profile graph means that only the Hue settings of the Radial Hue profile will be used.   The same is true for Saturation and Luminosity.   At this time you may wish to view the profile and priority profile graphs of one of the presets.

 Rotate: This control allows you to set the rotation angle of the refraction.   The angle can range from 0 to 360 degrees, and the rotation angle is measured from vertical moving clockwise (please refer to the diagram on the left.). The angle of rotation can be set using the slide gadget or by entering the appropriate value for the angle.

Presets:

Through Silk: The Through Silk preset creates a simulation of the interference pattern created by holding a piece of

silk up to a bright light source.   This preset uses mainly circumferential changes.

Rainbow: This preset will create a rainbow effect in the selected area.   This preset is best suited for use with a dark blue to black background color.   This preset uses mainly radial changes.

Tropical Sunset: The Tropical Sunset preset creates a mainly circumferential refraction that is similar to a sunset in the tropics.   This preset is best suited for use with a dark blue to black background color.
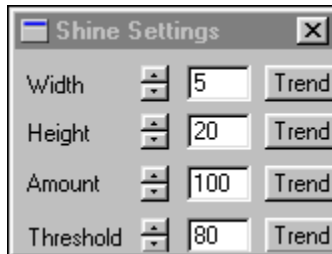
Outback Sunrise: This preset creates a refraction effect that is similar to a sunrise in the Australian Outback.   This preset is best suited for use with a dark blue to black background color.

Load: This control allows you to load a previously saved set of Refract settings.   The settings file will contain all of the trend and profile information.

Save: The Save control allows you to save the current settings for later use.   All of the profiles and trend information will be saved into the settings file.

Section 5.3.1.4 - The Shine Operation

The **Shine** operation is similar to a simple four armed asterization, but the effect will occur everywhere in the area selection that the specified **threshold** is met or exceeded.   This operation is similar to the effect a severe star lens on a camera would have in very bright lighting.   You have control over the width, height, amount, and the threshold value.

Shine Settings	☒
Width	⬍ 5	Trend
Height	⬍ 20	Trend
Amount	⬍ 100	Trend
Threshold	⬍ 80	Trend

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Width: The width control allows you to specify the horizontal dimension of each shine The shine effect will occur everywhere the image brightness is equal to or greater than the specified threshold.   The width can range from 0 to 50 pixels wide.   Setting this control to zero will cause there to be no shine horizontally.

Height: The height control alters the vertical dimension of each shine.   The shine effect will occur everywhere the image brightness is equal to or greater than the specified threshold.   The height can range from 0 to 50 pixels wide. Setting this control to zero will cause there to be no shine vertically.

Amount: This control allows you to specify the amount of the shine effect.   Setting an amount of 0% will cause there to be no effect on the image.   An amount of 100% will cause the maximum amount of the shine effect for the current threshold setting.

Threshold: The threshold value determines where the shine effect will occur in the selected area.   The value that you specify will be compared with all of the brightness values in the selected area.   Those brightness values that are greater than or equal to the threshold will have the shine effect applied to them.   Those brightness values that are below the specified threshold value will not be altered.   The threshold value can range from 0 to 100.   A threshold value of 100 will cause no change to the image.
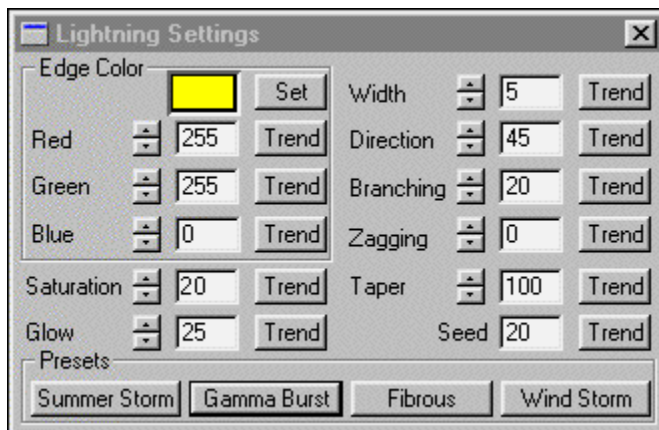
Section 5.3.2.1 - The Lightning Operation

The Lightning operation allows you to create an element in the specified area that is similar to certain types of lightning strikes.   The lightning area can be specified in one of two ways:

1.   Using the Freehand or polygon tool to draw a line in an image view.   The extents of the line will represent the starting and ending position of the lightning strike.   This allows you to actually "strike" objects in an image with lightning.   (**Note:** A line can be made with the polygon tool with a left click at the initial position, a left click at the termination point, and a right click to finish the area selection.)

2.   The other method is to use any of the area selection modes (except freehand) to specify a generalized area for the lightning strike.   In this case the lightning will go the direction of the Direction control in the dialog.   This is useful if you would like to use a completely random starting and ending position in the specified direction.

The Lightning operation uses fractal based mathematics to create a random lightning bolt that is repeatable based upon a particular seed value.   The seed values can range from 0 to 32,000, and can be used to produce an almost unlimited variety of lightning strikes.   It is important to remember that even though the seed value will make the lightning repeatable, altering the branching or zagging controls can completely change the lightning bolt.   If you find a lightning setting that is particularly useful to your work, we strongly suggest that you save those settings using the Save Op Settings option in the Operations menu.   By doing this you will be able to reload the specific lightning bolt, and use at a latter time.

The Lightning dialog offers you a wide range of controls including the width of the bolt, its direction, branching, zagging, the bolt's color, the saturation of the lightning bolt, and any "glow" that appears because of the lightning. Trending almost any of these parameters will create a vibrant animation that looks like a real lightning strike.   The example below demonstrates this point.   (**Note:** The animation below trends the lightning position, zagging amount, and branching of the lightning.   The time line that was used to create this animation can be found in the data directory under the name **lightn.tml**.)

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100

- 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Width: The width control is used to determine how wide the lightning bolt will be relative to the size of the original area selection.   This width specifies the maximum possible width for the main lightning bolt.   Any branches or sub-branches will always be smaller than this value and the branch above.   This prevents the lightning from having an extremely thin main bolt, and then very wide arms.   The width can range from a setting of   0 (small width) to 20 (large width) through use of the slide gadget, or it can be increased up to a value of 100 by entering the value in the provided text entry field.   In most cases a width of 20 will be more than adequate for all lightning bolts.   Altering this value can also alter where the bolt will occur with in the selected area.   Trending this value is one way of creating an "arcing" lightning bolt.

 Direction: The direction control allows you to specify where the "top and bottom" of the lightning bolt will appear.   The direction is measured as an angle value ranging from 0 to 360 degrees, with 0 and 360 being in the vertical up position.   All angle values in the program will move clockwise from vertical.   The diagram to the left demonstrates this point.   The start and position will be determined by the angle value, and the extents of the area selection.   If you are using the freehand or polygon tools to specify the start and end positions of a lightning bolt, then the furthest extents of the freehand or polygon line will be the starting and ending points of the bolt.   By using the freehand or polygon the direction control will automatically be ignored.

Branching: The branching control allows you to specify a percentage amount of branching along the main lightning bolt.   This control ranges from 0 (no branching) to 100 (many branches).   This allows you to create a wide range of lightning effects from single bolts to a plasma storm.   It is important to remember that changing this value will also change the lightning bolt pattern.   This can be put to good use by trending this variable over time to create a moving lightning bolt.

Seed: The Seed value allows you to specify a value for the fractal lightning bolt's "path".   These seed values can range from 0 to 32,000, which gives you an almost limitless number of different lightning patterns.   Each seed value is distinct, and no two seeds will repeat.   The seed values also allow you to create the same lightning bolt time after time.   IF you find a seed number and lightning setting that is appropriate for your work, we suggest that you save those settings by selecting the Save Op Settings option from the Operation menu.   This will save all of the various parameters associated with the lightning dialog.   It is important to remember that even though a seed value can produce the same lightning bolt twice, altering any of the other values will change the entire bolt.

Zagging: The Zagging control allows you to select how much the lightning bolt will deviate from its Direction angle value.   The zagging can occur in any direction, and effects all branches of the lightning bolt.   The zagging control ranges from 0 (no zagging) to 100 (maximum effect).   Increasing this value will increase the number of turns or bumps in the main bolt and any branches.

Edge Color: The Edge color preview window and RGB sliders allow you to view and alter the color of the edge of the lightning effect.   The edge color along with the saturation settings will determine the center color of the lightning effect.   As the saturation value is increased the center of the lightning bolt will get closer to the specified edge color.   At a saturation setting of 100, the entire bolt will be the specified edge color.   The edge color can be altered using the RGB sliders, or by selecting the Set button.   Pressing the Set button will access F/x's Color Selection dialog.   This dialog can be used to select a color for the edge of the lightning bolt.   After the desired color has been created, press the Ok button to exit the dialog.

Saturation: The Saturation value controls how the lightning bolt will be colored.   The saturation value can range
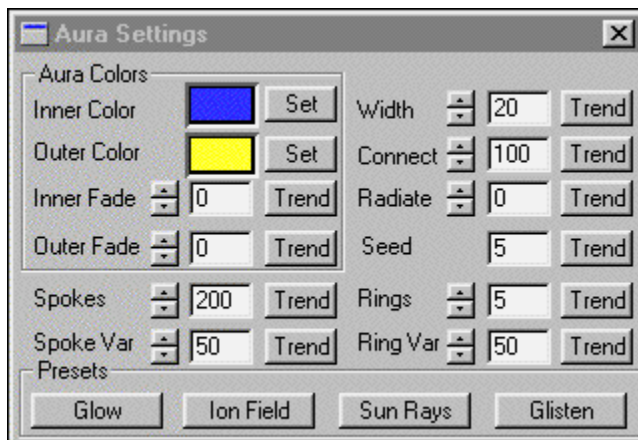
from 0 (white) to 100 (completely edge color).   A setting of zero saturation will result in an almost pure white bolt, and a setting of 100 will result in a bolt that is the same color as the edge color setting.   As the saturation increases, then the color that was selected as the edge color will become more visible in the bolt.   The increase occurs from the edge of the bolt inward.

Glow: The Glow setting allows you to select how much "aura" or surrounding light that the lightning bolt will produce.   Real lightning will produce a glowing around it based on it brightness and any surrounding clouds.   We have tried to duplicate this effect by adding a glow to the edges of the main lightning bolt and some branches.   The glow value ranges from 0 (no glow) to 100 (maximum effect).   Increasing the glow amount will also increase the overall size of the lightning bolt.

Section 5.3.2.2 - The Aura Operation

The Aura operation will produce a glowing effect around the specified area selection.   This can be used to create a glowing text outline (like the anim below), or as an aura outline for an object or person.   It is important to remember that the aura outline will take place outside the area selection.   For example, the animation below used the font are selection tool to place the aura around the word WinImages.   The aura takes place completely outside the original area selection (the text).   The outline placement of the Aura effect also limits the Redo area selection mode to areas outside the aura effect.   If you would like to preview several auras, we suggest that you use the desired area selection mode, and the edit control after the initial area selection.   This will force F/x to place the actual area selection back in the view instead of the outline selection.

The Aura operation uses a random setting to create a shifting motion along the spokes and rings.   This gives   the glimmering effect that is seen in the animation.   These spokes and rings can vary in size, position, number, and intensity.   You can control the color of the inner and outer aura ring, the color intensity, the number of rings and spokes, and the width of the outline.   It is important to remember that this operation can take a large amount of time to generate, and increasing the width value will also increase the necessary generation time.

Click on any of the functions for quick help or look below for detailed documentation.

Play Example Animation

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Width: The Width control allows you to select the width of the aura around the specified area selection.   This width is measured as a percentage of the original area selection, but it is placed completely outside the area selection.   This means that the area selection will serve only as the outline for the effect.   This value can range from a width of 0 percent (no effect), to a width of 100 percent which would be a width based on the area selection's total area.   Increasing this value will also increase the amount of time required to complete the operation.

Connect: This control allows you to alter the amount of connectability between the spokes and rings in the aura.   The setting ranges from 0 (no connection between spokes and rings) to 100 (all spokes and rings are connected).

The best way to demonstrate this point is to look at two of the preset operations, and how they use the connect option to achieve different looking auras.   The Glow and Sun Rays presets use the connect option at its two extents (all connected and all separated).   The Glow preset uses a Connect setting of 100 so that the spokes and rings appear as one cohesive stream or aura around the selected area.   This can also be seen in the Glisten preset which uses a connect setting of 90.   You should notice that this preset will have some spokes that are not connected with the rest of the spokes.   The Sun Rays preset takes the opposite extreme by setting connect to 0.   This results in all of the spokes appearing as separate rays.   If you were to increase the connect setting you would increase the number of rays that are connected.   It is important to remember that spokes and rings will be connected together regardless of the size differences created by the Spoke and Ring Variance controls.

Radiate: This option controls how the rings and spokes move over time in an animation, or their initial position in a still image.   This value, like all rotational values in F/x, ranges from 0 to 360 degrees with 0 and 360 being the same value.   The primary use for this option is trending the radial movement of the aura.   By   doing this you can create a wide range of moving aura effects.   For example, trending this value for the Sun Rays preset will create a glimmering aura that radiates outward over a sequence of frames.   Please refer to the AVI example above to see an example of this effect.

Seed: The Seed value will determine how the spokes will be "randomly" placed around the specified area selection. These seed values can range from 0 to 32,000, which gives you an almost limitless number of different aura spoke patterns.   Each seed value is distinct, and no two seeds will repeat.   The seed values also allow you to create the same looking aura time after time.   If you find a seed number and aura setting that is appropriate for your work, we suggest that you save those settings by selecting the Save Op Settings option from the Operation menu.   This will save all of the various parameters associated with the aura dialog.   It is important to remember that even though a seed value can produce the same aura twice, altering any of the other values will change the entire look of the aura.

Spokes: The Spokes control is used to specify the number of   radial arms or spokes in the aura.   These radial arms can be set to all be the same size or height, or they can be set so that all of the spokes has a varied height based on the Spoke Variance setting.   The maximum arm height is equivalent to the total width setting.   The spokes will be placed around the specified area using the specified Seed Number, number of spokes, and the spoke variance. These values will determine how the spokes will appear around the specified area.   The Seed number will alter the position of each of the spokes, and the Spoke variance will determine the amount of varied heights around the area selection.

Spoke Variance: The Spoke Variance option allows you to alter the height of the spokes based on the total width and fade settings.   This value can range from a setting of 0 (no spoke length variance) to a setting of 100 (maximum amount of length variance from spoke to spoke.   Setting between these values will create a wide range of interesting patterns and undulations.   This control only describes the maximum amount of variance, not how the spokes will vary.   That determination is made based on the seed number.   Each seed number will produce a different spoke pattern and undulation.   You should experiment with various seed numbers if you do not like how the default values look.

Rings: The rings control allows you to specify the total number of aura rings.   It is important to note that these rings are not necessarily visible for all setting.   The rings are primarily seen in an animation sequence where the radiate option has been trended.   In those animations you will see slight undulation along the spokes.   This is caused by the rings radiating outward.   The total number of ring will determine how intense this undulation is.   The Ring Variance alters the size and spacing of the rings based on the current seed value.   The only time that specific rings are visible is when there are very few spokes (1or 2).   In these cases you will see each ring around the selected area.   The Glow preset uses a single ring and spoke to create a hazy glow around the specified area.

Ring Variance: This setting allows you to alter the amount of variance between the rings of the aura.   As stated

above, rings are not always visible in an aura.   In most cases the rings will only be visible when the Radiate Trend is set to radiate the aura from 0 to 360 degrees.   In those cases the rings will appear as the lateral undulation along the spokes.   The variance setting controls how varied those undulations are.   A setting of 0 means that each undulation has the same size and spacing based on the current seed number.   A setting of 100 will result in the greatest amount of variation between each rings size and spacing.   An example of this is the Sun Rays preset.   This preset shows a great deal of undulation along the spokes of the aura.

Inner Color: The Inner Color selection allows you to alter the color that appears just outside the specified area selection.   This color is set using the Color Selection dialog.   Click Here to view more information on this dialog.   The transparency of the inner color is controlled by the Inner Fade control.   This control sets how transparent the inner and outer colors appear.

Outer Color: The Outer Color selection allows you to alter the color that appears outside of the inner color around the area selection.   This color is set using the Color Selection dialog.   Click Here to view more information on this dialog.   The transparency of the outer color is controlled by the Outer Fade control.   This control sets how transparent the inner and outer colors appear.

Inner Fade: The Inner Fade control allows you to specify how the default aura transparency will be applied to the inner color.   The default setting is for both the inner and outer colors to have a ramped transparency.   This means that no color appears at either edge of the aura, but the color is completely visible in the center of the aura width.   Increasing this fade value will decrease this transparency amount.   This means that more and more color will become more opaque closer to the initial area selection.   A setting of 100 (maximum) will result in the inner color appearing fully opaque at the edge of the effect.   Increasing this value is one way of increasing the total visible amount of the effect.

Outer Fade: The Outer Fade control allows you to specify how the default aura transparency will be applied to the outer color.   The default setting is for both the inner and outer colors to have a ramped transparency.   This means that no color appears at either edge of the aura, but the color is completely visible in the center of the aura width.   Increasing this fade value will decrease this transparency amount.   This means that more and more color will become more opaque closer to outside edge of the aura width.   A setting of 100 (maximum) will result in the inner color appearing fully opaque at the edge of the aura width.   Increasing this value is one way of increasing the total visible amount of the effect.

Presets:

Glow: The Glow aura preset will produce a faint blue outline around the selected region.   This aura has only a single spoke and ring, so it appears as a translucent solid ring around the specified area.   This could be used to give a ghostly or ethereal appearance to an object or person.

Ion Field: The Ion Field preset uses a large number of connected spokes to create an effect that looks similar to an ionic or magnetic field.   Try trending the Radiate option with this preset to create a moving field around the selected area.

Sun Rays: The Sun Rays preset uses a large number of highly varied spokes to create a radiating aura similar to the glimmer or radiance of sun rays.   This preset also sets the Connect option to 0 which makes all of the spokes around the area appear un-connected.

Glisten: The glisten aura uses a large number of connected rings and spokes to create a glistening aura around the specified area.   Trending the Radiate parameter will create an undulating aura effect around the area selection.
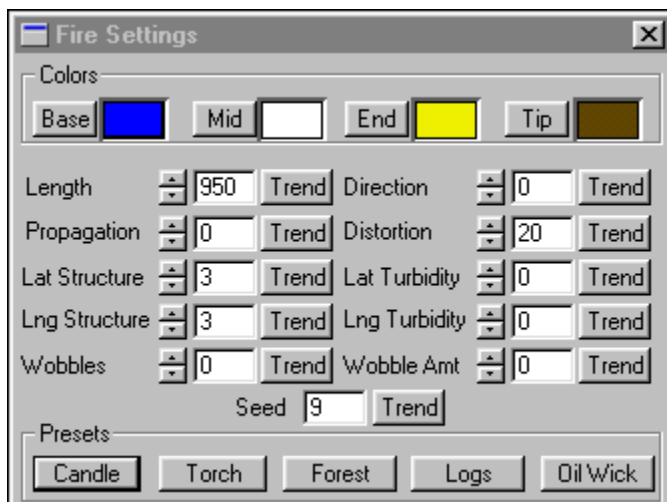
Section 5.3.2.3 - The Fire Operation

The Fire operation allows you to create a wide range of animated flames and fires.   The types of fires that you can create range from candle flame to a forest fire.   You can control the fire length, color, number of flames, distortion, and direction.   The fire can be placed at any angle value ranging from 0 to 360 degrees around the area selection. The flame or flames will always appear outside of the specified area selection in the direction set in the dialog.   The size of the flame is based upon the size of the area selection and the length parameter.   It is possible, with large area selections, to have flames that are completely off of the image.

This effect is particularly spectacular when animated.   The simplest way to animate the effect is to trend the propagation option.   This setting gives the flame effects their life by modulating the flame height, distortion, and wobbling based upon the see value.   Trending the effect from 0 to 360 degrees will create a looping flame effect that is very stunning.   The animation below shows a fire that fades slightly to show the text behind.   You should notice the distortion on the letters and how the flames actually appear to grow and shrink in size like a real flame.

Note: This effect can be applied with any area selection method, but the freehand area selection will give you the greatest amount of control over the flame size.

Click on any of the functions for quick help or look below for detailed documentation.

Play Example Animation

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Length: This control sets the total length of the fire flame or flames.   This length is determined by this setting, and the actual size of the area selection.   For example, if you select a large rectangle, then the flame will be sized according to the width of the rectangle, and the length setting.   All flames will appear outside of the specified region in the selected direction.   The length control can range from 0 (no effect) to 1000 (1000 times the length of the area selection.   Large length settings can create flames that appear completely off of the image.   If this occurs,

you can decrease the length setting, or decrease the overall size of the area selection.

Direction: The direction control allows you to set the direction that the flame will be generated in.   The angle value that is set here will determine the direction that the flame is applied to the area selection.   The direction is measured clockwise from vertical.   The diagram at the left further demonstrates how angle values are calculated in WinImages.   This setting will determine the direction that the flame will come off of the area selection.   The images below show a rectangular area selection with the flame operator in four separate directions: 0, 90, 180, and 270.   As you can see the 90 degree setting causes all off the flame to appear to the right of the area instead of on top of the area.   The same is true for the remainder of the direction settings.

Propagation: The propagation control allows you to alter a flame's position in the structure of the fire effect.   The propagation control is primarily used to cycle the flame effects motions.   This includes all of the motion parts of the flame - flame wobbles, distortion, and single flame position in the total fire.   For example, in the forest preset trending the propagation from 0 to 360 will cause all of these flame elements to cycle in a realistic manner - Flames will grow and shrink in size, the heat distortion will alter the background differently, and the flames will move based on the trended propagation.   It is important to remember that due to the large number of factor affecting a flame, a flame will not look the same in the middle of the propagation (180) as it did at the initial position (0).

Seed: The Seed value will determine how the flames will be "randomly" placed along the specified area selection in the desired direction.   These seed values can range from 0 to 32,000, which gives you an almost limitless number of different flame patterns.   Each seed value is distinct, and no two seeds will repeat.   The seed values also allow you to create the same looking flame or group of flames time after time.   If you find a seed number and aura setting that is appropriate for your work, we suggest that you save those settings by selecting the Save Op Settings option from the Operation menu.   This will save all of the various parameters associated with the aura dialog.   It is important to remember that even though a seed value can produce the same flame or flames twice, altering any of the other values will change the entire look of the effect.

Base, Mid, End, and Tip Color Selection: The Base, Mid, End and Tip colors determine the colors that will be used at the specified fame locations.   Each color is faded into the next at four percentage values 0%, 30%, 80%, and 100%.   This means that from 0 to 30% there is a fade of colors from the base color to the mid color, and then so on for each color up to the tip color.   The default settings are only a suggestion for that particular flame structure.   You can select any colors that you desire for the various flame components.   For example, you may like to try an all blue or green flame with the forest fire structure.   Each color is individually set by the Set button located to the right of the color preview.   Click Here to view more information on color selection in WinImages.

Lateral Structure: The Lateral Structure control sets how the flame or flames will look.   This control can simply be thought of as the total number of flames.   How these flames appear (separate or together) is based upon the Lateral Turbidity setting.   This setting defines how much motion and separation the flames have laterally.   You can have between 0 and 200 separate lateral structures or flames.   How these flames look is dependent on the number of longitudinal structure and the turbidity setting.   The best way to understand how lateral structures alter the look of a flame it to apply each of the preset values side by side, and then review their specific settings to see where the

changes occurred and how they effected the fire effect.

Lateral Turbidity: The Lateral Turbidity determines how distorted and separated the flames will appear.   The control itself determines if the flame will be treated as a single flame (candle preset) or as a number of flames (forest preset).   Turbidity values below 50 will cause the program to treat all of the lateral structures as a single flame.   Values of 50 or greater will cause each lateral structure (flame) to be treated individually.   This is very important to remember - especially for animations.   For example, decreasing the lateral turbidity (below 50) for the forest preset would cause the individual flames to move as a single flame similar to the logs preset.

Longitudinal Structure: The Longitudinal structures are subtle changes along the length of each flame element that make it appear more realistic.   This effect of this control is directly related to its turbidity setting.   If the turbidity is high, then this control can truly alter a flame to the point of distortion.   For this reason, all of the preset values use very few Longitudinal structures.   The control ranges from 0 (no structures) to 200.   You should notice that increasing this value will cause the flames to look more disjointed, and in many cases less realistic.

Longitudinal Turbidity: This control gives the Lateral structures their motion and structure along the length of the flame.   Increasing the turbidity will increase the amount of distortion along the flames length.   You should notice that most of the presets use the longitudinal preset in medium to high values with a low number of longitudinal structures.   This will give the fire the desired depth or realness while eliminating distortion.   The best way to understand how this control effects the flame, is to view a preset values, and then increase or decrease the turbidity and reapply the effect.   In most cases the default settings can help you to develop your own flame and fire effects.

Wobbles: This control can be used to set the number of "wobbles" or distortions in the flames. This differs from the Distortion amount in that Wobbles controls more of how the flame is distorted, instead of the background distortion.   You can have settings that range from 0 (no wobble) to 20 wobbles in a flame.   The size of the wobbles is determined by the amount setting.   Increasing the wobbles   and the wobble amount will also increase the overall distortion in the flames.   As with all of the other controls for this operation, you should look at the preset values as an initial basis for your understanding of a control.   After you have viewed how the control alters the effect, try altering a preset with new values to create new and unusual flame effects.

Wobble Amount: This control sets the size or intensity of the wobbles/distortions in a flame.   The amount can range from 0 (no wobbles) to 100 which allows for the greatest amount of variance from flame to flame in the fire.   Increasing this value to much can result in unwanted or un-needed distortions.   Please refer to the preset values for a better understanding of how this control alters the overall fire effect.

Distortion: The distortion setting allows you to set the amount of distortion caused by the "heat" of the flames.   The heat distortion occurs behind the flames, and is most visible and the edges of the flame, or if you decrease the transparency level of the effect (the Transparency controls are located in the Area menu).   The effect can range from a setting off 0 (no distortion) to 100 (maximum distortion).   This setting can help to give your flame or fire effect an even more realistic look.   For added heat waves, try the placing Waves operation's Heat Wave preset   above the flames.

Presets:

Candle: The Candle preset uses a small Lateral and Longitudinal Structure with no turbidity to create an effect similar to a burning candle.   Notice that the length setting is very high.   This gives the flame the long flame that is typical for many types of candles.   This means that you should use a very small area selection so that the entire flame appears on the image.

Torch: The Torch preset uses a small number of Lateral and Longitudinal structures with lots of turbidity to create separate flames in a torch like pattern.   These settings result in a small number of flames that vary greatly from one another in size and structure like flames from a burning torch.   The length setting for this preset is also a very high

setting.   This means that you should use a very small area selection so that the entire flame appears on the image.
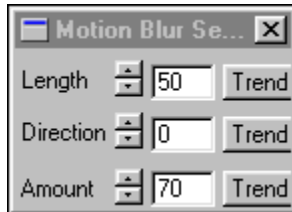
Forest: The Forest preset tries to emulate the look of a raging forest fire or other intense fires.   The flame contains a large number of flames and turbidity which gives it the look of a large blazing fire.   The animation example above uses the Forest preset with the propagation setting trended.

Logs: This is a more subtle version of the Forest preset.   There are fewer flames, and they are more connected together.   This is due to the fact that there are fewer longitudinal structures and a decreased turbidity.

Oil Wick: The Oil Wick preset uses setting similar to the Torch preset to emulate an oil wick burning.   You should notice that the oil wick contains the same number of lateral structures, but a decreased turbidity.   This gives it the appearance of a single flame instead of multiple small flames in the torch.

Section 5.3.3.1 - The Motion Blur Operation

The Motion Blur operation will create a blurred effect the length and direction that you specify.   This operation is used to achieve effects similar to turning wheels, moving heads, or any other motion that may cause a blurred look. It is important to remember that due to the large number of calculations, the Motion Blur operation is one of the slowest effects in this software.   This operation gives you control over the length of the blur, direction, and the amount of the effect.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

 Length: The **Length** control allows you to specify the length of the blur in pixels.   The length can range from 0 to 200 pixels in the specified direction.   Setting the length to 0 will result in no effect on the image.   It is important to remember that increasing the length, or any of the other settings, increases the amount of computational time needed

to complete the effect.   The Length can be set using the slide gadget or by entering the appropriate value in the provided text entry area.

Direction: The Direction control allows you to specify the direction that the motion blur is to be applied.   The direction is an angular value ranging from 0 to 360 degrees.   The angle is measured vertically from clockwise (please refer to the diagram on the left).   The Direction angle can be set using the provided slide gadget or manually entered into the text entry area.

Amount: This control allows you to set the Amount of the Motion Blur effect.   The Amount is a percentage value ranging from 0% to 100%.   A setting of 0% will result in no effect on the image.   A setting of 100% will result in the maximum amount of blurring in the selected area.   It is important to remember that increasing the Amount percentage will also increase the computational time for the effect.   The Amount can be set using the slide gadget or by entering the appropriate values in the provided text entry field.

Section 5.3.3.2 - The Spiral Blur Operation

The Spiral Blur operation will blur a region along a specified rotational path.   The blur may spiral clockwise or counterclockwise, and has a specified length.   It is important to remember that due to the nature of the Spiral Blur operation there is a large computational time needed to complete the effect.   This operation does require an <u>Undo Buffer</u>.   If you do not have an Undo buffer allocated, WinImages:F/x will automatically allocate one for you.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Radius: This control allows you to set the radius of the Spiral Blur effect.   The Radius is measured in pixels, from the edge of the area select.   The Radius can range from 0 to 200 pixels.   Setting this control to 0 will result in no change to the image.   It is important to remember that increasing the radius, or any of the other controls, also increases the computational time needed to complete the effect.   The Radius can be set using the slide gadget or by entering the appropriate value in the text entry area.

{bml **Rotation:** The Direction control allows you to set the rotation angle and the direction of the spiral blur.   The rotation angle is measured clockwise from vertical (please refer to the diagram on the left).   For example,   a rotation value of 90 degrees would result in a blur the started from o degrees (vertical) and moved clockwise to 90 degrees (horizontal).   Any negative setting will result in a blur that is counterclockwise.   The Direction can be set using the slide gadget or by entering the appropriate value in the provided text entry area.

Amount: The Amount setting dictates the intensity of the effect.   The Amount is a value ranging from 0% to 100%.   An Amount of 0% will result in no overall effect on the image.   It is important to remember that increasing the Amount, or any of the other settings, will require additional computational time.   The Amount can be altered using the slide gadget or by entering the appropriate values in the provided text entry field.

Section 5.3.3.3 - The Explode Operation

The Explode operation is another form of motion blur.   The area selected will explode a set length or implode (based on the Length Setting).   It is important to remember the Explode operation may require large amounts of computational time.   This operation requires an Undo Buffer.   If you do not have an Undo buffer allocated, WinImages:F/x will automatically allocate one for you.

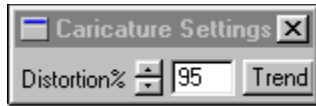*Click on any of the functions for quick help or look below for detailed documentation.*
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Length: The Length control allows you to set the length of the explode operation.   The length can range from 0 to 200 pixels.   If a negative length is specified the operation will be an Implode instead of an Explode.   It is important to remember that increasing the length may also increase the amount of computational time needed to complete the effect.   The length can be set using the slide gadget or by entering the appropriate value in the provided text entry region.

Amount: The Amount allows you to specify the intensity of the effect.   The amount can range from 0% to 100%. A setting of 0% will result in a null operation when applied to the image.   A setting of 100% will provide the maximum amount of explode or implode to the selected area.   It is important to remember that increasing the amount may also increase   the computational time needed to complete the effect.   The amount can be altered by using the slide gadget or by entering   the appropriate value in the provided text entry field.

Section 5.3.4.1 - The Dome Operation

The **Dome** operation will create a distortion that is similar to the effect of a convex lens.   The distortion amount can range from 0% to 500%.   This operation requires an Undo Buffer.   If you do not have an Undo buffer allocated, WinImages:F/x will automatically allocate one for you.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Distortion%: The **Distortion Percentage** sets the amount of magnification at the center of the selected area.   A setting of 500% (the maximum) would result in a 6x magnification in the center of the selected area.   The magnification level is then gradually reduced to 0% magnification at the edge of the area select.   A setting of 0% will result in no change to the image.   The Distortion Percentage can be increased by moving the slide gadget or by entering the proper value in the provided text entry area.

Section 5.3.4.2 - The Caricature Operation

The **Caricature** operation is similar to the distortion created by a concave lens.   The distortion amount can range from 0% to 300%.   This operation requires an Undo Buffer   If you do not have an Undo buffer allocated, WinImages:F/x will automatically allocate one for you.

Click on any of the functions for quick help or look below for detailed documentation.
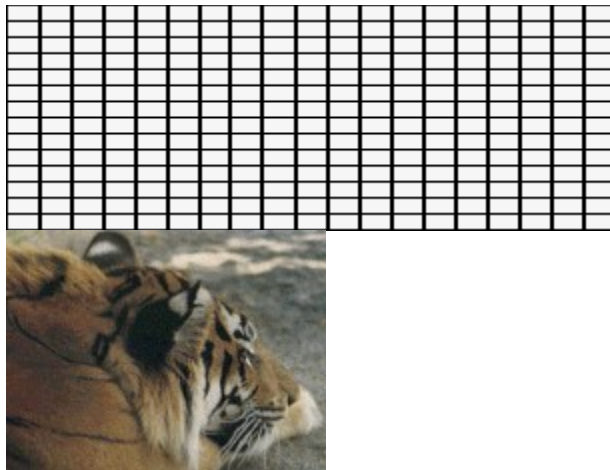
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.
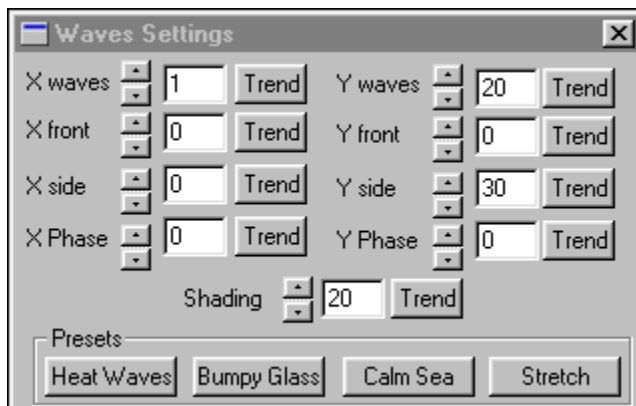

Distortion%: The **Distortion Percentage** sets the amount of de-magnification at the center of the selected area.   A setting of 300% (the maximum) would result in a -4x de-magnification in the center of the selected area.   A setting of 0% will result in no change to the image.   The Distortion Percentage can be increased by moving the slide gadget or by entering the proper value in the provided text entry area.

Section 5.3.4.3 - The Swirl Operation

The Swirl operation allows you to create a spinning effect in the image.   This effect is similar to swirling paint in a paint can, where the image is the paint in the can.   The swirl amount is an angle value ranging from -360 (counterclockwise rotation) to 360 (clockwise rotation).   A simple example of an animated effect using this operation is a trend that ranges from 0 to 360 degrees.   The resultant animation would swirl the image from 0 degrees (no swirl) to 360 degrees (maximum swirl).   Due to the nature of this effect, the Ellipse area selection method is suggested.   This operation requires an <u>Undo buffer</u>.   If you do not have one specified, F/x will create one for you.   You can specify your own Undo buffer by selecting the **Number of Undo Levels...** in the **Settings** pull down menu.

*Click on any of the functions for quick help or look below for detailed documentation.*

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Angle: The Angle control allows you to specify a rotation angle for the swirl effect.   This angle may range between -360 and 360 degrees, where negative values are counterclockwise and positive values are clockwise.   The rotation angle is measured clockwise from vertical (please refer to the diagram to the left).   It is important to remember that negative values always represent counterclockwise motion.   Specifying sequentially larger (or smaller) angle values will swirl the image further and further (dependent on sign).   In this operation settings of 0 and 360 will not result in the same change to the image.

Section 5.3.4.4 - The Waves Operation

The Waves operation allows you to create horizontal and vertical waves on the image.   These waves and effects are similar to the patterns found in nature, and every day objects. You can create effects like a heat wave, a fun house mirror, or a textured glass effect.   You can control the number of vertical and horizontal waves, direction and type of wave, and shading.   The waves will begin from the center of the area selection, therefore the center will have the greatest amount of distortion.   Since some of these concepts may be difficult to understand, there are four preset effects.   The detailed documentation below also contains example images based on an image of a grid so that you may see what is physically happening to the image, and an image of a tiger with the same effect applied to it.   This will help you to better understand the way that the control affects the image.   The initial grid image and tiger image look like this:

Due to the compute intensive nature of this operation, generation of this effect can be slow on machines without a math coprocessor.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames
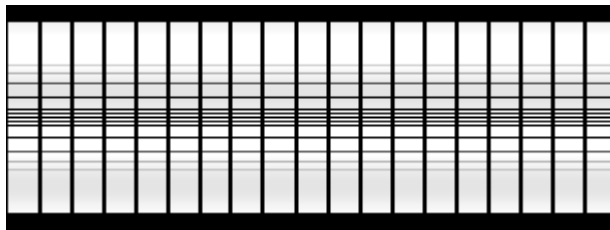
will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

X Waves: The X Waves control allows you to specify the total number of half waves in the selected area parallel to the x-axis of the image.   Waves can be made up of two half waves - a peak and a trough.   The peak is the maximum positive value, and the trough is the maximum negative value.   For this operation all waves can be considered to ideal sinusoidal waves.   This means that the maximum positive and negative values (peak and trough) are equal, and there is an equal distance between peaks and troughs.   Since a complete wave is made up of two half waves, all even values will produce a complete wave.   For example, a setting of 100 would result in a total of 50 peak/trough pairs parallel to the x axis.   All waves will begin from the center of the selected region.   This will cause that center point to have the greatest amount of distortion.   If this control is set to 1, no X Waves will be applied to the image.   A minimum setting of 2 half waves is required for application.

X Front: The X Front control allows you to specify the size of the waves that move parallel to the X axis.   This means that the move from the center of the area select to the area selection's top to bottom in a sinusoidal fashion. For example, the grid image below has a total of 5 X Front waves with a magnitude of 50.
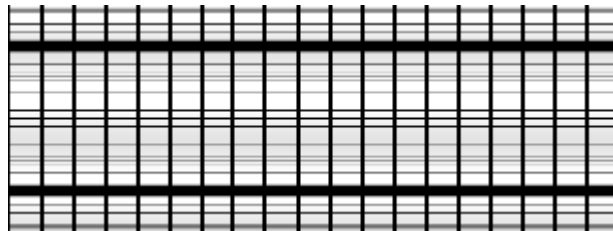
The area in the center of the image (which is also the center of the area selection) contains the greatest amount of distortion.   This control can range between -200 and 200, were negative values will reverse the wave.   This means that the maximum amount of distortion will occur towards the edge of the area selection instead of the center.   The diagram below demonstrates this point.

The value that you are specifying can also be thought of as the amplitude of the initial wave pulse.   Negative values are considered negative amplitudes (trough), and positive values are considered to be a positive initial amplitude
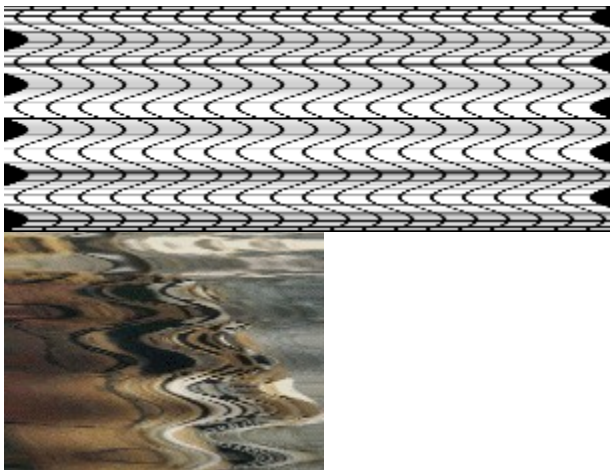
(peak).

X Side: The Side wave control is used to specify the amplitude of X waves that are perpendicular to the X axis. These waves are similar to compression waves.   The side waves are also sinusoidal in nature, and the amplitude of the waves will increase or decrease based on this setting.   The image below shows a grid that has had a total of 5 waves applied to it.   All of the waves in the image are Side waves.

Notice that this application of only side waves, to the entire image, caused portions of the original image to be "peeled up" from the background.   This explains the black regions on the left and right sides of the image.   This can be avoided by specifying lower amplitude waves, or by selecting region away from the edge of the image.   In some cases this peeling effect may be desired, and can be enhanced by increasing the number of waves or the amplitude (Side value).   The Side value can range from -200 to positive 200, and follows the same guidelines as the Front waves described in the previous section.

Application of both Front and Side waves can produce interesting and unusual wave patterns on your image.   The following image contains a total of 10 side and front waves applied at an amplitude of 50.


The overall effect is similar to the **Bumpy Glass** preset, but is more dramatic in effect.   Since F/x allows you to apply the front and side waves for the X and Y dimensions independently, the possibilities are nearly limitless. Some experimentation on your part may result in a stunning new effect.

X Phase: The phase control allows you to shift the position of the peaks and troughs of the X waves over the course of the animation.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   For example, if you were to trend the X Phase from 0 to 360 over the animation sequence, you would see the peaks and
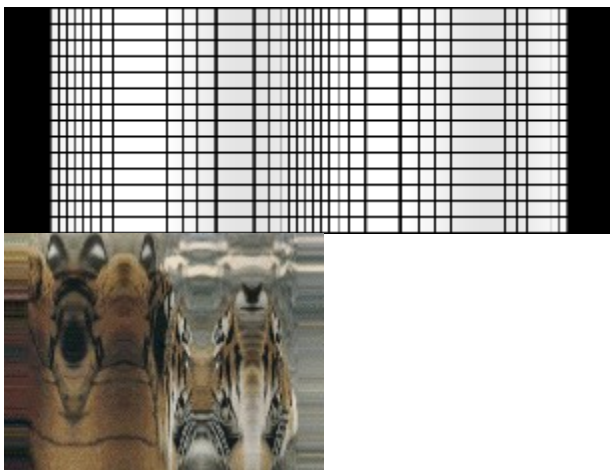
troughs of the waves slowly change positions.   This type of effect can be used to create undulating waves, or other motion based wave effects.   This will only cycle the X waves, the Y waves will not be altered by this control.

Y Waves: The Y Waves control allows you to specify the total number of half waves in the selected area parallel to the y-axis of the image.   Waves can be made up of two half waves, a peak and a trough.   The peak is the maximum positive value, and the trough is the maximum negative value.   For this operation all waves can be considered to ideal sinusoidal waves.   This means that the maximum positive and negative values (peak and trough) are equal, and there is an equal distance between peaks and troughs.   Since a complete wave is made up of two half waves, all even values will produce a complete wave.   For example, a setting of 100 would result in a total of 50 peak/trough pairs parallel to the y-axis.   All waves will begin from the center of the selected region.   This will cause that center point to have the greatest amount of distortion.   If this control is set to 1, no Y Waves will be applied to the image. A minimum setting of 2 half waves is required for application.

Y Front: The Y Front control allows you to specify the size of the waves that move parallel to the Y axis.   This means that the move from the center of the area select to the area selection's top to bottom in a sinusoidal fashion. For example, the grid image below has a total of 5 Y Front waves with a magnitude of 50.
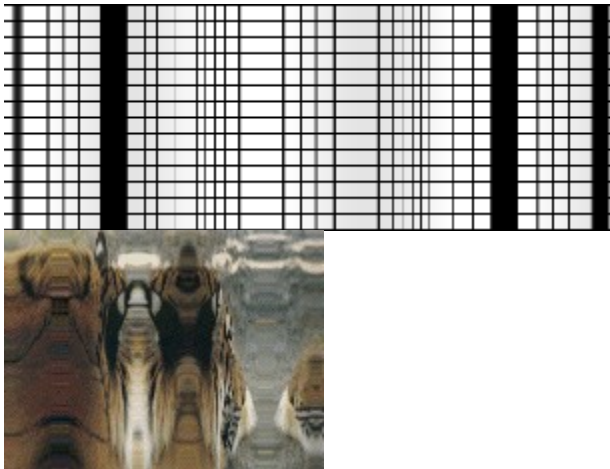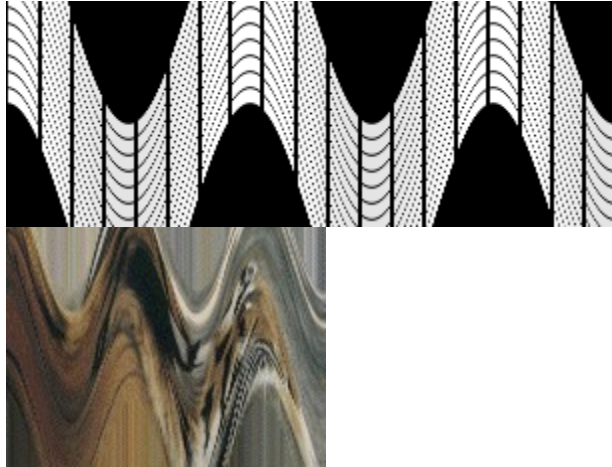

The area in the center of the image (which is also the center of the area selection) contains the greatest amount of distortion.   This control can range between -200 and 200, were negative values will reverse the wave.   This means that the maximum amount of distortion (stretching) will occur towards the edge of the area selection instead of the center.   The diagram below demonstrates this point.

The value that you are specifying can also be thought of as the amplitude of the initial wave pulse.   Negative values are considered negative amplitudes (trough), and positive values are considered to be a positive initial amplitude
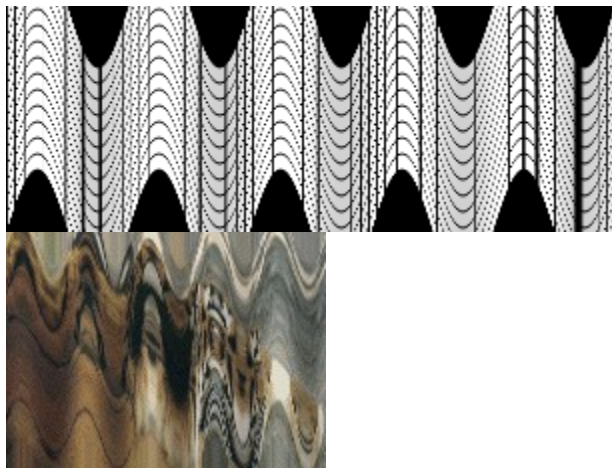
(peak).

Y Sides: The Side wave control is used to specify the amplitude of Y waves that are perpendicular to the Y axis. These waves are similar to compression waves.   The side waves are also sinusoidal in nature, and the amplitude of the waves will increase or decrease based on this setting.   The image below shows a grid that has had a total of 5 waves applied to it.   All of the waves in the image are Side waves.

Notice that this application of only side waves, to the entire image, caused portions of the original image to be "peeled up" from the background.   This explains the black regions on the top and bottom of the image.   This can be avoided by specifying lower amplitude waves, or by selecting region away from the edge of the image.   In some cases this peeling effect may be desired, and can be enhanced by increasing the number of waves or the amplitude (Side value).   The Side value can range from -200 to positive 200, and follows the same guidelines as the Front waves described in the previous section.

Application of both Front and Side waves can produce interesting and unusual wave patterns on your image.   The following image contains a total of 10 side and front waves applied at an amplitude of 50.

The overall effect is similar to the **Bumpy Glass** preset, but is more dramatic in effect.   Since F/x allows you to apply the front and side waves for the X and Y dimensions independently, the possibilities are nearly limitless. Some experimentation on your part may result in a stunning new effect.

Y Phase: The phase control allows you to shift the position of the peaks and troughs of the Y waves over the course of the animation.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   For example, if you were to trend the Y Phase from 0 to 360 over the animation sequence, you would see the peaks and

troughs of the waves slowly change positions.   This type of effect can be used to create undulating waves, or other motion based wave effects.   This will only cycle the Y waves, the X waves will not be altered by this control.

Shading: The shading slide gadget allows you to specify a percentage value for the shading of the waves.   This value can range from 0 (no shading) to 100 (maximum shading).   The shading of the waves will help to make the differences between troughs and peaks more pronounced.   The amount of shading that you use is entirely based on the type of effect that you are trying to achieve.   All shading is applied to the trough of the wave.

Presets:

Heat Waves: The Heat Waves preset will create waves on your image that are similar to the refraction of light by convection cells on a hot summer day.   This creates a wavy or "mirage" like appearance.   This is due to the layers of air that are various temperatures reflecting light in different amounts.   This wave is created in F/x by specifying only X waves (30 half waves - 15 total waves) with a side amplitude of 50.   There is only a slight amount of shading applied to complete the effect.   The overall result is very similar to the natural phenomena.   The grid below shows the application of this preset to the entire image.
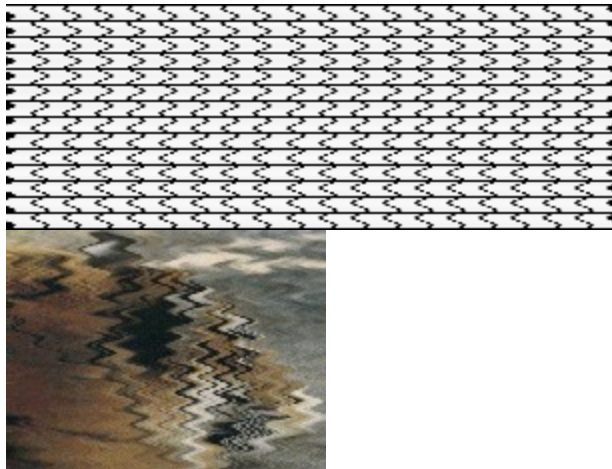

Bumpy Glass: The Bumpy Glass preset will make the selected region appear as if it were behind a textured or hammered glass.   This type of glass is often used in bathrooms for decoration.   The application of this effect will create an equal number of X and Y Front waves that are the same amplitude (50 X and Y Waves, X Front = 50, and Y Front = 50).   Altering the amplitude of either of the Front controls can create new "textures of glass" in the selected region.   The grid below shows the application of this preset to the entire image.
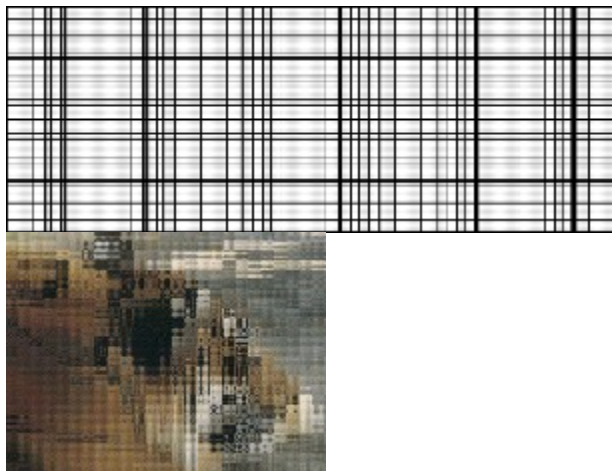

Calm Sea: The Calm Sea preset will make the selected region appear as though small ripples have been applied to

the image.   This is done using all Front based X waves with an amplitude of 20.   This preset will give the image a gentle rolling look, much like a calm body of water.   The grid below shows the application of this preset to the entire image.
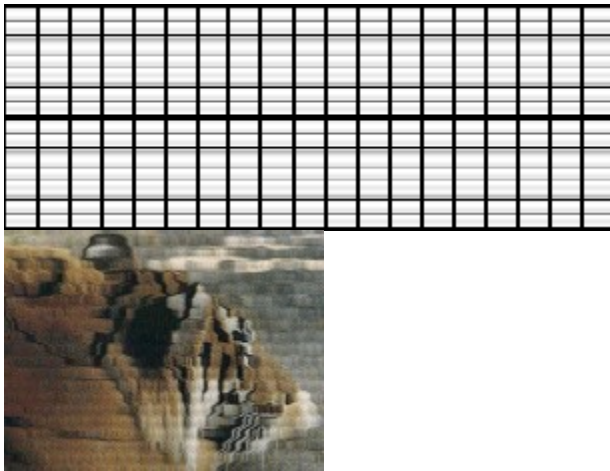

Stretch: Stretch creates a fun house mirror effect in the selected area.   This is done by stretching the center of the image horizontally.   The Waves dialog is set to have only two frontal waves of a small amplitude.   You can increase the amplitude to increase the effect.   The grid below shows the application of this preset to the entire image.
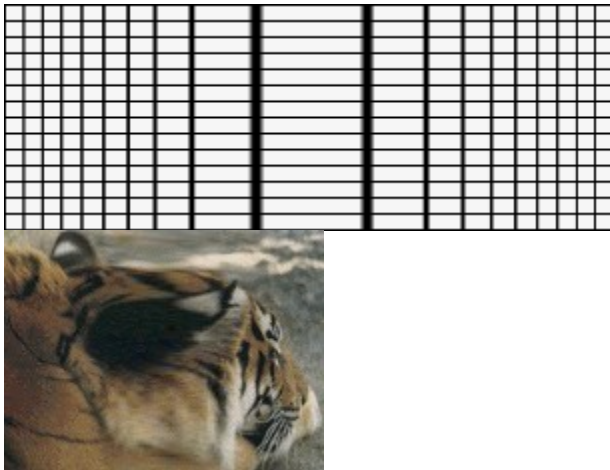
Section 5.3.4.5 - The Radial Wave Operation

The Radial Wave operation allows you to apply an effect similar to dropping a stone into a still pool of water.   You have control over the Distortion, Frequency, Number of Half Waves, Radius, Phase, and Shading.   A quick overview of the terms used in this section can be accessed by clicking on the diagram below.   This operation requires an Undo Buffer.   If you do not have an Undo buffer allocated, WinImages:F/x will automatically allocate one for you.   This operation is best suited for use with the ellipse area selection tool due to its circular nature.
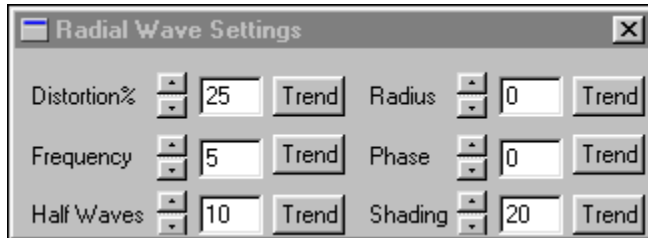
Click on any of the functions for quick help or look below for detailed documentation.
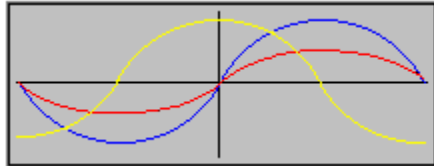
Some of the wave mechanics terms used in this section of the documentation are described in greater detail for our more technical users.   This information can be accessed by clicking on the picture above.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Distortion%: The Distortion percentage can be considered the **amplitude** of the wave.   The Distortion settings range from 0% to 100%.   Setting the Distortion% to 100% will result in the maximum amplitude for each **Half Wave**.   The amplitude of the half waves decreases as the distortion setting decreases.   The control can be set using the slide gadgets or by entering the appropriate value in the provided text entry field.

Frequency: Frequency is the total number of waves that can appear in the selected area.   The Frequency setting can range from 0 to 100.   A setting of 0 will result in no change to the image.   The frequency control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Half Waves: The Half Waves setting controls how many Half Waves (peaks and troughs) will appear in the selected area based on the Frequency setting.   A complete wave is made up of two portions; a peak and a trough.   The peak is the maximum positive amplitude of the wave, and the trough is the maximum negative amplitude.   For example, a wave with a frequency of 12 would have 24 half waves.   The Half Waves setting can be altered by using the slide gadget or by entering the appropriate value in the provided text entry fields.

Radius: The Radius control allows you to specify where the waves will start relative to the center of the area

selection.   The radius is set up as a percentage value with 0 being 0 % (center of area select) and 1000 being 100% (edge of area select).   Setting the control to 1000 will result in no wave with some area selection methods.   The Radius setting can be altered using its slide gadget or by entering the desired value in the provided text entry field.

Phase: The Phase control allows you to alter the waves relative position at a certain time.   The control ranges from 0 to 360 degrees.   For example, by altering the Phase from 0 to 90 degrees will cause the peaks and troughs to trade their positions.   The Phase can be set using the slide gadget or by entering the appropriate value in the text entry area.
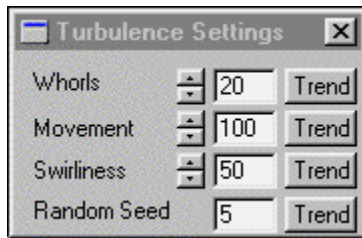

WARNING!: Altering the Phase in large degrees, over a series of frames, may cause tearing or discontinuities in the image.

Shading: The Shading control allows you to set the degree of shading in the waves.   The control ranges from 0% to 100%.   A setting of 0% will result in a wave that has no shading in the troughs, and a setting of 100% will result in a wave with the maximum amount of shading in the troughs.   The control can be altered using the slide gadget or by entering the proper value in the text entry field.

The **Turbulence** operation can be used to create a random swirling pattern in an image. This swirling pattern is determined by a seed number, the number of attractors (whorls), how far the swirls can move, and the amount of the effect to be applied (each of these parameters are detailed below). The effect, when animated, can give the illusion of smoke or mist swirling around the image. This effect can be further heightened through the use of shifting alpha channels that would give the swirl varying transparency over the animation. This effect is generally applied to an image of the substance you wish to swirl, and then composited (merged) into the actual animation.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. Click Here to view further information on trends.

Whorls: This control allows you to specify the number of whorls or swirls in the operation. This number directly alters how the turbulence will look, and the amount of time needed to generate a frame. The whorls are randomly placed into the image based on the **Seed Number**. This number sets a number of different size and motion parameters for each whorl in the operation. These whorls then increase in size and alter position based on the original seed number, the movement setting, and the swirliness setting. If you were to trend the whorls setting from 0 (no effect) to 100 (maximum number of whorls) with all other parameters static, you would see a number of swirls appear in various locations in the image. These new swirls would be randomly place based on the seed number, and each new swirl would have a different amount of rotation and size. You would also notice that the time for each frame would take more an more time as each new whorl was placed. In general, the number of whorls is a static variable that is animated through the use of the movement and swirliness controls.

Movement: This option allows you to specify the maximum amount of displacement for any whorl in the turbulence operation. Each individual whorl will use a random value between 0 and the maximum value set with this control for it initial displacement. This variable can be trended to create a moving effect that is similar to swirling dust or mist. The control can range from 0 (no effect) to 1000 (maximum movement). It is important to remember that each whorl will initially move some random amount for the first frame. This amount is then held constant for the rest of the animation which gives the whorls a fluid motion. If you want the worls to move in the animation, you must trend this parameter.
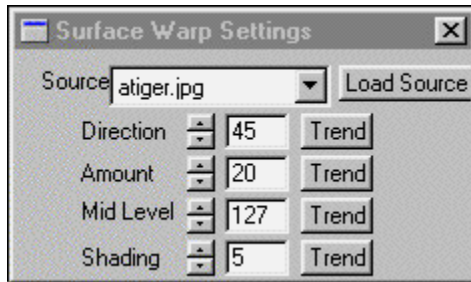
Swirliness: The swirliness option allows you to specify the maximum amount of spin for any of the whorls in an operation. Each whorl will move spin a certain direction and amount based on the initial seed number. Once this spin amount is set it will remain constant unless this value is trended. The control can range from 0 (no effect) to 1000 (maximum movement). It is important to remember that each whorl will initially swirl some random amount

for the first frame.   This amount is then held constant for the rest of the animation which gives the whorls a fluid motion.   If you want the worls to swirl during the animation, you must trend this parameter.

Random Seed: This value sets up how the turbulence effect will operate.   This random value between 0 and 65,000 sets where the whorls will appear, their movement, size, and initial swirliness.   Each seed will produce varied results that may or may not be the results that you are looking for.   This operation is provided with a default seed of five which will produce a nice swirling effect.   You do have the option of trending the seed value, but the only value in doing this is seeing how a range of different seed will look.   It is important to remember that even though the initial values provided by a particular seed are random, they can be repeated by using the same seed number.   For example,   all animations that use seed number five will have the same whorls which use the same patterns for movement and swirl amount.

Surface Warping allows you to warp an area in an image view, and warp it based on the information in a specified source image.   The action image is warped based on changes in brightness in the source image.   You can control the direction of the warp, the amount, and the shading.   This effect can be used with text to create a raised or bubbled glass effect, or over an animation sequence to give a pseudo 3-D look to a stream of images.   The operation can be carried out on any area in the action image, but is best suited for use with the Entire area selection tool.   The example image below shows the original jet, the image that was used for the surface warp, and the final result of the jet being warped by the sunset image.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Source Image Drop Down Box: The Source Image Drop Down Box and the Load Source button allow you to select the source image that is to be used for the surface warp operation.   Clicking on the drop down box's down arrow will open the box with a list of all of the currently loaded image files.   If you have no image loaded, then this box will be empty.   You can load a new image, and assign it as the source image by clicking on the Load Source button.   This will present you with a file requester for selecting the new source image file.   Once the file has been selected, and loaded, it will automatically be specified as the source image.   The source image determines how the action view will be warped based on the brightness values in the source image.

 Direction: The direction control allows you to specify the direction that the action image surface will be warped to.   This direction is specified as an angle value ranging 0 to 359 degrees.   The angle is measured vertically from clockwise (please refer to the diagram on the left).   Altering this direction over a sequence of frames can cause the surface warp to shift its position in a circular manner.   The Direction control can also be thought of as the direction of the light source that is being applied to the source image to cause the surface warp.   The Direction angle can be set using the provided slide gadget or manually entered into the text entry area.

Amount: The amount control allows you to scale the intensity of the surface warp operation.   The control ranges

from a setting of   0 (no effect) to 100 (maximum surface warping).   The larger the percentage value the more dramatic the effect.   Increasing the amount control can also have negative effects such as distortions which are too extreme.   If this is the case, you will have to decrease the amount control, and try to intensify the effect through the use of the Mid Level or Shading controls.
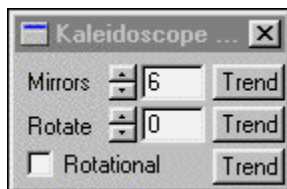
Mid Level: The Mid Level control allows you to set where the middle luminance (flat areas) will appear in the image.   The surface warp operation is based on warping the action image based on luminance or brightness values in the source image.   These values can range from 0 (black) to 255 (white).   altering the Mid Level control will change where the program sets the flat area or "ground level of the surface warp.   For example, using the default Mid Level setting of 127 will result in all luminance values above 127 being warped "up", and all values below 127 being warped "down".   This is how the program is able to create the new warped surface.   This Mid Level value can be altered so that certain luminance levels equate a low or high spot in the image.   For example, If you have a source image with large areas of black which you would like to have as a flat region instead of as a depressed region, you would simply set the Mid Level control to 0.   Now, all areas in the image that are black (luminance= 0) will appear unwarped, and all luminance values greater than 0 will appear as an elevation.

Shading: The shading control allows you to control how much shading is applied to the surface warp.   The shading amount is a percentage value ranging from 0 (no shading) to 100 (maximum shading).   This value will determine how the surface warp will be shaded; the greater the shading percentage, the greater the amount of shading in the "depressed regions" of the surface warp.   This control can also be related to the intensity of the light source.   The greater the shading percentage the, the greater the intensity of the light source.

The kaleidoscope operation uses mirrors and rotation to simulate the effect of an actual kaleidoscope.   This kaleidoscope differs from an actual one in that you can adjust not only the rotational position of the mirrors, but also the total number of mirrors used.   The operation can be animated by trending the Rotate parameter.   This setting controls the position or initial angle of the mirrors.   This operation also allows you to alter the way that the kaleidoscope functions.   The first method, and the default, is to reflect the initial mirror to all of the other mirrors as reflections of the first mirror.   The second method is to not reflect the image, but to copy the mirror slice to each of the mirrors. By turning the Rotational parameter on or off, you can control which method is used.   Please review the examples below to see how the two methods differ.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Mirrors: The Mirrors control allows you to adjust the total number of mirrors used by the kaleidoscope.   The number of mirrors can range from 2 to 500, with a setting of 6 mirrors as the default. This setting will determine how many segments the area selection will be divided into.   For each additional mirror added the total size of the mirrors will reduce.   The section of the image that is reflected to the other mirrors is determined by the Rotate setting.
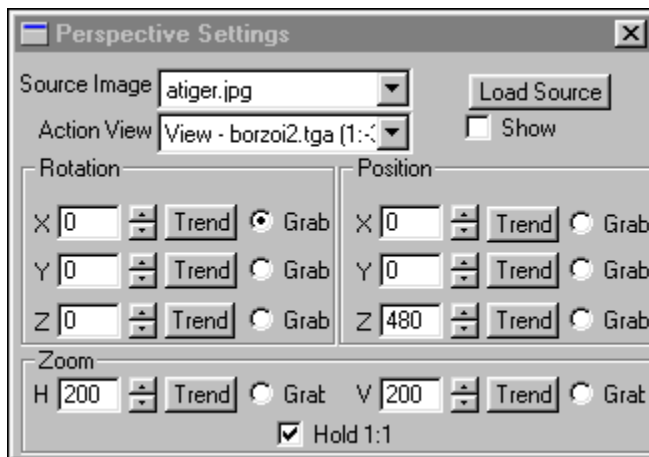
Rotate: The Rotate setting controls the section of the image that is reflected to the other mirrors.   This setting can range from 0 to 360, with 0 being the default setting.   This setting will determine where the initial mirror will be

placed.   For example, if the Rotate control is set to 0, then the initial mirror is located at the top of the area selection.   If this value were changed to 90, the initial mirror would be located on the left hand side of the area selection.   This continues for all values in a clockwise manner around the image.   The size of the initial mirror is based upon the **Mirrors** setting.   To produce a moving kaleidoscope simply trend this value from 0 to 360.

Rotational: This setting alters the way that the kaleidoscope works.   If this option is selected, then the section of image specified by the rotate image will be reflected to each of the mirrors.   The result is the traditional kaleidoscope image.   If this option is not selected, then the initial mirror segment will be copied onto all of the other mirrors.   This differs from the first method in that there is no true reflection from mirror to mirror.   The example images above should help to clarify the difference.

The **Perspective Placement** operation will place the Source image into the Action image in a three dimensional perspective view.   You will be presented with an outline rectangle of the placement that can be used to set the XYZ rotation and placement, as well as the horizontal and vertical zoom.   The outline can be manipulated by selecting the desired parameter's **Grab** control, and then using the right mouse button to alter the variable.   The placement will be executed when you press the left mouse button in the action image.   This operation can be used to create some of the most interesting multiple image effects in WinImages.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Show: This control, when selected, will display the perspective placement outline rectangle on the current action image.   This outline rectangle represents the placement of the Source image.   The outline can be altered by selecting the desired parameter's **Grab** button.   Once the Grab for a parameter is selected, the right mouse button is used to manipulate that variable.   The Source image will be placed once the left mouse button is pressed.

Action View: The Action View control allows you to select the image that is to be the target for the placement of the source.   This view will contain the perspective placement outline rectangle if the **Show** option is selected.

Grab: The Grab controls are used to specify the parameter that is to be altered.   Once a Grab is selected for a variable, the rectangular outline can be altered using the right mouse button.   The placement will be executed when the left mouse button is clicked in the action view.

XYZ Rotation: The XYZ rotation controls allow you to manipulate the source placement rotation.   Each of these controls has a **Grab** control so that it can be altered using the mouse or by entering the appropriate values.

XYZ Position: The XYZ position controls allow you to manipulate the source placement position in the image. Each of these controls has a **Grab** control so that it can be altered using the mouse or by entering the appropriate
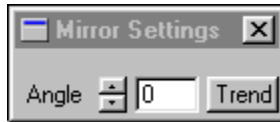
values.

Horizontal and Vertical Zoom: The horizontal and vertical zoom controls allow you to manipulate the source placement zoom level.   The zoom will be based on the placed image, **not** the original image.   Each of these controls has a **Grab** control so that it can be altered using the mouse or by entering the appropriate values.

Hold 1:1 : This control, when selected, will force the horizontal and vertical zoom levels to remain the same.

Section 5.3.4.10 - The Mirror Operation

The Mirror operation will reflect or mirror on portion of the image in the area select to the other.   This operation is based on a single mirror that can be rotated within the area selection.   The angle parameter runs from the top and moves in a clockwise manner around the image.   For example, an angle setting of 0 will result in the right hand side of the image being reflect onto the left hand side of the image.   You can achieve multiple reflection be adjusting the angle value to a new setting, and re-applying the mirror with the Redo area selection mode.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Angle: This setting controls which portion of the area selection is mirrored onto the other portion of the image. This setting can range from 0 to 360, with a default value of 0.   Like all rotational parameters used in F/x the Angle value moves from the top in a clockwise manner.   Please review the diagrams below to further clarify how the mirror operation functions.
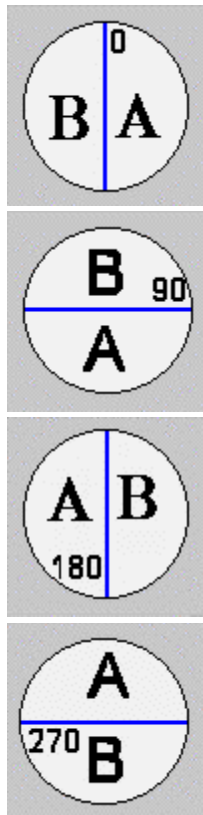
Section 5.3.4.11 - The Rotate Operation

The Rotate operation allows you to rotate a region of the image clockwise or counterclockwise.   The region can either rotate in place or into a new image.   Rotating in place will simply place the rotated region over the original image.   Rotating into a new image will create a view with the rotated region.

Click on any of the functions for quick help or look below for detailed documentation.
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.
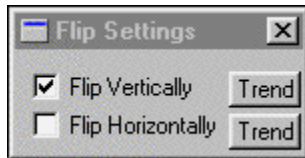

Rotation: This control allows you to set the rotation angle for the clip.   The angle can range from -180 to 180 degrees, and the rotation angle is measured from vertical moving clockwise (please refer to the diagram on the left.).   A negative rotation angle will be measured counterclockwise from vertical.   The angle of rotation can be set using the slide gadget or by entering the appropriate value for the angle.

In Place: The In Place control allows you to specify if the selected area will be rotated in place in the current image, or if the selected region will be rotated and then placed into a new image.   The image will have a black background where the new clip does not exist, and the alpha channel will be zero in these regions.   The size of the new image will be dependent on the size of the selected rotational area.   If the selected area is rotated in place the clip will be place over the top of the original image.

Section 5.3.4.12 - The Flip Operation

The Flip operation can be used to flip an image vertically, horizontally, or both.   This can be used to change the position of an object in an image, or to alter the entire image's orientation.   The selected region can be made using any of the area selection methods in F/x.   If the area selection is non-symmetrical, F/x will use image information from outside of the area selection to make the flipped region continuous.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Flip Vertically: This option, when selected, will flip the selected area vertically.   If the area selection is not vertically symmetrical, F/x will automatically fill the area selection with image data from outside of the area selection in a symmetrical manner.   For example, if you were to vertically flip the triangle IShape, the result might look something like this:
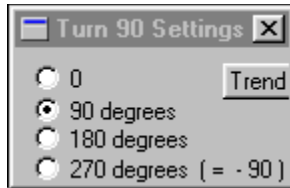
As you can see the flipped region contains part of the text from above.   This is due to the lack of vertical symmetry in the area selection.   The same holds true for the Horizontal Flip option, and horizontal symmetry.   The vertical flip option can be used by itself, or in conjunction with the horizontal flip option.

Flip Horizontally: This option, when selected, will flip the selected area horizontally.   If the area selection is not horizontally symmetrical, F/x will automatically fill the area selection with image data from outside of the area selection in a symmetrical manner.   The example images in above show this principle for vertical flips.   The horizontal flip option can be used by itself, or in conjunction with the vertical flip option.

The Turn 90 operation is used to flip an image region or the entire image in 90 degree increments.   This tool can be used to rotate any area selection, but it primary strength lies in rotating an entire image.   If you need to rotate an area or the entire image by an amount other than these 90 degree increments, you should use the **Rotate** operation.

Click on any of the functions for quick help or look below for detailed documentation.
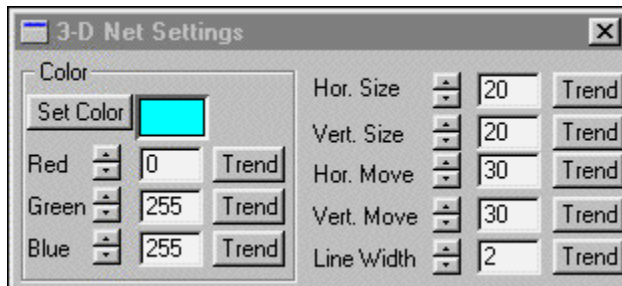

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

90 Degree Rotation: Each of these radio buttons represents a 90 degree rotation factor.   Selecting the 0 degrees button will result in no effect on the selected area.   Selecting 90 degrees will rotate the area by 90 degrees.   The remaining two settings will rotate the area selection by 180 degrees or 270 degrees.   This tool can be used to rotate any area selection, but it primary strength lies in rotating an entire image.   If you need to rotate an area or the entire image by an amount other than these 90 degree increments, you should use the **Rotate** operation.

The 3-D Net operation allows you to generate a grid on the image based upon the gray-scale brightness of the pixels in the selected area.   This will create a pseudo three dimensional look in the selected area.   You can control the color of the net, horizontal and vertical size of the grid squares, horizontal and vertical displacement of the net, and the size of the net's lines.   This operation is best suited for use with the **Rectangle** or **Entire Image** area selection modes.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Net Color Preview Window: This preview window will display the color of the net that is to be applied to the image.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Net color preview will be updated to reflect the changes.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Net** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Net** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Net** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Horizontal Size: This control allows you to specify the horizontal dimension of the net in pixels.   The Horizontal Size can range from 1 to 100 pixels.   This control is set using the slide gadget or by entering a value in the text entry field.

Vertical Size: This control allows you to specify the vertical dimension of the net in pixels.   The Vertical Size can range from 1 to 100 pixels.   This control is set using the slide gadget or by entering a value in the text entry field.
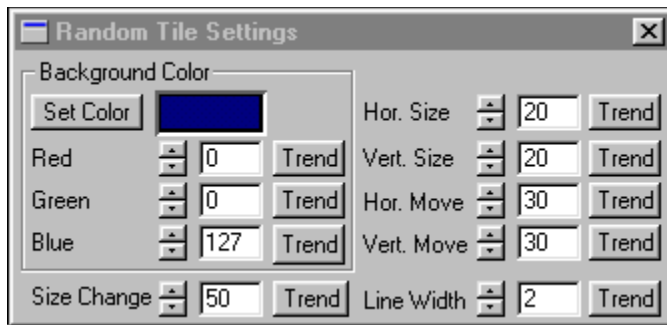
Horizontal Movement: This control allows you to specify the horizontal amount of movement for the net's grid at a point.   The image is evaluated at each intersection of the net, and the brightness value of that <u>pixel</u> will determine the percentage of the total that the grid will be moved in that area.   The control ranges from 1 to 100 pixels, and can be set using the slide gadget or text entry field.

Vertical Movement: This control allows you to specify the vertical amount of movement for the net's grid at a point.   The image is evaluated at each intersection of the net, and the brightness value of that pixel will determine the percentage of the total that the grid will be moved in that area.   The control ranges from 1 to 100 pixels, and can be set using the slide gadget or text entry field.

Line Width: This control allows you to specify the width of the net's grid lines.   The width can range from 1 to 20 pixels, and is set using the slide gadget or text entry field.

The Random Tile operation will create a series of random rectangular tiles and then randomly alter their position. The tile size, maximum amount of movement, and the background color are specified by you.   Due to its rectangular nature, this operation is best suited for use with the **Rectangle** or **Entire Image** area selection modes.

Click on any of the functions for quick help or look below for detailed documentation.

Play Example Animation

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Background Color Preview Window: This preview window will display the color of the background color that is to appear behind the tiles.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Horizontal Size: This control allows you to specify the horizontal dimension of the random tiles in pixels.   The Horizontal Size can range from 1 to 100 pixels.   The value that is set here is also effected by the **Size Change** control.   The Size Change control allows you to specify the percentage amount of allowable change in both the horizontal and vertical sizes.   The Horizontal Size control is set using the slide gadget or by entering a value in the text entry field.

Vertical Size: This control allows you to specify the vertical dimension of the random tiles in pixels.   The Vertical Size can range from 1 to 100 pixels.   The value that is set here is also effected by the **Size Change** control.   The Size Change control allows you to specify the percentage amount of allowable change in both the horizontal and vertical sizes.   The Vertical Size control is set using the slide gadget or by entering a value in the text entry field.

Horizontal Movement: This control is used to specify the maximum allowable horizontal movement for a tile.   Each tile will move a different (random) amount between 0 pixels and the Horizontal Movement setting.   The control ranges from 1 to 100 pixels, and can be set using the slide gadget or text entry field.
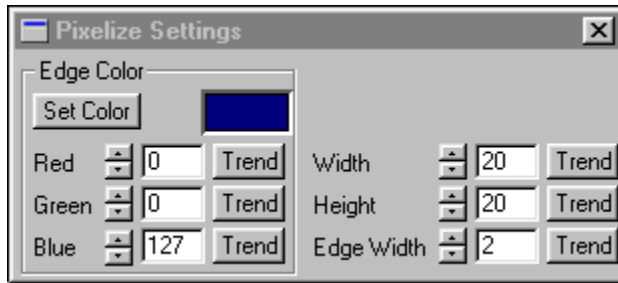
Vertical Movement: This control is used to specify the maximum allowable vertical movement for a tile.   Each tile will move a different (random) amount between 0 pixels and the Vertical Movement setting.   The control ranges from 1 to 100 pixels, and can be set using the slide gadget or text entry field.

Size Change: The Size Change control allows you to specify the maximum amount of change for the size of the tiles.   The change amount is a percentage value of the amount of allowable size change, and directly effects both the horizontal and vertical size controls.   For example, a setting of 50% would allow for both an increase and decrease in tile size by 50% of the horizontal size and 50% of the vertical size.   If the horizontal and vertical size were both set to 20 pixels, then the maximum tile size would be 30 pixels (horizontally and vertically) and the minimum tile size would be 10 pixels (horizontally and vertically).   This control can be set using the slide gadget or by entering a value in the text entry field.

Line Width: This control allows you to specify the width of the tile's border.   The width can range from 0 to 20 pixels, and is set using the slide gadget or text entry field.

Section 5.3.5.3 - The Pixelize Operation

The Pixelize operation will create rectangular regions that are the average brightness of the underlying pixels in that region.   The overall effect is similar to zooming an image to the point where only pixels are visible.   You can control the width and height of the pixels as well as the edge color of the pixels.   Due to its rectangular nature, this operation is best suited for use with the **Rectangle** or **Entire Image** area selection modes.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Edge Color Preview Window: This preview window will display the color of the edge color that is to appear on the edges of the pixels.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Width: The Width control allows you to specify the width component of the pixels to be created.   The width is measured in pixels and can range from 1 to 100 pixels in size.   The width can be set using the slide gadget or by entering a value in the text entry field.

Height: The Height control allows you to specify the height component of the pixels to be created.   The height is measured in pixels and can range from 1 to 100 pixels in size.   The height can be set using the slide gadget or by entering a value in the text entry field.

Edge Width: This control allows you to specify the width of the pixel's border.   The width can range from 0 to 20 pixels, and is set using the slide gadget or text entry field.

Section 5.3.5.4 - The Cellular Operation

The Point Cellular operation is very similar to the **Pixelize** operation.   The difference is that the **Edge** color fades from the edge of the cell to the center, and the cells are not necessarily the average brightness of the selected region. This operation is similar to looking at   the image through colored glass bricks.   You can control the size, color, and if the cells are transparent or translucent (frosted).   Due to its rectangular nature, this operation is best suited for use with the **Rectangle** or **Entire Image** area selection modes.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Edge Color Preview Window: This preview window will display the color of the edge color that is to appear on the edges of the cells.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Cell** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.
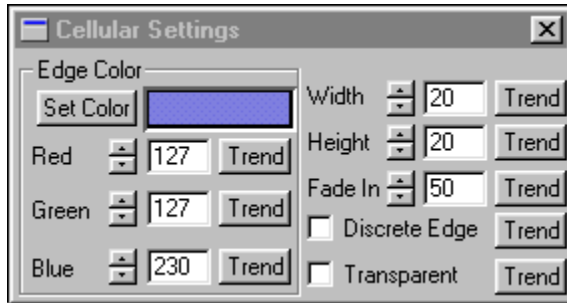
Green: This slide gadget allows you to specify the Green component of the RGB value for the **Cell** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Cell** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Width: The Width control allows you to specify the width component of the cells to be created.   The width is measured in pixels and can range from 1 to 100 pixels in size.   The width can be set using the slide gadget or by entering a value in the text entry field.

Height: The Height control allows you to specify the height component of the cells to be created.   The height is measured in pixels and can range from 1 to 100 pixels in size.   The height can be set using the slide gadget or by entering a value in the text entry field.

Fade In: The **Fade In** control allows you to specify the amount of the cell's edge color that is visible.   This control can be thought of as the amount of **blending** of the edge color and the cell color.   Increasing this control will cause there to be no blending, and decreasing the Fade In value will result in a more blended edge.   The setting is a percentage value that ranges from 0% to 100%.   A setting of 0% will result in cells that have no edge color, and a setting of 100% will result in a cell that has the maximum amount of edge color.   The Fade In value can be set using the slide gadget or by entering an appropriate value in the text entry field.

Discrete Edge: The **Discrete Edge** control determines the way the cells will be placed into the selected area.   When the control is not selected the cells will go to the edge of the area selection, even if the cell may not be rectangular. This means that the cells at the edge of an ellipse area selection will not be rectangular, but instead will be **cut off** at the edge of the area select.   When this control is selected, WinImages:F/x will only place those cells that can be completed within the selected area.   Therefore, an elliptical area select (using Discrete Edge) may only have two complete cells within it, and the non-discrete edge ellipse could have two complete cells and 5 uncompleted cells.

Transparent: The **Transparent** control allows you to determine if the cell is transparent or translucent.   A transparent cell will have the original image bellow the edges of the cell.   A translucent cell will have only the average brightness value for the area under the cell.   The translucent setting is similar to the pixelize effect.

The **Lined** operation converts the selected area into colored lines based on the images darkness at those points.   You can control the line height (which also controls the line spacing, line color, and background color.   The resultant effect is similar to the AT&T symbol.   The line will vary between 1 <u>pixel</u> for the darkest pixel to the setting of the Height control for the brightest pixel.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Line Color Preview Window: This preview window will display the color of the line that is to appear in the selected area.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Background Color Preview Window: This preview window will display the color of the background color that is to appear between the lines.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.

Place Background: The **Place Background** control allows you to insert the selected **Background Color** or to place the lines over the top of the existing image.   Placing the background will fill the region between the lines with the background.   The area that is filled by the background is symmetrical with the lines.   If this control is not selected, the original image will appear between the lines.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

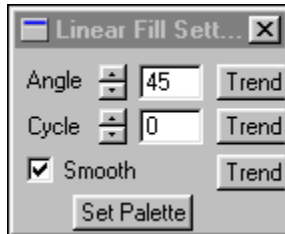**Height:** The height control allows you to specify the maximum height of the lines, and the distance between lines. The height can range between 1 and 100 pixels.   The height is set using the slide gadget or by entering the appropriate value in the provided text entry field.

Section 5.3.5.6 - The Linear Fill Operation

The Linear Fill operation allows you to fill selected regions with a range of colors from the Palette in a linear fashion.   This range or palette of colors can be as simple as two colors, or as complex as 400 colors.   The controls allow you to set the angle of palette application and to cycle the palette colors.   The range can be applied vertically, horizontally, or to any angle value you specify.   This tool is useful for creating cycled colored ranges in text and other objects.

Click on any of the functions for quick help or look below for detailed documentation.
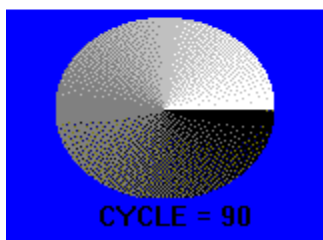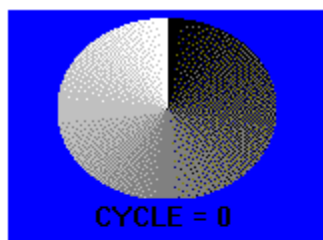

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

 Angle: The Angle control allows you to set the angle of the Linear Fill.   This angle is measured clockwise from vertical.   This means that a setting of 0 degrees would be a vertical fill with color zero at the bottom of the area select, and that a setting of 90 degrees would be a horizontal fill with color zero on the right of the area select.   Color zero is the initial color in the palette.   Color zero is used as the initial point for all fills in F/x.   For example, the default F/x palette is a Black to White range of gray scales.   Color zero in the default palette is black, so black is the initial position for all fills with this palette.   The color zero of a palette can be altered by altering the palette itself, or by using the **Cycle** control.   This allows you to shift the palette by a certain amount, thus changing color zero.   This can be used in an animation to create a cycling effect (the example animation uses this technique).   The diagram above demonstrates the way that angles are measured in F/x.   The control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   This control can be set using the slide gadget, or by entering an appropriate value in the text entry field.

Cycle: The cycle control allows you to shift the palette to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Imagine that the palette is a wheel with all of the colors radiating from the center as spokes, like the image on the left.   This image is a representation of the palette with the Cycle control set to 0 degrees, and using the default gray scale palette.   Notice that Black (the initial color zero) is at the 12 o'clock position.   The image below this shows a shift in the palette to a Cycle of 90 degrees.   Notice that the original color zero has shifted to the 3 o'clock position (90 degrees), and a new color zero is in the initial position.   From these two examples it is clear that increasing the Cycle value will shift or rotate the palette.   This will in turn set a new color zero for the fill.   If you were to trend the cycle over an animation from 0 to 360 degrees, you would see the colors of the palette cycle as they did in the example animation.

Smooth: The Smooth control allows you to smooth colors in the palette.   This control is most effective in low color palettes (palettes with less than 256 colors).   This control, when activated, will examine the colors in the palette and then smooth them to create a nice color spread between palette colors.   For example, a palette of two colors using the Smooth control will look much nicer than a two color palette without smoothing.   This control defaults to on, but can be shut off at any time by simply clicking on the check box.

Set Palette: The Set Palette button allows you to access WinImages:F/x custom palette controls.   This allows you to make any necessary alteration to the current palette or to load a previously saved palette.   Remember, any changes made to the palette will be reflected the next time a fill is applied.   If you would like to learn more about the palette controls, Press Here.

Section 5.3.5.7 - The Concentric Fill Operation

The Concentric Fill operation allows you to fill a region with the current <u>palette</u> in a circular manner.   The colors in the palette will fill the object in concentric rings of color starting with color zero at the edge of the area, and radiating inward to the final color in the palette.   You can control where the center of the object is located, and the **Cycle** or position of color zero.   This tool is useful for creating cycled colored ranges in text and other objects.

Click on any of the functions for quick help or look below for detailed documentation.
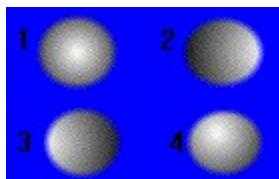

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.


 Cycle: The cycle control allows you to shift the palette to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Imagine that the palette is a wheel with all of the colors radiating from the center as spokes, like the image on the left.   This image is a representation of the palette with the Cycle control set to 0 degrees, and using the default gray scale palette.   Notice that Black (the initial color zero) is at the 12 o'clock position.   The image below this shows a shift in the palette to a Cycle of 90 degrees.   Notice that the original color zero has shifted to the 3 o'clock position (90 degrees), and a new color zero is in the initial position.   From these two examples it is clear that increasing the Cycle value will shift or rotate the palette.   This will in turn set a new color zero for the fill.   If you were to trend the cycle over an animation from 0 to 360 degrees, you would see the colors of the palette cycle as they did in the example animation.

X Bias: The X Bias control is used to set the center location for the concentric fill.   This location sets the initial position for the last color in the palette.   From this position all other colors in the palette will radiate outward in concentric rings.   The control ranges from -100 to 100.   This value is measured as a percentage of the area select from the center towards the left or right edge.   All negative values will move the center to the left, and all positive settings will move the center to the right.   It is important to remember that shifting the Cycle control will alter the sequence of the palette, thus placing another color in the center.   The example on the left shows four separate X

Bias settings.   Number 1 shows a Cycle of 0, and an X and Y Bias of zero.   Number 2 shows a Cycle of 0, a Y Bias of 0, and an X Bias of 100.   Number 3 shows a Cycle of 0, a Y Bias of 0, and an X Bias of - 100.   The Final example, number 4, shows a Cycle of 0, a Y Bias of 30, and an X Bias of -20.   The animation example above uses a shifted X and Y Bias in the **Concentric Fill** letters to create an off-center color cycling effect.
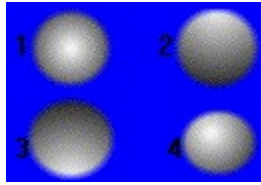
Y Bias: The Y Bias control is used to set the center location for the concentric fill.   This location sets the initial position for the last color in the palette.   From this position all other colors in the palette will radiate outward in concentric rings.   The control ranges from -100 to 100.   This value is measured as a percentage of the area select from the center towards the left or right edge.   All negative values will move the center down, and all positive settings will move the center up.   It is important to remember that shifting the Cycle control will alter the sequence of the palette, thus placing another color in the center.   The example on the left shows four separate Y Bias settings. Number 1 shows a Cycle of 0, and a Y and X Bias of zero.   Number 2 shows a Cycle of 0, an X Bias of 0, and a Y Bias of 100.   Number 3 shows a Cycle of 0, an X Bias of 0, and a Y Bias of - 100.   The final example, number 4, shows a Cycle of 0, a Y Bias of 30, and an X Bias of -20.   The animation example above uses a shifted Y and X Bias in the **Concentric Fill** letters to create an off-center color cycling effect.

Smooth: The Smooth control allows you to smooth colors in the palette.   This control is most effective in low color palettes (palettes with less than 256 colors).   This control, when activated, will examine the colors in the palette and then smooth them to create a nice color spread between palette colors.   For example, a palette of two colors using the Smooth control will look much nicer than a two color palette without smoothing.   This control defaults to on, but can be shut off at any time by simply clicking on the check box.

Set Palette: The Set Palette button allows you to access WinImages:F/x custom palette controls.   This allows you to make any necessary alteration to the current palette or to load a previously saved palette.   Remember, any changes made to the palette will be reflected the next time a fill is applied.   If you would like to learn more about the palette controls, Press Here.

Section 5.3.5.8 - The Radiating Fill Operation

The Radiating Fill operation will fill the selected region in a radiating manner.   The colors in the <u>palette</u> will radiate from a center position like spokes on a wheel.   You can control where the center of the area is, and you can also **Cycle** the colors in the palette.   The Radiating Fill operation also allows you the option of using smoothed or unsmoothed palettes.   This tool is useful for creating cycled colored ranges in text and other objects.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Cycle: The cycle control allows you to shift the palette to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Imagine that the palette is a wheel with all of the colors radiating from the center as spokes, like the image on the left.   This image is a representation of the palette with the Cycle control set to 0 degrees, and using the default gray scale palette.   Notice that Black (the initial color zero) is at the 12 o'clock position.   The image below this shows a shift in the palette to a Cycle of 90 degrees. Notice that the original color zero has shifted to the 3 o'clock position (90 degrees), and a new color zero is in the initial position.   From these two examples it is clear that increasing the Cycle value will shift or rotate the palette. This will in turn set a new color zero for the fill.   If you were to trend the cycle over an animation from 0 to 360 degrees, you would see the colors of the palette cycle as they did in the example animation.

X Bias: The X Bias control allows you to set the horizontal component of the Radiating Fill's center.   This center position is measured as a percentage value between -100 and 100, where -100 is the maximum horizontal movement left, and 100 is the maximum horizontal movement right.   A setting of zero will result in the X and Y center being in the actual center of the area select.   This value can be trended over time to create the "tumbling" effect seen in the words "Radiating Fill" in the above animation example.   You can also trend the X Bias in conjunction with the Y Bias   to create new and unusual animation effects.

Y Bias: The Y Bias control allows you to set the vertical component of the Radiating Fill's center.   This center position is measured as a percentage value between -100 and 100, where -100 is the maximum vertical movement down, and 100 is the maximum vertical movement up.   A setting of zero will result in the X and Y center being in the actual center of the area select.   This value can be trended over time to create the "tumbling" effect seen in the

words "Radiating Fill" in the above animation example.   You can also trend the X Bias in conjunction with the Y Bias   to create new and unusual animation effects.

Smooth: The Smooth control allows you to smooth colors in the palette.   This control is most effective in low color palettes (palettes with less than 256 colors).   This control, when activated, will examine the colors in the palette and then smooth them to create a nice color spread between palette colors.   For example, a palette of two colors using the Smooth control will look much nicer than a two color palette without smoothing.   This control defaults to on, but can be shut off at any time by simply clicking on the check box.

Set Palette: The Set Palette button allows you to access WinImages:F/x custom palette controls.   This allows you to make any necessary alteration to the current palette or to load a previously saved palette.   Remember, any changes made to the palette will be reflected the next time a fill is applied.   If you would like to learn more about the palette controls, Press Here.

Section 5.3.5.9 - The Outline Fill Operation

The Outline Fill operation allows you to fill the outside or inside of an area select in the shape of the area selection. This allows you to create an "agate-like" effect around ellipses, text, and other area selects.   The operation allows you to control the width of the outline, how many times the outline is generated, if the fill will be outside or inside the area, and if the palette will repeat.   This fill mode also contains a cycle setting for creating animations with a cycling palette (like the example below).   This operation also has a **Crystal** mode that will generate translucent crystals instead of filling with the current palette.   For an example of this operation, press the Play button below.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Width: The Width control is used to set the actual width for each generation of the outline range.   This width is measured in pixels, and can range from 0 (no effect) to 100 (maximum width).   Increasing the width will also increase the computational time needed to complete the operation.   You can decrease this time by setting a smaller width with more generations.   Increasing the generations control will cause F/x to generate the range, using the same width setting, at the edge of the original generation.   For example, you would like to generate an outline that is 30 pixels in width.   You could do this by setting the width control to 30, and the generations control to 1.   You could achieve the same effect faster by setting the width to 10, and the generations to 3.   F/x will generate three outlines of the selected region, and then fill the generated area with the current palette.   You can also have the option of having each generation repeat the palette.   This will produce an effect similar to the example animation above.

Generations: The Generations control is used to specify how many times the outline, or "inline", will be generated. This control can be extremely useful for generating large outlines quickly.   For example, you would like to generate an outline that is 50 pixels.   This could be done by setting the width to 50, and the generations to 1.   This particular method would take a substantial amount of time to generate.   A faster method of achieving the same results would be to set the width to 10, and the generations to 5.   The same is true for the Crystal settings which will generate much faster with small widths and more generations.   The generations control ranges between 0 (no effect) and 40 (maximum number of generations).   You can also use the Repeat function to create multiple outlines of the same palette.

Cycle: The cycle control allows you to shift the palette to create a cycling effect for animations. This control ranges between 0 and 360 degrees, where 0 and 360 are the same value. Imagine that the palette is a wheel with all of the colors radiating from the center as spokes, like the image on the left. This image is a representation of the palette with the Cycle control set to 0 degrees, and using the default gray scale palette. Notice that Black (the initial color zero) is at the 12 o'clock position. The image below this shows a shift in the palette to a Cycle of 90 degrees. Notice that the original color zero has shifted to the 3 o'clock position (90 degrees), and a new color zero is in the initial position. From these two examples it is clear that increasing the Cycle value will shift or rotate the palette. This will in turn set a new color zero for the fill. If you were to trend the cycle over an animation from 0 to 360 degrees, you would see the colors of the palette cycle as they did in the example animation.

Inside: The Inside control, when selected, will fill the object on the inside instead of the outside. The area will be filled from the edge inward, thus any generations or width that are larger than the remaining area will have no effect. For example, if you were to fill a 25x25 rectangle with a width setting of 5, a generations setting o 5, and inside selected, only the first three generations would be visible in the rectangle. This control can also be used to specify a Crystal effect inside the selected region instead of outside.

Crystal: The Crystal control, when selected, will generate a series of crystals based on the size and shape of the area selection, the with setting, and the number of generations. These crystals will be an average of the colors beneath them, thus causing crystalline effect. You can select to place the crystals inside or outside the selected region, and the Repeat control works exactly the same. If this control is not selected, F/x will use the current palette settings for the fill.

Repeat: The Repeat control, when selected, will repeat the current palette or crystal size for the next generation. This means that each generation of the outline fill will have the same palette colors. If this is not selected, the outline will occur only using multiple generations of the palette, but without repeating. The same holds true for the Crystal setting. The animation above uses multiple generations and the repeat control to place the same palette in multiple outlines.

Smooth: The Smooth control allows you to smooth colors in the palette. This control is most effective in low color palettes (palettes with less than 256 colors). This control, when activated, will examine the colors in the palette and then smooth them to create a nice color spread between palette colors. For example, a palette of two colors using the Smooth control will look much nicer than a two color palette without smoothing. This control defaults to on, but can be shut off at any time by simply clicking on the check box.

Set Palette: The Set Palette button allows you to access WinImages:F/x custom palette controls. This allows you to make any necessary alteration to the current palette or to load a previously saved palette. Remember, any changes made to the palette will be reflected the next time a fill is applied. If you would like to learn more about the palette controls, Press Here.

Section 5.3.6.1 - The Relief Operation

The Relief operation will create an effect that is similar to a sandstone relief or brass rubbing.   The Relief operation detects regions of change in the brightness values for the selected area.   These regions of change are then assigned a depth or height dependent on the amount of brightness change.   You can control the maximum depth or height.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Depth: The Depth control allows you to specify the maximum depth or height of the relief.   This variable can range from -20 to 20.   All negative values are the maximum height values, and all positive values are the maximum depth value for the relief.   This value can be set using the provided slide gadget or by entering the appropriate value in the provided text entry field.

Section 5.3.6.2 - The Dither Operation

The Dither operation allows you to create a random dithering effect in the selected area.   You can control the maximum size of a dither region, and the amount of dithering in the selected area.

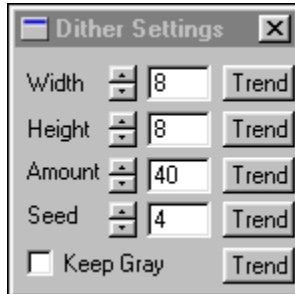*Click on any of the functions for quick help or look below for detailed documentation.*

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Width: This control allows you to specify the maximum width of a dither region.   The width is measured in pixels and can range from 1 to 100 pixels.   The width is set using the slide gadget or by entering the appropriate value in the text entry field.

Height: This control allows you to specify the maximum height of a dither region.   The height is measured in pixels and can range from 1 to 100 pixels.   The height is set using the slide gadget or by entering the appropriate value in the text entry field.

Amount: The Amount control allows you to specify the degree of the Dither effect in the selected region.   The Amount is a percentage value that ranges from 1% to 100%.   A setting of 100% would result in the maximum amount of dithering in the selected region.   A setting of 1% will result in the minimum amount of dithering in the selected region.   This control is set by using the slide gadget or by entering the desired value in the provided text entry field.

Seed: The Seed setting allows you to alter the random number variable for the Dither operation.   Altering this value will result in   an alternate dither pattern for each seed value.   The Seed parameter ranges from 0 to 9999, but it can set to higher values for timelines.

Keep Gray: This control, when selected, will allow for gray scale dithering in the selected region.   This means that all of the dither regions will be in gray instead of color.   If it is not selected, then there will be no gray in the dither colors.

Section 5.3.6.3 - The Elevations Operation

The **Elevations** operation creates an effect that is similar to the **Relief** operation, except the elevations are created using color instead of Black and White. There is also the additional feature of shading effect. You can control the **Sea Level** of the elevations and the amount of shading.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. Click Here to view further information on trends.

Sea Level: The Sea Level control is used to specify the change in brightness value that is to represent Sea Level in the image. The Sea Level can range from 0 (black) to 255 (White). The control is set by using the slide gadget or by entering the desired value in the text entry field.

Shading %: This control is used to specify the amount of allowable shading in the selected region. The shading amount can range from 0% to 100%, with 100% being the greatest amount of shading. The shading will occur as if there were a light source in the top left-hand corner of the image. This control is set using the slide gadget or by entering the desired value.

Edit Palette**:** This button will access the palette controls. You can then use the wide range of spreads, sorts, and other palette manipulation tools to create a new palette for the Elevations operation. This new palette can be applied by selecting the **Use Loaded Palette** option, and then selecting an area on the image. F/x will then remap the image based on the original colors, and their "elevations". Press Here to view more information on the palette controls.

Use Loaded Palette: This option, when selected, allows you to change the default elevations palette. This means that instead of remapping the image to the default blue and green palette, you can remap the image to any color spread or range that you like. The palette controls can be accessed by pressing the **Edit Palette** button in this dialog.

Section 5.3.6.4 - The Sharpen Operation

The Sharpen texture allows you to enhance or sharpen regions of   the image.   You can specify the effective radius of the sharpening and the amount of application.   F/x will search the selected area for features that are within the specified radius.   If a particular feature or surface is within this radius, the light and dark regions of the feature will be increased.   This increase will cause that region to become enhanced or sharpened.   For example, if a face in an image was within the specified radius, it would be sharpened based on the Amount setting.   This would cause the face to look sharper than the rest of the image.   This texture can be thought of as the inverse of a Gaussian Blur (the Blur Operation).   It is important to remember that this effect can be very subtle.   You can always increase the effect by increasing the radius, but this will require more time for generation of the resultant image.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Amount: The amount control allows you to specify how much any detected features will be sharpened.   The amount ranges between 0 (no sharpening) and 100 (maximum sharpening) percent.   A setting of 0 will result in a null operation, or no effect on the image.   Increasing this amount will increase the overall sharpening effect.   You can also reduce the sharpen effect by reducing the amount value.   This control is set using the slide gadget, or by entering the appropriate value in the text entry field to the right of this control.
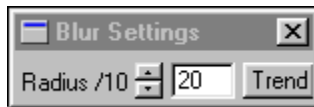
Radius: The Radius control is used to set the actual pixel radius that will be used for feature detection inside the area selection.   This radius is measured in tenths of a pixel.   For example, a setting of 200 is actually 20 pixels.   F/x will scan the selected region for gaussian surfaces that are within the specified radius.   For example, with a radius of 180 (18 pixels), a surface that is 15 pixels would be sharpened, and a surface that is 19 pixels would not.   Once all of the applicable surfaces have been detected, F/x will then enhance the light and dark regions of the surface.   The overall effect is a sharpening of the selected region.   The control ranges from 0 (no effect) to 200 (20 pixel radius). Increasing the radius will increase the time needed for generating the effect, as well as the overall sharpening effect.   The control can be set using the provided slide gadget, or by entering the desired value in the text entry field.

Section 5.3.6.5 - The Blur Operation

The Blur texture allows you to selectively blur a region based on a specified radius.   The radius is used to specify the extent of the effect.   Increasing the radius will increase the actual blurring effect, but this will also increase the computational time needed to complete the operation.   The Blur operation can be used to give a region a "soft edge", or in animation to blur background and foreground objects.   This operation is also known as a <u>Gaussian Blur</u>, and is the inverse of a sharpening effect.   It is important to remember that increasing the radius will greatly increase the computational time needed to complete the operation.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames

will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Radius: The Radius control is used to determine the amount of blurring in the selected region.   This radius can range between 0 (no effect) and 200 (maximum blur) tenths of pixels.   For example, a setting of 150 would be a radius of 15 pixels.   This radius is then applied to the selected region to find any objects or features that are within the specified radius.   If a region is inside the radius, it will be blurred.   This means that increasing the radius will increase the number of areas that are selected and blurred.   Areas that are greater than the specified radius will be unaffected.   It is important to remember that increasing the radius will greatly increase the computational time needed for the operation.   The control can be set using the slide gadget, or an appropriate value can be entered into the text entry field on the right.

Section 5.3.6.6 - The Remove Operation

The Remove operation allows you to remove a feature from an image, and then replace it with background color. For example, you could use this operation to remove a bird from the sky, or a ship from the ocean.   The general rule for removal is that if the object is not attached to another object, it can be removed.   Once the object has been selected, F/x will remove the object, and then fill that region with colors from the background.   You can control the number of samples in the remove operation by increasing or decreasing the Samples amount.   The Samples control is used to specify the number of points that will be used for background filling of the removed object.   Increasing the samples will increase the quality of the removal, but it will also increase the computational time needed to complete the operation.   This operation is best suited for use with the freehand area select, but you may use any of the other available modes.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animati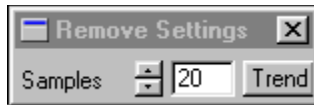on length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Samples: The Samples control is used to specify the number of points that the remove feature will draw color from. The number of samples specified relates directly to the quality of the remove feature.   Increasing the samples will also increase the computational time needed to complete the operation.   The sample can range between 0 (no effect) to 50 (maximum number of samples).   The sample will draw color from the edge of the area select towards a central location to effectively "remove" the object specified by the area selection.   This option can be set with the slide gadget, or by entering the value in the provided text entry field.

Section 5.3.6.7 - The Shave Operation

The Shave operation allows you to remove noise and artifacts from images.   This can range from single pixels to entire chunks of pixels.   This process is a decision based removal system.   This means that the pixels are eliminated based on the number of similar pixels in the group, and the colors of each <u>pixel</u> in the group.   You can control the **Severity** of the removal.   This severity can range from pixel or <u>dither</u> removal to a very harsh low pass filter.   The severity control is analogous to a group of razors which range from dull to sharp.   A low severity (dull razor) will shave fewer pixels from the image, and a high severity (sharp razor) will shave more pixels from the image.

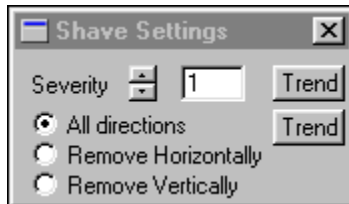*Click on any of the functions for quick help or look below for detailed documentation.*
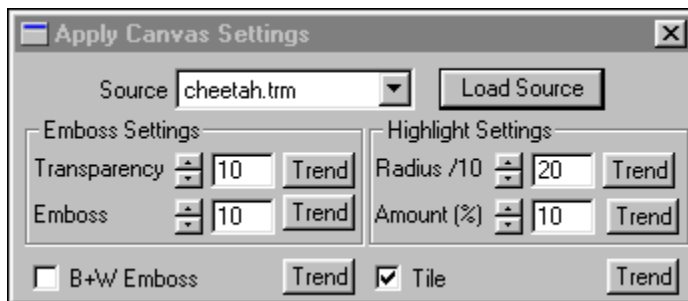
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Severity: The Severity control allows you to remove pixels or groups of pixels based on its setting.   The control ranges from a setting of 1 (lowest severity) to 16 (highest severity).   A setting of 1 will result in a remove isolated pixel operation.   This will examine all of the pixels in the selected area, and remove any pixels that are not the same as any of its surrounding pixels.   Increasing the severity will decrease the requirements for removal, thus more pixels or pixel groups will be removed.   Once a pixel is removed, it will be replaced with an average of its surrounding colors.   The severity setting is a good method for removing excessive dither in an image.   A setting of 16 would act like a severe low pass filter.   This means that areas in the selected region would become blurred as pixels or groups of pixels are removed and replaced with a color average.   This control is set using the slide gadget, or by entering an appropriate value in the text entry field to the right.

Direction: The Direction control allows you to select the direction in which image element (pixels, chunks, lines, etc.) are removed or replaced in the image area selection.   The direction can be set to replace/remove horizontally, vertically, or in all directions.   The direction is set by clicking on the desired radio button, and then applying the effect to an area selection.

Section 5.3.6.8 - The Apply Canvas Operation

The **Apply Canvas** operation allows you to apply a "canvas" or texture to a region in the image.   The overall effect is similar to a color emboss of the canvas into the selected region. You can control the transparency, amount of embossing, and how the texture is applied.   There are three separate operations within this function; A color emboss, a transparency application, and a sharpening process.   Each of these operation can be applied together or separately to create a wide range of effects.   You can turn one of the components "off" by setting its control to 0. For example, if you wanted to only do an emboss, you would set the Transparency, Radius, and Amount controls to 0.   You could then apply a simple emboss to the image.   F/x comes with a wide range of textures, and you can use any other image as a texture.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Transparency: The Transparency control is used to determine the amount that the source image will "show through" the current image's area select.   The transparency is a percentage value ranging from 0 (transparent source) to 100 (opaque source).   This control can be applied independent of the emboss and sharpening operation by setting their controls to 0, and then setting a transparency value.   The transparency is turned off by setting it to 0. This control is similar to applying the **Merge** operation with a specific transparency setting.

Emboss: The Emboss control will set the amount that the source image will be "pushed through" the action image. This effect simulates an embossed paper look by texturing the action image with the source image.   The control ranges from 0 (no effect) to 100 (maximum emboss).   This control can be used with or without the transparency and sharpening effects.   Those effects can be turned off by setting their sliders to 0.   The emboss used in F/x is a color emboss.   If you want to apply a gray scale emboss, you should first convert the source image to a gray scale.

Radius: The Radius control is used to set the actual pixel radius that will be used for feature detection inside the area selection.   This radius can be used to sharpen the overall results from a canvas texture application.   The actual radius is measured in tenths of a pixel.   For example, a setting of 200 is actually 20 pixels.   F/x will scan the selected region for gaussian surfaces that are within the specified radius.   For example, with a radius of 180 (18 pixels), a surface that is 15 pixels would be sharpened, and a surface that is 19 pixels would not.   Once all of the applicable surfaces have been detected, F/x will then enhance the light and dark regions of the surface.   The overall effect is a sharpening of the selected region.   The control ranges from 0 (no effect) to 200 (20 pixel radius).

Increasing the radius will increase the time needed for generating the effect, as well as the overall sharpening effect. The sharpening filter can be turned off by setting this control and the Amount setting to 0. The control can be set using the provided slide gadget, or by entering the desired value in the text entry field.

Amount: The amount control allows you to specify how much any detected features will be sharpened. The amount ranges between 0 (no sharpening) and 100 (maximum sharpening) percent. A setting of 0 will result in a null operation, or no effect on the image. Increasing this amount will increase the overall sharpening effect. You can also reduce the sharpen effect by reducing the amount value. You can turn the sharpening process off by setting this and the radius control to 0. This control is set using the slide gadget, or by entering the appropriate value in the text entry field to the right of this control.

Canvas Source Image: This list box will display all of the currently loaded images. Remember, all images in F/x can be used as a canvas/texture. An image is selected as the source image by simply clicking on its file name. If you would like to load another image for canvas application, simply use the **Load Source** control, and select the desired image. The Load Source documentation contains a full listing of all of the provided canvases.

B+W Emboss: This option, when selected, will force the embossing portion of the apply canvas operation into a Black and White emboss instead of the regular color emboss. This means that the emboss will be a gray scale emboss only. You can adjust some color into the effect by increasing the transparency level. This selection is useful for embossing backgrounds or poorly scanned images into the current action image. This control will normally default off. If this control is off, the emboss will contain color information from the source image.

Tile: The Tile selection will turn the tiling of the source image on and off. When this option is selected, the source image will be tiled within the area selection if possible. The source will only be tiled if there is room for more than one complete source image. If a source is tiled, it is possible that only portions of some of the tiles will be visible (this will generally occur with odd area selections). If this control is **not** selected, the source image will be stretched to fit the area selection in the action image. This can cause some distortions of the original source in the action image.

Load Source: The Load Source button allows you to load another canvas source image. WinImages:F/x comes with many source canvas images, but you can use **any** image as a canvas. Canvas texture creation is as simple as scanning an object or picture. Sometimes the most unlikely object can make a fantastic canvas. One thing to remember is that natural materials (rocks, barks, etc.) can be scanned. However, this does not mean you should place five or six bricks on your scanner (this can do some serious damage). With large heavy objects (like bricks) try using a photograph instead of the actual physical object. You will always want to stay away from scanning printed materials. Scanning printed materials will result in *Moiré Patterns* or waves and dot patterns in the image. Remember, the key to creating interesting canvases is creativity and imagination.

Section 5.3.6.9 - The Add Texture Operation

This operation will add a texture to the action image.   We have provided a wide range of textures, but you can create your own.   The texture is applied to the action image with a specified Intensity that determines how deep the texture will appear.   There is also a Tile option for tiling or stretching the tile inside the area selection.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Intensity: The Intensity control allows you to adjust the overall amount of the Texture applied.   The control ranges from 0 to 100, with a default of 100.   The higher the Intensity value, the deeper the texture will appear. Lower values will result in less texture being applied to the image.   This means that the texture will not be as deep.

Tile: This check box turns the tiling of the texture on or off.   If this controls is on, the Source Image or texture will be tiled within the specified area selection.   If this option is not selected, then the texture will be stretched to fit the area selection.

The Contour operation will outline areas of similar brightness in an image.   These "contour levels" can be used to create effects ranging from contour mapped images to line art.   You can control the spacing of the lines, their color, and the color of the background.   The background color can be placed by selecting the **Place Background** option. The contour lines are placed based on areas of similar brightness in the image, and the **Interval** setting.   The interval can be thought of as the luminance or brightness spacing between the contour lines.   There are a total of 256 interval levels ranging from 1 to 256.   The interval control is explained in greater detail below.   An example image using the contour operation can be viewed below.

Click on any of the functions for quick help or look below for detailed documentation.
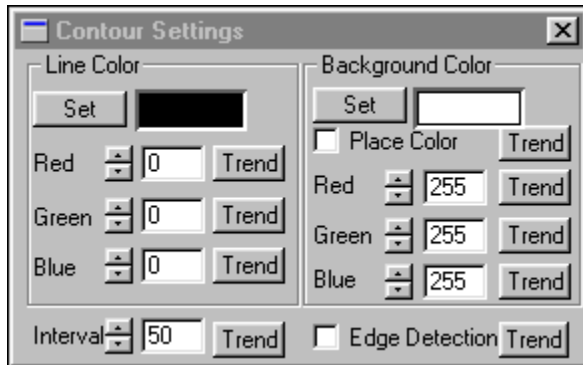

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Contour Line Color Preview Window: This preview window will display the color of the line that is to appear in the selected area.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the contour line color preview will be updated to reflect the changes.   Pressing the **Set** button allows you to access the **Color Selection Dialog.**   This dialog can be used to specify a custom or named color as the contour line color.   For more information on this dialog, Press Here..

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Contour Line** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB

components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Contour Line** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Contour Line** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Background Color Preview Window: This preview window will display the color of the background color that is to appear between the contour lines.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.   Pressing the **Set** button allows you to access the **Color Selection Dialog.**   This dialog can be used to specify a custom or named color as the background color.   For more information on this dialog, Press Here..

Place Background: The **Place Background** control allows you to insert the selected **Background Color** or to place the contour lines over the top of the existing image.   Placing the background will fill the region between the lines with the background color.   If this control is not selected, the original image will appear between the lines.

Red: This slide gadget allows you to specify the Red component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green: This slide gadget allows you to specify the Green component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue: This slide gadget allows you to specify the Blue component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Interval: The interval control allows you to specify the spacing of the contour lines on the image.   The contour lines are placed based on the specified interval value, and the actual brightness values found in the image.   The control ranges from an interval of 1 to an interval of 256.   A setting of 1 means that each contour level in the image will have a line.   This will result in the entire area selection being filled with the specified contour line color.   An interval of 256 means that no contour lines will be placed in the selected area.   Other interval settings will place contour lines based on their value, and the total number of intervals.   For example, if you were to select an interval setting of 15, then there would be a contour line for the 15th, 30th, 45th, 60th, ... , and the 255th luminance level in the selected area.   You can modify this effect by turning the **Detect Edge** option on.   In that case, F/x will only place contour lines where edges with the same interval value are found.   This will give you an image that contains fewer contour lines, and defines the edges in the image.   The two methods are shown below.   The image on the left is just a contour, and the image on the right is a contour with edge detection on.

 Edge Detect: This control is used to change the method of placing contour lines on the image.   If this option is selected, contour lines will only be placed on edges in the image where the luminance difference is equal to the interval value.   This will eliminate contour lines in areas of the image that do not contain specific edges (brightness differences).   If the control is not selected, then the contour lines will be placed at the specific interval setting. This option can be used to create "cleaner" line art, or to reduce the effect of the contour line operation.

Section 5.3.7.1 - The Derivative Operation

The **Derivative** operation examines the rate of change from one <u>pixel</u> to the next.   If this change is large, bright colors will be generated.   If the rate of change is low, then dark colors will be created.   The colors are the result of the derivative being applied to each of the component colors Red, Green, and Blue.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. <u>Click Here</u> to view further information on trends.

Multiply Effect: This control allows you to increase the amount of the derivative effect.   The rate of change will be multiplied by whatever factor is specified between 1 and 20.   In most cases a setting of 15 will create to great of a change, but in some extremely smooth images a higher setting may be necessary.   The control is set by using the slide gadget or the provided text entry field.

Signed; On Gray: This control, when selected, will allow for both positive and negative values based on a 0 value at Luma 128.   This means that any negative derivative values will be darker, and any positive derivative values will be brighter.   If this control is not selected, then all negative derivative values will be made positive.

Add to Image: This control, when selected, will add the existing pixel value with the derivative value to create a sometimes interesting effect.   If this control is not selected, the derivative color values will be placed over the original image.

The **Variance** operation measures the difference between a <u>pixel</u> and its neighbors.   These variance values are then assigned color values and applied to the image.   This operation can produce interesting color effect, and can also be used to detect high frequency noise in an image.   You can control the radius of pixels that are considered and the amount of the effect.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.
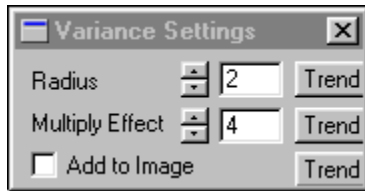
Radius: The Radius control is used to specify the number of pixels that are considered for each pixel in the region.   This setting can range between 1 and 10 pixels.   It is important to remember that as the number of pixels that are evaluated for each pixel in the region increases, so will the computational time needed to complete the effect.   For example, a radius of 10 pixels takes 100 times longer to complete than a radius of 1 pixel.   This control is set using the slide gadget or text entry field.

Multiply Effect: This control allows you to specify the amount of the Variance effect by multiplying the variance values by the specified factor.   The variance values can be multiplied by values from 1 to 20.   This control is set using the slide gadget or text entry field.

Add to Image: This control, when selected, will add the calculated variance values to the existing pixel values.   If this control is not selected, the variance values will be placed over the top of the original image.

Section 5.3.7.3 - The Add Images Operation

The **Add** operation will add the specified source image into the action image .   The entire source image will be scaled and added into the action image regardless of the area select.   If the area select is too small or a non-symmetric shape, the source will be clipped at the edges of the area select.   The image can be added directly or can be added absolutely.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.
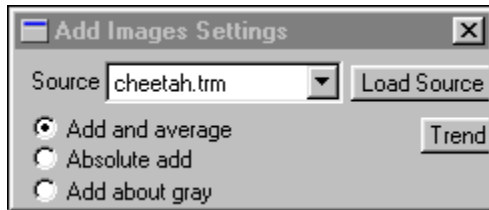
Absolute Addition: This control, when selected, will add the two images absolutely.   An absolute add means that if each image has a middle gray pixel, in the same location, the result would be white.   When this control is not selected the source and action images will be simply added.

Section 5.3.7.4 - The Subtract Images Operation

The **Subtract** operation will subtract the source image from the action image.   The entire source will be scaled and subtracted from the action image regardless of the area select.   If the area select is too small or a non-symmetric shape, the source will be clipped at the edges of the area select.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Signed; On Gray: This control, when selected, will allow for both positive and negative values based on a 0 value at Luma 128.   This means that any negative brightness values will be made darker, and any positive brightness values will be brighter.   If this control is not selected, then all negative brightness values will be made positive.

Section 5.3.7.5 - The Combine Operation

The Combine operation will combine a source and action image based on the lightness and darkness of the source image.   If the operation is set to Lighter, then all portions of the action image which are darker then the source image will be replaced with the source image.   A Darker setting will result in only those areas in the action image that are lighter than the same regions in the source image being replaced with the source image.
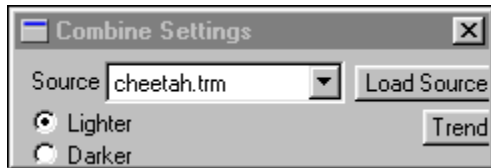

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Lighter/Darker: This control will alter how the Combine operation works.   A Lighter setting will result in the action image having areas darker than the same areas in the source image being replaced by the source image.   The opposite is true for the Darker setting.   See the images below for more details.

	Action	**Source**	**Lighter**
Darker			

Section 5.3.8.1 - The Clip Operation

The **Clip** tool allows you to take a certain portion of the image, and create a new image. You may also specify the clip as a source image.   The clipping control allows you to clip regions from an image, and the using the **Merge** operation, place them into other regions.   Clips can also be altered by other operations, and then merged into new images.   The new image created by clipping will also require more memory.   The new image will require area selection height times area selection width times 4 bytes of memory.   For example, a clip that is 100 x 100 would require 40,000 bytes of memory.

Click on any of the functions for quick help or look below for detailed documentation.

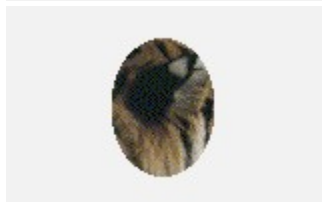## The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Assign the Result as Source: This control, when selected, will make the newly created clip image the source image. The source image is used for merging, alpha channel creation, and other composition functions.   The previous source image will be replaced by the new image.   If the control is not selected a new image will be created, but it will not be specified as the source image.

Section 5.3.8.2 - The Merge Operation

The **Merge** operation allows you to place the **Source** image into a selected area.   This allows you to create images that may be a composition of several other images.   As with all other operations in F/x, the Merge operation uses the underlined alpha channel of the source.   If the **Mask with Alpha Control** is selected, the source will be merged using only its alpha channel.   If the **Mask with Alpha Control** is not selected, the source will be merged using the product of the action and source alpha channels.   The source image is specified using the **Source Image drop down box** or the **Load Source** button.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

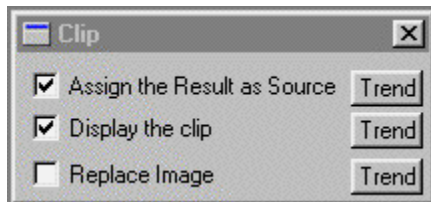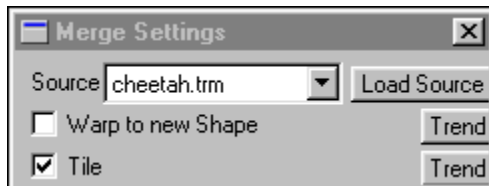**Warp to new Shape:** This control, when selected, will cause the source image to fit the selected area.   For example, with this control selected you could merge a rectangular source into an elliptical area select.   It is important to remember that this can cause some *tearing* or *image discontinuities*.   The best way to avoid the tearing or discontinuities is to use high quality (resolution) input images, and use uniform symetric area selections.

Tile: The tile check box, when selected, will cause the source image to be tiled inside the area selection if it is larger than the source image.   If this option is not selected, the image will be stretched (re-sized) to fill the entire area selection.   Remember,   a source image will only be tiled if it is smaller than area selection that made.

The **Key In** operation allows you to merge an image based on colors found in the action image.   You can select the color to be used for keying, the source image to be merged, the keying method, and the variance in the key color.   The merged image can be placed everywhere that the key color exists, or everywhere that the key color does **not** exist.   For example, you can select to merge a background into an image with an all blue background, or you can select to merge the source image everywhere that the blue background does not appear.   The Key In operation is a color and decision based merge.   This means that each <u>pixel</u> in the selected area is examined to determine if it is the key color or within the key color range.   This is more powerful than a standard merge because you have more control over which pixels will be replaced by the source image.   This operation is best suited for use with all of the area selection tools, except Color Key and Color Wand.

Click on any of the functions for quick help or look below for detailed documentation.
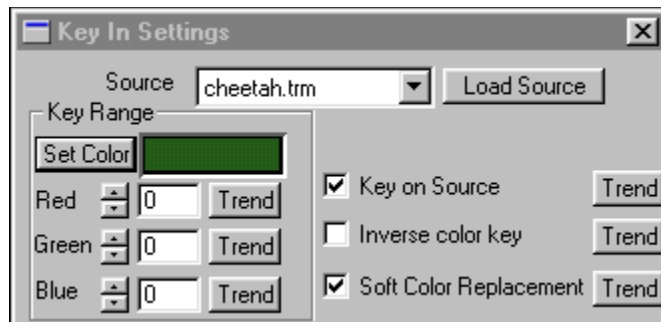
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Source Image Drop Down Box: The Source Image drop down box allows you to select a source image from all of the images currently loaded.   The source image is the image that will be "keyed" into the specified color in the action image.   This operation also allows you to load a new image as the source image.   This is done by selecting the **Load Source** button.   A source is selected by clicking on the name of the image to be used as the source.   Remember, any image can be a source image, even the current action image.

Load Source: This control allows you to load a new image into F/x as the source image.   Selecting this button will access a file requester.   You can then use this file requester to specify the file to be loaded as the source image.   Once the image is loaded you can execute the operation by selecting an area.   The source image that is loaded will remain as the source until a new source is selected.

Inverse Color Key: This control allows you to toggle the way the Key In operation works.   When this option is not selected (this is the default), the source image will be merged into the specified color.   For example, if you had a action image with an all blue background, and the key color was the same blue, the source image would be placed everywhere that the blue was found inside the area select.   If the control is not selected, the source image will be placed only where the key color does not exist.   If we use the example above, the source image would be placed

everywhere that the blue color is not found within the area selection.

There is a very simple way to demonstrate the two methods of using the Key In operation. Take two images, and designate one as the source using the Source Image drop down box. Now, use the **Color Fill** operation to fill one corner of the action image with a primary blue (R=0, G=0, and B=255). After you have filled the corner of the action image, return to the Key In dialog. You will now want to make sure that the key color matches the color that was used for the color fill. This can be done by selecting the **Set Color** option, and then entering the same RGB values that were used for the fill. Once you have the proper key color, select the **Ok** button to exit the color selection dialog. Now, select the Entire area selection mode from the area selection tool box. Make sure that the **Inverse Color Key** control is **not** selected, and then click on the action image. After this has generated, you should see the source image has been merged into the action image only where the key color existed. You can now select the **Undo** button to re-obtain the original action image. Next, select the Inverse Key Color option. This will now select all areas in the action image which are not the key color. Click on the action image to apply the effect. You should see that the blue corner is all that is left of the original action image. The rest of the image has been filled with the source image. As you can see the Key In operation is very simple to use, and has countless applications for altering an existing backgrounds, and filling a backgrounds into blue screened shots.

Soft Color Replacement: This control allows you to select how the source image will be merged into the specified key color. If this control is selected, then the source will be merged on a percentage basis across the range. This means that colors nearer to the key color will be replaced more than colors far away from the key color. The overall result is a softening of the merge giving it a blended look. If the control is not selected, then every color that is within the key color and its range will be filled with the source image data. This type of key in can be rougher, but is still quite effective.

Key Range: The Key Range controls are used to specify the specific Red, Green, and Blue components of the Key In color's variance. This variance determines which pixels inside the area selection will be replaced with the merge of the source image. For example, if the key color was blue (R=0, G=0, B=255) with no variance specified, then only the pixels in the area selection that exactly match the key color will be selected for the merge. If you were to use the same key color with a range setting of ten for each of the color components RGB, then pixels which are plus or minus ten the key color, and all colors within that range will be selected for the merge. This allows you to key in backgrounds into areas that may contain a gradient or variation in color. Using the range controls can produce a more accurate key in operation.

Set Color: The Set Color button will access the Color Selection dialog, and allow you to select a color as the key color from the palette. The final color that is visible in the color selection preview will be the color used as the key color for the operation. Remember, the color that is selected will be the color that is used for merging the source into the action image. If you are having difficulties selecting the correct colors, you should use the **Color Sample** tool to define the key color, and then use the Key In operation to place the source image into the action image. If you would like to view more information on the Color Selection dialog, Press Here.

Key on Source: This option allows you to color key based on colors in the source (actor) image. This allows you to composite actors into a background based on the colors in the source or actor image. If this toggle is not selected, then the images will be keyed using the color information from the background image only.

Section 5.3.8.4 - The Place Operation

The **Place** operation will place the source image <u>pixel</u> for pixel into the selected area.   The pixel for pixel placement means that a 100 x 100 clip or image will be placed into the action image at 100 x 100, regardless of the action image size.   You may select to have the image placed only in the selected area, or have it placed full size where you specify.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Only Place in Area Selected: This control, when selected, will clip the image being placed to conform to the selected area.   The placed image will still be pixel for pixel exact, but it will be clipped to follow the area selection. This does not mean that the image will be stretched to fill the area selection.   You should use the **Merge** operation if you would like the source image to be in the shape of the selected area.   If this control is not selected, the entire image will be placed wherever you click.   Remember, the image being placed will be placed pixel for pixel, and may be larger than the action image.   The source image will be placed based on the center of the source image and the center of the area selection mode.

Section 5.3.8.5 - The Extend Operation

The Extend operation allows you to increase or extend the physical size of the image in any one direction.   You have control over the direction of the pixel extension, the number of pixels, and how the new pixels will appear. You also have the option of replacing the previous image, or creating a new image with the specified pixel extension.   This operation can be especially useful for creating banner or caption areas in the image for text.

Note: This operation can only be used with the Entire area selection method.

Click on any of the functions for quick help or look below for detailed documentation.
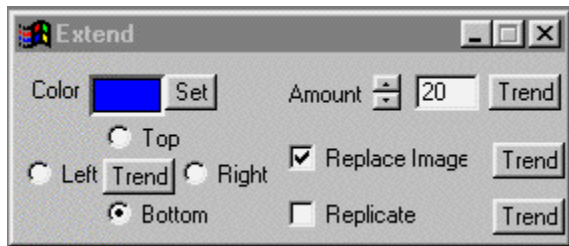
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Color Set: The Color Set button will access the Color Selection dialog, and allow you to select a color for the extended area from the palette. This color will only be used if the Replicate option is not selected.   If you would like to view more information on the Color Selection dialog, Press Here.

Direction: These four buttons allow you to select the direction in which the pixel extension will be applied.   For example if you select the Bottom button (default), the operation will add the specified number of pixels to the bottom portion of the image.

Amount: This control allows you to set the total number of pixels that the image is to be extended in any one direction.   The control ranges from a setting of 1 to a setting of 9999 additional pixels.   It is important to remember that extending an image by a large number of pixels will greatly increase the amount of memory necessary for the image.

Replace Image: This option allows you to select if the extended image will replace the existing image in memory, or create a new image leaving the original un-altered.

Replicate: This control determines the nature of the extension.   If it is selected, the image will be extend with the colors of the pixels on the outside edge of the image in the specified direction.   If it is not selected, the pixel extension will be the color specified with the Set Color button.

Section 5.3.8.6 - The Enlarge Operation

The **Enlarge** operation allows you to increase the size of a selected view by a percentage amount. This means that you can stretch a 320 x 200 image to a 640 x 480 image. It is important to remember that enlarging an image will not increase the image information. Enlarging will only increase the image size, and interpolate the original information. Enlarging may be useful in making extremely low <u>resolution</u> images more **pleasing** to the eye, but the image information will be exactly the same. This operation can also be used to make a group of files the same resolution.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. <u>Click Here</u> to view further information on trends.

Width%: This control allows you to control the percentage increase for the width of the image. The percentage increase can range from 100% to 1000%, with 100% being no change in the resolution. All changes made to the percentage value will be reflected in the **New Width** control. The width can be altered by moving the slide gadget, entering the appropriate percentage value, or entering the desired <u>pixel</u> value in the New Width control. Altering the value in the **Old Width** control will have no effect.

Height%: This control allows you to control the percentage increase for the height of the image. The percentage increase can range from 100% to 1000%, with 100% being no change in the resolution. All changes made to the percentage value will be reflected in the **New Height** control. The width can be altered by moving the slide gadget, entering the appropriate percentage value, or entering the desired pixel value in the New Height control. Altering the value in the **Old Height** control will have no effect.

Replace Image: This option, when selected, will automatically replace the image that was being enlarged. This allows you to reduce the amount of memory needed by the program by opening fewer image views. If you select to Undo the enlarge operation, F/x will be able to retrieve the unaltered image. If this option is not selected, then F/x will create a new image view with the enlarged image.

Constant Zoom: The Constant Zoom option allows you to select how a stream of images is enlarged. If this option is selected, then the images will all be enlarged by a constant enlargement factor. This value is the percentage value on the Width and Height controls. If this option is not selected, then all images will be enlarged to the same dimensions.

Section 5.3.8.7 - The Reduce Operation

The **Reduce** operation allows you to decrease the size of a selected view by a percentage amount.   This means that a 640 x 480 image could be reduced to a 320 x 200 image.   It is important to remember that reducing an image, no matter what its resolution is, will lose image information.   The lose of information can be reduced by only reducing an image by small amounts.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Width%: This control allows you to control the percentage decrease in size for the width of the image.   The percentage decrease can range from 1% to 100%, with 100% being no change in the resolution.   All changes made to the percentage value will be reflected in the **New Width** control.   The width can be altered by moving the slide gadget, entering the appropriate percentage value, or entering the desired pixel value in the New Width control.   Altering the value in the **Old Width** control will have no effect.
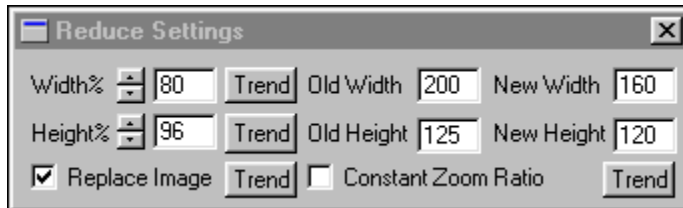
Height%: This control allows you to control the percentage decrease in size for the height of the image.   The percentage decrease can range from 1% to 100%, with 100% being no change in the resolution.   All changes made to the percentage value will be reflected in the **New Height** control.   The width can be altered by moving the slide gadget, entering the appropriate percentage value, or entering the desired pixel value in the New Height control.   Altering the value in the **Old Height** control will have no effect.

Replace Image: This option, when selected, will automatically replace the image that was being reduced.   This allows you to reduce the amount of memory needed by the program by opening fewer image views.   If you select to Undo the reduce operation, F/x will be able to retrieve the unaltered image.   If this option is not selected, then F/x will create a new image view with the reduced image.

Constant Zoom: The Constant Zoom option allows you to select how a stream of images is reduced.   If this option is selected, then the images will all be reduced by a constant enlargement factor.   This value is the percentage value on the Width and Height controls.   If this option is not selected, then all images will be reduced to the same dimensions.

Section 5.3.9.1 - The Color Fill Operation

The Color Fill operation will fill the selected area with the specified color.   The color is altered by moving the Red, Green, and Blue sliders, or by entering the appropriate values in the provided text entry fields.   As the sliders are moved you will be able to view the changes to the color in the sample color preview window.   After you have the desired color, you can then fill areas in the current view.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Set Color: The Set Color button will access the Color Selection dialog, and allow you to select a color for the fill from the palette.   The color that is selected will automatically adjust the RGB sliders and Fill Color Sample to reflect any selections that are made.   If you would like to view more information on the Color Selection dialog, Press Here.

Red: This control allows you to specify the amount of the Red component in the RGB color space.   This control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Green: This control allows you to specify the amount of the Green component in the RGB color space.   This control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Blue: This control allows you to specify the amount of the Blue component in the RGB color space.   This control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

The **Colorize** operation will apply the selected Hue and Saturation values to the selected area.   The Luminosity value is not used in the application of the color, but adjusting the Luma settings may help you to better *visualize* the color to be applied.

You also have the option of only applying the Hue values to the image that will simply change the current hue values in the selected area.   It is important to remember that this use of the Colorize operation can result in no change to the image.   For example, applying just the Hue to an all Black and White image will result in no change. The colorization of a Black and White image requires the use of the saturation value.   There are also situations where the preview may contain a gray color (a Saturation setting of 0), and the area that is colorized is blue.   This is because the saturation value is being ignored, and the Hue value, in this case a blue, was applied to the area.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Hue: The Hue control allows you to adjust the Hue setting for the Colorize color.   The selected Hue can be applied by itself or with the saturation value to create different effects.   The Hue can range from 0 to 360 degrees, and is set using the slide gadget or by entering the appropriate value in the text entry area.

Saturation: This control allows you to adjust the amount of saturation in the Colorize color selection.   The saturation value may or may not be applied to the selected area based on the setting of the **Apply Saturation Also** control.   If this control is not selected, the saturation setting will have no effect.   F/x will use the saturation value of the image in Colorizing the image.   In order to see the Hue that's to be applied, you may want to increase the saturation.   Doing this will cause the preview color to be closer to the color applied.   The pictures below show an example of the difference between using and not using the saturation.
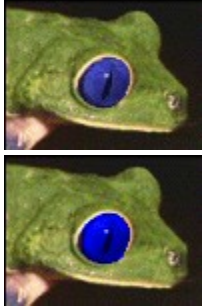
Luma: The Luminosity, how bright or dark a pixel is, is not used in this operation, but adjusting the luma can aid in visualizing the desired color.

Pick Color: This control will present the **Color Selection** controls.   These controls can be used to specify the color to be used for colorizing, or you can select the **Color Sample** color.   The last color that was sampled is always in the bottom right-hand corner of the **Custom** Palette group.   This allows you to colorize an image based on a previously sampled color.   If you would like to view more information on the Color Selection dialog,   Press Here.

Apply Saturation Also: This control, when selected, will apply both the Hue and Saturation values to the selected area.   It is important to remember that this control must be selected to apply color to a Black and White image.   If you do not have this control selected, only the Hue will be applied to the specified region.

Section 5.3.9.3 - The Contrast Operation

Contrast can be considered the difference between light and dark regions in an image.   When the contrast is increased the lighter regions will become darker, and the darker regions will become lighter.   Decreasing the contrast will make the difference between light and dark regions much less.

The contrast operation in WinImages:F/x is based on a center luma value of 128.   If a pixel has a value lower than 128 it will be considered **dark**, and values greater than 128 will be considered **light**.

*Click on any of the functions for quick help or look below for detailed documentation.*

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Contrast: The contrast settings can be altered by using the slide gadget, or by clicking on the text entry field and entering the appropriate value.   The contrast operation defaults to 100 which is the maximum contrast change.   The contrast can range from -100 to 100.   Setting the contrast to 0 will cause no change to the image.

Section 5.3.9.4 - The Brightness Operation

The Brightness operation alters the brightness value for each <u>pixel</u> in the selected area.   F/x calculates brightness based on a linear measure of how far from a brightness value of zero each pixel is.   The larger the value the brighter the value.   Brightness values can range from -100 (minimum brightness) to 100 (maximum brightness).

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Brightness: The brightness settings can be altered by using the slide gadget, or by clicking on the text entry field and entering the appropriate value.   The brightness operation defaults to 100 which is the maximum brightness change.   The brightness can range from -100 to 100.   Setting the brightness to 0 will cause no change to the image.

Section 5.3.9.5 - The Gamma Operation

The **Gamma** operation is similar to the **Contrast** operation.   Both operations evaluate the pixels in the selected area based on the <u>pixel</u> brightness.   The difference is that contrast will linearly brighten or darken a pixel, and Gamma brightens or darkens the pixel based on its original value.   A Gamma operation is a contrast operation that is modified to be closer to the way your eye responds to light.

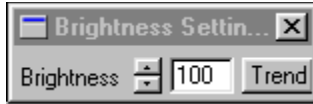*Click on any of the functions for quick help or look below for detailed documentation.*

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Gamma: The Gamma control allows you to adjust the dark and light regions of the image.   An increase in gamma will **lighten** the image, and a decrease will **darken** the image.   The control ranges from -200 to 200, and can be set using the slide gadget or text entry area.

Section 5.3.9.6 - The Balance Operation

The **Balance** operation allows you to sample a color, and then specify a new color as the original color. This means that you could take the brightest portion of the image and specify it as white. The Balance operation will then adjust the entire image with the new values. The Balance operation can be used to simulate tinting, eliminate a yellowish tinge to old photographs, or even to bring out greater image detail in a **dark** image. You have the option of balancing the sampled color to white, black, gray, or any other color that you like. The Balance operation works like this:

1 - Select the **Color Sample** tool from the **Standard Adjustments** group. Sample the color that you wish to use as the balance color. This color is generally the lightest or darkest portion of the image, but can be any color you like.

2 - Now, select the **Balance** operation. The Balance controls allow you to specify the new color that will become the sample color. There are three preset controls (White, Black, and Gray Balance), or you may select to change the color to another color. You also have the option of using the **Pick Color** control to select a color from the palette. **Note:** Selecting the **Key Color** as the Balance Color will result in a null operation.

3 - The Balance operation is completed once an area selection is made. The same Color Balancing can be performed in other areas, or you may select a new Sample Color and then balance the new color.

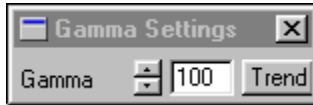*Click on any of the functions for quick help or look below for detailed documentation.*
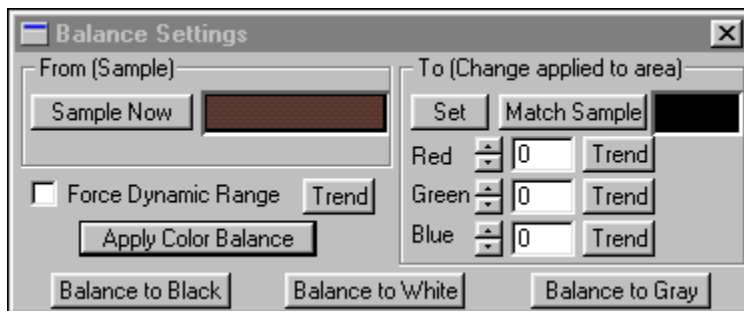
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. Click Here to view further information on trends.

Pick Color: Pressing this button will access the Color Selection dialog. You may then select a color from the palette or any of the preset colors as Balance Color. You may not select the Sample Color. Selecting the sample color will result in a null operation. If you would like to view more information on the Color Selection dialog, Press Here.

Red: This control allows you to adjust the amount of Red in the Balance Color. This control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Green: This control allows you to adjust the amount of Green in the Balance Color. This control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Blue: This control allows you to adjust the amount of Blue in the Balance Color.   This control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Force Dynamic Range: This control, when selected, will force a dynamic range based on the Sampled Color.   A dynamic range goes from maximum brightness to minimum brightness in the same selected area.   This selection will **stretch** the Sampled Color into a dynamic range in the specified area.

Presets:

Balance to Black: This will make the specified Sample Color black.   The rest of the image will then be adjusted based on the **new** black value.   This process is useful in removing the yellow tint from old photographs.   If the Sample Color is not the darkest region in the selected area, then any other regions that are darker will also be pushed to black.   This can result in loss of image information.

Balance to White: This will make the specified Sample Color white.   The rest of the image will then be adjusted based on the new white value.   This process is useful in removing the yellow tint from old photographs.   If the Sample Color is not the brightest region in the selected area, then any other regions that are brighter will also be pushed to white.   This can result in loss of image information.

Balance to Gray: This will make the specified Sample Color gray.   The rest of the image will then be adjusted based on the new gray value.   This process is useful in removing the yellow tint from old photographs.   This operation produces a smoother balance than the Black and White Balance presets.

Section 5.3.9.7 - The Histogram Operation

The Histogram operation is used to evaluate, and alter, the statistical data of an image's brightness. The Histogram will create a graph of the selected area's RGB and Average brightness. These values can then be evenly redistributed or altered in a specific brightness range. This operation also contains the color map for the selected area. This map can be altered to create interesting and new brightness values for each of the RGB components.

The Histogram of the area is obtained by selecting the **Gather Histogram** option, and then selecting the region to be evaluated. It is important to remember to turn the Gather Histogram control off after you have selected the region to be evaluated. The Histogram graph will display the RGB and Average values for the brightness in the selected area. The graph depicts the amount of a color at a certain brightness level in the selected area. The graph moves from he darkest values on the left to the brightest values on the right.

Once you have the histogram of the selected area you can equalize the distribution of the RGB brightness by selecting the **Histogram Equalize** option. This redistribution can be applied anywhere in the image that you like. Warning: A Histogram Equalize will almost always lose some image information when the pixels are remapped to the new brightness values. Despite the loss of the information the result can be quite pleasing. You also have the option of altering only a particular group of brightness values. The group can be windowed by using the **Brightness** and **Contrast** controls to enclose the desired brightness values. This group can then be equalized by selecting the Histogram Equalize button, and then pressing the **Apply** button. The next area selection made will then equalize only those brightness values in the selected area.

The Histogram operation also includes the functionality of altering the existing color map. Doing this will cause all of the pixels in the selected region to be remapped to new colors and brightness based on the new color map. The three color components (RGB) can each be altered separately on the same graph. Altering the color map can create new and unusual colors and effects known as solarizations.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. to view further information on trends.

Show Map: This button will display the current Color Map.   The Color Map can be used to alter the brightness values for each of the RGB components.   The RGB components area altered by simply drawing on the graph using the mouse.   The graph will display all three colors when they do not completely overlap.   The component is selected by simply clicking on the R, G, or B buttons.   There are also six tools to aid in the creation of new color maps.   These tools allow you to move the current component graph left, right, up, and down and there are two tools that allow for curve smoothing and enhancement.   The color map can be applied to an image at any time by selecting an area in an image.   Alterations to the color map can create new and unexpected colors in the selected area.

Reset Map: This will reset the current color map to the default map.   Applying the default color map to the image will have no effect.

Histogram Equalize: This button, when pressed, will reorganize the image brightness values so that they are statistically evenly distributed through out the available color range.   This operation can be done for the whole range of brightness or for a group.   A group of brightness values are equalized by windowing the brightness values using the brightness and contrast controls, pressing the **Histogram Equalize** button, and then pressing the **Apply** button.   Doing this will apply a histogram equalization that occurs over only the selected brightness levels.   It is important to remember that histogram equalization will almost always lose some image information, but the overall effect can be quite pleasing.

Independent RGB: This control, when selected, will display the average histogram and the individual RGB components.   If this control is not selected, then only the average brightness values will be displayed.

Apply: This control will apply the current Brightness and Contrast window to the color map.   A window can be directly applied or it could be histogram equalized first.   A direct application allows you to dynamically stretch the selected brightness range over the entire range of available brightness values.

Brightness and Contrast: The Brightness and Contrast control allow you to window a range of brightness values. The Brightness control will move the position of the window, and the Contrast will alter the number of brightness values in the range.   Increasing the brightness will move the window position to the left, and decreasing the value will move the window to the right.   Increasing the contrast value will decrease the number of brightness values in the window, and decreasing the contrast will increase the number of brightness values.   Once the window has been specified you can then histogram equalize the window or directly apply it to the color map.   These controls are set by either using the slide gadgets or by entering the appropriate brightness and contrast values in the text entry fields.

Gather Histogram: This button, when selected, will gather and create a histogram based on the image information in the selected area.   This information can then be equalized or altered to create new brightness values for the pixels in the next area select.   It is important to remember to turn this control off once you have the histogram from the specified region.   The current histogram will be lost when another gather operation is performed.

The Color Sample Tool is used to **grab** colors from an image for use with the Color Keyed area selection mode. Selecting an area will display the average RGB values and variances for that region.   The color that is determined is automatically placed in the **Key Color** Custom Color set in the very last position.   The variances can be automatically placed in the **Key Range**   control by selecting the **Make this the Key Color** option..

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Red: This control allows you to specify the amount of the Red component of the sampled color.   The control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Green: This control allows you to specify the amount of the Green component of the sampled color.   The control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Blue: This control allows you to specify the amount of the Blue component of the sampled color.   The control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Red range: The Red range control allows you to specify the variance for the Red component of the RGB color sample.   If this value is pasted into the **Key Range** control, it will also set the variance for the HSL color space.

Green range: The Green range control allows you to specify the variance for the Green component of the RGB color sample.   If this value is pasted into the **Key Range** control, it will also set the variance for the HSL color space.

Blue range: The Blue range control allows you to specify the variance for the Blue component of the RGB color sample.   If this value is pasted into the **Key Range** control, it will also set the variance for the HSL color space.

Make this the Key Color: This control, when selected, will place the sampled color directly into the **Key Color** control and select it.   This will also adjust the variance in the **Key Range** control.

Include Extreme Variations: This control, when selected, will include any extreme values that were encountered in the color sample.   These extreme values will alter the actual color sample and the individual ranges.   This function is used for sampling regions that have a wide range of colors.   For example, an image of a bright blue sky with

clouds contains a wide range of colors between the clouds and the sky.   Sampling the sky and cloud region, with this selected, will provide you with a better sample and range for color keying.

Section 5.3.9.9 - The Remap Operation

The Remap operation allows you to select a number of colors from the image, and then replace them with new colors.   This can be used to subtly alter a color or color range in an image, or to give an image a completely new 'look' with strange and unusual colors.   The colors are set using the <u>palette</u> tool, and you may selectively replace up to 1024 colors.   This operation also allows you to select more than just the specified colors for remapping through the use of the **Nearness** control.   This control allows you to specify a color variance that's to be used for selecting the colors to be remapped.   Increasing this values will select more and more colors in the image for remapping.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Position: The position control allows you to scroll through the "From" and "To" colors.   As you move the scroll bar up and down, the colors will also move to reflect the current palette position.   The current color cell number in the palette is displayed between the From and To ranges.   The number of colors for the palette is set using the Palette Size control, and the colors can be set by pressing the Set button for the From and To color ranges.

From and To Colors: These colors represent colors in the image that you would like to remap.   The color bar on the left is called the **From Colors**, and the color bar on the right is called the **To Colors**.   These colors can be set using the **Set** option located to the right of each color bar.   When the operation is applied, F/x will locate all of the

colors in the image that match (or are within the nearness setting) of the From Colors.   These colors are then remapped to their corresponding To Colors.   You can also increase or decrease the number of colors selected that are not exact matches by increasing or decreasing the **Nearness** setting.

Set From Colors: This Set button is used to specify the From Colors that are to be remapped.   The colors can be selected individually, loaded from a preexisting palette, or created through the various spreading and sorting tools in the palette controls.   Click Here to view more information on the Color Palette controls.

Set To Colors: This Set button is used to specify the To Colors.   These colors are the colors that F/x will remap the original From Colors into.   The colors can be selected individually, loaded from a preexisting palette, or created through the various spreading and sorting tools in the palette controls.   Click Here to view more information on the Color Palette controls.

Nearness: The Nearness slider allows you to specify a variance value for colors that are to be remapped.   This value can range from 0 (no variance) to 255 (maximum variance).   F/x will evaluate each From color in the image that is within the specified variance (nearness) amount.   Colors that exactly match the From color will be replaced with the corresponding To color.   Colors that do not exactly match, but that are within the specified nearness amount, will be remapped using the luminance values for the original colors, and an interpolated To color.   This allows you to remap a range of colors with only a few From and To Colors.

Palette Size: The Palette Size option allows you to select the total number of colors to be remapped.   This value can range from 1 to 1024 separate colors.   Each of these colors will need to have an associated To or From color. Any colors that are not specified will default to black, or the last specified color for that palette position.

Section 5.3.9.10 - The Build Palette Operation

The Build palette operation is used to develop an animation palette from a number of images.   This allows animators to "render down" a sequence of images into a palette which can be used for all of the frames in the animation.   The operation has three states or actions: Clear, Accumulate, and Generate Palette.   These options relate to how F/x and the Timeline will treat the action images in regard to the image's palette.   The Clear option is used to clear the palette collection buffer, and is usually only used once at the beginning of a timeline sequence, but it is not limited to this position.   The accumulate option will determine which colors are represented in the image, and is usually used for every frame in the timeline.   The colors in the image are simply placed into the palette collection buffer.   This is done for all of the frames that you wish to obtain color information from.   The final mode is the Generate Palette mode.   This option will review all of the colors that have been gathered from all of the images, and then it will develop a single palette in the specified number of colors.   This option is generally used in only the last frame of a sequence.   The use of this operation is mainly related to the timeline, but it can be used for a single image file as well.   Each of these controls and all of the other Build Palette dialog controls are explained below in the detailed documentation section.

Build Palette TimeLine Example

A typical build palette timeline will have three separate build palette icons, and a number of image files.   The first frame, in most cases, will contain a build palette operation set to Clear and Accumulate.   This will clear all of the colors from the current color collection buffer, and also accumulate colors from the action image in frame 1 of the timeline.   The colors collected or selected by the accumulate operation are determined by the actual colors in the image.   Colors are simply placed into the buffer with no specific weight or significance.   This is done for all frames that should be included in the final palette selection.   The next icon in the timeline should use the accumulate mode only.   This will cause F/x to accumulate color information from each of the specified animation files, and then store that information in the color collection buffer.   You have the option of skipping frames by decreasing the operation arrow associated with the operation icon.   For example, the timeline below does not use the 5th image in the accumulation of colors.   The accumulation resumes with frame 6.   The last operation is an Accumulate and Generate Palette option.   This will gather the color information from the final image, and then select the overall best palette from all of the accumulated colors.   The number of colors that this operation selects directly relates to the **Number of Colors** setting in the Output Color Reduction dialog.   This value can range from 1 to 256.   The colors are then placed into the render palette, on the basis of the color usage settings for each color cell (see output color reduction).   In general you will not want to use the Save Results option while gathering a render palette.   Instead, you should sequence the frames (as shown), and then re-render and save the frames with the newly selected render palette.
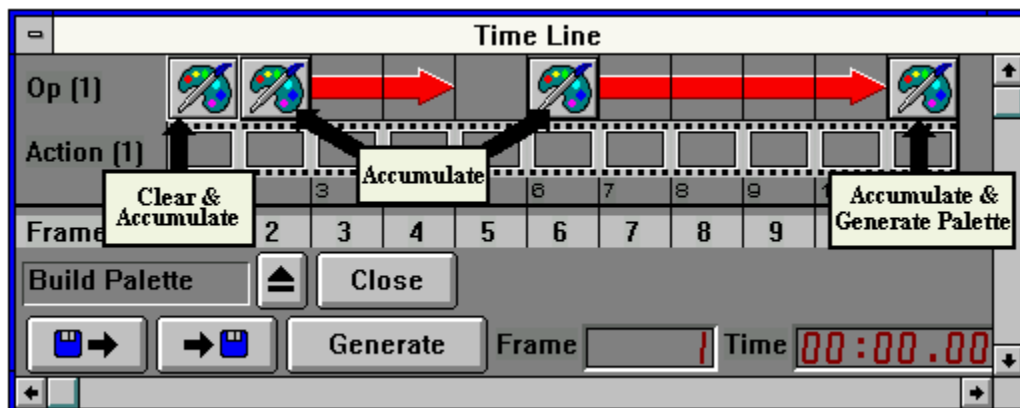
Generating a Palette for a Single Image

In some cases you may find it necessary to generate a palette for only one frame.   This can be done very simply by setting all of the Build Palette option On (Clear, Accumulate, and Generate Palette).   After you have switched all of these options on, you would select the Entire area selection mode, and click in the image that you wish to gather a palette from.   WinImages will then clear the collection buffer, accumulate all of the colors in the image, and generate a palette based on the number of colors specified in the output color reduction dialog.   After the operation has finished, the new render palette can be viewed by pressing the **Reduction Settings** button in the Build Palette dialog.   All of the newly selected colors will appear in the Color Usage area in the middle of the dialog.   You can then save the palette for later use.
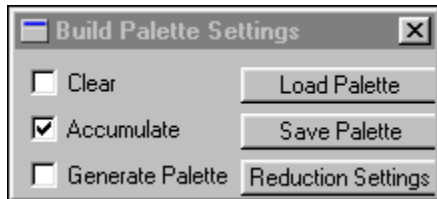
Build Palette Controls:

Clear: The Clear option will clear all of the currently stored colors in the color collection buffer.   This is generally reserved for the first frame in a timeline, but can be used for any frame.   Once the collection buffer has been cleared, it cannot be retrieved.   Please review the previous sections for proper usage of the Clear option in a timeline.

Accumulate: The accumulate mode will go through all of the specified images, and collect color information from these images.   This information is placed into a color collection buffer where all of the colors from all of the images are temporarily stored.   After all of the images have been processed, the **Generate Palette** option will pick the best representative colors from the collection buffer.   The accumulate option is used for almost every frame in a timeline, but can be turned off for any relevant frame or frames.   Review the sections above for proper usage of the accumulate option in the timeline.

Generate Palette: This option will create a palette of colors based on the colors in the color collection buffer, and the setting of the **Number of Colors** option in the Output Color Reduction panel.   For example, if you set the Number of Colors option to 64, Generate Palette would select the best 64 colors from the color collection buffer.   After these colors have been selected, they would be placed into the render palette based on the current usage status of the first 64 colors (see the output color reduction section for more on color usage).   As stated above, this option is generally reserved for the last frame of a timeline, but it can also be used to obtain a palette from a single image.

Load Palette: The Load Palette button will load any previously saved palette as the current render palette.   It is important to remember that render and effects palettes are kept separate in the program.   For example, loading a palette via this option will effect only the render palette, not the effects palette.   F/x loads a wide variety of palette formats including: Microsoft Windows Paintbrush palettes, AVI (Video for Windows) palettes, Bitmap palettes, Adobe Color Table (ACT) palettes, and IFF palettes.

Save Palette: The Save Palette option allows you to save the current render palette in the standard WinImages palette format.   Once a render palette has been saved, it can be reloaded using the load palette option in either a render or effects palette.

Reduction Settings: This button will access the Output Color Reduction dialog.   This dialog contains a new area that allows the user to select which colors should be selected.   This dialog can be left open and edited while you are setting up a Build Palette operation, and it will automatically reflect any changes that you make to the render palette.

Section 5.3.10.1 - The Make Alpha Operation

The **Make Alpha** operation will create an <u>alpha channel</u> based on current selections in this dialog and the alpha channel of the current image.   This control allows you to create an alpha channel for the action image based on the source image luminance.   You can also alter an existing alpha channel of an image by using the **Mask with Existing Alpha** control.   An image's Alpha Channel is used in conjunction with the **Mask with Alpha**, controls to create smooth edge blending and digital masking.   You may find it easier to work with this, and all other alpha channel tools, with an alpha view open.   These views can be opened by selecting the **Display Alpha** option in the **Open Another View** dialog accessed via the **View** menu.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Mask with Existing Alpha: This control, when selected, will alter the current alpha channel of the image based on the area select.   For example, an image with a circular alpha channel could be altered to have a square alpha channel by selecting a square within the original alpha channel.   It is strongly suggested that you open a view to the alpha channel when working with it.   This way all changes made to the alpha are visible.   An Images Alpha is viewed by using the **Open Another View** option in the **View** pull down menu.   If this control is used with the **Mask with Source Luminance** control selected, then the new alpha channel will be based on the selected region and the Luminance of the Source image.

Mask with Source Luminance: This control, when selected, will create an alpha channel for the current image based on the **Source Image Luminance**.   The Source image is specified in the **Generate** pull down menu.   This control can be used with the **Mask with Existing Alpha** control to create an alpha channel based on the original alpha channel and the source image luminance.

Section 5.3.10.2 - The Key to Alpha Operation

This <u>alpha channel</u> tool allows you to create an alpha channel for an image based on a key color in the image.   The alpha channel can be created in one of two ways.   The first method creates a simple "on/off" alpha channel based on the current **Key Color**.   This color is sampled from the image using the **Color Sample** tool (located in the Standard Operations   group), and an area selection method.   After the color has been sample, it will be automatically placed into the Key to Alpha Dialog as the key color.   F/x will also place any associated variance values that were in the sample color into the dialog.   You may now select the region on the image that is to be used for alpha channel information based on a key color (usually entire).   You may find it easier to work with this, and all other alpha channel tools, with an alpha view open.   These views can be opened by selecting the **Display Alpha** option in the **Open Another View** dialog accessed via the **View** menu.   F/x also gives you the option of changing the color ranges, inverting the alpha, and creating a soft alpha channel from the key color.   Each of these options is discussed in greater detail below.

Click on any of the functions for quick help or look below for detailed documentation.
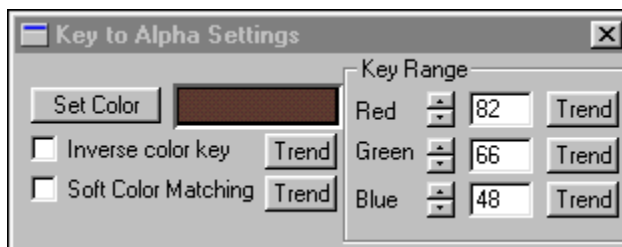
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Set Color: The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.   <u>Click Here</u> to view more information on the Color Selection dialog controls.

Inverse Color Key: The inverse color key option, when selected, will select all regions in the image that are **not** the specified key color.   If this option is not selected (default), then all areas in the image that are the key color will be selected as alpha channel.   When an area is "selected" then the alpha channel for that are will be black (opaque).   This tool can be used in conjunction with the **Soft Color Matching** option to create a 'soft' alpha channel based on the key color and the action image luminance.

Soft Color Matching: The Soft color matching option allows you to create an alpha channel based on the key color, and its radial distance.   This means that F/x will make the actual key color transparent (if inverse is not selected), and then gradually fade to opaque based on the size of the transparent region and its surrounding colors.   This allows you to create "soft" alpha channels from a key color in a quick and efficient manner.   If this control is not selected, then the alpha channel will be created with only transparent and opaque regions.

Key Range: These Red, Green, and Blue sliders allow you to alter the range of valid key colors for the Key to Alpha operation.   These sliders range from 0 (no variance) to 255 for the Red, Green, and Blue channels in the image.

These three channels combined make up the colors that are found in the image.   Adjusting these values changes the number of colors that are selected as alpha channel along with the actual key color.   For example, let's say that the desired key color is "pure" blue (R=0, G=0, and B=255).   If we were to set the RGB Key Ranges all to zero, F/x would only select that exact color in the image as a transparent region.   If we were to increase the RGB Key Range sliders and reapply the Key to Alpha operation, then we would see more and more regions of the image being selected as transparent.   If these RGB sliders were set all the way to 255 each, then we would see all of the colors in the image selected as a transparency region (the alpha channel would be completely black).   These sliders can be adjusted independent of one another so that you can fine tune the regions that are selected as opaque or transparent.

Section 5.3.10.3 - The Invert Alpha Operation

The Invert Alpha operation will take the images current <u>alpha channel</u> and invert the grayscale values.   This can be used to swap the transparent and opaque regions in a black and white only alpha channel, or to create an alpha channel negative in a gray scale alpha channel.   This operation has no controls, so the inverse is carried out immediately after the area selection is made.   The inverse can be applied using any of the area selection methods, but is most effective for use on the entire image.   The images below show an original alpha channel and its inverted counterpart.   You may find it easier to work with this, and all other alpha channel tools, with an alpha view open. These views can be opened by selecting the **Display Alpha** option in the **Open Another View** dialog accessed via the **View** menu.
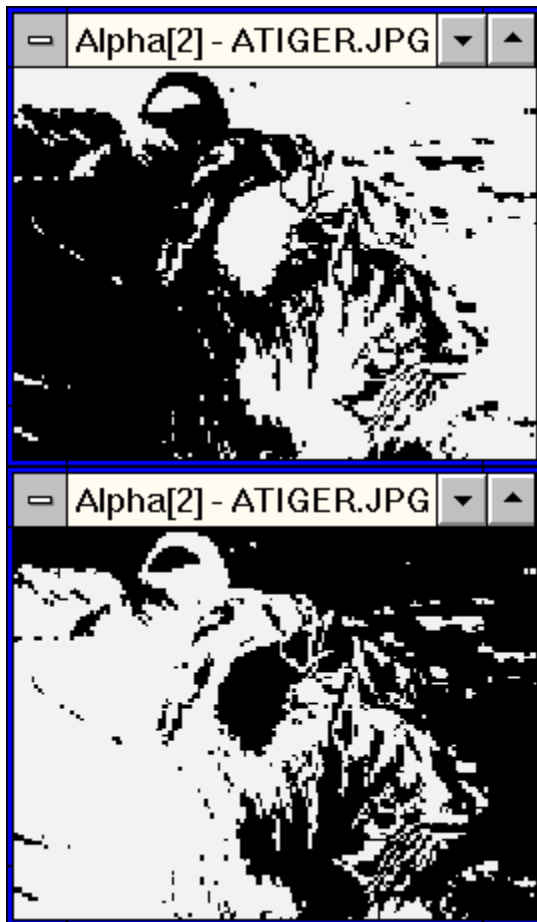
Section 5.3.10.4 - The Harden Alpha Operation

The Harden Alpha operation will convert an existing grayscale <u>alpha channel</u> (multiple levels of <u>transparency</u>) into a black and white alpha channel (transparent or opaque), or a reduced grayscale alpha channel..   This is useful for creating more specific alpha channels from an existing alpha channel, or to "clean up" an alpha channel.   The alpha channel is converted to black and white (transparent and opaque) by using a specified threshold amount that can be set by the user.   This value specifies which gray levels will be converted into black and white regions, or which grayscale will be shifted up or down based on the Amount setting.   You may find it easier to work with this, and all other alpha channel tools, with an alpha view open.   These views can be opened by selecting the **Display Alpha** option in the **Open Another View** dialog accessed via the **View** menu.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Threshold: The Threshold amount specifies which grayscale values are converted to transparent or opaque (Amount at 100%), or which grays are shifted up or down in transparency.   The threshold control ranges from 0 (completely opaque) to 255 (completely transparent).   The setting of this parameter determines which grayscale values are converted to Black or White.   As the threshold is increased more areas will be converted to darker grays or black, and as the threshold is decreased more areas will be converted to lighter grays or white.   The use of the Amount control can alter how the gray values are converted.

Amount: This control alters how the alpha channel is hardened.   The setting ranges from 0 (no effect) to 100 (maximum hardening).   A setting of 100 will result in an alpha channel which is completely transparent or opaque. F/x will use the threshold value to determine which areas of the image will be converted to white (opaque) or black (transparent).   Decreasing the Amount setting will also decrease this conversion severity.   A decreased amount allows for alpha channels that are multiple gray values (transparency levels).

Section 5.3.10.5 - The Soften Alpha Operation

The Soften Alpha operation allows you to smooth rough or pixelized areas in an <u>alpha channel</u>.   This is useful for smoothing rough edges in an alpha channel, or for creating a blur region around an object.   This filter will only work for softening completely transparent regions in an alpha channel (black areas in an alpha view).   All pixels along a completely transparent region, that are within the current radius setting will be remapped to a gradual fading <u>transparency</u> to the background color in the alpha channel.   This will create a soften edge effect for the alpha channel.   You may find it easier to work with this, and all other alpha channel tools, with an alpha view open. These views can be opened by selecting the **Display Alpha** option in the **Open Another View** dialog accessed via the **View** menu.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Radius: The radius control allows you to select how the edges of a transparent alpha channel region will be softened.   The radius can range from 1 (minimum effect)   to 20 (maximum effect) pixels.   As the radius value increases, the overall softening effect will also increase.   It is important to remember that the Soften Alpha operation will only effect regions in the alpha channel that are completely transparent (black in the alpha channel view).   Other regions (gray to white) will not be altered.   If you would like to soften regions that are not completely transparent, then you should use the <u>Gaussian Blur</u> operation on the alpha channel.

Section 5.3.10.6 - The Shave Alpha Operation

The Shave Alpha operation allows you to "clean up" an alpha channel created from an image's luminance, or an existing alpha channel.   The shave alpha operation works similar to the shave operation in that it locates areas of the image that are within the specified "bump size".   These areas are then replaced with an average of the color of the surrounding pixels.   This will effectively smooth areas in the image to the same color, thus cleaning the alpha channel up.   You may find it easier to work with this, and all other alpha channel tools, with an alpha view open. These views can be opened by selecting the **Display Alpha** option in the **Open Another View** dialog accessed via the **View** menu.

Click on any of the functions for quick help or look below for detailed documentation.
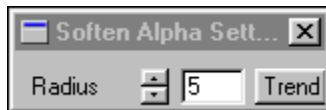
The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Bump Size: The Bump Size control allows you to select which pixel groups that the shave alpha operation will remove from the alpha channel.   The control ranges from 1 pixel to 20 pixels.   Based on this setting, F/x will run through the image and select isolated regions of   the same size or smaller, and then replace them with the average of the surrounding pixels.   Increasing this amount will cause F/x to select larger and larger "chunks" in the image for shaving.   In most cases you will not need to use settings over 8.

Section 5.3.10.7 - The Clip Alpha Operation

The **Clip Alpha** operation allows you to clip out a section of an image's <u>alpha channel</u>.   This alpha channel will then become a regular image.   This tool is mainly used to perform alterations and effect on an alpha channel.   This alpha channel image can then be returned as the alpha channel for the original image using the **Make Alpha** control. This process of altering an alpha channel can also be done by using the Alpha Channel controls in the **Settings** menu.

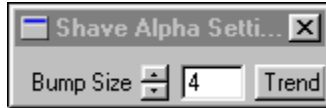*Click on any of the functions for quick help or look below for detailed documentation.*

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Assign the Result as Source: This control, when selected, will make the alpha channel clip the source image.   This allows you top alter the alpha channel, and then return it to the original image using the **Make Alpha** option of **Mask with Source Luminance**.   Alpha channels can also be modified using the Alpha Channel controls in the **Settings** menu.

The Make Area operation allows you to make an area selection in the image without making any changes to the image.   You can select to update the last area <u>key frame</u> in the time line with this area selection.   This is useful for placing complex area selections into the time line, and for creating complex area selections for specific operations. For example,   if you were going to complement a font area against an ellipse for a color fill, you would make the font area selection using this operation.   You would then make the complemented ellipse area selection using the color fill operation.   The result would look something like this:

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Update the Time Line with this Selection: This option, when selected, will place the area selection that you make into the last active area selection key frame in the time line.   This allows you to make an area selection for the time line, without opening the area selection dialog.   The area that is selected will be placed into the area selection, but can be replaced by selecting another area.   If this control is not selected, the area selection will be made without effecting the image in any way.   The primary use for this operation is to create complex area selection both in the time line, and for regular image processing effects.

Section 5.3.11.1 - The Distortion Morph Operation

WinImages:F/x can directly control and adjust a morph.   A morph operation can be placed into the exposure sheet and it will operate as just another effect.   F/x can also directly call Morph for the adjustment of morph control files (.MPT files).

To create a time line that uses morphing:

> **(1)**   Use Morph to create a .MPT Points File and save it.
>
> **(2)**   In F/x click on the Distortion or Transition operation.
>
> **(3)**   Specify the MPT file just created.
>
> **(4)**   Set the start and length of the morph.
>
> **(5)**   Drag the operation button into Time Line.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Morph MPT File: This is the Morph control point file that determines how the images get distorted.   MPT files can also contain morph <u>transparency</u> and velocity information.

Adjust: This will open the Morph program with F/x's images and the MPT file for adjustment.   The MPT file must be saved using Morph's Points Menu for your changes to become permanent.

Specify: This uses a File Requester to get a valid MPT file name.

Frame: The start frame number.   Distortion and Transition operations dropped into multiple cells in the exposure sheet will get incremented frame numbers.

of: The total number of frames in this morph.   For example, your entire F/x sequence may have 60 frames and include a 30 frame morph in the middle. Then this number would be 30.

End Frame: When doing a single <u>Transition Morph</u>   you will need to set the End Frame in the Transition Settings window.   In this case, the Start frame is the image you click on.

> Morph Start Frame   =   F/x Source Image
>
> Morph End Frame   =   F/x Target Image

Section 5.3.11.2 - The Transition Morph Operation

WinImages:F/x can directly control and adjust a morph.   A morph operation can be placed into the exposure sheet and it will operate as just another effect.   F/x can also directly call Morph for the adjustment of morph control files (.MPT files).

To create a time line that uses morphing:

> **(1)**   Use Morph to create a .MPT Points File and save it.
>
> **(2)**   In F/x click on the Distortion or Transition operation.
>
> **(3)**   Specify the MPT file just created.
>
> **(4)**   Set the start and length of the morph.
>
> **(5)**   Drag the operation button into Time Line.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Morph MPT File: This is the Morph control point file that determines how the images get distorted.   MPT files can also contain morph <u>transparency</u> and velocity information.

Adjust: This will open the Morph program with F/x's images and the MPT file for adjustment.   The MPT file must be saved using Morph's Points Menu for your changes to become permanent.

Specify: This uses a File Requester to get a valid MPT file name.

Frame: The start frame number.   Distortion and Transition operations dropped into multiple cells in the exposure sheet will get incremented frame numbers.

of: The total number of frames in this morph.   For example, your entire F/x sequence may have 60 frames and include a 30 frame morph in the middle. Then this number would be 30.

End Frame: When doing a single <u>Transition Morph</u>   you will need to set the End Frame in the Transition Settings window.   In this case, the Start frame is the image you click on.

> Morph Start Frame   =   F/x Source Image
>
> Morph End Frame   =   F/x Target Image

Section 5.3.12.1 - The Gouache Operation

The gouache operation will filter the image so that it looks like it has been painted using gouache, a type of opaque watercolors.   The effect can be manipulated by changing the radius and intensity of the brush strokes.   The overall effect on the image is similar to peering through translucent glass.   The fields of color are blurred and begin to bleed into each other; darker areas in the image remain more clearly defined.   The effect does not introduce new colors or change the existing color values.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Radius: The radius control alters the size of the brush strokes used to paint the image.   The control can range from 0 to 20, with a default setting of 12.   The greater the radius value, the more the colors in the image will blur and bleed into each other.   It is important to remember that increasing this parameter will also increase the amount of time required to complete the operation.

Intensity: This option controls the intensity or the amount of the effect.   The control ranges from 0 to 100, with a default value of 20.   The higher this value the darker or more intense the gouache effect will appear.   For best results we recommend not setting this parameter below 10.

Section 5.3.12.2 - The Oil Painting Operation

This operation will alter the image so that it looks like it has been painted using oil based paints.   This operation has a single control which alters the number of layers of paint applied to the image.   The higher this value, the darker the image will appear.   Low value settings will result in the image appearing lighter, but still as an oil painting. The overall effect is the reduction of colors in groups which gives the image the look of an actual oil painting.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Layers: This control alter the total number of layers of oil paint applied to the image.   The control ranges from 1 to 100, with a default setting of 95.   With the addition of more and more layers of oil paint the image will become darker and darker.   Thus, low layer values will result in the image appearing bright, and high layer values will result in darker images.

Section 5.3.12.3 - The Pseudo Color Operation

This operation changes the colors of the image based on their monochrome brightness values. The new colors range from blue for dark pixels (or cold), through green for middle gray levels (warm), to red for bright pixels (or hot). This operation has no controls, and is simply applied to the image by specifying an area selection. Applying the operation to an image multiple times will cause the image to develop an almost metallic look.

The Controls:

This operation has no controls.

Section 5.3.12.4 - The False Color Operation

This operation swaps the red, green, and blue color components of the image, so that red becomes green, green becomes blue, and blue becomes red.   This operation is considered cyclic because multiple applications will result in the original image being restored.   If this operation is applied three times to the same region, then the image will return to its original colors.   The operation has no controls.
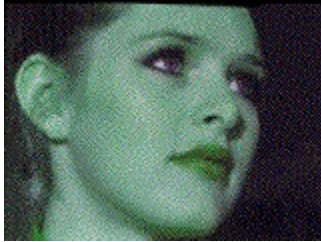
The Controls:

This operation has no controls.

Section 5.3.12.5 - The Solarize Operation

This operation alters each pixel based upon its monochrome brightness level.   Bright pixels are made blue, middle brightness pixels become green, and dark pixels become red.   The overall effect is a three toned image which is similar to thermal elevations.
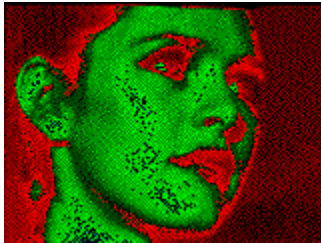
The Controls:

This operation has no controls.

Section 5.3.12.6 - The Blue Print Operation

This operation converts the image so that it appears like an old blue print. The operation will place white line to simulate contours on edges that are found throughout the image. You can control the spacing of these lines through the interval control.
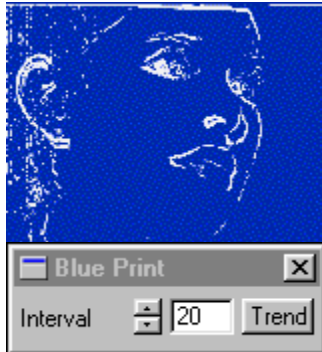
The Controls:

Interval: This control alters the spacing of the white outlines on the blue print. The control ranges from 1 to 256, with a default setting of 20. Large interval setting will result in the blue print having very few white lines, and lower interval setting will create many white lines. It is important to remember that extremely high setting may result in a solid blue image, or in a blueprint image with very few white outlines. Keeping the interval value low will result in more white outline on the blueprint.

Section 5.3.13.1 - The Monochrome Operation

The Monochrome operation will take the selected area and convert it to a gray scale value.   The gray scale calculation can be done in one of two ways.   The first method (RGB Average) treats the Red, Green, and Blue components of each <u>pixel</u> equally, and then derives a gray scale value from their average.   The other option (Luminance) will convert each pixel in the selected area to gray scale based on the way that the human eye perceives light and dark.   The documentation below describes further the differences between the two monochrome modes.

Click on any of the functions for quick help or look below for detailed documentation.

The Controls:

Trend: You will notice that all of the controls have a **Trend** button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Luminance/RGB Average: These two radio buttons allow you to select between a monochrome based on luminance values of a pixel, or the RGB average for each pixel in the area selection.   If you select to base the monochrome conversion on RGB Average, then the pixels will be converted to monochrome based on the following formula: (+ Green + Blue) /3.   Then all three color components are replaced with this new value.   This will produce a gray scale value for each pixel in the selected area.   This particular function assumes that each of the three color components contribute equally to the pixel's brightness.   This is *not* the way your eye perceives brightness.   The Luminance option will approximate more exactly the way the human eye perceives brightness.

The Luminance option will convert the selected region into a gray scale based on the way the human eye perceives brightness.   The pixel is converted using: (* .33) + (Green * .59) + (Blue * .11) to create the brightness value, and then replacing the three color components with this new luminance value.   Since all three color components are the same value the result is a gray scale value.   This option uses a non-linear weighted average.   This means that the three color components *do not* contribute equally to the brightness of each pixel.   This is useful for producing a Black & White television or nighttime perception effect.

Section 5.3.13.2 - The Negative Operation

The Negative operation allows you to create a wide range of color and Black & White negatives.   A negative, color or Black & White) is the process of reversing the brightness scale for each pixel, and then re-applying the reversed values as positive.   This is done by subtracting 255 from each brightness value, and treating the new value as positive.   This is carried out for each channel in the selected color space.   So, a bright color component (value:255) will become dark (value:0), and a dark color component (value:0) will be come light (value:0).

You should notice that all of the color negatives can be used for each color channel separately.   This gives you the ability to invert one channel and none of the others.   For example, if you were producing an RGB negative you might select to apply the negative process to only the Red channel.   This would cause the Negative Operation   to invert only the Red channel and leave the other two channels (Green and Blue) un-altered.   The channel controls will only be available for color spaces with more than one channel.

The Negative Operation can be used to create the following types of negatives: Monochrome, Luminance, RGB, CMYK, HSL, and HSV.   Watch of these color spaces will produce a different type of negative based the specifications of that color space.

The Negative controls are fairly simple to use and understand.   The left hand side of the dialog contains a check box list of all the different color spaces available.   Selecting one of these check boxes will force the operation to evaluate and perform the negative using that color space only.   If the color space contains multiple channels, a list of all the available channels for that color space will appear to the right of the Color Space check boxes.   At this point you can select which channel or channels that you would like to apply the negative operation to.   If the channel check box is selected for any of the color channels then the negative will be applied to that channel.   If the check box is not selected, then that channel will remain unchanged.

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Section 5.3.13.3 - The Adjust Hue Operation

This operation provides you with one slider for adjusting the amount or degree of hue change for the specified area. Hue adjustment is applied primarily to images which have been scanned too red or too green.   By adjusting the hue up or down, you can add either more green (up) or red (down) to the image.   In general you will only need to make small changes to the hue setting to get the desired correction.   Altering the Hue setting by a great amount will produce a great amount of change.

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

Hue: This control ranges from -180 to 180 and controls how much each pixels hue value will be shifted.   Positive hue increases will result in more green being applied to the image, and negative hue values will add more red to the image.   In general this is designed to be a correction tool only.   However, you can produce some interesting color effects by pushing the hue value too far.

Section 5.3.13.4 - The Saturation Operation

The saturation control will adjust the intensity or deepness of the colors in the image.   This operation uses a single control to alter the amount of saturation that is added (positive values) or subtracted (negative values) from each pixel in the area selection.   It is important to remember that the Hue of the image will not be altered, only the saturation values.   If you would like to alter both the hue and saturation values for the image, please use the Colorize operation.

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Saturation: The saturation control ranges from -100 to 100, and allows you to alter the specific saturation values for all of the pixels in the area selection.   Saturation can be defined as the intensity or deepness of a color (hue).   If you increase the saturation value, the colors will become more vivid or intense.   If you decrease this value the colors will lose their deepness and will eventually become gray.   Due to this fact, you will want to avoid using large negative values with this operation.   If you do not, the entire image inside the area selection will appear as a gray value.

Section 5.3.13.5 - The Adjust Value Operation

This operation allows you to alter the Value or brightness of each pixel in the specified area. Adjust value provides you with a single slider for altering the brightness of the image. This value adjustment can range from 100 (brightest) to -100 (darkest). It is important to remember that this operation adjusts the Value of the pixels only. It does not alter the Hue or Saturation values of the pixels in the image. This is considered to be primarily a correction tool.
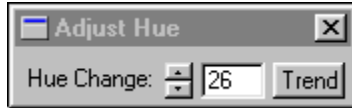

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the Sequence controls... in the Time Line pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. Click Here to view further information on trends.

Value: This slider allows you to adjust the value or brightness setting of each pixel in the specified area. The control ranges from 100 to -100 with positive values increasing the brightness, and negative values decreasing the brightness.

Section 5.3.13.6 - The Glare Operation

This operation allows you to locate areas in the images that are extremely white, and then enhance or reduce the glare in those areas. The operation provides you with two controls for altering the glare regions of an image. The first control is a pair of radio puss buttons that define how the operation will work (Decrease or Increase glare). The other control allows you to set the intensity or threshold of the effect. After you have selected the method (increase or decrease glare) and the amount to be applied, the operation will locate all of the bright regions in the image. Once these areas have been located, the operation will then increase or decrease the glare to that region. If the glare operation is set to increase, more of that region of the image will be forced to white. If the operation is set to decrease, the program will try to add back some of the saturation to the glare regions to a approximate color.
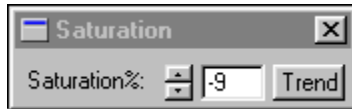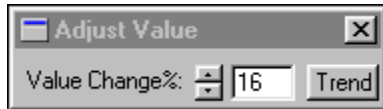

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them. The trend button allows you to set that variable over a set of frames. Each frame of the animation can be thought of as a slice of time. The trends allow you to alter some, all, or none of the variables for a particular time slice. You will notice that the trend graphs have equidistantly spaced vertical lines. Each of these lines represents a frame in the animation. The number of frames can be altered using the Sequence controls... in the Time Line pull down menu. Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames. <u>Click Here</u> to view further information on trends.

Reduce/Increase: These two radio buttons determine how the glare operation will function. If the control is set to Reduce, the operation will try to eliminate or reduce the effects of glare in the image. This means that saturation will be restored to areas which appear as glares in the image. The higher the Amount setting, the greater the reduction. However, high amount settings can also result in areas of the image which are not glare regions to have their saturation adjusted as well. You will find that normally Amount settings between 50 and 80 will give you the best results.

If you select to Increase Glare, hot spots in the image will be widened and intensified. This option also uses the Amount setting to determine the extents or amount of the effect. If you increase the Amount setting you will also increase the amount of glare that will be added to the image. You will find that very high settings over 80 will result in most of the image being glared out. In some cases this may be the effect you are looking for, but normally you will want to limit you Amount settings between 45 and 80.

Amount: The Amount setting controls the intensity or amount of the Glare reduction or increase. The control ranges from 0 to 100, with the most practical usage range between 45 and 85. The Amount setting is used with both the Reduce and Increase options. With the Reduce option, the Amount value will determine how much of the glare will be reduced. This includes which areas are defined to be glare regions. Increasing this value will result in more and more regions of the image being reduced in glare. The same is true for the Increase Glare setting. Increasing the Amount value will result in more and more areas of the image becoming glared. Very high settings will force large portions of the image to white.

Section 5.3.13.7 - The Antique Operation

The Antique operation allows the user to add or remove the "yellow tinge" usually associated with   antique photographs and film.   The dialog contains only two controls - antique and un-antique.   Antique will add or enhance any existing antique coloring an the specified area selection.   Selecting the un-antique option will produce the opposite result. Un-Antique will remove the yellowing effect instead of adding it.   In general you can regain some of the true color that once existed in a photo.   For more specific color corrections and reconstruction you should also try the Balance and Histogram operations found in the Standard group.
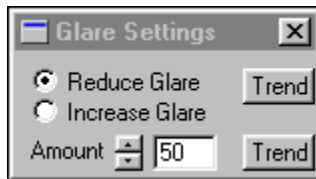

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Antique/Un-Antique: These two radio buttons control how the Antique operation will work.   If the Antique option is selected, then the operation will add the yellowish tinge that is usually associated with antique photos.   If the Un-Antique option is selected, then the operation will try to eliminate the yellow coloration from the image.

Section 5.3.13.8 - The Color Gel Operation

This operation will convert the specified area to a solid Red, Green, or Blue color palette.   You also have the option of combining the RGB components to produce cyan, yellow, or magenta color gels.   The color channels that are applied by this operation are controlled by selecting the desired components check box.   If a RGB component is selected, it will then be applied to the specified area in the image.   The overall effect of the operation is similar to color lighting effects accomplished through transparent lighting gels or color camera filtration.

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   <u>Click Here</u> to view further information on trends.

RGB Controls: These three check box controls allow you to alter the coloration of the color gel that is applied to the image.   Selecting one of the check boxes will cause that color component to be used as part of the color gel calculation.   If more than one box is selected, then the color will be a combination of the two color components. You are not allowed to select all three color components, since this will result in an all black image.

This operation performs two important conversions to images which are going to be used for NTSC display.   The first is a NTSC Limit operation.   This operation will modify the image to conform to the NTSC Chrominance modulation specification.   After application of this filter the image can be encoded without exceeding the ability of the NTSC signal to carry the color information, and without color distortions.   The second operation is the NTSC Filter operation. This tool will take the specified region and modify it to conform to the limited bandwidths of both color and luma signals in an NTSC composite signal.

It is also important to note that the destination software or hardware may perform both of these functions automatically.   For this reason you may wish to experiment with both the destination software/hardware and WinImages to find the one that best suits your needs, and will produce the best quality image on your output device.
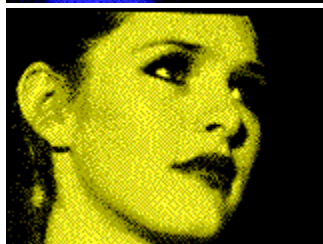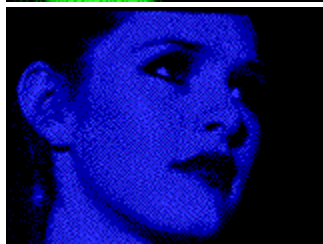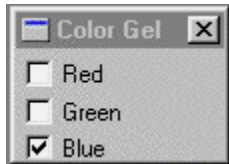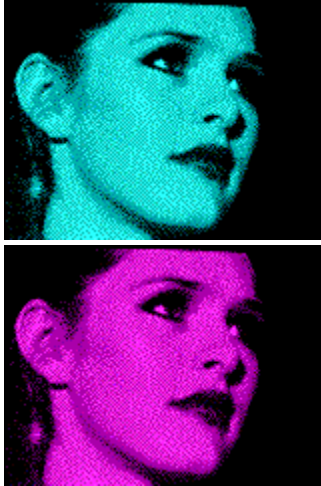

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

NTSC Limit: This will take the specified region and modify it to conform to the NTSC Chrominance modulation specification.   This tool will look for areas of high saturation, and any area that is luma will not be involved in this step of the evaluation.   After the area is evaluated the maximum saturation of any color is reduced to 82%.   Any luma portions of greater amplitude will be scaled down proportionally, but you could have values of 100% dependent on the selected area.   This tool will ensure that the image can be encoded without exceeding the ability of the NTSC signal to carry the color information, and without color distortions.

It is important to note that this *does not* filter transitions.   You could still have a pixel that goes from red to blue, which would not be properly encoded by NTSC.   In order to produce a completely NTSC compatible image, you will need to use the **NTSC Filter** option on the same region.

NTSC Filter: This tool will take the specified region and modify it to conform to the limited bandwidths of both color and luma signals in an NTSC composite signal.   This process will modify only the region you specify, but the entire length of the image scan line is used for computation.   For this reason,   you should only apply this effect to an entire region.

The NTSC signal can only change brightness (luma) about 300 times per scan line, and can only change colors about 100 times per scan line.   It is important to note that the color and brightness changes are independent of the number of RGB pixels in the scan line.   Due to this factor, the NTSC filter will have differing effects on images of different horizontal resolution.

For example, if your image had 320 horizontal pixels, it would only be smoothed to 300 changes.   The net effect on the image is less than 10%.   Now, let's say your image has 786 horizontal pixels.   This process would smooth

the image a great deal.   The image would go from 728 to 300, that amount to over 50% change in the image.   The same is true for colors, the only difference is that there can only be about 100 color changes in a scan line for a NTSC signal.

It is also important to note that the destination software or hardware may perform this function as well as the NTSC Limit automatically.   For this reason you may wish to experiment with both the destination software/hardware and WinImages to find the one that best suits your needs, and will produce the best quality image on your output device.

Section 5.3.14.2 - The Frame Rate Operation

This operation allows you to alter the frame rate of a group of frames from 24 frames to 30 frames using a 3-2 pull down method.   The operation allows you to select two separate methods of how the frame rate conversion will occur.   The first method is called Interlace Aware.   This method uses interlacing of middle frames to convert from 24 to 30 frames.   This is the more standard of the two methods available.   The second method, Frame Repeat, simply repeats every fourth frame in the sequence to achieve the desired frame rate conversion.   The operation can also be targeted for the separate frame rates of NTSC and PAL.

NOTE: This operation should always be applied by itself in the timeline.   The combination of multiple timeline layers can result in incorrect output frames.   It is also important to remember that only the entire area selection should be used with this operation.
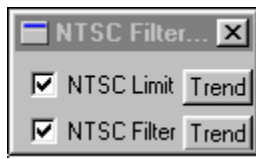

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Interlace Aware/Frame Repeat: These radio buttons allow you to select the method that will be used for converting the animation frames.   The Interlace Aware method uses a 3-2 pull down method to generate 30 frames for every 24 frames that are processed.   This method uses interleaving to accomplish this frame rate conversion.   This means that no frames are repeated.   Instead, the intermittent frames are derived from the combination of two interleaved frames.   The overall result is the addition of 6 extra frames for every 24 frames that are processed.   The Frame Repeat option will simply repeat every fourth frame in the 24 frame sequence to create the necessary extra frames.

NTSC/PAL: These radio buttons allow you to select the output frame rate that you are using.   Selecting NTSC will provide you with 30 frames for every 24 that are processed.   The PAL option will provide you with only 25 for every 24 that are processed.   The most common usage of this control is NTSC.

Section 5.3.14.3 - The Film Grain Operation

This operation adds random noise to the image to emulate the look of film grain. You can control the size of the grains, their intensity or darkness, and the random generation value for the grain pattern.   This operation can be used to produce a film grain effect by trending the seed value over a sequence of frames.

The Controls:

Trend: You will notice that all of the controls have a Trend button next to them.   The trend button allows you to set that variable over a set of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   You will notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the Sequence controls... in the Time Line pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.   Click Here to view further information on trends.

Grain Width: This control allows you to specify the maximum width of a grain region.   The width is measured in pixels and can range from 1 to 10 pixels.   The width is set using the slide gadget or by entering the appropriate value in the text entry field.

Grain Height: This control allows you to specify the maximum height of a grain region.   The height is measured in pixels and can range from 1 to 10 pixels.   The height is set using the slide gadget or by entering the appropriate value in the text entry field.

Intensity: The Intensity control allows you to specify the degree of the Film Grain effect in the selected region. The Intensity is a percentage value that ranges from 1% to 100%.   A setting of 100% would result in the maximum amount of Film Grain in the selected region.   A setting of 1% will result in the minimum amount of Film Grain in the selected region.   This control is set by using the slide gadget or by entering the desired value in the provided text entry field.

Seed: The Seed setting allows you to alter the random number variable for the Film Grain operation.   Altering this value will result in an alternate grain pattern for each seed value.   The Seed parameter ranges from 0 to 9999, but it can set to higher values for timelines.

Section 5.3.15.1 - The Aspect Ratio Operation

This operation allows you to alter the aspect ratio of an image.   The aspect ratio is a percentage which represents the width of the image pixel by the height times 100.   Aspect Ratio for this program is determined as part of the DPI setting.   Thus only the ratio of width vs. Height is displayed instead of the actual ratio.   You can select a custom ratio, or specify a default ratio by selecting one of the preset aspect ratio buttons (Square, NTSC, or PAL). It is important to remember that not all image formats support this information.   To save this information you will need to save in IFF, TIFF, Targa, or TRIM.
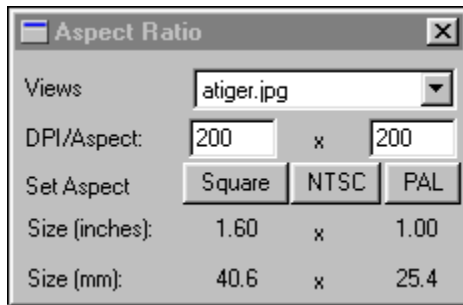
The Controls:

Aspect: This control alters the Aspect of the image to the values which you define.   You also have the option of selecting one of the preset aspect ratio settings of Square, NTSC, or PAL.   It is important to remember to save in an image format which records this information.

Section 5.3.15.2 - The DPI Operation

This operation allows you to alter the DPI (Dots per Inch) setting of the image.   This relates directly to how large the image is when it is printed.   For example, if you have a 400 by 200 image at 100x100 DPI, the result image would be printed at a size of 4x2 inches.   If you altered the DPI for the above image to 200x200, the image would be printed at a size of 2x1 inches. To save this information you will need to save in IFF, TIFF, Targa, or TRIM.
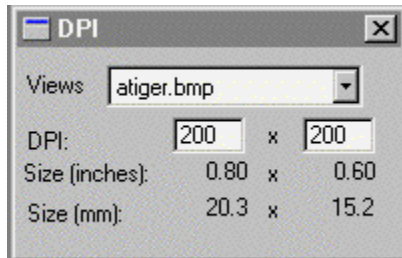
The Controls:

DPI: These two settings alter the actual DPI settings of the image.   Altering these values does not change the size of the image displayed in the program, but instead alters the size that the image will be printed at. For example, if you have a 400 by 200 image at 100x100 DPI, the result image would be printed at a size of 4x2 inches.   If you altered the DPI for the above image to 200x200, the image would be printed at a size of 2x1 inches.   The physical size of the image based on this setting is reported in this dialog in both inches and millimeters. It is important to remember to save in an image format which records this information.

Section 5.3.15.3 - The Author Name Operation

This operation allows you to enter an Author Name to be associated with the image file.   This information is saved with the image if it is saved as a IFF, TIFF, Targa, or Trim image file.   If you select to save the image in another file format, the author information will be lost.

If this operation is applied to a sequence of frames via the timeline, the author information from the first image specified in the timeline will be used for all of the other images in the sequence.   If no image is specified, the author information will come from the currently loaded image that the sequence is applied to.   Remember this information will only be maintained in the image file if it is saved in the TIFF, IFF, Targa, or Trim file formats.

The Controls:

Author: This text entry field allows you to alter the Author Name for the currently specified image view.   An image is selected for modification by selecting the image from the View drop down list.   This list will contain all of the image views that are currently open in the program.   Once a view is selected, the author field will display any name that is associated with the image.   If the image does not contain any author name, this field will appear blank. You can alter the author name by clicking in this field and entering the appropriate information.   This information will be stored with the image if you save the image in IFF, TIFF, Targa, or Trim.   If you specify any other file format, this information will be lost.

Section 5.3.15.4 - The Annotation Operation

This operation allows you t add or alter an images annotation. The annotation section of an image can contain a large amount of text that describes the image, how it was created, what it was created for, how long it took to produce, what project it is for, etc. This information is saved with the image if it is saved as a IFF, TIFF, Targa, or Trim image file. If you select to save the image in another file format, the annotation information will be lost.

If this operation is applied to a sequence of frames via the timeline, the annotation information from the first image specified in the timeline will be used for all of the other images in the sequence. If no image is specified, the annotation information will come from the currently loaded image that the sequence is applied to. Remember this information will only be maintained in the image file if it is saved in the TIFF, IFF, Targa, or Trim file formats.
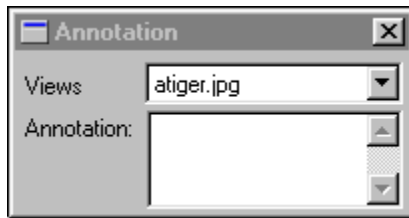
The Controls:

Annotation: This text entry field allows you to alter the annotation for the currently specified image view. An image is selected for modification by selecting the image from the View drop down list. This list will contain all of the image views that are currently open in the program. Once a view is selected, the annotation field will display any annotation that is associated with the image. If the image does not contain any annotation, this field will appear blank. You can alter the annotation by clicking in this field and entering the appropriate information. This information will be stored with the image if you save the image in IFF, TIFF, Targa, or Trim. If you specify any other file format, this information will be lost.

Section 5.3.15.5 - The Copyright Operation

The Copyright operation allows you to alter the copyright information for an image.   The dialog consists of two controls - Views and Copyright.   The Views drop down box allows you to select which image view you would like to alter the copyright information for.   The Copyright text entry field allows you to enter the appropriate copyright information for your images.   It is important to remember that this information can only be saved in the TIFF and IFF file formats.   Using other save formats for images altered by this operation will result in the loss of the copyright information.   This operation does not require an area selection.

If this operation is applied to a sequence of frames via the timeline, the copyright information from the first image specified in the timeline will be used for all of the other images in the sequence.   If no image is specified, the copyright information will come from the image that the sequence is applied to.   Remember this information will only be maintained in the image file if it is saved in the TIFF or IFF file formats.
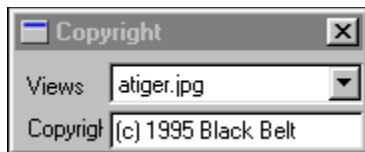
The Controls:

Copyright: This text entry field allows you to view and alter the copyright information for a particular image view. An image is selected for modification by selecting the image from the View drop down list.   This list will contain all of the image views that are currently open in the program.   Once a view is selected, the copyright field will display any copyright information that is associated with the image.   If the image does not contain any copyright information, this field will appear blank.   You can alter the copyright information by clicking in this field and entering the appropriate information.   This information will become part of the image file when you save the image using either TIFF or IFF as the save type.

Section 5.4 The Zoom, Undo, and Other Tools

The Filmstrip Tool:

This icon will open and close WinImages:F/x's Filmstrip controls.   These controls can be used to view animations created in the Time Line, or to keep a visual log of images that you have processed.   The controls are similar to the controls of a VCR (Play, Stop, Rewind, Fast Forward, etc.).   If the filmstrip is not already active, pressing this button will open the filmstrip and bring it to the front of the display.   If the filmstrip is already open, then this button will close the filmstrip.   It is important to remember that closing the filmstrip in this manner will force the filmstrip to eject its contents.   This means that all frames in the filmstrip will be lost.   Press Here to view further information of the filmstrip and its controls.

The Time Line Tool:

The Time Line icon is used to open and close F/x 's powerful Time Line.   The Time Line allows you to batch process images, animate effects, and create animations ranging from simple to spectacular.   If the time line is not currently open, pressing this button will open the time line and bring it to the front of the display.   If the time line is already open, pressing this button will close the time line.   Closing the time line **will not** result in the loss of the time line information (operation, area selections, and image files).   As a matter of fact, it is possible to generate a time line while the dialog is closed.   Pressing the time line icon again will bring the current time line to the front. The time line contains many controls and options which are explained in greater detail in the time line section of the documentation.   Press Here to view further information on the time line.

The Zoom Tool:

This tool allow you to zoom into the image, or if already zoomed, return the original non-zoomed image.   The Zoom tool is activated by clicking on the zoom icon's upper right-hand corner located at the end of the Operation

Tool Bar.   Once the Zoom icon has been selected, your pointer will look like this: .   Place the Zoom pointer over the view to be zoomed.   Press and hold the left mouse button to select the zoom area.   The zoom region rectangle is sized with the left mouse button, and is repositioned using both mouse buttons.   Release both mouse buttons once the zoom rectangle is the desired size and position.   This will zoom the area based on the size of the rectangle, and its relative position.   A zoom will always occur with the center of the zoom being the center of the rectangle.   Once an image is zoomed it can be zoomed any number of levels, down to 1 pixel filling the view.   This is done by simply following the above procedure as many times as necessary.   A simple 2x zoom can be accomplished by just clicking on the view with the zoom pointer.   You also have the capability to scroll a zoomed area using the provided scroll bars.

The De-zoom tool will de-zoom all levels of magnification back to the original un-zoomed image.   This is done by simply selecting the bottom of left-hand corner of the zoom icon.   You can perform any of the operations at any zoom level.   The De-zoom control can also be used to cause a "negative zoom" on a currently unzoomed image view.   This is done by clicking on the De-zoom icon, and then clicking on an image view that is not currently zoomed.   F/x will automatically perform a 2x negative zoom.   This means that the image will appear to be surrounded by a solid color (this is set in the Display menu's Set Off Image Color option).   Negative zooms can be extremely useful for placement of effects (animated and still) off the edge of an image.   The effect will only appear on the image, but you can place part or all of the area selection off of the image.   The image below shows a negative zoom image with an effect that was placed partially off of the image.

Modal Zoom

The Modal Zoom option is located in the Settings menu.   This option alters the way that a zoom is performed by the program.   If this option is not selected (default) the zoom will behave as follows:

1. Once the Zoom icon has been selected, place the Zoom pointer over the view to be zoomed.

2. Press and hold the left mouse button to select the zoom area.   The zoom region rectangle is sized with the left mouse button, and is repositioned using both mouse buttons.   Release both mouse buttons once the zoom rectangle is the desired size and position.   This will zoom the area based on the size of the rectangle, and its relative position. A zoom will always occur with the center of the zoom being the center of the rectangle.

3. Once an image is zoomed it can be zoomed any number of levels, down to 1 pixel filling the view.   This is done by simply following the above procedure as many times as necessary.   A simple 2x zoom can be accomplished by just clicking on the view with the zoom pointer.   You also have the capability to scroll a zoomed area using the provided scroll bars.

If this control is selected, the zoom tool will behave as follows:

1. Press the zoom icon.   You should notice that the zoom icon is now pressed in.   This means that you are in zoom mode, and no other action will occur in the image views except zooming.

2. To zoom in on an image left click the over the area you wish to zoom.   To zoom in further left click again.   You can continue to zoom in by left clicking, or you may select to zoom out by right clicking.

3. After you have finished zooming or de-zooming the image, double click the zoom icon on the tool bar to turn zooming off.

 The Undo Tool:

WinImages:F/x has a multiple Undo buffer system.   You may have between 0 and 20 levels of Undo.   This allows you to make up to 20 recorded changes to an image, and then undo only the last 6 alterations.   The number of undo levels is set in the **Settings** pull down menu.

WARNING: Remember that each level of undo will require the area selects width x height x 4.   This means that with 20 levels of undo, and an area select that is 20 pixels x 30 pixels, you would need 48,000 bytes of memory. Some of the operations in WinImages will require an undo buffer that is the size of the entire image.   This Undo buffer will automatically be allocated if you do not already have any Undo levels available.

Selecting the Undo icon (bottom left-hand corner) will present you with a list of all of the operations that may be undone.   This list will be dependent on the settings in the **Number of Undo Levels...** control, and how many operations have been applied.   The list will be in reverse chronological order with the last operation appearing at the

top of the list, and the first operation will be at the bottom of the list.   Selecting the top listing will undo only the last operation.   Selecting an operation further down in the list will undo all of the operations that occurred to that image after and including the listing selected.   Each listing will specify the name of the image, its Undo number, and the operation that was applied.   If you go beyond the set number of Undo levels   the oldest operation will be dropped from the list, and **can not** be undone.

The DeUndo will only work if an Undo level has been undone.   The DeUndo option is activated by clicking the top right-hand corner of the undo icon.   The DeUndo works the opposite of the Undo tool.   All items that have been undone will appear in the DeUndo list.   The list will only be available for undoing an Undo until the next operation is carried out.   Performing an operation will clear the DeUndo list.   The list will be   in chronological order with the first undone operation at the bottom of the list.   Selecting something in the middle of the list will deundo all levels below it.

See Also: Setting the Number of Undo Levels

Section 5.5 The Filmstrip

The Filmstrip in WinImages:F/x allows you to view animations that you have created or simply keep a visual record of the changes made to an image.   The filmstrip controls are simple, and are similar to the controls of a VCR.   You can play, stop, rewind, fast forward, and eject the filmstrip using the filmstrip controls.   There is also a control to alter the playback speed of the animation.   The length, resolution, loading, saving, method of play back (Pong/Normal and Reverse), and frame rate settings for the filmstrip can be set using the Time Line and Filmstrip pull down menus.

The Controls:

Frame Position Control: The position control slider allows you to adjust the current frame of the filmstrip.   As you move the slider right and left, the frame that is current will increase (move to the right) and decrease (move to the left).   The change in frame number will be reflected in the Frame Number and Animation Time window on the filmstrip.   This control is completely independent of the Current Frame # setting in the Sequence Controls menu option found in the Time Line pull down menu.

See Also: Sequence Controls

Move 1 Frame Controls: The move 1 frame controls allow you to adjust the frame position of the filmstrip left or right one frame at a time.   You can also use the Position Control to alter the filmstrip frame position.

Animation Speed Control: The speed control allows you to alter the speed of playback for the current filmstrip.   The speed may be increased or decreased as the filmstrip is playing.   This control is completely independent of the settings for the Frame Rate control found in the Time Line pull down menu. It is important to remember that the Frame Rate will need to be set independently of the speed   control on the filmstrip.

See Also: Frame Rate

Help on the Filmstrip: The Help button will access this section of the manual.

Play Filmstrip: The Play button will play the current filmstrip.   The filmstrip will be played at the rate set by the Speed control.   The filmstrip will continue to play until the Stop button is pressed.

Stop Filmstrip: The Stop button will cause the filmstrip to stop playing.

Seek to Beginning: This button will rewind the filmstrip to the first frame.

Rewind: The Rewind button will rewind the filmstrip eight frames.

Forward: This button will advance the filmstrip eight frames.

Seek to End: The End button will advance the filmstrip to the last frame.

Eject Filmstrip: This button will eject the filmstrip.   You will be presented with a requester that allows you to eject the filmstrip without saving, eject the filmstrip and save it, or cancel the ejection.

Frame Number and Animation Time Window: This window display the current frame and time length of the filmstrip.   The first readout shows the current position as a frame number (5 in this case) and the total number of frames in the filmstrip (20).   The second shows the time from the start of this animation in minutes : seconds . and milliseconds.

Extract Frame: This button will extract the current filmstrip frame and place it into a new image view.   This frame can then be saved or can simply be closed.

Section 5.6 The Status Bar

Status Bar Controls

Current Operation (Op): The Current Op display will show the name of the currently selected operation.   The example status bar above shows that the Color Fill operation is the currently selected operation.   This will only change as the current operation is changed.   This means that during a time line generation the current op will change as new operations are executed for each time line level.   This is not the same as the current cursor position which is displayed in the At control (to the right of this control).

Current Cursor Position (At): The At area displays the current pixel position in the image for area selections, and the object that the cursor is currently over.   The image coordinates will only be displayed if you are making an area selection.   For example, if you made an area selection with the rectangle tool, you would see a set of coordinates appear in this display area when you clicked on an image.   As you move the mouse theses coordinates will be updated to show the current position.   The coordinates are displayed in an X and Y format with X=0, Y=0 being the top left corner of the image.

This area is also used for displaying the current frame and position values for trends.   If a trend curve is visible, and being manipulated, this area will display the current control point's frame number and value for that parameter. This allows you to specify the exact frame and value for any control point in a trend.   If no control point is selected, this will display the cursors current frame and position values in the trend.   If you are not making an area selection or adjusting a trend, this display area will show the name of the object the cursor is currently over.   For example, if you were to place the cursor over the Contour icon, this area would say: Contour.   Pressing F1 while there is an object name in this display area will access that section of the documentation.   If there is nothing displayed in this area, pressing F1 will access the Table of Contents.

Operation Progress Bar: This area will display the current progress percentage for each operation in the program. The progress bar will be used for loading, saving, rendering, and all other operations.   This area will display the progress for each operation in the time line as it is executed.   The progress bar to the right of this display will show the overall progress for the whole time line.

Sequence Progress Bar: The Sequence Progress Bar displays the current progress percentage for an entire time line sequence.   This progress bar is also used for progress of FLI/FLC saves and multiple image file loads.

Pause Sequence: This control will pause any operation or time line sequence when it becomes possible.   You can not pause the loading or saving of image files.   Once the pause button has been pushed, the sequence or operation can be restarted by pressing this button again.   Pausing a sequence allows you to temporarily suspend all of F/x 's CPU activities.   This allows you to utilize the computer for another CPU intensive task (like printing), and then return to F/x   and restart the sequence.

Stop Sequence: Pressing this button will stop and cancel the current operation or sequence.   Once an operation is stopped, all save and sequence operation will stop.   F/x   will also undo any operations that have been performed.

Section 5.7 Trends

You should notice that most of the controls in F/x have a **Trend** button next to them.   The trend button allows you to set that variable over a sequence of frames.   Each frame of the animation can be thought of as a slice of time.   The trends allow you to alter some, all, or none of the variables for a particular time slice.   the various settings over the sequence will create an animated effect based on the settings you specified.

Trends can be used inside the time line to specify a complex set of changes to the variables of an operation over the sequence of frames.   This is similar to interpolation, but differs in that the values in the trend can be exactly specified for each frame instead of only the first and last frames.   A typical trend graph looks something like this:
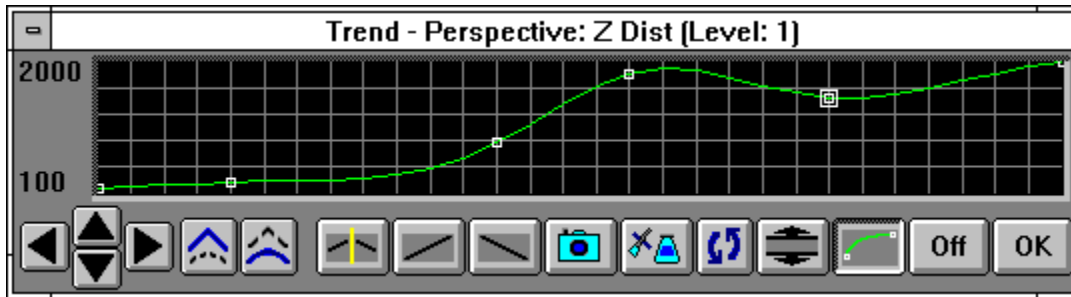
A trend is accessed for a parameter by pressing the trend button located to the right of the control.   Once the trend is open, you will see a set of vertical lines that represent the frames in the sequence.   Each of these lines or frames can have a separate value.   This allows you to have complete control for each frame in the sequence.   The trend is adjusted by simply "drawing" the desired curve.   A curve can be drawn by pressing and holding the left mouse button while over the trend graph.   Moving the mouse will alter the setting for that frame.   The current frame and parameter values are displayed in the bottom right of the trend display.   Clicking on the graph will create a control point for that frame.   Each frame in the time line can have a control point, but in most cases this is not necessary. You can continue to specify the desired control points in this manner until the trend graph appears the way you want. Trend graphs will always have a minimum of two control points (start and end frame), but can have as many control points as you like.   Once you have specified the desired control points, press the **Ok** button to close and save the trend for that parameter.

The trend graph for an operation is directly related to the time line, and any operations that are associated with that graph.   This means that placing multiple operation icons, with multiple settings, into the time line will force the generation of a trend graph for the operations.   This does not limit you to placing operations in the time line to alter the trend.   This can be done by opening the operation's trend graph after the operation is in the time line.   After the trend graph is open you can adjust the settings to fit the effect you are trying to create.   Adjusting the trend will not place additional operation icons in the time line.   The changes in the trend curve can only be view by opening the trend curve.   Placing another operation icon will alter the curve to reflect the new settings.

You should notice that the trend graphs have equidistantly spaced vertical lines.   Each of these lines represents a frame in the animation.   The number of frames can be altered using the **Sequence controls...** in the **Time Line** pull down menu.   Animation lengths of 100 - 999 frames will be represented with a vertical bar being 10 frames, and animation length greater than 1000 frames will have a vertical bar for every 100 frames.

The **Trend** dialog contains several tools to aid in the manipulation of trend graphs:

 The directional arrows will move the curve the specified direction.   This allows you to move the

curve left, right, up, or down.   Moving the curve up or down will flatten the top or bottom edge.   Moving the curve left or right will simply shift the graph horizontally left or right.

The enhance option will increase the **peaks** and **valleys** in the curve.   If you click on the enhance option the graph will then be amplified at its low and high points.

The smooth option will smooth any **rough** edges that are detected in the graph.   This option will create a smoother graph with fewer rough edges.

This option, when pressed, will make the graph have reflective symmetry.   This means that any changes made to the left side of the graph are **reflected** to the right side of the graph.

The increasing (rising) slope option will provide a graph that increases linearly from the minimum value to the maximum value.

The decreasing (dropping) slope option will provide a graph that decreases linearly from the maximum value to the minimum value.

The Copy Trend option allows you to take a **snapshot** of the current graph.   The copy of the graph will be held in memory until another copy is made.   This tool is useful for copying graphs to other trends.   Remember, once you make an additional copy the original will be **lost**.

The Paste Trend option allows you to paste the last graph that was copied into the current trend graph.   The paste will be an exact copy of the original.   This tool is useful for creating multiple trends that have the same graph. It is important to remember that you can copy and paste between any of the trend graphs.

The Flip Trend option will flip the current graph vertically.

The **Set Trend Extents** button allows you to adjust the maximum and minimum values for a parameter.   F/x will display the current upper and lower extents. as well as the theoretical maximum and minimum values.   For example, if you were adjusting the trend for the red component of a color fill, the theoretical maximum and minimum would be 255 and 0 (which is the default maximum and minimum).   If you were setting the rotation parameter of a motion blur operation, the theoretical maximum and minimum would both state **No Limit**.   This means that any value can be specified as a maximum or minimum value.   You can also use the extents buttons to scale a curve.   For example, if you wanted to have a linear increase in red from 0 to 100, you would set the extents to a maximum of 100 and a minimum 0f 0.   You would then select the **Rising Slope** button to create a strictly increasing line from 0 to 100.

The **Use Splines** button toggles the trend graph from linear to spline based lines.   When this button is not selected, F/x   will place straight line segments between control points.   If this option is selected, then the lines between control points will used spline based curves instead of lines.

The Off control will turn the current trend graph off.   This means that any curves that have been drawn will not be used.   In order for the trend graph to be used the trend must be left open **or** closed by double clicking on the System Menu box, by pressing **Alt F4**, or by selecting the **Ok** button located on this dialog.

The Ok button will confirm the trend graph, and close the dialog.   If this trend has been opened from the Time Line, the trend information will automatically be associated with the proper key frames.

Section 5.8 Keystrokes

Keystrokes used in WinImages:F/x:

WinImages:F/x has a few keystrokes to aid in the speed of changing operations and accessing help.   F/x   also follows all Windows keystroke conventions for selecting and sending dialog controls.

F1 - Pressing the F1 key will access the Table of Contents of the WinImages:F/x Help Documentation.   Pressing the F1 key while over an operation, icon, or dialog which displays quick help in the Status Bar, will access that section of the manual.

F2 - The F2 key will access the System and Memory Info panel.

F3 - Pressing the F3 key will display the Transparency Controls dialog.   These controls can be used to specify the transparency level and the width of the edge blending to be used.

F4 - Pressing the F4 key will access the Change Image Info.. panel.   The controls in this panel allow you to alter certain aspects of the selected image.

ESC - Pressing the escape key will force F/x to abort the current operation .   This can also be done by   pressing the **Stop** button on the Status Bar.   If an image is currently in the full screen view mode, then this button will close the full screen display.

TAB - The tab button will advance the Tool Bar to the next operation group.

Right Arrow key -   Moves the Tool Bar one operation to the right.

Left Arrow key -   Moves the Tool Bar one operation to the left.

Up Arrow Key - Closes the current operation dialog.

Down Arrow Key - Opens the current operation dialog.

a - Brings the **Area Selection Tools** to the front.

c - This key opens or fronts the Chronograph window.

e - Ejects the current filmstrip.

f - This keystroke will show or front the Filmstrip window.

p - Activates the play mode for the filmstrip.   Pressing this key a second time will stop the filmstrip playback.

s - This will open the Sequence Controls dialog which is used to specify output parameters for the program.

t - This keystroke will show or front the Timeline window.

u - This will cause F/x to undo the last operation.

v - This key will show or front the next image view.

w - Brings the WinImages:F/x main window to the front

y - Makes the currently active view window appear full screen.   Pressing the **y** key a second time will close the current full screen view.

z - Will present you with the zoom pointer.   Once this has appeared you can select the view and area that you would like to zoom.   Shift Z will access the Negative Zoom pointer for zooming out an image, and Alt z will allow you to present the zoom in a 1:1 aspect ration on screen.

SHIFT - Pressing the Shift key while making an area selection will cause the new area to be added to the last selected area.   This is very useful for creating complex area selections using multiple area tools.

Shift TAB - Moves the Tool Bar to the previous operation group.

Shift Left Arrow -   Moves the filmstrip left one frame.

Shift Right Arrow -   Moves the filmstrip right one frame.

Shift A - Closes the Area Selection Tools.

Shift C - Closes the chronograph window.

Shift F - Close the Filmstrip.

Shift O - Closes the operation dialog.

Shift T - Closes the Timeline dialog.

Shift U - Causes F/x to de-undo the last undo operation.

Shift V - This key will show or front the previous image view.

Shift Z - Dezooms a currently zoomed image one level.

Ctrl - Holding down the Ctrl key while making an area selection will subtract the new area selection from the previous area.

Ctrl Left Arrow -   Moves the Time Line Left one frame.

Ctrl Right Arrow - Moves the Time Line Right one frame.

Ctrl Up Arrow - Moves the current frame indicator Up one level in the Time Line.

Ctrl Down Arrow - Moves the current frame indicator Up one level in the Time Line.

Ctrl DEL - Delete the currently selected object in the time line.

Ctrl d - Deletes the current line of the Time Line.

ALT   - Toggles the From Corner area selection modifier

Alt F4 - Closes the program.

Views can be forced to display images with a 1:1 display ratio (a <u>pixel</u> for pixel display mode) by either Clicking on the Zoom button with the ALT key pressed, or by clicking on the Zoom button and then clicking in a view with the ALT key pressed.

Display Issues

There are several factors that affect Display quality:

 (1) Display Type.

A 24-bit display represents the image exactly.   256 color displays show fewer colors and therefore show the actual image less accurately.   You should select a display option that matches your hardware configuration.

 (2) Display Resolution.

WinImages:F/x takes advantage of high resolution displays by allowing you to scale windows to any size.

 (3) Image Resolution.

Image resolution is the physical size of the image in pixels.   It is important to remember that   a low resolution image is still low resolution, even in a high resolution display.   Remember, the quality of the image that you start with **greatly** effects the resultant output image.

 (4) Image Quality.

A low color image (256 colors or less) can never be restored to full color.   A true **full color** image are 24 bit and have up to 16.8 million colors.   It is always important to remember that a good quality starting image will produce a higher quality output.

It is important to note that even though your display hardware may not be capable of 24-bit display, F/x   holds and processes images as full color 24-bit at all times.

Error and Information Messages

Message 000

Message 001

Message 002

Message 003

Message 004

Message 005

Message 006

Message 007

Message 008

Message 009

Message 010

Message 011

Message 012

Message 013

Message 014

Message 015

Message 016

Message 017

Message 018

Message 019

Message 020

Message 021

Message 022

Message 023

Message 024

Message 025

Message 026

Message 027

Message 028

Message 029

Message 030

Message 031

Message 032

Message 033

Message 034

Message 035

Not enough memory to <u>render</u>**.**

The program was not able to get enough memory to render (draw) the image for display.   Try making more memory available by closing other programs or make the view windows smaller.

See Also: <u>Making More Memory Available</u>

Not enough real memory for film.

A filmstrip is really a string of images.   When a filmstrip is created for the first time or when an image is copied to the filmstrip F/x   must keep one frame of the filmstrip in real memory.   This message means that F/x   could not get the memory for one frame of the filmstrip during its creation.

Try making more memory available by closing other programs or make the filmstrip <u>resolution</u> (not view size) smaller.

See Also: <u>Making More Memory Available</u>

Message 002

 Not enough real memory for film record.

A filmstrip is really a string of images.   When a filmstrip is created for the first time or when a new image is copied (or recorded) to the filmstrip F/x   must keep one frame of the filmstrip in real memory.   This message means that F/x   could not get the memory for the record of frames for the filmstrip.

Try making more memory available by closing other programs or make the filmstrip <u>resolution</u> (not view size) smaller.

See Also: <u>Making More Memory Available</u>

Message 003
 Not enough real memory for film insertion.

A filmstrip is really a string of images.   When a filmstrip is created for the first time or when a new image is copied (or recorded) to the filmstrip F/x   must keep one frame of the filmstrip in real memory.   This message means that F/x   could not get this amount of memory during the recording of one frame to the filmstrip.

Try making more memory available by closing other programs or make the filmstrip resolution (not view size) smaller.

See Also: Making More Memory Available

Not enough memory for new film.

When the existing filmstrip in memory is resized, a new filmstrip is created and the old filmstrip copied to the new one.   This requires scaling to the new frame <u>resolution</u> and clearing new frames if the new filmstrip is longer than the old one.   This message is displayed if there was not enough memory for the new filmstrip in addition to the old one.

Try making more memory available by closing other programs or make the new filmstrip resolution and size smaller.

See Also: <u>Making More Memory Available</u>

Large Film window height is not recommended.

This is an informative message to suggest that a large film window height will require a large amount of computer resources as explained in the section on the filmstrip.   This message will not be displayed a second time from the same window.

To insist on the new size, click on the Done button again.

See Also: <u>The Filmstrip</u>

Could not open image file.

The program could not find or open the image file asked for.

Check to see that the image file exists and has the same name specified.   If it does check that no other program is requiring exclusive access to it. Under the MS-DOS operating system the FILES= line in your CONFIG.SYS file may specify a number that is too small.

Not Enough memory for new image.

The program was not able to get enough memory to hold the new image. Memory requirements for an image are calculated by Width x Height x 4 (This calculation is without an UNDO buffer.   If you have the UNDO buffer on, then the calculation would be Width x Height x 8).

Try making more memory available by closing other applications or by   specifying a larger area for <u>virtual memory</u> in Windows.

See Also: <u>Making More Memory Available</u>

<u>Undo Buffers</u>

Could not write the file header.

When trying to save an image file, the file was created but the program could not save the first part of the image specification.

Check that there is enough space on the disk being saved to and that the disk is free from bad sectors.

 Could not write the <u>palette</u>**.**

When trying to save an image file, the file was created but the program could not save the image palette.

Check that there is enough space on the disk being saved to and that the disk is free from bad sectors.

Message 010

Could not write the first frame.

When trying to save a frame to an animation file, the file was found but the program could not save the image just created (frame 1).

Check that there is enough space on the disk being saved to and that the disk is free from bad sectors.

Message 011

 No images loaded.

An operation was asked for that requires an image.   When an image has been loaded, it will be displayed in the View window.

Load an image by using the Menu option Load an Image....

Message 012

 No source image specified.

An operations that requires a source image was asked for.   The source image is used for operations that are compositions of two images.   The compose operations include Merge, Key In, and Place.

A source image can be specified by selecting the **Specify Source** button from the dialog, or by specifying a source image or sequence in the time line.

Message 013

 Can not find settings file.

The settings file that you requested could not be found.

Check the file name and path for errors.

Message 014

File is empty.

The settings file that you specified had no settings information in it.

The file was probably not successfully written when saved.   <u>Transparency</u> files can be viewed with a standard <u>text editor</u> (not word processor).

Message 015

 File not found.

The program could not find or open the file asked for.

Check to see that the file exists and has the same name specified.   If it does, check that no other program is requiring exclusive access to it. Under the MS-DOS operating system the FILES= line in your CONFIG.SYS file may specify a number that is too small.

Message 016

 Not enough memory for new curve.

When a Trend or Profile curve is created or loaded from disk, the program requires the following amount of memory: Frames x 4.   So, a 30 frame animation will require 120 bytes of memory for each curve that it uses.

Try making more memory by closing other applications or by specifying a larger area for <u>virtual memory</u> in Windows.

See Also: <u>Making More Memory Available</u>

 Incorrect file type.

This is a rarely encountered error, meaning that the image file being loaded had an identifying header that showed it was one type of image, but that the actual contents of the file was inconsistent.   This could happen if F/x encounters a new image file type or if the file has been corrupted.

If you encounter an image file that you think WinImages:F/x should load please send it to us (see the <u>Introduction</u> for phone numbers and address).   We especially encourage use of our bulletin board service.   Entirely new image file formats may require some additional file specification.

Message 018

 Image file type is not recognized.

The program was unable to load the type of image file specified. (see the File Menu documentation for a list of currently handled formats.)

If you encounter an image file that you think WinImages:F/x should load please send it to us (see the ~~Introduction~~ for phone numbers and address).   We especially encourage use of our bulletin board service.   Entirely new image file formats may require some additional file specification.

See Also: File Menu

No filmstrip loaded or created.

An operation was requested that requires a filmstrip.

Filmstrips can be loaded from disk or the filmstrip can contain images that you have altered.

Both source and <u>action images</u> **have to be specified.**

Some operations (Perspective, Add, and Subtract) require both a Source and a Action image.

Specify the Source and Action image using...

Setting for this operation specifies no change.

The setting for the current operation will have no effect on the current image.   This occurs in operations where a setting of 0 will result in no change to the image.

Alter the settings to a non-zero value and reapply the operation.

Message 022

 Not enough memory for this operation.

Image processing requires working memory.   If this message is displayed, the program has failed to obtain the working memory and will cancel the operation.

Try making more memory available by closing other applications or by using smaller images in the animation.

See Also: <u>Making more Memory Available</u>

Problem opening the window.

The program opens windows for control of trend curves and other F/x   parameters.   In some circumstances, Windows cannot provide the program with the window it requires.   This will happen if Windows uses all of its resources.

Try closing other applications.

Could not get the file header.

When reading a file, the program could not read past the start.

The file may be corrupted.

 File is truncated.

When reading an image file, the program could not get all of the image data.

The file may have been corrupted by a bad disk or incomplete save operation. When possible, the program will continue after this error and show the part of the image that was successfully loaded.

Problem writing file.

When saving a file out to disk, the program could not complete writing.

Check that the disk has enough free space to hold the file.

Not enough real memory for the image.

For operations such as image processing, the data for all of the current views must all be in memory.   This message is displayed if the program cannot put all the images in memory at once.

Try decreasing the number of views.   Users with 386 or higher computers can also utilize <u>virtual memory</u>, and effectively use more memory than the computer can actually store using its memory chips.

Redo cannot be used until an area selection is made.

You have selected the Redo area selection mode without making an initial area selection.

Select an area using one of the other area selection modes, and then use the Redo mode.

Message 029

 No image has been loaded to show information for.

You have selected the Image Information option from the Help pull down menu without having an image loaded.

Load an image and then select   the Image Information option.

Message 030

The current frame is larger than the total number.

The range of frames set in the Sequence Controls pull down menu should be between one and the last frame number.

Change the Current Frame to be greater than zero and less than or equal to the number of Total Frames.

There is no zoomed view to dezoom.

You have selected to dezoom a view without zooming first.

Number of frames must be more than one.

An animation specifies movement of an image.   The movement is shown over a sequence of frames.   So, the number of frames of the animation must be two or more.

Could not open new project file.

While trying to save the project data to disk, the program could not open the file.

Check that the disk is not write protected or if the file is being saved to the root directory of an MS-DOS disk, that the root directory has not reached its maximum number of files.

File is not an F/x   Project File.

A request to load a project file was made but the file found did not have an FPROJECT identifier in the first line.

 No result frame has been generated yet.

A request to save the image was made before the operation was complete.

File is not a TIFF image.

When trying to load a TIFF image file, the contents of the file was not consistent with the identifying header.

The file may be damaged.

Message 037

Could not create the new image file.

The program was unable to create a new file to hold the image being saved.

Message 038

 Not enough memory for the undo required for this operation.

Certain operation require an undo buffer.   In some cases you may not have the required memory for both the image, and the undo.   The program requires the following amount of memory for each level of undo: area selection width x height x 4.   Notice that it is only the area selection dimensions, and not the image resolution.

Try making more memory available by closing other applications or by   specifying a larger area for virtual memory in Windows.

See Also: Making more Memory Available

Message 039

Not enough memory to get an undo.

There was not enough memory left to undo the level that you have selected.   The program requires the following amount of memory for each level of undo: area selection width x height x 4.   Notice that it is only the area selection dimensions, and **not** the image resolution.

Try making more memory available by closing other applications or by   specifying a larger area for virtual memory in Windows.

   See Also: Making More Memory Available

The view selected to dezoom is not zoomed.

The view you have selected is not the view that was originally zoomed.

Select the view that has been zoomed to dezoom it.

There are no images loaded to undo.

You have selected to undo an operation with no images loaded.

You must have an image loaded and perform an operation before you can use the undo tool.

File does not match the type requested.

A request to load a file was made, for example, an asterization settings file, but the file was not recognized as the type asked for.

Check that the file is the type asked for.

Message 043

 Not enough memory for I/O buffer.

When loading image files such as TIFF the program requires a small amount of real memory to hold incoming information.   This greatly increases the speed over how an image file could otherwise be read.   This message means that Windows was unable to provide that amount of buffer memory (usually 1024 to 4096 bytes).

Try to make more memory available.

See Also: <u>Making More Memory Available</u>

 Not enough memory for decompression buffer.

When loading compressed image files such as BMP the program uses about 20k of real memory to decompress the image.   This amount of memory may be larger for images that are wider than 1024 pixels. This message means that the system was unable to provide the required amount of memory.

Try to make more memory available.

See Also: Making More Memory Available

Decompression over-run in file.

When loading a compressed image file (usually an Animator FLIC) the program had trouble decompressing (or in other words understanding) the data.   This may mean that the file has been corrupted or that a compression method is in operation that WinImages:F/x is not familiar with.

As with other file formats, if you have confidence that the file is OK, send the file to Black Belt Systems Technical Support along with a note describing the problem (we encourage you to use the Black Belt Bulletin Board at 1-406-367 2227) and we will endeavor to extend the loader to handle it.

Message 046

 Current frame number is before start.

The range of frames set in the Sequence Controls pull down menu should be between one and the total number of frames.

Change the Current Frame to be greater than or equal to one.

Source image not specified for this frame.

Some operations require the specification of a Source Image.   A source image is specified in a sequence using the Source Image Drop Down Box found in the operation's dialog.

Action image not specified for this frame.

An operation has been selected that requires a Action image.   The action image is specified by clicking on the image title bar, or in a sequence by using the Operation Action option in the Specify Sequential images sub-menu.

There is no (more) undo history to restore.

You have selected to deundo after all of the levels of undo have been restored.

Not enough memory for new film frame.

Each frame of the filmstrip is a 24-bit image when filled.   This message means that when inserting a result image into a new filmstrip frame, the program was unable to get enough memory for the new filmstrip image.

Try to make more memory available or reduce the filmstrip <u>resolution</u> specified in the Filmstrip pull down menu.

See Also: <u>Making more Memory Available</u>

Can not add a different size image to an animation file.

The program was unable to create the specified AVI or FLI/FLC animation because the images specified in the time line had different resolutions.   All animation frames must be the same size.   The size of the animation is determined by the first output action image.

Message 052

 Not enough real memory to undo.

WinImages:F/x was unable to carry out the undo that you requested due to a lack of memory.   Each level of undo requires the following amount of memory: area selection width x height x 4.   For example, an area select of   25 x 25 would require 2500 bytes of memory.

Try freeing up more memory by closing other applications or closing other views.

See Also: <u>Making More Memory Available</u>

Message 053

Unable to create FLC/FLI file.

When saving the first frame of an animation to an Animator file, the program must create (or over-write) the output file.   This message means that the program could not create the file.   It is really saying that the operating system could not create the file for us.

Possible causes are:

- The Output file name in the Sequence Controls may be invalid.

- If saving to the root directory of a FAT file system disk, the maximum number of entries may be reached.

- The disk being saved to may be write protected.

- The disk being saved to may be full.

- Under the MS-DOS operating system, the FILES= entry in CONFIG.SYS maybe set too low.

Use the Specify button to verify the path and name of the output file.

Message 054

 Not enough memory to open program interface.

When WinImages:F/x begins, it requires a minimum amount of memory just to get started.   This message means that the amount of memory (about 4k) was not available.

See Also: Making More Memory Available

Message 055

Settings file not found.

The settings file that you specified does not exist or has been corrupted.   Check the specified path and file name for errors.

Filmstrip is already ejected and empty.

You have asked to eject the contents of the filmstrip, but each frame is empty, so ejecting will have no effect.

AVI files must be saved as a sequence.

You have asked to save a single view as an AVI, however AVI files contain a sequence of frames.

To save to an AVI file either select the Output File Type option and select Save Result all in the Sequence Controls, then generate the sequence; or   save the filmstrip as an AVI after generating an animation.

Zoom or De-Zoom was requested with no images loaded.

You have selected the zoom or dezoom button, but there were no images loaded to be zoomed.

 Not enough <u>virtual memory</u> **for operation.**

WinImages:F/x was unable to execute the selected operation due to a lack of virtual memory.

Increase the amount of virtual memory allocated.   In some cases more real memory may be needed.

See Also: <u>Making More Memory Available</u>

Not enough real memory for the operation.

WinImages:F/x is unable to execute the selected operation due to a lack of real memory.

Try closing other applications to gain more memory.

See Also: <u>Making More Memory Available</u>

 Not enough <u>virtual memory</u> **for the mask.**

WinImages:F/x was unable to create the selected area mask due to a lack of virtual memory.

Increase the amount of virtual memory allocated.   In some cases more real memory may be needed.

See Also: <u>Making More Memory Available</u>

Not enough real memory for the mask.

WinImages:F/x is unable to create the selected area mask due to   a lack of real memory.

Try closing other applications to gain more memory.

See Also: <u>Making More Memory Available</u>

I-Shape file was not found.

The I-Shape file that you have selected was not found.

Verify both the I-Shape file name and path.

Message 064

There are no (more) UNDO levels that have been undone.

You have selected to Undo after all of the levels of undo have been undone.

In order to use the Undo there must be at least one operation that has taken place.

Message 065

 The settings for this operation will produce no change.

The settings that you have specified will cause no change in the selected area.   These operations are considered Null operations and not allowed, except in sequence where the null operation may be needed to produce an effect.

 Not enough memory for TREND curve.

WinImages:F/x did not have enough memory to create the trend curve.

Try closing other applications to gain more memory.

See Also: <u>Making More Memory Available</u>

Message 067

 The paste buffer is empty.

The Paste button has been selected in a trend, and there is no information in the paste buffer.

Use the Copy option, and then try to paste in the trend curve.

 Not enough memory to make sequence list.

WinImages:F/x did not have enough memory to create a sequence list for sequence processing of images.

Try closing other applications to gain more memory or using smaller images.

See Also: <u>Making More Memory Available</u>

Message 069

 Out of memory during trend rescaling.

F/x   ran out of memory while trying to resize a trend curve.   This will only occur if the Sequence Controls' Total Frames control has been increased or decreased.   Try making more memory available by closing other applications.

See Also: <u>Making More Memory Available</u>

Message 070

 Not enough memory for resulting image.

WinImages did not have enough memory to display the resulting image from a perspective placement or other compose operations.   Try making more memory available by closing other applications.

See Also: <u>Making More Memory Available</u>

Message 071

Could not open the requested file.

The settings file that you requested is not a valid file.   Check the name and path specifications for errors.

Message 072

Area Edit found no existing Area Selection.

You tried to edit an area selection method without having an existing area select in any of the views.   You must make an area select first, and then edit it using the Edit modifier.

 Could not write to the AVI file.

The AVI file could not be created because an output file path and name were

not specified or the path/file name was invalid.

A valid file and path name would be: C:\images\mytest.AVI.

Some examples invalid paths/file names might look like this: C:\images\

.AVI

C:\""

Specify the output path and file name in the Sequence Controls dialog in the Time Line menu.   It is strongly
suggested that you use the Specify File button to ensure valid path and file names.

Message 074

Animation file is being saved with incomplete frames.

The filmstrip is being saved as a FLI/FLC or AVI animation file, but some of the filmstrip frames are empty.   The animation file can still be saved, but unless the missing frames are added later, players will not be able to play the animation properly.

To successfully save an animation file, ensure that all of the frames in the filmstrip have been generated or loaded.

Message 075

 The loader for this file type was not found.

The file loader that F/x   requested was not found.   This can happen if the DLL's that F/x   uses have the same name as another program's DLL.

Move the F/x   DLL into the F/x   root directory, or contact technical support about possibly changing the name of the DLL.

Message 076

The loader for this file type was corrupted.

F/x   attempted to access one of its DLLs, but the DLL has been corrupted.

In this case it may be necessary to re-install the program or the DLLs.   Contact technical support for further information on re-installing DLLs.

System was unable to provide Timer.

F/x   was unable to obtain a system timer for the operation you specified.   System timers are used to play the filmstrip at regular intervals, scroll the icon bar, and in a few other areas of the program.   This error message is very rarely encountered on most systems.

You can correct this error by stopping the filmstrip, or by turning off any other application that may be using a system timer.

Message 078

This operation cannot be done while F/x   is Running or Paused.

The operation or change that you have made can not be carried out while F/x   is generating a sequence.   For example, you can not change the number of frames in the time line while it is generating a sequence of frames.

The image file was too small to ID.

The image file that you have specified does not contain enough information for a valid image file.

Check the name and directory of the specified file for errors.

Message 080

Could not find the image size from the file.

The image file that you specified does not contain any information about the images size.   F/x   will not be able to properly load this type of file.

Please contact technical support if you find a supported file that exhibits this behavior.

The area selection could not be placed in the Time Line, because the Time Line position has been lost.

You have selected to delete the current level of the time line after selecting the Make the area selection now option from the Area Selection dialog.

Message 082

 There are no operations in the Time Line.

This is an informational message that will occur if there are no operations in the time line when the Generate option is selected.

This will occur if you are trying to convert image file types, but t you can select to ignore the message and continue the time line generation.

Message 083

Two load operations have been requested simultaneously.

You have selected to load two files at the same time.   This operation can not be performed because the file loader can only load one file at a time.   However, you are permitted to load a sequence of files using the <u>drag and drop</u> method, or by selecting multiple files from the file requester.

Could not create the requested file.

The time line file that you requested to save can not be saved to the directory you specified.

Check the directory and file name for errors.

Time Line has changed.

The Time Line has changed since it was last saved, and you are exiting the program or loading a new time line. This is only an informational message.   You can select to not save the time line, or to replace this time line with a new time line file.

This cannot be done while an operation is in progress.

You have selected a dialog or control which can not be altered while an operation is in progress.   Wait for the operation to complete, and then make the change.

There is no image loaded or specified in the Time Line.

You have selected to generate a time line with no specified <u>action images</u>, or no loaded images.   You must have at least one action image specified in the time line, or one loaded image to generate a time line sequence.

Could not find the routine in the DLL.

The DLL that the program found was corrupted, truncated, or has the same name as an F/x   or Morph DLL.   This can be fixed by re-installing the DLL's into your Windows directory.

Message 091

The sequence output file already exists.

The output file name that you have selected for the sequence of frames already exists.   You can select to overwrite the file with the new frames, or you can cancel the file save to select a new name for the sequence.

The paste buffer is empty.

F/x can not paste into the exposure sheet without using the copy option first.

Cannot talk to Morph.

F/x was unable to create the specified morph, because morph was not found.   Make sure that morph is in the same directory as WinImages:F/x.

Message 098

The AVI file contains no video stream.

F/x was unable to load the specified AVI file because it contained new video information.   Check to make sure that the specified file has been corrupted.

Message 099

The handler (CODEC) for this AVI was not found.

The AVI that you selected for loading can not be loaded because you do not have the proper handler or CODEC on your system.   In some cases you may need to reinstall Video for Windows on you system.

Message 100

The filmstrip is currently being rendered.

You have selected to close the filmstrip or the program while the filmstrip is rendering.   Wait until the filmstrip has completed its <u>render</u> before closing.

Message 101

LZW compressed TIFF (or GIF) files use techniques patented by UniSys and IBM.   Clear legal title to the use of LZW is not possible to obtain at this time.

Gif and the most common form of compressed TIFF use LZW compression.   Both IBM and UniSys have patents on LZW.   UniSys has recently instituted a fee for the use of LZW, after years of free usage.   Until this matter is completely resolved, we will not load or save LZW compressed files.

Message 101

Image File contains no <u>palette</u>**.**

You have selected to load a palette from a BMP image file that contains no palette information (24 or 16-bit BMPs). If you are going to load a palette from a BMP file, it must be 256 color or less.

Making More Memory Available

It is no secret that image processing operations typically require large amounts of memory.   If WinImages:F/x can not get enough memory for a particular operation an   appropriate message will be displayed regarding the lack of free memory.   There are certain actions that you can take to maximize the amount of memory available to the program.

In some situations, you may be able to reduce the memory requirements for WinImages:F/x.   The filmstrip can be an especially heavy memory user because each frame is a complete image.   You can set a small filmstrip resolution or even close the filmstrip when it is not needed.

More memory can also be obtained by turning off other applications, especially other image processing programs that use large amounts of memory.

On '386 and higher processors you can specify a swap file for virtual memory use in Windows.   A large swap file of 20 megabytes or more will help.   Use a permanent swap file if possible.   A permanent swap file will be static and contiguous and therefore minimizes disk fragmentation.   For example, using virtual memory you could load a 2400 x 1400 image that would require 10 megabytes of memory on a machine with only 8 megabytes of RAM.

You can also reduce the number of images that you are working on at one time.   The calculation for memory usage in WinImages:F/x is image width times image height times 8 for the current image (width x height x 8 = memory needed), and image width times image height times 4 for all other images (width x height x 4).   These calculation are valid for all images, including the filmstrip.   The following is a list of sample image sizes and the required memory for each resolution.

Image Size:	Required Memory:
640 × 480 - Current Image	2,457,600 bytes
640 × 480 - Non-Current Image	1,228,800 bytes
1024 × 768 - Current Image	6,291,456 bytes
1024 × 768 - Non-Current Image	3,145,728 bytes
320 × 200 - Current Image	512,000 bytes
320 × 200 - Non-Current Image	256,000 bytes
96 × 72 (Standard Filmstrip Res)	48,384 bytes
32K × 32K - Max Image Size	8,192,000,000 bytes

The Palette Controls
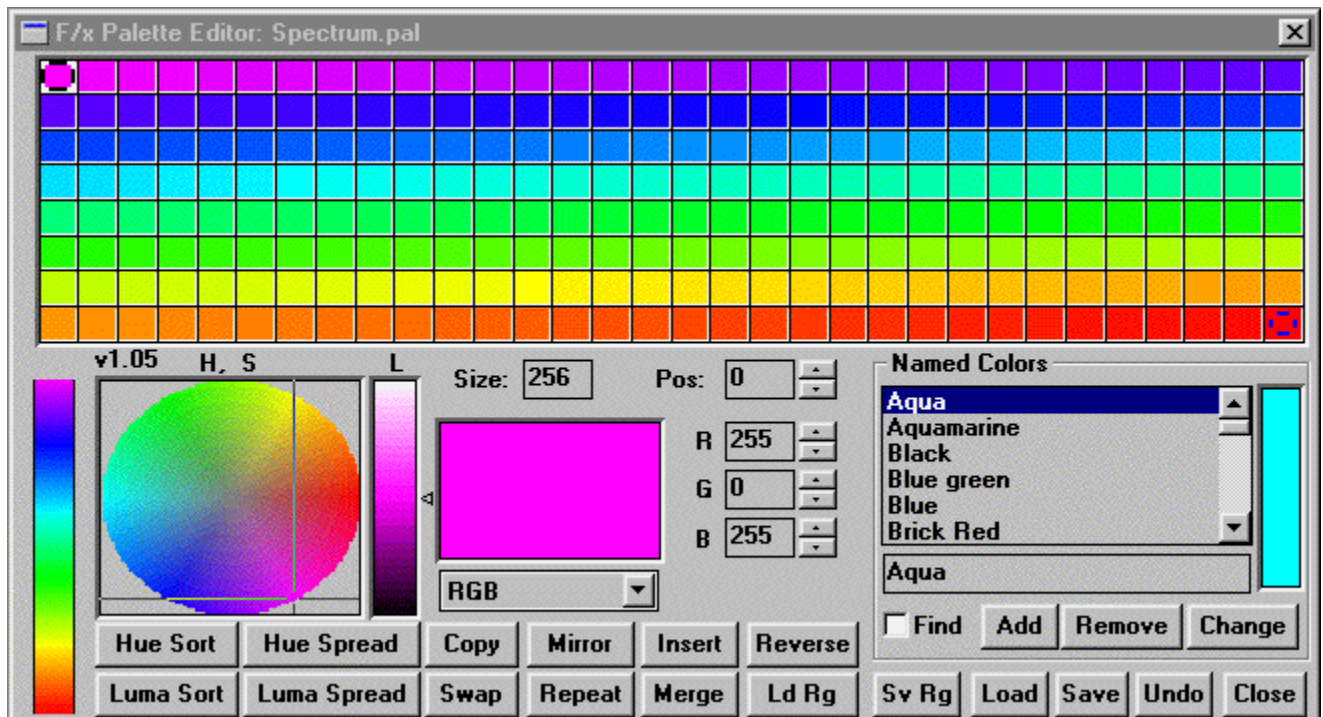
Click on any of the functions for quick help or look below for detailed documentation.

WinImages:F/x's <u>palette</u> control allows you to manipulate and alter existing palettes or create new palettes and ranges of color.   The Palette controls include operations that will merge two palettes, insert a new palette, mirror the palette, and create various color spreads and sorts.   This tool is particularly useful for loading a specific palette for an animation, thus keeping the original palette intact.   The palette is also useful for setting a range of colors for one of F/x 's many fill operations.   F/x 's palette can load Microsoft Windows Paintbrush palettes, AVI (Video for Windows) palettes, Bitmap palettes, Adobe Color Table (ACT) palettes, and IFF palettes.   The palette itself is broken up into a number of squares which contain the colors in the current palette.   You have the option to increase or decrease the number of squares or cells available in the palette.   Your palettes can contain anywhere between 2 and 1024 separate color cells.   Throughout the remainder of the documentation the terms "left color" and "right color" will be used to describe the   to palette position selectors.   The "left color" is a white with black marker that outlines the current color.   This color can be altered using the Hue and Saturation Color Wheel, or the provided RGB text entry fields.   This color is the starting point for all spreads, fills, and mirrors. The left color position can be altered by clicking on the palette with the left mouse button.   The "right color" is a blue and red marker which defines the ending position for all spreads fills and mirrors.   You can not manipulate the right color.   You do have the option of copying the left color into the right color position, or you can move the left color to the right color position to alter the color, and then move the left color back to its initial position.   The right color's position can be altered by pressing the right mouse button while over the desired palette position.

Related Topics:

<u>The Palette Controls:</u>

The Palette Controls:

Hue and Saturation Color Wheel: The Hue and Saturation color slice allows you to select a color's Hue and Saturation values.   These values are then combined with the Luminance setting (the control to the right) to create a color.   The Hue and Saturation "wheel" begins with red and then moves through yellow, green, cyan, blue, magenta, and then back to red.   The color is "purest" (has the most saturation) at the edge of the wheel, and as you move in towards the center of the wheel the saturation drops.   The center of the wheel is a gray scale value.   A color is selected by simply clicking, and holding the left mouse button on the color wheel.   You can then move the mouse towards the desired color.   The current color that the mouse is over will be displayed in the Color Preview Box to the right of the luminance control.   Once you have the color you desire, or a lighter or darker version of the desired color, release the left mouse button.   Remember, the left mouse button controls the "left color" or the beginning of any range spreads.   You can place a color in the "right color" or end of the range spread by copying the desired color from the left color, and then setting the right color to the desired color.   The "brightness" of the color can be altered using the Luminance control.   For example, you have a Red color (R=225, G=25, B=32, and Luminance at about 50%), but it is not dark enough for the range you are creating.   So, you would adjust the Luminance to about 25%, and the new red would be much darker (R=102, G=15, and B=25).   You do not need to use the color wheel and luminance color to create or specify colors.   You have the option of manually altering the RGB (or CMYK, HSL, etc.) values in the provided text entry fields.   By doing this you can increment one or more of the components to a specific value.   For more information on using the Hue and Saturation wheel, please refer to the sections bellow on creating spreads and ranges of colors.

Luminance Control: The Luminance control allows you to specify the brightness or luminosity of the color in the preview area.   The Luminance is measured on a percentage scale from 0 to 100.   A setting of zero will result in no luminance (black), and a setting of 100 will result in the maximum possible luminance (white).   This is true regardless of the current selected color.   For example, a red color can be made black by setting the Luminance control to 0 (bottom of the Luminance control), or it could be made white by setting the control to 100 (top of the Luminance control).   A setting in the middle of the control (50%) will produce colors which are completely saturated or "pure colors".   The luminance is set by simply clicking, and holding, the left mouse button over the luminance control.   As you move the mouse, you should see the color in the preview increase or decrease in brightness as you move the mouse up and down the control.   The preview will reflect all changes that you make to the luminance as they are made.   When you have the desired color, release the left mouse button.   The color you see in the preview will also be placed in the "left color" position.

Color Preview Box: The preview box contains the currently selected "left color".   This color can be specified using the Hue and Saturation color wheel, or the RGB entry fields to the right of the preview.   Any changes made to the color wheel, luminance control, or the RGB entry fields will be directly reflected in the preview color and the "left color" in the <u>palette</u> itself.   This color can then be copied to the "right color" position by selecting the Copy button.

Size: The Size control is used to set the actual size or number of colors in the palette.   This value can range between 2 and 1024 colors.   If you increase or decrease the size of the current palette, either more cells will be added or some of the current cells will be eliminated.   The cell size will decrease as the number of colors increase.   This means that a palette of 1024 colors will have extremely small cells for the colors in the palette.   If you are loading a palette which contains more colors than the current palette, F/x   will automatically increase the size of the palette to accommodate the new palette.

Position: The Position control displays the current "left color" position, and can be used to manipulate the position of the left color marker.   The up and down arrows can be used to move the left color marker through the palette, or you can enter a value in the provided text entry field.   If you specify a numeric value which is beyond the size of the current palette, F/x   will place the left color marker in the last available color cell.   Remember, manipulating

the Hue and Saturation color wheel, the Luminance slider, or the numeric color inputs will change the current left color.   This is done regardless of the position of the left color marker.

Color Spaces: This drop down box contains a wide variety of colors spaces commonly used in graphics, desktop publishing, desktop video, and <u>NTSC</u> video.   The color spaces include RGB (red, green, blue), CMY (cyan, magenta, yellow), CMYK (cyan, magenta, yellow, black), HSL (hue, saturation, luminance), HSV (hue, saturation, value), and YIQ (luminance, chrominance).   The default <u>color space</u> is RGB, but can be changed at any time by accessing this dialog, and double clicking on the desired color space.   Once the new color space has been selected, all of the values will be recalculated to reflect the differences between the spaces.   It is important to remember that F/x   is dealing with pure colors, not real colors.   This allows for conversion from color space to color space without altering the current "left color".   The color space's letter equivalents will be placed in front of the appropriate dialog, and can be altered as described below.

RGB (or CMYK, CMY, HSV, HSL, YIQ): The RGB controls allow you to enter specific Red, Green, and Blue values for the current "left color".   Each of these components has two methods of entering the desired color values. The first is to simply manually enter the exact numeric values.   This will alter the preview and "left color" colors. The second method is to use the up down gadgets located to the left of each text entry field.   These allow you to increase or decrease the desired color component by clicking on the appropriate gadget (up for a value increase and down for a value decrease).   You should notice that there are multiple color spaces available to you.   You can alter the change the current color space by following the procedure described in the above section.

Hue Sort: The Hue Sort control will sort all of the colors currently between the left and right colors.   This sort will rearrange the colors according to their individual hue settings.   This includes all gray scales and color values between the left and right color markers.   The hue sort begins with red and then moves through yellow, green, cyan, blue, and ends with magenta.   If a gray scale color contains a portion of one of the above mentioned colors, it will be sorted in that color group.   The colors themselves are sorted with the groups based on their saturation.   This means that darker colors will always come before lighter colors of the same hue.   You also have the option of sorting the colors "backwards" by pressing the Shift key and then this button.   You can always undo the last change that you've made to the palette by selecting the palette's Undo button.

Luma Sort: The Luma Sort option allows you to sort all of the colors in the current palette by their luminance or brightness.   Once this option is selected, F/x   will evaluate the palette and reorder the colors based on each color's RGB brightness value from dark to light.   If you were to select this option for the default palette, you would notice that the palette is already sorted on luminance.   The sort will only occur between the "left color" and the "right color" of the palette.   All other colors outside of these markers will not be altered.   You also have the option of sorting the colors "backwards" by pressing the Shift key and then this button.   You can always undo the last change that you've made to the palette by selecting the palette's Undo button.

Hue Spread: The Hue Spread option will create a spread of colors between the current "left color" and "right color" using the hue values of those two colors.   There are two methods of applying the Hue Spread.   The first is to simply press the Hue Spread button.   This will produce a spread of colors between the current left and right colors without cycling through the complete hue spectrum.   For example, a Hue Spread from red to magenta would simply create a range from red to magenta without cycling through yellow, green, cyan, and blue to get to magenta.   This method can be thought of as a "shortest path" method.   This means that F/x   will take the shortest Hue distance to reach the specified right color.   The second method requires you to press and hold the Shift key while pressing the Hue Spread button.   This will cause the new range to go through all of the colors linearly to reach the specified right color.   If we use the above example, the hue spread from red to magenta would start with red, pass through yellow, green, cyan, blue, and would end with magenta.   It is important to remember that the spread will only evaluate the current left and right colors.   All other colors in the palette will be ignored.   This includes all of the colors between the left and right colors.   The new colors created by this spread will be determined by the initial left

and right color.   For example, setting the left color to red (R=255, G=0, B=0) and the right color to magenta (R=255, G=0, B=255), and then applying a hue spread, with the shift button down, between the two will create a range of colors that is very similar to the Hue and Saturation color wheel (beginning with red and then moving through yellow, green, cyan, blue, and ending with magenta).   It is important to remember that F/x   does not always have to cycle the colors when doing a hue spread.   For example, a non-shifted spread between yellow and red would be the exact inverse of a non-shifted spread between red and yellow.   This is done to allow you the option of creating color ranges that are the inverse of one another. It is important to remember that pressing the Shift key in conjunction with this button will cause the spread to "cycle" through the hue space to create the spread.   You can always undo the last change that you've made to the palette by selecting the palette's Undo button.

Luma Spread: The Luma Spread operation allows you to create a spread or range of colors between the current left and right colors based on their initial luminance.   The luminance that F/x   uses is a measure of actual RGB brightness of the left and right colors.   For example, the Hue Spread mentioned above went from red to magenta based on the hue values of the left and right colors.   A Luma Spread of the same two colors would differ in that the colors created by the spread operation would be "between" red and magenta.   The colors that are created would gradually shift in brightness and shade from red to magenta, with each color being slightly darker or lighter than the previous.   You can always undo the last change that you've made to the palette by selecting the palette's Undo button.

Insert: The Insert option allows you to insert a palette of colors based on the position of the "left color" marker.   This allows you to insert or append another palette into the current palette.   After you have selected this button, you will be presented with a file requester for selecting the palette to be inserted.   Once you have selected the desired palette file, select the Ok button.   This will automatically load and insert the specified palette in the current left color position.   If the palette which is being inserted is larger than the remaining space in the palette, the additional colors will be placed beyond the total number of visible colors.   If you were to increase the total number of visible colors in the palette (increase the Size value), the colors that were inserted beyond the original palette will become visible.   F/x   will only use the number of colors specified in the Size control regardless of any colors that have been inserted beyond the visible palette.

Reverse: The Reverse option will invert the colors between the left and right position markers in the palette.   This can be used to flip the sequence of the entire palette or to reverse a range of colors in an existing palette.   The palette or range can be returned to its original status by pressing the Reverse button a second time, or by pressing the Undo button.

Full View Palette: This display of the palette shows the entire current palette in a linear format.   This gives you a better idea of how the actual palette will appear when it is applied as a fill.   Each color in the physical palette is represented by a corresponding color in the Full View display for palettes of 256 colors or less.

Load Range: This option allows you to load an already saved range of colors into the palette.   A range of colors is a group of colors that make up a palette, but need not be the entire palette.   These color ranges can be saved by selecting the range of colors with the left and right position markers, and then pressing the Save Range button.

Save Range: The Save Range button allows you to save the colors currently between the left and right color markers.   This range can then be loaded back into the palette by pressing the Load Range button, and selecting the desired color range file.

Merge: The Merge option is used to merge together two separate palettes.   The first step in using the merge option is to load the palette which will have colors merged into it.   The next step is to press the Merge button.   This will access a file requester which can be used to select the palette file to be merged.   Once you have selected the desired palette file, press the Ok button.   F/x   will now merge the two palettes by comparing the colors of both palettes, and selecting the colors which best represent both palettes.   This tool is especially effective for creating render

palettes for animations based on two separate palettes.

Copy: The Copy button will copy the current left color into the right color.   This can be useful for specifying the right color for spreads and sorts.   After you have copied the left color, you can then specify a new left color to be used for multiple color spreads.

 Swap: The Swap option will swap the current left and right color.   Only the colors will be swapped.   The left and right color markers will remain in the same position.   Pressing Swap again will return the colors to their original position.

Mirror: The Mirror operation will mirror the colors in between the current left and right color markers.   The mirror will be a "reflection" of the range of colors based on the center position of the range.   F/x   will have to eliminate some colors to do this, but the overall effect is very dramatic.   For example, if there were 32 colors between the left and right color markers, only 16 colors would be used and reflected inside the 32 color range.   This means that half of the colors will be eliminated.   You also have the option of applying multiple mirror's to the same range which can create some very stunning results.   You can always undo the last change that you've made to the palette by selecting the palette's **Undo** button.

Repeat: The Repeat option will repeat the range of colors currently between the left and right color markers.   F/x   will evaluate the colors that it finds, and will then repeat the entire range of colors inside the two markers.   For example, if you were to repeat the default gray scale palette, you would see two ranges of colors that start with black and move to white.   Selecting the Repeat button again will repeat the two gray scale ranges, and will create a palette with a total of four black to white ranges.   You should also notice that some of the colors are eliminated.   This is due to the fact that F/x   will only repeat within the left and right markers.   This means that some colors will be eliminated.   For example, If you placed the left marker in position 0 and the right marker in position 31, only the colors between positions 0 and 32 would be repeated.   This is a total of 32 colors in-between the left and right marker.   This means that F/x   will select 16 colors from the original 32, and then repeat them.   In this case, F/x   would select every other color in the range, and then repeat these colors.   You can always undo the last change that you've made to the palette by selecting the palette's Undo button.

Named Colors: The Named Colors section of the Palette dialog allows you to give names to specific RGB values.   For example, the default named colors file (colorset.ini) contains such colors as Cobalt Blue and Carnation Pink.   These two colors have specific RGB values, but also have a name associated with them.   The controls in this portion of the dialog can be used to add additional colors and names to the colorset.clr file, remove colors from the file, or replace existing colors with new RGB values or names.   A named color is placed into the palette and preview color box by simply selecting the desired named color, and then clicking on the named color preview color box to the right of the list.   This will automatically place the named color into the left color position of the palette, and will adjust the RGB values accordingly.   The intent of the named colors are to allow you to specifically name colors that you use frequently.   This means that you no longer have to remember an obscure RGB value, but can instead remember a name which describes the color in question.   The Named Color section of this palette dialog can be particularly useful for operations like Color Fill or Colorize.

All of the Named Colors are kept in a ASCII text file called colorset.ini located in your Windows directory.   You can use any Text Editor to add new named colors to the file.   You may find this method to be faster if you are entering multiple colors and names.   The instructions at the top of the file describe the method for adding new colors to the list.   Once you have added the desired colors and names save the file and exit the text editor.   The next time that you open the palette the new named colors will be available.   Remember, the named colors file (colorset.ini) is used for both the palette and the Pick Color selection dialog.   This is not the only method of adding colors to the named colors list.   Named colors can be added to the list in both the palette and color selector by pressing the Add button.   Its use is described below in the Add documentation.

Find: The Find control, when selected, will force F/x to find the color in the named colors list that is closest to the current color in the Preview Color box. For example, if you were selecting a color with the Hue and Saturation color wheel, you would see the current named color shift from name to name (color to color) as you move the mouse pointer over the color wheel. Remember, this is the closest color in the named color list. The current preview color can be added to the named color list by entering a new name, and then pressing the Add button. This will add the color to the list with the specified name and color space values (RGB, CMYK, HSL, etc.). If the find control is not selected, the current name color will only change when a new color is specified or selected using the provided list requester.

Add: The Add control is used to add new colors to the named colors list. New colors area added to the list by selecting the desired color, entering a name for the color, and then pressing the Add button. The color can be selected with the Hue and Saturation color wheel, or by the manual RGB numeric entry fields to the right of the color wheel. After the color is set, enter an appropriate name for the color. F/x will place the color directly above the currently highlighted named color. F/x will not automatically alphabetize the new named color entry. If you would like the list to remain alphabetical, you will need to manually select the appropriate location for the new named color. After you have the color set, named, and ready to go into the desired position in the list, press the Add button. This will automatically place the new name and color into the list, and make it the current named color. Remember, clicking on the named color preview box (to the right of the name list) will place the color in the current left color position as well as alter the RGB values to their appropriate settings.

Remove: This control is used to remove colors which are no longer needed. The remove control works by simply selecting the color to remove, and then pressing the Remove button. Once a color is removed from the list it will not appear again unless the color is re-added at a latter time. The remove feature can also be used to remove newly added colors that are in the wrong position in the list. You also have the option of Changing the color instead of removing it.

Change: The Change control is used to change the name or RGB values of the currently selected named color. You have the option to change the name, the color, or both. The first step in changing a named color is to select the color to be changed. If you are going to change the name, but not the color, you must first click on the named color preview color box to the right of the names list. This will place the current named color into the palette color preview. Next, enter the change to be made to the name, and press the Change button. This will replace the old name with the new name, but will not alter the actual color. If you would like to change only the color, do not click on the named color preview color. Instead, alter the color using the Hue and Saturation color wheel, or the manual RGB entry fields. After you have the desired color in the palette color preview , press the Change button. You can follow the same procedures to change the name and color. The only difference is that after setting the color you will also need to alter the name. Once that is complete, you can select the Change button to alter the color and color name. The changes made to the named colors list will be saved colorset.clr file when the palette is closed.

Load: This will load a previously saved palette. The current palette will be eliminated, and F/x will automatically resize the palette to best fit the newly loaded palette. F/x 's palette can load Microsoft Windows Paintbrush palettes, AVI (Video for Windows) palettes, Bitmap palettes, Adobe Color Table (ACT) palettes, and IFF palettes. The palette can also load custom palettes that have been saved using the Save option. Pressing the load button will access a file requester for selecting the desired palette file. Once you have the palette selected, press the Ok button to load the palette. Remember, once a new palette is selected for loading, the current palette will be lost.

Save: This control will save the current palette. The palette will be saved with a .pal extension. Once a palette is saved it can be reloaded using the Load option. After the save button is pressed, a file requester will appear. After you have specified the desired directory, file name, and extension, select the Ok button. This will save the palette with the specified name and extension. It is possible to load F/x palettes into Video for Windows' Palette Editor. Palettes which exceed 256 colors will be truncated by the Video for Windows Palette Editor.

Undo: This selection will undo the last modification made to the palette.   This allows you to apply an effect, and then undo the results if they are not to your liking.   The undo is available for only the last operation that was performed.   For example, if you do a Luma Sort and then a Hue Spread, only the Hue Spread can be undone.   You can undo all operations except the changing of the "left color" settings.   Pressing the Undo button a second time will give you back the modified palette.

Close: This will close the Palette dialog, and will allow you to use any modifications made to the palette. Remember, the last palette that is visible before closing will be used for all Fill operations, and can be used as the output palette if that option is selected.   Once the palette is closed, you can always reopen it by selecting the Set Palette button on one of the Fill operation dialogs.

How to Create a Range of Colors:

The creation of spreads of color is probably one of the most common tasks you will perform with F/x 's palette. The spreads can be used as backgrounds, and for other fill and text fill applications.   This example will create a simple blue to red color spread, which could then be used for any number of fills in F/x .   First, you will want to set the palette size to 256 colors by clicking on the size button, and then entering 256.   If the palette is already 256 colors you may skip the previous step.   Next, move the "left color" marker to position 0.   This can be done by clicking with the left mouse button in the top left corner, or by entering a 0 in the position control.   You will want to place the right color marker in position 255.   This can be done by clicking the right mouse button on the final position in the palette (bottom right corner).   Now, we will want to set the last color in the range.   Since we want our range to go from blue to red, we will need to set the final color to red.   This can be done in one of two ways. The first method is to select a red color using the Hue and Saturation color wheel.   The documentation above describes how to select a color by this method.   The second way of specifying a color is to enter the values using the provided RGB controls.   Once you have a red hue in the color preview box, select the button marked Copy. This will place the current left color into the right color position.   The next step is to set the blue color for the beginning of the range.   You can use one of the two methods above to select a blue color.   Once you have the blue color set, press the Luma Spread button.   This will create a luminance based color spread between the specified blue and red.   If you do not want to keep this spread, press the Undo button.   All spreads (Hue and Luma) are created in this manner.   You can create multiple color spreads by specifying multiple colors and performing spreads between each.   Try applying a Hue Spread (and a Shifted Hue Spread) using the colors you have selected.   Once you feel comfortable with that, try using some of the advanced tools like Mirror, Repeat, and Merge.

The Color Selection dialog
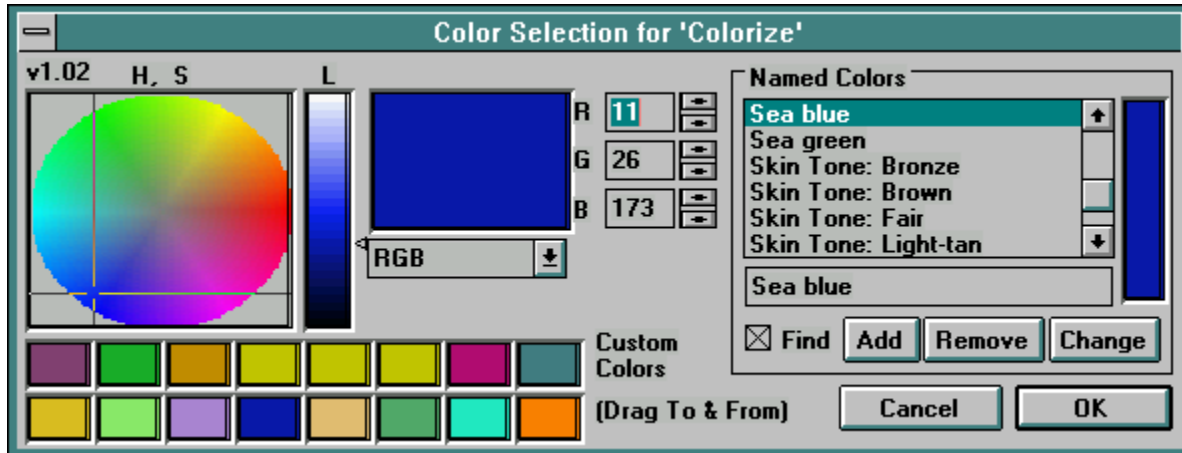
Click on any of the functions for quick help or look below for detailed documentation.

The Color Selection Dialog is used to select colors for operations that involve the use of color in creating effects or selecting areas.   The dialog can be accessed by pressing a button marked Pick Color or by entering the Key Color controls found in the Area pull down menu.   The color selection dialog is divided into two sections.   The first section deals with actual color selection, and contains a Hue and Saturation Color Wheel, a Luminance Bar, a color space selector, and manual color space entry fields.   These controls can be used together to create a mind boggling array of colors and hues.   The second portion of the dialog allows you to maintain a group of Custom Colors and a list of Named Colors.   Each of these are described below in great detail.   The dialog takes full use of Drag and Drop so that you can manipulate the colors quickly and efficiently.   After the desired color is in the Color Preview box, press the Ok button to select the color for use.   You can exit the dialog with out selecting a color by pressing the Cancel button.

Related Topics:

The Palette Controls:

The Palette Controls:

Hue and Saturation Color Wheel: The Hue and Saturation color wheel allows you to select a color's Hue and Saturation values.   These values are then combined with the Luminance setting (the control to the right) to create a color.   The Hue and Saturation "wheel" begins with red and then moves through yellow, green, cyan, blue, magenta, and then back to red.   The color is "purest" (has the most saturation) at the edge of the wheel, and as you move in towards the center of the wheel the saturation drops.   The center of the wheel contains a group of gray scale values.   A color is selected by simply clicking, and holding the left mouse button on the color wheel.   You can then move the mouse towards the desired color.   The current color that the mouse is over will be displayed in the Color Preview Box to the right of the luminance control.   Once you have the color you desire, or a lighter or darker version of the desired color, release the left mouse button.   The "brightness" of the color can be altered using the Luminance control.   For example, you have a Red color (R=225, G=25, B=32, and Luminance at about 50%), but it is not dark enough for the effect you are creating.   So, you would adjust the Luminance to about 25%, and the new red will be much darker (R=102, G=15, and B=25).   You do not need to use the color wheel and luminance bar to create or specify colors.   You have the option of manually altering the RGB (or CMYK, HSL, etc.) values in the provided text entry fields.   By doing this you can increment one or more of the components to a specific value.   Remember, the final color in the preview will be the one used for the selected operation.

Luminance Control: The Luminance control allows you to specify the brightness or luminosity of the color in the preview area.   The Luminance is measured on a percentage scale from 0 to 100.   A setting of zero will result in no luminance (black), and a setting of 100 will result in the maximum possible luminance (white).   This is true regardless of the current selected color.   For example, a red color can be made black by setting the Luminance control to 0 (bottom of the Luminance control), or it could be made white by setting the control to 100 (top of the Luminance control).   A setting in the middle of the control (50%) will produce colors which are completely saturated or "pure colors".   The luminance is set by simply clicking, and holding, the left mouse button over the luminance control.   As you move the mouse, you should see the color in the preview increase or decrease in brightness as you move the mouse up and down the control.   The preview will reflect all changes that you make to the luminance as they are made.   When you have the desired color, release the left mouse button.   It is important to remember that the final color in the preview will be the color used for the currently selected operation.

Color Preview Box: The preview box contains the currently selected preview color.   This color can be specified using the Hue and Saturation color wheel, or the RGB entry fields to the right of the preview.   Any changes made to the color wheel, luminance control, or the RGB entry fields will be directly reflected in the preview color.   This color can then be copied to the Custom Colors set by clicking on it, and then dragging it to the desired Custom Color cell.

Color Spaces: This drop down box contains a wide variety of colors spaces commonly used in graphics, desktop publishing, desktop video, and <u>NTSC</u> video.   The color spaces include RGB (red, green, blue), CMY (cyan, magenta, yellow), CMYK (cyan, magenta, yellow, black), HSL (hue, saturation, luminance), HSV (hue, saturation, value), and YIQ (luminance, chrominance).   The default <u>color space</u> is RGB, but can be changed at any time by accessing this dialog, and double clicking on the desired color space.   Once the new color space has been selected, all of the values will be recalculated to reflect the differences between the spaces.   It is important to remember that F/x   is dealing with pure colors, not real colors.   This allows for conversion from color space to color space without altering the current preview color.   The color space's letter equivalents will be placed in front of the appropriate dialog, and can be altered as described below.

RGB (or CMYK, CMY, HSV, HSL, YIQ): The RGB controls allow you to enter specific Red, Green, and Blue values for the current preview color.   Each of these components has two methods of entering the desired color values.   The first is to simply manually enter the exact numeric values.   This will alter the preview color as the

value is changed.   The second method is to use the up down gadgets located to the left of each text entry field. These allow you to increase or decrease the desired color component by clicking on the appropriate gadget (up for a value increase and down for a value decrease).   You should notice that there are multiple color spaces available to you.   You can alter the change the current color space by following the procedure described in the above section.

Custom Colors: F/x   has a total of 16 available custom colors.   These custom colors can be placed into the Custom Color cells using the Drag and Drop method.   This means that you simply have to click on the Preview Color or on the Named Color Preview, and then drag the paint can icon to one of the custom color cells.   This also works fro specifying a preview color using one of the Custom Colors.   To do this grab the desired custom color by clicking on it, and then drag it to the preview color box.   If you drag one of the custom colors to the named color preview, F/x   will select the named color that is closest to the custom color selected.   Custom colors allow you to maintain a group of visible colors for quick color selection.   These colors will be saved and available for use the next time you open the Color Selection dialog.

Named Colors: The Named Colors section of the Color Selection dialog allows you to give names to specific RGB values.   For example, the default named colors file (colorset.ini) contains such colors as Cobalt Blue and Carnation Pink.   These two colors have specific RGB values, but also have a name associated with them.   The controls in this portion of the dialog can be used to add additional colors and names to the colorset.clr file, remove colors from the file, or replace existing colors with new RGB values or names.   A named color is placed into the preview color box by simply selecting the desired named color, and then clicking on the named color preview color box to the right of the list.   This will automatically place the named color into the preview color box, and will adjust the RGB values accordingly.   The intent of the named colors are to allow you to specifically name colors that you use frequently. This means that you no longer have to remember an obscure RGB value, but can instead remember a name which describes the color in question.   The Named Color section of this color selection dialog can be particularly useful for operations like Color Fill or Colorize.

All of the Named Colors are kept in a ASCII text file called colorset.ini located in your Windows directory.   You can use any Text Editor to add new named colors to the file.   You may find this method to be faster if you are entering multiple colors and names.   The instructions at the top of the file describe the method for adding new colors to the list.   Once you have added the desired colors and names save the file and exit the text editor.   The next time that you open the palette the new named colors will be available.   Remember, the named colors file (colorset.ini) is used for both the palette and the Pick Color selection dialog.   This is not the only method of adding colors to the named colors list.   Named colors can be added to the list in both the palette and color selector by pressing the Add button.   Its use is described below in the Add documentation.

Find: The Find control, when selected, will force F/x   to find the color in the named colors list that is closest to the current color in the Preview Color box.   For example, if you were selecting a color with the Hue and Saturation color wheel, you would see the current named color shift from name to name (color to color) as you move the mouse pointer over the color wheel.   Remember, this is the closest color in the named color list.   The current preview color can be added to the named color list by entering a new name, and then pressing the Add button.   This will add the color to the list with the specified name and color space values (RGB, CMYK, HSL, etc.).   If the find control is not selected, the current name color will only change when a new color is specified or selected using the provided list requester.

Add: The Add control is used to add new colors to the named colors list.   New colors area added to the list by selecting the desired color, entering a name for the color, and then pressing the Add button.   The color can be selected with the Hue and Saturation color wheel, or by the manual RGB numeric entry fields to the right of the color wheel.   After the color is set, enter an appropriate name for the color.   F/x   will place the color directly above the currently highlighted named color.   F/x   will not automatically alphabetize the new named color entry. If you would like the list to remain alphabetical, you will need to manually select the appropriate location for the

new named color.   After you have the color set, named, and ready to go into the desired position in the list, press the Add button.   This will automatically place the new name and color into the list, and make it the current named color.   Remember, clicking on the named color preview box (to the right of the name list) will place the color in the color preview box as well as alter the RGB values to their appropriate settings.

Remove: This control is used to remove colors which are no longer needed.   The remove control works by simply selecting the color to remove, and then pressing the Remove button.   Once a color is removed from the list it will not appear again unless the color is re-added at a latter time.   The remove feature can also be used to remove newly added colors that are in the wrong position in the list.   You also have the option of Changing the color instead of removing it.

Change: The Change control is used to change the name or RGB values of the currently selected named color.   You have the option to change the name, the color, or both.   The first step in changing a named color is to select the color to be changed.   If you are going to change the name, but not the color, you must first click on the named color preview color box to the right of the names list.   This will place the current named color into the color preview. Next, enter the change to be made to the name, and press the Change button.   This will replace the old name with the new name, but will not alter the actual color.   If you would like to change only the color, do not click on the named color preview color.   Instead, alter the color using the Hue and Saturation color wheel, or the manual RGB entry fields.   After you have the desired color in the color preview , press the Change button.   You can follow the same procedures to change the name and color.   The only difference is that after setting the color you will also need to alter the name.   Once that is complete, you can select the Change button to alter the color and color name.   The changes made to the named colors list will be saved colorset.clr file when the color selection dialog is closed.

Tutorials

The Tutorials section of the manual is intended to give you a brief overview and "hands-on" experience with some of the operations in WinImages:F/x.   All of the tutorials will use an image from the original WinImages:F/x disks. These images are provided with the original disks, and should be in the F/x subdirectory called **Images**.   Each tutorial will show you one method of using that operation.   This should not be taken as the only way to use the tool. Instead, the tutorials should be viewed as a leaping off point for your own new and imaginative use of all of the operations in this program.

The tutorials are arranged in groups that follow the arrangement of the program.   This means that the first tutorial is on the **Asterize** operation found in the **Lighting** group, and the last tutorial, for this upgrade, is on the **Motion Blur** operation from the **Motion** group.   These tutorials are **not** in sequential order of importance.   You may select any tutorial at any time.   It is also important to remember that the definitions of all of the controls can be found in the individual sections on the various operations.   A basic understanding of an operation's purpose and method of control can be ascertained from reading these sections.   It is strongly suggested that you first look at an operation's control overview section before starting a tutorial on that operation.

Related Topics:

The Asterize Tutorial

The Motion Blur Tutorial

The Asterize Tutorial

Introduction

The Asterize Tutorial will explain and demonstrate some of the controls in the Asterize operation.   Before starting this tutorial, you should read the Asterize operation section in this manual.   This will help you to understand some of the basic terminology and the way the effect actually operates.   If you have not read this section do so now. Press Here to go back to the Asterize operation section.

The tutorial will be broken up into three sections.   The first section will be a basic illustration of using the asterize control dialog.   The second portion will deal with manipulating the Arm Profile graph. The final section will show you how to create an actual animation with the asterize operation.

1 - The first thing that we will need is an image to apply the asterize operation to.   Instead of using one of the provided sample image, we will create a new image.   This is done by first accessing the **New Image...** dialog in the **File** menu.   This dialog allows you to specify the new image's name, <u>pixel</u> <u>resolution</u>, DPI settings, and an Initial Color.   For this example, we will want an image that is 320 x 200 with a 100 x 100 DPI setting.   The initial color should be Black.   This is set by pressing the **Specify Initial Color** button, and then selecting the Black color box from the set of Basic Colors.   You also have the option of using the RGB text entry fields to specify the Black (R=0, G=0, and B=0) initial color.   Once you have specified the initial color simply select the **OK** button to exit the color <u>palette</u> and the New Image dialogs.

2 - After the new view has been created you will want to access the asterize dialog.   This can be done by selecting the Lighting group icon, and then selecting the Asterize icon.   The icon is located at the far left-hand side of the lighting group.   You also have the option of selecting the effect using the operation menu, and then selecting Lighting and Asterize.   The first thing that you will want to do is press the **Four Star** preset found in the preset group at the bottom of the dialog.   This will alter the controls and the Arm Profile so that a simple four armed asterization will be created.

3 - The next step is to apply this simple asterism to a selected area in the image.   In this case we will want the ellipse tool.   This area selection tool is located in the Tool Box second row, third column, and is represented with a circle icon.   This tool allows you to select a circular or elliptical region on an image.   The area that is selected will be the extents of the Asterize effect, or the total distance that the arms will extend.   The ellipse area selection tool is the recommended area selection mode for asterize because it allows you to alter the width or height of the arms to achieve asterizations that are wider than they are tall or vice versa.   If you are unclear on how to specify an ellipse, please review the section in the manual about the ellipse tool by <u>pressing here</u>.   After you have selected the ellipse tool apply an ellipse to the image near the center.   Dependent on the size and shape of the ellipse, you should get something that looks like this:

4 - You have just created an asterism using one of the default settings available to you.   The next step involves creating an asterism using non-default settings.   We will use the Four Star preset as an example for further discussions on the asterize controls and their uses.   Let's begin at the top with the Edge and Peak color selection preview windows.   The Peak window contains the color of the asterization.   This Peak color is then modified using the saturation to create an Edge color.   You should notice that the Four Star Preset has a blue color as the Peak, and white as the Edge.   This means that at the edges of the arms the color will be the Edge color (blue), and the center of the asterism will be the Peak color (white).   The Edge and Peak colors are both affected by the Red, Green, and Blue sliders located directly below these preview windows.   For example, click on the red slider with the left mouse button.   Now, move the slider slowly to the right.   You should see the Edge color slowly become more purple, and

eventually the edge color will be a magenta (red = 255).   You should also notice that there was no change in the Peak color preview.   This is due to the fact that the saturation for this preset is set to 0 which forces the Peak color to white.   To adjust this to a non-white color simply click on the saturation slide gadget with the left mouse button, and slowly drag it to the right.   You should notice that only the Peak color is changing.   After you reach 100% saturation the Peak and Edge colors should be exactly the same.   Lets apply another asterism to our image to see the changes that we have made.   The final result should look something like this:

Notice that the original asterism with a saturation of 0 has a gradient of color from the edge to the center that ranges from a blue to white.   The second asterism (saturation = 100%) only has the magenta color that we specified.   So, as you can see the intensity of the center and the color of the asterism can be simply adjusted by altering the Red, Green, and Blue sliders and the Saturation control.

5 - The next control that we will examine is the **Width** control.   The Width option is used to determine the thickness of the arms and of the *Center Hot Spot,* if one exists.   The Center Hot Spot will create a purely saturated region in the center of the Asterization.   The size of this hot spot will increase as the width control is increased.   As an example, let's apply a width of 75% to the original Four Star preset.   First, press the Four Star preset button to reset the initial values (you will need to adjust the Red slider back to 64).   Next, slide the width gadget until it reads 75. Now, size an ellipse below and to the left of the first asterism that you did.   You should notice that the arms of the asterism have become wider, and appear slightly "blurred".   The next step is to select the Center Hot Spot check box located in the **Lighting Method** control sub-group.   Now, apply another ellipse to our image above and to the left of the original asterism.   The results should look something like this:

Notice that the asterism with the Center Hot Spot has become almost completely round.   This is because the width control will increase the size of the arms as well as the width of the hot spot.   The last four controls (arms, rotation, additive, and taper) are thoroughly described in the main Asterize documentation.   You should take the time to alter and then apply some of these modifiers to the current example image.

1 -   This section of the tutorial will introduce you to the **Edit Profile** control which gives the asterize operation all of its power.   Let's begin this section with another new image (follow the steps in the previous section on creating a new image.)   Once the new image is created, select the Four Star preset, and apply an asterism to the new image. This should look something like this:

Now, press the button which says Edit Profile. The **Edit Profile** control allows you to alter the arm profile of the asterize operation.   The arm profile is the color and width of each arm in the asterization.   The graph is read from left to right (Clockwise along the arm).   The vertical axis of the graph is the **brightness** or color of each portion of the arm, and the horizontal axis determines the length of each portion of the arm.   You will notice that as the graph increases vertically that the color of the arm is getting closer to the **peak color,** and that as the graph decreases vertically that the color of the arm is approaching the **edge color.** It is important to remember that the arm profile that is specified will be used for all of the arms in the asterism.   The profile is altered by simply **drawing** the desired profile using the left mouse button.   There are several tools to aid in the creation of new profiles. The arm profile graph for the Four Star Preset will look like this:
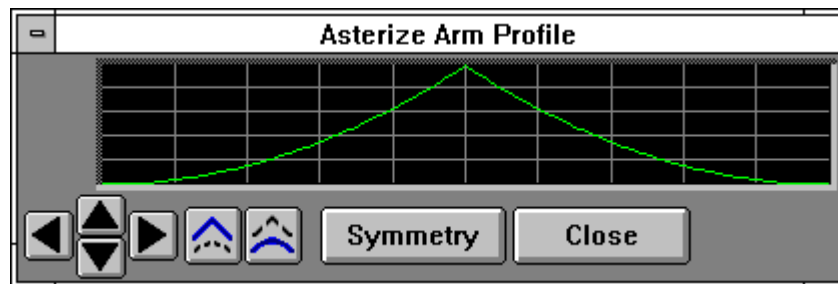
So using the above information, this graph tells us that each arm should reach the peak color near the middle of the arm, and then taper off in either direction towards the edge color, which is exactly what happens.

2 -   Now, let's actually alter the arm profile to create a new asterization.   The graph itself is altered by simply drawing on the graph while holding down the left mouse button.   You will want to bring the center of the graph (which is at the peak color) to the bottom of the graph.   Next, pull down the graph that is to the left of the center up to the first vertical division mark.   Now, press the button marked **Symmetry**.   This will cause the left and the right sides of the graph to have a reflective symmetry based on the graph information on the left.   This tool is very useful in creating very symmetric arms.   After you have completed this, the graph should look like this:
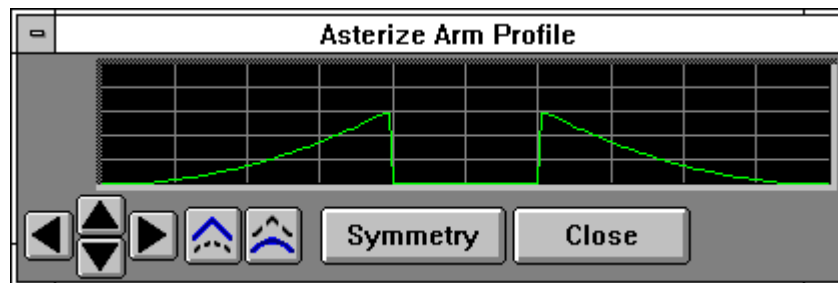
If you were to apply this graph with the current settings, you would get a very dark asterization that would be hard to see.   This is due to the fact that the edge color (bottom of the graph) is very close to the image color of black.   One way to make the asterism more visible is to move the entire graph up, so that the colors used will be nearer the peak

color.   To accomplish this, simply press the up arrow icon on the left-hand side of the profile graph until the two peaks just touch the top of the graph.

This new graph will create an arm that has two arms that reach the peak color and fade back to the edge color.   Let's apply this new profile, and see its effects.   You may now close the trend graph by pressing the **Close** button.   Now, select an ellipse above and to the left of the original Four Star Asterism.   The final result should look like this:

3 - You have now applied a new arm profile using the arm profile graph.   You have the option of using the default profiles, or creating your own.   It is important to remember that once you have altered the profile you should **not** press any of the preset buttons.   F/x also allows you to save any arm profile that you create.   This is done by pressing the **Save** button at the bottom of the asterize control dialog.   These settings can then be loaded and used at any time by pressing the **Load** button.   You should take the time to manipulate the arm profile graph, and then view its effects.   Once you feel comfortable using the graph, move on to the next section of this tutorial.

1 - This section of the tutorial is designed to give you a step by step example of producing an animation using the Asterize operation.   This tutorial will rely on your knowledge of the information provided in the previous two sections.   If you have not read and completed Part 1 and 2 of the Asterize tutorial, do so before beginning this section.   Let's start with a fresh image for this example.   Follow the instructions for creating a new image in Part 1 of this tutorial section.   The image should follow the specification made there (320x200 and black).   After this is complete, make sure that the asterize dialog is visible by selecting the Asterize icon in the Lighting group, or by selecting the Asterize option in the Operations pull down menu.

2 - The next step in the animation process is to set all of the output parameters in the **Sequence Controls** dialog. You can access this dialog by selecting the **Time Line** pull down menu, and then the **Sequence controls...** option. This will open a dialog which allows you to set the number of frames, output file type, and the name and path of the animation to be saved.   The first thing to set in this panel is the **Total Frames** option.   This option allows you to specify the total number of frames in the animation.   This can range anywhere from 3 to more than 64,000 frames! The demonstration animation (located near the end of this tutorial) was created using 45 frames.   For this example, set the Total Frames to a value between 15 and 30.   If you find the animation is not smooth enough, increase the number of frames.

The next step is to select the output format.   The format can be any of the available file types including AVI and FLI/FLC animations.   The file type is selected by clicking on the down arrow to the left of the **Output Format** drop down box.   Clicking this will access a scrolling list requester which can be used to set the output format.   We may want to use this animation in a later tutorial so select either AVI or FLI/FLC for simplicity.   Next, you will want to set the **Output Image Path and File Name**   You can select any valid directory and image name, or use the **Specify** button to access a file requester for directory and name specification.   It is important to remember to select a valid directory and name, or the animation could be saved in the wrong location, or the file name may be truncated.   You should also set the extension if it is different from the default setting.   For example, if you are creating an AVI, set the extension to **AVI.**   There is no need to add the **"."** in front of the extension because F/x does this for you.   The final option to set is the **Save Results** check box.   If this check box is selected, the animation will be saved in the specified format to the selected directory.   If you do not wish to save this or any other animation sequence, do not select this option.   When the save option is not selected the animation will only be created for viewing in the filmstrip.   This allows you to rapidly preview an effect or group of effects.   Once you have decided on saving or not saving the animation, press the **Ok** button to exit this dialog.

3 - The animation that we are going to create will be a four armed asterism that changes colors and rotates in the center of the image.   This will require that you set some of the available Trend Graphs.   The Trend Graphs are used to specify a particular parameter over time.   For example, if we wanted to have an asterism rotate from 0 to 360 degrees over the course of the animation, we would have to set the trend graph for the Rotate option in the Asterize dialog.   If you have further questions on trends or the trend controls, please review the section in the main Asterize documentation.   This animation will use the arm profile provided by pressing the **Four Star** preset button.   If you have not already done so, press the Four Star preset.

4 - Now that we know what type of operation we are going to create, we will need to open the Time Line.   The Time Line is a powerful key frame based animation controller.   It allows you to specify which operations, area selections, and image files will be used to create an animated sequence.   The time line dialog can be accessed   by selecting the time line icon from the tool bar, or by selecting the **Show TimeLine** option from the TimeLine menu. The time line should appear with the current operation in the first frame.   We will want to start with a fresh time line, so select the **Erase Time Line** button to clear the current time line dialog.   Now, select the asterize icon from the tool bar, and place it into frame one of the time line.   This method is known as Drag and Drop, and it is used to

place operation and area selection key frames into the time line.   The Asterize operation will have been placed with all of the current settings information.

In order to create the desired animation, we will need to set a trend graph for the rotation and green parameters.   This can be done by double clicking on the asterize operation icon in frame one of the time line.   This will access the **Time Line Operation** dialog.   This dialog contains controls for obtaining current settings and trends from dialogs, or for setting new values for an operation parameter or trend.   For this example, you will want to select the **Set Trends** option.   This will bring up a dialog which contains a list of all of the available trends for the asterize operation.   You will want to select the **Arm Green** trend, and then press the **Adjust this trend button.**   This will open this trend for manipulation.   Also open the **Saturation** and **Rotation** trends using the same method.   Once you have opened these two trends, select the **Ok** button to close the dialog.

5 -   We now have two trends available for adjustment.   The first trend that we will adjust is the rotation trend.   The initial rotation trend graph should look like this:
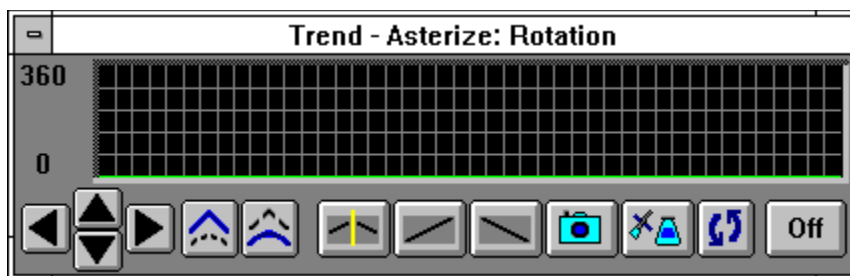
As you can see the trend for this control is set to 0 degrees rotation for each frame.   We would like to have an animation that ranges from 0 to 360 degrees over the entire length of the animation.   To do this we simply click on the button with the line that goes from the bottom right (minimum) to the top left (maximum).   After you have done this, the graph will look like this:
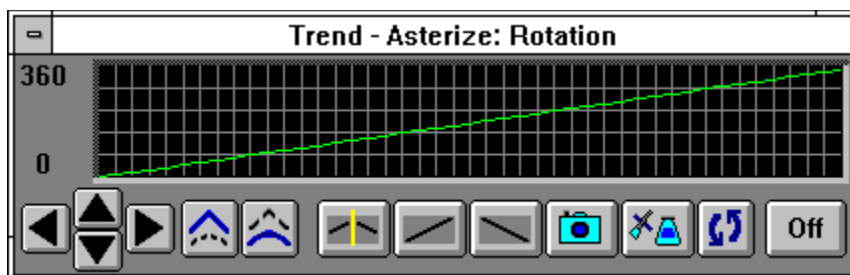
This is exactly the effect that we are looking for.   The asterization will begin on frame one with 0 degrees rotation, and will finish near 360 degrees on the final frame.   F/x will automatically reduce the final value of any trend that ranges from 0 to 360 degrees.   This is to eliminate "bumps" in a looping animation.   You can manually move the final frame value up to 360 degrees.   If you do this, you will notice that the animation will have two frames which are exactly the same (0 and 360).   You can also manually specify each frame value by "drawing" on the graph with the left mouse button down.   This allows you to visually set each frame, or a single frame to any value you like. You can exit the trend by pressing the **Ok** button.

Now that you have set the Rotation trend, set the Green and Saturation trends to the exact same settings.   This will produce an asterism that not only rotates, but also changes colors from dark blue to purple, and will have an increasing saturation value.   This is done by simply pressing the button with the line going from the bottom left to the top right for both the Green and Saturation trends.   After you have done this for both trends, select the **Ok** button to close the trend graphs.

6 - We have now finished setting all of the parameters for the asterization.   We will now need to set an area select

for the operation to occur in.   For this example, you will need to select the Ellipse area selection tool from the tool box.   This example is also going to show you how to create an effect that fades in, and then fades back out.   This can all be accomplished through the time line.   First, place an ellipse area selection into the first frame of the time line using the Drag and Drop method described above.   Now, double click on the ellipse area selection icon in frame one.   This will open the **Area Selection Object** dialog.   This dialog contains controls for making and altering area selections.   Choose the **Make the area selection now** option.   This will bring the current action image to the front.   Now, click and hold the left mouse button near the center of the all black image.   You will now be able to size out an ellipse by holding the left mouse button, and moving the mouse.   You may reposition the ellipse by pressing the right mouse button at the same time as the left.   (Warning: If you release the left mouse button the operation will be executed.   If this occurs, select the Undo option, and try again.)   The ellipse should be about one quarter the entire size of the image, and approximately centered.   This area selection will automatically be placed into the time line when you release the left mouse button.

Now we will set the transparency for the animation sequence.   The area selection transparency controls are located in the **Area Selection Details** dialog.   This dialog can be accessed by double clicking on the ellipse icon in the time line, and then selecting the **Show Details** option.   This dialog contains the controls for altering the transparency of an area selection.   These controls allow you to set the transparency and blending for any operation or area select. If you would like to view further information on these controls, press here, and then look for the section headed **Transparency Controls....**   To achieve the desired effect, select the trend for the **Level** control, and then select the **Ok** button.   Note: You will not be able to edit the Level trend until you select the Ok button in the Area Selection Details dialog.   The Transparency Level trend should be set to a linear setting of 255.   This means that the effect will be completely visible for the entire animation.   For this example, we will want to have the effect change from not visible to visible, and then back to not visible.   Using the left mouse button, set your trend graph to look like this:
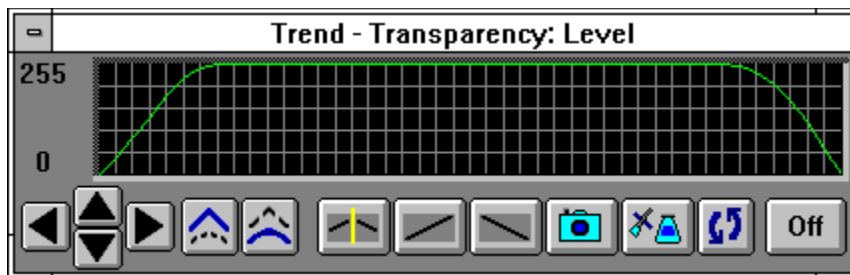
This will give us the desired fade in, and then a fade out.   Once you have set the trend, select the **Ok** button to exit.

7 - We are now ready to create our animation.   If your filmstrip is not currently visible, please turn it on by selecting the **Show Filmstrip** option in the Filmstrip pull down menu, or the filmstrip icon on the tool bar.   (Note: If this option already has a check mark by it, the filmstrip is already "on".   This means that you will not have to select this option.)   Once the filmstrip is visible, select the **Generate** option from the Time Line dialog.   F/x will now begin to process the specified animation using the trends and area selection information that you provided.   The final result should look like this:

You have now completed the Asterize tutorial.   This tutorial can serve as a good base for other examples and tutorials.   Not all of the tutorials will be as extensive as this one, but you can apply many of the same techniques to F/x's other operations.   As a further example of some of the things you can do in an asterize animation, play the example below.

The Motion Blur Tutorial

The Basics

The Motion Blur operation allows you to create a blurred effect in a particular direction. This effect is useful in depicting motion in a series of still images, or it can be used to enhance the idea of movement in an animation. This tutorial will cover the basic use of the Motion Blur operation and its controls. Before starting this tutorial, you should read the Motion Blur operation section in this manual. This will help you to understand some of the basic terminology and the way the effect actually operates. If you have not read this section do so now. <u>Press Here</u> to go back to the Motion Blur operation section.

1 - This tutorial will use one of the images provided on the original WinImages:F/x disks. This image was originally installed into a directory called **Images** on your hard drive, and is called **LIGHT.JPG**. The image can be loaded using the **Load Image...** option in the **File** pull down menu. After you have selected this option, use the file requester to select the proper directory and file to be loaded. Once the image has loaded, you will see an image which shows a ship near an island with two "moons" above in the sky. We will use the motion blur on this still image to make the ship appear as though it is moving slowly, and then rapidly to the right.

2 - The next step is to select the Motion Blur operation. This can be done in one of two ways. You could select the Motion Blur icon from the **Motion** group. This will access the Motion Blur dialog for use. You also have the option of selecting the Motion Blur option from the Motion Group area in the **Operations** pull down menu. The motion blur dialog consists of three controls used to specify the length, direction, and the amount of the motion blur effect. The Length control allows you to specify an actual length for the blur effect. This length is measured as a percentage of the entire area selection. For example, a setting of 100% would result in a blur that is the entire length of the area select for each <u>pixel</u> in the region. So, if the area select was 20 pixels across, the blur for each pixel would be 20 pixels in the specified direction. Increasing this value will give you more blur, and a decrease will give you less blur.

The Direction Control allows you to specify the actual direction of the blur. This means that a blur can occur in any direction that you wish, not just left, right, up, or down. The direction is specified as an angle value that can range between 0 - 360 degrees, with 0 and 360 being an upwards blur. The angle is measured clockwise from vertical. This means that 90 degrees is a blur to the right, 180 is a blur down, and so on.

The final control is the Amount specification. The amount slider allows you to set a percentage value for the overall application of the effect. For example, a setting off 50% would give you half of the total blur available to you. A setting of 100% is the maximum value, and will achieve the largest amount of the blur effect.

3 - Now that you are a little more familiar with the controls, let's apply some motion blurs to the **LIGHT.JPG** image. For this example, you will want to select the Rectangle Area Selection Mode. This is located in the first column, second row of the Area Selection Tool Box. This allows you to select rectangular regions using the left mouse button for sizing, and the right mouse button for positioning. Place the rectangle so that it is the height of the ship, and covers from the front of the ship to off of the actual image. Placing a portion of the area selection off of the image will increase the effective area select, and will create a nicer effect. If you have not altered the default motion blur settings, the blur should occur straight up, and have a length of 50. Since we want to create the idea of motion to the right, the blur should occur to the left of the image. As you know, the direction control measures angles clockwise from vertical, therefore a blur to the left would be at 270 degrees. Set the Degrees control to read 270 degrees at this time. You will also want to select the **Undo** button to eliminate the unwanted test blur, and then select the **Redo** button in the Area Selection Tool Box to preserve the last area selection that was made. You will also need to alter the Length and Amount controls to read 35 and 45 respectively. These settings will produce a blur

which is directly to the left, 35% of the area select in length, and applies about 45% of the total blur possible.   Once you have set the sliders to the correct position, simply click on the **LIGHT.JPG** image to apply the effect.   Notice that this creates a very subtle blurring effect, which may give you the impression that the ship is moving to the right.

4 - Now that we have created a subtle motion blur, let's create a more dramatic effect.   Begin by pressing the Undo button to erase the last motion blur.   Now, set the Length to 75, and the Amount to 85.   The overall effect should be a longer blur that is even more "blurry" than the previous example.   You can apply this effect by simply clicking on the image.   After generation is complete, you should have a more dramatic blur effect on the ship.   You get the impression that the ship *is* moving rapidly to the right.   You should undo this application, and continue to apply various Length, Direction, and Amount settings until you feel comfortable with the effect.   This tutorial will not cover the use of a motion blur in an animation sequence.   The motion blur operation is useful for making moving objects appear more realistic.   You can use the same concepts presented in the Asterize tutorial to create a motion blur animation.

Palette Controls

Repeat

The Repeat option will repeat the range of colors currently between the left and right color markers.   Morph will evaluate the colors that it finds, and will then repeat the entire range of colors inside the two markers.

Swap

The Swap option will swap the current left and right color.   Only the colors will be swapped.   The left and right color markers will remain in the same position.   Pressing Swap again will return the colors to their original position.

Mirror

The Mirror operation will mirror the colors in between the current left and right color markers.   The mirror will be a "reflection" of the range of colors based on the center position of the range.

Copy

The Copy button will copy the current left color into the right color.   This can be useful for specifying the right color for spreads and sorts.   After you have copied the left color, you can then specify a new left color to be used for multiple color spreads.

Merge

The Merge option is used to merge together two separate palettes.   Morph will take two <u>palette</u> and merge them together by comparing the colors of both palettes, and selecting the colors which best represent both palettes.   This tool is especially effective for creating <u>render</u> palettes for animations based on two separate palettes.

Insert

The Insert option allows you to insert a <u>palette</u> of colors based on the position of the "left color" marker.   This allows you to insert or append another palette into the current palette.   If the palette which is being inserted is larger than the remaining space in the palette, the additional colors will be placed beyond the total number of visible colors.   If you were to increase the total number of visible colors in the palette (increase the Size value), the colors that were inserted beyond the original palette will become visible.   Morph will only use the number of colors specified in the Size control regardless of any colors that have been inserted beyond the visible palette.

Luma Spread

The Luma Spread operation allows you to create a spread or range of colors between the current left and right colors based on their initial luminance.   The luminance that morph uses is a measure of actual RGB brightness of the left and right colors.

Luma Sort

The Luma Sort option allows you to sort all of the colors in the current <u>palette</u> by their luminance or brightness. Once this option is selected, morph will evaluate the palette and reorder the colors based on each color's RGB brightness value from dark to light.

Hue Spread

The Hue Spread option will create a spread of colors between the current "left color" and "right color" using the hue values of those two colors.   There are two methods of applying the Hue Spread.   The first is to simply press the Hue Spread button.   This will produce a spread of colors between the current left and right colors without cycling through the complete hue spectrum.   This method can be thought of as a "shortest path" method.   This means that morph will take the shortest Hue distance to reach the specified "right color".   The second method requires you to press and hold the Shift key while pressing the Hue Spread button.   This will cause the new range to go through all of the colors linearly to reach the specified "right color".   This will effectively cycle through all of the hue value between the selected colors from red to magenta based on the initial "left color".

Hue Sort

The Hue Sort control will sort all of the colors currently between the left and right colors.   This sort will rearrange the colors according to their individual hue settings.   This includes all greyscales and color values between the left and right color markers.   The hue sort begins with red and then moves through yellow, green, cyan, blue, and ends with magenta.

Close

The Close option will close the <u>palette</u> dialog.   The last visible palette will be the one that is used for animation rendering.

Undo

This selection will undo the last modification made to the <u>palette</u>.   This allows you to apply an effect, and then undo the results if they are not to your liking.   The undo is available for only the last operation that was performed.

Save

This control will save the current <u>palette</u>.   The palette will be saved with a .<u>pal</u> extension.   Once a palette is saved it can be reloaded using the Load option.

Load

This will load a previously saved <u>palette</u>.   The current palette will be eliminated, and morph will automatically resize the palette to best fit the newly loaded palette.   Morph's palette can load Microsoft Windows Paintbrush palettes, AVI (Video for Windows) palettes, Bitmap palettes, and IFF palettes.   The palette can also load custom palettes that have been saved using the Save option.

Change

The Change control is used to change the name or RGB values of the currently selected named color.   You have the option to change the name, the color, or both.   Please refer to the detailed documentation below for a description on changing named colors.

Remove

This control is used to remove colors which are no longer needed.   The remove control works by simply selecting the color to remove, and then pressing the Remove button.   Once a color is removed from the list it will not appear again unless the color is re-added at a latter time.

Add

The Add control is used to add new colors to the named colors list.   New colors area added to the list by selecting the desired color, entering a name for the color, and then pressing the Add button.   The color can be selected with the Hue and Saturation color wheel, or by the manual RGB numeric entry fields to the right of the color wheel. After the color is set, enter an appropriate name for the color, and then press the Add button.

Named Colors

The Named Colors section of the <u>palette</u> dialog allows you to give names to specific RGB values.   For example, the default named colors file (colorset.ini) contains such colors as Cobalt Blue and Carnation Pink.   These two colors have specific RGB values, but also have a name associated with them.   The controls in this portion of the dialog can be used to add additional colors and names to the colorset.ini file, remove colors from the file, or replace existing colors with new RGB values or names.   The intent of the named colors are to allow you to specifically name colors that you use frequently.   This means that you no longer have to remember an obscure RGB value, but can instead remember a name which describes the color in question.

RGB

The RGB controls allow you to enter specific Red, Green, and Blue values for the current "left color".   Each of these components has two methods of entering the desired color values.   The first is to simply manually enter the exact numeric values.   This will alter the preview and "left color" colors.   The second method is to use the up down gadgets located to the left of each text entry field.   These allow you to increase or decrease the desired color component by clicking on the appropriate gadget (up for a value increase and down for a value decrease).   You should notice that there are multiple color spaces available to you.   You can alter the change the current color space by following the procedure described in the color space control section.

Position

The Position control displays the current "left color" position, and can be used to manipulate the position of the left color marker.   The up and down arrows can be used to move the left color marker through the palette, or you can enter a value in the provided text entry field.   If you specify a numeric value which is beyond the size of the current palette, morph will place the left color marker in the last available color cell.

Preview

The preview box contains the currently selected "left color".   This color can be specified using the Hue and Saturation color wheel, or the RGB entry fields to the right of the preview.   Any changes made to the color wheel, luminance control, or the RGB entry fields will be directly reflected in the preview color and the "left color" in the palette itself.   This color can then be copied to the "right color" position by selecting the Copy button.

Size

The Size control is used to set the actual size or number of colors in the palette.   This value can range between 2 and 1024 colors.   If you increase or decrease the size of the current palette, either more cells will be added or some of the current cells will be eliminated.   The cell size will decrease as the number of colors increase.   This means that a palette of 1024 colors will have extremely small cells for the colors in the palette.   If you are loading a palette which contains more colors than the current palette, morph will automatically increase the size of the palette to accommodate the new palette.

Luminance Control

The Luminance control allows you to specify the brightness or luminosity of the color in the preview area. The Luminance is measured on a percentage scale from 0 to 100. A setting of zero will result in no luminance (black), and a setting of 100 will result in the maximum possible luminance (white). This is true regardless of the current selected color. The luminance is set by simply clicking, and holding, the left mouse button over the luminance control. As you move the mouse, you should see the color in the preview increase or decrease in brightness as you move the mouse up and down the control. The preview will reflect all changes that you make to the luminance as they are made. When you have the desired color, release the left mouse button.

The Hue and Saturation Color Wheel

The Hue and Saturation color wheel allows you to select a color's Hue and Saturation values. These values are then combined with the Luminance setting (the control to the right) to create a color. The Hue and Saturation "wheel" begins with red and then moves through yellow, green, cyan, blue, magenta, and then back to red. The color is "purest" (has the most saturation) at the edge of the wheel, and as you move in towards the center of the wheel the saturation drops. The center of the wheel is a greyscale value. A color is selected by simply clicking, and holding the left mouse button on the color wheel. You can then move the mouse towards the desired color. The current color that the mouse is over will be displayed in the Color Preview Box to the right of the luminance control. Once you have the color you desire, or a lighter or darker version of the desired color, release the left mouse button.

The Palette

WinImages:F/x's <u>palette</u> control allows you to manipulate and alter existing palettes or create new palettes and ranges of color.   The Palette controls include operations that will merge two palettes, insert a new palette, mirror the palette, and create various color spreads and sorts.   This tool is particularly useful for loading a specific palette for an animation, thus keeping the original palette intact.   Morph's palette can load Microsoft Windows Paintbrush palettes, AVI (Video for Windows) palettes, Bitmap palettes, and IFF palettes.   Please refer to the detailed documentation below for more detailed information.

Find

The Find control, when selected, will force morph to find the color in the named colors list that is closest to the current color in the Preview Color box.   For example, if you were selecting a color with the Hue and Saturation color wheel, you would see the current named color shift from name to name (color to color) as you move the mouse pointer over the color wheel.

Color Space

This drop down box contains a wide variety of colors spaces commonly used in graphics, desktop publishing, desktop video, and <u>NTSC</u> video.   The color spaces include RGB (red, green, blue), CMY (cyan, magenta, yellow), CMYK (cyan, magenta, yellow, black), HSL (hue, saturation, luminance), HSV (hue, saturation, value), and YIQ (luminance, chrominance).   The default <u>color space</u> is RGB, but can be changed at any time by accessing this dialog, and double clicking on the desired color space.   Once the new color space has been selected, all of the values will be recalculated to reflect the differences between the spaces.

Color Reduction Dialog

Default Colors

This option, when selected, will <u>render</u> the image using a default set of colors.   These colors are predetermined for both 16 and 256 color renders.   A 16 color render will use the default Windows <u>palette</u> for rendering, and a 256 color render will use a preset palette designed at Black Belt Systems to produce high quality renders without any color selection.   This method is the fastest render method, but also has the lowest quality.

Edit Palette

The Edit <u>Palette</u> button will access morph's <u>render</u> palette.   This palette can then be adjusted, altered, or a new palette can be loaded for use as the render palette.   Once you have the desired palette, select the Close button to exit the palette.   You can then use the Use Loaded Render Palette to generate a frame or sequence of frames which uses the current render palette as the output image palette.   This is very useful for creating output files or animations that use the same exact palette for each file or frame.

Confirm to Output Color Reduction

The Ok button will confirm the changes and close the Output Color Reduction dialog.

Dither

The <u>Dither</u> Amount control is used to specify the percentage amount of dither in a <u>render</u>.   This amount can range from 0 (no dither) to 100 (maximum dither).   The dither amount can effect the amount of <u>intraframe compression</u> over the sequence.   This can reduce the overall size of the animation frame.

EDD

Error Diffusion Dither (or EDD) will dither the image based on the specific pixel colors, and the colors of neighboring pixels.   This will generally produce the highest quality dithering in the image, with the best possible colors being represented by the dither.   This is done at the expense of adding more "noise" to the image.   This means that in some cases the dither is easier to perceive.

Ordered Dither

Ordered Dither will dither the image based on the current pixel, and that pixel's location in the actual image.   This type of dithering will generally produce a lower quality image, but is necessary for animation that will be using any type of compression.   The ordered dither allows for a great deal of interframe compression, which is needed to compress animation files.   This type of dithering should only be used for the output of animation files.   If you want to produce higher quality output images (not animations), you should use the EDD dither method.

Select Colors

This option will allow morph to use its custom color selection process to select the best colors possible for the output image.   The Spectral Color Selection process will determine the output colors which best represent the colors in the actual image.   This format is valid for both 16 and 256 color <u>render</u> modes.

Use Current Palette

This option will use the range of colors which is currently loaded into the render palette.   This range of colors can be specified manually or by loading a specific render palette file.   The render operation will then use the colors in the effect palette as the render palette for the output files.   This option is ideal for using a very specific palette for an output animation or sequence of files.   Morph will only use the number of colors specified in the render palette. For example, if you were doing a 256 color Bitmap render with only 240 colors in the render palette, the rendered bitmap would only use the available 240 colors.   The same is true for any number of colors.   This means that it is possible to render a 256 color output with only 2 colors in the render palette.   If you were to create a 16 color bitmap with 256 colors in the render palette, only the first 16 would be used.

Use Gray Scale Palette

The Gray Scale <u>Palette</u> <u>render</u> option will render the output in either 16 or 256 gray levels.   The gray scale palettes are predetermined which makes the gray scale render very fast.

Update Effects Palette from Render

This option, when selected, will update the current effects <u>palette</u> with the colors selected by the spectral color selection process.   This will only occur if the Choose Palette Colors option is also selected, and can only be used with that option.   This feature is nice for "grabbing" the palette from an image.   This palette is automatically placed into the effects palette, and will remain their until a new palette is loaded or F/x is closed.

Lock Palette after First Frame

This option, when selected, will determine the render palette from the first frame of the animation sequence.   This control is used in conjunction with the Choose Palette Colors option, and is only really useful for batch processing files or animation files.   Once selected, F/x will determine the render palette from the first frame in the sequence. This render palette is then used for all of the remaining frames.

Update Effects Palette from Render

This option, when selected, will update the current effects palette with the colors selected by the spectral color selection process.   This will only occur if the Choose Palette Colors option is also selected, and can only be used with that option.   This feature is nice for "grabbing" the palette from an image.   This palette is automatically placed into the effects palette, and will remain their until a new palette is loaded or F/x is closed.   You then have the option to save the palette that was created as a regular palette file.   This allows you to load the palette whenever it is needed for operations or rendering.

Lock Palette after First Frame

This option, when selected, will determine the <u>render</u> <u>palette</u> from the first frame of the animation sequence.   This control is used in conjunction with the Choose Palette Colors option, and is only really useful for batch processing files or animation files.   Once selected, F/x will determine the render palette from the first frame in the sequence. This render palette is then used for all of the remaining frames.   This method is nice because it allows you to use F/x's superior spectral color selection technology, while keeping the total render time to a minimum.   This is due to the fact that the render palette is only selected for the first frame.   All frames after that will use the same render palette as the first frame.   This will decrease the total amount of time needed to finish rendering the remaining frames.

Color Selection Dialog

Hue and Saturation Control

The Hue and Saturation wheel allows you to select a color's Hue and Saturation values.   These values are then combined with the Luminance setting (the control to the right) to create a color.   The Hue and Saturation "wheel" begins with red and then moves through yellow, green, cyan, blue, magenta, and then back to red.   The color is "purest" (has the most saturation) at the edge of the wheel, and as you move in towards the center of the wheel the saturation drops.   The center of the wheel is a gray scale value.   A color is selected by simply clicking, and holding the left mouse button on the color wheel.   You can then move the mouse towards the desired color.   The current color that the mouse is over will be displayed in the Color Preview Box to the right of the luminance control.   Once you have the color you desire, or a lighter or darker version of the desired color, release the left mouse button.

Luminance Control

The Luminance control allows you to specify the brightness or luminosity of the color in the preview area.   The Luminance is measured on a percentage scale from 0 to 100.   A setting of zero will result in no luminance (black), and a setting of 100 will result in the maximum possible luminance (white).   This is true regardless of the current selected color.   The luminance is set by simply clicking, and holding, the left mouse button over the luminance control.   As you move the mouse, you should see the color in the preview increase or decrease in brightness as you move the mouse up and down the control.   The preview will reflect all changes that you make to the luminance as they are made.   When you have the desired color, release the left mouse button.

Preview Color Box

The preview box contains the currently selected preview color.   This color can be specified using the Hue and Saturation color wheel, or the RGB entry fields to the right of the preview.   Any changes made to the color wheel, luminance control, or the RGB entry fields will be directly reflected in the preview color.   The color that is this preview will be the color used for the current operation when the Ok button is selected.

Color Space

This drop down box contains a wide variety of colors spaces commonly used in graphics, F/x   has a total of 16 available custom colors.   These custom colors can be placed into the Custom Color cells using the Drag and Drop method.   This means that you simply have to click on the Preview Color or on the Named Color Preview, and then drag the paint can icon to one of the custom color cells.   This also works fro specifying a preview color using one of the Custom Colors.   To do this grab the desired custom color by clicking on it, and then drag it to the preview color box.   If you drag one of the custom colors to the named color preview, F/x   will select the named color that is closest to the custom color selected.   Custom colors allow you to maintain a group of visible colors for quick color selection.   These colors will be saved and available for use the next time you open the Color Selection dialog.

Custom Colors

F/x   has a total of 16 available custom colors.   These custom colors can be placed into the Custom Color cells using the <u>Drag and Drop</u> method.   This means that you simply have to click on the Preview Color or on the Named Color Preview, and then drag the paint can icon to one of the custom color cells.   This also works fro specifying a preview color using one of the Custom Colors.   To do this grab the desired custom color by clicking on it, and then drag it to the preview color box.

Named Colors

The Named Colors section of the palette dialog allows you to give names to specific RGB values.   For example, the default named colors file (colorset.ini) contains such colors as Cobalt Blue and Carnation Pink.   These two colors have specific RGB values, but also have a name associated with them.   The controls in this portion of the dialog can be used to add additional colors and names to the colorset.ini file, remove colors from the file, or replace existing colors with new RGB values or names.   The intent of the named colors are to allow you to specifically name colors that you use frequently.   This means that you no longer have to remember an obscure RGB value, but can instead remember a name which describes the color in question.

Find

The Find control, when selected, will force F/x to find the color in the named colors list that is closest to the current color in the Preview Color box.   For example, if you were selecting a color with the Hue and Saturation color wheel, you would see the current named color shift from name to name (color to color) as you move the mouse pointer over the color wheel.

Add

The Add control is used to add new colors to the named colors list.   New colors area added to the list by selecting the desired color, entering a name for the color, and then pressing the Add button.   The color can be selected with the Hue and Saturation color wheel, or by the manual RGB numeric entry fields to the right of the color wheel. After the color is set, enter an appropriate name for the color, and then press the Add button.

Remove

This control is used to remove colors which are no longer needed. The remove control works by simply selecting the color to remove, and then pressing the Remove button. Once a color is removed from the list it will not appear again unless the color is re-added at a latter time.

Change

The Change control is used to change the name or RGB values of the currently selected named color.   You have the option to change the name, the color, or both.   Please refer to the detailed documentation below for a description on changing named colors.

Cancel Color Selection

The Cancel button will exit the Color Selection dialog without altering the previously selected color.

Confirm Changes

Pressing the Ok button will select the current preview color, and close the Color Selection dialog.   This color can then be used for the current selected or non-selected line color.

RGB Control

The RGB controls allow you to enter specific Red, Green, and Blue values for the current preview color.   Each of these components has two methods of entering the desired color values.   The first is to simply manually enter the exact numeric values.   This will alter the preview color as the values change.   The second method is to use the up down gadgets located to the left of each text entry field.   These allow you to increase or decrease the desired color component by clicking on the appropriate gadget (up for a value increase and down for a value decrease).   You should notice that there are multiple color spaces available to you.   You can alter the change the current color space by following the procedure described in the color space control section.

Status Bar

Current Object

The Current Object display will show the number of the currently selected object.   An object is defined as any point or line defined in either the start or end image.   This will display the currently selected object, and any associated transparency or velocity curves.   These curves are numbered based on how they appear in the curve list.

At/Position

The At area displays the current <u>pixel</u> position in the image for points and lines.   The image coordinates will only be displayed if an image has been loaded into the start or end frames.   This coordinate system can be useful for exact specification of points and lines for a morphing sequence.   The coordinates are displayed in an X and Y format with X=0, Y=0 being the top left corner of the image.

This area is also used to display the name of the object that the cursor is currently over.   The example above shows the Oval drawing tool to be the current position of the cursor.   Once you are over an object, you can press the F1 key to access the documentation for that object.   This is true for all objects that are defined by the At: display.

Progress

This area will display the current progress percentage for each operation in the program.   The progress bar will be used for loading, saving, rendering, and all other operations.   This area will display the progress for each portion of a morph as it is executed.

Sequence Progress

The Sequence Progress Bar displays the current progress percentage for an entire morphing sequence.   This progress bar is also used for progress of FLI/FLC saves and multiple image file loads.

Pause

This control will pause the generation of the morph when it becomes possible.   You can not pause the loading or saving of image files.   Once the pause button has been pushed, the sequence can be restarted by pressing this button again.

Stop

Using this button will stop and cancel the current operation sequence.

Contour

Contour Line Color Preview Window

This preview window will display the color of the line that is to appear in the selected area.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the contour line color preview will be updated to reflect the changes.

Line Color - Red

This slide gadget allows you to specify the Red component of the RGB value for the **Contour Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Line Color - Green

This slide gadget allows you to specify the Green component of the RGB value for the **Contour Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Line Color - Blue

 This slide gadget allows you to specify the Blue component of the RGB value for the **Contour Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Background Color Preview Window

This preview window will display the color of the background color that is to appear between the contour lines. This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.

Place Background

 The **Place Background** control allows you to insert the selected **Background Color** or to place the contour lines over the top of the existing image.   Placing the background will fill the region between the lines with the background color.   If this control is not selected, the original image will appear between the lines.

Background Color - Red

 This slide gadget allows you to specify the Red component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Background Color - Green

 This slide gadget allows you to specify the Green component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Background Color - Blue

This slide gadget allows you to specify the Blue component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Interval

 The interval control allows you to specify the spacing of the contour lines on the image.   The contour lines are placed based on the specified interval value, and the actual brightness values found in the image.   The control ranges from an interval of 1 to an interval of 256.   A setting of 1 means that each contour level in the image will have a line.   This will result in the entire area selection being filled with the specified contour line color.   An interval of 256 means that no contour lines will be placed in the selected area.

Edge Detect

This control is used to change the method of placing contour lines on the image.   If this option is selected, contour lines will only be placed on edges in the image where the luminance difference is equal to the interval value.   This will eliminate contour lines in areas of the image that do not contain specific edges (brightness differences).   If the control is not selected, then the contour lines will be placed at the specific interval setting.

RGB Line Color Trend

These Trends allow you to alter the contour line color over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Place Background Trend

This trend allows you to turn the Place Background color control "on" or "off" over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

RGB Background Color Trend

These Trends allow you to alter the background color over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Interval Trend

This trend is used to alter the interval setting over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Edge Detect Trend

This trend allows you to turn edge detection on and off over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Canvas

Radius

The Radius control is used to set the <u>pixel</u> radius for features in the selected area.   If a feature is within the specified radius, it will be sharpened.   Features which are greater than this radius will not be altered.   The radius can range between 0 and 200 tenths of a pixel.   This means that a setting of 150 has an effective radius of 15 pixels.   It is important to remember that increasing the radius will increase the sharpening effect, but it will also increase the time needed for generation.   This operation can be applied independent of the <u>Transparency</u> and Emboss controls by setting them to zero.   This will then only apply a sharpening effect to the image (no canvas will be applied).

Amount

The Amount control is used to specify how much sharpening will be done in the selected region.   The control ranges from 0 (no effect) to 100 (maximum sharpen).   This allows you to increase or decrease the overall sharpening effect.   This operation can be applied independent of the <u>Transparency</u> and Emboss controls by setting them to zero.   This will then only apply a sharpening effect to the image (no canvas will be applied).

Tile

The Tile control will turn the tiling of the source in the action image on or off.   If the control is selected, the source image will be tiled in the action image if possible.   If it is not selected, the source image will be stretched to fit the specified region in the action image.

Image List

The Image List allows you to select one of the currently loaded images as the source for the canvas application.   F/x comes with several supplied textures, but any image can be used as a texture.   The source is selected by simply clicking on its name.   Once the source is specified, it will be used until a new source image is selected.

Load Source

This control allows you to load a new Source Image.   You can also use the Load Image option in the File pull down menu.

Radius

This allows you to specify the radius of the sharpen effect over a selected sequence of frames.   This can be used to bring an out of focus object into focus over time.   It is important to remember that increasing the radius will also increase the time needed for generation.   Trends are defined and explained below in the detailed documentation.

Amount Trend

This trend allows you to specify the Amount control over a selected sequence of frames.   The can be used to create sharpening effect over an animation (something coming into better focus over time).   Trends are defined and explained below in the detailed documentation.

Tile Trend

This trend allows you turn the Tile option on and off over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Transparency Trend

The Transparency trend allows you to specify a changing transparency for the Apply Canvas operation over the selected sequence of frames.   This is useful for fading a canvas or source "in" and "out".   Trends are defined and explained below in the detailed documentation.

Emboss Trend

The Emboss trend allows you to control the percentage of embossing for the selected sequence of frames.   This value can be increased or decreased over time to create shifting emboss effects.   Trends are defined and explained below in the detailed documentation.

B+W Trend

This trend allows you turn the B+W Emboss option on and off over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Emboss

The Emboss control is used to set the percentage value of source embossing into the action image.   This value can range between 0 (no effect) and 100 (maximum emboss).   It is important to remember that this operation can be applied by itself or in conjunction with the Transparency and Sharpening controls in this dialog.   If you want to only apply the emboss, set the Transparency and Sharpening controls to 0.   The emboss control can also be turned off by setting it to 0.

Transparency

The <u>Transparency</u> control allows you to specify a percentage value for the transparency of the source canvas.   This control applied by itself is similar to the Merge operation and a specified transparency value.   The transparency can range between 0 (transparent source) and 100 (opaque source).   It is important to remember that this operation can be applied by itself or in conjunction with the Emboss and Sharpening controls in this dialog.   If you want to only apply the transparency, set the Emboss and Sharpening controls to 0.   The transparency control can also be turned off by setting it to 0.

B+W Emboss

The B+W Emboss option allows you to turn the color embossing of the source image on or off.   When this option is selected, the emboss will use no color information from the source image.   This means that the embossed image will only use gray scale values instead of the default color values.   If this control is not selected, the source image will be embossed in the action image using a color embossing technique.

Pen Outline

Set Line Color

This option allows you to access the **Color Selection Dialog** for selecting the pen color.   This color can also be set using the provided RGB sliders located bellow this control.   Using the **Set** option does allow you to select from a group of custom or named colors, as well as specify a new color using the appropriate controls.

Red, Green, and Blue

These slide gadgets can be used to specify the color of the pen.   As these controls are adjusted, the color preview window will be automatically updated to reflect the change.

Edit Width Profile

The width profile allows you to set the width of the pen stroke based on the curvature or angle of the selected area or contour.   If you have the **Vary with Curvature** option on, the width will be changed based on the curvature of the selected area or contour line.   The left-hand side of the graph represents no curvature (straight line), and the right side of the graph is the maximum curvature.   The same is true for **Vary with Angle**, except that the left side is defined as 0 degrees, and the right side is defined as 180 degrees.

Vary with Curvature/Vary with Angle

   These "radio buttons" will alternate between varying the pen width based on curvature or based on angle.   The curvature and angle values are determined form the specified area selection (if Contour is off), or from the contour lines (if Contour is on).   The pen outline will follow the width profile specified in the Edit Width Profile dialog for each curvature or angle value encountered.

Max Width

 This allows you to set the maximum pen stroke width.   This width can vary from 1 to 40 pixels, and this setting will automatically adjust the maximum width for the width profile.   This width can range from a minimum of 1 <u>pixel</u> to a maximum of 40 pixels.   It is important to remember that this is only setting the possible maximum pen width, not the absolute pen width.   The actual width of the pen is set using the **Width Profile**.

Width Smooth

 The Width Smooth control allows you to alter how an outline is smoothed based on the length of the line.   This control can range from a minimum setting of 0 to a maximum of 20 pixels.   If the control is set to 0, then there will be no smoothing along the line.   Settings greater than 0 will result in the line or curve being smoothed a certain number of pixels.

Contoured

This control will turn the Contour based outlining on or off.   If this control is selected, then the outline will be placed onto the contours located in the image.   In that case you can use the interval control to specify where contour lines should appear in the image.

Edge Detect

 This control is used to change the method of placing contour lines on the image.   If this option is selected, contour lines will only be placed on edges in the image where the luminance difference is equal to the interval value.   This will eliminate contour lines in areas of the image that do not contain specific edges (brightness differences).   If the control is not selected, then the contour lines will be placed at the specific interval setting.

Place Background

The Place Background control allows you to insert the selected Background Color or to place the contour lines over the top of the existing image.   Placing the background will fill the region between the lines with the specified background color.   If this control is not selected, the original image will appear between the outlines.

Set Background Color

 This option allows you to access the **Color Selection Dialog** for selecting the background color.   Using the **Set** option does allow you to select from a group of custom or named colors, as well as specify a new color using the appropriate controls.

Interval

 The interval control allows you to specify the spacing of the contour lines on the image.   The contour lines are placed based on the specified interval value, and the actual brightness values found in the image.   The control ranges from an interval of 1 to an interval of 256.   A setting of 1 means that each contour level in the image will have a line.   This will result in the entire area selection being filled with the specified contour line color.   An interval of 256 means that no contour lines will be placed in the selected area.

Use Red, Green, or Blue

 These controls allow you to selectively specify the use of the Red, Green, or Blue color channels for creating the contour lines.   This means that you can select to outline areas in the image which contain a red and blue component (no green).   These options can be applied in any order or singly.   Outlining with all three controls selected will cause F/x   to outline all color changes.

RGB Pen Color Trend

These trend controls allow you to alter the pen color over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Vary with Curvature/Angle

This trend allows you to switch the method of pen variance over a sequence of frames.   When the trend is in the "on" position, the pen will vary with the currently selected method (either curvature or angle).   When the trend is in the "off" position the pen will vary with the non-selected method.   For example, if the vary with curvature option were selected, then the "on" position would cause the pen to vary with curvature.   In this case the "off" trend position would cause the pen's line thickness to vary with angle.   Trends are defined and explained below in the detailed documentation.

Max Width Trend

This trend allows you to specify the maximum pen width over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Width Smooth Trend

This trend allows you to vary the width smoothing over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Contoured Trend

This option allows you to turn the pen outline's contouring method "on" or "off" over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Edge Detection Method

This option allows you to turn the pen outline's edge detection method "on" or "off" over a sequence of frames. Trends are defined and explained below in the detailed documentation.

Interval Trend

The Interval trend allows you to specify the pen outline interval over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Place Background Trend

This trend allows you to turn the background color placement on or off over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Edge Line

Edge Line Color Preview Window

This preview window will display the color of the line that is to appear in the selected area.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the edge line color preview will be updated to reflect the changes.   Pressing the **Set** button allows you to access the **Color Selection Dialog.**   This dialog can be used to specify a custom or named color as the contour line color.

Red

This slide gadget allows you to specify the Red component of the RGB value for the **Edge Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green

This slide gadget allows you to specify the Green component of the RGB value for the **Edge Line** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue

This slide gadget allows you to specify the Blue component of the RGB value for the Edge Line color. This value can be altered by adjusting the sliders or by entering the values. The values for any of the RGB components range from 0 to 255.

Background Color Preview Window

This preview window will display the color of the background color that is to appear between the edge lines.   This color will change as the Red, Green, and Blue values are altered.   As the RGB controls are altered the Background color preview will be updated to reflect the changes.   Pressing the **Set** button allows you to access the **Color Selection Dialog.**   This dialog can be used to specify a custom or named color as the background color.

Place Background

The **Place Background** control allows you to insert the selected **Background Color** or to place the edge lines over the top of the existing image.   Placing the background will fill the region between the lines with the background color.   If this control is not selected, the original image will appear between the lines.

Red

This slide gadget allows you to specify the Red component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Green

This slide gadget allows you to specify the Green component of the RGB value for the **Background** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.

Blue

This slide gadget allows you to specify the Blue component of the RGB value for the **Background** color. This value can be altered by adjusting the sliders or by entering the values. The values for any of the RGB components range from 0 to 255.

Steps

The steps control allows you to specify the spacing of the edge lines on the image.   The edge lines are placed based on the specified step value, and the actual brightness values found in the image.   The control ranges from an step of 1 to a step of 256.   A setting of 1 means that each contour level in the image will have a line.   This will result in the entire area selection being filled with the specified edge line color.   An interval of 256 means that no edge lines will be placed in the selected area.   Other step settings will place edge lines based on their value, and the total number of steps.   F/x will only place edge lines where edges with the same step value are found.

Width

This control allows you to specify the actual edge line width. This option ranges from 0 (no lines) to 40 (very thick lines. As this value is increased the overall thickness of the edge lines will also increase. This control is similar to the width control for the pen outline operation, but it differs in that this control sets a constant width for a line instead of the potential maximum thickness.

Merge

Warp

This control, when selected, will warp the current source image into the selected area regardless of size or shape.   It is important to remember that this can cause tearing and image discontinuities in low <u>resolution</u> images.   When this control is not selected, the source image will appear in the selected area.   The source will be clipped to fit the area selection if it does not fit entirely within it.

Load Source

The **Load Source** allows you to access a file requester for loading a new Source Image.   After the button is selected, you can use the provided file requester to locate a new source image for loading.   Once the image is loaded it will be specified as the source image.

Specify Source

The **Source** drop down box allows you to select one of the currently loaded images as the Source Image for the operation.   An image is specified as the source by clicking on its name.

Trend Warp

This trend allows you to turn the **Warp to New Shape** function *on* and *off* over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Key In

Source Image Drop Down Box

 The Source Image drop down box allows you to select a source image from all of the images currently loaded.   The source image is the image that will be "keyed" into the specified color in the action image.   This operation also allows you to load a new image as the source image.   This is done by selecting the **Load Source** button.

Load Source

 This control allows you to load a new image into F/x as the source image.   Selecting this button will access a file requester.   You can then use this file requester to specify the file to be loaded as the source image.   Once the image is loaded you can execute the operation by selecting an area.   The source image that is loaded will remain as the source until a new source is selected.

Inverse Color Key

 This control allows you to toggle the way the Key In operation works.   When this option is not selected (this is the default), the source image will be merged into the specified color.   For example, if you had a action image with an all blue background, and the key color was the same blue, the source image would be placed everywhere that the blue was found inside the area select.   If the control is not selected, the source image will be placed only where the key color does not exist.

Soft Color Replacement

 This control allows you to select how the source image will be merged into the specified key color.   If this control is selected, then the source will be merged on a percentage basis across the range.   This means that colors nearer to the key color will be replaced more than colors far away from the key color.   The overall result is a softening of the merge giving it a blended look.

Key Range

 The Key Range controls are used to specify the specific Red, Green, and Blue components of the Key In color's variance.   This variance determines which pixels inside the area selection will be replaced with the merge of the source image.

Set Color

 The Set Color button will access the Color Selection dialog, and allow you to select a color as the key color from the palette.   The final color that is visible in the color selection preview will be the color used as the key color for the operation.   Remember, the color that is selected will be the color that is used for merging the source into the action image.

Inverse Trend

This trend allows you to turn the inverse control on and off over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

RGB Trend

These controls allow you to trend the Red, Green, and Blue components of the key color range over the specified sequence of frames.   This allows you to adjust the key color's variance as the animation progresses.   Trends are defined and explained below in the detailed documentation.

Soft Color Trend

This trend control allows you to turn the soft color replacement on and off over the sequence of frames. Trends are defined and explained below in the detailed documentation.

Key on Source

This option allows you to color key based on colors in the source (actor) image.   This allows you to composite actors into a background based on the colors in the source or actor image.   If this toggle is not selected, then the images will be keyed using the color information from the background image only.

Key on Source Trend

This trend allows you to toggle the **Key on Source** option on or off over a sequence of frames.   When this option is on, the images will be keyed using color information from the source or actor image.   If this option is off, then the keying will only be based on colors found in the action or background image.

Place

Only Place in Area Selected

This control, when selected, will clip the image being placed to conform to the selected area.   The placed image will still be <u>pixel</u> for pixel exact, but it will be clipped to follow the area selection.   This does not mean that the image will be stretched to fill the area selection.

Place Trend

This trend allows you to turn the **Place in Selected Area** control on or off over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Enlarge

New Width

This control allows you to specify the new width for the enlarged image.   The new width is measured as a percentage increase in size.   All changes made to this control will be reflected in the **New Width** control.   You have the option of simply entering in the new width (in pixels) into the New Width control.

Width Trend

This trend allows you to alter the Width percentage over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

New Height

This control allows you to specify the new width for the enlarged image.   The new height is measured as a percentage increase in size.   All changes made to this control will be reflected in the **New Height** control.   You have the option of simply entering in the new height (in pixels) into the New Height control.

Trend Height

This trend allows you to alter the Height percentage over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Replace Image

This option, when selected, will automatically replace the image that was being enlarged.   This allows you to reduce the amount of memory needed by the program by opening fewer image views.   If you select to Undo the enlarge operation, F/x will be able to retrieve the unaltered image.   If this option is not selected, then F/x will create a new image view with the enlarged image.

Replace Image Trend

This trend allows you to turn the **Replace Image** option on or off over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Constant Zoom

The Constant Zoom option allows you to select how a stream of images is enlarged.   If this option is selected, then the images will all be enlarged by a constant enlargement factor.   This value is the percentage value on the Width and Height controls.   If this option is not selected, then all images will be enlarged to the same dimensions.

Constant Zoom Trend

This trend allows you to selectively turn the constant zoom option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Reduce

New Width

This control allows you to specify the new width for the reduced image.   The new width is measured as a percentage decrease in size.   All changes made to this control will be reflected in the **New Width** control.   You have the option of simply entering in the new width (in pixels) into the New Width control.

Width Trend

This trend allows you to alter the Width percentage over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

New Height

This control allows you to specify the new height for the reduced image.   The new height is measured as a percentage decrease in size.   All changes made to this control will be reflected in the **New Height** control.   You have the option of simply entering in the new height (in pixels) into the New Height control.

Height Trend

This trend allows you to alter the Height percentage over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Replace Image

This option, when selected, will automatically replace the image that was being reduced.   This allows you to reduce the amount of memory needed by the program by opening fewer image views.   If you select to Undo the reduce operation, F/x will be able to retrieve the unaltered image.   If this option is not selected, then F/x will create a new image view with the reduced image.

Replace Image Trend

This trend allows you to turn the **Replace Image** option on or off over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Constant Zoom

The Constant Zoom option allows you to select how a stream of images is reduced.   If this option is selected, then the images will all be reduced by a constant enlargement factor.   This value is the percentage value on the Width and Height controls.   If this option is not selected, then all images will be reduced to the same dimensions.

Constant Zoom Trend

This trend allows you to selectively turn the constant zoom option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Brightness

Brightness

 The brightness settings can be altered by using the slide gadget, or by clicking on the text entry field and entering the appropriate value.   The brightness operation defaults to 100 which is the maximum brightness change.   The brightness can range from -100 to 100.   Setting the brightness to 0 will cause no change to the image.

Brightness Trend

This trend allows you to adjust the brightness over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Contrast

Contrast

The contrast control allows you to specify the brightness adjustment to be made to a selected area.   The contrast adjustment can range from -100 to 100.

Contrast Trend

This trend allows you to adjust the brightness over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Colorize

Preview

The Colorize Color Preview Window allows you to view the current color that will be used in the Colorize operation.   The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders.

HSL

The Hue, Saturation, and Luminance sliders allow you to adjust the color that is to be used for the Colorize operation.   It is important to remember that the Hue is the only component that is applied for all settings, and that the luminance value is never applied.   The Colorize function uses the Luminance of the selected area in applying the specified Hue or Hue and Saturation.

HS Trend

These trends allow you to alter the Hue and Saturation values over the selected sequence of frames.   The saturation trend will only be used when the **Apply Saturation Also** control is *on*.   Trends are defined and explained below in the detailed documentation.

Color Selection Access

Pressing this button will access the Color <u>Palette</u> dialog.   You may then use the dialog to select the color to be used for the Colorize operation.

Apply Saturation

The **Apply Saturation Also** control, when selected, will apply both the Hue and Saturation values to the selected area.   This control must be selected to colorize a Black and White image.

Apply Saturation Trend

This trend is used to turn the **Apply Saturation Also** control *on* and *off* over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Gamma

Gamma

The **Gamma** operation is similar to the **Contrast** operation.   Both operations evaluate the pixels in the selected area based on the <u>pixel</u> brightness.   The difference is that contrast will linearly brighten or darken a pixel, and Gamma brightens or darkens the pixel based on its original value.

Gamma Trend

This trend allows you to specify the amount of Gamma correction for each frame in the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Remap

Position

The position control allows you to scroll through the "From" and "To" colors.   As you move the scroll bar up and down, the colors will also move to reflect the current palette position.   The current color cell number in the palette is displayed between the From and To ranges.   The number of colors for the palette is set using the Palette Size control, and the colors can be set by pressing the Set button for the From and To color ranges.

From and To Colors

These colors represent colors in the image that you would like to remap.   The color bar on the left is called the **From Colors**, and the color bar on the right is called the **To Colors**.   These colors can be set using the **Set** option located to the right of each color bar.   When the operation is applied, F/x will locate all of the colors in the image that match (or are within the nearness setting) of the From Colors.   These colors are then remapped to their corresponding To Colors.   You can also increase or decrease the number of colors selected that are not exact matches by increasing or decreasing the **Nearness** setting.

Set From Colors

This Set button is used to specify the From Colors that are to be remapped.   The colors can be selected individually, loaded from a preexisting palette, or created through the various spreading and sorting tools in the palette controls. Click Here to view more information on the Color Palette controls.

Set To Colors

This Set button is used to specify the To Colors.   These colors are the colors that F/x will remap the original From Colors into.   The colors can be selected individually, loaded from a preexisting palette, or created through the various spreading and sorting tools in the palette controls.   Click Here to view more information on the Color Palette controls.

Nearness

The Nearness slider allows you to specify a variance value for colors that are to be remapped.   This value can range from 0 (no variance) to 255 (maximum variance).   F/x will evaluate each From color in the image that is within the specified variance (nearness) amount.   Colors that exactly match the From color will be replaced with the corresponding To color.   Colors that do not exactly match, but that are within the specified nearness amount, will be remapped using the luminance values for the original colors, and an interpolated To color.   This allows you to remap a range of colors with only a few From and To Colors.

Nearness Trend

The Nearness trend allows you to alter the remap operation's variance control over a selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Palette Size

The Palette Size option allows you to select the total number of colors to be remapped.   This value can range from 1 to 1024 separate colors.   Each of these colors will need to have an associated To or From color.   Any colors that are not specified will default to black, or the last specified color for that palette position.

Gaussian Blur

Radius

The **Radius** control is used to specify the amount of the Blur texture.   This radius is used to determine which regions will be blurred in the selected region.   The radius can range between 0 and 20 pixels measured in tenths of a <u>pixel</u>.   For example, a setting of 120 would be a radius of 12 pixels.   Regions or features within this radius will be blurred.

Radius Trend

This allows you to specify the radius of the blur effect over a selected sequence of frames.   This can be used to blur an area and then bring it back into focus over time.   It is important to remember that increasing the radius will also increase the time needed for generation.   Trends are defined and explained below in the detailed documentation.

Distortion Morph

Morph MPT File

This is the Morph control point file that determines how the images get distorted.   MPT files can also contain morph <u>transparency</u> and velocity information.

Adjust

This will open the Morph program with F/x's images and the MPT file for adjustment. The MPT file must be saved using Morph's Points Menu for your changes to become permanent.

Specify

This uses a File Requester to get a valid MPT file name.

Frame

The start frame number.   Distortion and Transition operations dropped into the time line will get incremented frame numbers.

Frame Trend

This trend allows you to alter the current frame number for the morph sequence.   This allows you to create morphs on any given frame using the dynamic link from Morph to F/x.   Trends are defined and explained below in the detailed documentation.

Transition Morph

End Image Drop Down Box

This drop down box contains a list of all of the currently loaded images in F/x.   Any of these images can be selected as the end image for a <u>transition morph</u>.   It is important to remember that morph will create the morph sequence with the specified image file, even if they are not the same files that the original point set was designed for.

Load End

This option allows you to load an end frame that has not already been loaded.   Once the image has been selected from the file requester, F/x will load the file and make it the end image for the morphing sequence.   This image file can be changed at any time by altering the image name in the **End File Drop Down Box**.

Morph MPT File

This is the Morph control point file that determines how the images get distorted.   MPT files can also contain morph transparency and velocity information.

Adjust

This will open the Morph program with F/x's images and the MPT file for adjustment.   The MPT file must be saved using Morph's Points Menu for your changes to become permanent.

Specify

This uses a File Requester to get a valid MPT file name.

Frame

The start frame number.   Distortion and Transition operations dropped into the time line will get incremented frame numbers.

Frame Trend

This trend allows you to alter the current frame number for the morph sequence.   This allows you to create morphs on any given frame using the dynamic link from Morph to F/x.   Trends are defined and explained below in the detailed documentation.

Motion Blur

Length

This control allows you to specify the length of the motion blur in pixels.   The length can range from 0 (no effect) to 200 pixels.   It is important to remember that increasing the length can also increase the computational time to complete the effect.

Direction

This control allows you to specify the direction of the motion blur.   The direction is specified as an angle value measured clockwise from vertical.   For example, a value of 90 degrees would result in a blur horizontally to the right.

Amount

This control allows you to set the **Amount** of the Motion Blur effect.   The Amount is a percentage value that dictates the degree of the effect to be applied.   A setting of 0 will result in no change to the image.   It is important to remember that increasing the Amount can also   increase the computational time needed to complete the effect.

Length Trend

This trend allows you to specify the length of the motion blur over a series of frames.   Trends are defined and explained below in the detailed documentation.

Direction Trend

This trend allows you to alter the direction of the motion blur over the selected series of frames.   Trends are defined and explained below in the detailed documentation.

Amount Trend

This trend allows you to specify the Amount of the Motion Blur effect over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Add to Time Line

Add Source Images

This option allows you to add a sequence of source image files for the currently selected <u>key frame</u>.   Source image files are used for all composition based operations in the program.   Selecting this option will bring the Source Image Dialog to the front.   This dialog is used to specify the desired source file or files, and other related animation sequence parameters.   You can also place a source image in a key frame by double clicking on the operation icon for that frame.   This will bring the Operation Dialog to the front.   This dialog allows you to specify operation settings which include action and <u>source images</u>.   If the current operation does not require a source image file, the Specify Source Image button will appear ghosted (unavailable).   This button will only be available for operations that require a source image.   After a source image has been specified, the image file or files can be manipulated like any other time line object.

Add an Area Selection

This option will add the current area selection mode to the time line.   The area selection mode can be determined by viewing the Tool Box.   The Tool Box will display the name of the current area selection mode.   Once it has been placed in the time line, the area selection can be manipulated like any other time line object.   You can also alter the area selection mode by double clicking on the area selection's icon.   This will open the Area Selection Dialog. This dialog allows you to specify the area selection method, and other area selection parameters.

Add an Operation

This selection will add the currently selected operation to the time line.   The current operation name will always be displayed in the Op portion of the Status Bar.   The operation that is placed will contain the current settings for that operation.   Once an operation has been placed in the time line, it can be manipulated like any other time line object. You can also specify an operation by dragging the operation icon into the time line.

Add Action Images

This option allows you to add a sequence of action image files for the currently selected <u>key frame</u>.   Action image files are used for all operations in the program.   An action image is the target or destination for an operation.   Selecting this option will bring the Action Image Dialog to the front.   This dialog is used to specify the desired action image file or files, and other related animation sequence parameters.   You can also place an action image in a key frame by double clicking on the operation icon for that frame.   This will bring the Operation Dialog to the front.   This dialog allows you to specify operation settings which include action and <u>source images</u>.   After an action image has been specified, the image file or files can be manipulated like any other time line object.

Time Line - Main Area Sel. Dia.

Method

The method drop down box allows you to alter the current area selection method.   The method box will display the area selection method that was initially selected for that <u>key frame</u>. This area selection method can then be changes to another area selection type by selecting a new method from the drop down box list.   Changing the area selection mode in this manner will also change the actual area selection mode that will be used, and the icon that is displayed in the timeline.   You can select to make the area selection at this time by selecting the Make the area selection now option.   This will bring the last action image to the front.   You can then select the desired region for application of the operation.   If you do not select to make the area selection at this time, the last area selection that was made will be used for that key frame.   This means that regardless of where or when the last area selection was made, the effect will be applied in that area.   This would allow for application of an effect in several separate locations in the image, many which you may not have wanted.   You will almost always want to avoid this type of situation by making the area selection before generating the Time Line.

Interpolate

The interpolate option allows you to have the current area selection interpolate into the next area selection that is encountered for this level of the time line.   Interpolation means that the first area selection will modify its shape to become the second area selection.   For example, you could interpolate a rectangular area selection into an elliptical area frames.   This also allows you to alter an area selection position over time.   If the rectangle and the ellipse area selections in the above example were made in separate locations in the image, then F/x   would not only interpolate the shape of the area selection, but also the position of the area select.   If this control is not selected, the area selection that is made will remain in the same shape and position until another area selection is encountered for that level, or the end of the sequence is reached.   Area selection interpolation is available between font styles or text strings, but the interpolation is based on the exterior outline of the fonts and text.   For example, you could interpolate between a text string of *The Beginning* in an Arial font to *The End* in a Courier font, but only the outline of the text and font style would be used.   This would result in the outside edges slowly changing into the next <u>key frame</u>.   For a more accurate type of   font interpolation, you could produce a morphing sequence in WinImages:F/x. The morphed sequence could then be merged into the sequence that you are creating in F/x .   The interpolation option will always default `to the "on" position.

Make the Area Selection now

This button, when pressed will allow you to make the area selection for the current <u>key frame</u>.   This area selection is then saved for use in the time line sequence.   F/x   will automatically bring the last Action image to front.   At this point you should make the area selection.   The area selection will be scaled to fit any <u>resolution</u> image that is used in the sequence.   Making the area selection will close this dialog, but it can be re-opened after the area has been selected.   After an area selection is made, it is then associated with that key frame and level.   If you wanted to view more information on the area selection that you made, you could open the Show Details dialog.   This dialog will give a full description of the area selection including size, center position, <u>transparency</u>, and other related information.   You have the option of altering these settings to more specific values, or simply leaving them alone. The Show Details dialog and controls are discussed in further detail below.   You should consider always making an area selection for each key frame.   If you do not make an area selection for a key frame, the last area selection that was made will be used for that frame.   This can lead to highly undesirable results in your animation sequence.

Delete

This option will delete the area selection from the time line.   You then have the option of replacing the area selection with another selection method from the tool box, or having no associated area selection for the operation. If there is no area selection associated with an operation, the last selected region will be used as the area selection. You can avoid this by simply altering the Method control to display the desired area selection.   F/x   will automatically interpolate any previously associated area selections to fit the selection mode.   You always have the option of reselecting the region by pressing the **Make area selection now** button.   Once an area select is deleted, all of the area selection information will be lost.

Show Details

The Show Details option will access the Detailed Area Selection controls.   These controls are used to alter or specify specific details for an area selection.   Included in this dialog are controls to manipulate the area selection size, center position, transparency, and other area selection values.   It is important to remember that these are considered to be advanced controls, and they should not be manipulated by a novice user.   All of the controls and options for this dialog are documented below in the **Detailed Area Selection Controls** section.

Detailed Area Selection Controls

Method

The method drop down box allows you to alter the current area selection method.   The method box will display the area selection method that was initially selected for that <u>key frame</u>. This area selection method can then be changes to another area selection type by selecting a new method from the drop down box list.   Changing the area selection mode in this manner will also change the actual area selection mode that will be used, and the icon that is displayed in the timeline.   You can select to make the area selection at this time by selecting the Make the area selection now option.   This will bring the last action image to the front.   You can then select the desired region for application of the operation.   If you do not select to make the area selection at this time, the last area selection that was made will be used for that key frame.   This means that regardless of where or when the last area selection was made, the effect will be applied in that area.   This would allow for application of an effect in several separate locations in the image, many which you may not have wanted.   You will almost always want to avoid this type of situation by making the area selection before generating the Time Line.

Name

The Name control is a simple informational area that allows you to see the name of the currently loaded IShape. You can not alter this name from this dialog.   If you want to change the IShape that is to be used for this <u>key frame</u>, then you will need to use the Load IShape control from the Tool Box.

Image Size

This control will display the size of the image that this <u>key frame</u>'s area selection was made on.   This value is then used to scale the area selection up or down based on the size of the actual action image or images.   For example, if the area selection was made on an image that was 320 by 200, this value would read 320 by 200.   The area selection associated with this key frame, and made on the 320 x 200 image would then be scaled to fit any size action image that was specified in the time line.   Due to the fact that this value is used to resize the area selection for any size action frames, it is strongly suggested that you do not alter this value.   Doing so could result in area selections that are not properly scaled for the selected action frames.

Roundness

The roundness control displays the amount of roundness that was set for the Rounded Rectangle area selection method.   The roundness value that is displayed here will be the roundness value that is set in the Area menu's Roundness... option.   For example, if the roundness control is set to 20%, then this control will read 20.   You can alter this control to any roundness percentage that you like, but it will change any area selections that have already been made for this key frame.   The area selection will be modified to reflect the new roundness setting.   This option is only available for the rounded rectangle area selection method.   If you have any further questions on this area selection method, please refer to Section 5.1.5 for more information.

Center

The center position numeric entry fields will display the current center of the area selection that is associated with this <u>key frame</u>.   If no area selection has been made for this key frame, then this control will default to 320 by 320. If you select the Make the area selection now button and make an area selection, then the center control will display the center of that area selection.   The center control is available for all area selection modes in F/x .   You can also alter the center value of the area selection by simply entering the desired X and Y image coordinate values into the numeric entry fields.   This can be particularly useful for slight adjustments to the placement of an area selection, or for altering the center position for a center based operation like Radial Wave.   Altering this value after an area selection has been made for this key frame will result in a change in the area selection made for the sequence. Note: Any erroneous or illegal value entries will be automatically reset to 0.

Position

The position controls (X1, Y1, X2, and Y2) will display the X and Y image coordinates for an IShape, Rectangle, Rounded Rectangle, Ellipse, Numeric Rectangle, and Font area selection modes.   These coordinates are not available for Freehand, Polygon, Poly-arc, Spline, Color Wand, Color Key, Entire, or Redo.   If an area selection has not been made for the current <u>key frame</u>, then the coordinate values will default to the entire image size.   For example, if the Image Size control is set to 320 by 200, then the default position is X1=0, Y1=0, X2=319, and Y2=199.   After an area selection has been specified for this key frame, the position values will display the X and Y extreme position values.   X1 will specify the top of the area, Y1 will specify the left-hand side of the area, X2 will specify the bottom, and Y2 will specify the right-hand side.   The Font area selection method is lightly different.   It will only use X1 and Y1 to specify the origin point for the text string.   It will not use the X2 and Y2 values, and they will not be available.   It is important to remember that these are extreme values, or the edge points of the area selection.   These values can be altered to make an adjustment to the size of the area selection, or to alter the area selection position.   Altering this value after an area selection has been made for this key frame will result in a change in the area selection made for the sequence.   *Note:* Any erroneous or illegal value entries will be automatically reset to 0.

Boolean Modifiers

The Boolean Modifiers allow you to specify specific area selection modifiers to a <u>key frame</u> area selection.   These modifiers are located at the bottom of the area selection Tool Box, and include Complement, Intersection, Union, and Exclude.   These modifiers can be added to an area selection by using the <u>drag and drop</u> method, or by selecting them through this dialog.   This allows you to create complex area selection that are based on previous area selections.   In F/x   a Time Line level does not need to contain an operation.   It can instead contain only an area selection.   For example, if you wanted a cutout of the word End to appear inside of a solid filled ellipse, you would set the first level of the time line to a Font area selection only.   The second level would contain an Ellipse that has Complement control selected, and color fill as the operation.   You can specify the complement modifier by turning it on before you place the icon, turning it on before you select the area, by dragging the complement icon to the desired key frame, or by turning it on in this dialog.   The final time line would look like this:

Make the Area Selection now

This button, when pressed will allow you to make the area selection for the current <u>key frame</u>.   This area selection is then saved for use in the time line sequence.   F/x   will automatically bring the last Action image to front.   At this point you should make the area selection.   The area selection will be scaled to fit any <u>resolution</u> image that is used in the sequence.   Making the area selection will close this dialog, but it can be re-opened after the area has been chosen.   After an area selection is made, it is then associated with that key frame and level.   If you wanted to view more information on the area selection that you made, you could open the Show Details dialog.   This dialog will give a full description of the area selection including size, center position, <u>transparency</u>, and other related information.   You have the option of altering these settings to more specific values, or simply leaving them alone. The Show Details dialog and controls are discussed in further detail below.   You should consider always making an area selection for each key frame.   If you do not make an area selection for a key frame, the last area selection that was made will be used for that frame.   This can lead to highly undesirable results in your animation sequence.

Transparency

The Transparency controls allow you to alter the transparency and blending level of the area selection over the sequence of frames.   The transparency controls consist of three separate values: Level, Edge, and Grow.   These values and their interrelations are discussed in the Area Menu documentation under **Transparency Controls**. These controls specify how the area selection will be placed in the action image.   The Level control deals with the transparency level, or opaqueness, of the area selection.   The Edge control is used to specify the amount of edge blending, or gradual transparency, for the area selection.   The Grow control is used to specify the effective size of the area selection as a percentage value.   Each of these values can be trended over the sequence of frames by selecting the associated trend button.   This allows you to create effects that fade in and out, or fade to a center point and then disappear.   The trend graph that is present will be the same length (number of frames) that the area selection is valid.   Remember an area selection remains valid until a new area selection is encountered on the same level, or the end of the sequence is reached.   For example, it is possible to trend the Level value so that an effect would fade in over the first five frames, and then fade out over the last five frames.   A further explanation of trends is available in any of the operation documentation sections.

Font Description

The font controls allow you to adjust every aspect of a font area selection.   The font controls include the font name, point size, width, height, rotation, shear, and the text that is to be used for the area selection.   If you alter the font name or type, F/x   will automatically find the font type on your system that is closest alphabetically to the name you entered.   This change will be reflected in the final output of the font.   It is important to remember that interpolating fonts with other area selection, or one font style into another can produce unexpected or undesirable area selections.   This is due to the complex nature of fonts.   Interpolation of fonts, and other complex areas, uses an outline interpolation.   This means that the basic outline of the first area will be interpolated into the basic outline of the next area selection.   If you want to create an effect where one font style or text string changes into another font style or text string, you should use WinImages:F/x to create a morph sequence that alters from one style to the next.   The other controls allow you to alter the size, shear, and rotation values for the font area selection.   Adjusting any of these values will alter the area selection file that is associated with this key frame.

Key Color

This control allows you to specify the key color (Color Key only), and the key color range (Color Key and Color Wand).   There is also an option to specify a color selection based Hue, Saturation, and Luminance values instead of the RGB settings.   These controls allow you to make slight adjustments to your color keyed or Color Wand area selections.   The key color controls are used for the Color Key area selection only.   The range controls are used to specify the color range or variance for both the Color Key and Color Wand area selection modes.   Adjusting any of these values can significantly alter the area that is selected.

Splatter

The Splatter controls allow you to manipulate the Splatter area selection modifier, and its associated controls.   The Splatter modifier will produce multiple sub-regions within the main area selection, and then apply the selected operation in those sub-regions.   This allows you to create random star fields, domes, or merges.   You have the option of turning splatter on or off, altering the total number of splatters, altering the maximum splatter size, and changing how the sub-regions will be created.   Altering the Seed value will significantly change where the sub-regions occur and their size.

Interpolate

The interpolate option allows you to have the current area selection interpolate into the next area selection that is encountered for this level of the time line.   Interpolation means that the first area selection will modify its shape to become the second area selection.   For example, you could interpolate a rectangular area selection into an elliptical area frames.   This also allows you to alter an area selection position over time.   If the rectangle and the ellipse area selections in the above example were made in separate locations in the image, then F/x   would not only interpolate the shape of the area selection, but also the position of the area select.   If this control is not selected, the area selection that is made will remain in the same shape and position until another area selection is encountered for that level, or the end of the sequence is reached.   Area selection interpolation is available between font styles or text strings, but the interpolation is based on the exterior outline of the fonts and text.   For example, you could interpolate between a text string of The Beginning in an Arial font to The End in a Courier font, but only the outline of the text and font style would be used.   This would result in the outside edges slowly changing into the next <u>key frame</u>.   For a more accurate type of   font interpolation, you could produce a morphing sequence in WinImages:F/x. The morphed sequence could then be merged into the sequence that you are creating in F/x .   The interpolation option will always default `to the "on" position.

Delete

This option will delete the area selection from the time line.   You then have the option of replacing the area selection with another selection method from the tool box, or having no associated area selection for the operation. If there is no area selection associated with an operation, the last selected region will be used as the area selection. You can avoid this by simply altering the Method control to display the desired area selection.   F/x will automatically interpolate any previously associated area selections to fit the selection mode.   You always have the option of reselecting the region by pressing the Make area selection now button.   Once an area select is deleted, all of the area selection information will be lost.

Turbulence

Whorls

This control allows you to specify the number of whorls or swirls in the operation.   This number directly alters how the turbulence will look, and the amount of time needed to generate a frame.   The whorls are randomly placed into the image based on the **Seed Number**.   This number sets a number of different size and motion parameters for each whorl in the operation.   These whorls then increase in size and alter position based on the original seed number, the movement setting, and the swirliness setting

Movement

This option allows you to specify the maximum amount of displacement for any whorl in the turbulence operation. Each individual whorl will use a random value between 0 and the maximum value set with this control for it initial displacement.   This variable can be trended to create a moving effect that is similar to swirling dust or mist.   The control can range from 0 (no effect) to 1000 (maximum movement).

Swirliness

The swirliness option allows you to specify the maximum amount of spin for any of the whorls in an operation. Each whorl will move spin a certain direction and amount based on the initial seed number.   Once this spin amount is set it will remain constant unless this value is trended.   The control can range from 0 (no effect) to 1000 (maximum movement).

Random Seed

This value sets up how the turbulence effect will operate.   This random value between 0 and 65,000 sets where the whorls will appear, their movement, size, and initial swirliness.   Each seed will produce varied results that may or may not be the results that you are looking for.   This operation is provided with a default seed of five which will produce a nice swirling effect.

Whorls Trend

This trend allows you to specify the number of a whorls in a sequence over time.   Trends are defined and explained below in the detailed documentation.

Movement Trend

This trend allows you to specify the maximum displacement percentage randomly selected for whorls over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Swirliness Trend

This trend allows you to set the maximum amount of swirl possible for   any of the whorls over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Random Seed Trend

This trend allows you to alter the seed number over a sequence of frames.   This type of trending is generally not recommended.   Trends are defined and explained below in the detailed documentation.

TL Ops dialog

Get Current Settings

 This selection will "grab" the current operation settings from the operation's dialog.   This allows you to alter the settings of an operation in the dialog, and then place them into the current operation <u>key frame</u> without having to replace the current operation in the time line.   This will only replace the current settings with the operation dialog's settings.   It will not grab any trend information that has been specified for that dialog.   If you want to place trend information into the current operation key frame, you should select the Get Settings from Trends option.

Get Settings from Trends

This option will take the current trend graphs from the operation's dialog.   This means that you can set the trends for a time line operation even after the operation's icon has been placed into the time line.   This selection will treat each of the operation's settings or parameters as trends.   This means that even if a parameter remains constant over a sequence of frames, it will have an associated trend for this operation <u>key frame</u>.   Trend curves do require more memory, but in most cases it is negligible.

Set Current Settings

 This option allows you to alter an operation's parameters, and have the alterations transferred directly into the time line.   This means that any alterations made in the operation dialog will automatically be placed into the time line.   F/x   will continue to update the current operation <u>key frame</u> until a new operation or area selection is placed into the time line, until the current frame position is altered, or until you click in the time line dialog.   Once one of these has occurred, F/x   will break the link between the key frame and the dialog.   The final adjusted settings for all of the parameters in an operation will be placed into that key frame's operation settings file.

Set Trend

 The Set Trend option allows you to create a dynamic link between this time line level and an operation's trend settings.   This means that any changes made to an operation on this level will be immediately reflected in the trend graph.   For example, let's say you have a single operation icon on the current level, and you have selected the Set Trends option.   You will then be allowed to set any or all of the desired parameter trends for that operation.   If you were to then drop the same operation into the same level of the time line, the trends would be altered to reflect the changes in settings data.

Interpolate Settings

 This control will turn the interpolation of operation settings on or off.   When the control is on, the current operation settings will interpolate or tween their values over the specified number of frames to the next operation <u>key frame</u>. Operation interpolation is only available between the same operation.   For example, it is possible to interpolate from one contrast setting to another, but it is not possible to interpolate between a contrast setting and a brightness setting.

Remove Operation

 The Remove option will remove the current operation <u>key frame</u> from the time line.   It will remove all associated settings, trends, and interpolation for that operation.   The operation and its continuance arrow will be replaced by blank time line frames.   A new operation can be copied or placed into those frames, or they can remain empty.   It is important to remember that if an operation is removed, all of the associated settings will be lost.   An operation key frame can also be removed by selecting the Delete key while the operation key frame is selected (highlighted).

Specify Source Image

This selection will open the Time Line Source Image dialog for the current frame. This dialog is used to specify a file, sequence of files, or an animation file to be used as the source image. This Specify Source Image option is only available for operations that require a source image. For example, this button will be unavailable for color fill operation because that operation does not require a source image. You can also specify a source image by double clicking on a time line frame that does not contain a <u>key frame</u> icon. This will open the Add to Time Line dialog. This dialog allows you to specify an operation, area selection, source image, or action image for the current level and frame position. Selecting the source option will present you with the same source image dialog described above.

Specify Action Image

This selection will open the Time Line Action Image dialog for the current frame.   This dialog is used to specify a file, sequence of files, or an animation file to be used as the action image.   This Specify Action Image option is available for all operations in F/x .   You can also specify an action image by double clicking on a time line frame that does not contain a <u>key frame</u> icon.   This will open the Add to Time Line dialog.   This dialog allows you to specify an operation, area selection, source image, or action image for the current level and frame position. Selecting the action image option will present you with the same action image dialog described above.   You can have multiple action image files on separate levels of the time line.   This allows you to process a sequence of images, and then use the result as a source file for another operation.

TL Image

Specify Image File

 Pressing this button will access a file requester for selecting the image files or animation file to be used as a source or action image.   Image files can be selected in many different ways.   You can select a single file from the requester to be processed as an action or source image, you could select multiple files to be processed as a sequence of action and <u>source images</u>, or you could select to load an animation file.   Multiple files can be selected by clicking on the first file in the sequence, using the scroll bar to locate the last file in the sequence, and then pressing the Shift key and clicking on the final file name.   This will select all of the files between the first and last file that you specified.   Once you have the desired files selected, press the OK button to place the files into the time line.

Use Loaded Image

This option allows you to select an image that is already loaded as the source or action image for an operation. You also have the option of selecting a file from a previous time line level.   This allows you to process multiple sets of <u>action images</u>, and then place them into another action image sequence as source files.   For example, you could process action image sequence A on levels one and two of the time line, and then use those images from sequence A as <u>source images</u> for action image sequence B.   The dialog allows you to select the level that the source or action image will come from.   You can also specify an image which is already loaded into memory as the source or action image fro a time line operation.

This is a Video Sequence

 This check box denotes that the file or files you have selected are video sequence.   A video sequence is any supported animation format (FLI/FLC, AVI, and FLM).   It is possible to specify a non-animation file as a video sequence, but the file specified will only be used the specified number of frames.   Real animation files can be placed into the time line at any frame number, and with any frame increment (see below for more details).   It is suggested that you do not specify non-animation files as video sequences.

Start Frame

 The Start Frame control allows you to specify the beginning frame number for a video sequence.   This allows you to specify any value as the initial frame for the animation sequence.   For example,   you could start an FLC animation file on frame 3 instead of frame 1.   If you specify a value that is beyond the total number of frames in the animation sequence, F/x   will automatically use the last frame in the sequence for the entire specified length.

Frame Increment

 The Frame Increment control allows you to specify the way F/x   will load files from a video sequence.   A setting of one will load every frame in the sequence (1, 2, 3...), a setting of two will load every other frame (1, 3, 5...), and a setting of three will load every third frame (1, 4 , 7...).   This control can be set to any value you like up to a setting of every 1000th frame being used.   The default setting for this control is one.   You can also alter the starting frame value by adjusting the Start Frame control.

Remove

 The Remove option will remove the current action or source image file from the time line.   An action or source image can also be removed by selecting the Delete key while the file is selected (highlighted) in the time line.

Asterize

Edit Profile

The **Edit Profile** control allows you to alter the arm profile of the asterize operation.   The arm profile is the color and width of each arm in the asterization.   The graph is read from left to right (Clockwise along the arm).   The vertical axis of the graph is the **brightness** or color of each portion of the arm, and the horizontal axis determines the length of each portion of the arm.   You will notice that as the graph increases vertically that the color of the arm is getting closer to the **peak color,** and that as the graph decreases vertically that the color of the arm is approaching the **edge color.** It is important to remember that the arm profile that is specified will be used for all of the arms in the asterism.   The profile is altered by simply **drawing** the desired profile using the left mouse button.   There are several tools to aid in the creation of new profiles.

Edge Color Preview Window

The Edge color preview window allows you to view the color of the edge of the asterization.   This color will change as the Red, Green, and Blue values are altered.   The edge color along with the **saturation** settings will determine the **Peak** color of the asterization.   As the RGB controls are altered the Edge color preview will be updated to reflect the changes.

Peak Color Preview Window

The Peak color preview allows you to view the color of the center of the asterization.   The peak color will be the edge color, but can be altered using the saturation control.   Increasing the saturation will cause the edge and peak colors to become similar.   If the saturation is set to 100% then the peak and the edge color will be the same.   A saturation value of zero will set the peak color to white.

Red

This slide gadget allows you to specify the Red component of the RGB value for the **Edge** color. This value can be altered by adjusting the sliders or by entering the values. The values for any of the RGB components range from 0 to 255. You also have the option of using the **Set** button (located to the right of the edge color preview) to specify the desired edge color.

Green

This slide gadget allows you to specify the Green component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255. You also have the option of using the **Set** button (located to the right of the edge color preview) to specify the desired edge color.

Blue

This slide gadget allows you to specify the Blue component of the RGB value for the **Edge** color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255. You also have the option of using the **Set** button (located to the right of the edge color preview) to specify the desired edge color.

RGB Trend

These controls allow you to trend the Red, Green, and Blue components of the edge color over the specified sequence of frames.   Adjusting these trends will cause the color of the asterism to change over the sequence of frames.   Trends are defined and explained below in the detailed documentation.

Saturation

The saturation control allows you to adjust the amount of saturation applied to the edge color.   The value for saturation and the value for the edge color will determine the peak color.   Saturation is the perception received as more white light is added to a pure color.   At 0% saturation the peak color will be white, but as the saturation increases the peak color will become more and more similar to the edge color.   Then, at 100% saturation the edge and peak colors are the same.   The saturation value is set using the slide control or by entering the values.   The saturation values can range from 0% to 100%.

Saturation Trend

The saturation trend allows you to alter the peak color (saturation amount) over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Width

This control sets the width of the **center hot spot.** The center hot spot is center of the peak color areas of the asterization.   The width will also control when the arms will begin to taper, if the taper option is selected.   The width is measured as a percentage of the entire area selection.

Width Trend

This trend allows you to alter the width of the center hot spot over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Rotate

This control allows you to set the rotation angle of the asterization.   The angle can range from 0 to 360 degrees, and the rotation angle is measured from vertical moving clockwise (please refer to the diagram on the left.).   The angle of rotation can be set using the slide gadget or by entering the appropriate value for the angle.

Rotate Trend

This trend allows you to alter the rotation amount over a sequence of frames.   This can be used to create spinning Asterizations in the animation sequence.   Trends are defined and explained below in the detailed documentation.

Arms

This control allows you to specify the number of arms that the asterization is to have.   You may specify between 1 and 100 arms for an asterization.   It is important to remember that **each** of the arms will follow the current arm profile.   The number of arms can be set using the slide gadget or by entering the appropriate value.

Arms Trend

The arms trend is used to increase or decrease the number of arms that an asterization has over a sequence e of animation frames.   Trends are defined and explained below in the detailed documentation.

Center Glow

This control will allow you to turn the center glow effect on or off.   The diameter of the center glow is related to the **Width** setting.   If the Width control is set to 0% there will be no center glow, but if width is set to 100% the entire asterization will be covered be the center glow.   The center glow is enabled by clicking the center glow check box.

Center Glow Trend

This trend is used to turn the center glow option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Additive

The additive option, when selected, will place the asterization into the image using no blending.   If the asterization is applied to the same area with additive on, then the edge color will become less and less saturated with each application.   If applied to the same area enough times the asterization would become white.   A non-additive asterization will be blended onto the image using the   edge and peak colors and the colors in the image itself.   This will give the asterization a **softer** look.

Additive Trend

This trend allows you to turn the additive option "on" or "off" over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Taper

 The taper option, when selected, will force each of the arms to taper.   The arms will taper based on the arm profile graph.   For example, with a square arm profile and taper selected each arm would gradually taper using the square arm profile.   If taper is not selected then the arms will follow the arm profile and not taper the ends.   The **Width** control allows you to set when the arms will begin to taper.   The taper option is selected by clicking on its check box.

Taper Trend

The taper trend is used to turn the tapering parameter "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Vertical Glare

The Vertical Glare preset will produce an asterization with two vertically placed arms. This effect is similar to what you see when moonlight is reflecting on water. As with all of the presets, you can alter any of the controls that you like. You also have the option to save variations of any of the presets or of any asterization that you create yourself. These settings files will have to be loaded to be used.

Four Star

This preset will produce a simple four armed star.   As with all of the presets, you can alter any of the controls that you like.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Hex Lens

The Hex Lens preset creates a six armed asterization.   This is similar to light reflecting of the edges of a hexagonal lens.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Oct Lens

This preset creates an eight armed asterization.   This is similar to light reflecting of the edges of an octagonal lens.
You also have the option to save variations of any of the presets or of any asterization that you create yourself.
These settings files will have to be loaded to be used.

Solar Flare

This preset will produce a asterization with only one arm, but the arm profile is very random.   The effect is similar to a solar flare.   As with all of the presets, you can alter any of the controls that you like.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These setting files will have to be loaded to be used.

Even Glow

This asterism will produce a soft glowing effect.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Sparkle

 This asterization is similar to the sparkle from a gem.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Flash

This asterization preset is similar to the flash of a camera or any other sudden, bright light source.   You also have the option to save variations of any of the presets or of any asterization that you create yourself.   These settings files will have to be loaded to be used.

Load

This control allows you to load previously saved asterization settings files.

Save

This control allows you to save the current asterize settings files for later use.

Annular

Edit Profile

The Edit Profile control allows you to alter the radial profile of the annular operation.   The radial profile is the color and width of each ring in the annular effect.   The graph is read from left (center of the annular rings) to right (edge of the annular rings).   The vertical axis of the graph is the brightness or color of the ring, and the horizontal axis determines the number of rings and each rings width.   You will notice that as the graph increases vertically the color of the ring is getting closer to the peak color, and as the graph decreases vertically the color of the ring is approaching the edge color.   The profile is altered by simply drawing the desired profile using the left mouse button.   There are several tools to aid in the creation of new profiles.

Edge Color Preview Window

The Edge color preview window allows you to view the color of the edge of the annular effect.   This color will change as the Red, Green, and Blue values are altered.   The edge color along with the saturation settings will determine the Peak color of the annularization.   As the RGB controls are altered the Edge color preview will be updated to reflect the changes.

Peak Color Preview Window

The Peak color preview allows you to view the saturated peak color.   The peak color can be the edge color, or can be altered using the saturation control.   Increasing the saturation will cause the edge and peak colors to become similar.   If the saturation is set to 100% then the peak and the edge color will be the same.   A saturation value of zero will set the peak color to white.

Red

This slide gadget allows you to specify the Red component of the RGB value for the Edge color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.   You also have the option of using the **Set** button (located to the right of the edge color preview) to specify the desired edge color.

Green

This slide gadget allows you to specify the Green component of the RGB value for the Edge color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.   You also have the option of using the **Set** button (located to the right of the edge color preview) to specify the desired edge color.

Blue

This slide gadget allows you to specify the Blue component of the RGB value for the Edge color.   This value can be altered by adjusting the sliders or by entering the values.   The values for any of the RGB components range from 0 to 255.   You also have the option of using the **Set** button (located to the right of the edge color preview) to specify the desired edge color.

RGB Trend

These controls allow you to trend the Red, Green, and Blue components of the edge color over the specified sequence of frames.   Adjusting these trends will cause the color of the asterism to change over the sequence of frames.   Trends are defined and explained below in the detailed documentation.

Saturation

The saturation control allows you to adjust the amount of saturation applied to the edge color.   The value for saturation and the value for the edge color will determine the peak color.   Saturation is the perception received as more white light is added to a pure color.   At 0% saturation the peak color will be white, but as the saturation increases the peak color will become more and more similar to the edge color.   Then, at 100% saturation the edge and peak colors are the same.   The saturation value is set using the slide control or by entering the values.   The saturation values can range from 0% to 100%.

Saturation Trend

The saturation trend allows you to alter the peak color (saturation amount) over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Additive

The additive option, when selected, will place the annularization into the image using no blending. If the annular effect is applied to the same area with additive on, then the edge color will become less and less saturated with each application. If applied to the same area enough times the annularization would become white. A non-additive annular effect will be blended onto the image using the edge and peak colors and the colors in the image itself. This will give the annular effect a softer look.

Additive Trend

This trend allows you to turn the additive option "on" or "off" over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Flat Glare

The Flat Glare preset creates an annular effect that has a flat radial arm profile, and a saturation value of 50%. These settings will produce an even toned glare in the selected area.

Milk Ripples

The Milk Ripples preset uses a multiple ringed profile that has a decreasing amount of saturation in each ring.   This preset is similar to waves or ripples in a liquid medium.

Bright Ring

This preset will produce a bright ring that is almost entirely composed of the Peak color.   The saturation is set to 0 to create the bright glare like effect in the ring.

Even Glow

This preset will produce a soft glowing effect that slowly gradients from the Peak to the Edge color.   This preset has a linearly decreasing radial profile.

Halo

The Halo preset is similar to the Bright Ring preset, except that the edges of the halo are very smooth.

St. Elmo's Fire

This preset will give a soft glowing effect that is similar to the natural phenomena of St. Elmo's Fire.

Load

This tool allows you to load previously saved sets of annular settings.   These settings are saved using the Save option on this dialog.   All of the settings will be loaded when a file is selected.

Save

This tool allows you to save the current annular settings into an annular settings file.   This file can then be loaded at a later time to reproduce the current annular effect.   All of the settings in the annular dialog will be saved into the settings file.

Refract

Circumferential H,S,L Profiles

The Circumferential profiles allow you to specify the Hue, Saturation, and Luminance along the circumference of the selected area.   The Hue profile is used to specify the color to be placed circumferentially.   Hue can be thought of as the **basic** colors of the rainbow.   Other colors are created by altering the Saturation and Luminosity.   The hue can range from 0 to 360 degrees.   The vertical axis of the Hue trend is the Hue value, and the horizontal axis is the circumferential position measured counterclockwise from vertical.   The Saturation profile allows you to specify the purity of the current hue.   The Luminosity is the brightness of the current hue.   These settings are used in conjunction with the **Priority** profiles to create colors along the circumference of the selected area.   These colors can then be **mixed** with the settings of the radial colors to create refraction effects.   You will notice that the presets for the Tropical Sunset and Outback Sunrise are primarily Circumferential settings.

Circumferential H,S,L Priority Profiles

The priority profile allows you to specify which component (circumferential or radial) will have the priority at a given position.   Setting the Circumferential Hue Priority to the very top of the profile graph means that only the Hue settings of the Circumferential Hue profile will be used.   The same is true for Saturation and Luminosity.   At this time you may wish to view the profile and priority profile graphs of one of the presets.

Radial H,S,L Profiles

The Radial profiles allow you to specify the Hue, Saturation, and Luminance along the radius of the selected area. The Hue profile is used to specify the color to be placed radially.   Hue can be thought of as the **basic** colors of the rainbow.   Other colors are created by altering the Saturation and Luminosity.   The hue can range from 0 to 360 degrees.   The vertical axis of the Hue trend is the Hue value, and the horizontal axis is the radial position measured from the center of the area select to the edge.   The Saturation profile allows you to specify the purity of the current hue.   The Luminosity is the brightness of the current hue.   These settings are used in conjunction with the **Priority** profiles to create colors along the radius of the selected area.   These colors can then be **mixed** with the settings of the circumferential colors to create refraction effects.   You will notice that the preset for the Rainbow is primarily Radial settings.

Radial H,S,L Priority Profiles

The priority profile allows you to specify which component (radial or circumferential) will have the priority at a given position.   Setting the Radial Hue Priority to the very top of the profile graph means that only the Hue settings of the Radial Hue profile will be used.   The same is true for Saturation and Luminosity.   At this time you may wish to view the profile and priority profile graphs of one of the presets.

Rotate

This control allows you to set the rotation angle of the refraction.   The angle can range from 0 to 360 degrees, and the rotation angle is measured from vertical moving clockwise (please refer to the diagram on the left.).   The angle of rotation can be set using the slide gadget or by entering the appropriate value for the angle.

Rotate Trend

This trend allows you to specify a variable rotation amount for a refraction over a sequence of frames. Trends are defined and explained below in the detailed documentation.

Through Silk

The Through Silk preset creates a simulation of the interference pattern created by holding a piece of silk up to a bright light source.   This preset uses mainly circumferential changes.

Rainbow

This preset will create a rainbow effect in the selected area.   This preset is best suited for use with a dark blue to black background color.   This preset uses mainly radial changes.

Tropical Sunset

The Tropical Sunset preset creates a mainly circumferential refraction that is similar to a sunset in the tropics.   This preset is best suited for use with a dark blue to black background color.

Outback Sunrise

This preset creates a refraction effect that is similar to a sunrise in the Australian Outback.   This preset is best suited for use with a dark blue to black background color.

Load

This control allows you to load a previously saved set of Refract settings.   The settings file will contain all of the trend and profile information.

Save

The Save control allows you to save the current settings for later use.   All of the profiles and trend information will be saved into the settings file.

Make Shine

Width

 The width control allows you to specify the horizontal dimension of each shine The shine effect will occur everywhere the image brightness is equal to or greater than the specified threshold.   The width can range from 0 to 50 pixels wide.   Setting this control to zero will cause there to be no shine horizontally.

Width Trend

This trend is used to alter the width of the shine elements over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Height

The height control alters the vertical dimension of each shine.   The shine effect will occur everywhere the image brightness is equal to or greater than the specified threshold.   The height can range from 0 to 50 pixels wide. Setting this control to zero will cause there to be no shine vertically.

Height Trend

The Height Trend is used to define the height of the shine elements over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Amount

This control allows you to specify the amount of the shine effect.   Setting an amount of 0% will cause there to be no effect on the image.   An amount of 100% will cause the maximum amount of the shine effect for the current threshold setting.

Amount Trend

This trend is used to alter the Amount parameter over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Threshold

The threshold value determines where the shine effect will occur in the selected area.   The value that you specify will be compared with all of the brightness values in the selected area.   Those brightness values that are greater than or equal to the threshold will have the shine effect applied to them.   Those brightness values that are below the specified threshold value will not be altered.   The threshold value can range from 0 to 100.   A threshold value of 100 will cause no change to the image.

Threshold Trend

This trend allows you to alter the threshold amount over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Spiral Blur

Radius

This control allows you to set the radius of the Spiral Blur effect.   The Radius is measured in pixels, from the edge of the area select.   The Radius can range from 0 to 200 pixels.   Setting this control to 0 will result in no change to the image.   It is important to remember that increasing the radius, or any of the other controls, also increases the computational time needed to complete the effect.   The Radius can be set using the slide gadget or by entering the appropriate value in the text entry area.

Radius Trend

The Radius trend allows you to specify a variable radius setting for the spiral blur operation over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Rotation

The Direction control allows you to set the rotation angle and the direction of the spiral blur.   The rotation angle is measured clockwise from vertical.   For example,   a rotation value of 90 degrees would result in a blur the started from 0 degrees (vertical) and moved clockwise to 90 degrees (horizontal).   Any negative setting will result in a blur that is counterclockwise.   The Direction can be set using the slide gadget or by entering the appropriate value in the provided text entry area.

Rotation Trend

This trend is used to specify the rotation amount to be used for a spiral blur.   This variable can be set to change for each frame in an animation sequence, or to be a static value.   Trends are defined and explained below in the detailed documentation.

Amount

The Amount setting dictates the intensity of the effect.   The Amount is a value ranging from 0% to 100%.   An Amount of 0% will result in no overall effect on the image.   It is important to remember that increasing the Amount, or any of the other settings, will require additional computational time.   The Amount can be altered using the slide gadget or by entering the appropriate values in the provided text entry field.

Amount Trend

This trend is used to specify the amount option over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Explode

Length

The Length control allows you to set the length of the explode operation.   The length can range from 0 to 200 pixels.   If a negative length is specified the operation will be an Implode instead of an Explode.   It is important to remember that increasing the length may also increase the amount of computational time needed to complete the effect.   The length can be set using the slide gadget or by entering the appropriate value in the provided text entry region.

Length Trend

This trend allows you to set a variable length for the motion blur effect over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Amount

The Amount allows you to specify the intensity of the effect.   The amount can range from 0% to 100%.   A setting of 0% will result in a null operation when applied to the image.   A setting of 100% will provide the maximum amount of explode or implode to the selected area.   It is important to remember that increasing the amount may also increase   the computational time needed to complete the effect.   The amount can be altered by using the slide gadget or by entering   the appropriate value in the provided text entry field.

Amount Trend

The amount trend allows you to specify a variable amount setting for a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Dome

Distortion%

The **Distortion Percentage** sets the amount of magnification at the center of the selected area.   A setting of 500% (the maximum) would result in a 6x magnification in the center of the selected area.   The magnification level is then gradually reduced to 0% magnification at the edge of the area select.   A setting of 0% will result in no change to the image.   The Distortion Percentage can be increased by moving the slide gadget or by entering the proper value in the provided text entry area.

Distortion Trend

This trend is used to specify a variable distortion percentage over an animated sequence of frames.   Trends are defined and explained below in the detailed documentation.

Caricature

Distortion%

The **Distortion Percentage** sets the amount of de-magnification at the center of the selected area.   A setting of 300% (the maximum) would result in a -4x de-magnification in the center of the selected area.   A setting of 0% will result in no change to the image.   The Distortion Percentage can be increased by moving the slide gadget or by entering the proper value in the provided text entry area.

Distortion Trend

This trend is used to specify a variable distortion percentage over an animated sequence of frames.   Trends are defined and explained below in the detailed documentation.

Swirl

Angle

The Angle control allows you to specify a rotation angle for the swirl effect.   This angle may range between -360 and 360 degrees, where negative values are counterclockwise and positive values are clockwise.   The rotation angle is measured clockwise from vertical (please refer to the diagram to the left).   It is important to remember that negative values always represent counterclockwise motion.   Specifying sequentially larger (or smaller) angle values will swirl the image further and further (dependent on sign).   In this operation settings of 0 and 360 will not result in the same change to the image.

Angle Trend

This trend is used to specify the Angle value over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Waves

X Waves

The X Waves control allows you to specify the total number of half waves in the selected area parallel to the x-axis of the image.   Waves can be made up of two half waves - a peak and a trough.   The peak is the maximum positive value, and the trough is the maximum negative value.   For this operation all waves can be considered to ideal sinusoidal waves.   This means that the maximum positive and negative values (peak and trough) are equal, and there is an equal distance between peaks and troughs.   Since a complete wave is made up of two half waves, all even values will produce a complete wave.   For example, a setting of 100 would result in a total of 50 peak/trough pairs parallel to the x axis.   All waves will begin from the center of the selected region.   This will cause that center point to have the greatest amount of distortion.   If this control is set to 1, no X Waves will be applied to the image. A minimum setting of 2 half waves is required for application.

X Front

The X Front control allows you to specify the size of the waves that move parallel to the X axis.   This means that the move from the center of the area select to the area selection's top to bottom in a sinusoidal fashion.   The area in the center of the image (which is also the center of the area selection) contains the greatest amount of distortion. This control can range between -200 and 200, were negative values will reverse the wave.   This means that the maximum amount of distortion will occur towards the edge of the area selection instead of the center.

X Side

The Side wave control is used to specify the amplitude of X waves that are perpendicular to the X axis.   These waves are similar to compression waves.   The side waves are also sinusoidal in nature, and the amplitude of the waves will increase or decrease based on this setting.

X Phase

The phase control allows you to shift the position of the peaks and troughs of the X waves over the course of the animation.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   For example, if you were to trend the X Phase from 0 to 360 over the animation sequence, you would see the peaks and troughs of the waves slowly change positions.   This type of effect can be used to create undulating waves, or other motion based wave effects.   This will only cycle the X waves, the Y waves will not be altered by this control.

Y Waves

The Y Waves control allows you to specify the total number of half waves in the selected area parallel to the y-axis of the image.   Waves can be made up of two half waves, a peak and a trough.   The peak is the maximum positive value, and the trough is the maximum negative value.   For this operation all waves can be considered to ideal sinusoidal waves.   This means that the maximum positive and negative values (peak and trough) are equal, and there is an equal distance between peaks and troughs.   Since a complete wave is made up of two half waves, all even values will produce a complete wave.   For example, a setting of 100 would result in a total of 50 peak/trough pairs parallel to the y-axis.   All waves will begin from the center of the selected region.   This will cause that center point to have the greatest amount of distortion.   If this control is set to 1, no Y Waves will be applied to the image. A minimum setting of 2 half waves is required for application.

Y Front

 The Y Front control allows you to specify the size of the waves that move parallel to the Y axis.   This means that the move from the center of the area select to the area selection's top to bottom in a sinusoidal fashion.   The area in the center of the image (which is also the center of the area selection) contains the greatest amount of distortion. This control can range between -200 and 200, were negative values will reverse the wave.   This means that the maximum amount of distortion (stretching) will occur towards the edge of the area selection instead of the center.

Y Sides

The Side wave control is used to specify the amplitude of Y waves that are perpendicular to the Y axis.   These waves are similar to compression waves.   The side waves are also sinusoidal in nature, and the amplitude of the waves will increase or decrease based on this setting.

Y Phase

The phase control allows you to shift the position of the peaks and troughs of the Y waves over the course of the animation.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   For example, if you were to trend the Y Phase from 0 to 360 over the animation sequence, you would see the peaks and troughs of the waves slowly change positions.   This type of effect can be used to create undulating waves, or other motion based wave effects.   This will only cycle the Y waves, the X waves will not be altered by this control.

Shading

The shading slide gadget allows you to specify a percentage value for the shading of the waves. This value can range from 0 (no shading) to 100 (maximum shading). The shading of the waves will help to make the differences between troughs and peaks more pronounced. The amount of shading that you use is entirely based on the type of effect that you are trying to achieve. All shading is applied to the trough of the wave.

X Waves Trend

The X Waves trend allows you to alter the total number of X dimension waves over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

X Front Trend

This trend allows you to specify the magnitude of any X Front waves over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

X Side Trend

The X Side trend   allows you to specify the magnitude of any X Side waves over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

X Phase Trend

The X Phase trend allows you to alter the phase of the X Waves over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Y Waves Trend

The Y Waves trend allows you to alter the total number of Y dimension waves over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Y Front Trend

This trend allows you to specify the magnitude of any X Front waves over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Y Side Trend

The Y Side trend   allows you to specify the magnitude of any Y Side waves over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Y Phase Trend

The X Phase trend allows you to alter the phase of the X Waves over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Shading Trend

This trend allows you to increase or decrease the amount of wave shading over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Heat Waves

The Heat Waves preset will create waves on your image that are similar to the refraction of light by convection cells on a hot summer day.   This creates a wavy or "mirage" like appearance.   This is due to the layers of air that are various temperatures reflecting light in different amounts.   This wave is created in F/x by specifying only X waves (30 half waves - 15 total waves) with a side amplitude of 50.   There is only a slight amount of shading applied to complete the effect.   The overall result is very similar to the natural phenomena.

Bumpy Glass

The Bumpy Glass preset will make the selected region appear as if it were behind a textured or hammered glass. This type of glass is often used in bathrooms for decoration.   The application of this effect will create an equal number of X and Y Front waves that are the same amplitude (50 X and Y Waves, X Front = 50, and Y Front = 50). Altering the amplitude of either of the Front controls can create new "textures of glass" in the selected region.

Calm Sea

The Calm Sea preset will make the selected region appear as though small ripples have been applied to the image. This is done using all Front based X waves with an amplitude of 20.   This preset will give the image a gentle rolling look, much like a calm body of water.

Stretch

Stretch creates a fun house mirror effect in the selected area.   This is done by stretching the center of the image horizontally.   The Waves dialog is set to have only two frontal waves of a small amplitude.   You can increase the amplitude to increase the effect.

Radial Wave

Distortion%

The Distortion percentage can be considered the **amplitude** of the wave.   The Distortion settings range from 0% to 100%.   Setting the Distortion% to 100% will result in the maximum amplitude for each **Half Wave**.   The amplitude of the half waves decreases as the distortion setting decreases.   The control can be set using the slide gadgets or by entering the appropriate value in the provided text entry field.

Frequency

Frequency is the total number of waves that can appear in the selected area.   The Frequency setting can range from 0 to 100.   A setting of 0 will result in no change to the image.   The frequency control can be set using the slide gadget or by entering the appropriate value in the provided text entry field.

Half Waves

The Half Waves setting controls how many Half Waves (peaks and troughs) will appear in the selected area based on the Frequency setting.   A complete wave is made up of two portions; a peak and a trough.   The peak is the maximum positive amplitude of the wave, and the trough is the maximum negative amplitude.   For example, a wave with a frequency of 12 would have 24 half waves.   The Half Waves setting can be altered by using the slide gadget or by entering the appropriate value in the provided text entry fields.

Radius

The Radius control allows you to specify where the waves will start relative to the center of the area selection.   The radius is set up as a percentage value with 0 being 0 % (center of area select) and 1000 being 100% (edge of area select).   Setting the control to 1000 will result in no wave with some area selection methods.   The Radius setting can be altered using its slide gadget or by entering the desired value in the provided text entry field.

Phase

The Phase control allows you to alter the waves relative position at a certain time.   The control ranges from 0 to 360 degrees.   For example, by altering the Phase from 0 to 90 degrees will cause the peaks and troughs to trade their positions.   The Phase can be set using the slide gadget or by entering the appropriate value in the text entry area.

Shading

The Shading control allows you to set the degree of shading in the waves.   The control ranges from 0% to 100%. A setting of 0% will result in a wave that has no shading in the troughs, and a setting of 100% will result in a wave with the maximum amount of shading in the troughs.   The control can be altered using the slide gadget or by entering the proper value in the text entry field.

Distortion Trend

The trend for Distortion allows you to set the wave's amplitude over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Frequency Trend

The Frequency trend allows you to alter the frequency values over a selected series of frames.   Trends are defined and explained below in the detailed documentation.

Half Waves Trend

This trend allows you to set the number of Half Waves for a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Radius Trend

This trend allows you to alter the starting radius of the wave over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Phase Trend

This trend allows you to alter the Phase angle for the wave over a selected sequence of frames.   It is important to remember that large shifts in the phase angle can result in tearing or discontinuities in the image.   Trends are defined and explained below in the detailed documentation.

Shadow Trend

This control allows you to adjust the Shadow control over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

3D Net

RGB Line Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the line color. Each slider will alter its components of the RGB value. All changes made with these sliders will be reflected in the line color preview window.

Horizontal Size

This control allows you to alter the horizontal size of the grid cells of the net.   The horizontal size is measured in pixels.

Vertical Size

This control allows you to alter the vertical size of the grid cells of the net.   The horizontal size is measured in pixels.

Horizontal Movement

This control allows you to set the amount of horizontal movement that will occur based on the brightness value of that position.   This value is the maximum amount that the net can move horizontally. The amount movement is measured in pixels.

Set Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.

Vertical Movement

This control allows you to set the amount of vertical movement that will occur based on the brightness value of that position.   This value is the maximum amount that the net can move vertically. The amount movement is measured in pixels.

Line Width

The **Line Width** control allows you to set the width of the grid lines.   The width is measured in pixels.

RGB Trends

The Trends in this group are used to set the Red, Green, and Blue components of the Line color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Horizontal Size Trend

This trend allows you to alter the Horizontal Size control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Vertical Size Trend

This trend allows you to alter the Vertical Size control over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Horizontal Movement Trend

This trend allows you to alter the Horizontal Movement control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Vertical Movement Trend

This trend allows you to alter the Vertical Movement control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Line Width Trend

This trend allows you to alter the Line Width of the net over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Line Color Preview

The Line Color Preview window allows you to preview the color that is to be used for the lines of the net.   The window will be updated to reflect any changes made to the Red, Green, and Blue components.

Random Tile

Background Color Preview

The Background Color Preview window allows you to preview the color that is to be used for the background in the Random Tile operation.   The window will be updated to reflect any changes made to the Red, Green, and Blue components.

RGB Background Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the background color. Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the background color preview window.

Horizontal Size

This control allows you to alter the horizontal size of the random tiles.   The horizontal size is measured in pixels, and the size can vary based on the setting of the **Size Change** control.

Vertical Size

This control allows you to alter the vertical size of the random tiles.   The vertical size is measured in pixels, and the size can vary based on the setting of the **Size Change** control.

Horizontal Maximum Movement

This control allows you to set the maximum amount of movement for the random tiles in the horizontal direction. The movement amount is measured in pixels.

Vertical Maximum Movement

This control allows you to set the maximum amount of movement for the random tiles in the vertical direction.   The movement amount is measured in pixels.

Size Change

The Size Change control allows you to specify the amount of variance in the size of the random tiles.   The control is a specifies a percentage value of allowable size change in the tile.   For example, a setting of 50% would allow for horizontal and vertical increases and decreases in size that are 50% of the settings for the **Horizontal** and **Vertical Size** controls.

Set Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.

Line Width

This control allows you to specify the **Line Width** of the edges of the random tiles.   The specified value is in pixels, and a setting of 0 will result in tiles with no edges.

RGB Background Trends

The Trends in this group are used to set the Red, Green, and Blue components of the Background color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Horizontal Size Trend

This control allows you to vary the Horizontal Size control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Vertical Size Trend

This control allows you to vary the Vertical Size control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Horizontal Movement Trend

This control allows you to vary the Horizontal Movement control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Vertical Movement Trend

This control allows you to vary the Vertical Movement control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Size Change Trend

This trend allows you to specify the allowable horizontal and vertical size change of the tiles over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Border Width Trend

This trend allows you to specify the line width of the borders of the random tiles over a selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Border Color Preview

The Border Color Preview Window allows you to view the current color that has been set for the border color of the pixels.   The Border Color preview will be updated to reflect any changes made to the RGB sliders.

RGB Border Color

These control allow you to specify the Red, Green, and Blue values that are to be used as the Border color of the pixels.   Any changes made to these sliders will be reflected in the Border Color Preview Window.

Pixelize

Width

This control allows you to specify the **Width** of the pixels to be created.   The width can range from 1 to 100 pixels.

Height

This control allows you to specify the **Height** of the pixels to be created.   The height can range from 1 to 100 pixels.

Set Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.

Border Width

This control allows you to specify the border width of the pixels.   A setting of 0 will result in pixels that do not have a colored border.

RGB Trends

The Trends in this group are used to set the Red, Green, and Blue components of the Border color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Width Trend

This trend allows you to specify the width of the pixels over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Height Trend

This trend allows you to specify the height of the pixels over a selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Border Width Trend

This trend allows you to specify the edge width of the <u>pixel</u> border color over a selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Cellular

Edge Color Preview

The Edge Color Preview Window allows you to view the current edge color of the cells.   The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders.

RGB Edge Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the **Edge** color.   Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the edge color preview window.

Cell Width

This control alters the width of the cells in the Cellular operation.   The width can range from 0 to 100 pixels.

Cell Height

This control alters the height of the cells in the Cellular operation.   The height can range from 0 to 100 pixels.

Fade

The **Fade** control is the percentage value of how much Edge color is visible.   A setting of 0% will result in there being no edge color around the cells, and a setting of 100% will result in the maximum amount of edge color around the cells.

Set Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.

Discrete Edge

The Discrete Edge control, when selected, will determine how many complete blocks actually fit into the selected area, and place only those blocks that are complete.   If this control is not selected incomplete blocks may occur at some of the edges of the area selection.

Transparent/Translucent

This control, when selected , will make the cells **Transparent**.   If this control is not selected, the cells will be **Translucent**.   This allows for *clear* or *frosted* glass blocks.

RGB Trends

The Trends in this group are used to set the Red, Green, and Blue components of the Edge color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Width Trend

This trend allows you to vary the **Width** of the cells over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Height Trend

This trend allows you to vary the **Height** of the cells over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Fade Trend

This trend allows you to set the **Fade** amount over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Discrete Edge Trend

This trend will turn the **Discrete Edge** control *on* or *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Transparency Trend

This trend will turn the Transparency control *on* or *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Lined

Line Color Preview

The Line Color Preview Window allows you to view the current Line color.   The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders.

Set Line Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the Line Color.   Please review **Appendix F** for more information on the Color Selection Dialog.

Set Background Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the Background Color.   Please review **Appendix F** for more information on the Color Selection Dialog.

RGB Line Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the **Line** color.   Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the Line color preview window.

Background Color Preview

The Background Color Preview Window allows you to view the current background color.   The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders.

Place Background

This control, when selected, will place the specified background color between the lines.   If it is not selected, the original image will appear between the lines.

RGB Background Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the **Background** color. Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the edge color preview window.

Line Height

This control allows you to specify the maximum height of the lines.   A height setting of 20 pixels will only allow for lines that are a maximum of 20 pixels.   The height also specifies the distance between lines.

RGB Line Color Trends

The Trends in this group are used to set the Red, Green, and Blue components of the Line color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

RGB Line Color Trends

The Trends in this group are used to set the Red, Green, and Blue components of the Background color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Place Background Trend

This trend allows you to turn the **Place Background** control *on* or *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Height Trend

This trend allows you to vary the **Height** setting over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Color Fill

RGB Fill Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the **Fill** color.   Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the fill color preview window.

RGB Color Trends

of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Color Preview

Color Fill The Color Fill Color Preview Window allows you to view the current fill color. The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders.

Color Sample

RGB Sample Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the **sample** color.   Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the sample color preview window, and in the **Custom Colors** <u>palette</u> of the **Key Color**.

Sample Color Preview

The Sample Color Preview Window allows you to view the current sample color.   The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders or any samples that are performed.

RGB Ranges

The Red, Green, and Blue range controls allow you to specify the variance for each component of the RGB color space.   These ranges are automatically transferred into the Key Range control if the **Make this the Key Color** control is selected.   Trends are described below in the detailed documentation.

Set Sample Color

The **Set** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.

Make this the Key Color

This control will automatically transfer all Color Sample information into the **Key Color** and **Key Range** dialogs. If this control is not selected, the key color and key range will have to be set manually.

Make This the Key Color Trend

This trend is used to turn the **Make this the Key Color** control *on* and *off* over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Include Extreme Variations

This control, when selected, will include the extreme values for both the colors and ranges of the sampled region.

Include extreme Variations Trend

This trend is used to turn the **Include Extremes Variations** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Rotate

Rotation Angle

This control allows you to specify the rotation angle of the clip.   Positive rotation values are measured clockwise from vertical, and negative rotation values are measure counterclockwise from vertical.

In Place

This control, when selected, will rotate the selected area in its current position.   If this control is not selected, the selected area will be rotated and placed into its own view.

Rotation Trend

This trend allows you to specify the rotation angle over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

In Place Trend

This trend will turn the **In Place** control *on* or *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Assign the Result as Source

This control, when selected, will make any clips that follow the source image. The source image is used with the Collage operations, creation of alpha channels, and the **Perspective** operation. The clip will remain the source until a new clip is made or until a new source is specified in the **Generate** menu.

Assign the Result as Source Trend

This trend allows you to turn the **Assign the Result as Source** function *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Make Alpha

Mask with Existing Alpha

This control, when selected, will alter the existing alpha channel based on the next area select.   This control can be used in conjunction with the **Mask with Source Luminance** control to create a new alpha channel that may include the old alpha channel and an alpha channel based on the Luminance of the specified Source Image.

Mask with Source Luminance

This control, when selected, will create an <u>alpha channel</u> based on the Luminance of the source image.   The Source image is specified in the **Generate** pull down menu.

Mask with Existing Alpha Trend

This trend will turn the **Mask with Existing Alpha** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Mask with Source Luminance Trend

This trend will turn the **Mask with Source Luminance** control *on* and *off* over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Balance

Pick Color

The **Pick Color** button will access the Color Selection dialog.   You can then select the color to be used for balancing the image based on the **Sample Color.**   It is important to remember that selecting the Sample Color as the Balance Color will result in a null operation.

Balance Color Preview

The Balance Color Preview Window allows you to view the current color that will be used in the Balance operation. The preview window will be updated to reflect any adjustments made to the Red, Green, and Blue sliders.

RGB Balance Color

The Red, Green, and Blue sliders control the amount of Red, Green, and Blue that are in the **balance** color.   Each slider will alter its components of the RGB value.   All changes made with these sliders will be reflected in the balance color preview window.

RGB Balance Color Trend

The Trends in this group are used to set the Red, Green, and Blue components of the Balance color over a selected series of frames.   Each trend is set separately for each of the color components.   Trends are defined and explained below in the detailed documentation.

Force Dynamic Range

This control will stretch the sample color into a dynamic range.   This means that the sample will contain the lightest and darkest values of itself.   This will also force a dynamic range in the balanced area.

Force Dynamic Range Trend

This trend is used to turn the **Force Dynamic Range** control *on* and *off* over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Black Balance

This is a preset that will perform a Black Balancing operation over the selected region.   If the sampled color is not the darkest color in the selected region, then all darker colors will be forced to black.   This situation will result in image information loss.

White Balance

This is a preset that will perform a White Balancing operation over the selected region.   If the sampled color is not the brightest color in the selected region, then all brighter colors will be forced to white.   This situation will result in image information loss.

Gray Balance

This is a preset that will perform a Gray Balancing over the selected region.

Relief

Depth

This control allows you to specify the depth or height of the relief operation.   All positive values are maximum depths, and all negative values are maximum heights.

Depth Trend

This trend allows you to specify the **Depth** of the Relief over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Derivative

Multiply Effect

This control allows you to specify the factor that the derivative will be multiplied by.   Increasing this amount will increase the value that is multiplied to the determined derivative value for a <u>pixel</u>.

Signed; On Gray

This control, when selected, will allow for both positive and negative values based on a 0 value at Luma 128.   This means that any negative derivative values will be darker, and any positive derivative values will be brighter.

Add to Image

This control, when selected, will add the derivative values to the existing image values.   If this is not selected, the derivative values will be placed over the original pixels.

Multiply Effect Trend

This control allows you to specify the multiplication factor for the derivative effect over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Signed; On Gray Trend

This trend allows you to turn the **Signed, On Gray** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Add to Image Trend

This trend allows you to turn the **Add to Image** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Add Images

Source Image Drop Down Box

The **Source** drop down box allows you to select one of the currently loaded images as the source image for the operation.   An image is specified as the source by clicking on its name.

Load Source

The **Load Source** allows you to access a file requester for loading a new source image.   After the button is selected, you can use the provided file requester to locate a new source image for loading.   Once the image is loaded it will be specified as the source image.

Absolute Addition

This control, when selected, will allow for an absolute addition of the Source and <u>Action images</u>.   This means that all values that exceed the maximum RGB values will be forced to white.

Absolute Addition Trend

This trend allows you to turn the **Absolute Addition** control *on* and *off* over the selected sequence of frames. Trends are defined and explained below in the detailed documentation.

Dither

Width

This control allows you to specify the maximum <u>pixel</u> width for the dithered region.   This width may range from 1 to 100 pixels.

Height

This control allows you to specify the maximum <u>pixel</u> height for the dithered region.   This height may range from 1 to 100 pixels.

Amount

The Amount control allows you to set the percentage amount of allowable dithering in the selected area.

Keep Gray

This control, when selected, will force all of the dithering to be in gray scale instead of color.

Width Trend

This trend allows you to specify the **Width** over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Height Trend

This trend allows you to specify the **Height** over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Dither Amount Trend

This trend allows you to specify the Dither **Amount** over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Keep Gray Trend

This trend allows you to turn the **Keep Gray** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Elevations

Sea Level

This control allows you to specify the brightness value that is to be used as Sea Level.   A predefined color <u>palette</u> will then be applied to the selected area based on the assigned elevation value.

Shadowing %

This control allows you to specify the amount of shadowing to be used.   The shadowing will occur as if there were a light in the upper left-hand corner of the image.

Sea Level Trend

This trend allows you to specify the **Sea Level** over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Shading % Trend

This trend allows you to specify the **Shading %** over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Edit Palette

This option allows to alter the palette that is applied to the image as elevations.   This palette can be altered into any range or spread of colors.   After the desired palette has been created, press the close button to return to the Elevations controls dialog.

Use Loaded Palette

This option will use the currently loaded <u>palette</u> instead of the default Blue and Green elevations palette.   This allows you to apply any range or spread of colors to the image as colors for various elevations.

Use Loaded Palette Trend

This trend will turn the Use Loaded <u>Palette</u> option "on" or "off" over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Variance

Radius

The Radius control is used to specify the number of pixels that will be evaluated.   For example, a setting of 2 pixels means that 2 pixels in each direction will be used in calculating the variance for the center pixel.   This also means that the calculation time for a radius of 10 is 100 times greater than the computational time for a 1 pixel radius.

Multiply Effect

This control allows you to specify a factor that the variance is to be multiplied by.

Add to Image

This control, when selected, will add the variance values to the existing image.   If this is not selected, the variance values will be placed over the selected area.

Radius Trend

This trend allows you to specify the **Radius** over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Multiply Effect Trend

This trend allows you to specify the **Multiply Effect** control over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Add to Image Trend

This trend allows you to turn the **Add to Image** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Subtract Images

Source Image Drop Down Box

The **Source** drop down box allows you to select one of the currently loaded images as the Source image for the operation.   An image is specified as the source by clicking on its name.

Load Source

The **Load Source** allows you to access a file requester for loading a new source image.   After the button is selected, you can use the provided file requester to locate a new source image for loading.   Once the image is loaded it will be specified as the source image.

Signed; On Gray

This control, when selected, will allow for both positive and negative values based on a 0 value at Luma 128.   This means that any negative brightness values will be made darker, and any positive brightness values will be brighter.

Signed; On Gray Trend

This trend allows you to turn the **Signed; On Gray** control *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Histogram

Histogram Preview

The Histogram Preview window allows you to view the current histogram for the selected region.   The Histogram is a representation of brightness distribution in the image moving from the brightest values on the left to the darkest values on the right.   You have the option of viewing only the average values or the average values and the individual RGB components on the graph.

Show Map

This control, when pressed, will display the current color map for the selected region.   This color map can be altered to assign new brightness values to the RGB components.   Doing this can cause new and unusual colors in the image.   The color map is applied to the image when an area selection is made without the **Gather** tool *on.*

Reset Map

This control will force the color map back to its default position.

Histogram Equalize

The Histogram Equalize operation will statistically redistribute the brightness data so that all brightness values are more evenly distributed throughout the image.   It is important to remember that this process will almost always cause the loss of some image information, but the results can be quite pleasing.

Separate RGB

This control, when selected, will force the histogram preview to display the separate RGB components as well as the average brightness values.   If this control is not selected, only the average values will be displayed.

Apply

The Apply button will apply the current brightness and contrast window adjustments to the color map.

Brightness and Contrast

The Brightness and Contrast controls can be used to window a particular portion of the current histogram.   This window of brightness values can then be histogram equalized or simply applied to the color map to create a dynamic stretching of the brightness values in the window.

Gather Histogram

This control, when selected, will gather the brightness information for the selected region, and place it in histogram form.   It is important to remember to turn this control *off* once you have the desired histogram.

Gather Histogram Trend

This trend allows you to turn the **Gather** tool *on* and *off* over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Clip Alpha

Assign the Result as Source

This control, when selected, will make the <u>alpha channel</u> clipping the source image.

Assign the Result as Source Trend

This trend is used to turn the **Assign the Result as Source** control *on* and *off* over the selected sequence of frames.

Display the Clip

This option when selected will display the <u>alpha channel</u> clip in a view window.   If this option is not selected, then the clip will not be displayed in a view window.

Display Clip Trend

This trend allows you to turn the Display Clip Option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Perspective

Load Source

The **Load Source** allows you to access a file requester for loading a new source image.   After the button is selected, you can use the provided file requester to locate a new source image for loading.   Once the image is loaded it will be specified as the source image.

Source Image Drop Down Box

The **Source** drop down box allows you to select one of the currently loaded images as the source image for the operation.   An image is specified as the source by clicking on its name.

Show

This control, when selected, will display a representation of the perspective placement in the form of a rectangular outline.   This control must be selected if you wish to alter the parameters using the outline and the mouse.

XYZ Rotation

These controls allow you to alter the X, Y, and Z rotation values for the placement.

XYZ Rotation Trend

These trend controls allow you to specify the XYZ rotation for the perspective placement over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Grab

The Grab controls are selected so that a particular component can be altered using the perspective placement outline and the mouse.   The Grab control that is selected will be the parameter that is altered.

Action View

This requester is used to specify the image that is to be the target of the perspectively placed image.   You must select the source using the **Source Image drop down box** or the **Load Source** option.

XYZ Position

These controls allow you to alter the XYZ position of the perspectively placed image.

XYZ Position Trend

These trend controls allow you to specify the XYZ position for the perspective placement over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.
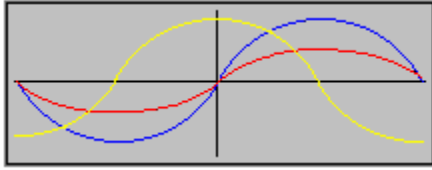
Horizontal and Vertical Zoom

These controls are used to specify the amount of horizontal and vertical zoom that is to be applied to the perspectively place image.

Hold 1:1

This control, when selected, will force the Horizontal and Vertical zoom factors to increase and decrease at the same rate.

Radial Wave Terms

Peak/Crest: A Peak or Crest is the maximum positive value of the wave.   This maximum value is determined by the Amplitude of the wave, and is equal to the Trough maximum value.   The diagram above shows a peak for each of the three waves.

Trough: A Trough is the maximum negative value of the wave.   This maximum is determined by the Amplitude of the wave, and is equal to Peak or Crest maximum value.   The diagram above shows a trough for the Red and Blue waves, and the beginning of two separate troughs for the Yellow wave.

Amplitude: Amplitude is the maximum positive and negative displacement of the wave.   The diagram above shows three waves; Red, Blue, and Yellow.   The Yellow and blue waves both have the same amplitude or vertical displacement.   The Red wave has one half the amplitude of the other two waves.   The amplitude control is called Distortion% , and its use is discussed in the main documentation for the Radial Wave operation.

Frequency: Frequency is the number of waves over a certain amount of time.   In WinImages:F/x the Frequency is the number of waves per distance.   The Frequency can be altered using the Frequency control.

Half Waves: An individual wave is composed of two Half Waves.   These Half Waves are the positive and negative maximum amplitudes of the wave.   The number of Half Waves in a Radial Wave is set using the Half Waves control.

Phase: The Phase of a wave deals with the relative position of the wave at a given moment in time.   In the diagram above the Red and Blue waves are in phase, but the Yellow wave has a phase that varies by 90 degrees. The phase can be set using the Phase control.

Click Here to return to the Radial Wave documentation or press the **Back** key.

Sharpen

Amount

The **Amount** control is used to specify how much sharpening will be done in the selected region.   The control ranges from 0 (no effect) to 100 (maximum sharpen).   This allows you to increase or decrease the overall sharpening effect.

Radius

The **Radius** control is used to set the <u>pixel</u> radius for features in the selected area.   If a feature is within the specified radius, it will be sharpened.   Features which are greater than this radius will not be altered.   The radius can range between 0 and 200 tenths of a pixel.   This means that a setting of 150 has an effective radius of 15 pixels. It is important to remember that increasing the radius will increase the sharpening effect, but it will also increase the time needed for generation.

Amount Trend

This trend allows you to specify the Amount control over a selected sequence of frames. The can be used to create sharpening effect over an animation (something coming into better focus over time). Trends are defined and explained below in the detailed documentation.

Radius Trend

This allows you to specify the radius of the sharpen effect over a selected sequence of frames.   This can be used to bring an out of focus object into focus over time.   It is important to remember that increasing the radius will also increase the time needed for generation.   Trends are defined and explained below in the detailed documentation.

Remove

Samples

The **Samples** control is used to specify the number of points that will be used to fill the removed region.   This value can range between 0 (no effect) and 50 (maximum number of samples).   Increasing the samples will increase the quality of the removal, but will also increase the computational time needed for completing the operation.

Samples Trend

This trend is used to set the number of samples per frame for the Remove operation.   Increasing the number of samples will also increase the time needed to generate the effect.   Trends are defined and explained below in the detailed documentation.

Shave

Severity

The **Severity** control allows you to set the severity of <u>pixel</u> removal for the **Shave** operation.   This control ranges from 1 (lowest severity) to 16 (highest severity).   Increasing the severity will increase the number of pixels or groups of pixels removed and replaced by a color average of the original pixels.   The severity control is analogous to a group of razors which range from dull to sharp.   A low severity (dull razor) will shave fewer pixels from the image, and a high severity (sharp razor) will shave more pixels from the image.

Severity Trend

This trend can be used to set the **Severity** control for the Shave operation over time.   This can be used to eliminate larger and larger groups of similar pixels from an image over time.   Trends are defined and explained below in the detailed documentation

Direction

The Direction control allows you to select the direction in which image element (pixels, chunks, lines, etc.) are removed or replaced in the image area selection.   The direction can be set to replace/remove horizontally, vertically, or in all directions.   The direction is set by clicking on the desired radio button, and then applying the effect to an area selection.

Direction Trend

This trend allows you to alter the direction parameter over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation

Linear Fill

Angle

The **Angle** control allows you to set the angle for the **Linear Fill** operation.   This angle can range between 0 and 360 degrees, where 0 and 360 are the same value.   The angle is measured clockwise from vertical.   This means that 0 degrees is a vertical fill, 90 degrees is a horizontal fill, and so on.

Cycle

The **Cycle** control allows you to shift the <u>palette</u> to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Please view the detailed documentation below for further information on this control.

Edit Palette

This control, when selected, will access the Palette controls.   These controls allow you to alter the current palette, create a new palette, or load a previously saved palette.   Once a palette has been set, the Linear Fill operation will use the new palette until it is altered again.

Smooth

The **Smooth** control, when selected, will smooth the current <u>palette</u> colors.   This is generally used with low color palettes to produce better quality, but it can also be used with high color palettes.   This control defaults to on.

Angle Trend

This trend is used to alter the fill angle over a specified sequence of frames.   Trends are defined and explained below in the detailed documentation.

Cycle Trend

This trend allows you to cycle the current <u>palette</u> over the selected sequence of frames.   This can be useful for creating effects similar to the demonstration animation below.   Trends are defined and explained below in the detailed documentation.

Smooth Trend

The Smooth trend allows you to turn off the F/x's <u>palette</u> smoothing over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Concentric Fill

Cycle

The **Cycle** control allows you to shift the <u>palette</u> to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Please view the detailed documentation below for further information on this control.

X Bias

The **X Bias** control is used to specify the X (horizontal) position for the center of the concentric fill.   The control ranges from -100 (maximum left) to 100 (maximum right), with 0 being the center of the selected area.

Y Bias

The **Y Bias** control is used to specify the Y (vertical) position for the center of the concentric fill.   The control ranges from -100 (top) to 100 (bottom), with 0 being the center of the selected area.

Smooth

The Smooth control, when selected, will smooth the current <u>palette</u> colors.   This is generally used with low color palettes to produce better quality, but it can also be used with high color palettes.   This control defaults to on.

Edit Palette

This control, when selected, will access the Palette controls.   These controls allow you to alter the current palette, create a new palette, or load a previously saved palette.   Once a palette has been set, the Concentric Fill operation will use the new palette until it is altered again.

Cycle Trend

The **Cycle** trend allows you to shift or cycle the palette colors over the selected sequence of frames.   This can be useful for creating effects similar to the demonstration animation below.   Trends are defined and explained below in the detailed documentation.

X Bias Trend

The **X Bias** trend allows you to shift the X value for the center of the concentric fill over time.   This means that the actual center can be moved by altering this trend, the Y Bias trend, or by altering both trends.   This trend will only alter the horizontal position of the center.   Trends are defined and explained below in the detailed documentation.

Y Bias Trend

The **Y Bias** trend allows you to shift the Y value for the center of the concentric fill over time.   This means that the actual center can be moved by altering this trend, the X Bias trend, or by altering both trends.   This trend will only alter the vertical position of the center.   Trends are defined and explained below in the detailed documentation.

Smooth Trend

The **Smooth** trend allows you to turn off the F/x's <u>palette</u> smoothing over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Radiating Fill

Cycle

The **Cycle** control allows you to shift the <u>palette</u> to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Please view the detailed documentation below for further information on this control.

X Bias

The **X Bias** control is used to specify the X (horizontal) position for the center of the radiating fill.   The control ranges from -100 (maximum left) to 100 (maximum right), with 0 being the center of the selected area.

Y Bias

The **Y Bias** control is used to specify the Y (vertical) position for the center of the radiating fill.   The control ranges from -100 (top) to 100 (bottom), with 0 being the center of the selected area.

Smooth

The **Smooth** control, when selected, will smooth the current <u>palette</u> colors.   This is generally used with low color palettes to produce better quality, but it can also be used with high color palettes.   This control defaults to on.

Edit Palette

This control, when selected, will access the <u>Palette</u> controls.   These controls allow you to alter the current palette, create a new palette, or load a previously saved palette.   Once a palette has been set, the Radiating Fill operation will use the new palette until it is altered again.

Cycle Trend

The **Cycle** trend allows you to shift or cycle the <u>palette</u> colors over the selected sequence of frames.   This can be useful for creating effects similar to the demonstration animation below.   Trends are defined and explained below in the detailed documentation.

X Bias Trend

The **X Bias** trend allows you to shift the X value for the center of the radiating fill over time.   This means that the actual center can be moved by altering this trend, the Y Bias trend, or by altering both trends.   This trend will only alter the horizontal position of the center.   Trends are defined and explained below in the detailed documentation.

Y Bias Trend

The **Y Bias** trend allows you to shift the Y value for the center of the radiating fill over time.   This means that the actual center can be moved by altering this trend, the X Bias trend, or by altering both trends.   This trend will only alter the vertical position of the center.   Trends are defined and explained below in the detailed documentation.

Smooth Trend

The **Smooth** trend allows you to turn off the F/x's <u>palette</u> smoothing over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.

Outline Fill

Width

The **Width** control is used to set the width of a generation of the outline fill.   This value can range between 0 and 100 pixels.   It is important to remember that increasing the width will greatly increase the time needed to generate the effect.   You should use a smaller width with more generations to achieve the desired outline width.   For example, a width of 50 pixels would take much longer to generate than a width of 10 pixels and 5 generations.   You can have the <u>palette</u> or crystal remain constant or repeat.

Generations

The **Generations** control allows you to create multiple generation of the same outline and width.   This is the fastest way to generate larger widths.   For example, a width of 50 pixels would take much longer to generate than a width of 10 pixels and 5 generations.   You can have the <u>palette</u> or crystal remain constant or repeat.

Cycle

The **Cycle** control allows you to shift the <u>palette</u> to create a cycling effect for animations.   This control ranges between 0 and 360 degrees, where 0 and 360 are the same value.   Please view the detailed documentation below for further information on this control.

Inside

The **Inside** control, when selected, will generate the fill inside of the area instead of outside of the selected region.

Crystal

Enabling this selection will cause the selected region to be outlined by "crystals" instead of the current <u>palette</u>. These crystals are an average of the color beneath them, thus giving them their crystalline appearance.   The Width, Generation, Repeat, and Inside controls will still carry out their normal functions with the Crystal fill selected.

Smooth

The **Smooth** control, when selected, will smooth the current <u>palette</u> colors.   This is generally used with low color palettes to produce better quality, but it can also be used with high color palettes.   This control defaults to on.

Edit Palette

This control, when selected, will access the Palette controls.   These controls allow you to alter the current palette, create a new palette, or load a previously saved palette.   Once a palette has been set, the Outline Fill operation will use the new palette until it is altered again.

Repeat

The **Repeat** option, when selected, will repeat the current <u>palette</u> or crystal structure for the number of generations specified.

Width Trend

The **Width** trend allows you to increase or decrease the outline width over the selected sequence of frames.   It is important to remember that greatly increasing the width will slow down the operation.   You should increase the number of generations instead.   Trends are defined and explained below in the detailed documentation.

Generations Trend

The **Generations** trend allows you to specify how many palette or crystal generations there will be over the selected sequence of frames.   Increasing the generations will increase the number of times that the outline is applied. Trends are defined and explained below in the detailed documentation.

Cycle Trend

The **Cycle** trend allows you to shift or cycle the <u>palette</u> colors over the selected sequence of frames.   This can be useful for creating effects similar to the demonstration animation below.   Trends are defined and explained below in the detailed documentation.

Smooth Trend

The **Smooth** trend allows you to turn off the F/x's <u>palette</u> smoothing over the selected sequence of frames.   Trends are defined and explained below in the detailed documentation.   Trends are defined and explained below in the detailed documentation.

Repeat Trend

This trend will turn the **Repeat** control on and off over the selected sequence of frames.   The Repeat control will cause each generation of the outline to repeat the original <u>palette</u> or crystal settings.   Trends are defined and explained below in the detailed documentation.

Flip

Flip Vertically

This option, when selected, will flip the selected area vertically.   If the area selection is not vertically symmetrical, F/x will automatically fill the area selection with image data from outside of the area selection in a symmetrical manner.   The vertical flip option can be used by itself, or in conjunction with the horizontal flip option.

Flip Horizontally

This option, when selected, will flip the selected area horizontally.   If the area selection is not horizontally symmetrical, F/x will automatically fill the area selection with image data from outside of the area selection in a symmetrical manner.   The horizontal flip option can be used by itself, or in conjunction with the vertical flip option.

Flip Vertical Trend

This trend is used to turn the vertical flip option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Flip Horizontal Trend

This trend is used to turn the horizontal flip option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Turn 90

90 Degree Rotation

Each of these radio buttons represents a 90 degree rotation factor.   Selecting the 0 degrees button will result in no effect on the selected area.   Selecting 90 degrees will rotate the area by 90 degrees.   The remaining two settings will rotate the area selection by 180 degrees or 270 degrees.   This tool can be used to rotate any area selection, but it primary strength lies in rotating an entire image.   If you need to rotate an area or the entire image by an amount other than these 90 degree increments, you should use the **Rotate** operation.

Angle Trend

This trend allows you to select a 0, 90, 180, or 270 degree rotation for the selected region over a sequence of frames. Trends are defined and explained below in the detailed documentation.

Key to Alpha

Set Color

The **Set Color** control will access the **Color Selection Dialog**.   The final color in the Preview Color box will be the color used for the effect.   Please review **Appendix F** for more information on the Color Selection Dialog.

Inverse Color Key

The inverse color key option, when selected, will select all regions in the image that are **not** the specified key color. If this option is not selected (default), then all areas in the image that are the key color will be selected as <u>alpha channel</u>.   When an area is "selected" then the alpha channel for that are will be black (opaque).   This tool can be used in conjunction with the **Soft Color Matching** option to create a 'soft' alpha channel based on the key color and the action image luminance.

Inverse Color Key Trend

This trend is used to turn the inverse option "on" or "off" over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Soft Color Matching

The Soft color matching option allows you to create an <u>alpha channel</u> based on the key color, and its radial distance. This means that F/x will make the actual key color transparent (if inverse is not selected), and then gradually fade to opaque based on the size of the transparent region and its surrounding colors.   This allows you to create "soft" alpha channels from a key color in a quick and efficient manner.   If this control is not selected, then the alpha channel will be created with only transparent and opaque regions.

Soft Color Matching Trend

This trend is used to turn the soft color matching option "on" or "off" overt a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Key Range

These Red, Green, and Blue sliders allow you to alter the range of valid key colors for the Key to Alpha operation. These sliders range from 0 (no variance) to 255 for the Red, Green, and Blue channels in the image.   These three channels combined make up the colors that are found in the image.   Adjusting these values changes the number of colors that are selected as <u>alpha channel</u> along with the actual key color.   For example, let's say that the desired key color is "pure" blue (R=0, G=0, and B=255).   If we were to set the RGB Key Ranges all to zero, F/x would only select that exact color in the image as a transparent region.   If we were to increase the RGB Key Range sliders and reapply the Key to Alpha operation, then we would see more and more regions of the image being selected as transparent.   If these RGB sliders were set all the way to 255 each, then we would see all of the colors in the image selected as a transparently region (the alpha channel would be completely black).   These sliders can be adjusted independent of one another so that you can fine tune the regions that are selected as opaque or transparent.

Key Range Trends

These trends are used to alter the key color range over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Harden Alpha

Threshold

The Threshold amount specifies which grayscale values are converted to transparent or opaque (Amount at 100%), or which grays are shifted up or down in <u>transparency</u>.   The threshold control ranges from 0 (completely opaque) to 255 (completely transparent).   The setting of this parameter determines which grayscale values are converted to Black or White.   As the threshold is increased more areas will be converted to darker grays or black, and as the threshold is decreased more areas will be converted to lighter grays or white.   The use of the Amount control can alter how the gray values are converted.

Threshold Trend

This trend is used to alter the threshold amount over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Amount

This control alters how the <u>alpha channel</u> is hardened.   The setting ranges from 0 (no effect) to 100 (maximum hardening).   A setting of 100 will result in an alpha channel which is completely transparent or opaque.   F/x will use the threshold value to determine which areas of the image will be converted to white (opaque) or black (transparent).   Decreasing the Amount setting will also decrease this conversion severity.   A decreased amount allows for alpha channels that are multiple gray values (<u>transparency</u> levels).

Amount Trend

This trend can be used to alter the Amount over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Soften Alpha

Radius

This control allows you to specify the alpha softening filter's radius.   This radius has a range from 1 to 20 pixels in distance.   The value of the radius determines the extents and magnitude of the effect.

Radius Trend

This trend is used to alter the radius setting over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Shave Alpha

Bump Size

The Bump Size control allows you to select how the image <u>alpha channel</u> will be shaved.

Bump Size Trend

This trend is used to set the bump size for the Shave Alpha operation over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Make Area

Update Time Line with selection

This control, when pressed, will update the last selected area selection icon in the time line with the current area selection.   This allows you to use F/x's area selection editor and Boolean operators to create complex area selection for the time line.

Clip

Assign the Result as Source

This control, when selected, will make the clip the source image.

Assign the Result as Source Trend

This trend is used to turn the **Assign the Result as Source** control *on* and *off* over the selected sequence of frames.

Display the Clip

This option when selected will display the clip in a view window.   If this option is not selected, then the clip will not be displayed in a view window, but will still be available for operations.

Display Clip Trend

This trend allows you to turn the Display Clip Option "on" or "off" over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Surface Warp

Source Image Drop Down Box

The Source Image Drop Down Box and the Load Source button allow you to select the source image that is to be used for the surface warp operation.   Clicking on the drop down box's down arrow will open the box with a list of all of the currently loaded image files.

Direction

The direction control allows you to specify the direction that the action image surface will be warped to.   This direction is specified as an angle value ranging 0 to 359 degrees.

Direction Trend

The Direction trend allows you to alter the direction of the surface warp displacement over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Amount

The amount control allows you to scale the intensity of the surface warp operation.   The control ranges from a setting of   0 (no effect) to 100 (maximum surface warping).   The larger the percentage value the more dramatic the effect.   Increasing the amount control can also have negative effects such as distortions which are too extreme.   If this is the case, you will have to decrease the amount control, and try to intensify the effect through the use of the Mid Level or Shading controls.

Amount Trend

The Amount trend allows you to alter the amount percentage over a sequence of animation frames.   This can be used to increase or decrease the effect of a surface warp over an animation sequence.   Trends are defined and explained below in the detailed documentation.

Mid Level

The Mid Level control allows you to set where the middle luminance (flat areas) will appear in the image.   The surface warp operation is based on warping the action image based on luminance or brightness values in the source image.   These values can range from 0 (black) to 255 (white).   altering the Mid Level control will change where the program sets the flat area or "ground level of the surface warp.

Mid Level Trend

The Mid Level trend allows you to alter where the surface warp mid level is located over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Shading

The shading control allows you to control how much shading is applied to the surface warp. The shading amount is a percentage value ranging from 0 (no shading) to 100 (maximum shading). This value will determine how the surface warp will be shaded; the greater the shading percentage, the greater the amount of shading in the "depressed regions" of the surface warp. This control can also be related to the intensity of the light source. The greater the shading percentage the, the greater the intensity of the light source.

Shading Trend

The shading trend allows you to alter the shading percentage of the surface warp over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Lightning

Width

The width control is used to determine how wide the lightning bolt will be relative to the size of the original area selection.   This width specifies the maximum possible width for the main lightning bolt.   Any branches or sub-branches will always be smaller than this value and the branch above.   This prevents the lightning from having an extremely thin main bolt, and then very wide arms.

Width Trend

The width trend allows you to alter the width value over a sequence of animation frames.   Changing the width of the lightning bolt will also change how it is formed.   Trends are defined and explained below in the detailed documentation.

Direction

The direction control allows you to specify where the "top and bottom" of the lightning bolt will appear.   The direction is measured as an angle value ranging from 0 to 360 degrees, with 0 and 360 being in the vertical up position.   All angle values in the program will move clockwise from vertical.   The start and position will be determined by the angle value, and the extents of the area selection.

Direction Trend

The direction trend allows you to alter the direction that the lightning bolt starts and terminates at over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Branching

The branching control allows you to specify a percentage amount of branching along the main lightning bolt. This control ranges from 0 (no branching) to 100 (many branches). This allows you to create a wide range of lightning effects from single bolts to a plasma storm. It is important to remember that changing this value will also change the lightning bolt pattern. This can be put to good use by trending this variable over time to create a moving lightning bolt.

Branching Trend

The Branching trend allows you to alter the branch percentage over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Seed

The Seed value allows you to specify a value for the fractal lightning bolt's "path".   These seed values can range from 0 to 32,000, which gives you an almost limitless number of different lightning patterns.   Each seed value is distinct, and no two seeds will repeat.   The seed values also allow you to create the same lightning bolt time after time.   If you find a seed number and lightning setting that is appropriate for your work, we suggest that you save those settings by selecting the Save Op Settings option from the Operation menu.

Seed Trend

The Seed trend allows you to alter the fractal seed value over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Zagging

The Zagging control allows you to select how much the lightning bolt will deviate from its Direction angle value. The zagging can occur in any direction, and effects all branches of the lightning bolt.   The zagging control ranges from 0 (no zagging) to 100 (maximum effect).   Increasing this value will increase the number of turns or bumps in the main bolt and any branches.

Zagging Trend

The Zagging trend allows you to alter the zagging percentage over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Edge Color

The Edge color preview window and Set button allow you to view and alter the color of the edge of the lightning effect.   The edge color along with the saturation settings will determine the   color of the lightning effect.   As the saturation value is increased the center and edges of the lightning bolt will get closer to the specified edge color. Pressing the Set button will access F/x's Color Selection Dialog.

RGB Controls

The RGB sliders allow you to alter the Red, Green, and Blue components of the Edge Color.   As each of these sliders is updated, the Edge Color Preview window will update the changes to reflect the new RGB values.   You also have the option of setting the edge color with the color selection dialog.

RGB Trends

The RGB color trends allow you to alter the color of the lightning bolt over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Saturation

The Saturation value controls how the lightning bolt will be colored.   The saturation value can range from 0 (white) to 100 (completely edge color).   A setting of zero saturation will result in an almost pure white bolt, and a setting of 100 will result in a bolt that is the same color as the edge color setting.   As the saturation increases, then the color that was selected as the edge color will become more visible in the bolt.   The increase occurs from the edge of the bolt inward.

Saturation Trend

The Saturation trend allows you to alter the saturation values over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Glow

The Glow setting allows you to select how much "aura" or surrounding light that the lightning bolt will produce. Real lightning will produce a glowing around it based on it brightness and any surrounding clouds. We have tried to duplicate this effect by adding a glow to the edges of the main lightning bolt and some branches. The glow value ranges from 0 (no glow) to 100 (maximum effect). Increasing the glow amount will also increase the overall size of the lightning bolt.

Glow Trend

The Glow trend allows you to alter the lightning bolt's glow amount over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Print

Print

The Print option allows you to select one of the currently loaded images for printing.   After the image has been selected, F/x will present a simple dialog with several option for printing the image file.   Once these settings have been altered to the desired specifications, you can select the **Print** button to send the information to the printer via the Print Manager.   After the image information has been sent to the Print Manager, you will be able to continue work in the program.   You may notice that the program will slow down slightly while a print is in progress.   This is normal, and will pass once the image has been fully printed.

Version 3.0 is the first WinImages release that allows for printing.   In future releases of the software we will be adding more industry standard printing controls.   If you have any suggestions on how we can make F/x a better program for you, please contact Technical Support at (406) 367-5509, and we will gladly submit your ideas for consideration for the next release.   (Note: You must be registered to receive technical support).

Print Setup

The Print Setup option allows you to alter the setup for your specific printer.   These options will vary from printer to printer based on your printer's specific capabilities.

Aura

Width

The Width control allows you to select the width of the aura around the specified area selection.   This width is measured as a percentage of the original area selection, but it is placed completely outside the area selection.   This means that the area selection will serve only as the outline for the effect.   This value can range from a width of 0 percent (no effect), to a width of 100 percent which would be a width based on the area selection's total area. Increasing this value will also increase the amount of time required to complete the operation.

Width Trend

The Width trend allows you to vary the aura width setting over a sequence of animation frames.   It is important to remember that increasing the width will also increase the amount of time needed to complete the operation.   Trends are defined and explained below in the detailed documentation.

Connect

This control allows you to alter the amount of connectability between the spokes and rings in the aura.   The setting ranges from 0 (no connection between spokes and rings) to 100 (all spokes and rings are connected).   The best way to demonstrate this point is to look at two of the preset operations, and how they use the connect option to achieve different looking auras.   The Glow and Sun Rays presets use the connect option at its two extents (all connected and all separated).

Connect Trend

The Connect trend allows you to alter the aura spokes' connectability over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Radiate

This option controls how the rings and spokes move over time in an animation, or their initial position in a still image.   This value, like all rotational values in F/x, ranges from 0 to 360 degrees with 0 and 360 being the same value.   The primary use for this option is trending the radial movement of the aura.

Radiate Trend

This trend allows you to specify how the aura will radiate over a sequence of frames.   This is the trend that will be used most often for this particular operation.   Trends are defined and explained below in the detailed documentation.

Seed

The Seed value will determine how the spokes will be "randomly" placed around the specified area selection. These seed values can range from 0 to 32,000, which gives you an almost limitless number of different aura spoke patterns.   Each seed value is distinct, and no two seeds will repeat.   The seed values also allow you to create the same looking aura time after time.   If you find a seed number and aura setting that is appropriate for your work, we suggest that you save those settings by selecting the Save Op Settings option from the Operation menu.

Seed Trend

The Seed trend allows you to alter the random number seed for the aura spokes and rings over a sequence of frames. Trends are defined and explained below in the detailed documentation.

Spokes

The Spokes control is used to specify the number of radial arms or spokes in the aura. These radial arms can be set to all be the same size or height, or they can be set so that all of the spokes has a varied height based on the Spoke Variance setting. The maximum arm height is equivalent to the total width setting.

Spokes Trend

The Spokes trend allows you to increase or decrease the number of radial spokes in the aura over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Spoke Variance

The Spoke Variance option allows you to alter the height of the spokes based on the total width and fade settings. This value can range from a setting of 0 (no spoke length variance) to a setting of 100 (maximum amount of length variance from spoke to spoke.   Settings between these values will create a wide range of interesting patterns and undulations.

Spoke Variance Trend

The Spoke Variance trend allows you to vary the amount of height difference from spoke to spoke over a sequence of frames.   This variance increases the feel of "undulation" in the aura.   Trends are defined and explained below in the detailed documentation.

Rings

The rings control allows you to specify the total number of aura rings.   It is important to note that these rings are not necessarily visible for all setting.   The rings are primarily seen in an animation sequence where the radiate option has been trended.   In those animations you will see slight undulation along the spokes.   This is caused by the rings radiating outward.   The total number of ring will determine how intense this undulation is.

Rings Trend

The Rings trend allows you to increase or decrease the total number of rings in the aura over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Ring Variance

This setting allows you to alter the amount of variance between the rings of the aura.   As stated above, rings are not always visible in an aura.   In most cases the rings will only be visible when the Radiate Trend is set to radiate the aura from 0 to 360 degrees.   In those cases the rings will appear as the lateral undulation along the spokes.   The variance setting controls how varied those undulations are.

Ring Variance Trend

This trend allows you to specify how the rings' spacing and size will vary over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Inner Color

The Inner Color selection allows you to alter the color that appears just outside the specified area selection.   This color is set using the Color Selection dialog.   Click Here to view more information on this dialog.   The transparency of the inner color is controlled by the Inner Fade control.   This control sets how transparent the inner and outer colors appear.

Outer Color

The Outer Color selection allows you to alter the color that appears outside of the inner color around the area selection.   This color is set using the Color Selection dialog.   Click Here to view more information on this dialog. The transparency of the outer color is controlled by the Outer Fade control.   This control sets how transparent the inner and outer colors appear.

Inner Fade

The Inner Fade control allows you to specify how the default aura transparency will be applied to the inner color. The default setting is for both the inner and outer colors to have a ramped transparency.   This means that no color appears at either edge of the aura, but the color is completely visible in the center of the aura width.   Increasing this fade value will decrease this transparency amount.   This means that more and more color will become more opaque closer to the initial area selection.   A setting of 100 (maximum) will result in the inner color appearing fully opaque at the edge of the effect.   Increasing this value is one way of increasing the total visible amount of the effect.

Inner Fade Trend

The Inner Fade trend allows you to alter the way that the aura <u>transparency</u> is applied to the inner color over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Outer Fade

The Outer Fade control allows you to specify how the default aura underline transparency will be applied to the outer color. The default setting is for both the inner and outer colors to have a ramped transparency. This means that no color appears at either edge of the aura, but the color is completely visible in the center of the aura width. Increasing this fade value will decrease this transparency amount. This means that more and more color will become more opaque closer to outside edge of the aura width. A setting of 100 (maximum) will result in the inner color appearing fully opaque at the edge of the aura width. Increasing this value is one way of increasing the total visible amount of the effect.

Outer Fade Trend

The Outer Fade trend allows you to alter the way that the aura <u>transparency</u> is applied to the inner color over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Glow

The Glow aura preset will produce a faint blue outline around the selected region.   This aura has only a single spoke and ring, so it appears as a translucent solid ring around the specified area.   This could be used to give a ghostly or ethereal appearance to an object or person.

Ion Field

The Ion Field preset uses a large number of connected spokes to create an effect that looks similar to an ionic or magnetic field.   Try trending the Radiate option with this preset to create a moving field around the selected area.

Sun Rays

The Sun Rays preset uses a large number of highly varied spokes to create a radiating aura similar to the glimmer or radiance of sun rays.   This preset also sets the Connect option to 0 which makes all of the spokes around the area appear un-connected.

Glisten

The glisten aura uses a large number of connected rings and spokes to create a glistening aura around the specified area.   Trending the Radiate parameter will create an undulating aura effect around the area selection.

Fire

Length

This control sets the total length of the fire flame or flames.   This length is determined by this setting, and the actual size of the area selection.   For example, if you select a large rectangle, then the flame will be sized according to the width of the rectangle, and the length setting.   All flames will appear outside of the specified region in the selected direction.

Length Trend

The length allows you to specify the maximum length of the fire over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Direction

The direction control allows you to set the direction that the flame will be generated in.   The angle value that is set here will determine the direction that the flame is applied to the area selection.   The direction is measured clockwise from vertical.

Direction Trend

The direction trend allows you to alter the direction of the flame over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Propagation

The propagation control allows you to alter a flame's position in the structure of the fire effect.   The propagation control is primarily used to cycle the flame effects motions.   This includes all of the motion parts of the flame - flame wobbles, distortion, and single flame position in the total fire.

Propagation Trend

The Propagation trend allows you to alter the fire's pattern over a sequence of frames.   You should use this trend to create realistic moving fire effects.   Trends are defined and explained below in the detailed documentation.

Seed

The Seed value will determine how the flames will be "randomly" placed along the specified area selection in the desired direction.   These seed values can range from 0 to 32,000, which gives you an almost limitless number of different flame patterns.   Each seed value is distinct, and no two seeds will repeat.   The seed values also allow you to create the same looking flame or group of flames time after time.

Seed Trend

The Seed trend allows you to alter the seed number over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Base, Mid, End, and Tip Color Selection

The Base, Mid, End and Tip colors determine the colors that will be used at the specified fame locations.   Each color is faded into the next at four percentage values 0%, 30%, 80%, and 100%.   This means that from 0 to 30% there is a fade of colors from the base color to the mid color, and then so on for each color up to the tip color.

Lateral Structure

The Lateral Structure control sets how the flame or flames will look.   This control can simply be thought of as the total number of flames.   How these flames appear (separate or together) is based upon the Lateral Turbidity setting. This setting defines how much motion and separation the flames have laterally.   You can have between 0 and 200 separate lateral structures or flames.   How these flames look is dependent on the number of longitudinal structure and the turbidity setting.

Lateral Structures Trend

The lateral structures trend allows you to alter the total number of lateral structures (flames) over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Lateral Turbidity

The Lateral Turbidity determines how distorted and separated the flames will appear.   The control itself determines if the flame will be treated as a single flame (candle preset) or as a number of flames (forest preset).   Turbidity values below 50 will cause the program to treat all of the lateral structures as a single flame.   Values of 50 or greater will cause each lateral structure (flame) to be treated individually.   This is very important to remember - especially for animations.   For example, decreasing the lateral turbidity (below 50) for the forest preset would cause the individual flames to move as a single flame similar to the logs preset.

Lateral Turbidity Trend

The lateral turbidity trend allows you to alter the lateral movement and distortion of the flames over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Longitudinal Structure

The Longitudinal structures are subtle changes along the length of each flame element that make it appear more realistic.   This effect of this control is directly related to its turbidity setting.   If the turbidity is high, then this control can truly alter a flame to the point of distortion.   For this reason, all of the preset values use   very few Longitudinal structures.   The control ranges from 0 (no structures) to 200.   You should notice that increasing this value will cause the flames to look more disjointed, and in many cases less realistic.

Longitudinal Structures Trend

The control allows you to vary the number of structures along the length of the flame over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Longitudinal Turbidity

This control gives the Lateral structures their motion and structure along the length of the flame.   Increasing the turbidity will increase the amount of distortion along the flames length.   You should notice that most of the presets use the longitudinal preset in medium to high values with a low number of longitudinal structures.   This will give the fire the desired depth or realness while eliminating distortion.   The best way to understand how this control effects the flame, is to view a preset values, and then increase or decrease the turbidity and reapply the effect.   In most cases the default settings can help you to develop your own flame and fire effects.

Longitudinal Turbidity Trend

The longitudinal turbidity trend allows you to alter the movements and distortions of the flames along their length over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Wobbles

This control can be used to set the number of "wobbles" or distortions in the flames. This differs from the Distortion amount in that Wobbles controls more of how the flame is distorted, instead of the background distortion.   You can have settings that range from 0 (no wobble) to 20 wobbles in a flame.   The size of the wobbles is determined by the amount setting.   Increasing the wobbles   and the wobble amount will also increase the overall distortion in the flames.   As with all of the other controls for this operation, you should look at the preset values as an initial basis for your understanding of a control.   After you have viewed how the control alters the effect, try altering a preset with new values to create new and unusual flame effects.

Wobbles Trend

The wobbles trend allows you to increase or decrease the number of wobbles over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Wobble Amount

This control sets the size or intensity of the wobbles/distortions in a flame.   The amount can range from 0 (no wobbles) to 100 which allows for the greatest amount of variance from flame to flame in the fire.   Increasing this value to much can result in unwanted or un-needed distortions.   Please refer to the preset values for a better understanding of how this control alters the overall fire effect.

Wobble Amount Trend

This trend allows you to alter the amount of effect that wobbles have over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Distortion

The distortion setting allows you to set the amount of distortion caused by the "heat" of the flames.   The heat distortion occurs behind the flames, and is most visible and the edges of the flame, or if you decrease the transparency level of the effect (the Transparency controls are located in the Area menu).   The effect can range from a setting off 0 (no distortion) to 100 (maximum distortion).   This setting can help to give your flame or fire effect an even more realistic look.   For added heat waves, try the placing Waves operation's Heat Wave preset   above the flames.

Distortion Trend

The distortion trend allows you to alter the amount of "heat distortion" is created by the flames over a number of frames.   Trends are defined and explained below in the detailed documentation.

Candle

The Candle preset uses a small Lateral and Longitudinal Structure with no turbidity to create an effect similar to a burning candle.   Notice that the length setting is very high.   This gives the flame the long flame that is typical for many types of candles.   This means that you should use a very small area selection so that the entire flame appears on the image.

Torch

The Torch preset uses a small number of Lateral and Longitudinal structures with lots of turbidity to create separate flames in a torch like pattern.   These settings result in a small number of flames that vary greatly from one another in size and structure like flames from a burning torch.   The length setting for this preset is also a very high setting. This means that you should use a very small area selection so that the entire flame appears on the image.

Forest

The Forest preset tries to emulate the look of a raging forest fire or other intense fires.   The flame contains a large number of flames and turbidity which gives it the look of a large blazing fire.   The animation example above uses the Forest preset with the propagation setting trended.

Logs

This is a more subtle version of the Forest preset.   There are fewer flames, and they are more connected together. This is due to the fact that there are fewer longitudinal structures and a decreased turbidity.

Oil Wick

The Oil Wick preset uses setting similar to the Torch preset to emulate an oil wick burning.   You should notice that the oil wick contains the same number of lateral structures, but a decreased turbidity.   This gives it the appearance of a single flame instead of multiple small flames in the torch.

Monochrome

These two radio buttons allow you to select between a monochrome based on luminance values of a <u>pixel</u>, or the RGB average for each pixel in the area selection.   If you select to base the monochrome conversion on RGB Average, then the pixels will be converted to monochrome based on the following formula: (+ Green + Blue) /3.   Then all three color components are replaced with this new value.   The Luminance option will convert the selected region into a gray scale based on the way the human eye perceives brightness.   The pixel is converted using: (* .33) + (Green * .59) + (Blue * .11) to create the brightness value, and then replacing the three color components with this new luminance value.

Kaleidoscope

Mirrors

The Mirrors control allows you to adjust the total number of mirrors used by the kaleidoscope.   The number of mirrors can range from 2 to 500, with a setting of 6 mirrors as the default. This setting will determine how many segments the area selection will be divided into.   For each additional mirror added the total size of the mirrors will reduce.   The section of the image that is reflected to the other mirrors is determined by the Rotate setting.

Mirror Trend

This trend control allows you to alter the total number of mirrors in the kaleidoscope over a sequence of animation frames.   This parameter can be trended from 2 to 500, with 6 mirrors as the default. Trends are defined and explained below in the detailed documentation.

Rotate

The Rotate setting controls the section of the image that is reflected to the other mirrors. This setting can range from 0 to 360, with 0 being the default setting. This setting will determine where the initial mirror will be placed. For example, if the Rotate control is set to 0, then the initial mirror is located at the top of the area selection. If this value were changed to 90, the initial mirror would be located on the left hand side of the area selection. This continues for all values in a clockwise manner around the image. The size of the initial mirror is based upon the **Mirrors** setting. To produce a moving kaleidoscope simply trend this value from 0 to 360.

Rotate Trend

This trend controls the rotation of the kaleidoscope over a sequence of animation frames.   This parameter can range between 0 and 360 degrees.   Trends are defined and explained below in the detailed documentation.

Rotational

This setting alters the way that the kaleidoscope works.   If this option is selected, then the section of image specified by the rotate image will be reflected to each of the mirrors.   The result is the traditional kaleidoscope image.   If this option is not selected, then the initial mirror segment will be copied onto all of the other mirrors. This differs from the first method in that there is no true reflection from mirror to mirror.   The example images above should help to clarify the difference.

Rotational   Trend

The Rotational Trend alters how the kaleidoscope operation function for a sequence of animation frames.   If the parameter is on the initial mirror section will be copied to all of the other mirrors.   If it is not selected, then the initial mirror will be mirrored to all of the other mirrors in the kaleidoscope. Trends are defined and explained below in the detailed documentation.

Angle

This setting controls which portion of the area selection is mirrored onto the other portion of the image.   This setting can range from 0 to 360, with a default value of 0.   Like all rotational parameters used in F/x the Angle value moves from the top in a clockwise manner.

Angle Trend

This trend controls the initial angle position for the mirror operation for a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Seed

The Seed setting allows you to alter the random number variable for the Dither operation.   Altering this value will result in   an alternate dither pattern for each seed value.   The Seed parameter ranges from 0 to 9999, but it can set to higher values for timelines.

Seed Trend

This trend setting allows you to alter the random seed value over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Source Image Drop Down Box

The **Source** drop down box allows you to select one of the currently loaded images as the Source image for the operation.   An image is specified as the source by clicking on its name.

Load Source

The **Load Source** allows you to access a file requester for loading a new source image.   After the button is selected, you can use the provided file requester to locate a new source image for loading.   Once the image is loaded it will be specified as the source image.

Intensity

The Intensity control allows you to adjust the overall amount of the Texture applied.   The control ranges from 0 to 100, with a default of 100.   The higher the Intensity value, the deeper the texture will appear.   Lower values will result in less texture being applied to the image.   This means that the texture will not be as deep.

Intensity Trend

The Intensity Trend allows you to adjust the Intensity of the added texture over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Tile Trend

This trend allows you to turn the Tile option on or off over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Tile

This check box turns the tiling of the texture on or off.   If this controls is on, the Source Image or texture will be tiled within the specified area selection.   If this option is not selected, then the texture will be stretched to fit the area selection.

NTSC Limit

This will take the specified region and modify it to conform to the NTSC Chrominance modulation specification. This tool will look for areas of high saturation, and any area that is luma will not be involved in this step of the evaluation.   After the area is evaluated the maximum saturation of any color is reduced to 82%.   Any luma portions of greater amplitude will be scaled down proportionally, but you could have values of 100% dependent on the selected area.   This tool will ensure that the image can be encoded without exceeding the ability of the NTSC signal to carry the color information, and without color distortions.

NTSC Limit Trend

This trend allows you to turn the NTSC Limit function on or off over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

NTSC Filter

This tool will take the specified region and modify it to conform to the limited bandwidths of both color and luma signals in an NTSC composite signal.   This process will modify only the region you specify, but the entire length of the image scan line is used for computation.   For this reason,   you should only apply this effect to an entire region.

NTSC Filter Trend

This trend allows you to turn the NTSC Limit function on or off over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Taper

This control allows you to specify how much the end of the lighting will taper.   The control ranges from 0 to 100. A setting of 0 will result in no tapering, and a setting of 100 will result in the maximum amount of tapering for the main lightning branch.

Taper Trend

This trend alter the Taper setting over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Summer Storm

This preset simulates a single bolt lightning strike similar to what you might see in a Summer Stom.

Gamma Burst

This preset uses a large amount of Tapering to result in a slender electrical strike.

Fibrous

The Fibrous preset uses a large amount of branching to result in a very thick and complex lightning bolt.

Wind Storm

This preset uses a larger amount of branching and zagging to produce an interesting electrical effect.

Lighter/Darker

This control will alter how the Combine operation works.   A Lighter setting will result in the action image having areas darker than the same areas in the source image being replaced by the source image.   The opposite is true for the Darker setting.   See the images below for more details.

Lighter/Darker Trend

This trend allows you to alter the Lighter/Darker setting over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Replace Image

The Replace Image option will replace the current action image with the clipped area.   This operation is especially useful, and necessary, for timelines which use the clip operation.   If this option is not selected a new image will be created containing the clip.

Replace Image Trend

The Replace Image trend allows you to turn this parameter on or off over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Tile

The tile check box, when selected, will cause the source image to be tiled inside the area selection if it is larger than the source image. If this option is not selected, the image will be stretched (re-sized) to fill the entire area selection. Remember, a source image will only be tiled if it is smaller than area selection that made.

Tile Trend

This option turns the Tile parameter on or off over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Sample Now

This option allows you to select an area as the current color balance.   You can then adjust the RGB sliders to make the appropriate color balance.   After you have the desired color, press the **Apply Color Balance** button to apply the color balance to the entire image.

Apply Color Balance

This button will apply the color balance operation to the entire image using the current sample color and balance color settings. You can apply a color balance to a more specific region in the image by manually selecting an area to be color balanced.

Clear

The Clear option will clear all of the currently stored colors in the color collection buffer.   This is generally reserved for the first frame in a timeline, but can be used for any frame.   Once the collection buffer has been cleared, it cannot be retrieved.   Please review the previous sections for proper usage of the Clear option in a timeline.

Accumulate

The accumulate mode will go through all of the specified images, and collect color information from these images. This information is placed into a color collection buffer where all of the colors from all of the images are temporarily stored.   After all of the images have been processed, the **Generate Palette** option will pick the best representative colors from the collection buffer.   The accumulate option is used for almost every frame in a timeline, but can be turned off for any relevant frame or frames.   Review the sections above for proper usage of the accumulate option in the timeline.

Generate Palette

This option will create a palette of colors based on the colors in the color collection buffer, and the setting of the **Number of Colors** option in the Output Color Reduction panel.   For example, if you set the Number of Colors option to 64, Generate Palette would select the best 64 colors from the color collection buffer.   After these colors have been selected, they would be placed into the render palette based on the current usage status of the first 64 colors (see the output color reduction section for more on color usage).   As stated above, this option is generally reserved for the last frame of a timeline, but it can also be used to obtain a palette from a single image.

Load Palette

The Load Palette button will load any previously saved palette as the current render palette.   It is important to remember that render and effects palettes are kept separate in the program.   For example, loading a palette via this option will effect only the render palette, not the effects palette.   F/x loads a wide variety of palette formats including: Microsoft Windows Paintbrush palettes, AVI (Video for Windows) palettes, Bitmap palettes, Adobe Color Table (ACT) palettes, and IFF palettes.

Save Palette

The Save Palette option allows you to save the current render palette in the standard WinImages palette format. Once a render palette has been saved, it can be reloaded using the load palette option in either a render or effects palette.

Reduction Settings

This button will access the Output Color Reduction dialog.   This dialog contains a new area that allows the user to select which colors should be selected.   This dialog can be left open and edited while you are setting up a Build Palette operation, and it will automatically reflect any changes that you make to the render palette.

Replace

These radio buttons control how the new alpha channel will be applied to any existing alpha channel that the image may have.   The first option is to **Replace** the existing alpha channel.   This means that any existing image alpha channel will be eliminated, and the new alpha channel will replace it.   The next option is to **Add** the new area selection to the existing alpha channel.   The final option is to **Subtract** the new area selection from the existing alpha channel.

Replace Trend

This trend determines if the existing alpha channel is replaced, added to, or subtracted from the new selection. Trends are defined and explained below in the detailed documentation.

Replace Image

The Replace Image option will replace the current action image with the clipped alpha channel.   This operation is especially useful, and necessary, for timelines which use the clip alpha operation.   If this option is not selected a new image will be created containing the alpha clip.

Replace Image Trend

The Replace Image trend allows you to turn this parameter on or off over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Radius

The radius control alters the size of the brush strokes used to paint the image.   The control can range from 0 to 20, with a default setting of 12.   The greater the radius value, the more the colors in the image will blur and bleed into each other.

Radius Trend

This trend controls the radius of the brush over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Intensity

This option controls the intensity or the amount of the effect.   The control ranges from 0 to 100, with a default value of 20.   The higher this value the darker or more intense the gouache effect will appear.

Intensity Trend

This option controls the Intensity setting over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Layers

This control alter the total number of layers of oil paint applied to the image.   The control ranges from 1 to 100, with a default setting of 95.   With the addition of more and more layers of oil paint the image will become darker and darker.

Layers Trend

This trend alters the total number of oil layers over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Interval

This control alters the spacing of the white outlines on the blue print. The control ranges from 1 to 256, with a default setting of 20.   Large interval setting will result in the blue print having very few white lines, and lower interval setting will create many white lines.

Interval Trend

This trend alters the Blue Print line interval over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Negative

The Negative controls are fairly simple to use and understand. The left hand side of the dialog contains a check box list of all the different color spaces available. Selecting one of these check boxes will force the operation to evaluate and perform the negative using that color space only. If the color space contains multiple channels, a list of all the available channels for that color space will appear to the right of the Color Space check boxes. At this point you can select which channel or channels that you would like to apply the negative operation to. If the channel check box is selected for any of the color channels then the negative will be applied to that channel. If the check box is not selected, then that channel will remain unchanged.

Hue

This control ranges from -180 to 180 and controls how much each pixels hue value will be shifted. Positive hue increases will result in more green being applied to the image, and negative hue values will add more red to the image. In general this is designed to be a correction tool only. However, you can produce some interesting color effects by pushing the hue value too far.

Hue Trend

This trend allows you to alter the amount of hue adjustment applied to the image over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Saturation

The saturation control ranges from -100 to 100, and allows you to alter the specific saturation values for all of the pixels in the area selection.   Saturation can be defined as the intensity or deepness of a color (hue).   If you increase the saturation value, the colors will become more vivid or intense.   If you decrease this value the colors will lose their deepness and will eventually become gray.

Saturation Trend

This trend allows you to alter the amount of saturation adjustment applied to the image over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Value

This slider allows you to adjust the value or brightness setting of each pixel in the specified area.   The control ranges from 100 to -100 with positive values increasing the brightness, and negative values decreasing the brightness.

Value Trend

This trend allows you to alter the amount of value adjustment applied to the image over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Reduce or Increase

These two radio buttons determine how the glare operation will function. If the control is set to Reduce, the operation will try to eliminate or reduce the effects of glare in the image. This means that saturation will be restored to areas which appear as glares in the image. The higher the Amount setting, the greater the reduction. However, high amount settings can also result in areas of the image which are not glare regions to have their saturation adjusted as well. You will find that normally Amount settings between 50 and 80 will give you the best results.

If you select to Increase Glare, hot spots in the image will be widened and intensified. This option also uses the Amount setting to determine the extents or amount of the effect. If you increase the Amount setting you will also increase the amount of glare that will be added to the image. You will find that very high settings over 80 will result in most of the image being glared out. In some cases this may be the effect you are looking for, but normally you will want to limit you Amount settings between 45 and 80.

Reduce or Increase Trend

This trend allows you to turn the increase or decrease glare option on or off over a sequence of frames.   Trends are defined and explained below in the detailed documentation.

Amount

The Amount setting controls the intensity or amount of the Glare reduction or increase. The control ranges from 0 to 100, with the most practical usage range between 45 and 85. The Amount setting is used with both the Reduce and Increase options. With the Reduce option, the Amount value will determine how much of the glare will be reduced. This includes which areas are defined to be glare regions. Increasing this value will result in more and more regions of the image being reduced in glare. The same is true for the Increase Glare setting. Increasing the Amount value will result in more and more areas of the image becoming glared. Very high settings will force large portions of the image to white.

Amount Trend

The Amount Trend allows you to alter the intensity of the Glare operation over a sequence of animation frames. Trends are defined and explained below in the detailed documentation.

Antique or Un-Antique

These two radio buttons control how the Antique operation will work.   If the Antique option is selected, then the operation will add the yellowish tinge that is usually associated with antique photos.   If the Un-Antique option is selected, then the operation will try to eliminate the yellow coloration from the image.

Antique or Un-Antique Trend

This trend will turn the Antique or Un-Antique operation on over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

RGB Controls

These three check box controls allow you to alter the coloration of the color gel that is applied to the image. Selecting one of the check boxes will cause that color component to be used as part of the color gel calculation. If more than one box is selected, then the color will be a combination of the two color components. You are not allowed to select all three color components, since this will result in an all black image.

Interlace Aware or Frame Repeat

These radio buttons allow you to select the method that will be used for converting the animation frames.   The Interlace Aware method uses a 3-2 pull down method to generate 30 frames for every 24 frames that are processed. This method uses interleaving to accomplish this frame rate conversion.   This means that no frames are repeated. Instead, the intermittent frames are derived from the combination of two interleaved frames.   The overall result is the addition of 6 extra frames for every 24 frames that are processed.   The Frame Repeat option will simply repeat every fourth frame in the 24 frame sequence to create the necessary extra frames.

Interlace Aware or Frame Repeat Trend

This trend allows you to select Interlace Aware or Frame Repeat frame rate conversion methods over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

NTSC or PAL

These radio buttons allow you to select the output frame rate that you are using.   Selecting NTSC will provide you with 30 frames for every 24 that are processed.   The PAL option will provide you with only 25 for every 24 that are processed.   The most common usage of this control is NTSC.

NTSC or PAL Trend

This trend allows you to switch between NTSC or PAL frame rate conversions. Trends are defined and explained below in the detailed documentation.

Grain Width

This control allows you to specify the maximum width of a grain region.   The width is measured in pixels and can range from 1 to 10 pixels.   The width is set using the slide gadget or by entering the appropriate value in the text entry field.

Grain Width Trend

This trend allows you to alter the grain width over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Grain Height

This control allows you to specify the maximum height of a grain region.   The height is measured in pixels and can range from 1 to 10 pixels.   The height is set using the slide gadget or by entering the appropriate value in the text entry field.

Grain Height Trend

This trend allows you to alter the grain height over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Intensity

The Intensity control allows you to specify the degree of the Film Grain effect in the selected region.   The Intensity is a percentage value that ranges from 1% to 100%.   A setting of 100% would result in the maximum amount of Film Grain in the selected region.   A setting of 1% will result in the minimum amount of Film Grain in the selected region.   This control is set by using the slide gadget or by entering the desired value in the provided text entry field.

Intensity Trend

This trend allows you to alter the grain intensity over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Seed

The Seed setting allows you to alter the random number variable for the Film Grain operation.   Altering this value will result in an alternate grain pattern for each seed value.   The Seed parameter ranges from 0 to 9999, but it can set to higher values for timelines.

Seed Trend

This trend allows you to alter the grain random seed value over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Aspect

This control alters the Aspect of the image to the values which you define.   You also have the option of selecting one of the preset aspect ratio settings of Square, NTSC, or PAL.   It is important to remember to save in an image format which records this information.

DPI

These two settings alter the actual DPI settings of the image.   Altering these values does not change the size of the image displayed in the program, but instead alters the size that the image will be printed at. For example, if you have a 400 by 200 image at 100x100 DPI, the result image would be printed at a size of 4x2 inches.   If you altered the DPI for the above image to 200x200, the image would be printed at a size of 2x1 inches.   The physical size of the image based on this setting is reported in this dialog in both inches and millimeters. It is important to remember to save in an image format which records this information.

Author

This text entry field allows you to alter the Author Name for the currently specified image view.   An image is selected for modification by selecting the image from the View drop down list.   This list will contain all of the image views that are currently open in the program.   Once a view is selected, the author field will display any name that is associated with the image.   If the image does not contain any author name, this field will appear blank.   You can alter the author name by clicking in this field and entering the appropriate information.   This information will be stored with the image if you save the image in IFF, TIFF, Targa, or Trim.   If you specify any other file format, this information will be lost.

Annotation

This text entry field allows you to alter the annotation for the currently specified image view.   An image is selected for modification by selecting the image from the View drop down list.   This list will contain all of the image views that are currently open in the program.   Once a view is selected, the annotation field will display any annotation that is associated with the image.   If the image does not contain any annotation, this field will appear blank.   You can alter the annotation by clicking in this field and entering the appropriate information.   This information will be stored with the image if you save the image in IFF, TIFF, Targa, or Trim.   If you specify any other file format, this information will be lost.

Copyright

This text entry field allows you to view and alter the copyright information for a particular image view.   An image is selected for modification by selecting the image from the View drop down list.   This list will contain all of the image views that are currently open in the program.   Once a view is selected, the copyright field will display any copyright information that is associated with the image.   If the image does not contain any copyright information, this field will appear blank.   You can alter the copyright information by clicking in this field and entering the appropriate information.   This information will become part of the image file when you save the image using either TIFF or IFF as the save type.

Source Images

Source images are mainly used for operations which combine two images.   F/x allows you to specify multiple files as the source image, or a video sequence as a stream of source images.   A single source image is represented by green outlined frame with no associated number.   This frame will also have an arrow associated with it which shows how long the single frame is to be used.   You can reposition the single frame on the same level of the time line by grabbing the outlined <u>key frame</u> box, or by grabbing the end of the arrow.   Once you have grabbed the box or arrow, you can resize the length by moving the mouse to the left or right.   After you have specified the desired length for the source image, release the left mouse button.   A sequence of video frames (FLI/FLC or FLM files) will appear as a green filmstrip with numbers representing the frame number under each frame.   This frame value is determined by the starting frame value and the increment value (these two values are described in greater detail in the <u>Specify Source and Action Image documentation</u>).   Remember, source frames will only be used if the operation requires a source.   The source images will remain valid until a new source image is specified.   This means that you can specify a sequence of source images in level one, and use them for a level three or level four operation.

Note: You can automatically load a source image in the timeline by Ctrl+Clicking on the desired Source Image icon.

Area Selections

The area selections define where the specified operation will occur in the image or image sequence.   The example time line above has a total of three area selections.   Each of these area selections has its own key frame represented by the area selection's icon.   The first area selection is a rectangle.   You should notice that the rectangle has an associated interpolation arrow to the next key frame.   This means that over the first five frames the rectangle will alter its shape to become the polygon.   The next area selection is a polygon.   Its arrow specified that there is to be no interpolation.   The final area selection is an IShape, and it is set to interpolate back to the original area selection (the rectangle).

Operations

The Operations line can contain any operation or operations that you would like to have occur on that level.   F/x has no limit on the number of levels of operations, but time lines with a large number of levels can take large amounts of time to generate.   We suggest that you use the Inhibit Display option in the Time Line menu for time lines with a large number of levels.   This option will prevent F/x   from rendering each image, and will speed up the process.   An operation can be specified using the two methods described in the previous topic.   The manipulation of operations are very similar to area selections.   The operation dialog can be accessed by double clicking on an operation icon, or by pressing the Enter key while the operation is highlighted.   This will bring up the operations dialog.   This can be used to set the parameters for the current operation.   This includes using pre-saved operation files, editing the operation's settings, or using the current operation settings.

Operations can also use interpolation to alter operation parameters over time.   You can only interpolate between two operations that are the same.   The example time line above does an interpolation between two Random Tile operation settings.   However, it would not be possible to interpolate between a Merge and a Random Tile.   The Operation dialog documentation explains this process in greater detail.

Action Images

Action Images are used for all F/x operations.   F/x allows you to specify multiple files as the action image, or a video sequence as a stream of action images.   A single action image is represented by gray outlined frame with no associated number.   This frame will also have an arrow associated with it which shows how long the single frame is to be used.   You can reposition the single frame on the same level of the time line by grabbing the outlined key frame box, or by grabbing the end of the arrow.   Once you have grabbed the box or arrow, you can resize the length by moving the mouse to the left or right.   After you have specified the desired length for the source image, release the left mouse button.   A sequence of video frames (FLI/FLC or FLM files) will appear as a gray filmstrip with numbers representing the frame number under each frame.   This frame value is determined by the starting frame value and the increment value.   Remember, an action image (or image sequence) can be specified on any level in the timeline.   This allows you to process multiple images with separate action images, and then use the result as a source or action image foe another operation level.   F/x will always save the last action image as the output image.

Note: You can automatically load an action image in the timeline by Ctrl+Clicking on the desired Action Image icon.

Load TimeLine

This control will present you with a file requester for loading previously saved time lines.   The time line file that is selected (a .TML file) will contain all of the operation ,area selection, and image information that was available when the file is saved.   A time line file contains all of the operation, area selection, and file information that has been place into the time line.   If you alter the time line, and would like to save the changes, select the Save Time Line option.

Save TimeLine

This control will save the current time line and all of its components.   This includes all operations, area selections, images, and related settings files.   This is not the same as saving a project.   Saving a project will only save the currently loaded image files into a project format.   Saving a project will have no effect on the time line, or any of its components.   The time line file will be saved with a .TML extension, and can be reloaded using the Load Time Line option.   Saving a time line allows you to use a time line multiple times without having to recreate the entire time line.

The .TML files can be edited using a standard <u>text editor</u>.   The TML file will contain all of the area selection, operation, and action/source image information.   You can edit these values, but illegal or ambiguous values can cause a sequence to not generate correctly.   If you would like more information on editing these files please contact technical support.

Generate Sequence

This control, when pressed, will start the generation of the time line using the specified operations, area selections, and image files.   The file will only be saved if the Save Results option in the Sequence Controls dialog is selected. The time line will be generated in the file format specified, and the results will also be displayed in the Filmstrip if it has been activated.   You can pause the time line generation by pressing the Pause button located at the end of the Status Bar.   The generation can be restarted by pressing the pause button again.   You can also cancel the time line generation by selecting the Stop button which is also located at the end of the Status Bar.

TimeLine Frame

The Frame value will display the currently highlighted frame number.   This frame number corresponds to the current frame value.   The current frame can be selected by moving the outline through the time line with the arrow keys, or by clicking on the desired frame with the left mouse button.   This will then alter the value that is displayed in the Frame area.

Time (MM:SS.)

The Time control displays the animation time for the current frame.   This display is directly related to the setting of the Frame Rate option in the Time Line pull down menu.   The Frame Rate dialog allows you to specify the playback speed or rate for the animation sequence you are generating (this only applies to AVI and FLI/FLC animation formats).   You can specify the frame rate in one of three methods: milliseconds per frame, frames per second, and jiffies.   Altering one of these values will automatically adjust the other two to the proper values.   Once the frame rate has been set, the Time control will display the current frame's time position in the sequence.   The time is displayed as follows: Minutes : Seconds . Milliseconds.   As you move from frame to frame the time value will change to reflect the new current frame's time position.

Level

The Level area displays the Time Line's current operation level.   This level relates to when an operation is carried out or performed.   The time line can have multiple levels with a wide range of operations, area selections, and image files for each level.   The levels start at the top of the time line display with one, and increase sequentially downward.   Each level is carried out in sequential order for each frame in the sequence.   For example, a three level, ten frame time line would be created as follows: Frame 1/Level 1, Frame 1/Level 2, Frame 1/Level 3 (The current action image is saved after this level), Frame2/Level 1, and so on until it reaches Frame 10/Level 3.   It is important to remember that higher numbered levels will be placed on top of any previous level's changes.   For example, you could cover a contrast adjustment mad in level one with a color fill in level two.

Time Object

The Time Object displays the currently active object in the time line.   An object can be defined as any area selection, operation, or image file.   This area of the time line will display the name of the area selection method, the operation, or image file name that is currently highlighted.   The highlight box is a simple white outline around the icon of the cell that was last clicked on.   If there is not an area selection, operation, or image icon in a cell, then area will say that it is a continuation of the last object.   In the dialog above a source image frame is the current object, and the Time Object display is showing the source image's file name.   If you were to move the current frame right one cell, the time object display would show that this frame should re-load a file.   If you were to double click on this cell, the Add to Time Line dialog would appear.   This allows you to add a new source or action image, operation or area selection to the current time line level.

Erase TimeLine

The Erase TimeLine control allows you to eject all of the objects that are currently in the timeline.   F/x will ask you if you would like to save the changes that you have made to the timeline. or if you would like to eliminate the changes.   You also have the option of canceling   the erase without any alteration to the existing timeline.   You can delete the currently highlighted object icon by pressing the Ctrl+Delete keystroke, or you can erase an entire level by pressing Ctrl+d.

Close TimeLine

The Close TimeLine button can be pressed to close the timeline window.   The contents of the timeline will remain intact until the timeline is re-opened and edited, or the program is closed.   We suggest the you leave the timeline closed if you are not generating a sequence of images.   This will reduce the number of open window in the main program window.

Sizing

The Sizing control allows you to alter the size of the individual timeline cells.   The default resolution of each cell is 36x32.   You can select to make each cell in the timeline a size between 24 and 64.   The dialog that appears when this option is selected has several preset resolutions to chose from, or you can specify your own setting.

Setup

This selection will bring up the Sequence Controls dialog. The Sequence Controls dialog allows you to specify the number of frames in an animation/filmstrip/time line and the output file type and path.   The top portion of the dialog deals with the length of the animation filmstrip and time line.   The length can be set by altering the Total Frames control.   The length must be at least two frames.   You also have control over which frames are the start and end frames, and which frame is the current frame.   The current frame is used for the Place Updates in Current Frame selection in the Filmstrip menu..

The bottom portion of the dialog allows you to Specify Output File name, extension, file type, and path.   The file type specified in this panel is completely independent of the setting in the Save File As Type: option in the Save Image As dialog.   The Save Result check box must be selected to save the frames as they are generated by the time line.

Spline Interpolation

This option allows you to select how area selections will be tweened by the program.   If this option is selected, the program will create a spline (curve) based path between the area selections.   If this option is not selected, a linear path will be used to interpolate between the area selections.   We suggest that you use Splined Interpolation for all area selection key frames in a level, but it is not required.

Color Set

The Color Set button will access the Color Selection dialog, and allow you to select a color for the extended area from the palette. This color will only be used if the Replicate option is not selected.   If you would like to view more information on the Color Selection dialog, Press Here.

Direction

These four buttons allow you to select the direction in which the pixel extension will be applied.   For example if you select the Bottom button (default), the operation will add the specified number of pixels to the bottom portion of the image.

Direction Trend

This trend allows you to alter the direction of the pixel extension over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Amount

This control allows you to set the total number of pixels that the image is to be extended in any one direction.   The control ranges from a setting of 1 to a setting of 9999 additional pixels.   It is important to remember that extending an image by a large number of pixels will greatly increase the amount of memory necessary for the image.

Amount Trend

This trend is used to increase or decrease the size of the extension (in pixels) over a sequence of frames. Trends are defined and explained below in the detailed documentation.

Replace

This option allows you to select if the extended image will replace the existing image in memory, or create a new image leaving the original un-altered.

Replace Trend

This trend allows you to turn the Replace parameter on or off over a sequence of animation frames.   Trends are defined and explained below in the detailed documentation.

Replicate

This control determines the nature of the extension.   If it is selected, the image will be extend with the colors of the pixels on the outside edge of the image in the specified direction.   If it is not selected, the pixel extension will be the color specified with the Set Color button.

Replicate Trend

This trend allows you to alter how the extension will appear over a sequence of frames.   If the trend is on, the extension will be the colors of the edge pixels of the specified direction.   If the trend is off, the extension will be the solid color defined by the Set Color.   Trends are defined and explained below in the detailed documentation.

Reverse

The Reverse option will invert the colors between the left and right position markers in the palette.   This can be used to flip the sequence of the entire palette or to reverse a range of colors in an existing palette.   The palette or range can be returned to its original status by pressing the Reverse button a second time, or by pressing the Undo button.

Full View Palette

This display of the palette shows the entire current palette in a linear format.   This gives you a better idea of how the actual palette will appear when it is applied as a fill.   Each color in the physical palette is represented by a corresponding color in the Full View display for palettes of 256 colors or less.

Load Range

This option allows you to load an already saved range of colors into the palette.   A range of colors is a group of colors that make up a palette, but need not be the entire palette.   These color ranges can be saved by selecting the range of colors with the left and right position markers, and then pressing the Save Range button.

Save Range

The Save Range button allows you to save the colors currently between the left and right color markers.   This range can then be loaded back into the palette by pressing the Load Range button, and selecting the desired color range file.

Basic Questions and Answers

This section tries to give you a brief overview to some of the problems that might be encountered while trying to install or run WinImages.   If you are having problems with any aspect of the program, please feel free to contact technical support at (406) 367-5509 from 9 to 5 MST.

Problem: After installation, all of the executable icons (Morph and F/x) are displayed as the standard MS DOS icons instead of the regular program icons.

Answer: WIN32S was not properly installed on your system.   Try re-installing the software, or contact technical support for further assistance.   In some cases you will only need to change the icon for the programs.   This can be accomplished by entering the Properties option of the File menu in the Program Manager.   The Properties dialog contains an option for altering the icon.   Select this option, and choose the appropriate icon.

Problem: When trying to re-install Win32s, it appears that the installation doesn't change anything.

Answer: The Win32s installation program believes that you already have Win32s installed on your system.   You will need to open and edit the **WIN32S.INI** file in you **C:\Windows\System** directory.   Change all instances of **Setup=1** to **Setup=0**.   After you have made these changes, save the file, and try to re-install Win32S on your system.

If the problem persists you may want to follow the steps above and the following:

1. Delete the W32SYS.DLL and WIN32S16.DLL from the **C:\Windows\System** directory.

2. Delete the Win32s VxD line from the [Enh386] section of the SYSTEM.INI file: **device=c:\windows\system\win32s\w32s.386**

3. Delete all files in the **C:\Windows\System\Win32s** subdirectory.

4. Finally, restart Windows, and try the Win32s setup again.

If the problem persists, please contact Black Belt Technical Services at (406) 367-5509.

Problem: The Area Selection Toolbox and other controls are off of the edge of the window, and I can not retrieve them.

Answer: In most cases F/x will automatically place the Area Toolbox and all other windows inside the program window.   If this does not occur (the toolbox or some other window is off the screen), simply close the program, and delete the **WINFX.INI** file located in your windows directory.   The next time that you run F/x, the tools should appear in their correct position.

Problem: After the program opens there is an Access Violation (Poiter.dll GROWSTUB) error message.

Answer: This can occur if you are using an older Microsoft mouse driver (version 9.0).   You should update your mouse driver to version 9.01 or later as soon as possible.

Problem: The image I specified for loading will not load.

Answer: The image you specified may not be one of the supported image file types (a complete list is available in the File Menu documentation).   If one of the supported image formats does not load, please contact technical support.   We will then ask you to send us the file so that we can expand the file loader to load the unrecognized image file.

There are several things that can severely effect the operation and speed of the program.   These can range from simple changes to your virtual memory partition to purchasing new hardware for your system.   It is important to

keep in mind that you can never have enough "horsepower" for graphics applications.   Here are a few suggestions that can improve the speed and suability of WinImages on your system:

• Buy more RAM or a faster CPU for your computer system.

This is the statement that customers like to hear the least, but increasing the amount of RAM or power of the CPU in your system can have amazing effects on the speed of WinImages and other applications.   More RAM allows you to load larger images, and more of them at the same time.   This can also increase speed by reducing the systems need for virtual memory which can eat up a good deal of time.   Upgrading your CPU will make the entire system run faster, and in most cases, more efficiently.   So, if you feel that your system could benefit from more RAM, use the Black Belt Systems Rule of Thumb: Use your thumb to peel $$$, and give these to your local memory vendor.   Make sure that you get memory in return.

• If you are using a Virtual Memory swap file, increase its size.

This is a simple way to effectively get more memory, though it is much slower than actual RAM SIMMs. This will give you a larger   chunk of virtual memory to work with, which will allow you to do more.   If your current swap file is not permanent, make it so - this allows Windows   to use the virtual memory in a more effective manner.

• Use 32-Bit disk access.

All of the file loaders and savers in WinImages use 32-bit disk access.   This can be activated through the Window's Control Panel in the Virtual Memory allocation dialog.   32-bit disk access is not available for all types of hard drive controllers, therefore, this option may not be available to all users.

• Conserve Memory

If you are low on memory, you may want to close other applications.   This will free up more memory for WinImages, and will reduce some of the strain on the CPU.   WinImages is fully capable of multitasking, but if your system is not well equipped, you may want to stick to running a single application at a time.   You can conserve memory inside the program by closing the filmstrip, and any un-necessary image views.   This will also free up valuable memory and system resources for WinImages.

Glossary of Terms

24 bit

Action Images

Alpha Channel

Aspect Ratio

Color Quantization

Color Reduction

Color Space

Continuous Tone

Distortion Morph (or Warp Morph)

Dither

Drag and Drop

End Frame (or End Image)

Error Diffusion Dither

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Gaussian Blur

High Compression

Interframe Compression

Intraframe Compression

Inverse Gaussian

Key Frame

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Motion Morph

NTSC

Ordered Dither

Pal

Palette

Pixel

Real Memory

Render

Resolution

Source Images

Start Frame (or Start Image)

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Virtual Memory

24 bit

A 24 bit image uses   24 bits (or three bytes) of information for each <u>pixel</u> in the image.   The number of bits per pixel is referred to as the image depth. A greater image depth allows greater color accuracy. For example, images that use 1 bit per pixel have two possible colors; 8 bits can handle 256 colors;   and   24 bit images can represent 16.8 million different colors.

Action Images

An Action Image is any image that an operation is to be applied to or the destination for a source image based combination of images.   The view or image that an operation is to be applied to is known as the action or target image.   An image is made the action image by clicking on its title bar.   Clicking in the image itself will start the current operation.   An action image is also the image that a composition operation will occur in.   These operations are: Merge, Add, Subtract, Perspective Placement, and Place.   The action image will remain the action image until a new image is selected as the action image.

Alpha Channel

In addition to the color information (Red, Green, and Blue) that is held for each <u>pixel</u> of an image, there can also be transparent information (**Alpha**).   This <u>transparency</u> data is used when re-combining the subject of an image with its surroundings.   So, it effectively depicts the subject's outline.   An Alpha channel can also be created based on its own luminance or even the luminance of another image.

Just as color information is stored in a range from 0 = Black to 255 = full, alpha transparency ranges from 0 = transparent to 255 = opaque.   With this range of   transparency, soft edges and even fading areas can be depicted.

Aspect Ratio

Aspect ratio describes the relative dimensions of an image: width compared to height.

Color Quantization

Color Quantization refers to the way colors are selected and defined by the program.   Morph uses a special process called **Spectral Color Selection** to quantize the colors in an image.   This process will look at all of the colors in the image, and then based on the display, select the best colors for image display.   These original image colors are quantized into a specific number of colors (256 for a 256 color display, 16 colors for a 16 color display, and so on). This applies for all areas of the program where a large number of colors are forced to a lesser number of colors through some selection process (rendering, display, and palette operations).   Color Quantization is directly related to Color Reduction.

Color Reduction

Color Reduction is the process of selecting a group of colors based on all of the colors in the image.   This includes the palette and dither methods that are to be used.   For example, if you were to render a 24 bit image as a 16 color image a color reduction, or color quantization, would occur to select the colors for the 16 color render.   Morph uses a special process called **Spectral Color Selection** to quantize the colors in an image.   This process will look at all of the colors in the image, and then based on the display or render method selected, Morph will select the best colors for rendering the image.

Color Space

The Color Space refers to a 3D color model that contains a subset of colors in which all colors of a particular <u>gamut</u> are visible.   A color space is also known as a color model.   The purpose of the color space is to allow the specification of certain colors within a particular gamut of color.   There are a number of color spaces used in a wide array of applications including graphics, desktop publishing, desktop video, and <u>NTSC</u> video.   Morph uses the following color spaces: **RGB** (red, green, blue), **CMY** (cyan, magenta, yellow), **CMYK** (cyan, magenta, yellow, black), **HSL** (hue, saturation, and luma), **HSV** (hue, saturation, value), and **YIQ** (luminance, chrominance).   Each of these color spaces have a physical 3D model which describes their color gamut.   It is important to remember that Morph uses "pure colors" instead of actual colors.   This is due to the fact that some colors do not exist in some of the other color spaces.   For example, the RGB color space contains colors which can not be represented by the YIQ color space model.   If you are converting from color space to color space, F/x will automatically select the color which is closest to the original color value.

Continuous Tone

A continuous tone image has a smooth transition of color and brightness between pixels.   For example, a photograph that was scanned would produce a continuous tone image, but a rendered 256 color BMP would not be.

Distortion Morph (or Warp Morph)

An original image which is shape changed without any fading to a second image.

Dither

Dither uses a limited number of colors arranged spacially to represent an actual <u>continuous tone</u> image.   It is also called digital halftoning.   In a way, dithering compromises spacial accuracy for color accuracy.   Human perception is able to 'reconstruct' the color that was originally intended over an area.   A dithered image is no longer continuous tone.

Drag and Drop

Drag and Drop is a means of loading files into a program directly from the File Manager. In WinImages:F/x image files can be dragged into the view windows.   Drag and Drop also allows you to grab operation and area selection icons, and place them into the Time Line.   This is done by clicking on the desired icon with the left mouse button, and then   dragging the icon into the proper frame in the time line.   Once the icon is in position, release the left mouse button.

To load an image using Drag and Drop:

(1) With the WinImages:F/x program opened, open the file manager

(2) Make sure that both the File Manager and a View window are visible

(3) Click down on the image file you want loaded

(4) With the mouse button still down move the pointer to the window in WinImages:F/x

(5) Release the mouse button over the window

When dragging files, the pointer will look like   if the   file can be dropped into the underlying window, and

if it cannot be dropped there.

You can Also load a group of files by first selecting the files, and then using the above steps load the files into WinImages:F/x.

End Frame (or End Image)

The source image in a morph that depicts the final position and possibly the final color of a morph.

Error Diffusion Dither

Error Diffusion <u>Dither</u> (or EDD) will dither the image based on the specific <u>pixel</u> colors, and the colors of neighboring pixels.   This will generally produce the highest quality dithering in the image, with the best possible colors being represented by the dither.   This is done at the expense of adding more "noise" to the image.   This means that in some cases the dither is easier to perceive.   This type of situation can by remedied by decreasing the dither amount, or by always working with 24bit files and output images.   Remember, the quality of the final result is directly related to the initial image quality.

Gamut

The Gamut of a display or <u>color space</u> refers to the actual color range that can be represented by the display device or color space model.   Most color spaces lie within the visible spectrum of colors.   A gamut lies within that visible spectrum defining a range of colors for a particular color space.   These gamuts do not necessarily display the same range of colors.   For example, the RGB gamut can display colors that the CMYK (printed material) or YIQ (<u>NTSC</u> video) gamuts can not.

Gaussian Blur

A Gaussian blur, in simple terms, is a defocus of all of the pixels in the selected area.   Each <u>pixel</u> is evaluated to determine its sharpness, and how that sharpness relates to the surrounding pixels.   Each pixel is then decreased in sharpness based on its original sharpness, and the pixel sharpness values surrounding it.   For example, if you were to look at a line of pixels, and their corresponding sharpness values it may look like this:
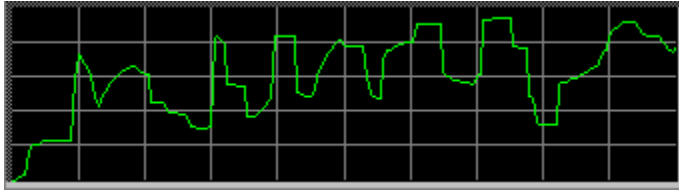
Where the x-axis is the pixels,   and the y-axis is the sharpness value.   As you can see there are several rough edges, and a great amount of sharpness variation from pixel to pixel.   After applying a gaussian blur to the area, the sharpness graph would look more like this:
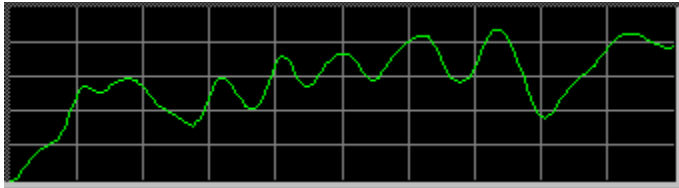
Notice that all of the sharpness values have been reduced and smoothed after the gaussian blur.   This is true for every pixel in the image.   As you can see the image would now appear to be out of focus, or slightly blurred.   This operation is the exact opposite of a <u>Inverse Gaussian</u> blur.

High Compression

Most image file formats compress the image during the saving process. Therefore, a 1 Mb image in memory may only require 0.6 Mb to save to disk.   There are many different methods of compression in use.   They vary in speed and in their ability to reduce the file size.

The amount of space saved by the compression is usually expressed as a percentage of the original size.   Typically, <u>lossless</u> image formats can save about 30 to 40 %.   A high compression format does better than this.   How much better depends on the nature of the image, but a colorful scanned photograph can typically be compressed (losslessly) by 50 to 60%   and ray traced images by 60 to 80%.

Image file formats that are not lossless, can achieve very high compression values typically about 95 to 98 %.

Interframe Compression

Interframe compression is the amount of compression between individual animation frames.   This type of compression can be augmented through the use of an <u>Ordered Dither</u>.   Ordered <u>dither</u> will increase the amount of possible interframe compression, while decreasing the overall size of the animation file.   You can set the compression level using tools like Microsoft Video for Windows' **VidEdit.**   VidEdit allows you to adjust the quantity and quality of the interframe compression used.

Intraframe Compression

Intraframe compression is the amount of compression in an individual animation frame.   This type of compression can be increased through the use of the <u>Dither</u> Amount control in the **Output** <u>Color Reduction</u> dialog.   Decreasing the dither amount will also decrease the actual animation frame's size.

Inverse Gaussian

An Inverse Gaussian, in simple terms, is a sharpening of all of the pixels in the selected area. Each pixel is evaluated to determine its sharpness, and how that sharpness relates to the surrounding pixels. Each pixel is then increased in sharpness based on its original sharpness, and the pixel sharpness values surrounding it. For example, if you were to look at a line of pixels, and their corresponding sharpness values it may look like this:
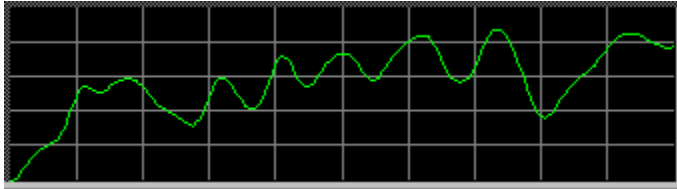
Where the x-axis is the pixels, and the y-axis is the sharpness value. As you can see there are many smooth edges, and not a great amount of sharpness variation from pixel to pixel. After applying an inverse gaussian effect to the area, the sharpness graph would look more like this:
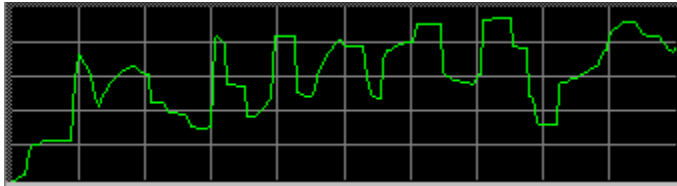
Notice that all of the sharpness values have been increased after the inverse gaussian procedure. This is true for every pixel in the image. As you can see the image would now appear to be sharper, or "more in focus". This operation is the exact opposite of a Gaussian Blur.

Key Frame

A Key Frame can be thought of as an "action" frame in an animation.   The key frame will contain some type of change that will occur in the animation.   This change could deal with the effect settings, the area selection method, or the frames being processed.   Setting up multiple key frames allows you to **tween** an area selection or an effect from key frame to key frame.   WinImages:F/x allows for as many key frames as you like, and a key frame is identified by either an area selection or operation icon in the time line dialog.

Lossless

The ability to save an image and load it again exactly as it was, is called 'lossless'.   Only 24-bit full color image formats can be lossless when saving full color images.

Image formats which render to fewer colors are lossy and therefore compromise image quality.   And, some full color image formats such as JFIF/JPEG are also lossy.   They are able to achieve very high compression by compromising some image quality.

Motion Morph

A Motion Morph applies a shape change to a sequence of original images which each show change or motion.   The Start and End frames are then, not just still images, but motion video.

Motion Morphs are also called animation morphs (although an animation can be created from still originals) and this use of motion video is sometimes referred to as rotoscope sequencing.

NTSC

NTSC (or National Television System Committee) video is the standard signal format used in North American television broadcasts.   This format combines the color, intensity, and synchronization information into a bandwidth of about 5MHz.   Due to the bandwidth limit, the picture quality is limited to a resolution of about 350 by 350, or about 640 by 400 pixels (no overscan).   This standard, despite its low resolution nature, is the standard for all videotape recording equipment, and video play back devices.   This standard may change in the future with the introduction of HDTV (High Definition Television), which has an effective resolution of 1000 by 1000.   NTSC uses the YIQ color space for color definition and display.

Ordered Dither

Ordered <u>Dither</u> will dither the image based on the current <u>pixel</u>, and that pixels location in the actual image.   This type of dithering will generally produce a lower quality image, but is necessary for animation that will be using any type of compression.   The ordered dither allows for a great deal of <u>interframe compression</u>, which is needed to compress animation files.   This type of dithering should only be used for the output of animation files.   If you want to produce higher quality output images (not animations), you should use the EDD dither method.   If you want to produce even higher quality <u>render</u>, you should use 24bit file or animation formats.   Remember, the quality of the final result is directly related to the quality of the initial image.

Pal

PAL (or Phase Alternate Line) is the video and television standard used throughout Europe and most of the world (North America uses <u>NTSC</u>).   The PAL format uses 625 scan lines at 50 Hz.   The effective <u>pixel</u> <u>resolution</u> of a PAL display is 640 by 512 pixels (no overscan).

Palette

A palette on the computer is a table of colors.   F/x automatically sets a display palette on computers with displays having 256 or less colors.   Some image formats that are NOT full color, use a color palette (8-bit BMPs for example).   When an image is displayed or saved using a palette, the image itself is changed to an array of numbers which index (or refer to) the color palette.

Pixel

An image pixel is one of the dots that it is composed of.   Similarly, a display screen shows an array of pixels that make up the image you see. In WinImages:F/x each pixel is held in memory as three values:

red

green

blue

Each having 256 possible levels. Combinations of these three values can represent any given color or brightness.

Real Memory

Even though the amount of memory your computer has is limited, morph is able to load images that exceed that amount by allowing Windows to move some of its memory to disk.

For some operations though, the data used to describe an image must be reloaded from disk back into the memory chips of your computer.   When the memory is actually in the memory chips it is called real memory.   The total amount of memory in the memory chips and swapped out to the disk is called <u>virtual memory</u>.

Render

To render generally means to create an image from some set of information.   In WinImages:F/x images that are displayable on your computer are rendered from the full color image in memory.

If your display can show 256 simultaneous colors, morph will render down from the full color (16.8 million color) image to 256 colors for display.   Also, when saving low color images such as 8-bit BMPs, morph will render to the low color format.

Resolution

Resolution refers to the size of an image in pixels.   The standard VGA display has a resolution of 640 (width) by 480 (height) pixels.   F/x does not restrict image size, however larger image sizes will require more memory.

Source Images

A Source Image is any image, including clips of images, that has been specified as the source image in the operation dialog.   Each operation requiring a source image will have a **Source Image drop down box**.   You can specify multiple source images by using the Time Line's source image controls in the Operations dialog, or by double clicking on the level where you want to specify a sequence of source images.   The source image is primarily used for merging, adding, and subtracting.   It can also be used in the creation of Alpha Channels.   The currently selected source image will remain the source until a new source is specified.   You can also use the <u>Transparency</u> **Controls** along with the source image to create blended composition effects based on the transparency level and the amount of edge blending.

Start Frame (or Start Image)

The source image which shows the position and color at the start of a morph. Note, that with the use of non-standard transparency and velocity curves, the beginning result frame of a morph may not be the same as the start frame.

Text Editor

A text editor is a program that can change a text file simply and directly. Some system files such as AUTOEXEC.BAT (under the DOS operating system) can be changed with a text editor.   F/x also saves project and some other files as text.   They can be changed with a text editor.   Word processors or desk top publishing packages, on the other hand, put special codes into their files; so, they could not be used to alter system files or morph project files.

Transition Morph

The changing of an original image into the shape of another. When the color information of the final image is also faded in, there   is a complete transition from one image to another. The intermediate steps are called morph frames.

Transparency

Transparency is the amount of opaqueness of an image.   The transparency control allows you to specify how much the Source Image or effect will *show through* the Action Image.   The Transparency controls are located in the **Area Menu**.

See Also: <u>Setting the Transparency</u>

Virtual Memory

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