StereoScopic Professional Help

COLLABORATORS			
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Chapter 1

StereoScopic Professional Help

1.1 StereoScopic Professional Help

StereoScopic Professional

User's Guide

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:;K'ALY*Vkxl:;K'ALY*Vkxl:;K'ALY*Vkxl:;K'ALY*Vkxl:;K'ALY*Vkxl:;K'ALY*Vkxl:;K'ALY
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X=8F:mNMENV;X=8F:mENV;X=*'8FENV;X=OY*'ENV;X=O]-YENV;X=O;K]-NV;;WO;Kgf]-NV;;WO;K
.D.u/kMQ*mQr.D.u/kMmQr.D.[Zu/mQr.D.E<[/mQr.DcJ.E/mQr.DjTcJ.mQrD^jTcEmJ.mQrD^jTc
AKNNTCP^U'pQAKNNTCP^U'AKNLGNTCP^AKNj+LTCPIp^AKNjTCPIp_i^AKNCPIFfi^A<rKNCPIFfi^A
FXbJ>CmxHzGSFXbJ>CmxHzFXb1<J>CmxFXbZc1>CmdNxFXbZ>CmdNxU3FXbCmd:YU3F6&XbCmd:YU3F
*bGh,IpwDEKG*bGh,IDEKG*bGxkhDEKG*bGCTxDEK;$G*bGCDEKD$G*_MbGEKD$G*_M+<bGEKD$G*_M
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QITi6IZCWPZBQITi6IZCWPZBQITi6IZCWPZBQITi6IZCWPZBQITi6IZCWPZBQITi6IZCWPZBQITi6IZ
C@PlXVS'fLZFC@PlXVS'fLZFC@PlXVS'fLZFC@PlXVS'fLZFC@PlXVS'fLZFC@PlXVS'fLZFC@PlXVS
ZeL=ADV_HTHDZeL=ADV_HTHDZeL=ADV_HTHDZeL=ADV_HTHDZeL=ADV_HTHDZeL=ADV_HTHDZeL=ADV_HTHDZeL=ADV

Version 6.1c
By: Timothy Eckel
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(419) 666-1701

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1.3 SSPro - 1.1 Overview of StereoScopic Professional

StereoScopic Professional, called SSPro, is a simple to use package that allows you to create professional quality 3D stereograms. What is a stereogram? A stereogram is a two dimensional image that has been encoded with a three dimensional picture. Other terms for these type of image is SIRDS (Single Image Random Dot Stereograms), SIS (Single Image Stereograms), CFS (Color Field Stereograms). SIRDS uses only random dots for their background brush patterns, while SIS or CFS can use any background brush pattern image including pictures. The SSPro program allows you to use any type of pattern background, CFS, SIS, or SIRDS. I call these images stereograms, after the antique type Viewmasters.

The method your mind uses to decode the "hidden" stereogram is called Wall-Eyed or Cross-Eyed. Wall-Eyed, the more popular viewing method, is when you focus beyond the surface to see the 3D image. The Cross-Eyed viewing method implies that you "cross" your eyes to view the 3D image. SSPro defaults to the more common method of Wall-Eyed viewing, however, those who cannot see stereograms with this method can render using the Cross-Eyed method instead.

1.4 SSPro - 1.2 How to View Stereograms

Being able to view stereograms is difficult at first, easier as time goes by. It's best to practice in a quiet environment, with few distractions. Don't get discouraged if you cannot see the "hidden" images, it took me a few hours to see my first stereogram. Don't be afraid of giving yourself a break and coming back to it latter.

Notice the repeating pattern in the stereograms. What you want to do is

allow one eye to look at one position, while the other eye looks at the same position in the next pattern. Don't let this get you too confused. While this is what is happening to your eyes, you need to trick your mind into doing it. If you have ever looked down at your keyboard late one night and the keys were all mixed up and you had to shake your head so that you could focus on the keys, you have already made your eyes do this! Other people have had similar experiences while looking at tile, a fence, or even wallpaper.

There are a few ways of viewing your first stereogram. One way is to just stare at the image for a long time and let your mind (and eyes) relax and drift apart. Another way is trying to look at your reflection in the monitor. The final way is to start with your nose on the monitor and slowly, I mean slowly move away from it.

If, during one of these methods, you think you see something, STOP! Try to relax your eyes and let your mind bring the image into focus. The first time you see one it will probably be out of focus and you will loose the "hidden" image quickly. Don't worry, you've seen your first stereogram and your excitement will keep you motivated to see it again. Remember, after some practice, you'll be able to instantly see a stereogram and it will be razor sharp! You'll be able to look all over the image, seeing the fine details, and make fun of the people who cannot see them!

There are some people, however, who don't have the patience to be able to view a stereogram. I know one of these people, and he gave me the following quote:

> "SIRDS - Random series of dots that some people claim to see an image of a motorcycle in. These same people see Jesus in trees and UFOS in the night skies."

1.5 SSPro - 1.3 Features of SSPro

StereoScopic Professional is a completely different program than it was just a few months ago. A lot of work has been spent in the past few years allowing this product to become what it is today. Following is a summary of its major features:

- 2x faster than version 6.0
- 2.3x faster than version 5.0
- 3x faster than version 4.1
- 16x faster than version 4.0
- 24x faster than version 3.5
- 32x faster than version 3.0
- 122x faster than version 2.4
- 216x faster than version 1.5
- 3-100 times faster than other similar programs
- No "ghosting" in stereograms like other similar programs
- Renders dithered images without ANY streaking, unlike other programs
- 68000 and 68020/030/040/060 versions
- Create images up to 9000x32000 in size even with a 512K Amiga 500
- Automatically uses virtual memory if not enough RAM is available
- Custom define 10 different preset output resolutions

- Create 24-bit stereograms even without a graphics card
- Create 256 color stereograms even without AGA
- 168 different rendering techniques, unlike 1-4 in other programs
- Left-Right, Right-Left, Symmetrical, and Smart rendering directions
- Ability to scale brush height 3 different ways
- Can create 2-16 color SIRDS images, unlike only 2 in other programs
- SMOOTH scrolling of large images, even while rendering
- Uses 8 or 24-bit images for ultra smooth stereograms, 256 levels
- Quick render option renders in only a few seconds
- Granular mode renders up to twice as fast with slight resolution loss
- Simple to use and well organized interface
- Also has complete menu and command-line interfaces
- Runs on AGA and NON-AGA machines running 2.04, 2.1, 3.0, & 3.1
- 2.1/3.1 look-and-feel
- Smoothing mode using Burkes dithering to remove depth stair-steps
- Darkness slider to control amount of black in SIRDS
- Cross-Eyed switch for inverted viewers
- Show-Eyes switch for easier viewing
- Beep Cancel switch to disable system beep after rendering
- Ability to adjust random seed for SIRDS animations
- Batch processing of stereograms
- Can save multiple configuration files, and re-open at any time
- Automatic PAL/NTSC resolution switching
- Automatic color sorting
- Automatic scaling of background brush size
- Can view, print, or delete stereograms within program
- Loads and saves images MUCH faster than other similar programs
- Includes MANY sample brush patterns and depth images
- Includes sample Imagine project with 4 different sample objects
- Written in the USA
- Free on-line and voice support

1.6 SSPro - 1.4 What's need to run SSPro

To run SSPro, you need the following:

- Workbench 2.04 or higher

- Deluxe Paint, Imagine, Lightwave 3D or similar product(s)

Recommended:

- Imagine, Lightwave 3D, or another 3D rendering package

- Art Department Professional or ImageFX

- Hard Drive

1.7 SSPro - 1.5 What's Disabled in the Demo Version?

Since the registered version of SSPro is NOT in the public domain, the demo version has a few restrictions. First, you can only render an image at 320x200 (320x256 PAL) resolution with the "Quick Render" gadget. "Render" and "Select" gadgets have been disabled. Secondly, it will NOT save the stereogram once it is rendered. Finally, the demo version is a 68000 compiled version, the registered version also includes a 68020+ version. Obviously, this demo version will give you a feel to how SSPro works and how fast it is.

1.8 SSPro - 1.6 How can I get the Full-Working Version of SSPro?

To get the full-working latest version of SSPro, which includes 68000 and 68020+ versions, a disk full of background brush patterns, depth images, and sample Imagine Projects. Send $20-US, $30-US for overseas (cashier check) to the following address:

Timothy Eckel
1243 Grassy Court
Rossford, OH 43460
U.S.A.

(419) 666-1701

Internet: TECKEL@kronos.com

If you are already a registered user of SSPro, the upgrade price is $5-US.

1.9 SSPro - 2.1 Included in this Package

Included in the SSProDemo archive are the following files:

- SSProDemo — Demo version for all Amigas
- SSPro.Guide — AmigaGuide document
- SSPro.History — Version history
- iff.library — Fast load/save functions
- SSProFont.font — Nice looking font (goodby Topaz)
- CatTails — IFF brush of cattails (Used for background)
- Grain — Another brush (Used for background)
- Dragonfly.8 — Depth image of dragonfly (256 grey scale)
- Dragonfly.ssp — Stereogram of dragonfly hiding in cat tails

Included on the SSPro_Install disk are the following files:

- SSPro020 — Version for 68020/030/040/060 machines
- SSPro — Version for 68000/010 machines
- SSPro.Guide — AmigaGuide document

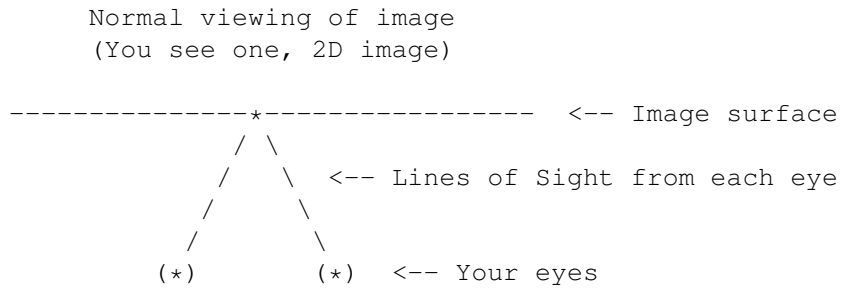
```
     o Install-SSPro             Installation file

     o iff.library               Fast load/save functions
     o SSProFont.font            Nice looking font (goodby Topaz)

     o SSPro/Images/Patterns/    Bunches of brush patterns
     o SSPro/Images/Sources/     Lots of depth images
     o SSPro/Imagine/            4 Imagine projects
```

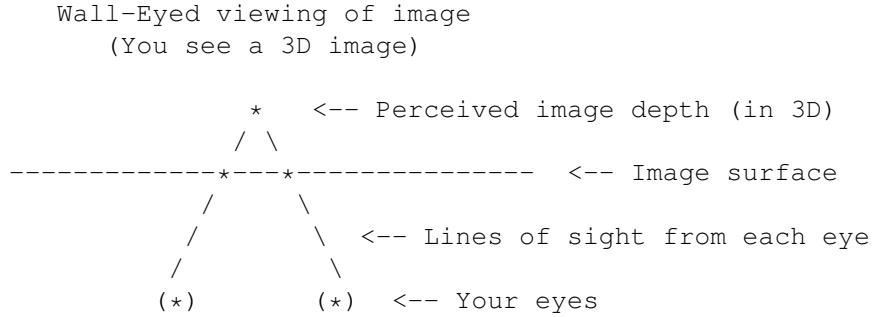
1.10 SSPro - 2.2 Installation of SSPro

```
Installing SSProDemo:

     1) Copy SSProDemo/libs/iff.library to your libs: directory

     2) Copy SSProDemo/fonts/#? to your fonts: directory

     3) Copy the SSProDemo directory to wherever you want it.


Installing the registered version on a hard drive:

     1) Boot your computer the way you normally would

     2) Insert the SSPro_Install disk

     3) Open the SSPro_Install disk icon

     4) Double-Click on the Install-SSPro icon

     5) Follow the Installer instructions


Running the registered version from floppy:

     You can run SSPro from floppies, but obviously, the system will be
limited.  Just boot as you normally would, copy the file Utils/iff.library to
your libs: directory, open the SSPro_Install disk and run directly from it.
It's that simple.  Note that the sample depth images and brush patterns are
compressed, and you will need to decompress them if you wish to use them.


Testing the System:

     To make sure that everything is installed correctly, try double-clicking
on the SSPro icon!  If the SSPro window comes up, with no errors, then all
files were installed correctly.  If it does not come up, or there are any
errors, check to see if the iff.library is located in your LIBS: directory, and
try running SSPro again.
```

1.11 SSPro - 3.1 How Stereograms Work

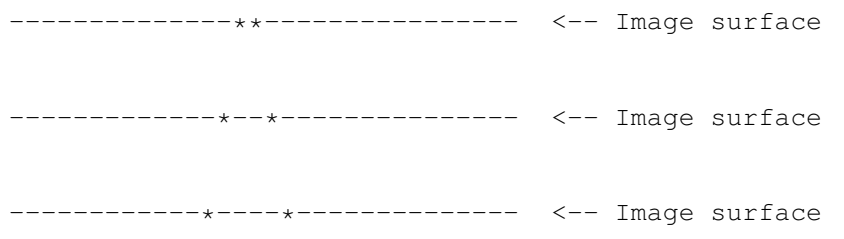
Look closely at a stereogram. Don't look at it Wall-Eyed, just look at the monitor surface. If you notice, there is a repeating pattern horizontally. What happens, is when you focus beyond the screen (Wall-Eyed), your left eye is looking at one image, and the right eye is looking at the image on the right. Your mind takes those two different images and creates a 3D image. The following examples explain this further.





Because your left eye sees one "*" and the right eye sees the other "*", the two combine in your mind and you think that you are looking at an "*" that is deeper than the surface of the image and in 3D.

By adjusting the distance between the repeating pattern, your mind interprets it as varying depths. So:



1.12 SSPro - 3.2 How SSPro Generates Stereograms

First, start off with a repeating brush pattern for your background, this

defines the maximum depth of your image:

```
 1   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 2   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 3   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 4   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 5   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 6   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 7   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 8   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
```

You should be able to look at the previous block of characters Wall-Eyed and see that it looks deeper than the surface. Notice that the edges are blurry. All stereograms are blurry on the edges, this is because when you get way to one side, only one eye can see the brush pattern, and you loose the 3D effect. In the previous block, notice that the repeat brush pattern is "ASDFGHJKL" or 9 characters. By removing all the "H" from rows 2-7 in repeat columns 2-7, then filling in the same repeat on the right, you get the following:

```
     |   1    |   2    |   3    |   4    |   5    |   6    |   7    |   8

 1   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 2   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 3   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 4   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 5   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 6   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 7   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 8   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
```

Notice how it stands out in the middle? Now I'll add another level to the image. Notice that when the image moves back down, the repeat pattern gets messed up and other characters are introduced:

```
     |   1    |   2    |   3    |   4    |   5    |   6    |   7    |   8

 1   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
 2   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 3   ASDFGHJKLASDFGJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFXJKLASYDFXJKLASY
 4   ASDFGHJKLASDFGJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFXJKLASYDFXJKLASY
 5   ASDFGHJKLASDFGJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFXJKLASYDFXJKLASY
 6   ASDFGHJKLASDFGJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFJKLASDFXJKLASYDFXJKLASY
 7   ASDFGHJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGJKLASDFGHJKLASDFGH
 8   ASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKLASDFGHJKL
```

Notice that the last repeat brush pattern on rows 3-6, column 8 are now "DFXJKLASY", not "ASDFGHJKL". This is the same reason that graphic stereograms sometimes seem smeared to one side, the other, or both.

1.13 SSPro - 4.1 Using the Interface

The interface is really quite simple, and you should have no problem if you are familiar with other Amiga interfaces. All functions can either be selected via window gadgets, pull-down menus or the CLI.

Window Gadgets	Pull-Down Menus	CLI Interface
	Project	
	Project	
	Interface	
	Options	
	Options	
	Techniques	
	Render	
	Switches	
	Image	
	Render	
	Image	

1.14 SSPro - 4.1.1 Using the Interface - Project

(Open) Brush Pattern
This is where you select the brush image that will be used as the background pattern for your stereogram.

(Open) Depth Image
This allows you to select an image that will be used as the 3D source for your stereogram. This image is typically a grey-scale.

Save Image As
Use this to decide where to save the created stereogram. When rendering is complete, SSPro will automatically save the stereogram as the filename selected here.

1.15 SSPro - 4.1.2 Using the Interface - Options

Output (Resolution)
Allows you to set the output image size. You can type in any resolution up to and including 9000x32000, or select one of the default or custom

resolutions from the menu.

Define (only on the menu)
To change the custom resolutions, select Define from the Output Resolution menu. You will be prompted with a listing of the current custom resolutions defined. Just change any settings desired and close the window. The menu will now reflect these changes. Remember, to save these changes, you must select Save Default Config from the Project menu!

Auto Adjustment / Eye Width / % Depth (Eye Width & % Depth are only gadgets)
Eye Width and % Depth allow you to set the background depth and depth image depth in 3D space. For starters, it is easier to just click on the "Normal" gadget and SSPro will pick a screen viewable width and depth for you. If you are going to print the created stereogram, click on the "300dpi" gadget and SSPro will pick a viewable width and depth for you. For more information on Eye Width and % Depth, refer to the section

Width & % Depth
.

Darkness (only a windows gadget)
Determines the amount of black in a SIRDS render. A Darkness value of 0 would give a mostly black SIRDS, while 50 would render very little black. Setting Darkness to 25, the default, results in an even division of all colors in the SIRDS. Note that this is only active if you are rendering with a SIRDS technique.

Seed (only a windows gadget)
Allows you to set the random seed, 0=random, anything else will fix on that seed.

1.16 SSPro - 4.1.3 Using the Interface - Techniques

In SSPro, the Techniques are broken-up into several different options. This is done to give you as MANY different rendering combinations as possible. Because many different effects are desired, and tastes vary from person to person, over 100 Techniques are possible. Following is an explanation the these Techniques.

Render Method
(1) SIRDS (default) -Single Image Random Dot Stereograms. Automatically generates the random dot pattern for you.
(2) Brush Pattern - System loads the brush specified in the Brush Pattern field.

SIRDS Colors (only available in SIRDS Render Method)
(1) 2 Color (default)
(2) 4 Color
(3) 8 Color
(4) 16 Color

Linear Direction

(1) Left-Right - Renders from the left side of the image to the right.
(2) Right-Left - Renders from the right side of the image to the left.
(3) Symmetric (default) - Renders from the middle out, this reduces tearing.
(4) Smart Direction - Automatically picks best direction for each line.

Render Technique
(1) Random Color - Best used for true random dot brush patterns. With this, you could create your own random dot brush pattern with your own palette. If using a Brush Pattern, a lot of graininess is added to the image.
(2) Nearby Color - Best used for Brush Patterns that have different colors in each row. It will pick a random color from the current row, therefore, it will not introduce additional colors. This Technique will not be as grainy as the Random Color is.
(3) Smart Block - Best used for Brush Patterns. It looks at the depth changes and besides the best color block to capture. This Technique will not be grainy as in Random or Nearby Color.
(4) Last Block - Best used for Brush Patterns. This is very similar to Smart Block, except that it always uses the last block. Sometimes, this Technique looks slightly better than Smart Block, other times it looks worse. It all depends on the image being rendered and the Brush Pattern.
(5) Dithered Block (default) - Best used for Brush Patterns. This is very similar to Smart Block, except that it doesn't allow a quick transition from close to far away pixels. This makes it a very good general purpose Technique. However, sometimes it gives a mechanical look, if it does, use Smart Block or Last Block.
(6) Smeared Block - Best used for Brush Patterns. With this technique, it takes the last color and simply smears it. This is a very popular stereogram technique. However, it does not give results as good as Smart, Last, or Dithered Block. It is best used for Depth Images that have gradual transitions, or if you use smaller % Depth values.

Brush Height Adjustment (only available with Render Method of Brush Pattern)
(1) Keep Height - Don't adjust the brush height.
(2) Stretch Height - Stretch the brush height to match the Output Resolution height.
(3) Keep Aspect (default) - Keep the brush aspect ratio 1:1 (width:height)

1.17 SSPro - 4.1.4 Using the Interface - Switches

Color Sort
Sorts 32, 16, 8, 4, or 2 color depth images in order of intensity. So, brightest is in front, while darkest is in the background.
Note: Does nothing if using an 8 or 24-bit Depth Image.

Cross-Eyed
Inverts the rendering so you can use the Cross-Eyed method of viewing instead of Wall-Eyed.
Note: Sometimes stereograms will not look correct with this mode.

Show-Eyes
Renders two "eyes" at the top of the image to help in viewing the stereogram.

Smoothing

Renders depth using the Burkes dithering method, thus smoothing the stair-step effects.
Note: Disabled if Cross-Eyed switch is selected.

Granular
Will only render every other row, which speeds up rendering by about 2 times. This looses quality, but is a great time saver for testing.
Note: Disabled if rendering in Virtual Memory Mode.

Beep Cancel
Will cancel the system beep that occurs after rendering is complete.

1.18 SSPro - 4.1.5 Using the Interface - Render

Quick Render
This allows you to quickly get a good idea on how your rendered image will look. It will render a 320x200 (320x256 PAL) image using your current settings. If the aspect ratio of the output resolution is not standard, it will use a resolution to match as close as possible. After quick rendering is done, click the left mouse button to continue.

Render
Use this to render just one image. This will render your current settings and save the image as the specified filename. During rendering, if you are not in Virtual Memory Mode, or rendering a non-viewable screen, you can click the "Display Image" gadget to view the stereogram as it is being created. Clicking on the stereogram will return you to the SSPro interface. Clicking the "Abort Rendering" gadget on the status window will also give obvious results.

Select
Use this when you wish to render multiple images. You can keep changing your options, filenames, etc. and each time, selecting "Select". When you are done selecting and you wish to render the images(s) selected, click on the "Render All" gadget. SSPro will render all images selected.

Render All
See "Select" above.

1.19 SSPro - 4.1.6 Using the Interface - Image

View (Image)
Use this to display any IFF image types except HAM or HAM8. While viewing you can move your mouse to scroll around the image or hit the left mouse button to cancel.
Note: 256 color images are converted to 16 colors with no dithering.
24-bit images are converted to 16 color gray scale images.
This is done to speed up viewing time. Images remain as 256 color and 24-bit.

```
Print (Image)
     This will print an IFF using the PrinterGfx Preferences settings.  In
     Preferences, setting the Dithering to Halftone, Aspect to Vertical, Type
     to Absolute, Width to 10.5, and Height to 8.0, will give you very nice
     results.  Note that at the present time, SSPro will not print a 256 color
     or 24-bit image.

Delete (Image)
     Obviously, this will delete an image.
```

1.20 SSPro - 4.1.7 Using the Interface - Project

```
                Open Brush Pattern...
                 Description
                Open Depth Image...
                 Description
                Save Image As...
                 Description
                ~~~~~~~~~~~~~~~
Open Config...
     Allows you to open a custom configuration file.

Save Config As...
     Allows you to save the current settings as a custom configuration file.

Save Default Config
     Save current settings as the default configuration.

~~~~~~~~~~~~~~~
About...
     View information on program version and how to reach the author.

~~~~~~~~~~~~~~~
Quit
     Obviously quits SSPro.
```

1.21 SSPro - 4.1.8 Using the Interface - Options

```
                Output Resolution
                 Description
                ~~~~~~~~~~~~~~~
Auto Adjust
                 Description
                ~~~~~~~~~~~~~~~

Render Method
                 Description
                SIRDS Colors
                 Description
```

```
                Linear Direction
                 Description
                Render Technique
                 Description
                Brush Height Adj.
                 Description
                ~~~~~~~~~~~~~~~
  Color Sort
                 Description
                  Cross-Eyed
                 Description
                  Show Eyes
                 Description
                  Smoothing
                 Description
                  Granular
                 Description
                  Beep Cancel
                 Description
```

1.22 SSPro - 4.1.9 Using the Interface - CLI Interface

This section talks about advanced options that you can use to run SSPro from a CLI window. You can run SSPro from the CLI by passing command line arguments. The format is as follows:

```
SSPro <Source> <Dest> [P=Pattern] [X=x][Y=x][W=x][D=x][K=x][A=x]
                                  [M=x][N=x][L=x][R=x][B=x]
                                  [C][O][E][S][G] [?]

     P=Pattern - Brush Pattern       (Default of: No Brush Pattern (SIRDS) )
     X=x       - Hor Output Size     (Default of: 736)
     Y=x       - Ver Output Size     (Default of: 480 (580 PAL) )
     W=x       - Eye Width           (Default of: 105)
     D=x       - % Depth  [5 to 99]  (Default of:  35)
     K=x       - Darkness [0 to 50]  (Default of:  25)
     A=x       - Seed  [0 to 32767]  (Default of:   0 [Random] )
     M=x       - Render Method       (Default of:   1 [SIRDS] )
     N=x       - No. SIRDS Colors    (Default of:   1 [2 Color] )
     L=x       - Linear Direction    (Default of:   3 [Symmetric] )
     R=x       - Render Technique    (Default of:   5 [Dithered Block] )
     B=x       - Brush Height Adjust (Default of:   3 [Keep Aspect] )
     C         - Turn Color Sort ON  (Default of: OFF)
     O         - Turn Cross-Eyed ON  (Default of: OFF)
     E         - Turn Show Eyes  ON  (Default of: OFF)
     S         - Smoothing Mode  ON  (Default of: OFF)
     G         - Granular Mode   ON  (Default of: OFF)
     H         - Beep Cancel     ON  (Default of: OFF)
     ?         - Help                (This screen)

SSPro <F=Config> (To open a custom config file)
```

```
Examples:

SSPro Eagle.8 Eagle.SS P=Colors R=3 X=640 Y=400 W=91 D=35 E S
     (Background brush: Colors, Smart Block, 640x400, Eye Width=91, Depth=35%
      Show Eyes, and Smoothing Mode)

SSPro Plane.8 Plane.SS
     (Assumes 2 color SIRDS, Symmetric Block 3, 736x480/580, Eye Width=105,
      Depth=35%)

SSPro F=Project1.cfg
     (Will open the configuration file "Project1.cfg" and leave you at the
      interface window)

Note:  The demo version does not include this functionality.
```

1.23 SSPro - 4.2 What does Eye Width and % Depth do?

Eye Width is the spacing of the repeat pattern that defines the maximum depth of the stereogram. % Depth is the depth of your Depth Image in 3D. Lets say that we have an Eye Width of 105 and a % Depth of 35 (Normal for 736x480). This means that the repeat in the background will be every 105 pixels. You could also say that there are 105 layers of depth between the screen's surface and the stereogram's background. The % Depth, on the other hand, defines how far from the background your Depth Image will come. So, it will come out 35% the depth of the background, or (105 x 35% = 37) 37 levels or layers from the background. You cannot have the Eye Width too large, or you will have to go wall-eyed to see it! You also cannot have it too small or you will see a double image. Also, the % Depth should be about 50% or less or the image will appear too close and will be hard to focus upon.

1.24 SSPro - 4.3 How to create professional quality smoothing

Even though SSPro has a Smoothing switch, many users are interested in even smoother stereograms. The Smoothing switch does a very good job. However, there is a way to get VERY professional results. The technique is called over-sampling. Over-sampling is accomplished by rendering the stereogram at twice the resolution and then reducing it by one half. Also, you should turn off the Smoothing switch, because it will have little effect.

An example of over-sampling is as follows: You want to render an image at 736x480. The Eye Width was set to 105 and % Depth was set to 35. Change the Output resolution to 1472x960 and the Eye Width to 210 and render. When the render is complete, load the image into a program like The Art Department Professional or ImageFX. Then, reduce the resolution back to 736x480. The more colors the better! So, if you have a 24-bit graphics board or AGA use it even though your source stereogram may have only been 8 or 16 colors. Even if you only have 16 colors to work with you should see an extremely smooth stereogram!

To summerize, double the Output resolution and Eye Width, render, and half the resolution with ADPro or ImageFX. You will be amazed how smooth it will really be!

1.25 SSPro - 5.1 Creating Background Brush Patterns

Creating a background brush pattern is just like the " ↩
ASDFGHJKL" in the

Generating
section. But, instead of using characters, you are using shapes and colors in Deluxe Paint or another painting package. Background brush patterns can be any resolution, and up to 24-bit. All you do is supply a brush from DPaint or any IFF program and SSPro takes care of tiling the background for you.

Many of the sample backgrounds were just created using DPaint. Just start using the airbrush with different colors, then change the drawing mode to things like "Cycle", "Smear", or "Smooth".

After you've mixed things up to your liking, you need to grab a brush to be used for your background brush pattern. Just grab a brush and save it! That's all there is to it! The brush that you grabbed will be tiled across the screen during rendering. SSPro also will adjust the size of your brush depending on the eye width that you are using.

You can even draw small pictures for your background brush pattern. But, if the depth image is very complex, or has a lot of dithering, the process to create the stereogram will tear, stretch, and distort your pictures just like how the "ASDFGHJKL" turned into a "DFXJKLASY" in the section
Generating
.
Making good background brush patterns takes a little practice, therefore, many are included for you.

1.26 SSPro - 5.2 Creating Depth Images

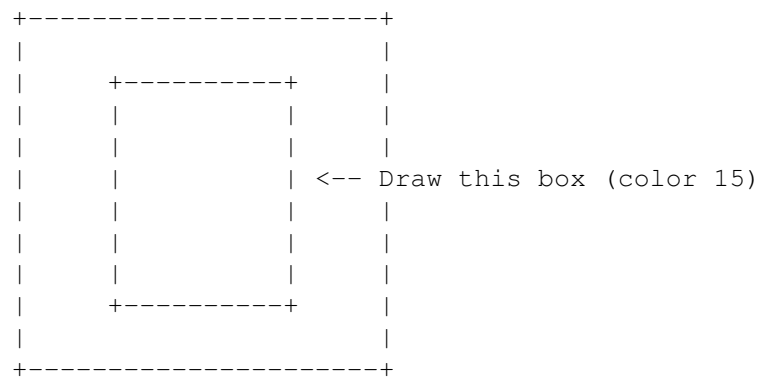
SSPro allows you to use any resolution for a depth image, with any number of colors from 2 to 16 million. The only limitation is the amount of memory that you have. 8-bit (256 color) and 24-bit (16 million color) images should be only grey scale. Therefore, there really is no difference between a 24-bit and a 8-bit image to SSPro. Using Art Department Professional to convert the image from 24 to 8-bit using the "Color_To_Gray" Operator saves a lot of disk space, and does not effect your image quality. Image depth is more important than resolution. So, if at all possible, use 8-bit depth images. Most of the time I use a 320x200x8bit image, except when I want the best quality, then I use 640x400x8bit or higher.

There are really two ways to create a depth image. First, you can use

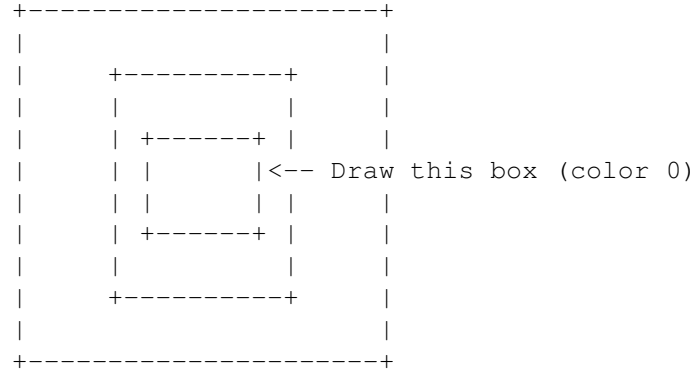
DPaint to just draw one. This is very simple and allows you to create stereograms right away. Secondly, you can use a 3D rendering program like Lightwave 3D, Imagine, etc. This requires you to be knowledgeable enough to create images in that package, but does allow you to take your stereograms to the next level. First, I'll be talking about how to create a depth image from DPaint.

1.27 SSPro - 5.3 Creating Depth Images Using Deluxe Paint

Open a 320x400x16 color screen in DPaint and bring up the palette requester. Notice the 16 colors, the first color is color 0 and the last color is color 15. Color 0 will appear to be the background, while color 15 will be the closest to the viewer. It makes no difference what actual color they are, only their position. So, lets create a test image. Pick color 15 and draw a filled box in the middle of the screen like in the following diagram:

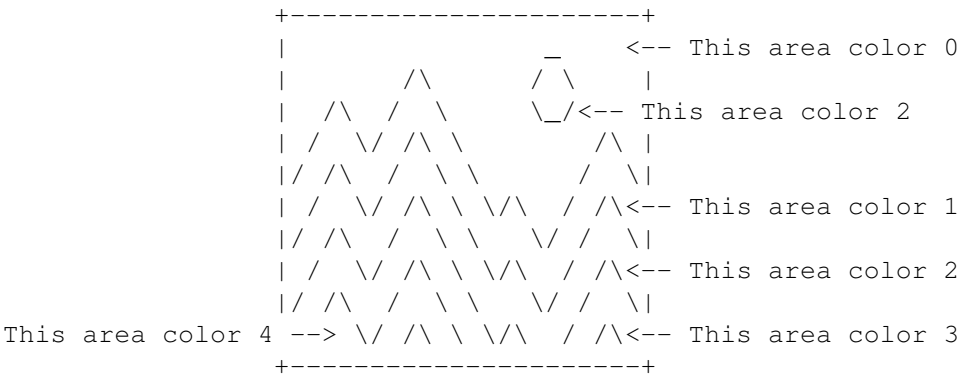


Always try to keep the focus of your image away from the very edges of the screen. For example, if the eye width was 100, you should keep your main drawing about 100 pixels from the left and right side of the screen. You can draw in this area, but just remember that you will not be able to focus on anything in it. Now lets add another box. Pick color 0 and draw another filled box like in the following diagram:

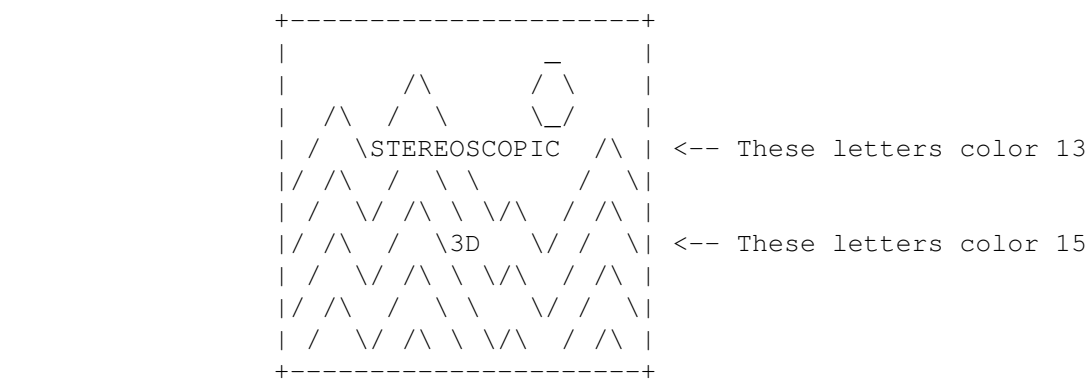


The image should look like a rectangle with a hole cut out of the center. When you render this image you will see a rectangle with a hold cut out of the center hovering out from the background.

Here is another sample image: (See: "Images/Sources/3D-Tutor")



This creates a nice mountains and sun background. You can then draw a logo or just type text in the foreground by using higher colors like 8 and up. Like in the following diagram:



This depth image will look like text floating out in front of a mountain background. Try making each letter in STEREOSCOPIC a different color. For example: S=8, T=9, E=10, R=11, E=12, O&S=13, C=12, O=11, P=10, I=9, C=8 so it looks like the words come out at you in the center. Try a company logo, try larger text. Note that when you use text it is sometimes better to use Smart Block, Last Block, Dithered Block, or a SIRDS technique. Otherwise, the image may start to smear too much and you may not be able to read the text.

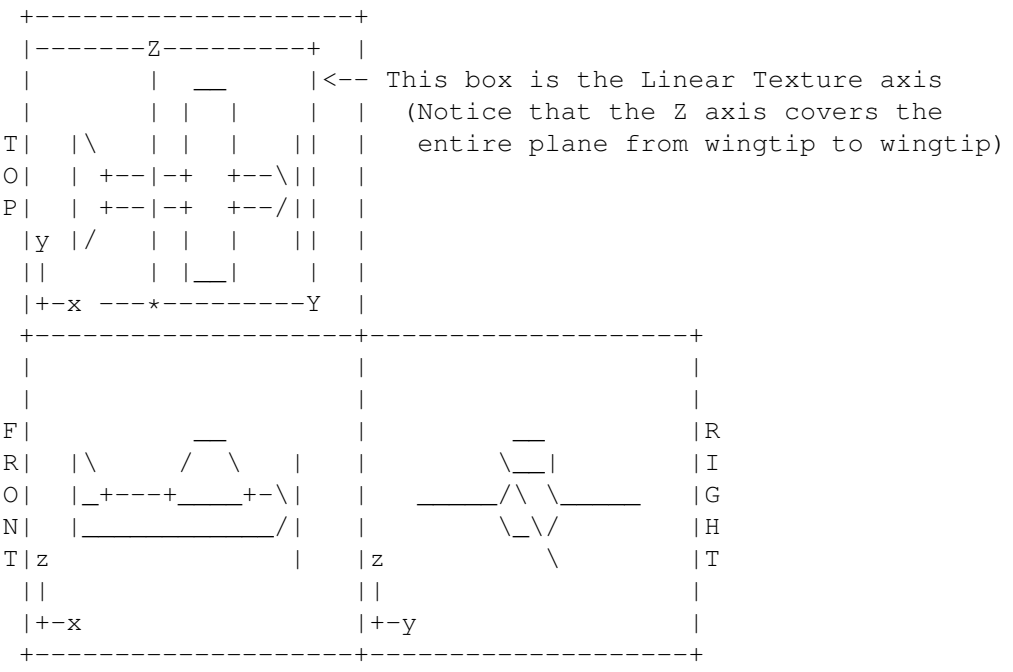
1.28 SSPro - 5.4 Creating Depth Images Using Imagine

The next way of creating a depth image is to do it in a 3D package. Since I know Imagine, I will be explaining it in Imagine terminology, but other 3D packages should work about the same. I've inclosed a sample Imagine project called "Imagine/StereoScopic.imp". Following, is an explanation of creating your own images using Imagine.

First, load in a 3D object. Then change the objects attributes to be a solid color of white with no reflection, filter, or specular highlighting. Also, make the object bright so that there is no shading. If you would render the object at this point (no lights are needed) you would see a white blob that was in the shape of the outline of the object.

Now that you have identified the shape, you now need to identify the

distance from the background. You do this by applying the Linear Texture to your object. The following diagram shows how you apply the Linear Texture:



You need to rotate the Texture axis until the Z axis points to the back of your object. Then scale and move it until it covers your object in the Z direction like in the diagram above. Then go to Transform Axis and look at the size of the Z axis. Key in Z axis value in the "Transition Z Width" requester. Change the color to Red=0, Green=0, Blue=0 (black). Now render the image using the ILBM-24bit option. Note that you do not need any lights.

Now, you should have an image that looks kind of like one of the sample images. However, if you rendered it as a 32 or 16 color image, not using the ILBM-24bit option, the colors will not be in the correct order! Why? Well, Imagine just does this. But, if you use the Sort Pic option in SSPro, the colors will be organized correctly. I would just always create a 24-Bit image because you don't need to worry about sorting, and the quality of the stereogram is MUCH better.

1.29 SSPro - 5.5 Creating Depth Images Using Lightwave 3D

This section discuses how to create depth images using NewTek's Lightwave 3D program. Since I do not own Lightwave 3D, this section was written by an SSPro user, David Banks.

The first step in creating a depth image in Lightwave 3D is to modify the color of your object(s). All polygons must be completely white. The easiest way of doing this to follow these steps:

1) Enter the MODELER
2) Load an object you want to render from the DISK menu
3) In the OPTIONS menu, select SURFACE
4) Type in "White" for your surface name and click CREATE

5) In the POLYGON menu, select SURFACE
6) Select "White" for the surface
7) Select SAVE AS and save your new white object with a different name

Now that you have created a completely white object, you need to position and render your scene. However, the trick is to turn off ALL lighting. This sounds self-defeating, but is really the effect we want. After we turn off all lighting, we apply Linear Fog to the scene. This automatically creates a gray-scale depth image. Following are detailed steps:

1) Turn off all ambient light (% = 0)
2) Turn remaining light into SPOT, and have intensity = 0%
3) Load object(s) and enter LAYOUT
4) Rotate and manipulate object(s) and camera to your liking
5) Select LIGHT, move and rotate light so it is completely out of scene
6) Exit LAYOUT and enter SURFACES
7) Select surface named "White"
8) Change color to 255,255,255 (white) and click on luminous
9) Exit SURFACES and enter BACKDROP
10) Make sure ZENITH is 0,0,0 (black)
11) Select ZENITH COLOR ONLY
12) Select LINEAR FOG
13) You'll have to play with the FOG MIN DISTANCE and FOG MAX DISTANCE until the FOG MIN is at the very front of the closest object, and the FOG MAX is a bit past the back of the farthest object
14) Render

Now, you should have an image that looks kind of like one of the sample images. Make sure you save the image as an 24-bit IFF. To save file space, you can convert the 24-bit IFF to an 8-bit gray-scale with Art Department Professional using the Color_To_Gray operator. This will NOT loose image quality, just save hard drive space.

1.30 SSPro - A.1 Copyright Information

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