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Chapter 1

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1.1 Cloanto - The Kara Collection - Starfields

Starfields

This collection includes three full-screen animations of stars "passing by", as they might be seen from a fast spaceship. One animation shows the stars coming directly towards the viewer. In the other, the center is slightly offset to the left. The third animation shows the stars from an imaginary "side window". All animations can be reversed to achieve the effect of stars moving in the opposite direction.

The animations are available in NTSC and in PAL screen formats, stored as IFF animations. Although the animations only use two colors (black and white), they also come in a 16-color version (where color 0 is black and color 8 is white) that is a bit slower to load, but is ready to host other items such as ColorFonts, AnimFonts and other animated space objects which are part of the Starfields collection.

Animation	Frames	NTSC Size	PAL Size	Colors
Front 16	100	704 \times 480	736 \times 580	2 or \leftarrow
Oblique 16	250	704 \times 480	736 \times 580	2 or \leftarrow
Side 16	350	704 \times 480	736 \times 580	2 or \leftarrow

The other objects included in the collection are: Asteroid (rotating rock-like object), Comet (with animated tail), Earth (revolving planet) and Satellite (with rotating antennas, transmitting dishes and solar panels). These are stored as IFF anim-brushes, and are available in NTSC and PAL formats (the PAL versions were generated automatically from the original NTSC versions). These objects are stored in 16 colors, but only colors from 9 to 15 are used, so that the entries from 0 to 8 are free to be used for ColorFonts or AnimFonts.

Anim-Brush	Frames	NTSC Size	PAL Size	Colors
Asteroid	60	75 \times 69	88 \times 92	16
Comet	30	211 \times 36	215 \times 36	16

Earth	120	123 \times 105	135 \times 132	16
Satellite	30	205 \times 185	214 \times 227	16

General Instructions

All starfield animations and space objects were carefully designed so that they can easily be used alone, in combination and even with one or two ColorFonts or AnimFonts. The space objects are stored as anim-brushes. The Kara Collection CD-ROM includes an upgrade version of Personal Paint supporting anim-brushes, which can be used to update a previous commercial version of the software.

For example, it is possible to use the moving stars as a background, and then add an object like Earth, and additionally write some text with an AnimFont. All of this can be done on the same screen and using only 16 colors. This is because the stars only use black and white, and black is shared with the other items as color 0 (the background color). The AnimFont, like all ColorFonts, also has black as color 0, and then uses colors 1 to 7 to render the font. Color 8 is used to render the white stars, and it is also shared with the space objects, which in addition use colors 9 to 15.

Some space objects consist of more frames than some or all of the starfield animations. In this case, it is possible to join several instances of the same starfield animation, so that there are enough frames to host the longer anim-brushes. This is done with the Append option of the Load Animation function of the animation software (e.g. Personal Paint, Deluxe Paint, Deluxe Video). When a starfield animation is used as a background video feed, it is usually not necessary to make it longer, as all animations are designed to be repeated, continuing without flickering from the first frame after the last frame. For simple black & white effects, the 2-color animations load faster and occupy less memory, compared to the 16-color versions. A number after the file name indicates the number of colors (as in "Stars_Front_2.anim" and "Stars_Front_16.anim").

Although the space objects come in certain frame-lengths, they can be made shorter or longer (for faster or slower motion) by skipping or repeating certain frames. This is usually best done through the anim-brush settings of the software being used to process the items.

In general, if titles which use ColorFonts or AnimFonts are to be added to an animation, it is recommended to pre-make the titles separately, and then add them as a brush or anim-brush. This makes editing and positioning easier.

All starfield animations can easily be flipped (by selecting "Project/Flip/Horizontal" in Personal Paint, or "Picture/Flip/Horiz" in Deluxe Paint). This could be useful, for example, to move the origin of the moving stars in the Oblique animation from the left side to the right of the screen.

Using Starfields with a Space Object and a ColorFont or AnimFont

In order to add two different items, it is important to follow the

appropriate order, or the wrong palettes will be used. First, the 16-color version of the desired starfield animation must be loaded. The stars only use two colors: 0 (black) and 8 (white). Then, the desired space object must be loaded as an anim-brush, and the object's palette must be applied to the image (in Personal Paint "Color/Palette/From Brush", in Deluxe Paint "Picture/Change Color/Use Brush Palette"). This resets the colors from 0 to 15, defining colors 8 to 15 for the space object. Color 0 remains black and color 8 remains white. Now a ColorFont or an AnimFont can be used. Applying the font palette changes the colors from 0 to 7, leaving colors 8 to 15 unchanged and confirming 0 as black (palettes where color 0 is not black will disturb the background). In Personal Paint, the Storyboard can be used to apply palette changes made to a single frame to the entire animation (or part of it).

Using Starfields with two Space Objects

All space objects use colors 8 to 15, of which color 8 is pure white for all objects (including the 16-color versions of the star animations). In order to use two objects, the palette colors 9 to 15 of one object must be remapped to colors 1 to 7. Color 0 must remain black for the common background. The "Palettes" drawer in the collection of Starfields already contains 8-color versions of the objects' palettes, which can be loaded without disturbing the remaining colors. These palettes have color 0 defined as black, and require an additional color to be defined as white (which is the case when another space object is using the colors 8 to 15). To use two space objects, first a 16-color starfield animation has to be loaded, and then the first space object can be loaded and used normally. After loading the second space object and its palette, the 8-color version of the first object's palette should be loaded ("Color/Palette/Load..." menu item, both in Personal Paint and in Deluxe Paint), followed by a Remap command. After getting the right colors for one frame, this palette can be distributed to all frames which have to host the space objects. In Personal Paint, this can be done with the Storyboard. Now the environment is ready to host the second object. The first object can also be used again, if its anim-brush is also remapped (with "Brush/Color/Remap" in Personal Paint, or "Brush/Change Color/Remap" in Deluxe Paint).

Using Starfields with two ColorFonts or AnimFonts

ColorFonts and AnimFonts use colors 0 to 7, with most fonts (one exception being Embossed) having color 0 as black. If two of these fonts are to be used on the same 16-color starfield animation, the colors of one font have to be remapped to colors 9 to 15. This is best done after the first font has been used, and before loading the second font. From the Palette requester (pressing <p> in most paint programs), the colors from 1 to 7 should be copied to the positions from 9 to 15 (color 8 should remain white). Now the second font can be loaded, together with its palette. This changes the colors from 0 to 7 (so that the animation looks "all wrong"), leaving colors 8 to 15 intact. In Personal Paint, the Storyboard can be used to apply the new palette to all frames where this is necessary. Before using the second font, the animation colors should be restored with the Remap command.

Adding Perspective

By accurately using the "Perspective" and "Move" options of programs such as Deluxe Paint, it is possible to make animated objects fly to or from infinity. In Personal Paint, similar features are made available through the ARexx interface. Programs like Deluxe Video, instead, do not support the depth-dimension, but they can easily import the animated results of processing done with other packages.

To make an object move along the same path as the stars, it is important to determine the point of origin of the stars. In the Front animations, this is the center of the screen (X:Y coordinates being 352:240 in NTSC, 368:290 in PAL). In the Oblique animations, this point is on the left of the screen (88:301 in NTSC, 103:356 in PAL). The Side animations have no origin or vanishing points other than the side edges.

In general, it should be noted that not all stars converge to exactly the same pixel, but rather to a small area consisting of several pixels around an ideal point. The exact path of each star can be determined by entering Perspective Mode (in Deluxe Paint) and re-centering the coordinates on the desired star (<.> shortcut on the numerical keypad). Subsequent "Z-moves" are relative to that point.

The slower an object "flies by", the more detail and motion become visible.

Example: Space Object Moving towards the Viewer

This example includes practical information and sample settings which can be used as a basis for further experiments and for more personalized use. The software used here is Deluxe Paint.

This example is based on the 16-color version of the Front starfield animation, which should be loaded first. Next, one of the four space objects should be loaded as an anim-brush, noting that specific instructions apply for each object:

Asteroid

This is a 60-frame anim-brush. At this number of frames, the asteroid makes a slow rotation. If you wish a faster rotation, select the "Anim Brush/Settings..." menu item and change the "Duration" value to 30. This causes the object to rotate twice as fast. To have it come from the origin/vanishing point, try setting the "Z" value in the Move requester to -6000. This size should be small enough for the object to come into view.

Comet

This anim-brush is 30 frames long, and needs special instructions because comets need to be orientated in relationship to their direction. Therefore, Perspective mode must be entered in order to rotate the comet. The default center should already be the center of the screen, which is appropriate since the Front starfield animation is used in this example. Press <0> on the numeric keypad to make sure that there are no previous settings already affecting the object. Once you decide the direction of

the comet, use the <1> and <2> keys on the numeric keypad to rotate the comet in the right direction. To have it come from the origin or vanishing point, try setting the "Z" value in the Move requester to -6000. This should be a small enough size for the comet to come into view.

Earth

It takes 120 frames for the earth to complete one revolution. Therefore, the 100-frame Front starfield animation must be loaded at least twice (using the Append option). To define a movement from the origin or vanishing point, a "Z" setting of -7500 is required for the earth to be small enough for the first frame. It is also recommended to make the earth move in for at least 200 frames in order to view the surface details as the earth flies by (the slower, the better).

Satellite

This 30-frame anim-brush has a lot of motion on it, so it is recommended to have it fly slower in order to be more effective. It should move for at least 100 frames (the more, the better). If you set the "Z" setting to -8000, the initial size should be acceptable, as this is a larger object.

Using the Go To requester, jump to frame 75 (or any other destination frame recommended for the motion of the specific object). Establish the position where the space object should be at this point in the animation (preferably towards the outer perimeter of the screen, but not off the edge). In the Move requester, set the "Distance... Z" setting as recommended for the particular object. Set "Count" to 75 (or a different value if a different starting frame was set) and "Direction/Move" to "Come To" (the arrow/point symbol - not the point/arrow symbol). Select "Draw" to render the animated object from the first frame to frame 75, where it will stop. To have the object continue along the same path, select "Go From" in the Move requester (the point/arrow symbol) and select "Draw" again. To abort rendering after the object goes beyond the edge of the screen, press the <Space> bar.

The opposite effect (object moving away from the viewer) can be achieved by having the object start its motion at the beginning of the animation, outside the screen (this type of positioning is best done by adjusting the brush handle position). In the Move requester, a positive "Z" value must be set, as well as the opposite Direction as the one indicated in the previous example, where the object was coming towards the viewer (and negative "Z" values were used).