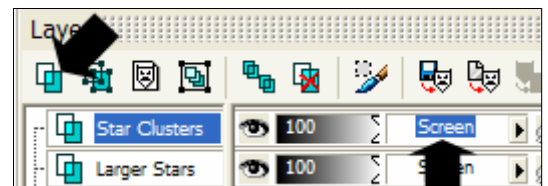
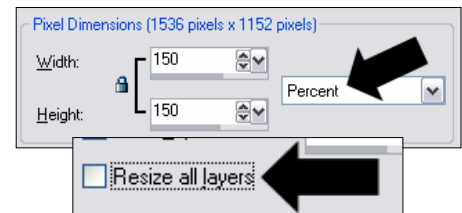
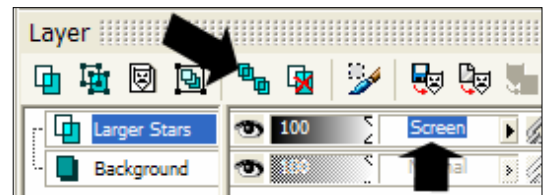
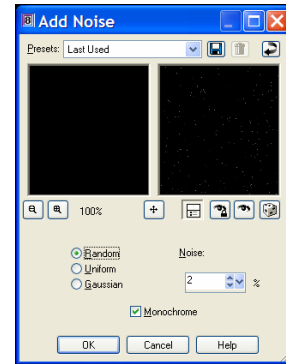



Out of This World Paint Shop Pro

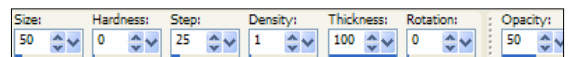
You can learn how to use Paint Shop Pro while learning how to create your own astronomical art. All of the techniques covered here can be modified and repurposed for creating other types of art. This handout covers all the main steps needed to create the images. You should be familiar with the basic layout of the Paint Shop Pro program tools and palettes in order to complete the projects below.

Section One: Creating the Background of Outer Space

1. Do FILE / NEW and create a new image with the desired width, height and resolution settings. Color depth should be set to “16 million colors (24 bit)” and the color of the new image set to black (R:0 G:0 B:0). Click “OK” to create the new image. This will be the base of the space image and will contain the first layer of stars.
2. Create the first stars by going to the menu bar do ADJUST / ADD-REMOVE NOISE / ADD NOISE. In the settings window, select “Random”, check the “Monochrome” box and enter “2” in the Noise percent box and then click “OK.” This will create a field of small dots that will serve as faint stars for the background.
3. Now create some larger stars for variety. Right-click on the “Background” layer and choose “Duplicate” to create a new layer that is a copy of your first stars. Name the layer “Larger Stars” and make sure that this layer is highlighted. Set the Blend Mode option of the layer to “Screen” to make the black color of the layer “invisible” which allows the stars on the background to show through. On the menu bar choose IMAGE / RESIZE. In the Pixel Dimensions section, choose “Percent” as the unit and then set the width and height to “150” percent and most importantly, make sure to uncheck the “Resize All Layers” box so that only this layer is changed. Click “OK” and there are now a few larger stars in the image.
4. Stars are not spread out evenly in space and may appear in clumps or bands. You can create this look by creating more stars on top of the existing stars. Click on the New Raster Layer icon to create a new layer and title it “Star Clusters” and set the Blend Mode of the layer to “Screen.” Now choose the “Airbrush” tool and use the following settings: Size (50 pixels) Hardness (0%) Density (1%) Opacity (50%) Make sure that the “Star Cluster” layer is active. Look at the picture and note several places where there are some existing clumps of stars. Now place the cursor over these areas and TAP the mouse button to paint stars over them and thus making clusters of stars. Be careful not to over do this and to keep the clusters very irregular and build them up gradually.
5. Where there are clumps of stars there may be more interstellar gases there and the increased light may make these clusters seem to glow faintly. To create this look,

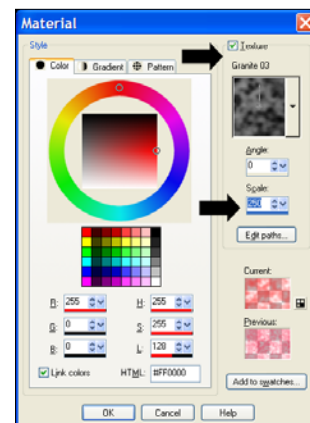
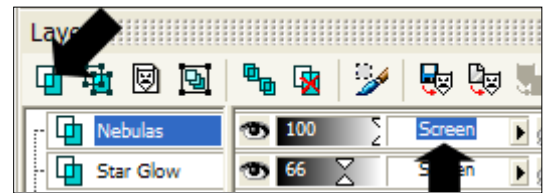
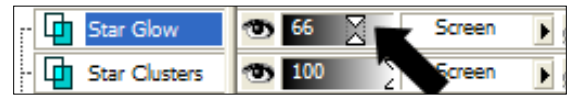
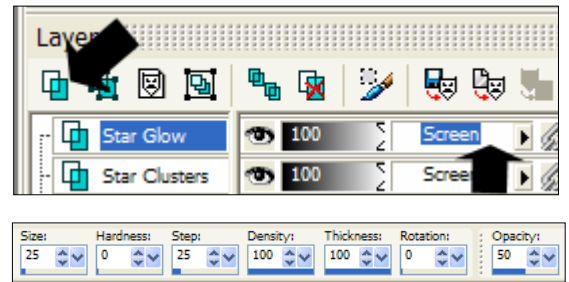


 Airbrush Tool

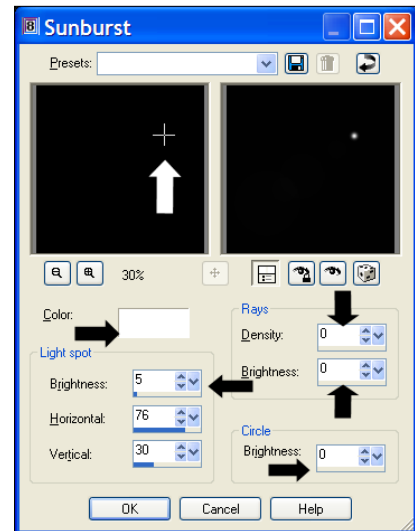
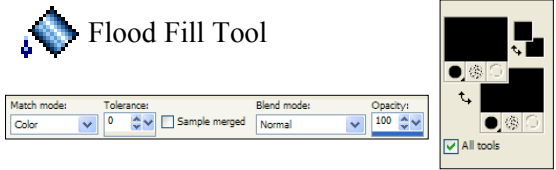
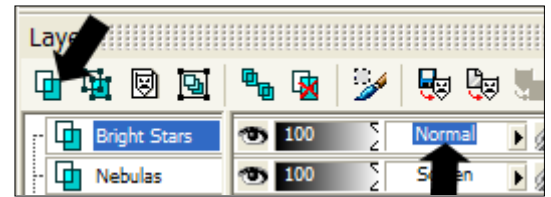


click on the New Raster Layer icon to create a new layer and title it “Star Glow” and set the Blend Mode to “Screen.” Choose the “Airbrush” tool and use the following settings: Size (25 pixels) Hardness (0%) Density (100%) Opacity (2%) Note that Opacity is set to “2%” so the color will not build up quickly. Go to the Materials Palette and set the foreground color to a color you want for the glowing (a deep blue or purple might look good.) Make sure the “Star Glow” layer is selected and then begin to paint over your star clusters with the brush, gradually building up the color in the areas. Make sure the color is faint in some places and brighter in others to keep a variety of intensities. Once you have finished you can adjust the Opacity slider of the layer to decrease the intensity of the overall glow color if desired. You can also create additional gas layers using different colors to create even more visual interest.

- There may be other interstellar gases out in space that may be illuminated and thus glowing (such as nebulas.) By introducing some nebulas into your picture you can provide some nice contrasting colors to the general blackness of space. To create nebulas, click on the New Raster Layer icon to create a new layer. Title it “Nebulas” and set the Blend Mode to “Screen.” Choose the “Airbrush” tool and use the following settings: Size (80 pixels) Hardness (0%) Density (100%) Opacity (2%) Again the Opacity level is kept very low to keep the color build up slow and subtle. Go to the Materials Palette and set the foreground color for the gas (use a different color than your other gases.) Before clicking “OK” to close the color palette, click on the “Texture” checkbox. Go to the texture selection box and select the “Granite 03” texture. Set the Scale option for the texture to 250%. Once everything is set, click “OK” to close the Materials Palette. Select the “Nebulas” layer and then start to slowly work in the colored texture through the picture, trying to keep it in large clumps or bands. Try tapping the mouse button quickly as you move the mouse around the picture. Be sure to keep the color very thin in some places and thicker in others. After doing the first color, return to the Materials Palette and select a complementary or contrasting color. Then keep the same texture but change the texture scale option to “100%”. Paint the new color into your picture where it overlaps your first color in some places and in new areas around the first color. Once you have finished, you can soften the gas clouds if desired. To do this, go to the menu bar and do ADJUST / BLUR / BLUR MORE. You can also change the Opacity layer of the layer to make the colors seem more transparent.

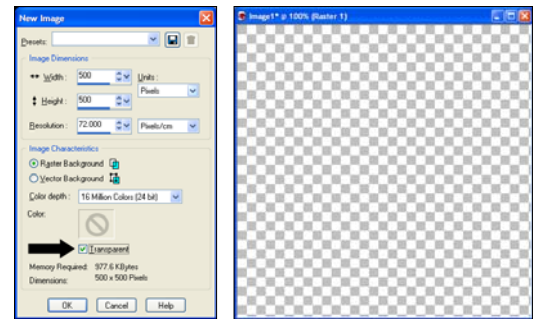


7. Create some further visual interest by making a few stars that appear closer and thus much brighter. To do this, click on the New Raster Layer icon and create a new layer titled “Bright Stars.” Make sure to leave the Blend Mode of this layer on “Normal” for now. Go to the Materials Palette and select pure Black as your color and make sure that Texture is turned off. Make sure that the “Bright Star” layer is selected and then select the Flood Fill tool and set its Opacity level at “100%” and Tolerance to “0%.” Click on the picture to fill the entire image with black. This will cause your picture to disappear as the completely black layer hides the lower layers. Once you have filled the layer, change the Blend Mode of the layer to “Screen” and the picture will reappear. You are now prepared to add the stars. Now go to the menu bar and do EFFECTS / ILLUMINATION EFFECTS / SUNBURST. In the dialog box, set the color to white (R: 255 G: 255 B: 255) and then set the “Rays” density and brightness to “0” and set “Circle” brightness to “0” as well. Then in the “Light Spot” section, set the brightness to a number between 1 and 5 and then go to the left-hand view and move the cross marker to the approximate point where you want the star to be in the picture. Click “OK” and you should now have a bright star. Repeat this process again creating different sizes of stars and moving the placement crosshair until you have three to five stars with different intensities in the picture.

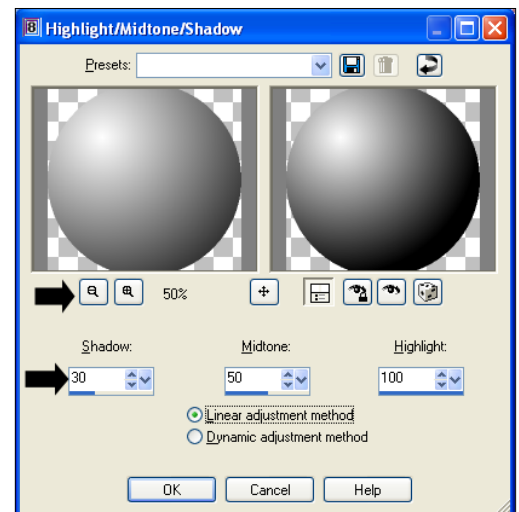
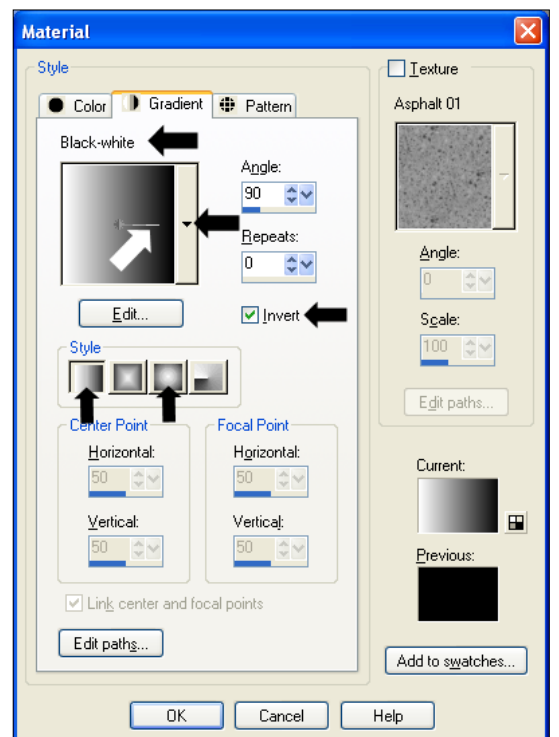


Section Two – Creating Planets

1. Do FILE / NEW and create a new image with the desired width, height and resolution settings. Color depth should be set to “16 million colors (24 bit).” You will also not pick an image color this time but instead put a check in the “Transparent” box. Click “OK” to create the new image. Note that the image window opens with a checkerboard pattern. This is the “look” that most graphics programs use to indicate transparency. This image will be used to create the planet and then copy and paste it into a final picture.
2. Click on the New Raster Layer icon and create a new layer titled “Planet Shading.” (See the Section One instructions if you don’t know how to do this.) This layer will be used to set the light and shadow sides of the planet.
3. Click on the Selection tool on the Tools toolbar. Set the selection properties to these: Selection Type (Circle) Mode (Replace) Feather (0) Anti-alias (Unchecked). Draw a circular selection in the image area to the desired size of your planet. This selection area will be used on multiple layers to create the finished planet.
4. Select the Flood Fill tool and then click on the foreground color box in the Materials Palette to change the color. In the Materials window, click on the “Gradient” tab and select the “Black-White” gradient from the drop-down arrow. Next click on the “Invert” box so it is selected. Depending on the shading you want for the planet, you will set Gradient style to “Linear” (First one in the Style group) or “Sunburst.” (Third one in the Style group.) Depending on the style you select, you can rotate the direction or set the center point of the gradient by using the control in gradient sample (the white arrow.) Click “OK” when finished setting the gradient properties. Return to the image and click in the selection area to fill it with the gradient. *Note: If you used the “Linear” style for your gradient, you can help it look more spherical by going to the menu bar and doing EFFECTS / GEOMETRIC EFFECTS / SPHERIZE.* Set the Strength option to “100” and click “OK.”
5. The gradient used in the previous step will need to have the darkest area enhanced to make the planet look more curved and dramatic. Go to the menu bar and do ADJUST / BRIGHTNESS AND CONTRAST / HIGHLIGHT/MIDTONE /SHADOW. In the dialog box click on the “Zoom Out” magnify icon so that you can see most of the planet shading. Use these settings: Shadow (30) Midtone (50) Highlight (100) and select “Linear adjustment method.” By increasing the Shadow setting, the dark side of your planet will be much stronger. Click “OK” and the effect will be applied. Note that once you

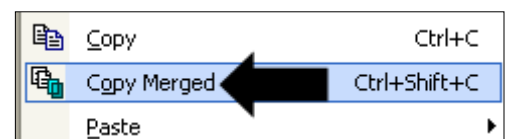
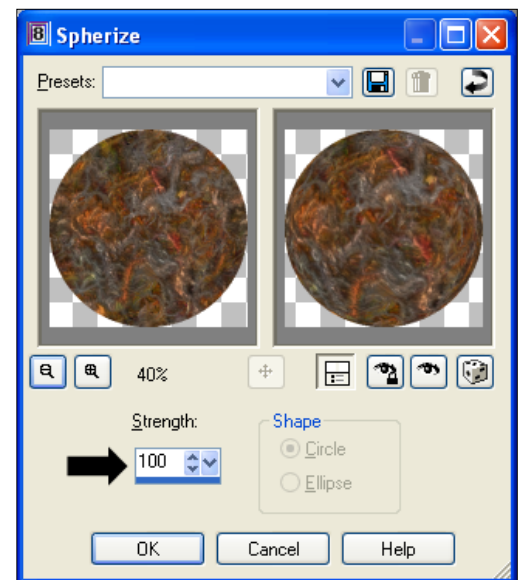
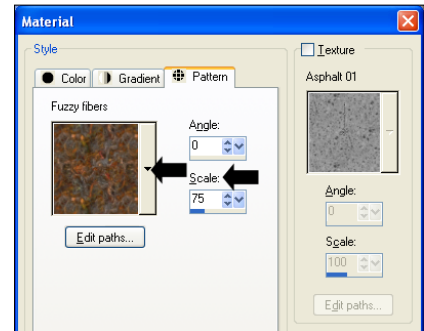
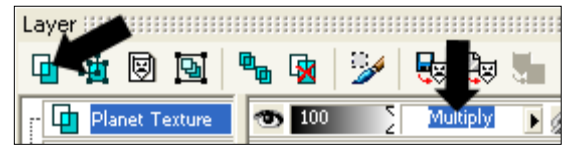


Selection Tool



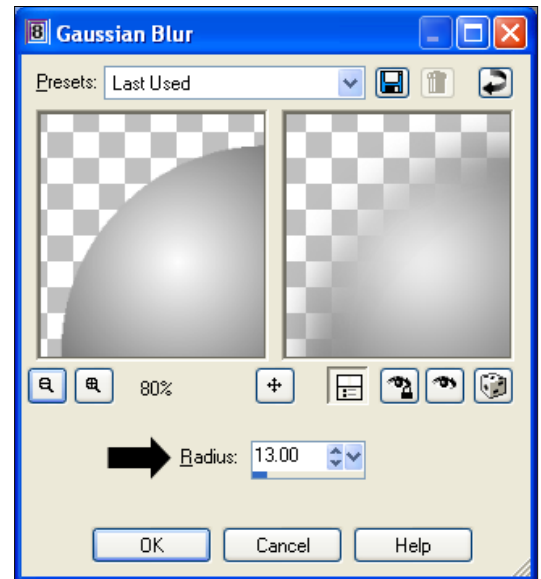
understand how to use this tool, you can create much more subtle shading variations (such as reflected light on the dark side of the planet) by using the “Dynamic adjustment method” setting and entering positive and negative numbers for the values.

6. Click on the New Raster Layer icon and create a new layer titled “Planet Texture.” Set the Blend Mode of the layer to “Multiply”, which will cause the “Planet Shading” layer can show through. The “Planet Texture” layer will be used to set the overall color and texture of the planet.
7. Select the “Flood Fill” tool and then click on the foreground color box in the Materials Palette to change the color. In the Materials window, click on the “Patterns” tab and select an available pattern (ex. Fuzzy Fibers) or import one of your own from a digital photo or other image. *Note: Any image you have open in Paint Shop Pro will be at the top of the pattern drop-down images. Just scroll up to the top of all the patterns to see them.* You also have the option of using the Scale and Angle settings to change the look of the pattern. Click on “OK” to return to the image. Make sure the “Planet Texture” layer is selected and then click in the selection area to fill it with the pattern. The image will look very dark but this is temporary. When it is pasted into the final image it will look much lighter.
8. Now you will need to make the pattern look more spherical so it appears to go around the curved surface of the planet. Go to the menu bar and do EFFECTS / GEOMETRIC EFFECTS / SPHERIZE. Set the Strength option to “100” and click “OK.” The planet surface should now look like it is curving around the edges of the sphere.
9. Once the planet looks satisfactory, you are ready to copy it into your final image. Go to the menu bar and do EDIT / COPY MERGED so that all the layers of the planet are copied. Now go to your final space image (Created using the Section One instructions) and do EDIT / PASTE / PASTE AS NEW LAYER. Make sure to name the layer in your image to “Planet” or something similar to you can work with it later. You can then move your planet around on it’s layer to its final position by using the Move tool.
10. **(Optional Step)** You may want to create the look of an atmosphere around the planet which will appear as a thin band of haze around the planet. To do this, return to your original planet image and select the “Planet Shading” layer you created earlier and then do EDIT / COPY. Go to your final image where you pasted your planet and do EDIT / PASTE AS NEW LAYER. Name this new layer “Planet Atmosphere.” Go to the menu bar and do IMAGE / RESIZE. Set the Pixel Dimensions section to “Percent” and Width to “102%” and Height to “102%.” Then make



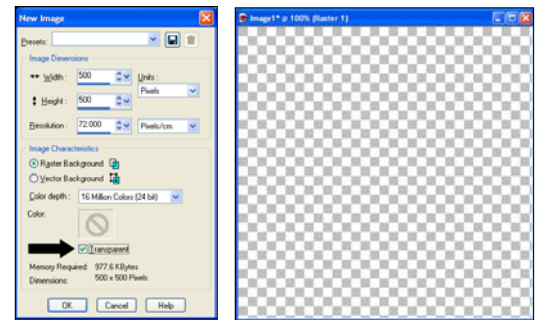
sure that the “Resize All Layers” option is UNCHECKED because only the atmosphere layer should be changed. Click “OK” and the sphere for the atmosphere should be slightly larger than the planet.

Next blur the sphere by going to the menu bar and do ADJUST / BLUR / GAUSSIAN BLUR. Set the Radius option to “13.00” and then click “OK” to blur the entire layer. Once this is done, move the “Planet Atmosphere” layer below that of the planet layer in the Layer palette and then use the “Move” tool to place it directly under the planet to create the atmosphere band. If desired, you can also change the transparency of this layer to make the atmosphere less pronounced. If you want to give the atmosphere a different color, you can use the “Colorize” effect to recolor the layer.




Section Three – Planetary Rings (Advanced)

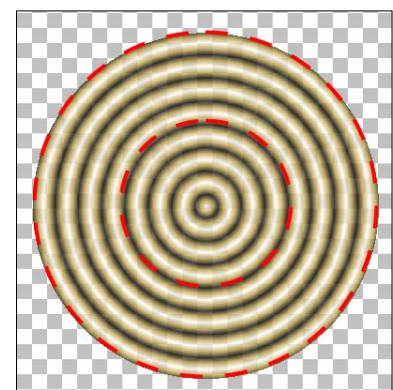
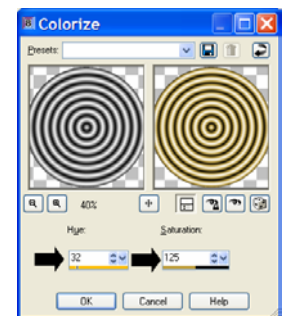
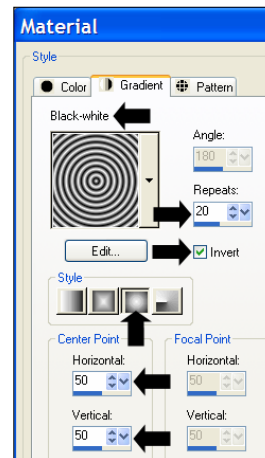
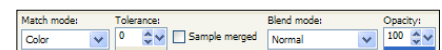
1. Do FILE / NEW and create a new image with the desired width, height and resolution settings. Color depth should be set to “16 million colors (24 bit).” You will also not pick an image color this time but instead put a check in the “Transparent” box. Click “OK” to create the new image. Note that the image window opens with a checkerboard pattern to indicate transparency. This image will be used to create the rings that will be placed around a planet made previously using the Section Two instructions.
2. Click on the Selection tool on the Tools toolbar. Set the selection properties to these: Selection Type: (Circle) Mode: (Replace) Feather: (0) Anti-alias: (Unchecked). Draw a circular selection in the image area so it fills about 75% of the image area.
3. Select the “Flood Fill” tool and make sure the tool settings are Match Mode: (Color) Tolerance: (0) Blend Mode: (Normal) and Opacity: (100). Next click on the Foreground color box in the Materials palette area to change the color. In the Materials window, click on the “Gradient” tab and select the “Black-White” gradient and click on the “Invert” box so it is selected. Select the “Sunburst” gradient in the Style section and set the Horizontal and Vertical Center Point boxes to “50” so the gradient will start in the center. In the Repeats option box, enter a number between “20” and “40” in the box. Click “OK” to exit the gradient properties and then fill the selection area with black & white sunburst blend.
4. Go to the menu bar and do ADJUST / HUE AND SATURATION / COLORIZE. Set the Hue option box to the desired color for the rings and the Saturation option box to a number between “50” and “150” depending on how strong you want the color of the rings to be. Click “OK” to complete the operation.
5. Click on the Selection tool and set the selection shape to “Circle” and make sure that “Anti-alias” box is still unchecked in the Selection properties. Carefully place the center of your cross shape cursor in the center of the “bulls eye” of the gradient you created in the last step. Hold down the CTRL key on the keyboard and a minus symbol should appear next to the cursor. While continuing to hold down the CTRL key, carefully draw another circular selection within the larger one so that it is about 25% of the size of the larger selection and that the line of this selection area sits on one of the black areas of the gradient. You should see two selection circles visible; the original one around the rings and the second, new selection circle inside of the rings.



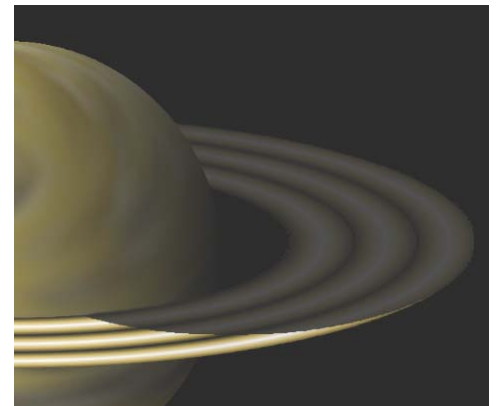
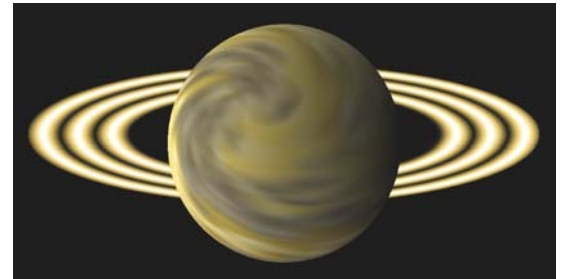
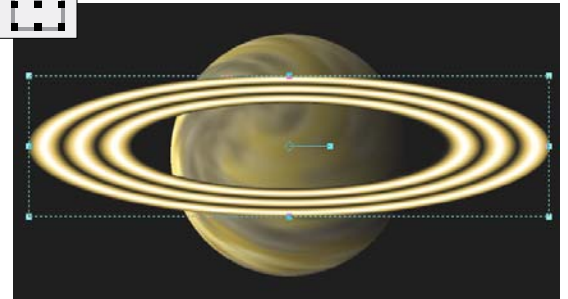
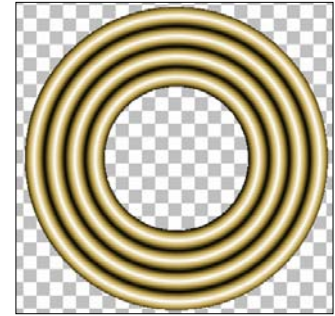
 Selection Tool



 Flood Fill Tool

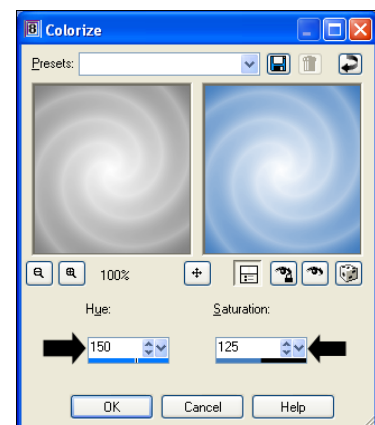
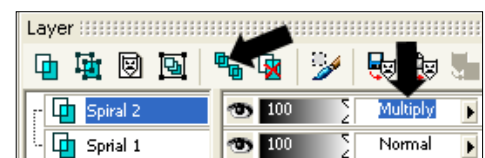
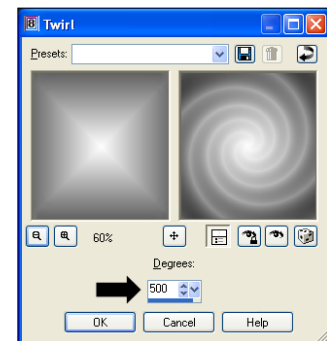
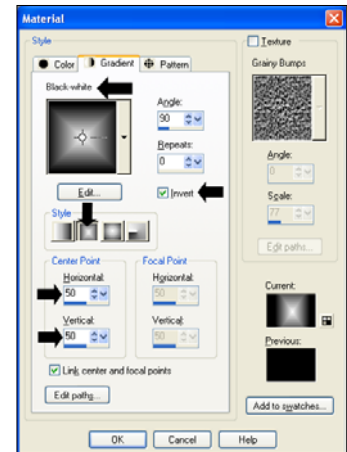
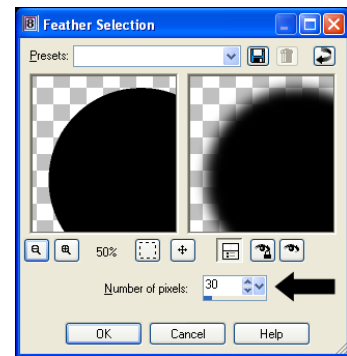


6. Once you have the two selection rings, go to the menu bar and do EDIT / COPY to copy the ring. By doing this, you have just extracted the ring with a hole in the center to fit around your planet image. See the example image at the right to see a sample of the effect.
7. You will now paste the ring into your image with the planet. Open your final image with the planet where the planet exists on its own separate layer. Go to the menu bar and do EDIT / PASTE / PASTE AS NEW LAYER and name this new layer "Rings." If it is not so already, move the Rings layer so that it is above the planet layer. Use the "Deform" tool to resize, reshape and rotate the Ring layer so that it appears to fit around the planet. Use the "Move" tool to center the rings over the planet.
8. Go to your planet layer and then click on it so it is highlighted in the Layer palette. Right-click on the layer and choose "Duplicate" to make a copy of the planet layer. Name this layer "Planet Top." Move this layer above the Ring layer so the layering goes from bottom to top like this: Planet / Rings / Planet Top. It will now appear that the planet is covering the rings.
9. You will now remove part of the "Planet Top" layer to reveal the front of the rings that should appear to be in front of the planet. Click on the "Planet Top" layer so that it is highlighted. Click on the "Eraser" tool and set the Size so that the brush is smaller than the width of the rings and set the Opacity to "100." Go into the image where the front of the rings should be in front of the planet. Use the eraser tool to remove the planet where it overlaps the front of the rings, thus revealing it. When completed, the rings should appear to go around the planet. Select the "Ring" layer and adjust the layer opacity so that the rings appear to be semi-transparent (80% should look good.)
10. Depending on the shading of your planet, a shadow from the planet may fall across the rings. To create the shadow, create a new layer and title it "Planet Shadow" and move the layer so that it is between the "Ring" layer and the "Planet Top" layer. Select the "Paint Brush" tool and click on the foreground color box and select black as your color. Paint black over the area of the rings where the shadow would fall and then set the layer's blend mode to "Darken" to complete the shadow effect. Lower the Opacity level of the shadow layer so that some of the ring details can show through the shadow.



Section Four – Creating Spiral Galaxies

1. Do FILE / NEW and create a new image with the desired width, height and resolution settings. Color depth should be set to “16 million colors (24 bit)” and the color of the new image set to black (R:0 G:0 B:0). Click “OK” to create the new image. This will be the base of the galaxy image. Go to the Layer palette and name this layer “Spiral 1.” (If you get a prompt that the layer must be promoted, click “OK”.)
2. Click on the Selection tool and set the selection shape to “Circle” and make sure to UNCHECK the “Anti-alias” box on the selection properties. Draw a circular selection in the image area to the desired size for your galaxy.
3. Next go to the menu bar and do SELECTIONS / MODIFY / FEATHER and set the Number of Pixels option to “30” and click “OK.”
4. Select the “Flood Fill” tool and then click on the foreground color box in the Materials palette area to change the color. In the Materials window, click on the “Gradient” tab and select the “Black-White” gradient and click on the “Invert” box so it is selected. Select the “Rectangular” gradient in the Style section and set the Horizontal and Vertical Center Point boxes to “50” so the gradient will start in the center. Click “OK” to exit the gradient properties and then fill the selection with rectangular blend.
5. Go to the menu bar and do EFFECTS / DISTORTION EFFECTS / TWIRL. Set the Degrees option to “500” and click “OK.” The selection area should now start to resemble a spiral galaxy.
6. Go to the Layer palette and click on the “Duplicate Layer” icon to create a duplicate of the “Spiral 1” layer and name this layer “Spiral 2.” Set the blend mode of this layer to “Multiply.” Go to the menu bar and do ADJUST / HUE AND SATURATION / COLORIZE. Set the Hue option box to the desired color for the galaxy and the Saturation option box to a number between “50” and “150” depending on how strong you want the color of the galaxy to be. Click on “OK” to complete the colorization.
7. Go to the Layer palette and click on the “Duplicate Layer” icon to create a duplicate of the “Spiral 2” layer and name this layer “Spiral 3.” Set the blend mode of this layer to “Overlay.” This will increase the glowing look of the galaxy and create a deeper color.
8. Create a new layer and call it “Galaxy Stars.” Select the “Airbrush” tool and set the following options for it: Size (15 pixels) Hardness (0) Density (3) Thickness (100) Opacity (50%). Go to the Materials Palette and click on the foreground color and set it to white (R:255 G:255 B:255). Slowly paint stars over the galaxy core and along the spiral arms. Make the stars thicker at the center of the



galaxy and thinner at the edges of the spiral arms.

9. **(Optional Step)** Add additional color to the galaxy by adding space gases around the galaxy core and arms with low opacity color. Go to the Layer palette and create a new layer and name it “Galaxy Gases.” Select the “Airbrush” tool and set the following options for it: Size (25 pixels) Hardness (0), Density (100) Thickness (100) Opacity (2%). Go to the Materials palette and click on the foreground color box. Click on the “Color” tab and select the desired color for the gases (a contrasting color should look good.) Start at the center of the galaxy and start to paint color around the middle and work your way out to the arms. Use the layer opacity to adjust the strength of the galaxy gas layer.
10. Once the galaxy looks satisfactory, you are ready to copy it into your final image. Go to the menu bar and do EDIT / COPY MERGED so that all the layers of the galaxy are copied. Now go to your final space image and do EDIT / PASTE / PASTE AS NEW LAYER. Set the Blend Mode of the layer to “Screen” to remove the black color around the galaxy. Use the “Deform” tool to squash, resize the galaxy into a more oval shape for a more oblique view or leave it as is for a direct view. Use the rotate point of the Deform tool to change the angle of the galaxy as well. You can then move your galaxy around the image using the “Move” tool.

