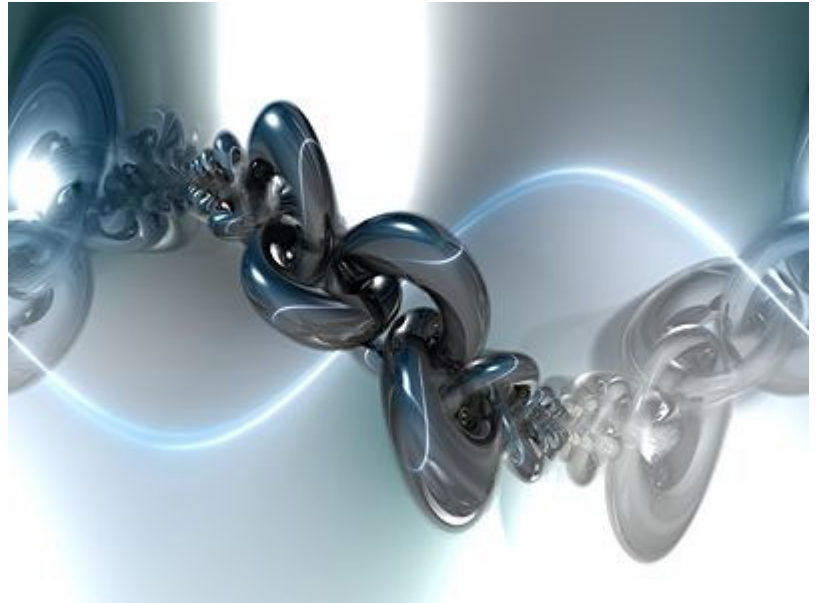


## BRYCE 5 Mini Tutorial

### How to Create Abstract Voids (or whatever)

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HTML Version  
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«Bluevoid v4» by David Brinnen >

The technique presented here uses the peculiarity of Bryce 5(.5) to permit materials that are both fully transparent and fully reflective at the same time. No real object has this quality. A glass can be partly transparent and partly reflective but never both completely at the same time.

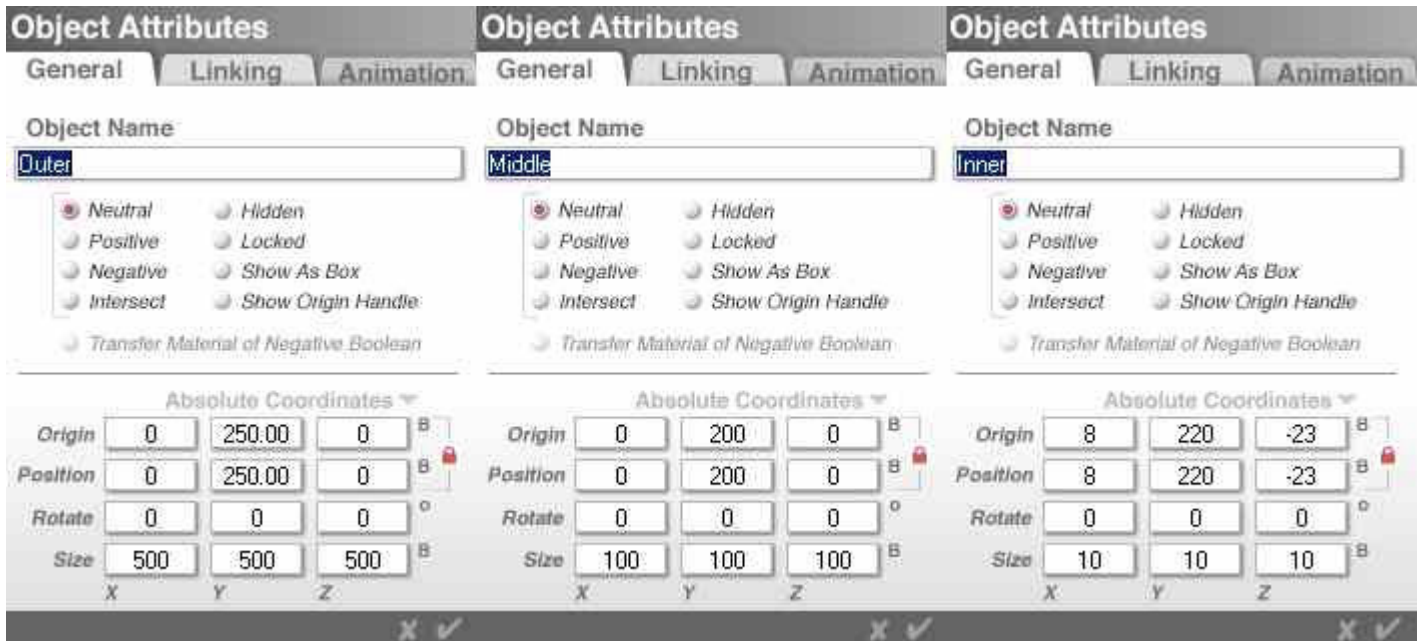
Mirrors can be created by the quality of reflection and if their surfaces are bent, you can get interesting patterns. Being transparent at the same time makes it possible to bring the light of the Bryce environment within a closed mirror system.

Finally, we slant the camera to get effects we already know from the «Abstract Panoramics» tutorial. Also, we render as a 360° panorama.



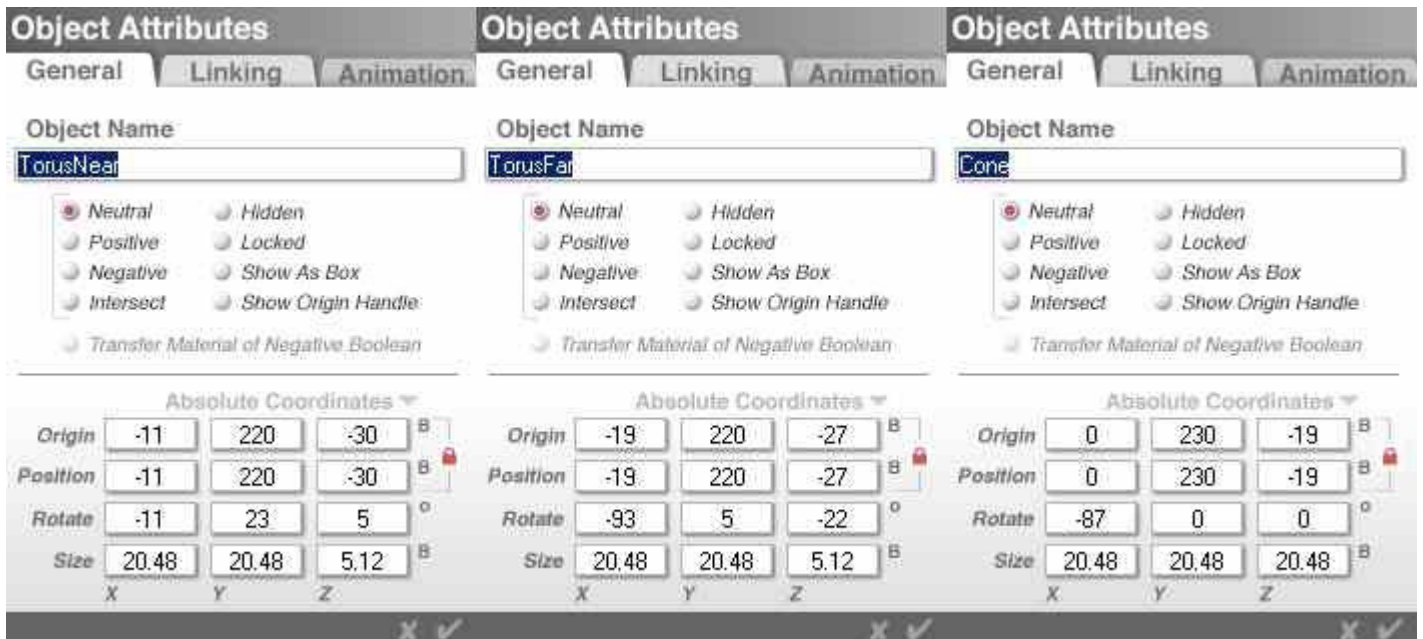
Of course, there are many variations possible. Here, we use an outer sphere filled with a volume material that is reflecting and partly transparent. Within that sphere, there is another one that is fully reflecting and fully transparent. The camera is set within that second sphere. A couple of fully reflecting, non transparent objects are placed within that sphere as well.

Create three spheres and name them «Outer», «Middle» and «Inner».



Set the sizes of the spheres as shown above and put them at the positions indicated.

Now create two torii (torus, ring) and one cone.



Set the sizes and positions for the three objects as shown above. Name the objects.



Select the camera and position it as shown at left. The value of FOV (field of view) is of no importance since this scene will be rendered as a panorama. It does have an effect on the small preview picture at top left of the Bryce working window.

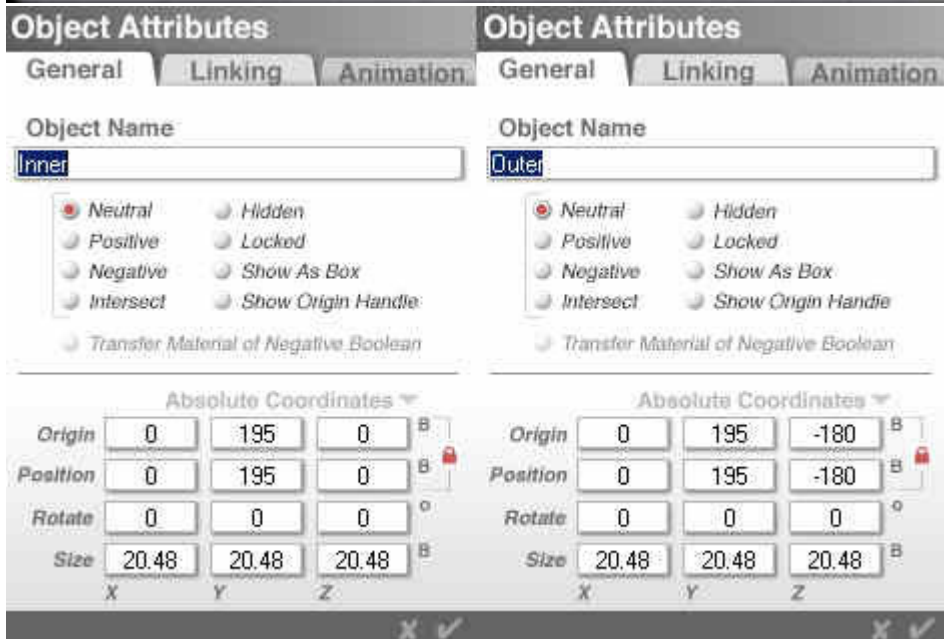
Now, the objects get their material strapped on. Select the sphere «Outer», go to the Materials Lab and adjust the material for this sphere as shown below.



Select the sphere «Middle» and assign it the material shown below. If you want it more simple, you can give the «Outer» sphere the same fully transparent and fully reflective material.



Now, select the remaining objects: the «Inner» sphere, both torii and the cone. These objects all get the same fully reflective, non transparent material that is shown below.



Create two simple Radial Lights and place them to their respective positions as shown at left. Name them as «Inner» and «Outer».

Bryce has a capability, nature hasn't, but J.R.R Tolkien had described as Unlight in the Silmaril (Shelob in The Lord of the Rings was a descendant). We speak about negative light. Negative light sucks the light out of its environment and the shadows it casts are not dark, but bright. This effect will be employed here. Select first one Radial Light, then the other one and go into the Light Lab.



At left (blue) are the values for the Radial Light «Inner» while the right part (red) shows them for the light «Outer».

The only light we have is inverse light, i.e. darkness. We have transparent spheres within which the camera is set. We need to adjust the sky. The majority of the colours are dependent upon the settings chosen for sky and atmosphere



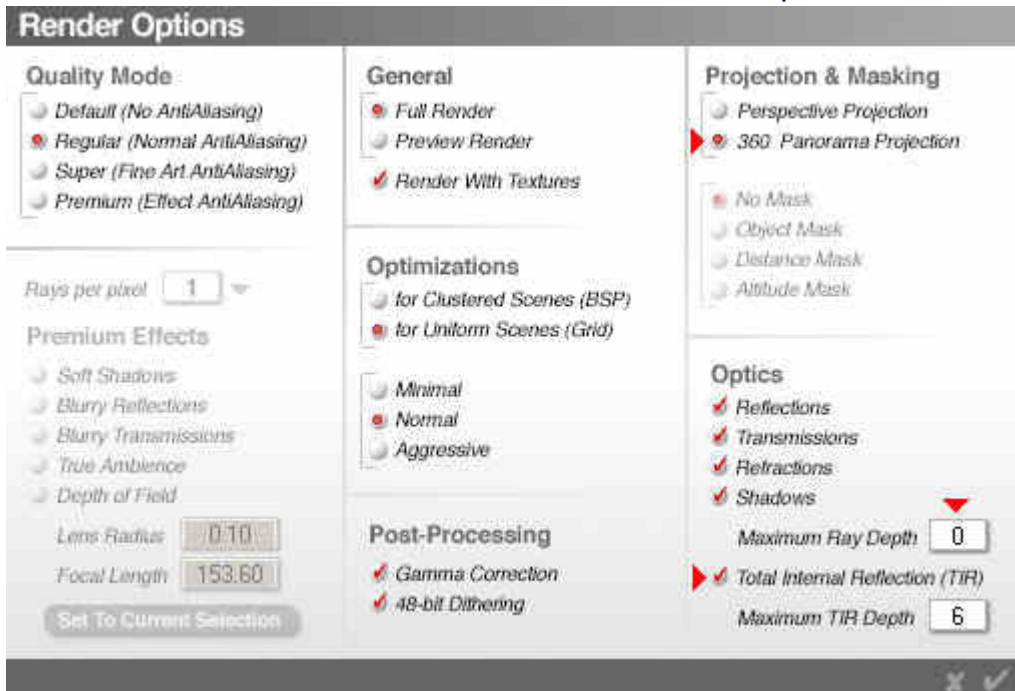
Adjust the general settings of the sky and ambient light approximately as shown above.

Open the Sky Lab and adjust the values for Sun & Moon, Cloud Cover and Atmosphere as the following three pictures show.



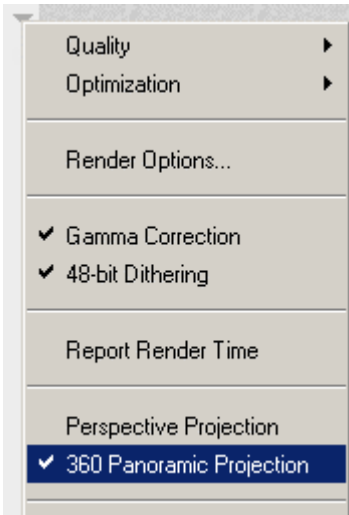


We are soon done. We still have to define the render options.



Be sure the 360° Panorama Projection is marked. Set TIR to 6 (total internal reflection) to limit the number of reflections the renderer has to follow within a partly transparent and partly reflecting body. Maximum Ray Depth determines, how many times a ray is reflected between two opposing mirrors. The value 0 is a joke, you might think. Right! Perhaps, you start with a value of 3. Further down, it will be shown how result and render time are influenced by this value.





Here it is shown how it can be verified that the 360 Panoramic Projection option is selected.



The preview does not change when the 360° Panorama Projection is selected. Neither does it change when the value for the Maximum Ray Depth is altered! The ray depth for the preview is set by the program.

### Different renders — Take your choice

The following 10 renders of the same source file show the Maximum Ray Depth employed and the render time in seconds for a small 540 x 405 picture. The bent orange line is the horizon.



Ray depth = 0, Time to render = 30 seconds



Ray depth = 1, Time to render = 108 seconds



Ray depth = 2, Time to render = 235 seconds



Ray depth = 3, Time to render = 412 seconds



Ray depth = 4, Time to render = 580 seconds



Ray depth = 5, Time to render = 858 seconds



Ray depth = 6, Time to render = 1171 seconds



Ray depth = 7, Time to render = 1406 seconds



Ray depth = 8, Time to render = 1670 seconds



Ray depth = 9, Time to render = 1689 seconds

## More Possibilities

The material for the fully reflecting, non transparent objects could be Fuzzy. The result will be different and the time to render about double. It is worth the while to experiment with this in any case.



Select the sphere «Inner», both torii and the conus again and open the Materials Lab. Click on the small grey arrow above, next to the material channels to open the options menu. Select Fuzzy instead of Normal.

If you wish, you may de-select Cast Shadows, Receive Shadows and Self Shadows (usually selected). De-selecting these three options speeds up the render time by approximately 14%. For the kind of scenes discussed here, not much change is visible.

The following series of pictures will show the difference. Mind you, nothing was changed in the setup.



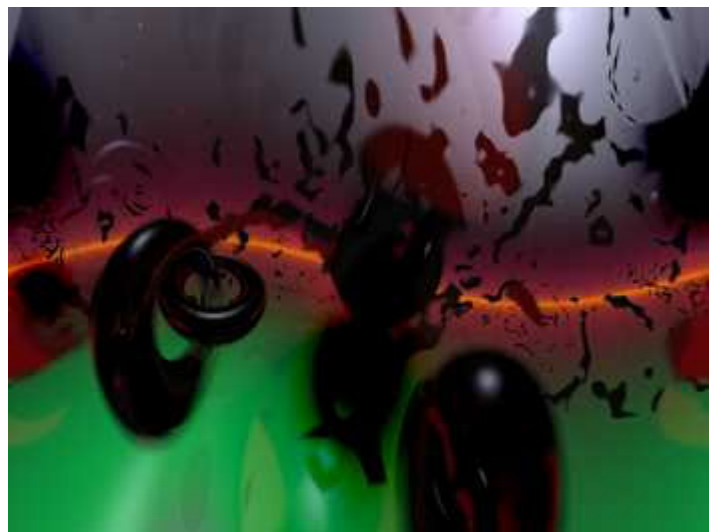
Ray depth = 1, Normal, not Fuzzy (as above)



Ray depth = 1, Fuzzy, Shadows enabled



Ray depth = 1, Normal, not Fuzzy (as above)



Ray depth = 1, Fuzzy, Shadows disabled



Ray depth = 3, Normal, not Fuzzy (as above)



Ray depth = 3, Fuzzy, Shadows enabled



Ray depth = 3, Normal, not Fuzzy (as above)



Ray depth = 3, Fuzzy, Shadows disabled



Ray depth = 5, Normal, not Fuzzy (as above)



Ray depth = 5, Fuzzy, Shadows disabled



Ray depth = 7, Normal, not Fuzzy (as above)



Ray depth = 7, Fuzzy, Shadows disabled

As you can see, the scene can change considerably. Decide at an early stage, whether you want to use fuzzy or normal material.

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