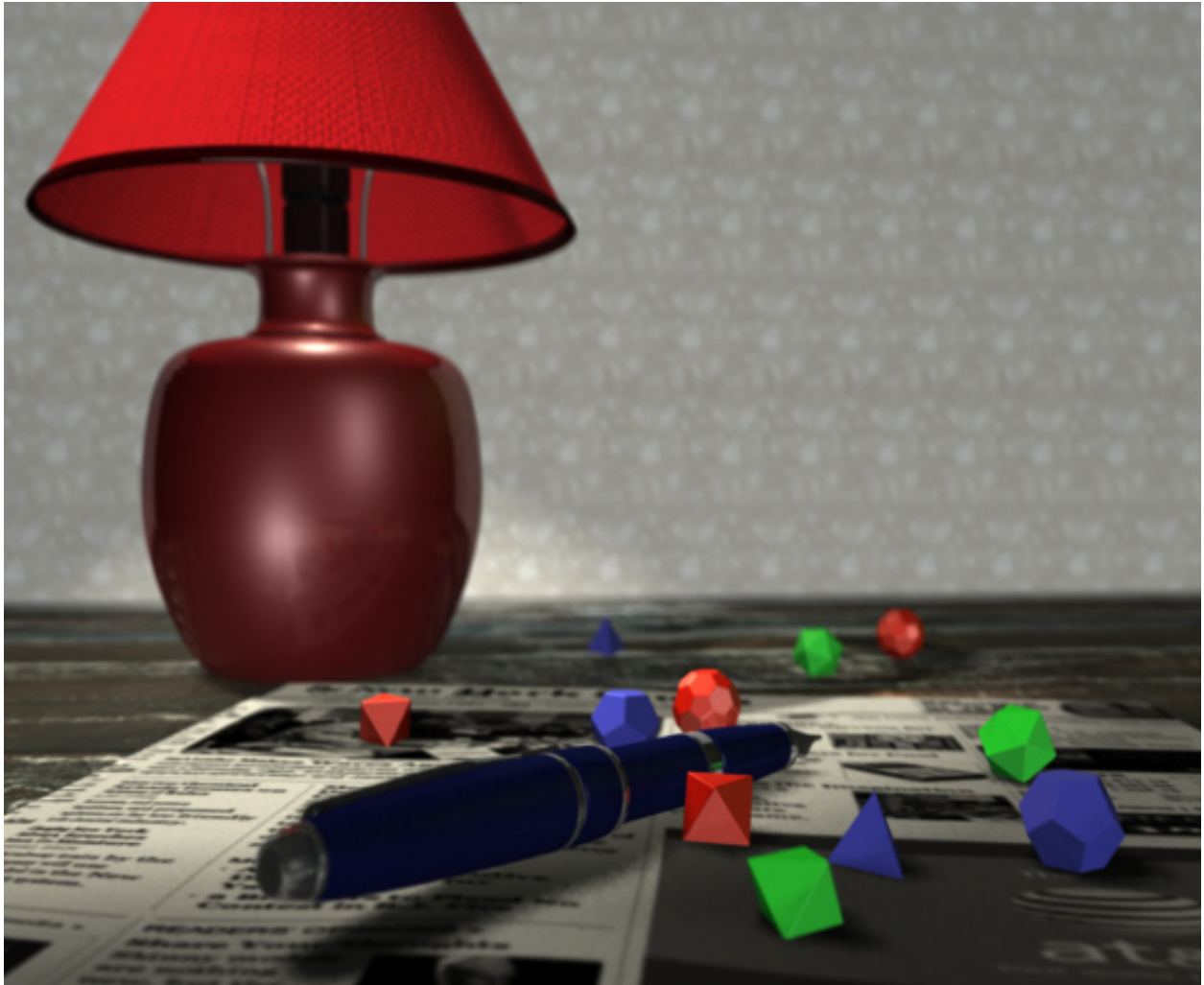


SORBETTO - ADVANCED

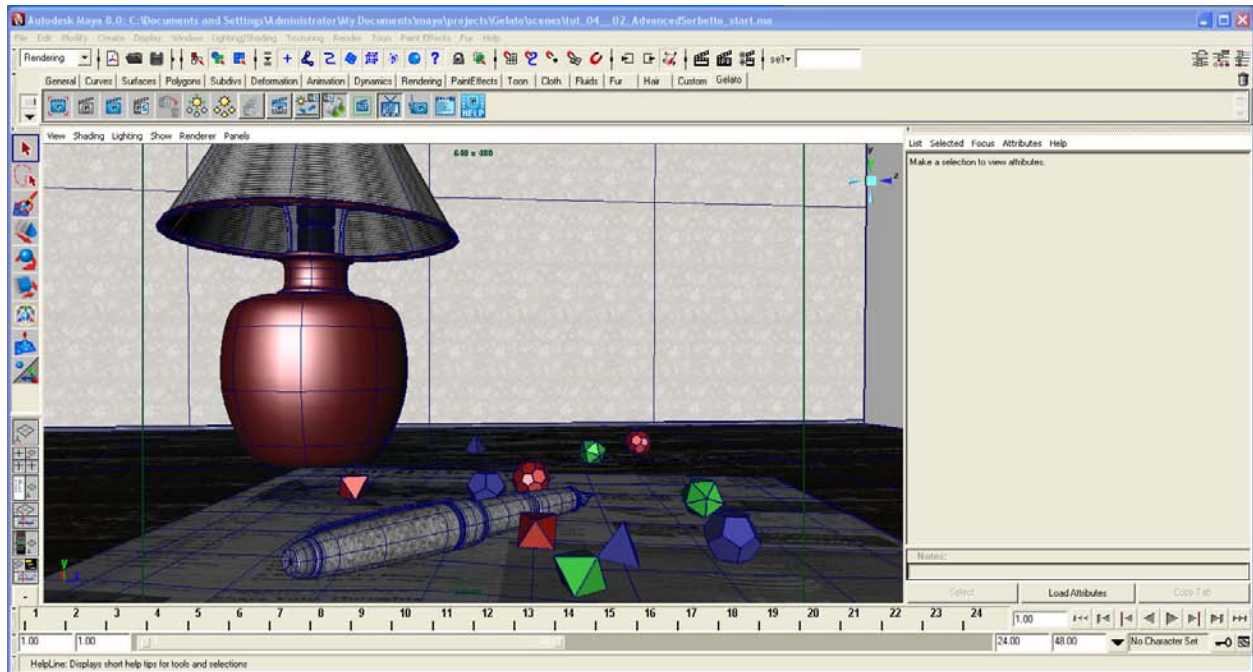


This is the companion to the movie, tut_04_02, the second of two Sorbetto Tutorials.

In the last tutorial, we saw how Sorbetto sped up our workflow when working with lights by providing almost real-time feedback. The ability to cache the geometry and texture information separately from the lighting information made tweaking lights a painless task with regards to render times. Even as we added more lights to the scene, the quick render times kept us from stepping away from the computer to refill our coffee cups as we tapped toes waiting for a render update. This proved to be very useful technology.

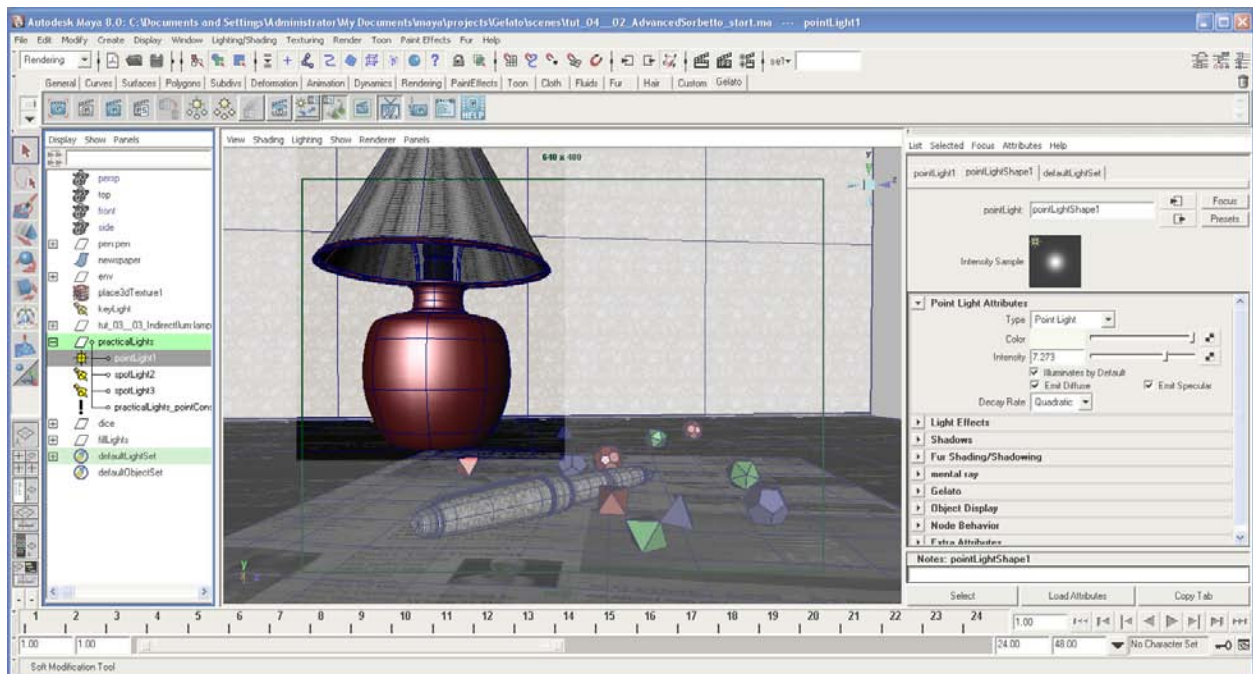
So what else is under the hood? In this tutorial, we will take a look at the more advanced features of Sorbetto as we throw other things into its path. We will see how Sorbetto handles shadow and reflection calculations, as well as depth of field.

To finish things off, we will set up a stereo render. Stereo renders are 3D images which the viewer looks at through a special filter, such as those glasses with one blue lens and one red lens. They give an image a true feeling of depth. So, if you're ready, let's begin....



- Open “tut_04_02.”

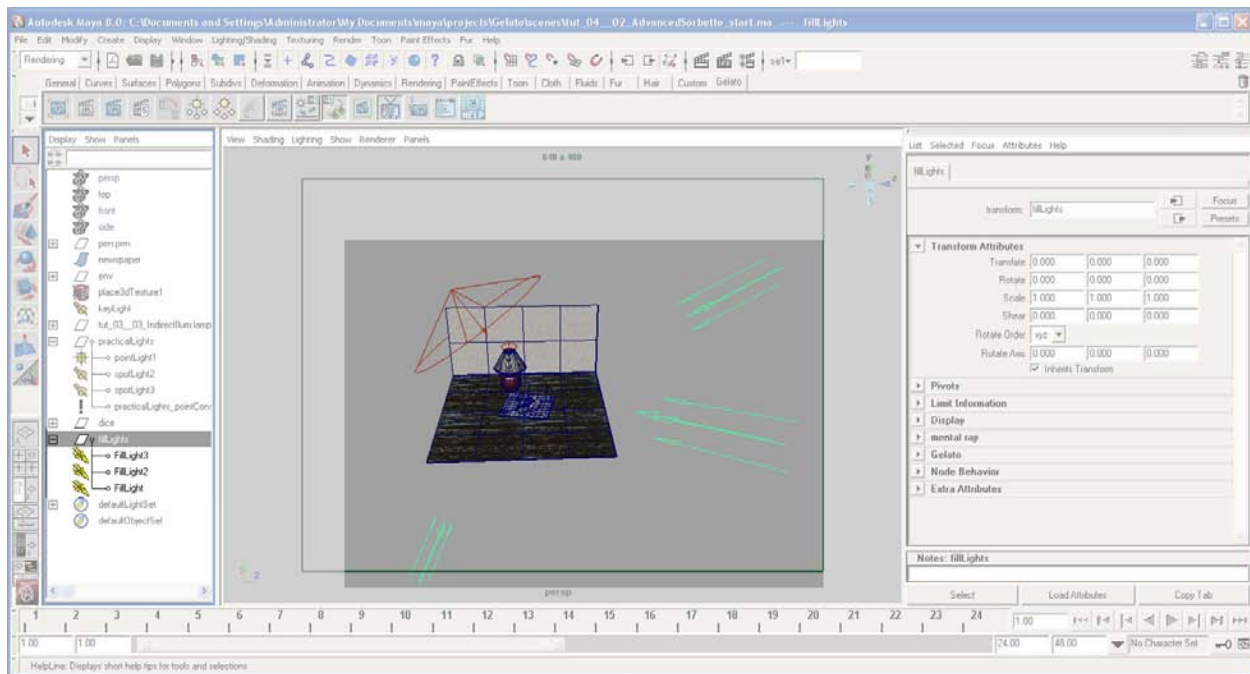
The scene contains a lamp and various items on a table.



- Open the Outliner.
- Open the practicalLights group.

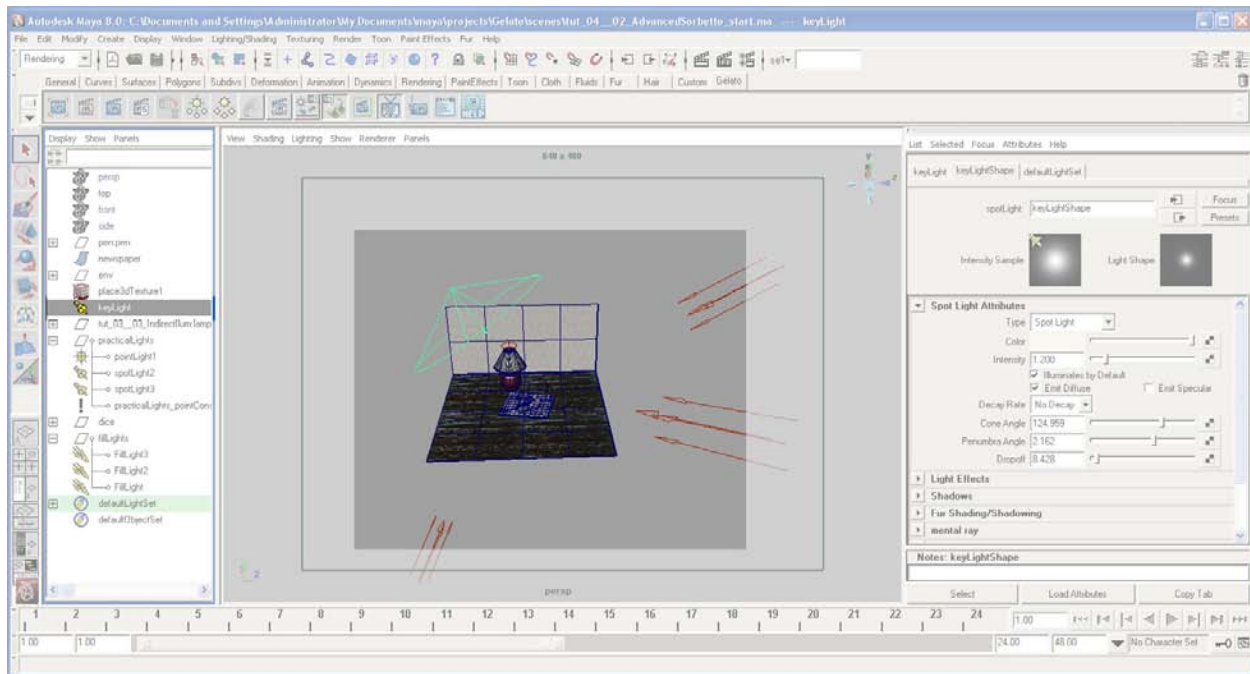
The point light is simulating the light bulb.

The 2 spot lights are simulating the shadows cast by the lamp shade.

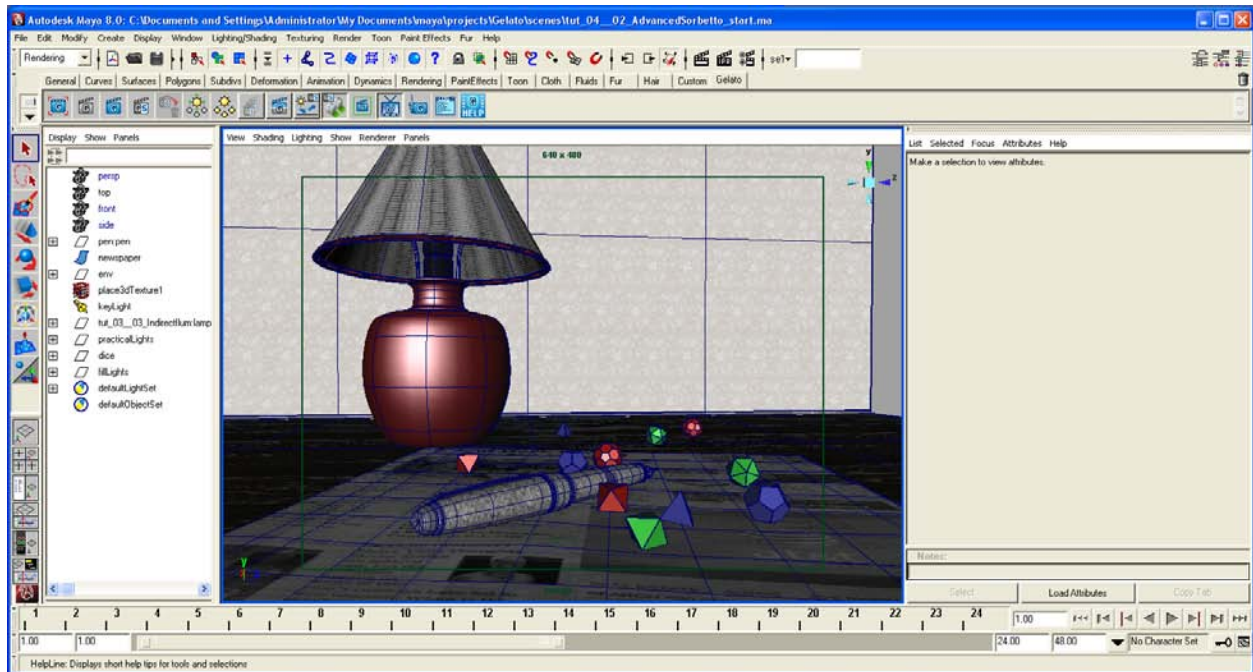


- Open the fillLights group.
- Zoom out until you can see the lights.

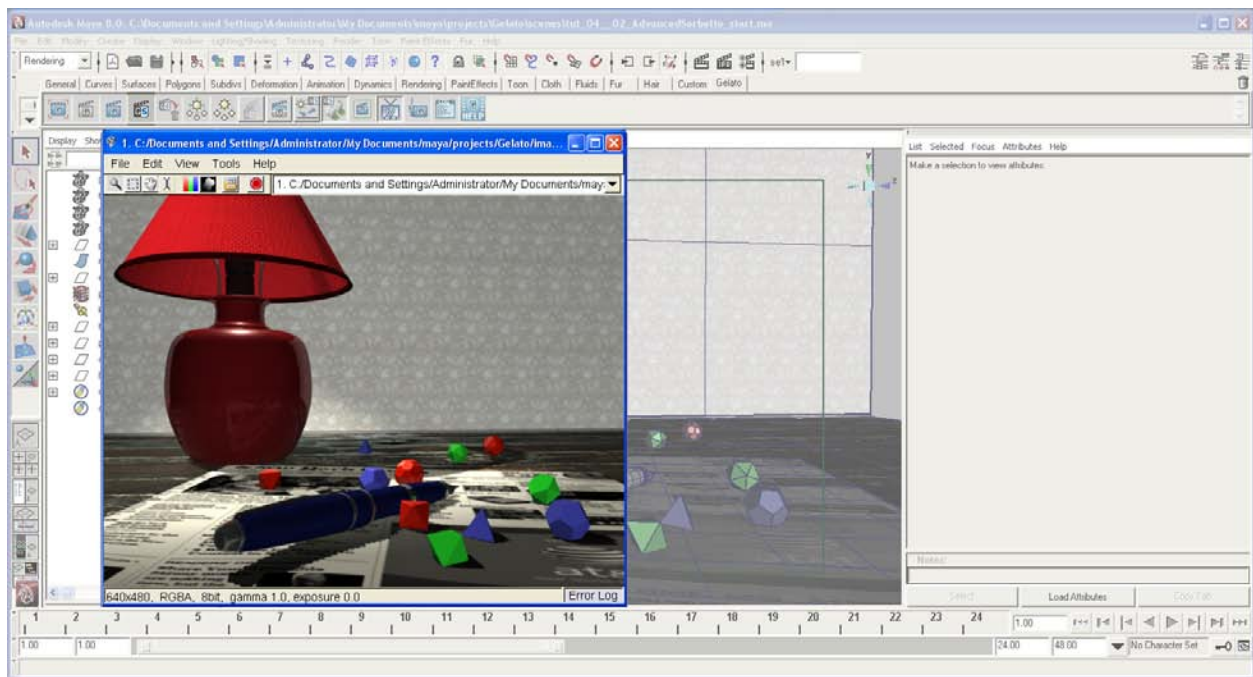
There are 3 fill lights and we can see where they are located.



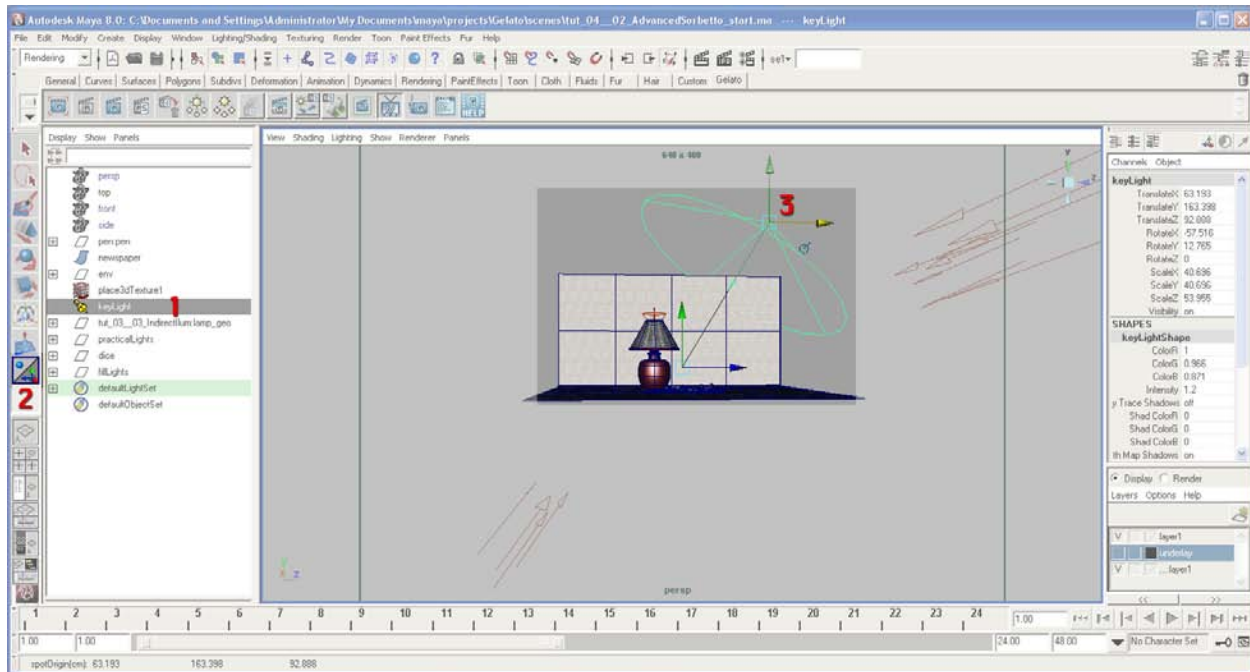
And... there is a spotlight serving as the key light. This light is responsible for casting the shadows in the scene.



- To restore the original view of the scene, move the time slider a frame. A keyframe was previously set, so the view will snap back.

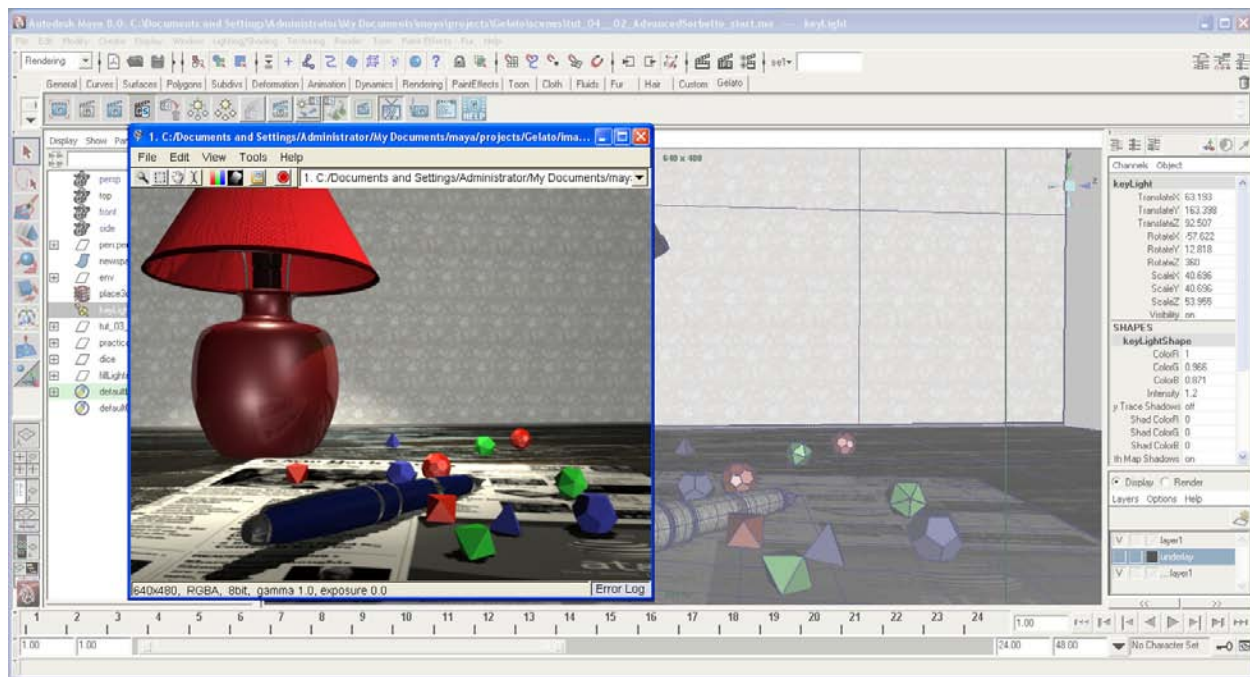


- Sorbetto Re-Render.
- This is our starting point.

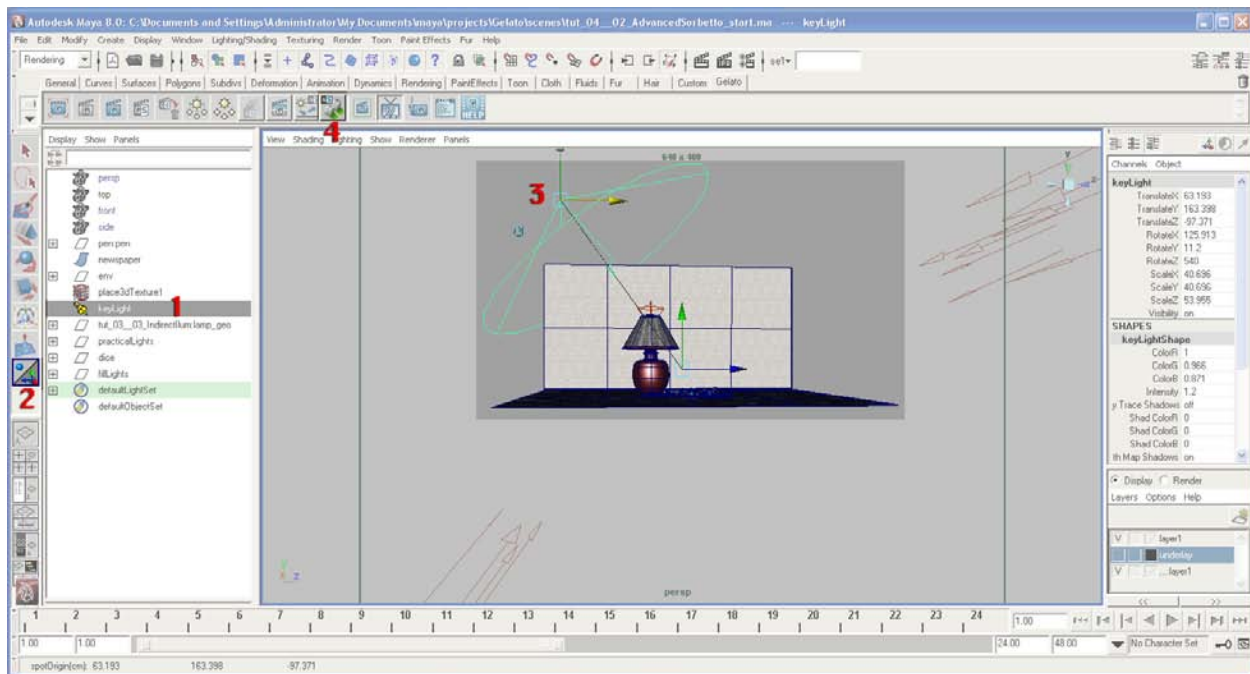


We are going to begin by looking at the Toggle Shadow Map Updates button. This is **on** by default.

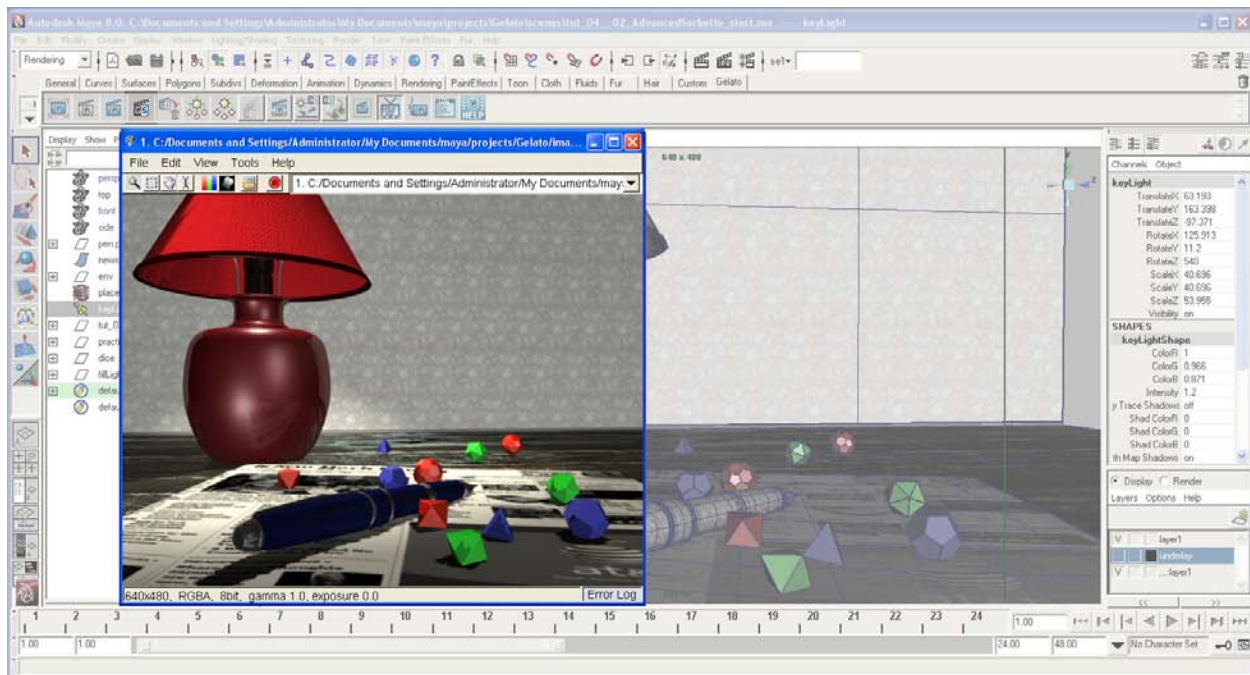
- Zoom out in the viewport so that the keylight is visible.
- Select the keylight.
- Select the Show Manipulator Tool.
- Move the spotlight over to the right, leaving its center of attention as is.



- Sorbetto Re-Render.
- Use the Wipe Tool to compare this render to the last.
- Notice that the shadow has changed position to reflect the new direction of the light – the shadow maps have been recalculated.

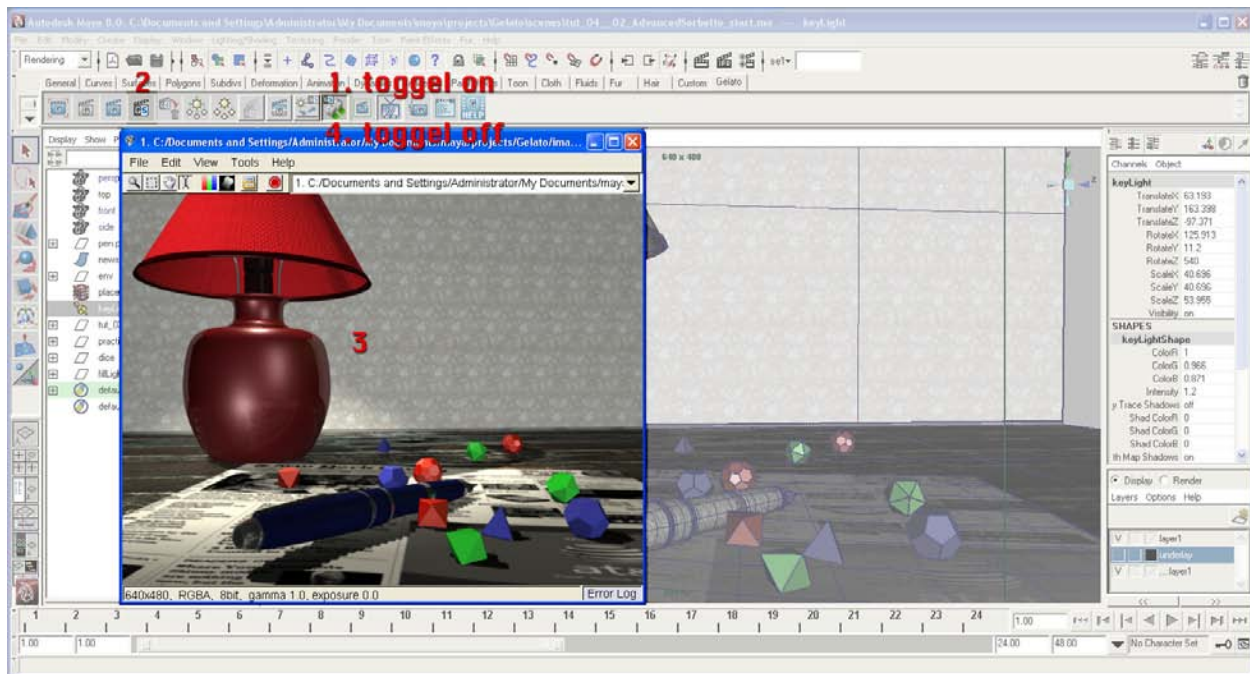


- Move the light back to its original position.
- Toggle Shadow Map Updates off.



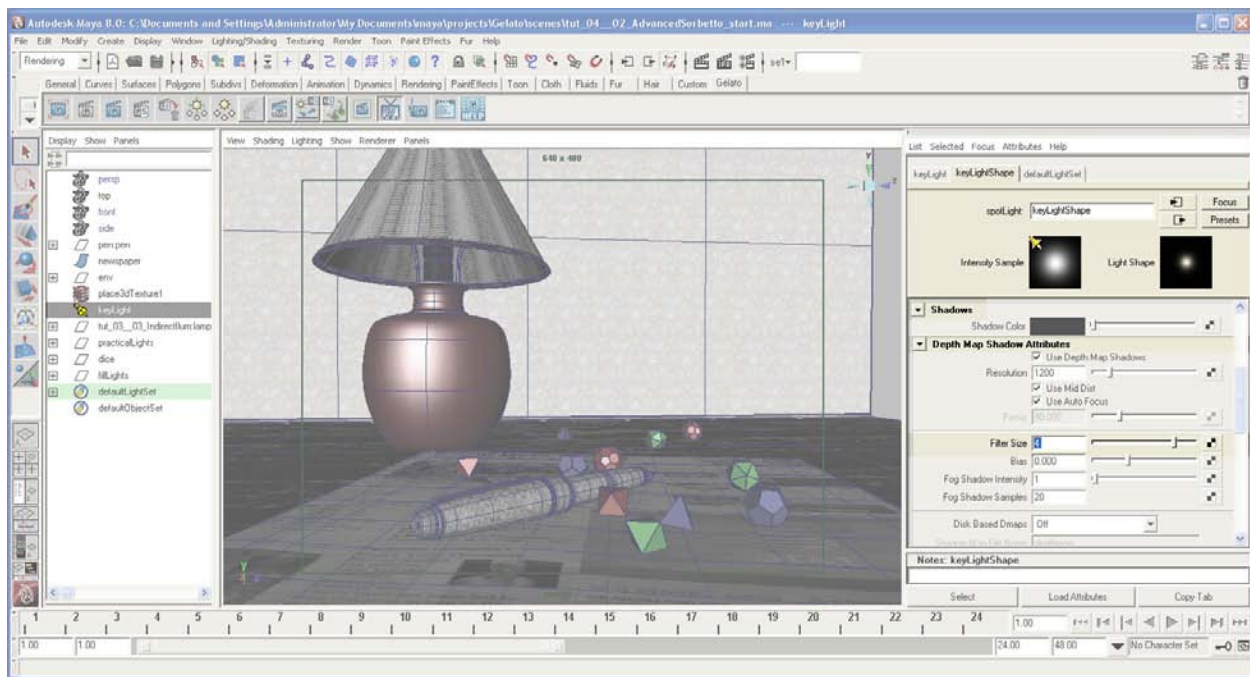
- Sorbetto Re-Render.
- Notice that this time, though the lighting has changed, the shadows have not – the shadow maps were *not* recalculated.

This is a time-saving feature when the light positions have been set and the only thing needing tweaking is the lighting itself. Turning this off saves us the time it takes to recalculate the shadows each and every time.



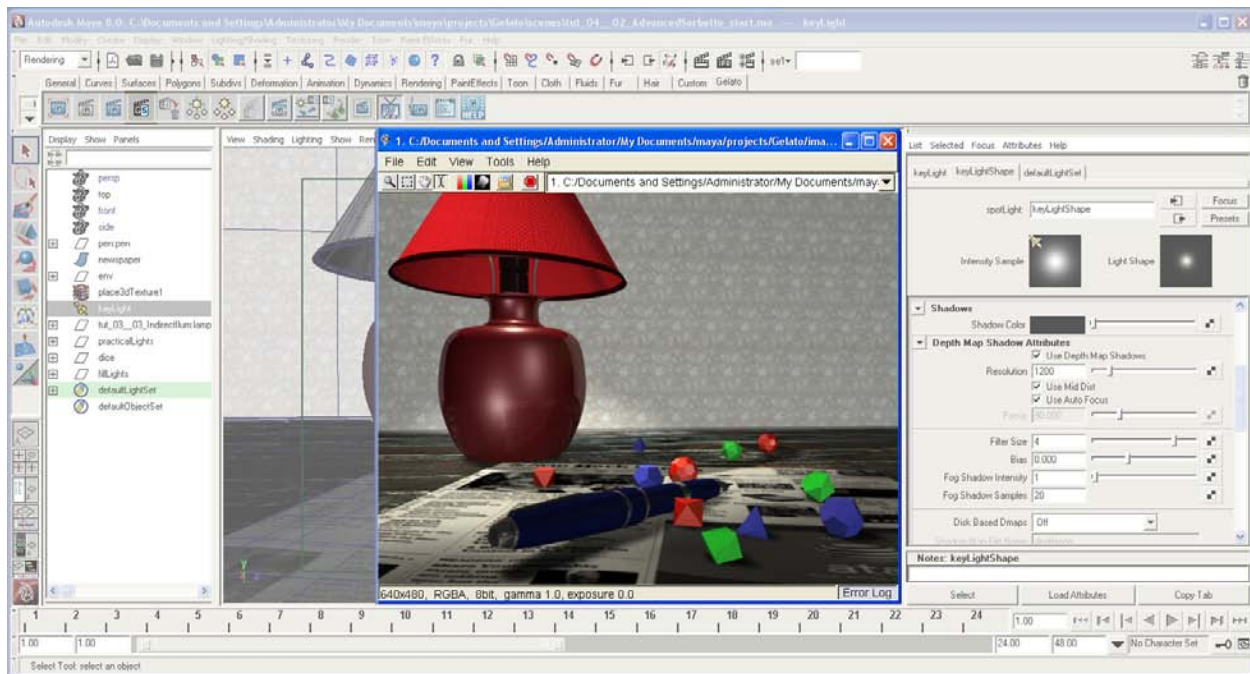
- Enable Toggle Shadow Map Updates.
- Sorbetto Re-Render to sync the shadow maps back up with the lights.
- Disable Toggle Shadow Map Updates.

We won't be moving the lights in the scene around, so won't need update the shadow maps.

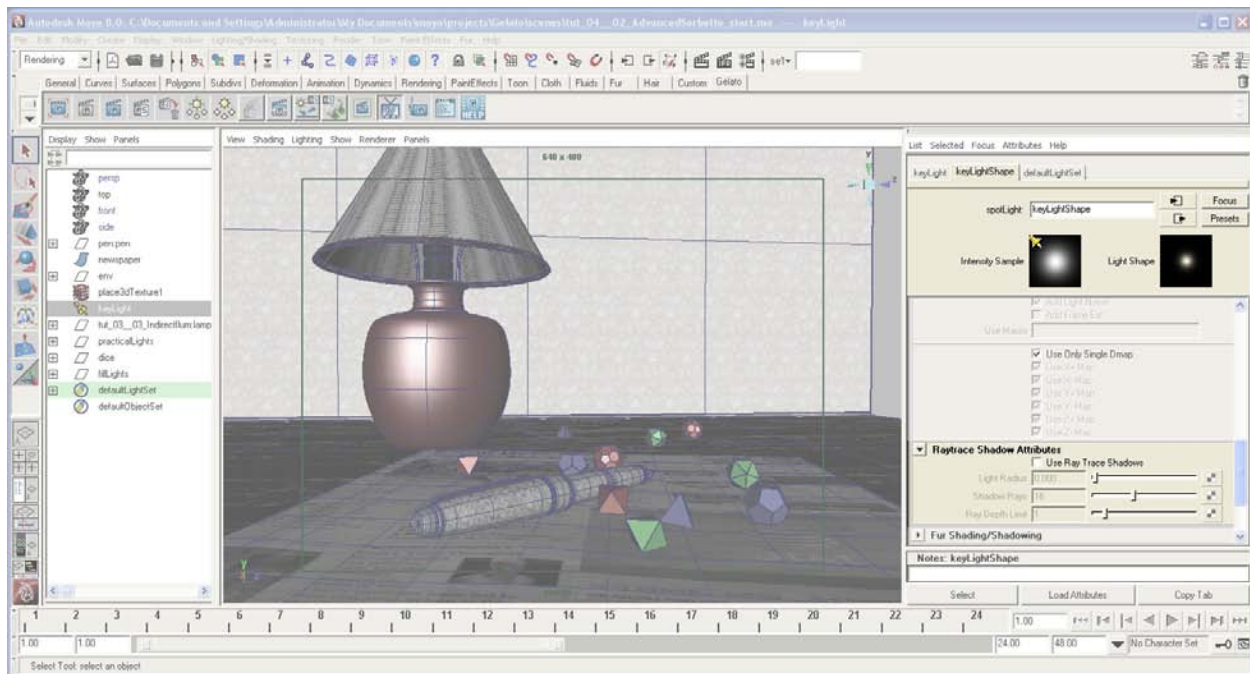


While the shadow maps now won't be recalculated, making for the faster renders, they can still be filtered, allowing us to get rid of nasty artifacts or adjust the shadow softness.

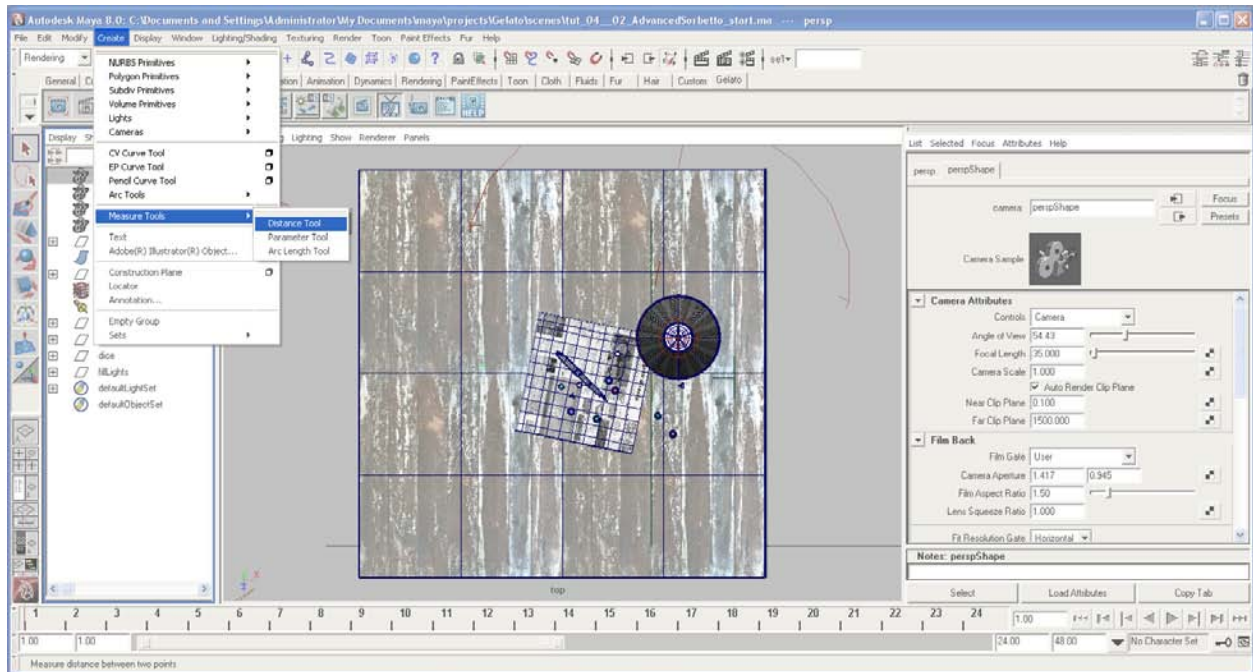
- keyLight's Attribute Editor > Shadows > Depth Map Shadow Attributes > change Filter Size to 4.



- Sorbetto Re-Render.
- Notice that the shadow has been softened.

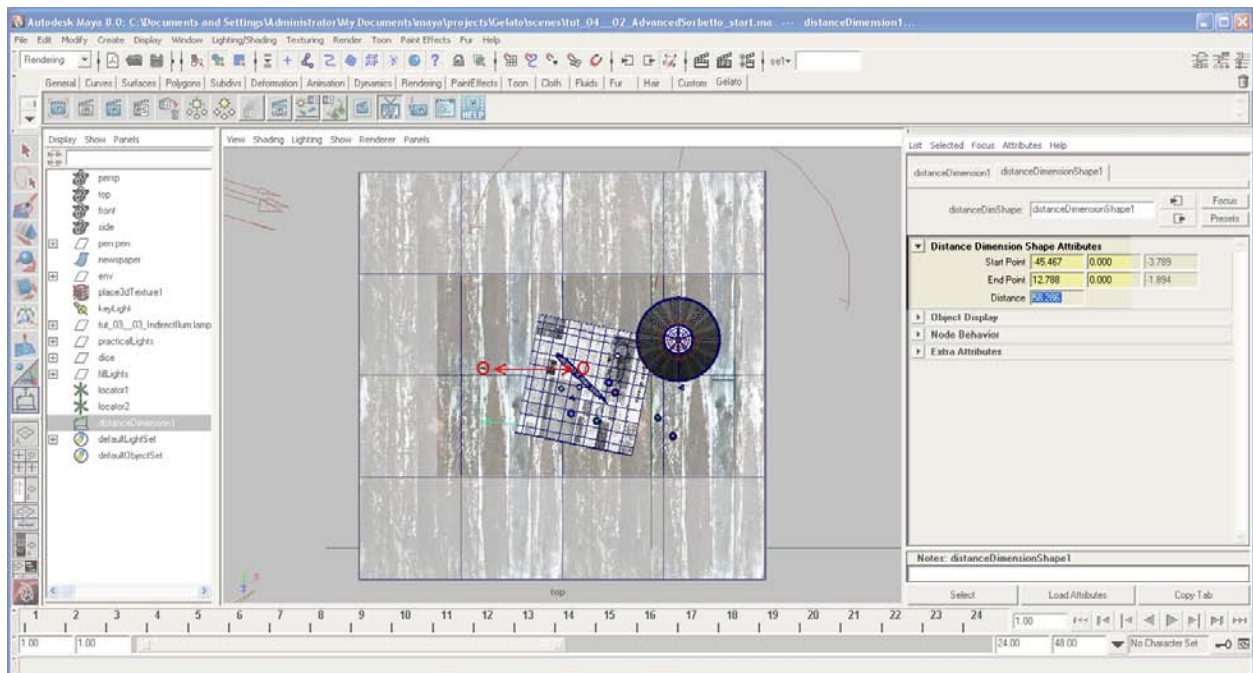


- keyLight's Attribute Editor > Raytrace Shadow Attributes.
- Notice that the Shadow Rays have been set to 16. In this case, this seems to be working, so we'll leave this as is. As we have seen in preceding tutorials, we can change this setting as needed.

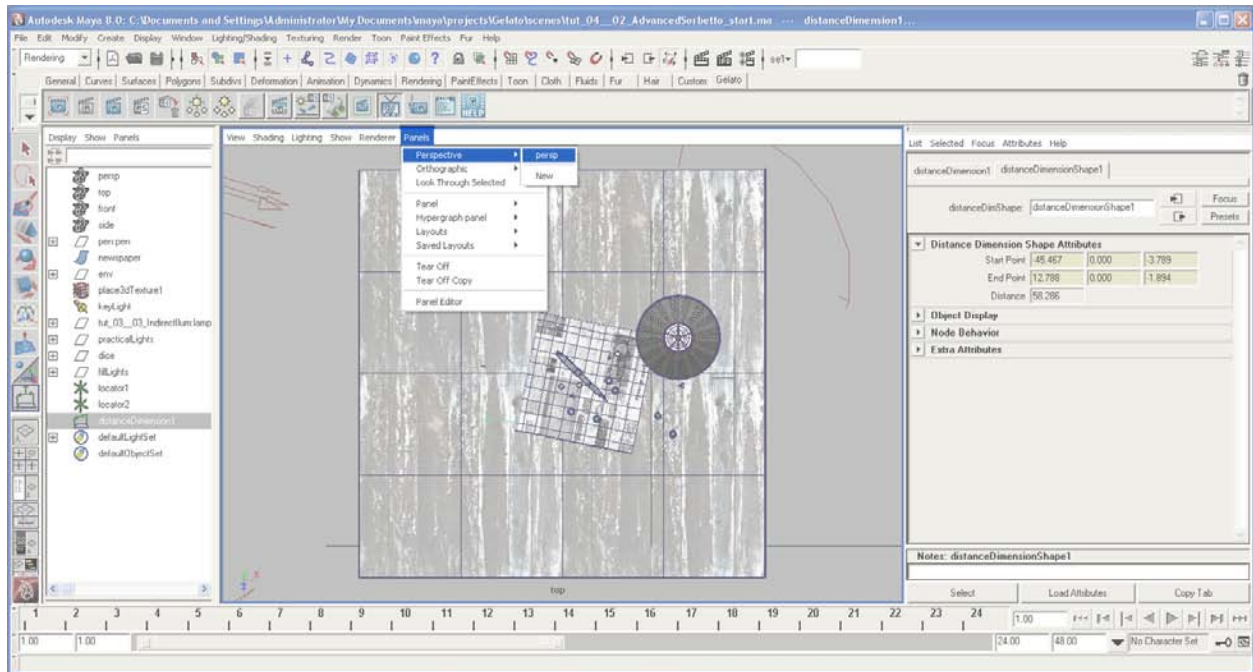


We are now going to look at another great feature of Sorbetto. We can not only get zippy updates to changes in the lighting, but can work with things pertaining to the camera, such as depth of field. When working with depth of field, we need an idea of the scale of our scene.

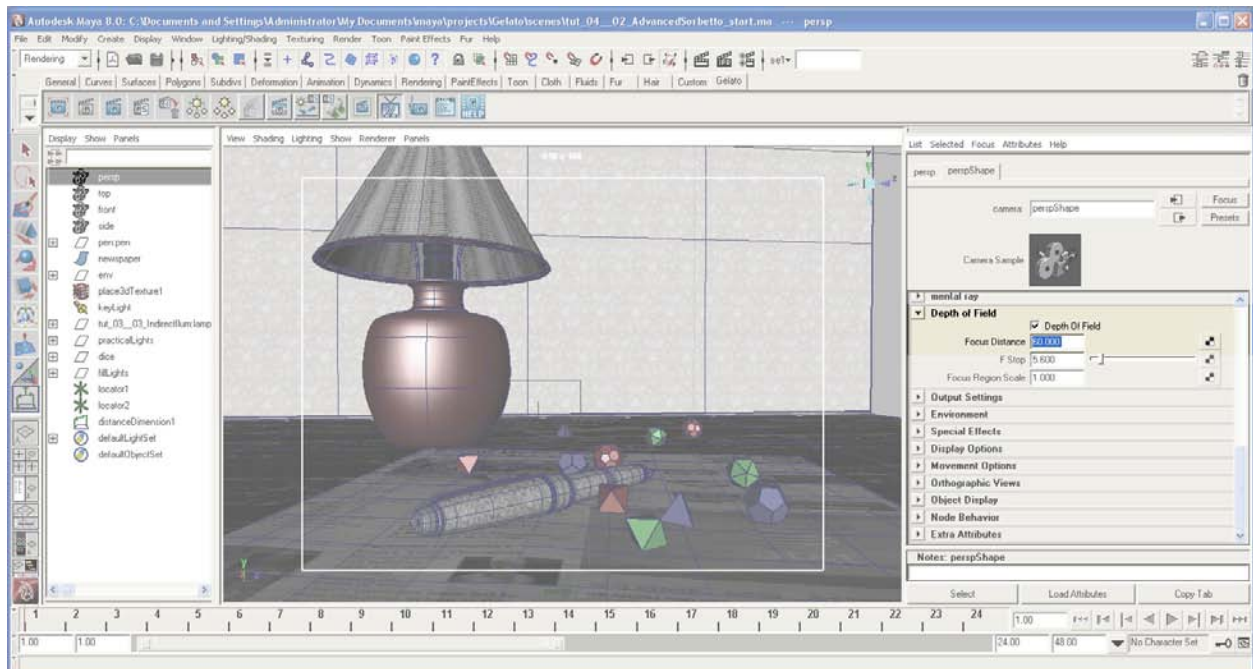
- Change to the Top view of the scene.
- Main Menu > Create > Measure Tools > Distance Tool.



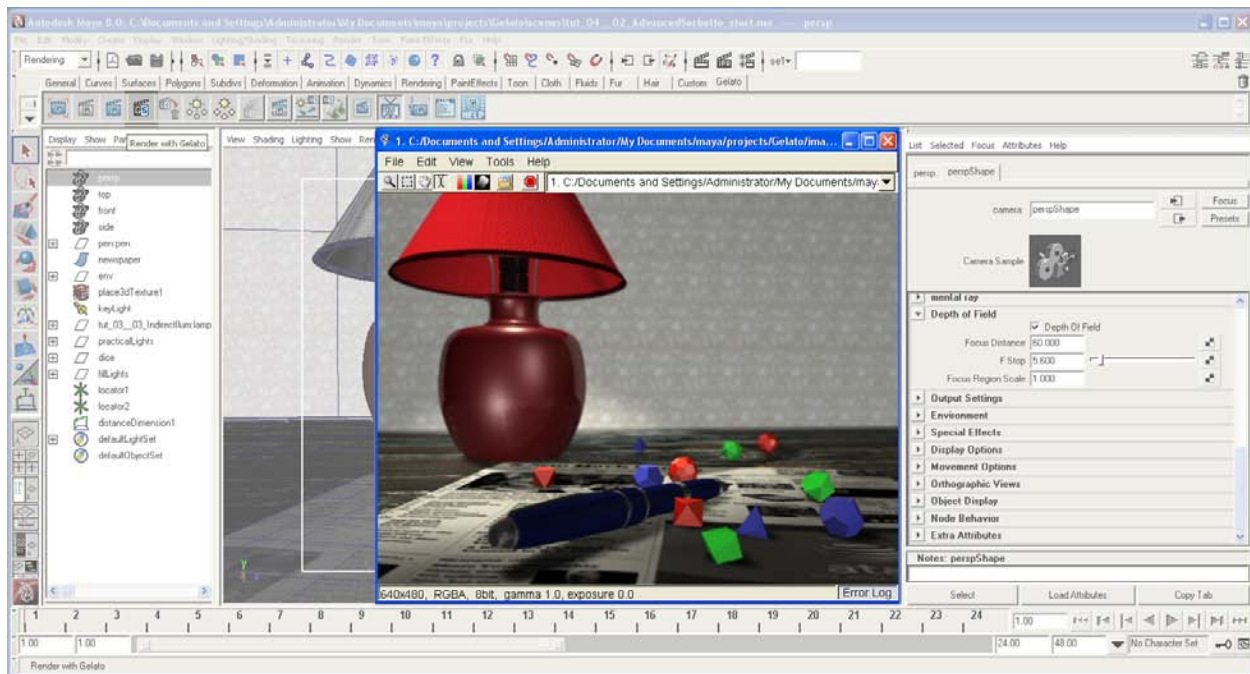
- **[CLK]** on the middle of the camera and again at about the middle of the scene.
- Notice the Distance value in the Distance Dimension Shape Attributes. In the above example, it is 58.286. Let's round this off to 60.



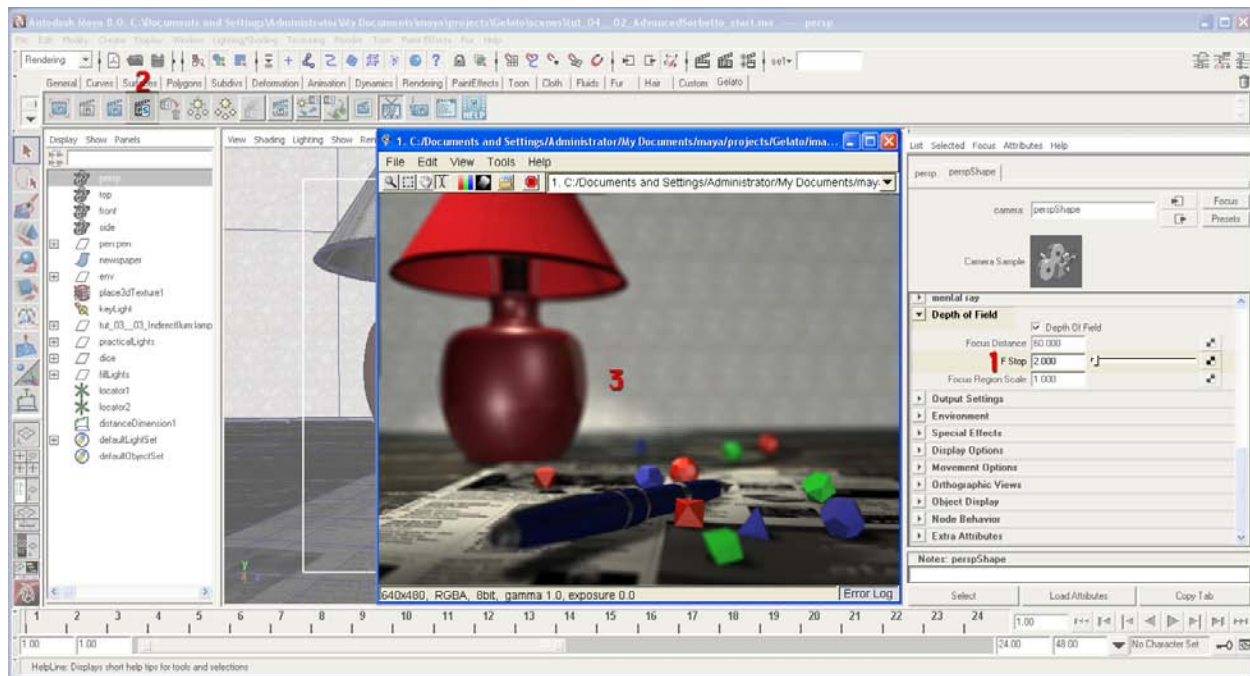
- Return to the Perspective view.



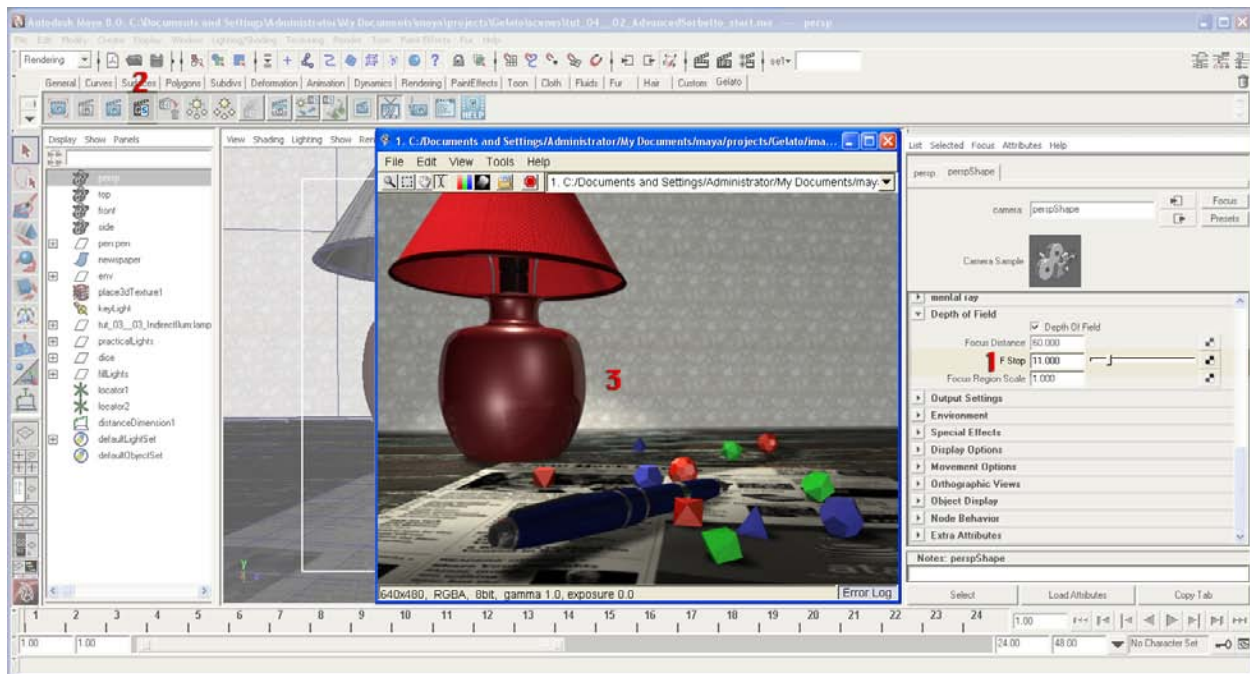
- Select persp camera.
- persp Camera Attribute Editor > Depth of Field > enable Depth of Field
change Focus Distance to 60.000



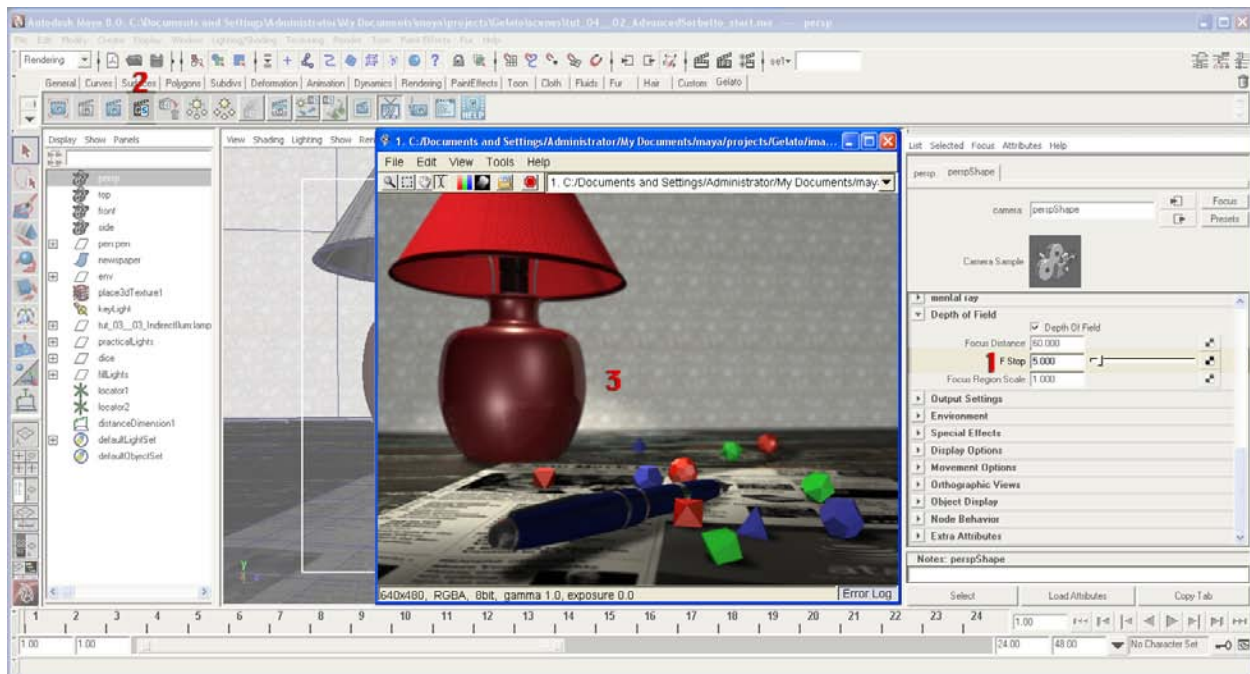
- Sorbetto Re-Render.
- Notice that there is now depth of field in the image.



- Change the F Stop to 2.000.
- Sorbetto Re-Render.
- Notice that the depth of field decreases.

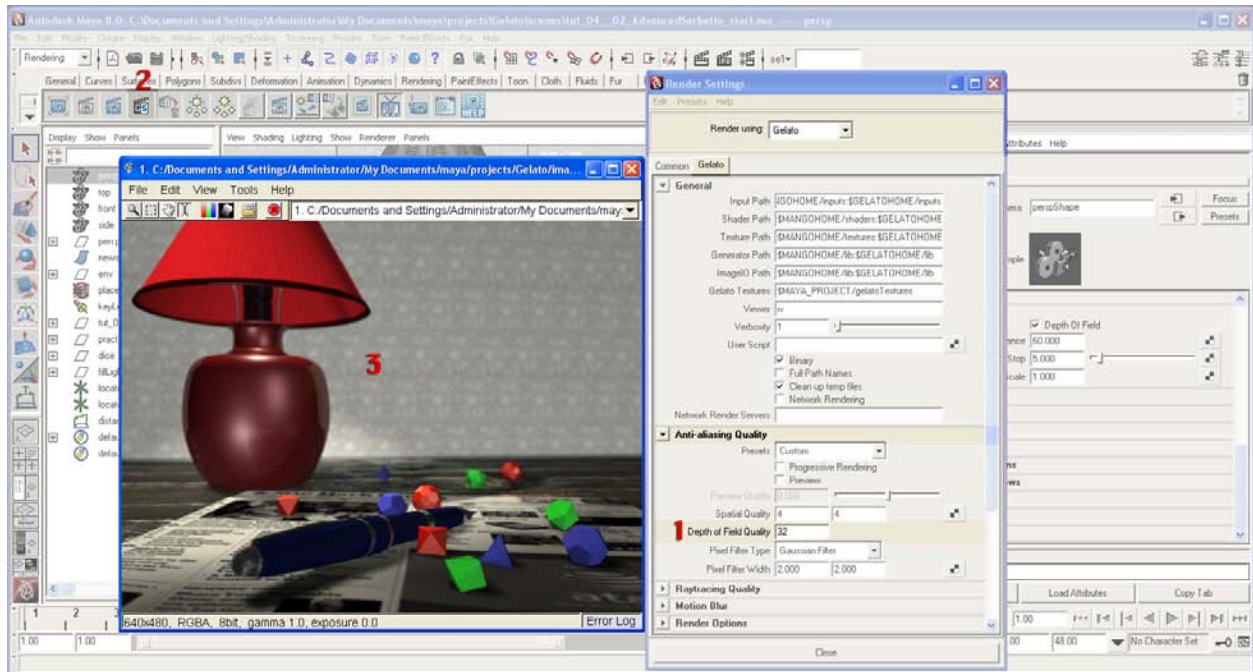


- Change the F Stop to 11.000.
- Sorbetto Re-Render.
- Notice that the depth of field increases.



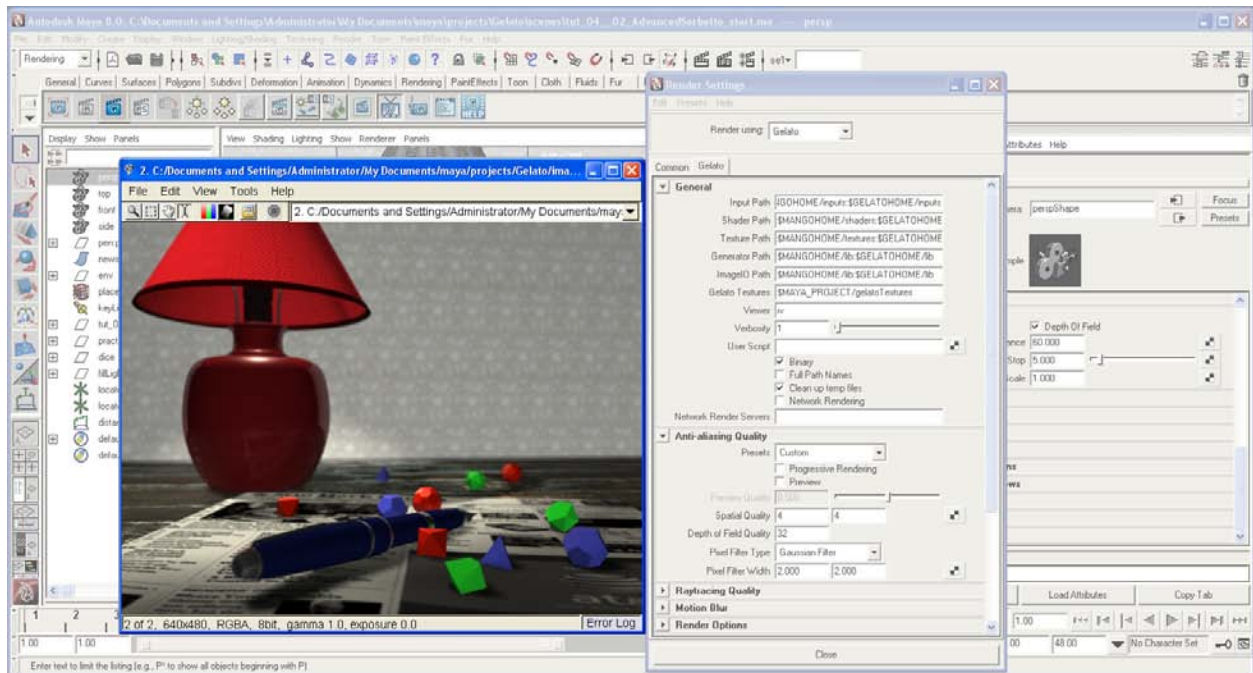
- Change the F Stop to 5.000.
- Sorbetto Re-Render.

We'll leave it here. As you have seen, tweaking this "just so" is a pretty quick venture.



- Render Settings > Gelato > Anti-aliasing Quality > change Depth of Field Quality to 32.
- Sorbetto Re-Render.

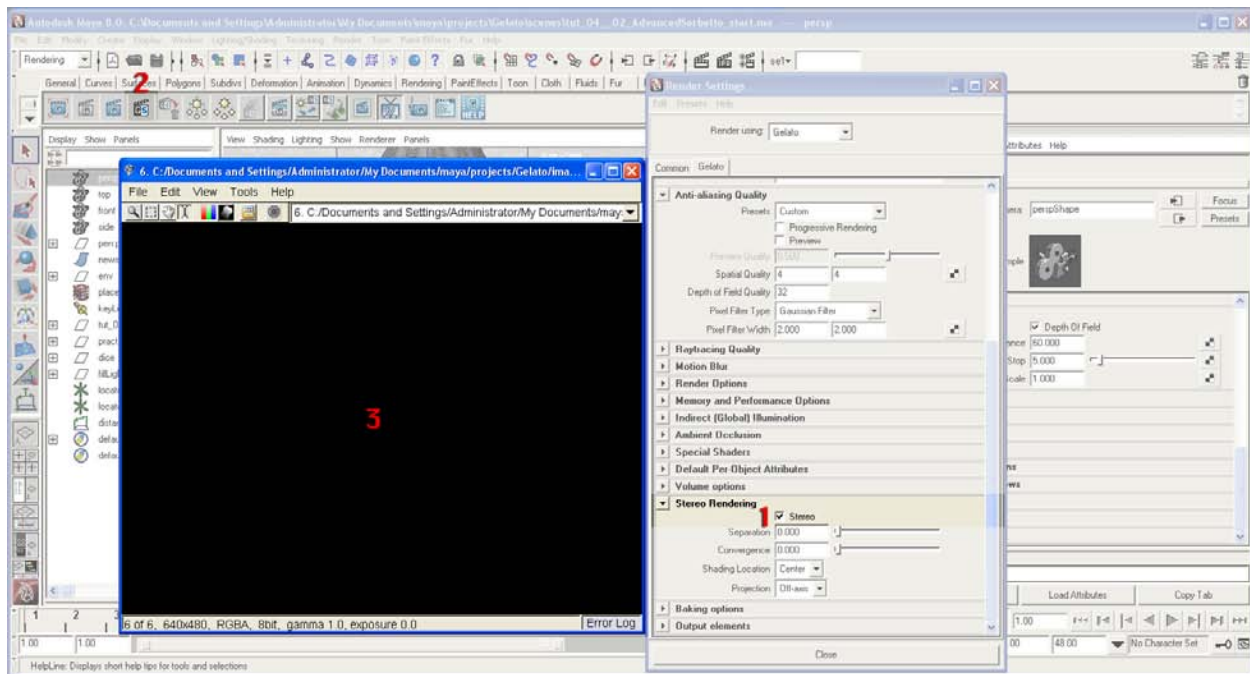
This is a bit sharper. Again, this tweak didn't take much in the way of render time.



We're now going to move on to stereo rendering. This simulates the convergence of two cameras, or eyes, to make an image look like it exists in 3D when the viewer is wearing stereo glasses. Sorbetto will perform two renders, then composite them together.

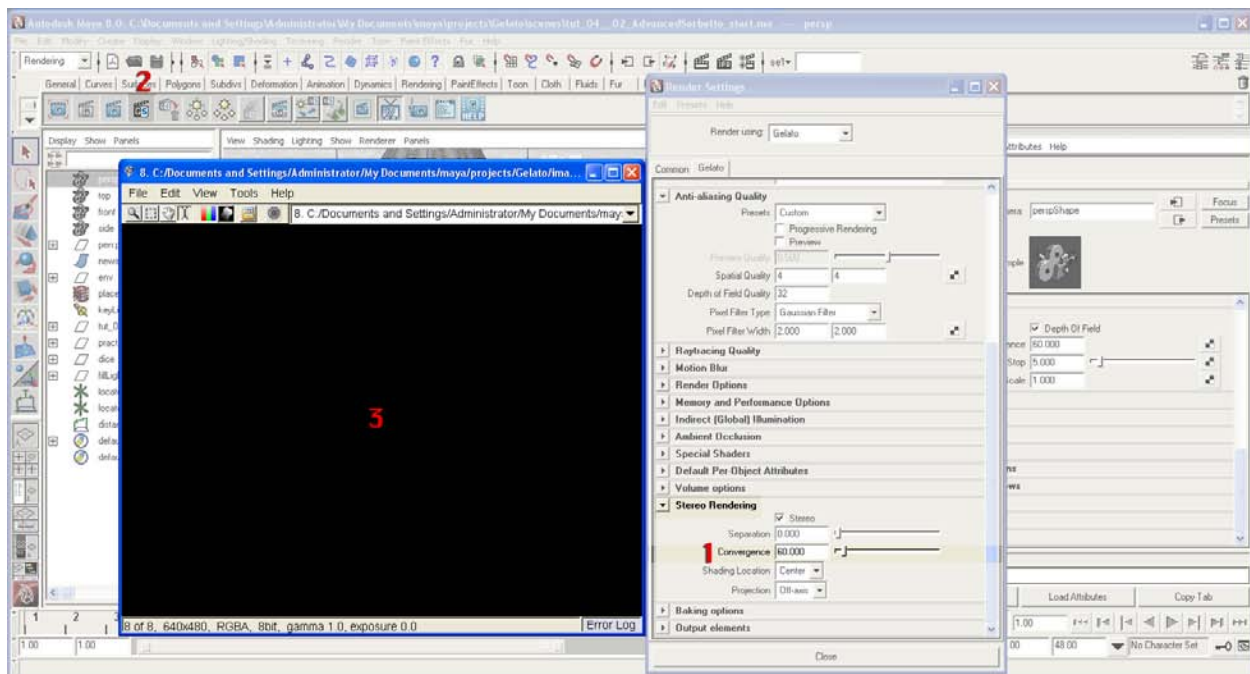
- Gelato Render.

This is an important step. It clears everything so that the stereo render will work as expected.



- Render Settings > Gelato > Stereo Rendering > enable Stereo.
- Sorbetto Re-Render.

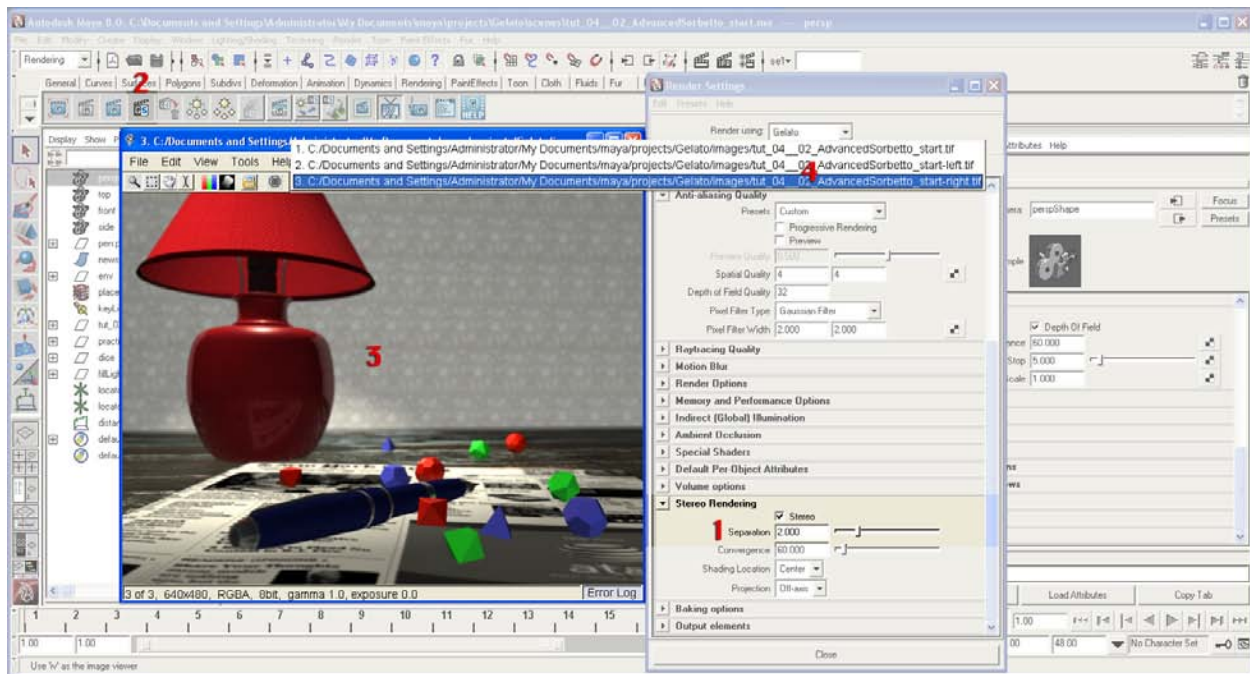
What happened!?! The Separation and Convergence are set to 0, so the render yielded no result.



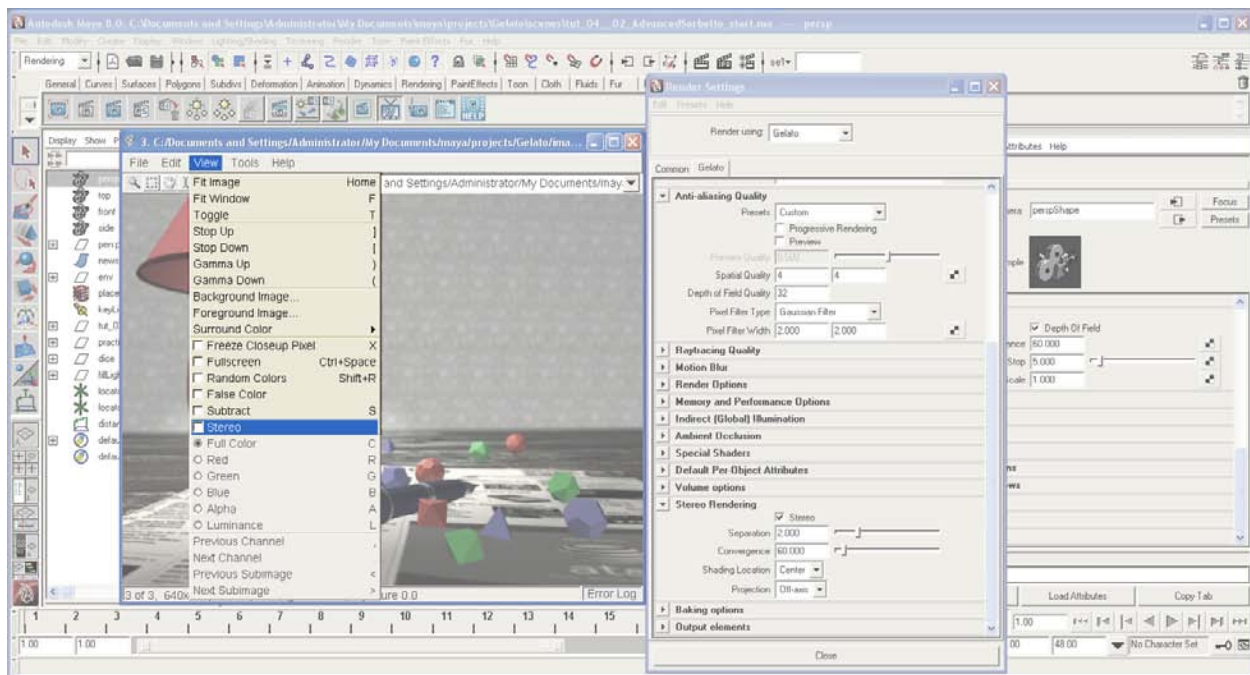
Earlier, we determined that the center of our scene was about 60 units, so this is a good starting point.

- Change Convergence to 60.
- Sorbetto Re-Render.

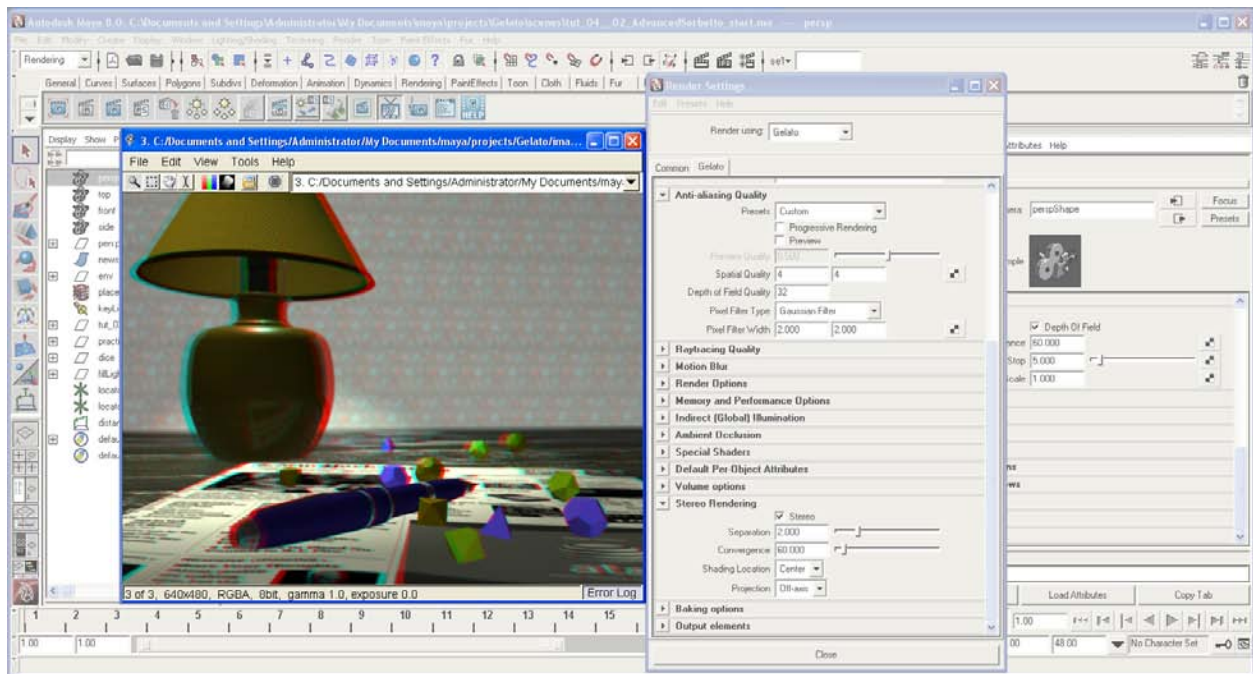
Still nothing. This is because we need to have some separation.



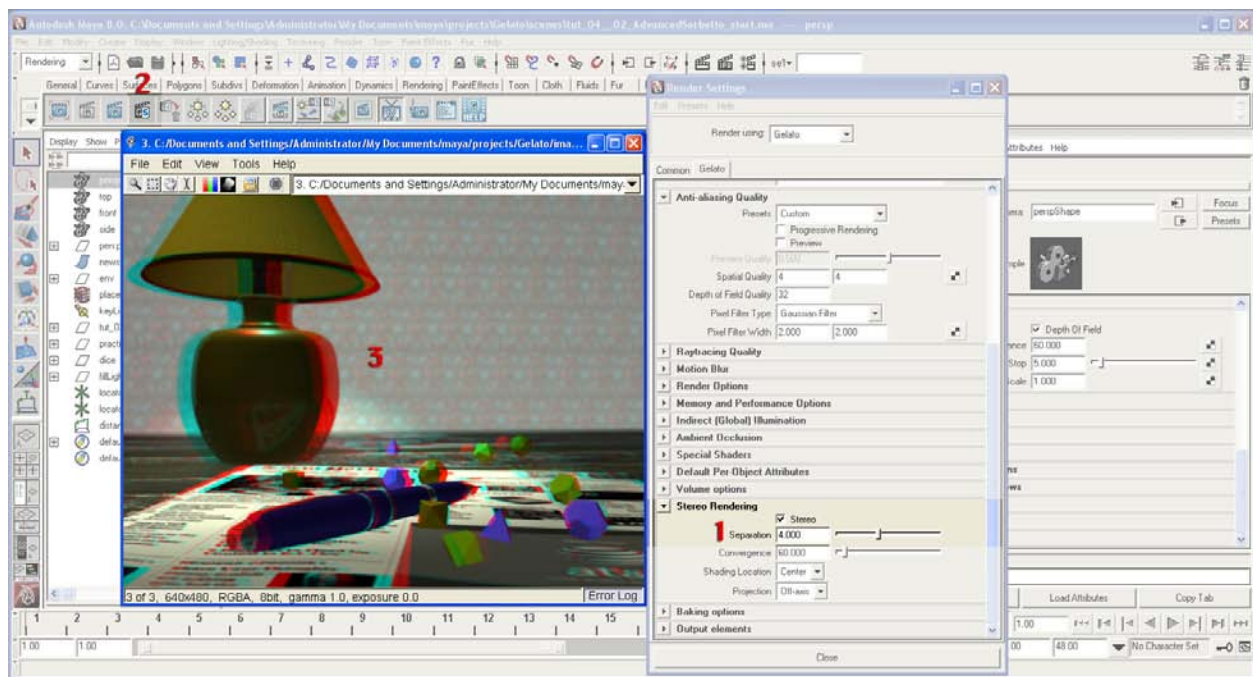
- Change the Separation to 2.
 - Sorbetto Re-Render. *If this doesn't render now, hit the Refresh Sorbetto button.*
 - Notice that in the Documents field of the Image Viewer there is a left and a right pass.
- The offset of these 2 passes is based on the Separation value.



- Image Viewer > View > Stereo

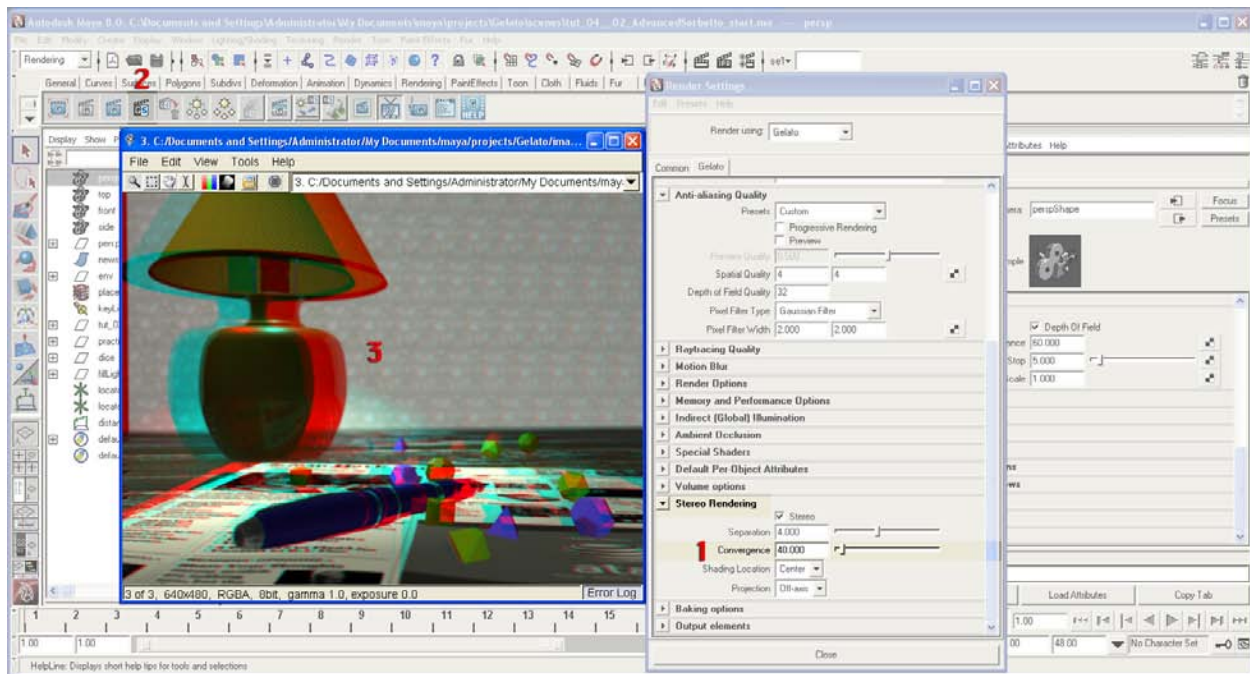


We can now see the stereo effect. This would be the time to put on those fancy glasses if you have them.



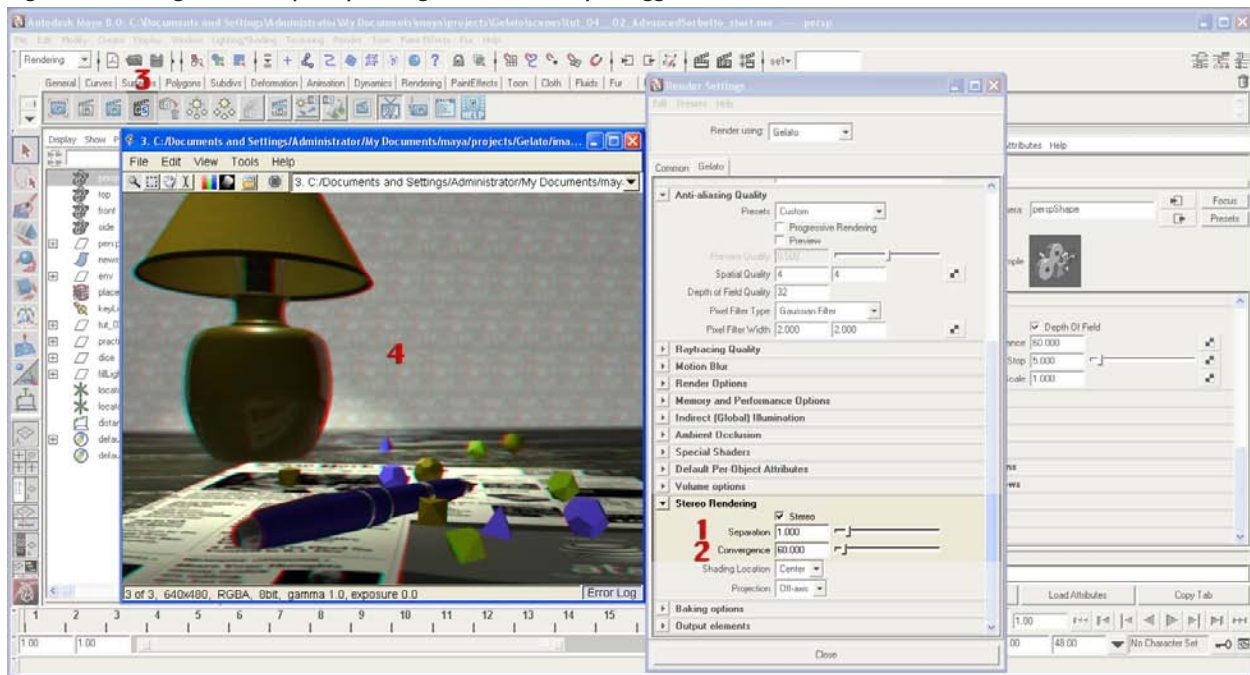
- Change the Separation value to 4.
- Sorbetto Re-Render.

The render update doesn't take long.



- Change the Convergence value to 40.
- Sorbetto Re-Render.

Again, this change is seen quickly, though now it's really exaggerated.



- Change the Separation value to 1.
- Change the Convergence value to 60.
- Sorbetto Re-Render.

This is more reasonable. As you can see, tweaking this effect is a very easy and expeditious in Sorbetto.

This concludes the last of this series of Gelato/Sorbetto tutorials. By now, you have seen many reasons why incorporating Gelato into your workflow is of benefit to any production. Spend more time creating, less time setting things up and waiting for renders.