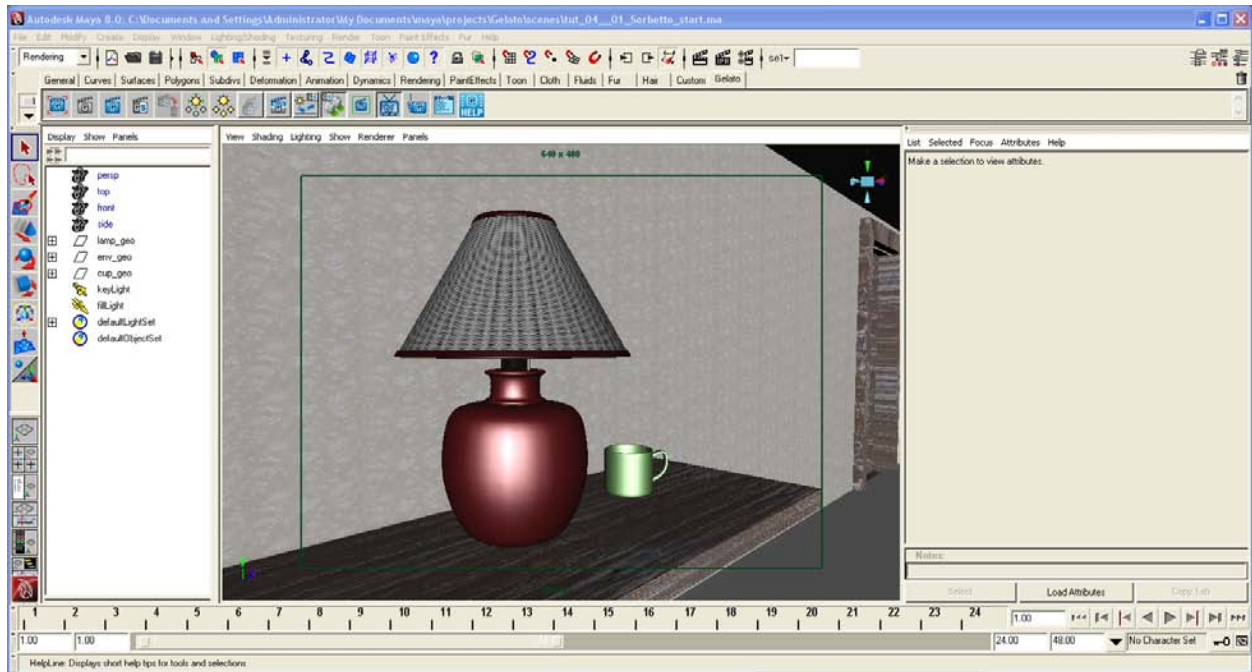


4.1 SORBETTO- BASICS



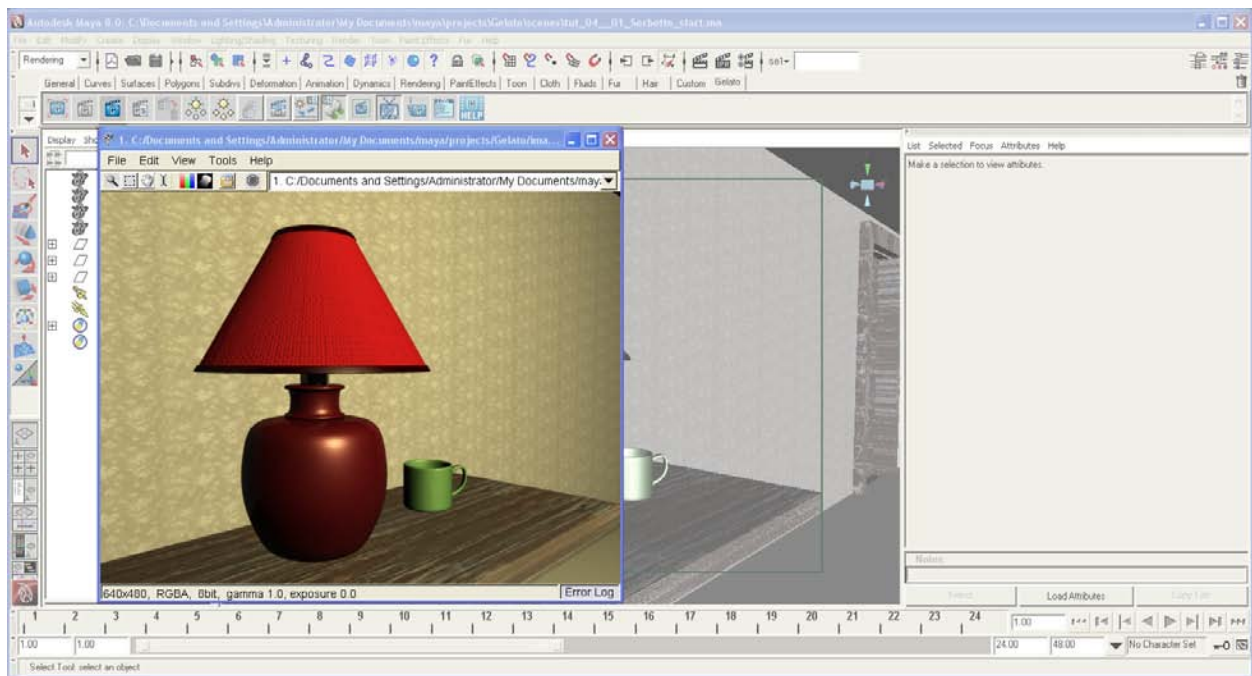
This is the companion to the movie, tut_04_01, the first of two Sorbetto Tutorials.

Sorbetto is relighting rendering technology that allows one to make changes to scene lighting without having to re-render the entire scene, similar to Maya's IPR. Instead of re-rendering the geometry and textures when we want to check or tweak our lighting, that data is cached separately from the lighting information. When we make adjustments to the lighting, only the lighting is updated. This is particularly and especially useful when there are many lights in a scene – we all know how each additional light adds to render times. Lighting changes can be seen in almost real-time, as we are about to discover....



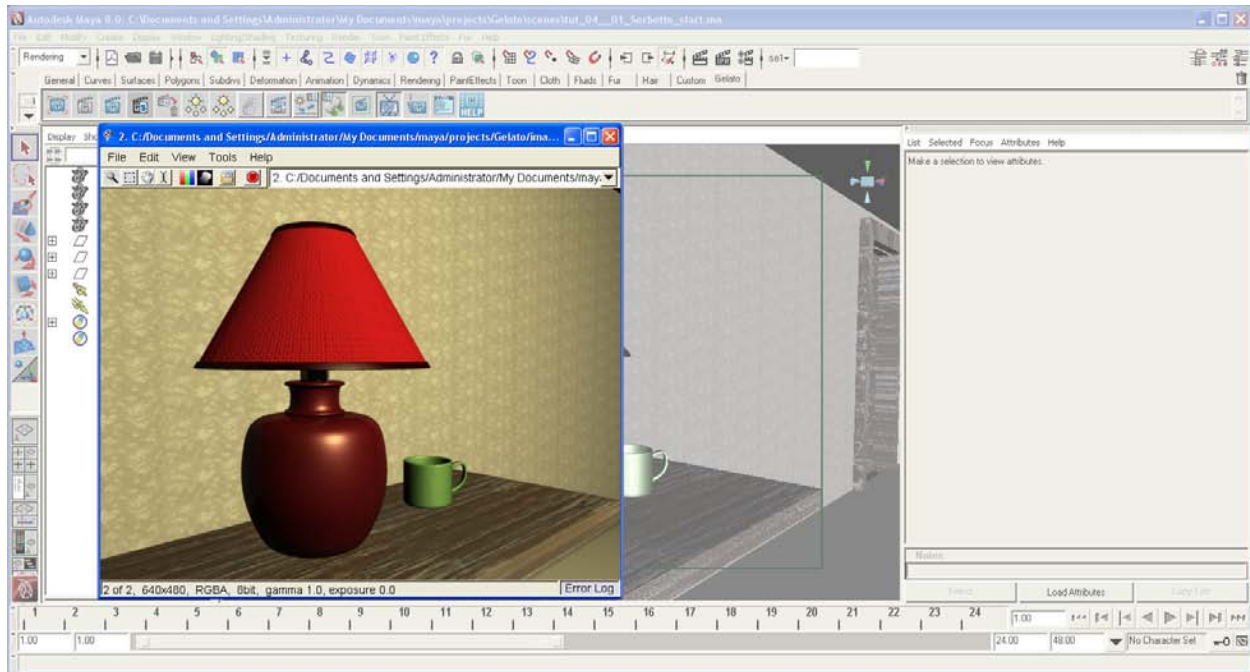
- Open "tut_04_01."

The scene has a lamp and a cup sitting on a table with a wall behind.



- Gelato Render.

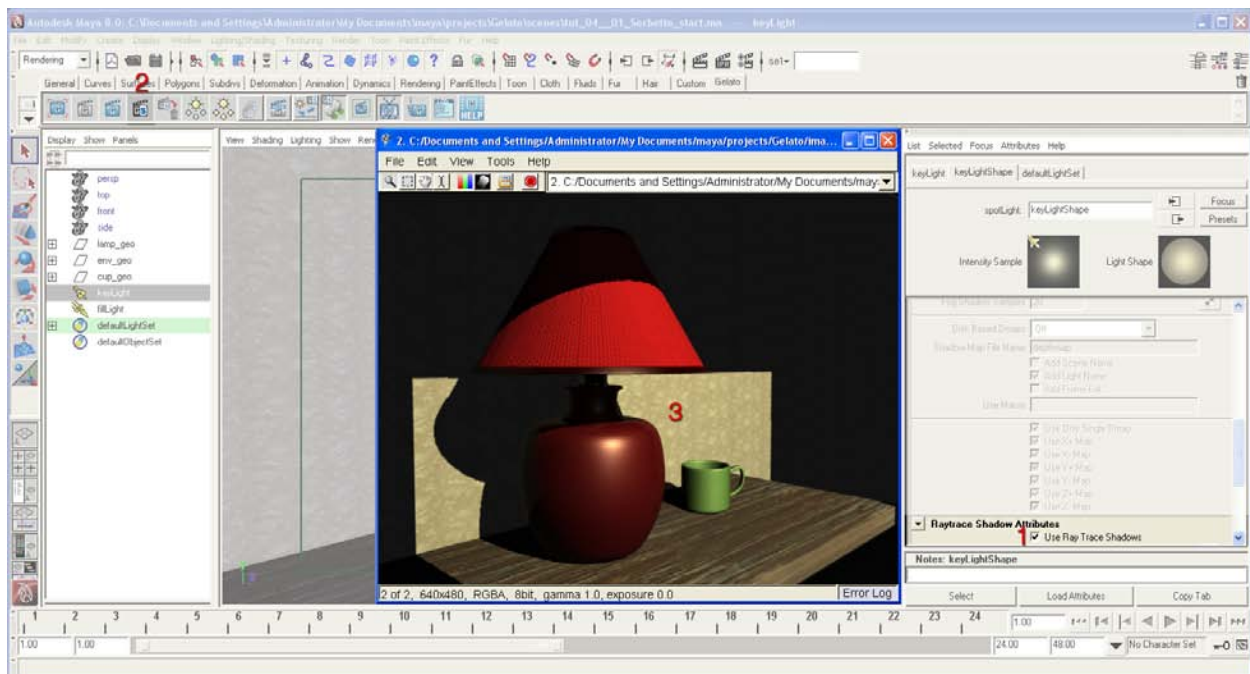
The lighting is currently coming from a spotlight which is acting as the scene's key light.



• Sorbetto Re-Render.

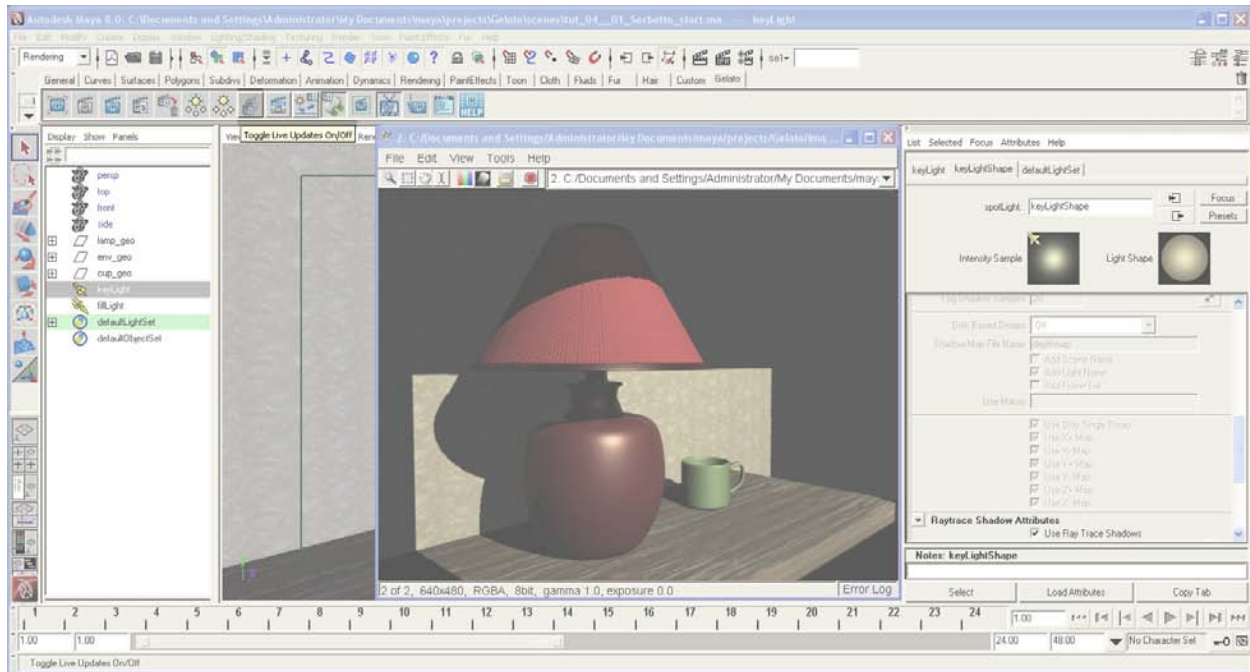
- * It looks the same as the Gelato render.
- * It took pretty much the same amount of time to render.

What's different about this render is that things were stored to cache.



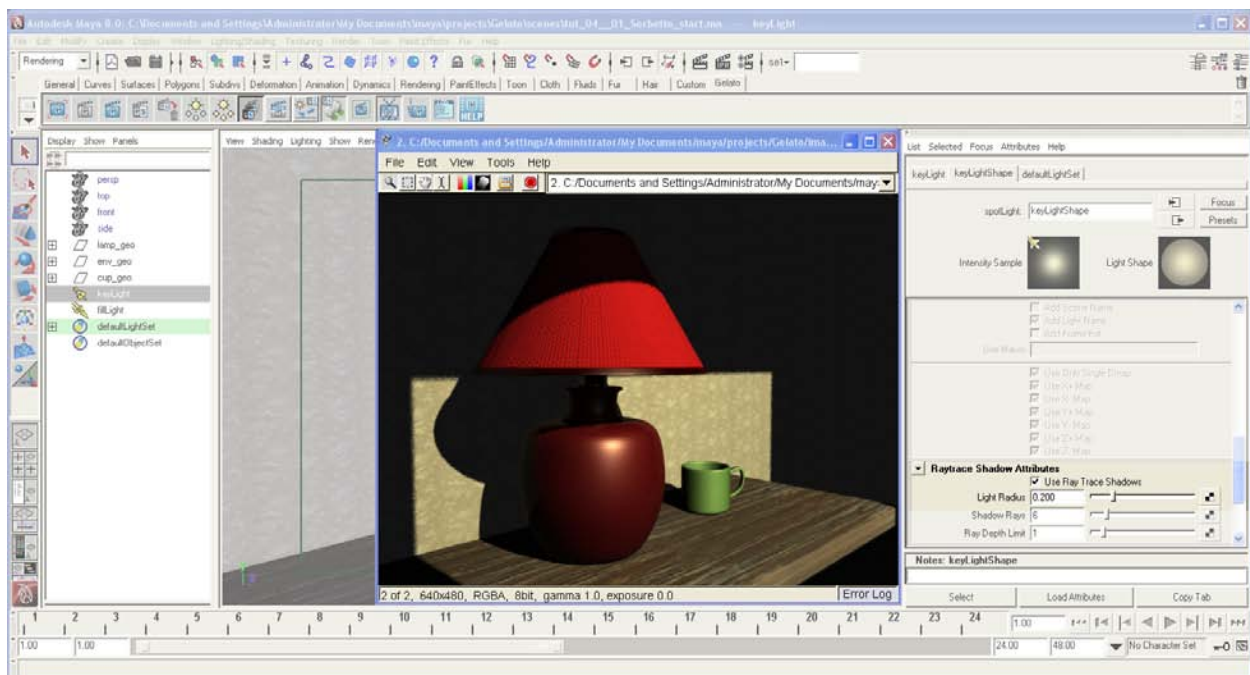
- Select the key light.
- Key Light's Attribute Editor > Raytrace Shadow Attributes > enable Use Ray Trace Shadows.
- Sorbetto Re-Render.

This render occurred very quickly since now the lighting information is the only thing to have been updated.



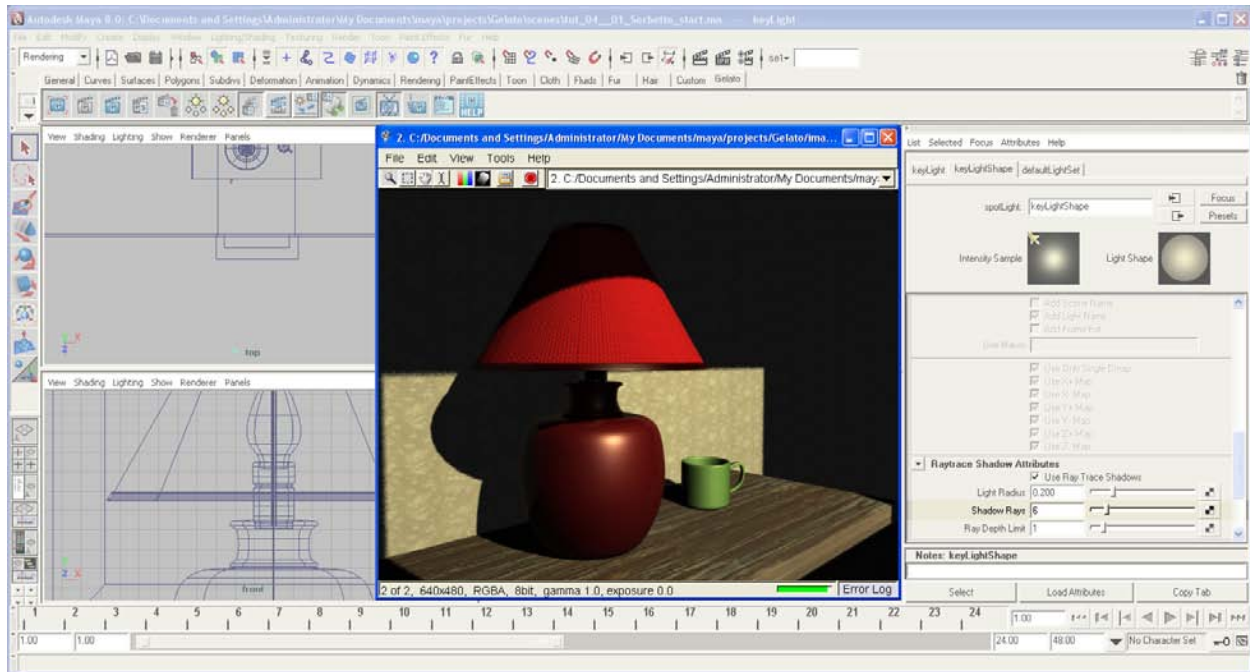
While making adjustments, it might become a nuisance to constantly go up to the Gelato Shelf every time we make a tweak in the lighting. If you recall from the Tutorial 2 series, Gelato has given us an easy solution to help our work flow become more efficient...

- Turn on the Toggle Live Updates button, the 8th button from the left in the Gelato Shelf.



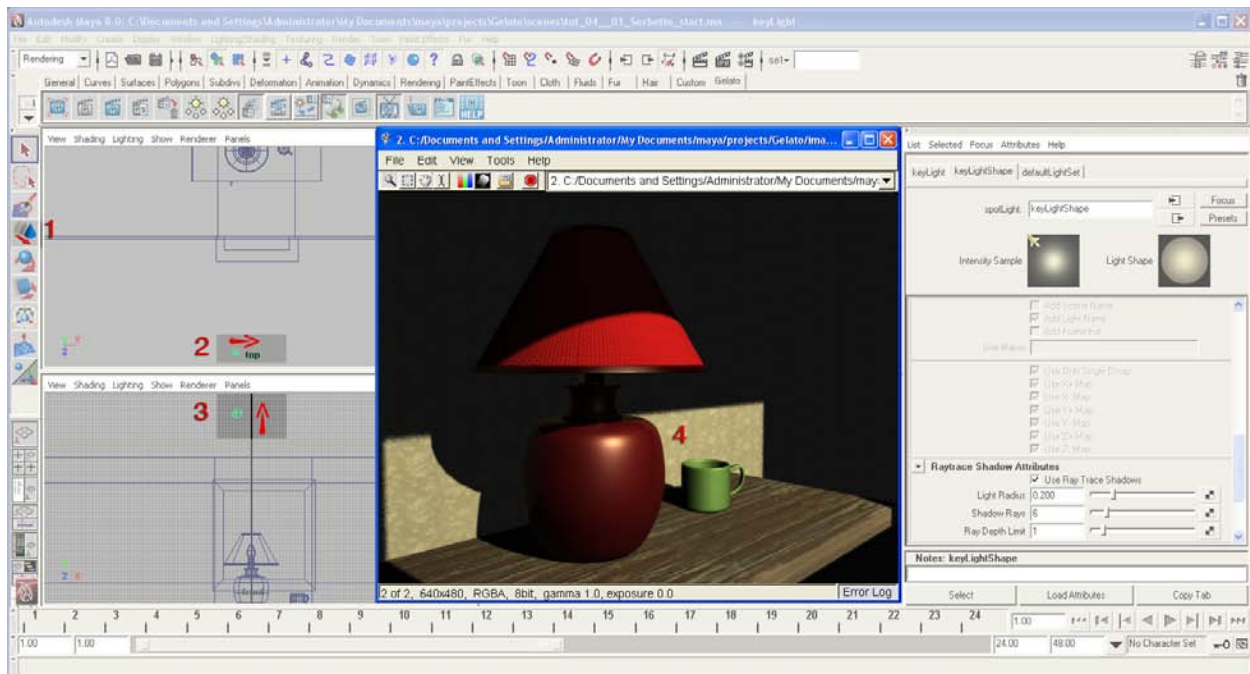
- Change the Light Radius to 0.200.

The iv automatically updates and we can see that the edges of the shadow are softened.



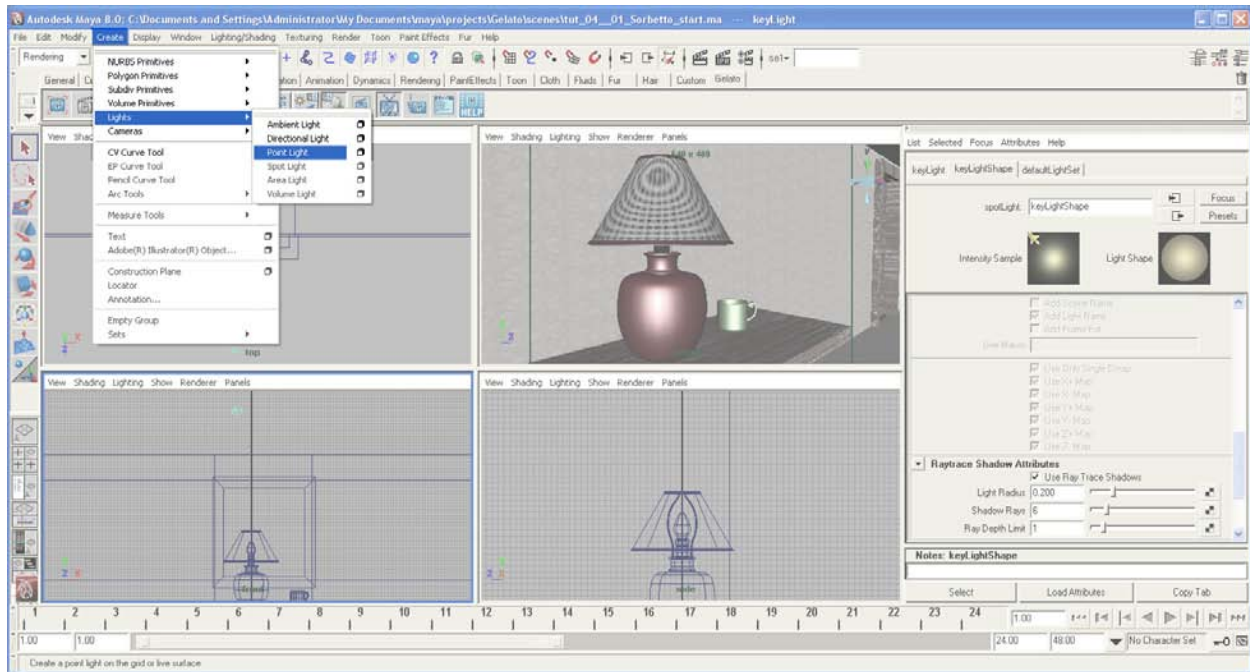
- Change Shadow Rays to 6.

As soon as we enter the value, Sorbetto again begins to automatically update the Image Viewer – without us having to hit an extra button. It's a little thing, but a nice thing, and is another way our workflow can be streamlined.



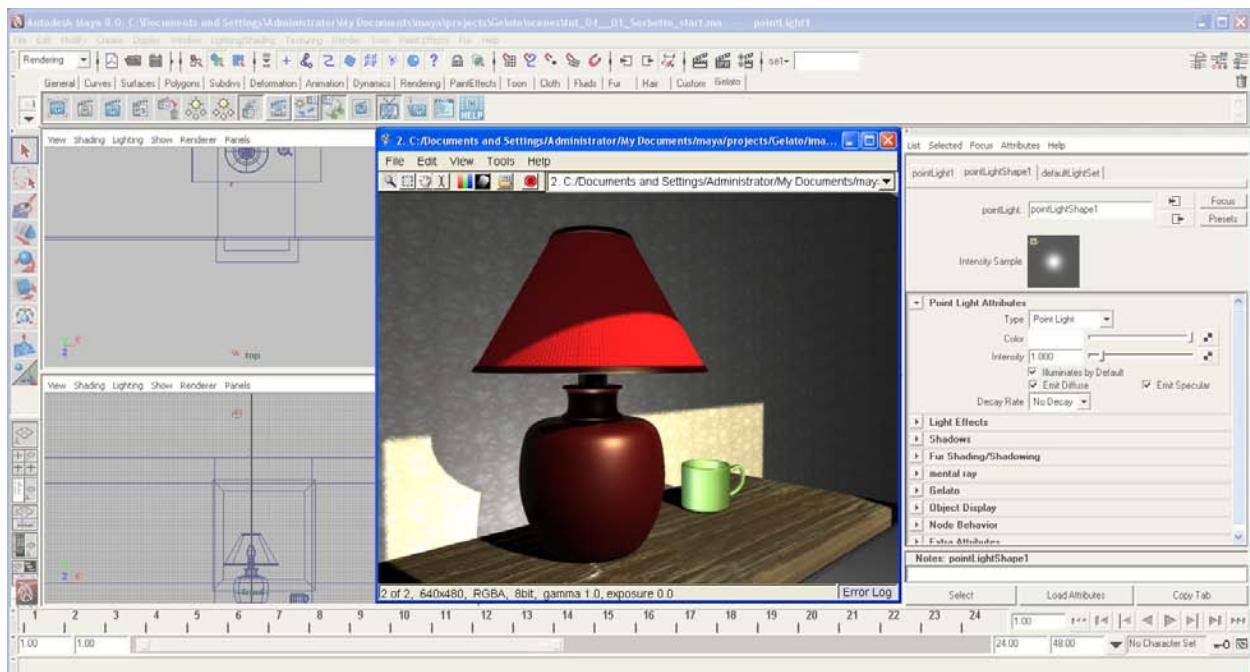
- With the key light still selected, go to the top view of the scene, **[CLK]** the Move tool and move the light a little to the right.
- In the front view, **[CLK]** the Move tool and move the light up a bit.

The iv keeps up with us.

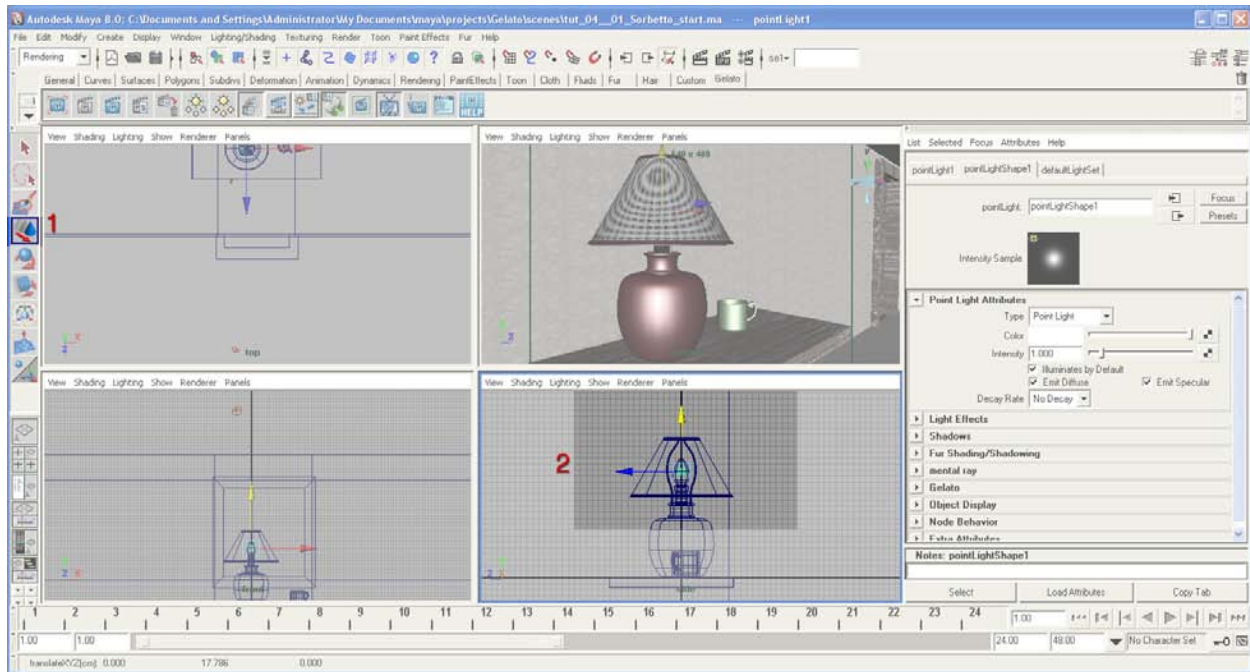


- Main Menu > Create > Lights > Point Light.

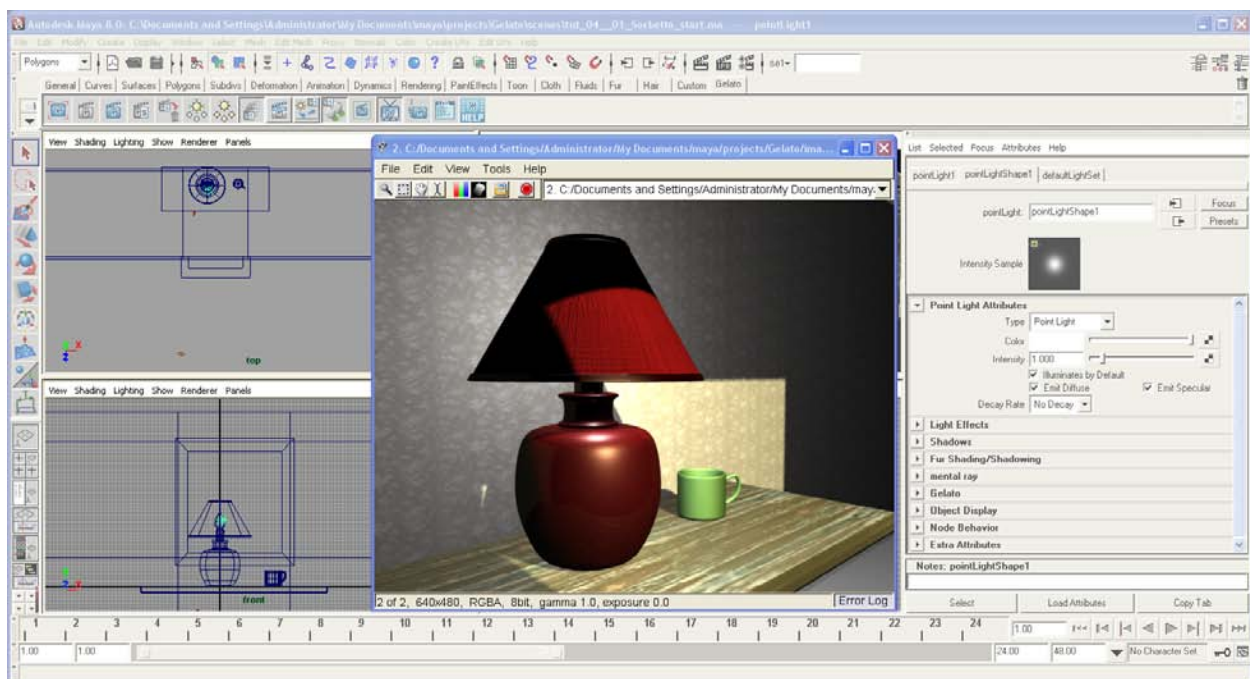
We're going to begin to light our scene and this light will simulate the light coming from the lamp's light bulb.



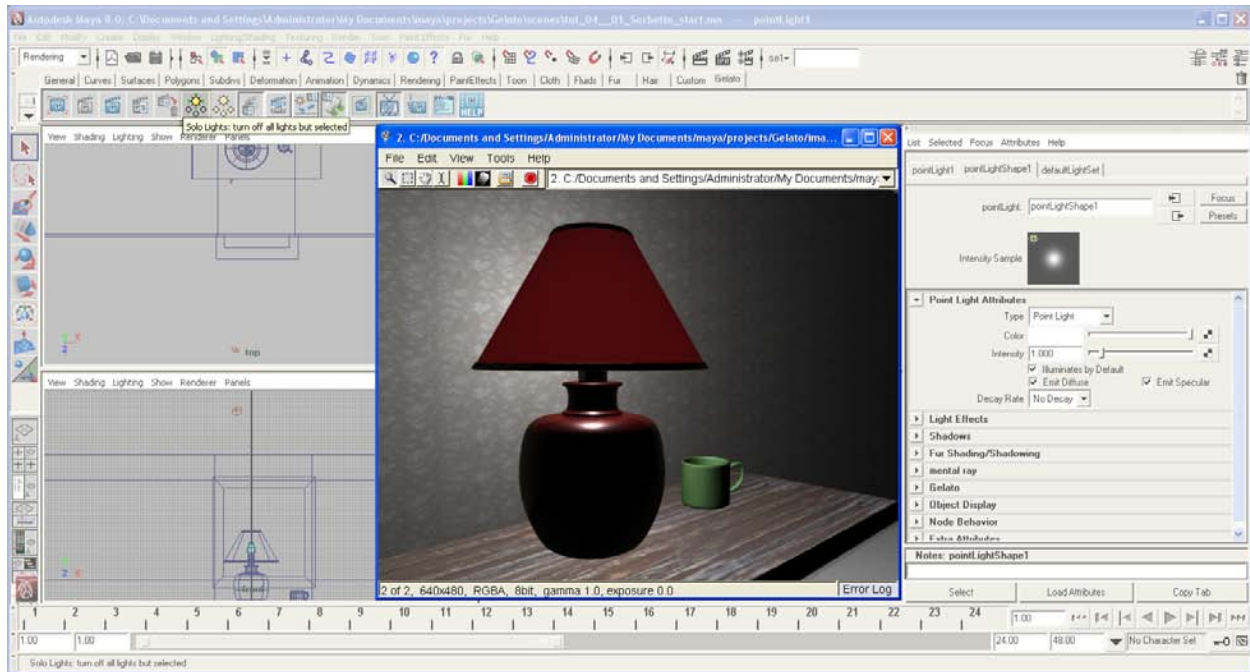
When we added the light, the iv updated to show the added light source.



- Select the Move Tool and move the new light into the center of the modelled light bulb.

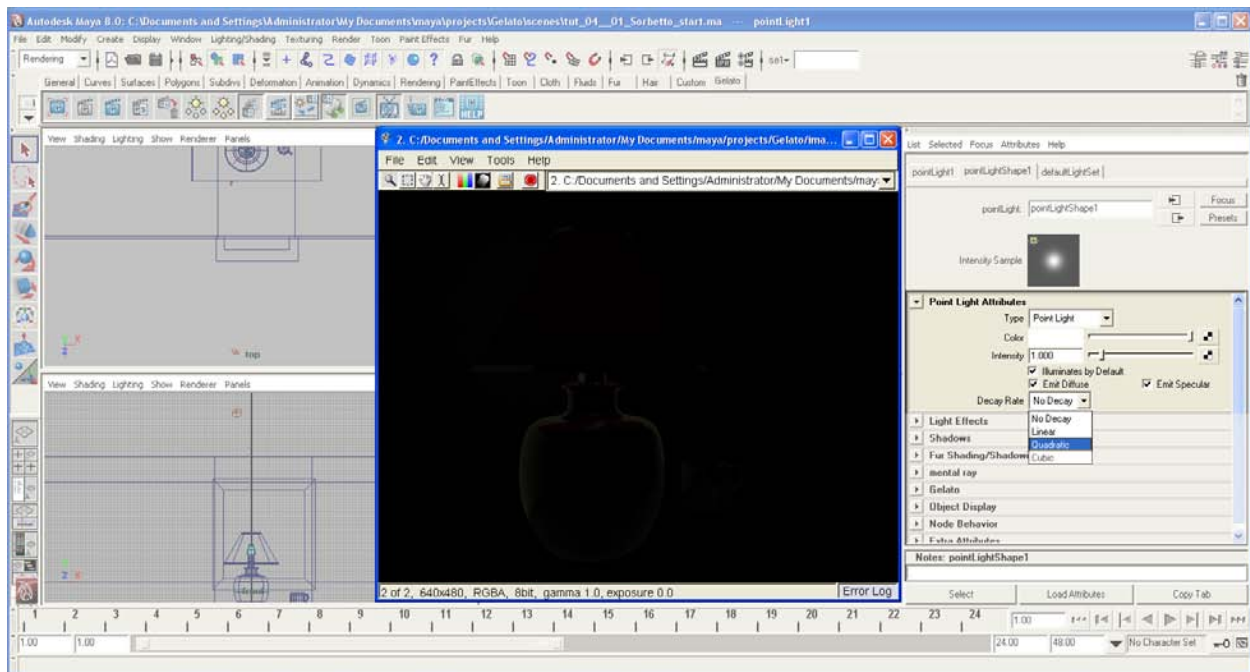


- Should the Image Viewer not update, **[CLK]** the Sorbetto Re-Render button again.
- We want a nice, soft pool of light on the wall behind the lamp.



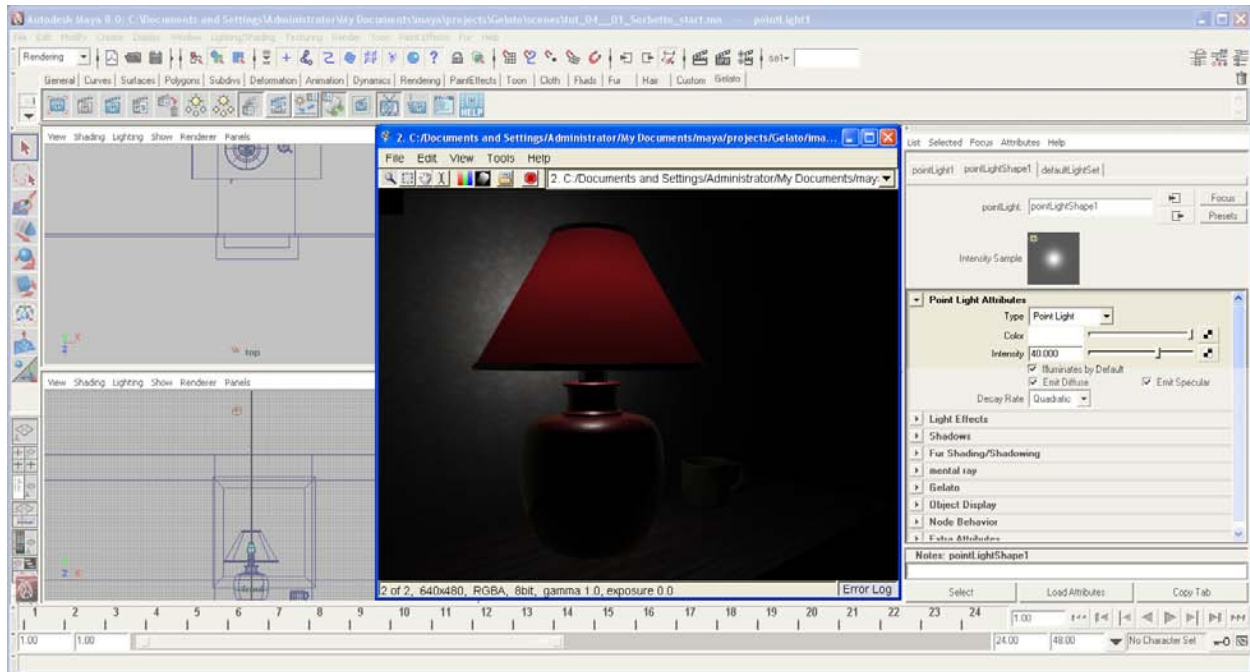
- With the point light selected, **[CLK]** the Solo Lights button.

This, if you recall, will turn off all other lights, making it easier to tweak this one. The Image Viewer updates to show only this light's illumination.



- In the Point Light Attributes Editor, set the Decay Rate to Quadratic.

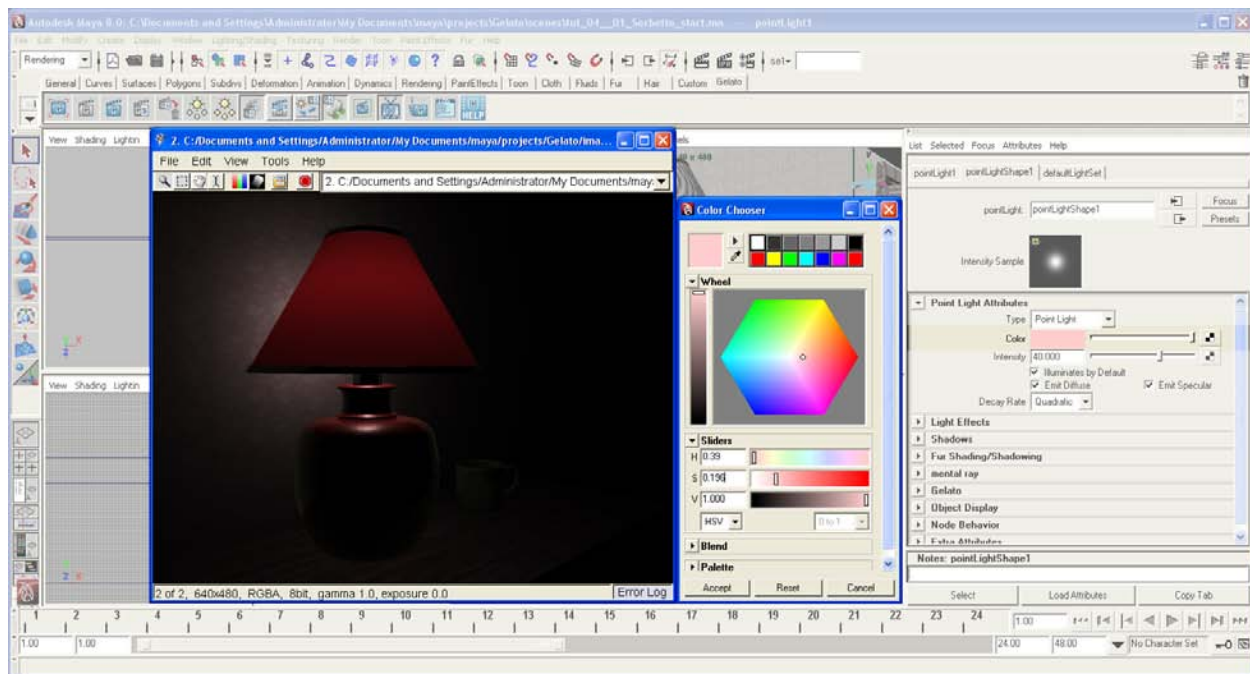
Whoops... looks like someone turned the light out.



- Set the Intensity to 40.

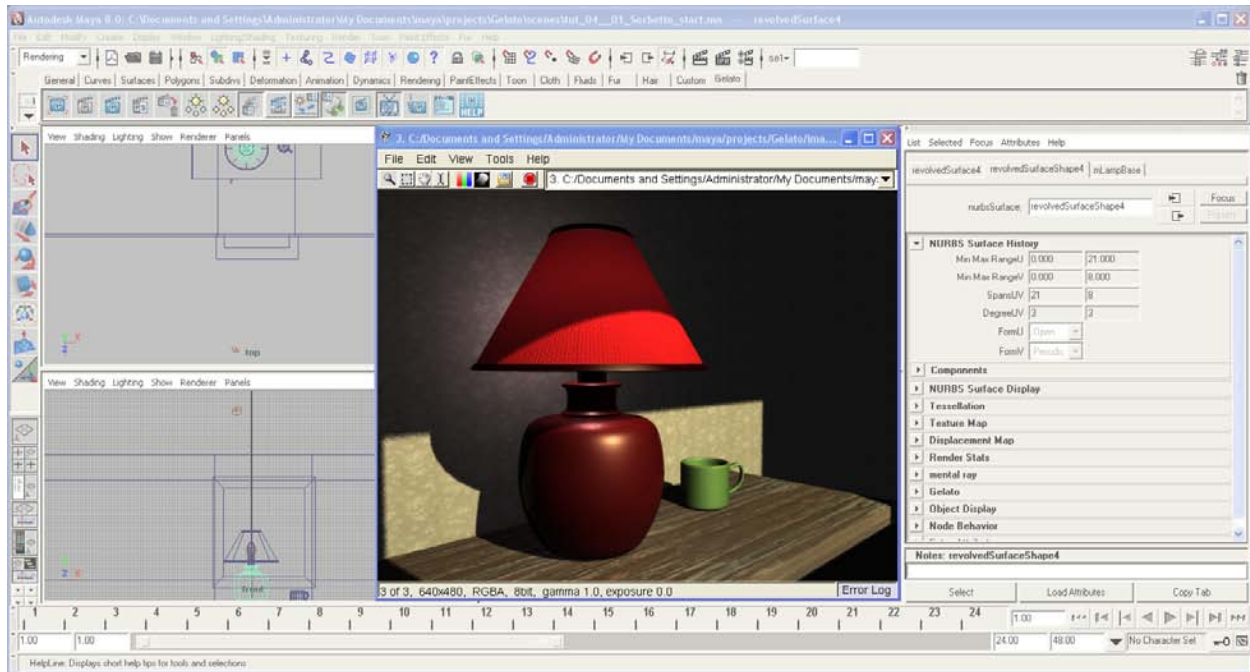
Now we see some soft lighting.

Since the light falls off more quickly because of the change we made to the Decay Rate, the higher intensity value is needed.



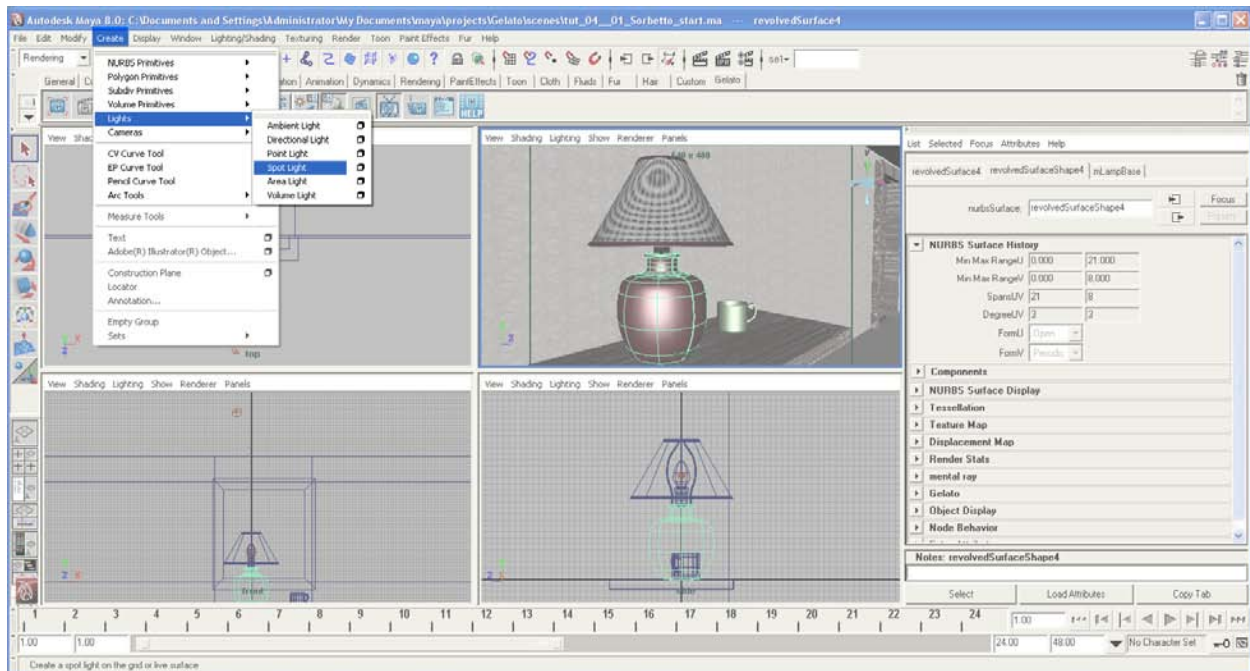
- Point Light Attributes > Color > **[CLK]** the color field to open the Color Chooser.
- Add a reddish tint to the light's Color.

We can see this in the updated Image Viewer. The color is simulating bounced light – this is much faster than using global, or indirect, illumination.



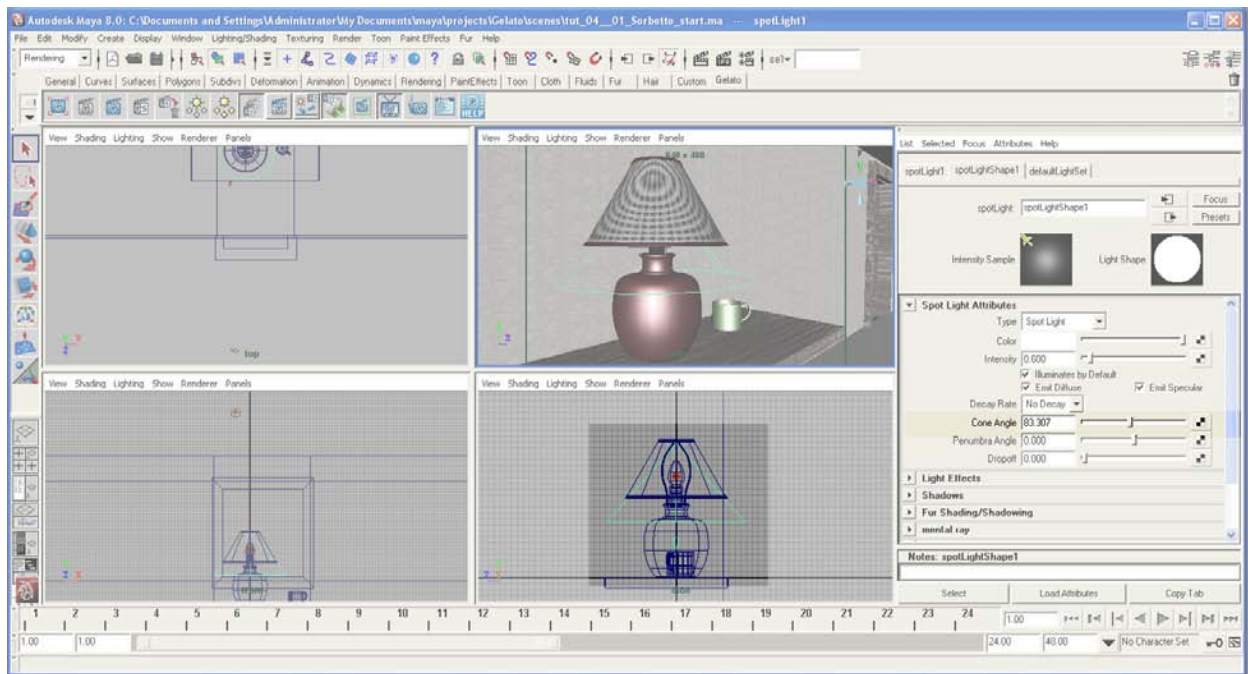
- With the light still selected, Unsolo the light.
- Sorbetto Re-Render. It may be necessary to use the Refresh Sorbetto button.

As of the time this documentation was created, often when the *Unsolo lights* action is done, it's necessary to throw out the cache and re-render. If Gelato is being stubborn, **[CLK]** on an object in the perspective view, then **[CLK]** Refresh Sorbetto.

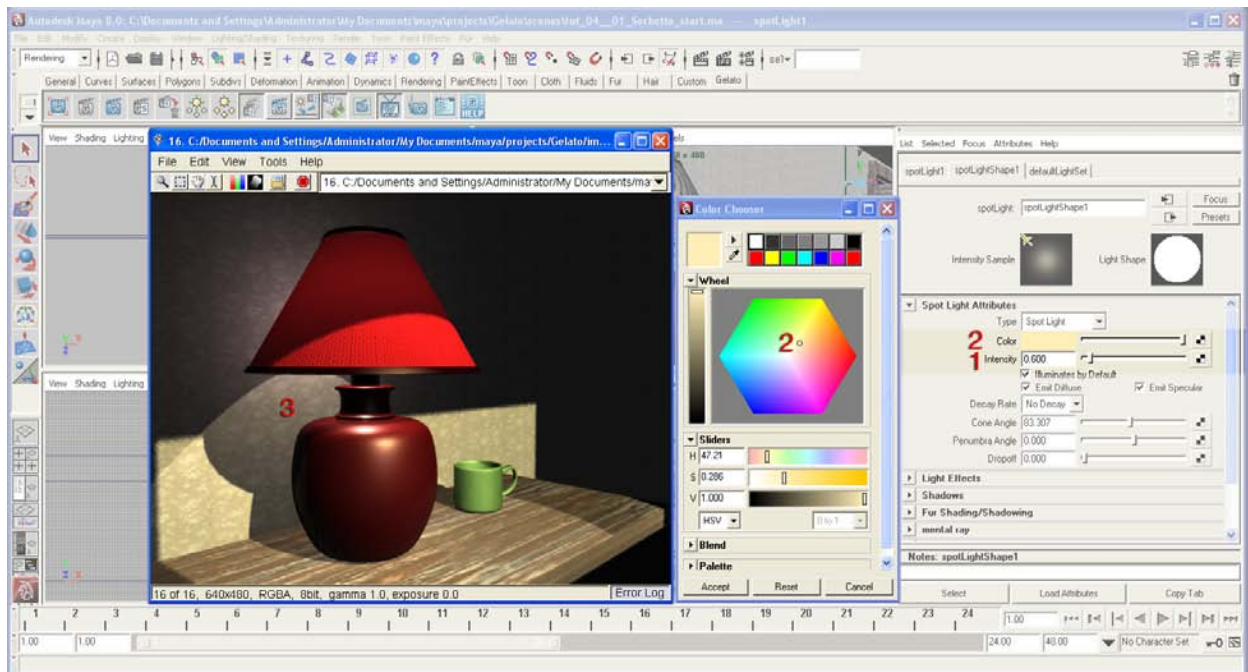


- Add a spotlight.

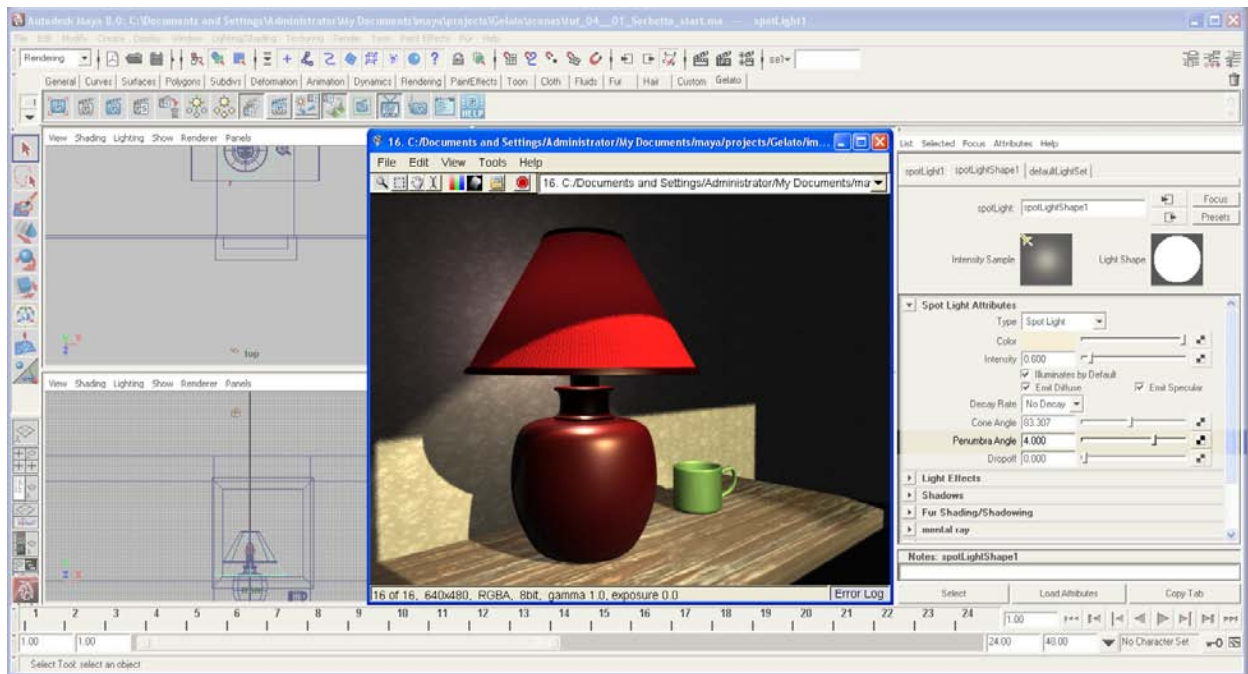
Light spilling out from the lamp shade will add to the scene's lighting and will cast its own shadows. Point lights are expensive when they are used as shadow-casting lights; the spotlight will serve as a good cheat to achieve the desired effect.



- Scale, rotate and position the spotlight so that it is just below the top of the lampshade, facing downwards.
- Adjust the Cone Angle to fill the bottom of the lamp. In the above example, this value is 83.307

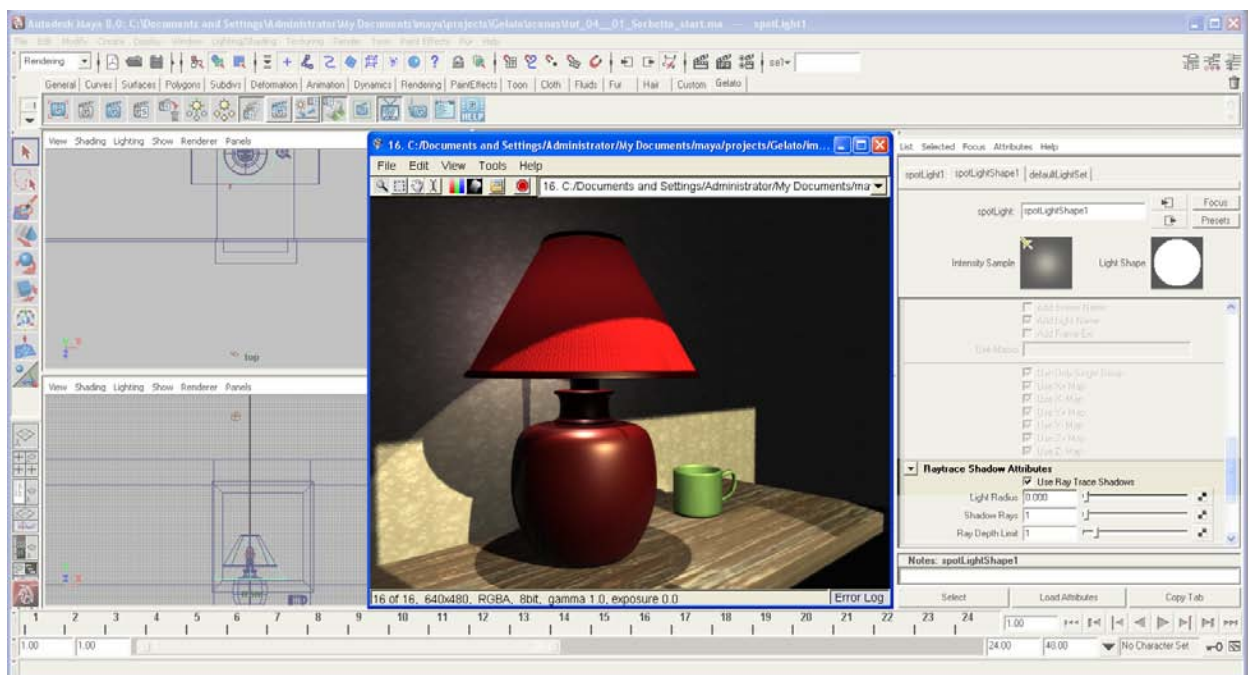


- Change the Intensity to 0.600.
- Change the Color to a soft yellow.
- Observe the effects. If the iv doesn't update spontaneously, Refresh Sorbetto.



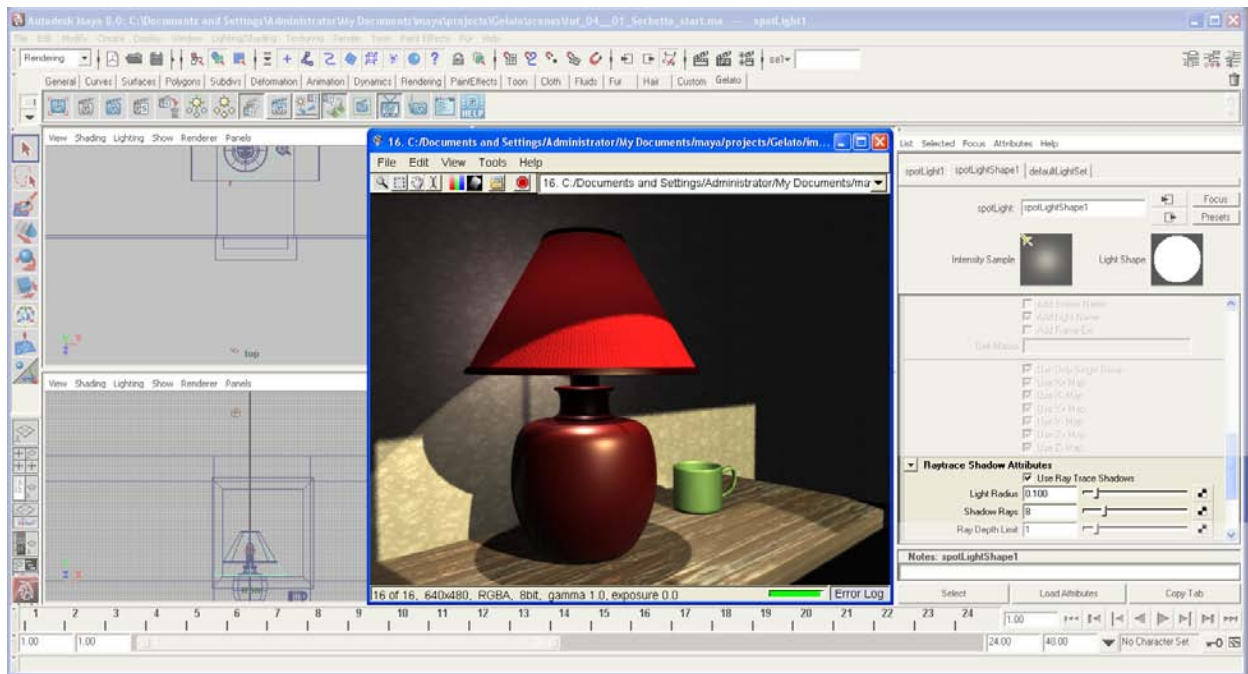
- Increase the Penumbra Angle to 4.000.

This softens up the edges of the light.



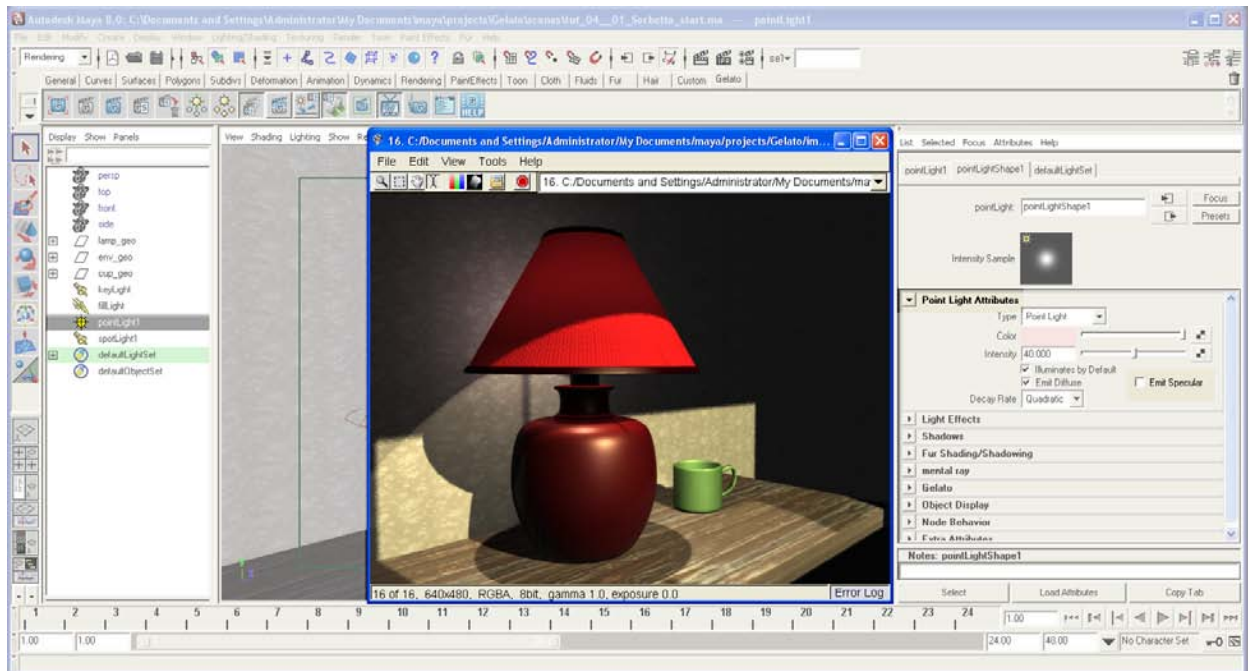
- Spotlight's Attribute Editor > Shadows > Raytrace Shadow Attributes > enable Use Ray Trace Shadows.

Interesting shadows are now included in the updated render, breaking up the scene and creating interest. We can see some of the detail from within the lampshade casting shadows onto the scene, as well as new shadows being cast from other objects falling under the influence of the light.



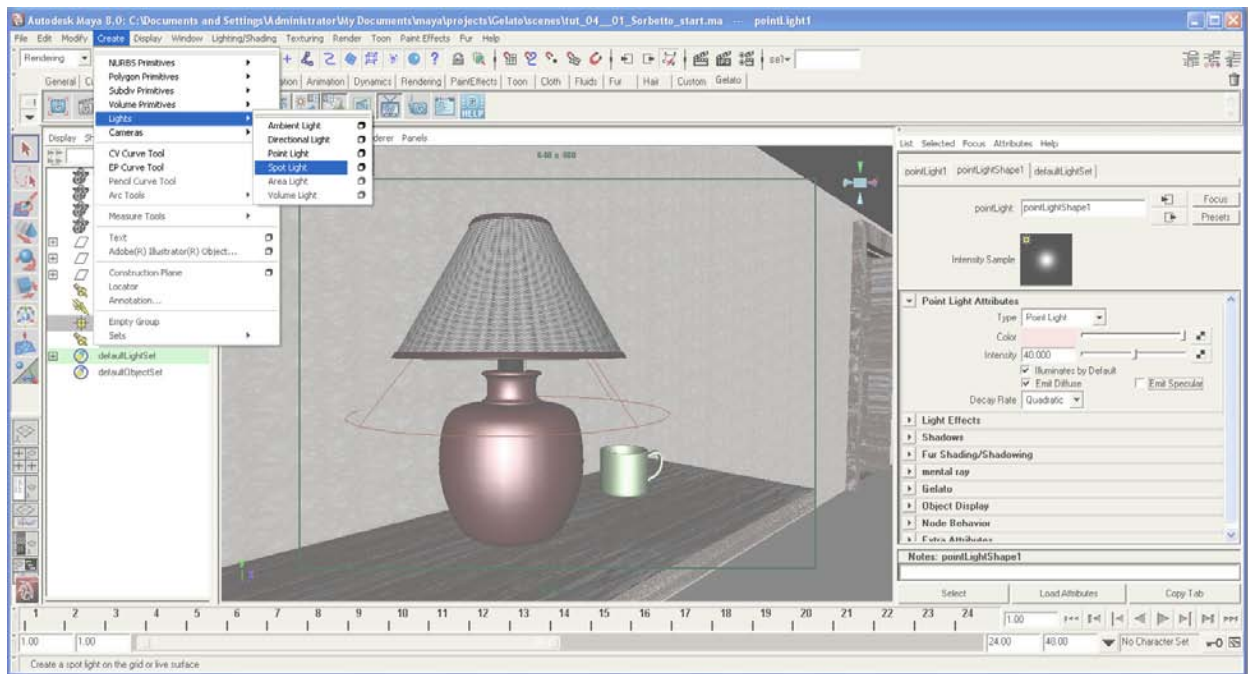
- Still in the Raytrace Shadow Attributes, change: Light Radius to 0.100
Shadow Rays to 8

This softens things somewhat.



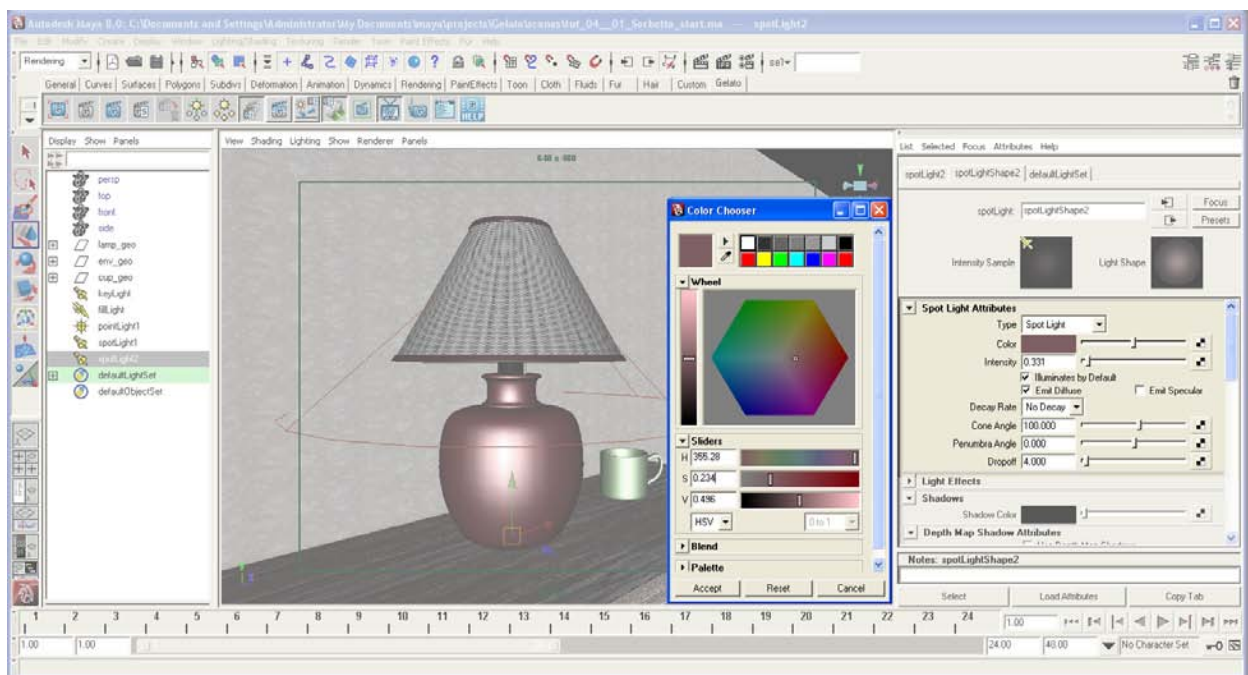
- Select the Point light.
- Point Light Attributes > disable Emit Specular.

We don't need multiple speculars from what is supposed to be the same light.

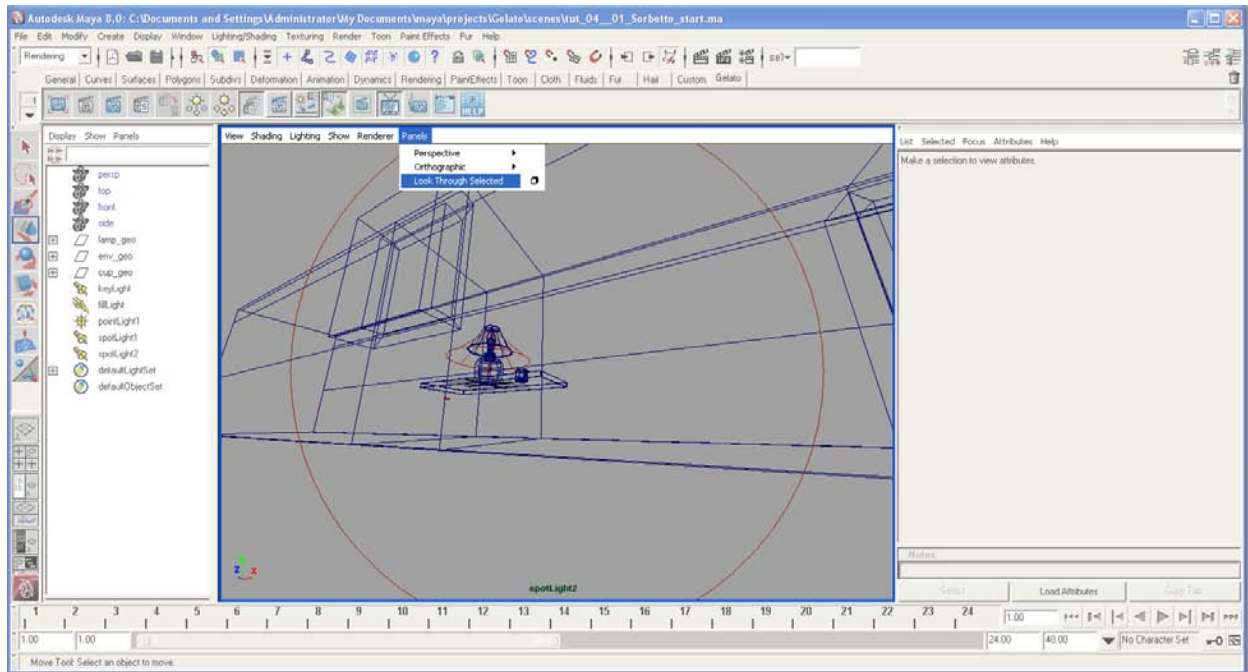


It would be nice to brighten up the scene a bit, but rather than merely increasing the intensity of the fill light, we're going to do it in such a way that a bit more interest will be added to the scene.

- Main Menu > Create > Lights > Spot Light.

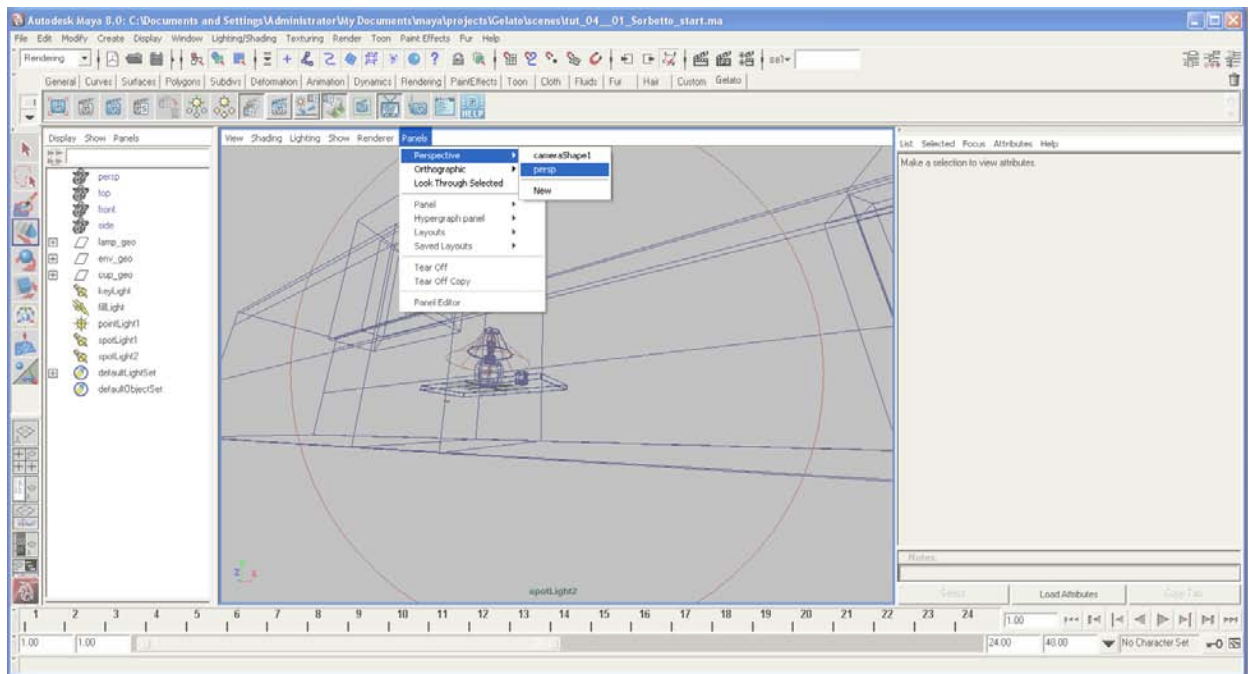


- Disable Emit Specular.
- Reduce the Intensity - in the above example, we settled on 0.331.
- Increase the Cone Angle to 100.00
- Increase the Dropoff to 4.000
- Change the Color to a soft, dull neutral color. In the above example, the color is: H=355.28; S=0.234; V=0.496.



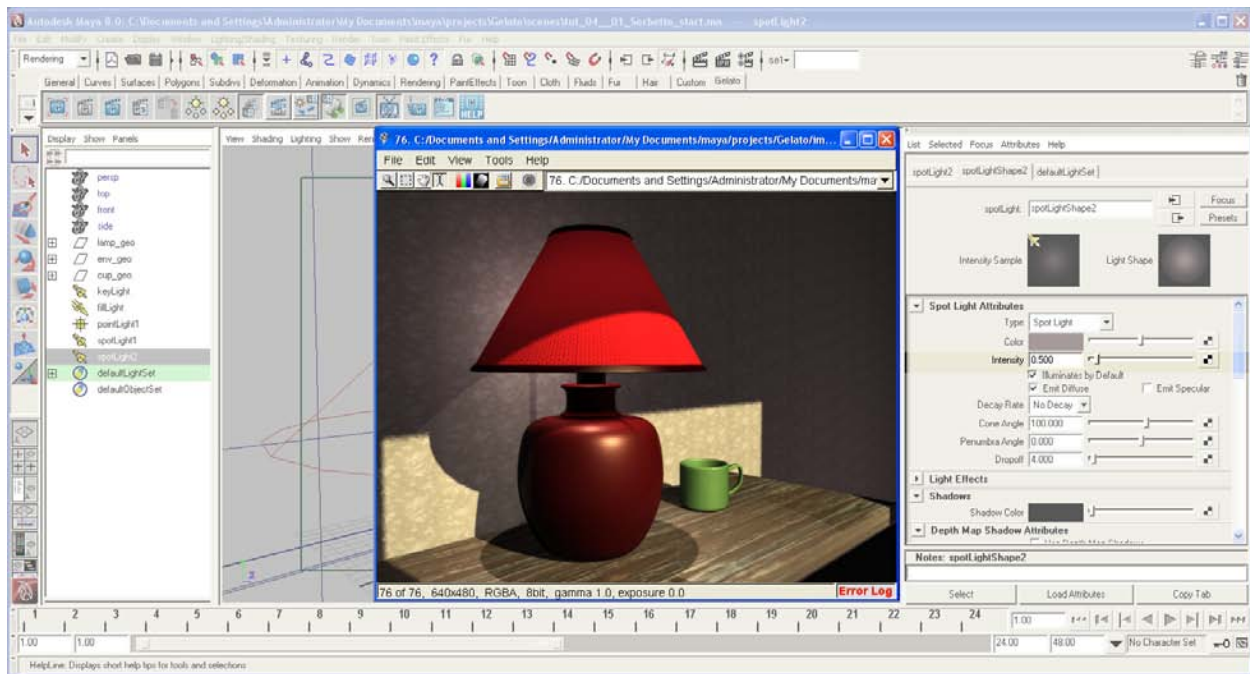
- With the new spotlight still selected, Viewport Menu > Panels > Look Through Selected.

This gives us the light's point of view. We want the light to be looking up at the scene, so orient the scene so that it looks similar to the above example. We can see the area covered by the light as everything within the red circle.

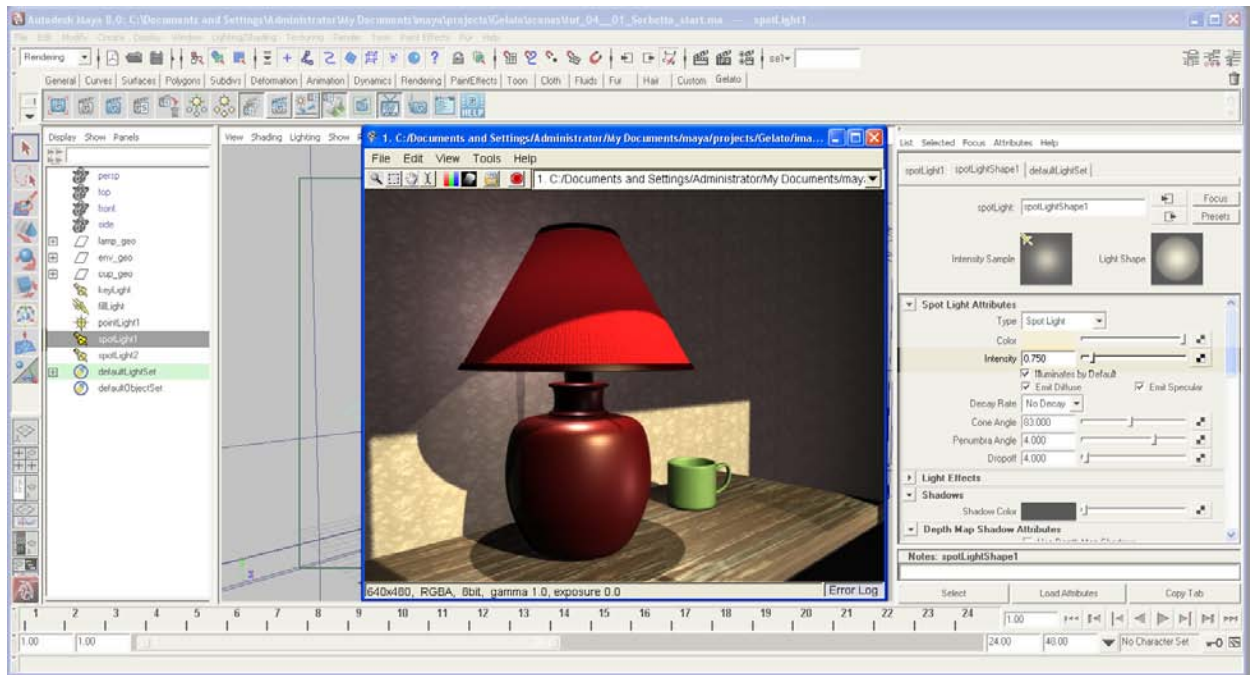


- Viewport Menu > Panels > Perspective > persp.

This returns us to our familiar view.



- Change the Intensity to 0.500.



- Select spotLight1.
- Change its Intensity to 0.750.

Check to ensure that there's no clipping where two or more lights are overlapping. Things look fine, and this is where we are going to stop until the next tutorial. You, however, could continue to add lights if you wish. Some lights to simulate color spill from the cup, wall or lamp base, a light to simulate the light beaming up from the top of the lampshade... it's up to you how far you would like to take it.