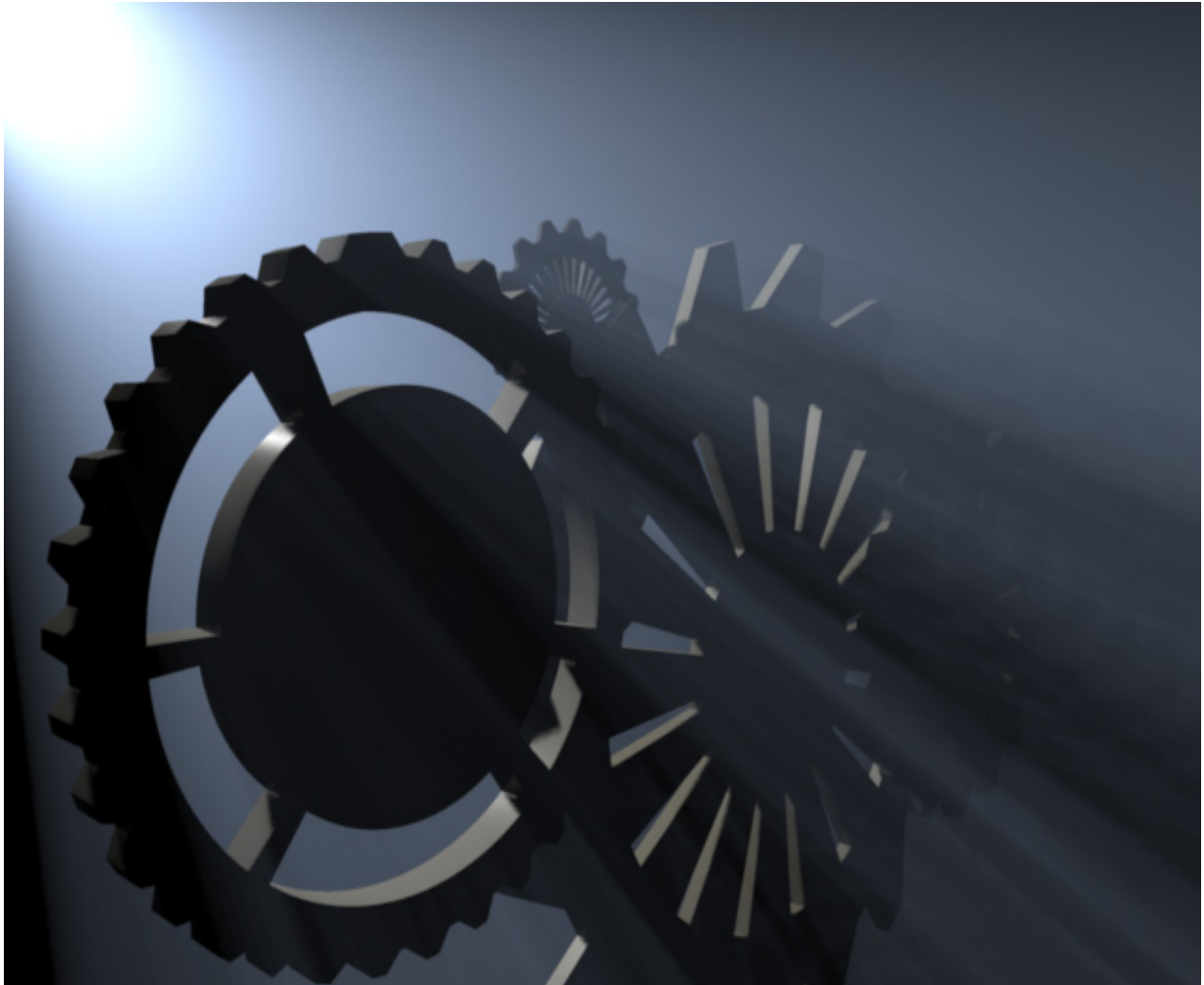
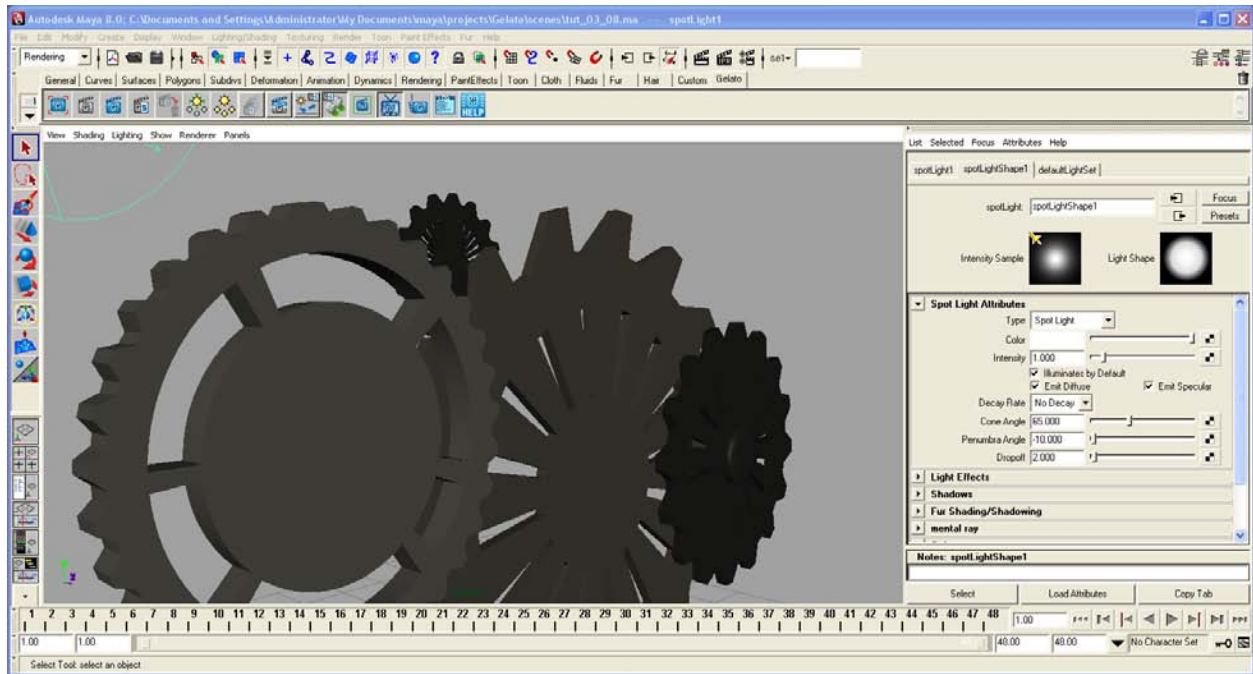


3.8 **VOLUMETRIC EFFECTS**



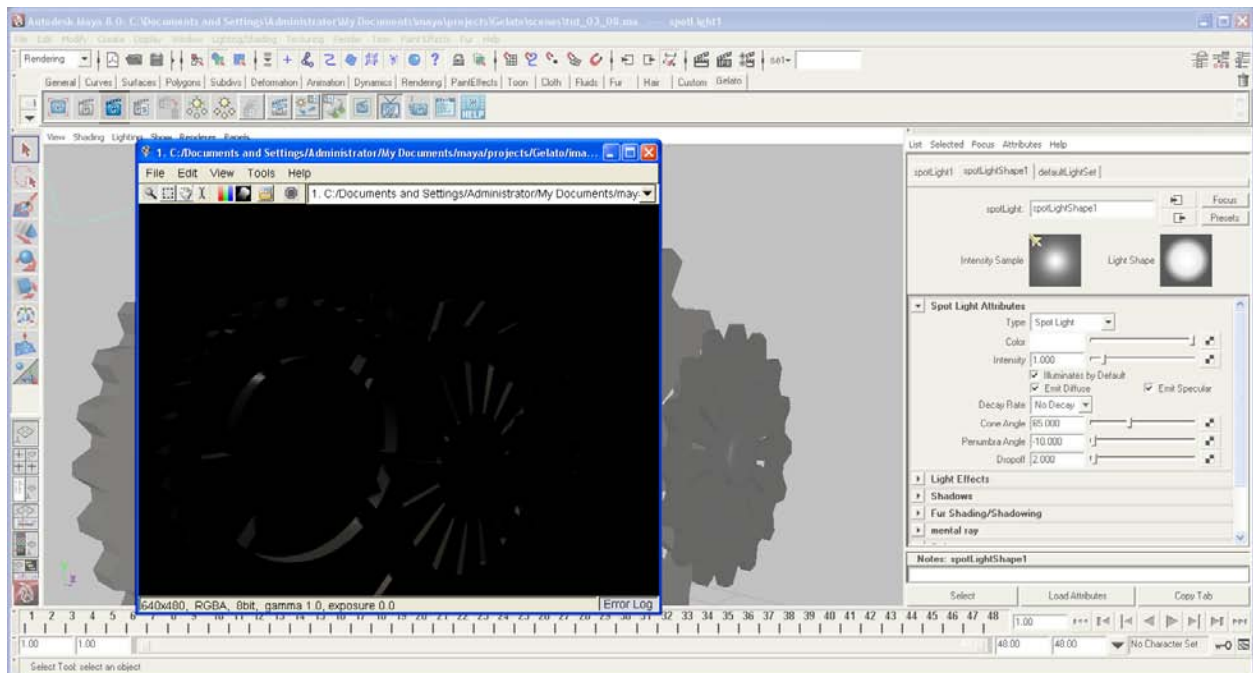
This is the companion to the movie, tut_03_08, the final of 8 NVIDIA® Gelato® Advanced Tutorials.

Volumetric effects are wonderful for adding atmosphere to a scene. In the image above, we see shafts of light streaming through the gear objects, adding interest and perhaps a bit of mystery. We are going to set up Light Fog in this scene to achieve those light rays. Setting this up will be a familiar procedure for those of you who have been making use of this feature, but, of course, we are not only going to enable the light rays – we are going to show you how Gelato allows for a speedier way of tweaking this effect by using the Image Viewer in conjunction with the Gelato Render Settings. So, let's begin...



- Open "tut_03_08."
- Go to the Timeline and hit **[Play]**; when you've had enough, **[Stop]**.

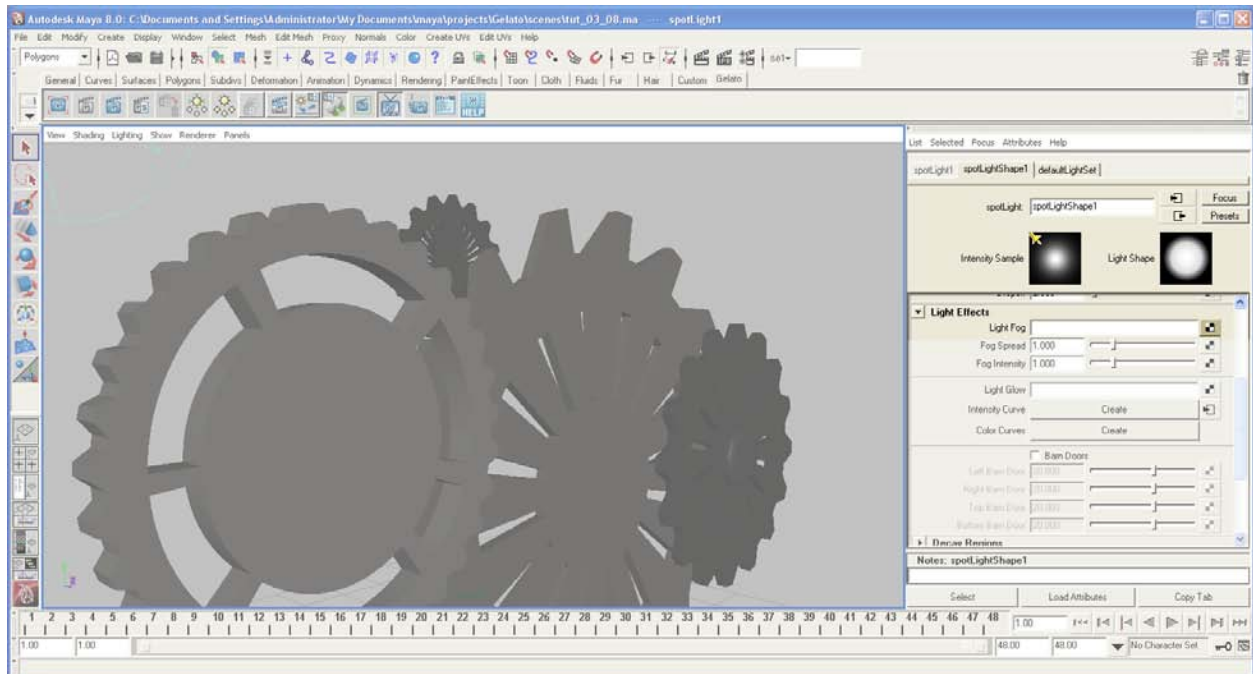
We can see that the gears are animated.



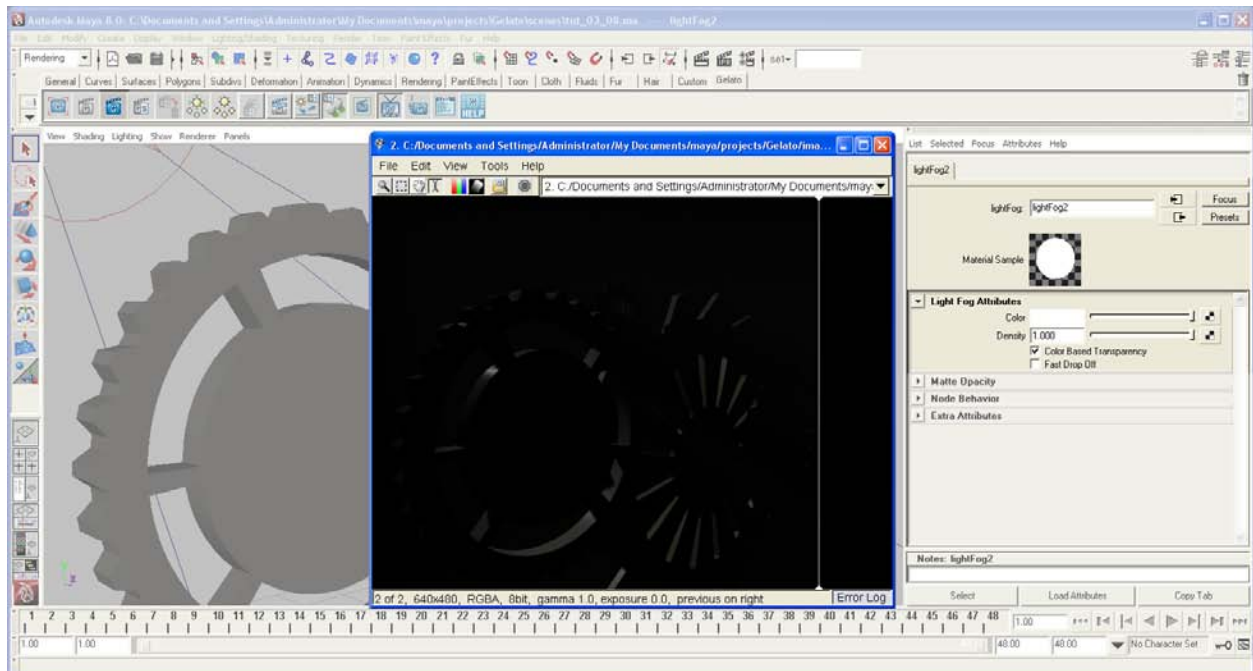
- Gelato Render.

The gears are backlit, but that's about all that can be seen so far.

We're now going to turn on some fog. If you are already acquainted with how to do this in Maya, you'll find these next steps very familiar...



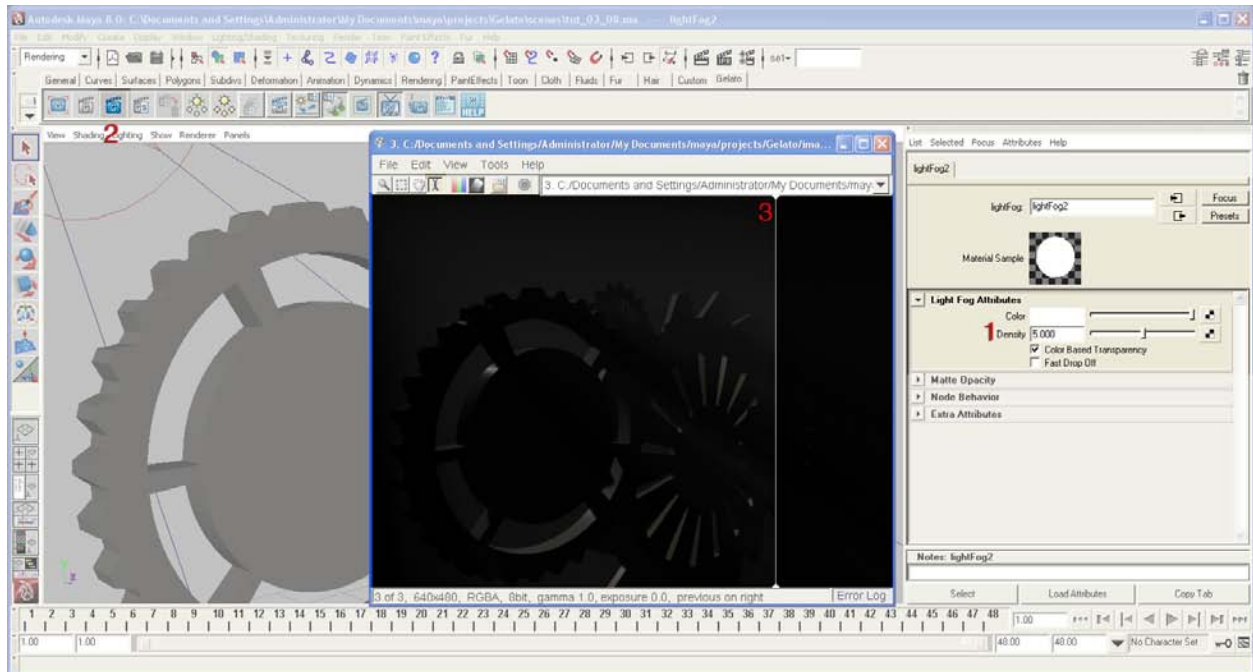
- Select the spotlight.
- Spotlight's Attribute Editor > Light Effects > Light Fog > **[CLK]** the checked button to the right of the Light Fog field.



This creates light fog and opens up the Light Fog Attributes.

- Gelato Render.
- Use the Wipe Tool to compare this image to that last.

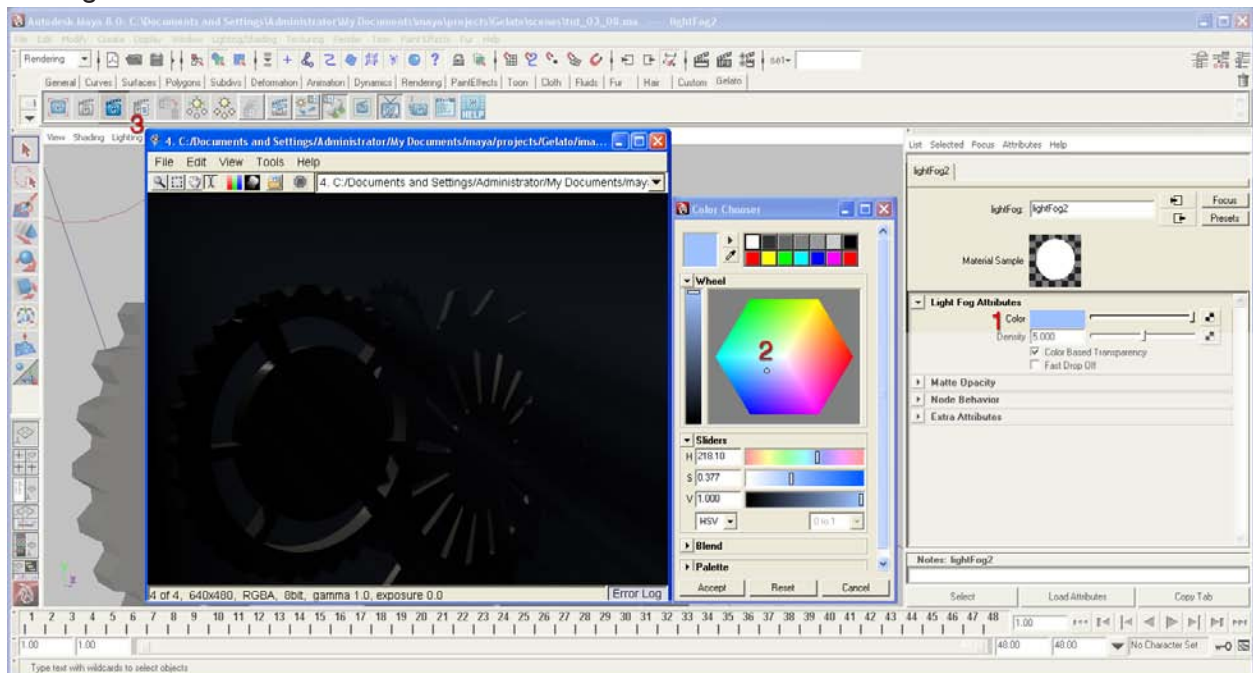
There really isn't much to see here yet.



We're going to make this effect more noticeable...

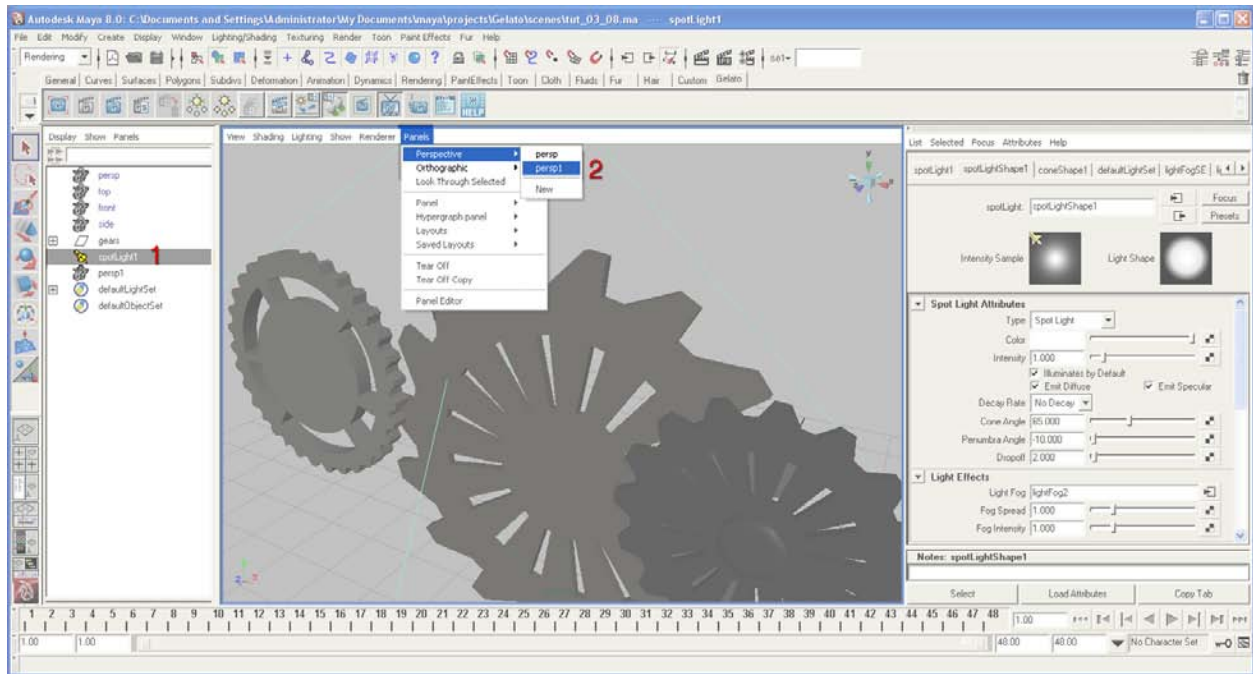
- Change the Density of the fog to 5.000.
- Gelato Render.
- Use the Wipe tool to compare this render to the last.

The fog is now a little more visible.

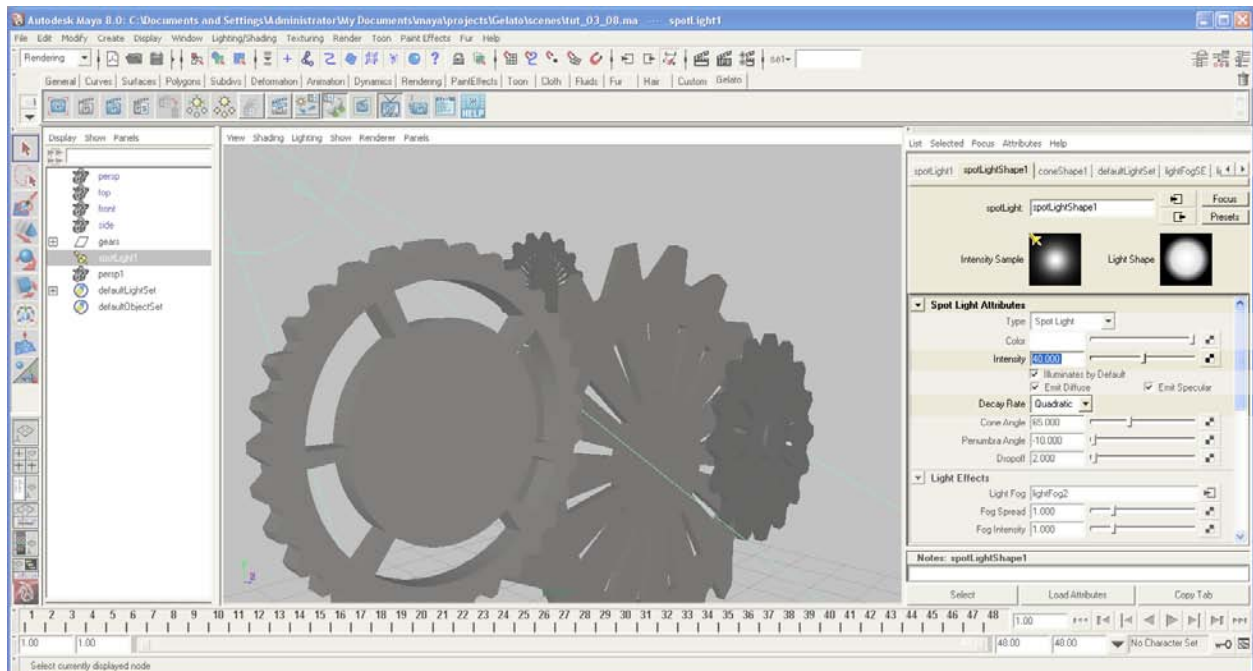


- Still in the Light Fog Attributes, **[CLK]** on the Color field.
- In the resulting Color Chooser, choose a light blue color.
- Gelato Render.

Some volumetric effects are just visible.

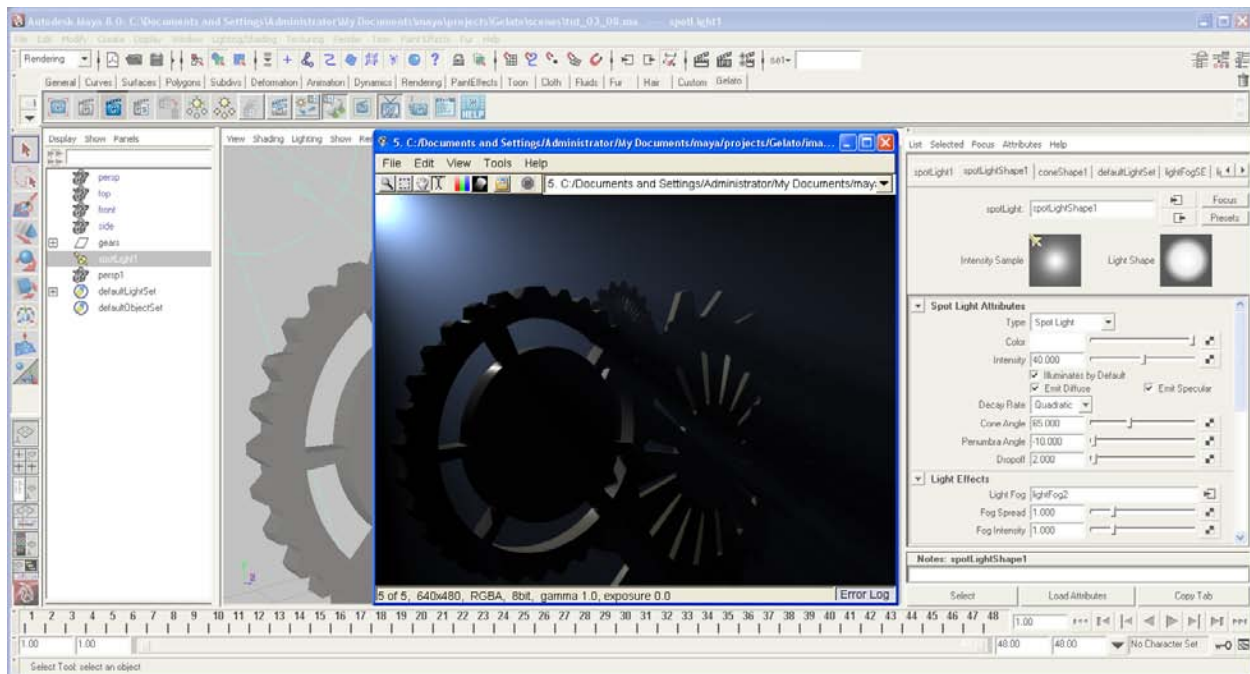


- Select the spotlight. This changes the viewport's angle, so...
- Viewport > Panels > Perspective > persp1.



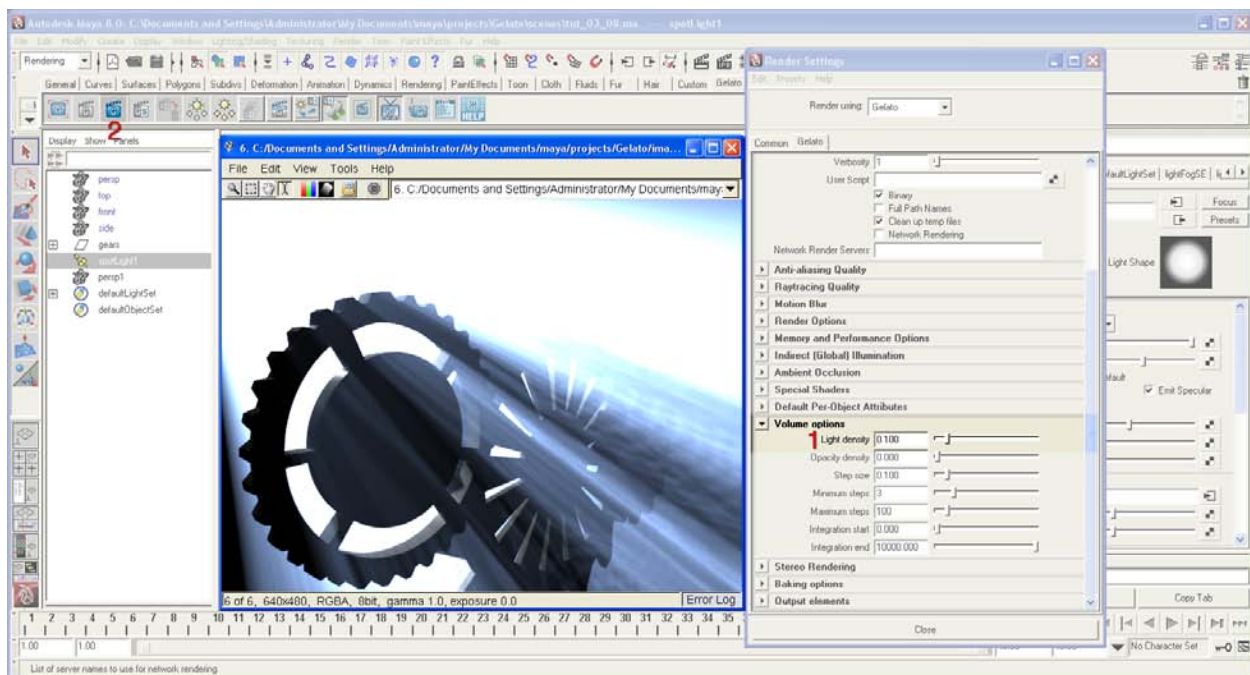
- Spot Light Attributes > change Decay Rate to Quadratic.
Intensity to 40.00.

Quadratic is the more physically accurate decay rate setting. This is going to change the fog falloff, making it fall off faster and necessitating that bump in the intensity.



- Gelato Render.

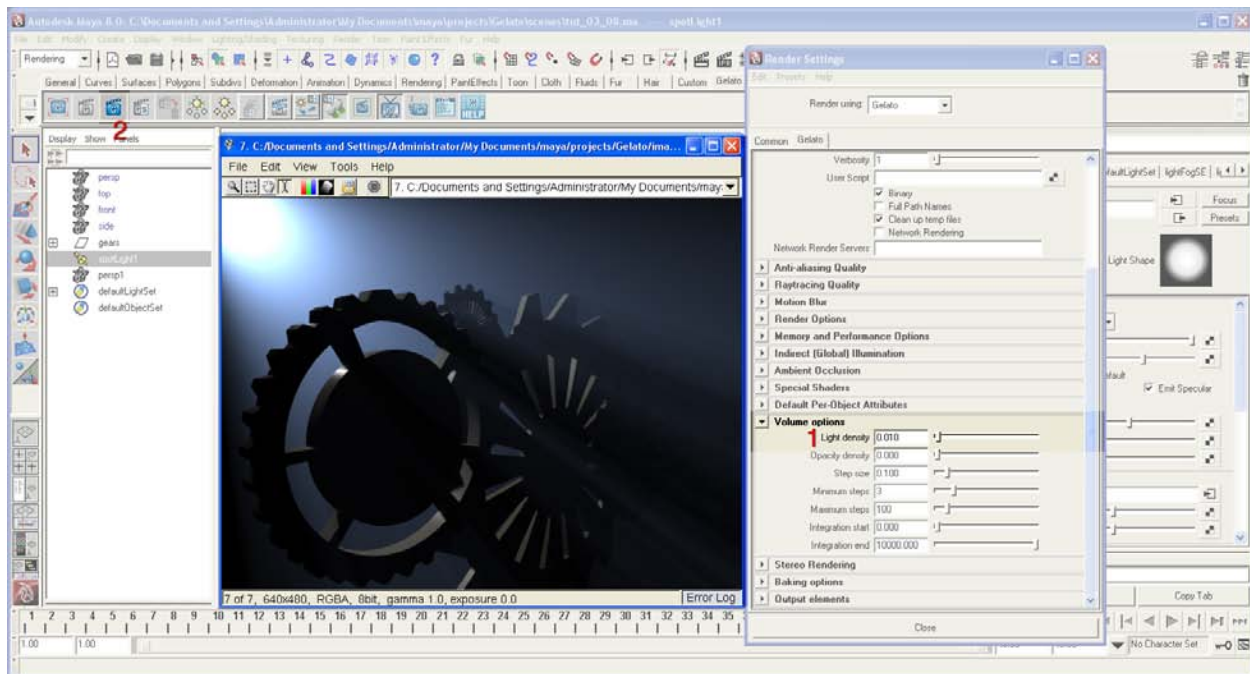
A bloom appears where the light is; this falls away with distance.
Shafts of light are seen shining through openings in the gears.



We're going to make the fog even more visible...

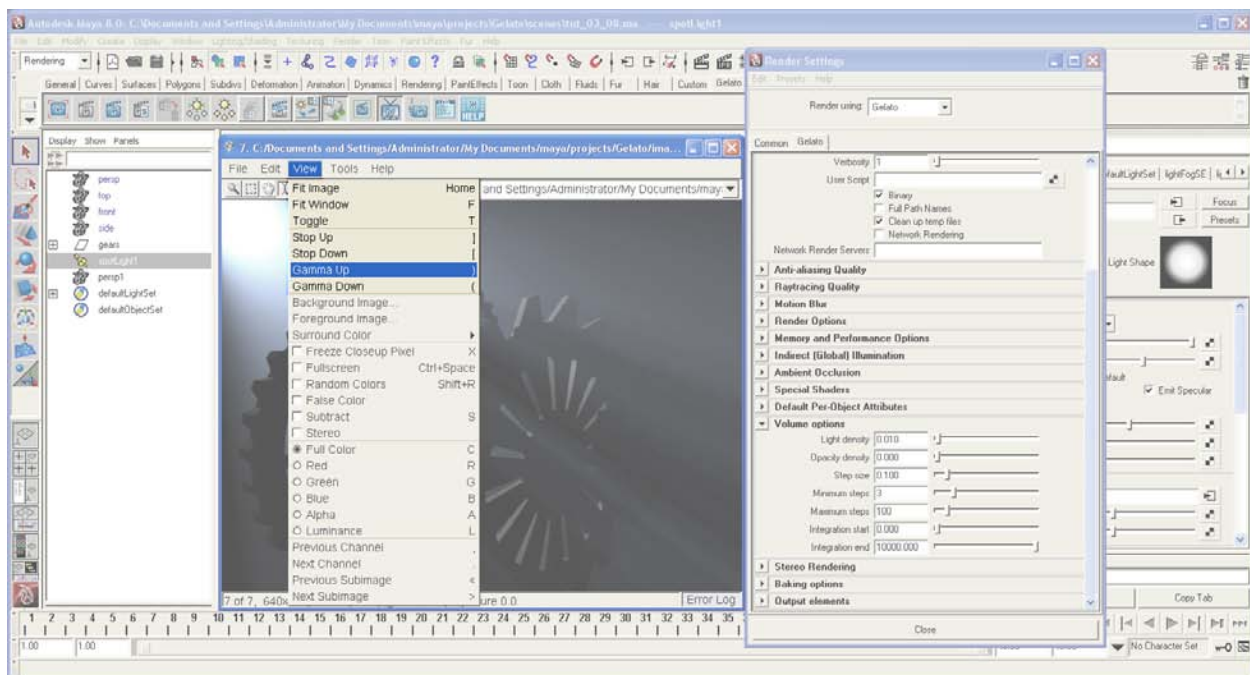
- Open the Render Settings dialog.
- Gelato tab > Volume options > change Light density to 0.100.
- Gelato Render.

Too visible. The effect is now blown out, so let's dial this back...



- Change the Light density to 0.010.
- Gelato Render.

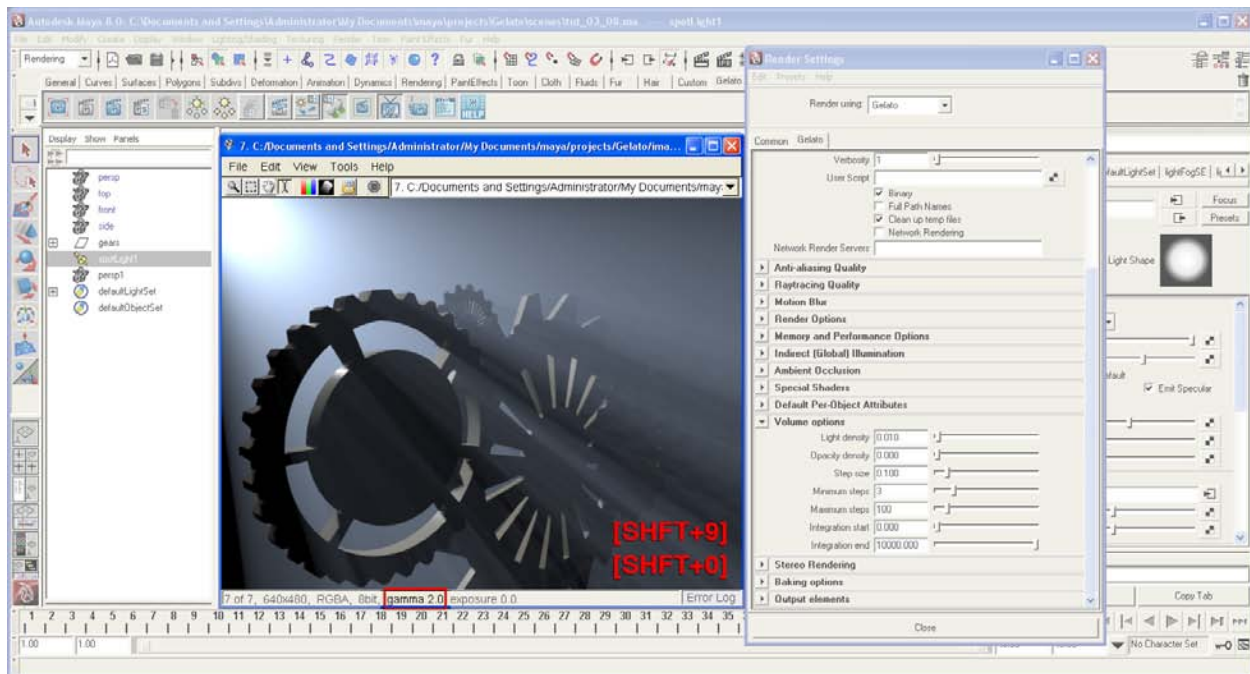
This is looking better. We can see the shafts of light shining through the gear parts.



We are now going to look at another way to increase the effects of the fog... without incurring a render hit.

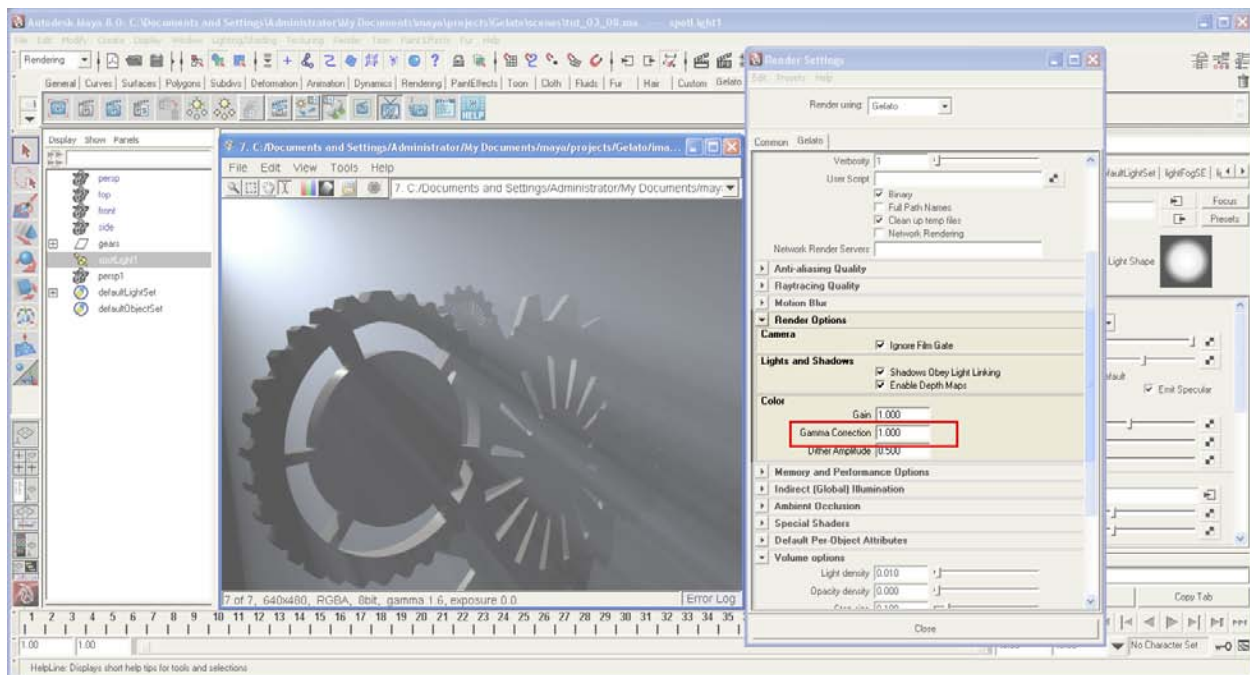
- **[CLK]** "View" in the Image Viewer and be reminded that there is a Gamma Up and a Gamma Down.

This is unique to the Gelato Image Viewer - it's not available in Maya's Render View.



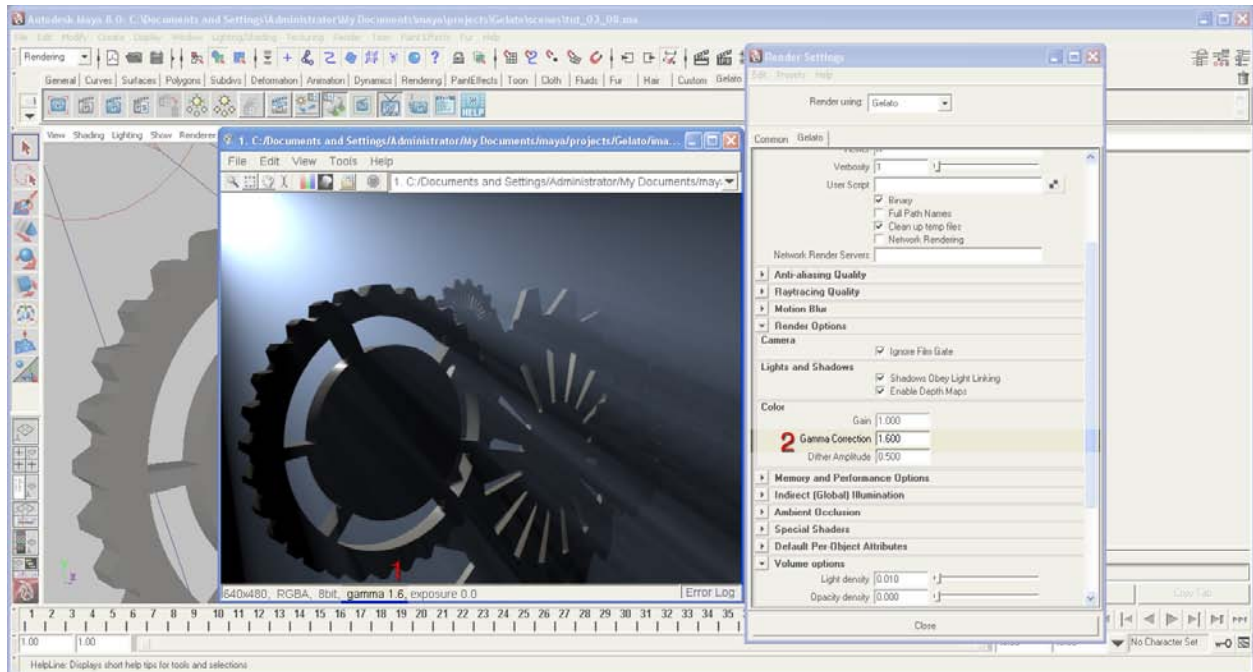
- Use the shortcuts, the right and left parenthesis keys (**[SHIFT+9]** and **[SHIFT+0]**), to alter the gamma and change the look of the fog.

We can see that the information from the fog light **is** in the image, it just isn't very visible at a gamma setting of 1.0.

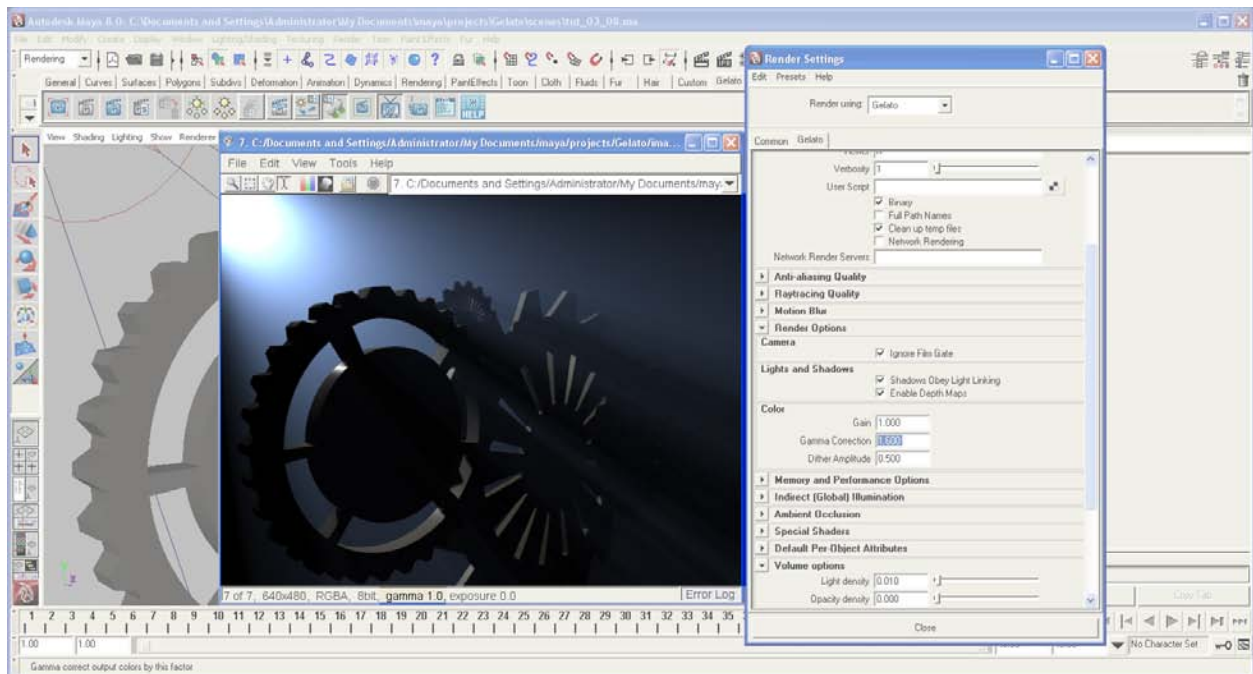


- Render Settings > Render Options > Color.
- Observe that there is a Gamma Correction setting in this section.

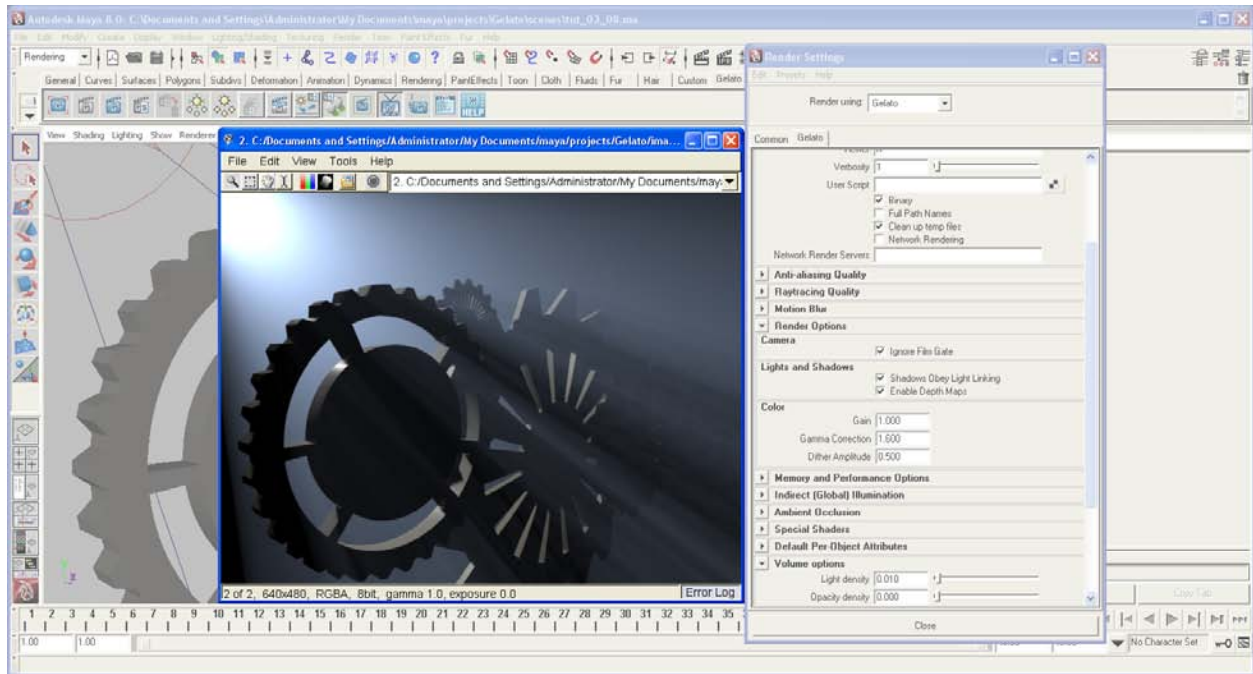
Something that the NVIDIA engineers have given us in the Gelato Render Settings is the ability to set the Gamma for the render.



- Return to the Image Viewer and play with the gamma to find a setting you like.
- When you are happy, note the reading at the bottom of the Image Viewer. A setting of 1.6 looks good...
- Armed with this information, return to the Gamma Correction setting in the Render Settings dialog and change this to 1.6.



- Return once more to the Image Viewer and reset the gamma in the image to 1.0. If we don't do this, the render we are about to do will look blown out.
- Gelato Render.



- Compare this new image to the last.

We can see very visible shafts of light streaming through the gear parts – not too bright, not too dim, just right.

We didn't have to play with the fog density or opacity settings in the Render Settings or the spotlight. The information was there, just not visible while using the flat gamma setting. This fast and easy image correction not only resulted in no render hit, it saved us time! We were able to escape a number of renders that would have been necessary to tweak it just right. Another speedy addition to your workflow...

The next tutorial will begin our exploration of Sorbetto.