

Hyperspace Effect using a Gobo and Atmosphere Volume



In this tutorial, we will cover how to use the **Gobo** filter in combination with a **Spot light** and **Atmosphere Volume** to create a hyperspace effect. We will also look at various ways to adjust the spot light to enhance the lighting in the scene. Finally, we will add a **Filter Map** to the camera to provide a vignetting effect.

The Maya scene file can be downloaded [here](#).

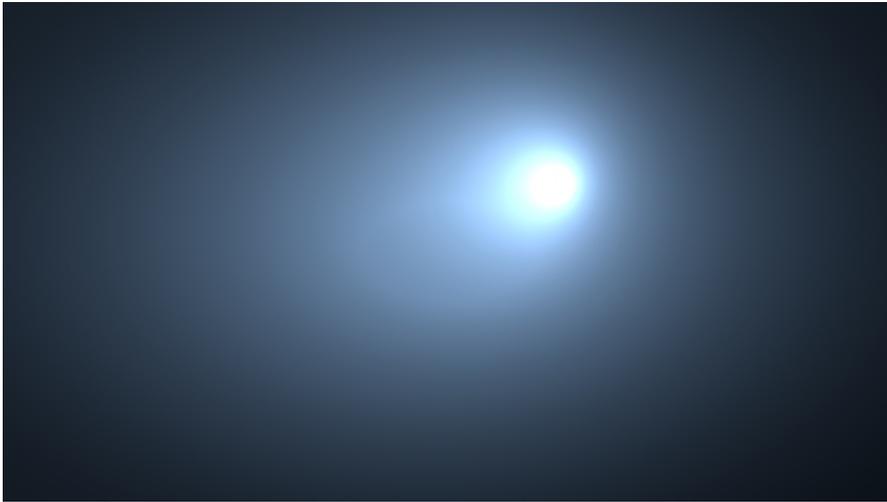
The original Maya scene files for this series of tutorials can be downloaded from Autodesk's *Hyperspace Madness* production.

- Start off by creating a **Spot light**. Position and rotate it so that it is pointing towards the camera. Under the Arnold attributes of the spot light, enable **Color Temperature** and use a cool blue value of around **15000**. Increase the **Exposure** to around **7**.

Atmosphere Volume

- Open the **Render Settings** and go to **Environment**. Create an **Atmosphere Volume** by selecting the icon to the right of **Atmosphere**.

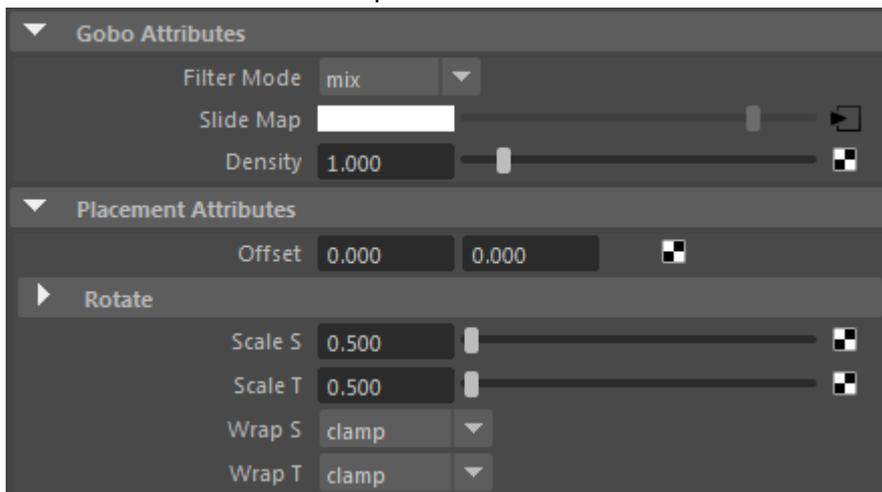
- Increase the **Density** to **1**. You may notice some noise in the volume scattering. This is fine for test rendering, but for final scene rendering, you may want to increase the Atmosphere Volume **Samples** value (in this case a value of **15** was used).



Density 1

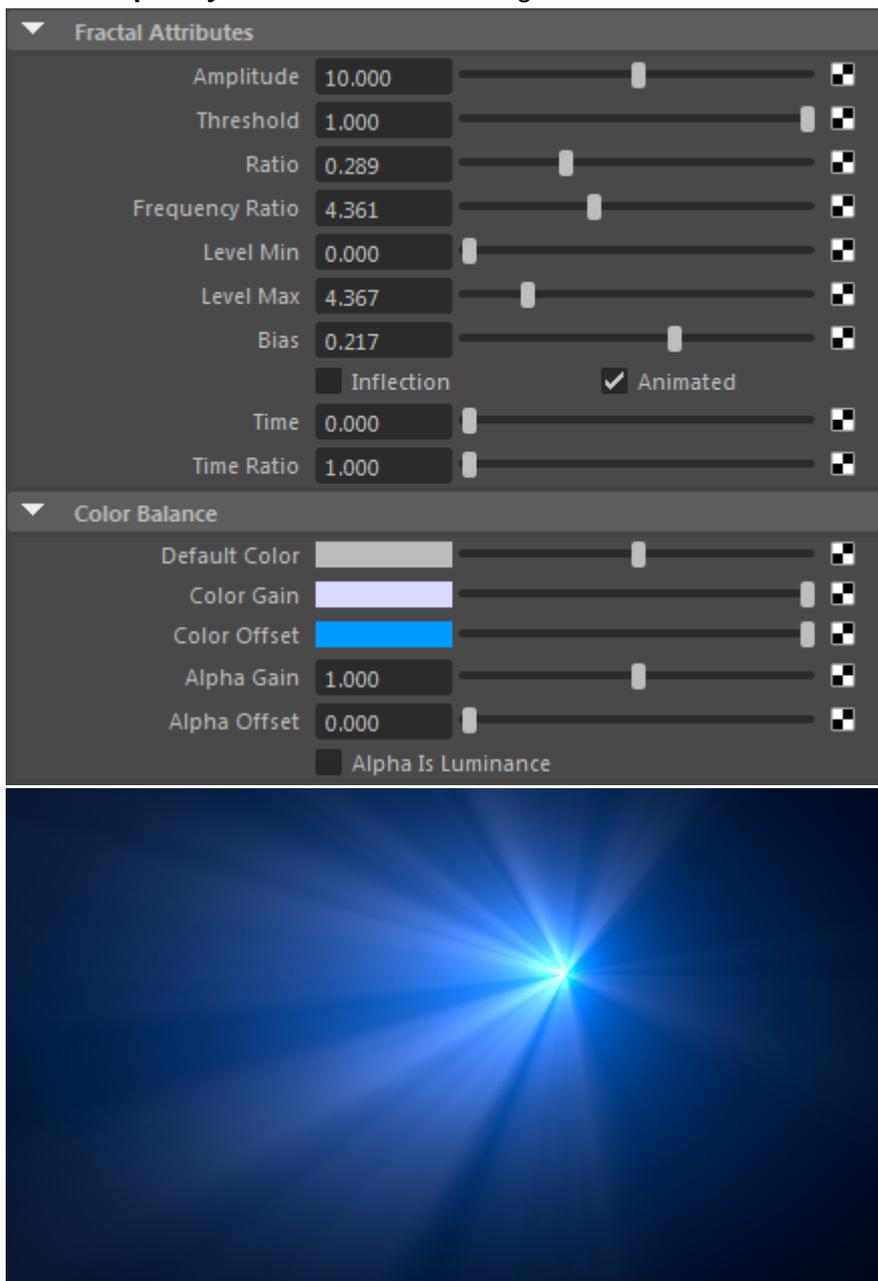
Gobo Filter

- Go to the Arnold attributes of the Spot light and add an **aiGobo** filter. Change the **Filter Mode** to **mix** and increase the **Density** to **1**.
- Increase the **Scale S** and **T** to **0.5** of the Gobo filter. This will scale down the fractal texture that will be used in the Slide Map.



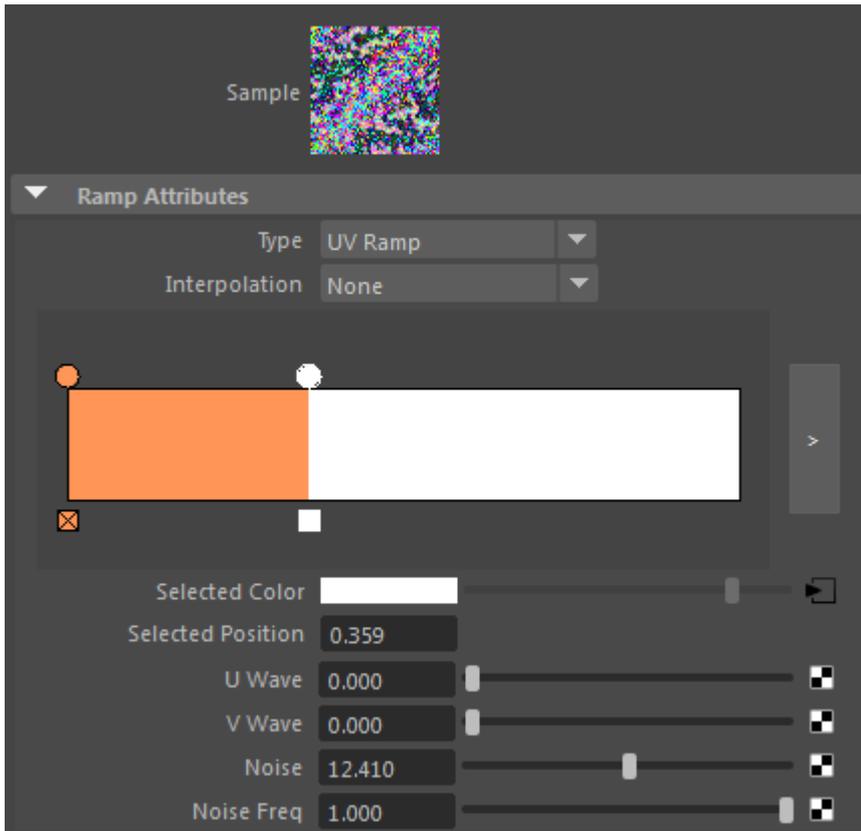
- Connect a **fractal** texture map to the **Slide Map** of the Gobo filter.
- Increase the **Amplitude** value of the fractal texture. This will add more contrast to the fractal which will provide the light beam effect that we want to see in the volume scattering. Increasing the

Frequency Ratio will create finer light beams.



Fractal texture added to Slide Map of Gobo filter

- Next, we will add some variation to the noise beams. Disconnect the fractal map and project a **ramp** texture to the Slide Map. Connect the **fractal** texture to one of the colors of the ramp. Change the ramp **Type** to **UV Ramp**. Experiment by adding some noise to the ramp.



Per-Light Attribute Scaling

If we wanted to adjust the specular highlight on the front of the space ship, we could adjust the exposure of the spot light. However, that would also increase the volume scattering effect, which is not what we want. A way around this is to adjust the **per-light scaling** for **Specular** in the Arnold attributes of the spot light. You can then adjust the effect the light has on the specularity without the light affecting anything else.

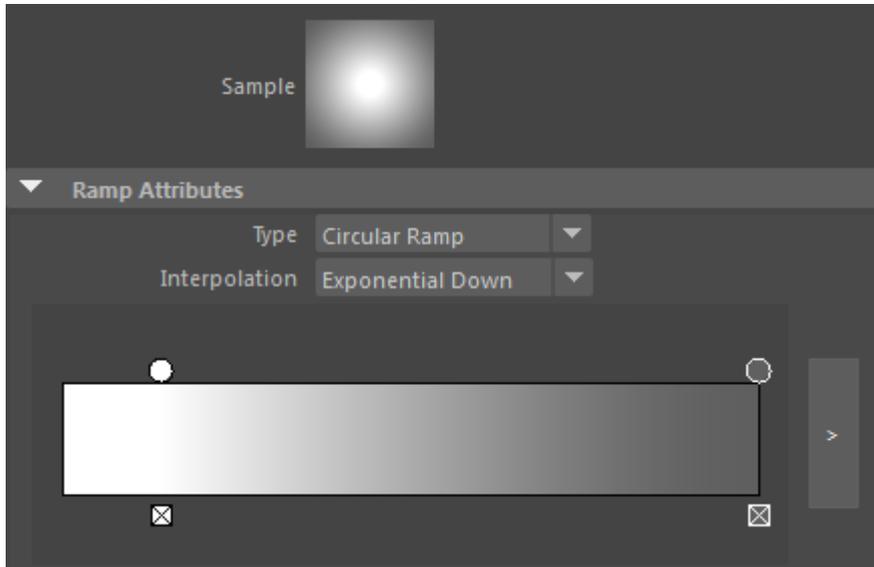
Note that these values should normally be left at 1 to produce physically accurate results.



Camera Filtermap

We can use the camera Filtermap attribute to add a vignette effect to the lens of our camera quite easily.

- Open the Arnold attributes for the camera and connect a **ramp** to the **Filtermap** attribute. Change the **Type** to **Circular Ramp** and the **Interpolation** to **Exponential Down**.



Circular ramp connected to Filtermap



No Filtermap

Animation

Once you are happy with how the hyperspace effect looks, you could try animating it. In the example below, the **Time** attribute of the fractal texture has been keyframed. The **Rotate Frame** attribute of the **fractal** texture's **place2dTexture** has also been keyframed.

