

# Caustic Effect Using Cell Noise: Shark Scene



The *cell\_noise* shader is a very versatile shader that is capable of creating a wide range of shading effects. In this simple tutorial, we will cover how to create a caustic effect using a *spot\_light* with the *cell\_noise* shader connected to a *gobo* light filter. Thanks to [Slava Sych](#) for the assistance with this tutorial.

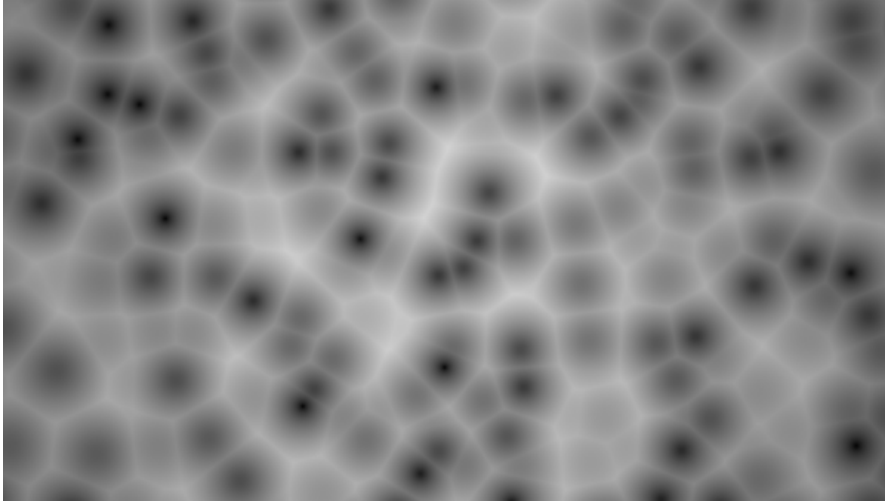
The tutorial scene file can be downloaded [here](#). The shark model used in this tutorial can be downloaded [here](#).

## Gobo -> Spot Light

- Start off by creating a plane. We will project the *cell\_noise* shader through a *gobo* using a *spot\_light*.
- Create a *spot\_light* and point it at the plane. Increase the *exposure* of the *spot\_light*.
- Connect a *gobo* light filter to the *spot\_light*.
- Connect a *cell\_noise* shader to the *blend* attribute of the *gobo*.

## Cell Noise

- Change the *cell\_noise pattern* to *Worley 1*.
- Increase the *cell\_noise scale*. In this case, 20 was used in XYZ.
- Change the *coord\_space* to *UV*. This uses the object's local UV coordinate and in this case, looks better for the effect that we want to achieve.

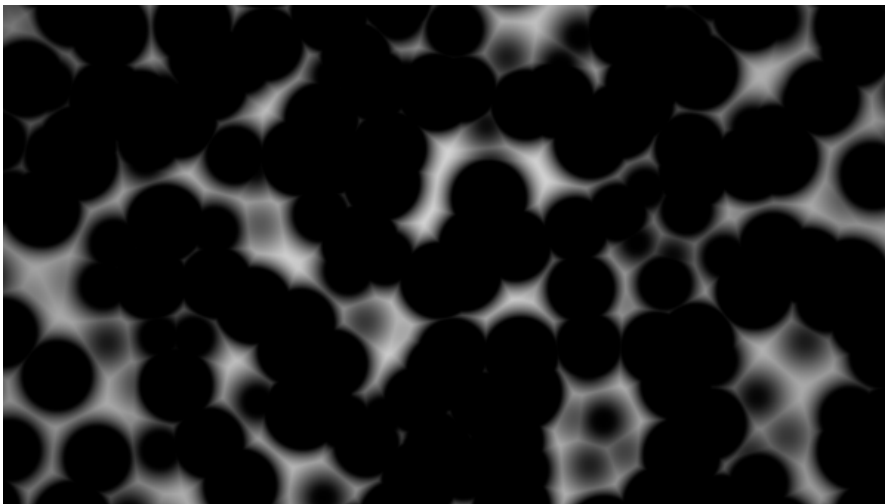


*cell\_noise* shader using the *Worley 1* pattern

### Range Shader

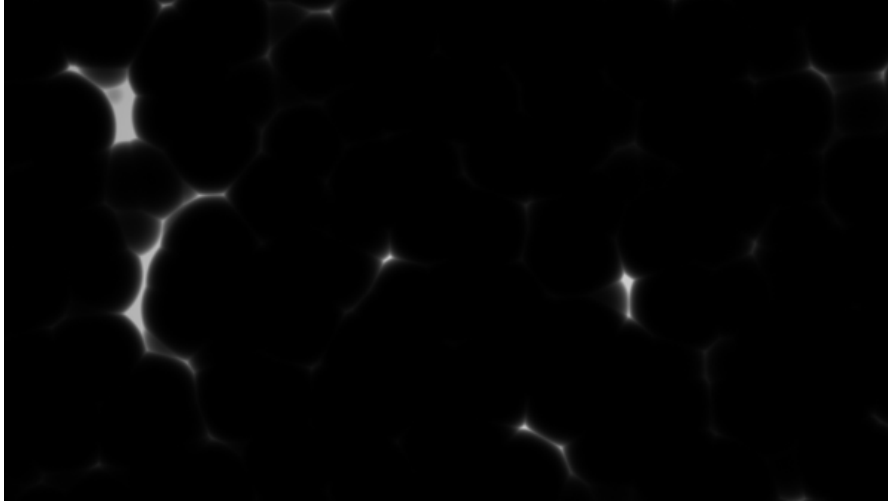
We can use the *range* shader to linearly remap the output of the *cell\_noise* shader to create something that looks like a caustic effect.

- Insert a *range* shader in-between the *cell\_noise* shader and the *gobo*.
- Enable *smoothstep* in the *range* shader.
- Increase the *input\_min* attribute and notice its effect on the *cell\_noise* shader.



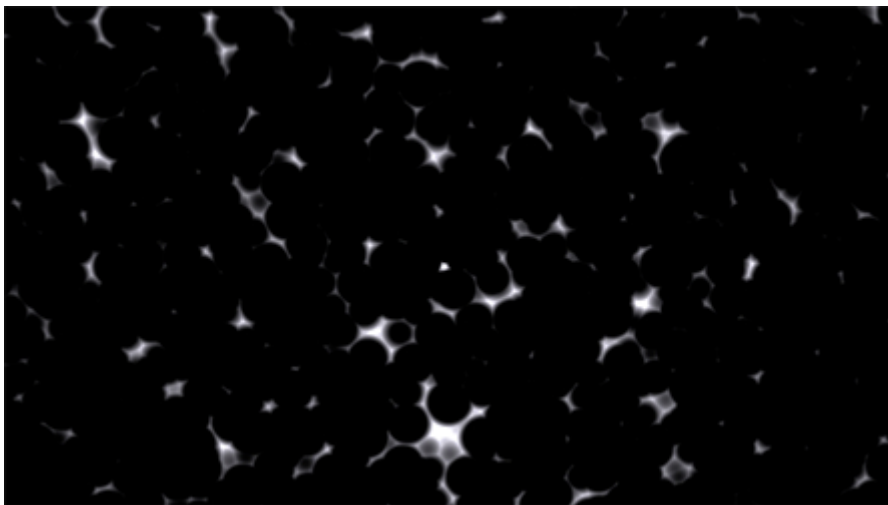
*Input Min* increased to 0.6

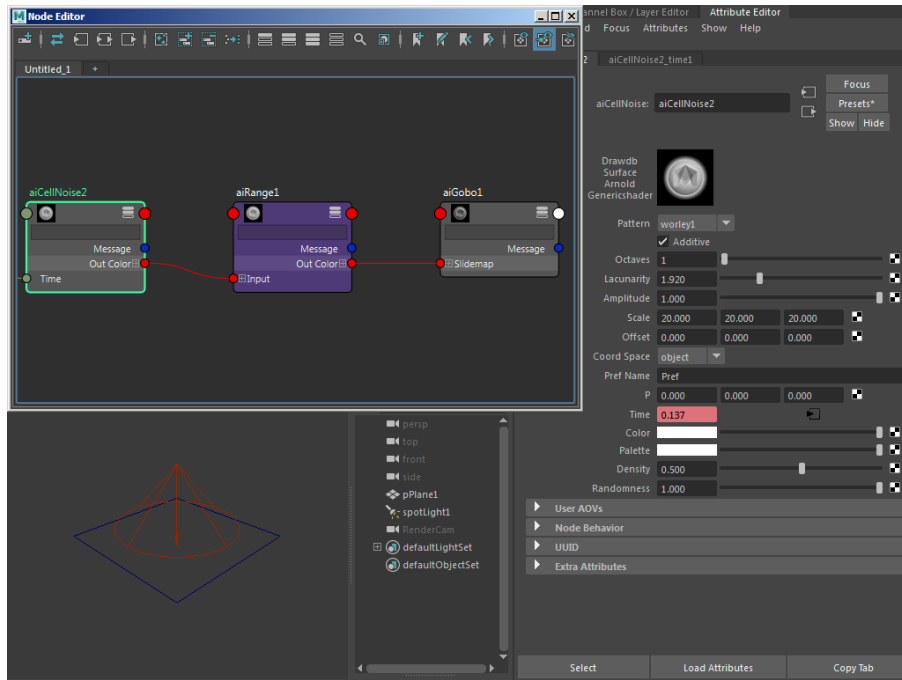
- Reduce the *bias* to around 0.01. You should notice that it now looks more like a caustic effect.



*Bias reduced to 0.01*

- Go back to the *cell\_noise* shader and keyframe the *time* attribute. You should see something that looks like a caustic pattern!





Scene settings