# Infinity Mirror Scene



*Specular Ray Depth* **keyframed over time (1-50)**

This simple tutorial shows you how to create an infinity mirror scene. It demonstrates what happens when a light is traced multiple times inside a reflective cube. The *specular_ray_depth* is increased to reveal multiple reflections inside the cube. The scene consists of a simple reflective tapered cube with a point light inside it (far end) and a camera pointing at it (also inside the cube).

A .ass file can be downloaded here.

A scene file can be downloaded here.

## Scene

- Start off by creating a cube and scaling it out in one direction.
- Select the end face of the cube and taper it out slightly. This will help to create more internal reflections.
- Create a point light and position it towards the back face (tapered end) of the tapered cube.
- Create a camera and position it at the other end of the cube (inside it) pointing at the point light.
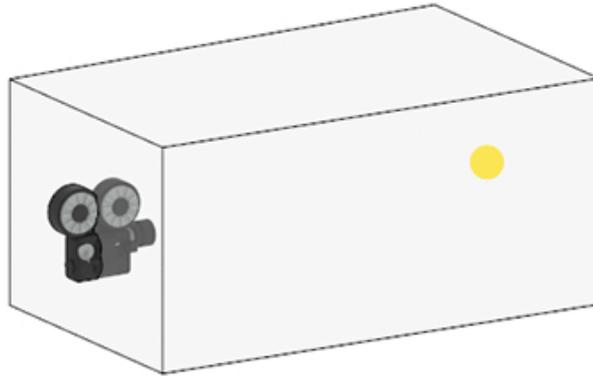
**Camera pointing at a point light inside a tapered reflective cube**

## Shading

- Assign a *standard_surface* shader to the cube and change the following attributes:
    - Reduce the *base_weight* to 0. We only want to see specular reflections inside the cube.
    - Reduce the *specular_roughness* to a very low amount. Something like 0.004. This value will depend on how high the *specular_ray_depth* is set. With a high *specular_roughness* value and a high *specular_ray_depth* the resulting render may look too bright.
- Render the scene. You should see something like the render below using the default Arnold render settings.
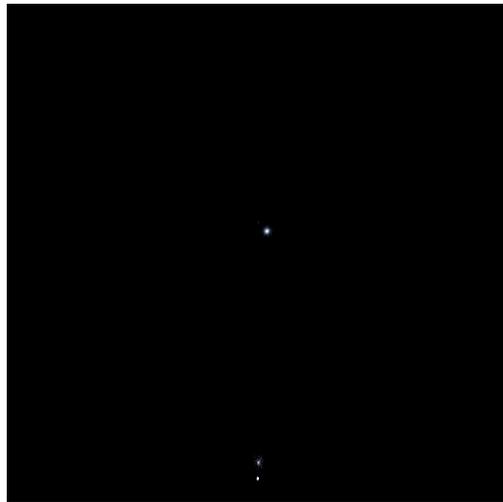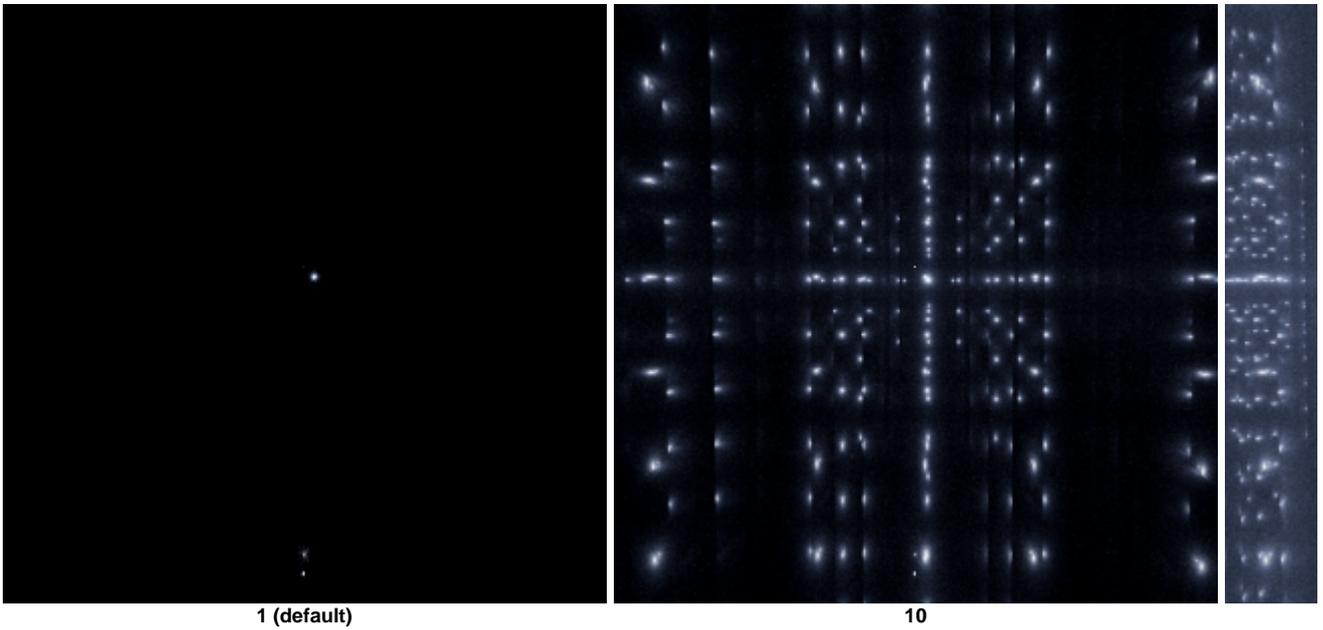


**Render using the default *specular_ray_depth*: 1**

## Specular Ray Depth

- Try increasing the specular ray depth to see more internal reflections of the point light.

> ⊘ Increasing the *specular ray depth* value will <u>dramatically</u> increase render times.



**1 (default)**      **10**

> ⚠ You may need to increase the number of *specular samples* to resolve some of the *specular_roughness* noise for final rendering.