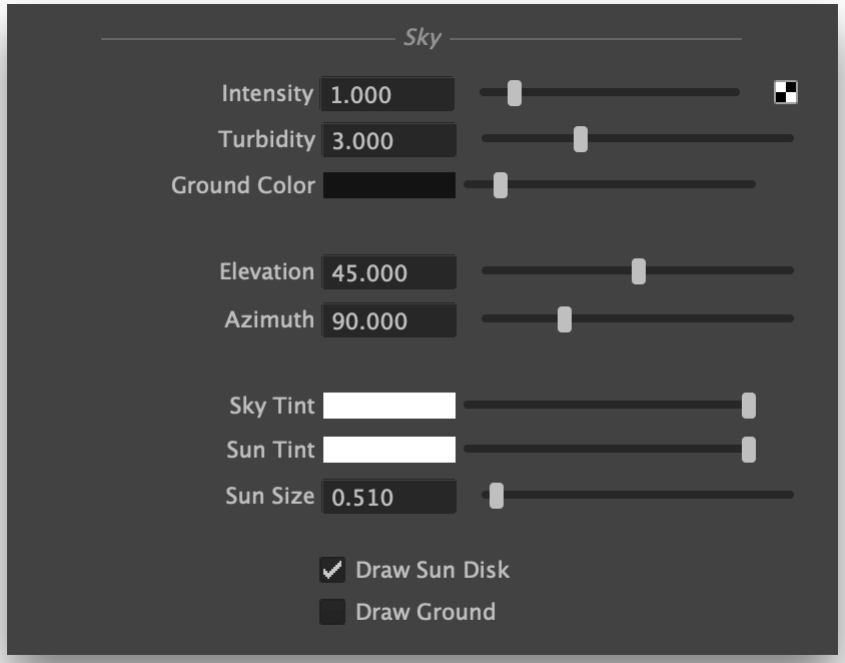
Sky Light



Creating a Sky Light

A sky light can be created by connecting a 3Delight Sky texture to the *Texture* attribute of an environment light.

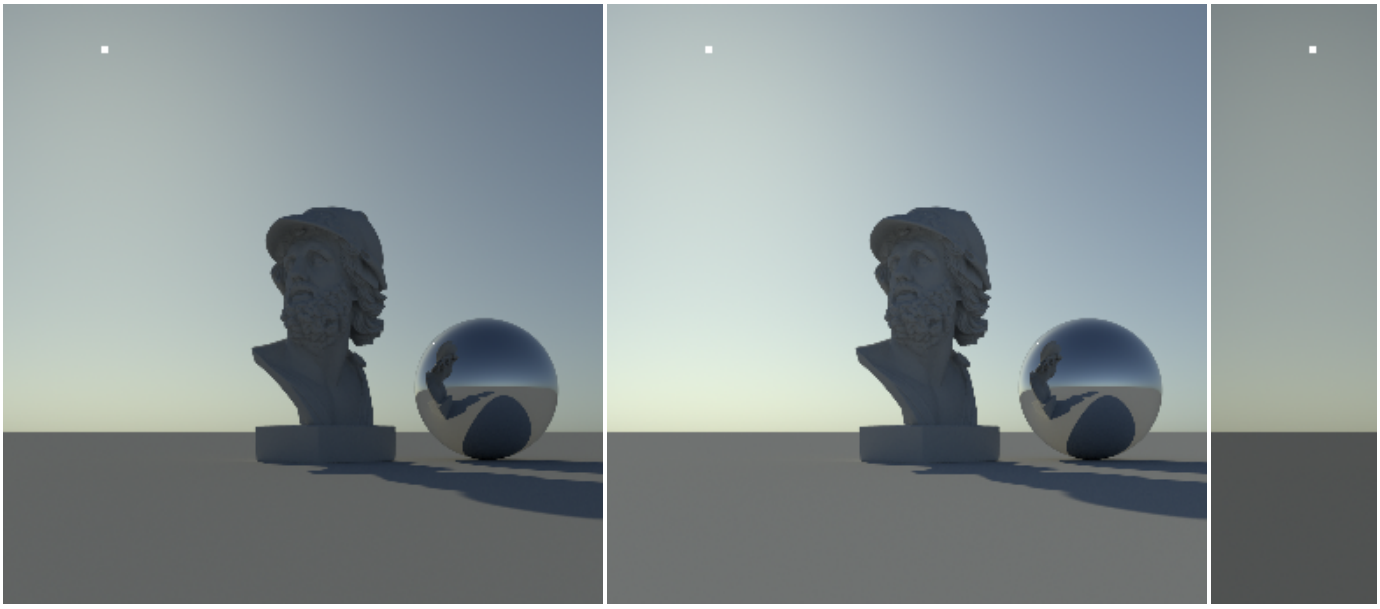
Characteristics of the Sky Shader

The *3Delight Sky* shader is used for image-based lighting of daylight conditions. *3Delight* can extract sharp shadows using this shader so that *no directional light is needed to cast shadows from the sun*. This shader is based on the Hosek-Wilkie sky model. It is an analytical model of the daytime sky that includes the latest improvement in this field of research. This model is able to properly picture sunsets and lighting in high turbidity environments – such as lighting during a moist day.

Parameters of the Sky Shader

Intensity

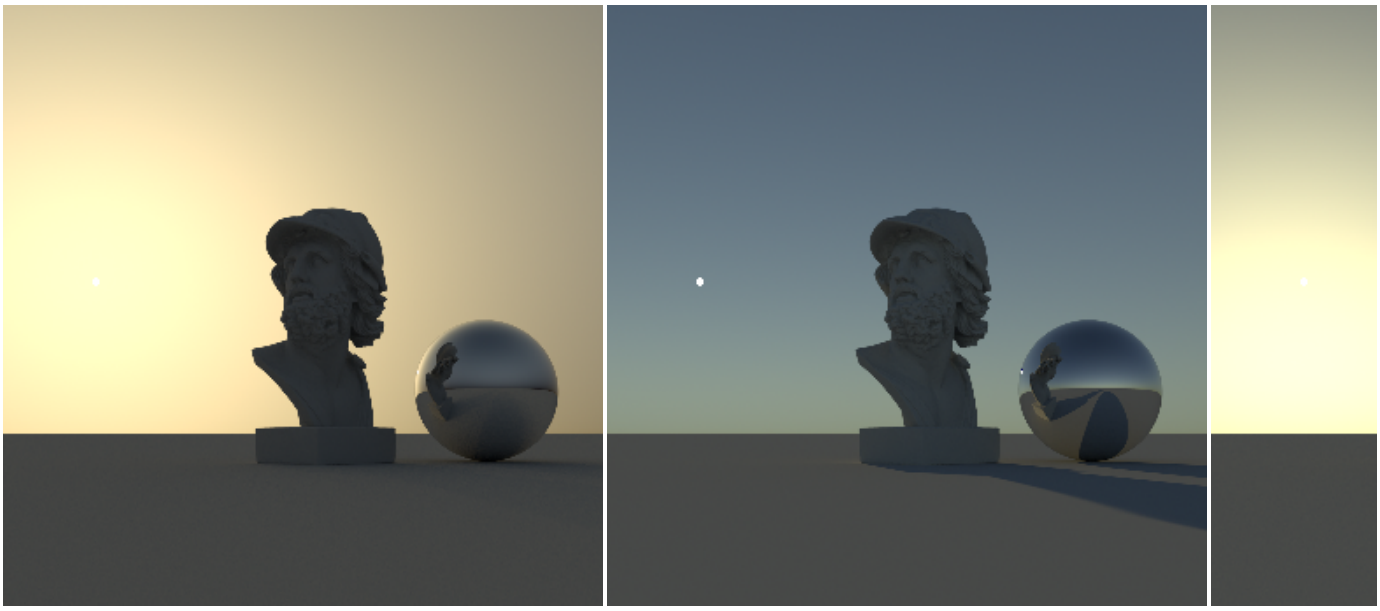
This drives the overall intensity of the sky. It is a direct multiplier of the sky radiance function.



1.5 2.0 1.0

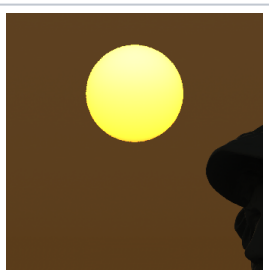
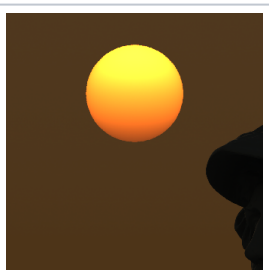
Tubidity

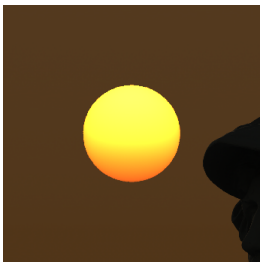
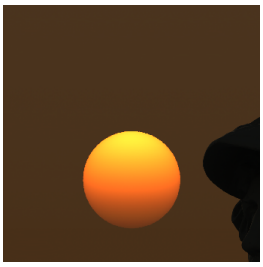
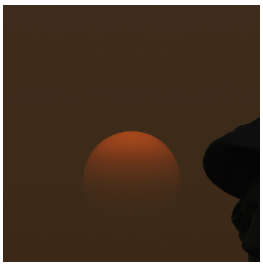
This parameter determines the overall aerosol content of the air. As an example, a moist day will have higher turbidity values than a dry day. Values range between 1 and 10. Note how high *turbidity* values affect cast shadows.



10 1.0 4

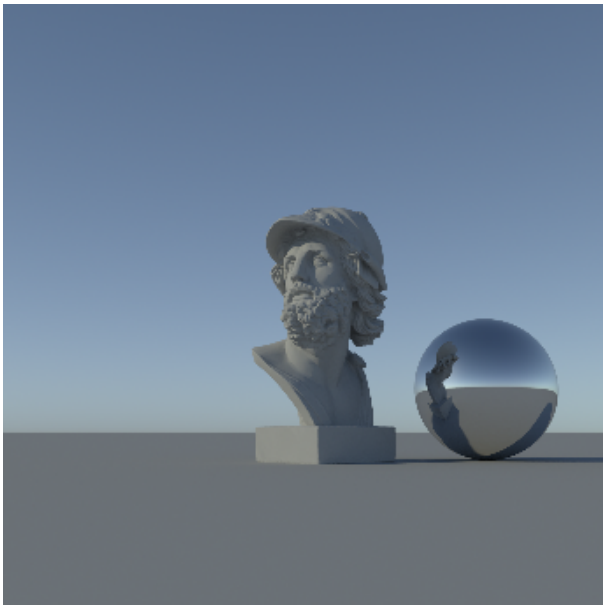
Also note that *turbidity* affects the look of the sun when near the horizon. The following renders show the effect of *turbidity* for different sun elevations.

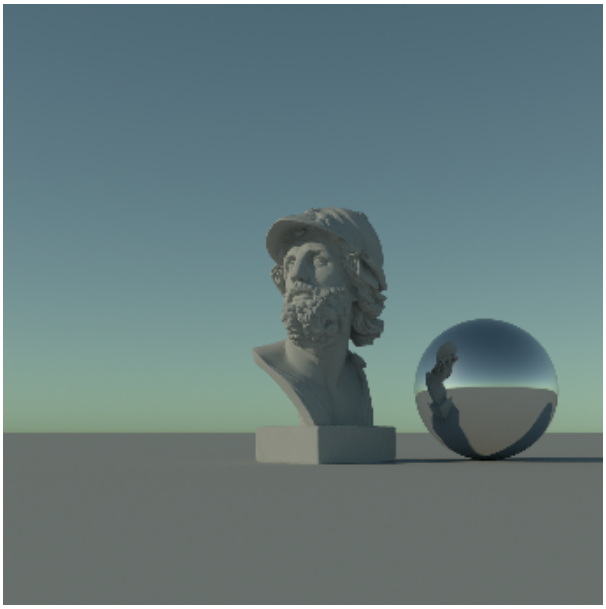
Elevation 0.75			

Elevation 0.50			
Elevation 0.25			
	Turbidity 6.0	Turbidity 7.0	Turbidity 8.0

Ground Color

Changing ground color (also called *albedo)* affects the brightness of the whole sky-dome, especially in high turbidity settings. High albedo values can occur in winter scenes - snow reflectance is very bright so almost all incident radiation is reflected and backscattered towards the viewer.

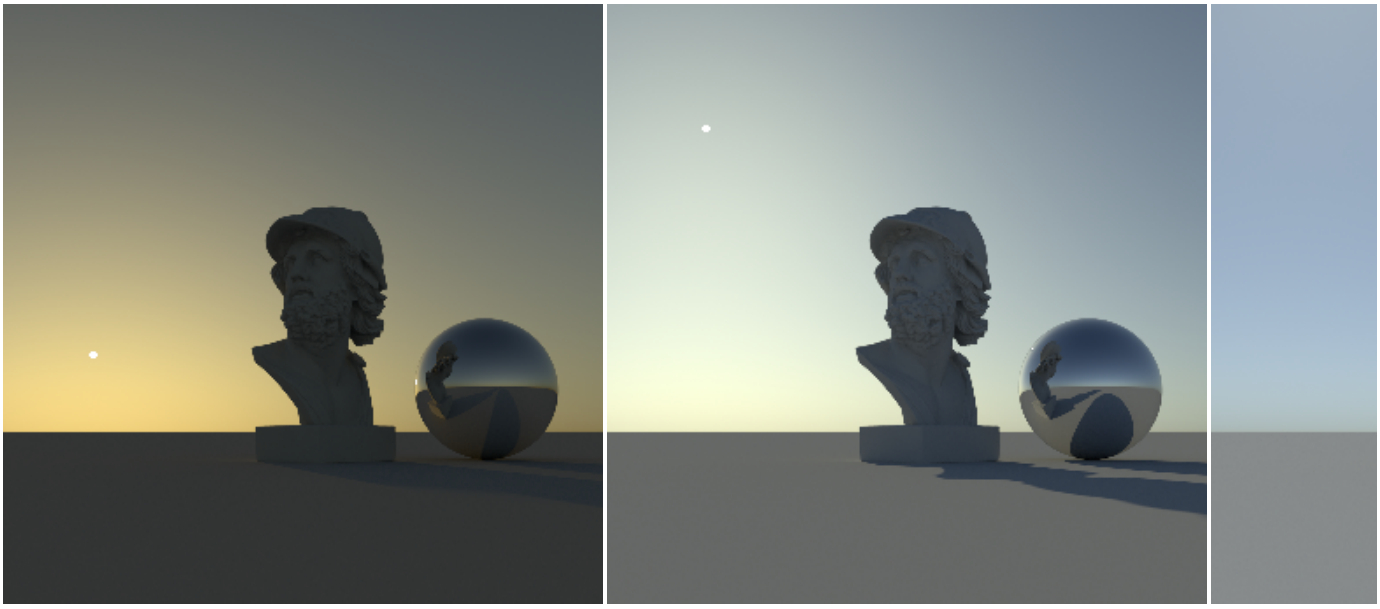

White


Green


Blue

Elevation

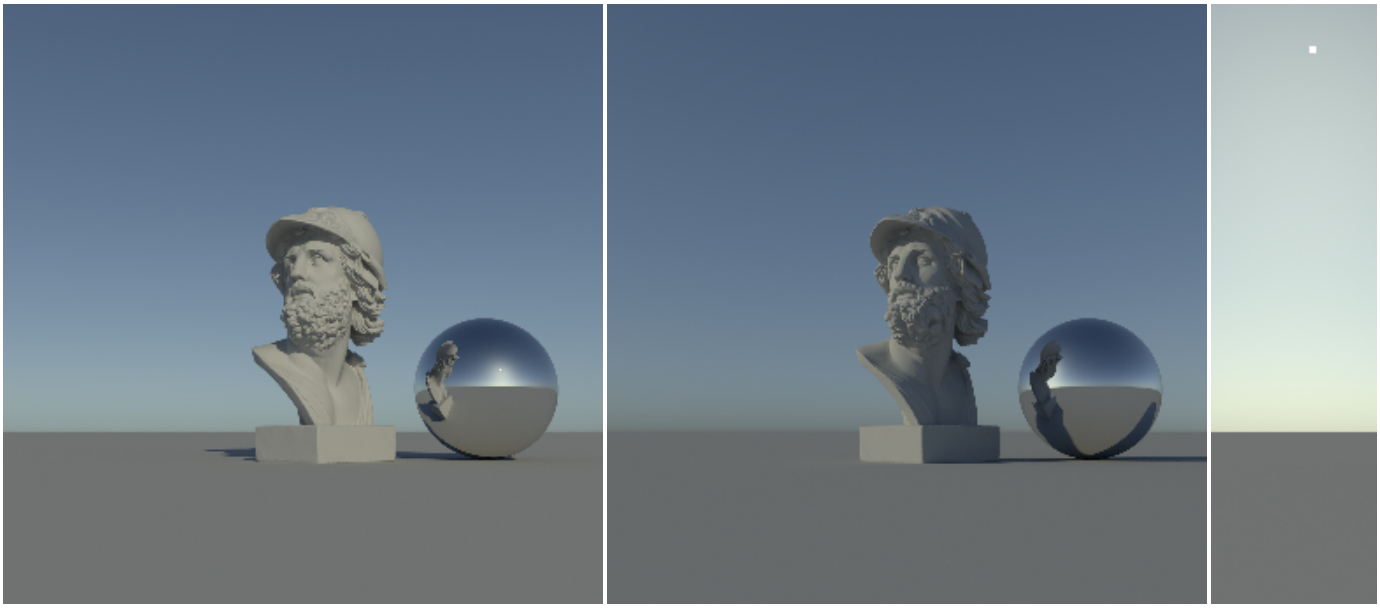
This the elevation of the sun, in degrees. The range is 0 to 90.



5 20 40

Azimuth

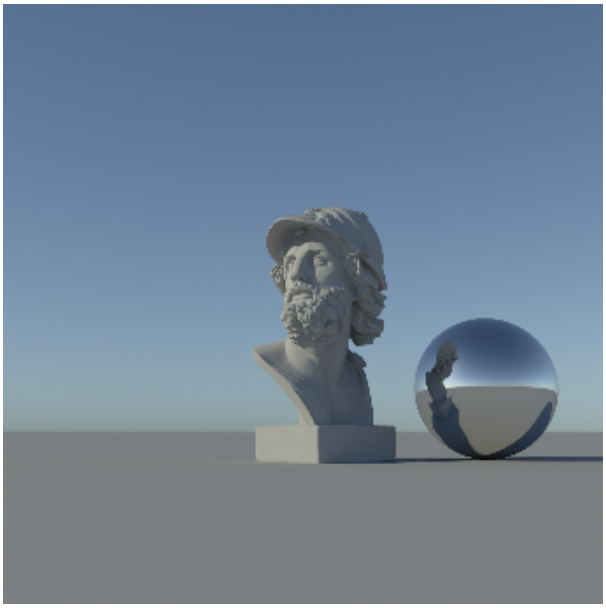
This is the azimutal position of the sun, in degrees. Range is 0 to 360.



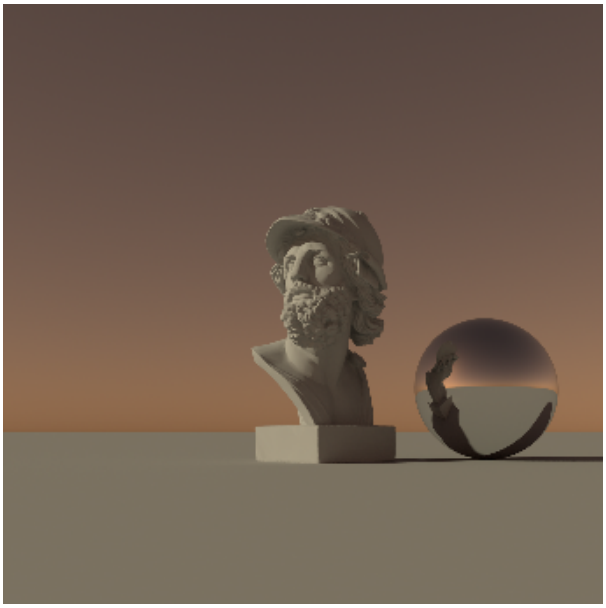
90 180 270

Sky Tint

A convenient artistic control to change the overall color of the sky dome. If physically correct renders are desired this parameter should be set to [1,1,1].



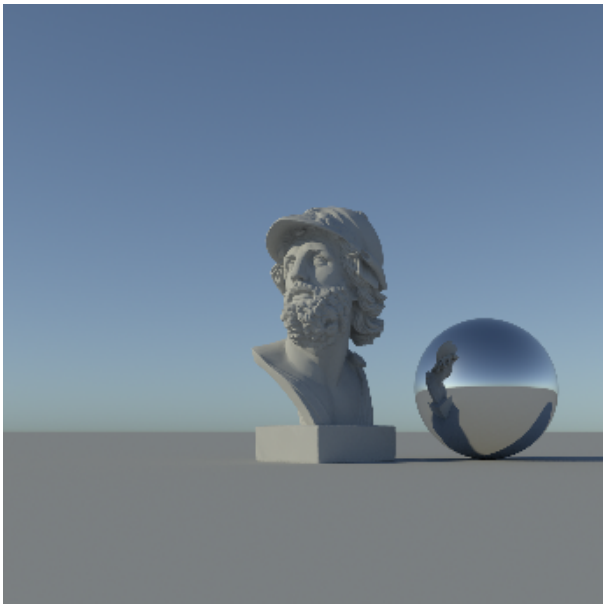
White



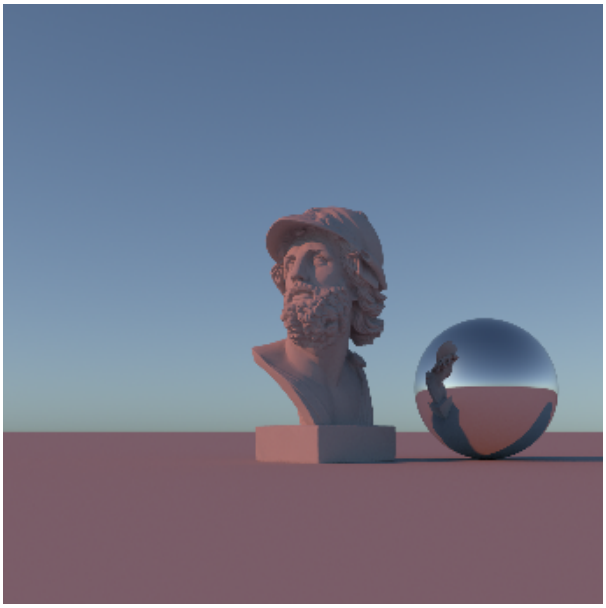
Red

Sun Tint

A convenient artistic control of the sun's color. If physically correct renders are desired this parameter should be set to (1,1,1).



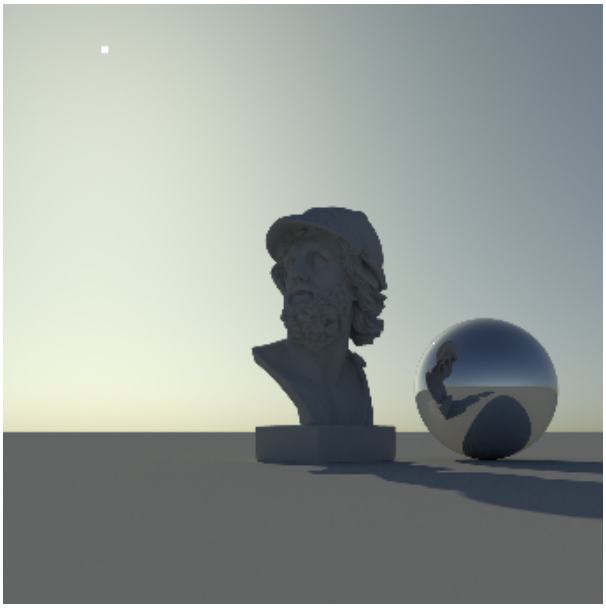
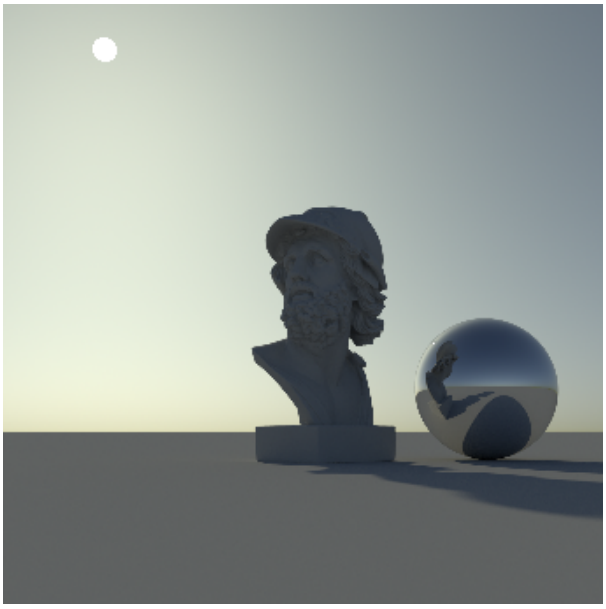
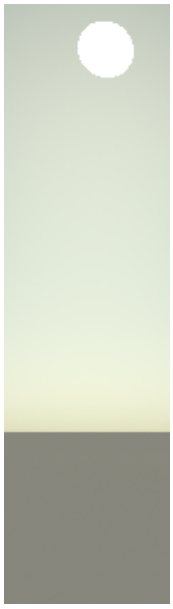
White



Red

Sun Size

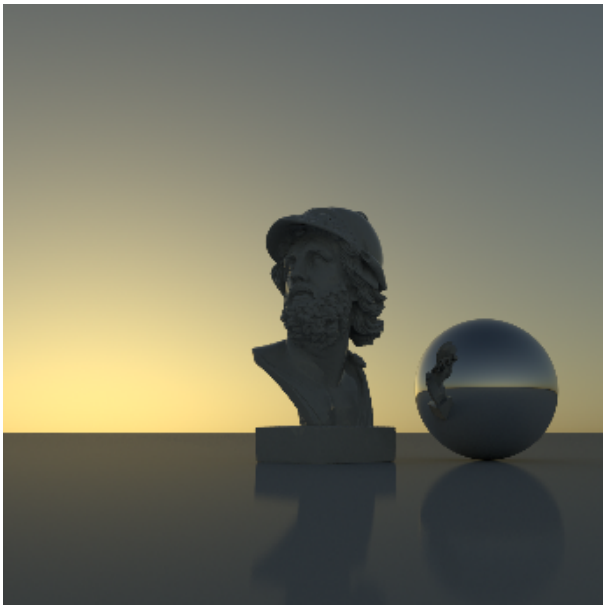
The size of the sun in the sky, in degrees. The default value (0.51 degrees) is the size of the sun as seen on earth. Note that changing the size of the sun doesn't affect the overall radiance of the sky in this model but the objects will receive more light, as seen in the images below.

0.51 (Default) 1.51 3.51

Draw Sun disk

This enables or disable the sun in the sky. Disabling the sun will disable the drawing of the sharp component of the shadows (the strongly directional shadow).

ON OFF

Draw Ground

Draws the ground (the space under the horizon) using the color specified in *Ground Color*.