

The Gas Giant Component

This component allows you to create volumetric gas giants. If you want your GameObjects (e.g. space ships) to enter the gas volume and be visually affected, you must attach the **Space Graphics Toolkit** → **Volumetric Probe** component to those GameObjects.

Gas Giant

Light Source

If your scene already contains a light source, then this field will automatically be filled in. If not, then create an empty **GameObject** and attach the **Space Graphics Toolkit** → **Light Source** component.

Observer


If your scene contains a camera tagged with **MainCamera**, then this field will automatically be filled in. If not, then create one and either change its tag to **MainCamera**, or drag it into this field.

LUT Size

This allows you to change the resolution of the generated gradient textures. A higher resolution means the gradient will be more accurately represented, but it will require more GPU memory.

Note: You should set this as low as you can get away with. You probably won't ever need this to be above 256.

Mesh

You can open the select mesh window by pressing the  button. If you then type in '**Gas Giant**', you'll see a list of suitable prepackaged meshes.

Note: The number at the end of the mesh name (e.g. Geosphere40) indicates how detailed the mesh is. You should try to set this as low as possible for faster rendering.

Render Queue

This allows you to change the render queue used by the gas giant material. Consult the official Unity documentation if you're unsure what this means.

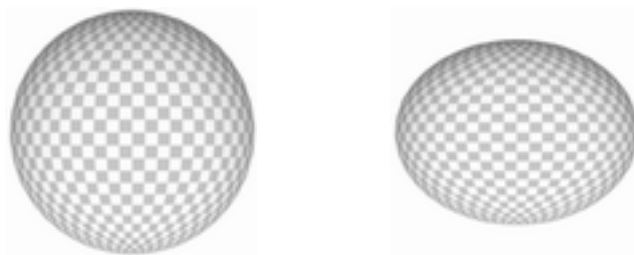
Atmosphere

Equatorial Radius

This allows you to change the radius of your gas giant's equator.

Oblateness

This allows you to change the oblateness (how round it is) of your gas giant.



Density

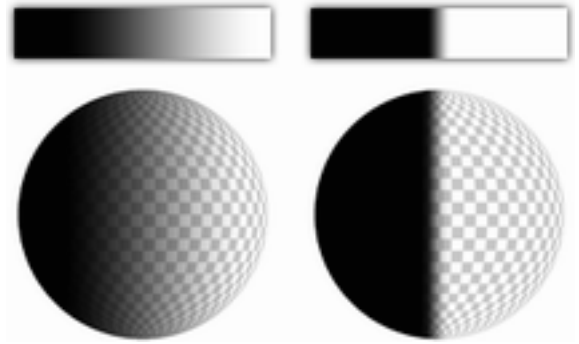
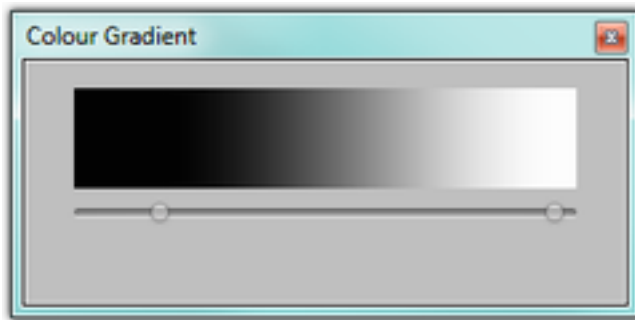
This allows you to change the overall particle density of your gas giant. A higher value means your gas giant will appear more solid and be harder to see through.

Density Falloff

This allows you to make the edge of the gas giant's atmosphere less dense than the centre.

Lighting

This field allows you to modify the lighting gradient applied to your gas giant. On the right you can see two example gradients and what they look like when applied to a gas giant. If you hit the Edit button, then you should see the gradient window as seen below.



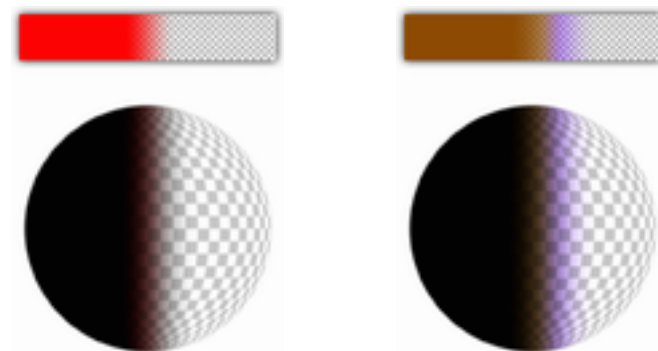
The left side is how bright the dark side of your gas giant is, and the right side is how bright the light side of your gas giant is. The two small circles you can see on the slider bar are colour keys, if you click one then you can select it which will reveal the colour picker. You can also click and drag the colour keys to a different position on the gradient. To add a new colour key, just click on an empty part of the slider bar. To remove a colour key, just click and drag a key out of the window.

Twilight Colour

This gradient allows you to change the sunset/sunrise colour. The left of the gradient indicates the dark side of your gas giant, and the right side indicates the light side.

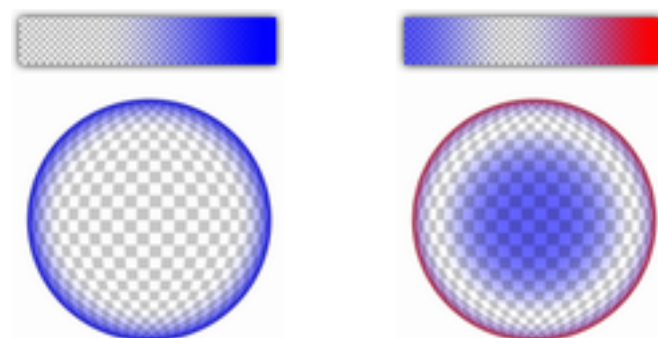
Here are some examples of atmospheres with different twilight gradients.

Note: This gradient is multiplied with the **Atmosphere** → **Lighting** gradient, so any twilight colour you set on the night side won't be seen unless you extend the lighting into the dark side.




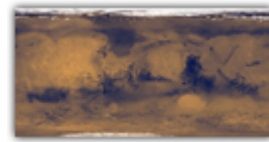
Limb Colour

This field allows you to modify the colour of the limb (edge) of your gas giant.




Texture Day

This allows you to set the texture applied to the light side of your gas giant. You can open the select texture window by pressing the  button. If you then type in '**Gas Giant Day**', you'll see a list of suitable prepackaged textures.



Night

This allows you to set the texture applied to the dark side of your gas giant. You can open the select texture window by pressing the  button. If you then type in '**Gas Giant Night**', you'll see a list of suitable prepackaged textures.



Shadow

If you tick this then your gas giant can receive a dynamic shadow from either a planetary ring, or a planet/gas giant/moon.

Caster

Type

This field allows you to choose between the type of shadow being cast on your gas giant.

- **Ring**

Ring shadows can be cast from the **Ring** or **Asteroid Ring** components, you can also manually define it.

- **Planet**

Planet shadows can be cast from the **Planet**, **Star**, or **Gas Giant** components, you can also manually define it.



GameObject

Note: Requires **Shadow** → **Caster** → **Type** to be set to **Planet**.

This field allows you to set the GameObject casting a shadow on your gas giant, this GameObject can be empty.

Auto Update

If your **Shadow** → **Caster** → **Type** is set to **Ring**, then the **Shadow** → **Caster** → **Radius + Width** fields will automatically be filled in.

Note: If these components can't be automatically found (e.g. your hierarchy layout is different) then you should disable this option and manually set the **Radius** and **Width**.


Radius

This is the radius of the shadow caster. If your **Shadow** → **Caster** → **Type** is set to **Ring**, then this is the radius at the centre of your ring.

Width

This is the width of your shadow caster. If your **Shadow** → **Caster** → **Type** is set to **Planet**, then this is the width of the soft-shadow area (penumbra).

Texture

You can open the select texture window by pressing the  button. Then depending on your **Shadow** → **Caster** → **Type** setting If you type in '**Shadow Ring**' or '**Shadow Planet**' into the search box, you'll see a list of suitable prepackaged textures.

