

Making a Star

This tutorial will teach you how to make a basic star, like the Sun.

Step 1 - Make a Sphere

You can use a basic Unity sphere for this. For example, right click in the Hierarchy window, and select **3D Object** → **Sphere**, and your scene will have a new Sphere GameObject.

If you want an even rounder sphere, I recommend you use the **Geosphere40** mesh that comes with SGT. Keep in mind the SGT sphere has a radius of 1.0 unit, whereas the default Unity one has a radius of 0.5, so your collider settings may need updating.

Step 2 - Add a Corona

Right click your Sphere GameObject in the **Hierarchy** window, and select **Space Graphics Toolkit** → **Corona**, your sphere will now have the Corona GameObject added as a child, with the SgtAtmosphere and SgtSharedMaterial components.

Step 3 - Set up the Corona

At the bottom of the SgtCorona component in the Inspector window, you will see 3 buttons. If you click these, then your corona will automatically be set up using basic values.

The first button adds the **SgtCoronaDepthTex** component, which will automatically generate the **Inner Depth Tex** and **Outer Depth Tex** settings for your SgtCorona.

The second button sets the **Outer Mesh** to use the **Geosphere40** mesh, as well as calculate the **Outer Mesh Radius**.

The third button adds your basic sphere from step 1 into the **SgtSharedMaterial.Renderers** list, and calculates the **Inner Mesh Radius field**. This renderers list lets the SgtCorona know which renderers you want the corona material to be applied to.

Step 4 - Done!

You now have a basic corona with a fully volumetric atmosphere, so your camera can seamlessly travel from space to the surface.

I recommend you now experiment with all the corona settings to understand what they alter. If you're unsure what a particular setting does, then hover your mouse over the field to see a tooltip, or read the associated documentation file.

NOTE: If you're using the floating origin system then you also need to add the **SgtFloatingPoint** and **SgtFloatingObject** components.

Optional Step - Adding Prominences

A sphere with a corona looks nice, but to make it look more interesting you can add prominences around it to make the corona look less regular.

To add one, right click your Sphere GameObject in the **Hierarchy** window, and select **Space Graphics Toolkit** → **Prominence**, your sphere will now have the Prominence GameObject added as a child, with the SgtProminence component.

You can set the **Main Tex** setting of the SgtProminence component to the **Prominence** texture that comes with SGT, and adjust the **Radius Min/Max** settings.

Optional Step - Procedurally Animated Surface

If you want the surface of your star to be procedurally animated, then you can use one of the materials in the **Star Pack/Materials** folder/directory. If you want to customize the material then I recommend you duplicate one of these materials first.

To use it, simply find the **MeshRenderer** component in the inspector window for your Sphere GameObject, expand the **Materials** array, and drag and drop your new material over the **Element 0** slot.