The Surface Displacement Component

This component allows you to make your planet and star surfaces more interesting by applying a displacement map to the surface mesh.

Source

Note: If you add this component to a GameObject that already has a **Planet** or **Star** component then these fields will automatically be filled in.

Configuration

This allows you to change the mesh configuration used by your surface.

● Sphere

A sphere configuration means your surface will be made from a single mesh of a sphere.

● Cube

A cube configuration means your surface will be made from six meshes forming a cubed sphere.

The main difference between these two options is that **Sphere** surfaces will suffer from polar distortion, whereas **Cube** surfaces are free from polar distortion. However, creating cube textures for surfaces may be more difficult and time consuming. The image below illustrates what polar distortion (left) looks like compared to cube mapping (right).

Surface Mesh

You can open the select mesh window by pressing the ⊙ button. Then depending on your **Source → Configuration** search for either **'Surface Sphere'** or **'Surface Cube'**, and you'll see a list of suitable prepackaged meshes.

Note: The number at the end of the mesh name (e.g. Geosphere**40**) indicates how detailed the mesh is. You should try to set this as low as possible for faster rendering.

Note: If your **Surface → Configuration** is set to **Cube**, then make sure the mesh face (**+X. -X, +Y**, etc) matches the face you're currently setting.

Displacement

Configuration

This allows you to change the texture configuration used by your surface when reading displacement values. This can be different to **Source → Configuration**.

Texture

This allows you to set the texture(s) used for your surface displacement. You can open the select texture window by pressing the ⊙ button. Then depending on your **Source → Configuration** search for either **'Surface Sphere'** or **'Surface Cube'**, and you'll see a list of suitable prepackaged textures.

Note: If your **Source → Configuration** is set to **Cube**, then make sure the texture face (**+X. -X, +Y**, etc) matches the face you're currently setting.

Scale Min

This allows you to set the minimum displacement scale, this is represented by black pixels.

Scale Max

This allows you to set the maximum displacement scale, this is represented by white pixels.

Use UV

If your **Source** → **Configuration** matches your **Displacement** → **Configuration** then you can tick this to avoid calculating the UV for each vertex.

Clamp

If you tick this then all UV values will be clamped before they're read from the displacement texture(s).

Auto Regen

If you tick this then the corona mesh will automatically be regenerated every time you make a modification to this component's settings. The regeneration will take place before the scene is rendered (in LateUpdate).

Regenerate

Note: This button is only visible if you've disabled **Auto Regen**.

If you press this button then your corona mesh will be regenerated.