

MichaelEGA / Simple-Stochastic-Planet-Shader

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MichaelEGA

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🕒 4 Commits

Planet Shader

Add files via upload

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README.md

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README

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Apache-2.0 license

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Simple-Stochastic-Planet-Shader

A simple procedural planet shader with stochastic texturing

Get it here: <https://github.com/michael-evan-allison/Simple-Stochastic-Planet-Shader>

Tested In: Unity URP 2022.2.9f1

Version History

17/03/2023 - Initial commit

Planet Shader Features

- Generates texture from heightmap (great if your procedurally generate heightmaps with say Libnoise)
- Looks good from far away to midrange
- Eight different terrain colours
- Three different detail textures: ground, water, and lights
- Control scale of detail textures
- Control metallic and smoothness of textures
- Triplanar texturing (so that textures look right regardless of angle)
- Stochastic texturing (avoids texture repition)
- Shadow attenuation (so the dark side of the planet is black)
- Control whether lights appear on the dayside or just on the darkside of the planet
- Control spread of lights
- Animate and control speed of water texture
- Control strength of heightmap and normals

Cloud Shader Features

- Input detail cloud texture for detail
- Control scale of cloud detail texture
- Control alpha threshold of cloud detail texture
- Stochastic texturing (avoids tiling of cloud detail texture)
- Shadow attenuation (so that clouds on the dark side of the planet are black)
- Triplanar texturing (so that textures look right regardless of angle)
- Animate and control speed of clouds so they move across the planet, uniform and reform
- Control metallic and smoothness of clouds



Terrain Scale

40

Water Scale

40

Land Smoothness

0

Water Smoothness

0.25

Land Metallic

0

Water Metallic

0.25

Water Speed

0.005

▼ Lights

Lights Texture



Select

Lights

☒

Lights Height

0.85

Lights Color

🔗

Lights Scale

5

Lights Visibility

0

Shadow Strength

0.55

▼ Terrain Colours

Depths Height

0

Depths Colour

🔗

Shallows Height

0.4

Shallows Colour

🔗

Shore Height

0.48

Shore Colour

🔗

Sand Height

0.5

Sand Colour

🔗

Grass Height

0.625

Grass Colour

🔗

Dirt Height

0.75

Dirt Colour

🔗

Rock Height

0.875

Rock Colour

🔗

Snow Height

0.95

Snow Colour

🔗

How To Use

- Drag the planet sphere into the scene
- Drag in your selected heightmap (the higher the resolution the better it looks)
- Fiddle around with the heightmap strength until it looks right
- Add in your ground and water and light textures (or just use the samples provided)
- If your making a desert planet or similar use the ground texture in the water slot and make sure that the water speed is set to 0 so that the ground doesn't appear to move
- Set the colours for the different heights of the heightmap
- Set what height you'd like lights to appear from... something above 0.55 is good if you dont want them to appear in the water
- 'Lights Visibility' controls the degree to which lights appear on the dayside of the planet

Credits

- I implemented the custom lighting node by Cyanilus (MIT License), which can be found here: https://github.com/Cyanilus/URP_ShaderGraphCustomLighting
- I implemented some of bgolus ideas for generating my own normal maps
- I implemented Junior_Djir stochastic node, which can be found here: <https://github.com/JuniorDjir/UnityProceduralStochasticTexturingNode>
- The cloud texture is from Solar System Scope (CC 4.0): <https://www.solarsystemscope.com/textures/>
- Other Textures in example files from nasa earth observatory (Public Domain)

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About

Generates a planet texture from a heightmap (includes cloud shader)

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