Planets

Version 1.2

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Contents

Introduction

Thank you for purchasing Planets!

This guide describes the features of the Planets integration in Unity3D. A basic understanding of the Unity3D engine, as well as C# programming language is assumed. Having basic knowledge of the shader and visual effects design in Unity3D may be advantageous.

For more information please visit www.forge3d.com

If you have any questions, suggestions, comments or feature request please do not hesitate to contact us at support@forge3d.com

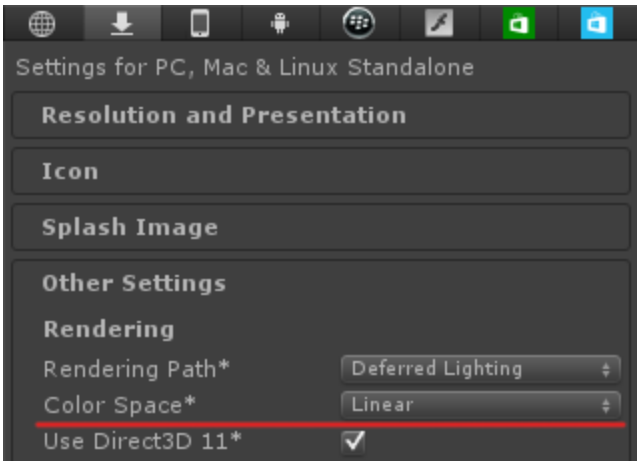
Brief overview

Planets is a collection of highly customisable prefabs allowing you to design your own worlds right in the Unity editor. Use a combination of supplied textures and shaders to craft any kind of planets your project needs, anything from terrestrial planets to lava worlds. Create your solar system by placing sun and setup custom planetary soft shadowing in no time.

Please note this package is designed for desktop platforms only. Soft Particles *Unity Pro **feature is required to display Sun corona billboards correctly.**

Getting started

First of all make sure you set your project settings to linear color space. If you haven't done so go to **Edit -> Project Settings -> Player** and select Linear using drop down list:



** You can find gamma space prefabs added with update v.1.2 to be used with Unity Free.*

Example scenes

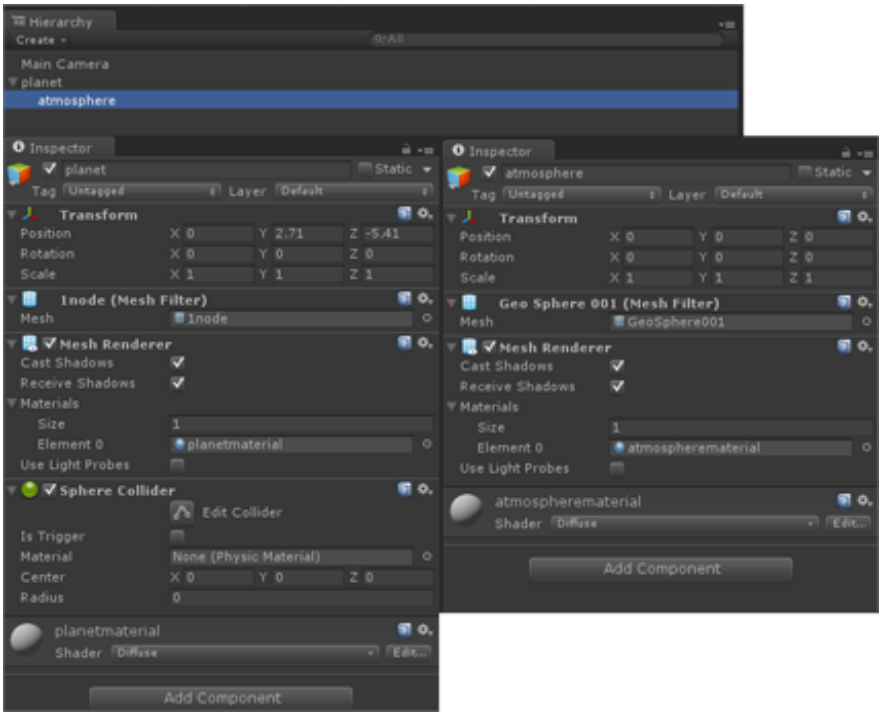
There are several example scenes included at **Assets/FORGE3D/Planets/** path:

sun_examples and **planet_examples** ending with **_gamma** or **_linear** - Demonstrates all available planet and sun prefabs and custom light source with soft shadowing technique. Move your mouse to change light's position.

solar_system_example - Demonstrates example solar system setup with planets orbiting around sun. Move your mouse to orbit camera. Left and right mouse buttons to toggle between objects and scroll wheel to zoom.

Creating your first planet

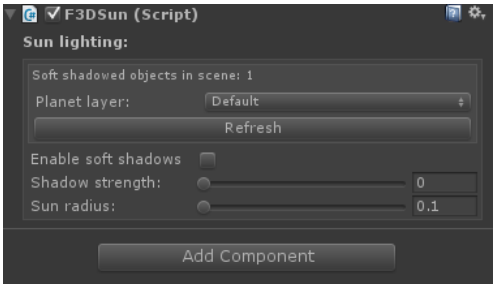
1. Lets create a new scene to get started with and place a new gameobject in it.
2. Select the gameobject and add Mesh filter component and Mesh renderer component.
3. Duplicate the gameobject and make one a child of another. Name the parent "Planet" and the child "Atmosphere".
4. Select parent and add Sphere collider component (we will need this in future).
5. Create two new materials. Name them "planet" and "atmosphere".
6. On parent: Assign **Assets/FORGE3D/Planets/Misc/sphere.fbx/1node** mesh to a Mesh filter.
7. On parent: Assign "planet" material to a Mesh renderer.
8. On child: Assign **Assets/FORGE3D/Planets/Misc/geosphere.fbx/geosphere001** mesh to a Mesh filter.
9. On child: Assign "atmosphere" material to a Mesh renderer.



Creating sun lighting

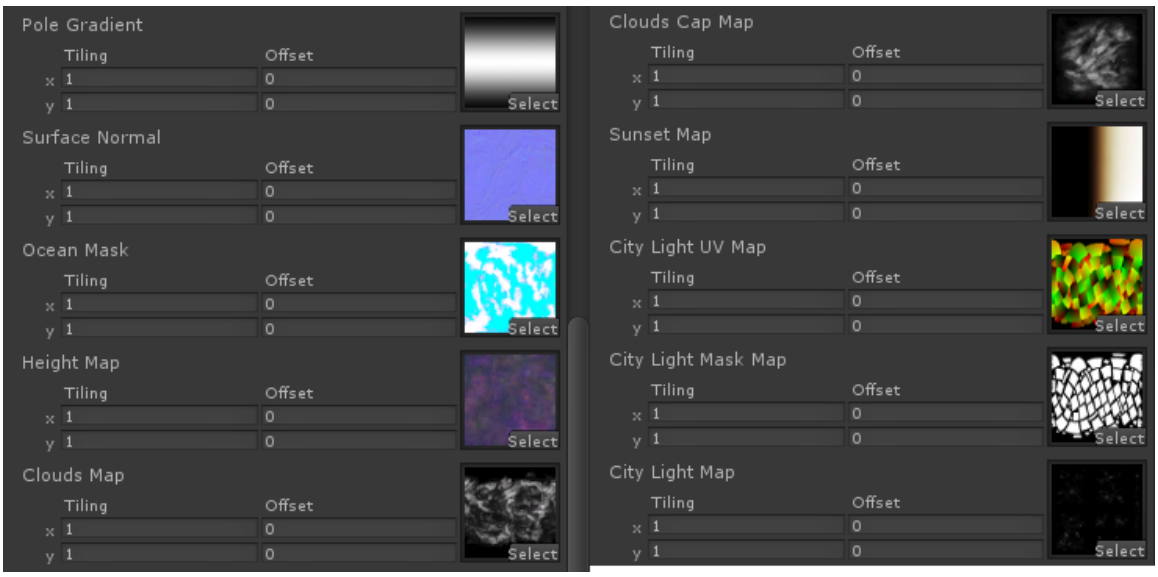
Before we get to the material creation we need to setup sun light source:

1. Select planet parent object and add **F3DPlanet** component to it.
2. Create an empty gameobject and name it “Sun”.
3. Add **F3DSun** component to “Sun” gameobject and click “Refresh”



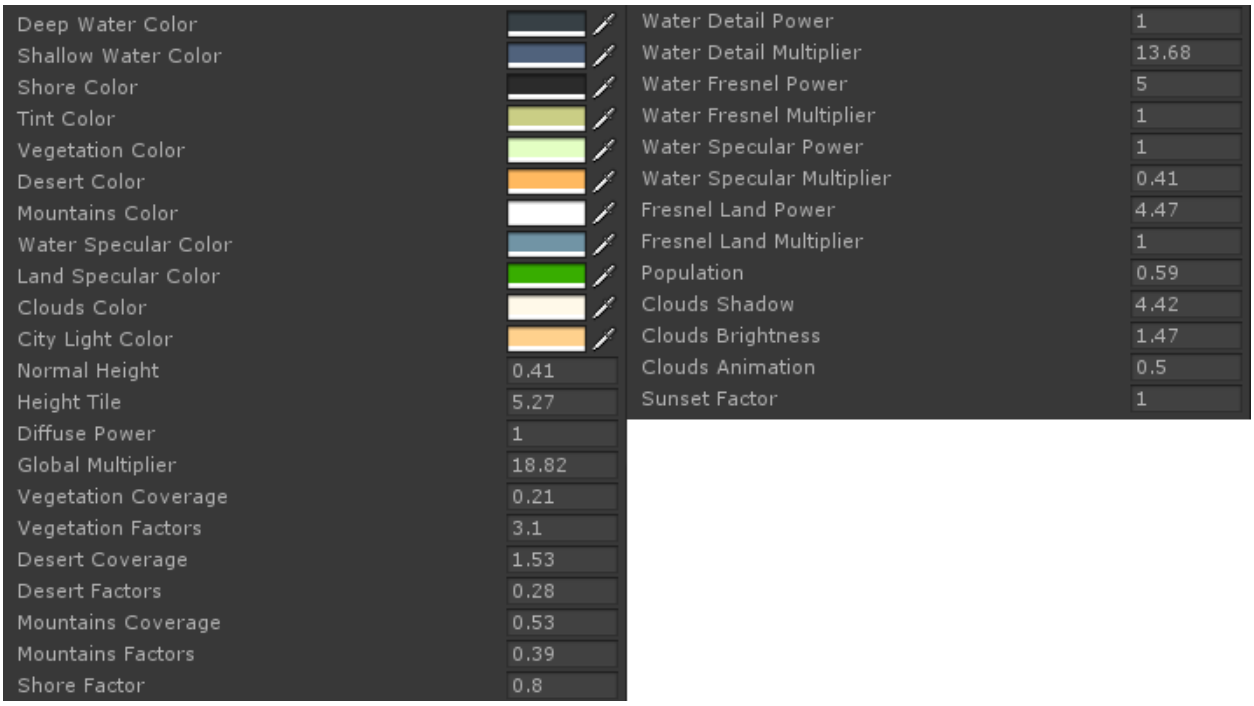
Setting planet textures

1. Select planet material and set shader to **FORGE3D/Planets/Terrestrial**
2. Set Pole Gradient texture to **polegradient_01**
3. Set Surface Normal to **terrestrialdetail_01_normal**
4. Set Ocean Map to **landmask_01**
5. Set Height Map to **terrestrialdetail_01**
6. Set Clouds Map to **clouds_03**
7. Set Clouds Cap Map to **cloudscap_03**
8. Set Sunset Map to **sunset_yellow_05**
9. Set City Light UV Map to **lights_01_uv**
10. Set City Light Mask Map to **lights_01_mask**
11. Set City Light Map to **lights_01**



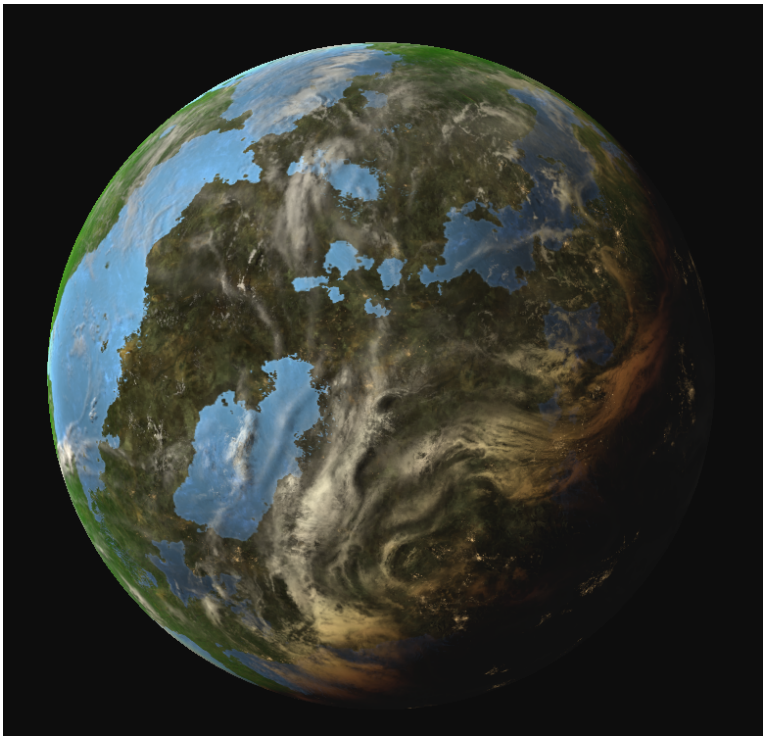
Setting planet material values

Select planet material and set material values as shown on the picture:



* *While most settings are self explanatory it is best practice to pick one of the sample prefabs and invest some time in learning how these values are used to create specific planet.*

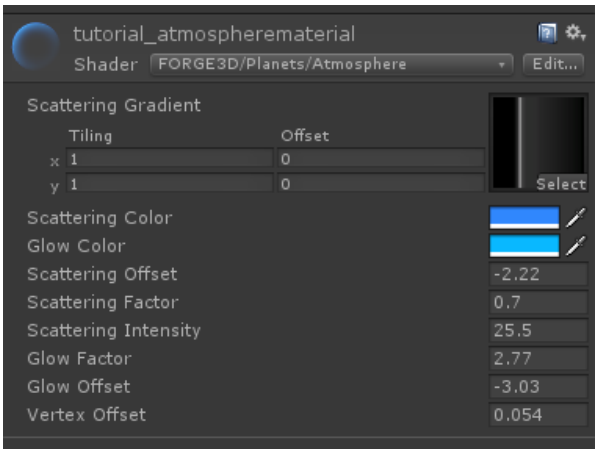
After setting all the planet values you should be able to see something similar to this:



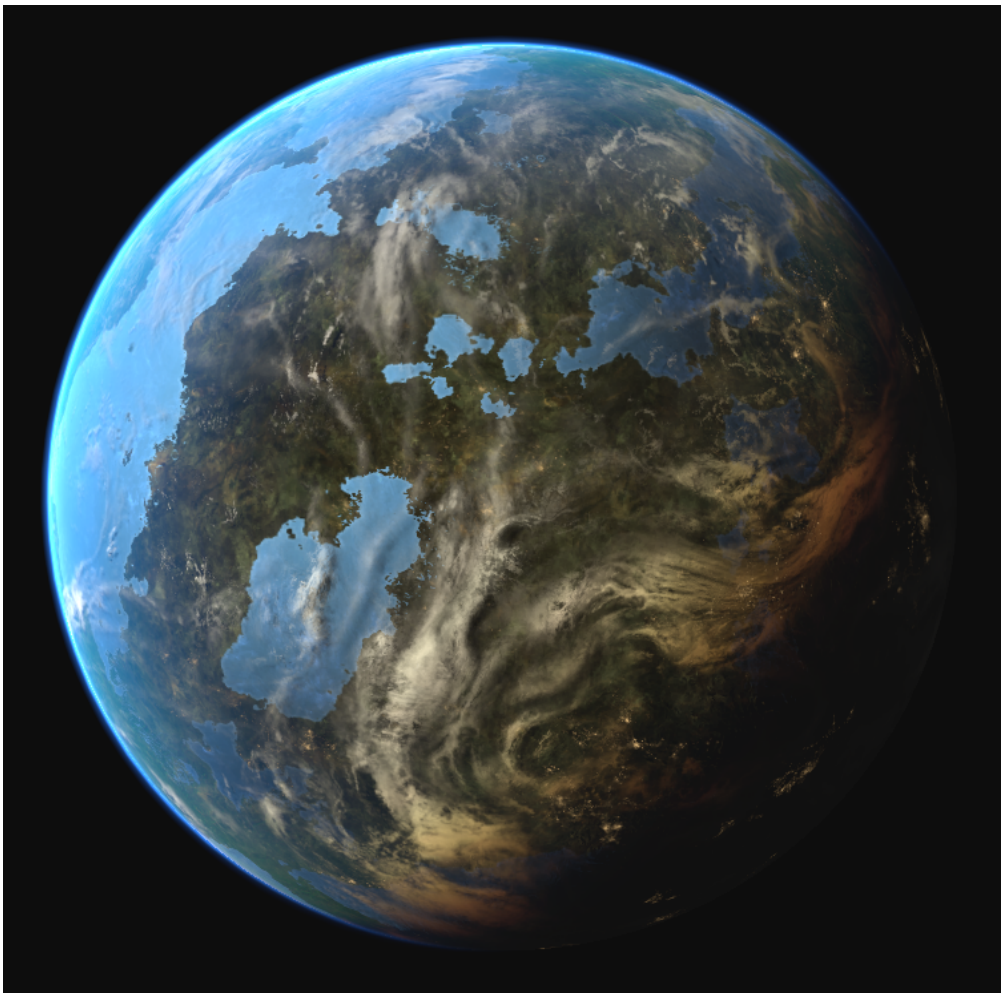
Setting atmosphere

Make sure you have your atmosphere gameobject enabled before you proceed.

1. Select atmosphere and set Scattering Gradient texture to **atmosphere_01**
2. Set color and the other values like shown in the picture:



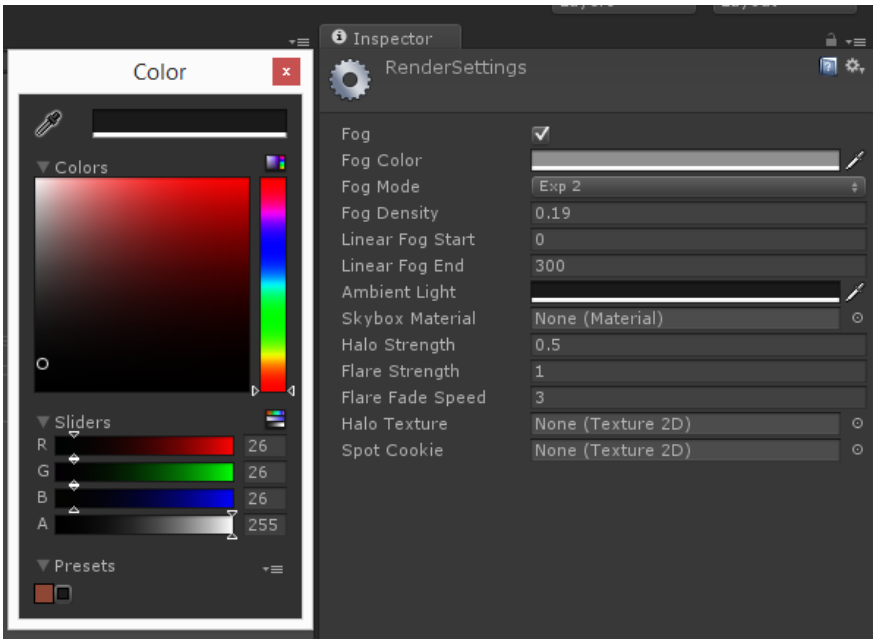
Your final result should look similar to this:



Setting ambient color

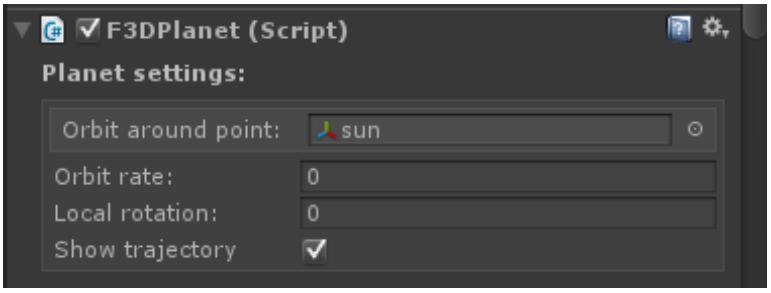
Planets and especially their dark shadowed sides can be sensitive to ambient color. Setting ambient color can be useful to make the planet fit into your skybox background.

Go to **Edit menu - > Render Settings** and set ambient color like show in the picture:

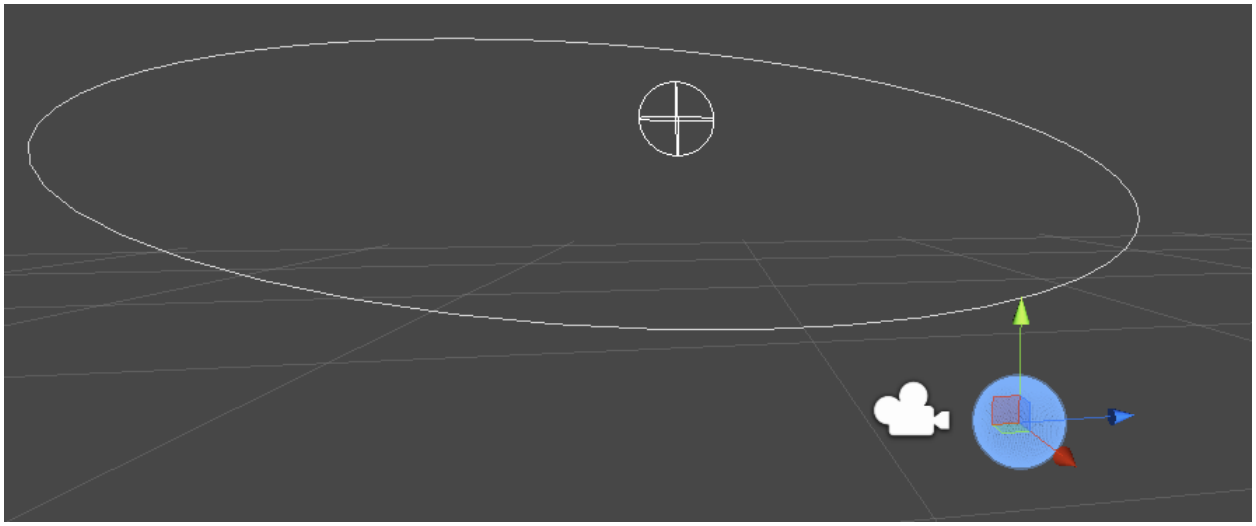


Setup planet orbit parameters

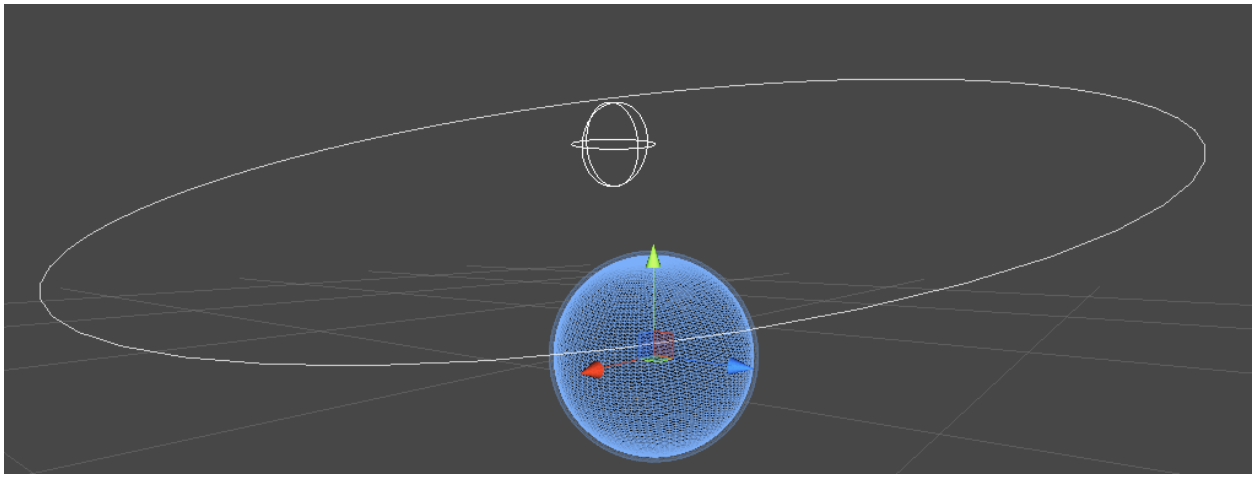
Select the planet and make sure it has **F3DPlanet** script attached to it. Set Orbit around point parameter to “Sun” gameobject and click Show trajectory. Make sure to set Orbit rate and Local rotation values.



As soon as you set to show trajectory you will immediately see it in the Scene view:



Rotating the planet will rotate the trajectory plane. All you have to do now is to align the planet on its local Y axis to match with the trajectory plane:



Unity Free restrictions

Since version 1.2, the gamma color space prefabs were added making this asset Unity Free compatible. The only restriction that is left is the Soft Particles *Unity Pro feature required by the Sun corona billboards.