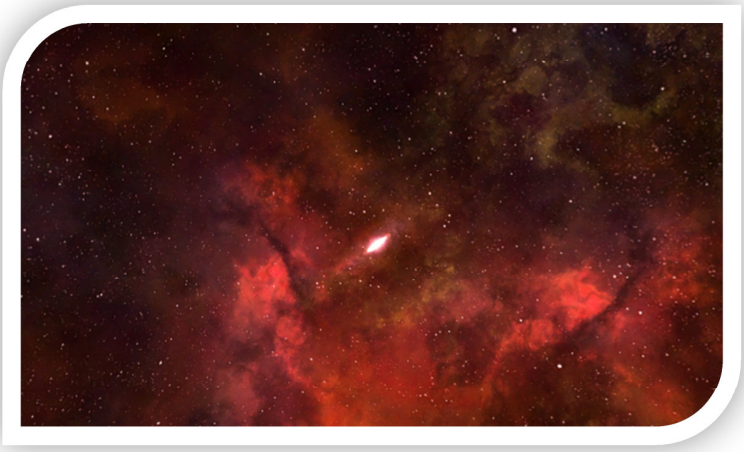
MOBILE SPACE SKYBOXES 01

MANUAL

Version: 1.0.0



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1 Introduction

This package contains 20 unique space themed skyboxes plus an additional 20 alternative versions where planets and most galaxies have been removed for a cleaner look.

The skyboxes are designed primarily for mobile devices where performance is of importance although they can, of course, be used for any platform.

2 Skybox Alternatives

In Unity, especially for mobile devices, performance is generally gained by reducing the number of "draw calls" required to render a scene.

A standard skybox requires 6 draw calls. This is because a skybox is composed by six separate textures and each texture requires a draw call.

An alternative custom skybox method to draw skyboxes is included in this package which only requires 1 draw call. This is achieved by including all six sides of the skybox on a single 2048x2048 texture which also saves distribution size and memory usage. Quality of the custom skyboxes is also reduced since the resolution of each side in the skybox is reduced from 1024x1024 to 682x682.

2.1 Standard Skybox

Standard skyboxes use 6 seamless 1024x1024 textures which require 6 draw calls.

Custom Skybox Details

Draw Calls	6
Resolution	6.1 Megapixels
Texture Memory	4.0 MB

2.2 Custom Skybox

Custom skyboxes use a single 2048x2048 texture where all six skybox textures (reduced to 682x682) are included on the same texture. A custom inverted UV-mapped cube mesh is used to draw the texture which is rendered in a single draw call using a high performance mobile optimized shader.

Custom Skybox Details

Draw Calls	1
Resolution	2.7 megapixels
Texture Memory	2.7 MB

3 Asset Structure

3.1 Demo Scenes

Demo scenes have been separated into two folders, standard skyboxes and custom mobile optimized skyboxes.

3.1.1 Skyboxes (6 Draw Calls)

- **Demo Mobile Device Skyboxes**
  - Build this to a mobile device, e.g. Android. Tilt the device to use the accelerometer to rotate within the skybox. Tap the screen to switch between 3 skyboxes.
- **Demo Skybox (6 Draw Calls)**
  - A single skybox and no GUI textures to demonstrate that six draw calls are required.
- **Demo Skybox - All Skyboxes**
  - Demo of all skyboxes that have planets and galaxies. Use arrows to cycle through the 20 skyboxes.
- **Demo Skybox - All Skyboxes Plain**
  - Same as above but with alternative textures where planets and most galaxies have been removed.

3.1.1 Skyboxes Custom (1 Draw Call)

- **Demo Mobile Device Skyboxes Custom**
  - Build this to a mobile device, e.g. Android. Tilt the device to use the accelerometer to rotate within the skybox. Tap the screen to switch between 3 skyboxes.
- **Demo Skybox Custom (1 Draw Call)**
  - A single skybox and no GUI textures to demonstrate that only a single draw call is required.
- **Demo Skybox Custom - All Skyboxes**
  - Demo of all skyboxes that have planets and galaxies. Use arrows to cycle through the 20 skyboxes.
- **Demo Skybox Custom - All Skyboxes Plain**
  - Same as above but with alternative textures where planets and most galaxies have been removed.

3.2 Materials

3.2.1 Skyboxes (6 Draw Calls)

This folder contains 40 standard skybox materials (20 of which have the suffix "_plain" where planets and most galaxies have been removed.)

These materials can all be used for traditional skyboxes in Unity:
http://docs.unity3d.com/Documentation/Components/class-Skybox.html

3.2.2 Skyboxes Custom (1 Draw Call)

This folder contains 40 custom skybox materials (20 of which have the suffix "_plain" where planets and most galaxies have been removed.)

These custom skybox materials require a custom mesh to be positioned around the camera. See section 4.2 for instructions.

3.3 Meshes

A custom mesh, *MobileSkyboxMesh*, is included which is used by the "Skybox Custom" prefab.

The mesh is simply an inverted cube with UV-mapping which corresponds to the custom skybox textures where all sides are drawn on a single texture.

3.4 Prefabs

A prefab, *Skybox Custom*, is included which can be used to draw custom skyboxes.

The prefab uses a script, *MSS_CustomSkybox.cs*, to position a custom skybox mesh at the parent camera location.

See section 4.2 for instructions how to use Custom Skyboxes.

3.5 Scripts

Scripts (C#)

MSS_CustomSkybox.cs	Enables and positions custom skybox mesh and material.
MSS_Demo.cs	Demo to cycle through array of standard skybox materials.
MSS_DemoCustom.cs	Demo to cycle through array of custom skybox materials.
MSS_MobileLook.cs	Mobile device look script using accelerometer (tilt to rotate.)
MSS_MouseLook.cs	Mouse look script.
Editor\MSS_CreateCustomSkybox.cs	Adds option to create Custom Skybox through the GameObject top menu.

3.6 Shaders

Folder contains a custom mobile shader, *MobileCustomSkybox.shader*, which effectively renders the custom skybox material for mobile devices.

3.7 Textures

3.7.1 Custom 1 x 2048

Folder contains 20 custom 2048x2048 textures containing all skybox sides on a single texture used by the custom skyboxes.

3.7.1.1 _Plain

Folder contains 20 alternative custom 2048x2048 textures where the planets and most galaxies have been removed from.

3.7.2 Standard 6 x 1024

Folder contains 20 x 6 standard 1024x1024 textures which can be used for normal skybox textures.

3.7.2.1 _Plain

Folder contains 20 alternative 1024x1024 textures where the planets and most galaxies have been removed from.

4 How to Use

4.1 Standard Skyboxes

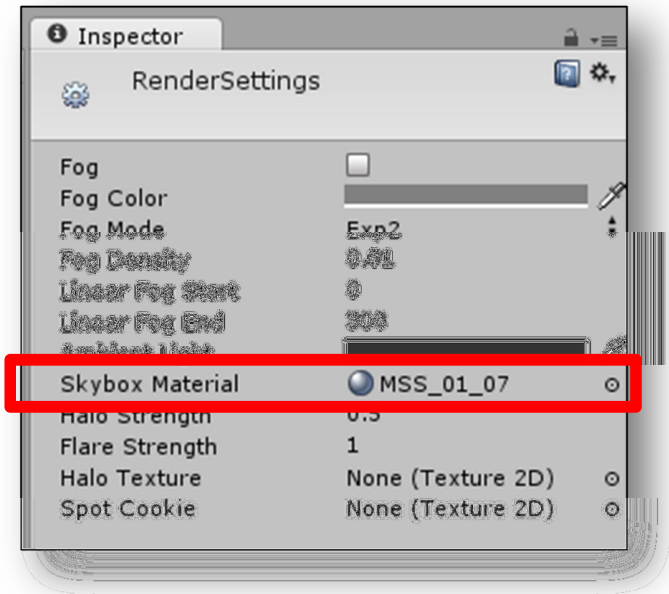
The standard skybox materials (Mobile SPACE Skyboxes 01/ Materials/ Skyboxes (6 Draw Calls)) can be used just like normal skyboxes in Unity.

There are two ways to use skyboxes:

4.1.1 Render Settings

If you only plan to use a single skybox in your game, you can configure a skybox in the Render Settings of your project:

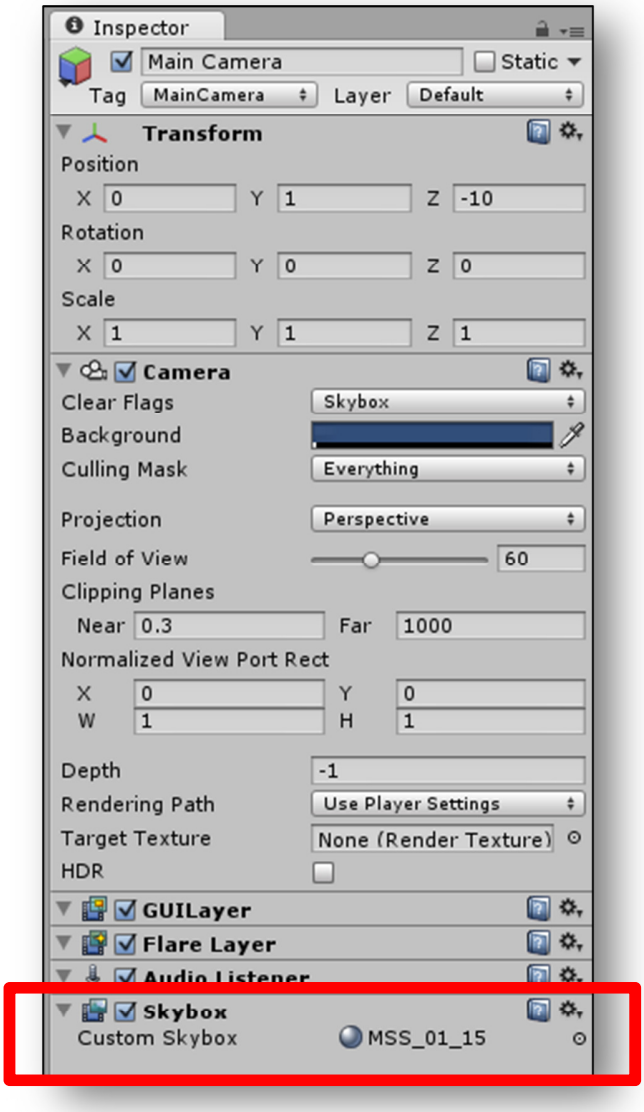
1. (Title Menu) **Edit** | **Render Settings**
2. **Drag & drop a material** from **Mobile SPACE Skyboxes 01/ Materials/ Skyboxes (6 Draw Calls)** into **Skybox Material** in the Inspector



4.1.2 Camera Component

If you wish to change the skybox in your game, you should use a Skybox component for your camera:

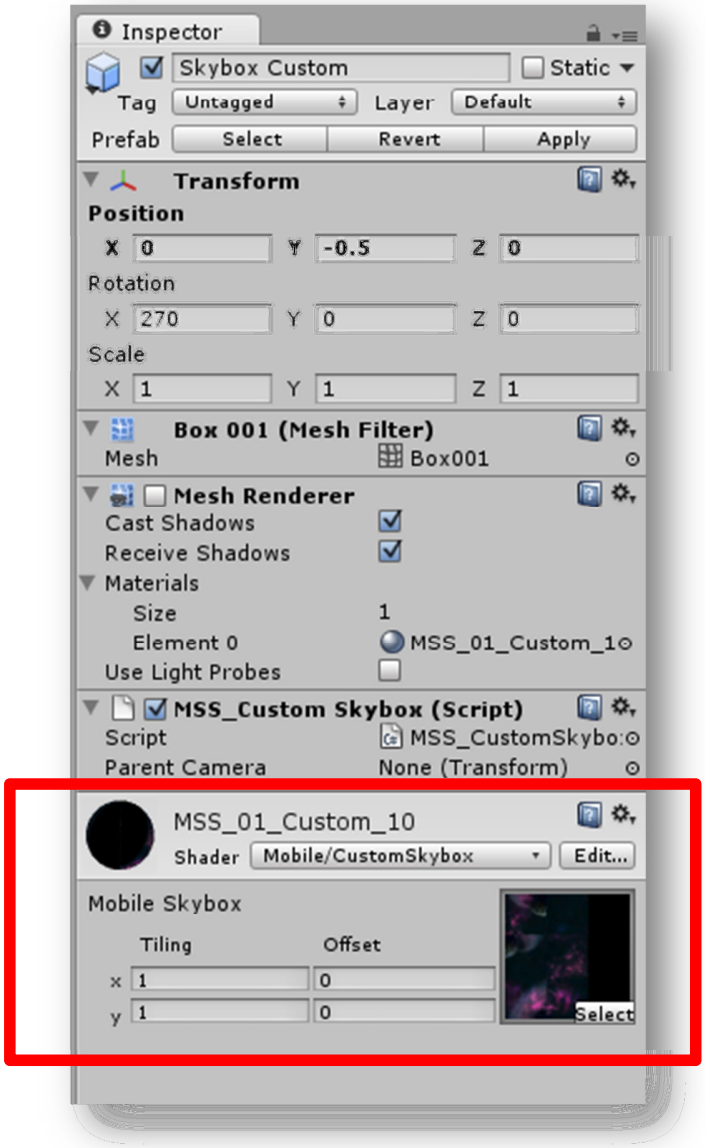
1. In the Project Hierarchy, select **Main Camera** (or your primary camera)
2. (Title Menu) **Component** | **Rendering** | **Skybox**
3. **Drag & drop a material** from **Mobile SPACE Skyboxes 01/ Materials/ Skyboxes (6 Draw Calls)** into **Custom Skybox** in the Inspector



4.2 Custom Skyboxes

The custom skybox materials (Mobile SPACE Skyboxes 01/ Materials/ Skyboxes Custom (1 Draw Call)) can only be used with a custom mesh and script.

1. (Title Menu) **GameObject | Create Other | Custom Skybox**
2. Select the new **Skybox Custom** game object in the Hierarchy
3. **Drag & drop a material** from
   Mobile SPACE Skyboxes 01/ Materials/ Skyboxes Custom (1 Draw Call)
   onto the Inspector for the game object



5 Support & Troubleshooting

5.1 General Help

4.1.3 Should I use "Standard" skyboxes or "Custom" skyboxes?

The standard skyboxes have higher resolution and look better. If your distribution size and target platform is not impacted by the size and additional draw calls, I suggest that you use the standard skyboxes. If you wish to target older mobile platforms, if you wish to reduce the size of your distributable, or if you are not in need of higher resolution backgrounds, I suggest that you use the custom skyboxes.

4.1.4 The "Custom Skyboxes" are not working?

Ensure that you have imported the full asset package. You can create a custom skybox either through (Top Menu) **GameObject | Create Other | Custom Skybox** or by dragging and dropping the prefab **Prefabs/Skybox Custom** into your scene view.

5.2 Contact Support

If you have any questions, please contact me at stefan@imphenzia.com

6 Thank You

Thank you for purchasing "**Mobile SPACE Skyboxes 01**" - I hope you find great use of the asset for a successful game release ☺

If you need millions of dynamic and unique skyboxes, consider purchasing the "**SPACE for Unity"** asset which is an editor extension for Unity that creates random space scenes at the click of a mouse button: http://spaceunity.com. The skyboxes in this package have, in fact, been created using SPACE for Unity.