# PDG Terrains – a short manual

**Thank you for purchasing this asset and supporting future projects and updates!**

You should have received 15 different looking, low polygon meshes, each with a complete set of textures.

Every mesh got a corresponding material "Mesh(number of the mesh)" assigned and comes with a bunch of textures:

4 Color- or diffuse maps: diffuse1_AO, diffuse2_AO, diffuse3_AO, …

**Note:**
The textures designated "_AO" got ambient occlusion "baked" into RGB. This helps to make terrain look a bit "dirty" or "dusty" in darker areas. If you prefer a "cleaner", more bright look, you could use the "non-AO" versions. In the "non-AO" version, there is also AO "baked" into – but only in the alpha channel.

* "non AO" versions are fitting perfectly into the **Marmoset Skyshop Terrain Specular IBL Shader** – but can also be used with standard unity shaders. Just try both and see, what suits you best!

1 "normal map" for every mesh - this one mimic high detail "structures" on the low-poly meshes for good visual-detail and maintaining high performance at the same time.

*A "Splatmap" for every terrain/mesh.
This one controls, how detail textures are placed across a terrain:

**r**ed Channel = areas with higher altitude
**g**reen Channel = sloped areas
**b**lue channel = areas with lower altitude / flow
**a**lpha = free/not used

**Note:**
Remember to set the splatmap-texture to "2048x2048", "ARGB 32-bit" and "read/write enabled" in the inspector-window.

Last but not least, heightmaps or displacmentmaps are included from which you can re-create the terrains at a high resolution,. Use them to generate your unity terrains or to import terrains into other 3D applications.

1 standard Skybox (6 1024x1024 Textures) and a 360°spherical panorama .hdr file

**This asset is Marmoset Skyshop ready, skyshop owners can make use of the provided .hdr file to light scenes and get some nice reflections on objects - all based on life-like lighting emitted from the skybox.**

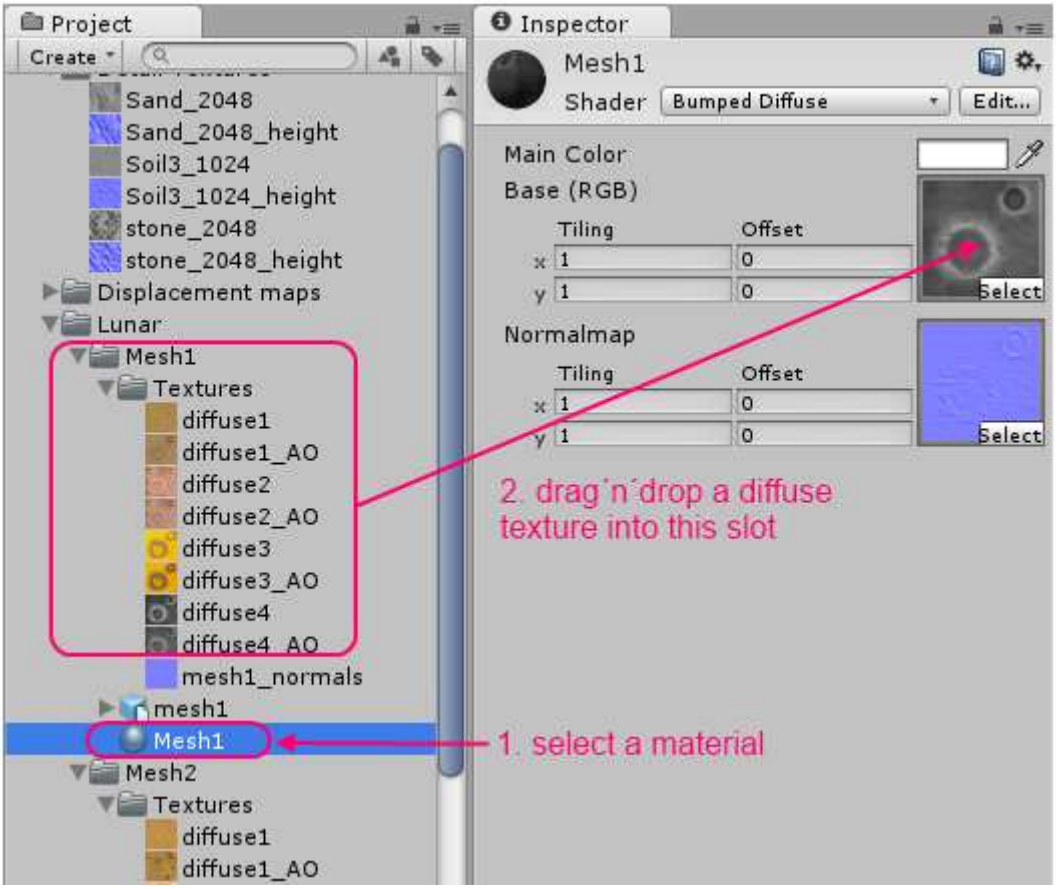
The following step-by-step guides will give you (hopefully) a clue on how to use this asset and change some of its content to your liking.

**Enjoy your PDG Terrain asset!**
***-Karsten***

***= Included in PDG Lunar Terrain BONUS package**

**Change a terrain texture (unity standard shader)**

You can change the look of a terrain, by dragging your favorite texture over to the corresponding slot of a mesh-material.



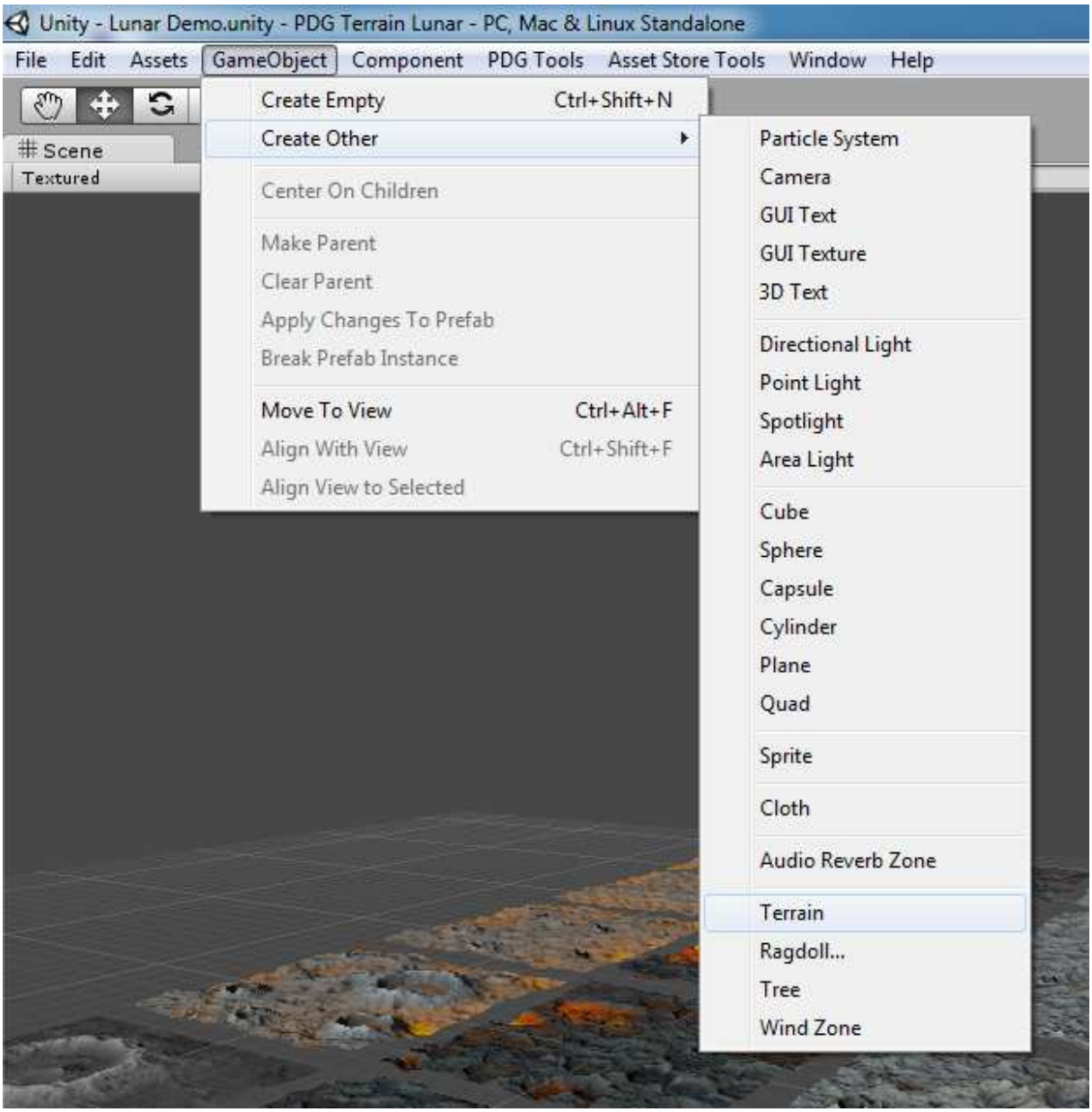
## Creating a “Unity Terrain” from displace-/heightmaps

Finally yet importantly, there is a .raw heightmap or "Displacement map" included for each mesh. You can load it into the Unity Terrain Editor and create a "Unity Terrain" out of it. You can take advantage of all the benefits that come along with it. (Like LOD, planting Trees, make a terrain useful for an FPS game, etc.)

**For more information and reference, please see:**

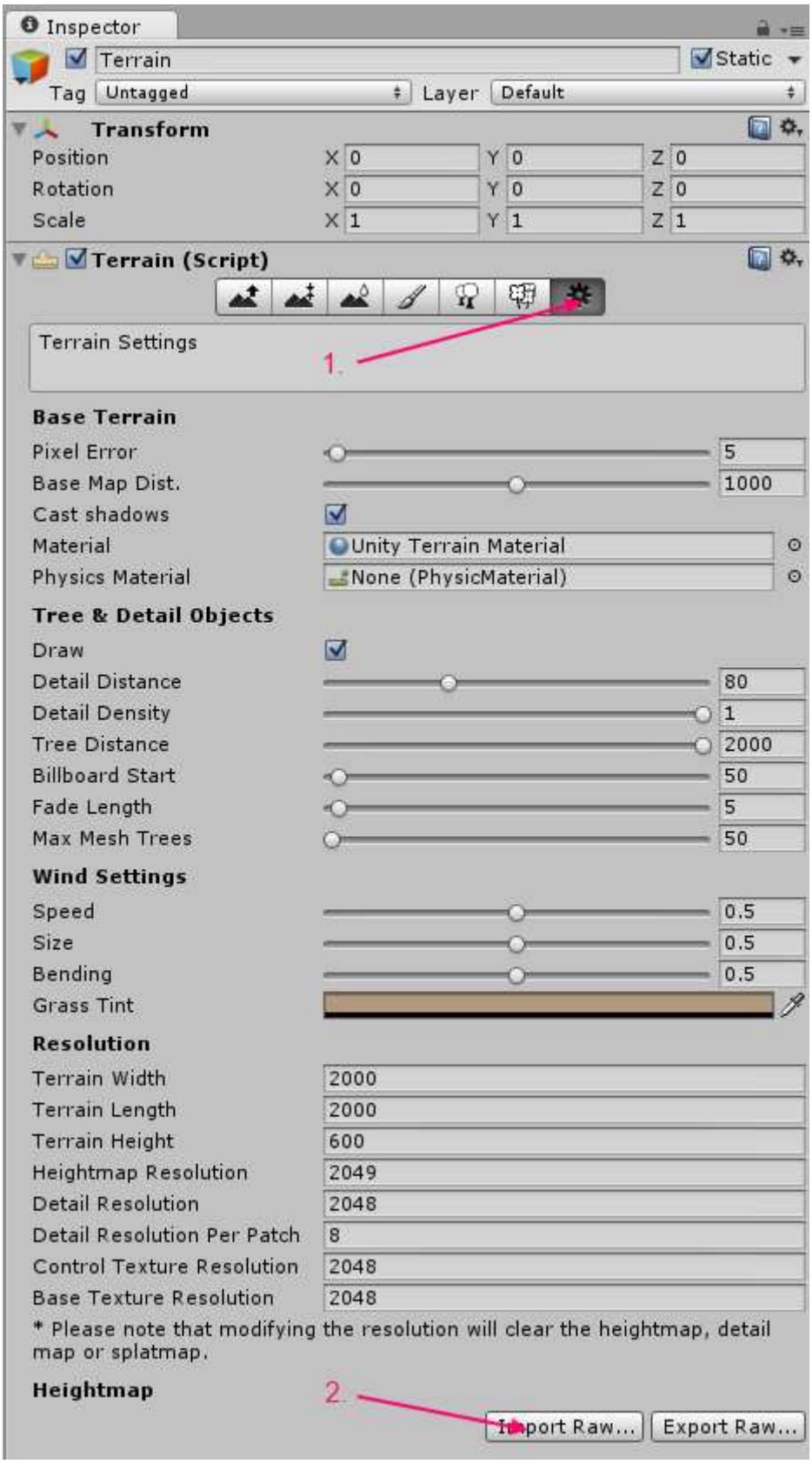
**http://docs.unity3d.com/Documentation/Manual/Terrains.html for reference.**
**http://docs.unity3d.com/Documentation/Components/terrain-Textures.html**

**Step 1:** Create a terrain “GameObject”

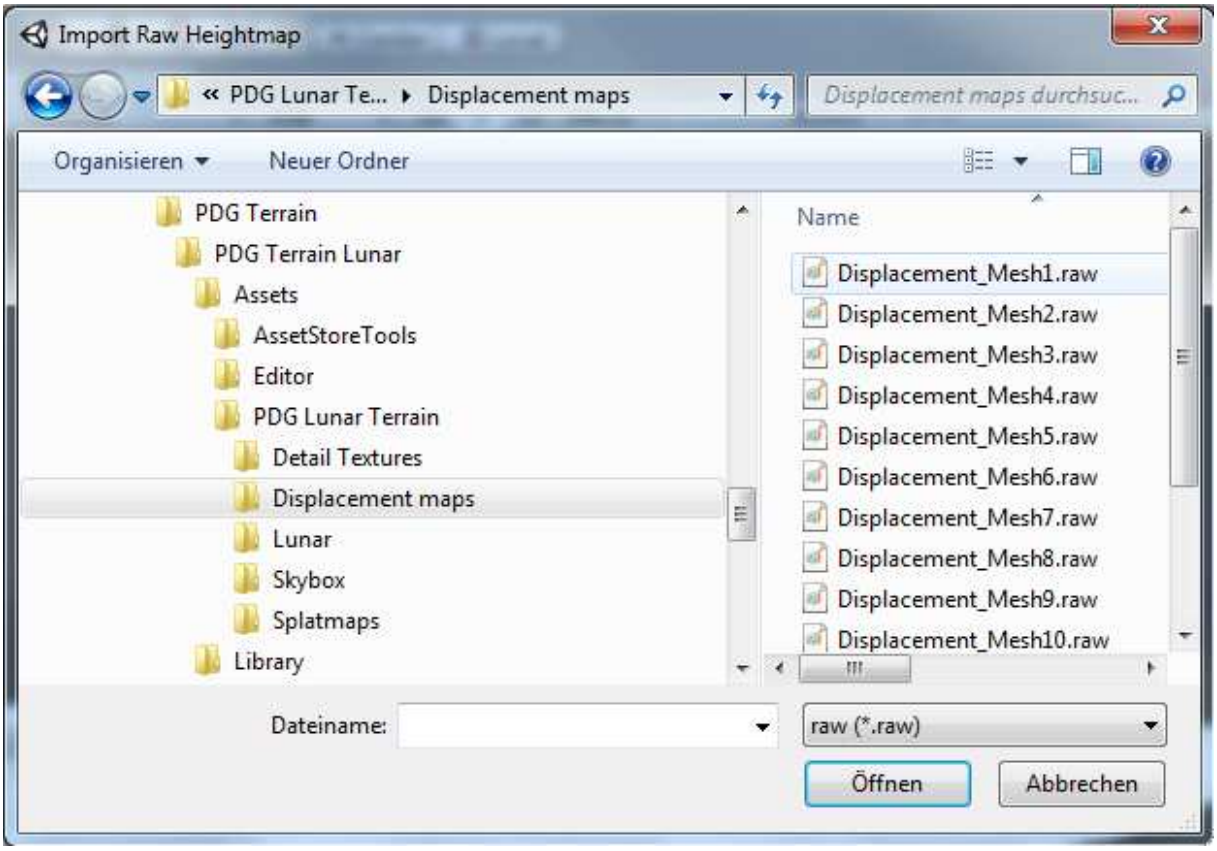


**Step 2:** Importing the heightmap

Click on the gear-icon first, then on the import raw button

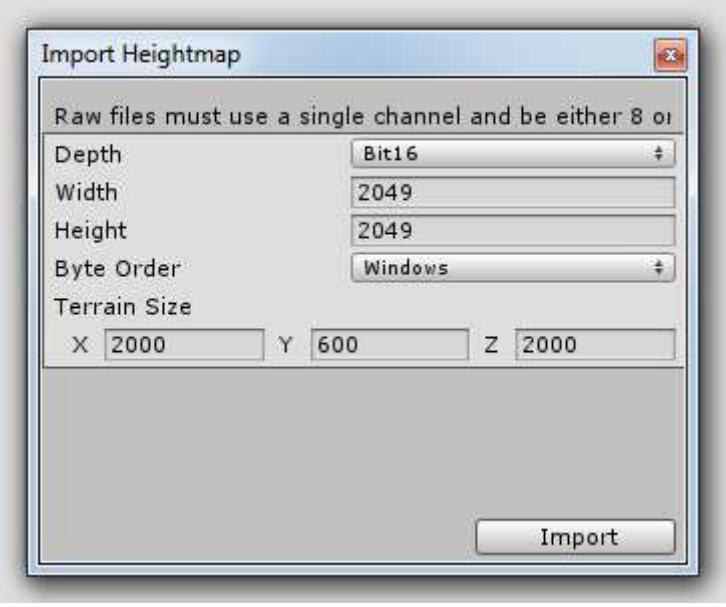


**Step 3:** Navigate to the heightmap




**Note:**
Remember to unzip the displacement maps before you try to import them. Unzip them all to a location, that you can easy access, like in the screenshot above.

**Step 4:** Check the values and click „import“




When importing the displace-/heightmap into the editor, make sure to set the right resolution!
(The resolution settings in the "Import Heightmap" dialog must always match the resolution of the displace-/heightmap)

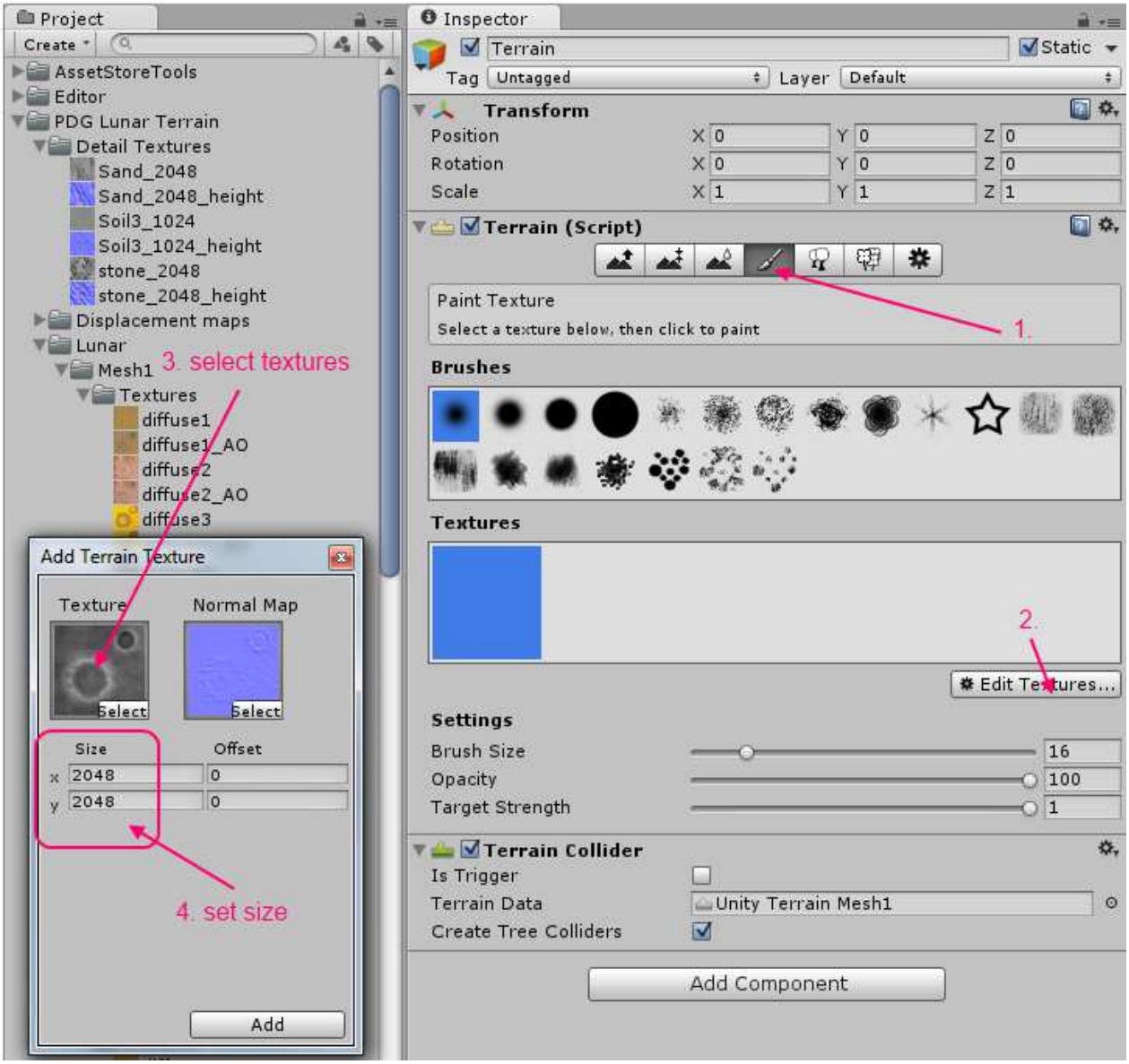
To get the maps work correct, you must set “2049” for width & depth, “16bit” and Byte order "Windows”.

The terrain size could be left at the default settings and can be adjusted later, if you wish.
(It is a good idea, to keep the X and Z equally)

Now, your terrain should have been created in the scene. Go ahead and add some texture to it.

**Step 5:** Choose a texture

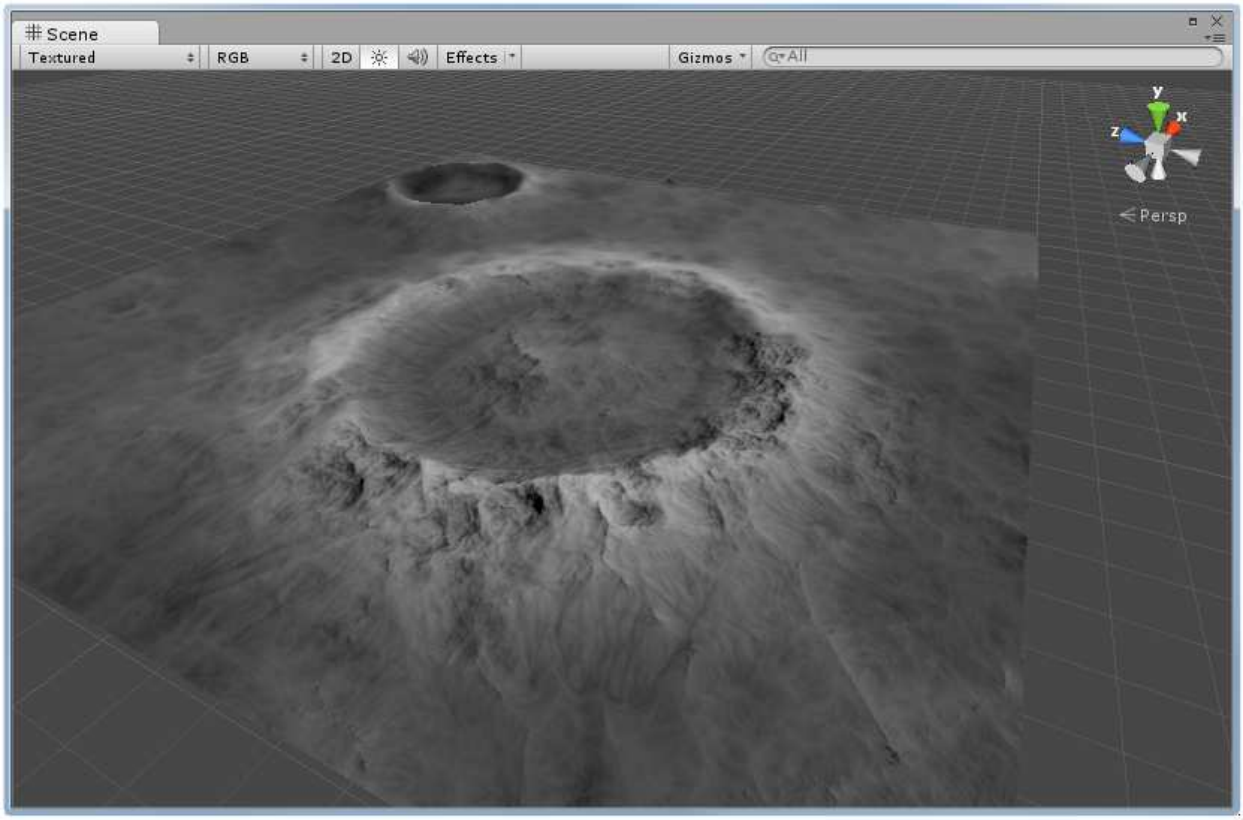
Go to the terrain inspector, click on the small brush icon, the “Edit Textures” -> “Add Texture”.
Choose the diffuse texture and “Normal Map” that matches the heightmap, you have imported first.
Simply drag´n´drop them into the slots.




**Example: If you created a Unity-Terrain from the displacement .raw map of “Mesh1” from sub-folder “Displacement maps”, you would use one of the “diffuse” textures and the normal map out of the “Mesh1” folder.**

After you added a normal map in the slot, you'll eventually see a message saying that the
Terrain requires a material with a normal mapped terrain shader.
No problem! Just go ahead and create a new material in your project using the “Nature->Terrain->Bumped Specular” shader.
Now click on the terrain again, to bring it into the inspector. Find the gear icon to open the terrain settings and click it. Drag over the created terrain material to the slot labeled “Material” in the terrain settings.

**Step 6:** Done! Your Terrain should look something like this now




**Note:**
You can also add ***detail textures** – this makes sense, when your terrain is viewed close up (FPS,…)
Just add them the way, as you did with the base-texture before.
After assigning them to the texture slots, you can freely paint them on top of the terrain.

Another (much faster) way to apply those detail-textures is to use the provided ***splatmaps**.

It is best, to use them within a custom terrain-shader, instead of the standard unity one.
Usually, 3rd party terrain-shaders come with a script, to replace the unity standard
Splatmap with a custom one.

There are some free terrain-shaders, like “ats colormap terrain shader” (this one is also available as a commercial version), and the Marmoset Skyshop Shaders - they all provide you with a script and custom shaders for optimal terrain texturing!

Remember, you can also modify the terrains with the brushes, smooth out some areas or raise them, stich them together etc. to your likings – just be creative!

***= Included in PDG Lunar Terrain BONUS package**

**Re-Creating high poly mesh in other applications**

The .raw heightmap "Displacement map" can also be useful, if you want to reconstruct the full high-poly geometry of a mesh for HQ rendering.

With the provided 16-bit .raw maps, you can do so by importing them into your favorite 3d app or other programs.
Basically, you create a simple plane and subdivide it into a good amount of segments. Then use the provided map as displacement texture.

Maybe you have to convert the .raw heightmaps into .tiff or other formats – check your applications reference to determine the correct format.

Questions or want to give us your feedback? - just be sure to drop an email: unity@play-da-gaimz.de or visit Unity Forums at http://forum.unity3d.com/threads/236475-RELEASED-PDG-Lunar-Terrain-and-Bonus-Pack

If you like this asset – please let other users know by rating it and write a short line or two about it!

## Bonus for Marmoset Skyshop users

The skybox is also delivered as spherical panorama (4096x2048) in .HDR 32-bit format, so you can use it to bring life-like **I**mage **B**ased **L**ighting to your scene!

It is located in the "Skybox/Skyshop HDR" folder (Moon.hdr)

You don't know about "Skyshop" ?!

Visit: http://www.marmoset.co/skyshop/learn/intro-tut

**REMINDER: for alternative textures, detail textures and splatmaps, please download the New BONUS package on the asset store**