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Using Bump, Specular, & Alpha Mask Image Map Textures (Earth & Moon) by Geno Ruffalo

NOTES FROM RED_FOX: Because this tutorial was written prior to the 2.3 GUI changes, many of the screen captures will be significantly different from version 2.3 of Blender. I'm too lazy to go through and change them all. :) There have also been some significant updates to the material settings, but I think that this tutorial is basic enough that everything is still relevant.

In Blender each Material can have up to 8 Textures linked to them. This tutorial will cover how to use specialized images in these texture channels to create realistic Earth and Moon Materials. The final image will be composed of 4 types of Image Maps:

Color, Bump, Specularity, and Alpha Masking.



The first Image that is usually applied will be the main Surface, or a picture of the Earth itself. If you have not done so already, create a new Material (F5) and create a new Texture (F6). Throughout this tutorial the pictures below will be

the settings and the links will be to the texture images themselves. So click on the image below to load the Image, save it to your harddrive, and assign it to the new Texture.



The next image that we will apply will be the Bump Map. Bump Maps are usually greyscale images where the light and dark areas raise and lower the texture to give the over material a deeper textured appearance. To use a Bump Map create a new

Texture for the Material, load the image, and activate the 'nor' button while turning off the 'col' option. We don't want the Bump Map to contribute any color to the overall Material. The 'Nor' slider button can be adjusted to increase the effect. To reverse the highs and lows click the 'nor' button so it is yellow in color, as in the example below.



The next step is to apply a Specularity Image Map. The Earth's Oceans will reflect more light than the land masses will. I took the image of the Earth, and turned it into a Halftone image. The black land masses will now block out the shine from the sun and give us a more realistic overall appearance.

Load the image and push in the 'spec' button while turning off the 'col' button as we did with the Bump Map. In the Material Buttons set the 'Spec' slider button down to zero.



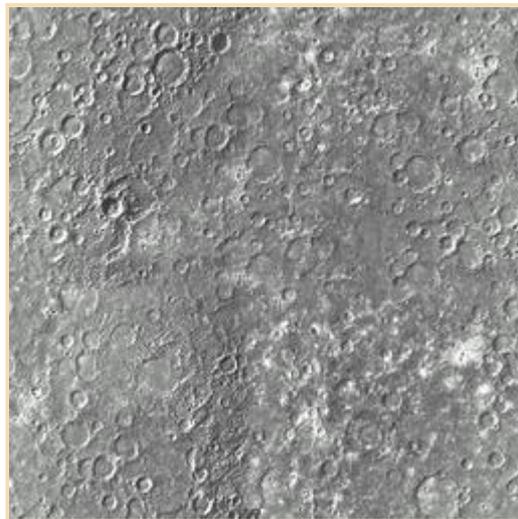
If we want to add some semi-transparent clouds to the Earth we can create a new sphere at the exact same location as the Earth but scale it just a little bigger. All we need is a new Material with one new image that we will set up as an Alpha Channel Mask. Load the image in the Texture and push

in the 'CalcAlpha' and 'UseAlpha' buttons. In the Material buttons push in the 'Alpha' and 'sub' button. Set the 'Alpha' slider button as shown and push in the 'Ztransp' button. Set the Materials main color to a bright white. Since the cloud Image is greyscale we can add to the texture by also using it as our Bump Map by clicking the 'nor' button.



The Moon only needs 2 Image Textures, a Color Image Map and a Bump Map. The Image below is the Main Image and clicking of it will take you to the Bump Map. Set it up the same way as the you did for the first 2 steps for the Earth.

Since there is no Specularity Map make sure to adjust the 'Spec' slider button to your liking.



These techniques can be applied to all kinds of Meshes and Surfaces. The best way to test them out is to create a basic Sphere and Plane, add some lighting, and load each type of map individually and play around with

the different settings. If you were to add animation to our Earth, make the outer sphere that we used for the clouds and rotate it just a little slower than the Earth's Sphere. This will give your world a true to life look.