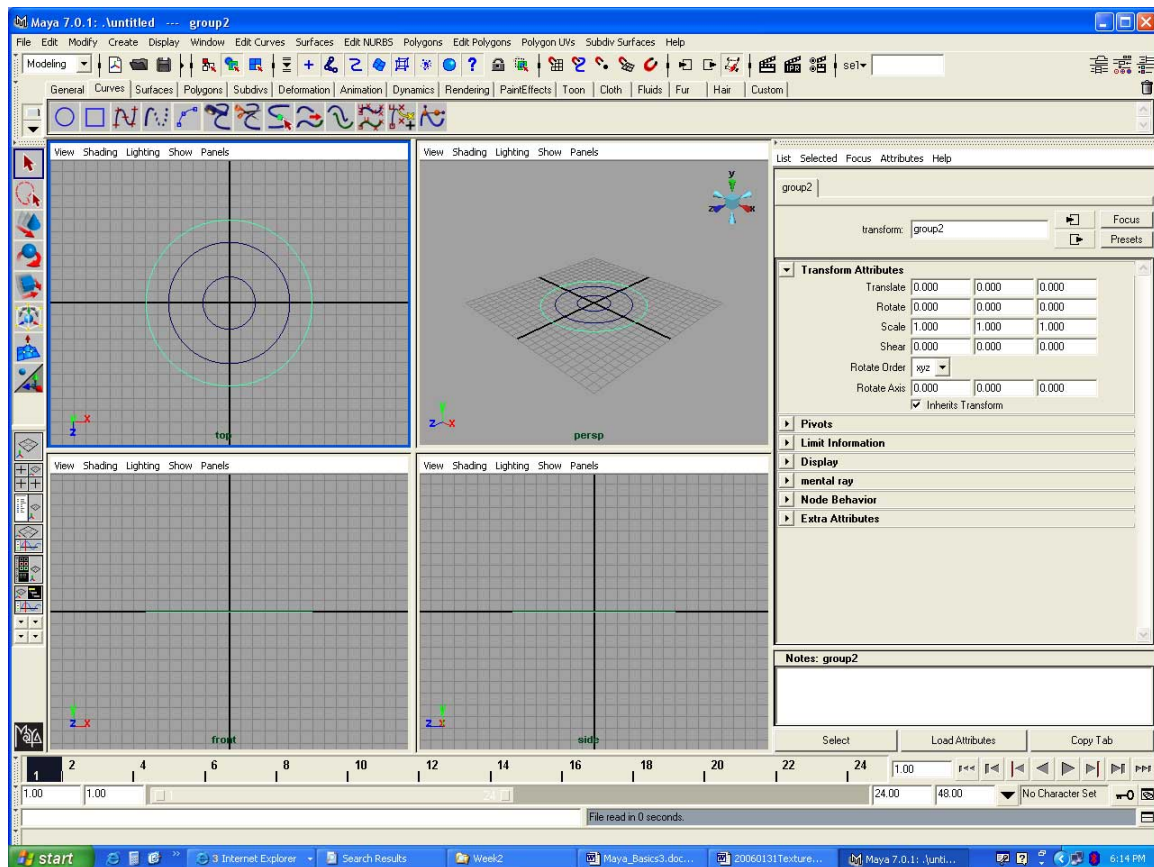


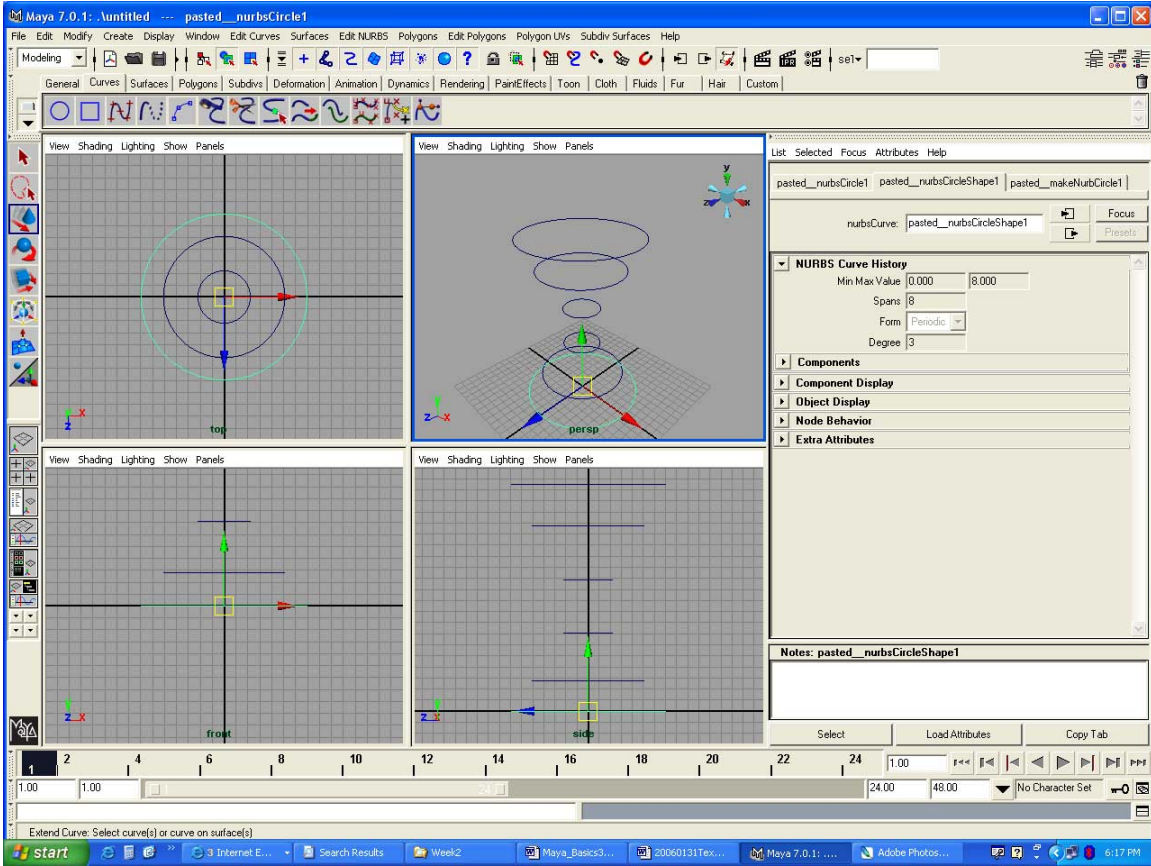
More on Textures

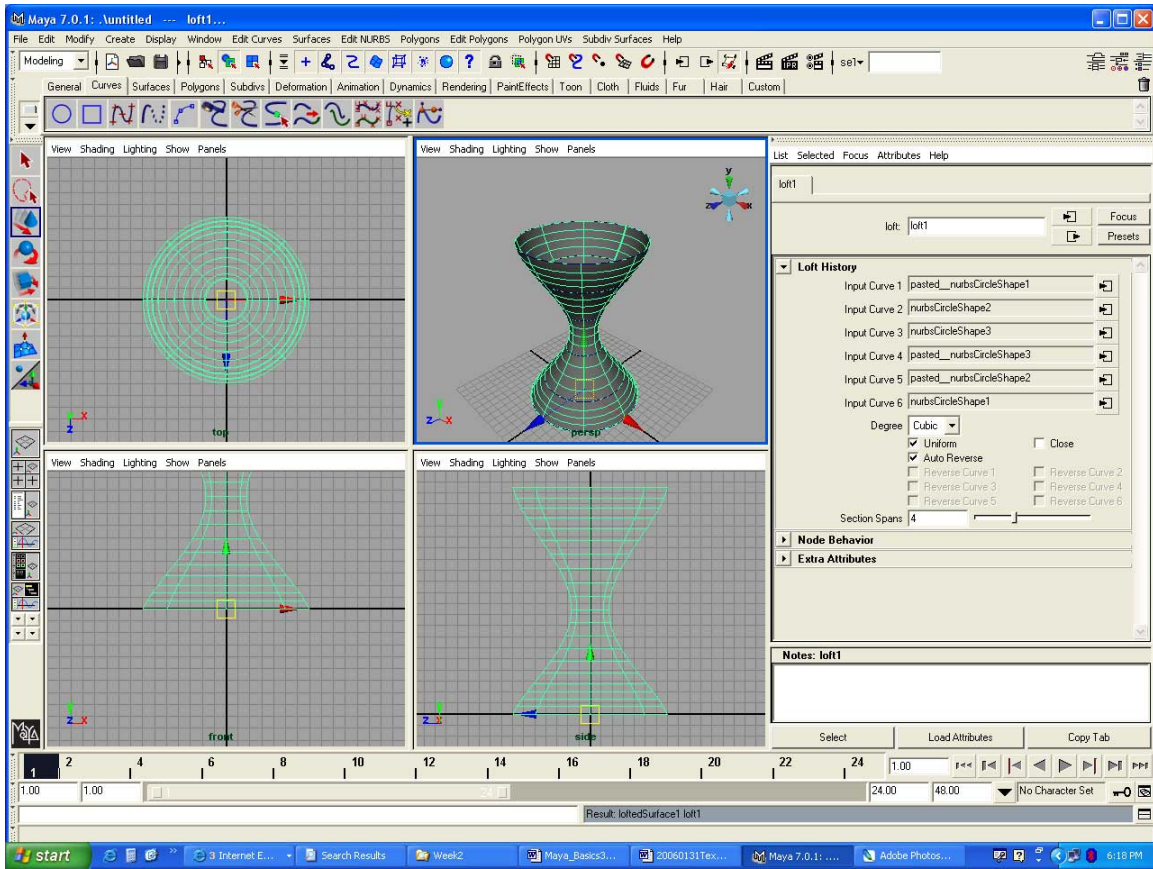
(1/31/06)

Lofting

Another form of curve based modeling we didn't get to cover last week is "lofting." This is similar to the surfaces->extrude technique we discussed, except here you're creating a set of cross sections around which a continuous curve is drawn. For example: begin by creating 3 circles of decreasing diameter. Copy and paste each of these circles so you have a total of 6. Then arrange them in space by moving them up the Y axis such that the largest circle is at the bottom, the two smallest are in the middle, and then the circles widen so that the copy of the widest is at the top, as shown below.







Voila, a nice looking hour-glass type shape.

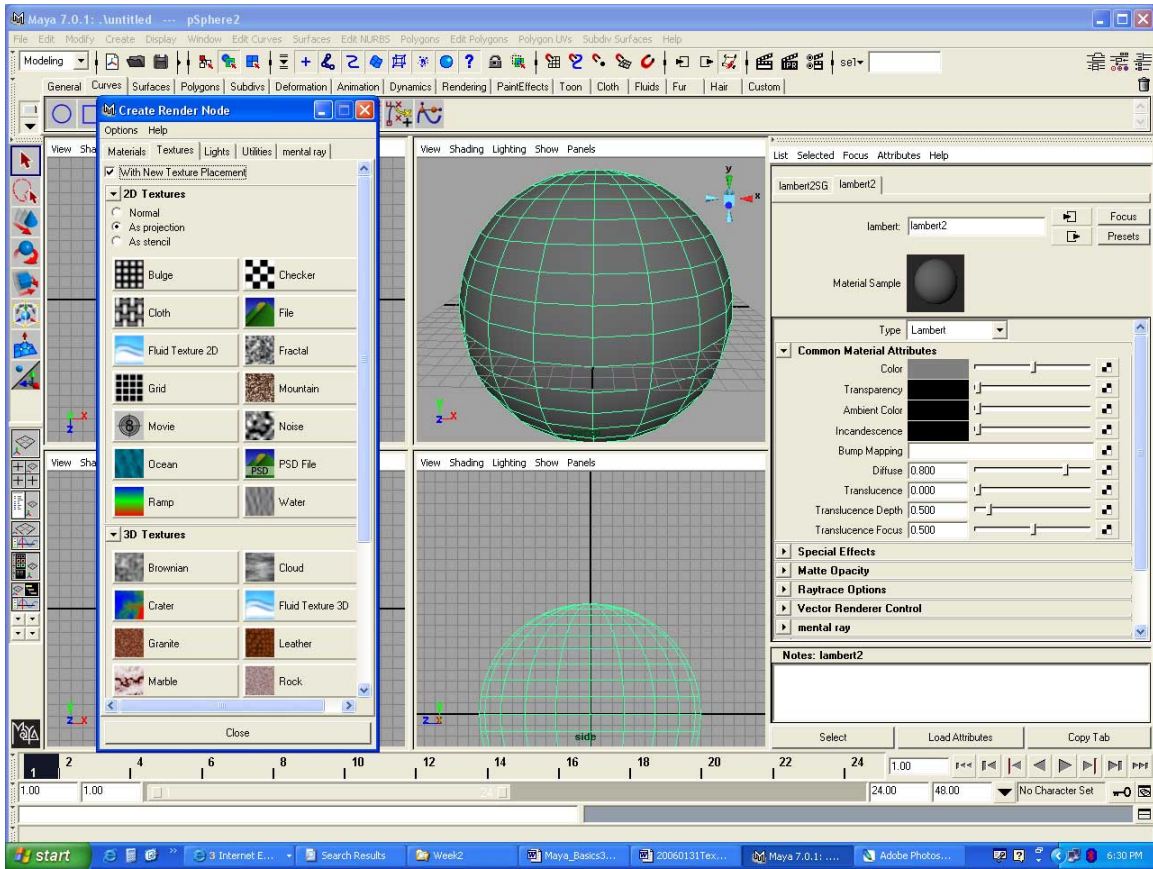
Note: in the tutorial, we also went over “face extrusions,” see my week two lecture notes for a description of this technique.

Texturing

We began with a fairly lengthy review of basic .jpg image texturing. See class lecture notes. We then covered two somewhat more advanced texturing methods: “projected textures” and “layered textures.”

Projected Textures

Let’s begin by creating a sphere adding a new Lambert material and clicking the checkerboard next to that material’s color property. This will bring up the “create render node” dialog. One of the most important aspects of this window (for applying 2d textures) appears right at the top of that section: the 3 radio buttons (Normal, Projection, Stencil).



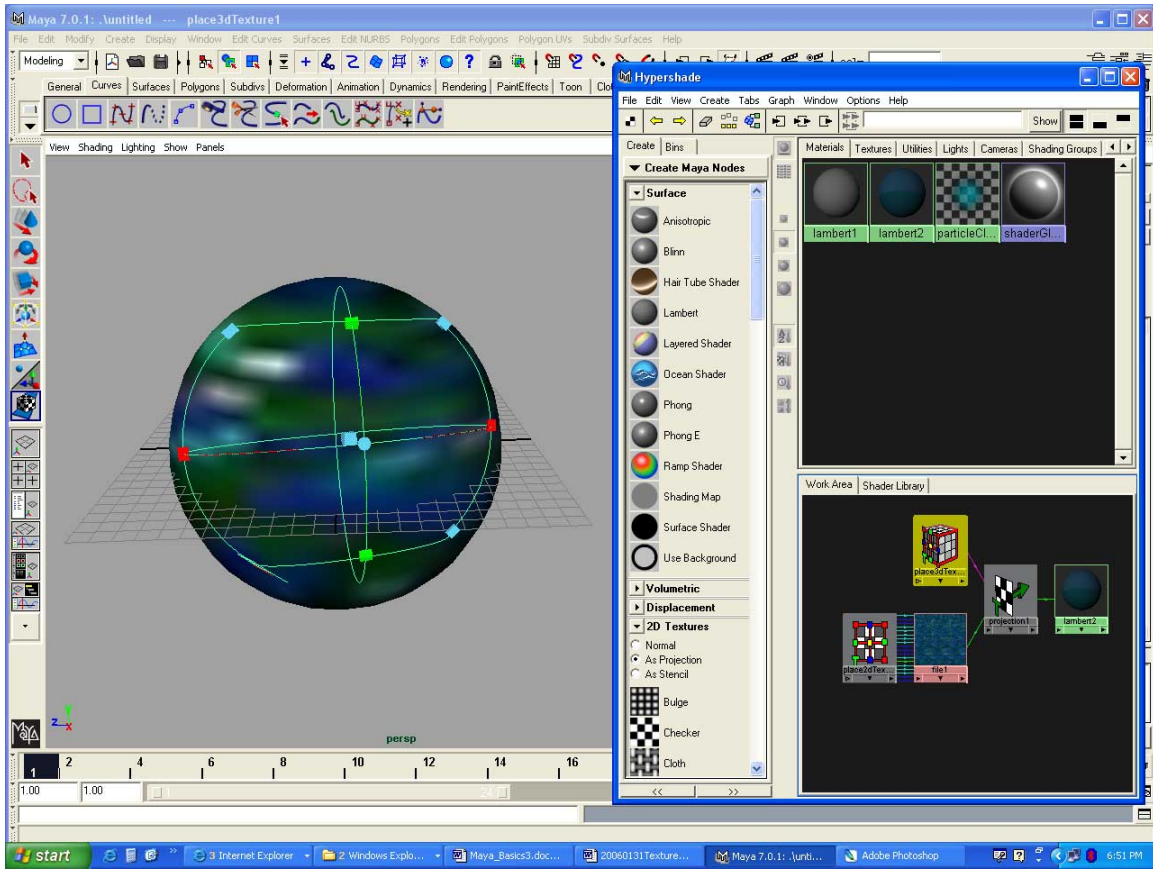
Previously we've selected "normal" which is fine for many texturing activities. However sometimes one wants to be able to interactively manipulate the texture one is applying ON your actual model. To do this we use the "projection" option, which effectively allows Maya to warp your texture according to a number of mapping modes and associated numerical parameters. So select "As Projection," and hit the "file" button.

You'll notice when the render node is created, that you have 3 property tabs in the channel box: a file tab, a projection tab, and a place3dtexture tab.

Let's start with the file tab. Hit the folder icon and load a convenient .jpg file.

Then hit the projection tab. The most important attribute here is the Proj Type selection box. Select Sphere in this case. This tab contains several other parameters of the projection node. Feel free to experiment with them to determine their effects.

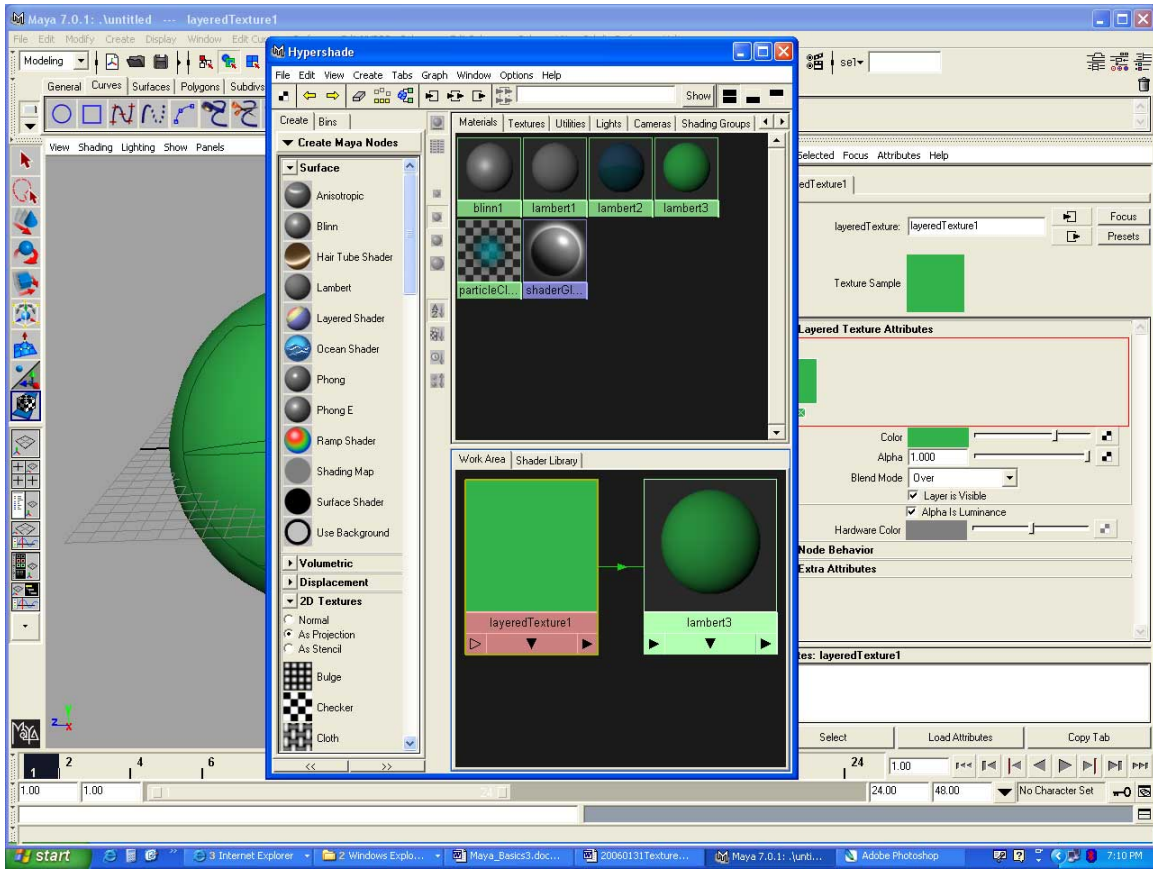
Finally, examine the Place3Dtexture tab. This exposes a number of transformation parameters with which you should be familiar at this point. The fun begins if you hit the "Interactive Placement" button. You will see a texture projection gizmo pop up in your work area. By using the move and rotate tools, or by grabbing the colored handles of this gizmo you can translate, rotate, or scale the UV coordinates of your texture map, and see the result immediately in your work area assuming you have a **SMOOTH SHADED** model with **HARDWARE TEXTURING** turned on.



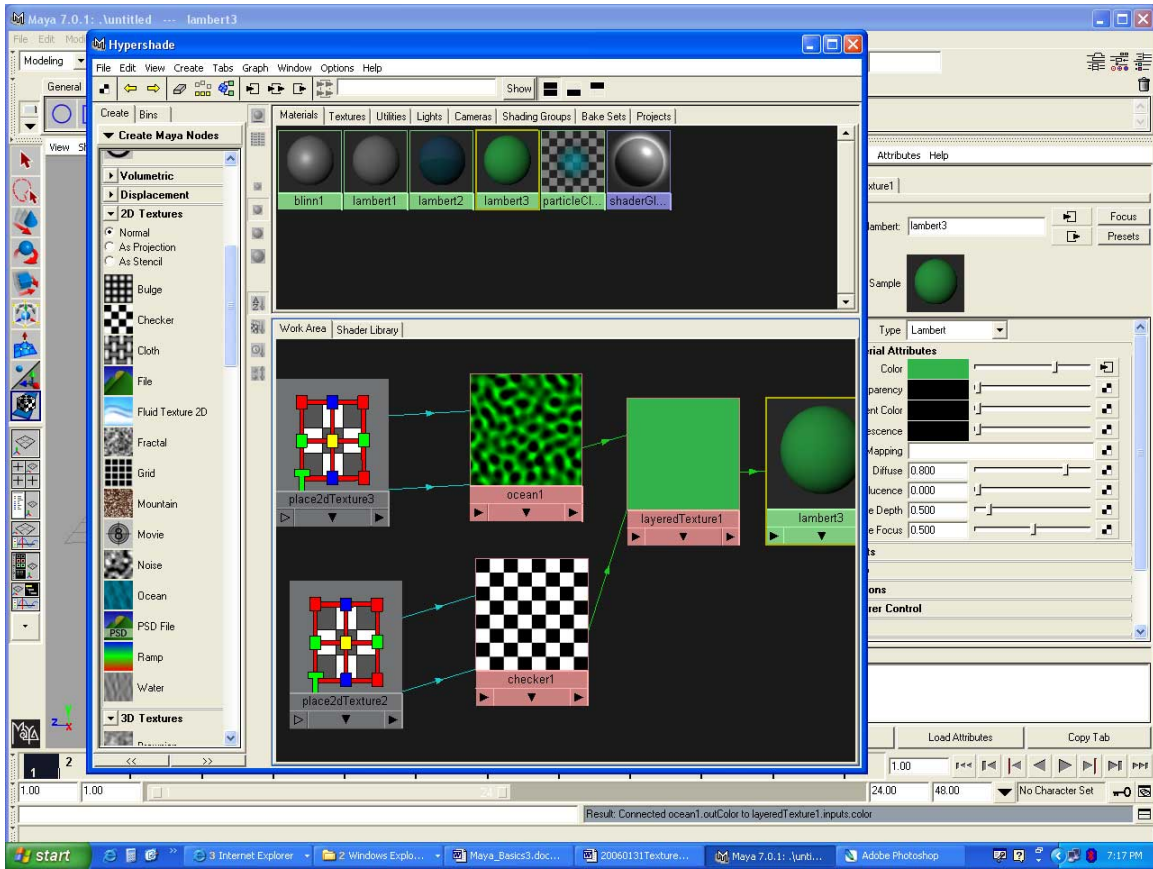
Also shown above is the material we just created with its network Graphed in HyperShade. Note: you see the nodes we discussed above along with a Place2D texture node which you can use to change the file parameters before it is projected onto your surface. Note that changing these parameters can be redundant with changes you might make to the Place3Dtexture node.

Layered Textures

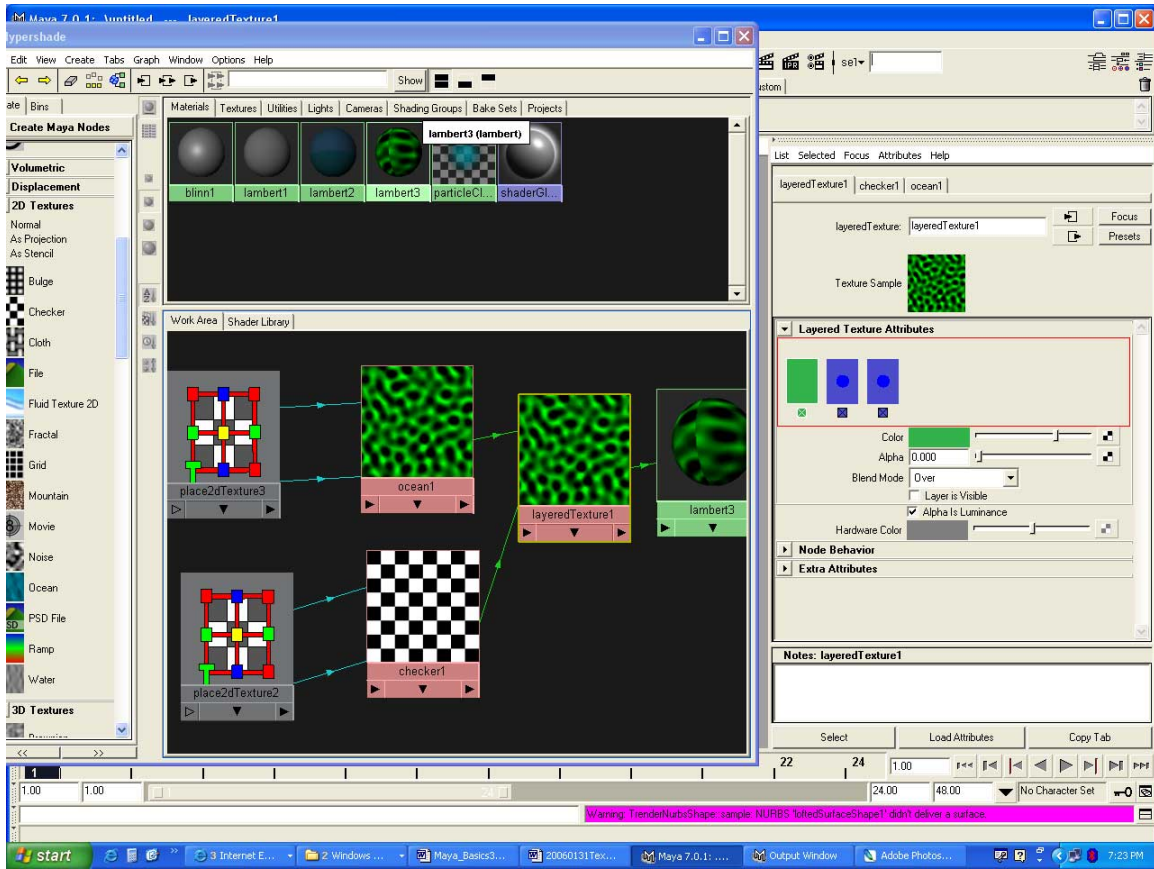
In Hypershade, hit Graph->Clear Graph. Then add a new Lambert material to your sphere. Hit the checkerboard next to the Color property of this new material. This time, instead of adding the usual 2D render node, scroll down in the Create Render Node dialog, and press the Layered Texture button. MMB drag the new material into the hypershade work area, and RMB. Select Graph Network to reveal the render nodes for this material. You should see a green "Layered Texture" node connected to your material.



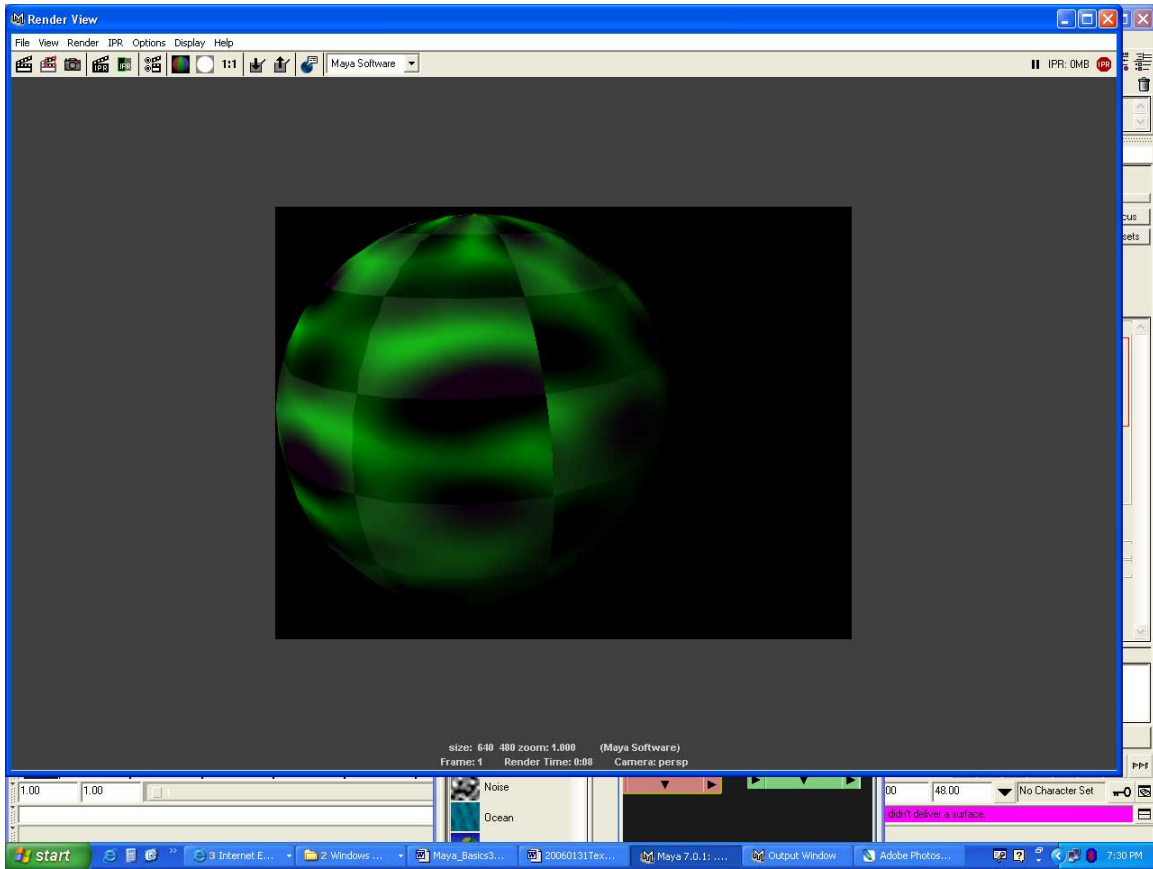
Now we're going to blend together 2 procedural textures. Click on the checkerboard icon in the create render node list at the left of HyperShade. Then click the Wave icon. You should see both of these render nodes pop up in the HyperShade work area. MMB drag both the checker1 and wave1 icons onto the layeredTexture1 icon and when the little dialog comes up select "default." Your work area should look like this:



Click on the LayeredTexture1 icon. Note the three colored rectangles in the middle of its Channel Box properties. These correspond to the 3 textures to be blended together (the layered texture itself which can have color & file properties and the two input procedural textures). Click the first box, which is the default texture and either set its alpha to 0 or uncheck the "visible" check box. Then click the second colored box, which is your checkerboard texture. Set its alpha to .125 you should see the texture icon begin to blend as below:



Then, either render your sphere to see what it “really” looks like, or convert this procedural texture to a file texture (shift-select your surface and the material in hypershade, and hit Edit->convert to file texture[] and make sure you select .jpg) . You should see something like this:



Try exporting this into Virtools.

Now you are armed with the skills to make some truly appalling 3D objects!