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THE AMBIENT METHOD

I call this first method The Ambient Method because it involves disabling the Diffuse and Specular channels in your Surfaces tab, and instead using only the Ambient channel to display the colors and textures.

We'll need to use a shader called the **UberSurface** shader to achieve this look. The reason for this is because the UberSurface shader allows us much more control over what does and does not get rendered.

I'll explain The Ambient Method in much more detail with each step.

* **NOTE:** This preview chapter is pretty much nuts and bolts of the process. The full book will contain more info on my actual thought process and “philosophies” of how and (just as important) *why* to create comics this way.

This chapter may change slightly in the final book, as I'll try to keep it as up-to-date as possible with the latest application changes before final publication.

Some working knowledge of Daz Studio is assumed. If you're not familiar at all with Daz Studio and 3D, I'd recommend **The Complete Guide to DAZ Studio 4**, by Paolo Ciccone.

That book is a couple of years old, but it will explain the concepts and basics of working with 3D in the Daz ecosystem.

A Note about Renderers

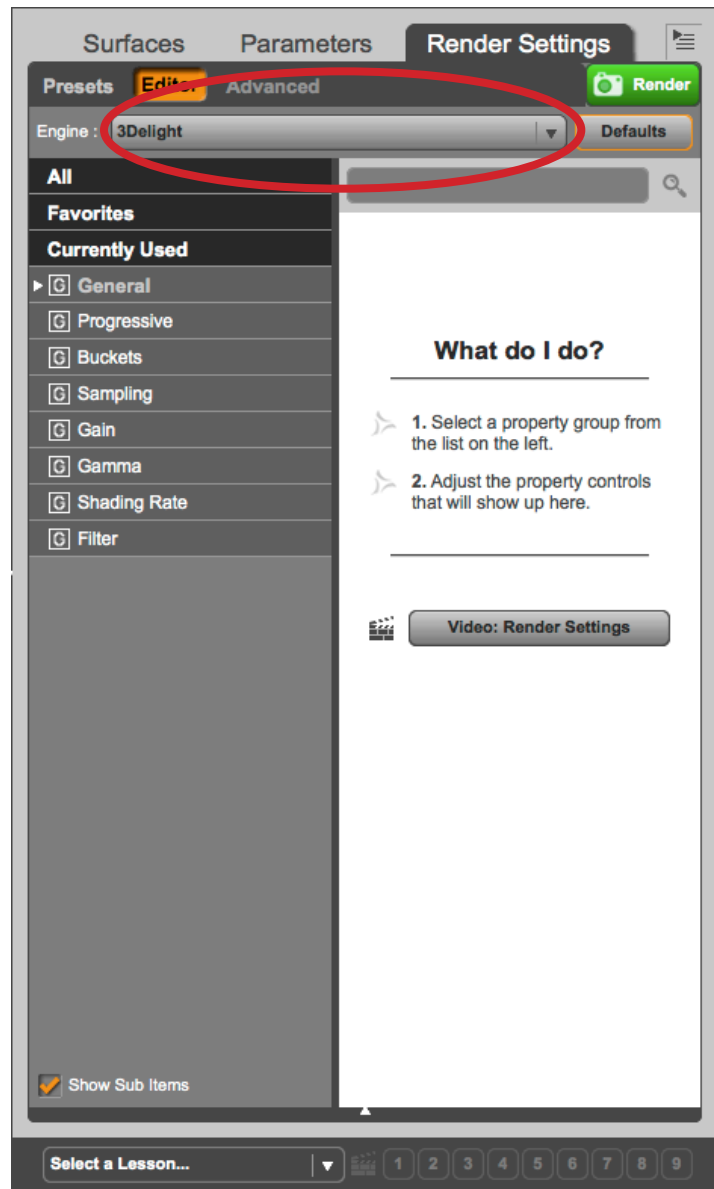
As of Daz Studio 4.8, there is a new rendering option called Nvidia Iray that may be set as default in your Daz Studio install.

Iray is a more physically accurate render that can help achieve realistic results more easily than the “old” renderer, which was called 3Delight.

However, we’re decidedly **not** looking for realistic results here, so we’ll be working with 3Delight for the majority of this book.

To make sure you’re using 3Delight instead of Iray, select your Render Settings tab (*which should be on the right of your screen in a default install*), then set the “Engine” drop down menu to “3Delight”.

Iray and 3Delight set up their materials and rendering in different ways, so in order for your settings to match the settings in the rest of the book, we’ll need Daz to be working in 3Delight mode.



PART ONE - AMBIENT SETUP

STEP 1. Convert From Daz Studio Default Shader To Ubersurface Shader.

To begin, we'll load the "Basic Male" version of the DAZ Genesis model.

In your Content Library tab [1], go to *DAZ Studio Formats > My Library > People > Genesis > Characters* > then double-click the Basic Male icon in the bottom window [FIGURE 01].

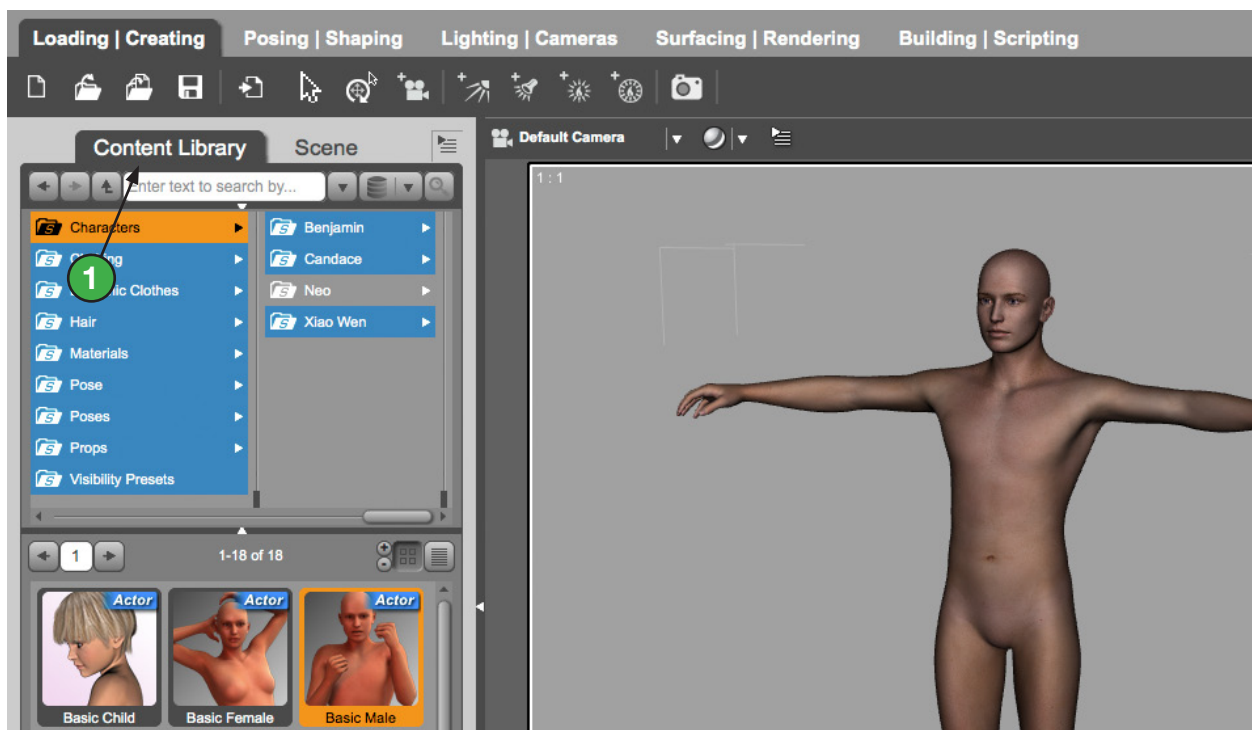


Figure 01: The Genesis Basic Male model in Daz Studio

That's where Genesis is located on my install of Daz. It may be somewhere different for you. If you don't have it here, try using the search box at the top of the Content Library tab. Type "Basic Male" in the search panel, and you should see the icon listed as one of the results below.

You can select the figure, object or parts of a figure from the Scene Tab or directly in the viewport. By default you should be using the Node Selection Tool, which is represented by the "arrow" symbol in the toolbar [FIGURE 02]. Or, you can choose it from the menu by selecting *Tools > Node Selection*. With this tool active, you

can click the figure in the viewport and see the corresponding node selected in the Scene Tab [FIGURE 03][2].

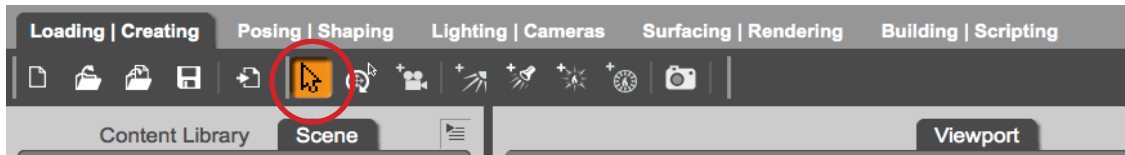


Figure 02: The Node Selection Tool

Now that you have the Node selected, over on the right make sure the Surfaces tab [3] is open. Listed in the Surfaces tab are all the Surfaces for that item. They will be listed under the “Genesis” heading (if the disclosure triangle to the left of the Genesis name is closed, click on it to open it).

There will be many surfaces listed under the Genesis header. To select them all, click on “Genesis”. You can select all surfaces at once by clicking on the main header for a Surface. For now, though, only click the first one, which will be “1_Lip”.

Once you select the Surface, notice at the top of the list there will be a line that reads “shader: omHumanSurface”. This lets you know which shader is applied to

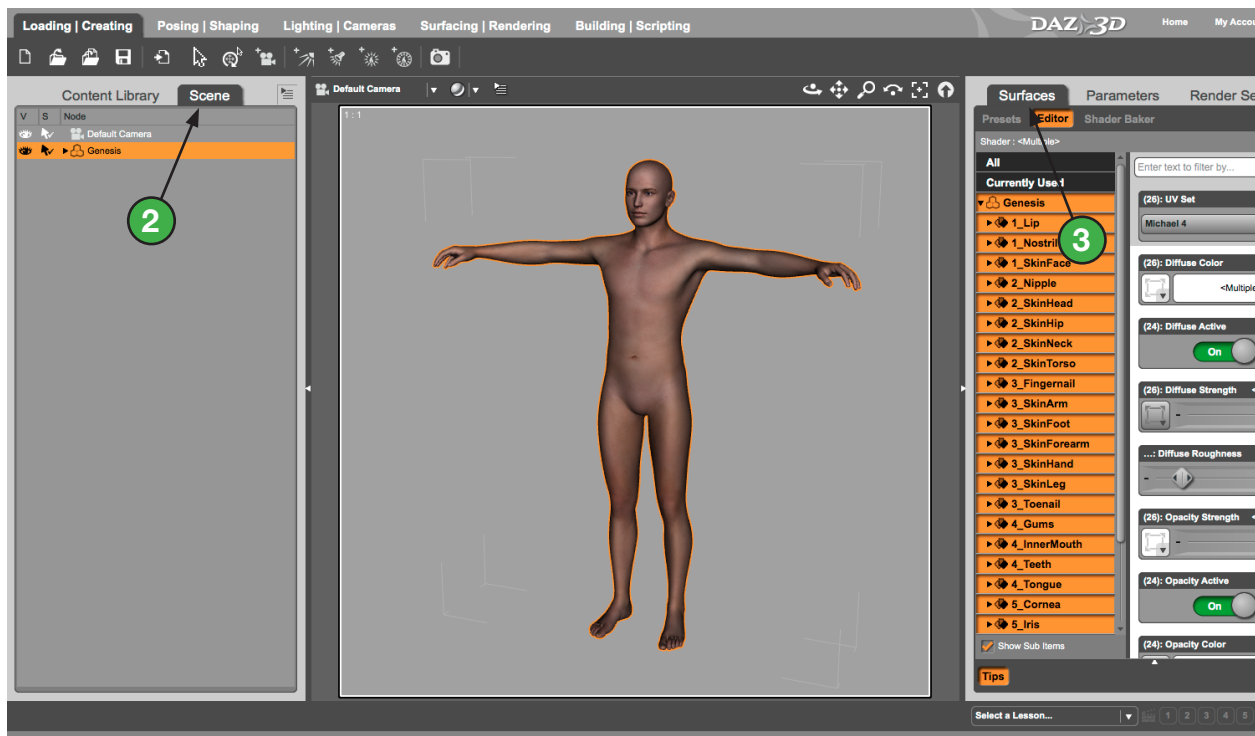


Figure 03: Select all surfaces in the Surfaces tab



Figure 04: Load the UberSurface shader.

each surface. In this case, the Elite Human Surface shader, by OmniFreaker (hence the “om” at the beginning of the name). This one is an earlier version of the shader we’re going to switch to.

Now, scroll to the bottom of your list of Surfaces and select the very last Surface, which is “7_Tear”. The shader at the top of the tab now reads “shader: DAZ Studio Default” (most props you load will have the DAZ default shader applied at first). You can now see how to identify which shader is applied to a given Surface.

At this point, we’ll need to select all of the Surfaces, so go all the way back up to the top and select “Genesis”. Every Surface should now be selected. Now that a Node

and (at least one) Surface are selected we can apply a new shader.

Next, to apply it we’ll need to locate the UberSurface shader. On the left side of the screen, start by switching from your Scene tab back to your Content Library tab, then click *DAZ Studio Formats > My Library > Shader Presets > omnifreaker > UberSurface Base* (it may be listed as “!UberSurface Base”).

Again, it may be located somewhere different for you. Type “ubersurface” in the search panel at the top of the Content Library, and you should see the icon listed as one of the results below (it’s a red teapot in my install) [FIGURE 04].

If you see two of them (as in my screenshot), that’s ok, because one of them is a *.dsa* and the other is a *.duf* file. The difference being the *.duf* file works better with later versions of Daz. Hovering your mouse pointer over the icons will show a pop-up tooltip revealing which one is which.

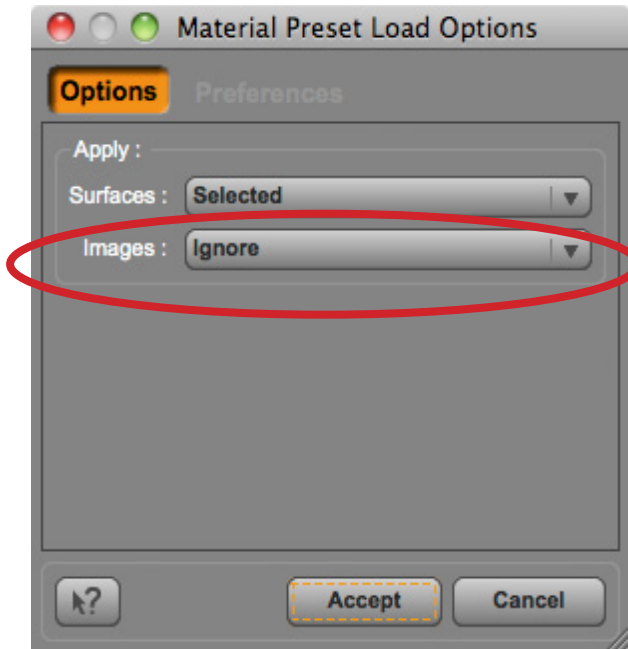


Figure 05: Material Preset Load Options

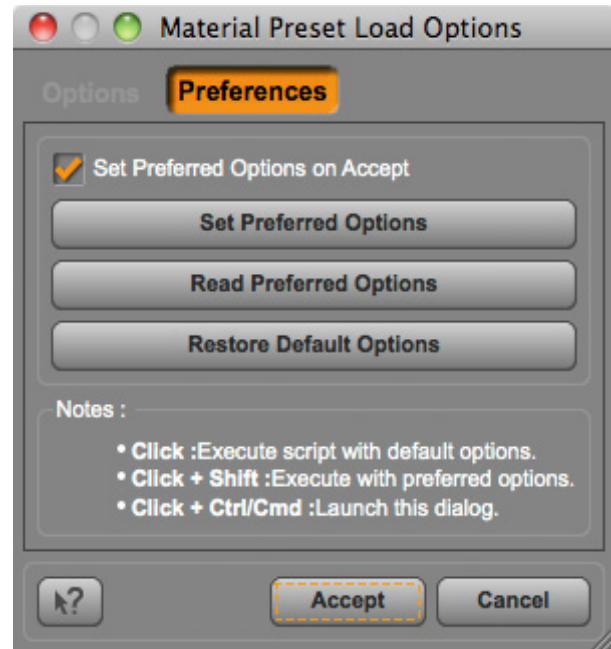


Figure 06: Material Preset Preferences

The best way to proceed here is to COMMAND Double-Click on the Mac (CONTROL Double-Click on PC) on the UberSurface Base icon. This will cause a small dialogue box to pop up called Material Preset Load Options [FIGURE 05].

By default you'll be in the Options tab of this dialogue. The important part of this screen is to change the "Images" drop-down menu from "Replace" to "Ignore". We want the shader to leave the texture maps as they are for now. If we didn't change it, we'd find that all of our textures would likely be gone. We will be dumping most textures later, but for now we still need them.

TIP: If you find yourself doing this a lot, you can click the "Preferences" link at the top of the dialogue box [FIGURE 06]. That will allow you to set your current options as default once you click the "Accept" button. This will spare you from having to always COMMAND-Double Click and change that drop-down value. It's certainly done wonders for my carpal tunnel...

Once you click "Accept", you should be able to see the shader value at the top of the Surfaces tab on the right listed as "omUberSurface" instead of "omHumanSurface" (or "DAZ Studio Default") as it was previously. At this point you've successfully applied the new shader to your object.

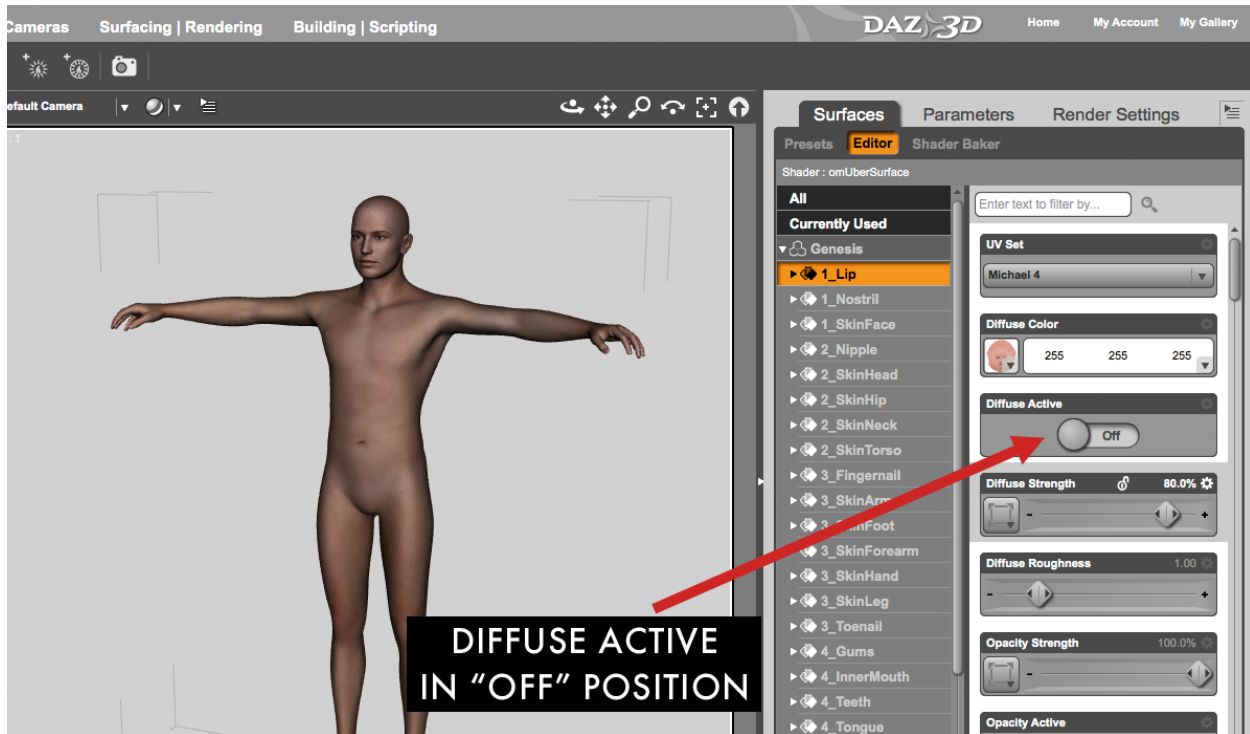


Figure 07: Disable the Diffuse channel

STEP 2. Disable The Diffuse And Specular Channels.

In Surfaces tab, scroll down through the list of options on the right and set the *Diffuse Active* and *Specular Active* buttons to OFF [FIGURE 07].

This is the main reason we're using the UberSurface shader instead of the DAZ default shader. Now we can simply turn the Diffuse and Specular channels completely off. With the Daz default shader, even if you have the diffuse value at 0, textures will still mix in with your ambient color because there is no way to turn it completely off. We can with the UberSurface shader, so regardless of what values or textures are in the Color, Strength, or Roughness fields they won't affect the render and possibly mix in with our Ambient channel.

TIP: If you don't like scrolling you can simply type either "Diffuse" or "Specular" in the search field at the top. This will limit the display to only those properties that contain the word you're searching for. Click the red "X" to the right of the field to clear the search term.

STEP 3. Enable Ambient Channel.

This is called the Ambient Method, after all, so in the Surfaces tab, scroll down and set Ambient Active button to ON. Leave the values as they are for now.

STEP 4. Copy Any Needed Textures And Colors From The Diffuse Channel.

Ideally, you wouldn't use any textures, just the color, but if you definitely need any textures, they'll have to be in the Ambient channel in order to show up, since the Diffuse channel is now disabled.

To do this, we're going to use a free script to switch our desired textures from Diffuse to Ambient. The script is called Copy Surface Channels, and it was posted over on the Lakeworks 3D forums:

<https://lakeworks.com/forums/copy-surface-channels-t521.html>

I searched far and wide to find a script such as this. I even attempted to script it myself, but failed. Thus, I was quite relieved to find this one did exactly what I was looking for, and a little more.

Basically what it does is to copy the Color and Strength settings (including any texture maps) of the Diffuse channel into either the Ambient *and/or* the Specular channel.

You're probably thinking that you could do the same thing just by using the texture button and selecting the appropriate texture file. You could, but it is an annoying, tedious process. It's bad enough when you have one figure, but try doing it when you have an entire city prop or forest prop in your scene. There could be well over a hundred textures, if not more. To do them all one by one would lower efficiency to unacceptable levels.

First, you'll need to download the script. It comes with its own folder hierarchy, but I simply placed the script itself, called "*CSC-0-1-0-4.dsb*" in the "Scripts" folder of my content installation.

If you're not sure where your content folder is, try this: Open up the Content Library pane open, open the flyout menu on the right of the pane, then choose "*Content Directory Manager...*" from the menu [FIGURE 08].

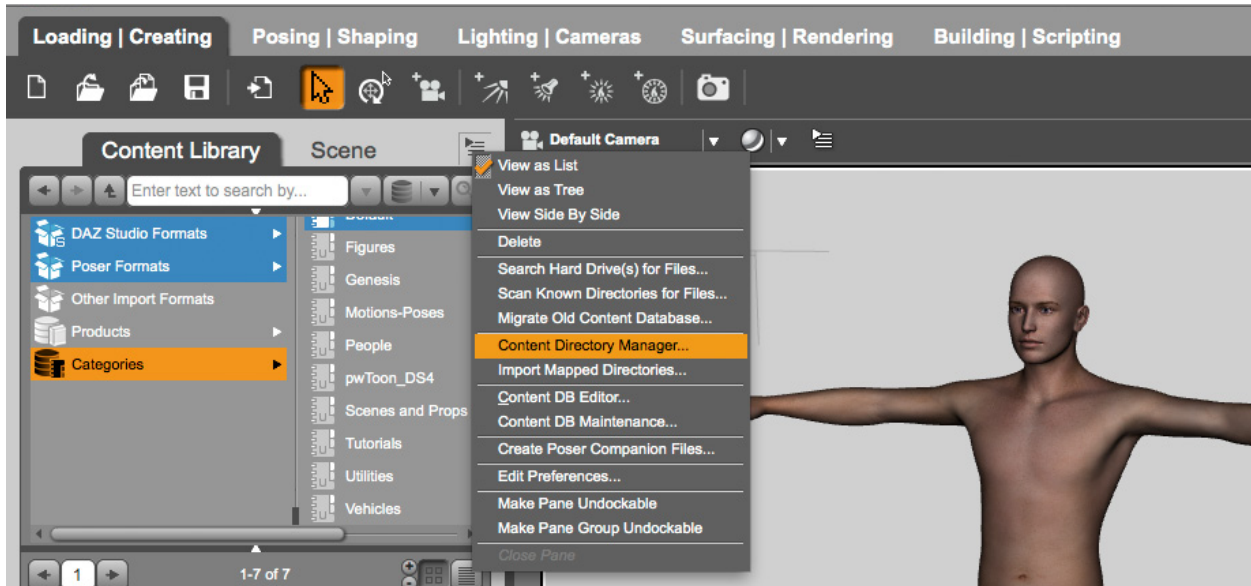


Figure 08: Open the Content Directory Manager

This will open up a window which shows all of your content directories (you may have to click the disclosure triangles to the left to view them) [FIGURE 09].

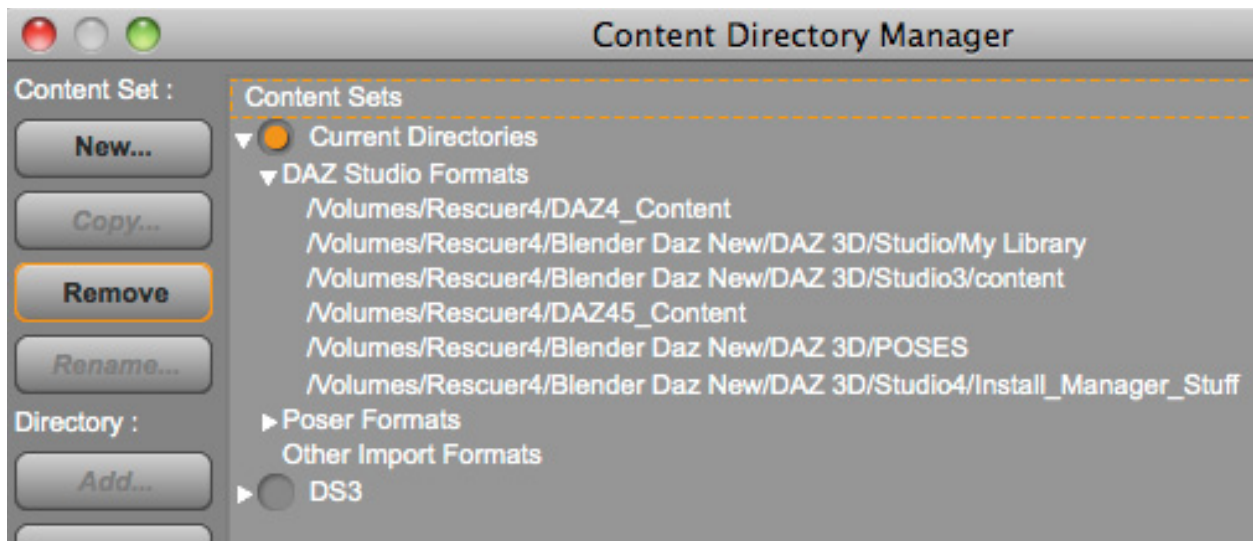


Figure 09: Inside the Content Directory Manager

Then, place the script in the correct folder. Now, with your Content Library tab open, you can select "*Scan Known Directories For Files...*" from the fly-out

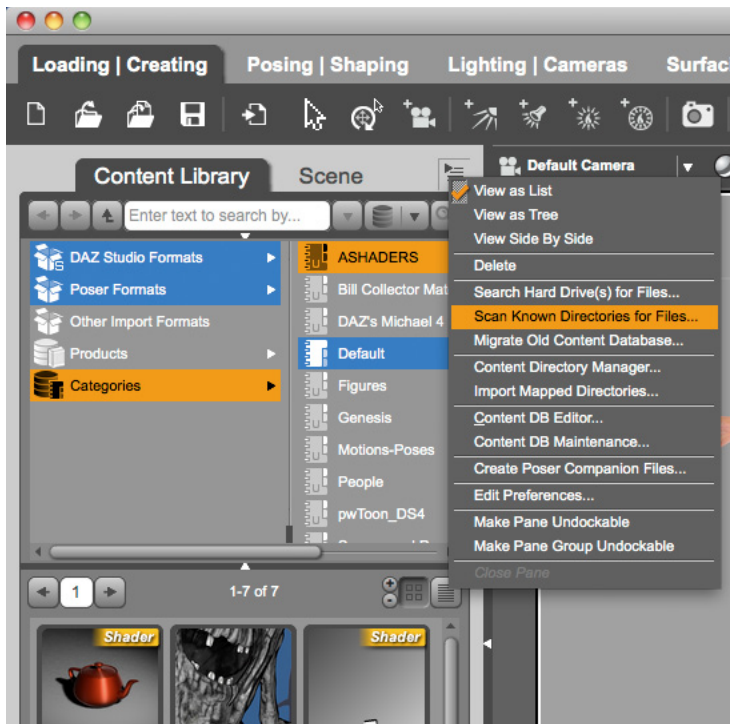


Figure 10: Scanning known directories for files.

menu to the right [FIGURE 10]. This will search for any new files in your DAZ install, and should find the new script file you added. You can browse to *DAZ Studio Formats > (My Library) > Scripts* and double-click the “CSC-0-1-0-4” from there (use the search if you can’t find it).

Or you can choose *File > Merge...* from the top menu, browse to the directory where you keep the script, and choose it from there. It will start to run automatically.

When it does, you’ll see a small dialogue box appear. The first tab of the screen is called *Source Channel (Diffusion)*. It allows you to choose which of the four properties of the Diffuse channel that you want to copy - Color, Color Map, Strength or Strength Map. I usually leave all four checked [FIGURE 11].

Next, click the *Target Channels* tab at the top of the dialogue box. Now you’ll select which channels you want those Diffuse properties to be copied into. Ambient Channel and Specular Channel are the only choices here [FIGURE 12].

I only want the Ambient channel, so I usually uncheck the Specular box, but the truth is - it doesn’t matter. Remember, in Step 2 (above), we set the *Specular Active* button to OFF. That means no matter what we

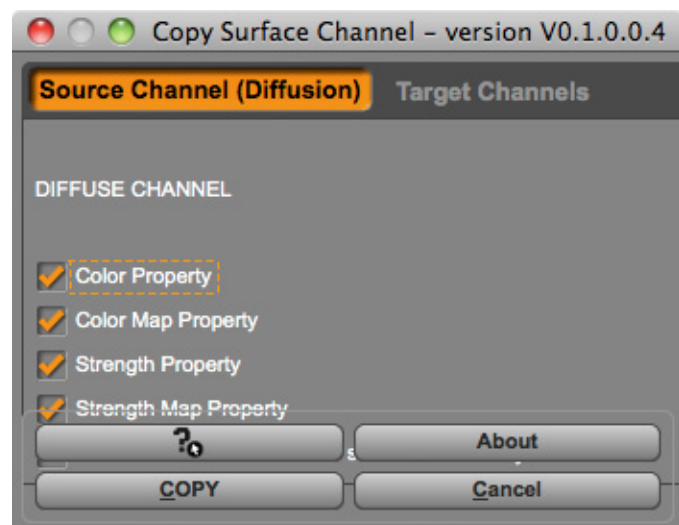


Figure 11: Copy Surface Channels script.

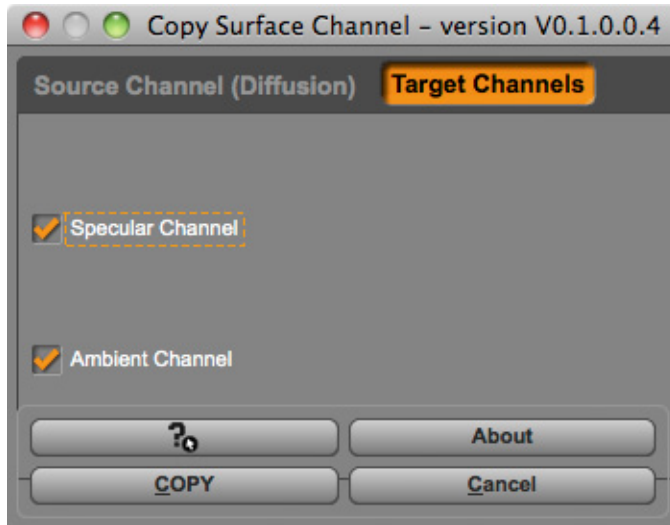


Figure 12: Target Channels tab.

put in the Specular channel or how we change the values, it will not be rendered. So it doesn't actually matter if you want to leave the Specular Channel box checked or not.

Now, click the *COPY* button at the bottom of the dialogue box, and whichever properties you left checked on will be copied into the Ambient channel. If you have multiple objects selected then it will obviously take a while longer but it will eventually work.

TIP: *This script only needs the Node of the object selected. It will run on EVERY SURFACE of your object. Even if you have only one, or no surfaces at all selected. So be aware that ALL surfaces of the selected object will have their Diffuse values copied into the Ambient channel.*

Another reason we switched to the UberSurface shader is because textures added to the Ambient channel don't show in the viewport. You can see this if you remove the texture from the Diffuse Color channel. Only the **color** in the Ambient Color channel actually shows in the viewport, not the texture. Sometimes this is desirable, but when you have textures you'd like to see how they're showing up as you're working. That means you have to have it in the *Diffuse Color* channel.

If we were using the DAZ Studio Default shader, any texture we added to the *Diffuse Color* would multiply into our render and affect the results, even if we lowered the strength to zero. With the UberSurface shader, we can add in any texture we want to the *Diffuse Color* and have it appear for us in the viewport, but as long as we set the *Diffuse Active* button to OFF, it won't show up in the render at all.

STEP 5. Deactivate Unnecessary Channels.

Next, scroll down through the options and make sure these buttons are set to off:

- *Refraction Active*
- *Reflection Active*
- *Fresnel Active*
- *Velvet Active*
- *Subsurface Active*
- *Translucency Active*

These are usually needed if you're going for realistic results, but we can turn them off because we're trying to make a 2D-looking comic here.

STEP 6. Bump, Displacement And Opacity Settings.

For a quick intro, **bump mapping** is a way to use a grayscale or RGB image to trick the camera into thinking certain parts of the surface are either raised or lowered.

50% gray is unchanged. Any values lighter than 50% gray are treated as being raised, while any darker values are treated as being recessed. This gives the illusion of texturing (bumps, etc.). Your mesh is not actually changed.

Displacement mapping is applied the same way, using a grayscale or RGB image, but the crucial difference is that Displacement actually **does** distort the mesh itself. You can get more extreme variations using Displace, but it can get out of hand quickly and increase render times. Another disadvantage is that extreme displacements don't show up in the viewport as you're working, so it can be tough to estimate their effect until you complete a render.

The **Opacity** (aka transparency) settings can also be affected by a using a grayscale map, with black being completely transparent, and white meaning that the surface is completely opaque (sometimes this is reversed in other 3D programs).

It makes sense when you think about it, though since black is an RGB value of 0, 0, 0 - meaning it has **NO** colors in it, while white is a value of 255,255,255 - meaning

it has **every** color in it. The value of 0 is fully transparent, while 255 becomes fully opaque.

My procedure is to leave the Bump, Displacement and Opacity settings alone when doing mass actions like we've been doing. Hair, skin and eyes usually use some forms of bump mapping, and definitely use opacity maps. You don't want to lose all those maps and then have to reapply them if you can avoid it.

Bump and Displacement settings can be useful. They likely won't show very much in our first render, but they can play a big role in the next part. For that reason, try to get those settings locked down here, so they at least match up when we go to the next part of the tutorial. Meaning that if you don't turn on bump here, but do turn it on in the next part, the renders may not composite (lay on top of one another) correctly.

Check to see if the Bump Active and Displacement Active buttons are on for a selected surface, or if the surface has a map applied but isn't active. Usually I leave them off for skin, but might turn them on for buildings, leather or other cloth and other similar objects.

STEP 7. Repeat These Steps For All Items In The Scene.

Try to do them all at once if your computer will allow. If you have a large number of items in your scene, you can select them all by going to your Scene Tab and choosing *Expand > Expand All* from the fly-out menu to the right of the tabs [FIGURE 13]. This will force open every disclosure triangle of every node in your scene, which is good in case you have items buried deep in the Node structure of your models (weapons held in hands, etc.) and you don't want to hunt for them one by one.

Once the Nodes are all expanded, you can select the very top Node ("Genesis" in this case), then scroll all the way to the bottom and shift-click the very bottom Node. That will select every Node in between as well as the original selection.

This first scene is very simple, but if you have a scene with multiple objects you will sometimes have Cameras and Lights in the Node list that may get selected. Don't worry about these, as they will be ignored by most shader/materials type

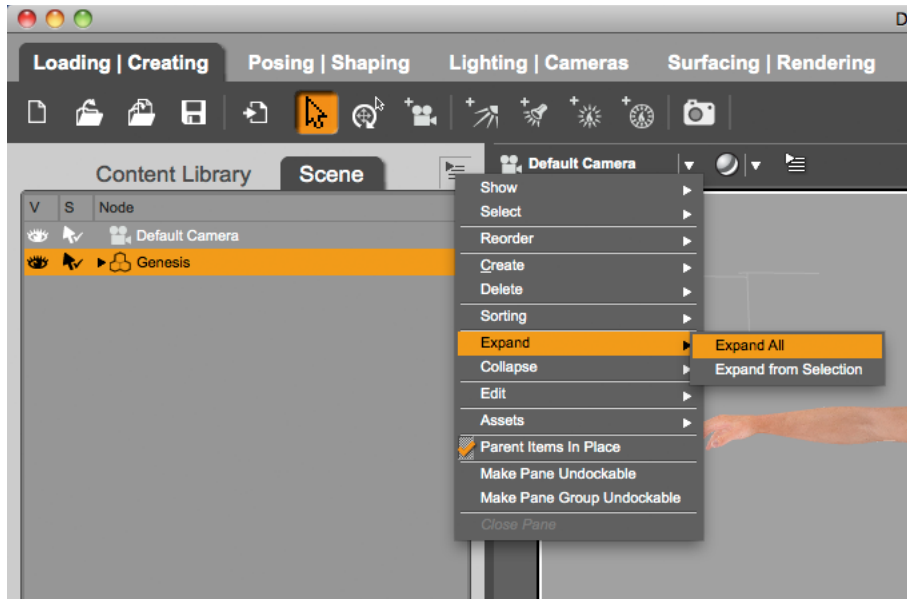


Figure 13: Expand all nodes.

operations. If it bothers you, you can always command-click (control-click PC) to deselect items one by one in the Scene Tab.

STEP 8. Remove Any Lights You May Have In The Scene.

Using only the Ambient Channel essentially causes your surfaces to behave somewhat like a light. Even though they won't glow or actually *emit* light, this means they won't allow shadows or darkness on them, and will be completely visible even when there is no light in the scene. As it turns out, this is the exact behavior we want.

Because of this, we won't actually need lights, and if any are in your scene, we'll remove them now. Make sure you completely remove (delete) the light, as opposed to merely lowering the Intensity value to 0, or turning off its visibility by clicking the "eye" icon to the left of the light name in the Scene Tab. Usually your scene will go completely dark if there is a light in the scene that is rendered invisible or has its value very low. This is expected behavior. When there is a light in the scene DAZ expects that you want those lights and only those lights to control the lighting.

To delete a light (or any item), select it in the Scene Tab, then simply press the Delete key. Or you can right-click the item, then choose *Remove Item from Scene* from the resulting pop-up menu.

Without a light, DAZ Studio's default omnidirectional faux lighting takes over, which is exactly what we want. Actually, since we're using the Ambient channel here, the presence of lights, invisible or not, doesn't make too much difference, but you should get in the habit of deleting unused lights. Sometimes a rogue light can have unintended effects.

STEP 9. Render.

Check the Render tab over on the right side of the screen [FIGURE 14]. Choose "Active Viewport" from the Dimensions Preset drop-down to include the entire viewport are in the render. Then change it to "Custom", so we can easily edit the pixel sizes. Change the first Pixels field to 1200 - this will be the width. As long as the "Constrain Proportions" toggle is turned on at the bottom of the Dimensions section then the height should automatically change to stay in proportion.

Finally, make sure "png" is the file format in the dropdown of the Image Name section. This will allow for transparent backgrounds.

Leave all the other settings alone and click the Render button at the top, or press COMMAND-R (CONTROL-R PC). When you render the scene you will get an extremely flat looking render that finishes very quickly [FIGURE 15].

Success! This is exactly what we want.



Figure 14: The Render tab



Figure 15: First Ambient render.

STEP 10. Save Your Render To A Location Of Your Choosing.

Once the file renders, you can use the fields at the bottom of the render window to name your file and save it to your chosen location. I usually name mine something like:

Comic 01-Panel-01-AMBIENT.png

To be completely honest, I don't use those fields at all. I use the menu command *File > Save Last Render...*

I mapped the command to my "F3" key on my Mac using the Keyboard Shortcuts preference pane of my System Preferences. This lets me name and save the file using the OS standard dialogue that I prefer, rather than take extra time using those fields.

I'm not sure of the way to map keys on Windows, but even if you don't add a shortcut, just selecting it from the menu is usually faster than those fields.

STEP 11. Save Your Current Daz File.

To be consistent with the render name, I'll name my Daz file something like:

Comic 01-Panel-01-Ambient.duf.

I usually make sure the term "Ambient" is in the file name so I'll know exactly which stage of the process that particular render came from, and which file to edit if I have to change something.

In the next section we'll move on to setting up our shadows, so we can start to model our figure and give him some depth.

PART TWO - SHADOW SETUP

So now that we have our first flat render with our surfaces set up using the ambient channel, we'll need to flesh it out by adding some shadows and modeling to that image.

We'll do this by again using the UberSurface shader options, but this time we'll only render using the Specular channel.

The steps to do this are as follows:

STEP 1. Save New File

Perform a Save As (*File > Save As > Scene...* from the top menu), then name the file *Comic 01-Panel-01-Shadow.duf* (or similar, just make sure to add "Shadow" somewhere in the name). This way you'll always know exactly which stage of the process this file pertains to.

STEP 2. Select Object Nodes.

Select one or more Nodes of your objects in the Scene tab, then select the surfaces listed in the Surfaces tab. If your computer can handle it, try to select as many as you can at once.

STEP 3. Disable Ambient Channel

In the Surfaces tab, turn *Ambient Active* button to OFF, and make sure to set *Ambient Strength* to 0, or the *Ambient Color* value will still show up in the viewport (even though it won't be rendered).

STEP 4. Enable Specular Channel.

In the Surfaces tab, turn the *Specular Active* button to ON.

STEP 5. Adjust Specular Values

Set *Specular Color* to white, and *Specular Strength* to 100. Normally I leave *Glossiness* and *Specular Sharpness* at defaults, but increasing *Glossiness* will make the surface shinier and darker by decreasing the area of the highlights, while increasing *Specular Sharpness* will make your shadows sharper with hard edges.

STEP 6. Remove Specular Textures

Make certain there are no textures in the *Specular Color* or *Specular Strength* properties. We don't want any specular maps controlling the specularity on specific surfaces, we just want the same settings for all surfaces. Also make sure to remove any lingering textures from any of the Diffuse or Ambient channel properties. Once you do this, your surface should be completely white.

STEP 7. Check For Transparent Items.

If you have any surfaces with *Opacity* set to 0, they need to have their *Specular* channels turned completely off, or at least set to 0. The reason for this is even though the *Opacity* is at 0 (and thus should make the surface fully transparent), the surface may still pick up a specular highlight and become somewhat visible, like a ghost image in your scene. Setting *Specular* all the way to 0 (or turning off the channel) will prevent this problem.

If you have a lot of props in the scene and aren't sure which may have *Opacity Strength* set to 0, a quick way to find out is to select one you know for sure has *Opacity Strength* at 0, then choose the *Tools > Surface Selection* from the top menu. With this tool active you can right-click on the selected item. You'll receive a pop-up menu with several selection options. You'll choose the one that reads

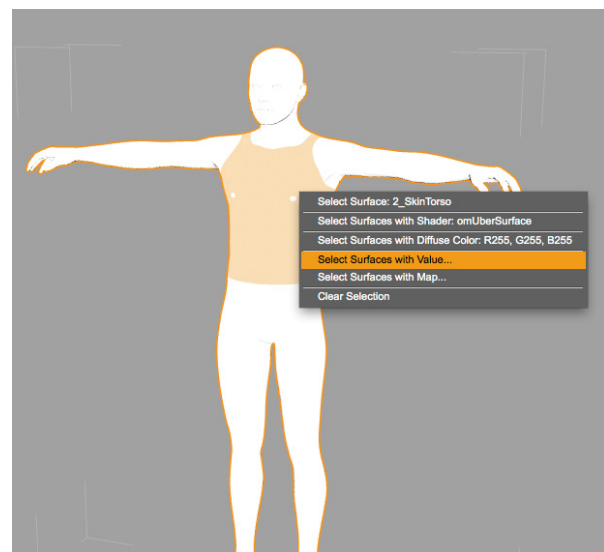


Figure 15: “Select Surfaces with Value” option.

“*Select Surfaces with Value...*” [FIGURE 15].

Once you choose it, you’ll receive the “*Pick Property...*” dialogue box that contains a drop-down menu [FIGURE 16].

You will use this menu to choose “*Opacity Strength*” from the list, then click the “OK” button. At this point every surface in your scene with *Opacity Strength* set to 0 will be selected in the Surfaces tab. You can now safely set the *Specular Active* button to off.

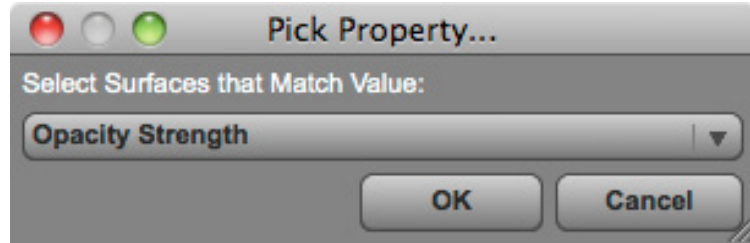


Figure 16: Pick Property Dialogue.

To select the Node Selection tool again, just choose *Tools > Node Selection* from the menubar, or click the arrow symbol in the toolbar above the viewport.

STEP 8. Add Distant Light.

To add a new Distant Light, choose *Create > New Distant Light...* from the top menu, or by clicking the Distant Light icon at the top of the viewport.

When you add the light, you’ll receive the “*Create New Distant Light*” pop-up dialogue box [FIGURE 17]. At this point you don’t need to change any options in here.

Simply click the “Accept” button. The Distant Light will be added to the scene at the “World Center” of the scene.

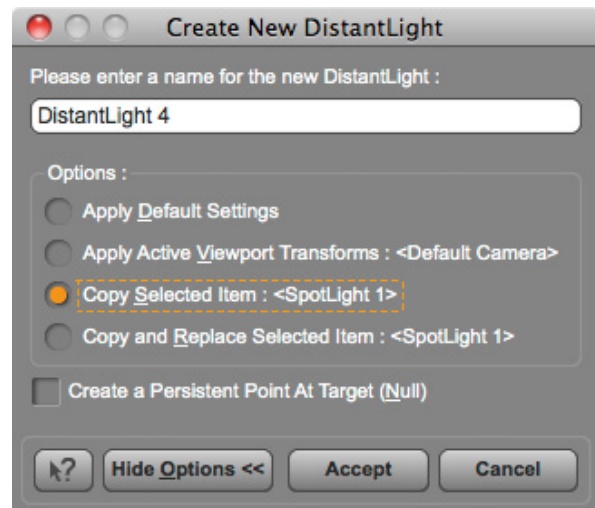


Figure 17: Create New Distant Light

STEP 9. Rotate Distant Light

It won’t matter where this Distant Light is positioned. The only thing that will affect the scene is the **rotation** of the Distant Light [FIGURE 18].

To rotate the light, select the Distant Light and make sure the Universal Tool [4] is selected. You can click the Universal icon in the top viewport, or choose *Tool > Universal* from the top menu. The Universal Tool creates a manipulator [5] with

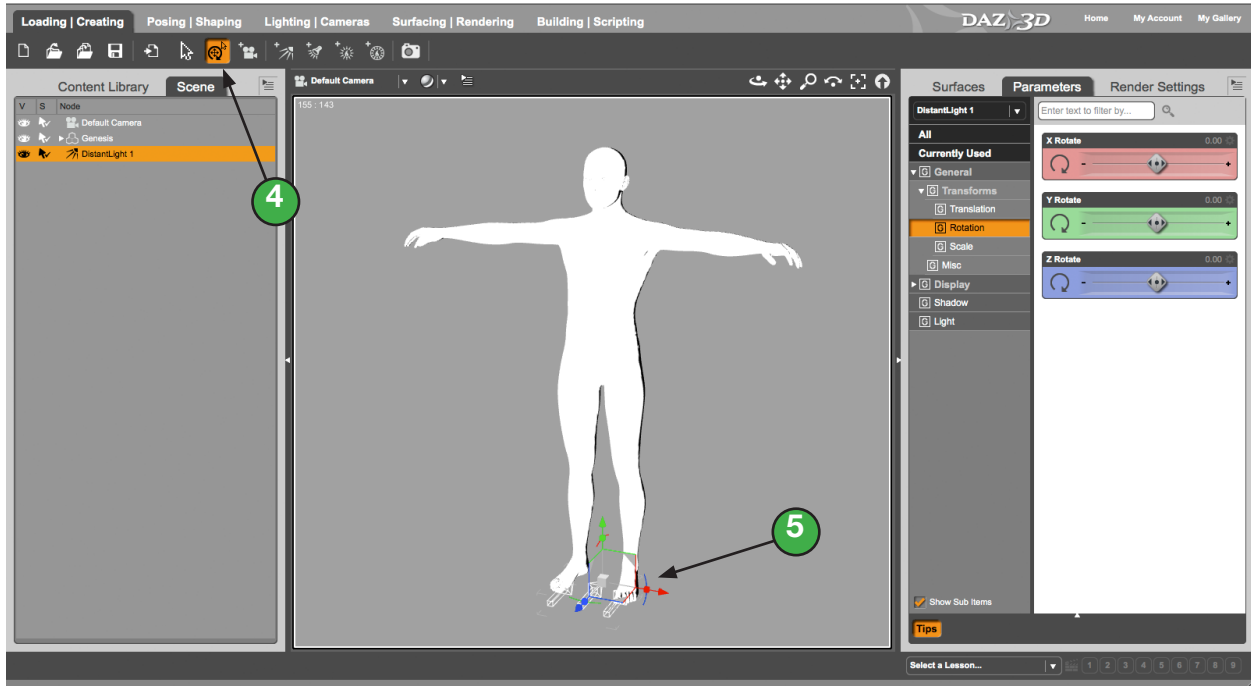


Figure 18: Rotating the Distant Light with the Universal Manipulator.

different colors on every item that you select. To rotate an object you need to grab one of the three red, green, or blue curved lines provided by the manipulator.

***TIP:** Your Distant Light will be white by default. If your background color is also white, sometimes this makes it difficult to tell which direction the light is pointing. The solution is to change the background color of the viewport. To do this, select the fly-out menu at the top of the viewport (to the far right of "Default Camera"), then choose **Change Background Color...** [FIGURE 19]*

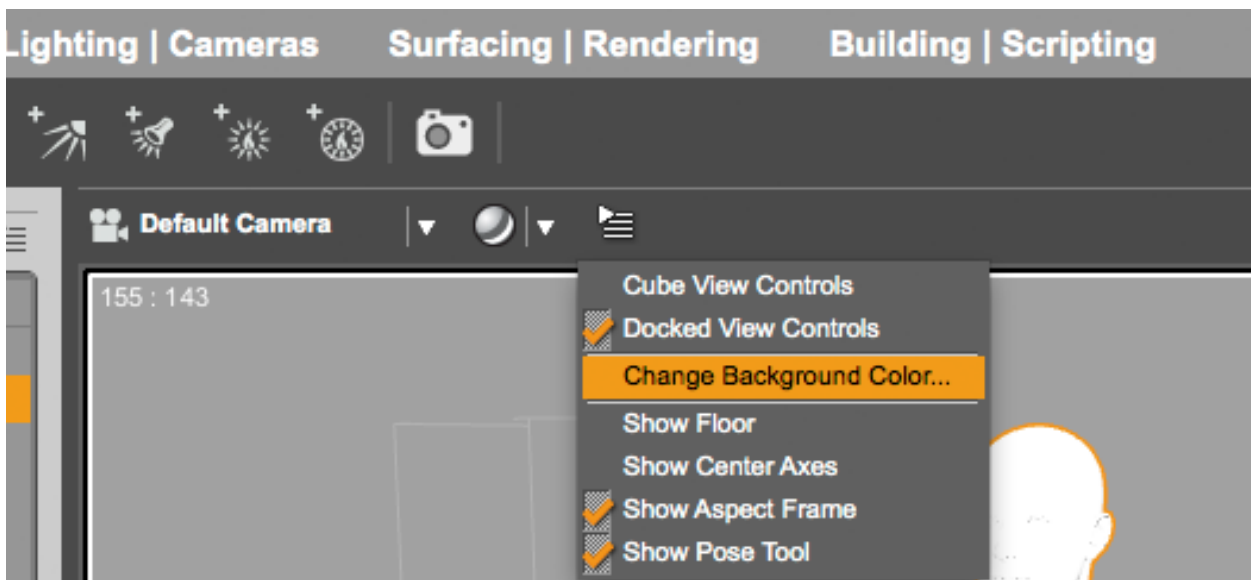


Figure 19: Changing the background color.

You'll get a **Select Color** pop up with a color wheel. You can use this to change the background color to whatever you like. I usually change it to a light gray color. If you're rendering to png format, as we should be, the background color doesn't matter that much. It only matters if you happen to see any ugly fringe around your transparent images. In that case we could decrease the Pixel Filter Width X and Y settings in the Filter section of the Render tab. Decreasing those to about 3 usually helps to clear that up.

If you don't care for working with the manipulator, then you can also rotate the light by using the *Transform Parameters*. To do this, make sure the light is selected, then select the Parameters tab from the top right. In the list on the left will be a *General* heading, and under this heading will be a "Transforms" heading, which in turn

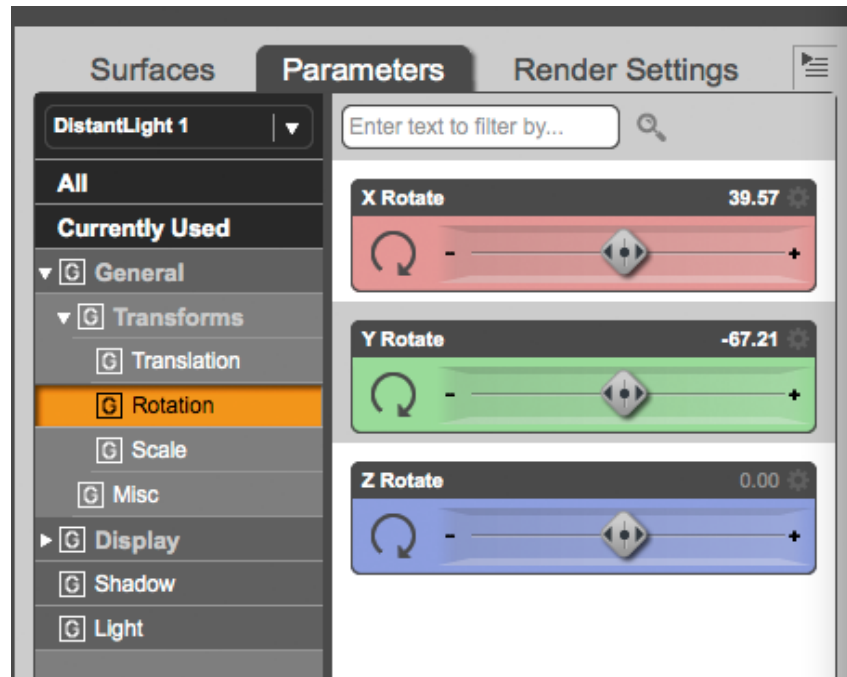


Figure 20: The Transform Parameters.

has its own subheadings of *Translation*, *Rotation* and *Scale*. *Translation* moves the object, *Scale* resizes the object and *Rotation* will rotate the object.

[FIGURE 20]

Choose the *Rotation* heading, then start rotating the light using the X, Y and Z sliders. You will be able to clearly see where the shadows are falling as you rotate the light. Keep rotating until you get shadows you like. You can also add in more Distant Lights if you need more than one light source, but you'll need to vary the strength of the lights somewhat.

The rotation settings for my Distant Light are:

X = 39.57
Y = -67.21
Z = 0.

Or you can just rotate the light until you get something you like.

TIP: You may need to turn your main Distant Light's Intensity all the way up to 200 [FIGURE 21]. If left at 100, you can end up with a lot of gray tones, depending on the angle of the light. To do this, select the Distant Light, then make sure the Parameters tab is active. At the bottom left, select Light. Then, on the bottom right, move the Intensity slider all the way to 200.

You want it to be stark black and white because when you composite this with your ambient render you'll only want the black parts to affect it. If the light parts are anything less than pure white they'll end up adding gray to the ambient layer. This could turn out to be an effect you like, but for now let's keep it black and white.

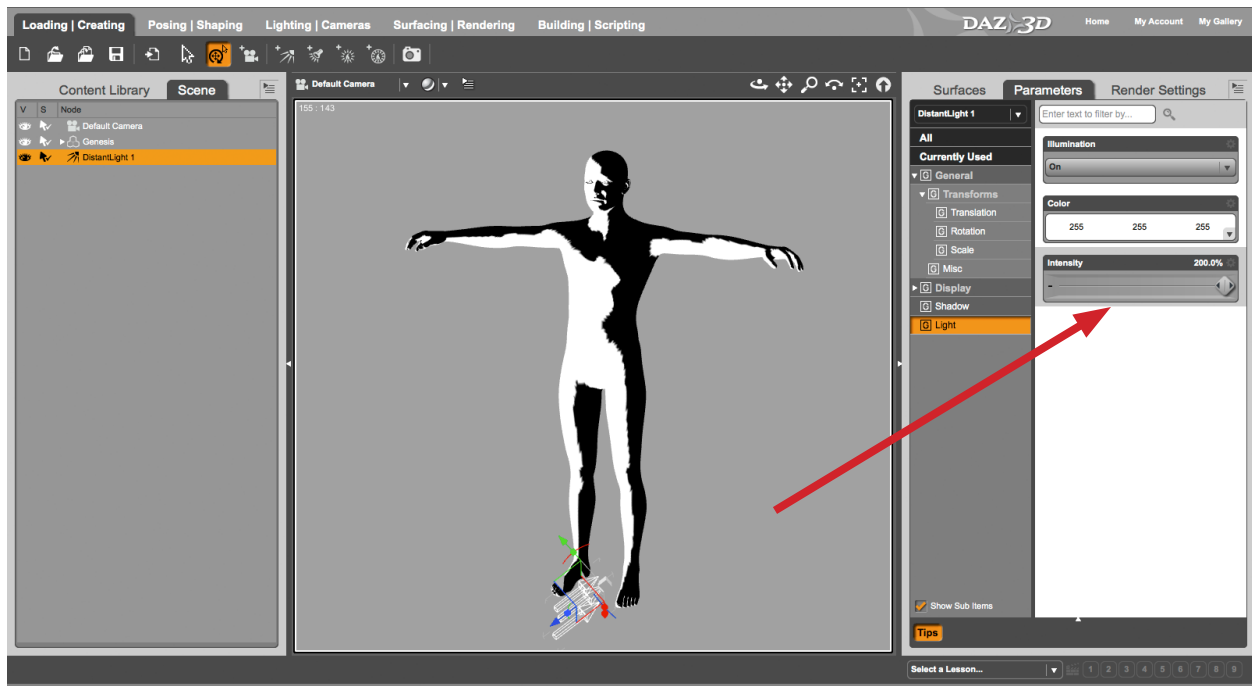


Figure 21: Increasing light intensity to 200.

STEP 9. Render.

Again, you'll get a very quick, flat render, this time in all black and white [FIGURE 22]. I might keep rotating the light and make 4 or 5 of these shadow renders. Sometimes you don't know how it's going to look until you composite them together in Photoshop or GIMP.



Figure 22: Black and white shadow render.

OPTIONAL STEPS

STEP 10. Turn On Shadows.

You *could* stop here and move to compositing the images in Photoshop.

In this optional step we'll cast some shadows. You'll notice that the above render gives you shadows on your objects, but doesn't actually cast long shadows. To do this you'll need to enable shadows on your lights.

Select your Distant Light, then click the Parameters Tab. Down towards the bottom left click *Shadow*. On the right set your *Shadow Type* to *Raytraced*. [FIGURE 23]

This will cause ALL items in your scene to cast shadows. As such it will also slow your renders down appreciably (how much depends on the speed of your computer).

If you only need a more targeted shadow, instead of enabling shadows on your Distant Light, add a Spotlight to your scene, then enable shadows on that. Add the Spotlight by choosing *Create > New Spotlight...* from the top menu, or by clicking the Spotlight icon at the top of the viewport.

You can position the Spotlight so that it only points at the specific object you need the shadow from. The influence of the Spotlight is much less than the Distant Light. In this way you won't be casting shadows on every item in your scene.

To move the Spotlight, make sure the Universal Tool is active, select the Spotlight by clicking on it in the scene or selecting its Node in the Scene Tab. Then use the Red, Green, or Blue arrows to move the Spotlight along their respective axes. You could also choose to move it by using the "Translation" Parameter sliders in the Parameters tab.

Positioning the Spotlight can be tricky sometimes. To help with this, you can change your view at the top of the viewport (under Default Camera) to Spotlight 1 [FIGURE 24]. This way you will see your scene through the Spotlight, and can better aim it in

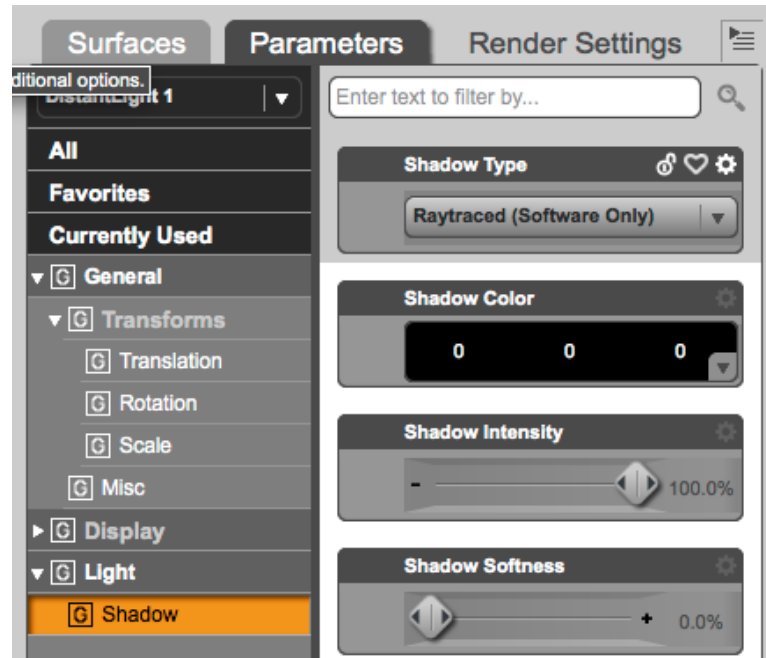


Figure 23: Set Shadow Type to Raytraced.

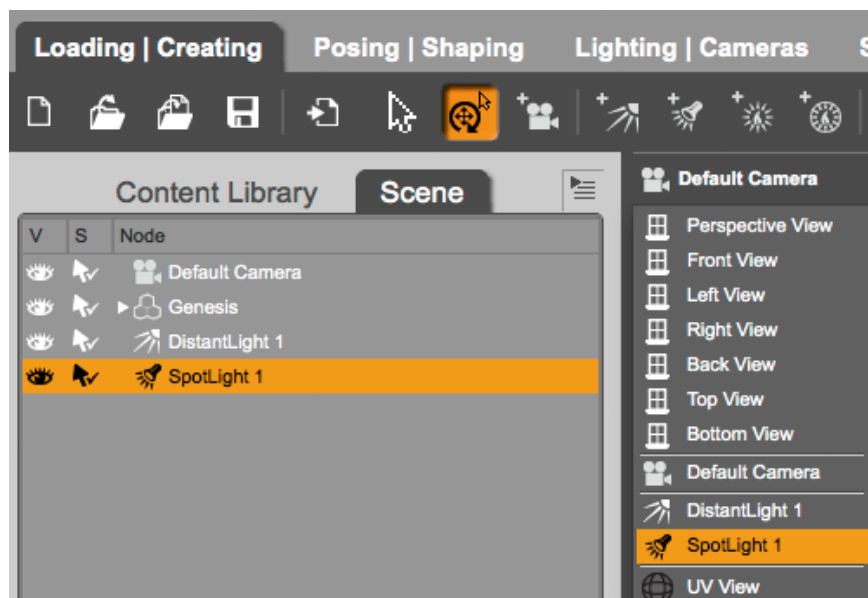


Figure 24: View your scene through the spotlight.

order to cast the shadow.

Sometimes changing the color of the Spotlight in the Light Parameters can help to show where it's aiming a little better (just remember to change it back to white before rendering).

I usually try to get as close as I can using the Universal Tool or the Translation Sliders, then I'll switch my view to the Spotlight for more fine incremental positioning.

My setting for the Spotlight are as follows [FIGURE 25]:

TRANSLATION

$X = 91.30$

$Y = 189.47$

$Z = 1.13$

ROTATION

$X = -36.08$

$Y = 88.56$

$Z = 0$

Remember, you'll need to have something to cast the shadows ON. If there are already enough objects in the scene, then you're ready to render, but if not (as in our basic scene), you'll need to add a plane or other Primitive object to "catch" the shadow.

A "Primitive" in Daz Studio is just a basic geometric shape that you can add to your scene. You can't do any advanced modeling with these Primitives, but you can adjust their size and shape somewhat, as well as assign different shaders and materials to them.

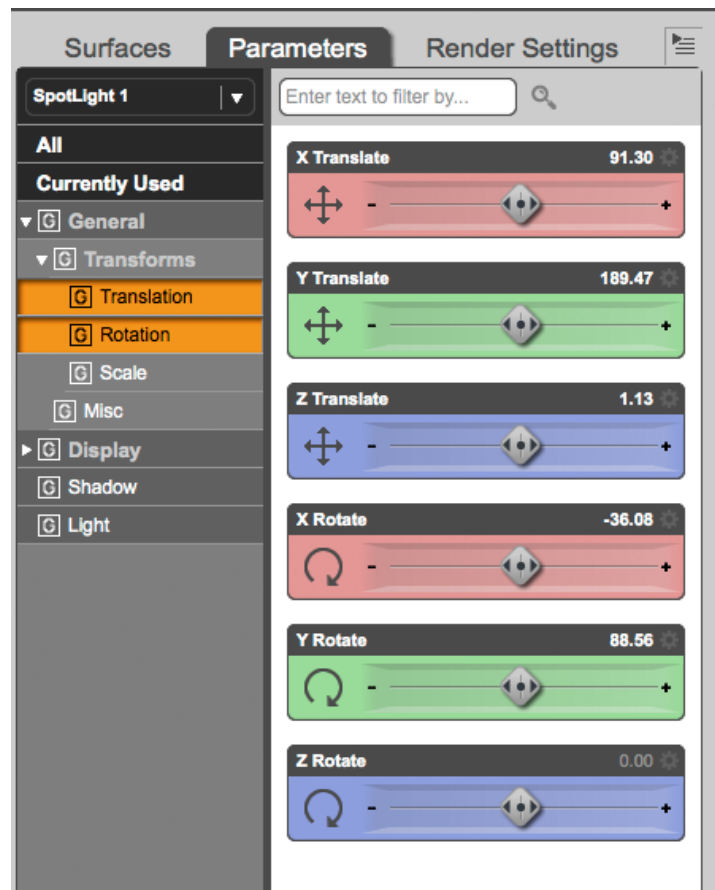


Figure 25: My spotlight positioning settings.

For this scene, we'll add a plane to act as the ground. Choose *Create > New Primitive...* from the top menu. You'll see the "Create New Primitive" box pop up

[FIGURE 26]. Set the “Type” drop-down to “Plane”, and set the “Size” field to “10” with the unit drop-down beside it set to “m” for meters.

Depending on how you rotated your Distant Light earlier, your plane may appear to be solid black in the viewport.

That’s the case with mine, as my light is pointing upwards, and that means no light is pointing down to hit the plane, so it’s showing up as black.

You can either rotate your light around until it’s pointing down, or add in another Distant Light. I usually add another light in, so let’s try that now.

Click the Distant Light icon or use the Create menu to add a new Distant Light, then select it, and change it’s X rotation to -90 in the Rotation slider of the Parameters Tab. This will point the light straight down at the plane.

Since the new light has 100% Intensity by default, that’s likely too much light, so try reducing it to 50%. This way it won’t completely eliminate the shadow we’re trying to create.

If you decide you’d rather switch from Spotlight to Distant Light (or vice versa), this is easily done. If I wanted to change my Spotlight to a Distant Light, I would first select my Spotlight, then click the Distant Light icon or add it using the menu. In the resulting pop-up, I would select the “Copy Selected Item: <Spotlight 1>” option.

This will add the new light with the same position, rotation, intensity and shadow settings as the Spotlight. The only thing different is that it will be a Distant Light instead of a spot. Test out a render with either of these on, but probably not both. Also, if you were to use Distant Light shadows in this manner, the second Distant

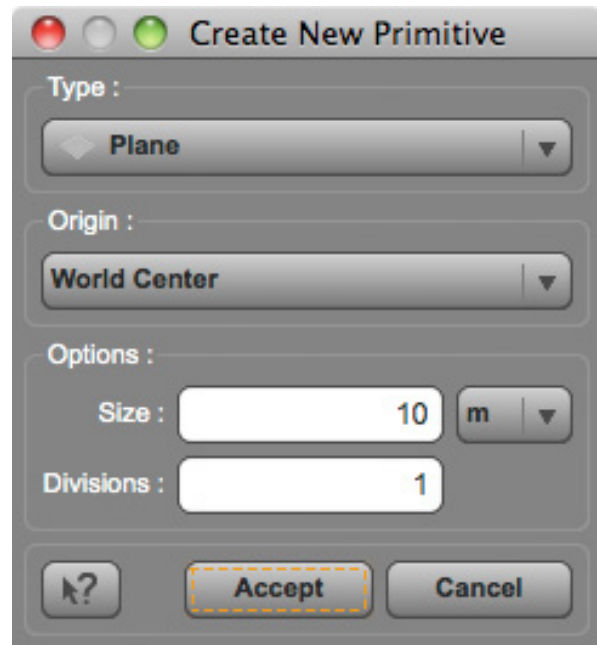


Figure 26: Create New Primitive box.

Light we added (the one pointing straight down) would likely not be necessary, as the new one is angled far enough down to illuminate the ground.

When you render you should notice an increase in speed, as the renderer will be casting a (presumably) much smaller shadow. I like to add the cast shadows in this step because there is less texture and color information for the renderer to worry about. The render should show one stark shadow cast from your light [FIGURE 27].

There will be a performance hit in render time no matter what you do when you turn on shadows, but this way should minimize it as much as possible.

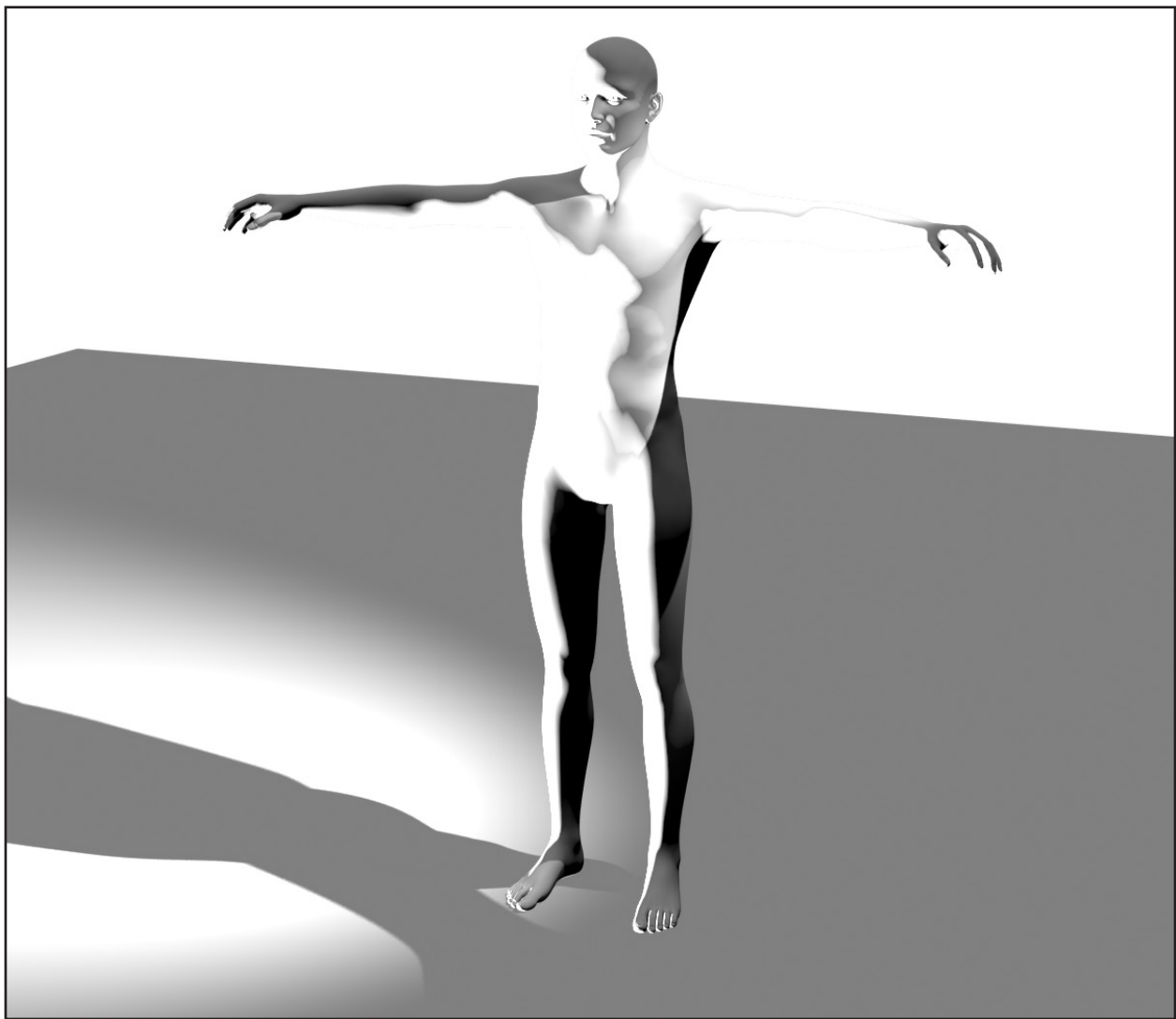


Figure 27: Render with Distant Light and raytraced shadows.

PART THREE - BASIC LINEWORK

Depending on your tastes and style of comic, you may or may not need linework (aka, an inker).

I've done comics with no linework, some that had linework on every panel, and sometimes I even switch off from panel to panel. It all depends on what I feel needs to happen with the artwork, and if it helps the story or not.

That's one of the perks of having the final say over your own comic.

If you're someone who wants linework, then this section will show you a basic way to accomplish that with the existing tools within Daz Studio. In a later chapter I'll go over my other linework methods, which include commercial products (luckily, they are not expensive).

Save one of your files as a separate file, normally I will just add "linework" into the file name somewhere so I can be sure what it is at first glance.

STEP 1. Switch Render Style from Normal to Cartoon.

Normally, I would avoid the Cartoon renderer, because I use other methods for linework. However, if you just want some basic outlines, I've found this will work out pretty well.

To do this in Daz 4.8, first go to the Render Settings tab, and expand the "General" subheading. Then click the Flyout menu on the top right and choose "Show Hidden Properties".

[FIGURE 28]

Once you do this you should now see a "Style" selection appear under the General sub-

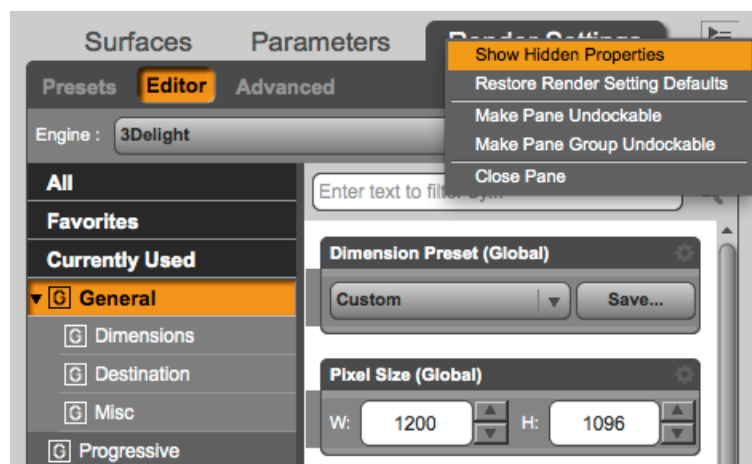


Figure 28: Show Hidden Properties.

heading. Click this one and you should see one dropdown appear in the column to the right. [FIGURE 29]

Change the dropdown from “Default” to “Cartoon”, and then we’ll be ready to move on.

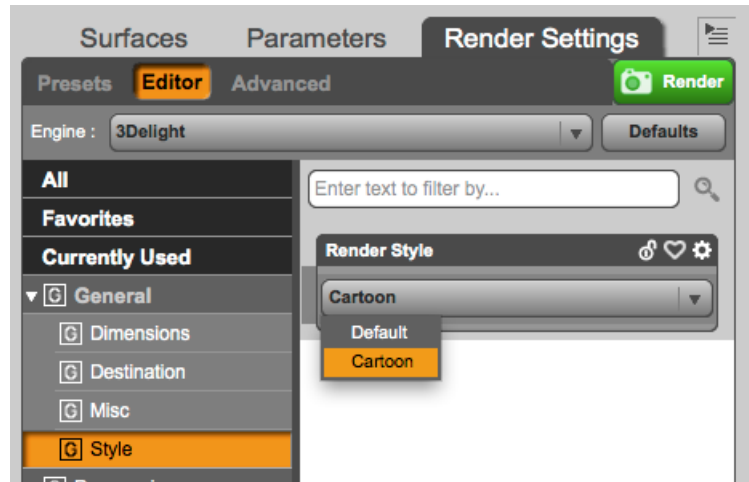


Figure 29: Show Hidden Properties.

STEP 2. Switch all objects back to the DAZ Studio default shader.

Previously, we spent a bit of time converting everything to the UberSurface Shader, so it probably seems counterintuitive, or at least wasteful, to double back and revert everything.

The reason we have to do this is because the Daz Cartoon renderer is built to work with the DAZ Studio default shader. Therefore, it won’t recognize any objects that have the UberSurface Shader applied. While it will render them, they will not be outlined, which is the effect we’re looking for.

As it turns out, it’s quite easy for us to revert objects back to the DAZ Studio default shader, at least for our purposes. Here’s how:

STEP 2A: Choose *Create > New Primitive...* from the top menu. In the “Create New Primitive” box choose any primitive you want. It doesn’t matter what type it is (cube, plane, etc.) or what size. Any object will do [FIGURE 30].

STEP 2B: Make sure the new primitive object is selected. Check in the Surfaces tab to see that the DAZ Studio default shader is applied to this object.

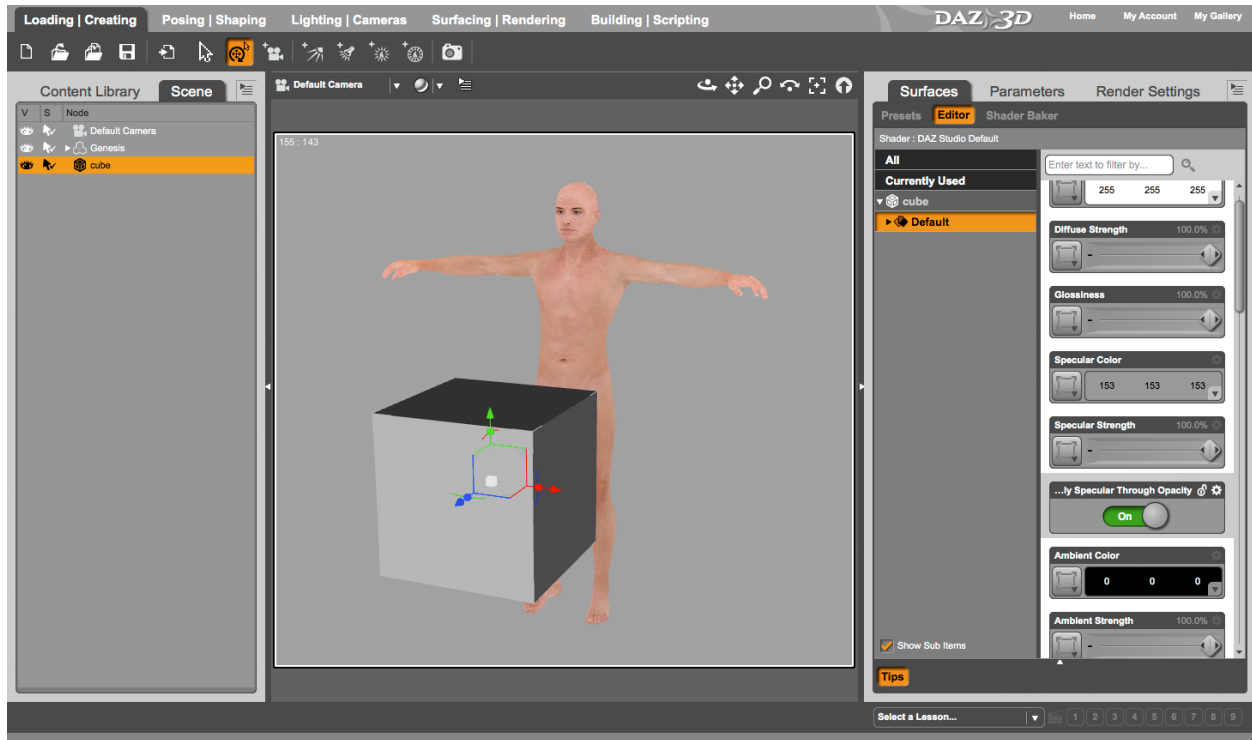


Figure 30: A basic primitive object with the Daz Studio Default shader applied.

STEP 2C: Lower the Diffuse Strength, Glossiness, and Specular Strength values all the way to zero. Then increase the Ambient Strength all the way up to 100, making sure that the Ambient Color is white (255 255 255). Changing these values here will spare us some work later on.

STEP 2D: With your primitive still selected, choose *Save As > Shader Preset . . .* from the File menu. First it will ask you where to save the file and to name it. In my case I saved it to the “scripts” folder that resides in my “content” folder. If you’re not sure where yours is, you can check by making sure the Content tab is open, then choosing “Content Directory Manager” from the flyout menu on the right. Under “Current Directories” you should see the list of paths to directories that Daz is aware of.

After you save your file, the “Shader Preset Save Options” box will pop up [FIGURE 31]. You don’t need to change anything in here for this task, but you can see that you are able to uncheck any channels you don’t want affected in your preset. Again, for our purposes here we don’t need to change anything. Click “Accept” to complete saving the new Shader Preset.

You can safely delete the primitive now, as we won't need it any longer.

STEP 2E: Now that the preset is saved, we need to alert Daz that it's there and ready to be discovered. So with the Content tab open, choose "Scan Known Directories for Files..." from the flyout menu and click "accept" to start the scan.

Once it's finished the script should now be available in your Content Library. You'll need to navigate to your Scripts folder within your library, or better yet just search for it using the search field using the name you chose for it in Step 2D. It should show up in the bottom content pane of the Content tab.

STEP 2F: To apply the Shader Preset, you need to select the object nodes in the Scene tab AND the surfaces in the Surfaces tab. If your computer will handle it, try to select all the nodes and all the surfaces at once (or as many as you can get away with).

Once all the nodes and surfaces are selected, simply double-click on your Shader Preset in the Content tab, and all of your selected surfaces will now be switched over to the DAZ Studio default shader (it should be completely white). This is why we made those adjustments to our primitive earlier, now every surface you had selected should have those settings.

One final thing before rendering, make sure to lower the *Pixel Filter Width* X and Y settings in the Render Engine section of the Render tab down to about 3 [FIGURE 32]. If you don't do this, I've found the render can end up with ugly "double outlines" in some places.

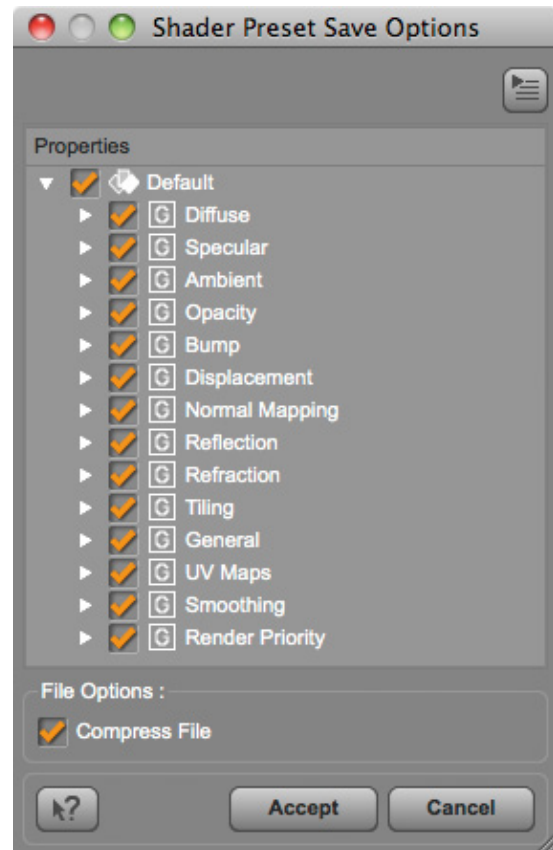


Figure 31: The Shader Preset Save Options box.

STEP 3. Render in Cartoon Mode.

Figure 32: Lower Pixel Filter Width to 3.

So this is really all we needed to do. Since your ambient color is white, and the cartoon renderer adds a black outline around objects, you should get a stark black and white render at this point [FIGURE 33].

If you have any lights in the scene, it's ok to delete them, as they won't make much difference at this point.

Checking the render, you'll see the outlines aren't perfect, or very stylish, but they're really the best we can do while using the basic Daz Studio settings.

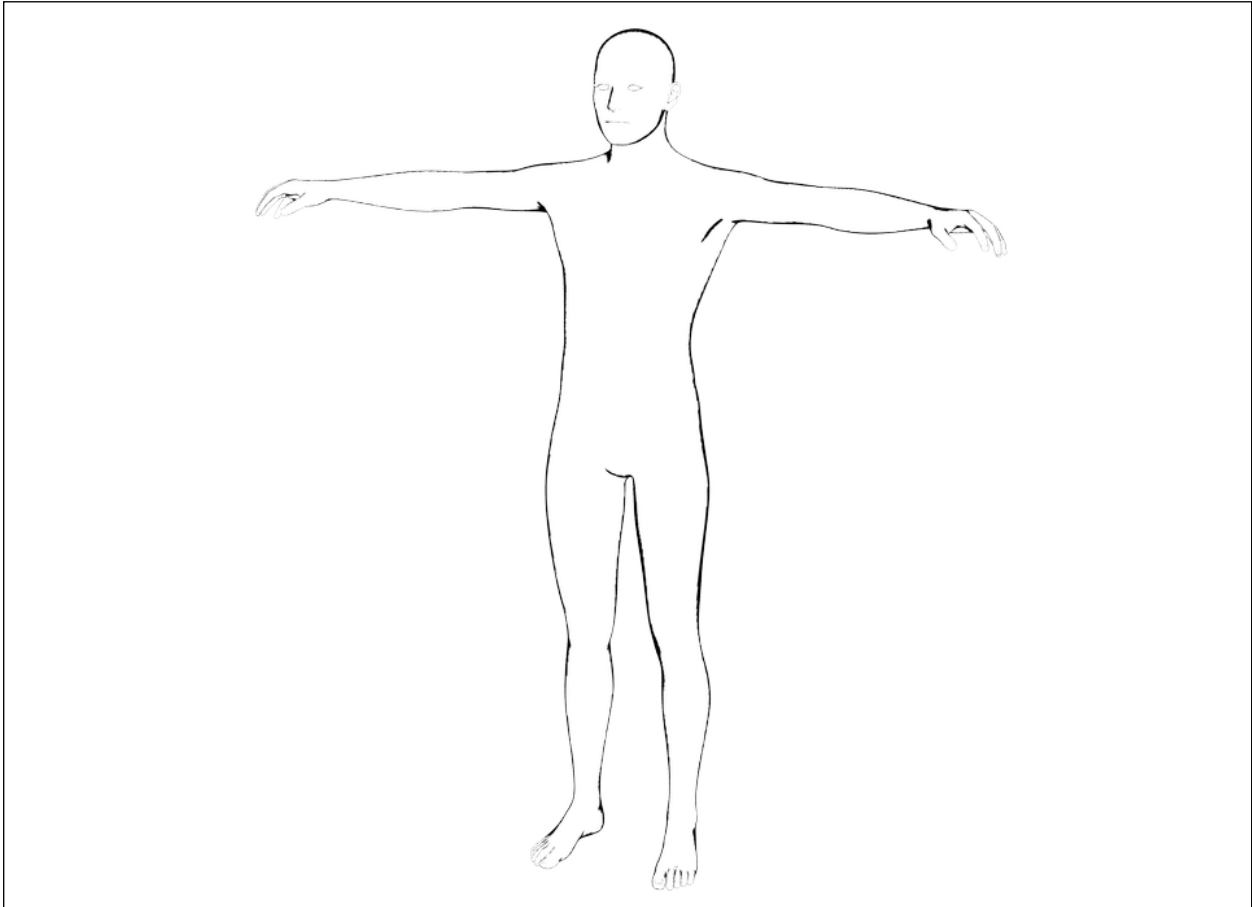


Figure 33: Linework render using the Daz Cartoon Renderer.

TIP: To get smoother edges when rendering, lower the Shading Rate in the Render Settings down to .2 from the default of 1. This will increase render times, but not by too much for these comic renders, and the resulting smoother lines will be worth it.

[FIGURE 34]

Depending on the angle of objects in your scene (with respect to the camera) some parts may come out completely black. Usually floors, walls, ceiling and the like can end up all black. There's really nothing you can do about it with the cartoon renderer, so if you see that happening, try turning off the floor/ceiling/other object just to keep it from screwing up your character or other objects that actually do render correctly.

We'll end up multiplying this layer on top of the others in Photoshop or Gimp, so it's important we don't have unnecessary dark areas in the render.

In a later chapter, I'll discuss alternatives to this method that can help you avoid the "render as black" problem, and also allow you a little more control of line style and colors.

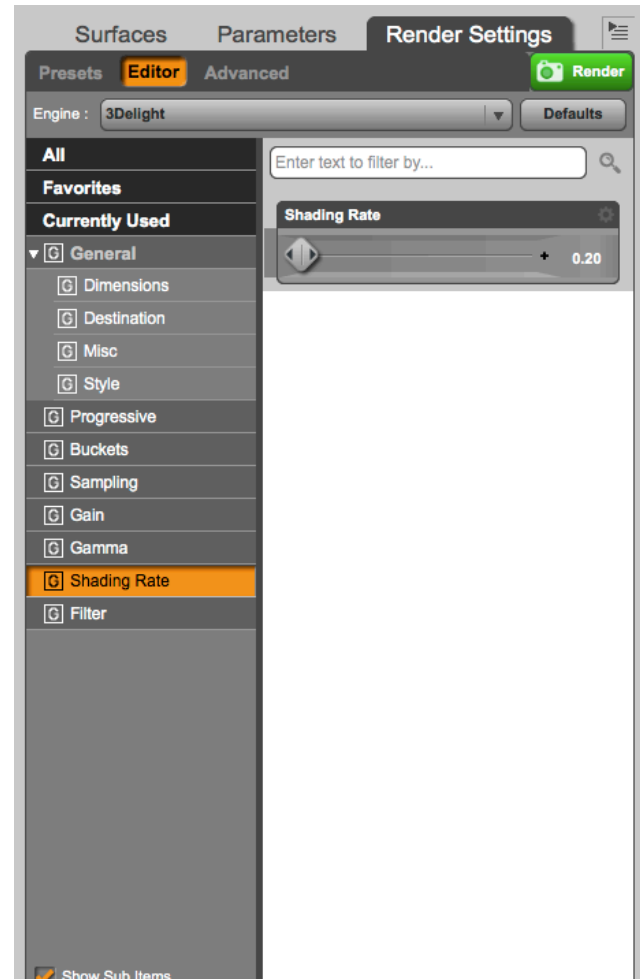


Figure 34: Lower Shading Rate. Also note the Pixel Filter Widths lowered to 3.

PART FOUR - PHOTOSHOP COMPOSITING

Now that we have our three (and possibly more) renders, it's time to composite them in Photoshop or GIMP. All I mean when I say composite is simply “combine them”, “put them together” or “layer them on top of each other”.

I normally use Adobe Bridge to organize and view thumbnails of my renders, so if you do as well, you can open up Bridge to your renders folder (I usually just drag the render folder onto my Bridge icon in my Dock on OS X).

1. One way to get multiple renders into one Photoshop file is to select your files, then choose *Tools > Photoshop > “Load Files into Photoshop Layers...”*. This will load every selected thumbnail into it's own layer in a single Photoshop file [FIGURE 35].

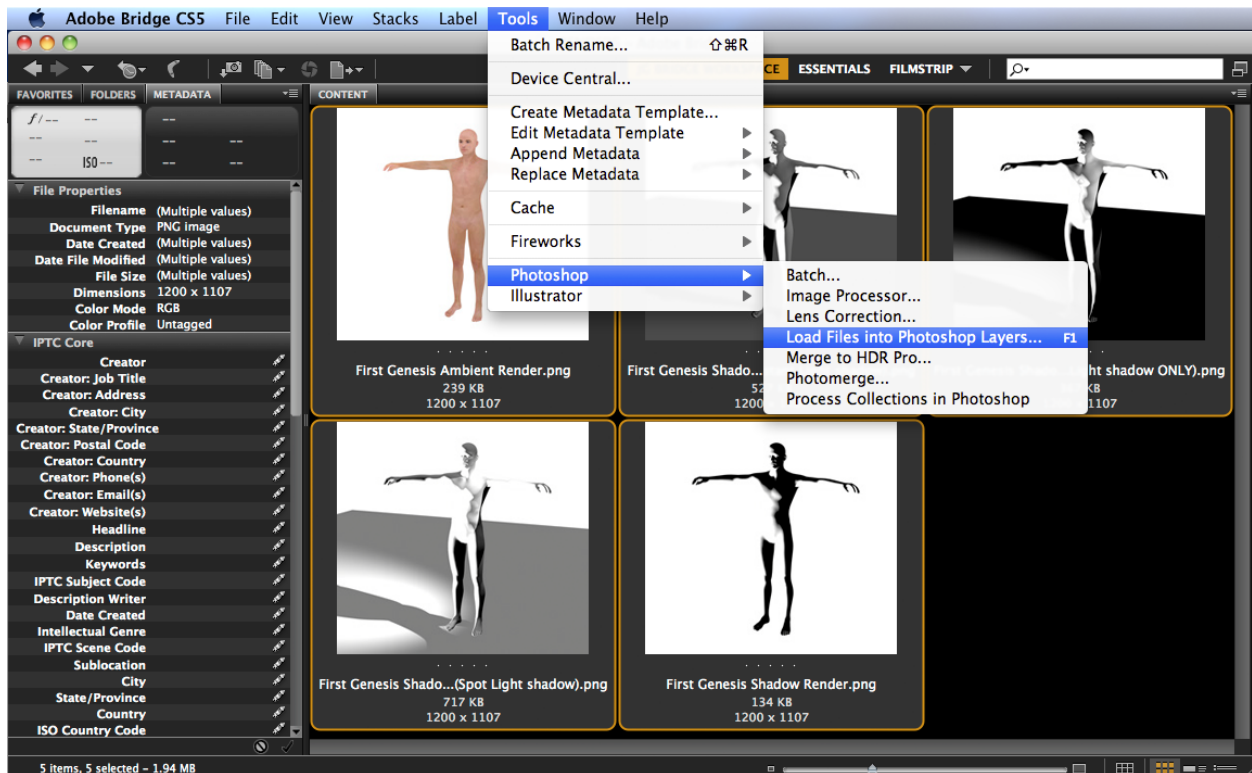


Figure 35: “Load Files into Photoshop Layers...” command in Adobe Bridge.

Another way is to open up Photoshop, then select *File > Scripts > Load Files into Stack...*

Then you'll choose your files in the resulting pop-up box (you can choose files or just choose the folder) and they should load in just as they did in the Bridge method.

TIP: I've attached a keyboard shortcut to that menu item by going to the Mac System Preferences > Keyboard > Keyboard Shortcuts, then selecting "Application Shortcuts" on the left, and clicking the + button on the bottom to add the new shortcut. You have to type the menu item in exactly as shown, so if it has an ellipse at the end, you need to type the "...". Now when I select the required thumbnails, I just press F1 and they open up immediately in Photoshop in separate layers.

In GIMP, you can simply choose *File > Open as Layers...* - then select the files you want and it will open them as separate layers, using the file name as the name of the layer [FIGURE 36].

2. If you don't see a palette called "Layers" open by default, just go to *Window > Layers* in the top menu to open it up (choose *Windows > Dockable Dialogs > Layers* in GIMP). The layers should be named using your file name, but you should be able to easily spot your color ambient layer and your shadow layer(s) using the icons shown in the Layers palette. If your shadow layer(s) is not the top layer, move it to the top of the Layers palette by clicking and dragging it.
3. Change the Blend Mode to "Multiply" by using the drop-down at the top of the Layers palette (it should be on "Normal" by default). You should see your original ambient image, but now with shadows laid over the top.

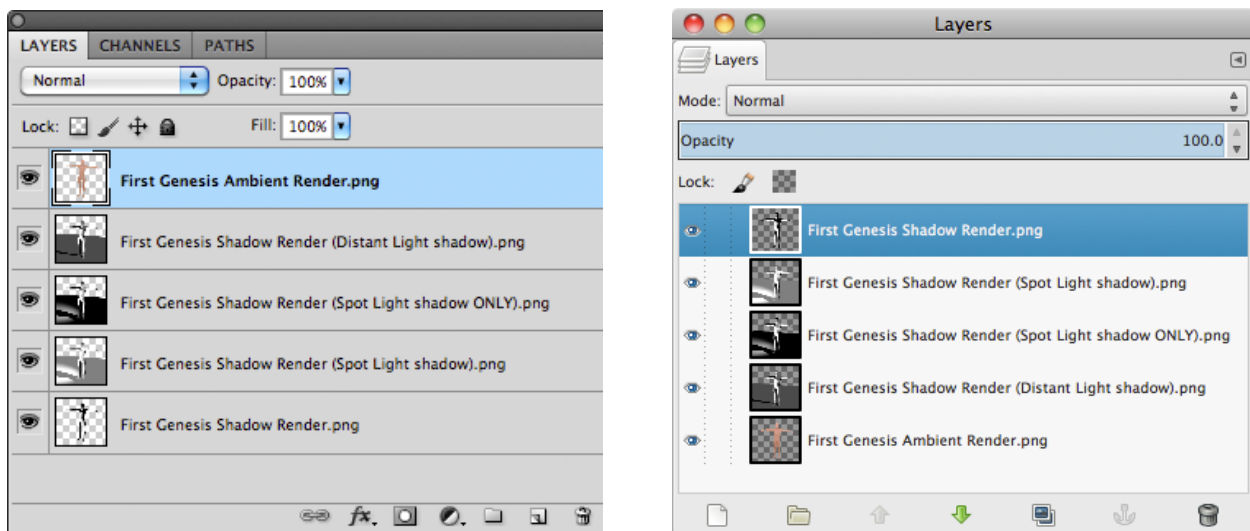


Figure 36: The Layers palettes in Photoshop and Gimp

4. The shadows may be too dark for your liking, so adjust opacity to taste by using the Opacity slider to the right of the Blend Mode drop-down. Also, be sure try out other blending modes like Overlay (which makes brights brighter and darks darker), or Soft Light, which really dials back the Overlay effect. For very dark shadows, I prefer using Linear Burn in Photoshop instead of Multiply because it produces a richer black (I *believe* the “Burn” blend mode in Gimp is actually the equivalent of “Color Burn” in Photoshop, and not “Linear Burn”, but they should be close).
5. I’ll usually place the linework layer on the top and set it to Linear Burn. If the lines seem too thin to you, just keep duplicating the layer (Command-J Mac, Control-J PC). If it’s set on Linear Burn, it will increase the density of the black lines. Keep doing this until you like the result you see.

At this point, it’s just a matter of adjusting the Blend Modes and Opacity to taste to get a look that you like. My final image is below [FIGURE 37].

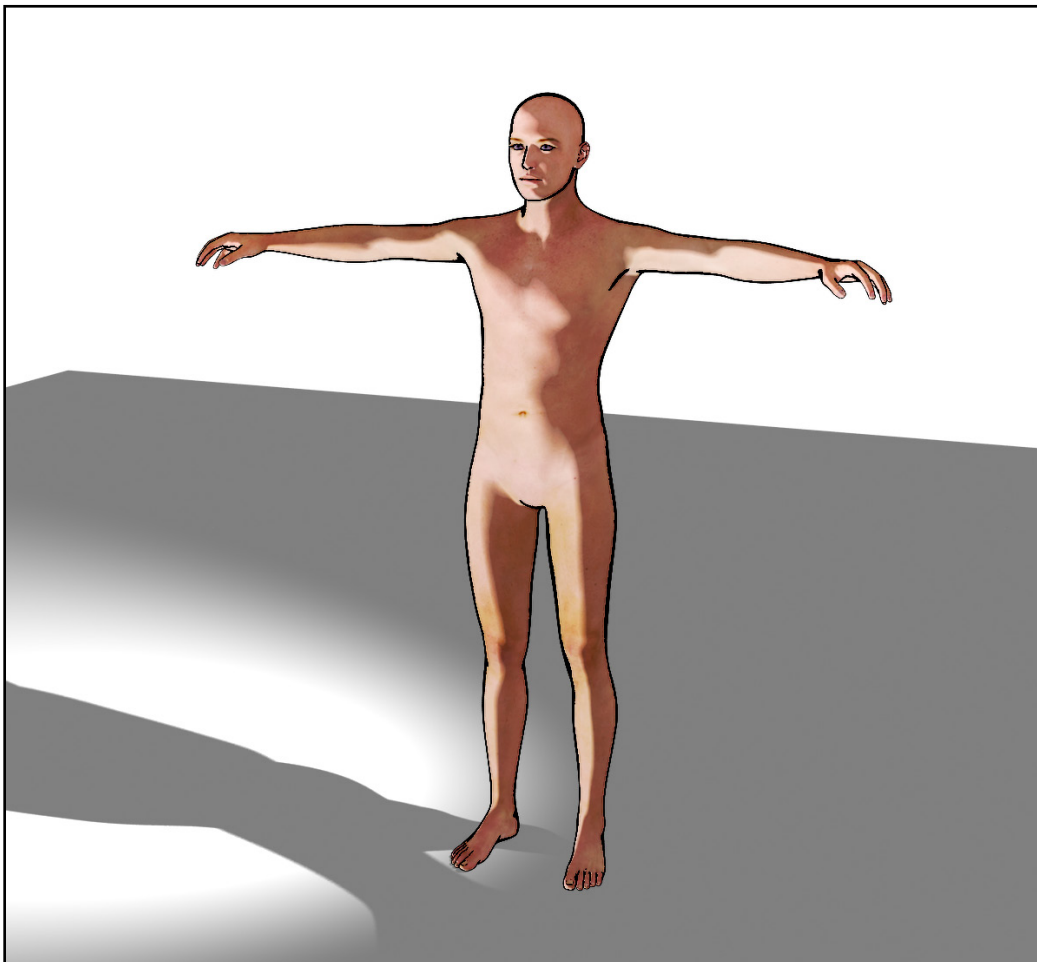


Figure 37: The final composite image of the Genesis character.

It doesn't look like much, but we've learned the principles now.

Save this layered file either as a native Photoshop (.psd) or GIMP (.xcf) so you can come back to it and adjust it, if necessary. Make sure to include the panel numbering for easier selecting if/when you need to find it again.

Finally, save a flattened versions as a tiff or png file using the *File > Save As...* command. We'll use those formats because they're lossless (they lose no quality when saved, unlike jpeg) and can be easily imported into the next link in the chain - Adobe Illustrator.

Do these steps for each panel, and save the layered version and tiff/png versions of each one.

At this point you've completed The Ambient Method, and using the concepts from this chapter, you can begin creating some truly awesome comics.

THE AMBIENT METHOD

EXAMPLE COMIC

After all this theory, at some point we need to see some real-world examples of these comics in their final state.

The following 1-page comic was produced using the procedures you just read about in **“The Ambient Method”**.

After the comic, you’ll see some example panels of the raw renders straight from Daz Studio, and a few working screenshots of the scenes within Daz.

The only caveat with this one is that I added some linework using another method that will be covered later in the book.

I hope these panels show you the kind of comic that is possible in 3D with just a little elbow grease.

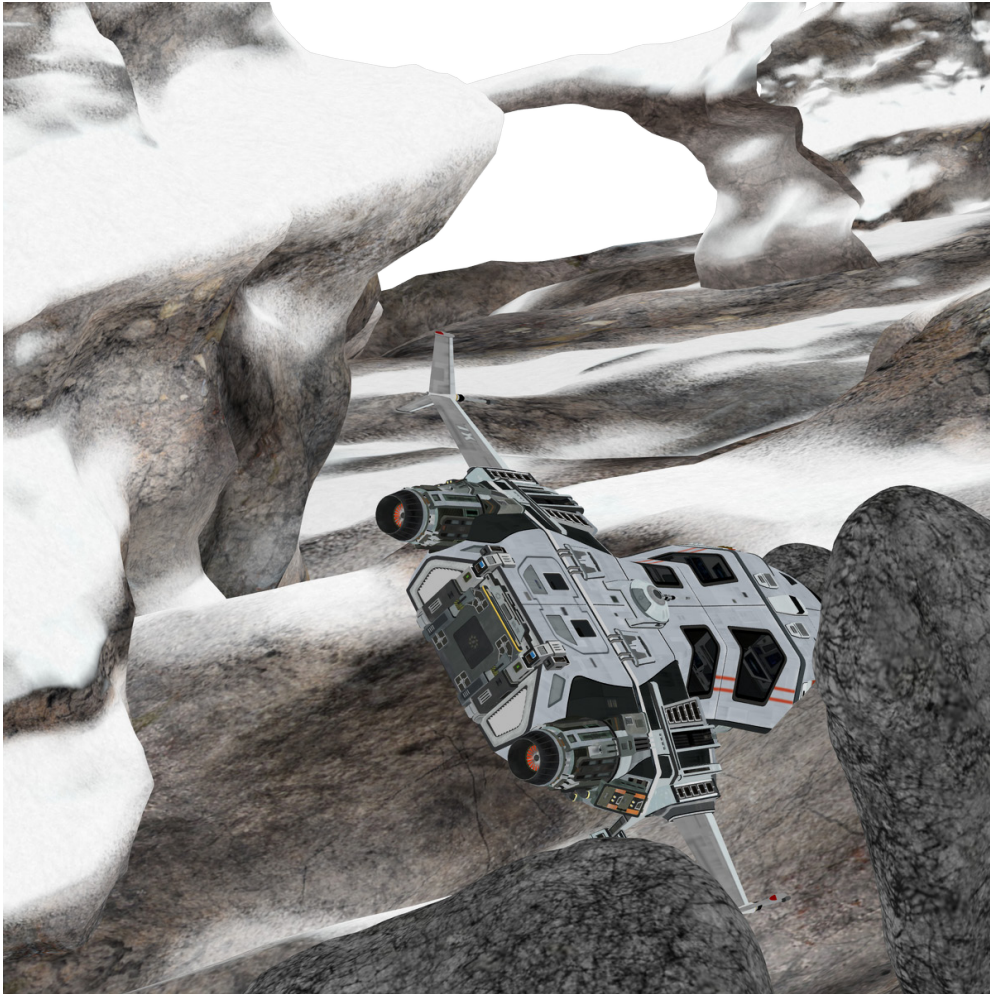


TITANS | DIVINITY

EPISODE 01



PANEL BREAKDOWN



Raw render from Daz Studio using Ambient Method

In this first panel, you can see how flat and lifeless the image is.

All of the textures are loaded into the Ambient channel, and there is no light or shadow information to be found in this image.

When you're just starting out with this method, it can be easy to get discouraged at this beginning stage. Don't worry, though, adding the shadow layers will make the image a lot more interesting.



My first specular “Shadow” render.

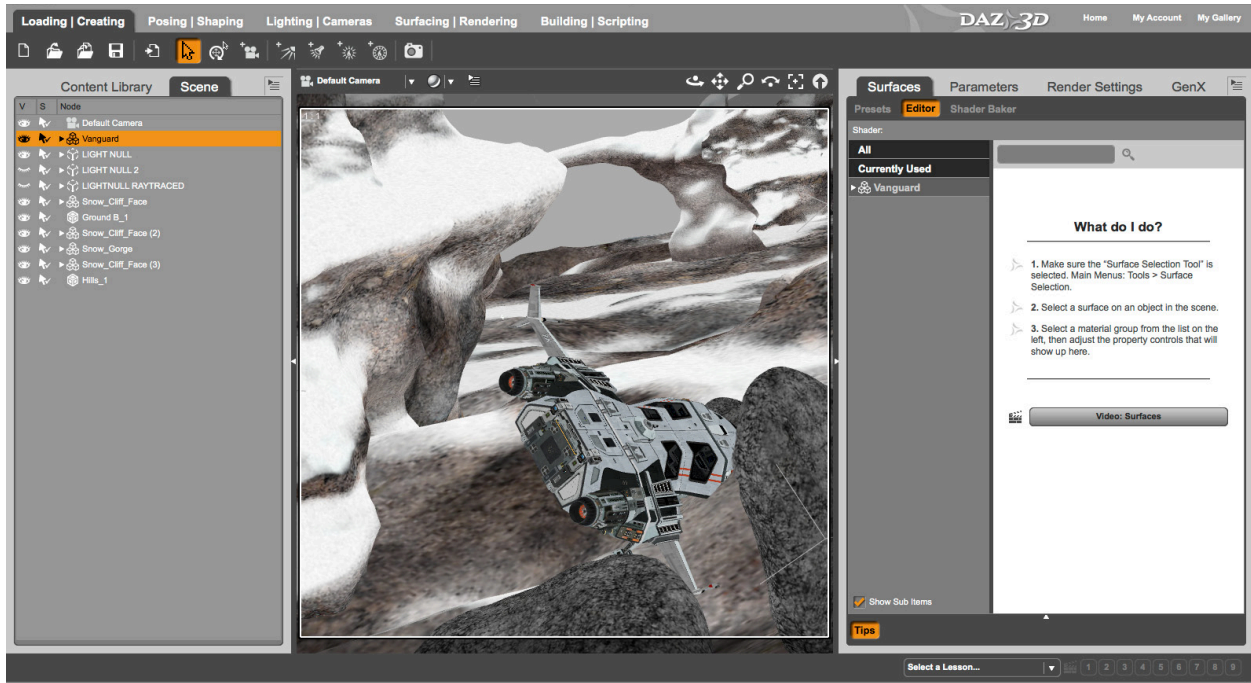


Second “Shadow” render after rotating the Distant Light.

Above are two shadow renders for this panel. I might make up to 5 or 6 of these shadow renders.

I’ll usually make one to suggest the direction of the dominant lighting source, then make the rest in case I need them. Many times I’ll have a few unused shadow layers in my Photoshop file. They render very quickly so it’s not a huge time-sink.

Below is the first panel as it displays from within Daz. You can see that the ambient render comes out looking very close to what you see within the program, itself.





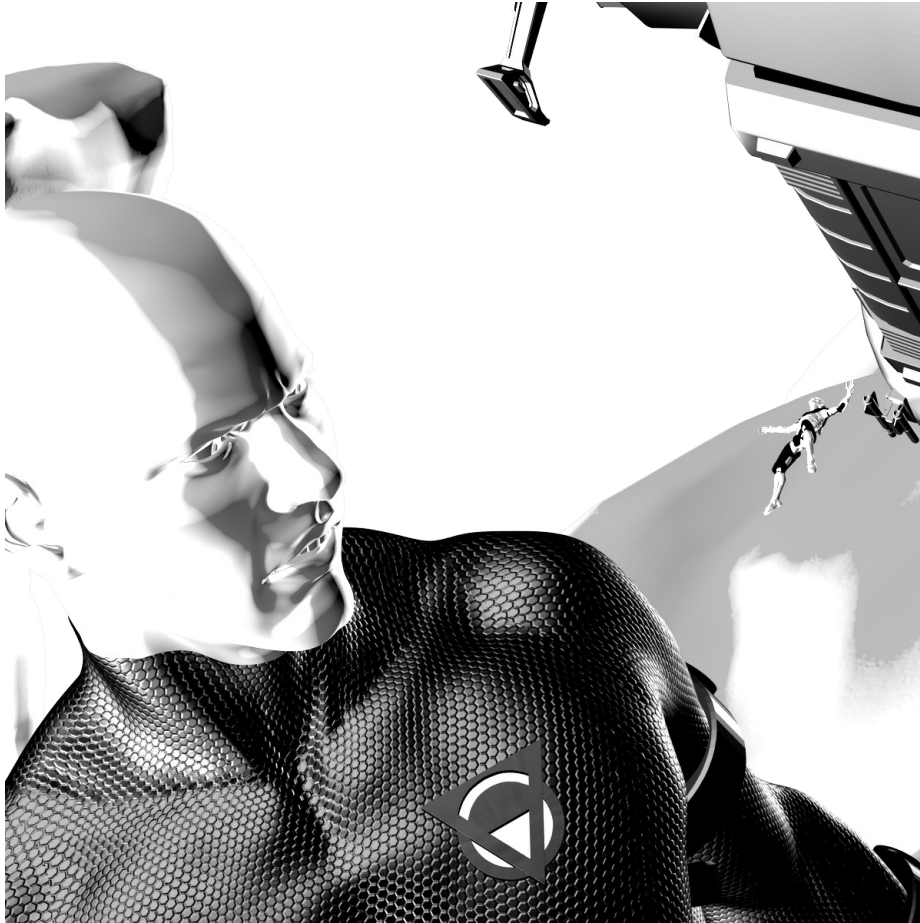
Panel 3 raw render from Daz Studio using Ambient Method

In panel 3, notice how I've kept the texture of the skin, but removed texture from the suit.

You have to make this choice for yourself, but in this case, every texture I loaded into the suit's Ambient channel screamed "fake" to me, so I decided to use only color information.

Not all textures are created equal, and some will look bad no matter what you do. Some of my characters rely only on color, while others have a decent texture that works well.

Also, I have a bump map with a pretty high setting on the suit, but you can't see it because that sort of detail won't show in an ambient channel. Remember, the Ambient channel is essentially a light, and you don't see much detail when looking directly at a light.



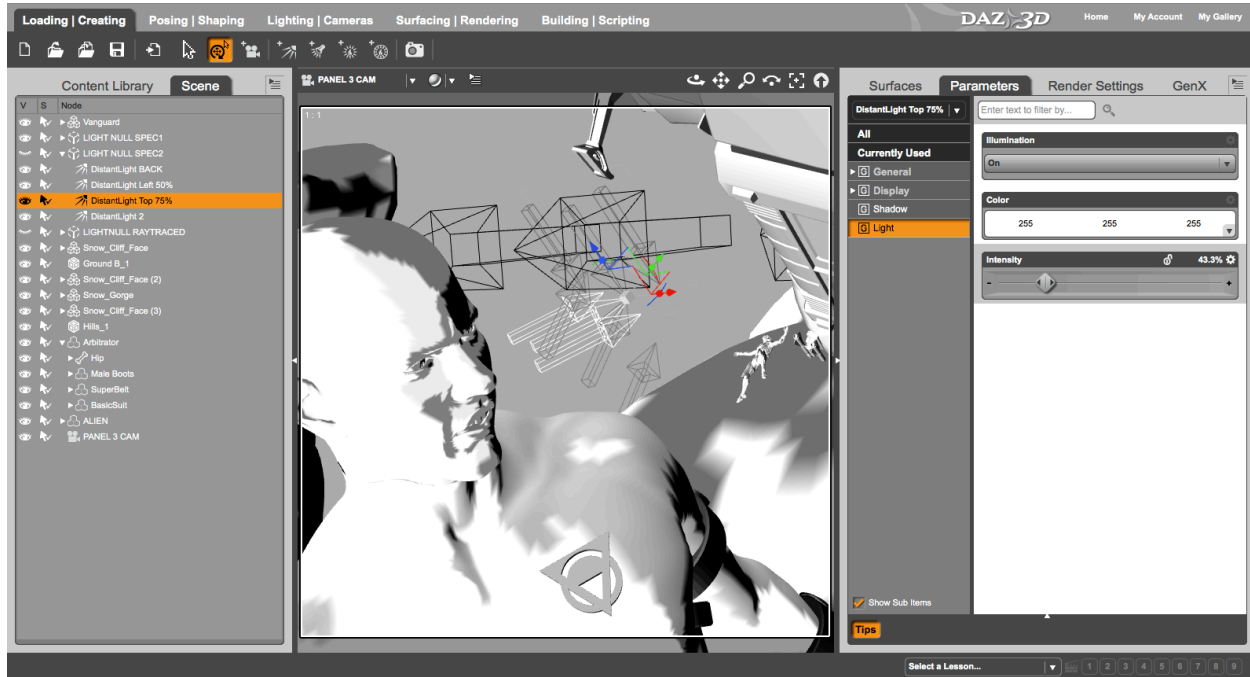
Panel 3 raw “Shadow” render from Daz Studio using Specular channel

In this specular “shadow” render, notice the detail on his suit. This is not an image texture.

Instead, this is provided by using a bump map texture loaded into the Bump channel. While it doesn’t show in the ambient render, the Specular channel is forced to acknowledge the bump information and apply specularity as indicated by the map.

As mentioned earlier, a “bump map” is a grayscale (or RGB) image, where 50% gray is unchanged, and values darker than 50% gray appear lowered, while values lighter than 50% gray appear raised.

Using bump is a good way to indicated rocky terrain, craggly skin, or even raise/ lower logos and lettering



Above is how the previous panel appears as a working files within Daz Studio.

By now you should have a good overview of how to use Daz Studio and Photoshop/Gimp to create your own great-looking comic.

And this is only one of the methods I use. Depending on the look I'm going for, I may decide one way is better than the other.

I hope you've gained something useful from what you've read so far. If you'd like to be notified of when the full book comes out then make sure to jump on my mailing list for regular updates. You can do that by going here:

<http://hype3d.com>

If you have any questions or comments, be sure to hit me up on Twitter or via my email contact form on the site.

-John Garrett