

## It's All About 3D!

# Making Anaglyph Images in Adobe Photoshop\*

(\*Thanks to the SDSC Geowall Team for their assistance)

### What You Need:

In order to make an anaglyph you need two slightly off-set images. These can be produced using 3D software applications (Maya, Bryce, 3D Studio Max, Blender) or they can be downloaded from a camera or pair of cameras. If you are downloading images from cameras, it is absolutely critical that you keep track of which image is for the left eye and which is for the right eye. You can figure this out later, but it is a very tedious process and prone to error. I recommend placing all left-eye images in one folder (called Left) and all the right-eye images in another folder (called Right).

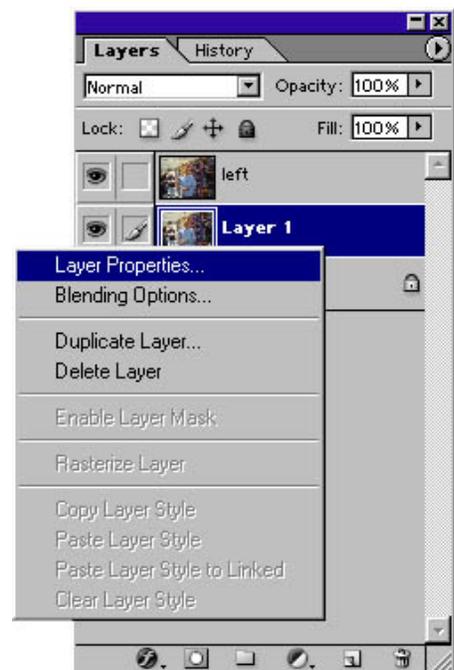
If you are using cameras it is likely that the image file names don't sync up properly - the left-right pairs have different, unrelated file-names. If you are working with a large number of images, it's worth your time right now to go through and rename all of the images so that you can tell which pairs go together. I recommend a naming system that goes something like this: 01l, 01r, 02l, 02r... and so on where the number indicates the images go together as a pair and the r/l indicates which eye the image is. This system is good because it lets you put all the images into a single folder without the order getting confused.

Now that you have that done, it's time to start working in Adobe Photoshop. For this demo, I'll be using version 7.0.

## Step 1: Open your pair of 3D Stereo images

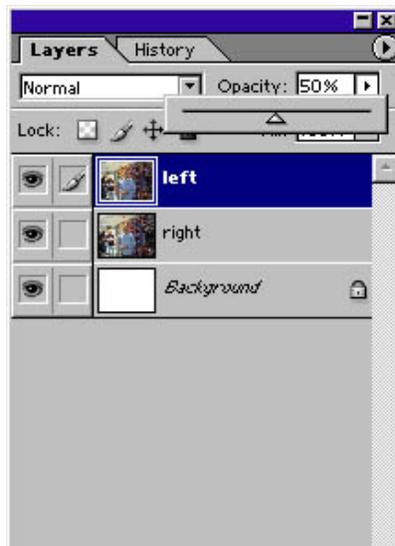
The first thing you need to do is open the left and right images. Once those are opened, you want to copy them into a new document. In the first image go to Select > All (Control-A), then Edit > Copy (Control-C). Now go to File > New (Control-N). The new file will default to the correct dimensions, so hit enter, and finally go to Edit > Paste (Control-V). Your image will be pasted as a new layer. You want to label that layer left or right, so right click on the layer and go to Layer Properties, and type "Left" or "Right" depending on which layer it is.

Repeat these steps for the second image. You should now have a 3-layer image, with layers "left", "right" and "background."



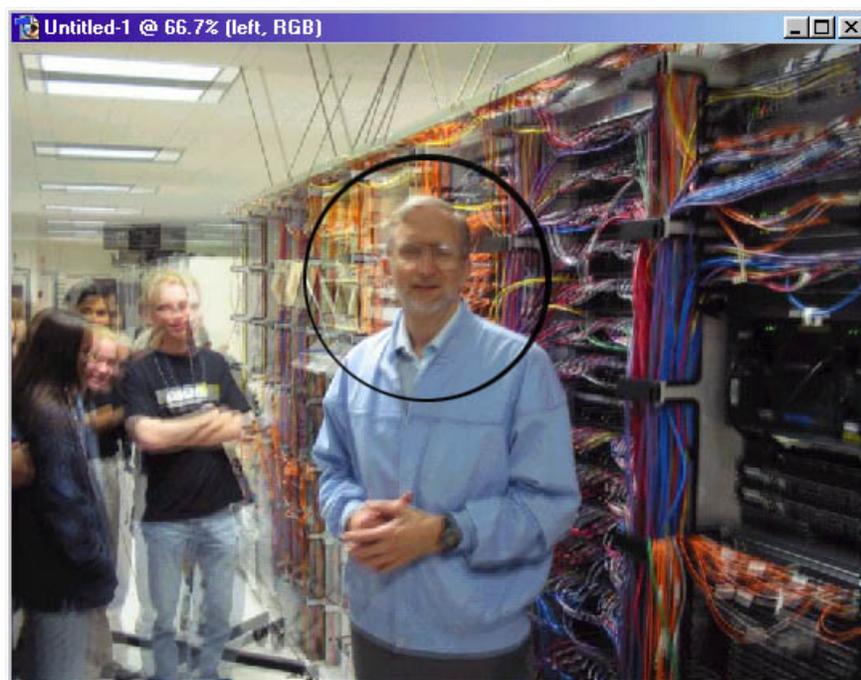
## Step 2: Align Your Images

Step 2.1: Now you need to align the layers properly. to do this, go to the top layer and select the Opacity drop-down menu. Slide the bar until it reads around 50%.



You should now be able to see both images at the same time, as the top image is slightly transparent. You must pick a prominent place on the image which will be your focus. This should be somewhere near the center of the picture and where you think the eye will be drawn to first.

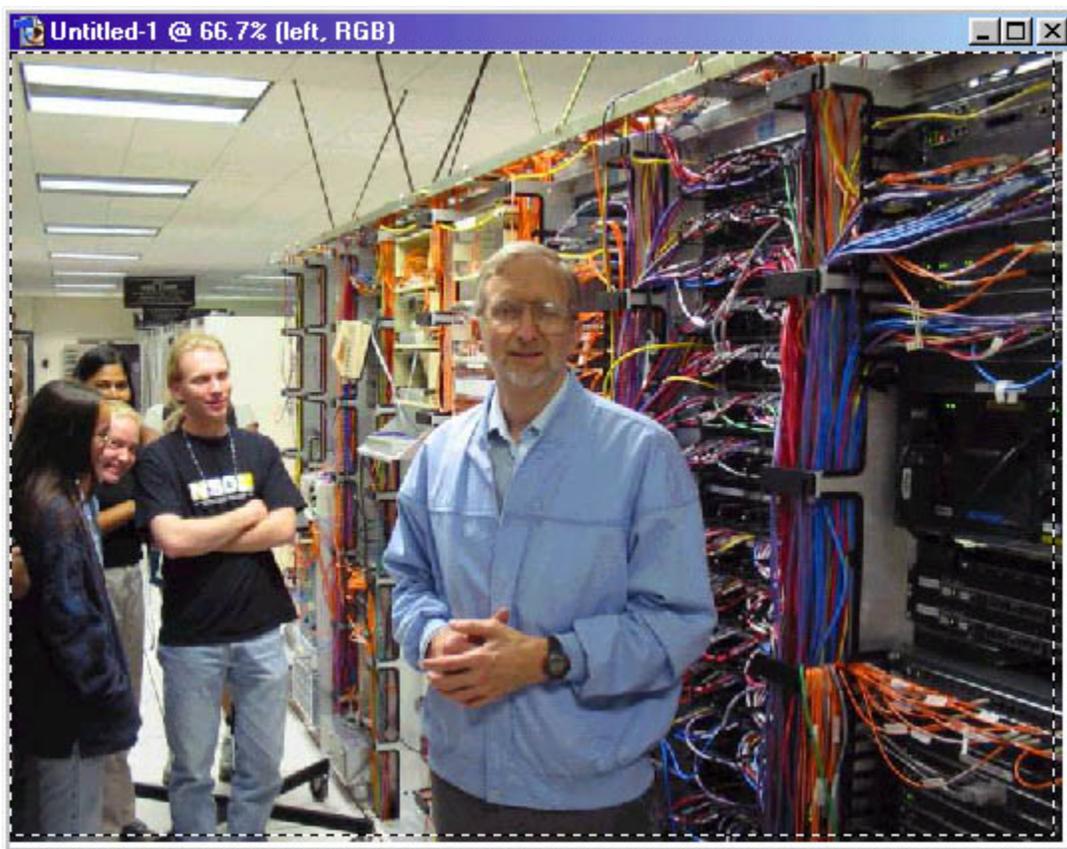
In this case, I'm using the head of the man. You want to use your drag tool:  to move the top image so that the focus of the two images are roughly aligned.



The focus is roughly in the circle (added for emphasis)

You don't want any parts of the image to have information from only one picture, because that hurts the eyes and messes up the symmetry. So the next step is to return the top layer to 100% Opacity.

Step 2.2: Now deselect the eye next to the layer for the bottom image layer . There will be two white borders from where you have moved your image in order to line them up. You need to get rid of these borders. To do this, use the select tool and select the portion of your image that is inside of these white borders.

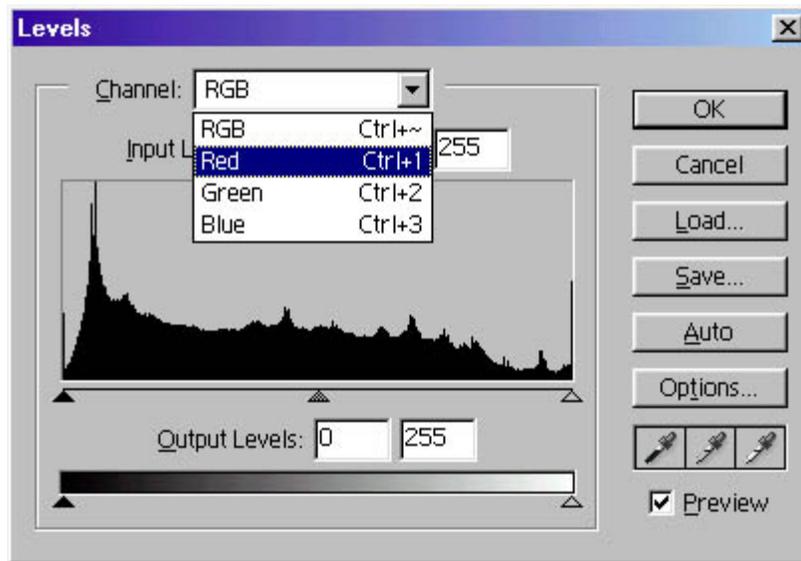


Notice the white boarder on the bottom and right hand side. I've selected a portion of the image that doesn't include this boarder.

Step 2.3: Now go to Edit > Crop. This will resize your image so that both eyes take up the entire field.

## Step 3: Adjust Color Levels to Create Red and Blue Images

Step 3.1: Now it is time to remove the appropriate colors from the left and right eye. Make the bottom layer visible again by clicking on the eye icon next to the layer.  This should make both eyes visible again. Let's start with the right eye. The best way to remember this is Right red. Make sure the right eye image is selected and go to Image > Adjustments > Levels... (Control-L) This will open the following box. Drop down the top menu and select the Red channel (Control-1).



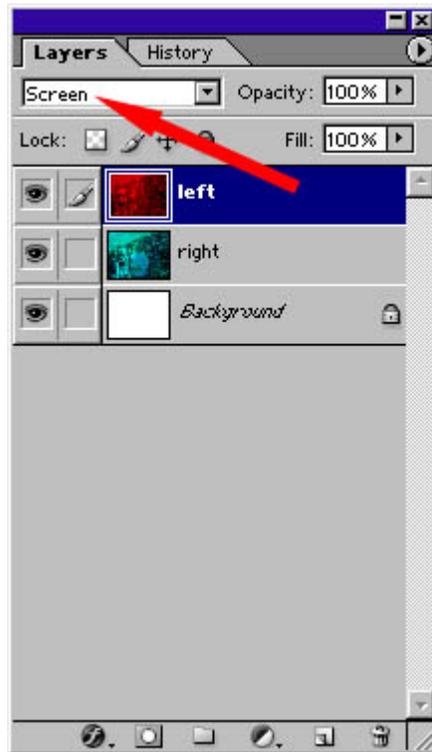
Step 3.2: Now, at the bottom where it says Output Levels (Tab four times to get there): change the 255 to 0 and click OK. This should change your layer to a green-blue color (cyan).

Step 3.3: Now select the left layer. and open the Level... dialog box again (Control-L). Select the Green Layer (Control-2) change the Output Level to 0 (Tab four times). Select the Blue Layer (Control-3) and change the Output Level to 0 (Tab four times). Click OK. This should turn the top layer to bright red. Your layers should now look like this:

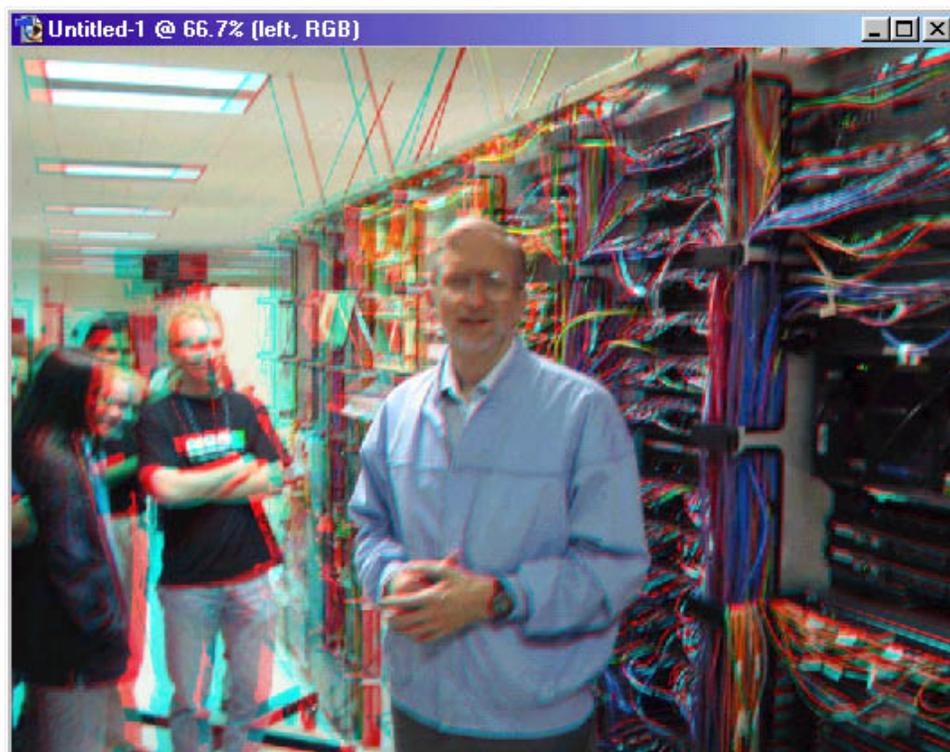


## Step 4: Create a Screened Image

Step 4.1: The final step is to select the top layer (left or right) and in the box where it currently says Normal change it to Screen.



Step 4.2: Go to Save Image As (Control-Shift-S) and save it as a jpeg (or tiff or whatever kind of file you need). Voila! Your own anaglyph image.



That's it. Congratulations! You are now an expert at creating 3D Anaglyph Stereograms! Below are the sequences of keyboard function key commands you can use to perform this task quickly and easily.

## Hot Keys

Open Right Image

Control-A

Control-C

Control-N

Enter

Control-V

(rename layer)

Open Left Image

Control-A

Control-C

Select New Image

Control-V

(rename layer)

Change top transparency to 50%

Move top layer to align focus

Replace 100% opacity for top layer

Make bottom layer invisible

Crop out empty space

Make bottom layer visible

Select Right Layer

Control-L

Control-1

Tab, Tab, Tab, Tab

'0'

OK

Select Left Layer

Control-L

Control-2

Tab, Tab, Tab, Tab

'0'

Control-3

Tab, Tab, Tab, Tab

'0'

OK

Change top layer from Normal to Screen

Control-Shift-S

Filename

Tab

J

Enter