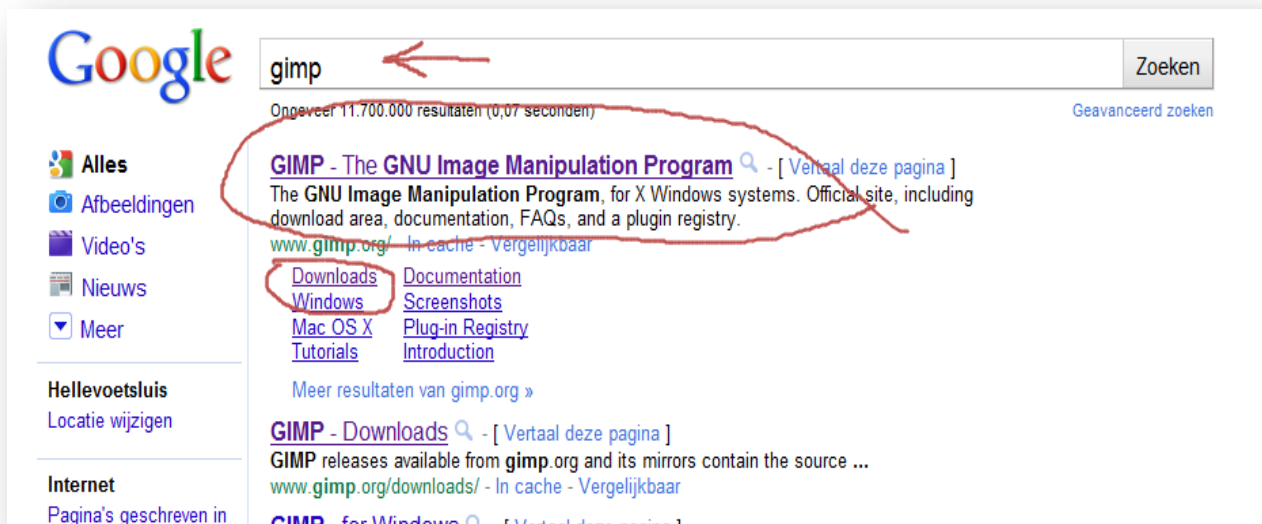
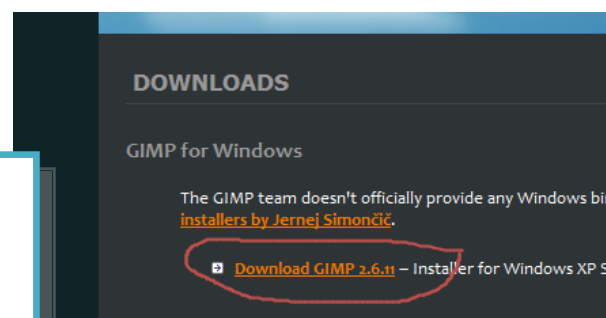
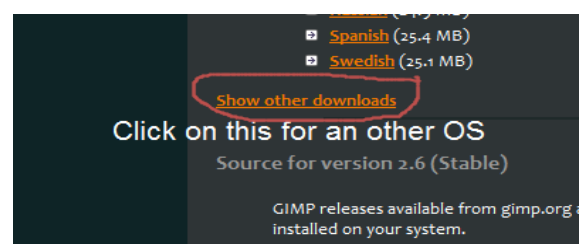
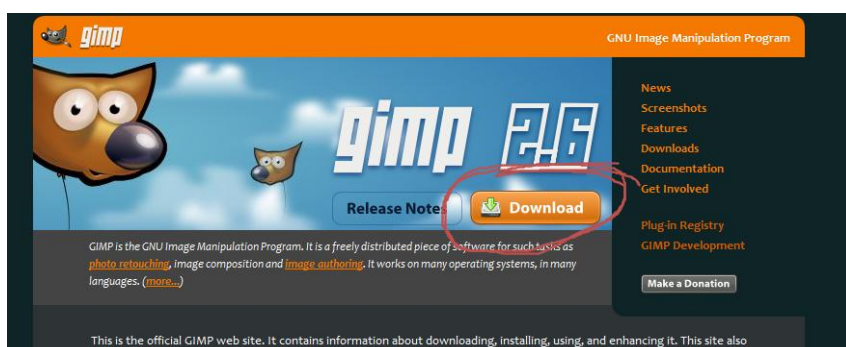


First



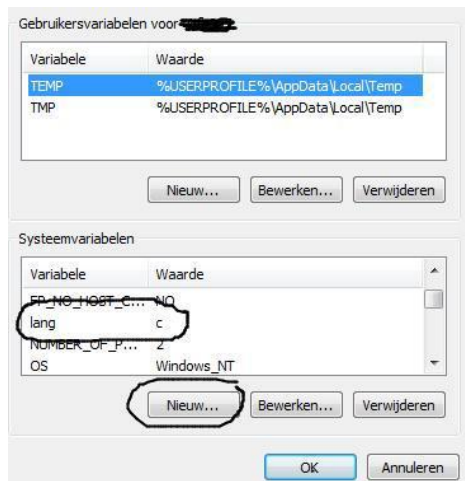
Google **Gimp**, download and install the program. For Windows and Mac OS X users.

Load the English version; it's easier to follow the tutorials that way.



If something is done different using Photoshop I will use this box to tell you how it is done in Photoshop. By the way... Photoshop and Photoshop Elements work the same.

Link: <http://www.gimp.org/> the complete user guide is here <http://docs.gimp.org/2.6/en/>



TIP: If you have downloaded Gimp in a different language; still no problem. There is a very easy way to change Gimp into English and back.

In windows, you should be able to change the language of gtk+ to English by adding a new environment variable 'lang' with a value of 'c'.

Close Gimp if it is running.

(Go to your desktop and Right-click on My Computer -> properties -> Advanced -> Environment Variables)

Click on New (Nieuw is Dutch) and enter the variable **lang** in the first and **c** in the second entry (see figure).

After clicking OK you can start Gimp again and it is in English.

Remove **lang c** and it is in your language again after a re-start.

Make a flat anaglyph.

What we are about to do is making a flat anaglyph. Then we make a deep anaglyph and add some detail, and then we are going to look at some enhancements and tricks with anaglyphs.

Example? OK.

This is me. When I was a baby, way back in June 1960. Many people have pictures like this. It was made by a street photographer going door to door.

Not much detail and a natural sepia color.



Put your glasses on (red/cyan). And look at this one! This is the *flat Anaglyph*. Seeing this, you might understand what I mean by flat. The *whole image* is 3d but the objects like hands and body are not separated from the background. It's not like there is a real baby lying there. Everything just moved into the back a little.



Now this is a real deep 3d anaglyph and as you can see, the hands and body are fully separated.

It is like a real baby on a cushion.

Zoom in and you'll see the difference





All I've done to have this result was making a depth map using a gradient (black/white) and a few solid gray's. Then I've blurred it with the Gaussian Blur Filter. And that's all. Just tracing the image and filling in numbers in a menu. Even if you cannot draw a straight line you can't do anything wrong. It's so very simple.

This depth map was made in about 10 minutes. Of course there can be more detail in it, like the fingers and nose and clothes but you've got the idea now, the rest follows later.

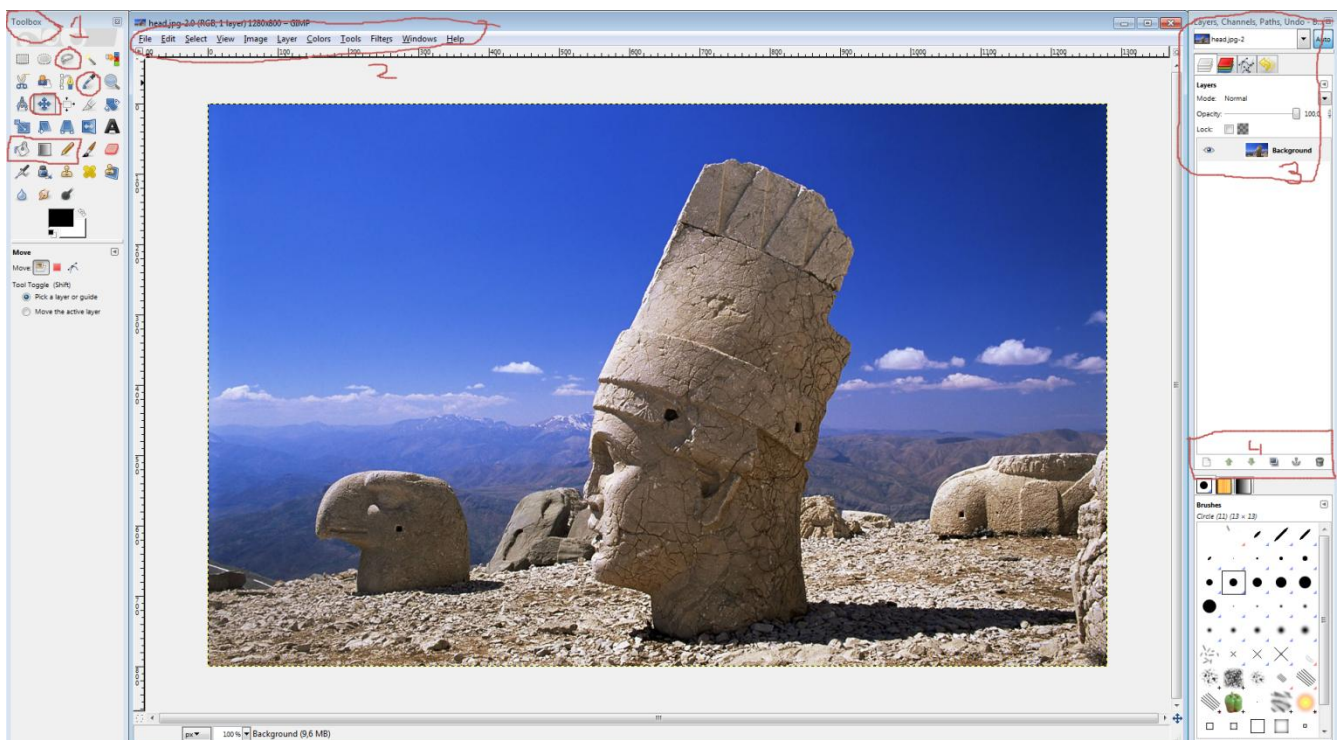
If you also use the images I am using, you can exactly follow me in what I am doing. They are included with the book.

The first image we use is this simple landscape called "head":



Open Gimp by double-clicking on the icon and load the image with <Files><Open> and choose "head"

Your screen should look like this.



Left to right: number 1 is the toolbox. The items we are going to use often are circled in red.

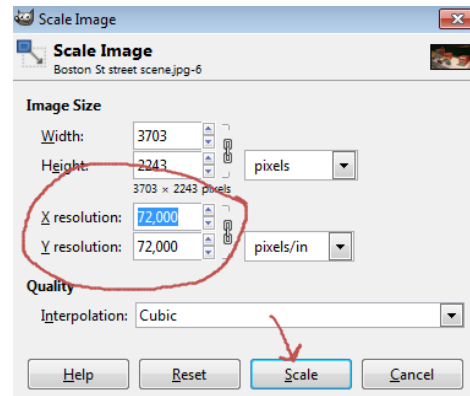
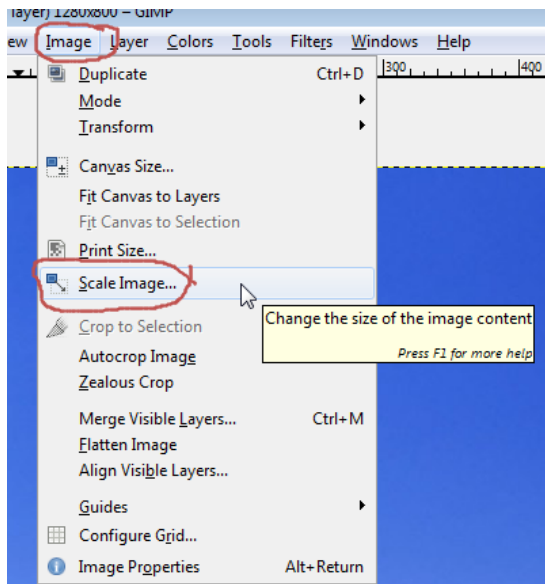
Number 2 is the top menu. We use the <Colors> and the <Filters> a lot.

Number 3 is the layer panel. We are going to work with many layers so keep your eyes focused on this panel.

Number 4 is the layer panel button bar. Here we can make a new layer, travel up and down through all the layers (or we can just click on a layer to select it), duplicate layers, anchors we don't use and the bin is to delete a layer.

What we do now is the base for every anaglyph.

After we opened an image check the resolution, <Image><Scale Image> (**Photoshop:** <image><Image Size>) and this menu comes up. Change 72 DPI to 300 DPI, both x- and y resolution. Click the button <Scale> (**Photoshop:** OK). When we are done, we can always change it back to 72 DPI and save it.



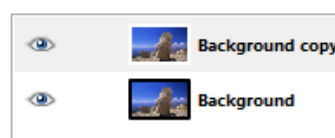
Here you'll see the difference in detail between 72 DPI and 300 DPI. We don't want to see big blocks.



Figure 1

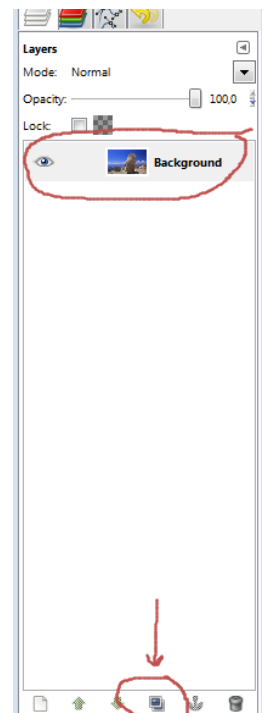
We now have a one image layer but we need two to make a Red *and* a Cyan layer. To do this we duplicate this background layer by clicking on it to select it (it turns to blue), and click on the double image in the bottom of the layer panel.

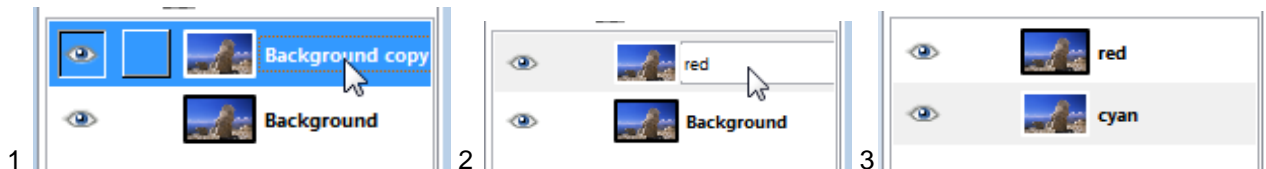
After we've done this we have two identical layers called background and background copy.



To recognize the layers let's rename them to Red and Cyan.

Double-click on the text "Background Copy" (1) and it is selected. Change the name by typing Red (2) and press the enter key to change the name. Do this with the second layer too (3) and call it Cyan.



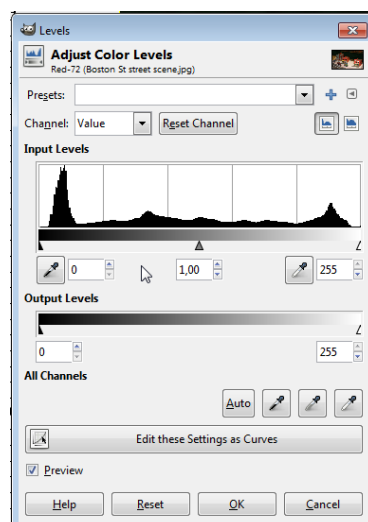
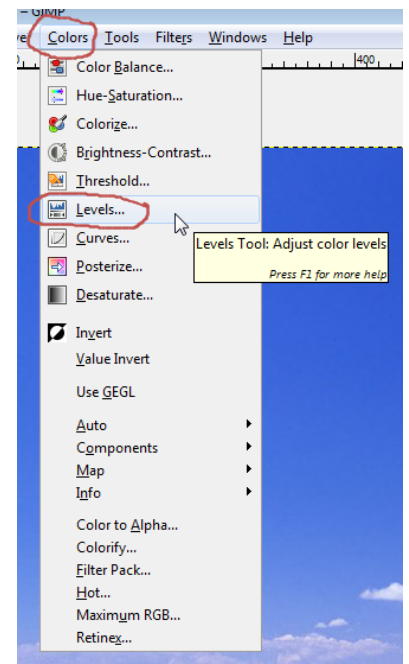
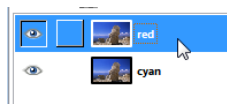


Now we must change the color levels of the layers to make them Red and Cyan.

Click on the Red layer to select it, it changes to blue.

This is the layer we will change.

Go to <Colors><Levels> -->

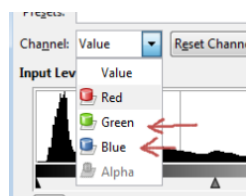


and this menu pops up.--->

For the Red we have to change TWO Channels, for the Cyan just one.

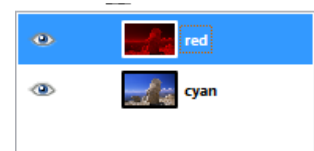
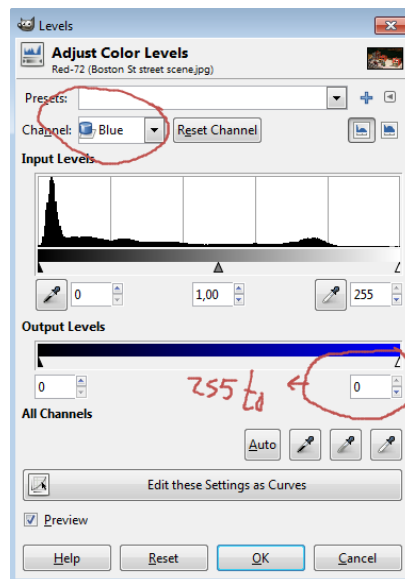
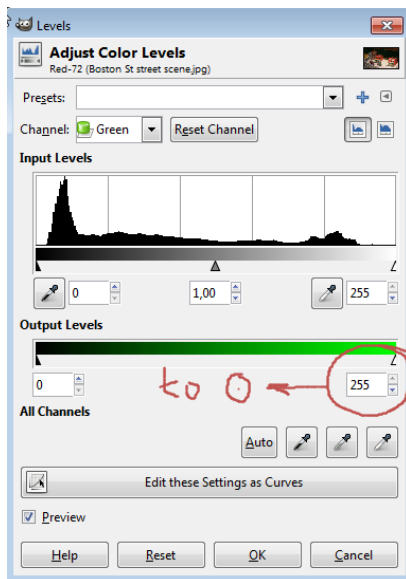
We have the Red selected so we must change the channels Blue and Green to make a Red layer.

Using Photoshop
press *CTRL-L* to
access the *Adjust*
Color Levels
menu.

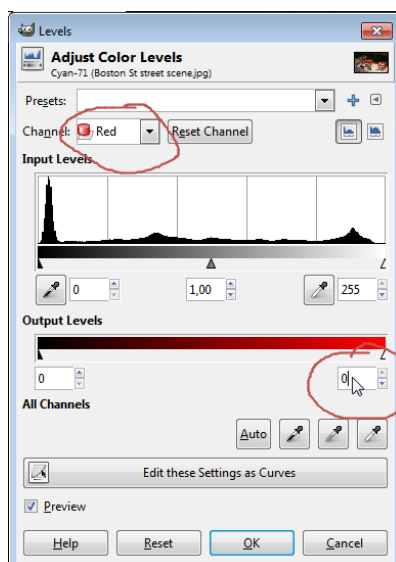
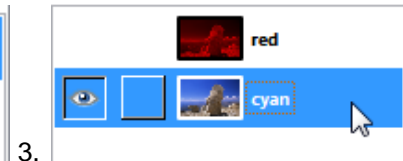
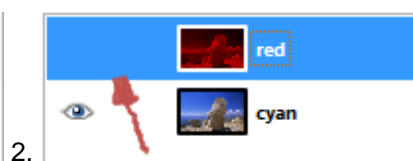
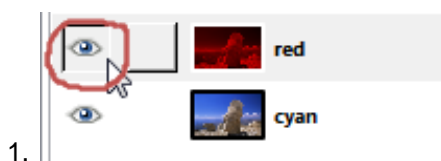


Click on the pull down menu next to the word Channel and click on Green.

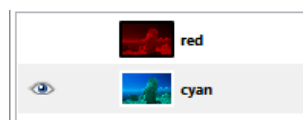
In this menu we change the Output Levels from 255 to 0 (zero). Don't click on OK yet! We must change the Blue too. Click on Channel again and choose Blue. Do the same as in the Green. Change Output Levels from 255 to 0. Now we can click OK and the layer is red.



To change the next layer to Cyan and make it visible, click on the little eye on the red layer (1). This makes the layer invisible and we can see the layer underneath it (2). The one called Cyan. Select this layer (3).

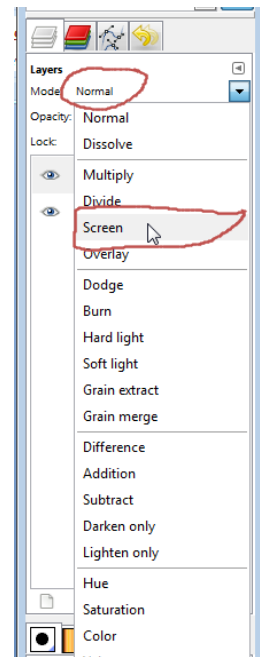
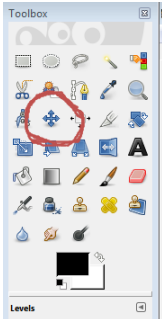


Got to <Colors><Levels> (**Photoshop:** press CTRL-L) again and in Channels choose the Red channel. Change 255 in the output levels to 0, like we did with the Green and Blue and, because we don't have to change anything else, click OK and the layer is Cyan.



Click on the (invisible) eye on the red layer to make it visible again and in order to get the original colors back, we need to do one thing. Select the Red layer by clicking on it and change the Mode of the layer from Normal to Screen. If we look at the image it has normal colors again.

With the red layer selected choose the Move tool from the toolbox (four arrows).



Put on your glasses, we are going to dive...

Click anywhere on the image using the Move tool, hold the mouse button and drag the layer a little bit to the left until it is still comfortable for the eyes. Don't go too far, just a few pixels to the left. And if you have the glasses on, you'll see the image not moving to the left but BACK into space. Like this:



And we just made a flat 3D anaglyph. That was easy, don't you think? Save it to your hard disk and that is all.

Just like the first baby picture. But we really want the second, right? Separation. It still looks a bit flat.

In the next chapter I'll show you the way to make a deep anaglyph but before you go on to the next chapter it might be wise to practice the procedure to make some flat anaglyphs. Changing the output levels is something we do at every image so this is the very basic you have to learn to do.