TUTORIAL on
ANAGLYPHIC STEREOSCOPIC ANIMATION
in ADOBE AFTER EFFECTS

For this tutorial, we’ll be compositing several irregularly shaped two-dimensional elements into a three-dimensional stereoscopic workspace. Your elements can either be still images, in which case you should create alpha channel for each one in Photoshop (fig 1), or QuickTime movies (fig 2), as this tutorial describes, for which we’ll be using an additive mode to composite our layers.

Start After Effects, and create a new project. Create a new composition, with Width and Height set to 320 x 240 (fig 3).

Import your elements (movies or pictures). Drag them to the Timeline. Arrange them so that the element that will be closest is on top.

Add a new Solid Layer (fig 4). Open up Solid Settings and change the color to black, rename the solid ‘black background’.

Add two more Solid Layers, set the colors to red (255 0 0, fig 5) and cyan (0 255 255), and name them ‘red filter’ and ‘cyan filter’, respectively.

Arrange your layers so that the cyan and red layers are on top in the Timeline, and the black layer is on the bottom.

Set the Transfer Mode of the cyan and red layers to Darken (fig 6).

In the Timeline, toggle the Eye icons for the cyan and red layers to off, so that you can see your pictorial elements clearly.
Set the Transfer Mode of your three pictorial elements to Screen, using Layer/Transfer Mode, or by selecting Screen from the Modes display in the Timeline (fig 7).

Turn on 3D Layer for each of the pictorial elements, using Layer/3D Layer (fig 8), or by toggling the button in the Switches display in the Timeline (fig 9).

Now create two new Cameras, using Layer/New/Camera (fig 10).

In the Camera Settings dialog, select the 28mm preset (fig 11), and name them Camera_Left and Camera_Right.

On the Timeline, click on Switches/Modes to toggle between the two settings. Your Timeline should look like fig 12 when set to Modes, and fig 13 when set to Switches.

If you look at the settings for your cameras (in the Timeline Camera Name/Transform/Position, fig 14), you will see that the camera’s z position (which represents its distance from the picture plane) is -248.9.

Also, if you look back at the ‘Camera Settings’ dialogue, you will see that the ‘Angle of View’ for the cameras is 65.47.

We now have all the information we need to calculate our maximum positive and negative parallax values.

First we’ll need to enter our known values. For ‘Distance from Camera to Screen Plane’, enter 248.9. For ‘Camera Field of View’ enter 65.47. For ‘Width of Final Image’ enter 320.

Now we can play with the other three values (‘Distance Between Left and Right Cameras’, ‘Distance from Camera to Nearest Object’, and ‘Distance from Camera to Farthest Object’) until we have the desired amount of parallax (under ‘Final Image Parallax’).

I decided I wanted about 1/4 inch of negative parallax (in front of the screen), and about 1/8 inch of positive parallax (behind the screen). Looking at a 320 x 240 QuickTime on my Powerbook at Double Size, 1/4 inch is about 10 pixels and 1/8 inch is about 5 pixels. I found that with an inter-camera distance of 10, I could get the parallax values I wanted by setting my near distance to 124 and my far distance to 496.

The calculator also tells me that I will have to slide my left and right views 5 pixels in their respective direction to set the screen plane.

We have decided on an inter-camera distance of 10, so back in After Effects, we need to offset each of our cameras by 5 pixels. In the Timeline, under each camera’s Transform, offset the x values of ‘Point of Interest’ and ‘Position’ by 5 pixels, leftward for the left camera and rightward for the right (fig 16) and 17).

Next, we set the z values of our near and far objects, under each object’s Transform. The z value of the nearest object should be set to 124 (fig 18), and the z value of the farthest object should be set to 496 (fig 19). At this point, you can now animate your composition in any way you want (using keyframes for the various transform values, for instance), always making sure to stay within your near and far values.
Using the eye icons at the left of the Timeline, toggle the ‘Camera Right’ and ‘Cyan Filter’ layers off, and the ‘Camera Left’ and ‘Red Filter’ layers on (fig 20). When you toggle the right camera off and on, you should see your view of the composition change between the right and the left camera, because After Effects always uses the viewpoint of the topmost active camera.

Select your composition in the Project window.

Select Edit/Duplicate (or Cmd-D) (fig 21). This creates a copy of your composition in its current state. Rename the copy ‘left comp’.

Select your main composition in the Timeline again. Toggle the ‘Camera Right’ and ‘Cyan Filter’ layers on, and toggle the ‘Camera Left’ and ‘Red Filter’ layers off (fig 22).

Again, select Edit/Duplicate to create a copy of your main composition in its current state. Rename this copy ‘right comp’.

Now create a new empty composition (Composition/New Composition). Name it ‘stereo comp’. Drag ‘comp left’ and ‘comp right’ into the new composition’s Timeline (fig 23).

Set the Transfer Mode of the topmost layer to ‘Lighten’ (fig 24). You should now see an anaglyph image in the Composition Window.

Finally, move the ‘left comp’ layer 5 pixels to the left (fig 25), and the ‘right comp’ layer 5 pixels to the right (fig 25).

You’re now all set to preview and render your animation!

To make any changes to your animation, delete ‘left comp’, ‘right comp’ and ‘stereo comp’. Make any and all modifications, changes, tweaks and improvements to your main composition, then follow the instructions on this page again to create new left, right and stereo comps.

Repeat as necessary.