HBA PHOTOGRAPHIC STUDIES

Parallax, Anaglyphs, & 3D Photography

Scripture for Meditation:

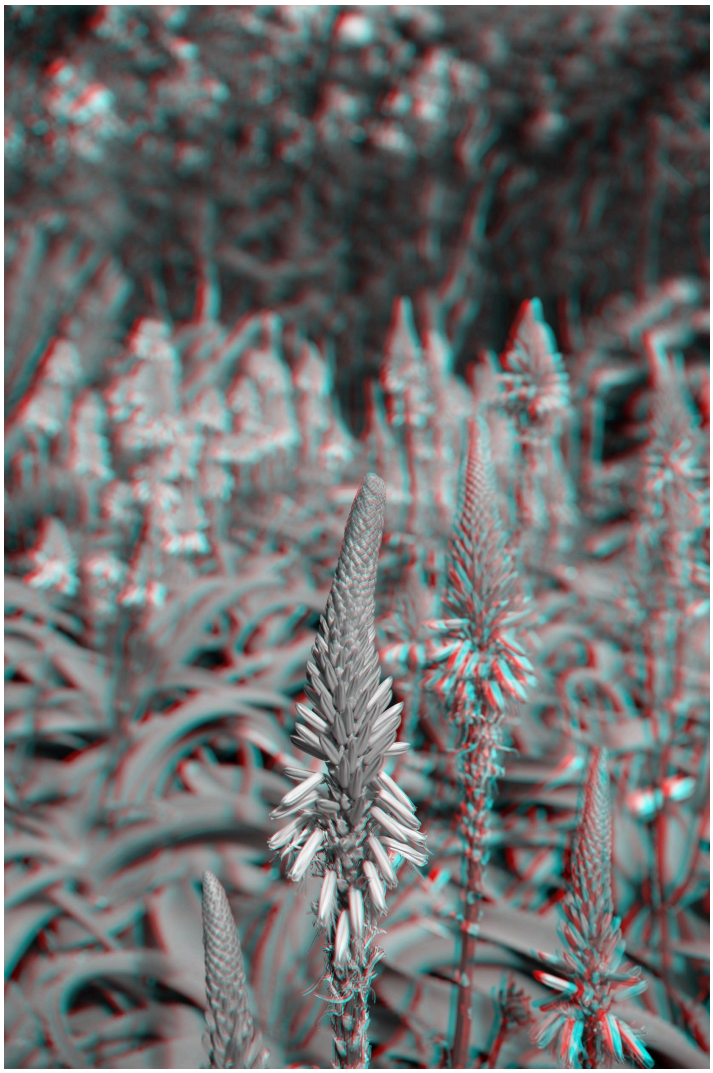
The hearing ear and the seeing eye,
The Lord has made both of them.

Proverbs 20:12 (NASB)

Description: The purpose of this assignment is to demonstrate how parallax & color canceling properties of light can be used to create 3D pictures. View the sample image to get an idea of how your final picture will look. Also view the slideshow linked here.

Assessment: Your photo will be assessed using the Photography Rubric.

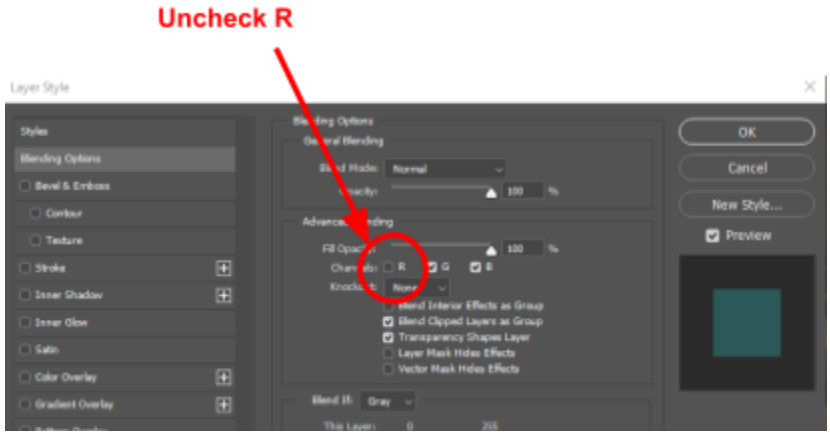
Sample Image:



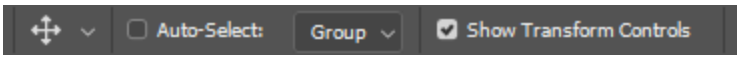
Procedure:

1. Find a subject that you think would be interesting seeing in 3D
2. If possible shoot in Raw.
3. Set your lens to somewhere within a wide - normal lens focal length (no more than 35mm for a crop sensor or 50mm for a full frame sensor. If you are not sure what sensor your camera has, use the widest focal length your lens has, i.e. the lowest number of millimeters).
4. If available, set your ISO to Auto
5. Set your camera in aperture priority.
6. Set your aperture to one of the following depending upon how much light you have f/4, f/5.6, f/8, or f/11
7. Take one photo of your desired subject (This will be the Left “eye” image.)
8. Move the camera to the right and take another picture of the same subject. Do not rotate your camera, or change your lens, just move laterally.
    a. The closer the foreground elements to the camera the less you should move the camera. For very close elements do not move the camera more than ⅛ - ¼ inch.
    b. The further the elements are to your camera the more you can move the camera left or right. Do not move it any more than 2 ½ inches
    c. This will be the right “eye” image.
9. Go to a computer.
10. Upload both images to the computer.
11. Rename the images with the “eye” that was seeing the scene, but do not delete the file extension. (The first image you made will be Left, the second Right.)
12. Open Adobe Photoshop.
13. Go to File>Open
14. In the window that opens, select both the Left and Right images.
15. If you shot in Raw, Camera Raw will open and both images will be in the carousel at the bottom. (If you didn’t shoot in Raw continue to step 19.)
16. Hold shift on the keyboard and make sure that both images are selected in the carousel.
17. With both images selected make the necessary adjustments using Camera Raw, and be sure to “Remove chromatic aberration” in the Optics section.
18. Click Open in the bottom right corner.
19. Both images will open.
20. Make sure that the Right image is the active window or tab.
21. Go to Select>All
22. Go to Edit>Copy
23. Close the Right image, and if Photoshop asks you to save changes click No.
24. With the Left image as the active window click Edit>Paste
25. Your file will now have 2 layers in it.
26. Double click the name Layer 1 in the Layers palette and change the name to Right.
27. Click the lock next to the layer titled Background and the layer will become Layer 0.
28. Double click the layer named Layer 0 and rename it as Left.
29. Double click the Right layer in the Layers window (do not double click the title of the layer, but the thumbnail image of the layer.)

30. In the Layer Style window that pops up, under the Heading Advanced Blending the Channels are listed; uncheck the Red (R) box



31. Click OK
32. Put on red/cyan glasses (the red lens should be on the left and the right lens on the right). The combined image should look somewhat 3D with things in the foreground appearing closer and things in the background appearing further away.
33. If what you created looks somewhat 3D but what was in the foreground of the scene seems to be further and what is in the background seems to be closer, put your 3D glasses on backward (red on the right and cyan on the left). If the image looks more properly 3D it is because you accidentally go the layer order mixed up. To fix this:
    a. Double click the thumbnail of the top layer.
    b. Recheck the R channel box, and click OK.
    c. Drag the bottom layer above the top layer.
    d. Double click the thumbnail of the new top layer.
    e. Uncheck the R channel box, and click OK.
34. Select the Move tool 
35. Be sure that Auto-Select box is unchecked, and the Show Transform Controls box is checked.



36. Using the Move tool, move the Right layer so that the red & cyan ghost images *in the background* align.
    a. If the alignment seems crooked you may need to rotate the top image using the Move Tool and hovering the mouse near a corner. This will give you the ability to rotate the image.
    b. If you use the arrow keys on the keyboard you will have the ability to make finer adjustments to image placement.
37. What happens to the depth of the picture if you align what is in the background?
38. Repeat step 25 but this time, move the Right layer so that the red & cyan ghost images *in the foreground* align
39. What happens if you align what is in the foreground?
40. Move the top layer where the 3D effect looks best (whether you align, background, foreground, or somewhere in between).
41. If the scene you photographed has a lot of red or yellow and strains your eyes to look at, it is best to convert the layers to black and white using steps 42-47. If not proceed to step 48.
42. Select the Right layer.
43. Go to Image>Adjustments>Black & White
44. Click okay in the box that opens without making any changes
45. Select the Left layer in the layers palette.
46. Go to Image>Adjustments>Black & White

47. Click okay in the box that opens without making any changes
48. Double check your image alignment and be sure that the image has the 3D effect that you want.
49. Select the Crop tool. 
50. Crop the image to get rid of any areas that don't have image overlap or the areas that you don't want. (Be sure to uncheck the box that says Delete Cropped Pixels, in case you want to make changes later.)

51. Go to File>Save As (This step will save the image as a Photoshop file that still retains the layers.)
52. Name the File Your First and Last Name 3D, (i.e. John Smith 3D)
53. Click Save.
54. If the Maximize Compatibility box opens click OK.
55. Go to File>Save a Copy (This step will save a copy of the image that is more sharable with others.)
56. In the Save as Format dropdown menu select JPEG
57. Click Save
58. Set the quality settings to 12.
59. Repeat the process for your other anaglyph images.
60. Upload the Jpeg images to the Google Classroom assignment.
61. Upload the Jpeg images to your Lightroom Portfolio album.
62. The Google Classroom also has a slideshow on it that has other student anaglyphs from this school year. This slideshow will be shown at HBAAFF. Add your Jpeg images to a blank slide and add your name to the slide.
63. Respond to the following reflection questions.
    a. What is fascinating about human sight?

    b. Compare and contrast the complexity of a camera to human sight.

    c. What was challenging about this project?

    d. In your own words, explain how parallax and the color canceling properties of light create images that appear to be 3D?

    e. Respond to the following questions.
        i. Read Proverbs 20:12 above, how do you think this verse connects to questions a & b above?

        ii. What questions do you have for God?

        iii. Have you ever considered getting to know God? Why or why not?