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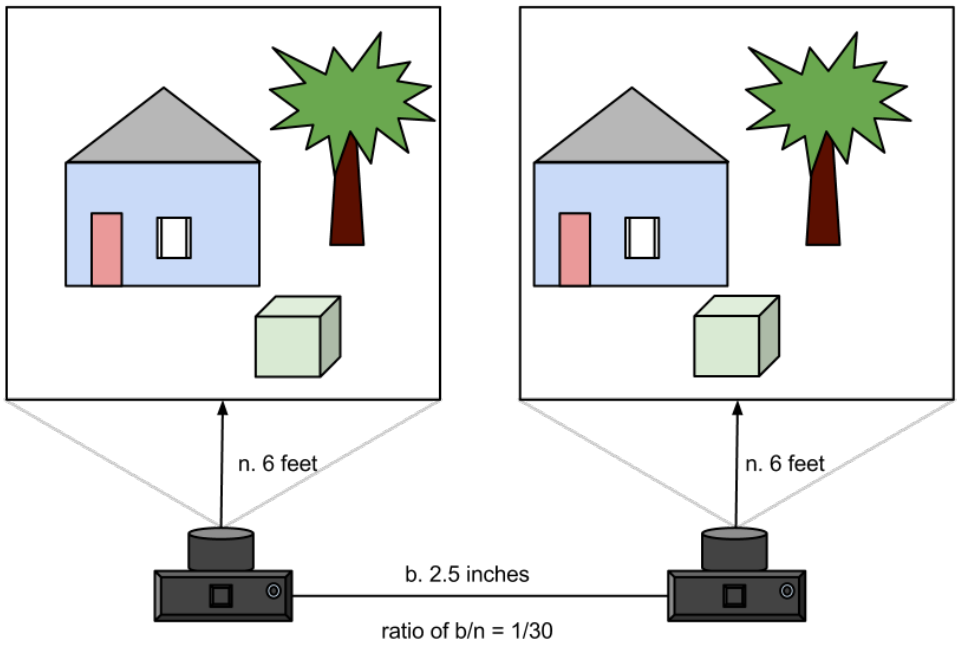
10/16/2012

3D Stereoscopic Photography Basics

1. Positioning and Taking Stereo Pairs
    a. 1/30th ratio: distance between left and right image pair should be 1/30 distance to closest object in frame, or 2° of rotation
    b. Relationship between human vision and stereo pairs; left eye sees a slightly different view than right eye; brain fuses image and position of eyes for depth
    c. Cha-Cha method: take Left photo, shift body to right, take Right photo.
    d. Two eye method: look through viewfinder with left eye and take photo, move camera to right eye and take photo.
    e. Two camera method: mount two identical cameras horizontally, take two photos
    f. Keep the camera in the same vertical plane and at the same horizontal height
    g. Objects between 30 and 1000 times baseline b will show depth effect (i.e. 6'-200')
    h. Increase baseline to compress distance and increase depth with distant objects



2. Composition
    a. Maximum depth of field required; sharp focus from front to back
    b. Choose objects at different distances for maximum effect
    c. Leave left margin in Left image for pair cropping
    d. Any objects that will break the stereo window must remain within the frame
    e. Eliminate movement of subject between taking the photo pair
    f. Use low ISO to minimize noise

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3. Image Adjustment
    a. Use preferred image editor to adjust color, exposure, horizon, and cropping
    b. Pre-cropping left margin in Left image and right margin in Right image can produce better final product after alignment
    c. Picking the plane of the stereo window equivalent to Left-Right alignment plane
    d. StereoPhoto Maker

        i. Automatic Alignment gives good results, but you may want to adjust the stereo window for a pop effect, or crop the subsequent set to remove near objects which don't resolve properly
        ii. Active Stereo setting requires 3D video cards and displays
        iii. Color Anaglyph display offers Dubois algorithm (fix images with bright red objects) and Ghost-reduced algorithm (reduce red/blue artifacts against bright backgrounds)
        iv. Will output image based on current display mode
        v. Can output jpg, jps, mpo, 'wiggle' gif, lenticular jpg

4. Viewing Stereoscopic Images
    a. Anaglyph - red/blue glasses used, inexpensive, printable, full resolution, loss of color information (books, websites, magazines)
    b. Active/Passive stereo display - special glasses used, expensive, full resolution, full color, uses electronics (3D TVs, PCs, Blu-Ray)
    c. Lenticular screen - plastic lens, moderate priced, 1/2 to 1/10 resolution (or more), full color, printable, requires more images (posters, fast food ads, souvenirs)
5. Appendix
    a. StereoPhoto Maker http://stereo.jpn.org/eng/stphmkr/ (Windows)
    b. Stereoscopic Slide Maker http://www.thebox.myzen.co.uk/Steroscopic_Site/Software.html (Mac)
    c. Waack, Fritz G. "Stereo Photography." *Stereoscopy.com*. http://www.stereoscopy.com/library/waack-contents.html, 1985. Web. 10/13/2012.
    d. Harry Potter Lenticular Image http://www.snapily.com/blog/wp-content/uploads/2012/09/HP7A-Acrylic-Lenticular.gif
    e. New York City Lenticular Image http://www.ny3d.org/paj01sm.gif