Callipygian 3D

3D Photo Editing Software
Version 2.0

User Guide
September 10, 2003

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Questions? Contact us at rasw@callipygian.com. Put the word "anaglyph" in subject line.

Introduction

This document describes CALLIPYGIAN 3D Photo Editing Software. (The software comes with no warranties, expressed or implied.). This software facilitates the editing of a stereo view pair so that anaglyphs and Holmes Stereo Cards of several different styles and renderings can be produced

System Requirements

This software, developed using the latest .NET technologies from Microsoft, has been developed and tested for Windows XP, with at least Service Pack 1. While it may run on other versions of Windows, it has not been tested in these environments, and we are unable to support them.

If you're dealing with large images, having more memory helps.

You'll need an accurate color display (some early LCD displays may prove problematic), RED/CYAN anaglyph "3D" glasses to view 3D images, and/or a Holmes stereo card viewer to look at stereo cards.

Installation

If you have a previous version of Callipygian 3D installed, go to Add/Remove programs (control panel) and uninstall it.

Download the .msi file from http://www.callpygian.com/3D/ . If you're not running Windows XP, you may need to go to http://windowsupdate.microsoft.com/ and get the "Microsoft Installer"

Figure 1 – Installer Window

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If you see a message saying that you need to install the .NET frameworks, then you're trying to install this software on a PC with an operating system other than the latest Windows XP with Service Pack 1. If you wish to proceed at your own risk, you can get the correct frameworks at http://windowsupdate.microsoft.com/

Using Callipygian 3D to make Anaglyph Images

After installing the program, start it up by looking for "Callipygian3D" on your start menu, or going to the directory where you installed it.

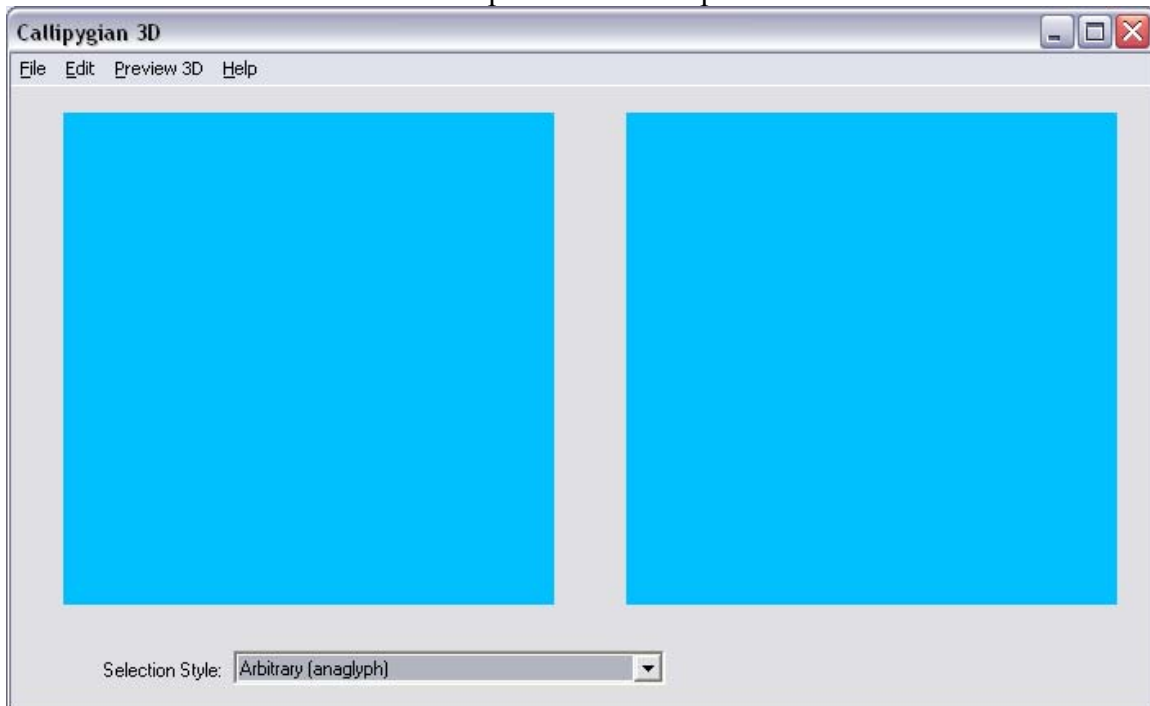The main screen consists of two blue panels and a simple menu.

Figure 2 – Main Screen

The panel on the left represents the left image of the stereo pair, and the panel on the right represents the right image. On the bottom you can choose the selection style. For anaglyph images (red/cyan) leave it as "Arbitrary"

Step 1 – Load the images

Open a stereo pair using either the File->Open menu or by dragging and dropping the left and right images onto the appropriate blue region for the image.

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If you accidentally loaded the images reversed left-for-right, use the Edit->Swap Left And Right menu to swap the images.

The images don't have to be the same size, but they need to be the same resolution. For example, if you scanned two slide halves from a Realist 35MM film, and have cropped them to slightly different dimensions, it's OK to load them in because they were scanned at the same resolution. Callipygian 3D will scale the images inside a common bounding box.

If you want, you can drag images onto the blue panels directly from Microsoft Internet Explorer.
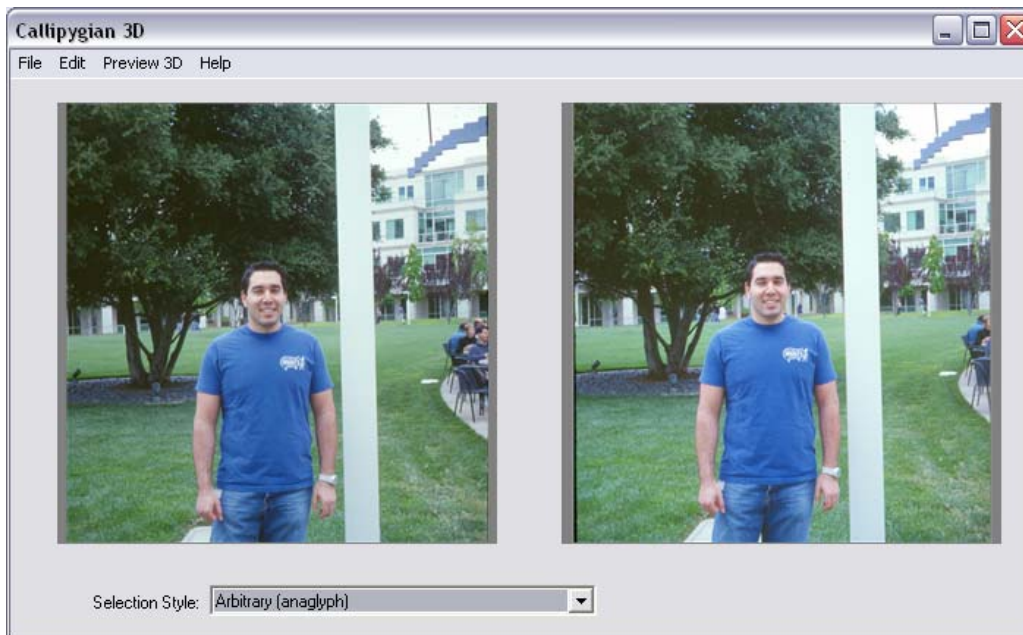

Figure 3 – Left and right images loaded in

Step 2 – Select your region of interest

Use your mouse on the LEFT image to select the boundary rectangle of your region of interest. The RIGHT image will automatically get the same bounding rectangle.

Sometimes, depending on how the images were cropped after being scanned, the position of the bounding box on the right hand side needs adjustment for a proper stereo window. **In this view, we're only worried about course adjustment; you'll be able to do fine (per-pixel) adjustment later.**

Move the mouse inside the bounding box on the RIGHT image, and click-drag to reposition this rectangle to the appropriate position

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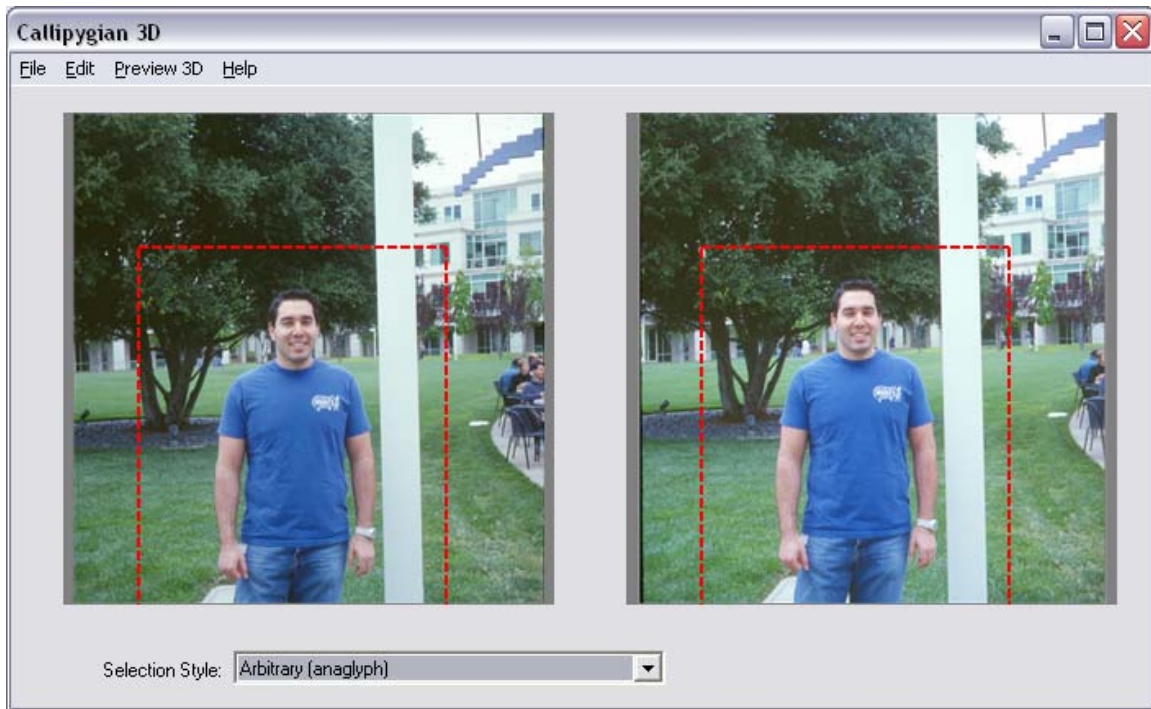
Figure 4 -- Bounding box on left and corresponding box on right. Note that right bounding box isn't necessarily in the correct place for our stereo window.
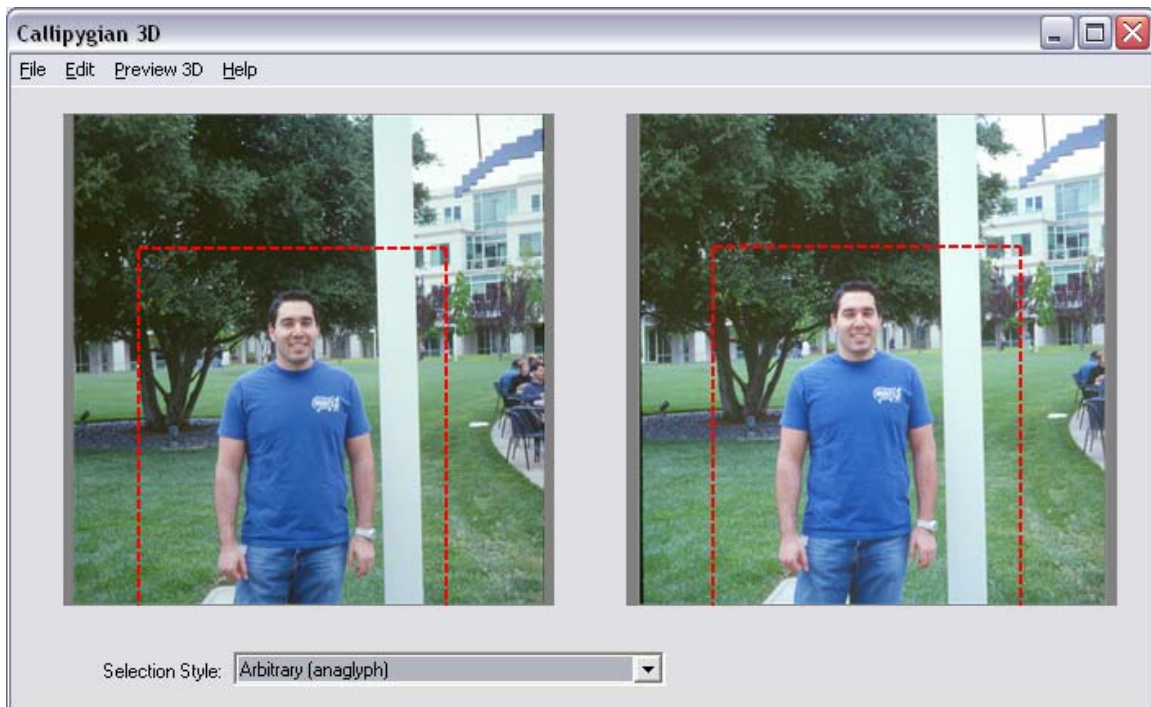

Figure 5 – Right hand-size bounding box repositioned by moving mouse inside rectangle and click-dragging

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Step 3 – View 3D Preview and make fine adjustments

Select **View3D -> Anaglyph** from the main menu and a "Color Anaglyph View" appears.

Fine tune this view by using the sliders on top right and bottom right., The slider will move the RIGHT view over the left in the corresponding direction.

Figure 5 – Anaglyph View preview window

Step 4 – Saving your 3D Image

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Note that this image is scaled down to "Screen Resolution". **When you save your image, it will be regenerated at the original image resolution.**

Select File->Save 3D View from the main application window, and save your image. The generated image will be trimmed to include only the intersection of the two overlapping left and right images.
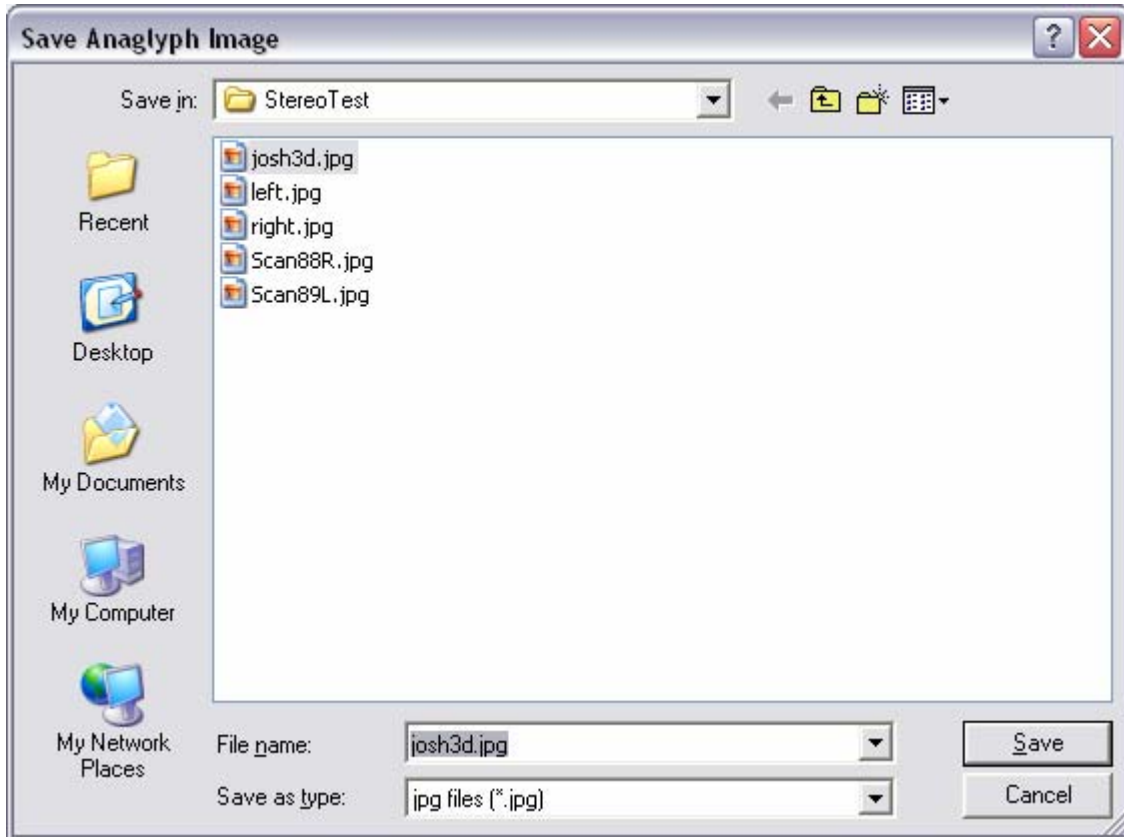

Figure 6 – Saving your anaglyph image.

This image will be saved as an ordinary JPEG file, at the same quality setting as your original image. If you need to scale it down or crop it for publication, use your favorite (2D) image editor. (Figure 7.)
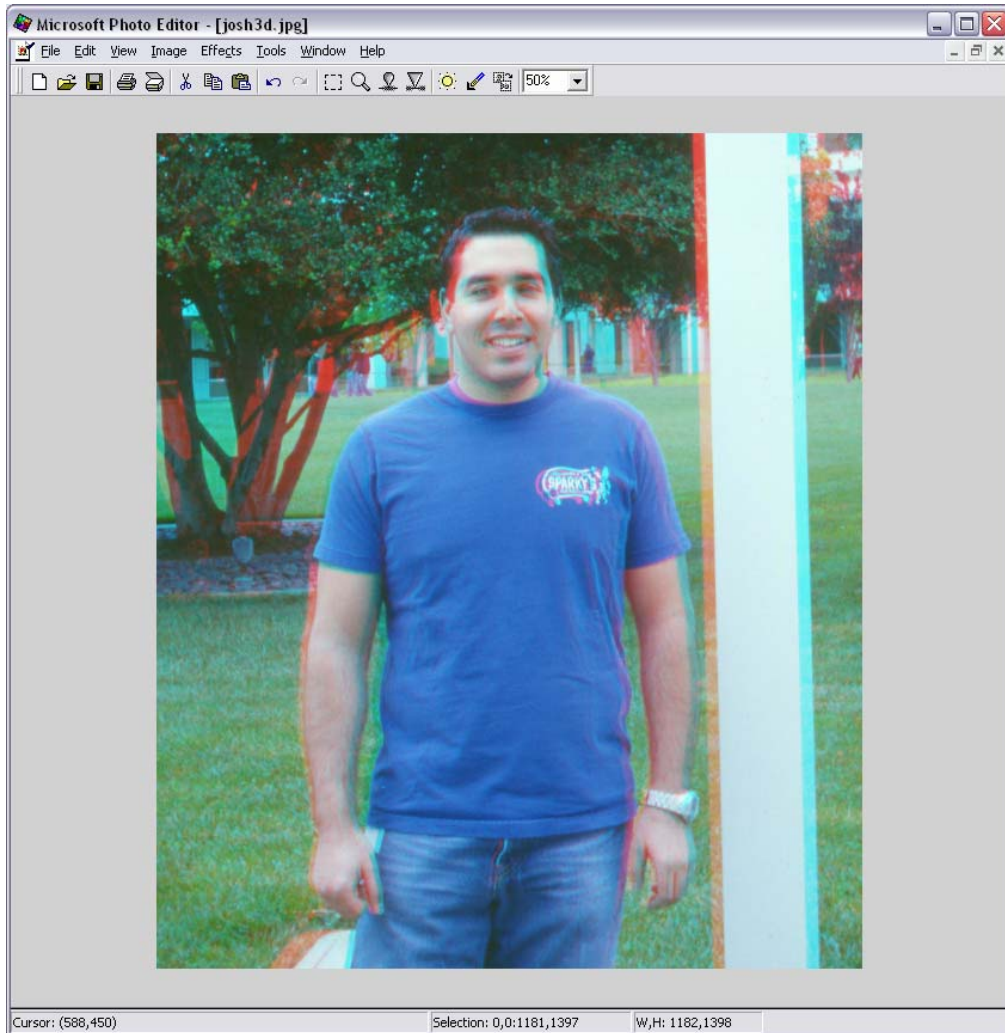
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Figure 7– Image displayed as full-color anaglyph in Microsoft Windows Picture Viewer.

Anaglyph Generation Modes

The Anaglyph View Preview Window (Figure 6), has a drop-down box on the lower left to select the Anaglyph Generation modes:

- Red Cyan Full Color
  - Default mode that takes the Red component from the Left image, and the Cyan component from the Right Image
- Red Cyan Tweaked Color
  - Similar to above, but with primary colors (R, G, B) desaturated to reduce retinal rilvalry.
- Red Cyan Graysale Red
  - The left channel is converted to Grayscale using the NTSC weights, and mapped to the red channel. This makes an easier-to-see 3D image, at the expense of color fidelity.
- Red Cyan Black White

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- o Both Left and Right are converted to Grayscale. This makes an easy-to-see 3D image, but with no color information
- Green Magenta Full Color
  - o Uses Green/Magenta instead of Red/Cyan. For LCD projectors viewed with polarized glasses.
- Magenta Green Full Color
  - o Uses Magenta/Green instead of Red/Cyan
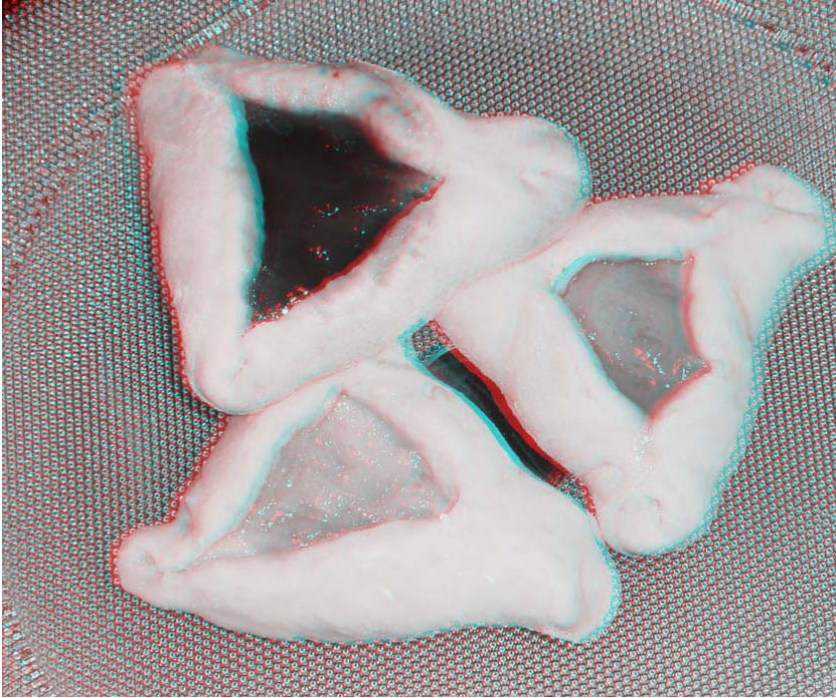
Examples:

Red Cyan Full Color

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Red Cyan Tweaked

Red Cyan Gray Red

Red Cyan Black and White

Magenta Green Full Color

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Using Callipygian 3D to make Holmes Stereo Cards

A *Holmes Stereo Card* is a 3D format developed by Oliver Wendall Holmes. It consists of a 3.5" x 7" card which is meant to be inserted into a special optical viewer.

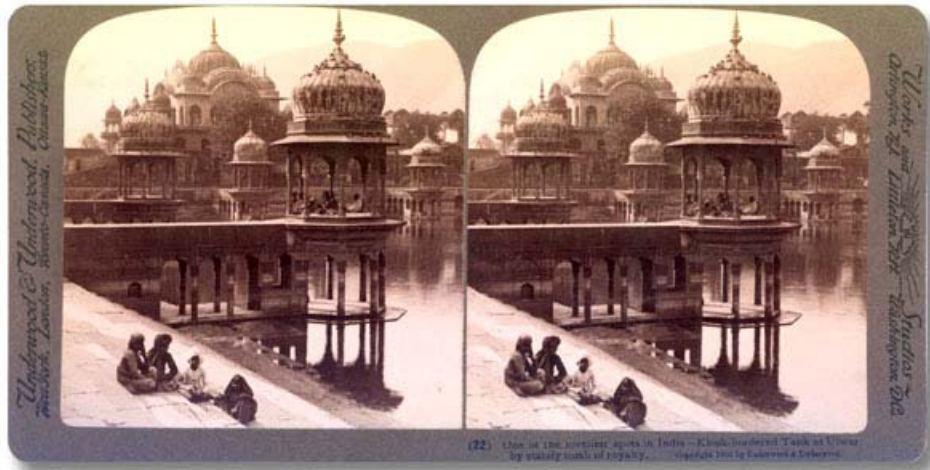**Figure 7 – A Holmes Stereo Card viewer**

Figure 8- Antique Stereo Card with a scene of Italy

You can use Callipygian 3D to make your own modern stereo cards, and print the cards out on your photo printer.

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Making Stereo Cards

Since stereo cards, unlike anaglyph images, have to conform to a certain layout, the crop selection for the images has to be constrained.
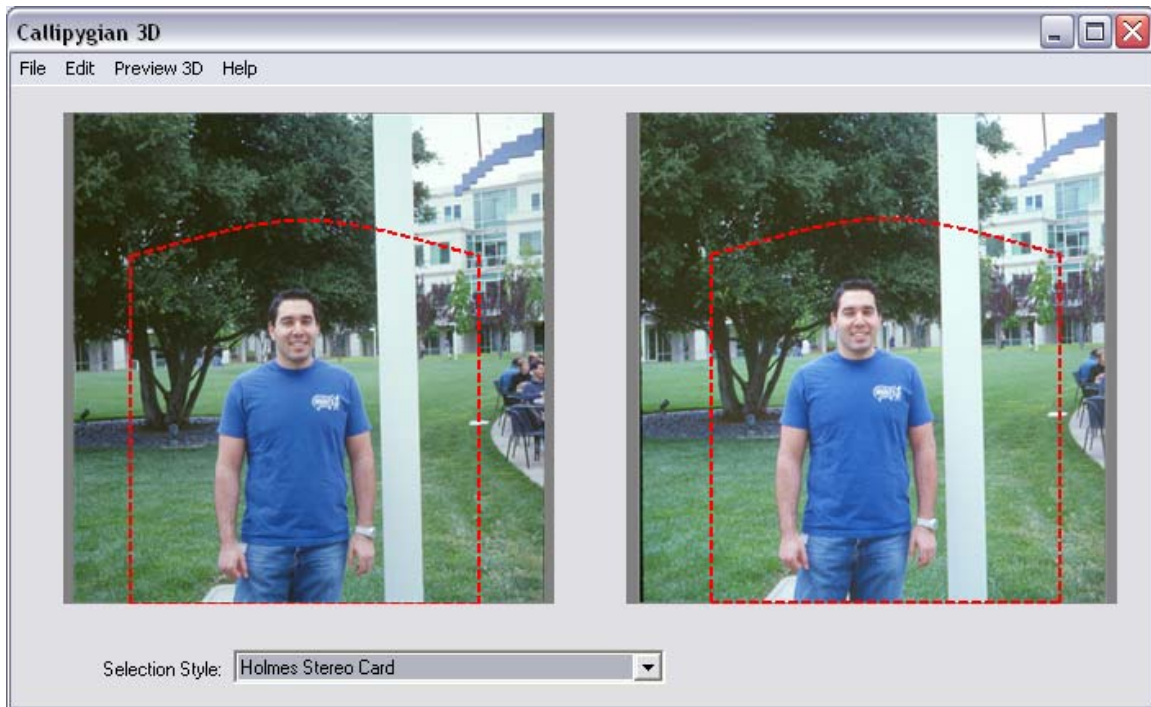

Figure 9 – Selection Style Holmes Stereo Card

Load a left and right image as described in "Using Callipygian 3D to make Anaglyph Images" and then chose "Holmes Stereo Card" in the selection style. Make a selection on the left image, and position it properly on the right image.

Note that the selection is constrained to a fixed aspect ratio (i.e., the ratio of width over height) and it has a rounded top.

Use the Preview 3D->Stereo Card menu selection to bring up the stereo card preview panel. (It's possible to bring up an anaglyph preview panel if you have a Holmes Stereo Card selection, too. This lets you preview your image as an anaglyph, or generate both an anaglyph and a stereo card from the same selection.)

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Figure 10 – Stereo Card View preview Panel

Use the Vertical and Horizontal sliders to align the images to your satisfaction. There are small handheld lens viewers available (so called "lorgnette" viewers) that can be used to examine an image on a computer screen.

Only the right hand image moves, the left hand stays fixed. If your selection is way off, close the 3D Stereo Card preview window, make a new left selection, and carefully place the right selection in the main crop screen.

Note that vertical alignment is especially important for good 3D vieweing.

When you are satisfied with the alighment, select Print from the menu in the Stereo Card View panel. One stereo card will print on the top half of the page. To save expensive photo paper, you can reinsert the sheet (after the ink is completely dry) and print another image on the bottom half by turning the paper 180 degress.

You'll have a chance to select your printer and printing options before printing starts.
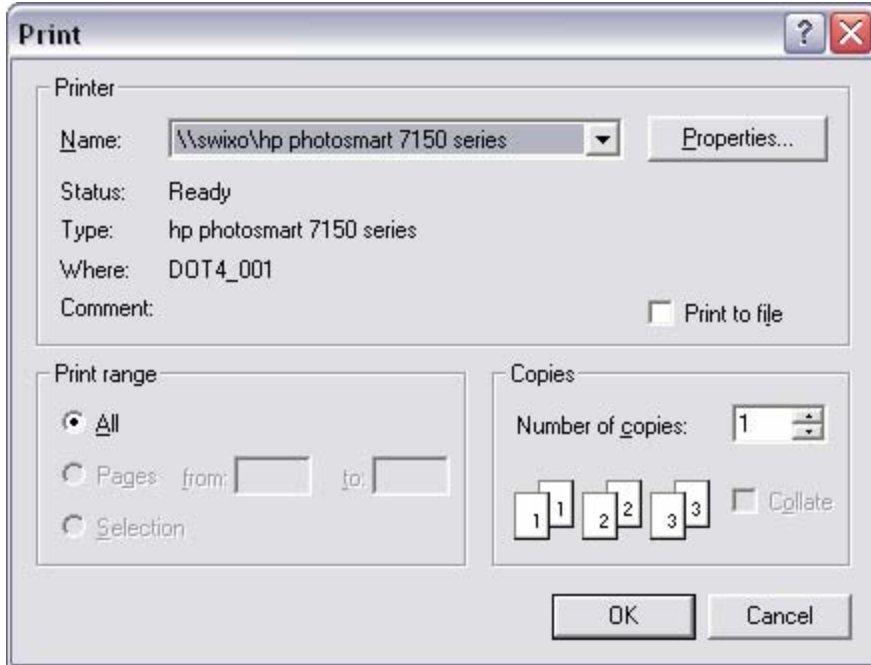
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Figure 11 – Print meno

Trim the card inside the lines with your paper cutter and put it in your Holmes viewer. Depending on the thickness of your photo paper, and the design of your viewer, you may choose to dry-mount it on a piece of card-stock. This is especially useful if you have an stereo viewer with only side-clips and no easel.

Figure 12 – A stereo card trimmed and ready for viewing.

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