

Beginners Guide to Stereo Photo Maker for Fuji W1, Fuji W3 & Panasonic 3D1 Digital 3D Cameras

by David Starkman [This is an update of David's article published in the January 2010 issue of 3D Window, the newsletter of the Sydney Stereo Camera Club]



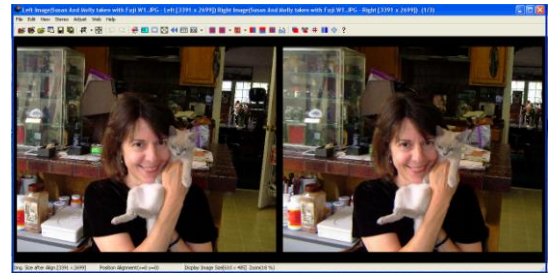
Fujifilm W3

or



Lumix 3D1

+



StereoPhoto Maker (SPM) is a FREE program for just about anything that you might want to do to a (3D) stereo image pair to make it suitable for comfortable 3-D viewing. (Google stereophoto maker to find it easily.)

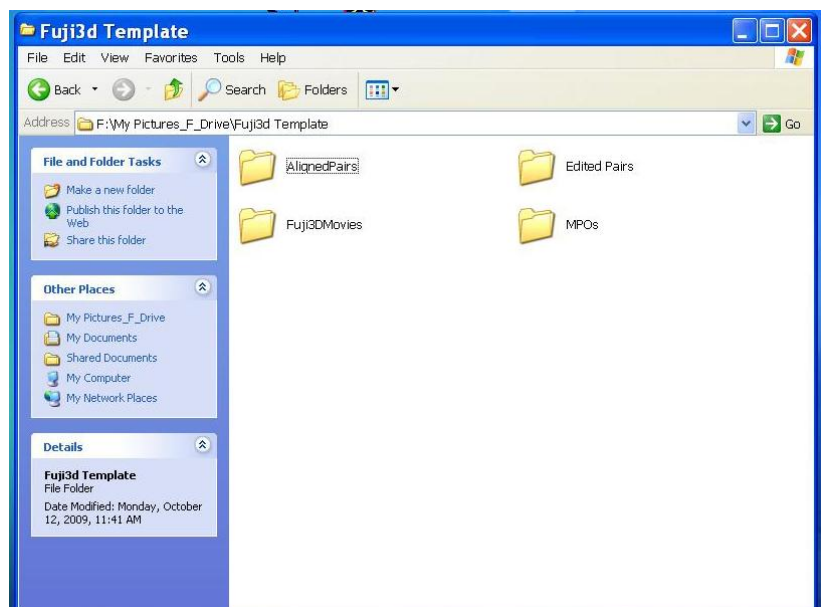
This program is especially useful to users of the following 3D digital cameras: Fujifilm Finepix Real 3D W1, Fujifilm Finepix Real 3D W3 and Panasonic Lumix 3D1. It is also useful to users of compatible Micro 4/3 cameras fitted with the Lumix 3D lens. It will allow you to open the MPO image files created by the camera, and to edit, view, and print, them in a wide variety of ways (ways not explained by Fujifilm). Hereafter I'll refer to the camera simply as the W3.

I mentioned this program in my article "Getting Started in Digital 3-D: One User's Report" that was published in the January 2008 issue of 3D Window.

This article is not meant to be a full tutorial, but rather a basic introduction to the SPM program.

Before you begin using SPM, the first step is to **ORGANIZE** your files! At a minimum you want to create five folders: first **a folder with a subject name** (such as the name of a person, place or event), and *within that folder* at least four subfolders. First, there should be a folder called **MPOs** (for the original images), and then **L and R** (for the extracted and adjusted side-by-side 3D pairs). Then **Edited L & R** (for images that are further adjusted for printing or other purposes), and (optional) **3DMovies** (for movie files, if you do these). These are only suggestions that I have found useful. Modify these suggestions to suit your own needs and workflow. NOTE: I have not recommended that you create a 2D JPG folder as I do not see the point in SPM users saving both MPO files and a 2D JPG, even though the default setting on the W3 camera is [MPO+JPG]. I recommend that you change the default to just [MPO] and get 50% more images on your memory card. (My partner, Susan, adds an "AlignedTIFFpairs" folder so she can first save the pairs as TIFFs, which she then modifies with PhotoShop.) JPGs lose quality when saved and copied multiple times. **Don't skip this step, as it is crucial in keeping yourself organized for the next steps!**

NOTE: Some of the folder names in the template on the right are different to those used in the text. Also, if you wish to optimize images for viewing on a Panasonic, LG or other MPO compatible 3D TV, you may require an '**Edited MPO for 3D TV**' folder.



The reason for this is that, before you upload the files from your Fujifilm W3 3D camera, it is a good idea to have some empty folders ready to put the files in to. Once you have created the folders you are ready to upload your digital images. A file transfer cable comes with the camera. However, I suggest that the easiest way to transfer the images from digital cameras is to use a card reader for your desktop and laptops. Most newer machines come with multi-format card readers built-in, but, if not, an external USB card reader is inexpensive and worth it! You want one capable of working with SDHC cards.

You will notice that I have not used the software that came with the W3 camera. You don't need it if you are going to upload the files with a card reader. It's up to you if you want to try the Fujifilm software, but it is not necessary.

When you insert the card in your card reader a box will open with an "Open File Folders" option. If not, you will have to manually use the Windows Explorer to find the "Removable Disk" drive. When you do, you will find a DCIM folder (Fuji W1 & W3). **Double-click on the DCIM folder** . Then you will see a "101_FUJI" folder. **Double-click** in that folder, and then you will see a list of files with numbers such as DSFC0041 and so on. **The file type will be a .MPO File**. This is a new multi image file format. In the case of the W3 camera, each MPO file actually has a parallel left and right **JPEG** stereo pair contained within it. However, you need the StereoPhoto Maker software to "open" the file into a useable format. If you have taken 3D movies, there will also be AVI files in the folder. I suggest you edit pictures in the camera before uploading, although it is perfectly possible to delete bad images later, if you prefer.

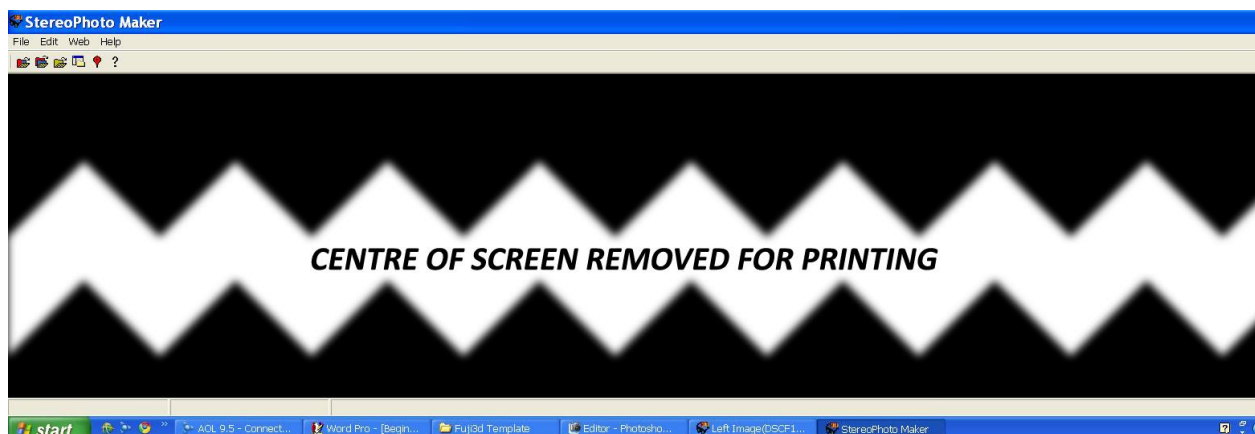
The next step is to copy all of the MPO files into the MPO folder that you have created for this group of images already. If you have AVI files, copy them into the Fuji3DMovies folder.

I use the **COPY** function, rather than **MOVE**, so that the files are still on the card, in case some problem occurs in the uploading. Once you know you have the copies where you want them, you can delete them from your memory card. Learn from my experience of losing data, and **COPY**, rather than **MOVE**, your files.

Now that you have your MPO image file uploaded, and in their MPOs folder, you are ready to begin using StereoPhoto Maker (SPM).

First, you will need to have SPM downloaded and on your PC (sorry, no MAC version is available, so MAC users have to run the program in Windows emulators). It is completely **FREE**, and available from <http://stereo.jpn.org/eng/stphmkr/>. The August 2013 version of SPM is 4.41. Versions 3.0 and higher represent a quantum leap for this program, as they include an "Automatic Alignment" feature. Downloading and installation instructions are all available at the SPM website. Note that versions earlier than 4.12 will not work with MPO files.

Assuming SPM is installed, the next step is to open the program. Once you have opened the program you will get a mysterious black box, with the usual popdown commands at the top, and a strip of icons. (see below).





Next, click on the **OPEN STEREO IMAGE** icon (first from the left, a yellow folder with red on the inside).

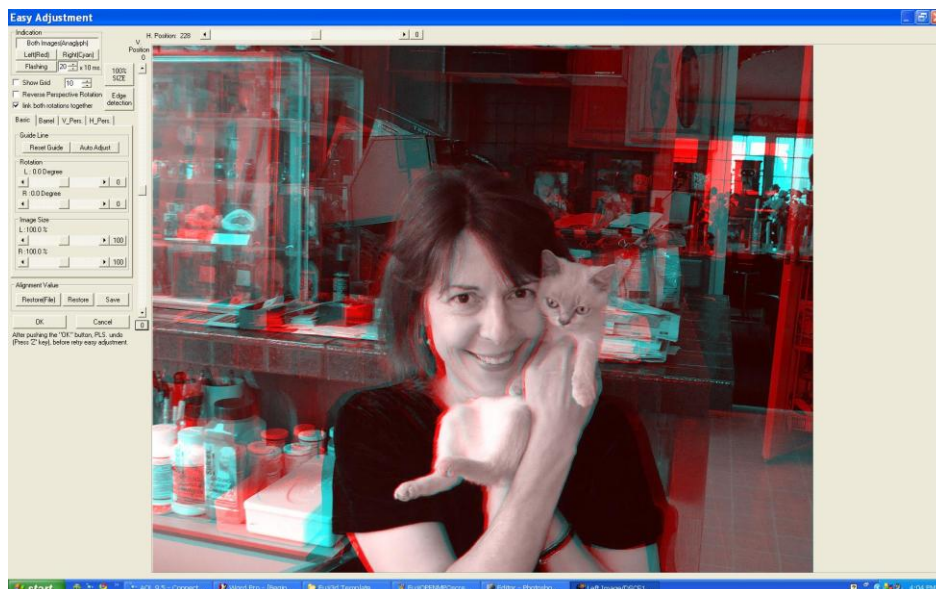
Next to the “look in” box use the popdown arrow to find the folder where all of the MPO files are, until you see the list of MPO files that you want to work with. It should look like this:

You can work with a single image by clicking on it and opening it at this point.

The next step is the alignment and cropping of your image. Since the introduction of SPM 3.0, there are now two choices for alignment: **Easy Adjustment** (individual, user controlled alignment), and **fully automatic alignment**.

A good tutorial in all of these functions would require lots of pages and screenshots to show you how these functions work. The purpose of this article is to let you know what the program can do, not to be a step-by-step instruction manual. There is an extensive help menu if you download it at the same time you download the program.

For manual adjustment of the stereo pair, click on the **ADJUST** popdown from the tool bar, and then **EASY ADJUSTMENT** (or just press the letter K as a shortcut). This will bring up an anaglyph (Red/Cyan) version of your image, with vertical and horizontal slider bars above, and below, the image. There are also a lot of other adjustment options to the left of the anaglyph version of your images. I will not explain all of the adjustments at this time, but this is something you can experiment with, and learn for yourself.



However, the most significant feature of this **FREE** program is the **AUTOMATIC ALIGNMENT** function. This can be done for a single image pair, or for large groups of pairs.

For a single pair, such as the one described above, instead of clicking on **EASY ADJUSTMENT** click on **AUTO ALIGNMENT** (or ALT+A as a shortcut). Then just wait, and the image will **AUTOMATICALLY** be adjusted for vertical, horizontal, rotation, and size matching. Once this is done you can check it in the manual EASY ADJUST mode, and , if desired, make a horizontal adjustment only, to alter the window position (usually of the main subject).

For large groups of image pairs you can go to the File popdown and choose **MULTI CONVERSION**. You will then get the multi conversion screen which lets you browse to the name of the file you want to work with, then choose the input file type (side-by-side).

Next you choose the **output** file type, which offers the same options as the **input** file type, as well as the image format (JPG is the default, but TIFF and PNG formats do not lose any quality when modified multiple times).

Then there is an **Adjust** section of the box where you may check the "**Auto Alignment**" option as well as the "**Auto Color Adjustment**" option. There are many other options available, but not necessary for the beginner. Explore them when you become more familiar with the program. I have found that the W3 is well matched enough, that I only use the Auto Alignment option, not the Auto Color Adjustment.

Last, you set the **Output Folder** location by clicking on the browse button in this section. If you choose the same destination as the source you will not have to change settings for each new group of images. Just be sure to move the output image to an appropriately named folder when you are finished. This is where you want to use the "**Aligned Pairs**" file folder that you have already created for this purpose. Be sure to choose the **FILE TYPE** that you want for the output files. I normally choose side-by-side.

Then you can click on the **CONVERT ALL FILES** button and walk away. Depending on the speed and configuration of your PC it can take from 5 seconds to 3 minutes per pair. My old computer takes about 45 seconds per pair. My new dual core Pentium laptop takes about 18 seconds!

Hard as it is to believe, the program *automatically* adjusts the images for a correct stereo window, corrects image rotation, size differences, and vertical difference errors! I can say from personal experience that it *really* works! Problem images may be done manually, if the Auto Alignment does not work.

Once aligned, the side-by-side images can be converted to anaglyphs, or viewed using SPM in a variety of formats, including Interlaced for 3D monitors such as the Zalman 3D monitor, or for 3D Ready DLP TVs. You can also use SPM to save your 3D image pair in MPO format, so that it may be put back onto the SD card for viewing in the camera or V1 viewer. This is also useful for saving 3D pairs taken with other 3D cameras, or scanned 3D pairs.

You can also use the **PRINT STEREO CARD** option to format the side-by-side pair for printing on 4" x 6" photo paper, or in the classic vintage 3.5" x 7" stereo card format, for printing on 5" x 7" paper.

The program itself is amazingly small in size, at only about 0.5 MB. There is also a "Help" file which can be downloaded, and it takes up about 5 megabytes. This has extensive illustrated instructions, and is *strongly recommended* both for help and tutorial.

I hope this will provide you with enough information to get started using StereoPhoto Maker, and inspire you to download it and give it a try. For further details of the program, see the SPM web page, and, when you download the program also download the HELP files. The HELP files contain extensive instructions on all of the features of the program.

Below is the basic screen you will see if you bring a MPO file into the program for manual adjustment, cropping, or even exposure tweaking or matching. I generally work with the side-by-side view that you see below, but you may choose other viewing options.

Note that if you hold the cursor over the icons that it will tell you what they do. Feel free to explore. There are many output formats, and the Print section will format various stereo card formats! Explore! You don't have to save any mistakes!

