

ONE HOUR with the new **Fuji 3d Camera**

A Review by George Themelis , DrT-3d@att.net



Disclaimer

I have nearly zero experience with digital 3d photography and very little knowledge/experience with 2d digital photography, but decided to write this informal review with my impressions (and some personal thoughts) after using the Fuji 3d camera for only about an hour.

Right now there is one complete review of the camera by **David Starkman**, published in many stereo publications (Stereo World, Stereoscapy, etc) and also a plethora of impressions from users posted daily in the fuji3d email discussion list, plus reviews and specifications of the camera in the internet. If you would like to read more facts or opinions and see more pictures from this camera, I recommend starting with an internet search for "fuji 3d camera".

An offer I could not Refuse

I asked Jay to write a short hands-on review of his new Fuji 3d camera. In return, I received an email titled "An offer you cannot refuse" where Jay told me that he is busy and offered to let me borrow and use the camera so I can get my own impressions.

My first reaction was "thanks, but I can't do it". I was busy too, plus, digital stereo is an unknown area for me and I was not sure what I could do with the camera in such a short time. But curiosity got the best out of me and I accepted the offer.

I picked up the camera on Tuesday, last week. Instead of using it right away, I let it sit in its box all day Tuesday and Wednesday. I was procrastinating because I did not know what is involved in using the camera and did not want to read the 128 page instructions first. On Thursday, around noon, I only had a few hours before returning the camera and I felt embarrassed to return it without using it, so I decided to take it out of the box and turn it on.

Turn On and Shoot!

To my surprise, I was able to take digital stereo pictures, by just turning the camera on and pressing the shutter button! The camera works right out of the box, without reading any instructions. That's a good first impression.

My first "victims" were my wife, preparing lunch in the kitchen, and our cat. I found myself thinking "This is fun!" I especially liked the way I could see 3d in the camera's display in the back. That's a

great innovation by Fuji.

After taking pictures inside the house, I took the camera for a short walk, up and down our street. In the next half hour I took pictures of houses, leaves turning orange/yellow, or whatever caught my fancy around our neighborhood.

While outside, I realized one of the issues with the camera: You cannot see the display very well (under bright light, the display is like a mirror and you see yourself instead of the display.) But this is digital photography, not film. Composition is not very critical and it can be adjusted later. So, I kept taking pictures of anything I found interesting.

What's Next?

I came back from my walk with 50 stereo pictures in the camera. So far, so good. Now what?

Without any instructions from Jay and without reading the manual, I decided to plug the camera to my computer with the included cable. The

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Photo 1 – My favorite 3d subject: Our cat! This picture has been cropped from the original, using StereoPhoto Maker.



Photo 2 – An easy-to-use camera encourages experimentation. Here I took this picture of myself in the bathroom. I am shooting facing a mirror. There is a second mirror in the back, tilted to create a long row of reflections.

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computer "recognized" the camera and it appeared as an extra storage drive. I could see my 50 stereo pairs and copied them to my computer.

Each stereo pair is stored in a file with the .MPO extension. To see its contents, I decided to download StereoPhoto Maker (SPM). This is a free program, used and praised by the majority of stereo photographers. It has been described in previous Tutorials, but I have essentially no experience with it.

After a few painless minutes, SPM was in my computer. I started the program and opened the first file. Lo and behold, my first stereo pair was displayed in the computer screen! I can control the viewing method (parallel, cross viewing, or anaglyph). I turned on the anaglyph mode so I could check the stereo effect quickly, with a pair of anaglyph glasses that are always next to my computer.

I soon found out how to load the next picture by just clicking the mouse button. In a few minutes I had previewed all my stereo pictures.

How cool is that? Starting of a state of fear of the new camera and new software,

in one hour I have downloaded and previewed my first 50 digital stereo pairs, without breaking a sweat and without reading any instructions. It could not be any simpler than that!

Stereo the Easy Way

Having just witnessed how easy it is to take digital stereo pictures, I see our stereo hobby changing really soon. I can picture half of the participants in the 2010 NSA convention carrying these Fuji 3d cameras in their pockets, happily taking pictures of each other. This camera alone will increase the digital stereo output of stereo enthusiasts by many times.

The fact that it is so easy to carry and use means that everyone can have one at any time and any occasion. And since it costs nearly nothing to take a picture, I see people taking lots of pictures, experimenting with situations they would normally not bother with.

Notice, I have not said anything about the quality of the pictures from this camera. They looked OK in the screen. In my mind, this is a camera for 3d snapshots, so top quality is not important. Ease of use, combined with creativity,

will result in many interesting pictures, I am sure. For more demanding jobs and variable stereo base, a twin rig will be required, just like serious film stereo photographer, use both a stereo camera and twin cameras.

I can see many situations where this compact digital 3d camera will become handy for me. Right now, to document favorite activities like running, or stereo club meetings, I take two cameras with me: A film stereo camera and a digital 2d camera. Both cameras could be replaced by an easy to carry 3d camera.

I also know people who got out of film and only carry on digital 2d camera and shoot 3d with cha-cha. No need to do that any more. Just carry the Fuji 3d digital camera. Actually, the Fuji 3d camera gives you a tool to shoot cha-cha (sequential) pictures, if variable stereo base is desired.

I can also see how this camera will bring a wave of new photographers back into stereo clubs and organizations like NSA. Adjustments will have to be made for this, especially in our club.

The Viewing Issue

Am I ready to sell my film stereo cameras and convert to digital? Not yet. I have 50 digital stereo pairs in my computer. What do I do with them? There are several viewing options. Fuji promotes two options:

1. **Fuji Photo Frame.** This is a rather expensive autostereoscopic display that allows you to view your pictures without using glasses. Reports from people who have seen the frame vary. Some like it, others don't.
2. **Lenticular prints.** Sample prints (one such print came with Jay's camera) from Fuji are disappointing. They appear to be almost totally flat.

Digital stereo photography enthusiasts add a long list of additional options:

3. View the **stereo pairs in the computer** screen either by freeviewing, or anaglyph, or using viewing devices, including complicated setups with two screens and large mirrors.
4. Make **prints** in various formats and then use the corresponding viewer.

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Photo 3 (top) - Typical 3d snapshot from our neighborhood.

Photo 4 (bottom) - The scarecrow attracted my attention here. Trying not to trespass too deep into the neighbor's house, I zoomed into the scene. Some "cardboarding" is evident.

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For example, traditional Holmes' stereoviews and stereoscopes, or large prints and mirror-based viewers (Mirscope, for example).

5. Digital stereo projection.
6. "3d ready" monitors.
7. Make slides using a film recorder at home or a service via the internet.

Personally, I don't enjoy looking at stereo pictures in the computer. It might be fun to post some stereo pictures in the internet but I don't see myself doing this often. I also have no experience with stereo prints and I have no knowledge or personal experience with 3d monitors. Autostereoscopic screens and lenticular prints are interesting but their appeal is limited. I enjoy digital projection, but I don't have the equipment (or inclination

to figure out how to do it) right now. Making slides from digital files is a step backwards (I see this mainly as an option to enter film slide projection competitions with digital images.) So none of these options look particularly attractive to me.

What I would like to see is a good digital stereo viewer. A viewer where I can plug a memory card and view my pictures in full resolution and get the same impact that I get when using my Realist red button viewer. A digital viewer is available (see next page) but it is not perfect. I am looking forward to improved viewing options in the future.

In Conclusion

My one hour with the new Fuji 3d camera was an eye-opener. Unlike my film stereo cameras, the Fuji 3d camera is extremely easy to use by just about any-

one without any instructions (just be careful to keep your fingers out of the lenses). This camera certainly delivers and makes taking digital stereo pictures extremely easy and convenient. I am sure it will be a great hit among stereo photographers.

Those who are already involved with digital stereo should welcome this easy-to-use camera. Those who are currently shooting film exclusively will need to make adjustments in the viewing department (plus invest in computer hardware and knowledge) in order to make the switch from film to digital as smooth as possible. The big unknown for me is the reaction of the general public, which will determine the commercial success (or failure) of the Fuji 3d experiment.

George Themelis

Fuji 3D Camera At a Glance

Official Name: Fujifilm FinePix Real 3D W1

Camera Features:

- Records 3D still photographs or movies
- Two Fujinon lenses separated by 77mm (fixed stereo base)
- Resolution: 10MP per sensor
- File Format: MPO (can be read by several programs)
- Size of each pair: 9-10MB (slight jpg compression)
- Storage: Internal memory, plus SD card
- 3x optical zoom (equivalent to 35-105mm in 35mm film)
- 3D/2D 2.8 inch LCD monitor allows you to compose the scene in 3d and play back the pictures (or movies) in 3d
- Automatic stereo window adjustment with manual override
- 3D Interval Shooting mode aids in taking two sequential shots
- Standard (conventional) 2D photography is possible
- Dual Capture Mode allows you to take two 2d shots at different settings
- Other features: Built-in flash, stereo microphones, tripod socket

Official 3D Viewing Options:

FinePix Real 3D V1 8-inch viewer & 3D Print Service

Viewer Features:

- Supports playback of 3D still photos and movies
- 3D/2D LCD panel with 800x600 resolution

Availability & pricing: Available in the USA as of October 1.
~\$600 for the camera, ~\$500 for the viewer, ~\$7 per print

Fuji web page: <http://www.fujifilm.com/products/3d/>
Email Discussion list: <http://tech.groups.yahoo.com/group/fuji3d/>
StereoPhoto Maker: <http://stereo.jp.org/eng/stphmkr/>
Recent review: http://www.photographyblog.com/reviews/fujifilm_finepix_real_3d_w1_review/

Advantages:

- **Portability:** Fits in a pocket.
- **Ease of operation:** Slide the lens cover, aim and shoot.
- **3D LCD display:** A good way to compose, view and show your stereo pictures (and videos) to others.
- **Assisted sequential mode:** You see a shadow of the first image when aiming for the second. That enables you to align the two images and also estimate the stereoscopic deviation. A great feature for hyper stereos.
- **MPO file format** is read by StereoPhoto Maker (and videos by StereoMovie Maker) so printing or making analog pairs is not a problem.

Disadvantages:

- **Image quality** is not very good. Zooming at full resolution shows loss of sharpness & chromatic aberration. This is typical for compact digital cameras with small sensors.
- **LCD is hard to see** in bright sunshine, which makes accurate composition a problem.
- **Ergonomics** are not great. It is easy to put the fingers in front of the lenses or accidentally hit the buttons in the back of the camera.
- **Fixed spacing of lenses.** Would it be too much to ask for variable lens spacing? Most probably yes.
- **Viewing Options:** People are not very enthusiastic by the official viewing methods, but this is unrelated to the camera and can change in the future.

Bottom Line: Despite a couple of issues, almost every stereo photographer who has tried this camera has been highly enthusiastic and recommends it.

[This list is compiled from a list posted by Pierre Meindre in the fuji3d list, and edited by the Editor]

More on the Fuji 3d camera

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77mm?

The choice of 77mm for stereo base (spacing of lenses) belongs to the “what were they thinking?” department. There is no historical or logical justification for this choice. A 65mm base (average spacing of the eyes) or 70mm (Realist format) would have been easier to understand. In film stereo cameras this distance is dictated by the mechanics of film advance. There seems to be no physical limitation for digital cameras, so maybe 77mm was chosen because it “sounds good”.

In the end, 77mm might be a bit on the wide side, but I think it is a reasonable choice. When the viewing resolution is low (as expected in free-viewing or autostereoscopic displays) it is generally better to have “more” than “too little” depth. Also, a larger stereo base helps when zooming in.

Cost

\$600 is not cheap, especially compared to 2d cameras of similar image quality. But it is not out of line for a unique camera with no competition in the marketplace. Prices will certainly drop in the future, so if one is not ready to try digital stereo right now, then it is better to wait for a while.

As a film shooter I am the first to admit that shooting film in quantity is expensive. In our recent trip to Orlando, FL, I shot 32 rolls of film with my stereo cameras. The cost of buying and processing the film, and mounting about 200 stereo pairs in RBT mounts, is over \$600. With the Fuji 3d camera I would have taken thousands of stereo pictures at zero

cost, other than the cost to purchase the camera. Of course, this does not include the cost of making stereo prints, or investing in computer hardware to process the digital pictures.

More Viewing Methods

It seems that Fuji’s official position is to keep their 3d system “viewer/glasses free”. This is of course the easiest way to view stereo, but the quality is compromised. A number of people have suggested that Fuji includes other viewing options, such as stereoviews, printed by Fuji (or other independent services) and viewed in a viewer similar to the Loreo viewer, but manufactured by Fuji.

John Dennis in an Editorial in Stereo World suggested that Fuji promotes free-viewing. He writes: “Teaser ads in national magazines could promote the concept with the question ‘Can you Fuji-View?’ The right PR effort could resurrect the whole Single Image Random Dot Stereogram craze of the early '90s, but featuring real photos of your family”

Cyclopital 3D viewer

An independent company has developed a digital viewer called Cyclopital3D (<http://www.cyclopital3d.com/>). This, for me, is a step in the right direction. But the cost and the image resolution is an issue. People who have seen (and bought) the viewer report that the quality of the lenses is very good, but the digital resolution (800x480 pixels) is low. While the viewer works well for novices, experienced stereo photographers are turned off (at least at first) by the pixels visible in

the picture. Let’s hope that digital viewers improve in the near future.

The Competition

There appears to be competition for the Fuji 3d camera. A Chinese company, 3DInLife, is already producing a stereo frame and is working on a 3d digital camera. No working prototype is available yet.

The Future

Is Fuji the Stereo Realist of the 21st century? Or maybe the Nimslo? The difference between these systems is that the Realist was a commercial success, while Nimslo was not. It is difficult to predict how successful the Fuji 3d experiment will be. Stereo enthusiasts should hope for a commercial success, which will bring a great variety of inexpensive digital 3d equipment into the marketplace and a new group of stereo enthusiasts into the scene, just like the Stereo Realist did in the 1950s.

Fuji is being criticized by stereo enthusiasts for not promoting the 3d camera system aggressively, as David White did for the Stereo Realist in the 1950s. This might show a hesitation of the company to invest advertising money into an experimental system whose commercial future is questionable. One interesting suggestion is to promote the camera in ads during 3d movies, showing 3d pictures taken with the camera.

But even in the case of the Nimslo camera, stereo enthusiasts benefited by adding a new stereo camera to their disposal. The same is true for the Fuji 3d camera, no matter what the future brings in terms of sales for the company.

George Themelis



Left: Cyclopital3D is (the world's first?) digital stereo viewer. The “missing link” in digital stereo and a step in the right direction.

Right: A new digital stereo camera designed by the Chinese 3DInLife company. Shown here is a non-working prototype.

