**[Embedding EXIF Data in Photographs](http://eogn.com/wp/?p=34461" \o "(+) Embedding EXIF Data in Photographs)**

Monday, February 16th, 2015 | [Plus Edition Article](http://eogn.com/wp/?cat=6)

Congratulations if you have scanned your old family photos and documents or invested in a digital camera to preserve today’s pictures for future family historians. Before resting on your laurels, take a moment to recall all the old photos you’ve come across that you wish had labels describing the people, places, or events pictured. Your digital images have a built-in capability to create such labels – descriptions that won’t get separated from their subjects – with ease that would amaze our forebears. With today’s image files, what you see is only part of what you get! Let’s take a look “behind the scenes” of your digital photos.

All sorts of invisible information can be stored inside the digital file itself, such as:

* Date and time information. Many digital cameras will print this on the picture, but they also can save it with the image file.
* Camera settings. This includes static information such as the camera model and make, and information that varies with each image such as orientation, aperture, shutter speed, focal length, metering mode, and ISO speed information.
* A thumbnail for previewing the picture on the camera’s LCD screen, in file managers, and in photo manipulation software.
* Descriptions and copyright information.
* Longitude and latitude where the picture was taken
* Any information about the picture or its subject that you choose to add, using one of the free or cheap photo editing packages I’ll describe in a bit.

This extra information is called metadata. Not all cameras will create all the invisible information listed above but most of today’s digital cameras will create and save several of these items.

Simply put, metadata is “data about data;” that is, it describes the context, content, and structure of a file. In the case of image files, the metadata uses a special set of rules called Exchangeable Image File format, or EXIF, to describe how large the picture is, the color depth, the image resolution, when the image was created, and other data. You normally cannot see this information when looking at the image or when printing it on a photo printer. The only way to see the EXIF information is by using a program designed for that purpose. Many graphics programs will display the image normally and then also display the EXIF data to one side or at the bottom of the image.

EXIF works right inside the most popular image formats: JPEG, TIFF Rev. 6.0, and RIFF WAV, with the addition of specific metadata tags. It is not available in JPEG 2000, PNG, or GIF. In this article I will ignore the use of EXIF in RIFF WAV (audio) files and focus solely on JPEG and TIFF images.

EXIF capability can be useful for old family photographs or for a variety of other pictures as well. I have used EXIF to store descriptions of a scanned photograph, such as “The family of Jeremiah and Lucinda Dow, circa 1890” or similar information. The information stays with the photograph when I copy it or send it by e-mail to a distant cousin. However, if anyone later opens the image in a photo-editing program and then re-saves it, it is possible that the EXIF information will disappear at that time. Of course, converting the photograph to any of those formats that does not support this EXIF data – JPEG 2000, PNG, or GIF – also will lose this information.

The extra information is called metadata. In brief, this means “data about data;” that is, it describes the context, content, and structure of a file. In the case of image files, the metadata uses this EXIF format to describe how large the picture is, the color depth, the image resolution, when the image was created, and other data. You normally cannot see this information when looking at the image or when printing it on a photo printer. The only way to see the EXIF information is by using a program designed for that purpose. Many graphics programs will display the image normally and then also display the EXIF data to one side or at the bottom of the image.

Some of today’s high-end cameras will automatically record EXIF information within the TIFF or JPEG image. In this case, “high end” is the same as saying “expensive.” Many cheaper cameras now record the date and time the picture was taken as part of the EXIF data. A few cameras even have built in GPS (satellite navigation) receivers and will record the latitude and longitude where the picture was taken.

I was pleasantly surprised to find the digital camera that is built into the Apple iPhone and many Android cell phones will also record the aperture setting that was used to snap the picture, such as “f2.8.” It also records the date and time of the photo, but not the time zone. It could have been logged in Eastern Time or Pacific Time or New Zealand Time, which may or may not matter for a given situation.

In Windows XP and later Windows operating systems, you can view a subset of the EXIF information by right-clicking on an image file and clicking PROPERTIES. Next, click the SUMMARY tab. However, this can damage certain EXIF headers if changes are applied.

On Mac OS X 10.4 and above, you can view the EXIF information in the Finder by doing Get Info on a file and expanding the More Info section. The free iPhoto application included with later versions of the Macintosh OS X operating system also displays EXIF information.

It is surprisingly easy to add EXIF data to any JPEG or TIFF image at a later date. If you wish to manually add EXIF data to any digital image, all you need is suitable software. Most photo editing programs, such as PhotoShop, will display and possibly modify EXITF information. You can find a list of many of these programs by starting at http://goo.gl/ZWh9Me.

You can find many other programs to view and/or update EXIF information. Many such programs are inexpensive or even free. I found the following, although I do not have experience with all of them:

**Cloud-based:**

**View and Remove EXIF Online** allows anyone to view and remove EXIF data online of pictures without downloading any program. This free service works with Windows, Macintosh, Linux, and any other computer able to access the Web. See [http://www.verexif.com/en/](http://www.verexif.com/en/%22%20%5Ct%20%22_blank) for details.

**Jeffrey’s Exif Viewer** is an EXIF VIEWER only.  It may be found at[http://regex.info/exif.cgi](http://regex.info/exif.cgi%22%20%5Ct%20%22_blank).

**Windows:**

My favorite file-viewing program for Windows is **IrfanView**, a very powerful and easy-to-use image viewer. This program has many features, including the ability to view EXIF data. You can find this free program at:[http://www.irfanview.com](http://www.irfanview.com/%22%20%5Ct%20%22_blank),

**XnView** is also a great, free image viewer for Windows:[http://www.xnview.com](http://www.xnview.com/%22%20%5Ct%20%22_blank).

**Opanda IExif Viewer** (a free program for Windows):[http://www.opanda.com/en/iexif](http://www.opanda.com/en/iexif%22%20%5Ct%20%22_blank)

**EXIF Sync** (9.95 Euros / $11.95 US):[http://www.lemkesoft.com/xd/public/content/index.\_cGlkPTE5Mw\_.html](http://www.lemkesoft.com/xd/public/content/index._cGlkPTE5Mw_.html%22%20%5Ct%20%22_blank)

**Macintosh:**

As mentioned earlier, the free **iPhoto** application included with Macintosh OS X is a good “first editing program.”

**Apple Photos** will be available this spring at[https://www.apple.com/osx/photos-preview/](https://www.apple.com/osx/photos-preview/%22%20%5Ct%20%22_blank)

There are many others. The above is simply a list of some of the more popular programs.

**One word of caution:** You probably want to be careful about revealing too much information! For instance, a picture of your grandchildren playing in the back yard that includes the precise latitude and longitude in the photo’s EXIF data may provide too much information to pedophiles and others. Use caution when sharing information.

While caution is always advised, using EXIF data can be a big help in organizing the photographs in your digital albums. I’d suggest you start with one of the free “viewers” before experimenting with the more expensive programs. If you’re ready to take greater advantage of your investment in today’s technology for digital images, your descendants may never need to wonder who’s who in your carefully preserved electronic picture collection.

**1 Comment to '(+) Embedding EXIF Data in Photographs'**

**Char**
February 16, 2015

Part of OSX for Mac is the “Preview” program which you can use to look at photos, scans, PDFs etc. Preview’s “Show Inspector” module (under Tools) will let you examine EXIF data that has been saved with the item AND to add your own “Keywords” which become part of the item’s metadata. I use that Keywords feature extensively for documentation.