



**Capital Apple, Mac
Performa User
Group**



Gardiner, Maine

**May
2007**

“The Southwest – In Search of the Pure Image”

It doesn't get much purer than *Hat and Shawl*, the photograph by CAMP vice president Rob Darby reproduced on the right.

This is just a taste of what to expect from "The Southwest – In Search of the Pure Image," the Keynote slide show that Rob will present at the May 9 CAMP meeting.

Actually, the slide show is a bonus. Rob's primary presentation will be a demonstration of the camera raw capabilities of Adobe Photoshop, with a special emphasis on the sharpening step.

Additional samples from the slide show appear on pages 4 and 5.

Upcoming Programs

Our spring season winds to a close at the June meeting with presentations by CAMP webmaster Sue Westlake and director-at-large Adam Tomash.

In as stark a left brain – right brain contrast as one can imagine, Sue will show us the fine points of using functions in Microsoft Excel, and then introduce us to a unique piece of napping software called Pzizz. Adam will follow with a demonstration of SpamSieve spam-blocking software.

We're off in July, will have our annual August potluck dinner at Rob's house in Winthrop, and will regroup with renewed vigor in September.



Shooting Raw: What's The Fuss All About?

Jeffrey Frankel, CAMP Newsletter Editor

The Concept

I offer this introduction with all of six weeks of raw digital photography under my belt. But I'm so enthused with the opportunities offered by this new-to-me mode of shooting that I just can't hold myself back.

Digital cameras gather image information through a lens, convert the image to electronic values through a sensor, and process all this information in an on-board computer. It is in the processing phase that most of the camera settings the user designates — or the default settings, in the absence of specific choice — are applied to the image. These include such variables as the color space of the image (e.g., sRGB, Adobe RGB), the exposure of the image (how bright or dark), the color balance of the image, the amount of contrast, color saturation and sharpening applied to the image and, perhaps most important of all, the white balance value applied to the image.

When you record an image in the customary JPEG format, the camera's computer incorporates the values of all these settings into the image saved on the camera's memory card. Later, if you transfer the image onto a computer, your image editor can manipulate the pixels of the saved image, but cannot *alter* any of the settings that you (or the camera) chose at the time you took the picture. Raw format changes all that.

When you record an image in raw format, the camera doesn't process the image as described above. Rather, it records the choices that you (or the camera) made at the time you took the picture, but doesn't finally apply them to the image. That task is handed off to the computer that you use to edit the image, and to image editing software specially designed to work with images taken in raw format. For this part of the job, your desktop or laptop computer substitutes for the computer in the camera.

The Camera

Raw capability was originally a feature of high-end digital SLRs. Now, practically all digital SLRs and many digital compact cameras can take photos in raw format.

For reasons I'm not familiar with, raw shooting places a heavier load on a camera than JPEGs. Specifically, the speed of continuous shooting is likely to slow down after fewer shots. Also, raw files are much larger than JPEG files because unlike JPEGs, raw files are not compressed. For example, the user

manual to my Nikon D80 says that anywhere from 133 to 1500 JPEGs can be saved on a 1 gigabyte SD memory card, depending on image quality and file size. For me, 260 shots per gigabyte would be typical. But only 82 raw files can be saved on that same 1 gig card, and even fewer if you want the convenience of saving a JPEG copy of the image along with the raw file.

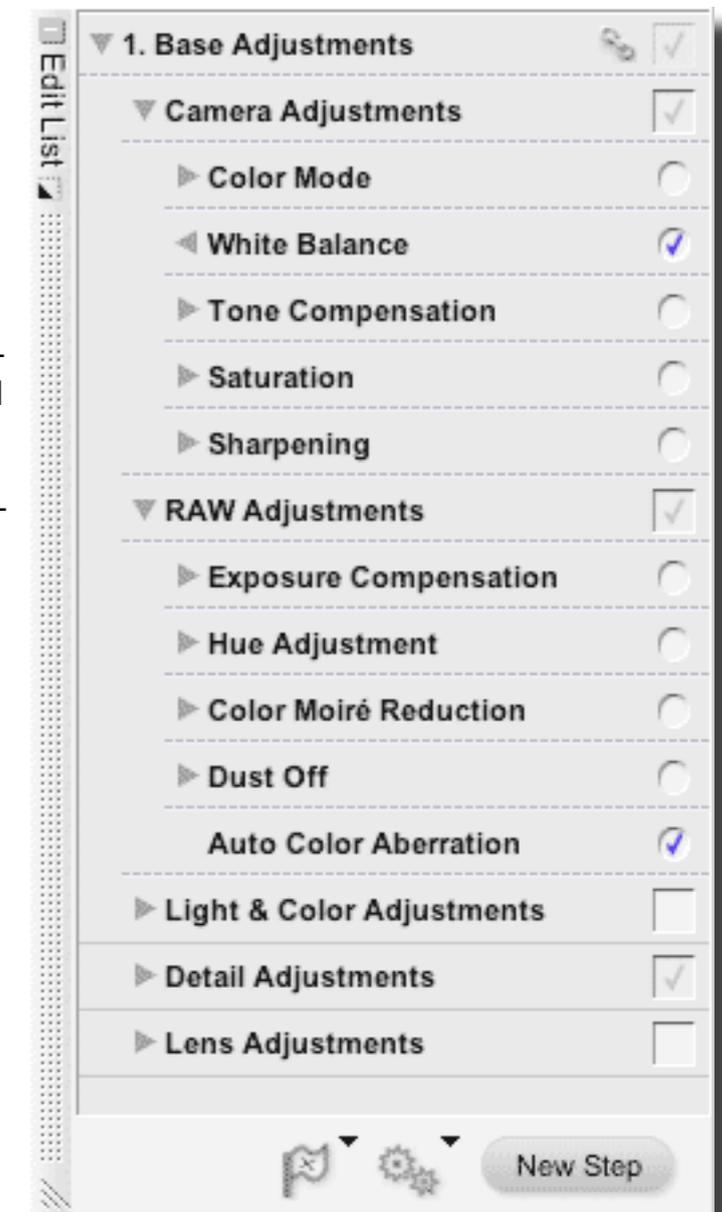
The Software

JPEG and TIFF are standard image formats supported by a wide variety of image editors and other programs. Not so with raw files. The term "raw" is an umbrella designation for unprocessed image data, but the files themselves are saved in proprietary formats that vary with the camera maker. Various manufacturers offer software that will open and manipulate raw files taken with their brand of equipment. Makers of general audience image editors, such as Adobe Photoshop, usually lag a bit until they develop plug-ins that allow their software to recognize raw files generated by a particular camera. Other image cataloging and editing programs do not recognize raw files from any camera. I believe this is also the case with email programs, web browsers and photo kiosks. This is one reason why the D80 (and probably other cameras) allow you to simultaneously record images as both JPEG and raw. Although you can convert raw photos to JPEGs on your computer, sometimes it's easier to have them as JPEGs from the get-go.

The Benefits

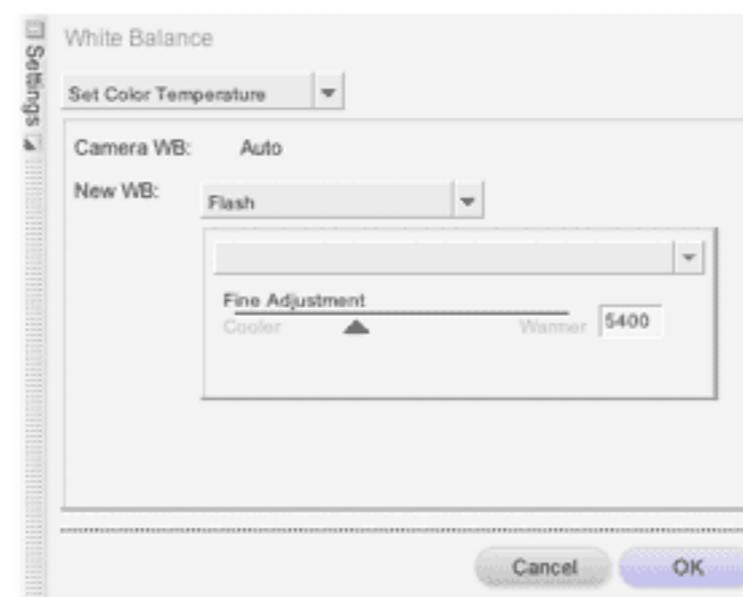
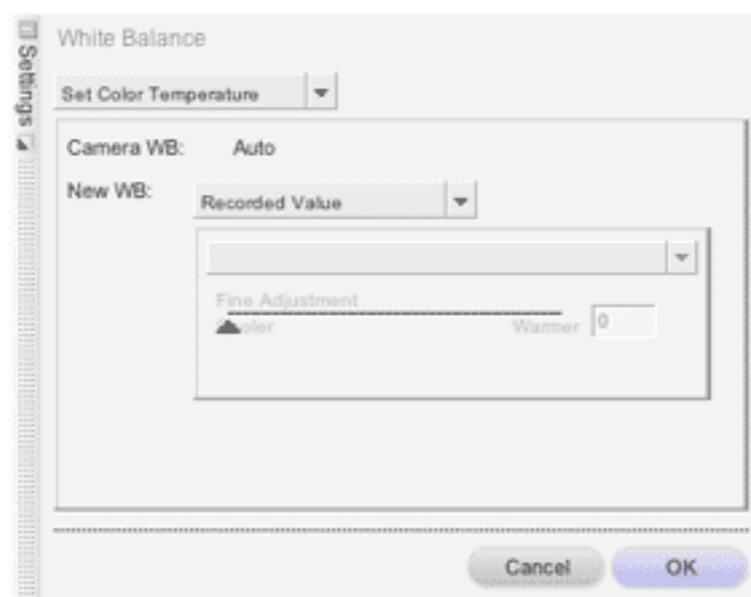
I use Nikon Capture NX to edit the raw images taken with my D80. The Edit List window in Capture NX shown at the right displays many of the image attributes that can be manipulated only on a raw file. Let's focus on (oops!) the White Balance adjustment that appears beneath the Camera Adjustments sub-heading.

The lefthand photo on the next page was taken with my camera's white balance set to Auto.

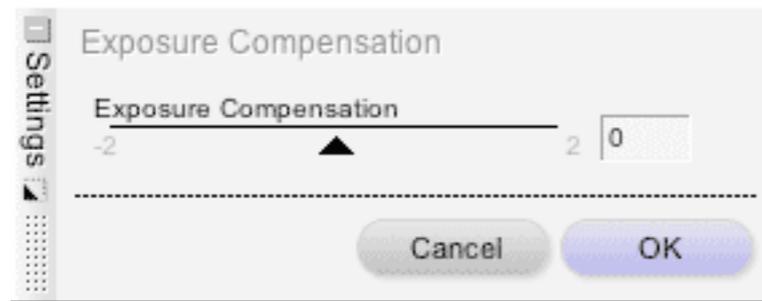


Big mistake. The image shows the washed-out drabness seen on so many indoors shots taken with an on-board flash. Opening The Capture NX White Balance window displayed below the picture shows that the Auto setting I shot with, the Recorded Value, is currently in use.

But let's use the New WB dropdown list in the White Balance window to change the white balance setting to Flash. As shown below right, this warms the image and makes an immediate improvement. It's as though I was back at the scene and chose the better white balance setting on my camera before I took the shot! And if I wanted to choose an intermediate value between the two (the Flash WB version might be a little too warm), I could drag the Fine Adjustment slider in the White Balance window to the desired spot.



The Exposure Compensation adjustment underneath the Raw Adjustments subheading in the Capture NX Edit List window shown on page 2 is another good illustration of the power of raw. Clicking the disclosure triangle opposite the Exposure Compensation adjustment opens the following window:



Virtually every digital camera offers an exposure compensation adjustment in all shooting modes other than manual. This allows the photographer to override the exposure suggested by the camera and make the image darker (negative values) or brighter (positive values) than it otherwise would be. The Capture NX exposure compensation slider shown above allows the photographer to do the same thing after the shot has been taken. Once again, it's just as if the shooter was transported back in time to a point just before the shot was taken.

This flexibility also offers shooting efficiency. Many digicams offer exposure bracketing and white balance bracketing. This allows the photographer to take a burst of two or three shots that vary slightly in brightness or whiteness so as to maximize the chances of getting the best image. But if you're shooting raw, there's little advantage to taking multiple bracketed shots, as you can later play with the exposure or white balance of any image on your computer and pick the setting that looks best.

Shooting efficiency aside, you may ask "What's the big deal? Can't I achieve similar effects by editing a JPEG's tone levels, curve and saturation in Photoshop?" The answer is "not as well." Here's how Ben Long explains the difference in *Real World Nikon Capture NX* (Peachpit Press 2007), pp. 135-36:

[White Balance] Earlier, you saw how using Levels and Curves, or any of the other tonal correction tools, pushes and pulls the data in your image. A White Balance adjustment on a raw image does *not* incur any data loss. The raw converter simply changes its basic idea of what red, green, and blue are, so white balance corrections are "free" edits. You should do as much color correction as you can using the White Balance edit...

Exposure Compensation lets you brighten or darken your image by up to two stops. Like White Balance, performing an Exposure Compensation adjustment on a raw image is a free

edit. The tones in your image — the whole mess of them — are simply shifted up or down. No redistribution happens, so you don't have to worry about data being discarded or stretched. Consequently, if your image needs overall brightening or darkening, it's best to do that with Exposure Compensation. You can refine it later using your tonal adjustment tool of choice.

Because raw adjustments re-create the image as oppose to change it, you can frequently do your most important edits without harming a single pixel. This gives you a lot more headroom for the kind of manipulations that will alter relative pixel values. There is a really good demonstration of this phenomenon in iPhoto 6 Help. Type "raw" in the iPhoto 6 Help Viewer and open "iPhoto 5 (*that's right* - 5): Using the RAW image format" from the list of Support Articles that appears.

A final benefit of editing photos in a raw-capable photo editor like Nikon Capture NX is that your edits are not irrevocably made to the image proper. Rather, they are saved as a set of instructions that are applied to the file each time you open it. In other words, your edits are non-destructive. You can modify or reverse *any* change you make to a file at any time without degrading image quality. This is impossible to do with JPEGs and is extremely laborious to attempt with Photoshop format files.

So stop cooking your digital photos: serve 'em raw! ☀



untitled, by Rob Darby

Table 1
Preliminary Worldwide PC Vendor Unit Shipment Estimates for 1Q07 (Thousands of Units)

| Company | 1Q07 Shipments | 1Q07 Market Share (%) | 1Q06 Shipments | 1Q06 Market Share (%) | 1Q07-1Q06 Growth (%) |
|-----------------|----------------|-----------------------|----------------|-----------------------|----------------------|
| Hewlett-Packard | 11,030 | 17.6 | 8,569 | 14.9 | 28.7 |
| Dell Inc. | 8,692 | 13.9 | 9,430 | 16.4 | -7.8 |
| Acer | 4,275 | 6.8 | 2,927 | 5.1 | 46.1 |
| Lenovo | 3,969 | 6.3 | 3,417 | 5.9 | 16.1 |
| Toshiba | 2,552 | 4.1 | 2,213 | 3.8 | 15.3 |
| Others | 32,201 | 51.3 | 31,014 | 53.9 | 3.8 |
| Total | 62,719 | 100.0 | 57,571 | 100.0 | 8.9 |

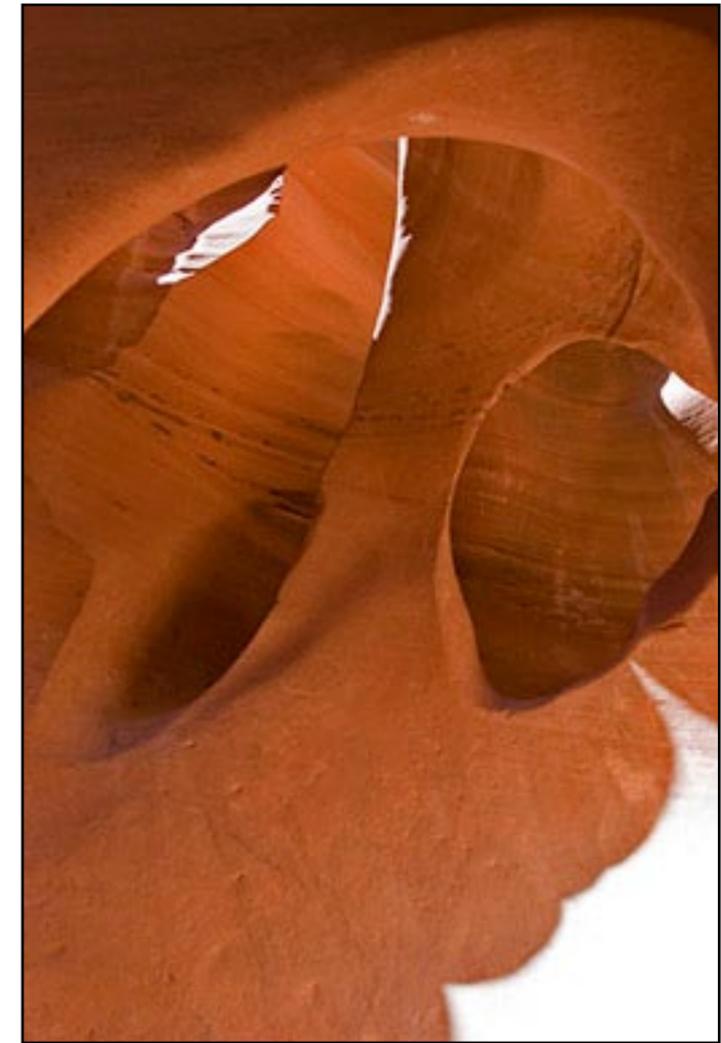
Note: Data includes deskbased PCs, mobile PCs and X86 servers.
Source: Gartner Dataquest (April 2007)

Table 2
Preliminary U.S. PC Vendor Unit Shipment Estimates for 1Q07 (Thousands of Units)

| Company | 1Q07 Shipments | 1Q07 Market Share (%) | 1Q06 Shipments | 1Q06 Market Share (%) | 1Q07-1Q06 Growth (%) |
|-----------------|----------------|-----------------------|----------------|-----------------------|----------------------|
| Dell Inc. | 4,126 | 27.9 | 4,881 | 33.9 | -15.5 |
| Hewlett-Packard | 3,807 | 25.7 | 3,027 | 21.0 | 25.8 |
| Gateway | 1,147 | 7.7 | 1,225 | 8.5 | -6.3 |
| Toshiba | 805 | 5.4 | 635 | 4.4 | 26.8 |
| Apple Computer | 741 | 5.0 | 570 | 4.0 | 30.0 |
| Others | 4,185 | 28.3 | 4,057 | 28.2 | 3.1 |
| Total | 14,811 | 100.0 | 14,395 | 100.0 | 2.9 |

Note: Data includes deskbased PCs, mobile PCs and X86 servers.
Source: Gartner Dataquest (April 2007)

Top Five PC Vendors Worldwide (Table 1) and Domestic (Table 2) for First Quarter 2007, as reported by Apple Insider on April 19, 2007. Apple didn't crack the top five internationally, but held the #5 spot for domestic shipments with a 5% market share.



untitled, by Rob Darby

Apple in the News

by Jeffrey Frankel, CAMP Newsletter Editor

The June 2007 issue of *Consumer Reports* ranked the 15-inch MacBook Pro as the #1 laptop, despite a retail price double that of most of the other contenders. Among desktop computers, *CR* ranked the 20-inch iMac as #3 out of 8. The 20-inch Apple cinema display was the middle pick of the three 20-inch monitors that *CR* rated.

CR also tabulated reader survey responses regarding repair history and tech support. Apple's laptop repair history was typical of most brands,

but its desktop repair rate was far and away the best. In tech support, Apple simply smoked the competition in both the laptop and desktop categories.

New York Times columnist David Pogue gave the MacBook the nod on May 3, 2007 in "Pogue's Picks:"

Best Laptop: MacBook. It runs both the virus-free Mac OS X as well as Windows, making the world's entire library of commercial software available to you. It's loaded (built-in video/still camera, WiFi, DVD burner, Bluetooth). Its magnetic power adapter means you'll never drag this thing off the table by accident. And its design is light-years cleaner and smoother than Windows laptops, which

are covered with so many flaps, panels and stickers, they look like quilts. (The base price is \$1,100, but you should get it installed with more memory than the ridiculous 512 megs it comes with.)

I'd have said the MacBook Pro, but I find those 15- and 17-inch models too big for convenient portability; I know this is a matter of personal choice, but I always feel like I'm carrying around a serving tray. The 13-inch, extremely bright MacBook screen is just right. ☺