

WPS Mini Photoshop Session on Using Adobe Camera Raw
Walter Kimmel 6/30/06

Download your camera's files in the usual way. Whatever browser you use, point it to the folder with your downloaded files. If you have a combination of jpeg, PSD, Tiff or other files in the folder, sort the files by View/Sort/Type, or View/Sort/Document Type, or if you are using CS2, in Bridge you can select View/Show Raw Files Only.

NOTE: If you have a camera made after the introduction of your version of Camera RAW, you have to open your version of Photoshop and select Help/Updates, and download the latest version of Adobe Camera Raw.

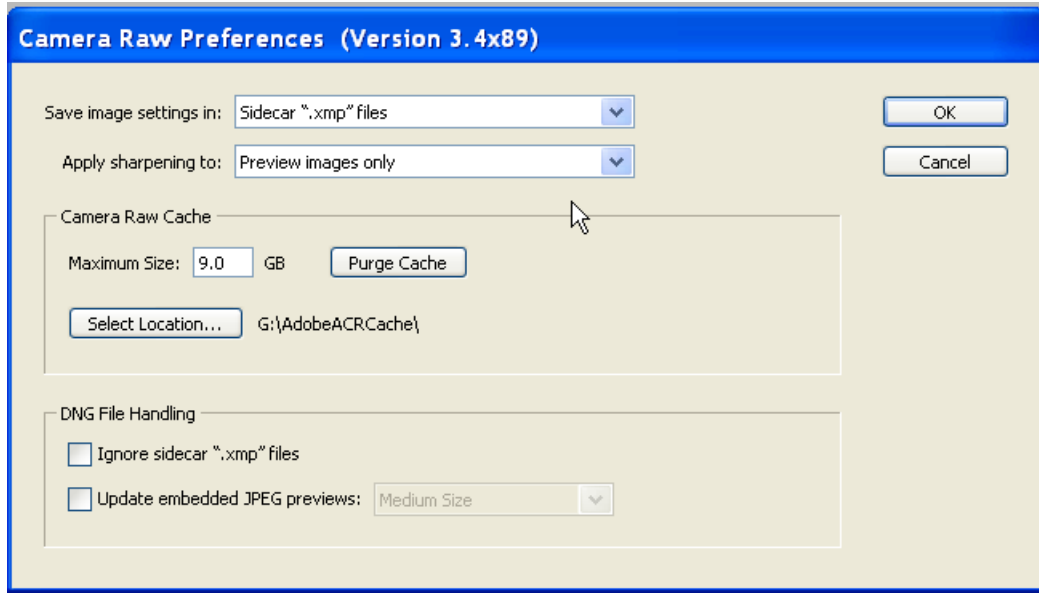
The way I download files: I have a folder on the hard drive named **LatestDownloads**. I make a subfolder under that named with the date, e.g., **2006-06-30**. I use a program which was free but now only the pro version is available, for \$30. If you use an Album program you don't need this, but if you would like to try it, it is called **Downloader Pro**. It can be obtained from www.breezesystems.com. After my 1st memory card is downloaded to the folder, I point the browser (Bridge) at the folder and rename it with some description of the shoot, e.g., **2006-06-30BronxZoo1**. The "1" at the end of the name is put there only if I will download images from a second memory card, also from the Bronx Zoo. If I have a third card, the process is repeated, and the 2nd folder gets named **2006-06-30BronxZoo2**. When I have done this for all the memory cards from the shoot, I make another folder called **2006-06-30BronxZooBestShots**.

I point the browser at the 1st folder of the day's shoot, and go through all of the images. I use the Bridge's rating system and give 5 stars to each image that is a "Must Do." I am very, very selective with the 5-star category. Images almost as good get 4 stars, the average images get 3, and the ones I will probably chuck get 2 stars. The real duds get 1 star. But the first time through the folder I generally mark only the real keepers. **I then sort by rating, select all of the 5-star pix, and drag their thumbnails to the BestShots folder.** I then repeat with folders 2, 3, etc. Before leaving each folder, in Bridge I then do **Tools/Cache/Export Cache**, which adds information about your ratings, file rotations, etc., to the current folder so that the information gets saved in the next step.

If you are really good, now is the time to make a CD or DVD containing the day's new folders. I don't often have the patience to do that, and I have paid the price several times. I never learn, but it's easy to tell you to do the right thing!

OPENING Adobe Camera Raw and Setting Up Your Defaults

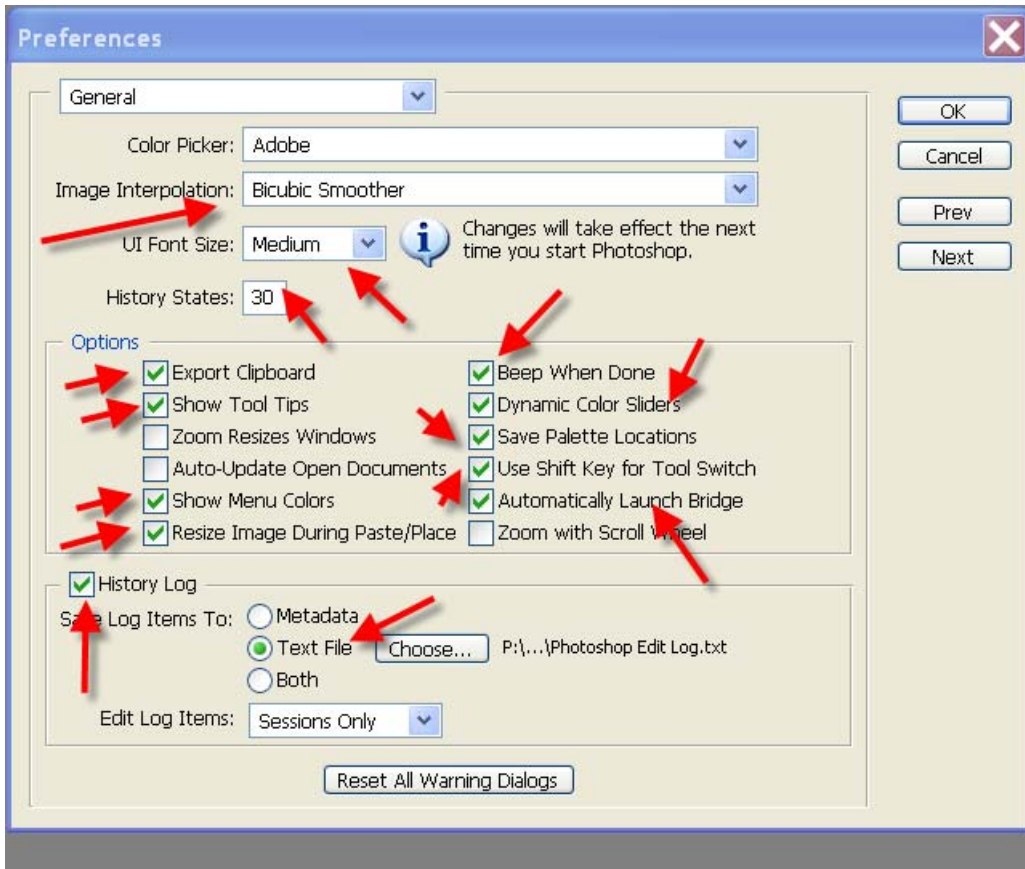
In the Bridge in CS2, go to **Edit/Camera Raw Preferences** and set up your choices as follows:



If you save image settings in Sidecar files, when you back up your files or copy them to a CD, etc, the settings will be saved with the files.

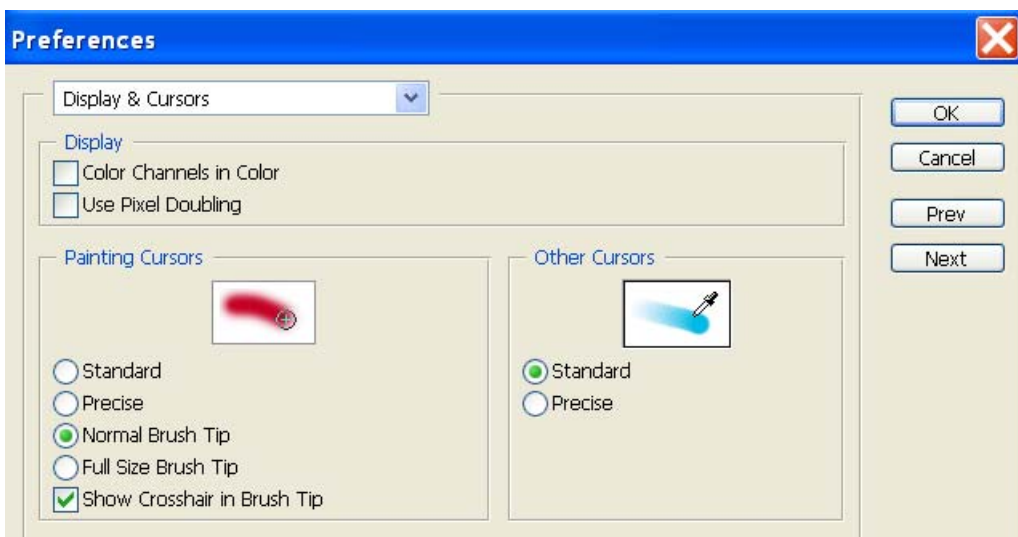
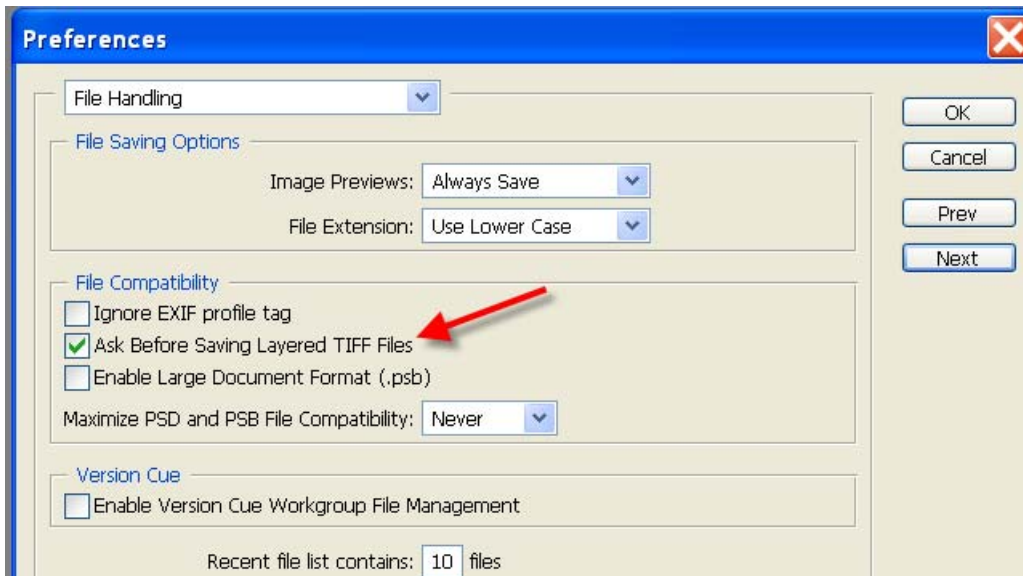
Sharpening in Camera RAW is not as sophisticated as it is in Photoshop itself, and also should be applied depending on the size and nature of your output file. However, I like to see, at least roughly, how my files will look with adequate sharpening. This allows my previews to look sharp without actually applying the sharpening to the file before conversion.

Here are some preferences I use in Photoshop proper. Open Photoshop (you may have to minimize the Browser or Bridge) and go **Edit/Preferences**. You will see a dialogue box with several tabs, which you can reach by clicking on **Next** or **Previous**. These are the settings I use. Try checking the same boxes:



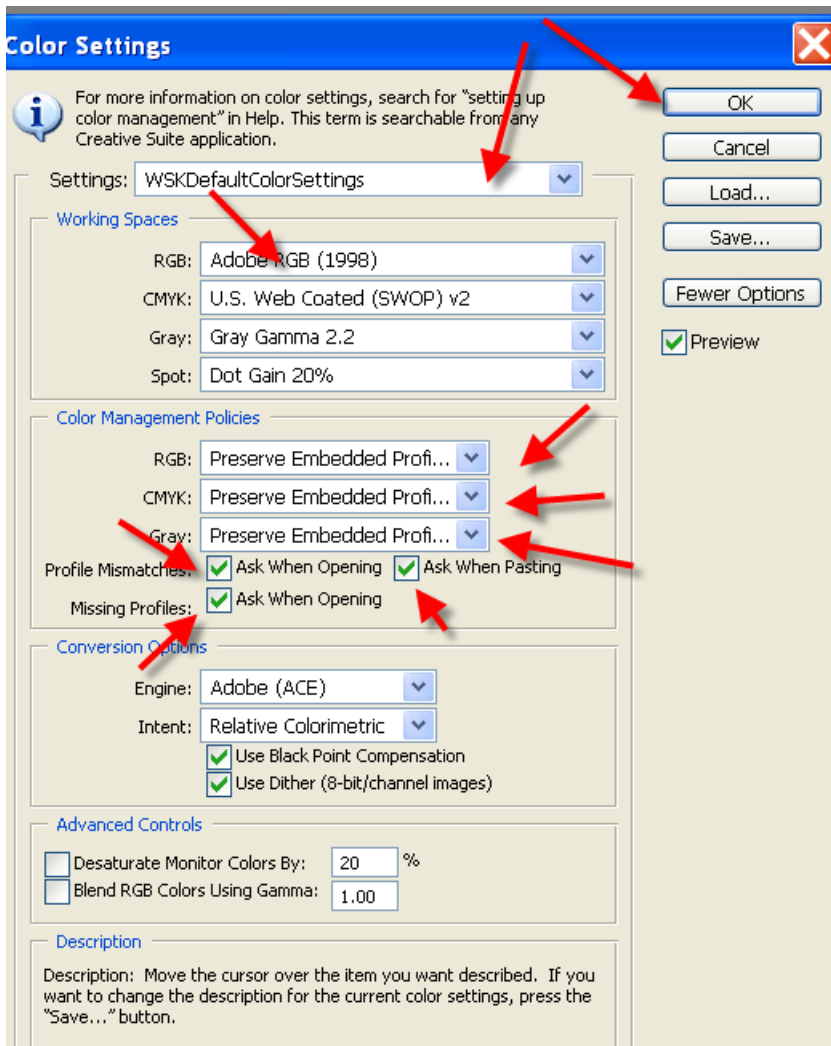
Using Bicubic Smoother will let you interpolate your file size upward to make a large print, with incredible accuracy. I used to use a 3rd party program, Genuine Fractals, to keep from losing quality, but most users have found that Bicubic Smoother is great.

If you have sufficient memory in your computer, increase the History States to 30, or even more. This will let you go back more steps than the 20 set by Adobe as the default.

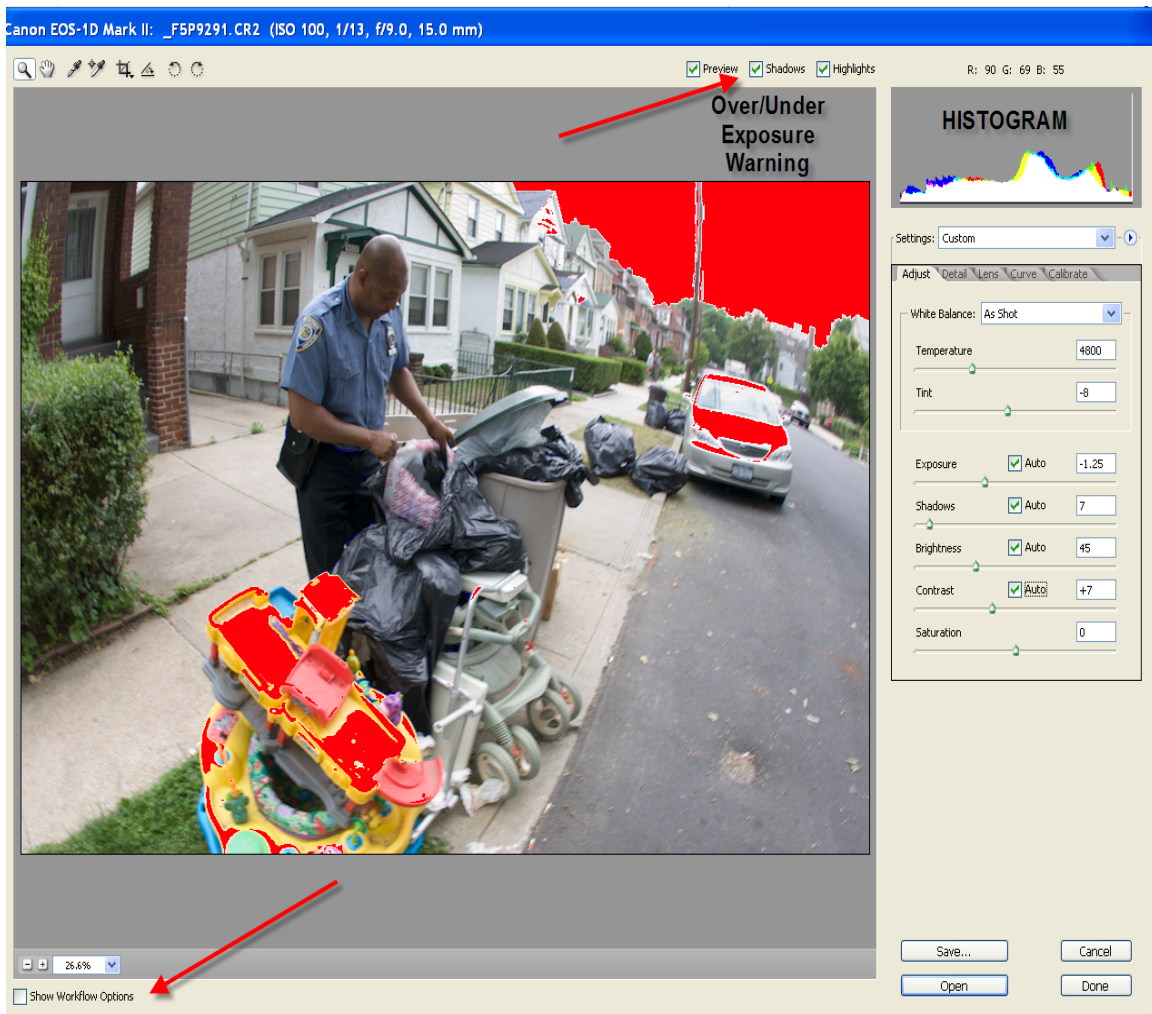


Setting your brushes up this way gives you a more accurate way of visualizing the effects of the brush, especially the clone tool.

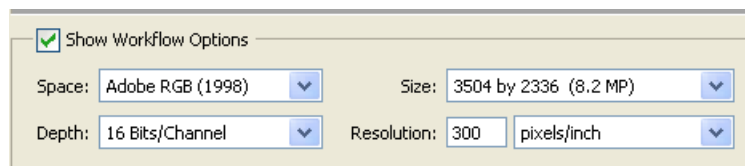
COLOR PREFERENCES: As long as we are in Photoshop proper, go to **EDIT/COLOR SETTINGS**, and for RGB pick Adobe RGB (1998). Check the boxes that I have checked, and then click on **SAVE**, and name your choice as I have done (with your name, of course, so I don't get the blame for this...) If you want to be on the cutting edge, you can scroll down to **ProPhoto RGB** but unless you are knowledgeable in color management, stick with Adobe RGB.



In your browser (CS: the Browser, CS2: the Bridge) double click on the thumbnail of the RAW file you want to open. This is what you will see:



On the above image, note: On the lower left corner, check the **Show Workflow Options**. At the top, make sure that the **Preview, Shadows and Highlights** boxes are checked. If you are using CS2, look at the right panel under the histogram. There are 4 **Auto** boxes. **UNCHECK** them! They are a fairly good attempt to optimize your image, but if you have several similar images with different exposures, you will not be able to judge which is the best exposure!



The Workflow Options:

I have my **Space** (short for "Color Space Profile" that will be embedded in your image file) set for Adobe RGB. This is the best choice for working with RAW files that are going to be printed. If you are only planning to use them for the web, you can set the Space for sRGB. If you are adventurous you can use ProPhoto as the space and then convert to sRGB or Adobe RGB when you are finished editing the picture. In Photoshop's Color Management setup, I also have Adobe RGB as my RGB working

color space. That way, when the RAW file gets opened in Photoshop, it will be in the correct editing space.

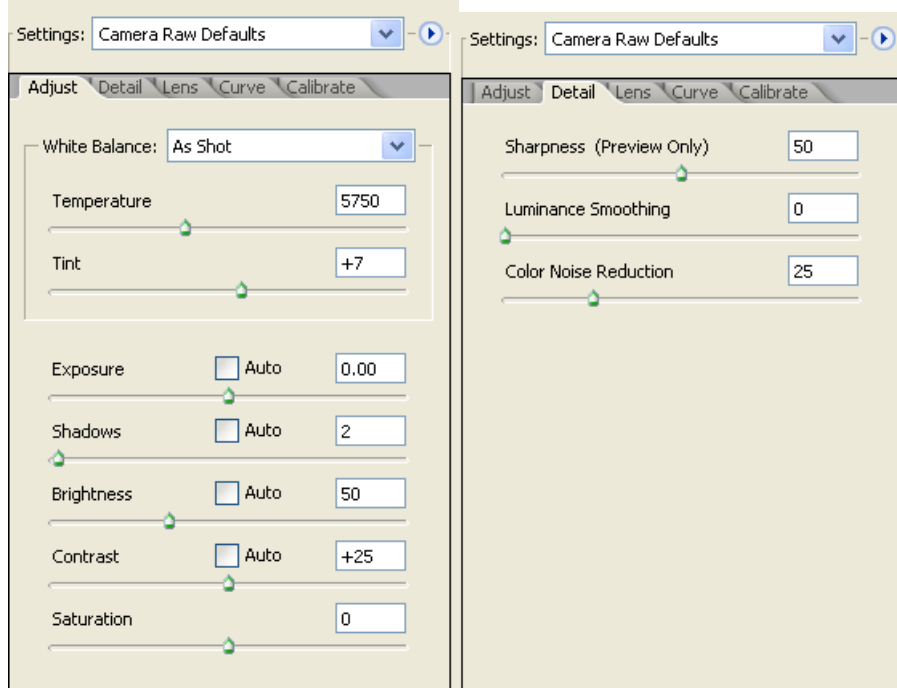
Depth: If your camera can shoot in RAW, it is worth opening it at 16 Bits/Channel, unless your camera can only record 8Bits/Channel. You have to look at your camera's manual to check. However, if you are using a Digital SLR, you probably have the option of 12-bit per channel color, and should use the 16-Bits/Channel setting.

Size: This will come up as the file size that your camera produces, measured in pixels. I leave that as the default setting, and do any up-or-down resizing after the RAW image is converted and edited in Photoshop proper.

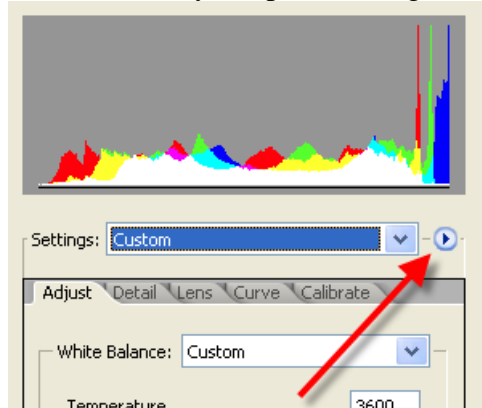
Resolution: I set this at 300 pixels per inch because it simplifies calculations for me. Some people use 240 ppi, some 360 ppi, depending on their printer. I have found that 300ppi works fine for me, and this is easily changed once the image is in Photoshop, if you want to.

On the panel on the right, click on the **Detail** tab. I drag the **Sharpness** slider to **50**, but you should adjust your slider using a well-focused image such that it looks reasonably sharp. Remember that this does not sharpen the image. It just makes the PREVIEW look sharp. I set the **Luminance Smoothing** at "**0**" and the **Color Noise Reduction** at "**25.**" This is a gentle setting that removes some of the blotchy color noise that can appear, especially in the darker areas, and leaves the Luminance noise alone. (Any further noise reduction, such as what I would do at ISO 1600 or 3200, is best done either in Photoshop proper, or with a 3rd party program such as Noise Ninja or Neat Image. I much prefer Noise Ninja.)

Here are the **Adjust tab** and **Detail tab** settings I use:



I don't change anything on the Lens, Curve or Calibrate tabs. Next, click on the little arrowhead to the right of the **Settings** box, and on the drop-down menu select **Save New Camera Raw Defaults**. Then, click **DONE** at the bottom right of the RAW window. The next time you open an image in RAW, it will come up with your new settings.



WORKING ON AN IMAGE IN CAMERA RAW

It would take hours to go through all of the ways to work in Camera Raw, so I have opted to show the color and tone adjustments that are most vital to optimizing a RAW file, as well as how to straighten a file where the camera was tilted.

From the Bridge or your Browser, double click on the image you want to open. It will open with the white balance setting that was set in the camera. Mine is usually fine on AUTO, with little or no adjustment needed, but yours may differ. The other settings will be the defaults you have set, and should give you a good idea of what needs to be done to the file.

Here is the **WORKFLOW** I use. That's a word used by the people who want you to think they know what they are doing. It describes the order in which they do things to the file.

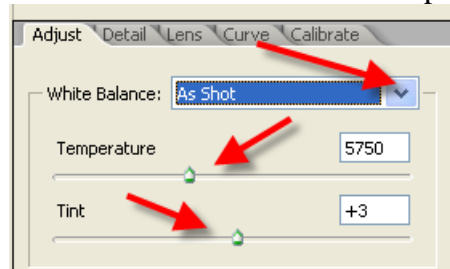
Fix the Biggest Problems First:

1: If your camera was tilted, the **verticals or horizontals** can be easily straightened. At



the top of the RAW window is a little engineer's triangle. Click on it. Then, click and drag it over a line that should be vertical or horizontal. We're not talking about converging verticals, which tilt on opposite directions, but just one where the horizon is tilted, for example. To get a good look at where you want to draw the line, press **Ctrl-Alt-0**(zero, not the letter O). That will let you view at 100%, seeing the actual pixels. Then, hold the space bar down and the cursor turns to the hand, which will let you drag the image around while the space bar is down. To then view the whole image, press **Ctrl-0**, which will fill the window with the image. Notice that the image is now cropped, with the edges parallel to the lines that should be vertical or horizontal in the image. Hit **ENTER** to accept the change. Simple enough?

2: White Balance: Here is one of the major ways that RAW makes it all worth it. The default setting **AS Shot** will be the white balance set in your camera, either by auto or one of the presets, or by a custom white balance. But not a pixel has been changed yet!



The arrow gives you a drop-down menu with several preset options, as well as an **AUTO** setting. Try each one and see how the white balance changes. Also note that the **Temperature** slider, which goes from colder on the left to warmer on the right, and the **Tint** slider, which adjusts from magenta to green, also change with the different choices. These can also be tweaked to fine-tune the results to your own liking.

An easy way to set the white balance (another term meaning the same thing is **Neutralizing** the grays) is to use the eyedropper at the top of the RAW window.



Click on it, then find a spot on your image that is a bright but not blownout white. Click on that with the eyedropper and you will get another version of white balance. If it's not to your liking, click around the white and see if you don't find a spot that works better. In the absence of white, see if you can find a light gray to click on. If all of this doesn't give you what you want, you can always go back to **As Shot**, and then tweak the **Temperature** and/or **Tint** sliders.

If, after correcting the tone you find that the white balance is off again, you can retune it. Try that with your Jpegs...this is much safer for the pixels.

Fixing the Tonal Values of the Image: There are many combinations of settings that will make the edited image look more or less right, but understanding what the sliders are doing will help you make the best decisions.

EXPOSURE: this is similar to setting the **WHITE POINT** using Levels in Photoshop proper. Here again, RAW wins over Jpeg. If you have come close to blowing out your highlights but still have data in one or two of the R,G or B channels you can actually rescue what otherwise would be lost detail in Jpegs. To get the best of your image, try this:

Press the Alt key and hold the left mouse key down over the **EXPOSURE** slider. The image preview will either be white, or will be white with some color and /or black areas. If the preview is white, while holding the Alt key down, move the slider to the right. The first bit of color you see will be the brightest spot in the image. Let go of the mouse and Alt key to see what that spot is in the image. If it is not a major detail, but is a specular highlight such as the glint of a metallic reflection, you have set the white point correctly. On the other hand, if it represents somebody's forehead, hold the Alt key down and move the slider to the left until the color spot becomes white.

If, on the other hand, there are many spots of color, and even some of black, your exposure is too high. Hold down the Alt key and slowly drag the Exposure slider until the colors disappear. This is not always possible if the highlights are blown in 2 channels, and never possible if they are really blown in all three channels. This is why it is essential to use your histogram when shooting, so that you can make sure that you don't blow out the highlight detail.

SHADOWS: This is like using the left slider in Levels to set the **BLACK POINT**. Here again, hold down the **ALT** key while dragging the Shadows slider. Your preview should be black. Slowly drag the slider to the right until you see bits of color and/or white. These are the darkest spots in the image. Back the slider off to the left until the last bits of color or white disappear. For emphasis of your blacks, if the bits of color or white are in minor areas of unimportant shadow, you can get away with a small amount

of loss of detail in the darkest shadows, and you will learn how to judge. But you can never be wrong if you set the slider just at the point where the first non-black pixel appears in the preview.

BRIGHTNESS: This slider is like the middle slider in Levels, that adjusts the Gamma, or relative brightness of the midtones. Because the sensor records photons differently from the way film or the human eye do, it is usually better to brighten an image by adjusting the **EXPOSURE** slider if possible, and use the **BRIGHTNESS** slider sparingly, mostly when you have had to pull the Exposure slider far to the left to recapture highlights. Unfortunately, holding the ALT key only works in conjunction with the Exposure and Shadows sliders.

Moving the **BRIGHTNESS** slider is like pulling up on a point on CURVES in Photoshop proper, and should be used in small amounts to lighten or darken the midtones.

CONTRAST adjustments actually pull the curve below the point affected by the Brightness slider down, darkening the lower midtones. At the same time, the points on the curve above the point affected by the Brightness slider are pulled up, brightening the upper midtones. The curve would look like an “S” around that point, and increasing the Contrast setting steepens the S-curve (increasing the midtone contrast). Decreasing the Contrast setting flattens the S-curve, resulting in lower contrast in the midtones.

The **Contrast** and **Brightness** controls are interactive, and you may need to tweak each several times until you get the result you want. **Keep an eye on the histogram to make sure you don't get a spike of pixels either at the left or right end as you do this, or you might lose shadow or highlight detail, or both.**

SATURATION: In Camera RAW, this is not as subtle as in Photoshop proper, as it affects all colors at once. However, I find that a boost of 1-12 points is often just right. However, unless you either want special effects or to be seen as somebody with a tin eye, go easy with the Saturation slider. If you have a camera that oversaturates a color, or if you want selectively to change the saturation of one color or area of the picture, use a Hue-Saturation adjustment layer in Photoshop proper.

At the top of the Camera Raw window is the **PREVIEW CHECKBOX**. Click it on and off to compare your results with the original, and start admiring your work.

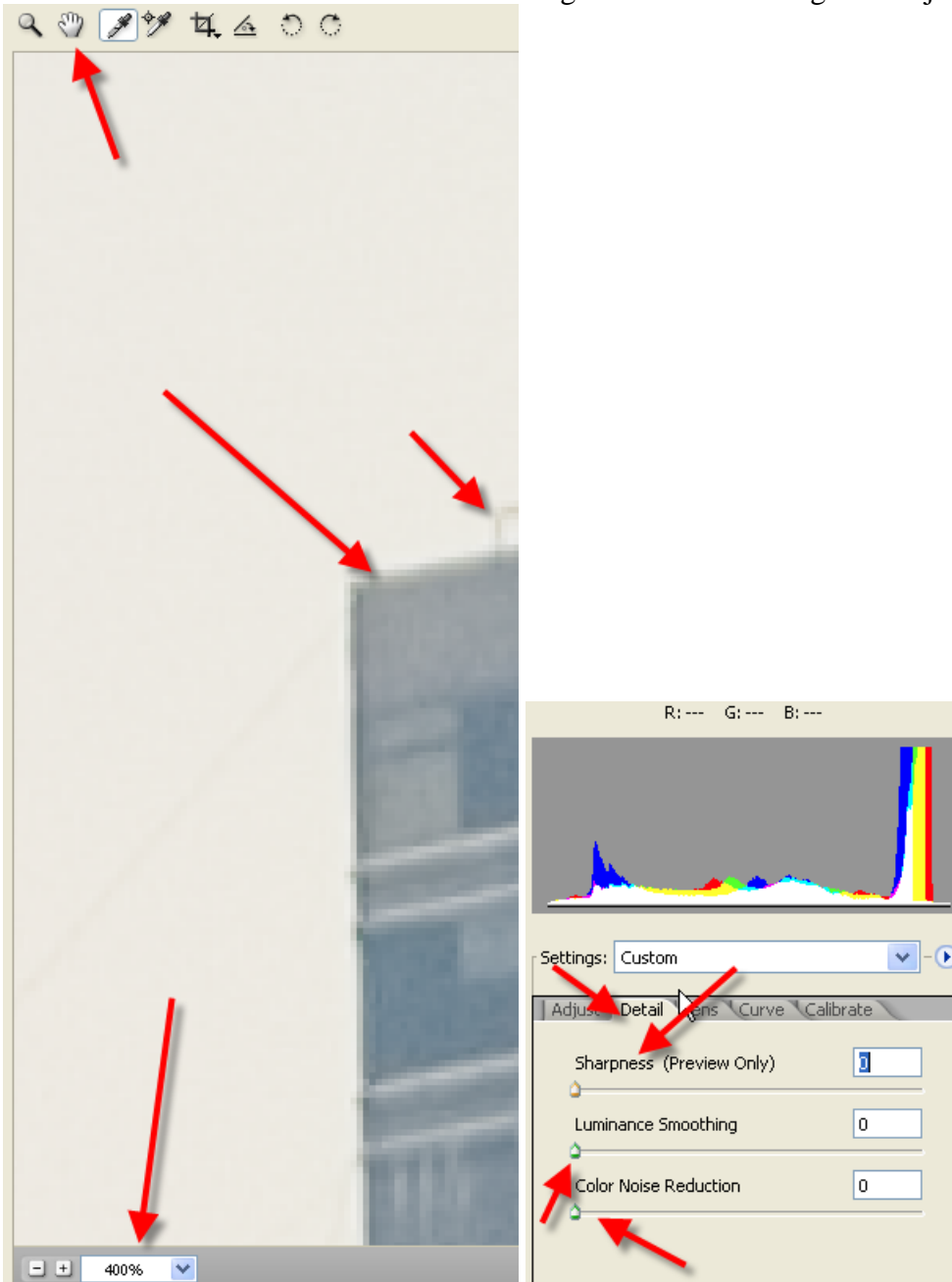
CHROMATIC ABERRATION AND VIGNETTING: THE LENS TAB

Some lenses, particularly but not limited to wide angle lenses, have two undesirable effects on the image. **CHROMATIC ABERRATION** is frequently seen in the corners of an image and is caused by the inability of the lens to focus the R, G and B light at the same point. Because they are diffracted at different angles, the further from the center of the lens, the more apparent the color distortion gets, and is noticeable as a red, blue, cyan or yellow fringe at the edges of objects. That is not to be confused with the “purple fringing” sometimes seen at very high contrast edges of objects, caused by overloading of

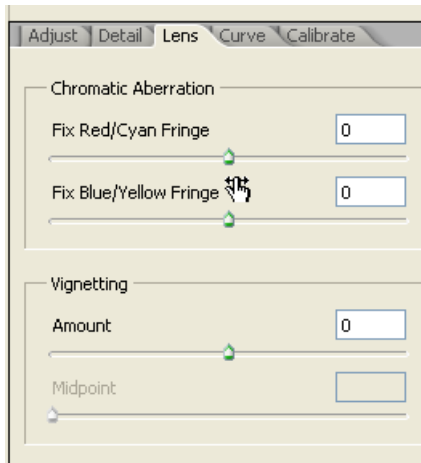
the individual pixels. **Vignetting** is noticed as a darkening at the corners of the image because of inability of the lens to distribute the light evenly to the edges of the frame. Both of these can be corrected using the **LENS tab**.

CHROMATIC ABERRATION:

1: To see if your image has this, go to the bottom of the preview window, select 400% zoom, and using the hand tool at the top of the window, scroll the image to a contrasty area near one of the corners. Look for a fringe of color at the edges of objects.



Set the 3 sliders on the **DETAIL tab** to “0” temporarily so as not to influence the adjustments you will use in the **LENS tab**.



Hold down the ALT key while you slowly drag the Red/Cyan slider. You can see the fringe come or go, either Red or Cyan. When it has reached its point of least color fringing, repeat this step with the **ALT key** held down while moving the Blue/Yellow slider. Generally, all of the chromatic aberration can be removed. **At the bottom left**

of the Preview window,  select **FIT In VIEW** to see the full image.

Vignetting: If you see darkening at the corners, drag the Amount slider to the right. To change the midpoint of the lightening effect, use the Midpoint slider, which will be available as soon as the Amount slider is moved. Some people use this to **darken the corners**, to draw more attention to the center of the image, but I haven't found that to be as useful as other methods of darkening.

After using the **LENS tab**, don't forget to reset the sliders in the **DETAIL tab** (my settings are **Sharpness: 50, Luminance: 0, Color Noise: 25**).

After you get familiar and comfortable with this aspect of Camera RAW, I'll do an advanced session on Camera RAW. Until then, I wouldn't play with the **CURVE or CALIBRATE TABS**. It is not that you can hurt something, but it should wait until you really understand what you are doing with the adjustments outlined here.

Now, go back to the **ADJUST tab**, and hit the **OPEN button** at bottom right of the window.

When your image opens in Photoshop proper, edit it to your heart's content with whatever additional adjustments you may wish. I save the worked-on file as a TIFF, in 16-bit color. I do any noise reduction, Shadows/Highlights, maybe a curves and/or adjustment layer, and possibly selective Hue/Saturation at this point. I name the file something like BronxZooUnResized_filename.tif. I cut off the DSC or other part of the original file name, leaving only the file sequence number.

If, however, I have to use a filter or other adjustment that only works on 8-bit color, I'll convert to 8-bit before using those tools, and then save the file.

When I resize the file, I save it as an 8-bit file with the output size in the name: BronxZoo_1077x1615_filename.tif. I then resize it, convert the mode to 8-bit color, use Focus Magic and PhotoKit Sharpen for the proper size and medium, and then save again. The original RAW file is untouched. My basic converted file is available to resize for different purposes, and my resized file is available to print again if I choose.

I hope you find this summary helpful. After your first 20 or so RAW files get processed you will probably not want to go back to shooting just Jpegs for most purposes.
