

## *HDR and Photomatix*

The burgeoning desire to capture High Dynamic Range (HDR) images and process them in appropriate HDR software can be found in many places on the web.

HDR is ideal if you want to capture Magic Hour pictures at that gorgeous hour around sunrise and sunset. Such images may be at low shutter speeds, show high contrast, and, in effect, be difficult to process without converting to a 32-bit image and then have some form of 16-bit interpolation. At present time, there is a tendency to over dramatize (color saturate) HDR images produced by Photomatix.

If you have the goal that an HDR image should be on the upper edge of your best CS3 fine art production, then we offer some suggestions.

1. Convert your raw images to a 32-bit image using Photomatix.
2. Save that image as a .hdr file. It will be a good image to return to if you want to tone map at different settings.
3. Check the dynamic range of the image; Photomatix expresses dynamic range in terms of base  $\log_2$ , but it's effectively an EV for each number on the log scale. Don't forget to count 0 also...
4. Choose either Details Enhancer or Tone Compressor. Details Enhancer looks around each pixel and averages other pixels. Tone Compressor works with just that pixel.
5. Because I think visualization and modification controls and techniques are much better in CS3 than Photomatix, I usually produce an image with default settings then save a 16-bit tif.

### *Difficulties With Good HDR Images*

Landscape shooters often face light sky and dark foreground. Because they are shooting in low light, high contrast, and often with slow shutter speeds, they also often have to deal with capture noise.

In the brightest daytime images presently being shown on the web for this sort of capture, HDR has a tendency to produce darker halos in the sky. In other words, you can look at an HDR-produced sky and its lighter near the trees and darker out in the sky.

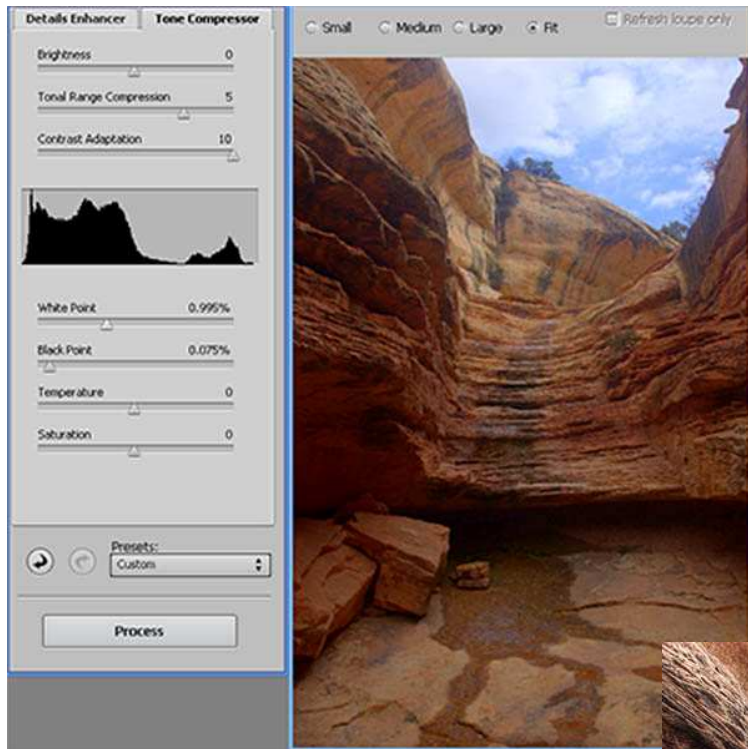
HDR algorithms also have a difficult time dealing with anything that's moving. Although Photomatix will attempt to align images, this software does not presently have precision similar to the align function in CS3.

You may find yourself creating an HDR image, then realize you're going to have to merge one of the originals with this HDR to smooth out some difficulties from

your HDR interpretation. If you choose to enhance the HDR image with Photomatix controls, this is a more likely situation.

You may find yourself reversing some of these trends using CS3.

### Details Enhancer and Tone Compressor



### Bullet Canyon Cataract

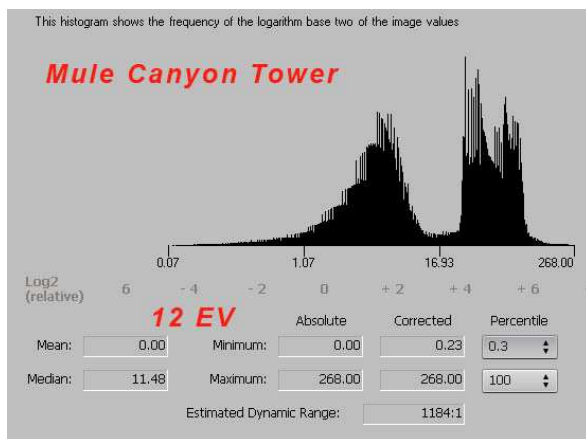
Tone Mapping in Photomatix is controlled by one of two buttons: either Details Enhancer or Tone Compressor.

Our first image shows Details Enhancer settings for an HDR image. While watching the histogram, we increased strength and luminosity, then varied clipping points and increased gamma.

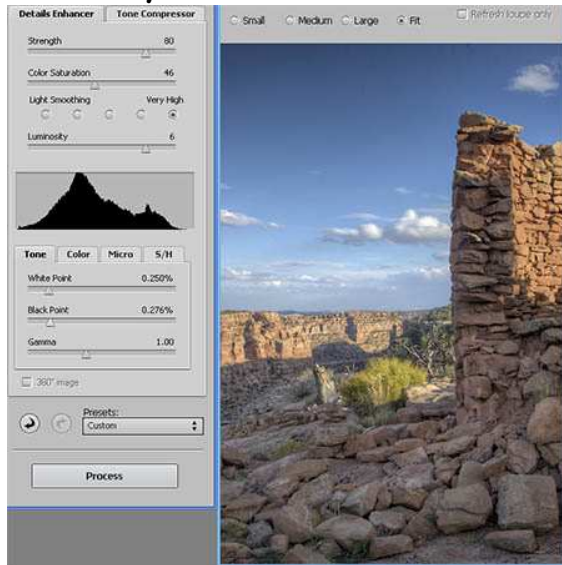


The histogram shows most of data in mid tones and shadows; on screen, the result is a rather pale comparison of what the eye saw.

The image on the right represents actual conditions in stormy weather. It's been fine tuned in CS3.



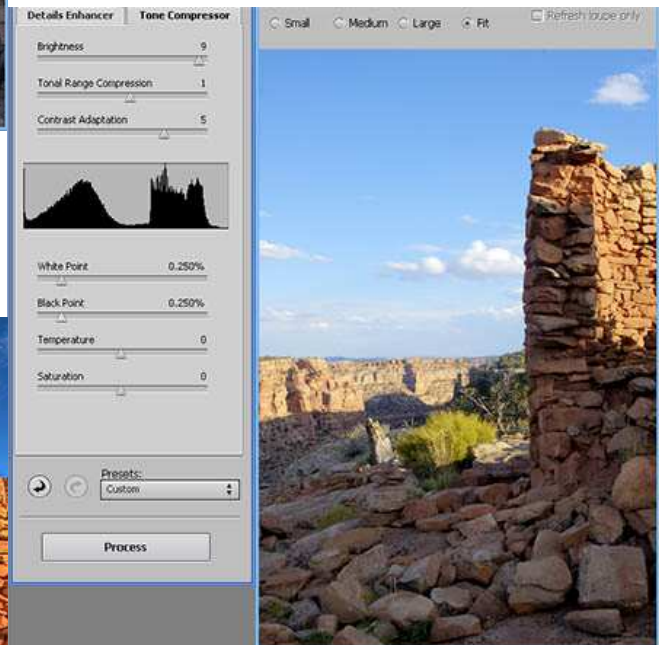
## Mule Canyon Tower



Photomatix made a Mule Canyon Tower histogram (above) before Tone Mapping. Note both 12 EV range and bimodal shape; midtones and highlights had different luminosity.

The image on the left shows Details Enhancer settings to create the 16-bit tiff file in Photomatix. Again, note strong smoothing of the histogram distribution for the same data.

Tone Compressor can provide an entirely different histogram (right). At least ~ it retains the bimodal shape of the original histogram.



Fine tuning created our final CS3 image (left).

Visuals from Photomatix Pro were created with version 3.0.1.

The final image was processed with adjustment layers in Photoshop CS3. A Levels reset the white point, the blue sky saturation was boosted 10%, and a channel mixer action enhanced color 30%.

### *Maturity of HDR Software*

Photomatix seems to be our current darling for HDR software. At present, Photoshop CS3 does not have popular HDR tools which smoothly create 32-bit images. However, I would anticipate CS4 will retrieve high honors when it's HDR capability is finally released.

Photomatix has recently released version 3.0.1. The graphical user interface (GUI) has changed a bit. In its present incarnation, 3.0.1 has matured over 2.5.3 - where I began. Several annoying features have been significantly refined, making a smoother workflow!

At the rapid rate HDR software development is progressing, I would imagine Photomatix will rectify this set of issues while creating smoother performance in the next few releases ~ probably prior to release of CS4.

### *Caveat*

As of going to press in early second-quarter 2008, Photoshop CS3 has a limited HDR, but it's not yet become the darling of HDR enthusiasts. Photomatix is priced much more reasonably; so it's getting a big rush.

I often only have a laptop in the field to do preliminary processing. The fit command should let me process images on the laptop where I can see all of the image.

I've been around software development for a long, long time. If my opinions seem fixed in stone, I also know continued software development, such as the prolonged effort put into Adobe Photoshop, makes for a deep, wide-ranging, tool with incredible capabilities. So, I suspect HDR will become more mature in the future as prosumer cameras continue to lower their noise capture abilities. I also suspect landscape shooters will really like some of their images coming from HDR processing.

For most software growth, time and money help. So I would expect Photomatix to go forward a fair distance in the next couple of years. It's even possible Adobe will buy Photomatix to smooth out a lagging HDR production schedule.

But here I, like Bill Gates, am trying to simply read mystical HDR tea leaves...

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