

# Intro to Photography

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Session 7

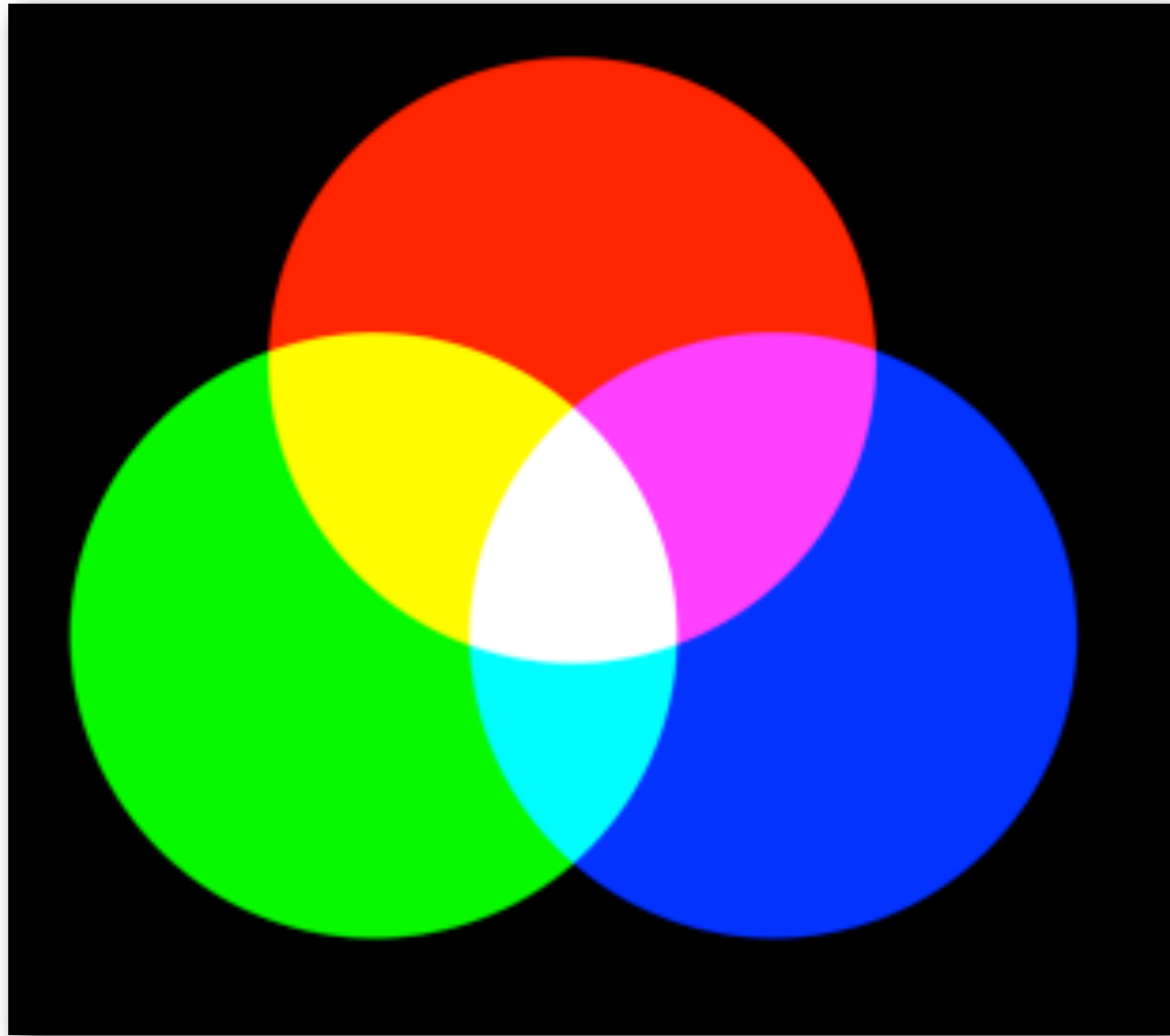


# File types and Post Processing

The principal difference between Raw and Jpg is the number of steps between 0-100%

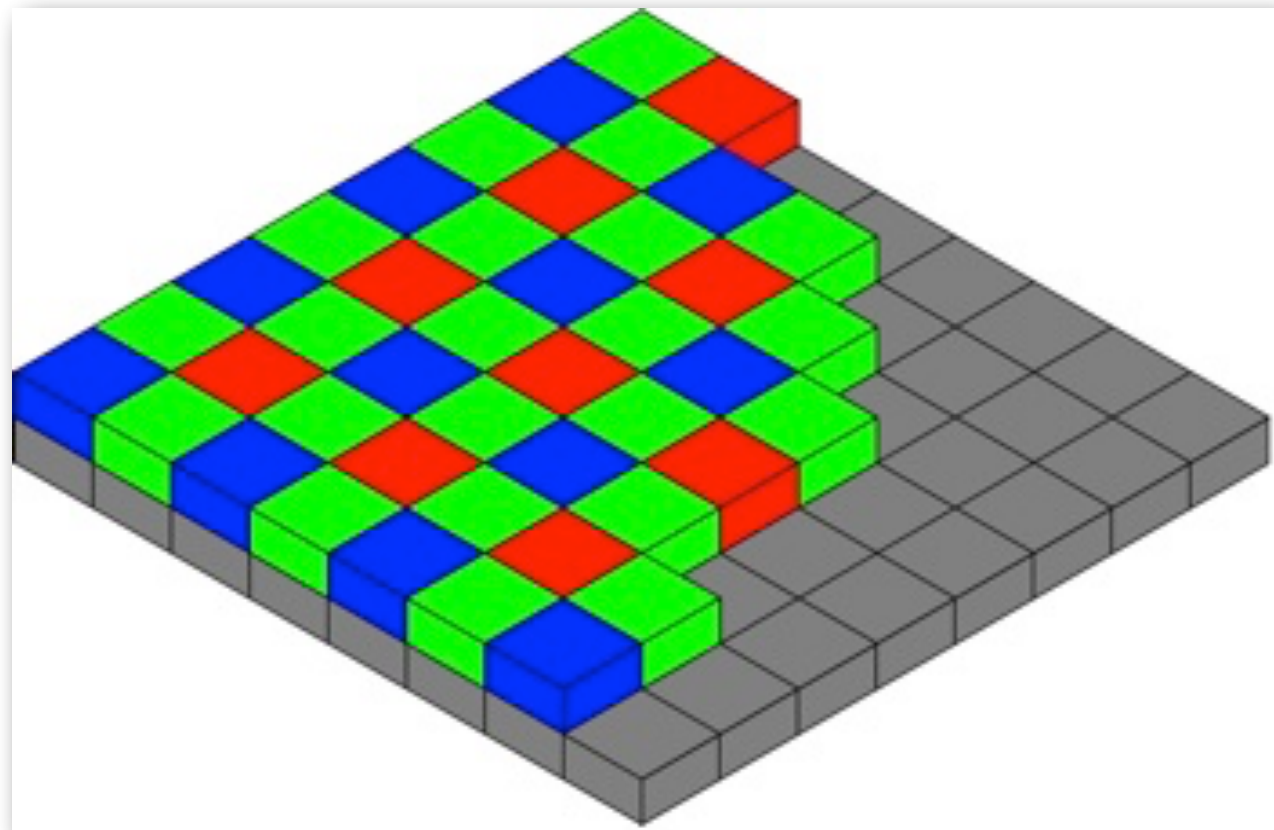
or...

0 and 255



**A camera  
records red,  
green, and  
blue light in  
three  
channels...**





**...using a sensor that is covered with photo sites that are behind red, green, and blue filters**







**For a  
photograph  
to appear  
continuous  
in tone, we  
need around  
200 unique  
values**

so, what that means is, between black and white are shades of grey.

The number of shades of grey is determined by the bit depth the camera records.



Jpg files are saved as 8 bit files.  
That's 2 to the power of 8 which is 256

A greyscale jpg would be made of 256 shades of grey  
(if saved as a greyscale image)

An RGB greyscale would have 256 shades of red,  
green, and blue. That gives us:

$256 \times 256 \times 256 = 16,777,216$  possible colors

Jpg files are saved as 8 bit files.

Because the Jpg file only give us 256 values per channel, and a continuous tone image needs around 200, we don't have much to edit with.

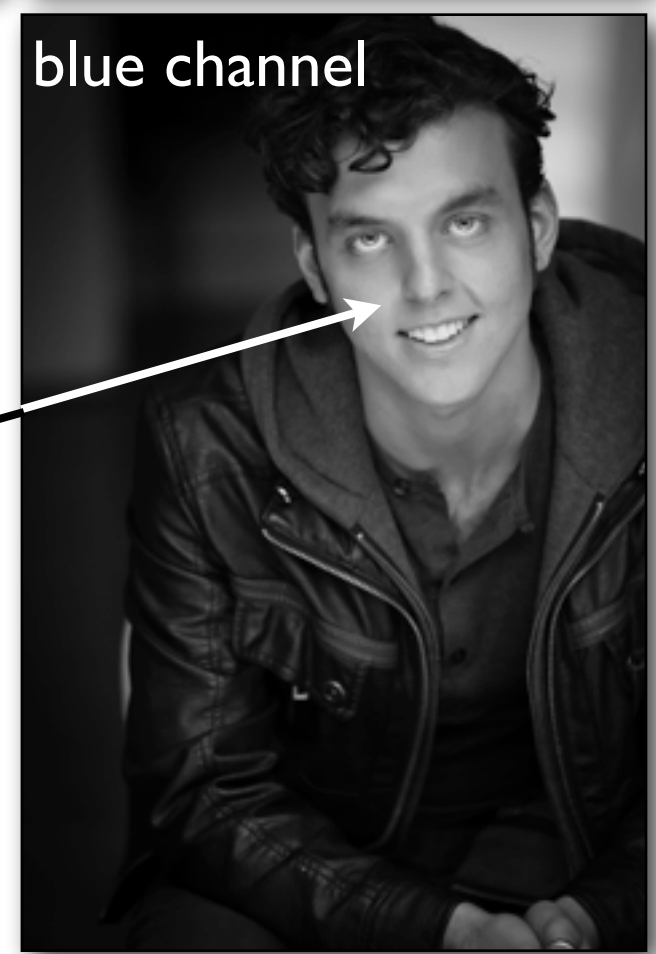
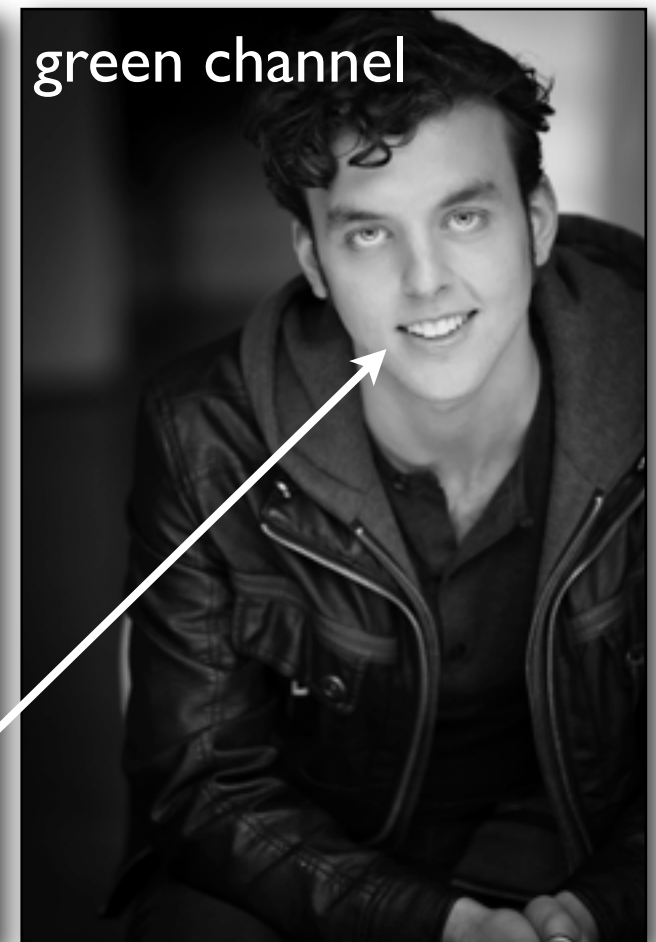
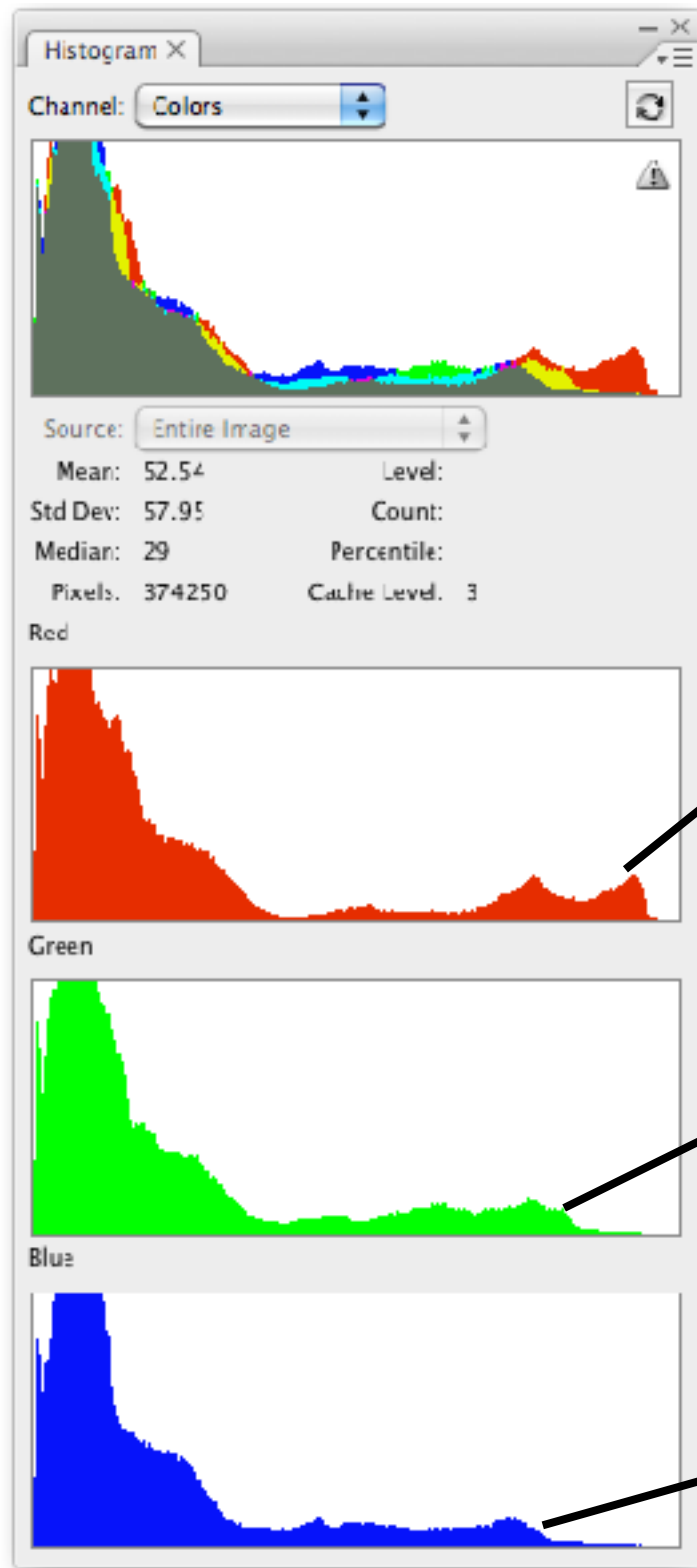
Raw files are saved with greater bit depth.

10, 12, 14, or sometimes 16 bit

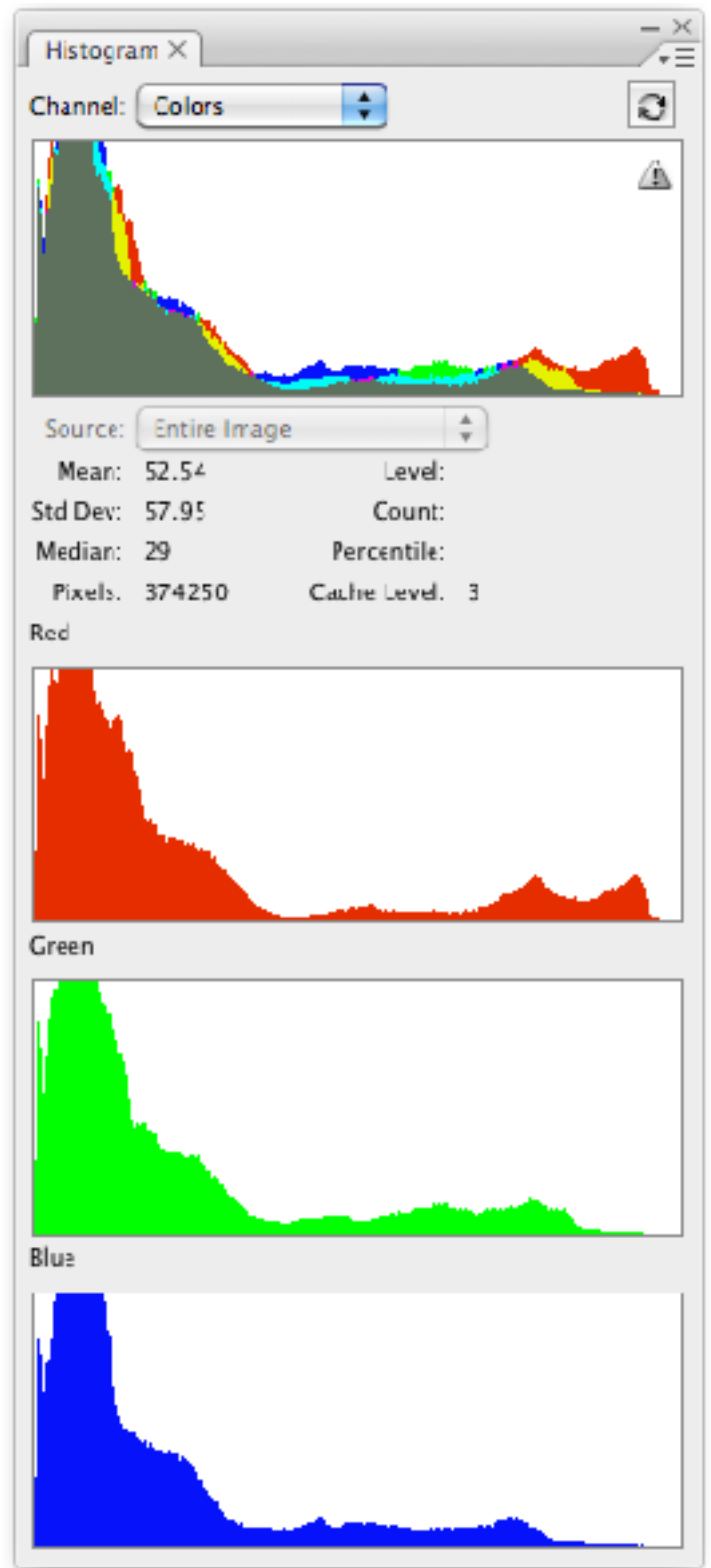
A 10 bit raw file would have 1024 shades of grey, or over one billion possible colours

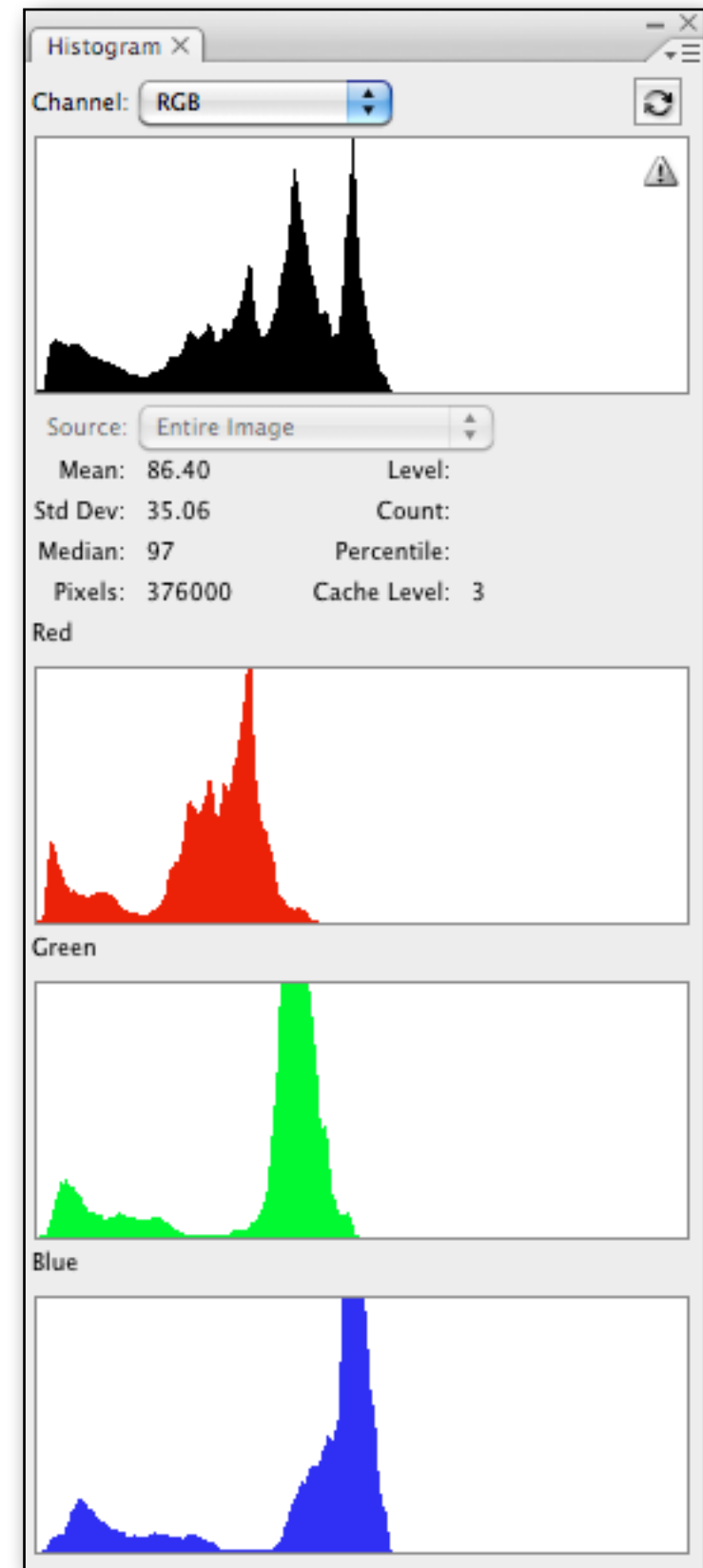
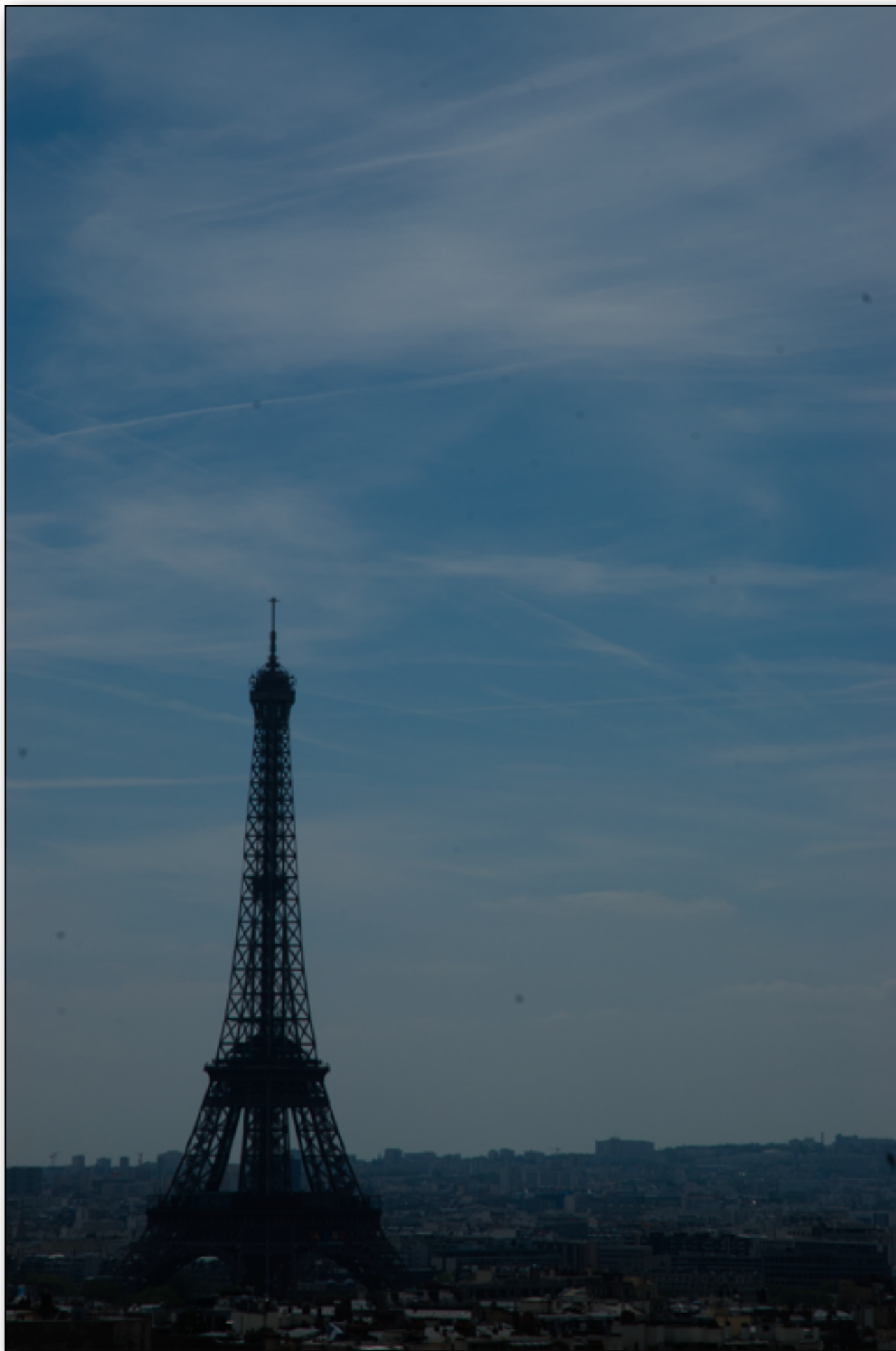
12 bit gives us 4096 shades of grey and over 68 billion colours

and a 16 bit file gives us a 65,536 shades of grey and a number of colours that needs scientific notation to display.

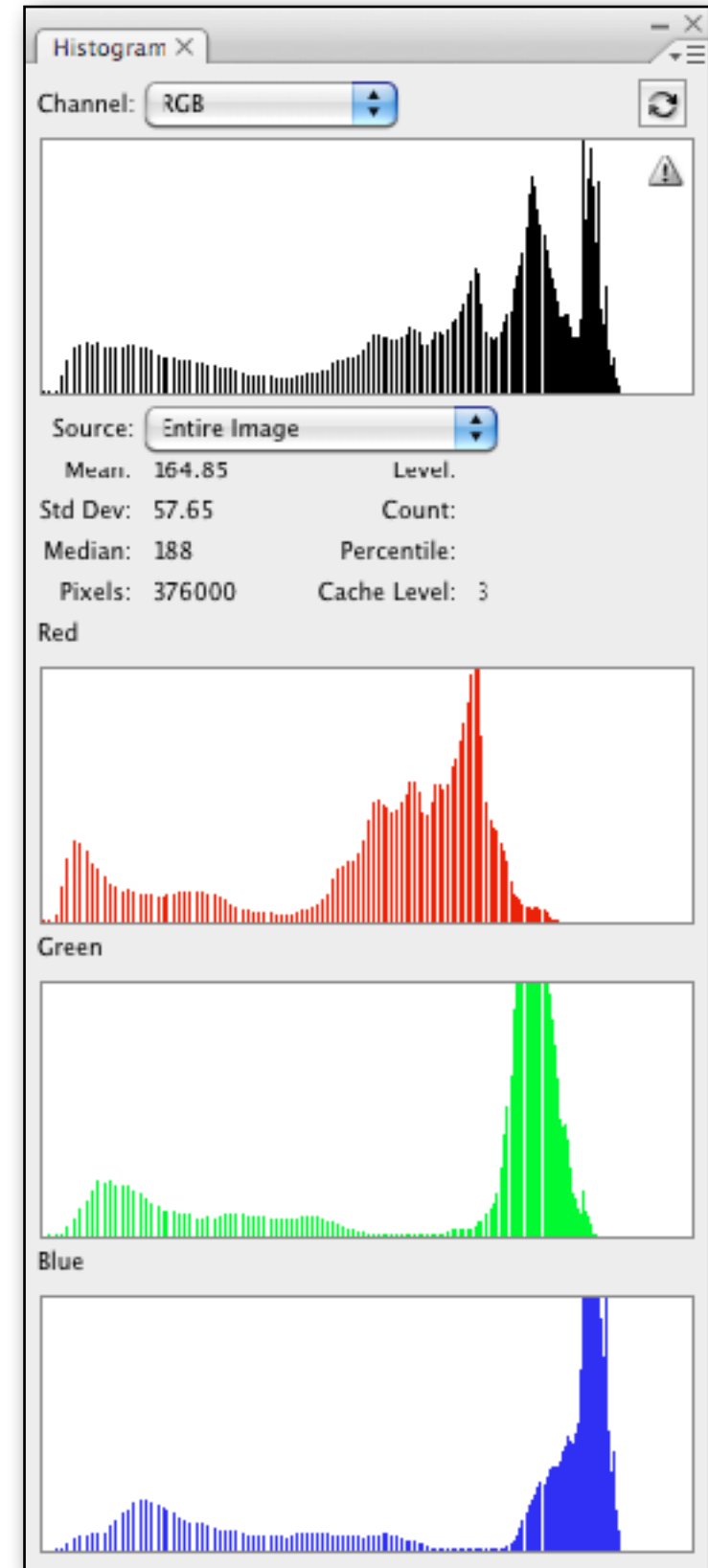






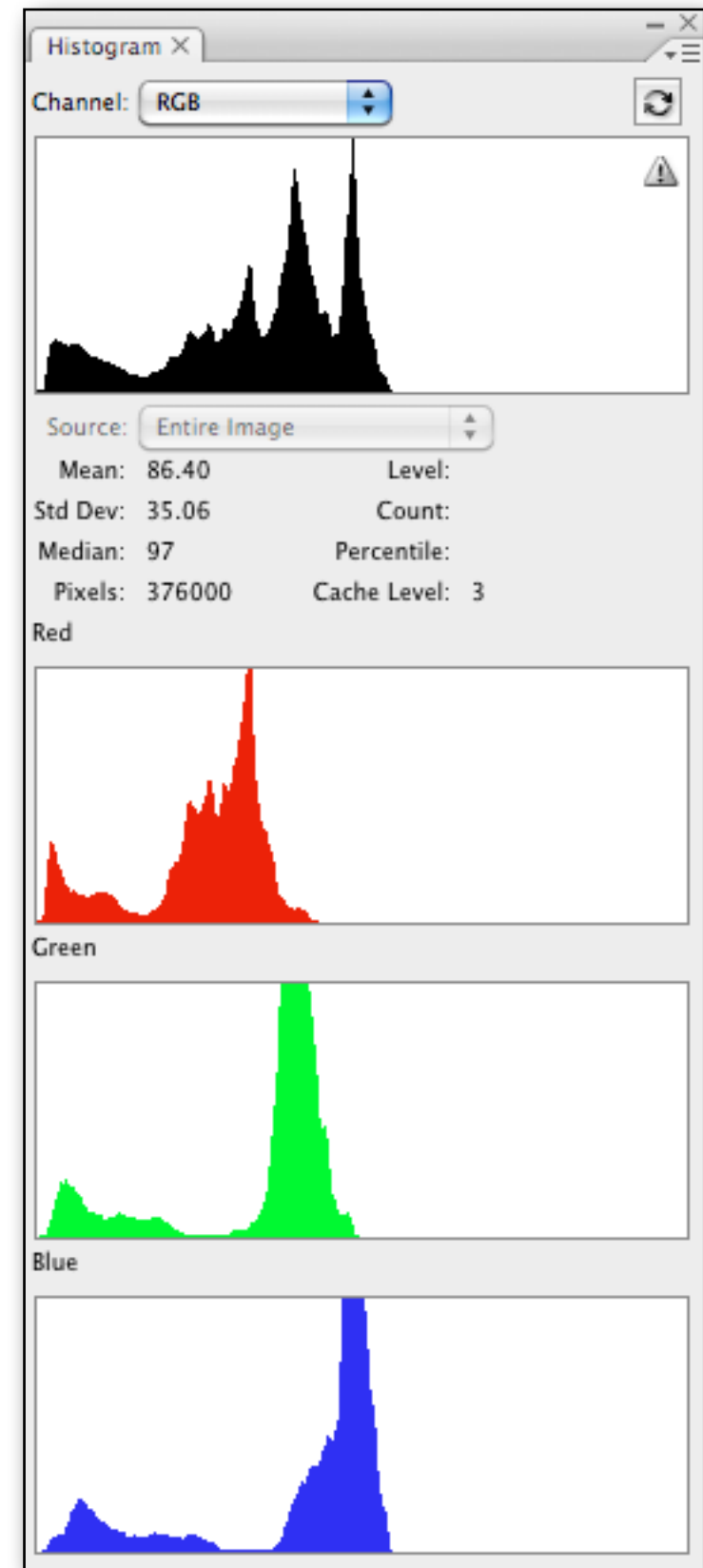
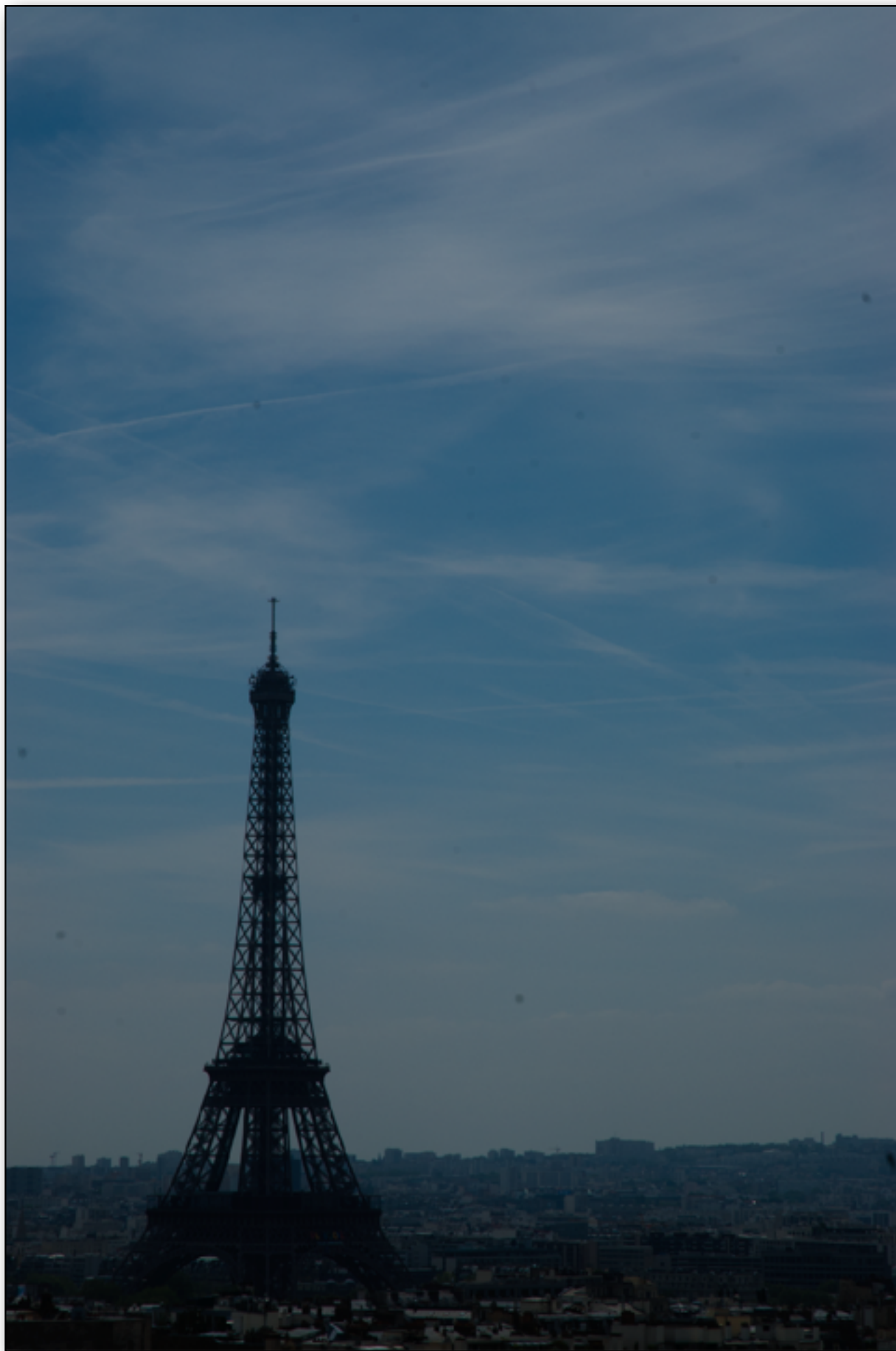


8 bit file - underexposed



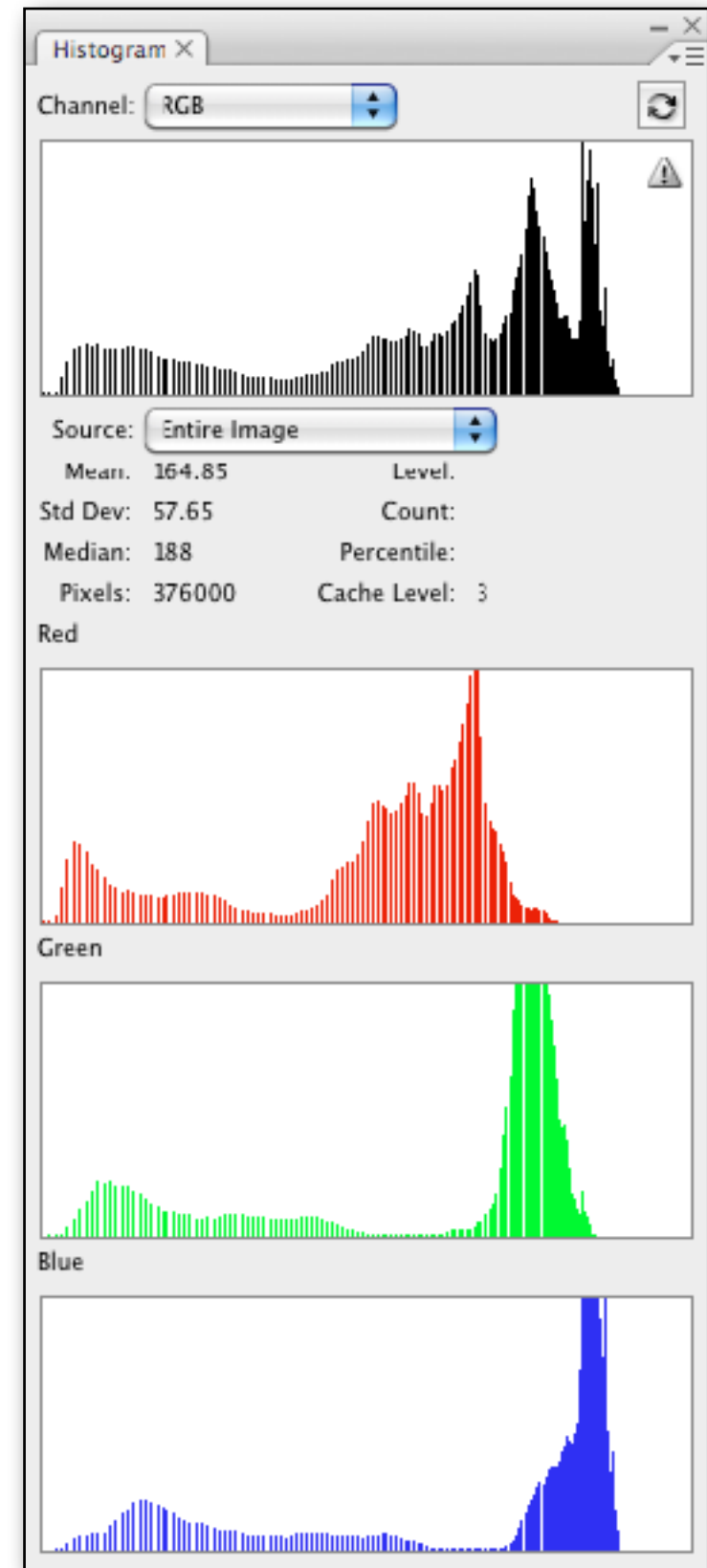
8 bit file - adjusted



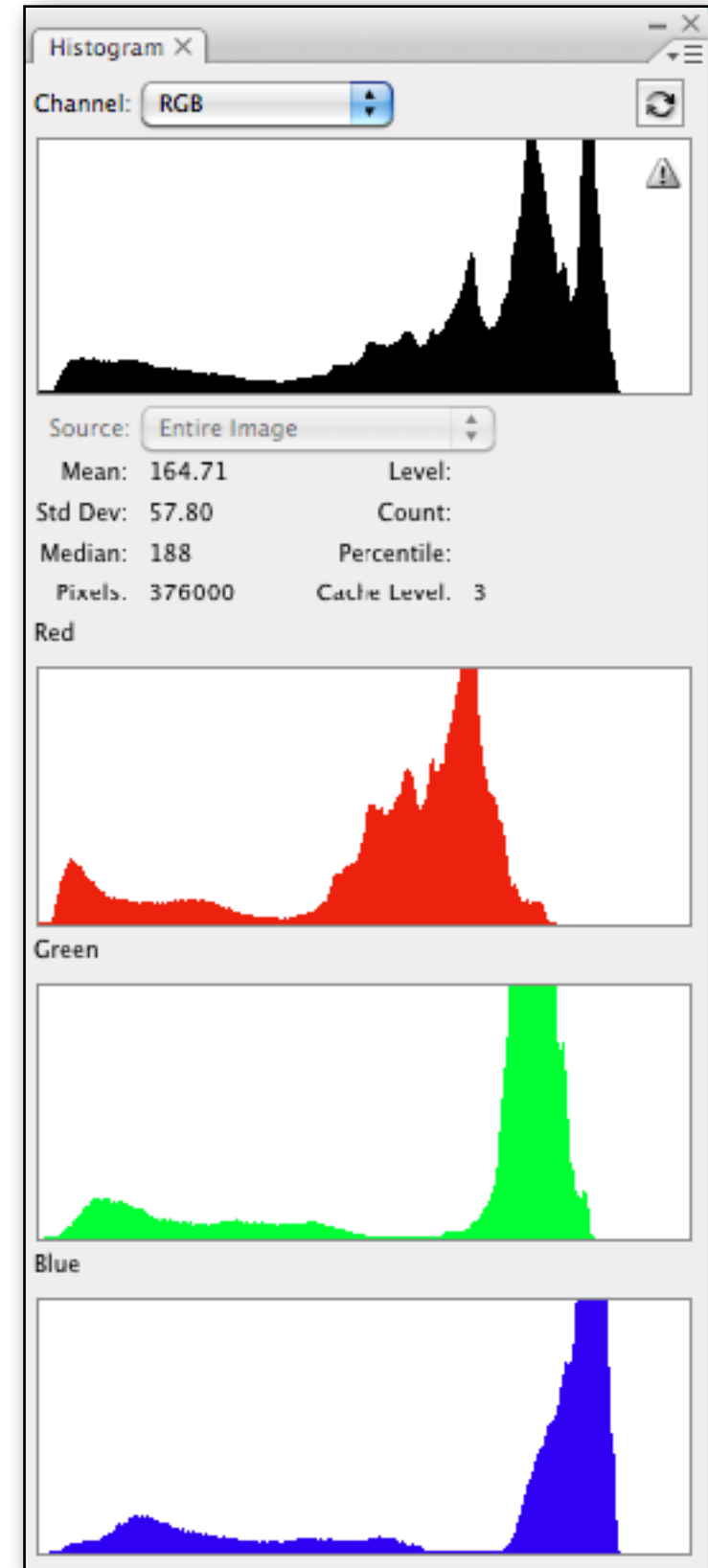


16 bit file - underexposed





16 bit file - adjusted



16 bit file - adjusted and converted to 8 bit

Photoshop or  
Lightroom?

It Depends on what  
you are doing

None Filters Off

|                               |                                    |                                    |                                    |                                |
|-------------------------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------|
| 73 dng<br>DNG<br>4255 x 2848  | 171 dng<br>DNG<br>4255 x 2848      | 172 dng<br>DNG<br>4256 x 2848      | 347 dng<br>JNG<br>4256 x 2848      | 348 dng<br>JNG<br>4256 x 2848  |
|                               |                                    |                                    |                                    |                                |
| 187 dng<br>DNG<br>2000 x 3008 | 1688 dng<br>DNG<br>2000 x 3008     | 1689 dng<br>DNG<br>2000 x 3008     | 1690 dng<br>JNG<br>2000 x 3008     | 1874 dng<br>JNG<br>2000 x 3008 |
|                               |                                    |                                    |                                    |                                |
| 80 RW2<br>RW2<br>2847 x 4356  | DSC_1990 dng<br>DNG<br>4000 x 2672 | F1160628 dng<br>DNG<br>4000 x 2672 | F1160629 dng<br>JNG<br>4000 x 2672 |                                |

Histogram

ISO 100 91 mm f/5.6 1/400 SEC

Original Photo

Quick Develop

Saved Preset: Default Settings

Crop Ratio: Original

Treatment: Color

White Balance: As Shot

Temperature: 00

Tint: 00

Tone Control: Auto

Exposure: 00

Contrast: 00

Highlights: 00

Shadows: 00

Whites: 00

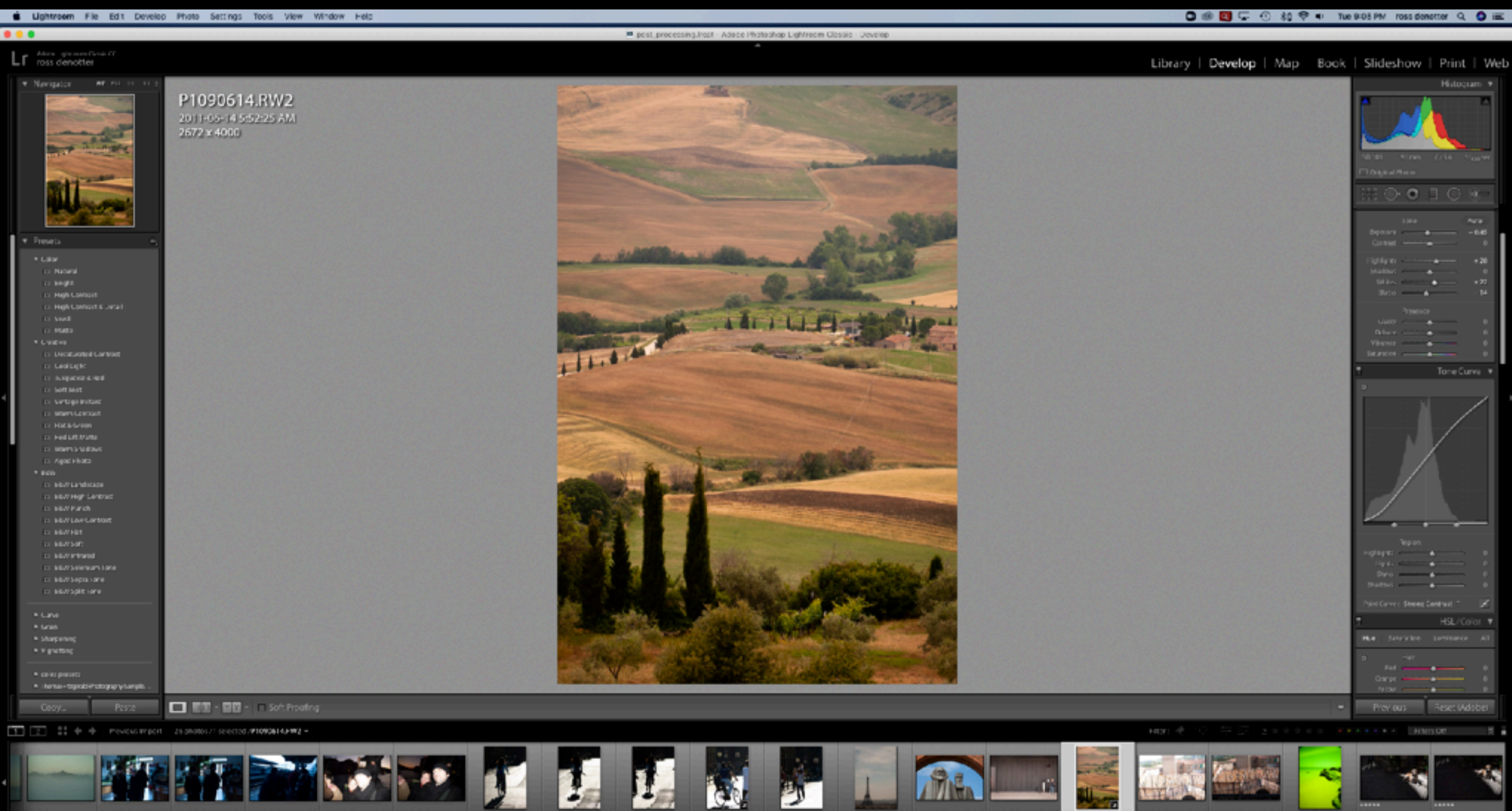
Blacks: 00

Lightroom combines a number of modules into one program.



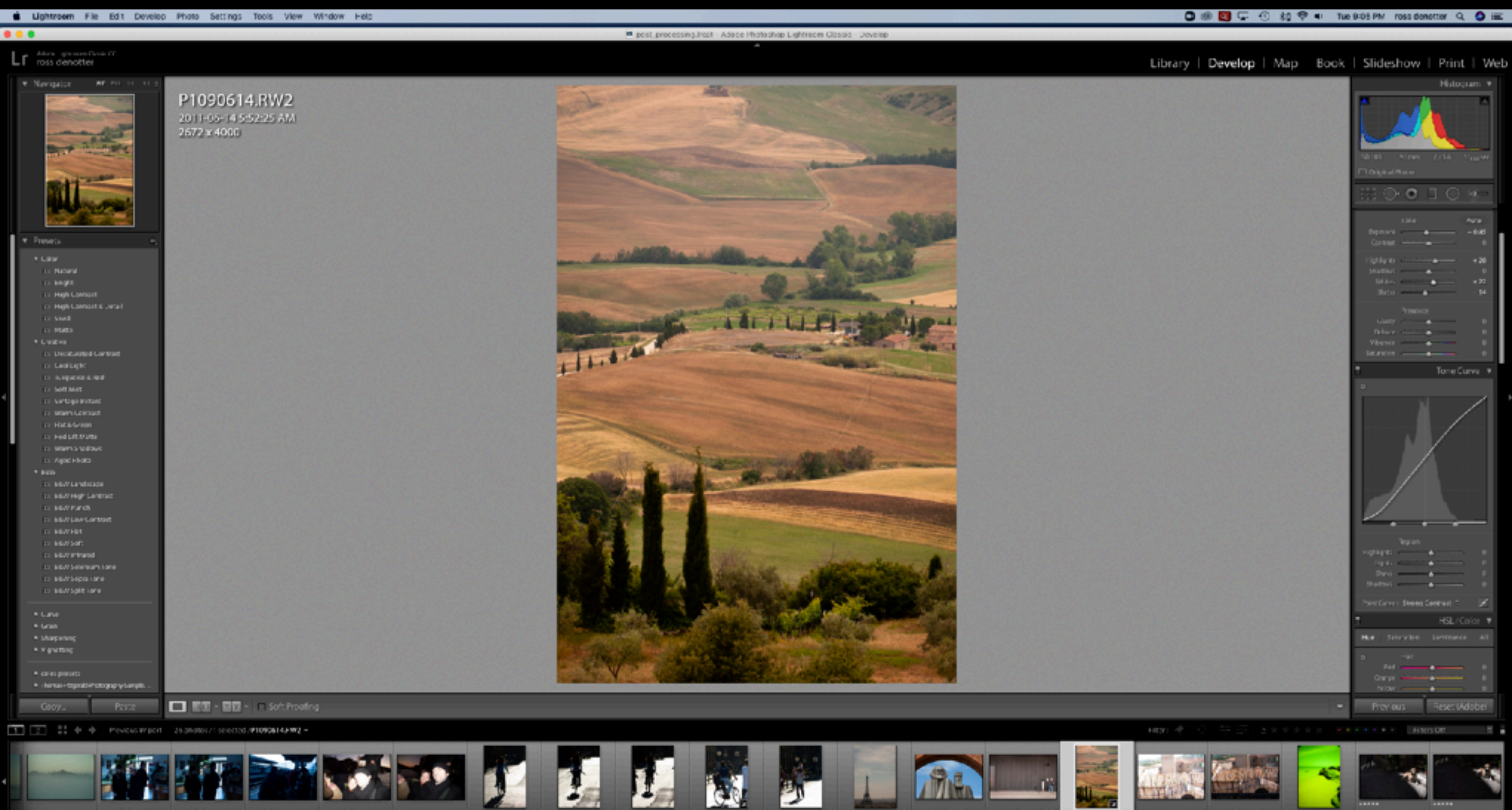






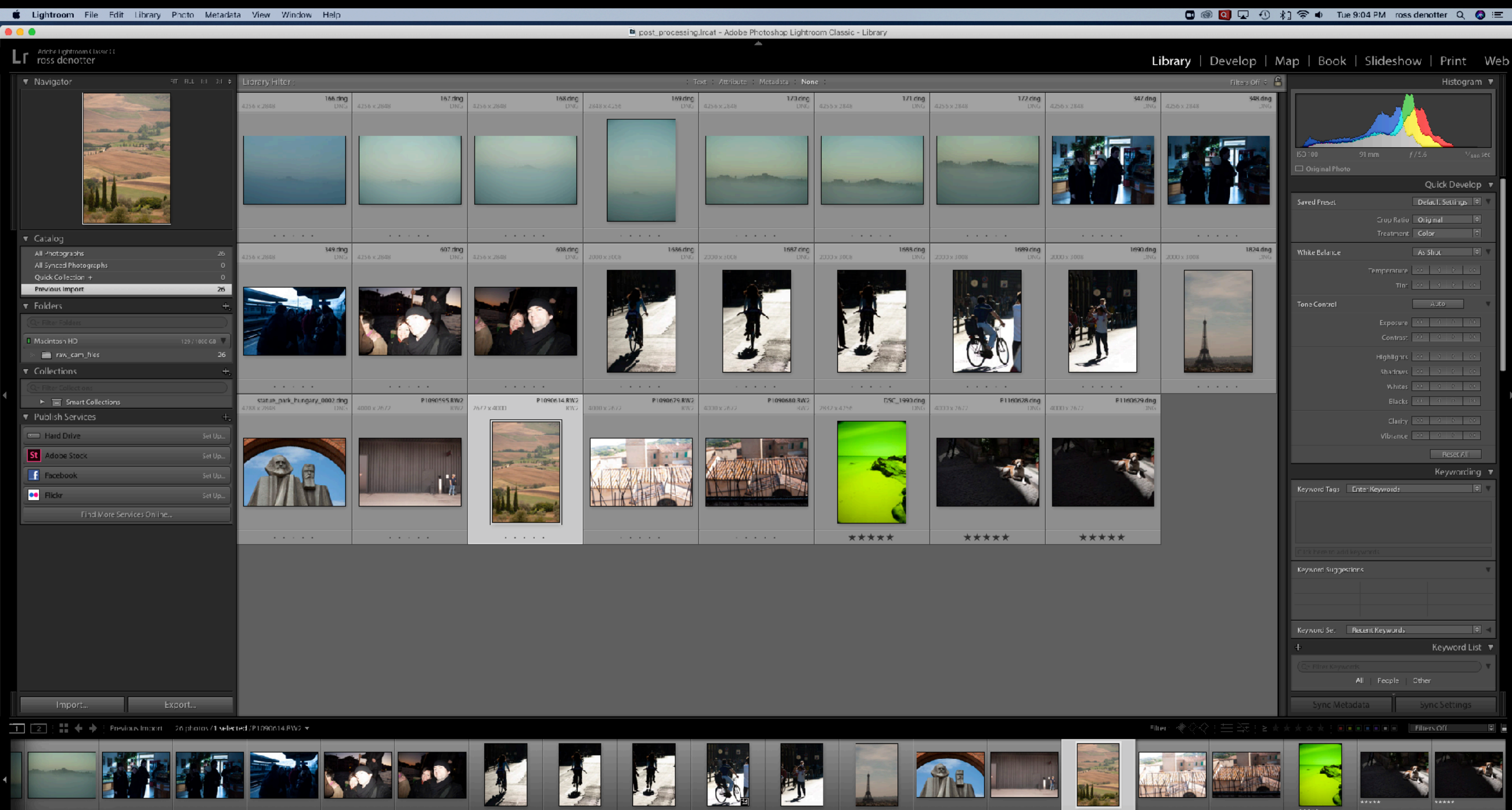
...or a single image





When working in Lightroom, you are working on proxy files. That means your original images are untouched.





The Library module shows the imported images.





Histogram

SO 100 91 mm f/5.6 1/400 sec

Original Photo

Basic

Treatment: Color Black & White

Profile: Adobe Color 1

WB: As Shot

Temp: 6950

Tint: +9

Tone: Auto

Exposure: -0.45

Contrast: 0

Highlights: +28

Shadows: 0

Whites: +22

Blacks: -14

Presence

Clarity: 0

Dehaze: 0

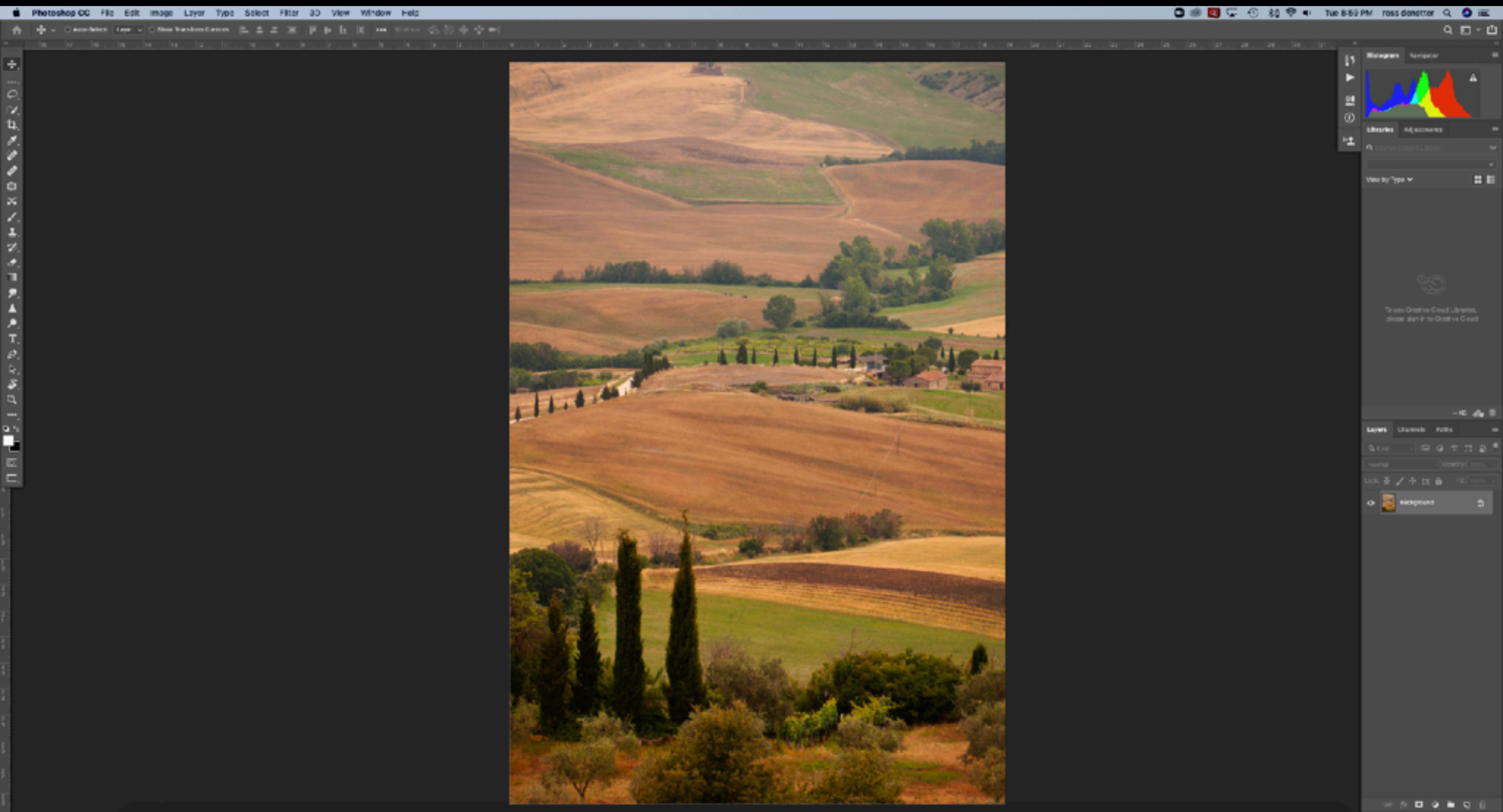
Vibrance: 0

Saturation: 0

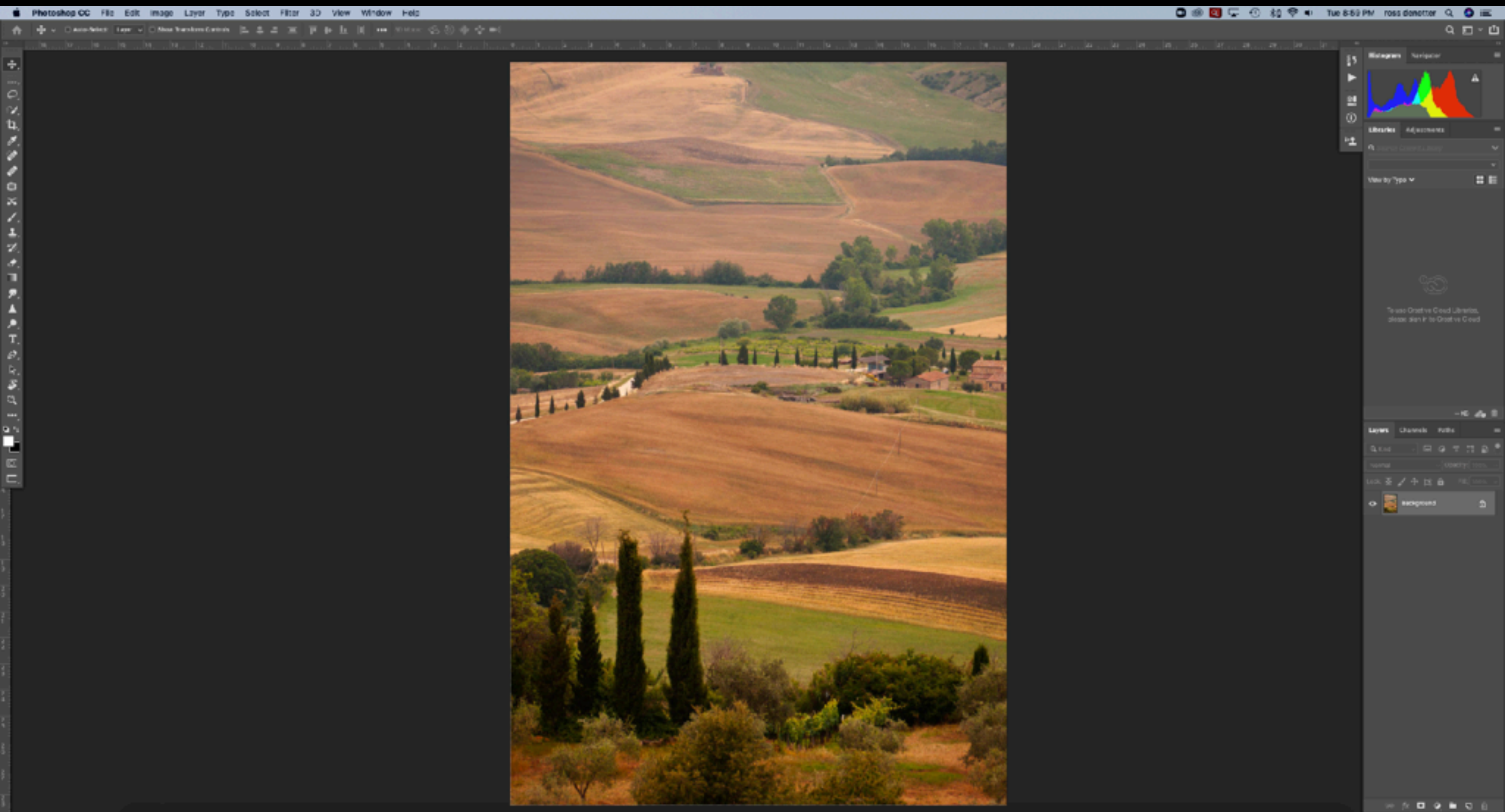
Tone Curve

The Develop Module allows us to make adjustments



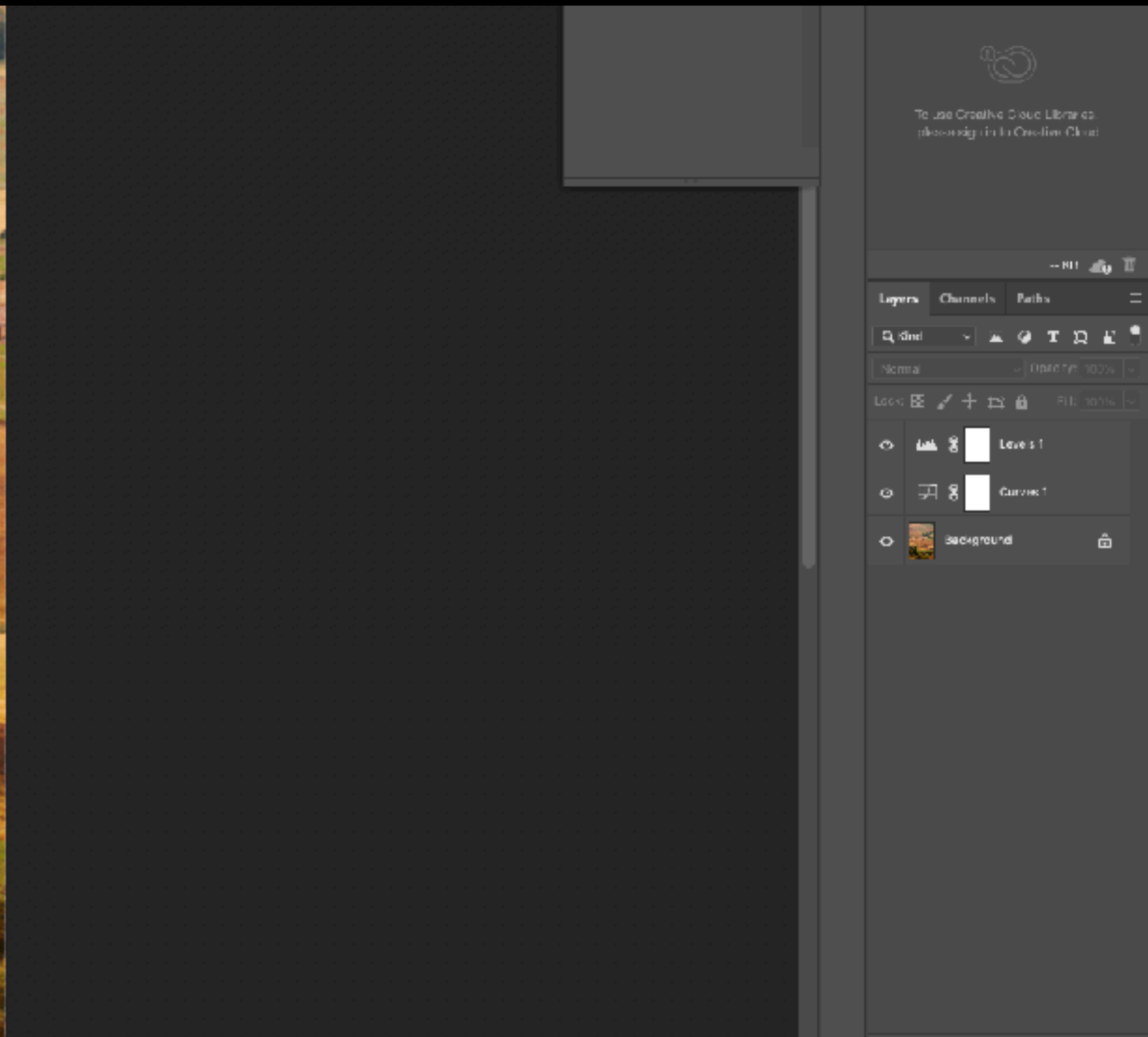


Photoshop works in layers on a single image at a time.



it works on either the original photo or a copy, which takes up substantial storage space.





Photoshop allows us to work in layers, enabling adjustments and/or compositing



**NEVER**

Jpg a Jpg



If you make changes to an image in Photoshop, Save to a lossless file like TIFF or PSD.

Making changes to a Jpg and saving those changes will compress the file again which results in a loss of quality.





Less compressed

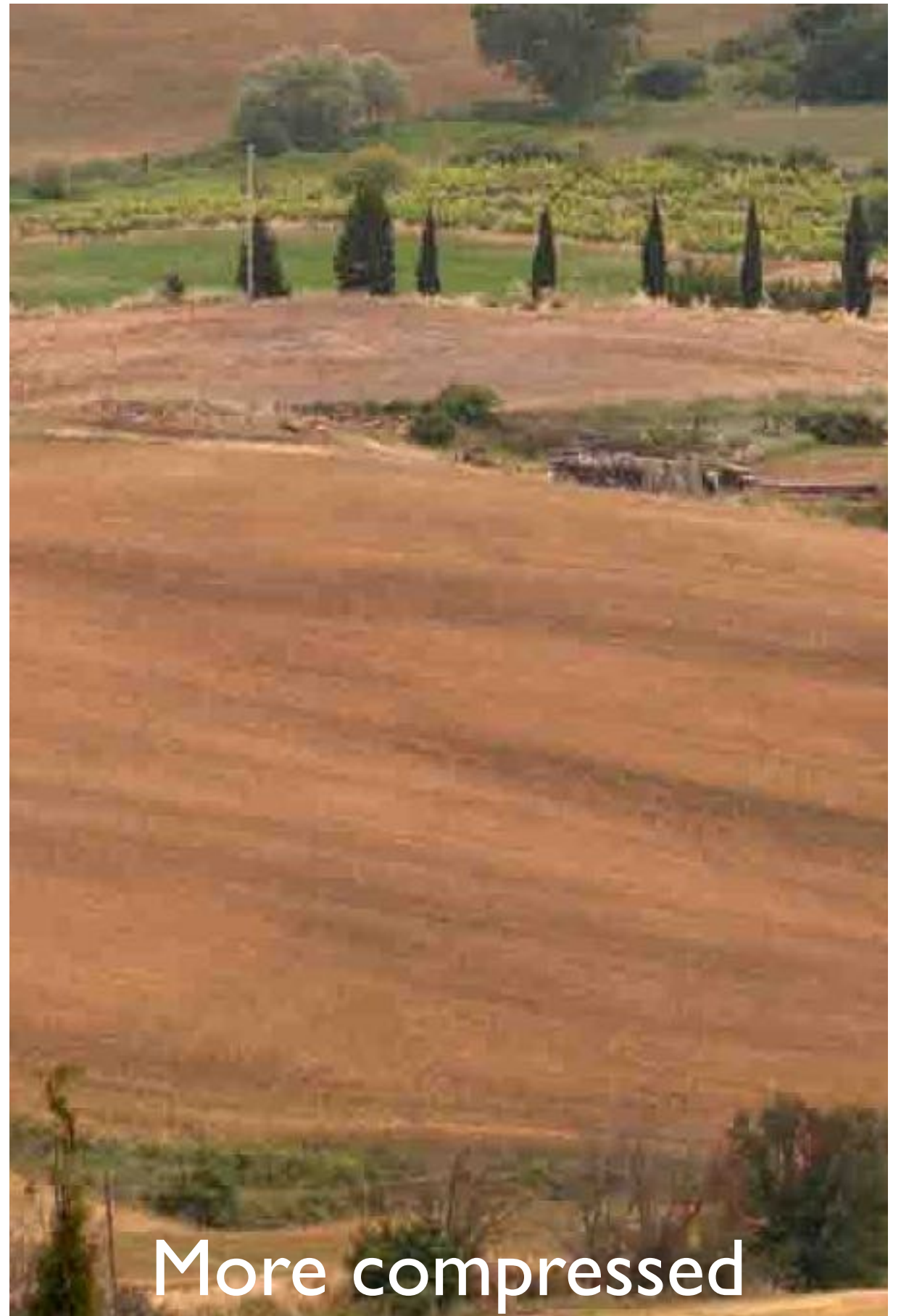


More compressed





Less compressed

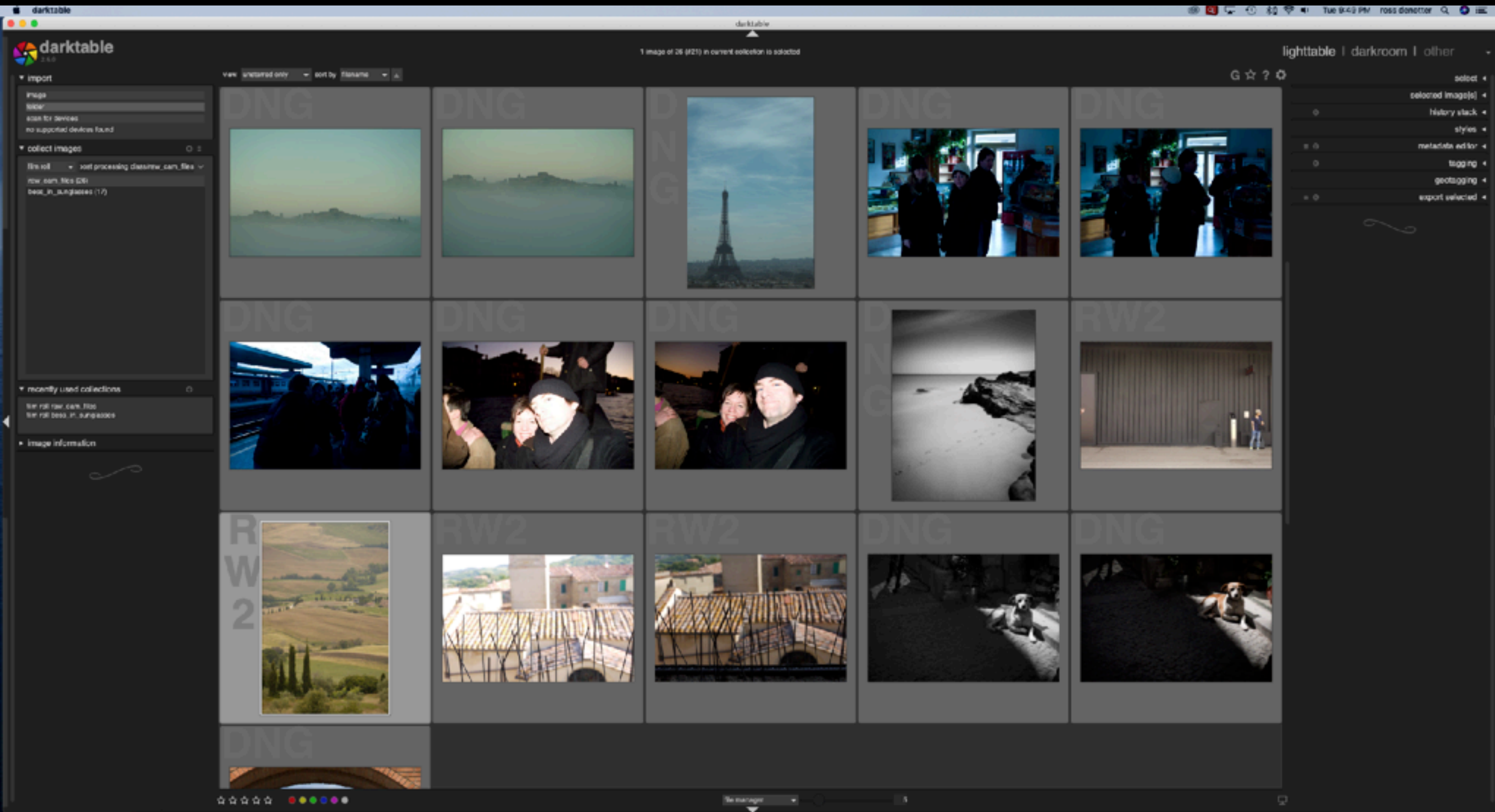


More compressed





To keep your original files intact in Photoshop, work on a duplicate set of images, not your originals



Darktable is free



