

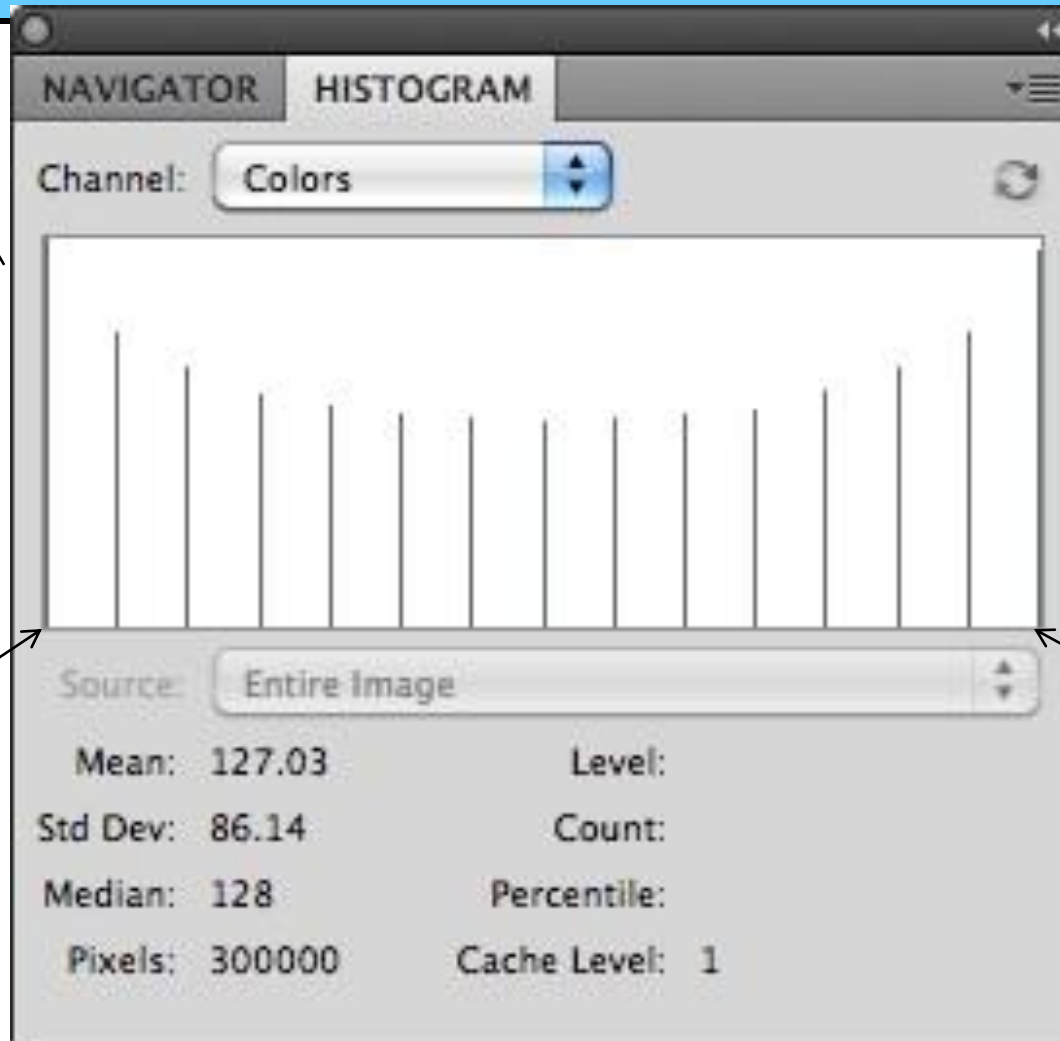
Histograms

Bill Woody
Photographs by Bill Woody
<http://photowoodys.home.att.net>
Photowoodys@ameritech.net

HISTOGRAMS

- **Histograms tell “How Many” pixels are at each shade of gray, from Black-to-White**
- **Histograms on the back of the camera**
 - Can tell you if you got it (the exposure) about right
 - Learning to use this can be very valuable
- **Histograms are also available in the Raw converters and in photoshop**
 - These can help a lot in image processing

Basic Histogram



Number
Of pixels
At each
Scene Value

Black •
Digital
Value
= 0

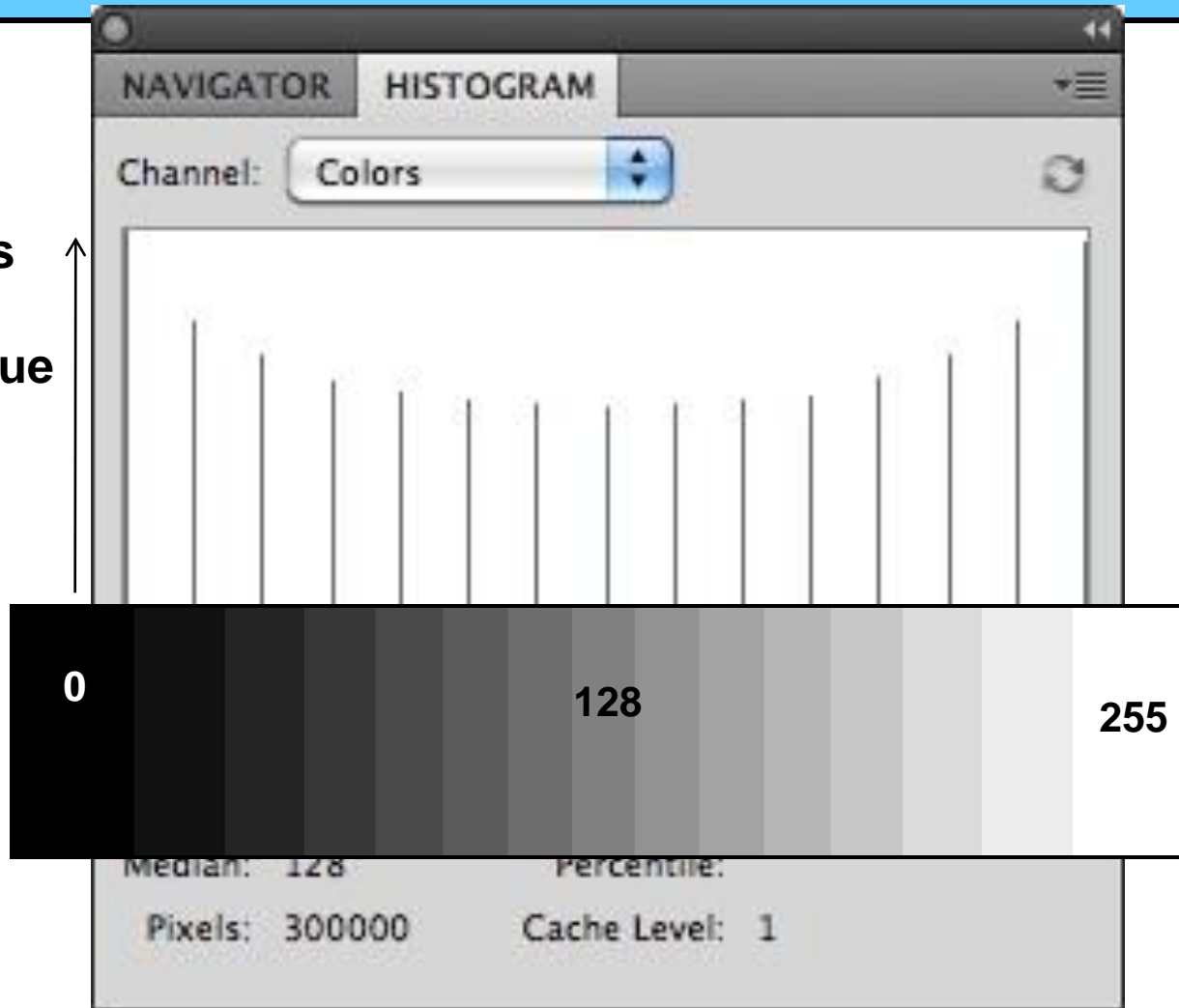
• White
Digital
Value
= 255

Digital Values are # of Bits
If this were an 8 bit image

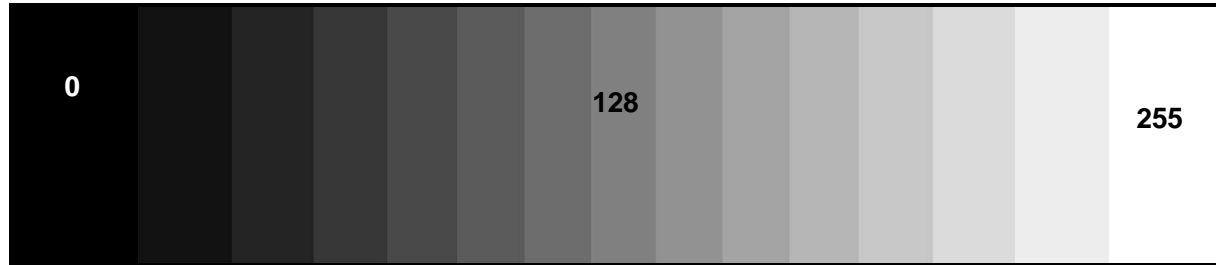
Lightroom uses 0 – 100%

The Histogram

Number
Of pixels
At each
Scene Value



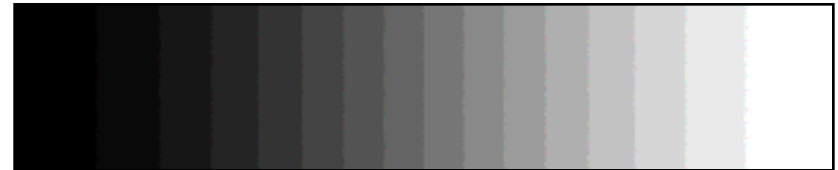
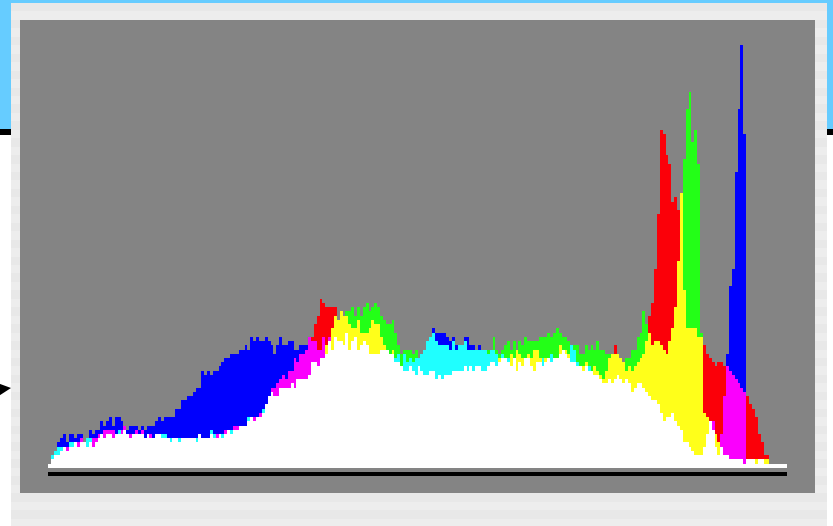
The Grayscale



Pure Black
No Detail
Saturated
Black

Middle gray
18% reflectance
Live with it
Anytime you point your camera
At a very uniform subject, this is the
Value that you will get

Pure White
No detail
“Blown out”



**Note that nothing is pure black or pure white
In this histogram
A normal scene histogram will fill the space
Left to Right**

When shooting



- **Set your camera to Identify “highlights”**
- **This image has “Flashers”**
 - Saturated highlights
 - Really ok in this image
 - But not ok on a standard image
- **The histogram would show a strong vertical line on the right hand side at 100% or at 255**

When shooting

- **Normal scenes should fill the width of the window**
 - But protect the highlights
 - Can have some “flashers”, BUT!
 - Not in an are where you want detail
- **Narrow illumination scenes – Expose to the right**
 - Protect the highlights

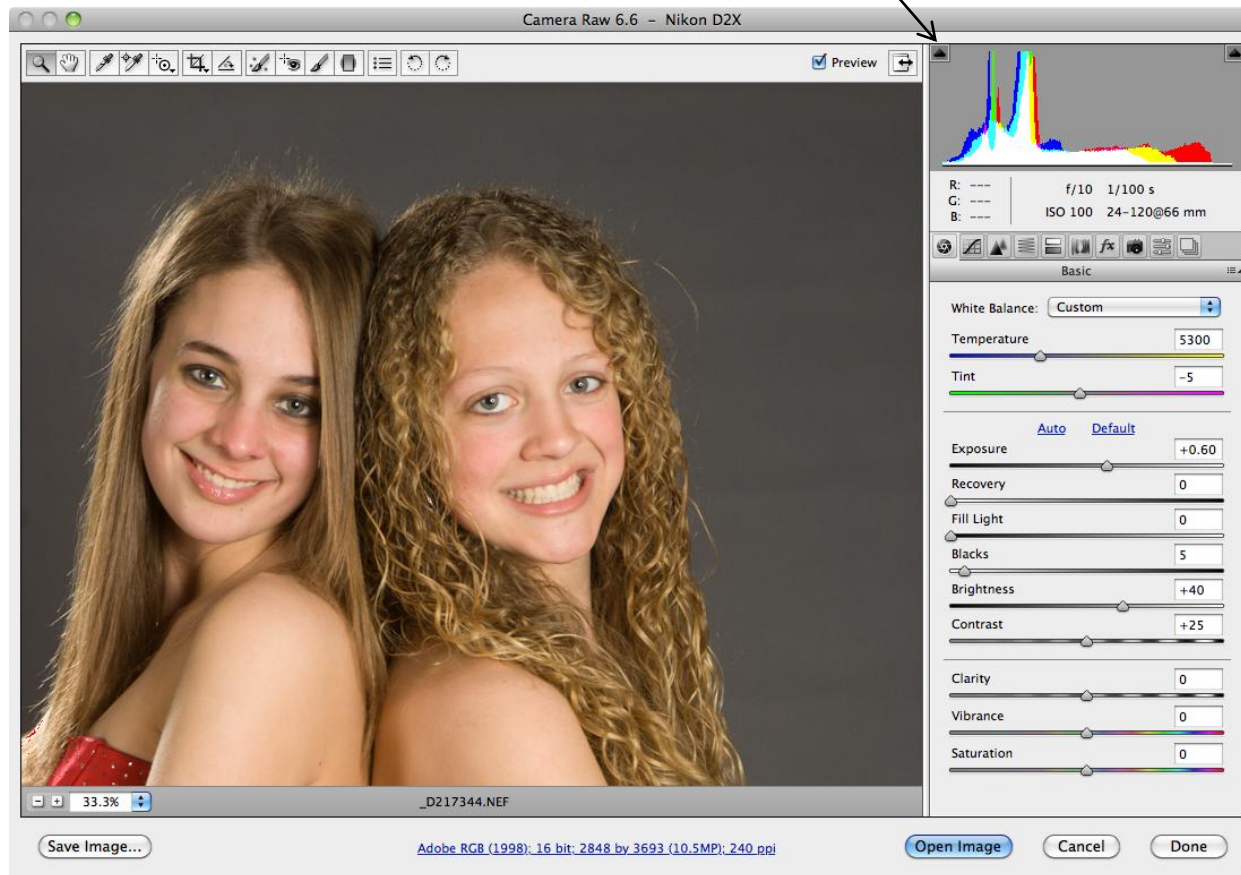
Histograms

Useful when printing or optimizing photos

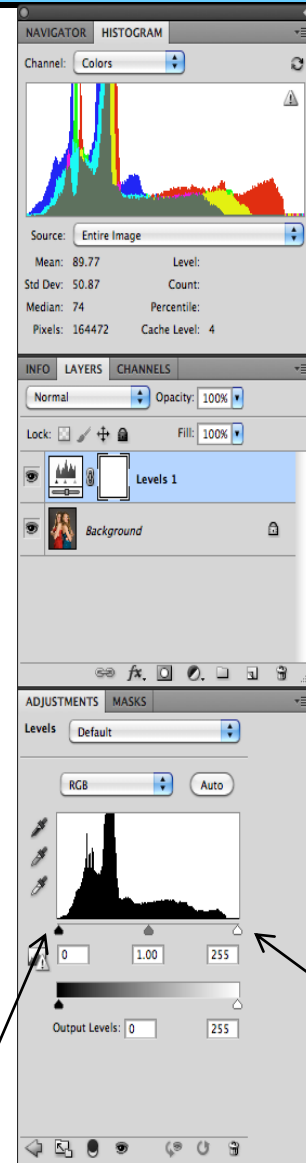
- **The histogram can give lots of clues**
 - Too little exposure
 - Too much black saturation
 - Too much White saturation
- **In ACR and in PS there are ways to find what is saturated**
 - **ACR (and Lightroom)**
 - Black slider + Alt/option will show black saturation (By color)
 - Exposure slider + Alt/Option will show White Saturation (by color)
 - The histogram has Saturation Icons in the
 - Upper LHC to show Black saturated areas in the image
 - Upper RHC to show White saturated areas in the image
 - **Use the Same process in Photoshop With a Levels adjustment layer**
 - Black slider + Alt/option will show black saturation (By color)
 - White set slider + Alt/Option will show White Saturation (by color)

In Adobe Camera RAW

- Show Black Saturation
- Show White Saturation



In the Photoshop window Histogram + Layers window



Black point set •

• White point set

Histograms Summary

- **Histograms are important in all parts of digital photography**
 - **When Shooting: to verify exposure**
 - **When Sorting & Editing: to set proper levels**
 - **When Optimizing & Printing: for final adjustments**