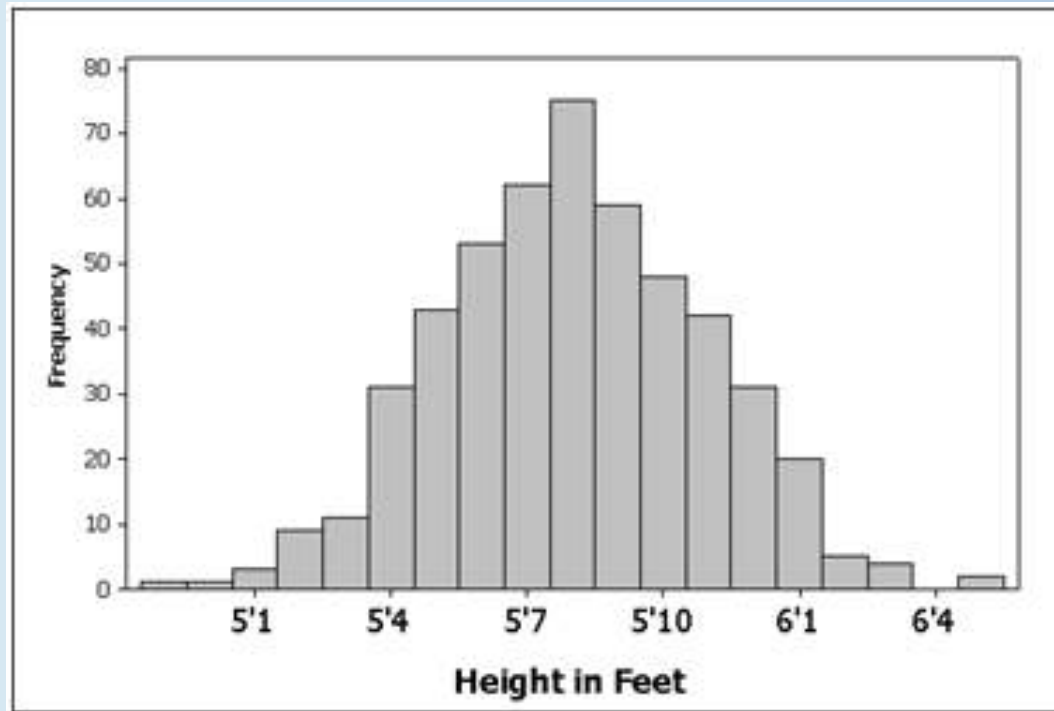


Histograms

Example: Height Distribution Histogram



Height distribution in
group of 500 men

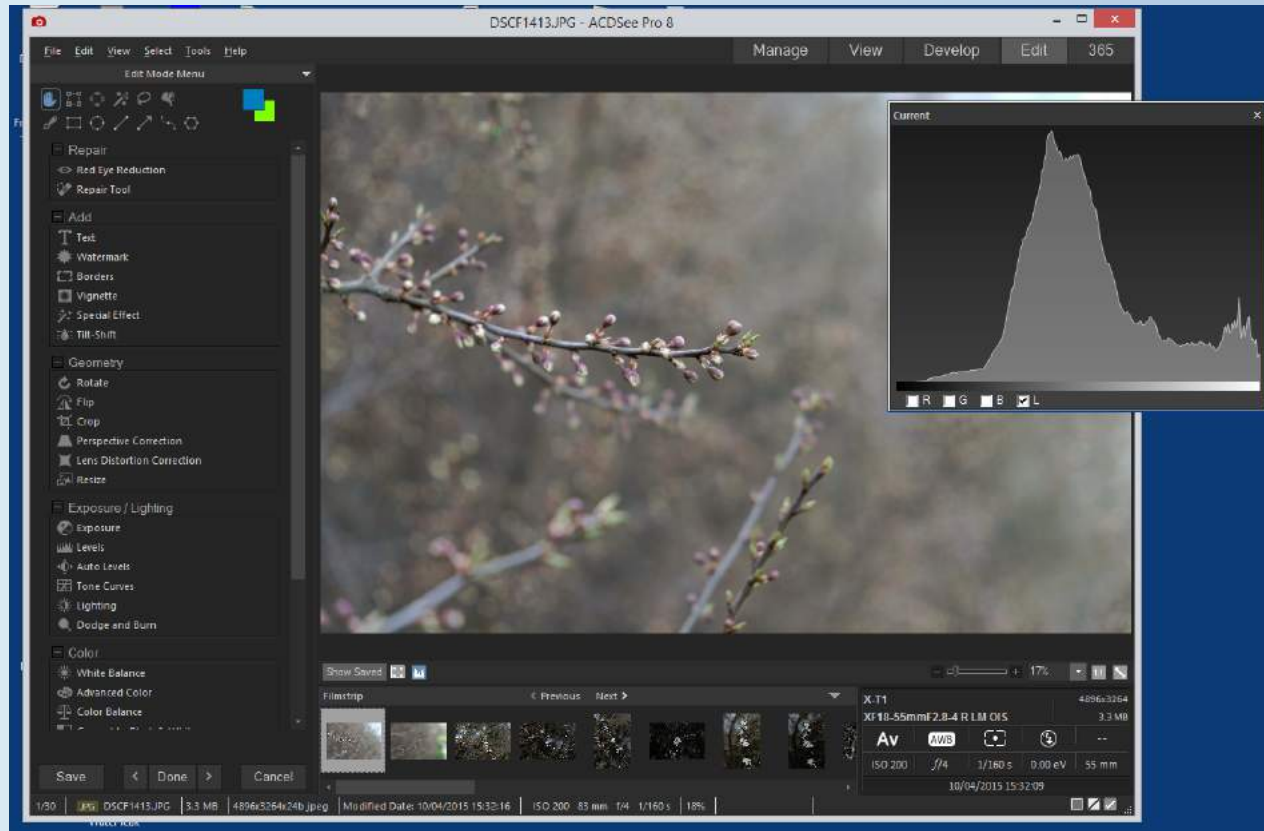
Image Density Distribution Histograms

Some cameras show histogram on LCD monitor of the shot you have just taken.

Some cameras show histogram on LCD monitor of the shot you are about to take.



Most image editing software applications have a histogram display function.



What is an Image Density Histogram ?

4.7 MegaPixel
8 bit grey scale (256 shades)



**Best way to explain
is to make a simple
histogram?**

FIRST, to make the problem manageable....

4.7 MegaPixel

8 bit grey scale (256 shades)



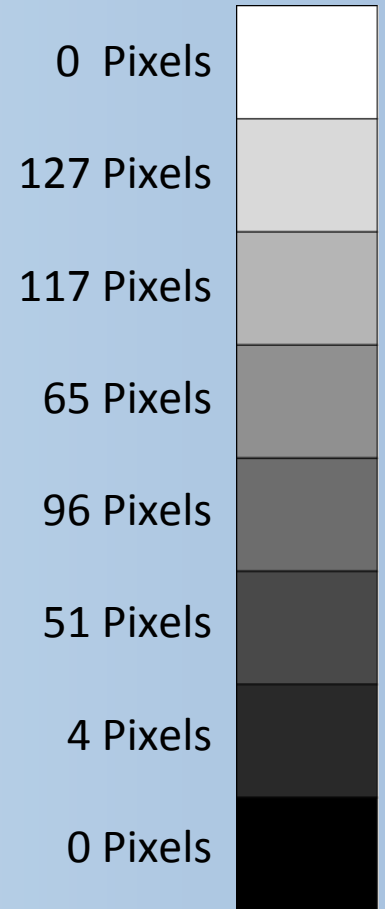
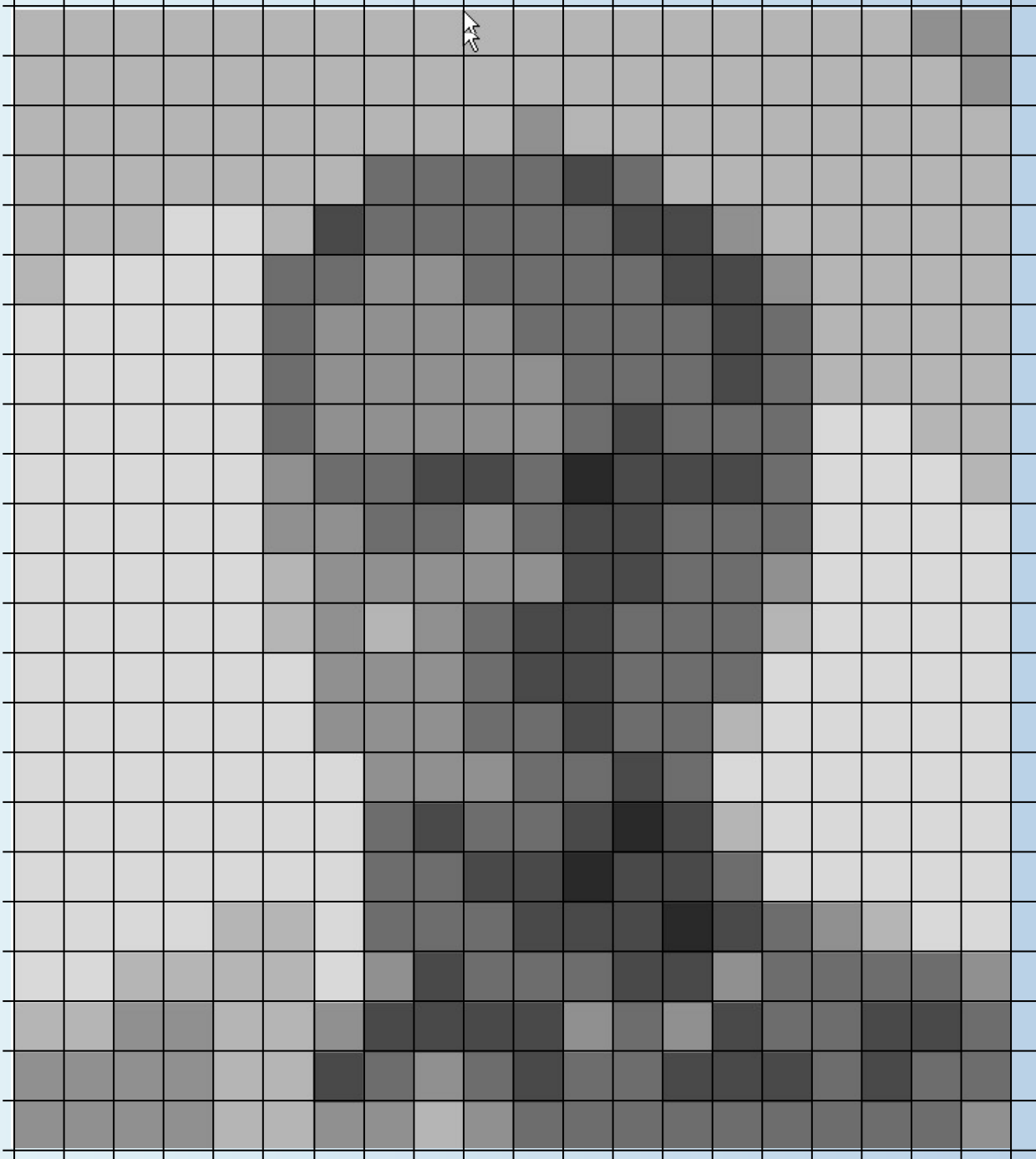
460 Pixel

3 bit grey scale (8 shades)



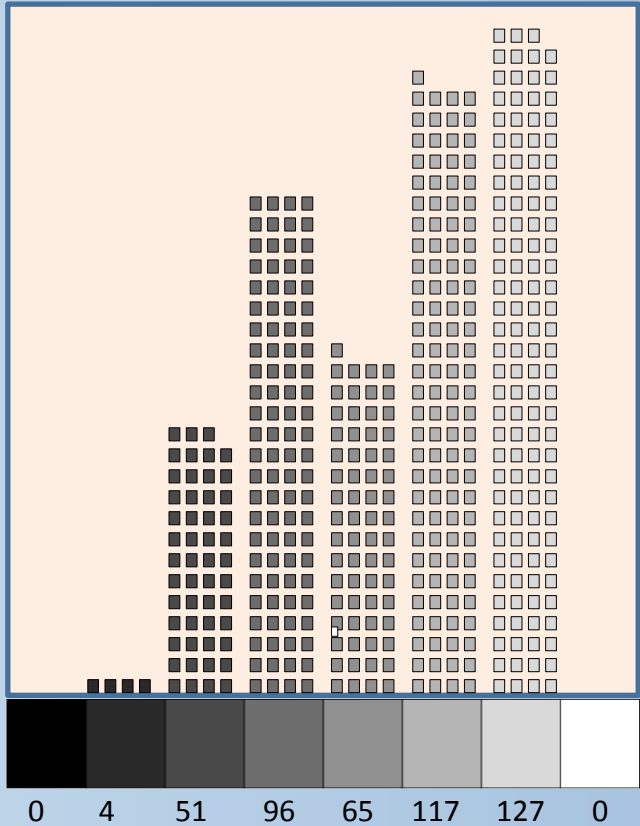
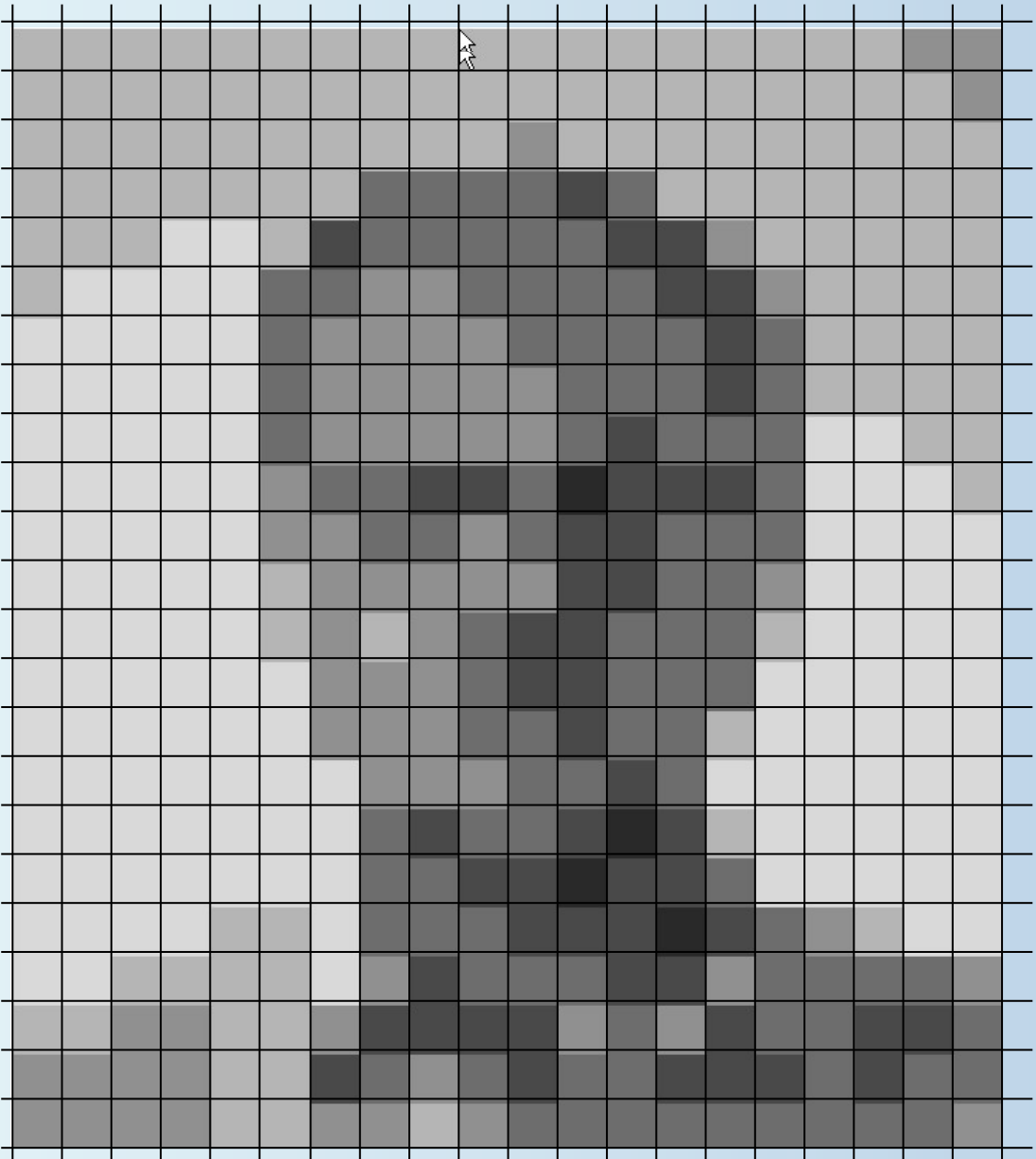
- Reduce the image size
- Reduce number of shades

NEXT, count
the pixels for
each shade



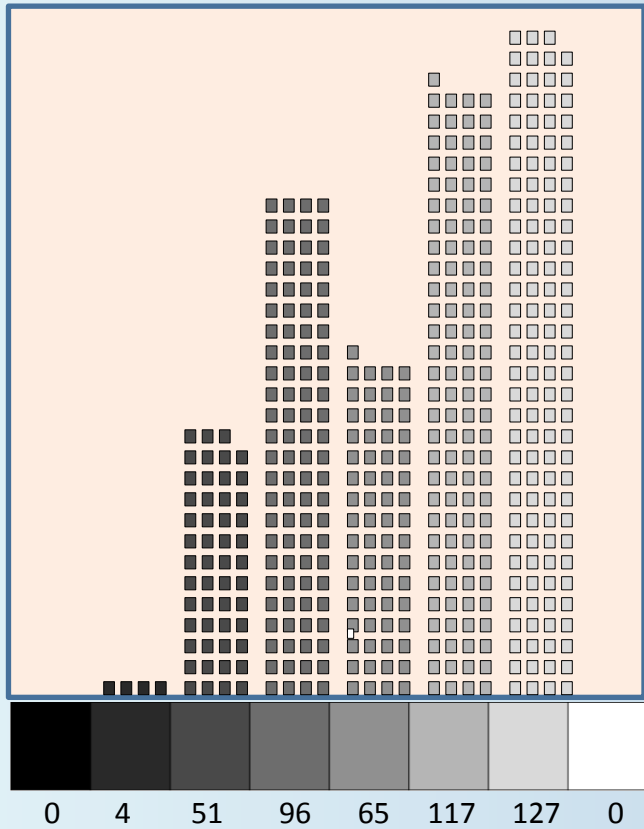
Total = 460

FINALLY, make a bar graph that shows the number of pixels for each shade.

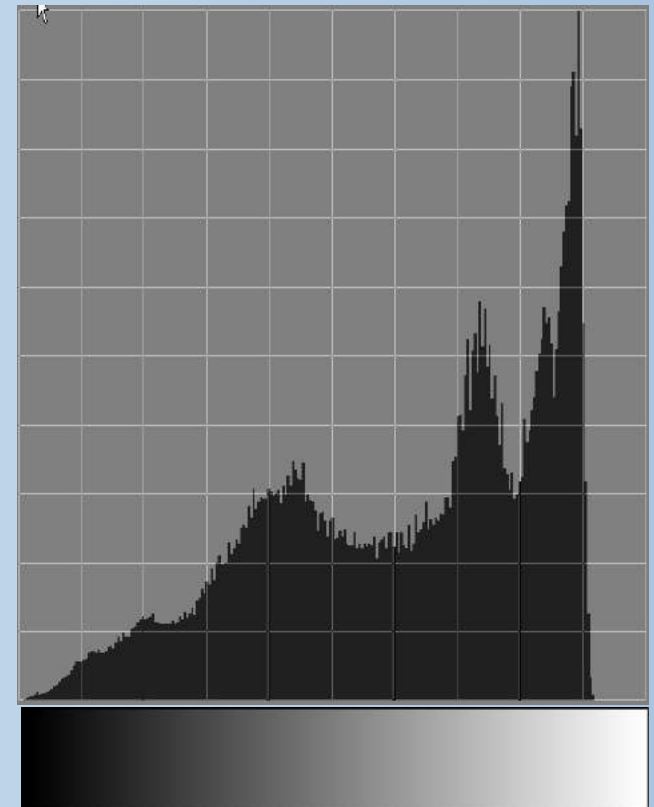




Home-made histogram
(8 shades of grey)



Computer calculated histogram
(256 shades of grey)

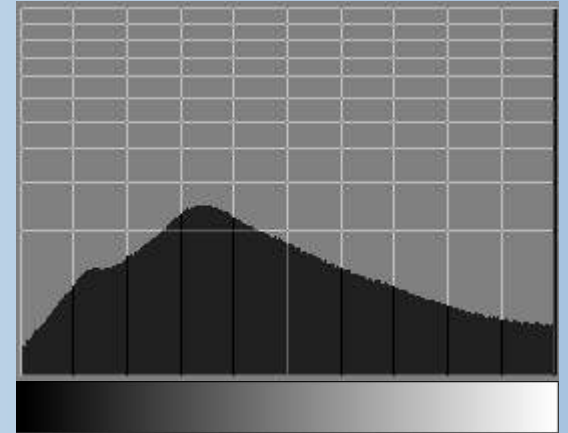
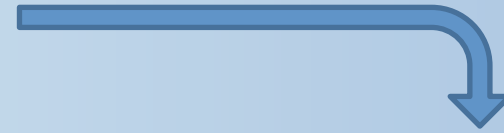


Examples of Image Density Histograms

Subject has typical outdoor
brightness range



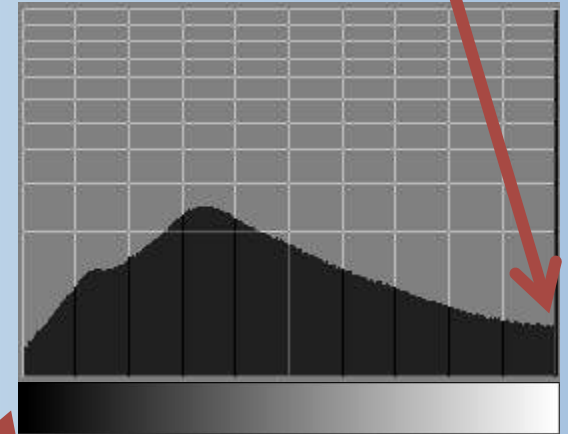
Average subject, correctly exposed



Brightness range of subject
only slightly exceeds dynamic
range of sensor

Correct exposure means that the picture can take full advantage of available brightness range in the imaging system

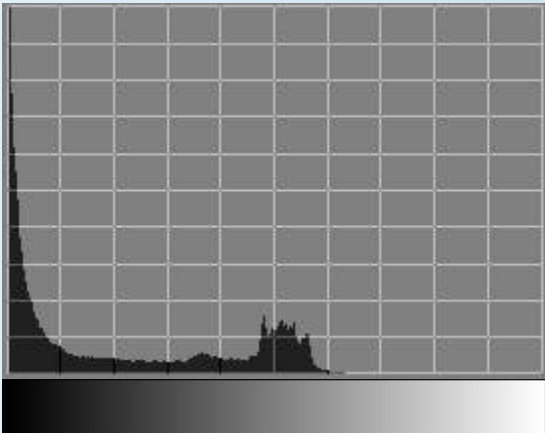
Acceptable absence of detail given that sky is overcast and featureless.



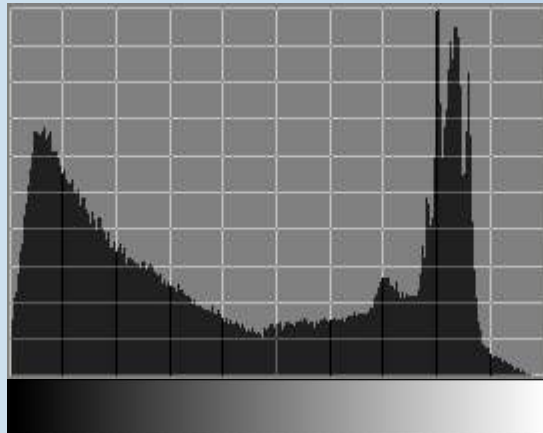
Acceptable loss of detail in shadows



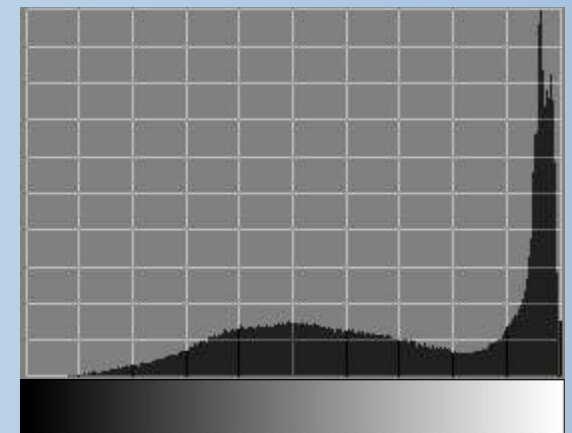
2 stops under exposed



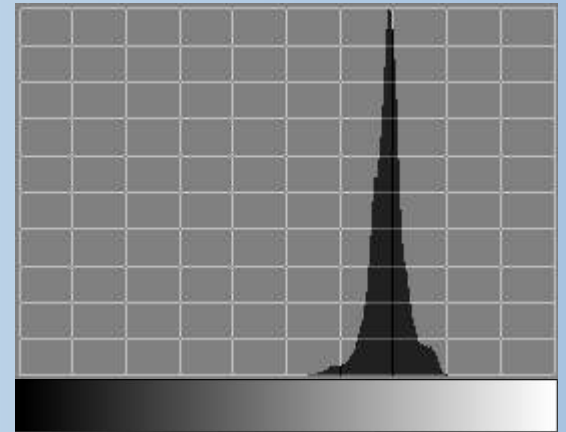
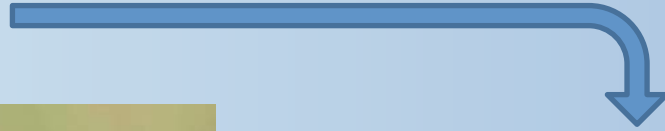
Correct exposure



2 stops over exposed



Subject with narrow
brightness range



Brightness range of subject is
less than dynamic range of
sensor

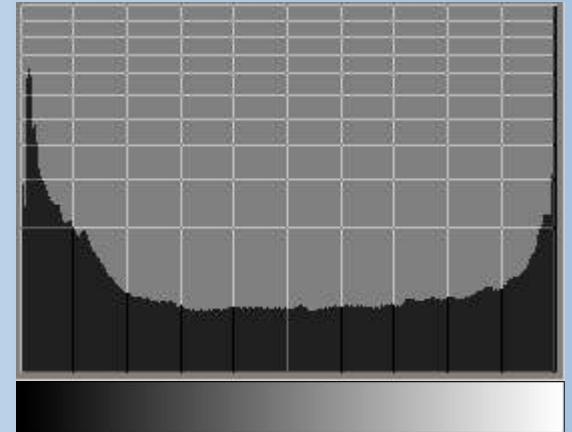
Image uses only a small range of
the available brightness levels

Exposed to give natural image

Subject with wide
brightness range

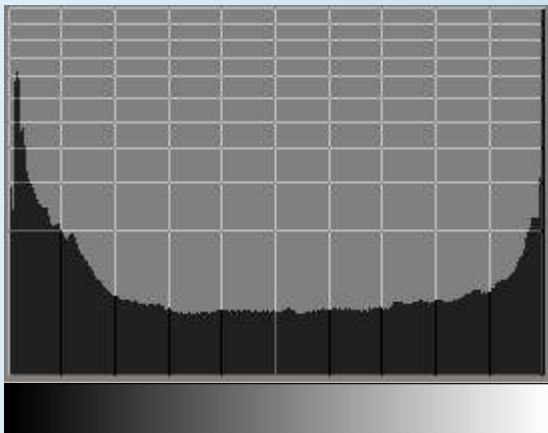


Exposed for best compromise

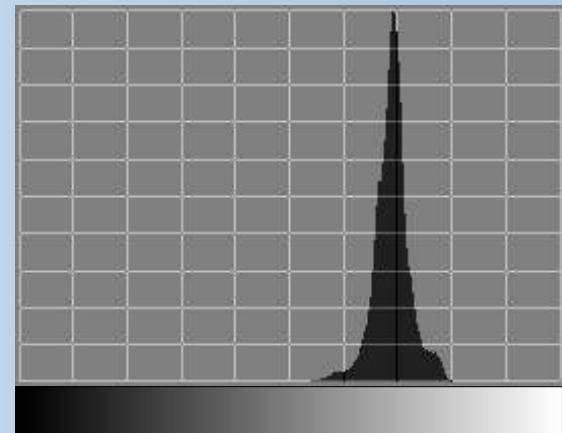


Brightness range of
subject greatly exceeds
brightness range of image
display

Subject with wide brightness range



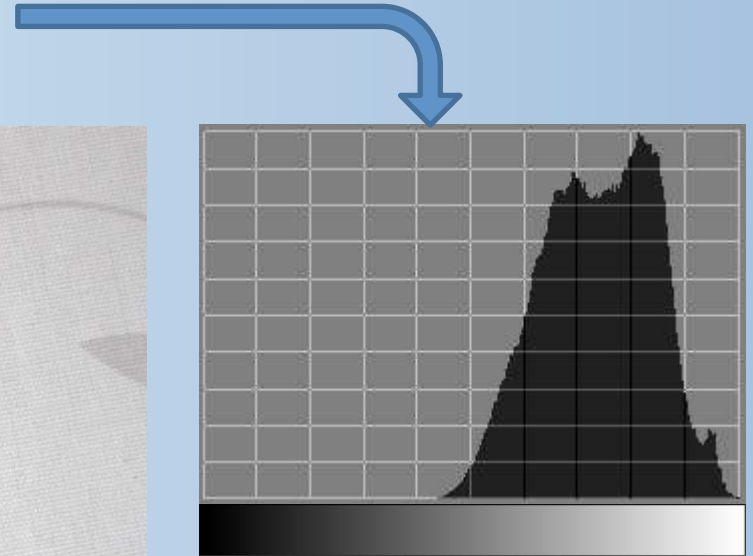
Subject with narrow brightness range



Subject with narrow
brightness range

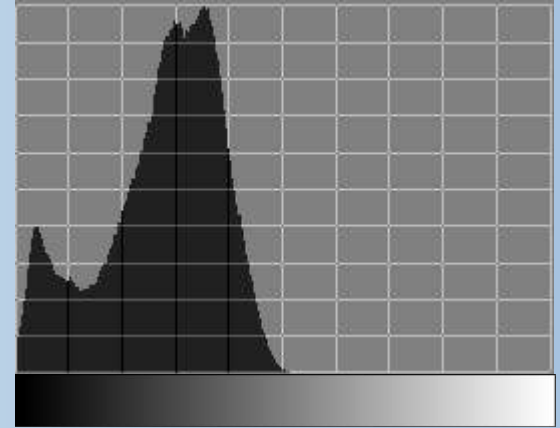
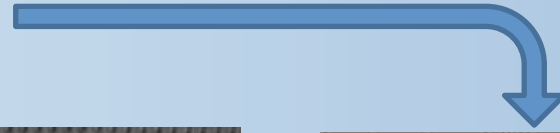


Exposed to give high key image



Brightness range
concentrated at the
light end of the grey
scale

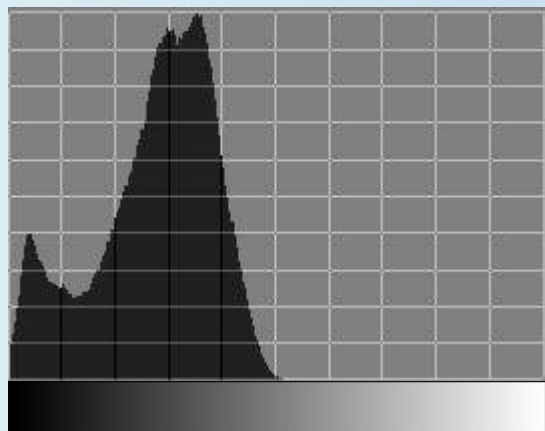
Subject with narrow
brightness range



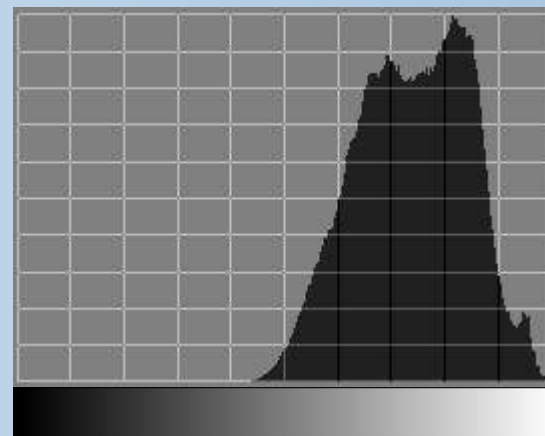
Brightness range
concentrated at the
dark end of the grey
scale

Exposed to give low key image

Low key image



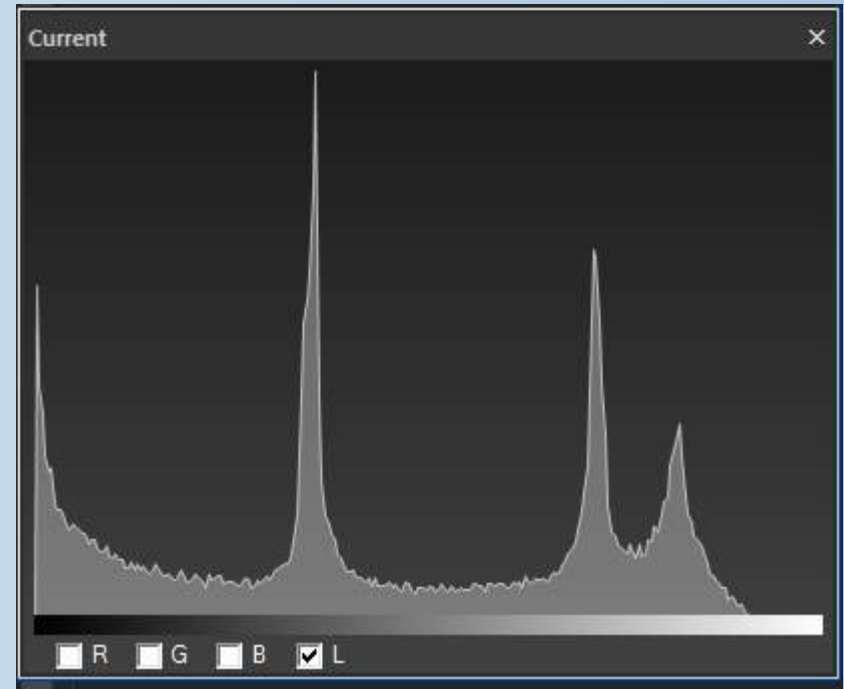
High key image



Deliberate Posterization



Andy Warhol
Marylin

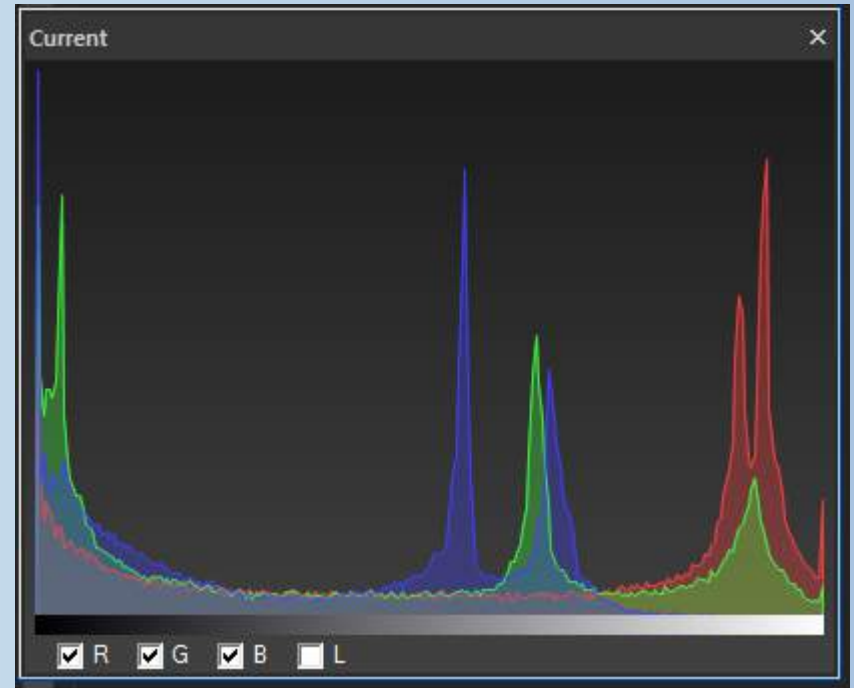


Luminance

Deliberate Posterization

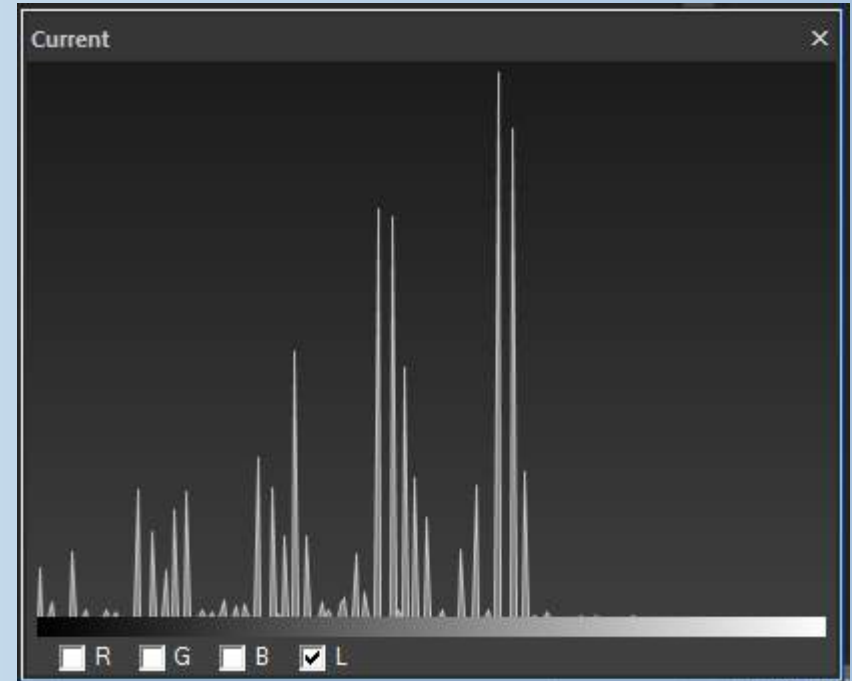


Andy Warhol
Marylin



R - G - B

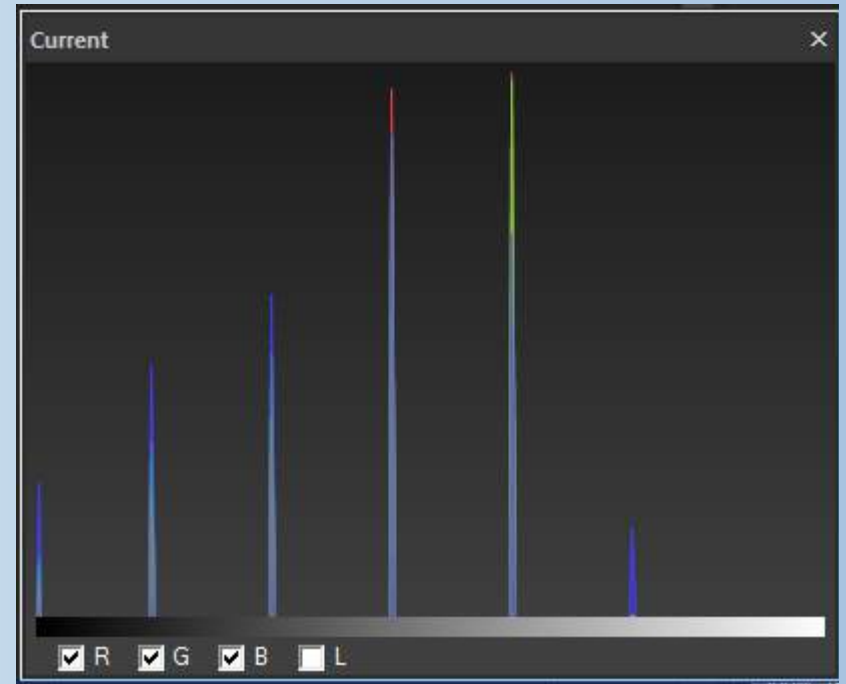
Deliberate Posterization



Luminance

Feeble attempt to copy
Warhol

Deliberate Posterization



R - G - B



Original
Image

Unintended Posterization
Example





Over
processed
Image

Unintended Posterization
Example

