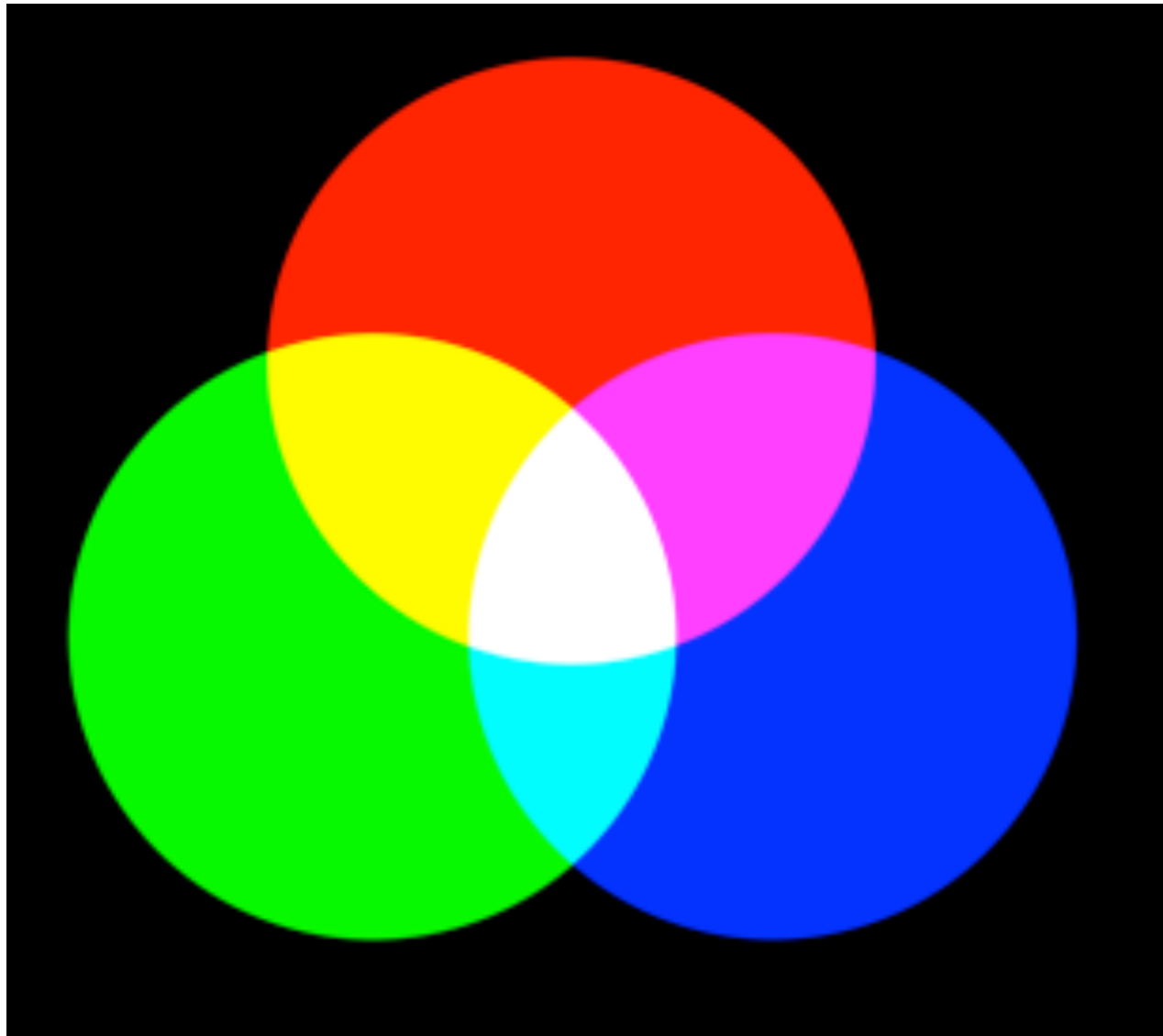


Intro to Photography

Ross den Otter
Session 2

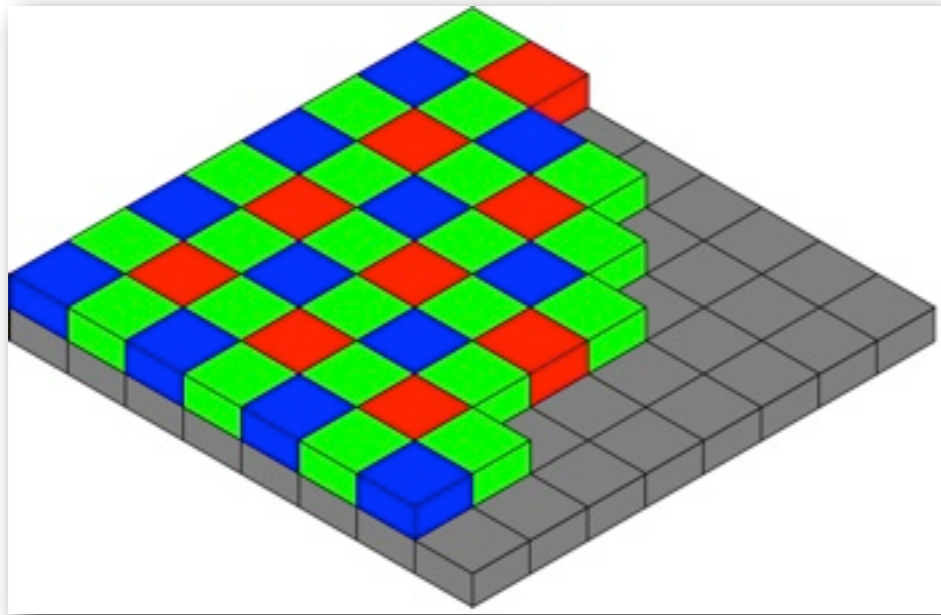




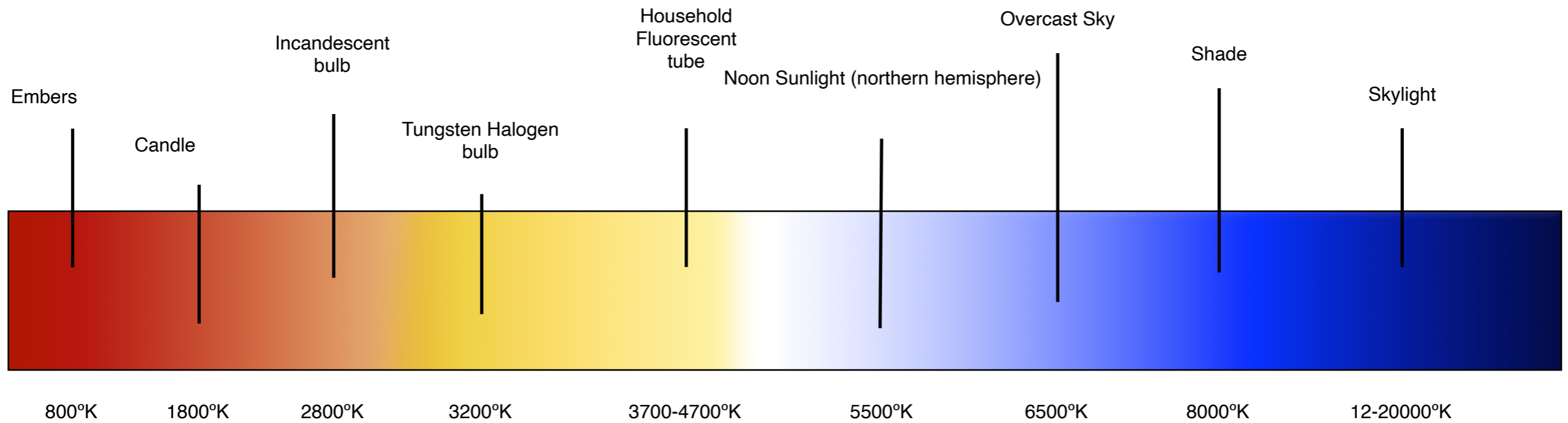
How a camera records colour.

Additive primary colours making subtractive primary colours and white light.

Recording Colour



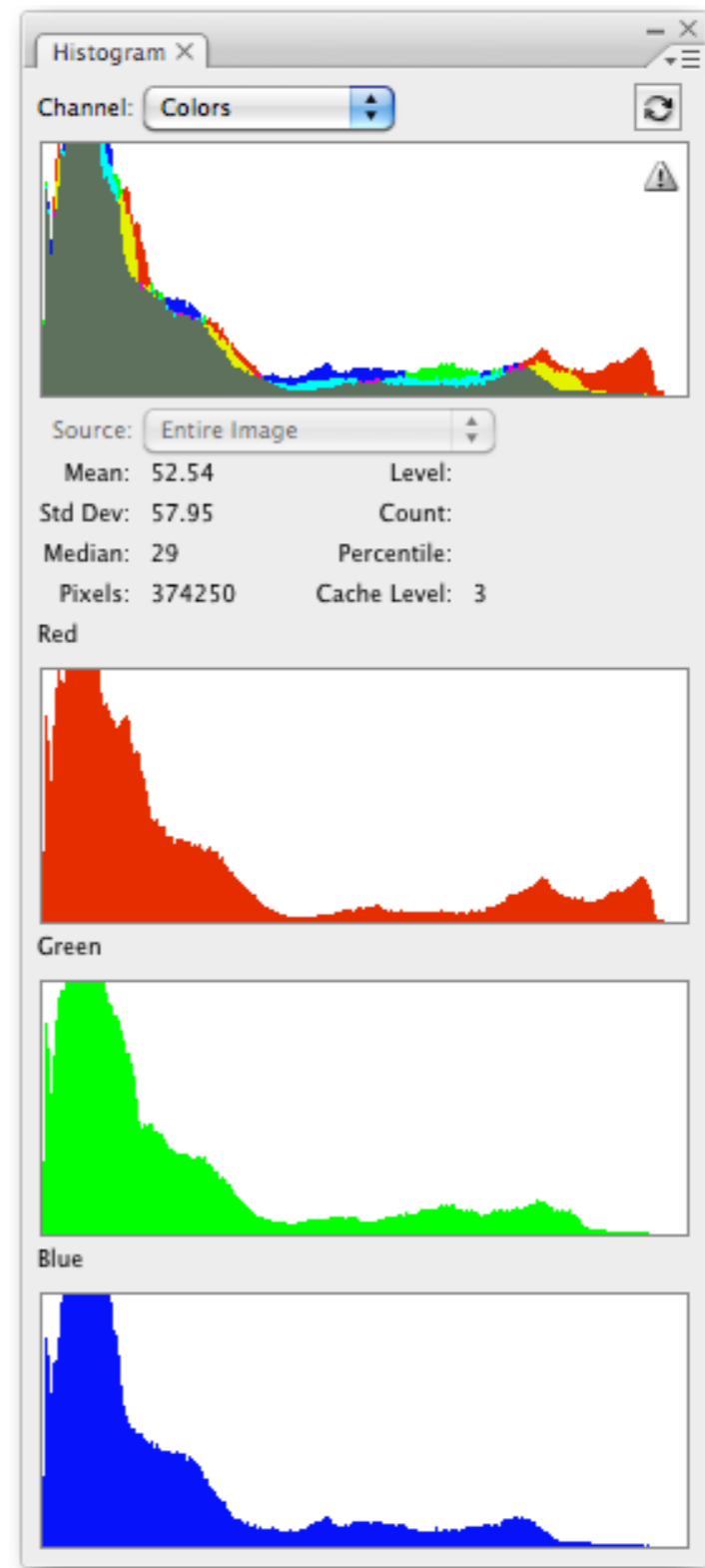
Typical Bayer sensor array



A range of colour temperatures

A digital colour image is
made from three black
and white photos





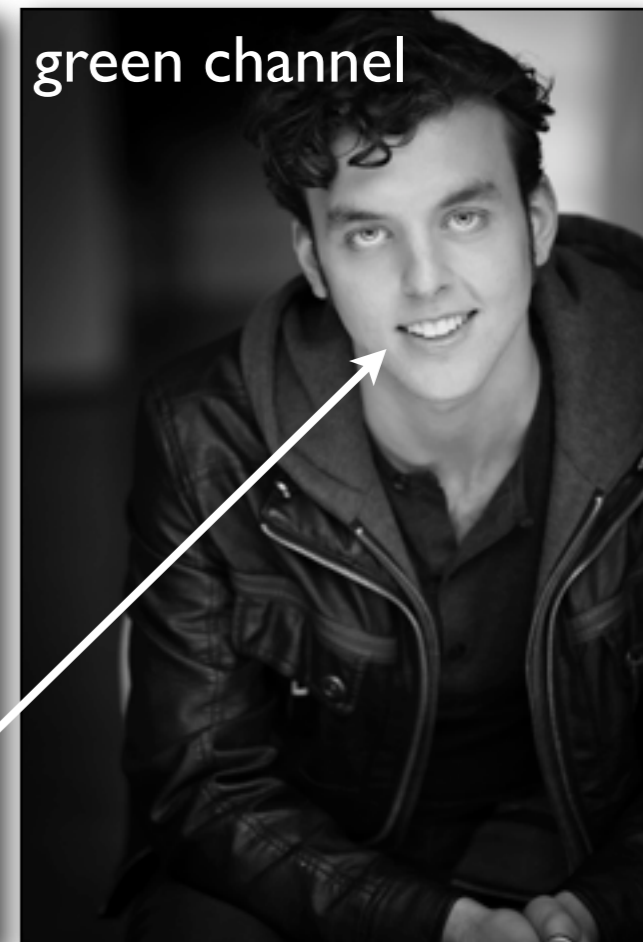
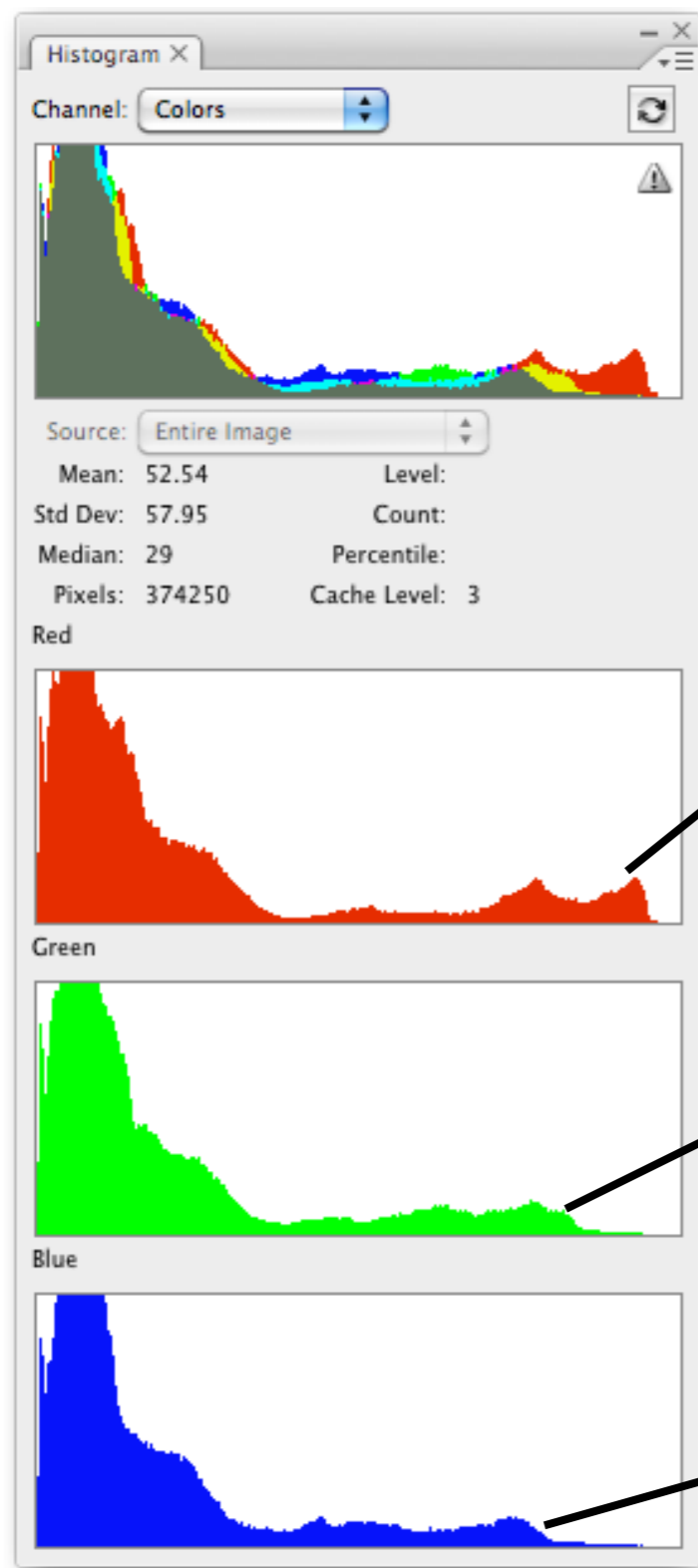


Image size and Quality

Image size refers to the physical number of pixels in your image

- RAW file format images are, by default, the largest possible size
- JPG file format images can be different sizes (Large, Medium, Small) & different quality

Quality refers to jpeg file format only

- Jpeg file format is a “lossy” file format with different levels of quality (compression)

Nikon – Fine, Normal, Basic

Canon – smooth triangle, rough triangle

Pentax - ***, **, *

Image size and Quality

RAW

Image is recorded directly off the sensor before any processing

Only aperture, shutter speed and ISO are permanently set

Overall exposure, white balance, and image parameters can be adjusted

Files are much larger than jpeg

No loss in data through compression

More information available in shadow and highlight areas

Better for “dim-rim” adjustments and creative effects

Format is different between every camera manufacturer

Usually need special software to open and process files

Development of DNG as a universal file format

File **MUST BE PROCESSED** in order to have an actual image file

Image Size and Quality



less compressed has smoother image appearance



more compressed file has banding and artifacts

Metering

Metering



Your meter sees everything as 18% or middle grey.

centre weighted average



spot



matrix, evaluative or
multi segment

Where the meter gets it right.



If we have equal amounts of highlight and shadow we should get an accurate exposure.

Where the meter gets it right.

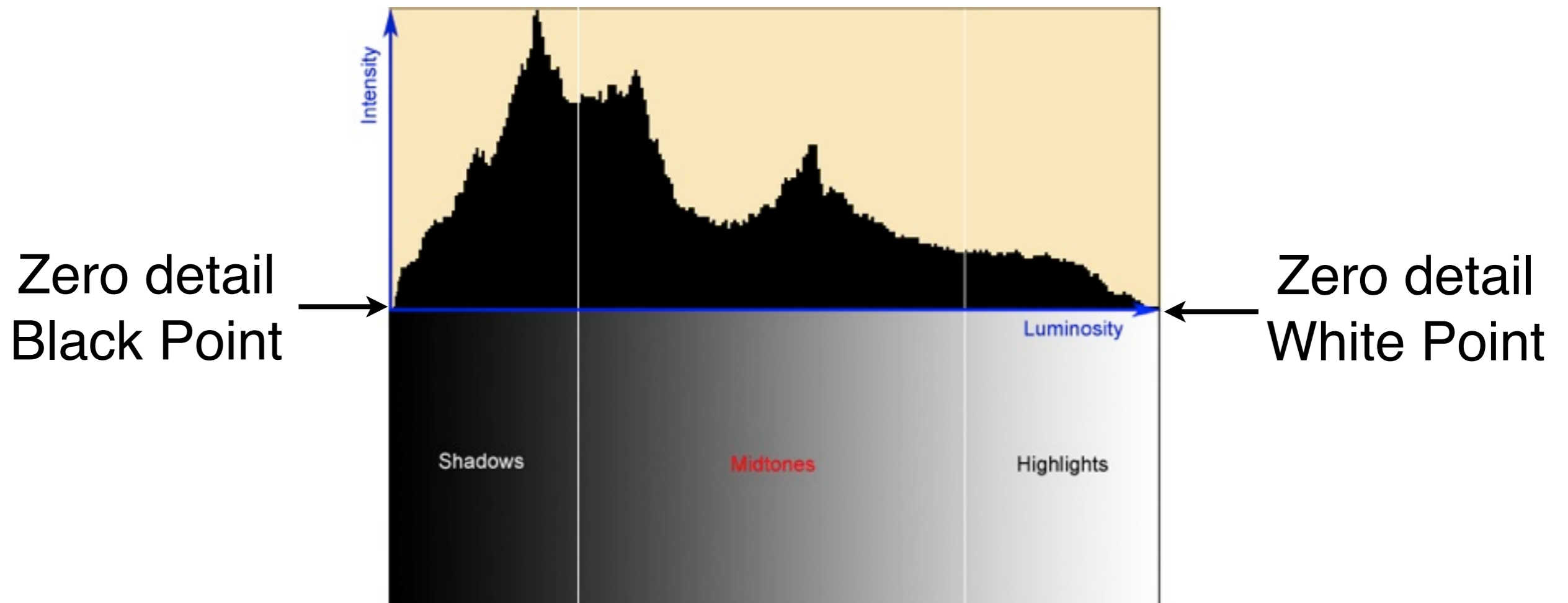


In scene where the amount of highlight and shadow are about equal and the midtones are in the centre of the frame we should also get a proper exposure.

Judging your exposure

Reading a Histogram

Exposure and the Histogram

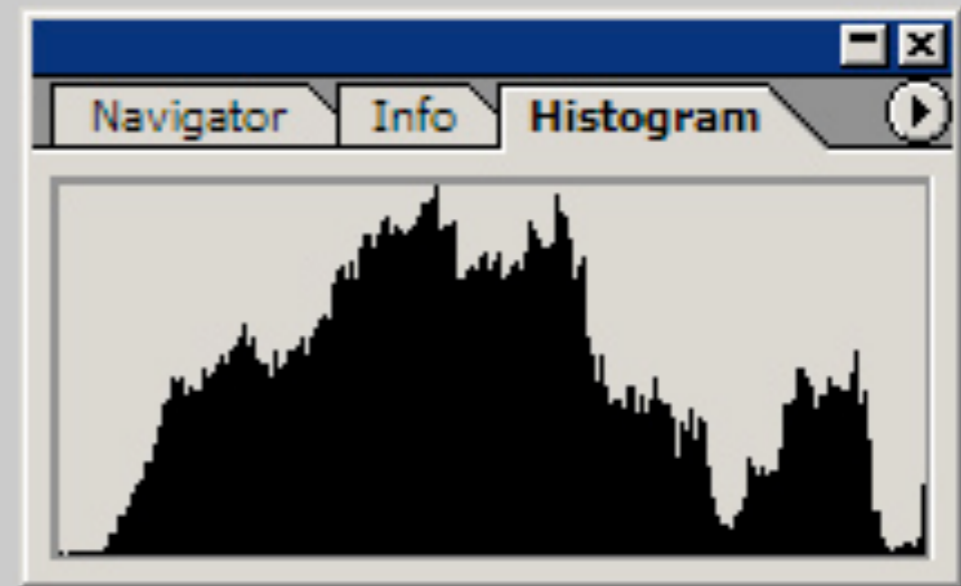


The histogram can be used as a visual indication of correct exposure when viewed in concert with the scene being photographed.

No such thing as an ideal histogram for all situations.

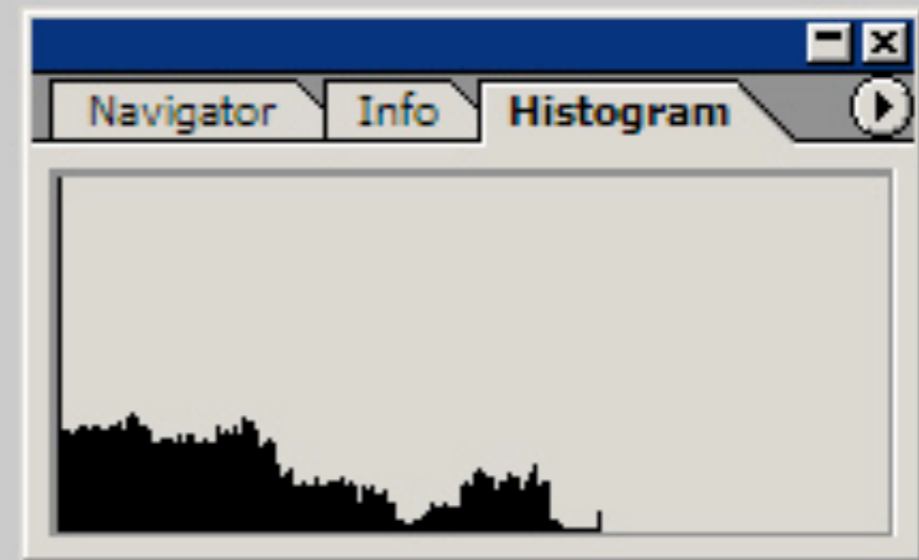
Reading a Histogram

Normal Exposure



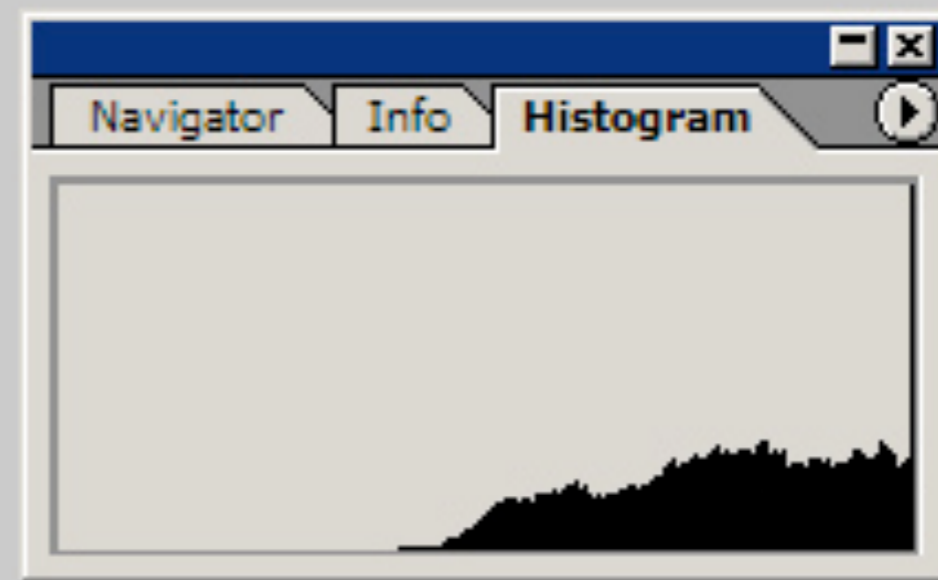
Reading a Histogram

Under Exposure

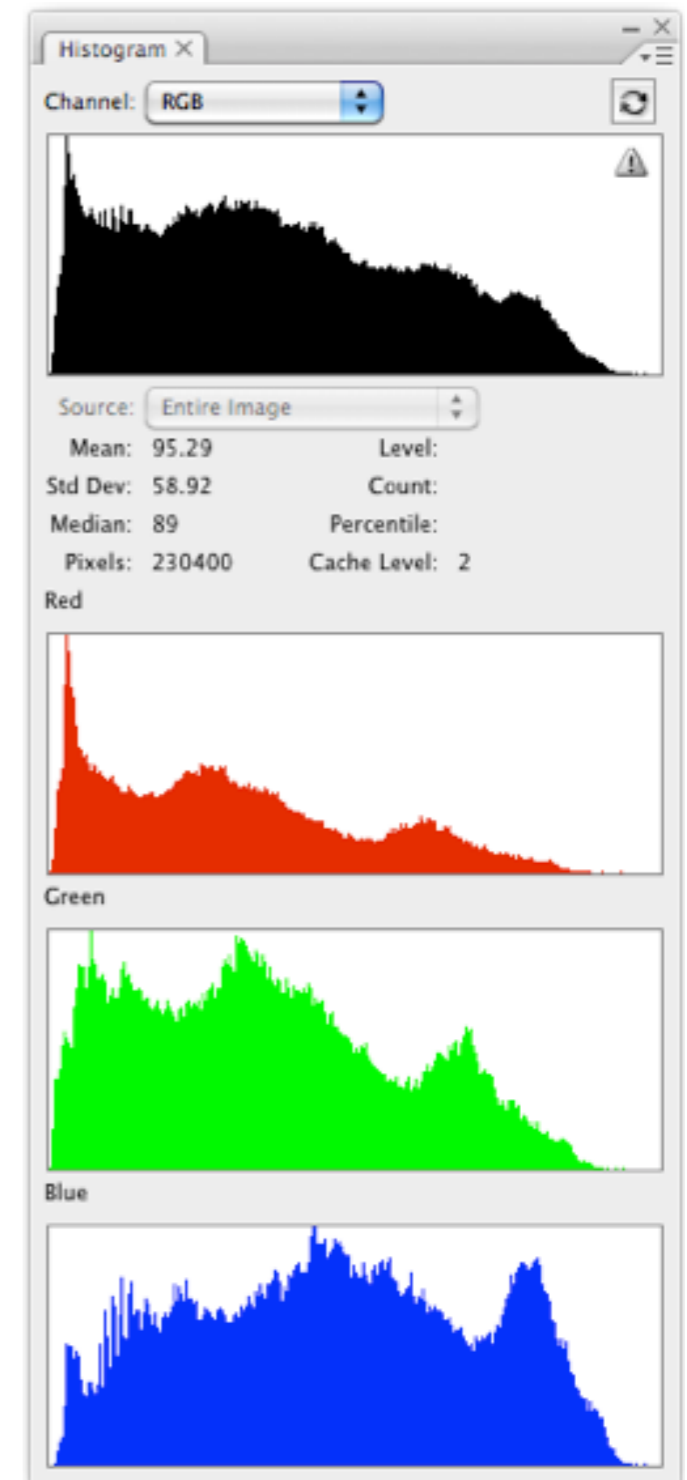


Reading a Histogram

Over Exposure



More than just exposure info



This histogram shows a range of tones from shadow to highlight and that blue is the dominant colour in the highlights and midtones.

More than just exposure info

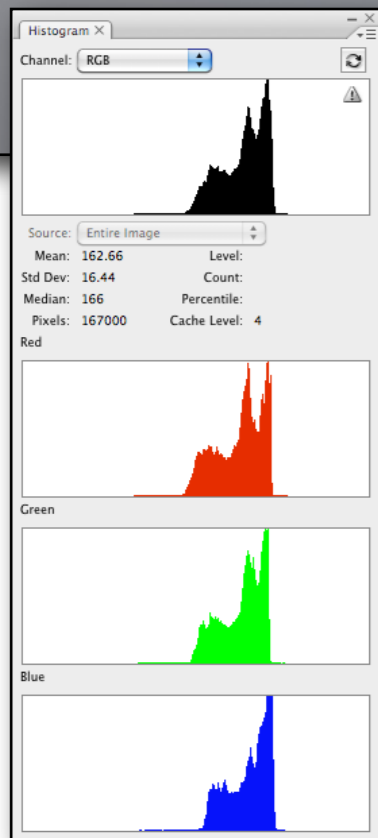
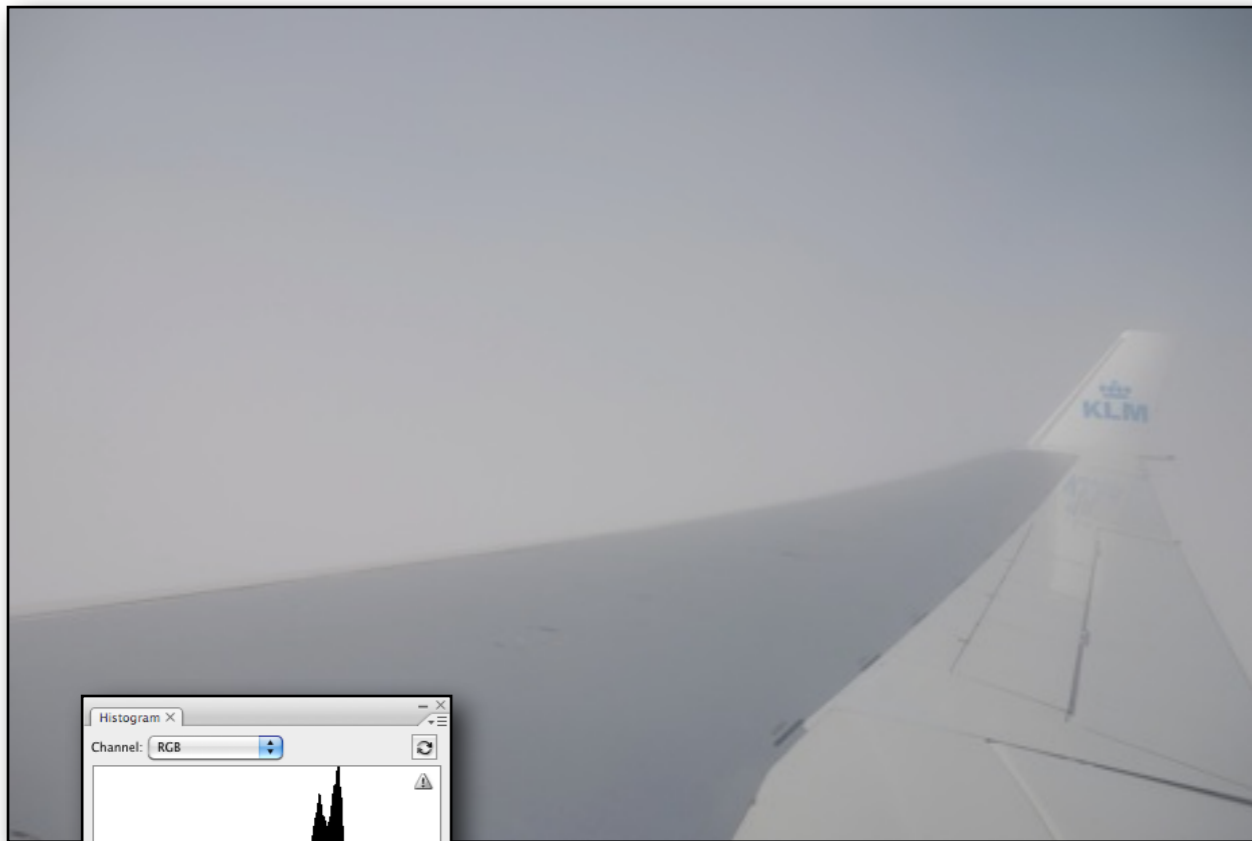


Low contrast image

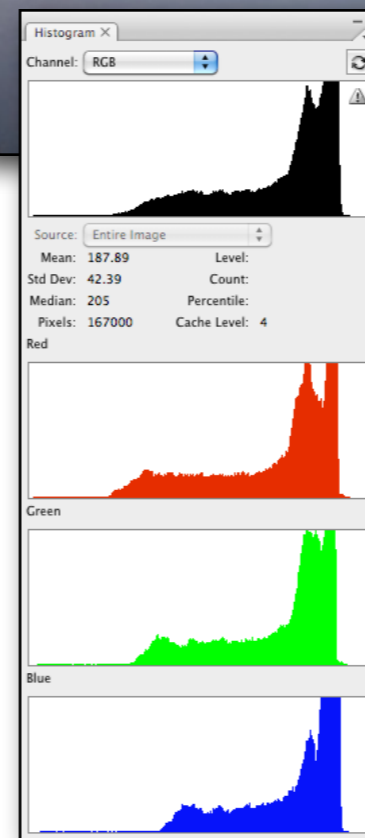
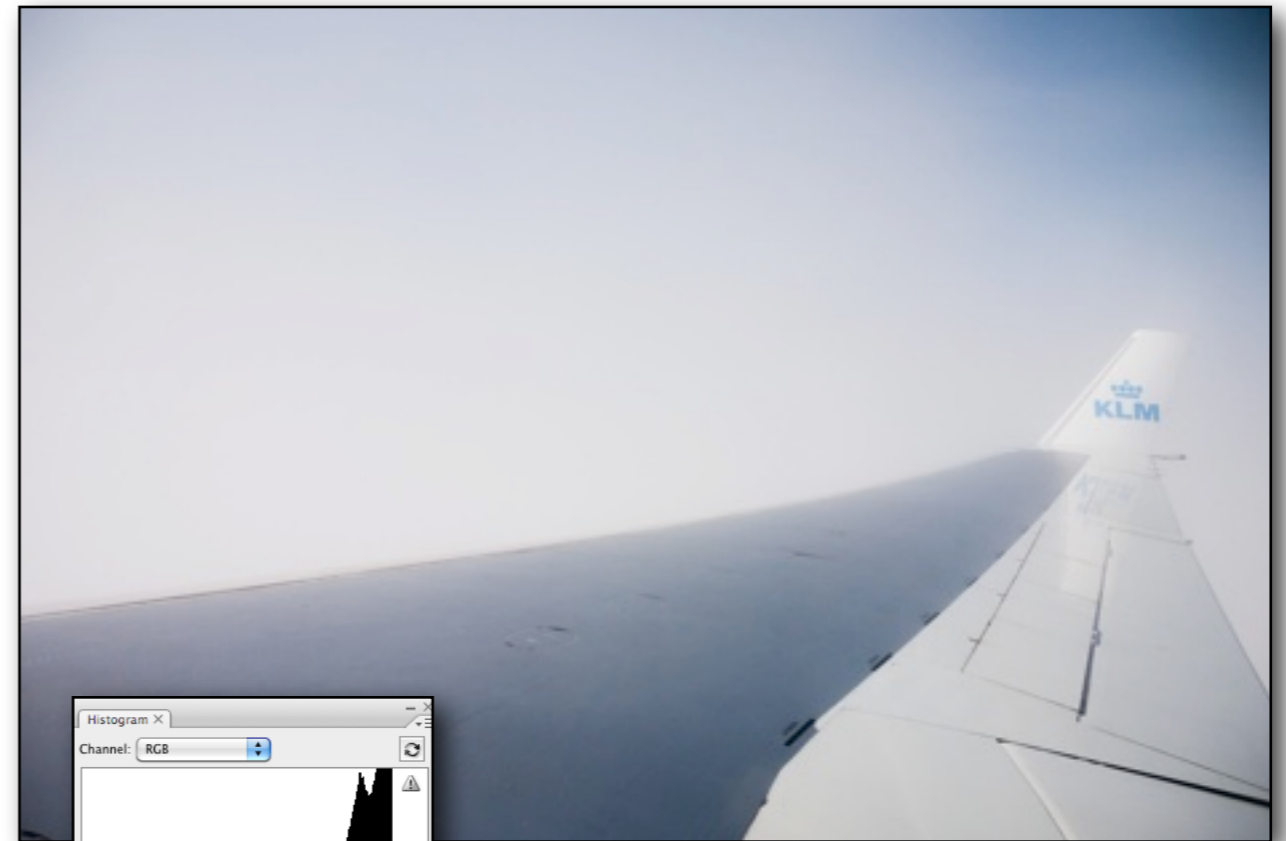


high contrast image

Reading a Histogram



The low contrast scene has a histogram that is compressed.



As the contrast is increased the histogram's shape changes.

Exposure Compensation Settings

The exposure compensation adjustment usually indicated by a +/- symbol on the camera is a method of increasing or decreasing the amount of exposure in the program or semi automatic exposure modes. It's used

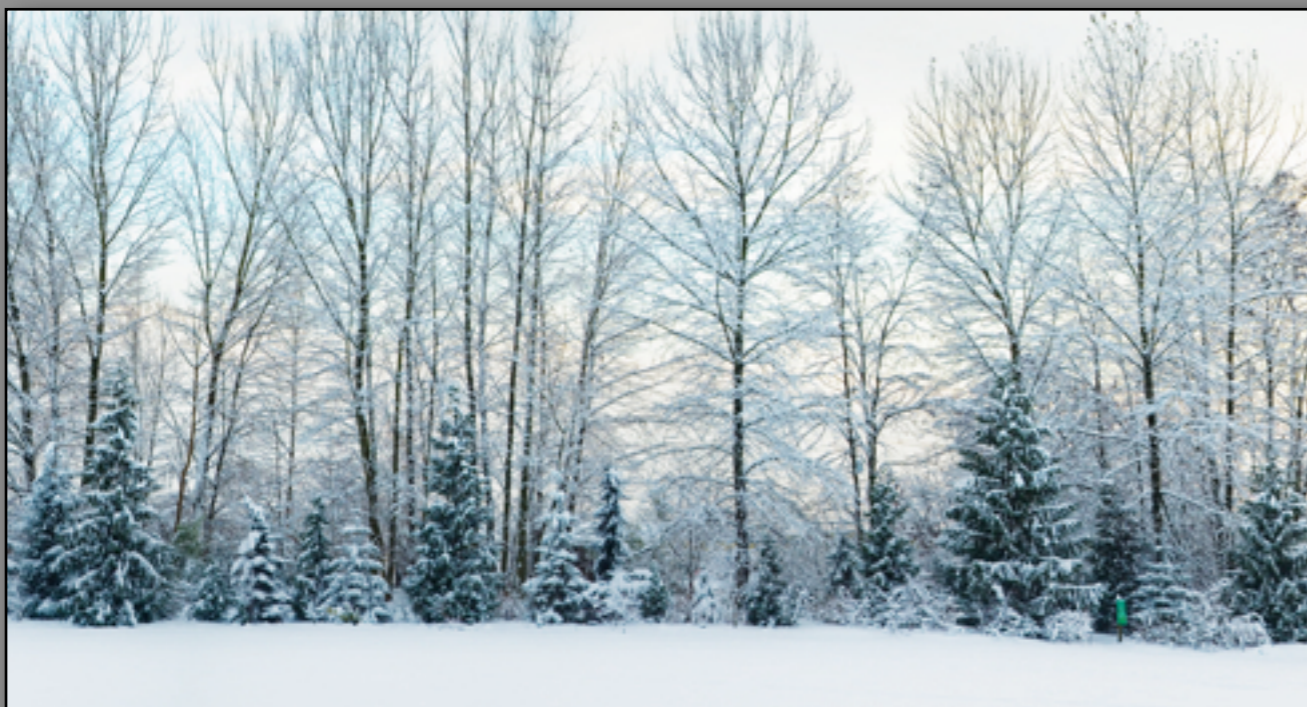
in scenes that would be problematic for the metering system to achieve the correct exposure; backlit or spotlight scenes, or scenes where the tones are predominately lighter or darker than 18% grey.

spotlit scenes



Scenes that include a bright light

snow



When the meter gets it wrong.

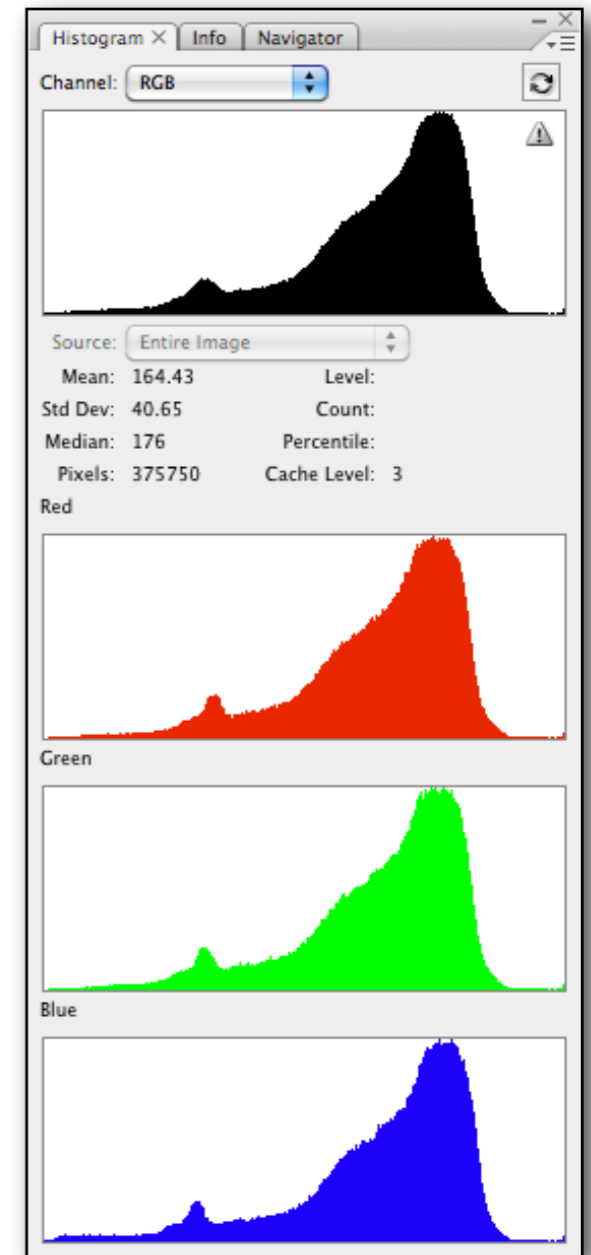
Compensate.

When the meter gets it wrong.



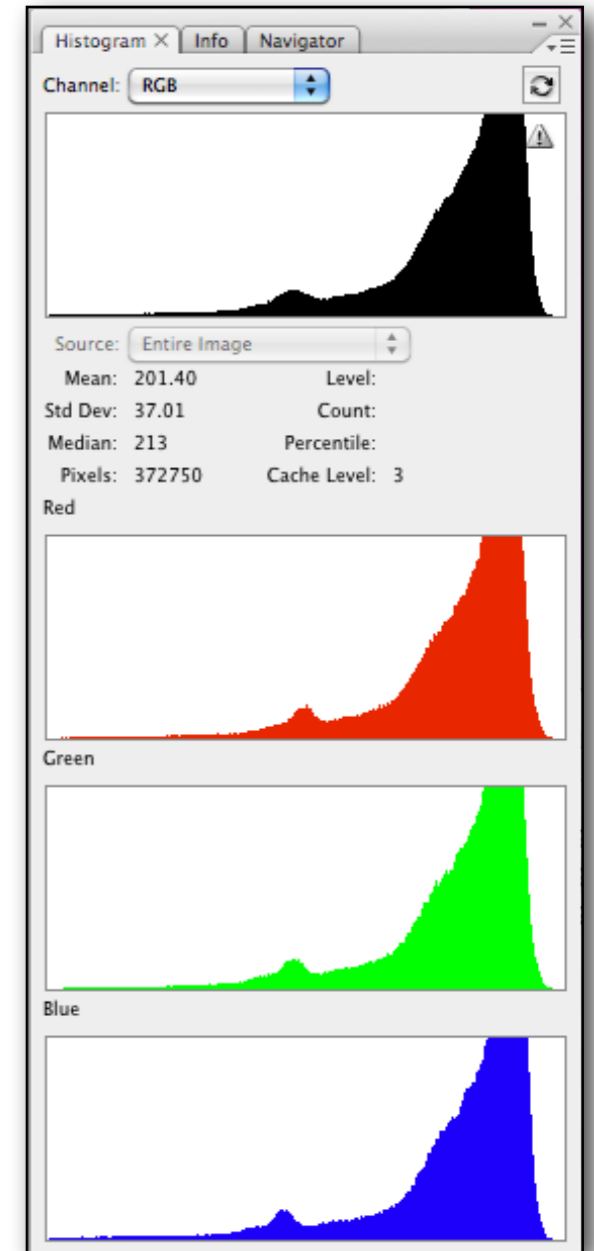
This white wall reflects more light than 18%. The meter will give an exposure that is too dark.

When the meter gets it wrong.



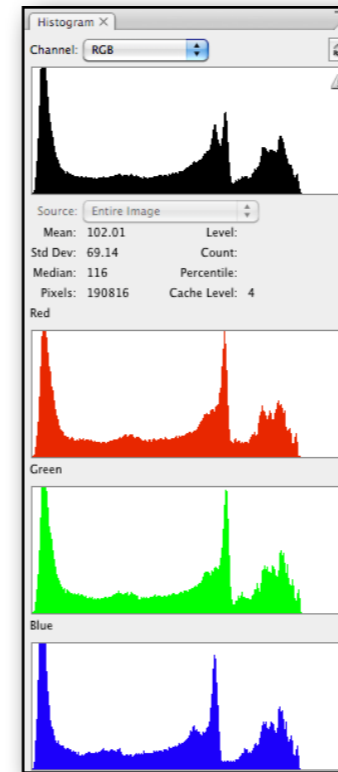
This white wall reflects more light than 18%. The meter will give an exposure that is too dark.

When the meter gets it wrong.



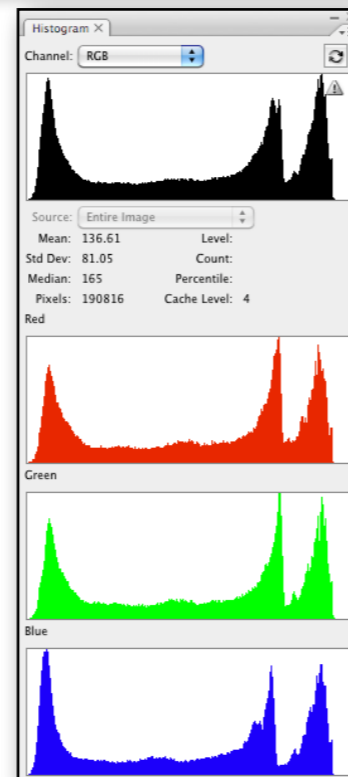
+1 stop exposure compensation makes the wall look brighter.

When the meter gets it wrong.

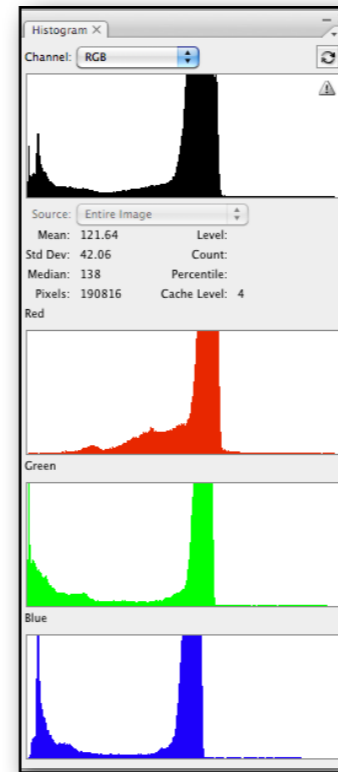


As metered in the camera.

Increasing the exposure corrects the tones.

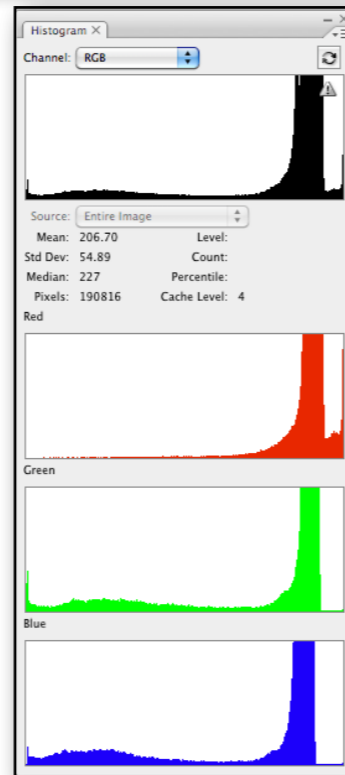


When the meter gets it wrong.

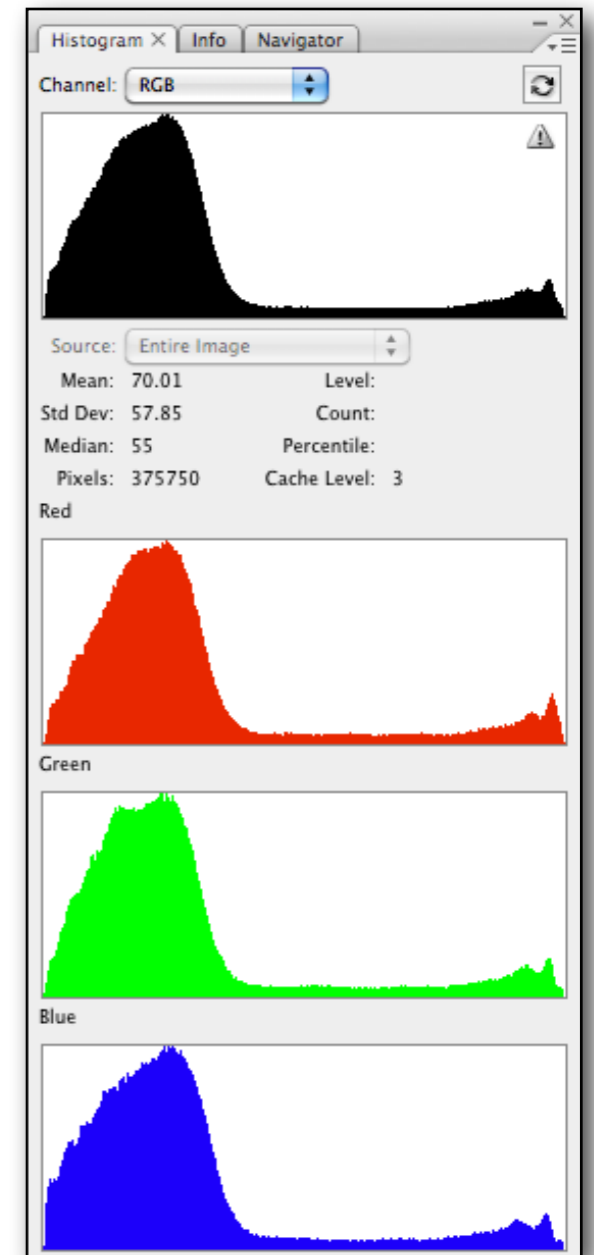


As metered in the camera.

Red channel clipping.

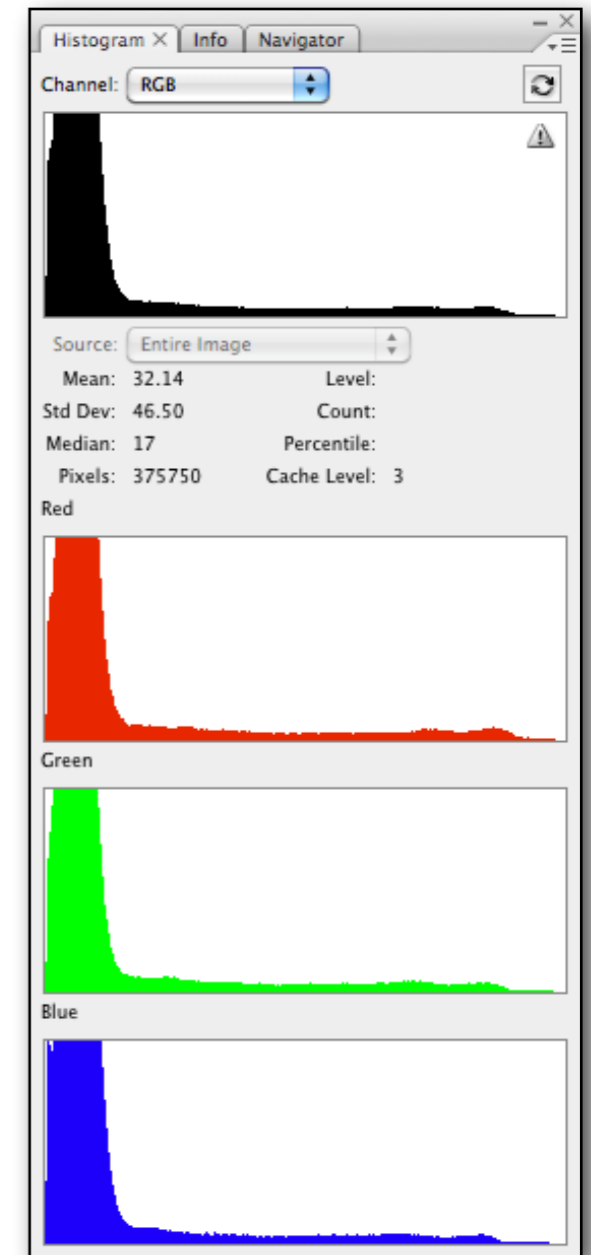


When the meter gets it wrong.

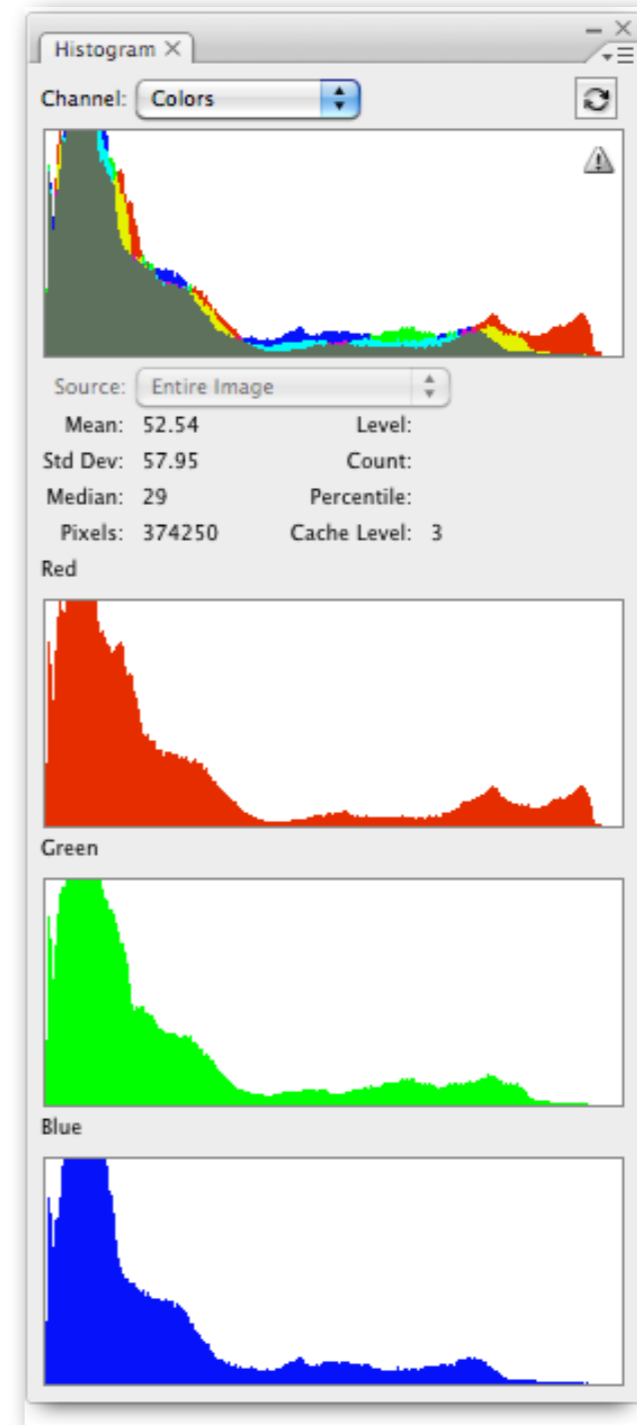


The dog is grey and tan the tones in this shadow should appear darker than 18% grey. The highlights are washed out. The meter gave an exposure that is too light.

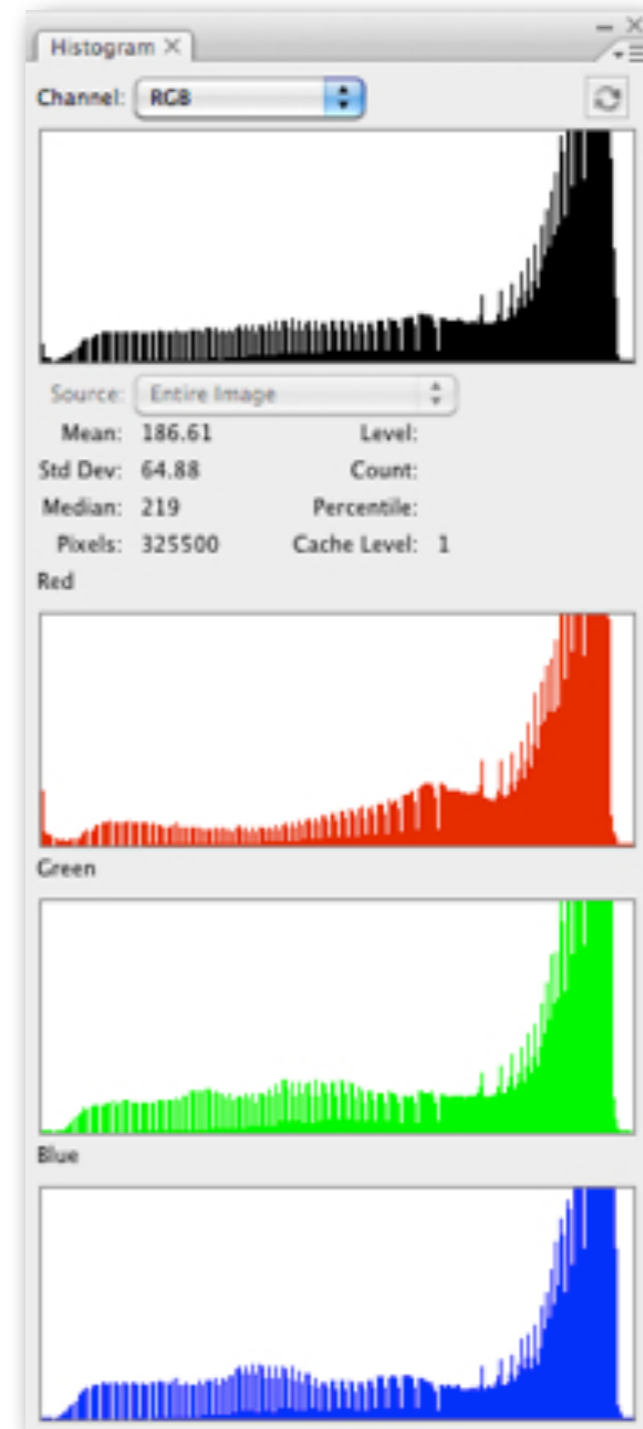
When the meter gets it wrong.



-1 1/3 stop exposure compensation makes the scene look darker and the dog less washed out.



Histogram of a primarily dark scene



Histogram of a primarily light scene

Histogram and white balance



Correct White Balance



Incorrect White Balance.

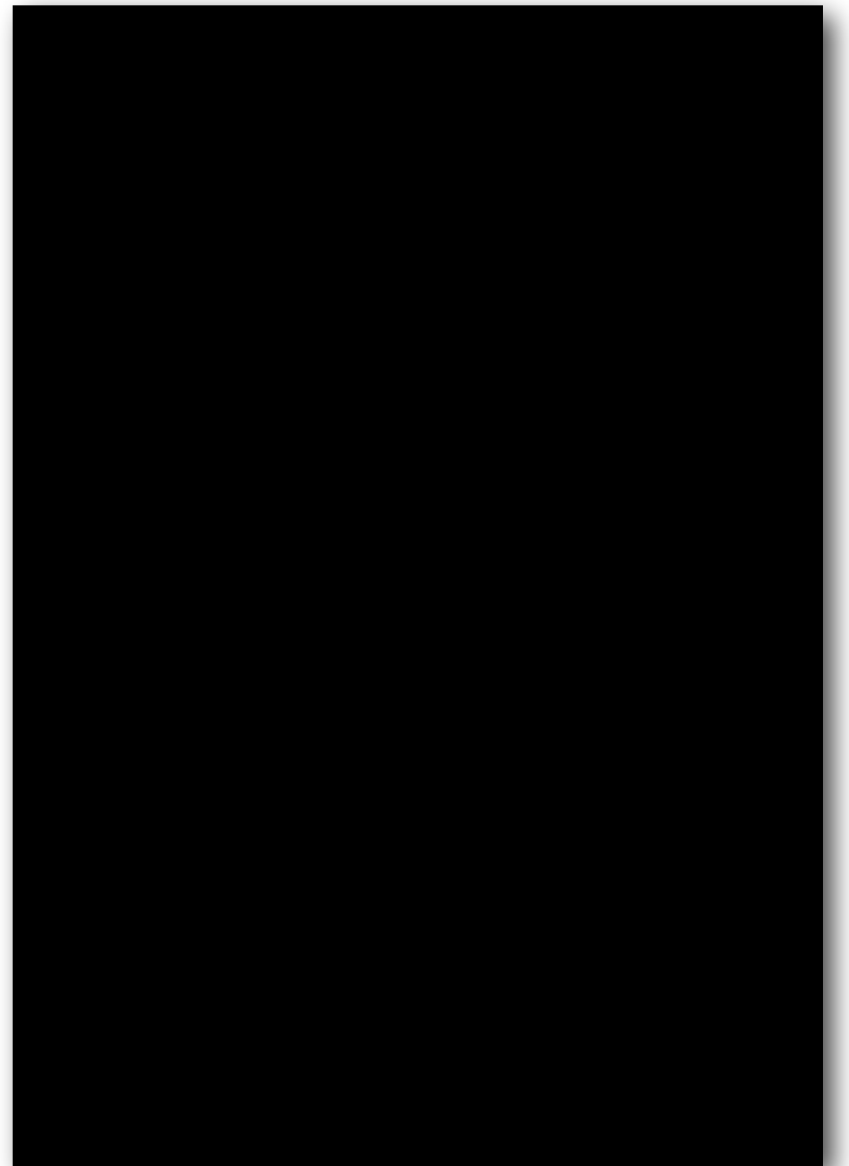
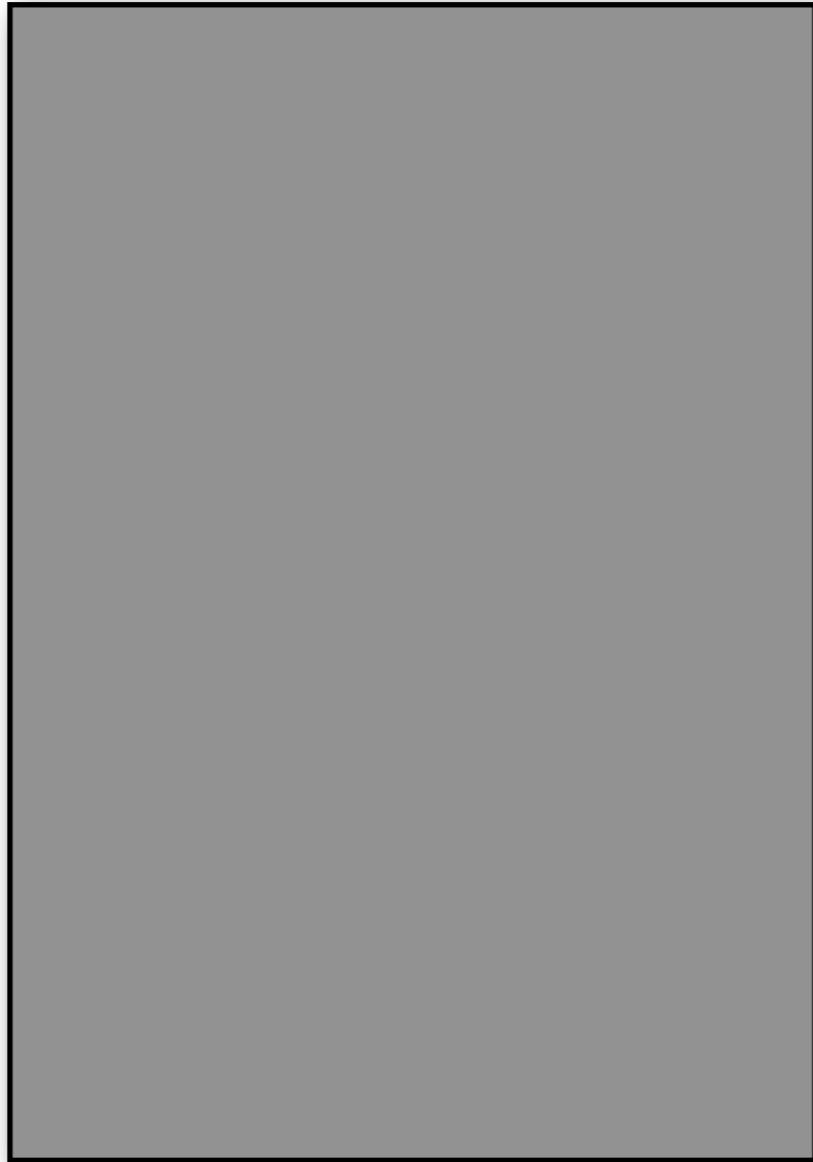
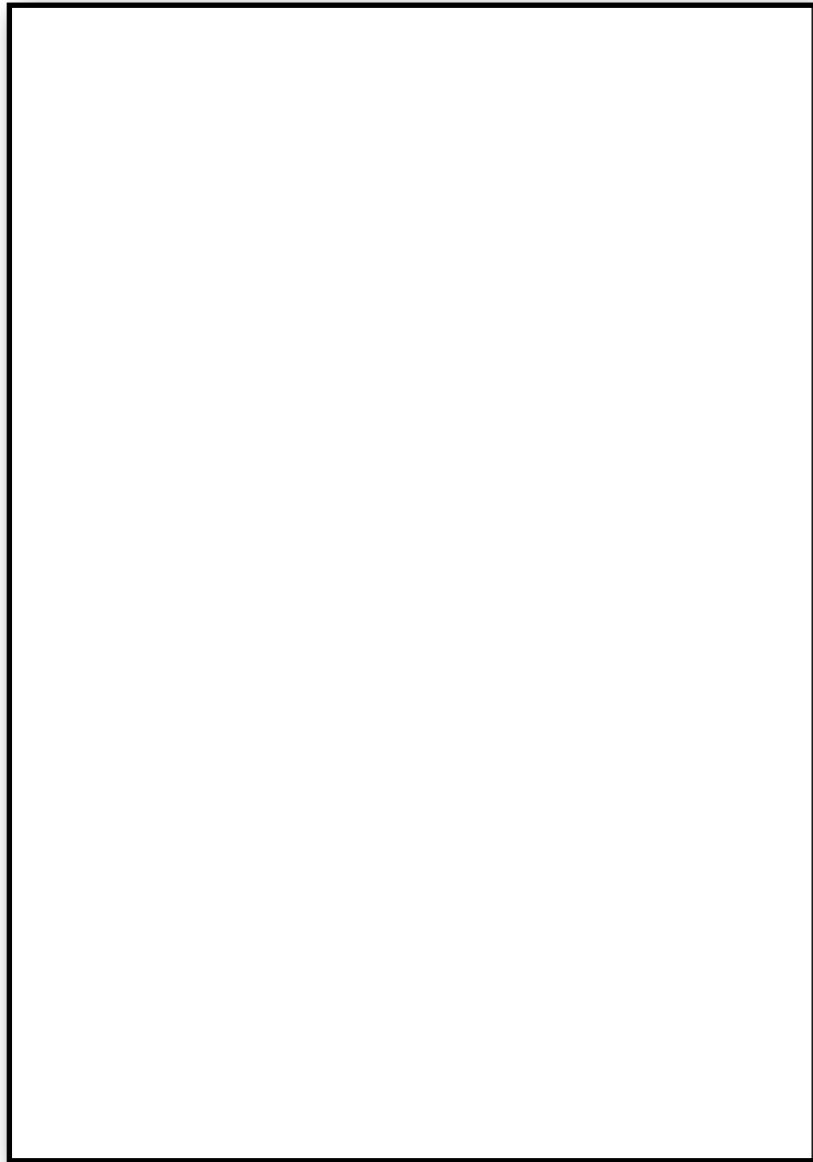
Histogram and white balance



When the White Balance is correct the spikes representing neutrals on the histogram will align.



When the White balance is incorrect the spikes representing neutrals will not align.



Demo Time!

EXPOSURE COMPENSATION

| Typically <u>over-exposed</u> scenes: Many dark areas (less than 18% reflectivity) on subject | Exposure compensation Direction: | Typically <u>under-exposed</u> scenes: Many bright areas (more than 18% reflectivity) on subject | Exposure compensation Direction: |
|--|-------------------------------------|---|-------------------------------------|
| Images with deep greens, such as the color of broadleaf trees | Minus (-) | backlighting, or lighting simulating backlighting | Plus (+) |
| More than half of the images is in shadow | | More than half of the image area is white or yellow | |
| Close-ups of black-colored subjects | | Sunsets or sunrises, with sky occupying more than half of the image area | |



EXPOSURE EXERCISE

Exposure Modes Exercise – 2 images

Create an image using aperture priority (AV) exposure mode

Be sure to watch your shutter speed and avoid camera shake!

Create an image using shutter priority (TV) exposure mode

Be sure to pay attention to the aperture your camera chooses!

Exposure Compensation Exercise

Find a subject/scene that is dominantly light in tone and correctly expose using your histogram and bracketing with the EV +/-

Subject should be opaque

You may need to adjust your ISO to avoid slow shutter speeds in aperture priority or to avoid LOW or blink aperture in shutter priority.

Start without any compensation, then plus one stop, then plus two, then adjust again if needed. Bring in all three or four images.

Find a subject/scene that is dominantly dark in tone and correctly expose

Subject should be opaque

You may need to adjust your ISO to avoid slow shutter speeds in aperture priority or to avoid LOW or blink aperture in shutter priority.

Start without any compensation, then minus one stop, then minus two, then adjust again if needed. Bring in all three or four images.