

Computer Science E-7

Exposing Digital Photography

Lecture 2: Software Tools & Light
September 12, 2011

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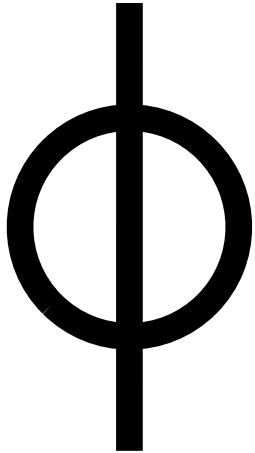


Image from <http://www.dpreview.com/reviews/canoneos40d/page7.asp>

Cameras

Location of the Focal Plane



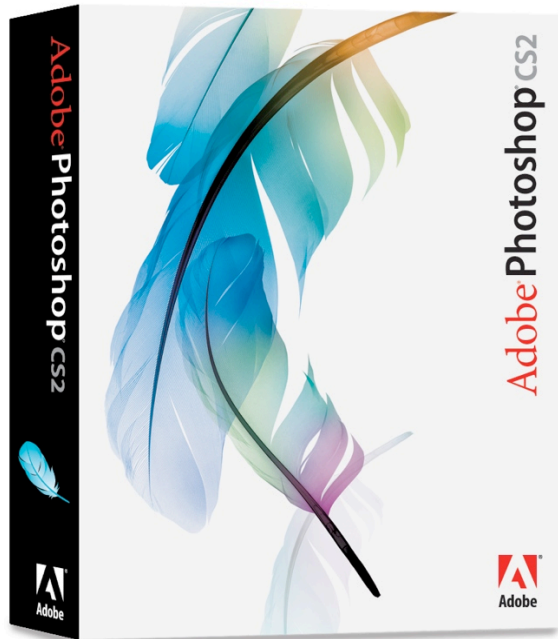
Image from Digital Photography Review, <http://www.dpreview.com>

Cameras

Exposing SLRs

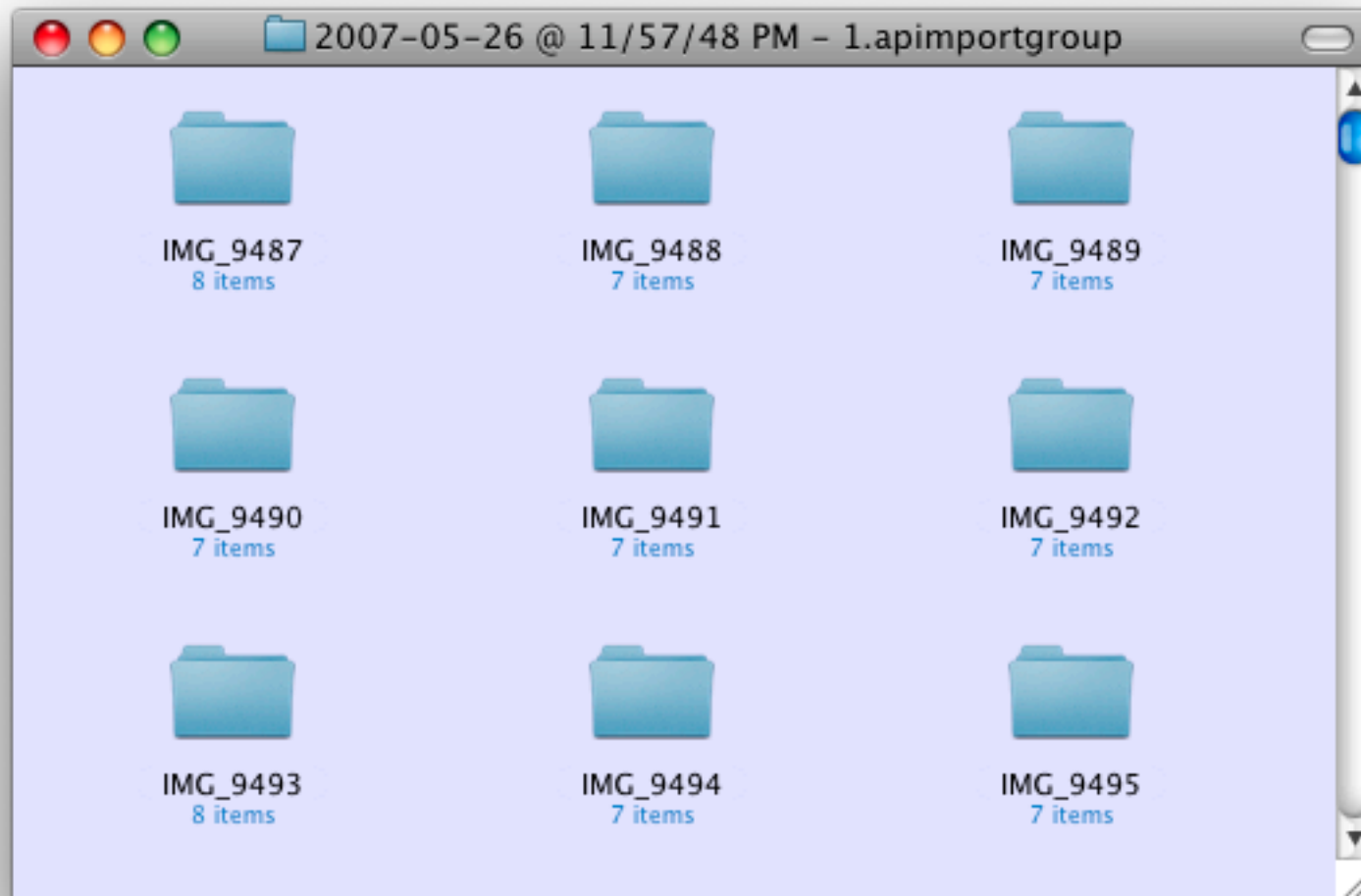
Day	Time	Location
Mondays	7:35 to 9:35	Sever 206
TBD	TBD	Online

<http://cse7.org/sections>



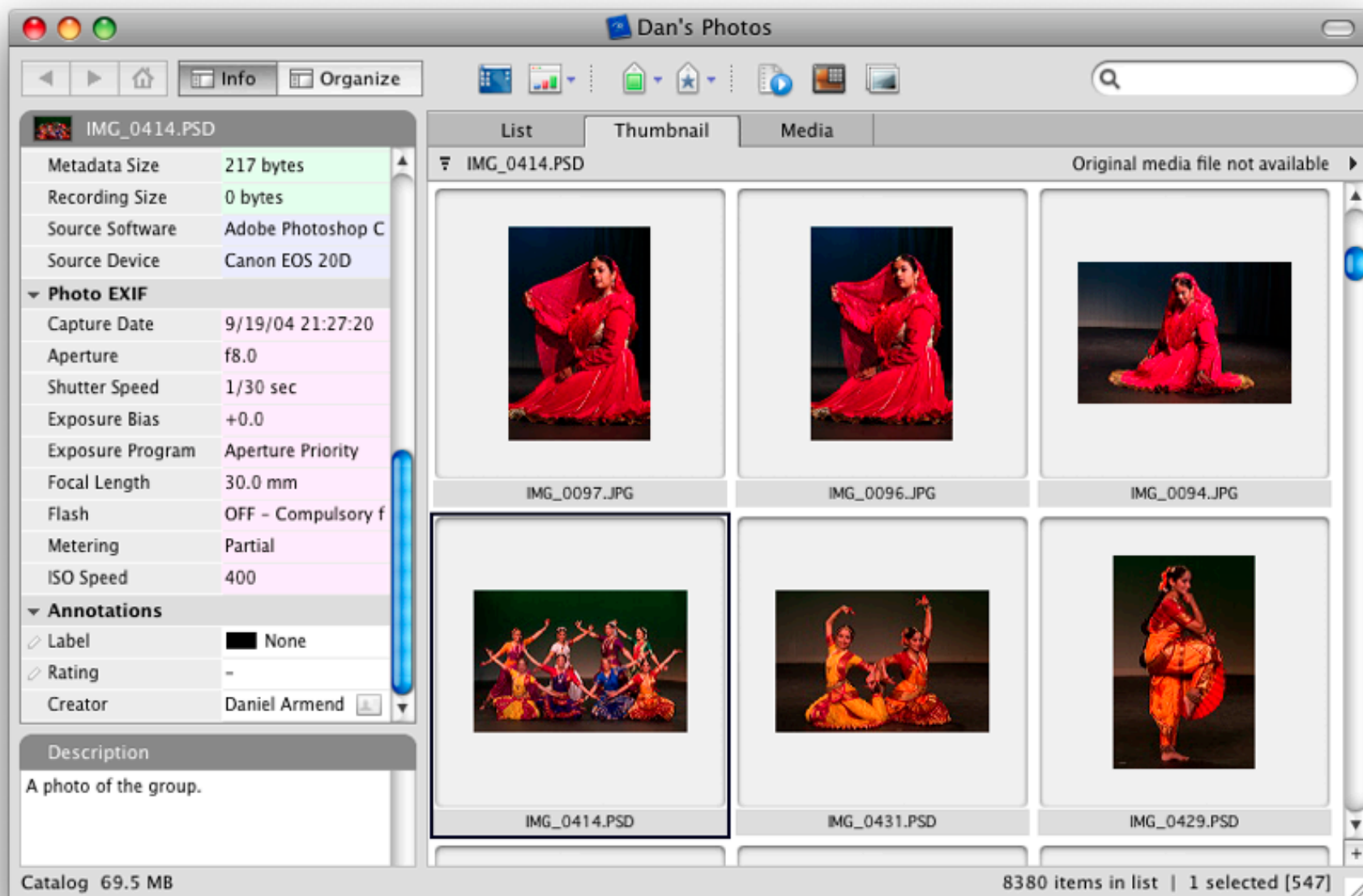
Software Tools

Available Tools



Software Tools

Photo Organization



Software Tools

Photo Organization



Software Tools

Photo Organization

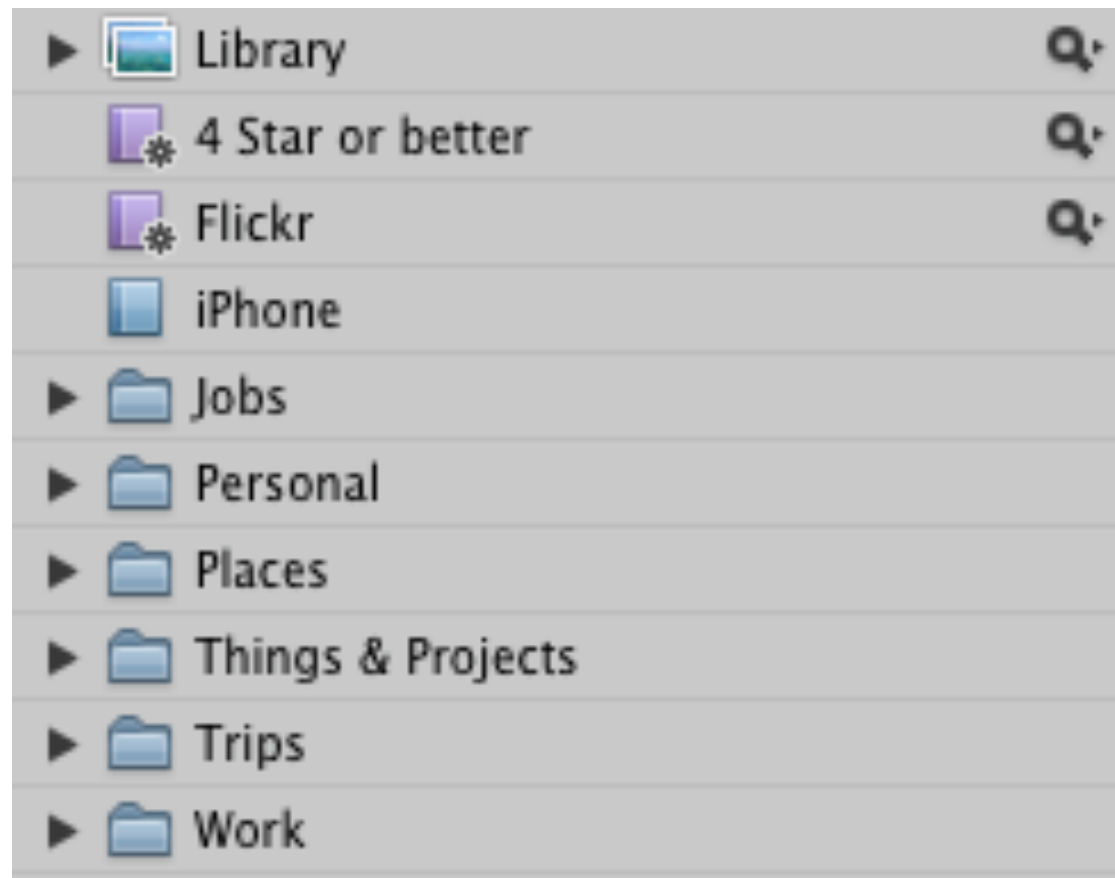


Photo Organization

Folders, Projects

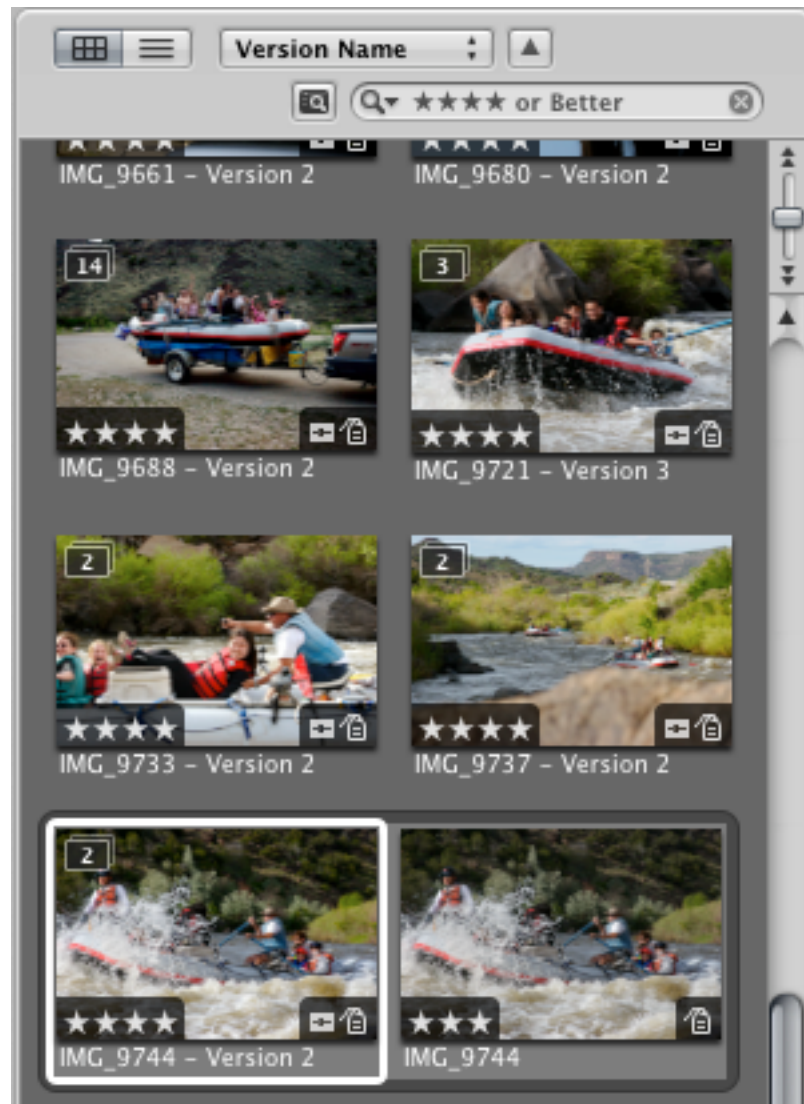


Photo Organization

Ratings, “Stacks”

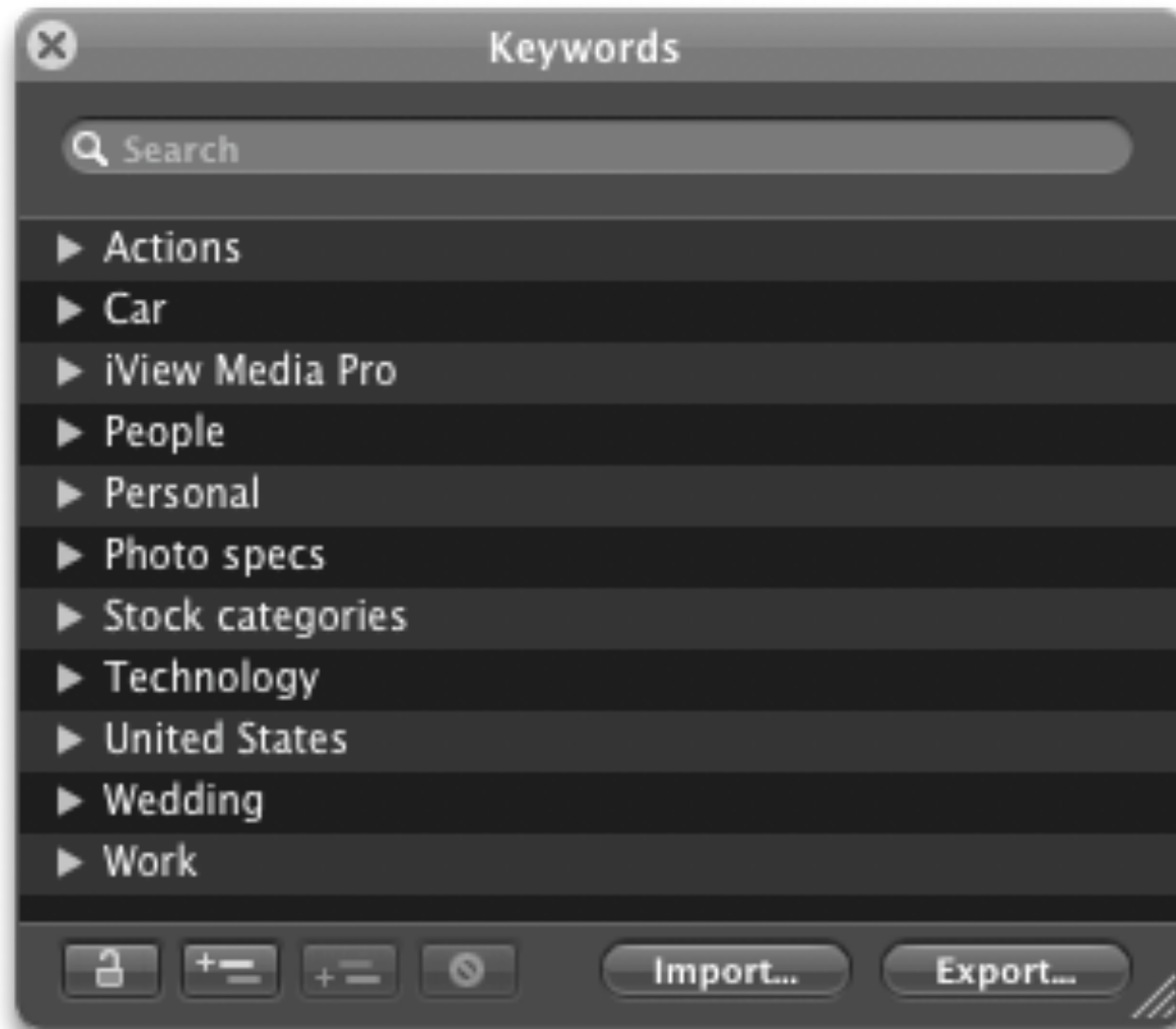


Photo Organization

Keywords

Metadata View: EXIF - Expanded ⚙

Version Name: IMG_9744 - Version 2

Image Date: 5/27/07 6:04:18 PM MDT

Camera Make: Canon

Camera Model: Canon EOS 20D

Pixel Size: 3504 x 2332

Aperture: f/5.6

Shutter Speed: 1/2500

Exposure Bias: -0.3ev

Focal Length (35mm):

Focal Length: 105mm

ISO Speed Rating: ISO400

Aspect Ratio: 3:2

Orientation: Landscape

Depth: 16

Color Space: 1

Exposure Mode: 0

Flash: 16

Serial Number: 320116013

Lens Minimum (mm):

Maximum Lens Ap...:

Lens Maximum (mm):

Color Model: RGB

Profile Name: Adobe RGB (1998)

Badges: 🏠 📁

Keywords EXIF IPTC Other Archive

Photo Organization

Metadata

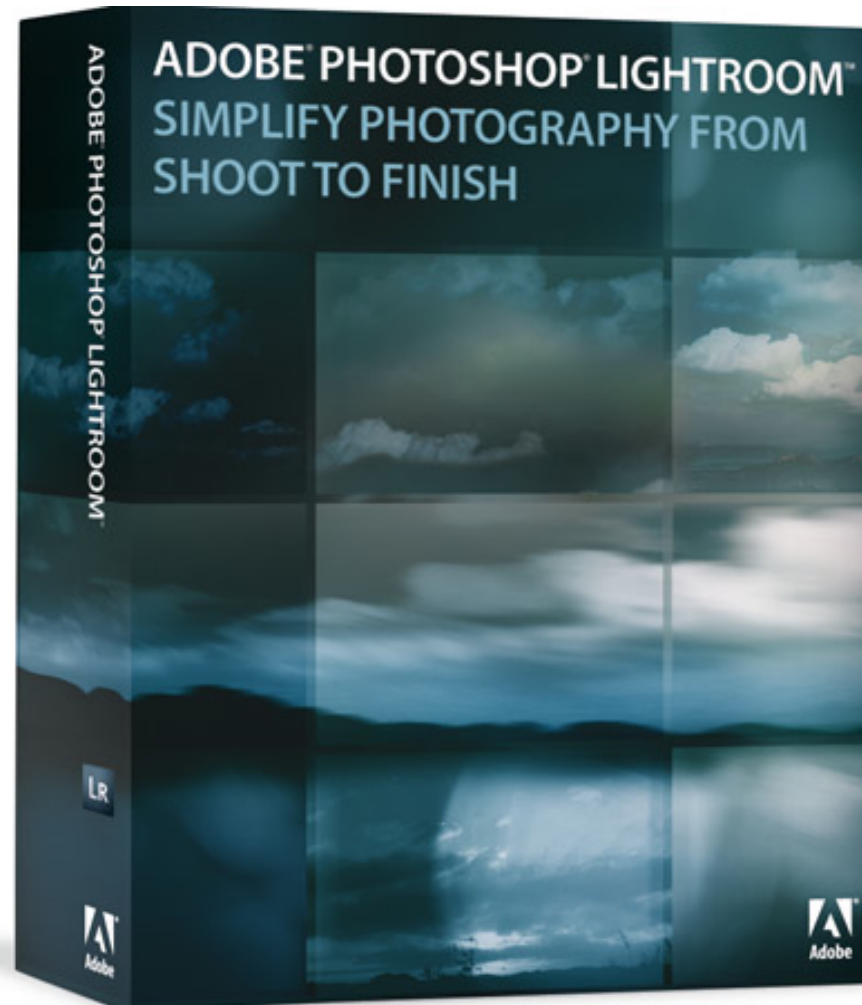


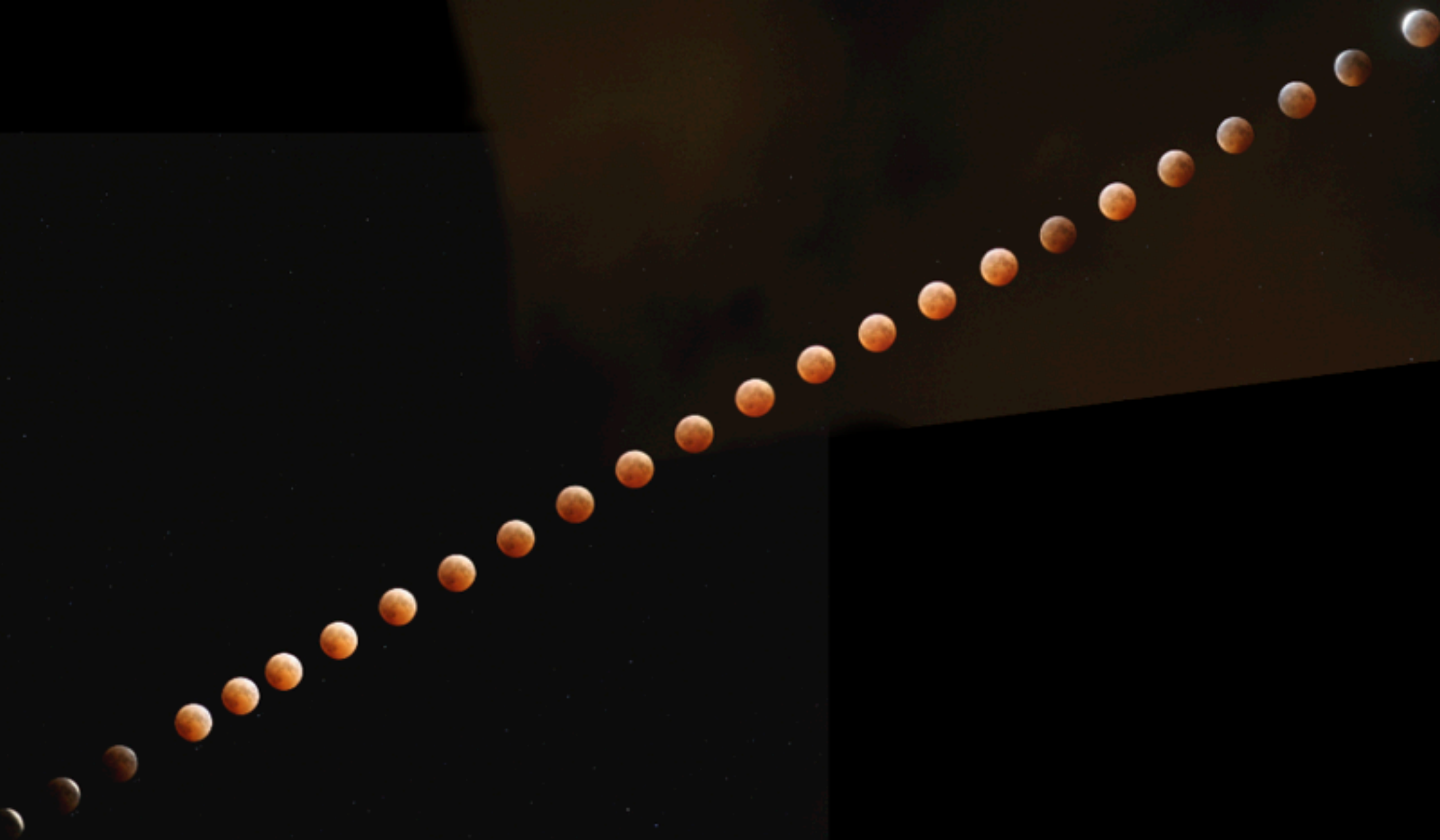
Photo Organization

My way or the highway!



Photo Organization

Backing up

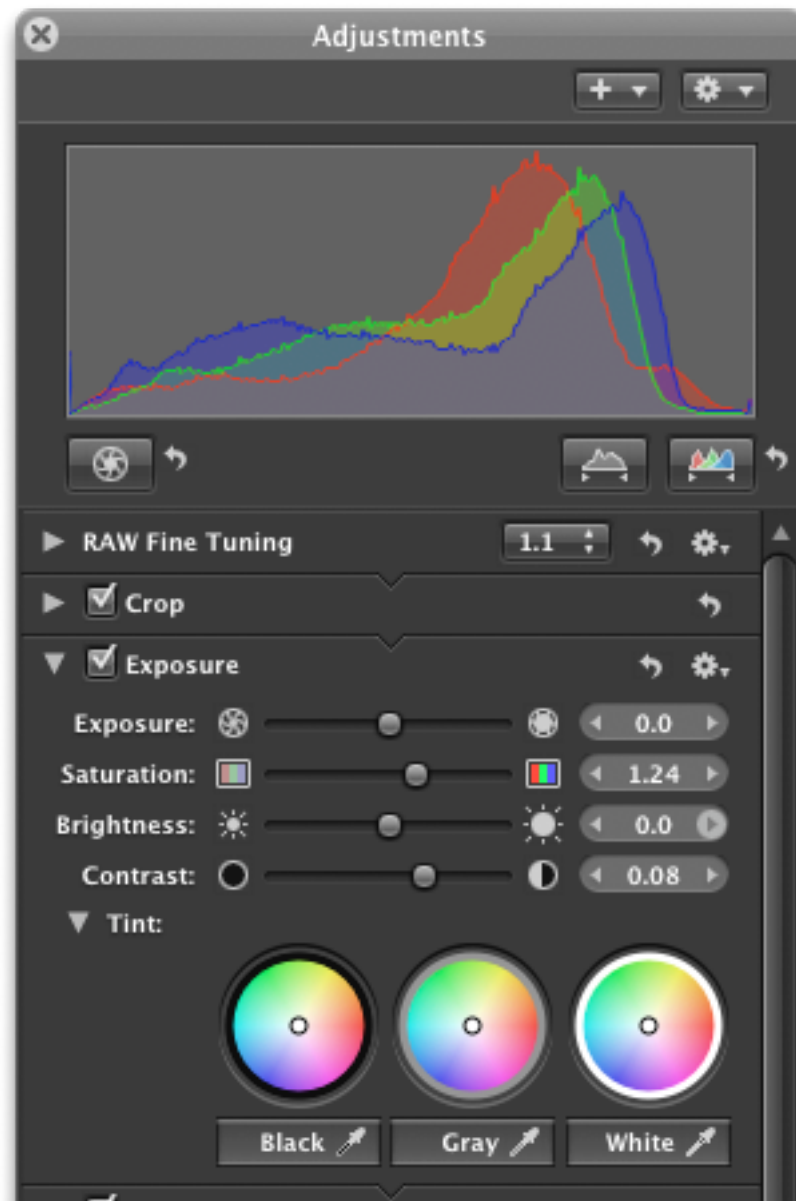


Around f/5.6, 1/20s, ISO 400

Photo sequence by Dan Armendariz, 2004

Software Tools

Interacting with a camera



Software Tools

RAW Processing



Photo by Dan Armendariz, 2007

Software Tools

Resizing and Cropping



Software Tools

Photoshop!

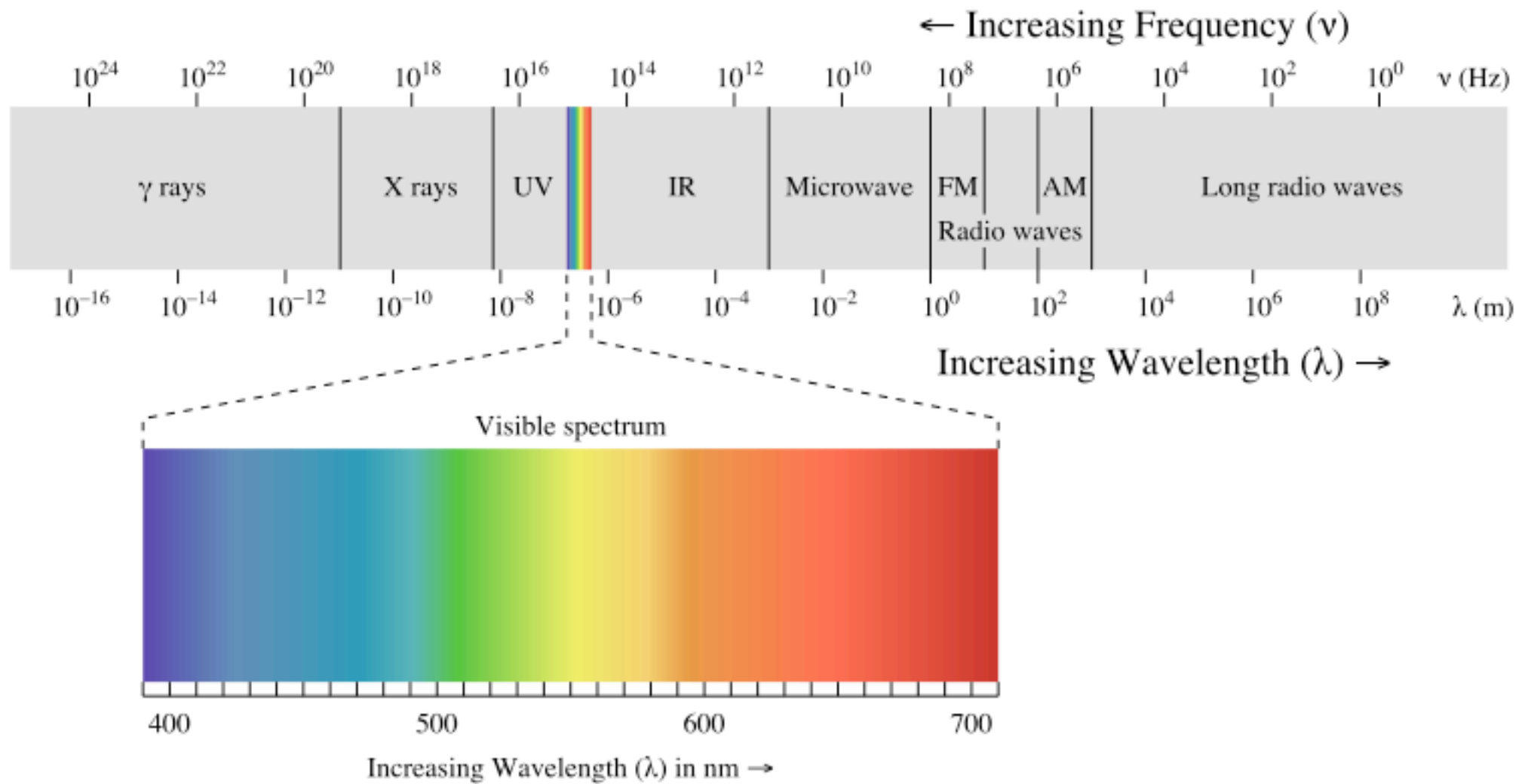


Image from http://en.wikipedia.org/wiki/Electromagnetic_radiation

Light

Properties of Waves & Particles

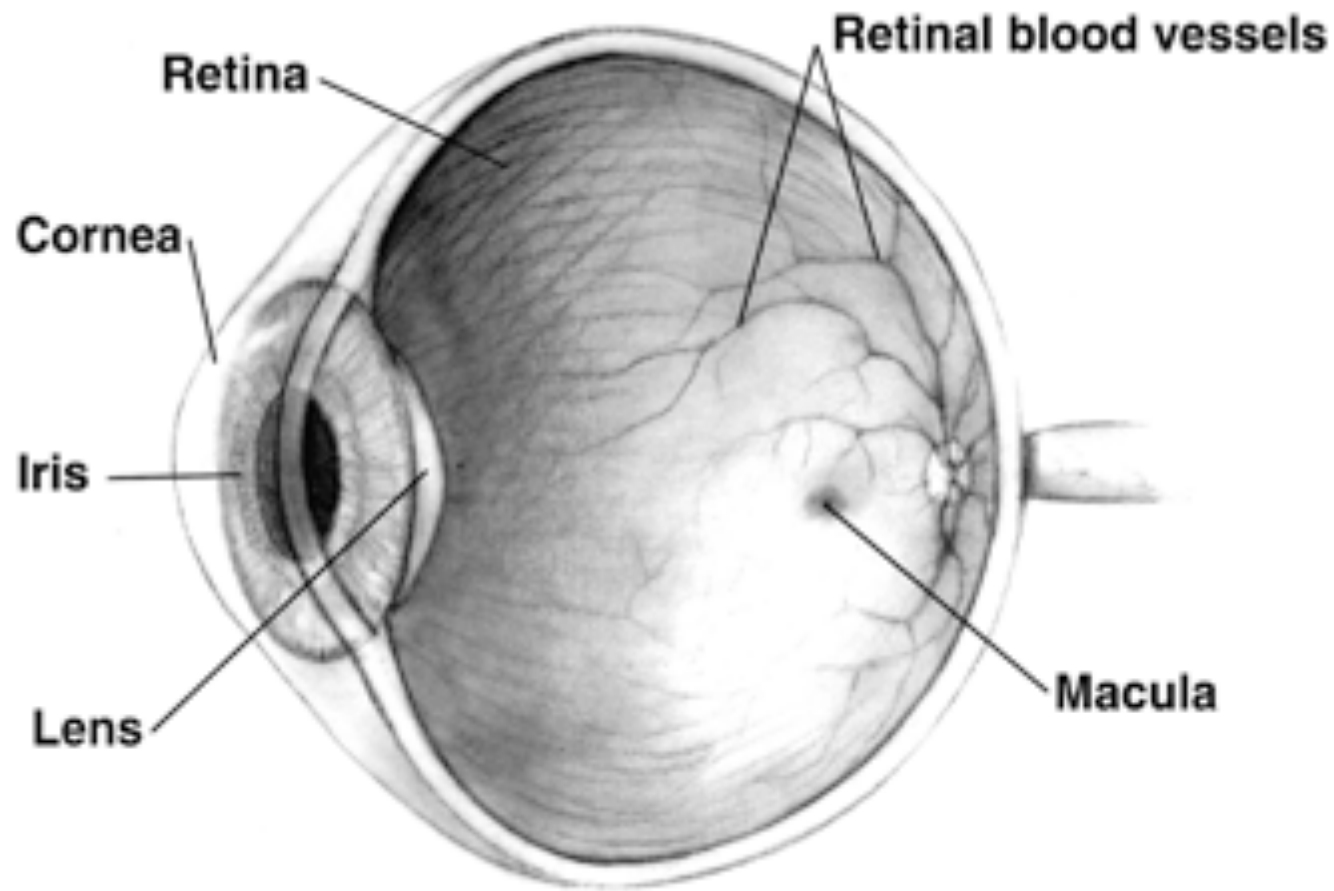


Image from <http://en.wikipedia.org/wiki/Eye>

The Eye

In a nutshell

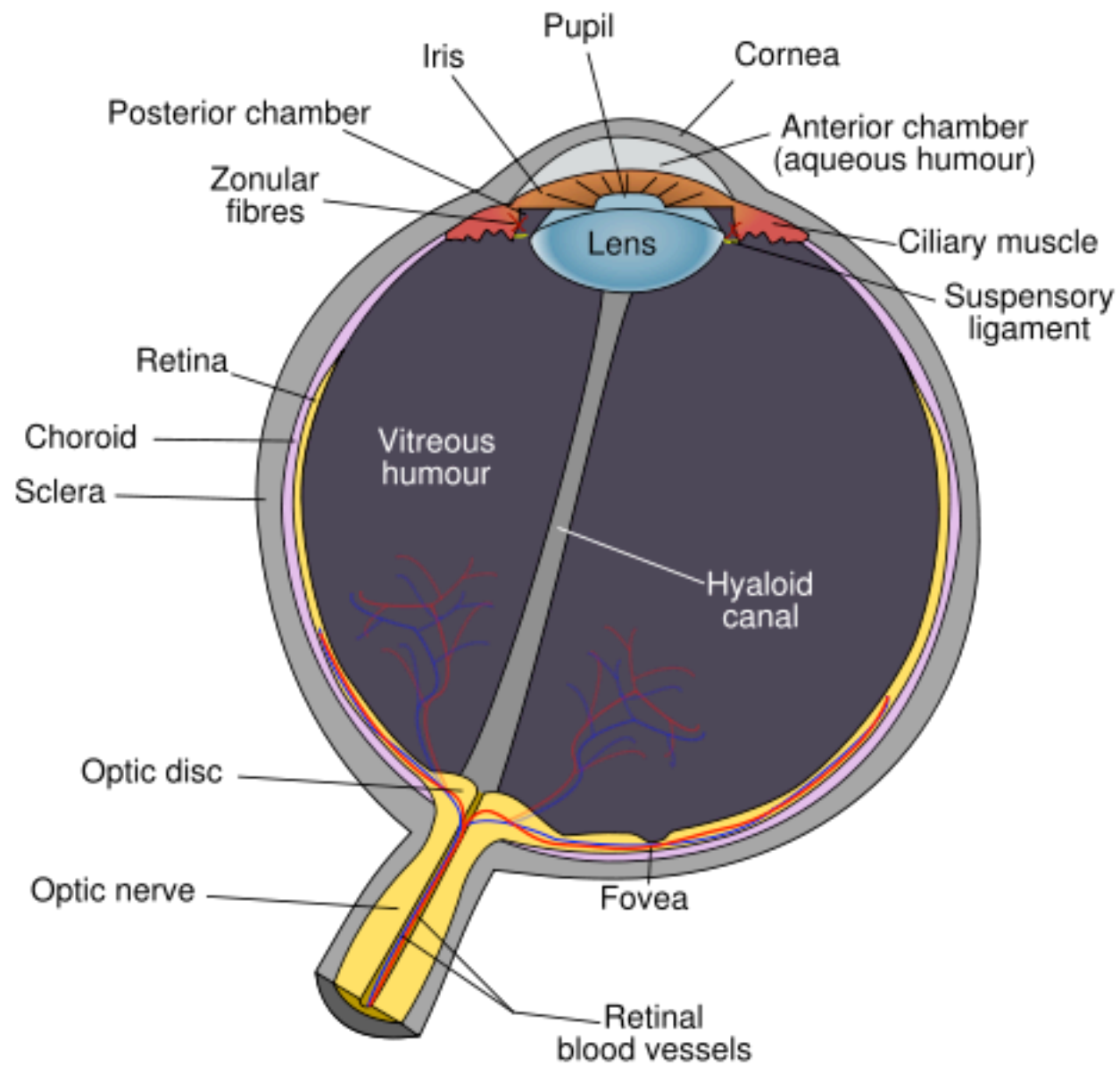


Image from <http://en.wikipedia.org/wiki/Fovea>

The Eye

Fovea

Rods	Cones
Night vision	Day vision
More sensitive to light	Less sensitive to light
Not in fovea	Concentrated in fovea
22 times as many rods than cones in retina	
Monochromatic stimulus	Trichromatic (color) stimulus
Preference to detect motion	Preference to detect detail

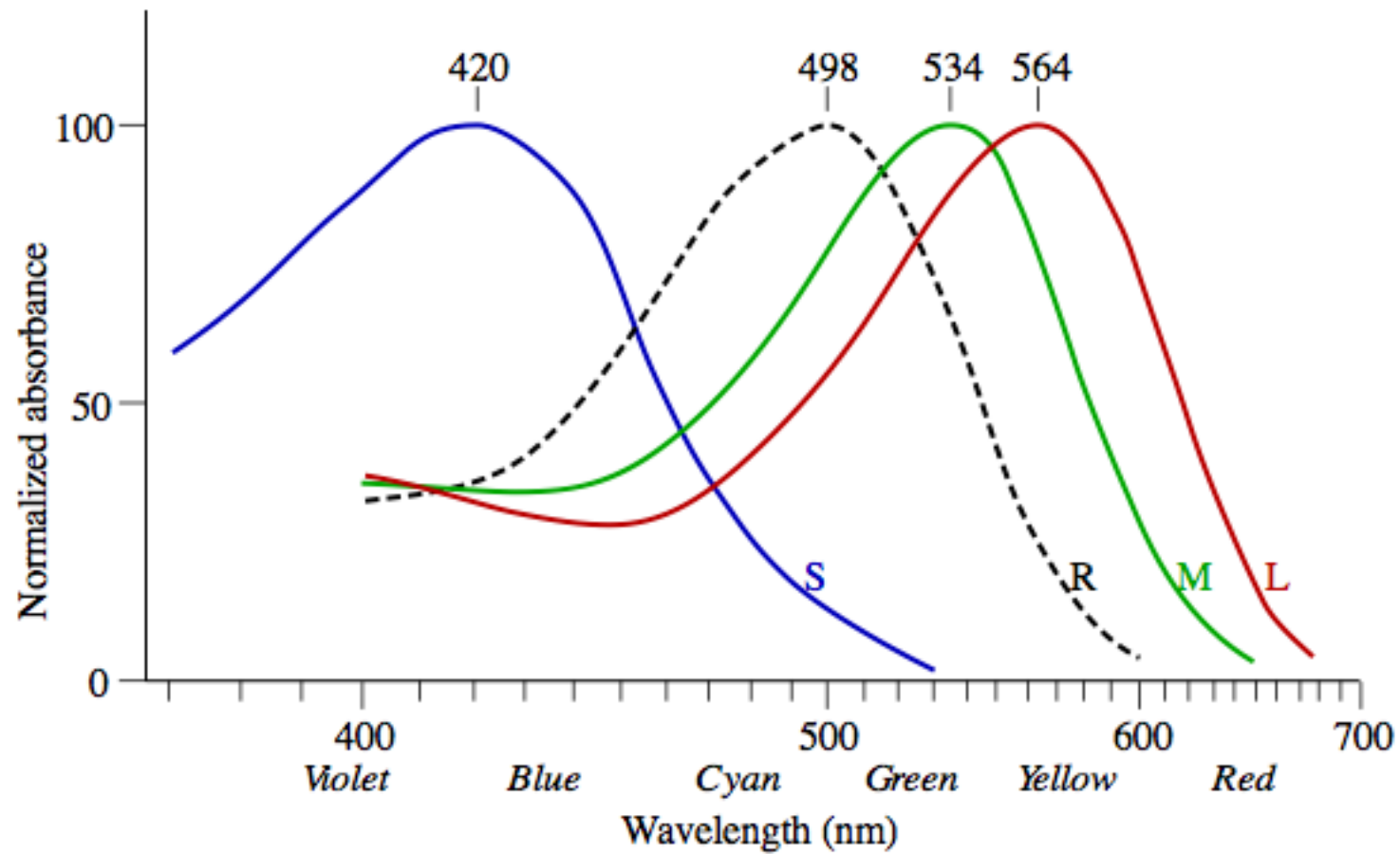
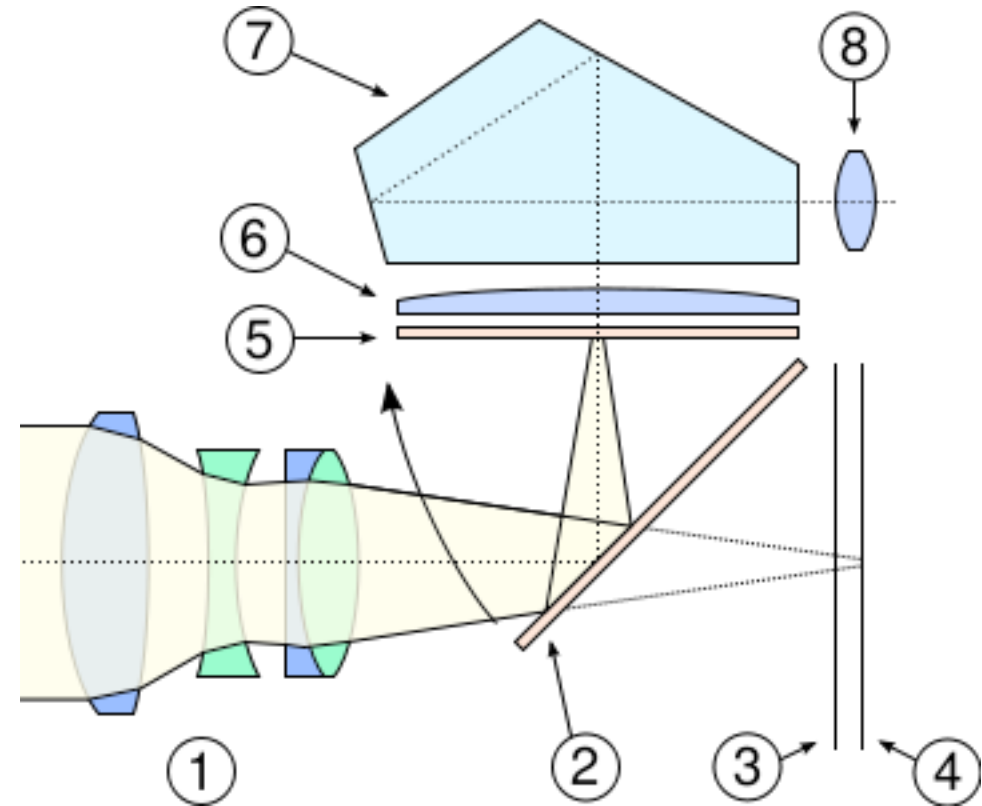
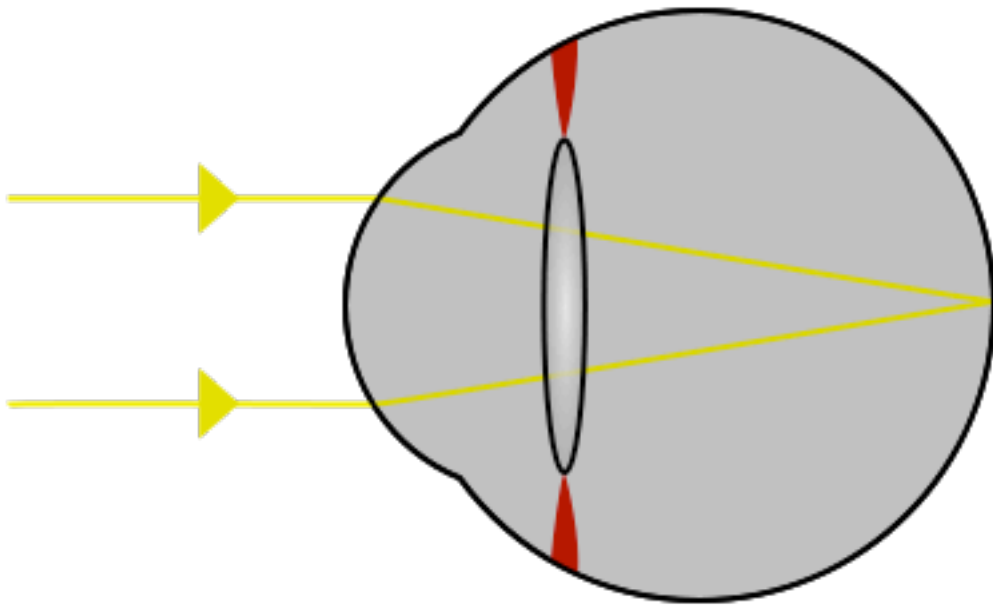


Image from <http://en.wikipedia.org/wiki/Trichromacy>

The Eye

Rods & Cones



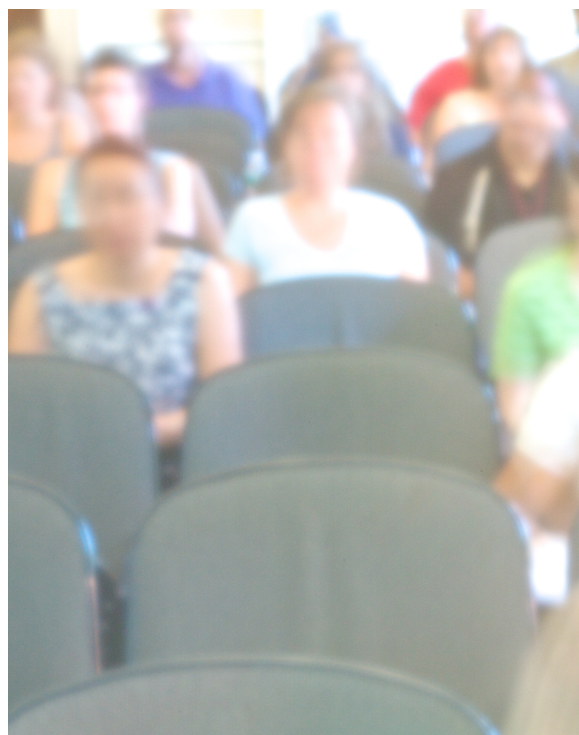
Images from <http://en.wikipedia.org/wiki/Eye> and http://en.wikipedia.org/wiki/Single-lens_reflex_camera

Cameras

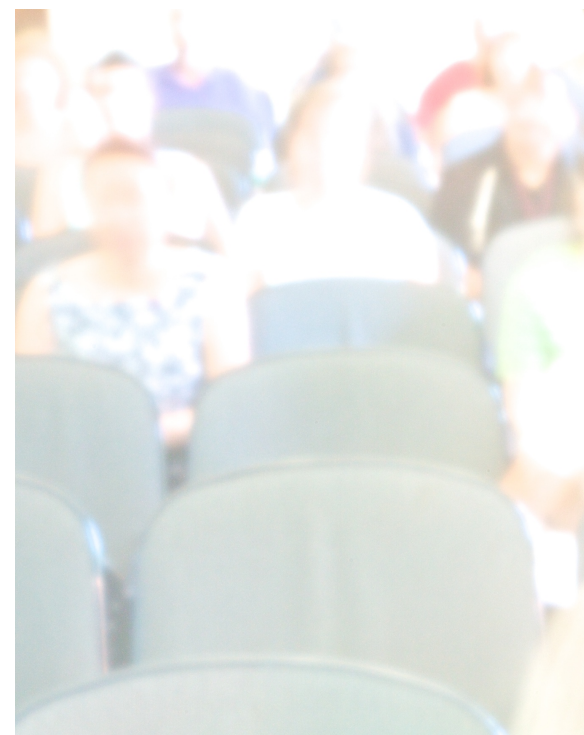
Similarity to the Eye



+0 EV



+1 EV



+2 EV

Exposure

Stops & Exposure Value (EV)



367s, ISO 100

Photo by Dan Armendariz, 2009

Exposure

Shutter Speed



10.0s, ISO 100, f/8

Photo by Dan Armendariz, 2007

Shutter Speed

Effects



2s, ISO 100, f/13

Photo by Dan Armendariz, 2007

Shutter Speed

Effects

Shutter Speed

Stopping motion

Photo by Dan Armendariz, 2004
1/1250s, ISO 200, f/2.8





1/320s, ISO 100, f/9.0

Photo by Dan Armendariz, 2009

Shutter Speed

Mixing motion with still



2.5s, ISO 400, f/5

Photo by Dan Armendariz, 2006

Shutter Speed

Mixing motion with still



1/1000s, ISO 400, f/5.6

Photo by Dan Armendariz, 2007

Shutter Speed

Stopping motion

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