WEEK 4: EXPOSURE (CONTINUED)

DIGITAL MEDIA E-10
EXPOSING DIGITAL PHOTOGRAPHY

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Project 1: due tonight (11:59PM)
Problem set 2: due next Thursday, October 1
Project 2: released today
A DIY PROJECT

PROJECT 2

Photo by Rob McCarthy, 2014.
PROJECT 2

- DIY Lens
- High-speed flash photography
- High(?)-altitude photography
- EXTREMELY long exposure (>1 hour)
- Ferrofluids (warning: difficult!)

Photo by Rob McCarthy, 2014.
COMBINED WITH SHUTTER SPEED

ISO “SENSITIVITY”

2007: 846s, f/8, ISO 400

2007: 336s, f/8, ISO 800
F-Number = F/D

Aperture
PINHOLE MATH
EXPOSURE: THE BIG FOUR

- Amount of available light
- Shutter speed
- ISO
- Aperture

2014: 1/3200s, f/2.8, ISO 200
The power of good light
INTENTIONAL UNDER- AND OVER-EXPOSURE (LOW, HIGH KEY)

EXPOSURE

2005: 8s, f/16, ISO 100

2005: 15s, f/16, ISO 100
METERING

EXPOSURE
SPOT

METERING

Relative importance for metering

Image x-axis

Image y-axis

Image from http://www.imaging-resource.com/PRODS/E40D/E40DAS.HTM
CENTER-WEIGHTED

METERING

Relative importance for metering

Image x-axis

Image y-axis

Image from http://www.imaging-resource.com/PRODS/E40D/E40DAS.HTM
ZONE METERING

METERING
EXPOSURE COMPENSATION

METERING

2014: 1/125s, f/2.8, ISO 200, +1 EV
METERING
EXPOSURE COMPENSATION

2014: 1/125s, f/2.8, ISO 200, +1 EV

+0 EV

+1 EV
CAMERA MODES

METERING

Images from dpreview.com's Nikon d40x and Canon 5D reviews
EXPOSURE: THE BIG FOUR

- Amount of available light
- Shutter speed
- ISO
- Aperture
INCREASING AVAILABLE LIGHT

EXPOSURE
INVERSE SQUARE LAW

LIGHT

Guide Number = Distance x F-number
FOCAL PLANE (REVISITED)

FLASH

Videos from http://www.smugmug.com/gallery/8945351_aVDzo#!i=597165552&k=BYPEm
STROBES ARE QUICK!

FLASH

0.30 Bullet Piercing an Apple. ©1964, Dr. Harold Eugene Edgerton
GONE WRONG: SHADOWS, MOTION BLUR

FLASH

2002: 2s, ISO 100, f/2.8, 0ev
GONE WRONG: RED EYE

FLASH

Retina
Cornea
Iris
Lens
Retinal blood vessels
Macula

wikipedia.org
FIXING PROBLEMS

FLASH

Image from http://www.reallyrightstuff.com/s.n/l/t.A/d.5327/f
Curtain Sync

Flash

Front curtain sync

Rear curtain sync

Images from http://www.nikondigitutor.com/eng/d70/select.php?menu=1&sub=b11&num=4
Gussie Moran. ©1949, Dr. Harold Eugene Edgerton.
USING OLDER UNITS ON DIGITAL CAMERAS

FLASH
2010: 1/3200s, f/4, ISO 320