A Bunch of Stuff

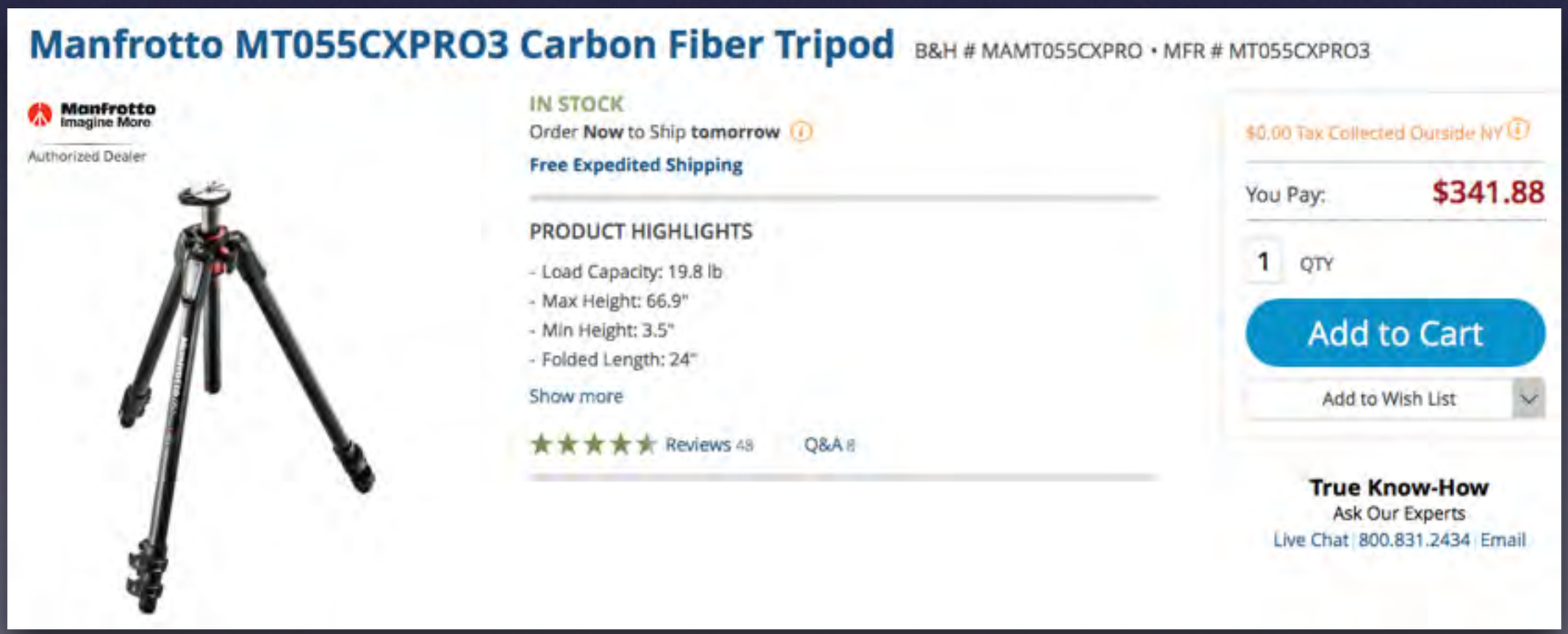
KIPC, January 30, 2017

Some Topics

- Tripods
- Camera sensors
- Lenses
- Depth of field/hyperfocal distance
- Back button focus
- Auto ISO
- Calibration

Tripods

- Benro
- Feisol
- Giotto
- Gitzo
- Manfrotto
- MeFOTO
- Oben
- Surui



Tripod Heads/Ball Heads

Manfrotto

Acra-Tech

Really Right Stuff

Oben

Factors to consider:

1. **weight**
2. **weight capacity**
3. **type of quick release plate**

Tripod Heads/Ball Heads

★★★★★(125)

Manfrotto 468MGRC2 Hydrostatic Ball Head with RC2 Quick Release

B&H # MA468MGRC2 • MFR # 468MGRC2

TOP HIGHLIGHTS

- Load Capacity: 22 lb
- Magnesium Alloy Construction
- Quick Release with Camera Plate

Availability: IN STOCK

Order **Now** to Ship **Tomorrow**

Free Expedited Shipping

You Pay: **$269.88**

1 Add to Cart

Add to Wish List

Buy Used from **$209.95**

★★★★★(71)

Acratech GP Ballhead

B&H # ACGPBQRD • MFR # 1155

- Lightweight Ballhead
- Functions as a Gimbal Head
- Functions as a Leveling Base
- 25 Lb Load Capacity

Availability: IN STOCK

Order **Now** to Ship **Tomorrow**

You Pay: **$399.95**

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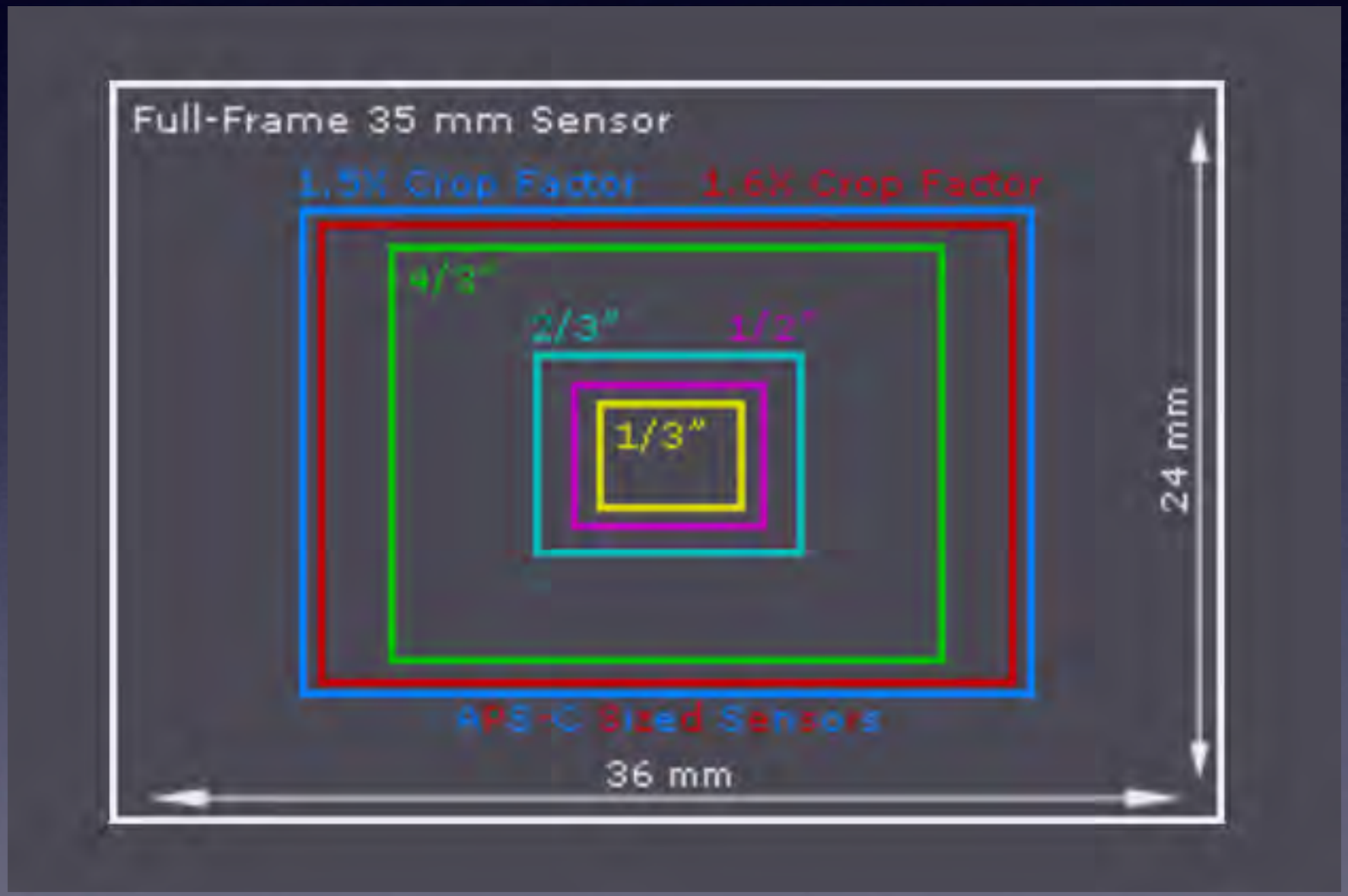
Useful References

- http://www.cambridgeincolour.com
- http://northrup.photo

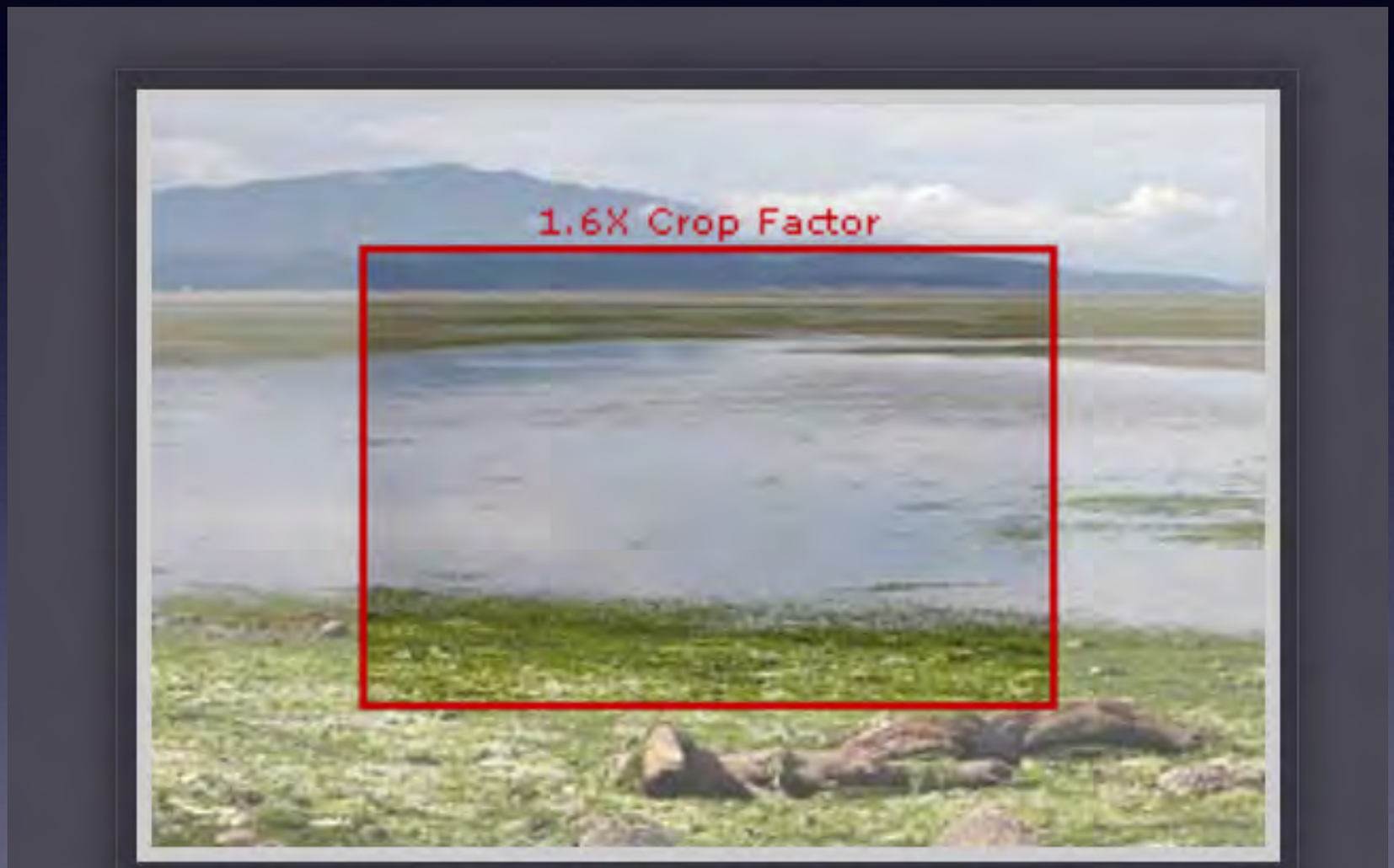
Camera Sensors

Camera sensors - Cambridge



Camera Sensors

Camera sensors - Cambridge

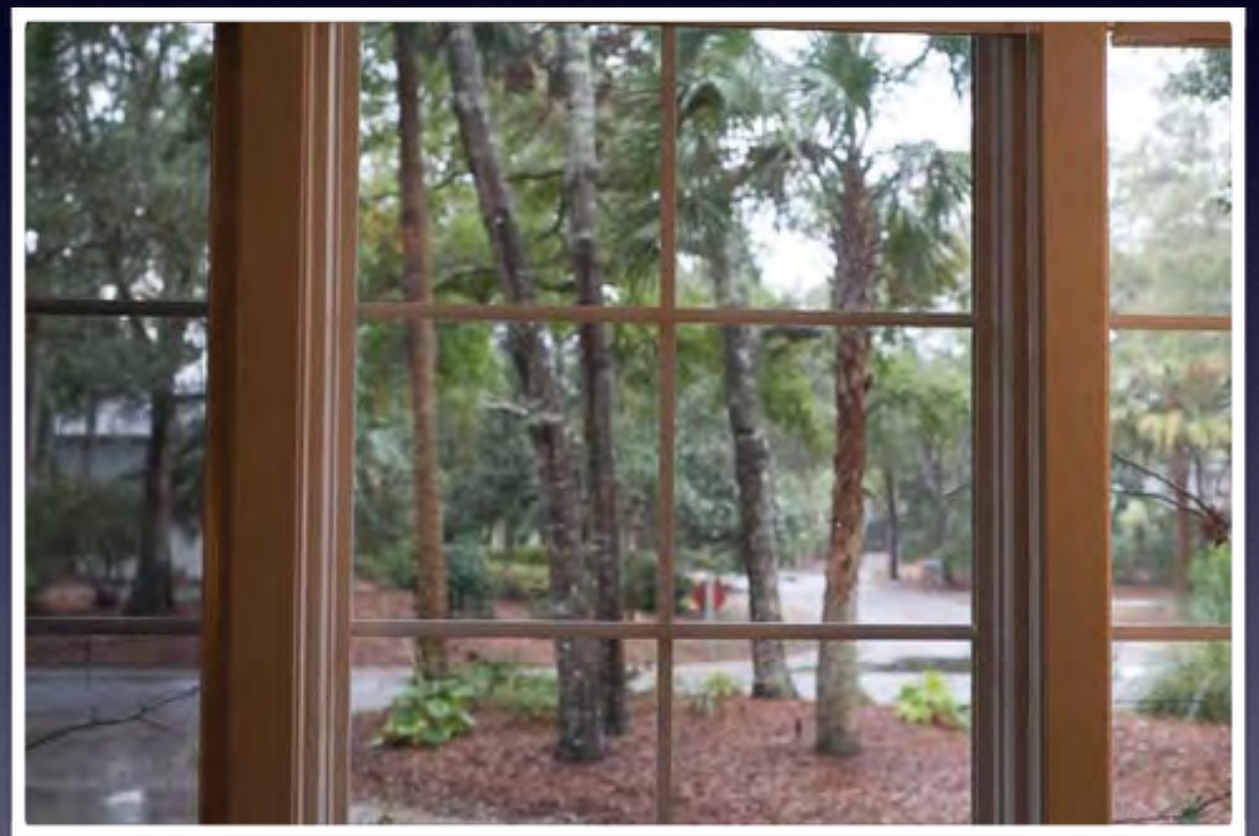


35 mm Full Frame Angle of View

Camera Sensors

Camera sensors - Cambridge

1.5 Crop: DX mode



Full frame: FX mode

Both photos at f/5.6 with 50 mm lens on Nikon D810

Camera Sensors

Camera sensors - Cambridge

Nearly all lenses are sharpest at their centers, while quality degrades progressively toward to the edges. This means that **a cropped sensor effectively discards the lowest quality portions of the image**, which is quite useful when using low quality lenses (as these typically have the worst edge quality).

Camera Sensors

Camera sensors - Cambridge

“**The optical performance of wide angle lenses is rarely as good as longer focal lengths**. Since a cropped sensor is forced to use a wider angle lens to produce the same angle of view as a larger sensor, this can degrade quality. Smaller sensors also enlarge the center region of the lens more, so its resolution limit is likely to be more apparent for lower quality lenses.”

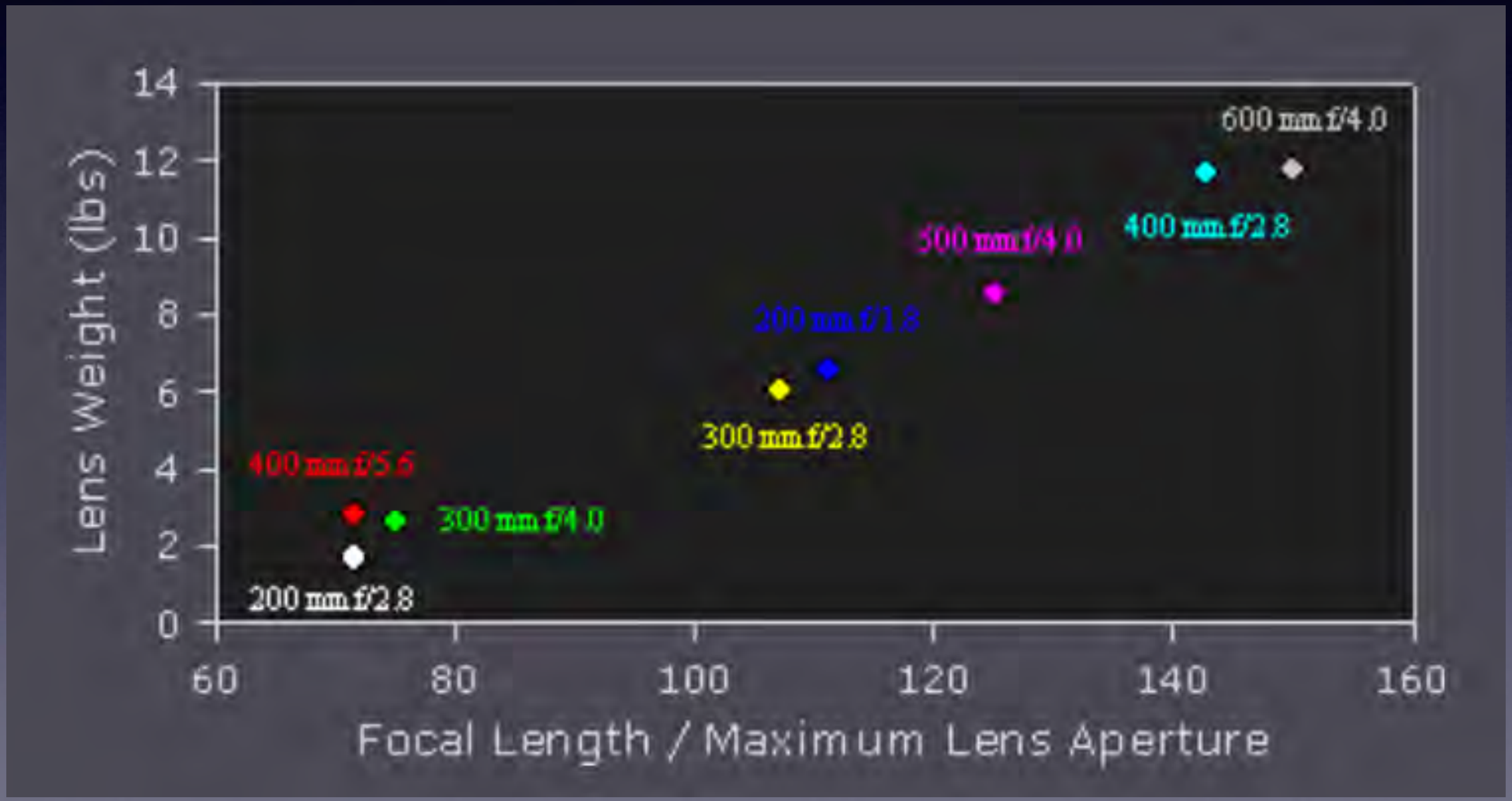
Camera Sensors

Camera sensors - Cambridge

Smaller sensors require lighter lenses (for equivalent angle of view, zoom range, build quality and aperture range). This difference may be critical for wildlife, hiking and travel photography because all of these often utilize heavier lenses or require carrying equipment for extended periods of time.

Camera Sensors

Camera sensors - Cambridge



Camera Sensors

Camera sensors - Cambridge

For SLR cameras, larger sensor sizes result in larger and clearer viewfinder images, which can be especially helpful when manual focusing. However, these will also be heavier and cost more because they require a larger prism/ pentamirror to transmit the light from the lens into the viewfinder and towards your eye.

Lenses

- DX and FX lenses (crop frame vs. full frame)
- Prime lenses vs. zoom
- Constant aperture vs. fixed aperture
- The longer the lens, the shallower the depth of field at a given aperture.
- *Buy lens quality first, body quality second.*

Camera Sensors

Camera sensors - Cambridge

Sensor Type

Digital SLR with CF of 1.5X

Lens Focal Length

50 mm

CALCULATE

35 mm Equivalent Focal Length: **80 mm**

Focal Length Multiplier: **1.6**

Camera Sensors

Camera sensors - Cambridge

As sensor size increases, the **depth of field will decrease for a given aperture** (when filling the frame with a subject of the same size and distance). This is because **larger sensors require one to get closer to their subject, or to use a longer focal length in order to fill the frame** with that subject. This means that **one has to use progressively smaller aperture sizes in order to maintain the same depth of field on larger sensors**.

Depth of Field

http://www.cambridgeincolour.com/tutorials/digital-camera-sensor-size.htm

http://www.cambridgeincolour.com/tutorials/dof-calculator.htm

DEPTH OF FIELD CALCULATOR

A depth of field calculator is a useful photographic tool for assessing what camera settings are required to achieve a desired level of sharpness. For a background on what everything here means, also see the tutorial on depth of field.

Depth of Field Calculator

show advanced

Camera Type

Digital SLR with CF of 1.5X

Selected Aperture

f/2.8

Lens Focal Length

50 mm

Focus Distance

10 feet

CALCULATE

Nearest Acceptable Sharpness:

9.34 ft

Furthest Acceptable Sharpness:

10.76 ft

Total Depth of Field:

1.42 ft

http://www.cambridgeincolour.com/tutorials/dof-calculator.htm

Depth of Field

DOF Equivalents

Depth of Field Equivalents

Sensor #1

Digital SLR with CF of 1.5X

Selected Aperture f/11

Lens Focal Length 10 mm

Sensor #2

35 mm (full frame)

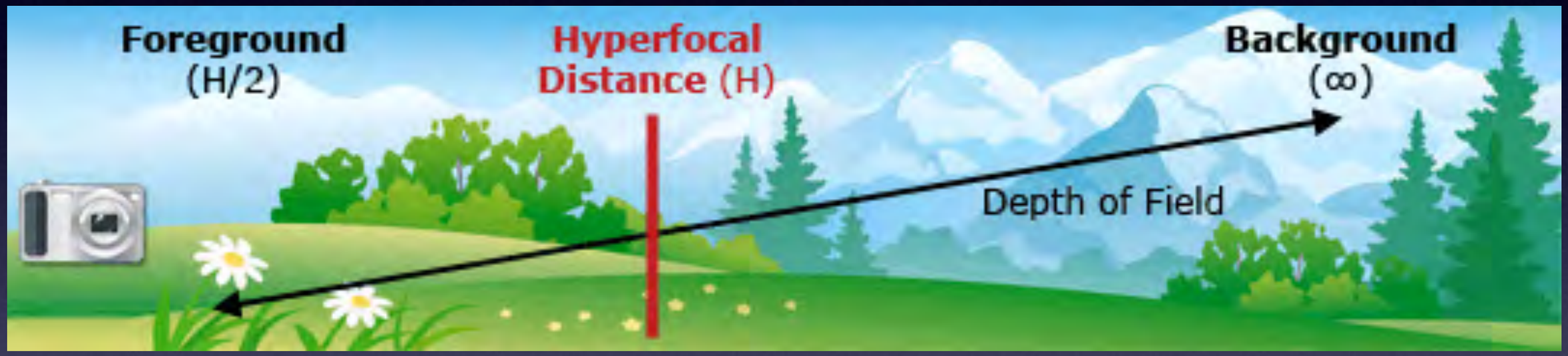
CALCULATE

Required* Focal Length: **15 mm**

Required Aperture: **f/16.7**

Hyperfocal Distance

Hyperfocal distance - Cambridge



The hyperfocal distance is the closest distance at which a lens be focused while keeping objects at infinity acceptably sharp. When the lens is focused at this distance, all objects at distances from half of the hyperfocal distance out to infinity will be acceptably sharp.

Hyperfocal Distance

http://www.cambridgeincolour.com/tutorials/hyperfocal-distance.htm

Hyperfocal Chart Calculator

show advanced

Camera Type

Digital SLR with CF of 1.5X

CALCULATE

Note: CF = "crop factor" (commonly referred to as the focal length multiplier)

meters	16 mm	24 mm	35 mm	50 mm	85 mm	135 mm	200 mm
f/2.8	4.3 m	9.8 m	20.8 m	42.4 m	122.5 m	308.9 m	678 m
f/4.0	3 m	6.8 m	14.5 m	29.7 m	85.7 m	216.2 m	474.6 m
f/5.6	2.2 m	4.9 m	10.4 m	21.2 m	61.2 m	154.5 m	339 m
f/8.0	1.5 m	3.4 m	7.3 m	14.8 m	42.9 m	108.1 m	237.3 m
f/11	1.1 m	2.5 m	5.3 m	10.8 m	31.2 m	78.6 m	172.6 m
f/16	0.8 m	1.7 m	3.6 m	7.4 m	21.4 m	54.1 m	118.7 m
f/22	0.6 m	1.2 m	2.6 m	5.4 m	15.6 m	39.3 m	86.3 m
f/32	0.4 m	0.9 m	1.8 m	3.7 m	10.7 m	27 m	59.3 m

Autofocus

- "The Nikon Autofocusing System," M. Hagen.

- For the autofocus system to work requires light, contrast, and distinct lines.

Nikon Autofocus

- **AF-S: single-servo AF.** Focus locks on subject when you press shutter halfway. Stays locked until it is released. Used for portraits, landscapes, etc.

- **AF-C: continuous servo AF.** Continues to focus as long as the shutter or AF-L button is pushed. Looks for movement. Used for flying birds, sports, etc.

- **AF-A: automatic servo AF.** used on mid-range and entry level cameras. Tries to select AF-S or AF-C itself.

Nikon Autofocus

- For the Nikon 810 and some 7000 series cameras there are arrays of sensors that track focus.
- There can be 9, 21, 51, or 3D tracking, Group focus, or auto area. How to access these depends on the model. **RTM!**

Back Button Focus

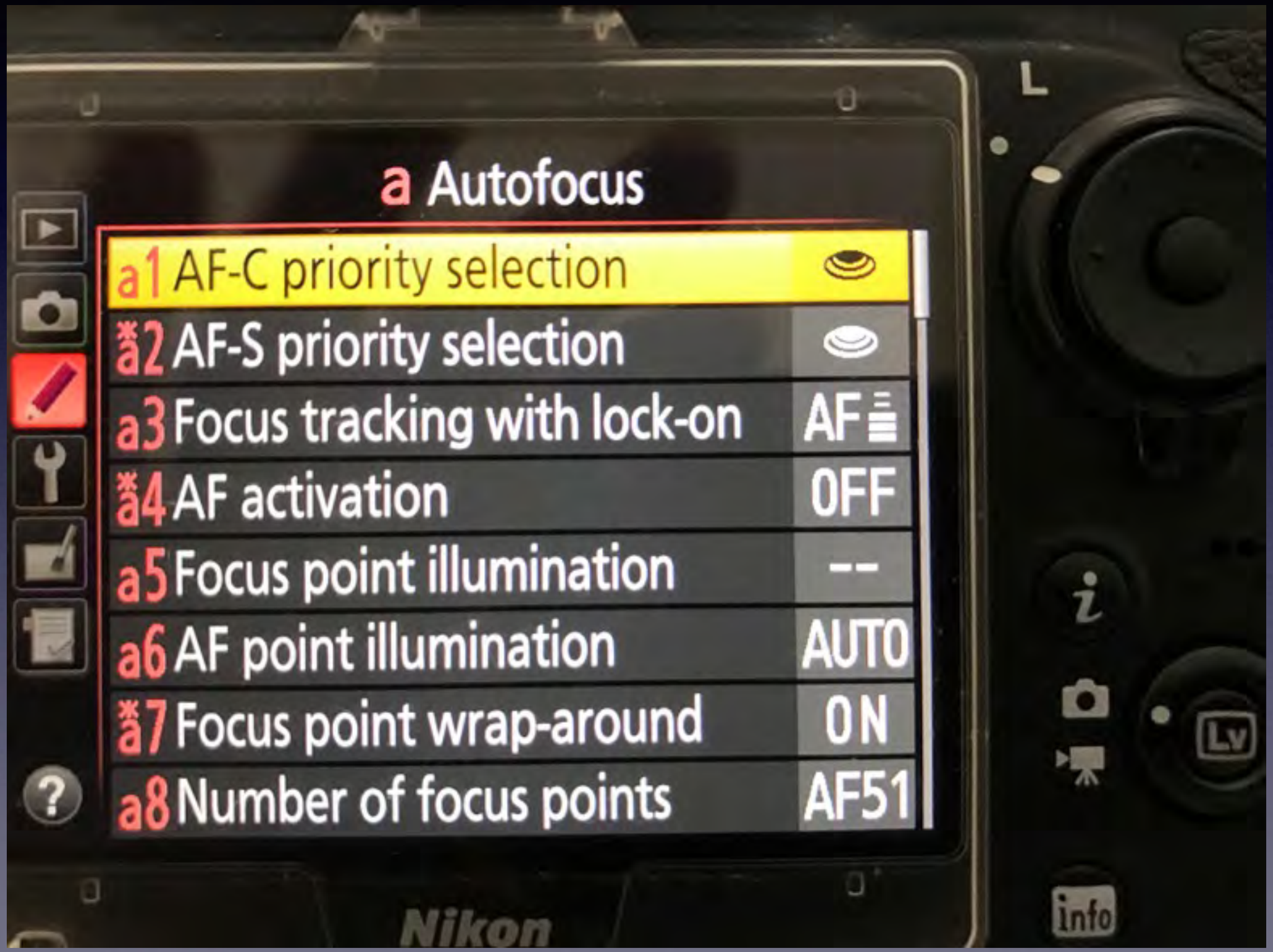
Back button - Tony Northrup

Steve Perry - Nikon

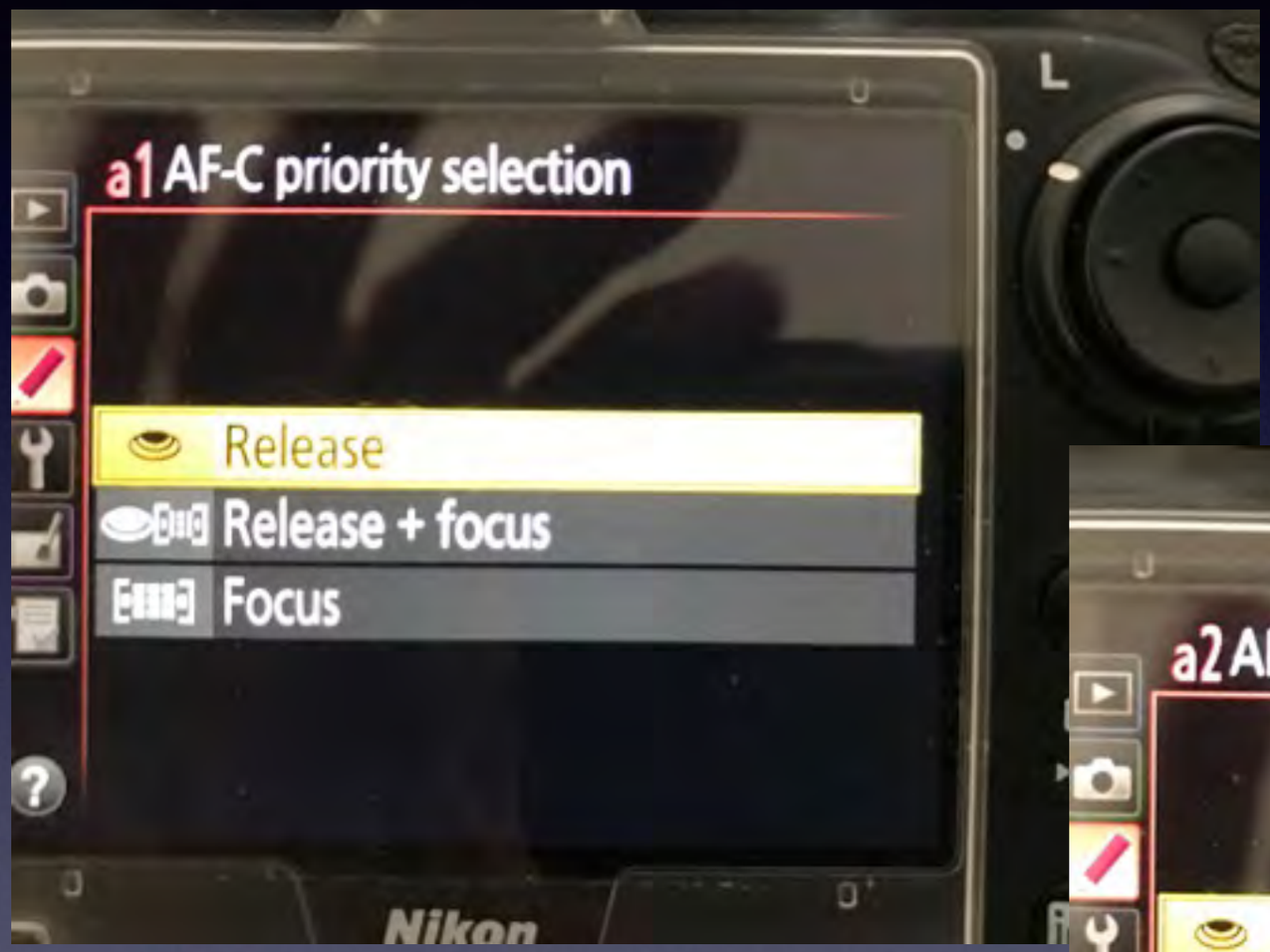
Back-Button Focus: Why EVERYONE should use that AF-On autofocus button

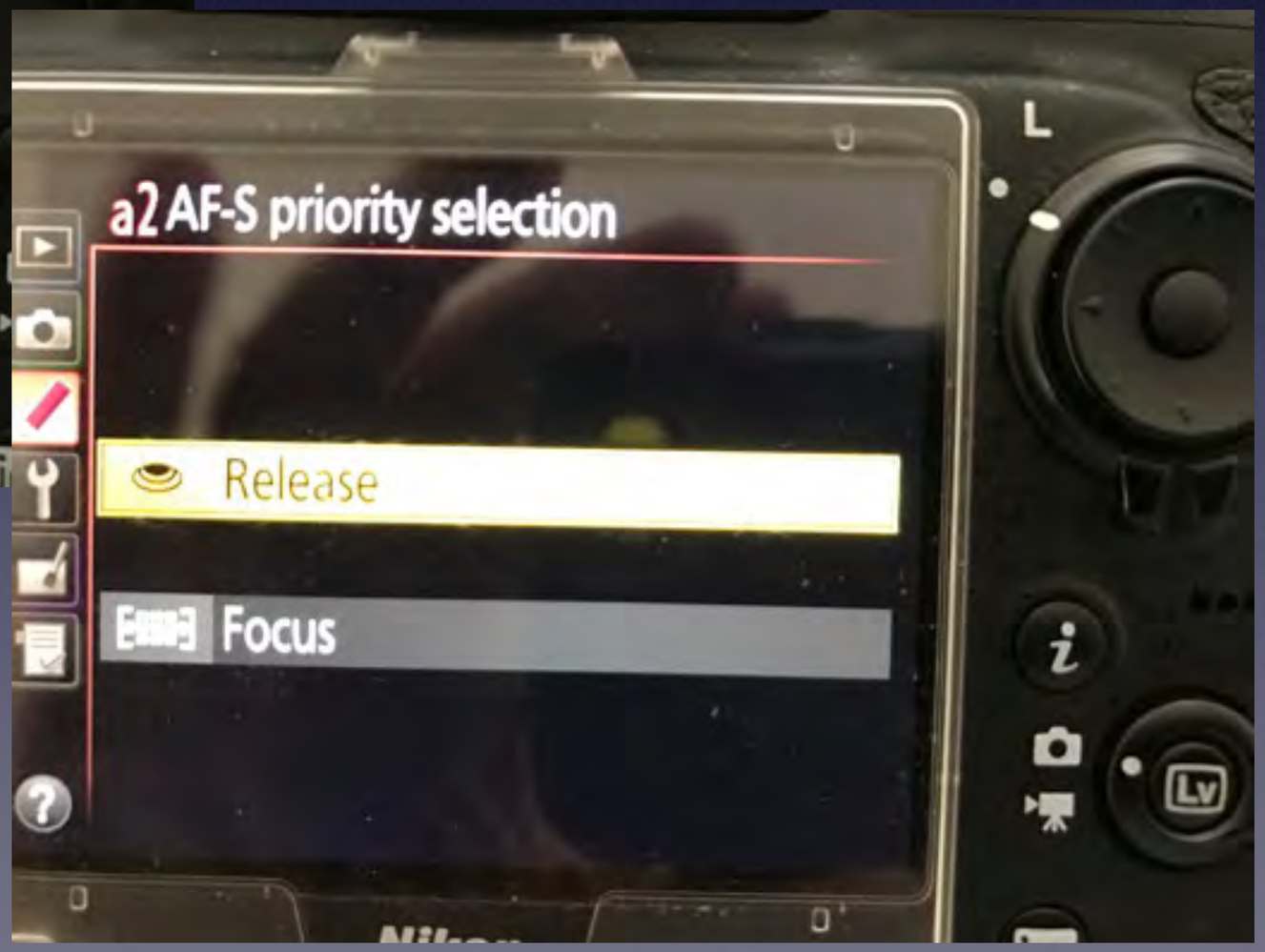
Back Button Focus

Back Button Focus



Back Button Focus





Back Button Focus

AUTO ISO


MENU
SHOOTING MENU
Vignette control
N
Auto distortion control
OFF
Long exposure NR
OFF
High ISO NR
NORM
ISO sensitivity settings
--
Multiple exposure
OFF
Interval timer shooting
OFF
Time-lapse photography
OFF
OK
info
Nikon
BM-12

AUTO ISO


ISO sensitivity settings
ISO sensitivity 64
Auto ISO sensitivity control ON
Maximum sensitivity 6400
Minimum shutter speed AUTO
Nikon
info

Monitor Calibration

http://www.picturecorrect.com/tips/color-calibration-how-to-succesfully-print-a-photo/

- No two **computer screens**, LCD, LED or the old CRT type, match colors. Line up six from the same manufacturer and each will be different.
- Many LCDs are skewed towards blue.
- Think your **digital camera** captures color correctly? While high end cameras are far more accurate, the inexpensive ones are all over the place. To complicate matters even more, Japanese cameras reflect the Japanese preference for redder skin tones.
- **Printers** are not immune either. Printer drivers and even the ink from one lot to another can cause colors to shift. And paper makes a big difference.

Monitor Calibration

★★★★½ (473)

X-Rite ColorMunki Display

B&H # XRCMUNDIS • MFR # CMUNDIS

- Ergonomic: 3 Integrated Functions
- Advanced Filter and Optical Systems
- For Virtually All Modern Displays
- Field-Upgradeable for Future Technology
- Rotating Diffuser Arm / Tripod Mount
- Easy and Advanced Modes
- Ambient Light Measurement/Smart Control
- Flare Correct
- Intelligent Profiling for Color Accuracy
- Automatic Hardware Adjustment

You Pay: **$129.99**

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Add to Wish List

Buy Used from **$99.95**

TOP SELLER

★★★★½ (16)

X-Rite ColorChecker Passport Video

B&H # XRCCPV • MFR # MSCCPPVC

- Ruggedized Pocket-Sized Hard Case
- Four Color/Camera Calibration Targets
- Color Chip Chart
- White Balance Card & Grayscale Card
- Focus Target

You Pay: **$109.95**

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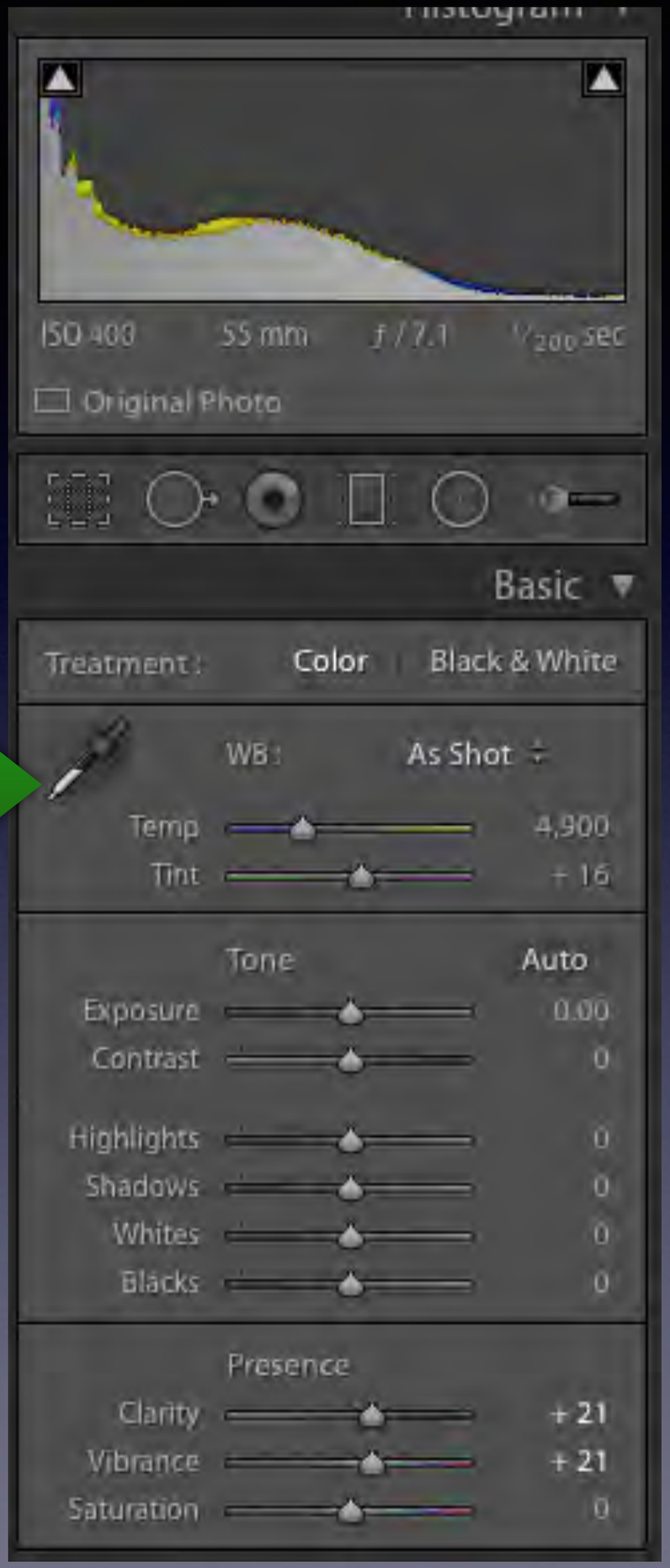
Add to Wish List

Color Calibration in Lightroom

The eyedropper tool is used to set the white balance in a photo.



Other Useful Stuff

- Northrup home page: http://northrup.photo
- Northrop tutorials: sup.io/tutorials
- Recovering images from memory cards: sup.io/photorec
- http://www.cambridgeincolour.com