

Understanding Your DSLR or Mirrorless Camera

June 2022

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Agenda

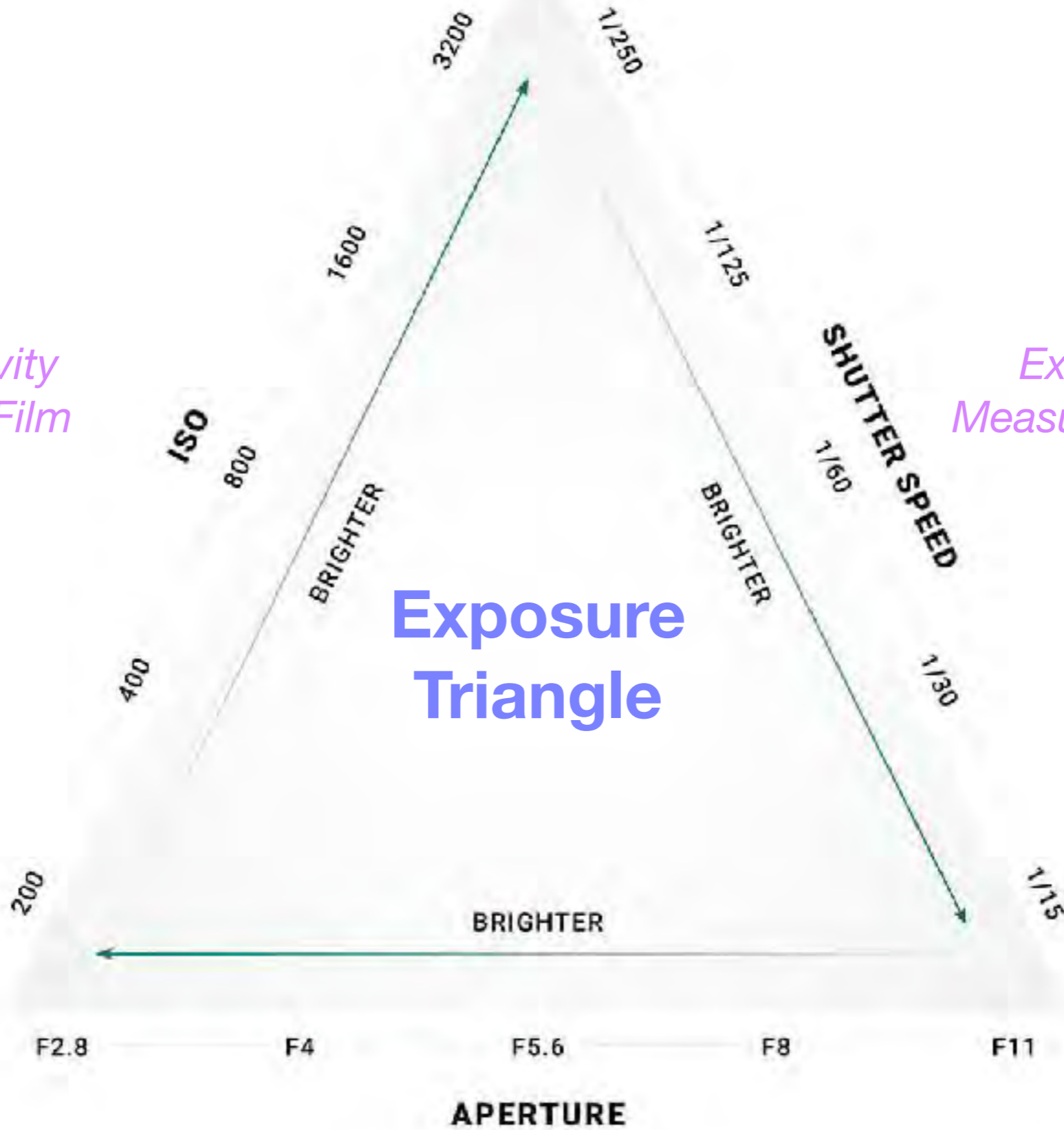
- Exposure
- Focus
- Light Meter

Canon AE-1 Film Camera



*Light Sensitivity
of Sensor or Film*

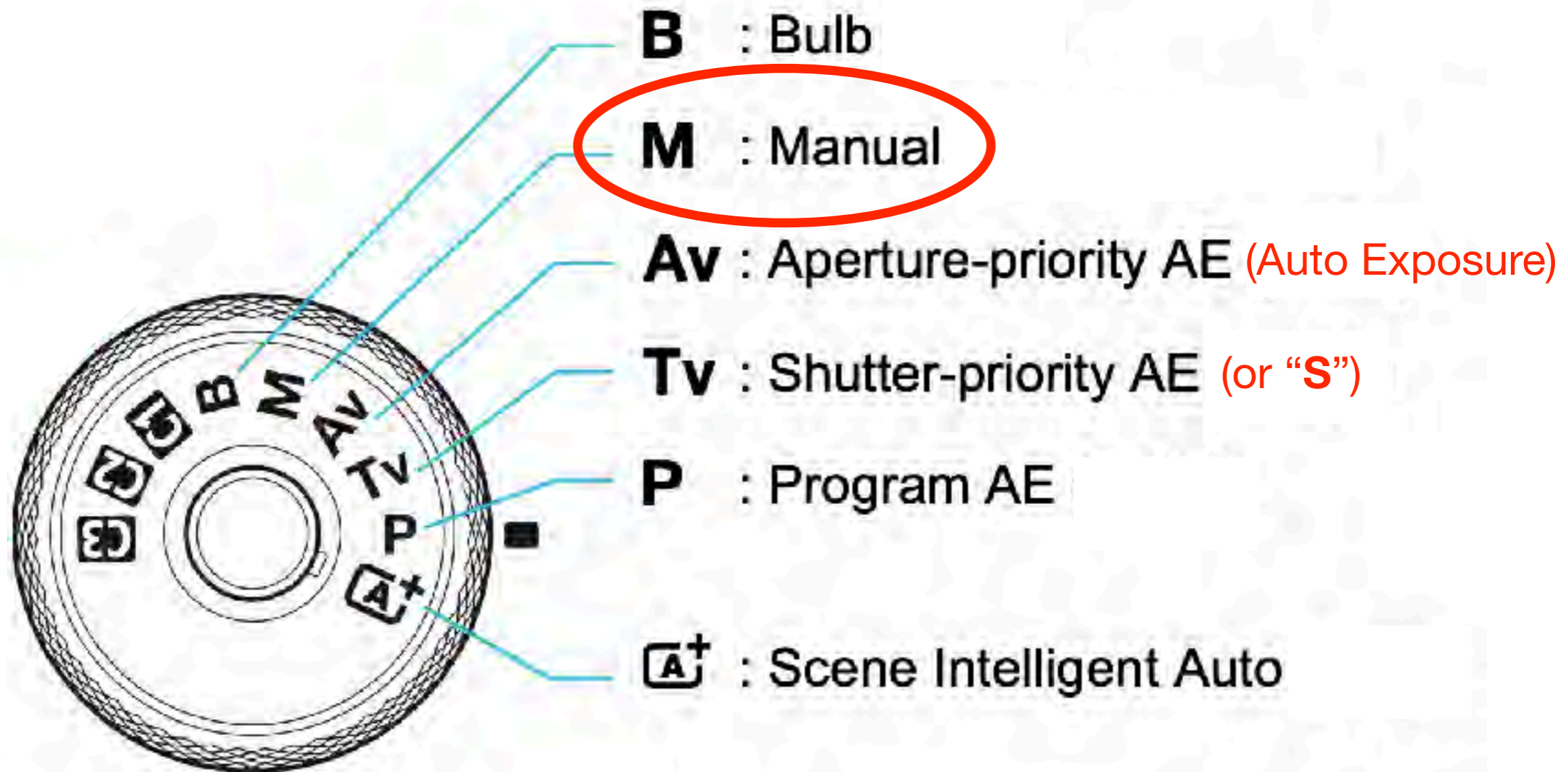
*Exposure Time
Measured in Seconds*



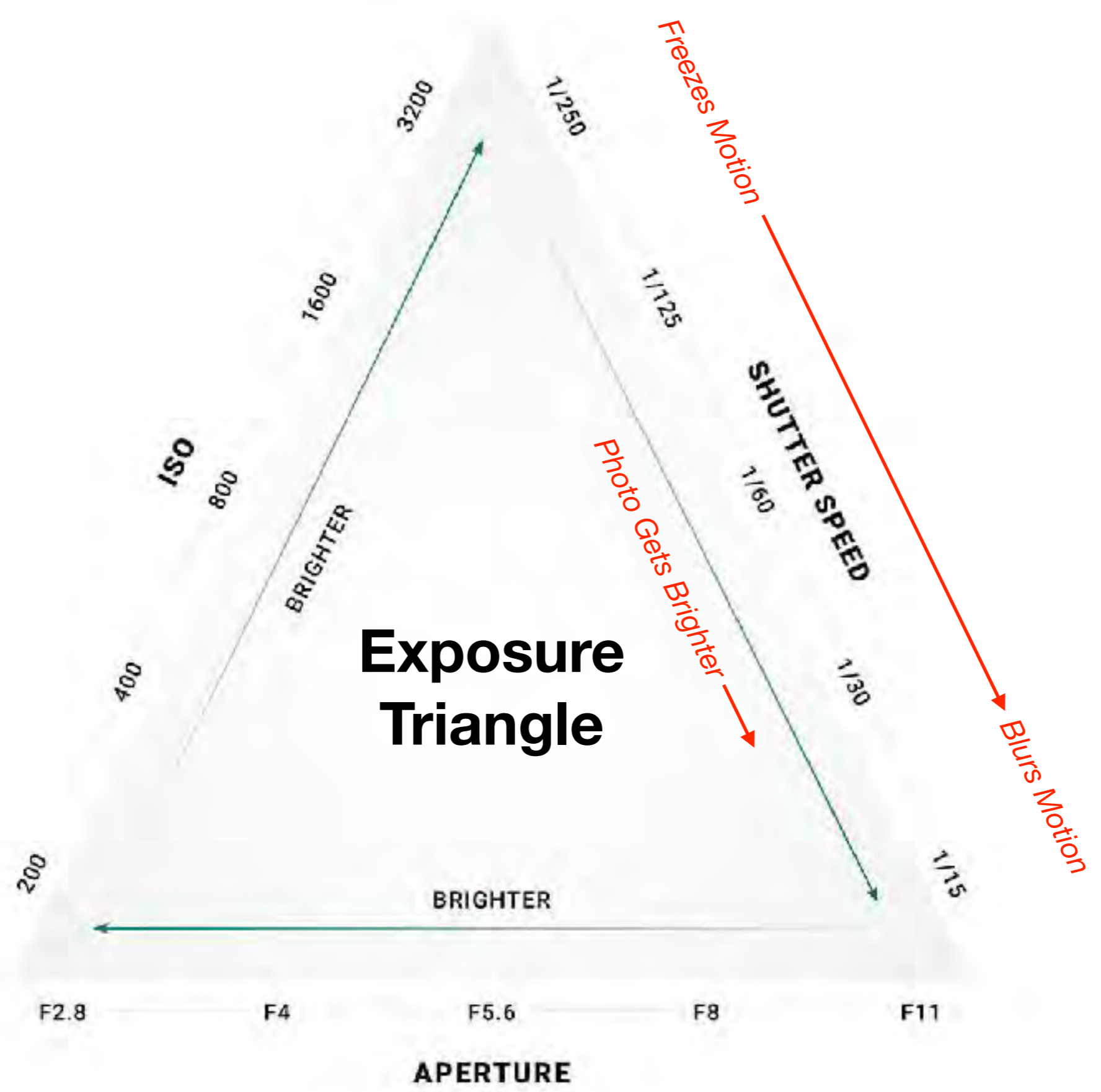
Exposure Triangle

Area of the Lens Opening

Digital Camera Modes



“Manual” means you manually set the “Exposure Triangle”



Exposure Triangle



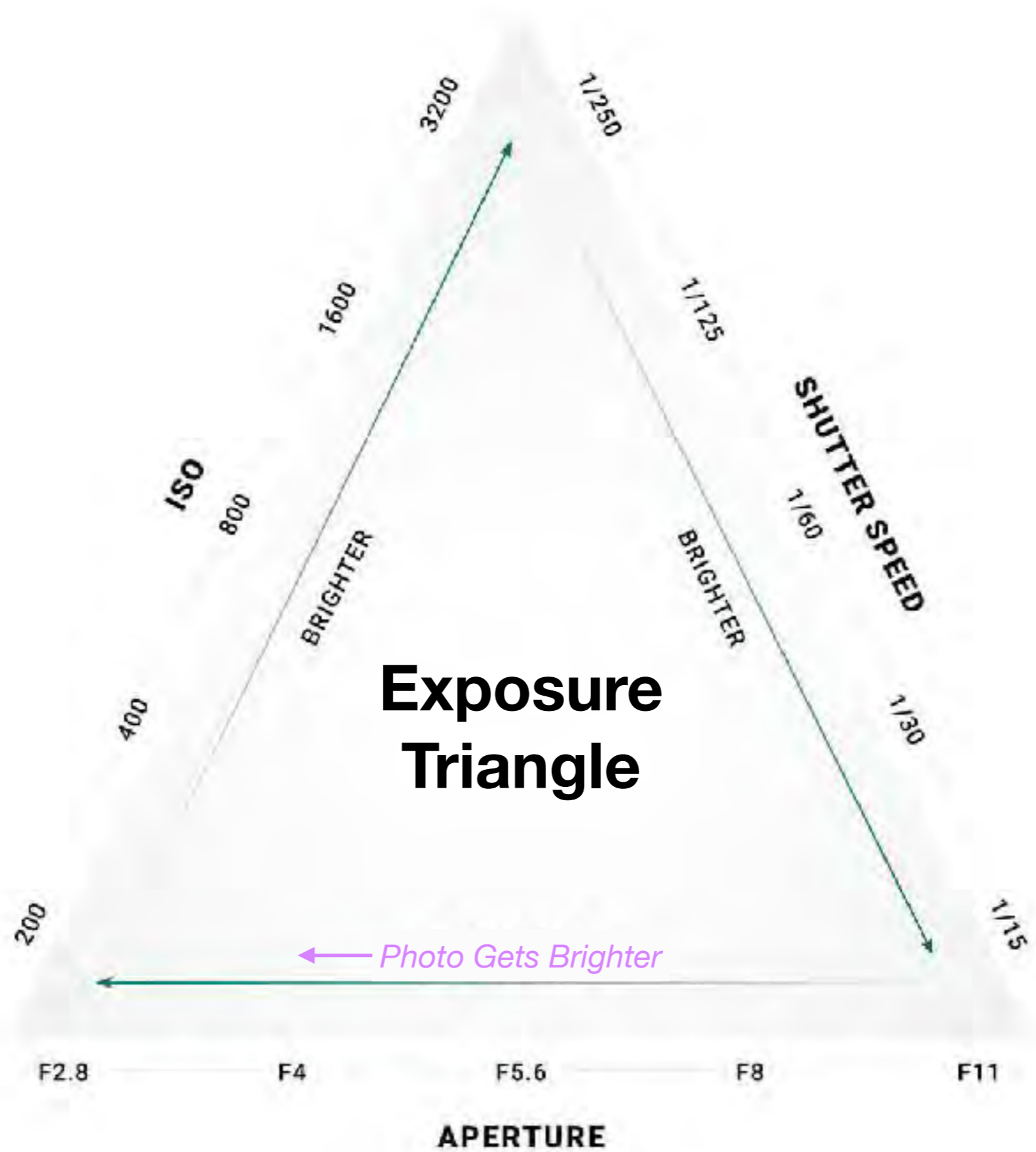






ISO 100
f/11
25 sec

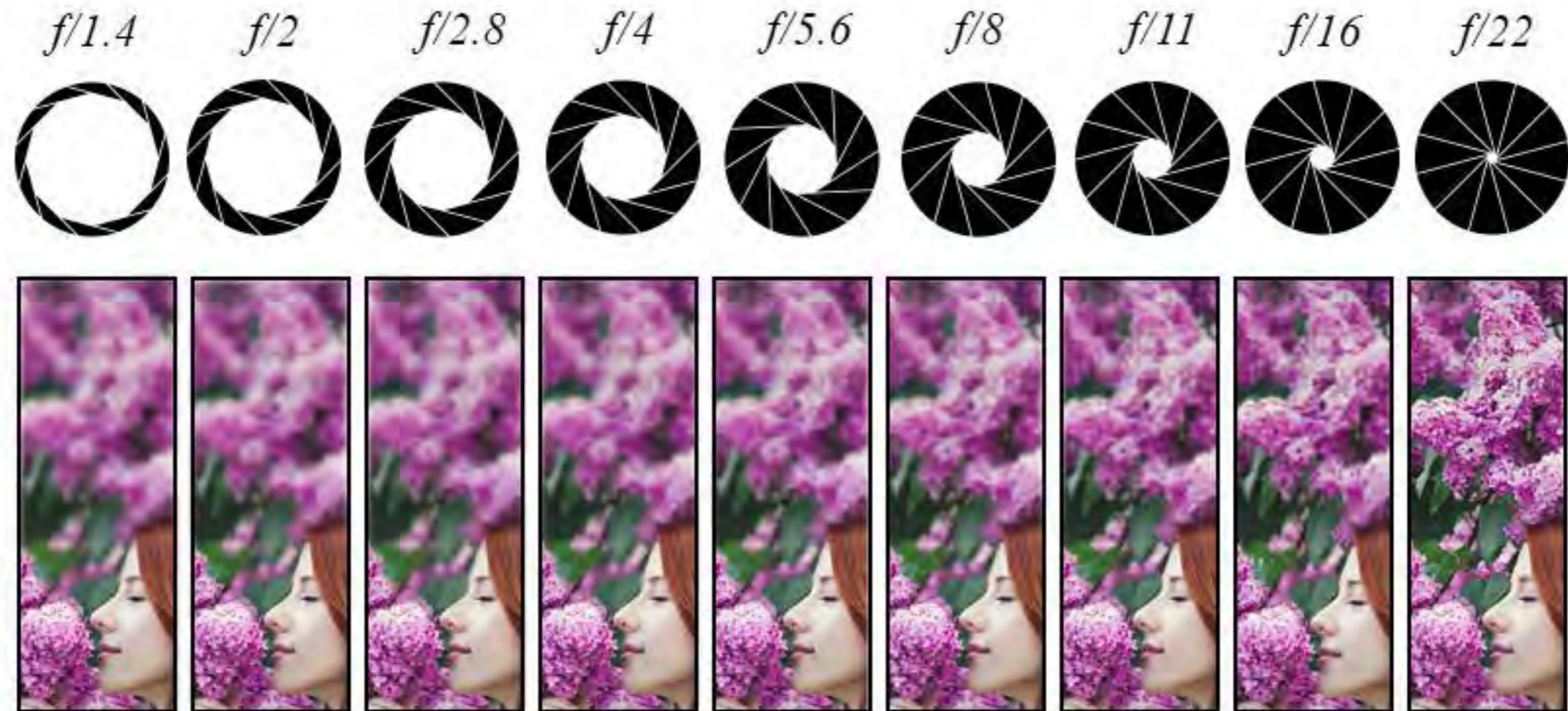




Exposure Triangle

Less Depth of Field ← ————— → More Depth of Field

Aperture Scale



Larger Aperture ← → Smaller Aperture
More Light ← → Less Light
Less Depth of Field ← → More Depth of Field

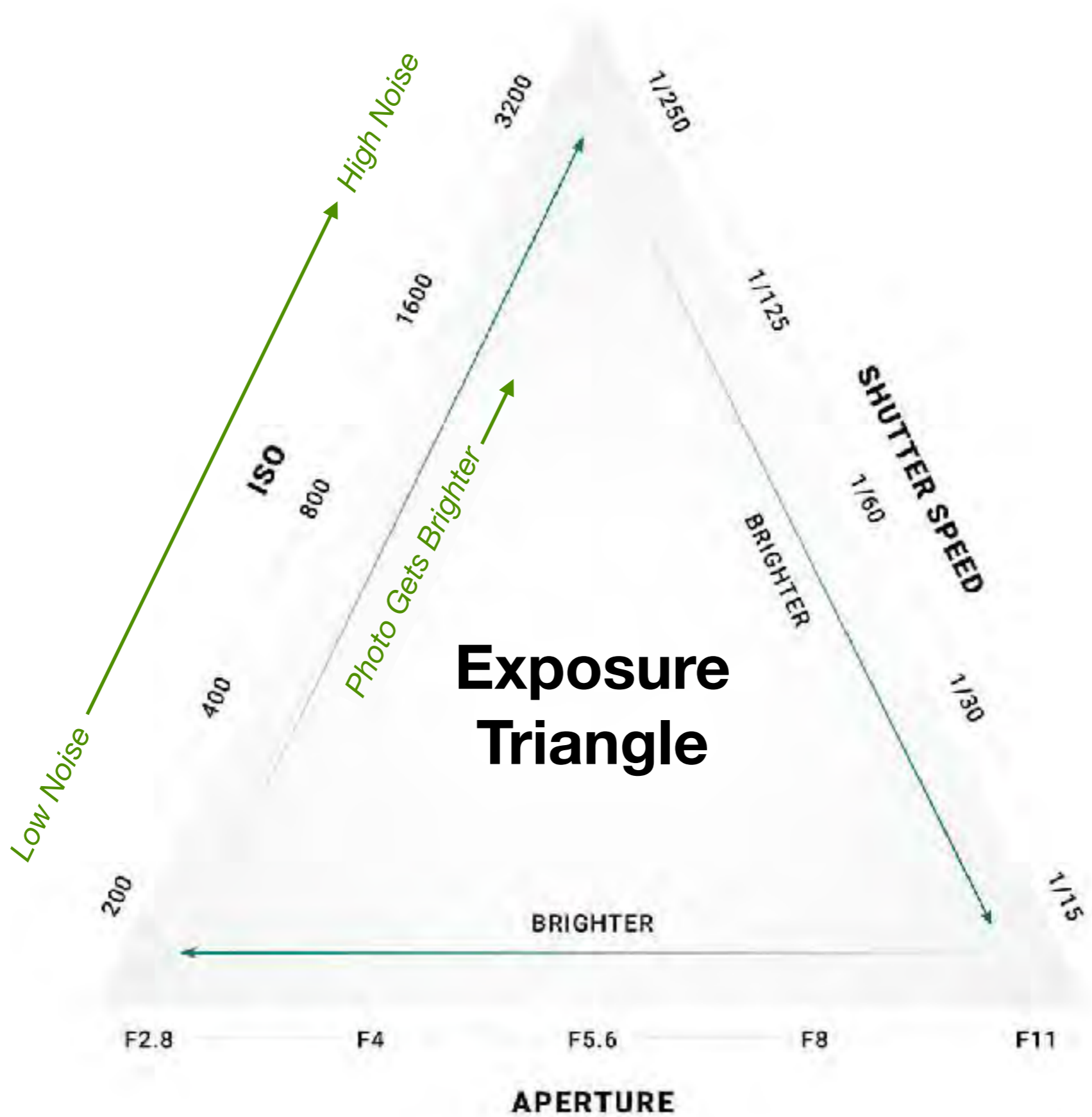


ISO 100
f/8.0
1/40 sec



ISO 100
f/5.6
1/200 sec





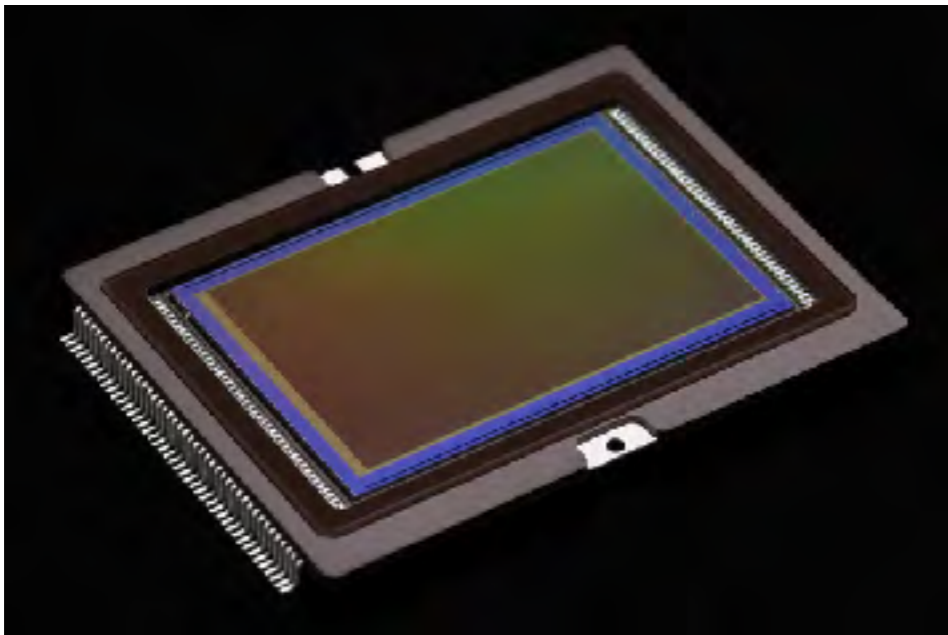


Lower ASA / Less Light Sensitive Film



Higher ASA / More Light Sensitive Film

+ More Noise or "Graininess"



For Digital Camera Sensors
Higher ISO = More Light Sensitivity

+ More Noise



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Library Develop Map | Book | Slideshow | Print | Web |

Navigator FIT 100% 400%



History

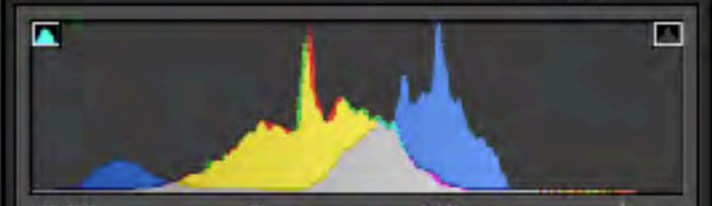
- Update Hue Adjustment
- Update Color Tint Adjustment
- Update Color Temperature Adjustment
- Update Color Temperature Adjustment
- Update Color Tint Adjustment
- Add Sky
- Perspective Scale** -5 105
- Perspective Rotate 0 0
- Perspective Rotate -10 0
- Perspective Rotate 0 0
- Perspective Rotate 0 0
- Update Exposure Adjustment
- Update Exposure Adjustment
- Update Exposure Adjustment
- Update Contrast Adjustment
- Update Contrast Adjustment
- Update Dehaze Adjustment

Copy... Paste



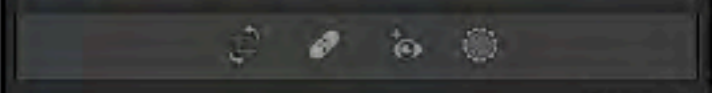
Soft Proofing

Histogram



ISO 100 35 mm f/11 1/500 sec

Original + Smart Preview



Basic

Treatment: Color Black & White

Profile: Adobe Landscape

Temp 5,800

Tint +27

Exposure +1.80

Contrast +25

Highlights 0

Shadows 0

Whites 0

Blacks -41

Texture 0

Clarity 0

Dehaze 0

Vibrance 0

Previous Reset



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Library Develop Map Book Slideshow Print Web

Navigator 100%

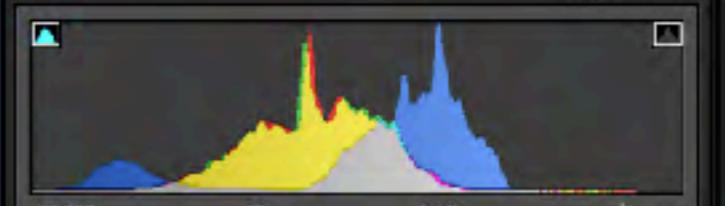


History

- Update Hue Adjustment
- Update Color Tint Adjustment
- Update Color Temperature Adjustment
- Update Color Temperature Adjustment
- Update Color Tint Adjustment
- Add Sky
- Perspective Scale** -5 105
- Perspective Rotate 0 0
- Perspective Rotate -0 0
- Perspective Rotate 0 0
- Perspective Rotate 0 0
- Update Exposure Adjustment
- Update Exposure Adjustment
- Update Exposure Adjustment
- Update Contrast Adjustment
- Update Contrast Adjustment
- Update Dehaze Adjustment



Histogram



Basic

Treatment: Color Black & White

Profile: Adobe Landscape

Temp: 5,800

Tint: +27

Exposure: +1.80

Contrast: +25

Highlights: 0

Shadows: 0

Whites: 0

Blacks: -41

Texture: 0

Clarity: 0

Dehaze: 0

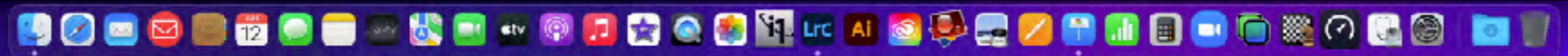
Vibrance: 0

Saturation: 0

Copy... Paste

Soft Proofing

Previous Reset



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Library Develop Map Book Slideshow Print Web

Navigator 100%



History

- Update Hue Adjustment
- Update Color Tint Adjustment
- Update Color Temperature Adjustment
- Update Color Temperature Adjustment
- Update Color Tint Adjustment
- Add Sky
- Perspective Scale** -5 105
- Perspective Rotate 0 0
- Perspective Rotate -0 0
- Perspective Rotate 0 0
- Perspective Rotate 0 0
- Update Exposure Adjustment
- Update Exposure Adjustment
- Update Exposure Adjustment
- Update Contrast Adjustment
- Update Contrast Adjustment
- Update Dehaze Adjustment

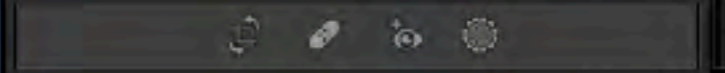


Histogram



ISO 100 35 mm f/11 1/500 sec

Original + Smart Preview



Basic

Treatment: Color Black & White

Profile: Adobe Landscape

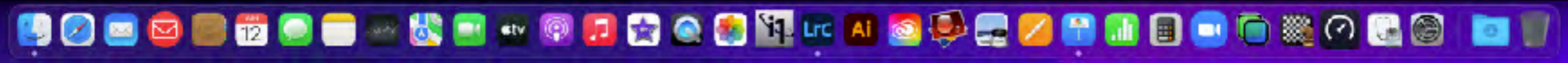
Temp: 5,800
Tint: +27

Exposure: +1.80
Contrast: +25
Highlights: 0
Shadows: 0
Whites: 0
Blacks: -41

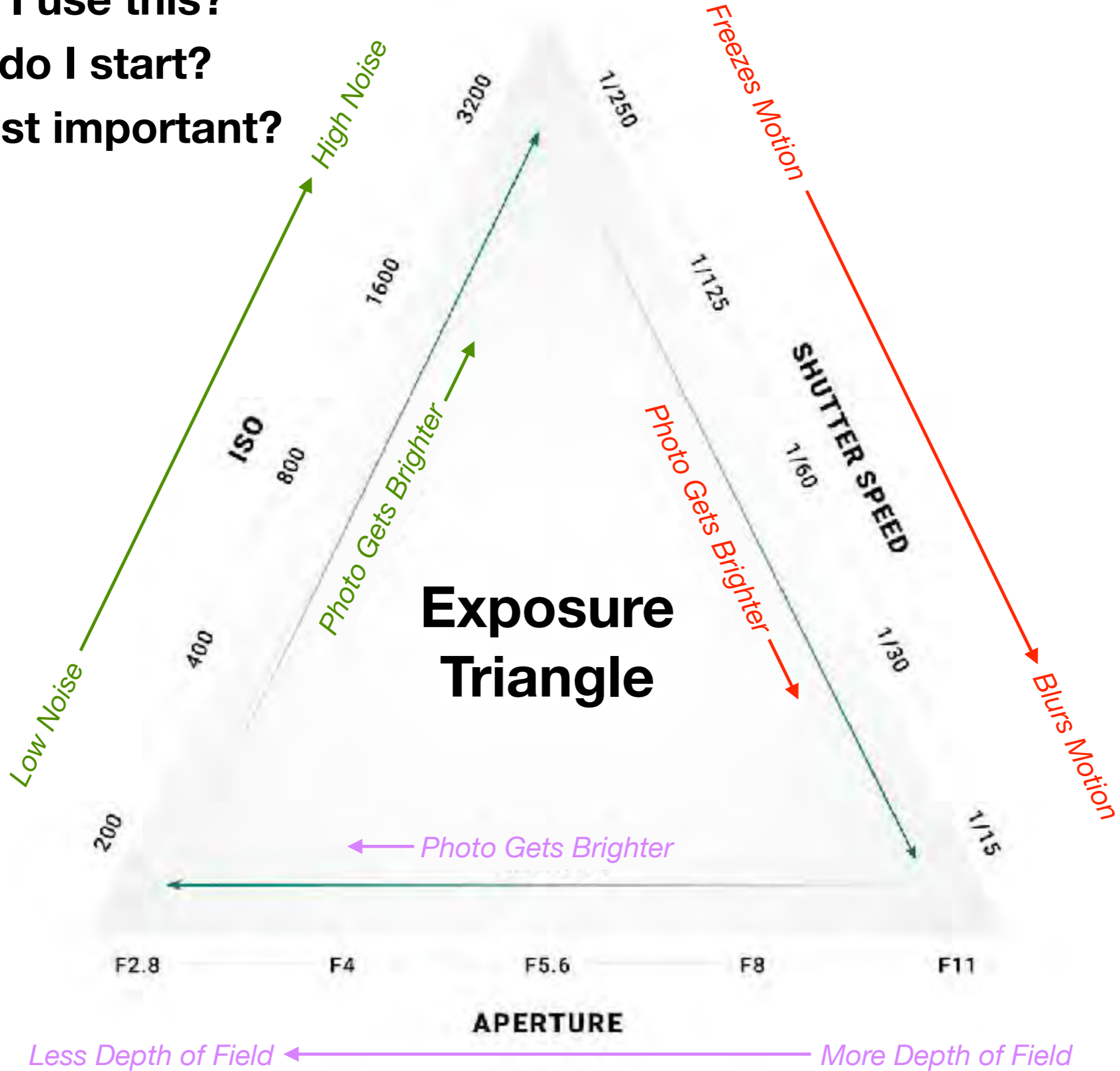
Texture: 0
Clarity: 0
Dehaze: 0
Vibrance: 0
Saturation: 0

Previous Reset

Copy... Paste [Grid] [Compare] [Web] [Soft Proofing]

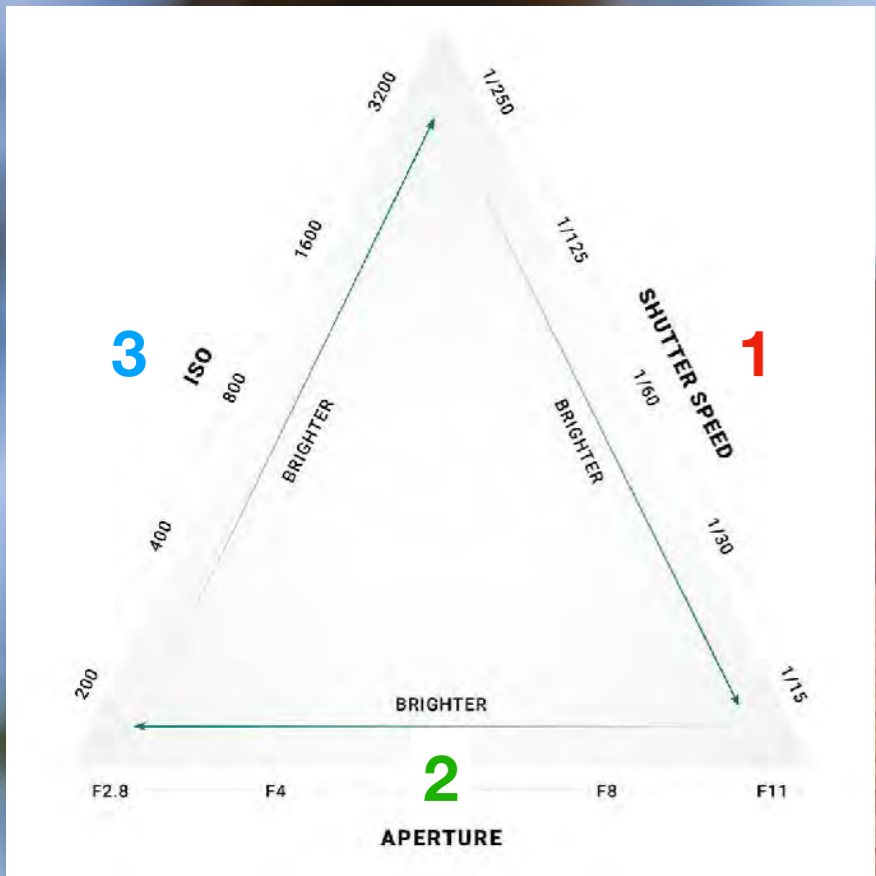
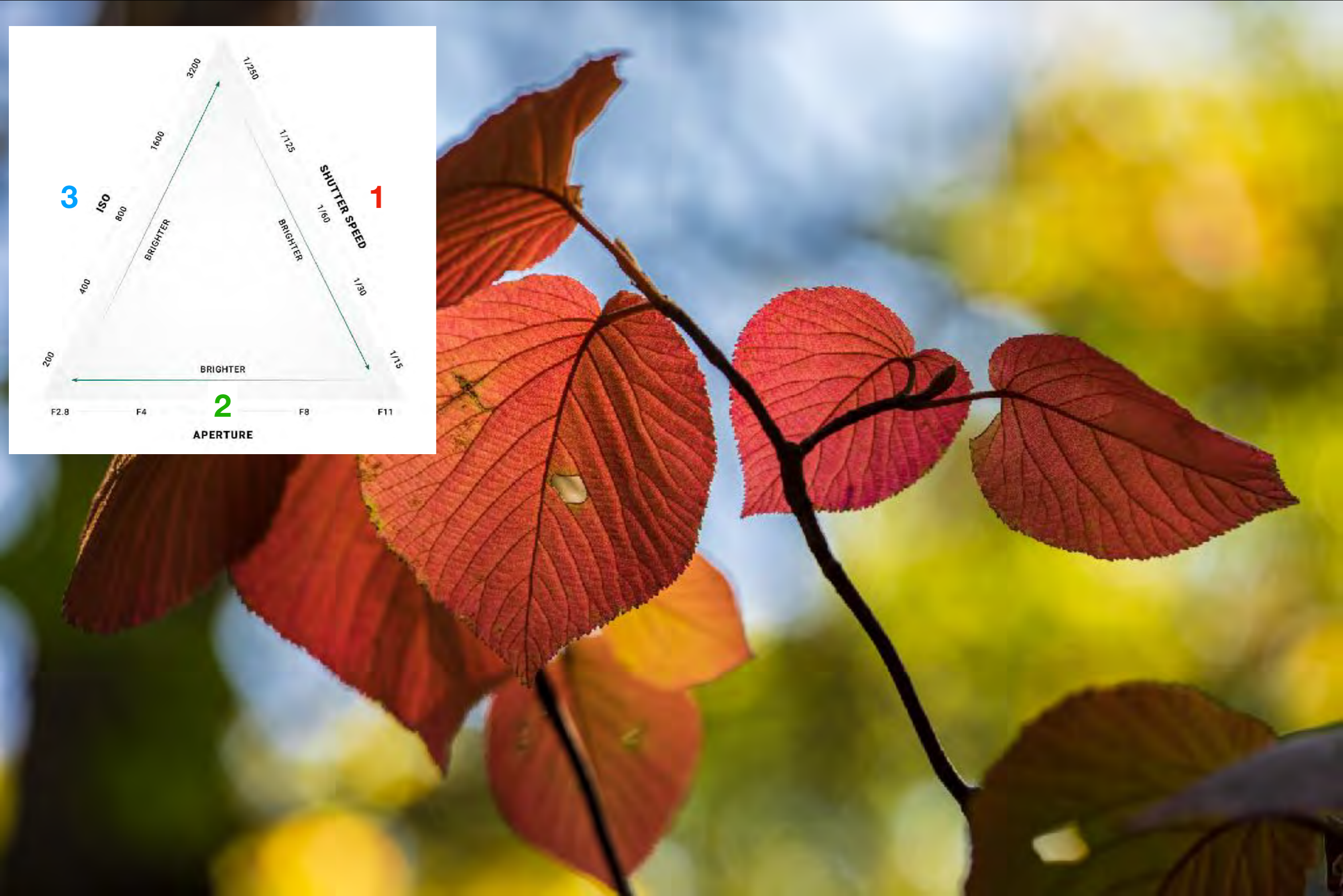


How do I use this?
Where do I start?
What's most important?











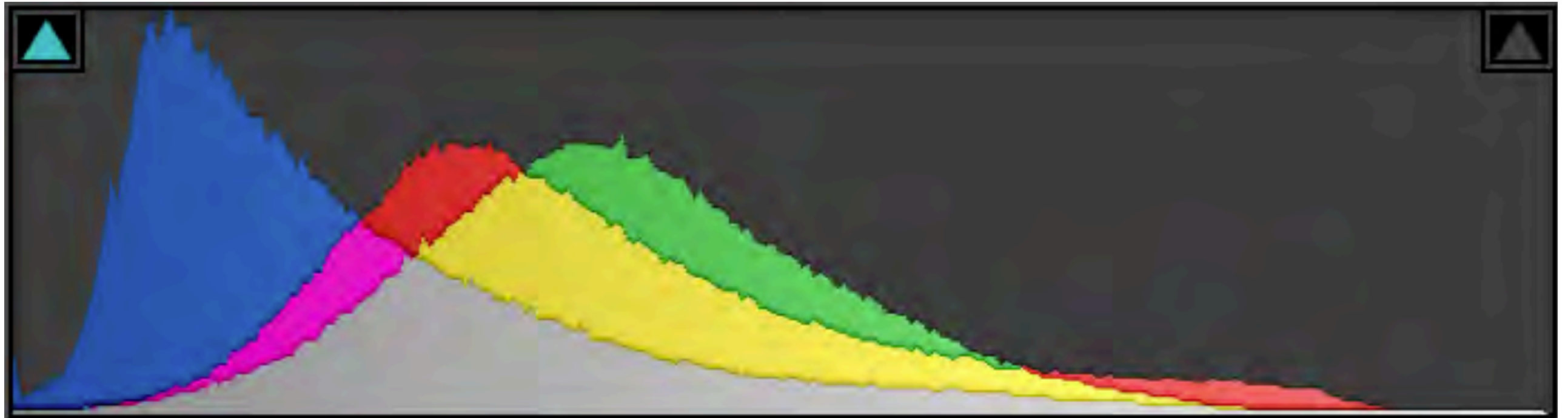
1. Fast shutter speed to stop motion of leaves fluttering in breeze
2. Shallow depth of field to blur background
3. Adjust ISO for good exposure

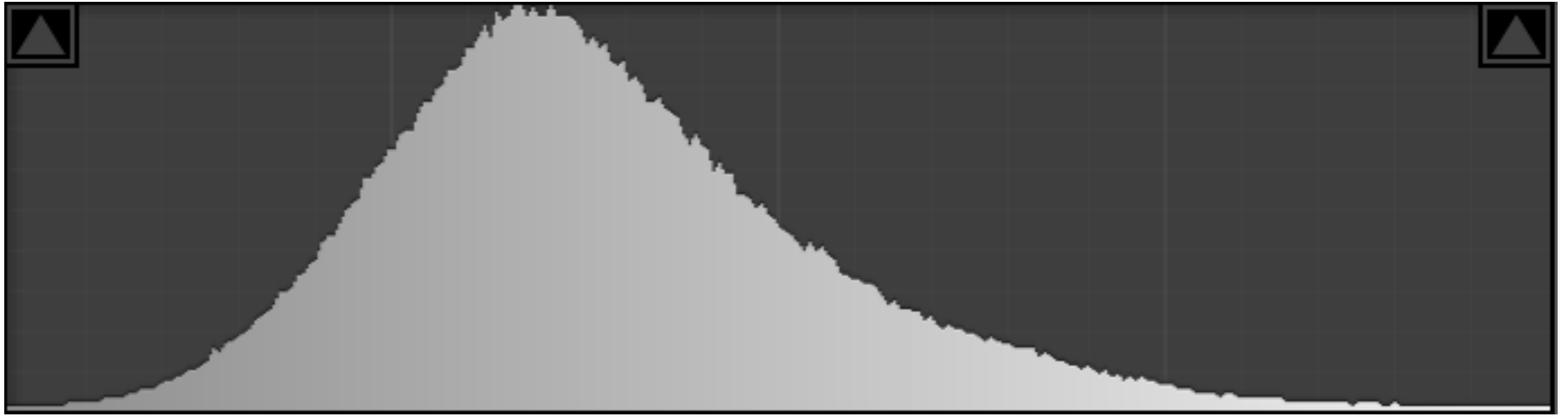
3

2

1

Focal Length (zoom)

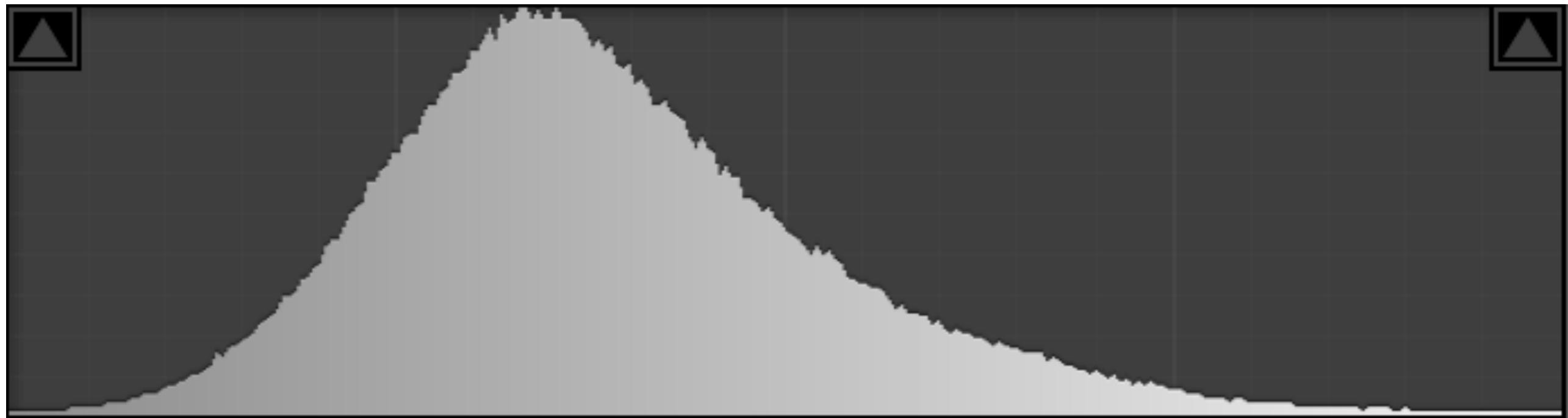




0

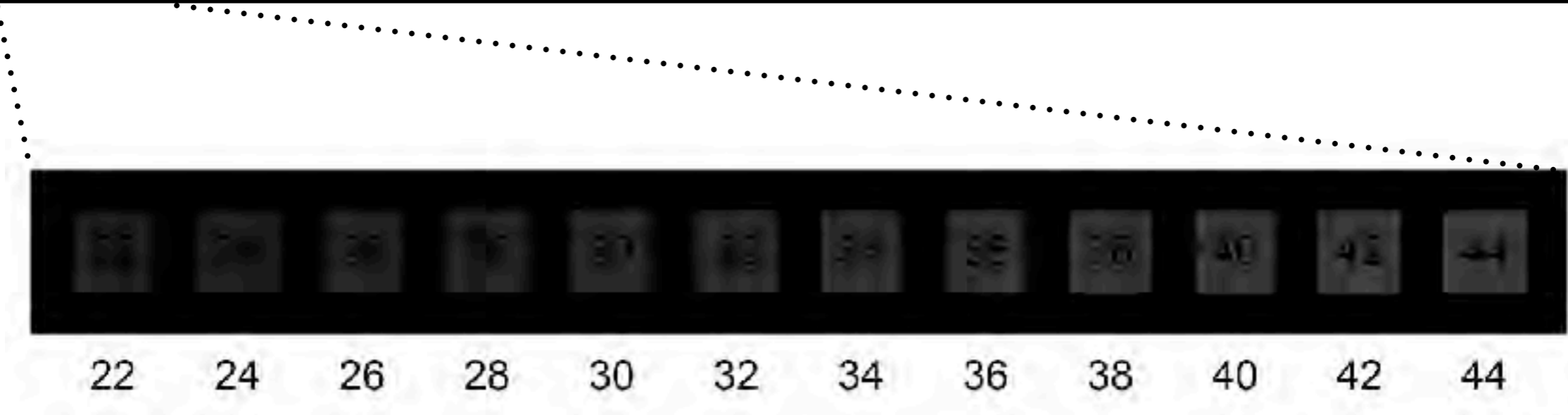


255



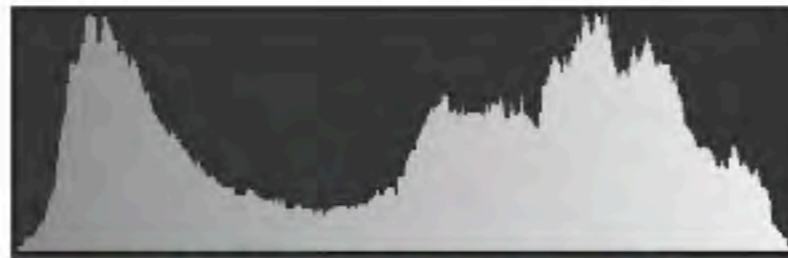
0

255

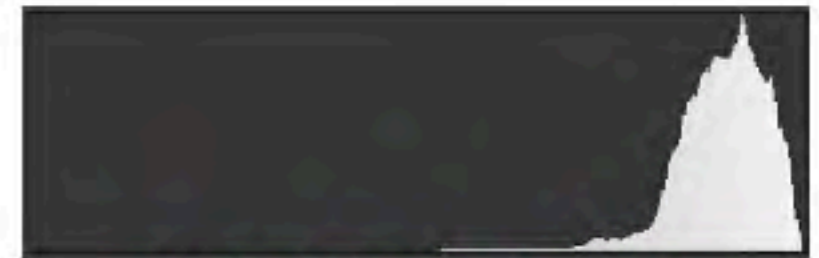




HISTOGRAM #1

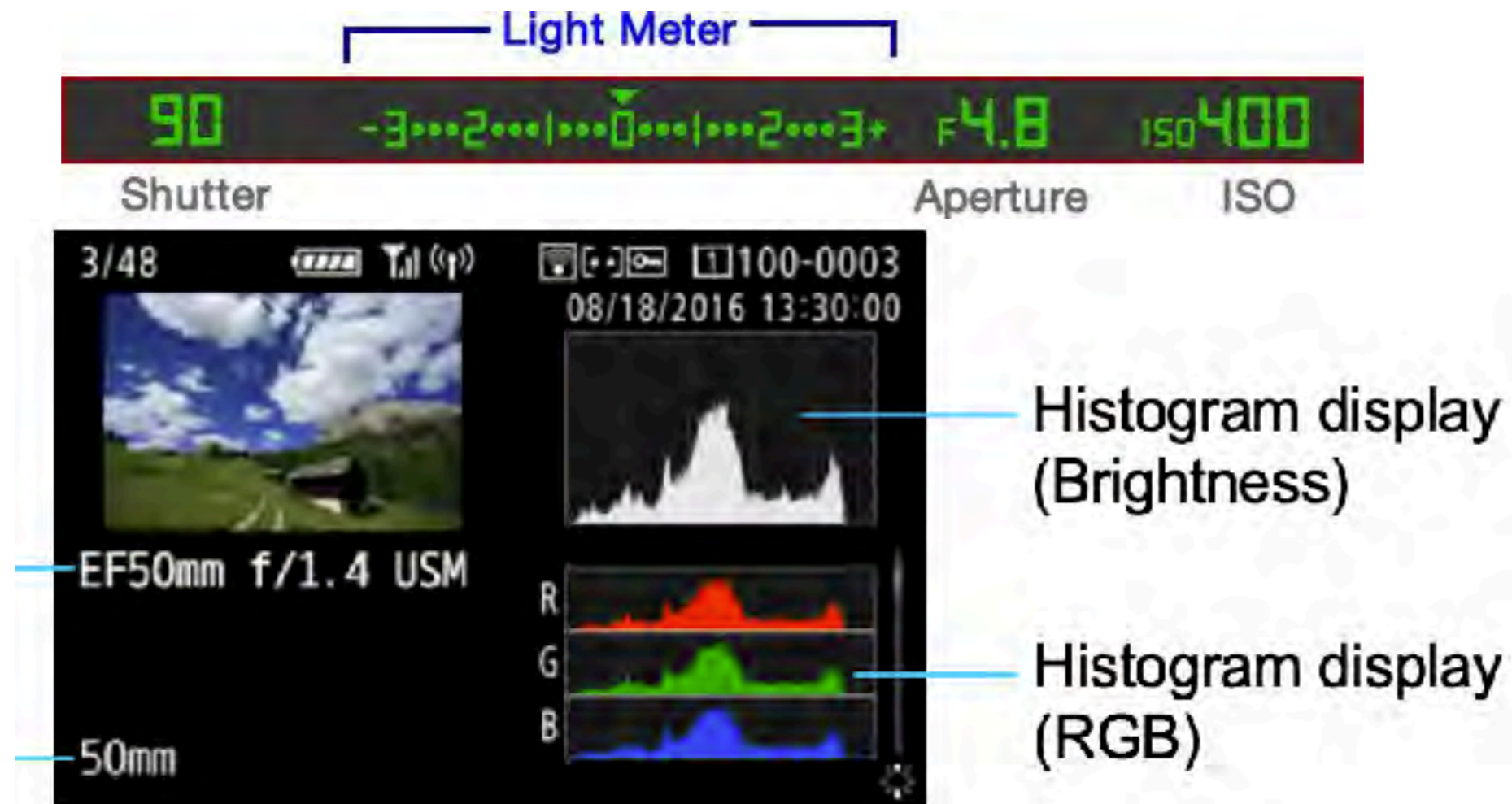


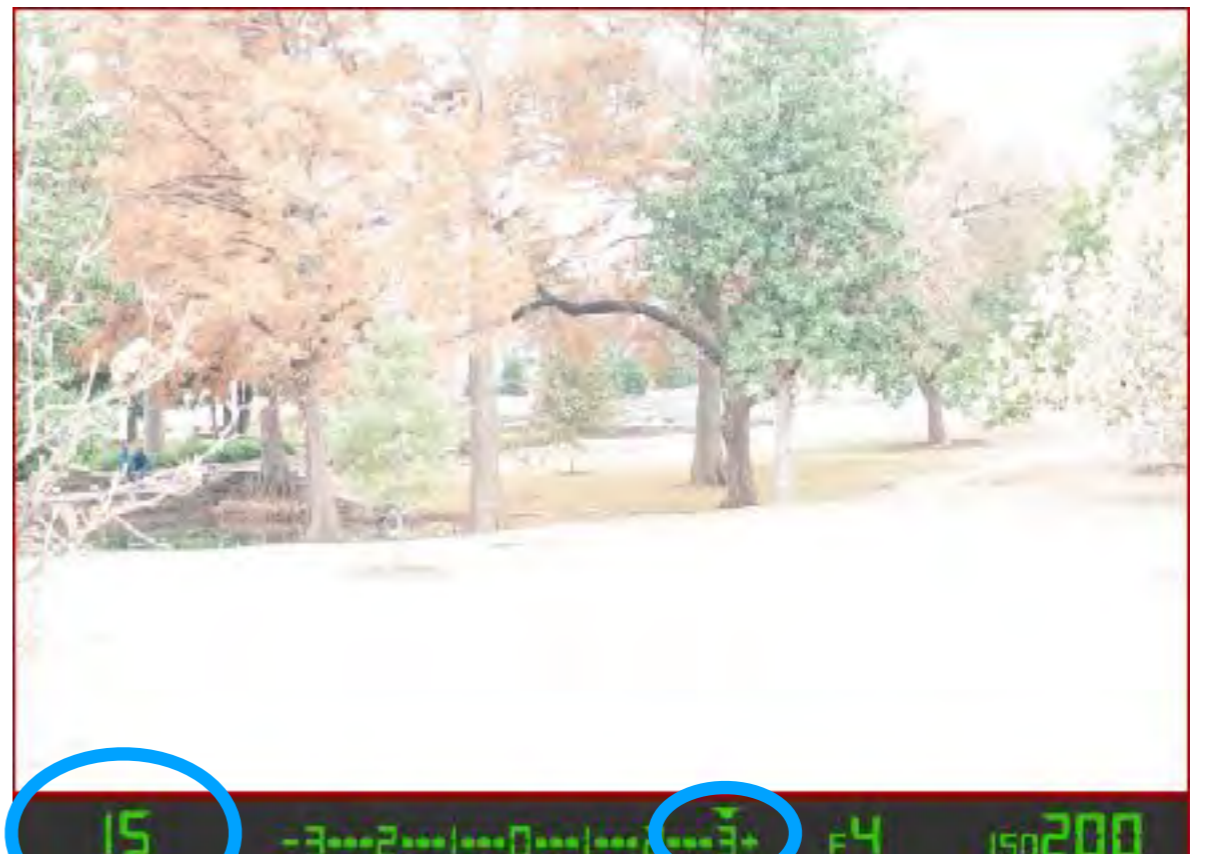
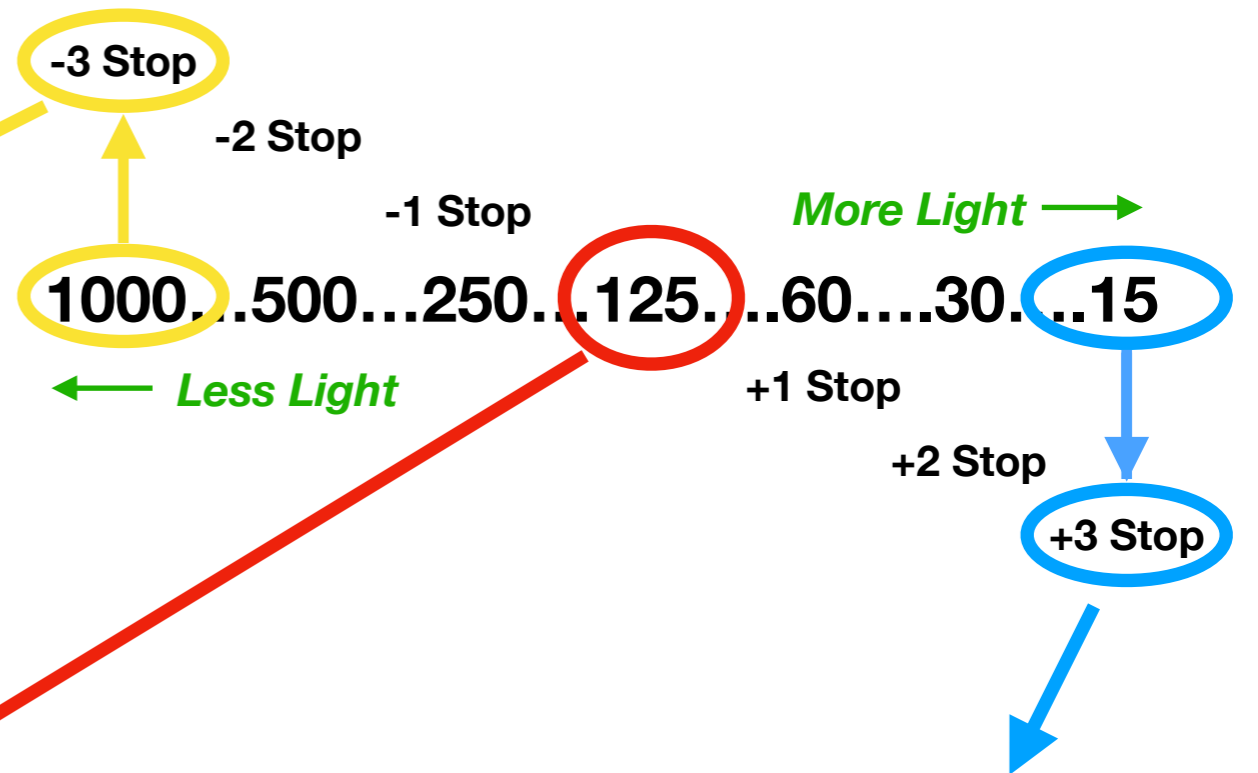
HISTOGRAM #2

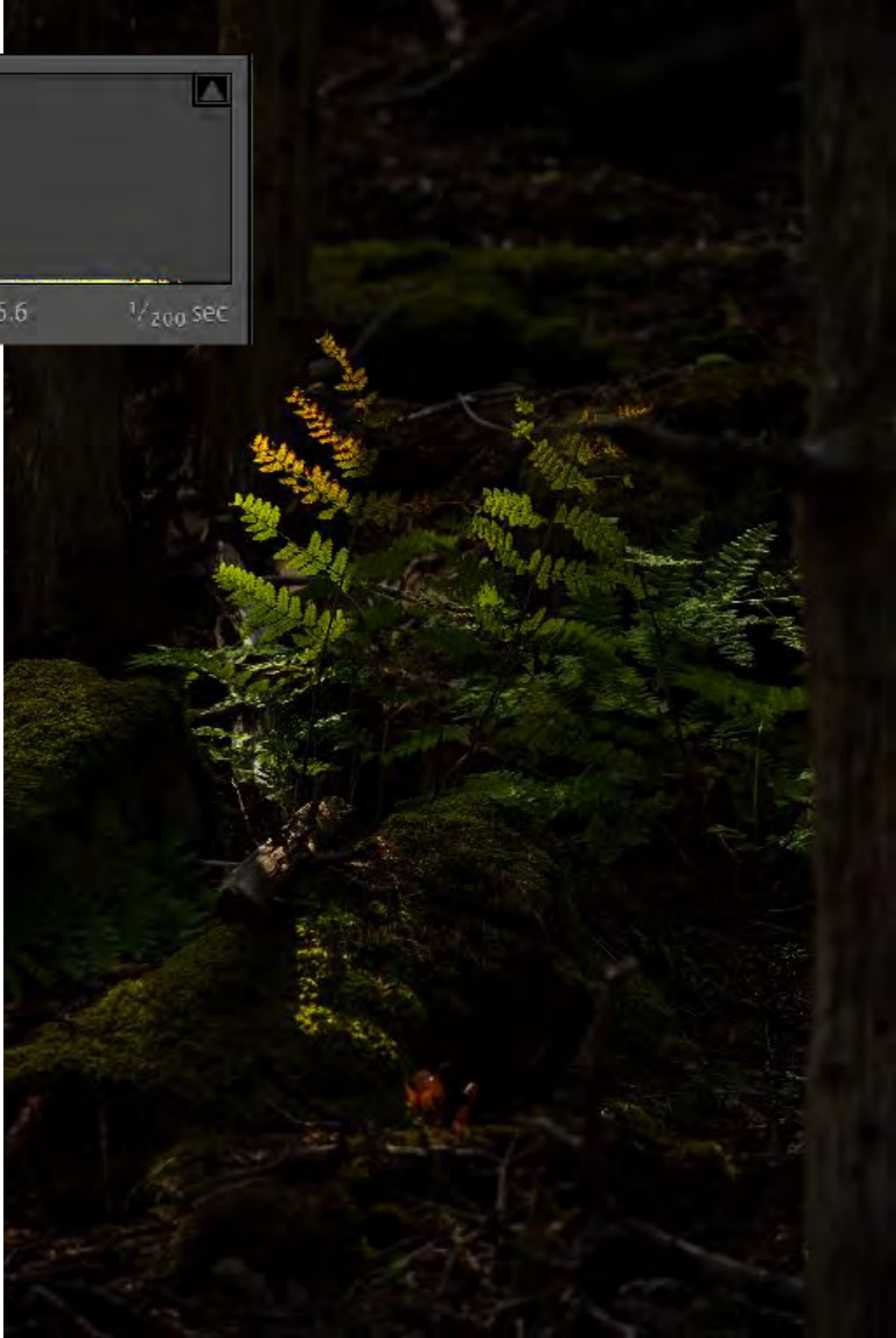


HISTOGRAM #3

Using the Light Meter and Histogram in Manual Mode

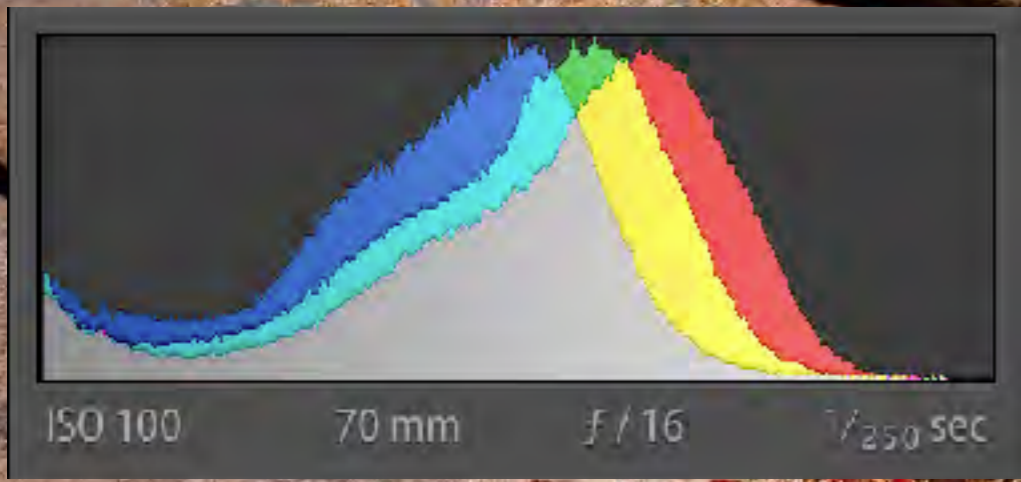


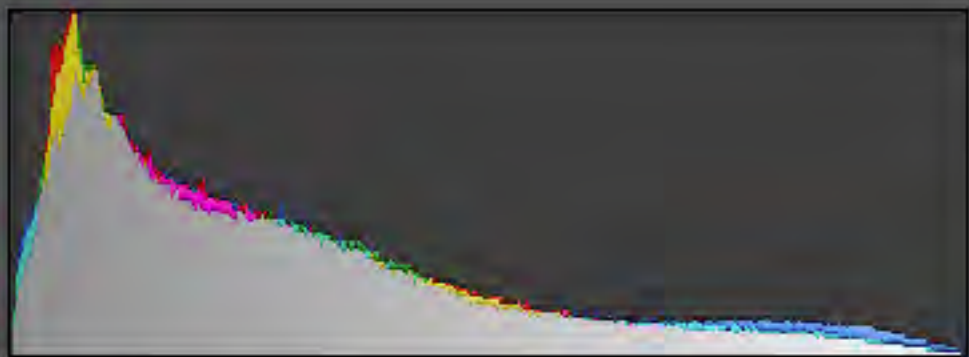




**When hand holding your camera:
Slowest Shutter Speed = 1 / Focal Length**





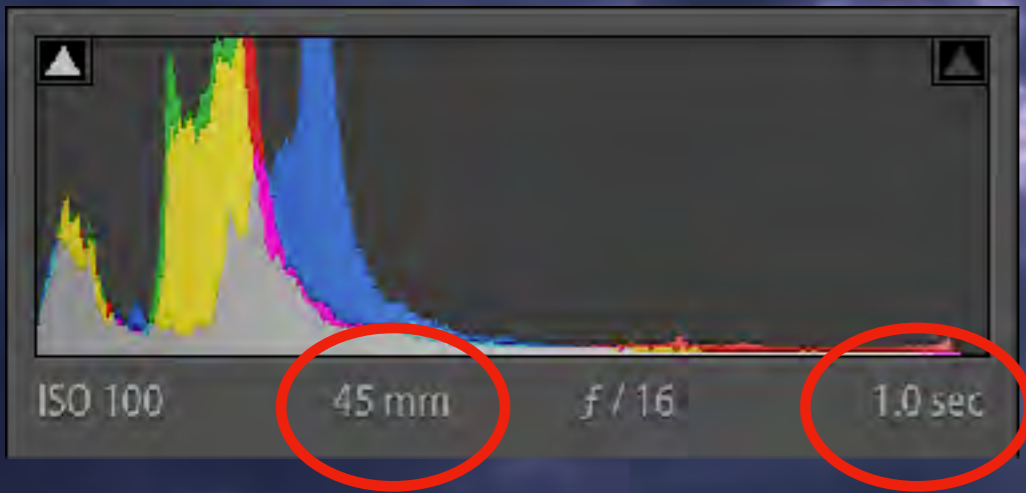


ISO 100

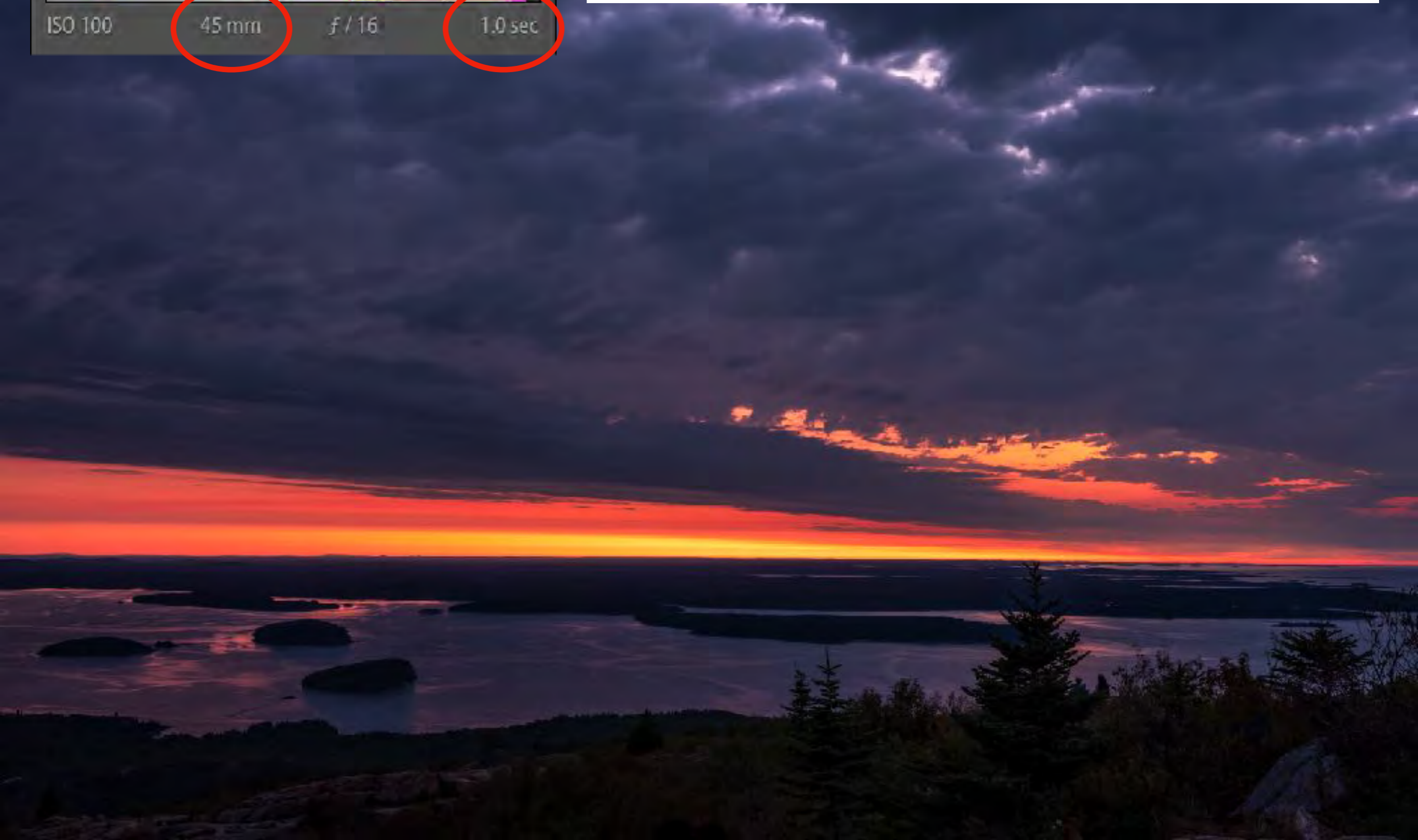
97 mm

f/11

1/400 sec



When your camera is on a tripod, you can set the shutter speed as slow as you want, i.e. you don't have to follow "1/Focal Length" rule



ISO 100

f/11

15 sec

tripod



ISO 100
f/16
1/800 sec
(no tripod)



ISO 100

f/8

1/200 sec

(no tripod)



The Shutter Button

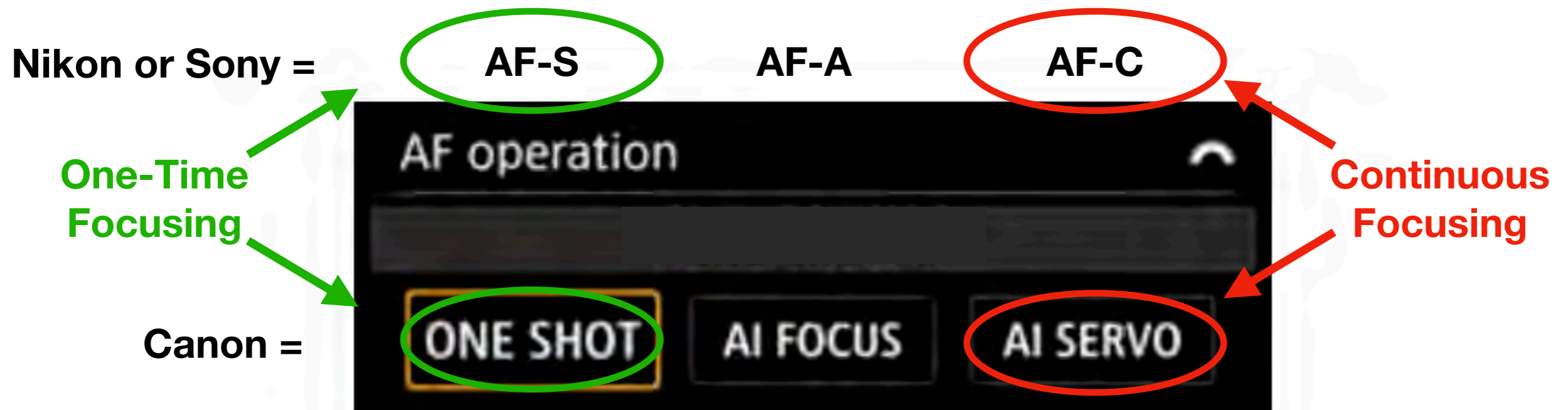
- By default on most cameras, the shutter button does **3** things simultaneously
- Pressing *half-way* down → **1** activates Focus
→ **2** activates Light Meter
- Pressing *all-the-way* down → **3** activates Shutter

You Must Tell Your Camera When, When and How

- By default on most cameras, the shutter button does 3 things simultaneously
- Pressing half-way down → **1** activates Focus → Where + How
→ **2** activates Light Meter → Where
- Pressing all-the-way down → **3** activates Shutter → When + How

How to Focus

Auto-Focus (AF) Operation

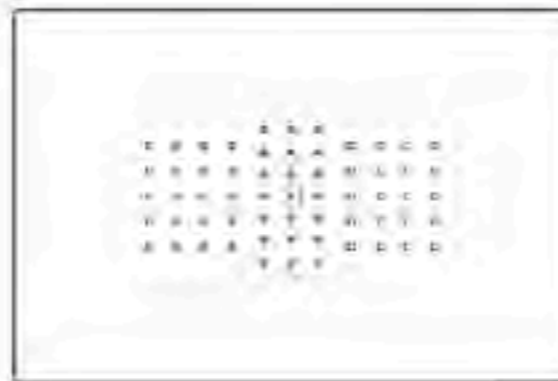


- **One-Time Focusing** is for **Stationary Subjects**. Press shutter button half-way and the camera focuses ONCE.
- **Continuous Focusing** is for **Moving Subjects**. Press shutter button half-way and the camera CONTINUOUSLY focuses as long as shutter button is depressed.

Where to Focus

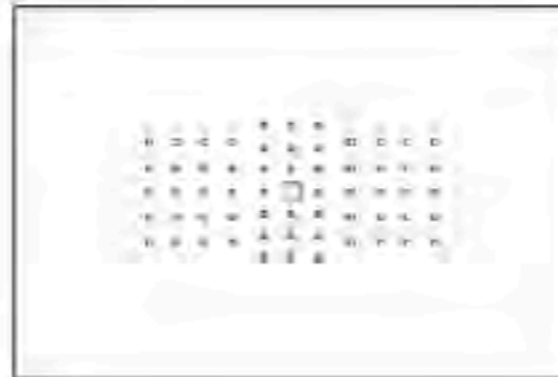
Auto-Focus (AF) Mode

Typically Use Point Focus Mode
for One-Time Focusing
on Stationary Subjects



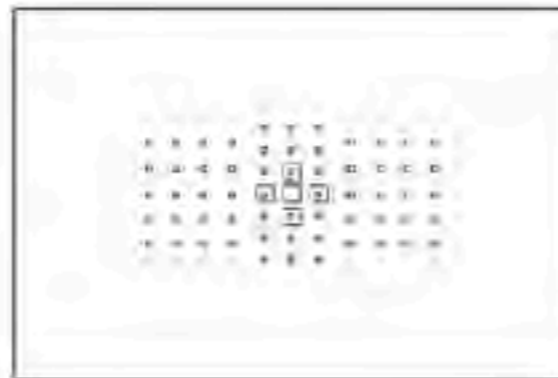
▣ **Single-point Spot AF (Manual selection)**

For pinpoint focusing.



□ **Single-point AF (Manual selection)**

Select one AF point to focus.



▣⁺ **AF point expansion (Manual selection ⁺▣)**


The manually-selected AF point <▣> and four adjacent AF points <▣⁺> (above, below, on the left, and on the right) are used to focus.

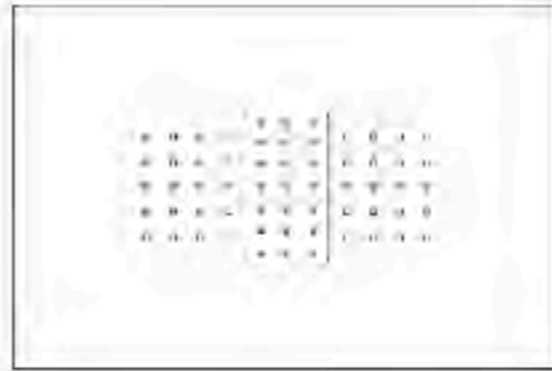
Where to Focus


Auto-Focus (AF) Mode

Typically Use Zone Focus Mode
for Continuous Focusing
on Moving Subjects




 **Zone AF**
(Manual selection of zone)
One of nine focusing zones is used to focus.



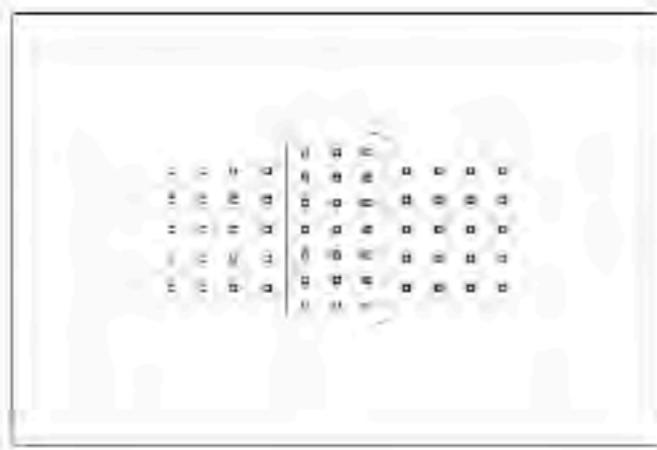
 **Large Zone AF**
(Manual selection of zone)
One of three focusing zones (left, center, and right) is used to focus.



 **Automatic selection AF**
The Area AF frame (entire AF area) is used to focus.

Focusing Technique

- For **Stationary Subjects**, use AF-S / One-Shot + Spot Focus
Use Focus & Recompose technique
- For **Moving Subjects**, use AF-C / AI-Servo + Zone Focus
(usually in central part of frame)



() **Large Zone AF**

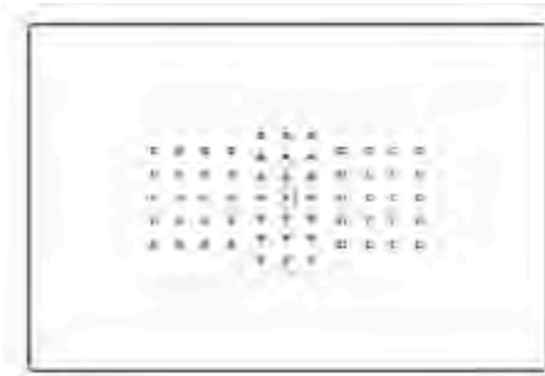
(Manual selection of zone)

One of three focusing zones (left, center, and right) is used to focus.

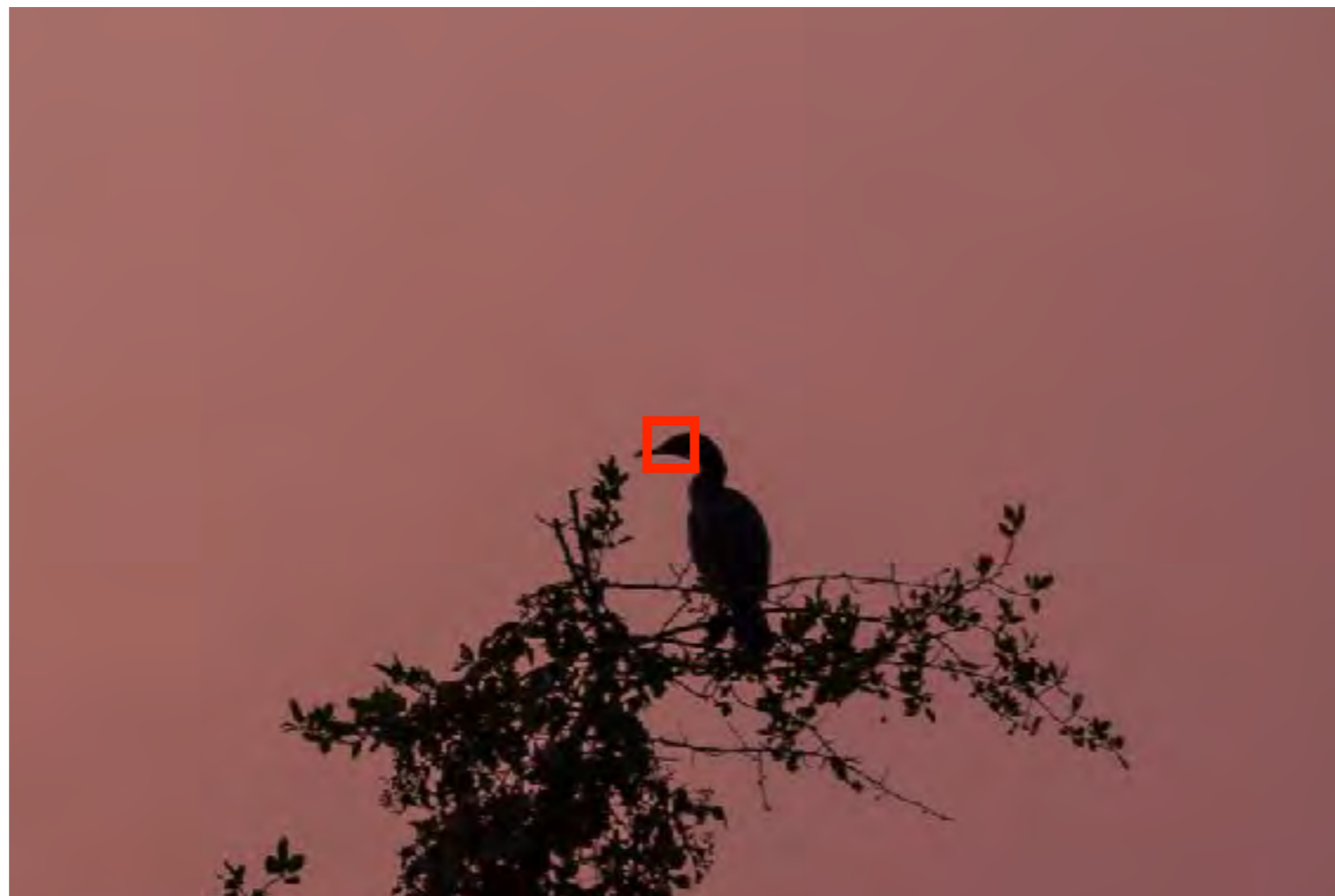
Focus & Recompose



Focus & Recompose

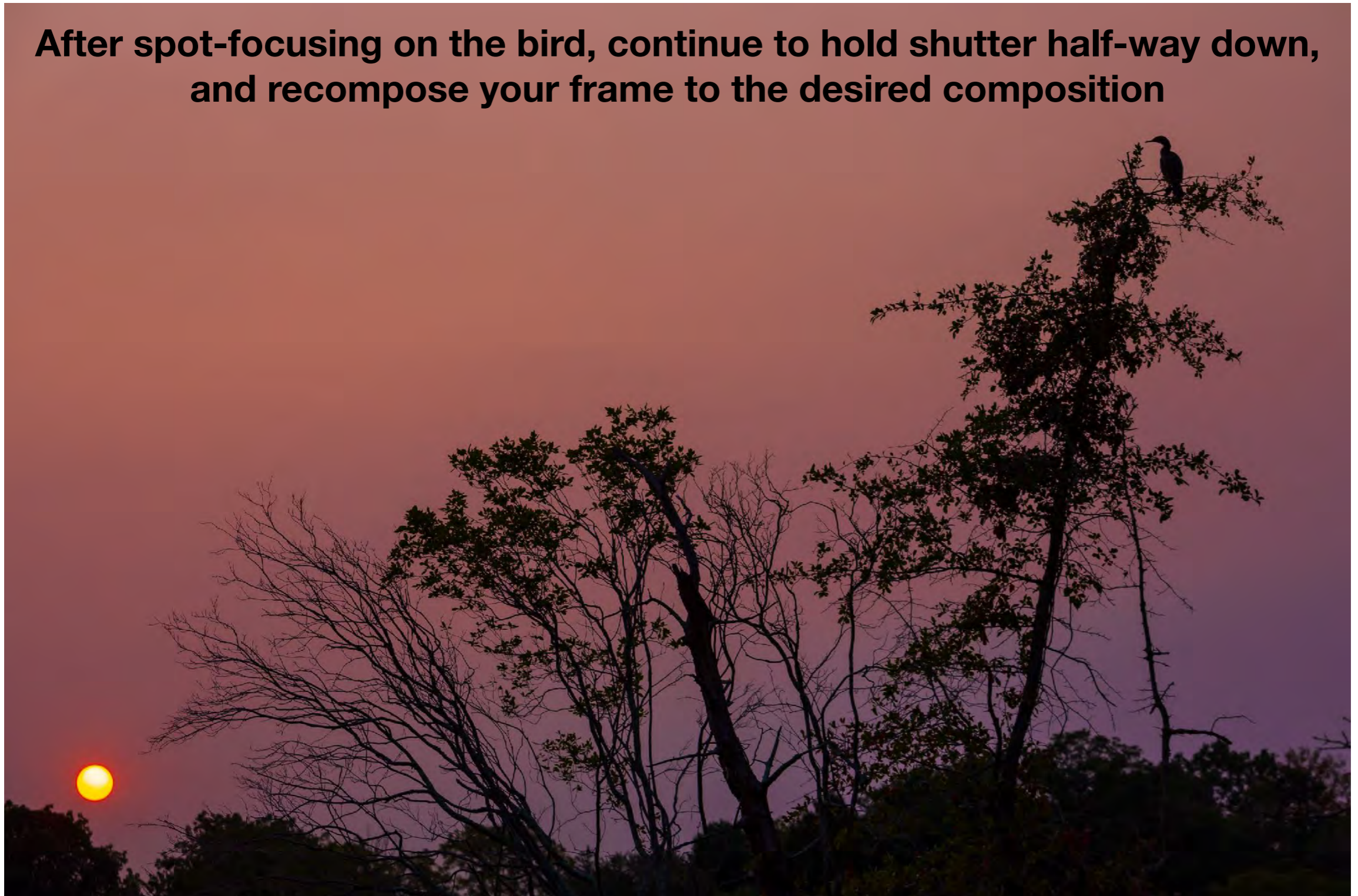


☐ **Single-point Spot AF**
(Manual selection)
For pinpoint focusing.



Focus & Recompose

After spot-focusing on the bird, continue to hold shutter half-way down, and recompose your frame to the desired composition



Where to Light Meter



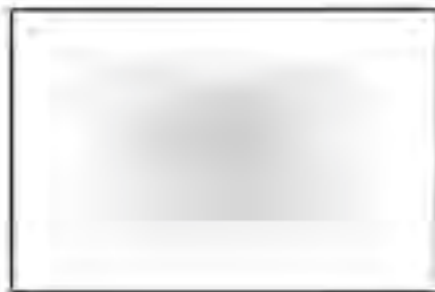
◼: **Spot metering**

Effective when metering a specific part of the subject or scene. Spot metering covers approx. 1.3% of the viewfinder area at the center. The spot metering circle will be displayed in the viewfinder.



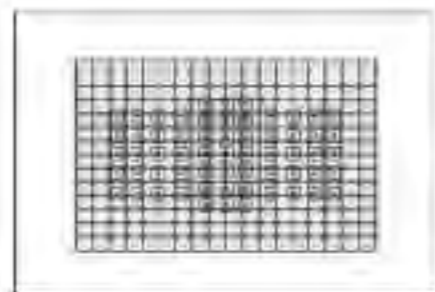
◻: **Partial metering**

Effective where there are much brighter lights around the subject due to backlight, etc. Partial metering covers approx. 6.1% of the viewfinder area at the center.



◻: **Center-weighted average metering**

The metering is averaged for the entire scene with the viewfinder center weighted more heavily.



◻: **Evaluative metering**

General-purpose metering mode suited even for backlit subjects. The camera adjusts the exposure automatically to suit the scene.





Evaluative Metering

A dramatic sunset over a large body of water, likely a lake or bay, with several islands visible. The sky is filled with dark, heavy clouds, with a bright orange and yellow glow from the setting sun breaking through near the horizon. The foreground shows dark silhouettes of trees and a rocky outcrop. A blue circle with a black outline is centered in the upper half of the image, containing the text "Partial Metering".

Partial Metering

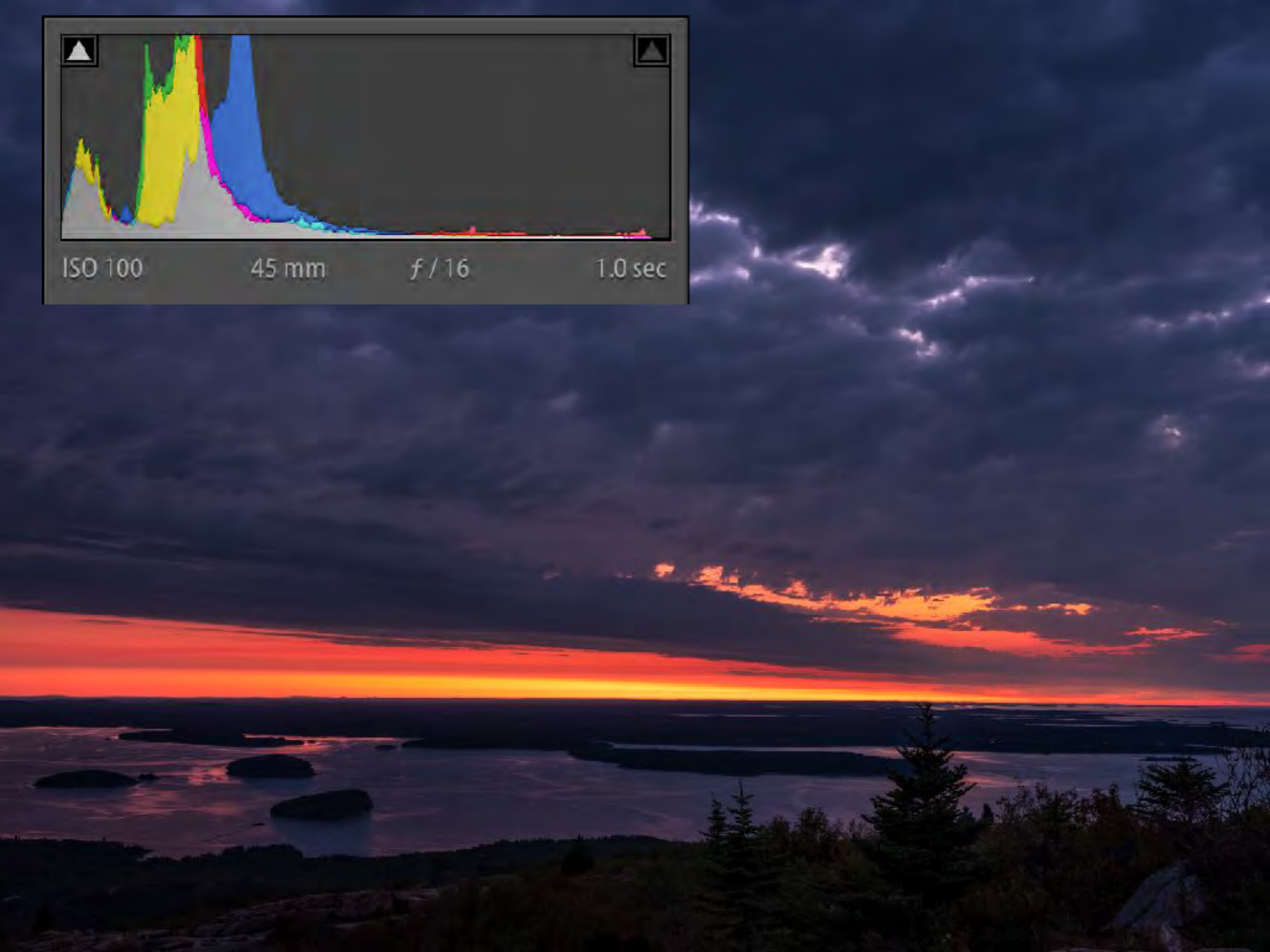
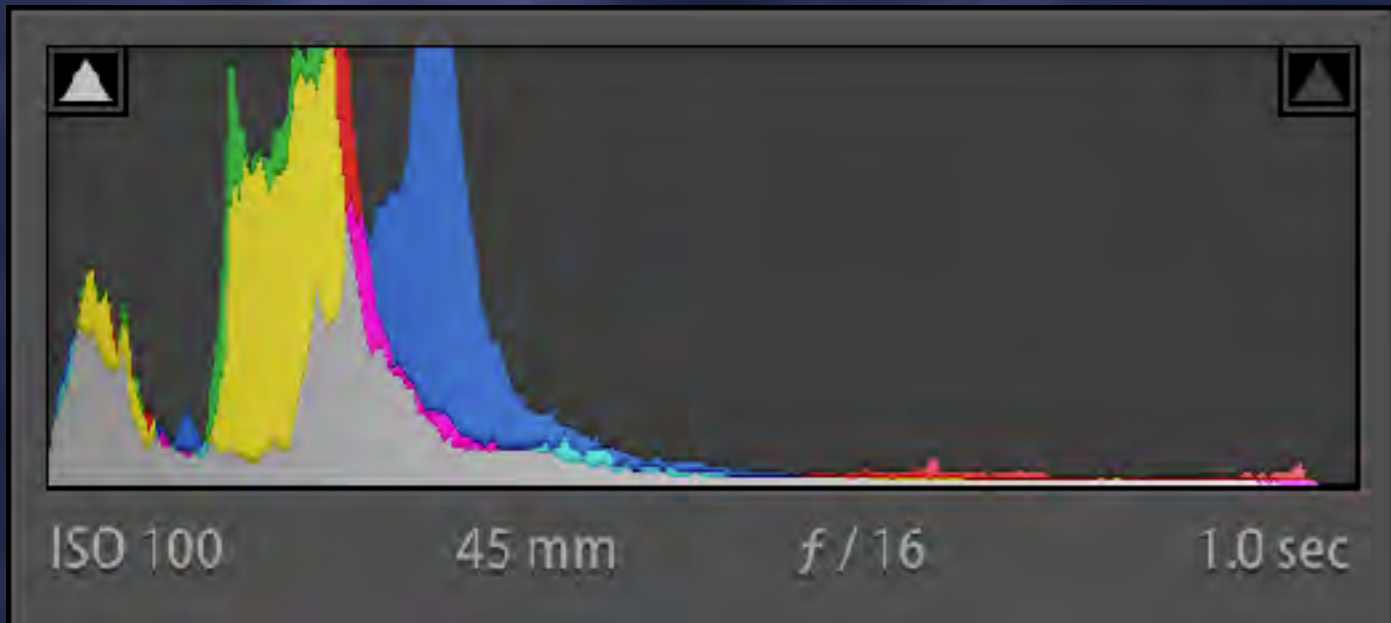


Spot Metering



Spot Meter on the Brightest Areas in Scene
Make Sure Meter Reads +2-3 EV





When & How to Open Shutter

The Shutter “Drive Mode”



Shutter
Activation is:

Immediate

Delayed

One
Photo

Fast
Burst

Slow
Burst

Silent

10 sec

2 sec

One
Photo

Slow
Burst

One
Photo

Image Quality & Resolution

JPEG or RAW











L only



RAW only



White Balance

Display	Mode	Color Temperature (K: Kelvin)
	Auto (Ambience priority, p.194)	3000 - 7000
	Auto (White priority, p.194)	
	Daylight	5200
	Shade	7000
	Cloudy, twilight, sunset	6000
	Tungsten light	3200
	White fluorescent light	4000
	Flash use	Automatically set*
	Custom (p.195)	2000 - 10000
	Color temperature (p.197)	2500 - 10000

Thank You!

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