

Cameras, copy stands and imaging

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Lights from top left and
bottom right

Camera with
macro lens

Copy stand

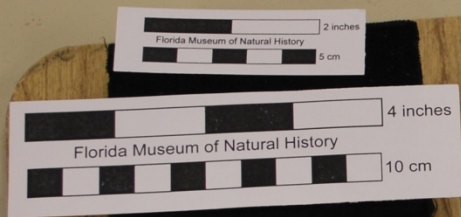
Clay for
positioning fossils



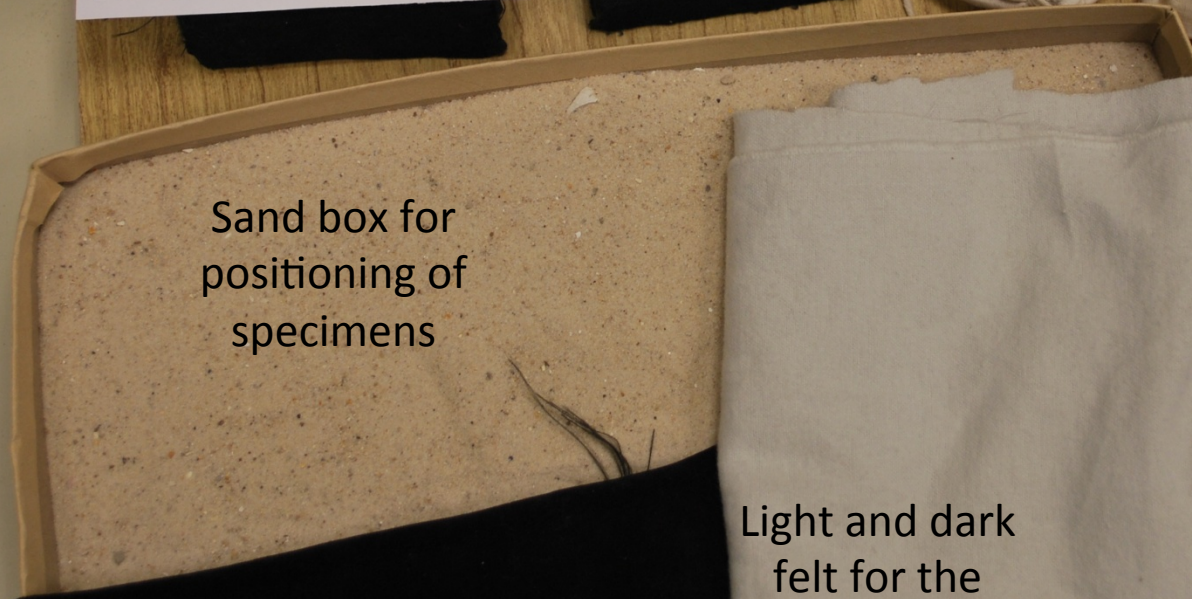
Sand bags for
positioning fossils



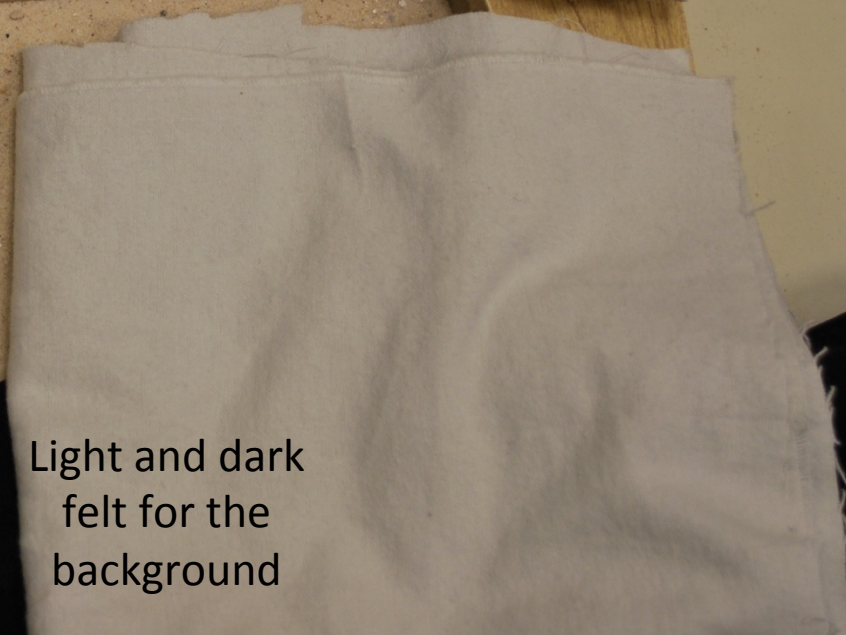
Scale bars
of varying
sizes

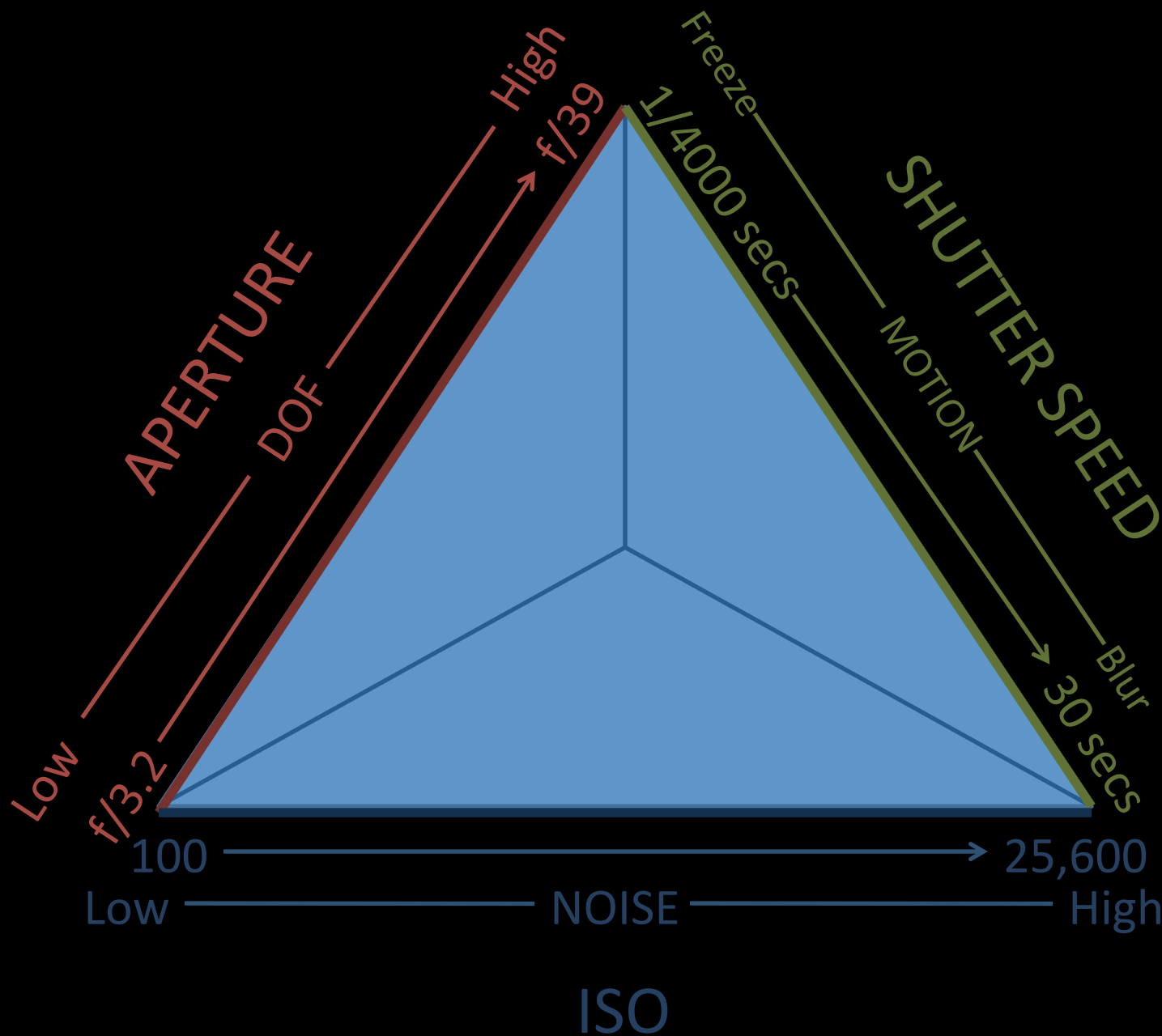


Sand box for
positioning of
specimens



Light and dark
felt for the
background





Shutter Speed

The length of time the shutter is open to capture light

Long shutter speeds
(e.g. 30 seconds)



[wikipedia.com](https://en.wikipedia.org/wiki/Star_trail)

Short shutter speeds
(e.g. 1/4000 seconds)



digital-slr-guide.com

- Blurs motion
- Noisier
- More light

- Stops motion
- Less noise
- Less light

Aperture (F-stop)

The size of the aperture opening

Large aperture
(e.g., f/3.2)



- Low depth of field
- Low diffraction
- More light



digitalcameraworld.com

Small aperture
(e.g., f/39)



- High depth of field
- High diffraction
- Less light



secondpicture.com

ISO

The sensitivity of the “film” to light

Low ISO
(e.g., 100)

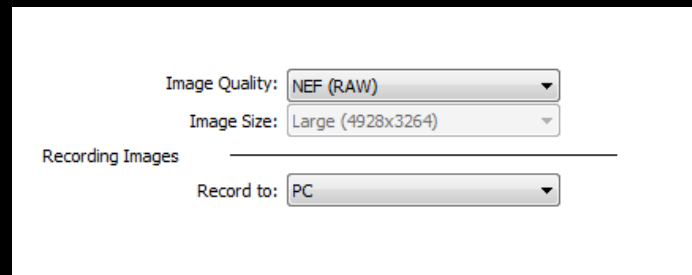
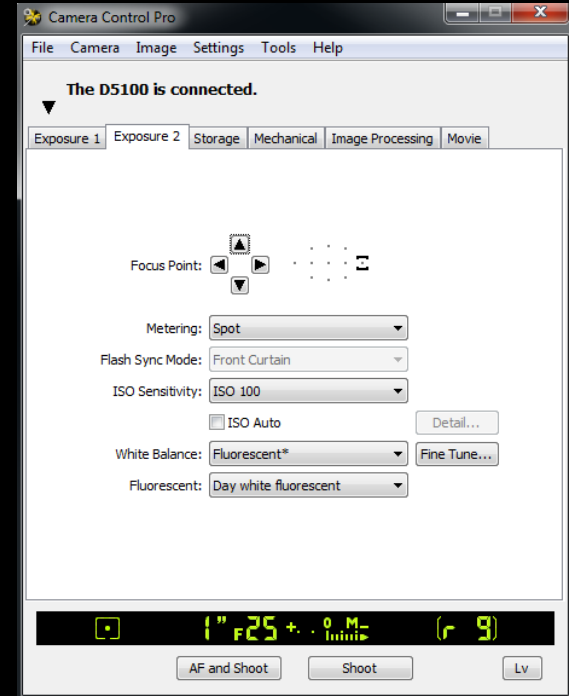
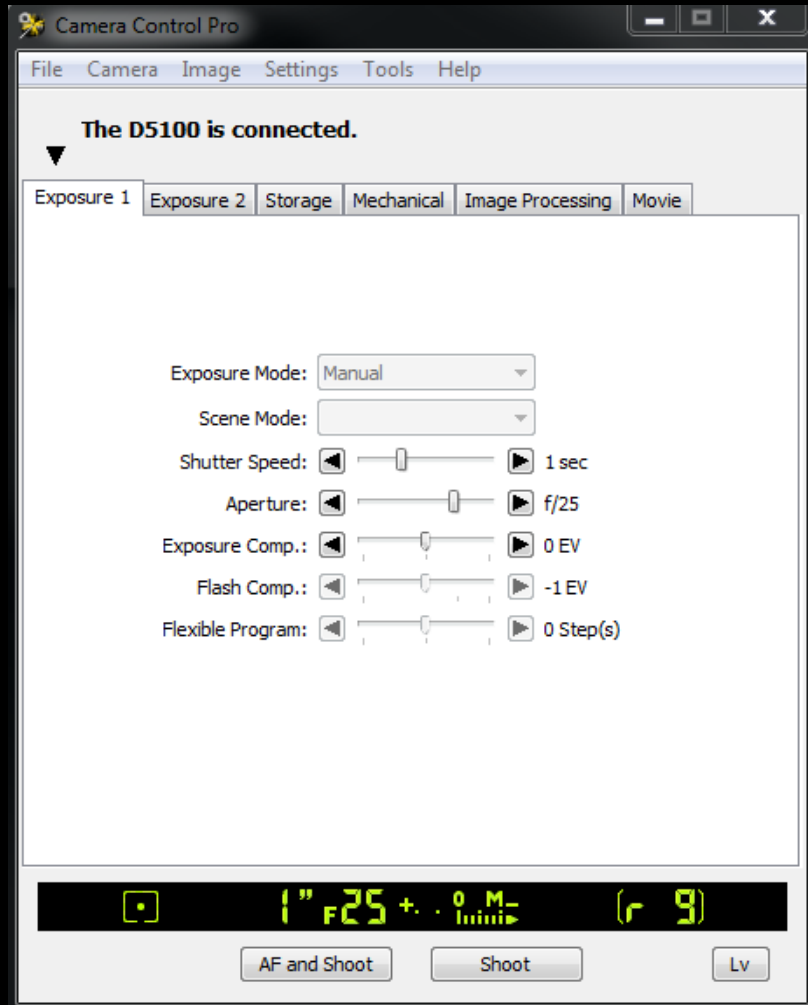
High ISO
(e.g., 25,600)



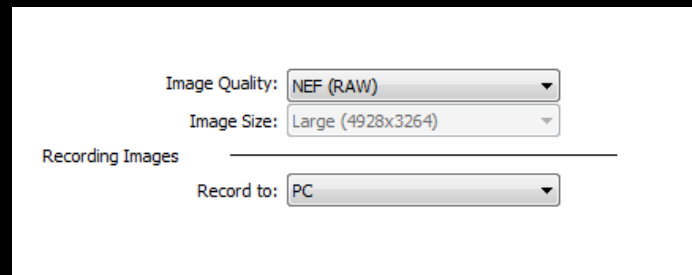
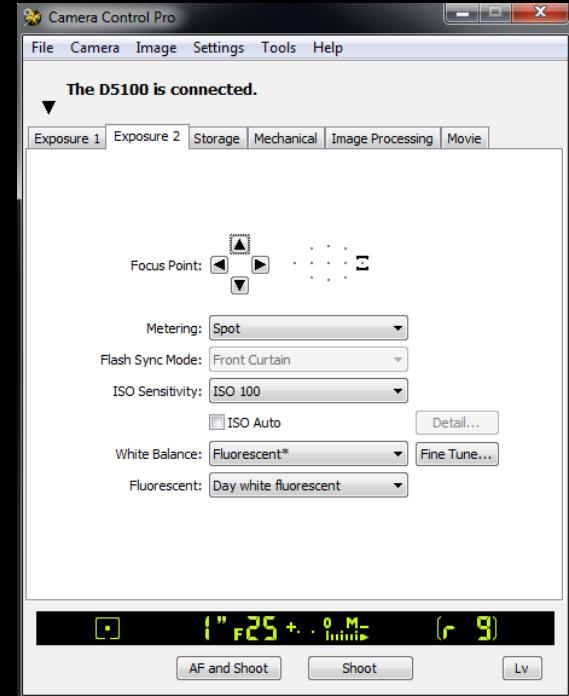
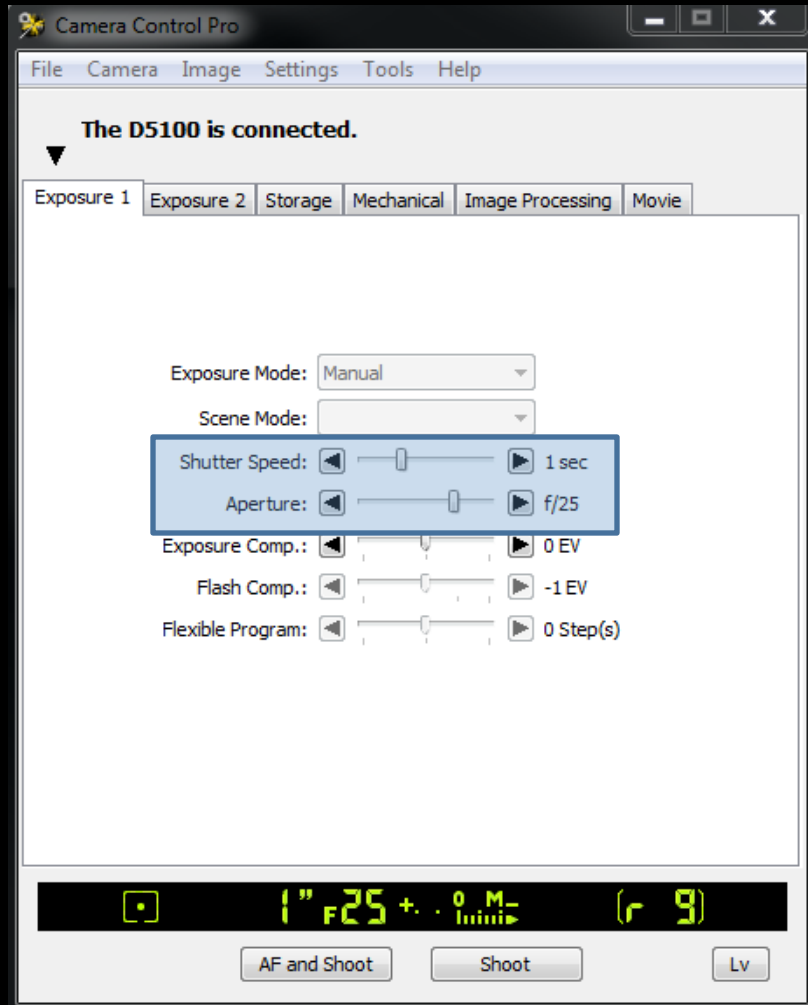
- Low noise
- Less light

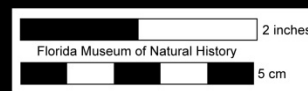
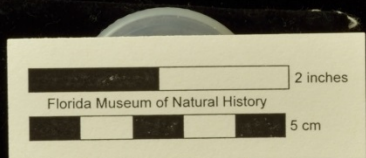
- High noise
- More light

Camera control Pro



Camera control Pro





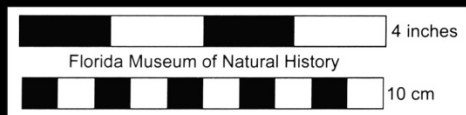


UF 95615
Suwannee
River

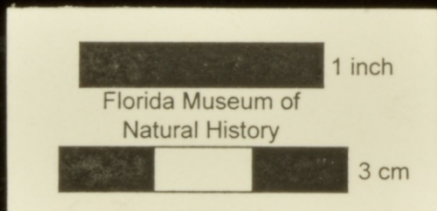
4 inches

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10 cm



Aperture too small

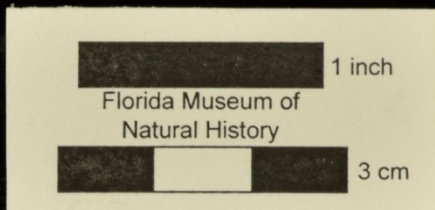


- f/36
- High diffraction
- Soft edges

Aperture too large



- f/3.2
- Low depth of field
- Some portions out of focus



Aperture too small



- f/36
- High diffraction
- Soft/fuzzy edges

Aperture too large



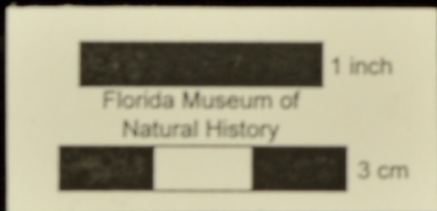
- f/3.2
- Low depth of field
- Some portions out of focus

Well exposed



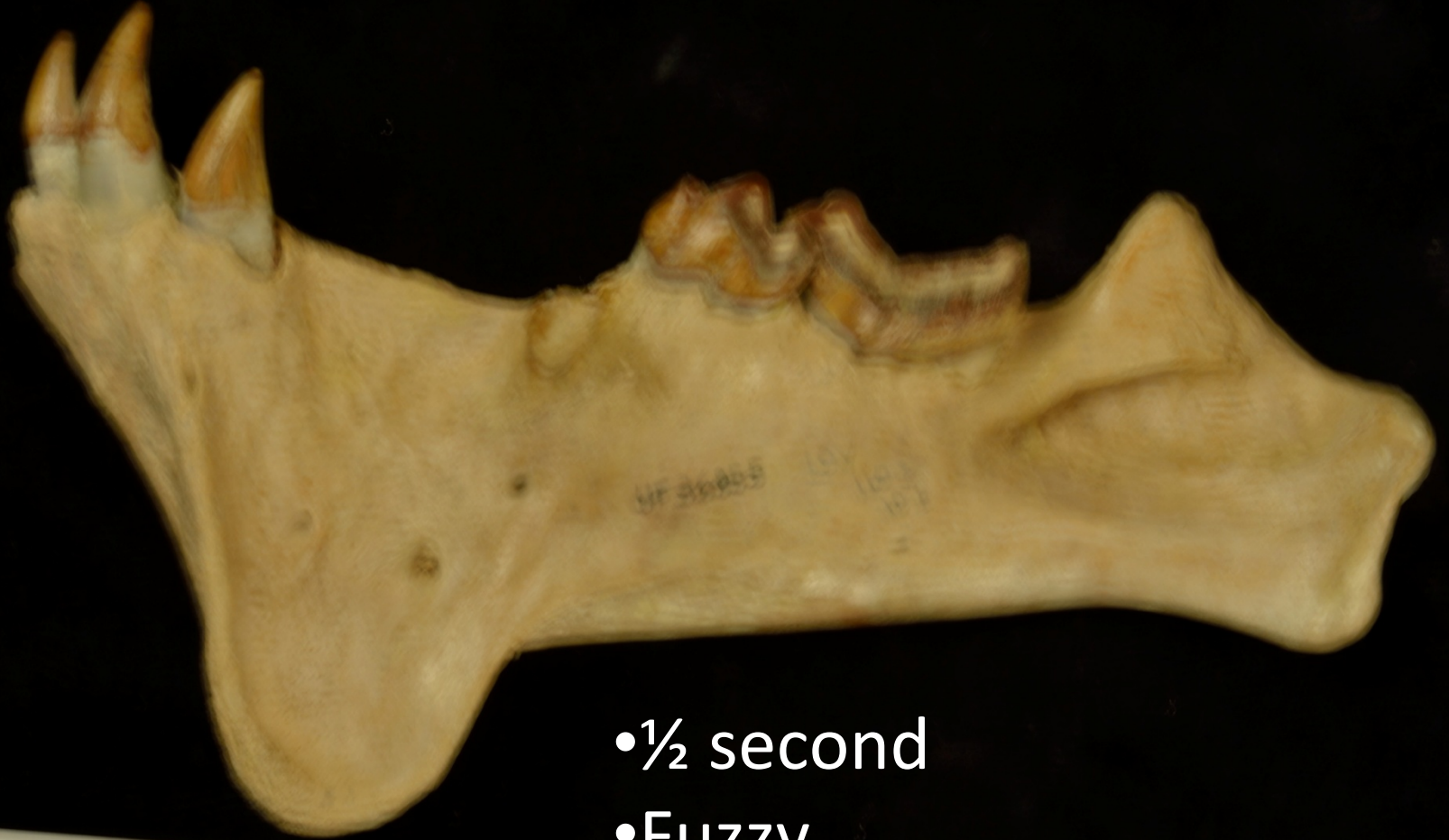
Balance between acceptable depth of field (large f-stop) and diffraction (small f-stop)

Poorly focused

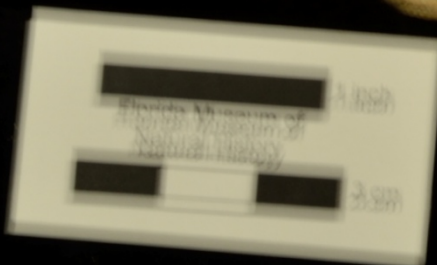


- Focal point is not in line with the specimen
- Refocus (manually or automatically)

Long shutter speed without stabilization



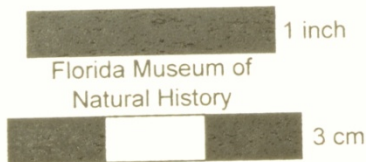
- 1/2 second
- Fuzzy
- Use tripod/copy stand or faster shutter speed



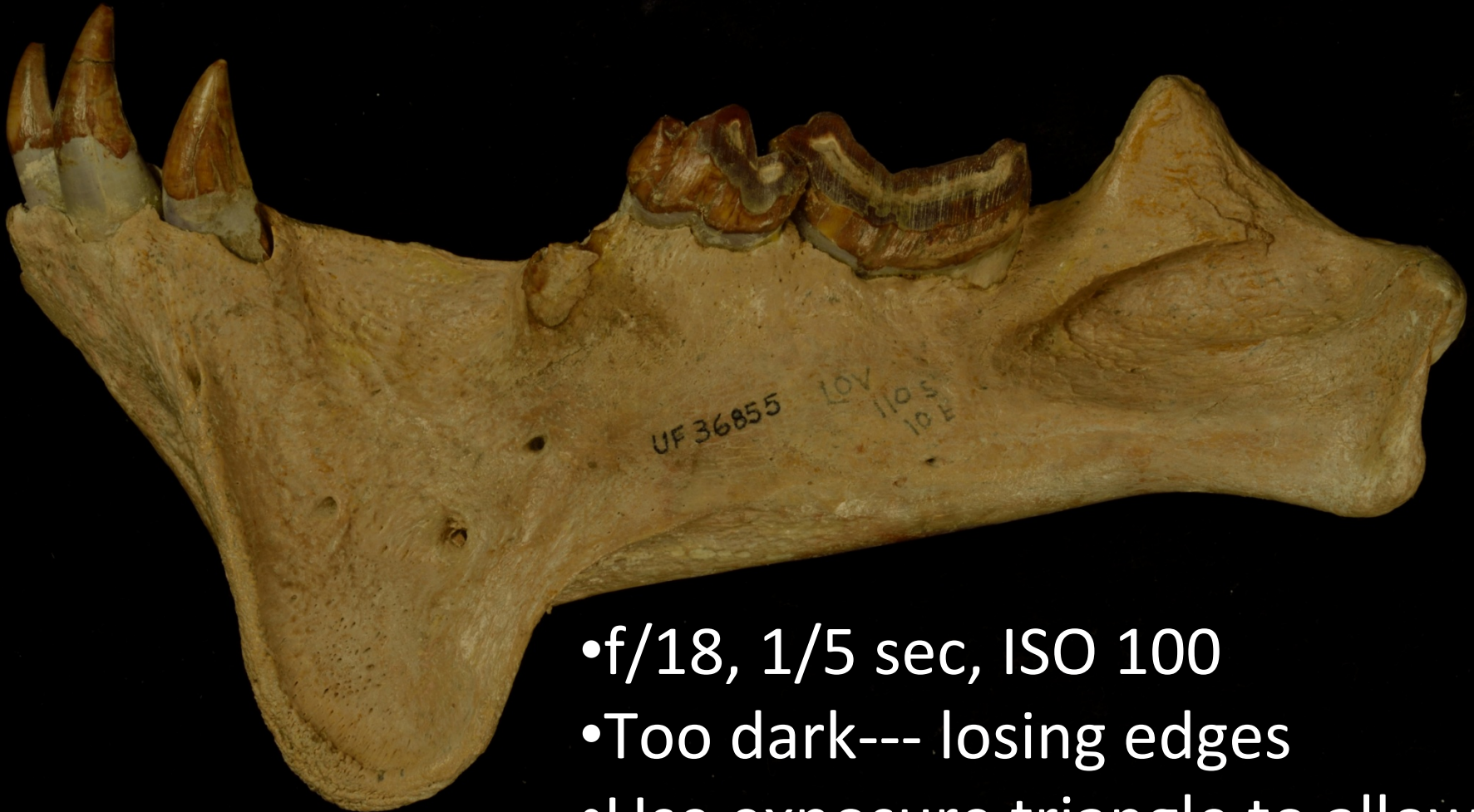
Overexposed



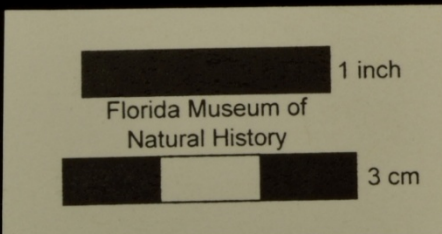
- f/18, 2 sec, ISO 100
- Blown out
- Use exposure triangle to allow less light into the sensor (darken)



Underexposed



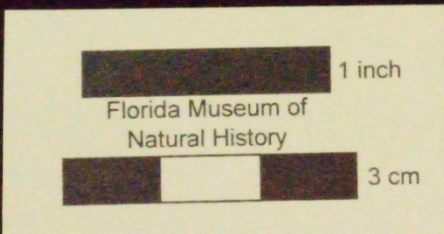
- f/18, 1/5 sec, ISO 100
- Too dark--- losing edges
- Use exposure triangle to allow more light into the sensor (brighten)



High ISO



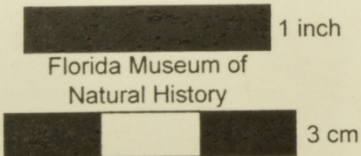
- ISO ~25,600
- Grainy, loss of detail
- Lower ISO and compensate with longer shutter speeds or larger aperture




Well exposed



- f/18, 1/1.6 sec, ISO 100
- Good balance between shutter speed and aperture using lowest possible ISO



FLMNH Vertebrate Paleontology Database

									Phosphate Pit	Early	
	UF/TRO	1450	Mammalia	Carnivora	Felidae	<i>Lynx</i>	<i>rexroadensis</i>	Figured	Palmetto Mine (Agrico)	Pliocene, Early	Bone Valley Fm.
	UF	1473	Mammalia	Perissodactyla	Equidae	<i>Anchitherium</i>	<i>clarencei</i>		Thomas Farm	Miocene, Early	
	UF/TRO	1478	Mammalia	Perissodactyla	Equidae	<i>Nannippus</i>	<i>aztecus</i>		Payne Creek Mine (Agrico)	Pliocene, Early	Bone Valley Fm.
	UF	1485	Mammalia	Carnivora	Canidae	<i>Metatomarctus</i>	<i>canavus</i>		Thomas Farm	Miocene, Early	