

FotoClave Speaker Presentation
“Magic of the Night” (D4 & D6)
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Saturday, Oct. 26, 2019

Summary of Presentation

Types of Night Photography:

Blue Hour • Moon • City Skyline • City Architecture • Neon Signs • Starbursts • Car Trails • Lighted Fog • Bridge Structures • Star Trails • Star Points • Dark Sky Milky Way • Light Painting • Still Life • only really limited by your imagination of capturing the “Magic of the Night”.

Planning:

- Required Particularly for Night Work
- Check Climate and Sky Conditions
 - <https://weather.gov>
 - https://www.cleardarksky.com/csk/prov/California_charts.html
 - <https://www.astrospheric.com/?Latitude=38.0973&Longitude=-122.5837>
 - <https://tidesandcurrents.noaa.gov/>
- Use Apps to Research Sky Elements (The main ones I use)
 - <http://www.photopills.com/>
 - <http://skysafariastromy.com/>
 - <https://www.photoephemeris.com/> (desktop best)
- Preview Site Locations and Scout it during the Day
- Arrive at Destination before Dark (You may also enjoy the Golden Hour!)
- Most Important...Know Your Gear!

Planning Resources:

- Star Trails: <https://skylum.com/blog/how-to-plan-and-photograph-amazing-star-trails>
- Web Cams: <https://www.northwestwebcams.com/california-web-cams.php>
- Other Tide Chart: http://gofishingforum.net/tide_stations.pl
- Moon Photos: <https://photographylife.com/landscapes/how-to-photograph-moon>
- Dark Skies: <https://www.lightpollutionmap.info>

Equipment:

- DSLR or Mirrorless Camera for Dark Environment
- Cable Release or Intervolometer
 - <http://starcircleacademy.com/2013/01/cameracontro/> Star Circle Academy
- Sturdy Tripod – (extremely important)

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Equipment, Continued:

- Fast Wide-angle Lens; f2.8 to 1.2 (Night Skies)
- Batteries (Fully Charged!)
- Red Flashlight (won't affect night vision)
- Light Painting Gear
- Compass (App or hand-held)
- Appropriate Clothing (Warm & Dark), Sturdy Shoes
- Hand Warmers (disposable) - For you or your lens!
- Memory Cards
- Rain Sleeve or Shower Cap to Cover Camera

Camera:

- Manual – Bulb Mode
- Set Kelvin at 2500K – 3200K, depending on how much blue you like for night
- Turn Viewfinder down to lowest brightness, then set to view histogram
- Start out generally at f/8.0 @ 100 ISO; then just adjust time, using chart below as a reference (may have to adjust time (1 stop) if your camera only goes to ISO 200):

Scene Type (after dark)	Exposure Type (f/8 @ISO 100)	Notes
City Lights & Street Scenes		
Very high contrast lighting	1 - 5 sec.	Street signs, neon signs
Average contrast lighting	5 - 30 sec.	Flood lit buildings/statues; fairground rides; Christmas lights;
Dark urban/Industrial; no direct light in scene	10 sec. - 2 min.	Industrial buildings; quiet streets
Moonlit Scenes (mostly full)*		
Buildings with some streetlight	1 - 4 min.	Think Mare Island
Rural/Landscape	2 - 10 min.	Trees; hills; rock-out cropping's; old vehicles
Dark Skies		
Landscape; Trees; Rocks	4 - 30 min.	Have to light paint, if not wanting silhouette
Milky Way; Sharp Stars	15-30 sec. (See Note)	f/2.8 to f/1.2 @ ISO 1600-3200

Notes:

1. Digital photography reference. Film requires 2-3 stops longer time, based on film type.
2. Exposure times are suggested. Utilize histogram to verify and adjust as necessary.
3. All exposures based on camera settings at f/8, ISO 100 - except for Milky Way; Star Points.
4. *Moonlit scenes with longer exposures can look like daytime.
5. Depending on sensor quality, longer exposures will develop more noise, as will increasing ISO.

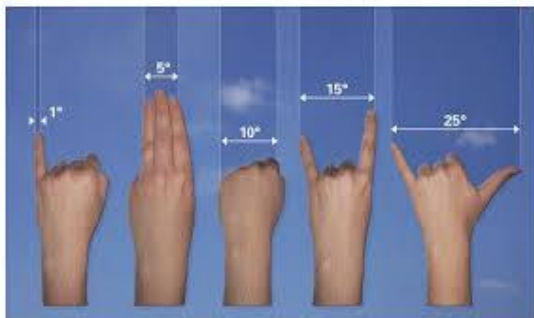
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One Stop Reference Chart:

Common ISO Ratings	One-Stop Aperture Increments	One-Stop Shutter Speeds
50	f/1.4	1/1000
100	f/2	1/500
200	f/2.8	1/250
400	f/4	1/125
800	f/5.6	1/60
1600	f/8	1/30
3200	f/11	1/15
6400	f/16	1/8
	f/22	1/4
	f/32	1/2
	f/45	1"
	f/64	2"
		4"
		8"
		15"
		30"
		Bulb

- Each increased stop lets in 2 times the amount of light and decreased stop lets in $\frac{1}{2}$ of the light.
- Aperture values are an approximate geometric sequence

Figuring Degrees of Sky Movement:



Rough guide to check how far your sky element is above the horizon. Hold your hand out at arm's length.

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Focusing: (Good Link for Info: bhphotovideo.com/explora/photography/tips-and-solutions/11-tips-focusing-your-camera-night)

- Auto vs. Manual Focus
 - Find Lens Focus Setting During Day
 - Auto Focus on Moon, Bright Star, Contrasty Edge
- Infinity Setting for Most Night Landscape
- Flashlight or Laser to Highlight a Foreground Subject
- Use Depth of Field Chart (Hyperfocal Focusing)
- Live View on Camera

Considerations:

1. Keep in mind that camera straps, cable releases and loose tripod elements can cause camera vibration, particularly on windy days. Remove or secure as necessary.
2. High humidity and temperature extremes can cause lens fog.
 - a. Condition your gear to temperatures before starting shots.
 - b. In cold conditions, strap a hand warmer to outside of lens hood.
3. Turn off Live View and LCD display to reduce battery drainage.
4. Camera captures subtleties of light color at night, much more than the eye can see. Adjust Kelvin or use presets on camera for various light conditions.
5. Scout with computer before going to site to see other photographs of an area. Use Google Maps and Flickr for orientation shots.
6. When shooting in one location for long time, make sure tripod legs are securely clamped and secured into the ground. Weight with bag or ankle weights on tripod legs.
7. In Northern Hemisphere, brightest core of Milky Way is up after midnight in Spring and before midnight in Fall.
8. Make sure focus is set to manual and VR turned off when photographing on a tripod at night.
9. Use camera's built-in virtual horizon or bubble level to determine if camera is straight.
10. Shoot in RAW to maintain quality in processing.
11. Turn off "Long Exposure Noise Reduction", unless you want to wait for your camera to double the shot length by taking a dark exposure right after. You cannot access your camera during this 2nd exposure time.
12. 500 Rule: On full frame camera, divide 500 by your focal length to get the number of seconds needed to get (mostly) sharp stars. EX: $500/24 = 21$ Sec. Use as a guide, then confirm manually.
13. Once you set aperture and ISO, keep it there...you only have to calculate stops of camera speed to adjust exposure. Adjust aperture only if needing to adjust depth of field, and/or ISO to get enough light in the scene.

Practice, practice, and practice at home in the dark before going out. You want to be familiar with changing out batteries, putting your camera on the tripod, hooking up remote release, knowing the focus ring on your lens...and doing all of this with your eyes closed!