

Milky Way and Night Photography

Night Sky Photography Apps:

- The Photographers Ephemeris
- Photo Pills

Equipment:

- Tripod (Sturdy)
- Flash light or head lamp with Red lamp
- Batteries (always have extra, long exposures use a lot of battery power)
- Remote Shutter Release
- Wide Angle Lens with low f-stop

When to go:

- November to February (not really possible in this area of the world) while parts of the Milky Way are out, the Galactic Center is not visible at this time of year
- March to May- Late night/early morning prior to sunrise
- June-July -11-1AM
- August- September- 10 to around midnight
- October- Just after sunset

Lenses/fstops:

- Use the widest angle lens you have as wide open as it is sharp
- The wider the angle of the lens the more you have of the sky. A lower f-stop allows more light into your image which will make your image sharper, and your stars more pinpoint. If you exposure it too long, stars lose their sharpness and appear more comma (,) like or as a star trail than a pinpoint dot. Anything below f4 is considered a good wide angle night lens, but 2.8 or better is preferred.

ISO:

- Night photography has made great strides due to the ability for increased ISO
- Start at 1600 and with modern cameras you should be able to expose all the way to 3200 (or higher) without your image being too noisy

- Most photographers recommend for Star and Milky Way photographs shoot at or around 3200
- Adjust your histogram as needed so you don't clip your blacks
- You can set your ISO in the camera to High ISO Noise Reduction and Long Exposure Night Reduction but that extends each exposure by double the time

White Balance:

- If you are photographing night scenes in cities or with buildings, experiment with your white balance, tungsten can give you some nice warmth and effect
- Can be adjusted in post processing if image is shot in RAW
- Some photographers set their white balance in Kelvin; 5200-5600. I prefer around 4000 for Milky Way.

Focusing:

- You can set your focus during the day time by focusing for infinity and then using a piece of Gaffers tape to lock your lens...however there is a chance that at some point you will hit or nudge your lens and it will no longer be in focus
- I recommend re-focusing periodically throughout the night just in case. You would hate to get home and have all of your images be blurry because at some point you lost your focus
- You can focus in live view
- Point your camera at the brightest star and zoom into a 100% using live view. Look at the star, it should appear as a point of light, not a halo or starburst. Once your star is in focus don't touch your lens and transition out of live view and retape with Gaffers tape so you don't lose focus again accidentally.

Exposure Length:

- For shutter speeds follow the rule of 500

500/focal length: For example

- Full frame cameras- 24mm lens $500/24 = 20.8$ so you want your maximum exposure time to be 20 seconds or less
- Nikon APS-C- 24 mm lens $55/24 = 20.8$ $20.8/1.5 = 13.8$ so you want your maximum exposure time to be 13 seconds
- Canon APS- C 24 mm lens $55/24 = 20.8$ $20.8/1.6 = 13.02$ so you want your maximum exposure time to be 13 seconds

- ***ITS OKAY TO HAVE A SHORTER EXPOSURE.*** Not all images will need a full 20 seconds, particularly if there is another light source like a lighthouse. If you have a newer higher ISO camera, you could even use 10 seconds or less.
- Refer to your histogram to ensure you are not clipping your whites or blacks depending on your exposure time

Other Fun Facts:

- If you see white streaks in your image it is possible you captured a shooting star
- Jets and planes may show up as red short streaks
- Fireflies may appear in green
- Use flashlights and other items to light paint images- only a quick shining of light is often needed to add some light to your image
- Play around with you hand blocking the front of your lens for a period of time to experiment how it will impact lights from lighthouses
- You can do vertical panos and stitch later for the entire MW.
- Star Trails can be done with multiple shorter exposures and stacking them in post processing.

Caution:

Please be conscientious of other photographers near you. Using a red light on your headlamp can impact their image. If possible shoot as a group or at least coordinate amongst yourself if you need to use your headlamps in order to not ruin others images with a red glow. For Canon shooters, tape the red light on the back of your camera if you have one.