

# Introduction to Night Photography

Coastal Camera Club  
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# Types of Night Photography

- ◉ City Scapes
- ◉ Time lapse of moving objects (cars, planes, etc.)
- ◉ Star Trails
- ◉ Meteor Showers
- ◉ Milky Way
- ◉ Lunar Eclipse
- ◉ Full Moon
- ◉ Aurora Borealis

# Cityscape Bay Bridge, San Francisco, Ca.

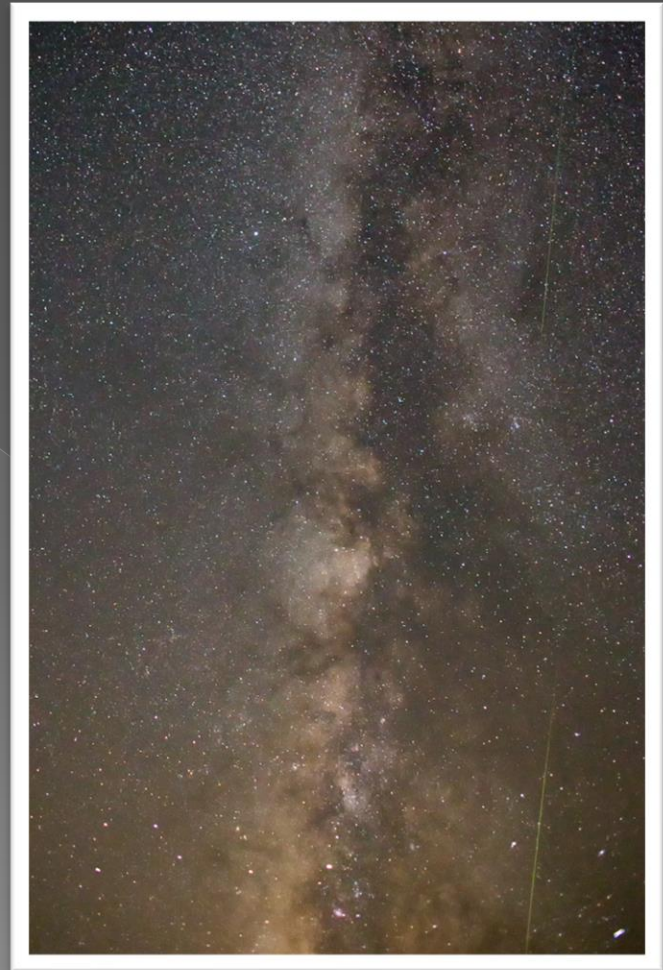
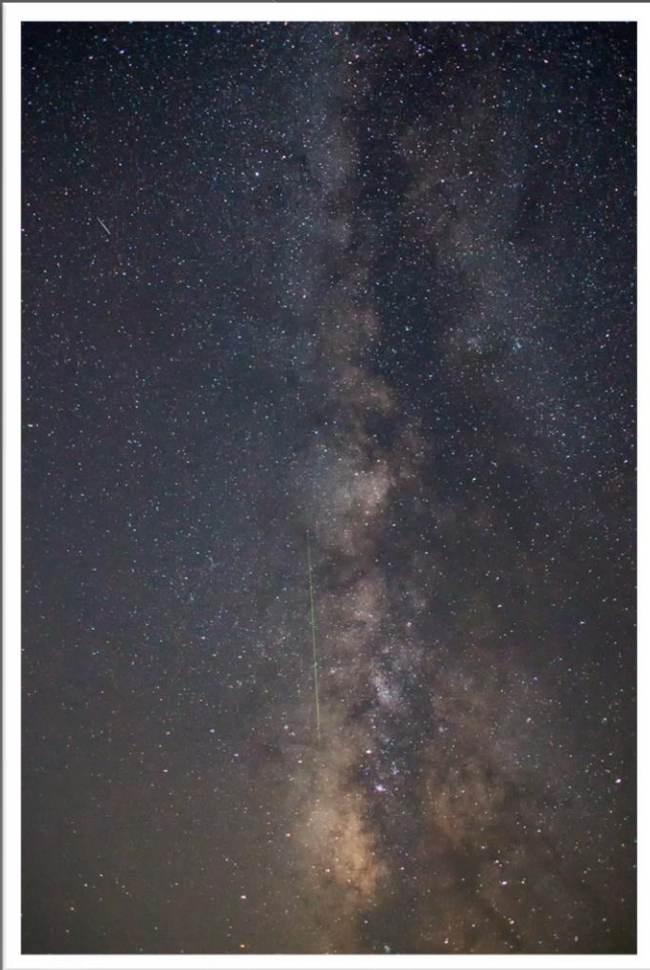




# Time lapse of car head and tail lights – Lombard Street, San Francisco, Ca



# Perseid Meteor Shower





# Milky Way



# Long exposure with jet trails





# Night Photography Resources

## Night Sky Photography Apps:

- ◉ The Photographers Ephemeris
- ◉ Photo Pills
- ◉ Sky Live (current night skies)
- ◉ Clear Outside (works best non-coastal)
- ◉ Stellarium (3D Night Sky) – free on the computer has cost on phone

# Night Photography Resources

## Websites:

- ◉ <https://www.kadamsphoto.com/> (can sign up for his night photography blog-based out of Asheville area)
- ◉ <https://www.darksky.org/> (use this to find dark skies for night photography)
- ◉ <https://www.darksky.org/about/> (leadership/tools/information to reduce light pollution)

# Night Photography Resources

- ◉ <https://nightsky.jpl.nasa.gov/> (general night sky information)
- ◉ <http://www.lightpollution.it/worldatlas/pages/fig1.htm> (map of dark skies/light pollution - select English version)
- ◉ <https://www.cleardarksky.com/csk/> (more accurate space weather)



# 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

Long exposures eat up  
batteries...always have an extra  
fully charged



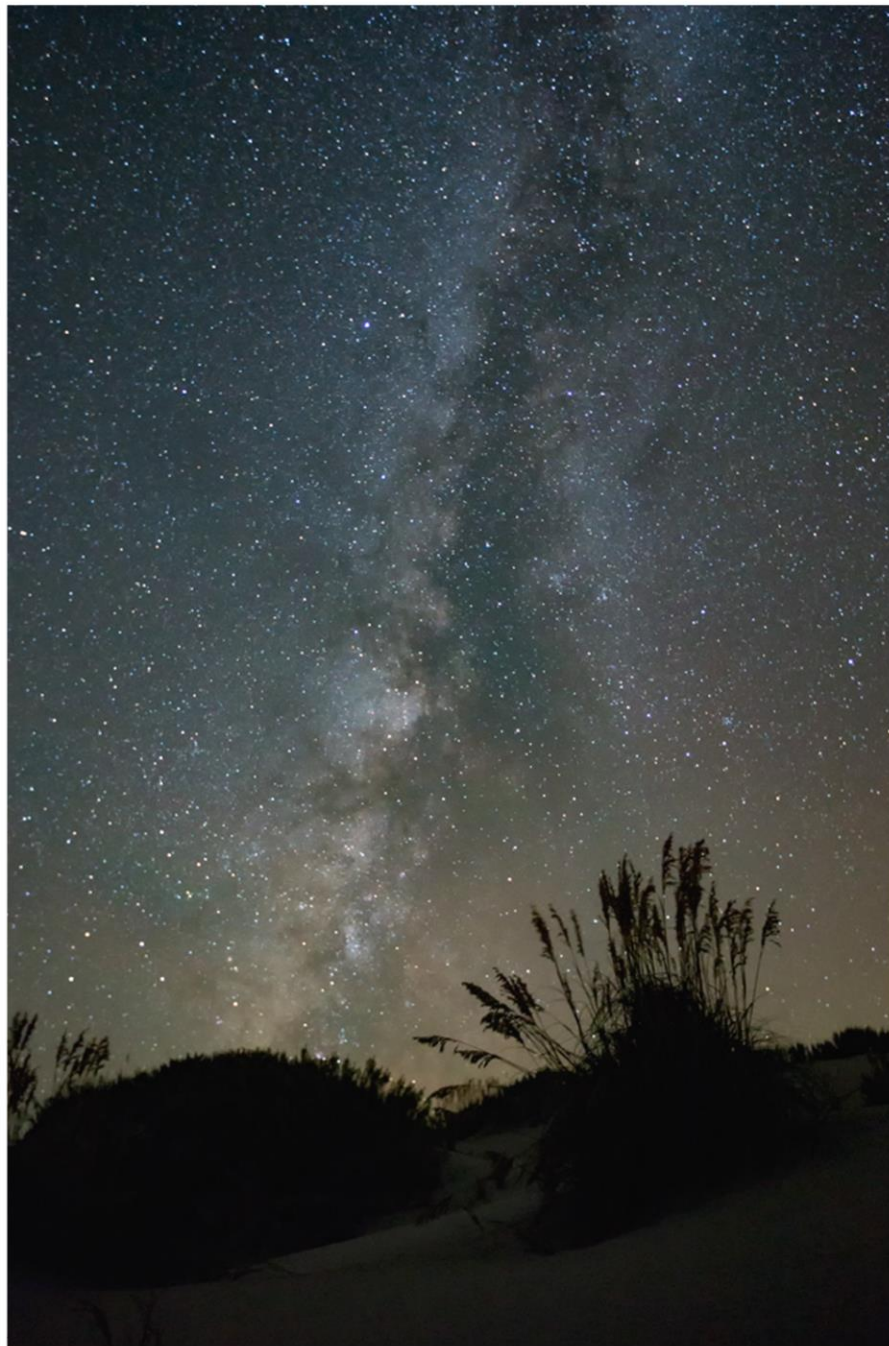
# Photographing in Cold Conditions

- ◉ Bring hand/toe warmers to use on your lens and battery
- ◉ Attach via a rubber band
- ◉ Keep an extra battery on your body for warmth
- ◉ Use the lens hood for added protection
- ◉ Can use a rain cover as well for additional warmth



# When to Photograph the Milky Way in the Northern Hemisphere

- ◉ November to January the sun is blocking our view of the Milky Way
- ◉ Milky Way is visible to the south
- ◉ March to May- Late night/early morning prior to sunrise
- ◉ June to July -11 to 1AM
- ◉ August to September- 10 to around midnight
- ◉ October- Just after sunset



# Where to go for night photography

- ◉ Do your research (sunset/sunrise times, weather, dark skies, moon cycle, etc.)
- ◉ Be safe – Don't go alone
- ◉ Research parks, areas for dark skies (for Milky Way and Stars)
- ◉ Take a workshop or class
- ◉ Look for interesting objects for the foreground
- ◉ Scout your location ahead of time during the day



# For Milky Way

- ◉ You want clear dark skies
- ◉ National Parks are often very dark
- ◉ Go to higher elevations
- ◉ Out west, the desert, has dry air which makes for less noise and sharper images

# Lenses/fstops

- ◉ Wide angle lens: less motion blur, faster shutter speed, less noise, and more depth of field
- ◉ Use the widest angle lens you have and as wide open as it is sharp
- ◉ The wider the angle of the lens the more you have of the sky

# Lenses/fstops

- ◉ A lower f-stop allows more light into your image which will make your image sharper, and your stars more pinpoint points of light.
- ◉ If you exposure the image too long, stars lose their sharpness and appear more comma ( , ) like or as a star trail than a pinpoint dot.
- ◉ You will notice this most along the corners and edges of your images
- ◉ 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 much higher) without your image being too noisy
- Most photographers recommend for Star and Milky Way photographs start 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 length time
- Long Exposure Night Reduction may remove stars it identifies as noise

# 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
- ◉ 3600 Kelvin and up will give your Milky Way images the “blue color”
- ◉ 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.



Long exposure of the Golden Gate Bridge with Tungsten white balance

# 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

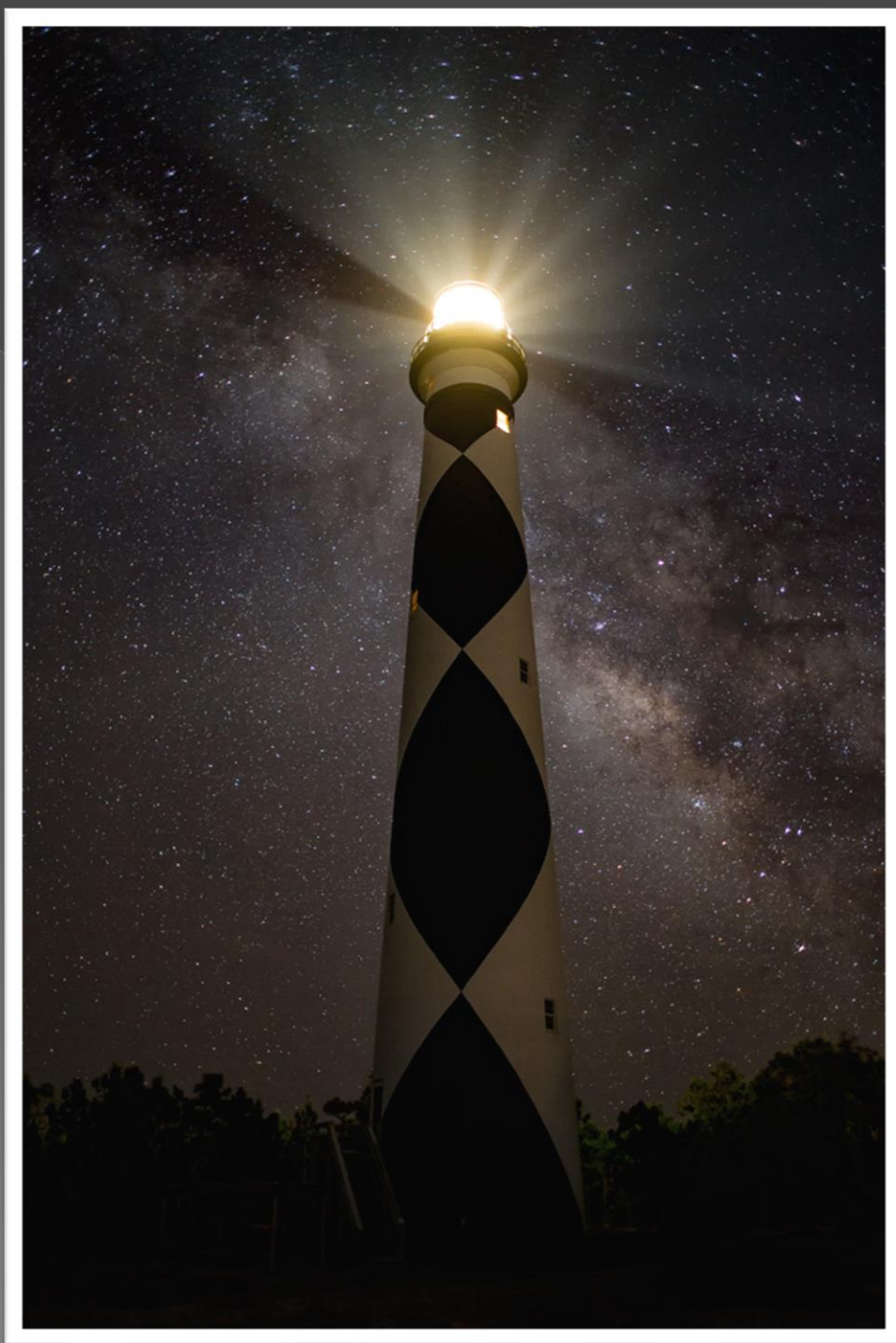


# Focusing in Live View

- ◉ You can focus in live view
- ◉ Point your camera at the brightest star (or other object) and zoom to 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 re-tape with Gaffers tape so you don't lose focus again accidentally.

# Other Equipment

- ◉ If you find focusing difficult there is a special lens made for focusing on stars
- ◉ Sharp Star 2 – star focusing filter
- ◉ Comes in a variety of sizes and is inexpensive
- ◉ <https://www.lonelyspeck.com/shop/sharppstar/>
- ◉ There are also specific lenses that you can use to reduce light pollution



# 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

# Exposure Length

- ***ITS OKAY TO HAVE A SHORTER EXPOSURE.***

Not all images will need a full 20 seconds, particularly if there is another light source such as a lighthouse.

- If you are using a higher ISO setting in your camera your exposure may be shorter

- Refer to your histogram to ensure you are not clipping your whites or blacks depending on your exposure time



# Newer Schools of Thought

- ◉ Some think the rule of 500 is outdated
- ◉ Newer cameras and sensors are so advanced that this rule no longer applies
- ◉ Use Photopills and enter your exact camera, sensor and aperture and you will get the exact formula for your specific camera

# 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
- ◉ Add people to your images to add a sense of size or interesting subject matter

28mm f 1/8 ISO 640 20 sec

Get Low and light paint to illuminate your subject



# CAMPING BY THE OCEAN



Play around with light and inserting people into your images!



Add the human element



# Other Fun Facts

- ◉ 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.
- ◉ Experiment with Black and White images.

# Other Tips

- ◉ Get low- change your perspective
- ◉ Use a wider angle lens
- ◉ Experiment with tilt shift lens or fisheyes
- ◉ For Sony shooters- experiment with your LCD option they have a bright option on their newer cameras which help you see your image better in the dark

28mm f 1/8 ISO1600 2.5 sec  
Use your hand to make a “Bow Tie”





Experiment with Black and White

# 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.





# Post Processing Tools

- ◉ Adobe Camera Raw
- ◉ Changing White Balance
- ◉ Adjusting Temperature
- ◉ Dehaze (both in ACR and Lightroom)
- ◉ Nik- Dfine or Topaz DeNoise AI
- ◉ Adding Structure or Detail
- ◉ Starry Landscape Tracker for Mac's is free and allows you to stack star trails
- ◉ Sequator is the same type of software for PC's





Get Out!  
Go EXPLORE!  
Experiment  
And most of all HAVE FUN!

