



SILVANA DELLA CAMERA PHOTOGRAPHY

Seeing in the Dark, Night and Milky Way Photography

Why Shoot in the Dark?

- Night is very colorful!
- We can't see well in the dark, but our cameras see very well!
- Night photographs are other-worldly
- It is very different than daytime photography.
- It is very relaxing to photograph at night.

Types of Night Photography

Cityscapes and General Night Scenes

- Low ISO and long exposures
- Usually single frames
- Simpler than astro-landscapes to do.
- Not as much fumbling in the dark required
- High f stops create starbursts on lights

Astro-landscapes

- Different approach than cityscapes
- Requires a balance of ISO to noise and Earth's movement
 - Star trails – long exposures
 - Milky Way – higher ISO to capture pin point stars
 - Relatively short exposures.
 - Both types require attention to the white balance.

Safety First!

- Be aware of your surroundings.
- Keep in mind, there is someone always watching you.
- Use the buddy system when shooting at night.
- Your tripod attracts attention!
- Be courteous.
- Use small red flashlights so you don't destroy your night vision or anyone else's.
- Dress in layers (yes, even in summer).

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Lenses and Focusing

- Fast, sharp lenses are best for astro-landscape.
- Not so fast lenses (f/3.5-4.5) are fine for city nightscapes.
- Manual focus with “true” infinity are great for astro-landscapes.
- When using an auto focus lens, switch the auto focus off.
 - Either at the body or on the lens.
- Focusing in the dark is challenging.
 - Use live view, high ISO and zoom in to focus.

External Intervalometer

- Allows interval shooting on cameras that don't have the ability internally
- More control over time adjustments.
- Extend camera's shutter speed

Works as a shutter release as well

Proper exposure is difficult at night for several reasons.

- Your eyes are pathetic at understanding the actual amount of light available.
- Your LCD is lying to you.
- Various types of outdoor lighting emit different temperatures and lumens.
- You have to balance all of this to get the proper exposure.
- Fumbling in the dark with your camera is hard, unless you know what all the buttons do!

These can be overcome

- Lean on your camera!
 - As it sees light better than you can, use the information it has to make adjustments.
 - Shoot RAW and in Manual mode.
- Use the highest ISO available on your camera to help focus.

Shooting at Night – Basic Camera Settings

1. Shoot RAW
2. Manual Mode (M)
3. Shoot at native ISO
4. Set your LCD brightness to -3
5. Turn ON RGB Histogram and blinkies (aka highlights)
6. Turn OFF long exposure noise reduction (LENR)
7. Turn OFF high ISO noise reduction.

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8. Close/cover the eyepiece (DSLR)
9. Set the exposure and take test shots. Adjust as needed. *The Histogram is your Guide!*
10. Use ND Filters to slow down shutter. Especially helpful during Civil and Nautical Twilight
11. Set focus to manual!
12. Reduce camera movement as much as possible.
 1. Mirror up
 2. Enable exposure delay (at least 2 second delay)
 3. Use external shutter release.

Astro-landscape Photography

- Similar approach to night photography but with a twist.
- Images can be single frames or stacked.
- Fast lenses are best for astro-landscapes.
 - Chose a lens f/2.8 or faster.
- Star trails can be had anywhere, even in a city.
- Milky Way is more challenging due to light pollution.
- Phases of the Moon have an impact.
- Planning is key when photographing a landscape with the stars.
- Star trails can be had throughout the year. Even in your backyard!
- Milky Way has a "season". The galactic core is visible from late Jan - Nov
 - It becomes more reasonable in late May when it rises before midnight.
- Lens quality will affect your image.
 - Use a lens that has minimal coma aberrations at the edge.
 - Stars should be dots edge to edge.
 - Some lenses make edge stars appear like commas.

Star Trails

- Star trails can be an accent to an image.
 - Select a foreground object and star trails are secondary.
 - Not critical on direction.
 - Star trails are the main object.
 - North facing images have great impact due to circular star trails.
 - Use an app or compass to determine North and location of Polaris.
 - Unless you are on the North (or South) Pole, the celestial pole is not overhead!

Milky Way

- Light pollution is a huge problem.
- Find a (dark) south-facing location.

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- Use [light pollution map](#) to assess conditions.
- Atmospheric conditions affect “viewing”.
- Websites help locate dark skies.
- Cloud cover assessment critical.
- ISO 1250-6400* depending on sensitivity of camera.
- Wide to Super Wide fast lenses.
- Rises in the south-east to south-west depending on date.
- Requires planning. No full moon (unless in a very dark location).
- Can be stacked.
 - High ISO frames stacked with dark frames.
 - Foreground can be shot separately from background.
 - Determine maximum exposure for pin point stars. Use NPF rule.
 - *No, the 600/500/400 rules don't work very well!*

Astro-landscape Photography Settings

- Shoot RAW
- Manual Mode (M)
- Set WB 3750K - 4200K
- Shutter speed determines ISO
 - ISO 1250-6400+ depending on camera and conditions.
- ***Pay close attention to histogram.***

Stacking Software

- Sequator- PC only. Free
 - Processes RAW files
 - Very fast
- Starry Landscape Stacker Mac Only. Trial & Paid
 - Processes RAW files
 - Very Fast
- Photoshop (PC and Mac)
 - *Much slower*

Can mask out unwanted elements.

Learn how much light pollution affects everything. <https://www.darksky.org>

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Astrolandscape Photography Recommended Accessories

[Dew Heater](#)

[Dew Heater Battery](#) – Any power bank with a 5V output will work.

[Dummy Battery & External Power adapter](#) (link is for Nikon but many [other](#) cameras are supported) For long duration shoots.

[Power Bank](#) for camera external power adapter

[External Intervalometer](#)

Planning Tools

- Stellarium – Planning tool for astronomy. Browser, computer program (free), phone and tablet apps (paid)
- Mobile Observatory Pro – Full featured planning too. (free and paid).
- PlanIt Pro! – Full featured planning tool. Android and IOS (free and paid)
- Exsate Golden Hour – Sun & Moon info, twilight and more. Free
- Clear Outside – forecasts clarity of skies (online and mobile apps). Free
- Astrospheric – forecasts clarity of skies (online and mobile apps). Free and paid
- Compass 54 – Compass app

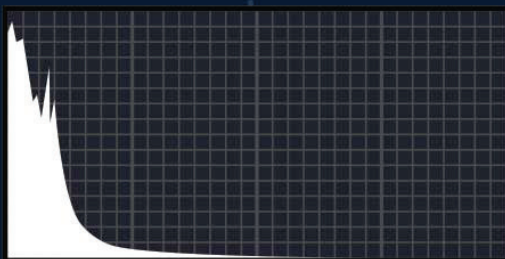
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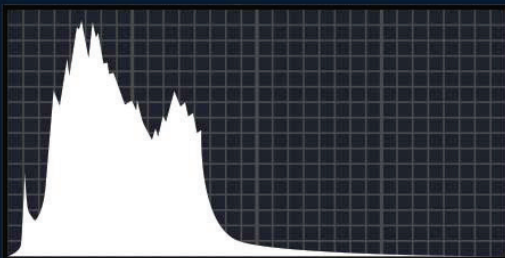
Use the Histogram!

Goal



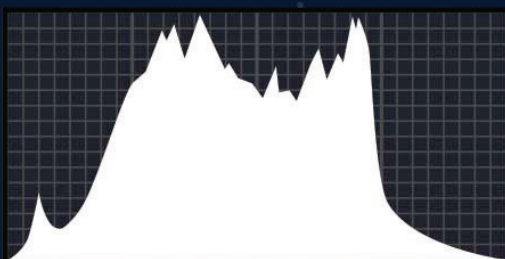
UNDEREXPOSED

Difficult to recover in post process. Results in overly noisy photographs. Avoid underexposure at all costs. Use a lower f/number, or lengthen the time the shutter is open.



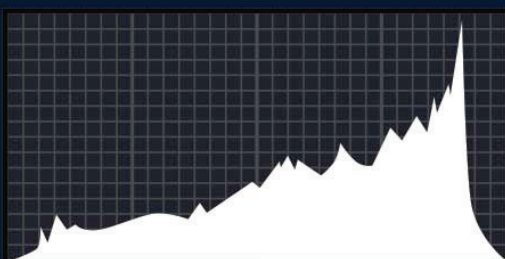
EXPOSED TO THE LEFT

Generally acceptable, most common nightscape exposure with standard settings. Photo may get noisier if pushed in post process. Use a lower f/number or shutter speed if possible.



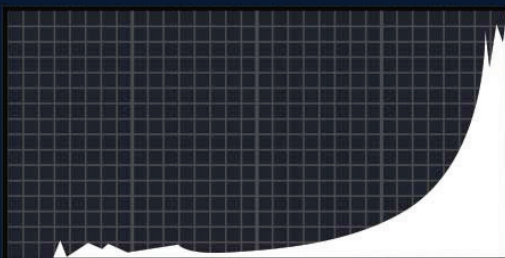
NEUTRAL EXPOSURE

Safest exposure. Results may appear brighter than natural in the camera but can be easily pulled in post process. No need to change any settings.



EXPOSED TO THE RIGHT

Best choice for the lowest noise but requires care not to overexpose. Results will look overly bright in the camera but can be easily corrected in post process.



OVEREXPOSED

Difficult to recover in post process if highlights are overblown. Rarely occurs unless affected by moonlight or extreme light pollution. Use a lower ISO setting if overexposed.

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