

Night Photography

By Chris Attrell - Anywhere.ca

Why Night Photography Is Different

Night photography is magical and mysterious. But it's dark out, so you must plan better. Be aware of the weather, wind conditions, cloud coverage & maybe the aurora predictions. Further, it is important to know where you will be shooting & that you have checked for any hazards or situations that may interfere with shooting at night.

Your night photography experience is dependent on uncontrollable variables, such as moon phase, cloud cover and aurora visibility, and other controllable variables, such as your camera equipment and the lighting you bring. In-field experience is the best education.

Safety

Good judgement is required for night photography.

- Bring a friend.
- Ask permission when shooting on private property.
- Make sure any animals become aware of your presence.
- Have roadside assistance.
- Make sure you are aware of the weather forecast.

Equipment

Any modern DSLR will work with night photography. I use a mid-level Nikon, and I have seen great work from people with entry-level cameras. Expensive cameras *will* have better results & allow you to print larger images. Here are some important recommendations:

- Cameras should have a live view feature to help with focusing.
- A wide-angle lens with an aperture that can reach f/ 2.8 is important. Tokina makes a very good lens. See the link at the end of this worksheet for more info.
- A good ball-head tripod that can support your camera is highly recommended. It can ruin your experience if you have a poor one. A tripod is a must for night photography.
- A release cable or intervalometer is a handy tool to have for shooting at night.
- If you have a lens shade, use it as it helps prevent lens flare.
- No filters on your lens.

Manually Focusing At Night

You must shoot in manual focus, and you must do it right every time.

There is a switch on your lens, in most cases, to shoot in manual.

Manually focusing may be difficult to get used to. I strongly recommend you practice this first at or near your home, before trying to do it in the dark.

If you have an infinity ring on your lens, use that to get infinity focus.

For wide angle lenses (10mm – 24mm) focus on something 30 feet or further from you. For all other lenses, it is safer to focus on something 50 feet away or further. A hyperfocal length calculator can be found on the student panel.

Shooting

1. *Compose your shot first. An easy way to see the composition is to try a test shot and deliberately overexpose the image. Then you can make any adjustments to your composition. You can also use your flashlight to light everything up and see all the elements of the shot.*
2. *It is nice to have a foreground element, such as a tree, building, vehicle etc.*
3. *Once you are setup for the composition, now you can set the camera settings for the type of night shot you are doing.*
4. *Manual Mode - Shooting at night does require you to shoot in manual mode. This means you are setting the shutter speed, ISO, and aperture.*
5. Use your histogram to see if the exposure is too dark or bright. Images generally look brighter on your camera at night than they do when you put on your computer. So slightly over expose just to be safe.

ISO

ISO is your film speed/image quality- Lower numbers produce cleaner, higher quality images with richer colors.

- 100 or 200 – When shooting within a city and you want really long 1-10 minute exposures. This is also the default ISO on most cameras.
- 400 – Great for full moons, but will need a longer exposure.
- 800 – When you have lots of light and can use f/1.8 or f 2.8, or for short exposures within the city.
- 1600 – A starting point for beginners doing astro-landscapes.
- 3200 – When there is no moon and you are doing an astro-landscape with a kit lens.
- 6400 – Milky way.

Aperture

Most night photography you will need to use a wide aperture ($f/1.8 - f/4$). Urban astro photography with really long exposures lasting minutes can use something in the middle like $f/9.0$ or $f/11.0$.

A wide aperture lets the most light into your camera.

When you focus for infinity, depth of field will not be an issue.

Shutter Speed

The Shutter Time (AKA Time Value) is the length of time that the camera lets light in onto the film or sensor. While the shutter is open, light keeps pouring into the camera making the image more and more exposed.

You will need to shoot at least half a second and up. On most camera, when you see a " symbol beside the shutter speed, this means seconds. 30" is 30 seconds for example.

Your shutter speed will depend on how much light you have in the scene (moon, ambient light etc).

You can extend your shutter speed if you are painting with light. If your exposure ends up being too bright, lower your ISO.

An intervalometer allows you to shoot for minutes or hours using (B) Bulb as your shutter speed.

Astro Landscapes

Beginner tip: Try to shoot your first time when the moon is more than 33%.

Start with 3200 ISO, but you may increase it to 6400 if your images are too dark or lower to 1600 if moon is bright.

$f/stop$ at about $f/2.8 - f/4.0$ or even $f/5.6$, to increase image quality. Learn more about the 500 rule to make sure everything stays in focus.

The shutter speed will need to stay about 5-30 sec. to compensate for the lower ISO and smaller $f/stop$. This may also need to be adjusted based on the brightness of the moon and the cloud cover.

You can shoot for as long as you want. I've shot up to 30 minutes, and some have shot hours. After 20-30 seconds you will start to get star trails.

Basic Setting:

- ISO - 3200 (Full moon nights 1600 would be better)
- $f/stop - f/3.5$ (To make image brighter, try $f/2.8$, if your lens allows)
- Shutter Speed: 20 Seconds (less or more depending on moon, clouds etc.)

Milky Way

Best done on cloudless nights when there is no moon.

You must also open to the widest aperture to let in as much light as possible. f/3.5, f/2.8 or even f/1.8, depending on your lens.

To avoid star trails, apply the 500 rule. For example: an 18mm lens on an entry level crop sensor DSLR or mirrorless: 500 divided by 18 is 27.7. Thus, your max exposure should be 27 seconds.

Basic Setting:

- *f/ 1.8, f/2.8 or f/3.5, depending on your lens*
- *ISO - 3200 or 6400, depending on how well your camera can handle it.*
- *Shutter speed: 15 - 25 seconds, depending on your lens.*

Auroras

It is best to do a shorter exposure for auroras, to capture the ribbon effect.

I often mix in some light painting with auroras

Basic Settings:

- *ISO – 800 - 3200*
- *f/2.8, or f/3.5 if using a kit lens*
- *Shutter Speed: 4 - 10 Seconds*
- *If your photos are too dark, shoot longer or increase ISO.*

Post Processing

You might want to perform the following post processing tasks on your photos. As you get more experienced you can do more post processing.

If you use Lightroom, you can use what is called a 'Brush' to apply these adjustments only to certain areas. This enables you to have one adjustment for the sky and a different one for the landscape. I have some 3rd party quick tutorials on how to process night images on my site. Access link to student panel <https://anywhere.ca/beginner/>

Noise Reduction Crop Straighten Sharpen	Exposure (Add or lessen) Contrast (Add) Clarity (Add) Highlights (Add or Lessen) Shadows (Add)
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Painting With Light

What is light painting? It is adding light to your photos, mostly with flashlights or glow sticks.

- Don't show the light source in your frame.
- It's best not to apply light from behind the camera. It looks better and adds contrast and shadows when you apply light from the left or right side.
- Experiment with using a few different types of lights; differing brightness, warm lights, cool lights, and maybe one that has light focus on it. Each light will show up differently in your image.
- You can also use cheap battery-powered tea lights to put inside buildings to give them some mood. Never use an open flame.
- On average I take about 8 shots to get 1 that I like.
- You can use the 2 or 10 second delay on your camera to give you enough time to get into position.
- Changing the distance between flashlight and subject has a huge impact on brightness and light quality. Try different distances.
- The reflect-ability of the subject can require more or less light. Dead wood absorbs light, metal objects reflect it.

At Home

You can try these skills in your own home before you head out into the middle of nowhere. Gaining this experience before going to a place where it is dark & cold is invaluable. Try using manual focus and some painting with light and long exposures with these settings:

- *ISO - 200*
- *f/Stop - f/8.0*
- *Shutter Speed: 10-30 Seconds to give yourself some time to paint with light.*

Other Tips

- Practice your focus and become familiar with changing your settings at home before you drive out into the middle of no where at night to go shooting. It's harder to do when cold, dark and spooky sounds.
- Keep note of every object you bring to the shoot and where you put it. It will reduce the chance that you forget something at the location.
- It's best to open your lens to maximum (zoom out) to get the most sky.
- Dress appropriately; cold can seem to feel twice as cold when you are shooting at night.
- Fingerless gloves are highly recommended.
- Shoot in RAW or RAW & JPEG file format so that when you get good at post processing, you can do more adjustments. It results in a bigger file, but one day you will be glad you did it. JPG is a compressed file and only keeps about 1/3 of the information as a RAW file
- Animals are curious, but they stay away, so don't worry if you hear anything odd.
- When you are done don't forget to put your lens back to Auto and change your ISO back to Auto (or something other than what you use for night photos)

Thank you

YouTube: [YouTube.com/ChrisAttrell](https://www.youtube.com/ChrisAttrell)

Website to view photos used in this class plus list of equipment, apps software etc: <https://anywhere.ca/beginner/>