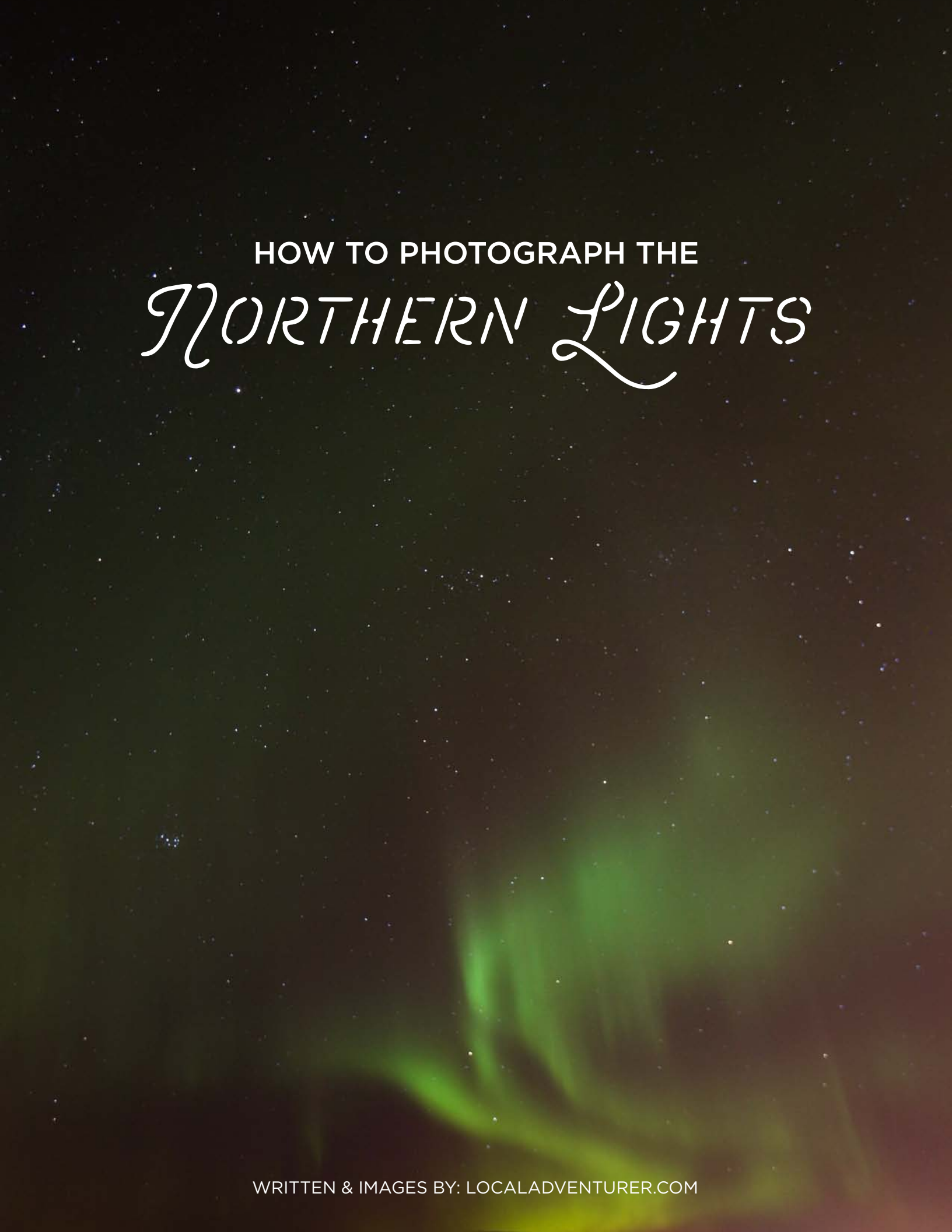


HOW TO PHOTOGRAPH THE NORTHERN LIGHTS

WRITTEN & IMAGES BY: LOCALADVENTURER.COM

Hello Adventurers! If you've downloaded this e-book then you probably plan on traveling somewhere where you'll see the Northern Lights. We've been fortunate enough to visit Iceland to see the lights and we definitely can't wait to hunt for the lights again. In the meantime, we've put together this guide to help you capture your very own beautiful images of the Northern Lights.

STEP 1: Planning your Trip

Know Where to Book Your Trip

The Northern Lights are most visible at high latitudes because that's where the Earth's magnetic field is the strongest. To see the Northern Lights (aurora borealis), you must go to the Arctic Circle – which includes Alaska, northern Canada, Greenland, Iceland, Norway, Sweden, Finland, and Siberia). Likewise, to see the Southern Lights (aurora australis), you go to the Antarctic Circle.

You can book a Northern Lights tour where they take care of the logistics of time and location, but because the unpredictable nature of the aurora combined with the unpredictable weather in Iceland, we opted out from taking a a tour. It's best to seek out spots on your own to maximize your time to see them and to have flexibility if you want to go to another location. Our first night, when we were shooting and the activity was still strong, the tour bus had to leave.

Know When to Go

Year: The Northern Lights are always around, but depending on the activity of the sun, it goes through a cycle where it's brighter and dimmer. It's an 11-year cycle, with its most recent peak of highest solar activity in 2014. To see the highest activity, book your trip now (or wait till 2025)!

Month: Statistically, the best aurora activity is in September and March, but it's also good during the winter months (October-February) when there are more dark hours.

Day: There is a 28-day prediction technique. The sun revolves on its axis every 27-28 days, so if you see that there was an active aurora night (such as last Sunday – the day we flew out BOOO!), mark that on your calendars. If the same spot on the sun is active, you will see it again in the next rotation.[1]

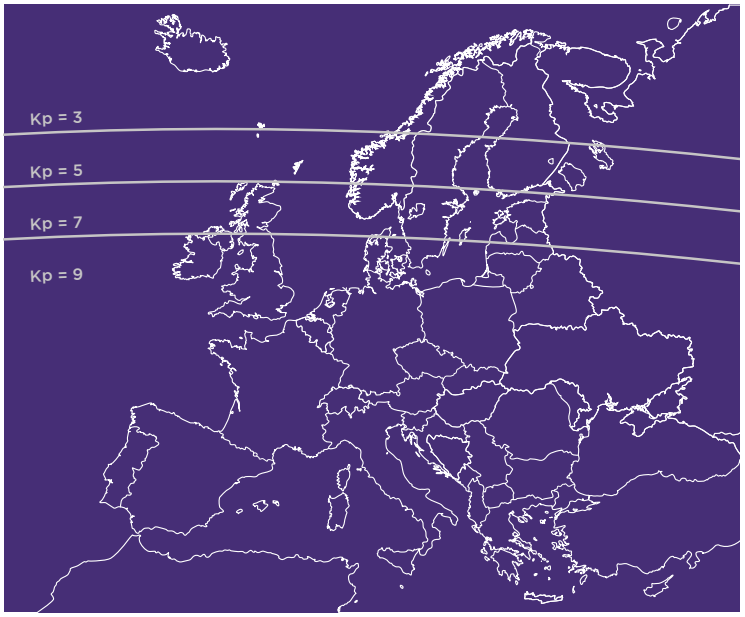
Hours: The peak hours are from 11pm to 2am, but we've seen activity around 9pm. It can happen anytime it's dark, so you can even head out at sunset.

Check the Weather & Activity Charts All the Time

We used this chart for Iceland to plan, but you can google "aurora forecast + your location" to see the activity level and the expected cloud coverage. On this chart, you're hoping to get white areas near you which means clear skies! Since the weather in Iceland is so unpredictable, the chart is constantly changing, so plan your time accordingly. Some nights we drove out a few hours away where it was predicted to have less cloud coverage, and some nights when the chances were supposed to be good, it ended up changing a few hours later.. Also, as with any weather predictions, it's not 100% accurate. Some nights we left empty handed even though the forecast looked promising, and some nights ended up clearer for much longer than predicted.

In southern and west Iceland where we were, the Kp aurora activity had to be a 3 or more to see the Northern Lights (and a Kp 2 for northern Iceland). It's not precise since the aurora is so unpredictable, but these maps can be a general guide for how far north you need to be to view them. When it's Kp 5 or above (a geomagnetic storm), you can even see the Northern Lights at lower latitudes.

Kp chart for North America



Kp chart for Europe

For more tips, check out How to Catch the Northern Lights.

STEP 2: What to Bring

Now that you know how to find the northern lights, let's talk about what you need to shoot them. At the bare minimum, to have the lights show up and in focus, you need a tripod and a camera that can shoot longer exposures.

This is our current set up:

Camera: Canon 5D Mark III
Batteries: 3-5 Spare Batteries
Lens: Canon 16-35mm f/2.8L II
Trigger: Wired Trigger
Tripod: MeFOTO Globetrotter Travel Tripod
Backpack: LowePro Pro Runner BP 350 AW II
Head Lamp: Petzl Tikka+ 110 Lumens

Camera

As mentioned before, any camera that has manual settings will allow you to capture the Northern Lights to a certain extent. If the lights are bright enough and light up the entire sky, you can even capture it on your phone. But this can be rare, and assuming you still want to shoot during low aurora activity, you will want a camera that has high ISO capability (Read more about ISO in the Camera Settings Section). For night photography, a DSLR can make a big difference. The ideal camera is a full frame (35mm or larger sensor) DSLR camera. This will allow you to capture beautiful photos without too much noise in your image.

In addition to less noise, a full frame camera will also allow you to maximize your lenses. The image to the right shows how much you lose using a cropped sensor.

Batteries

Batteries drain much faster in cold weather, so depending on how long you're out and how cold the temperature is, you want to bring plenty of batteries. Some suggest that you bring 5-7 batteries on one excursion. In Iceland, it was in the low 20s Fahrenheit and we used 2 full batteries in a 3-5 hour period. We also made sure to keep them in a pocket near our body beneath a few layers of clothes so that they stayed as warm as possible.

Lens

Your fastest wide angle lens - whichever one gives you the maximum aperture (smalles F-number). The night sky is big and the Northern Lights can span the entire sky. The wider your lens, the better. We were constantly shooting at 16mm, but I probably could have gone even wider (less than 16).

For Canon cameras, the 16-35mm is a solid option. They also have this cheaper option. For Nikon cameras, you can use either this nicer lens or the budget option.

Trigger

Whether it's wired or wireless, you want to use a trigger to ensure that you don't move the camera once the shutter is open. You can also use the 2 sec timer option, but then you are dealing with a delay of 2 seconds. If the Northern Lights are forming a desirable shape, you will want to shoot it ASAP. The wireless is more prone to fail than the cable release (sometimes doesn't successfully send a signal). It also helps if you want to take a long exposure self-portrait.

You will need to look for a trigger that works with your model camera, but you can check out this wired one and a wireless one as a start.

Tripod

Look for a solid tripod that can handle the weight of your camera and lens. We recently started using the MeFOTO Carbon Fiber Globetrotter Travel Tripod which has worked out great. It's relatively lightweight and packs small so we can travel easily with it.

Some other great options are this budget tripod or a compact tripod.

Backpack

A bag always helps to keep all your gear safe as you make your way to your photo spot. If it's a particularly windy day, you can also use it to weigh down your tripod, so that it doesn't fall over and damage your gear. Our LowePro bag helps us a haul a lot of gear!

> **PROTIP:** Depending on how padded your backpack is, it also makes a great chair that won't crush your gear. When you're waiting for hours in the snow, it's nice to be able to sit without freezing your butt off!

Head Lamp

A headlamp is a must to help you navigate in the dark and also to shine on your camera if you need anything. Look for a headlamp that has a red light option to help you keep your night vision. This is the one we recommend.

Light Gun

In case the Northern Lights are too dim to light up your foreground or there isn't enough ambient light., it helps to have a light gun. We packed as light as possible for our Iceland trip and had no room for it in our luggage, but we bring it along on almost all our astrophotography excursions.

Hand & Toe Warmers

Keep your phalanges warm with some warmers for your hands and toes.

STEP 3: *Shoot!*

Now onto the fun stuff! We're going to break down the basic principles of how to shoot the lights without getting too technical.

Camera Settings

We can't tell you the exact settings since it will depend on the capability of your gear, how bright the lights are, and how fast they are moving, but we can give you a general range to get you started. The rest will be trial and error. After we go over the settings and how to shoot, we'll show you some of our shots and the settings we used to get each photo.

The 3 Pillars of Photography are Aperture, Shutter Speed, and ISO. These settings are interrelated and depend on each other. Read our Intro to Photography here.

Aperture (How Big Your Lens Opens to Let in Light)

This one is easy! Open your aperture to as wide as it can go. Ideally, you want it to be 2.8 or lower.

Shutter Speed (How Long Your Lens Opens to Let in Light)

You typically want to keep your shutter open from anywhere between 5-30 seconds.

Quickly moving Northern Lights - 5-7 second exposures
Slow moving Northern Lights - 10-30 seconds

The shorter the time, the more it will be like what you see with the naked eye, and the longer the time, you may see the lights starting to smear and lose its shape.

13 Seconds

30 Seconds

White Balance

I used Auto, but if you want to save yourself the pain of color correcting while you edit, you should shoot in Kelvin (K) mode so that you can set your own and more consistent white balance. You want to set your white balance to look as natural and as close to what you see with your naked eye as possible, though you can make them a little warmer or cooler based on artistic preference. Typically for night / Northern Lights you'll want to be between 2800-4000 Kelvin.

Fooooocus...

So what the heck do you focus on when you're shooting up at the night sky?? Auto focus usually won't work, since nothing is bright enough for the camera to focus on, so you must turn your lens setting on manual focus. There are several ways to focus, but here's a trick we've learned and use. Once you've framed your shot, look for the brightest star in the sky. Now go to the live view mode on your camera and zoom in to that star. During live view mode, focus in on that star (basically make it as small and sharp as possible). Once you've done that, get out of live view before you shoot.

Test, Review, Adjust, Repeat

Now that you have the basic settings down, it's time to shoot! Start with some of the basic settings, see how the photos look, and adjust accordingly. If the lights aren't showing up bright enough, then increase the exposure time or ISO.

Keep in Mind:
-Increasing ISO will decrease the quality of the photo.
-Opening your shutter longer during fast moving lights may give you a shapeless green blob.

PROTIP: If you are using the light gun to light the foreground, there will also be a lot of testing. A general rule of thumb is that you want to light it from the side and not from directly behind the camera. You'll also only want to hit the foreground with a quick burst of light first before lighting it for longer.

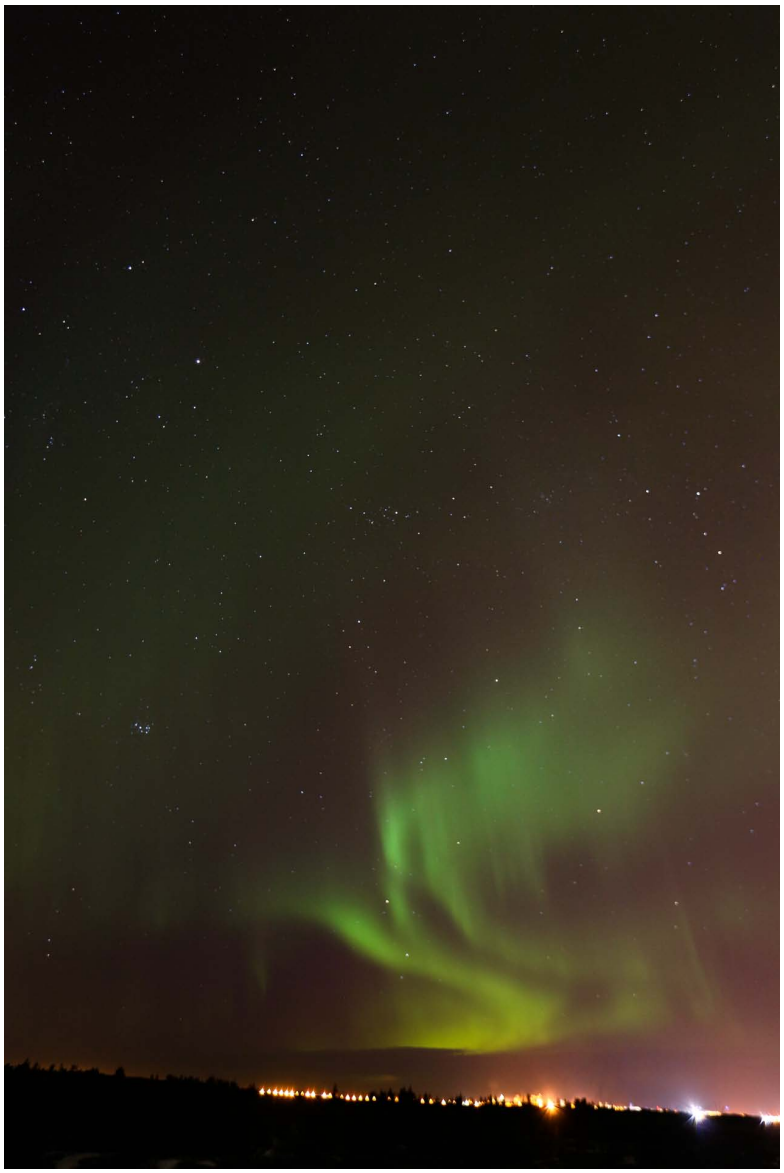
Here are a few examples with the settings that we used.

SETTINGS

16mm
ISO 800
Shutter 10sec
Aperture 2.8

SETTINGS

16mm
ISO 1250
Shutter 30sec
Aperture 2.8



SETTINGS

23mm
ISO 800
Shutter 13sec
Aperture 2.8

Good Luck!

Happy Hunting and be sure to tag your photos #LocalAdventurer so we can see them and reshare! If you have any more questions, please feel free to say hello at hello@localadventurer.com.