

GABRIEL BIDERMAN · TIM COOPER · MATT HILL · LANCE KEIMIG · CHRIS NICHOLSON

HERE COMES THE SUN

2017 SOLAR ECLIPSE GUIDE



NPAN 2017 SOLAR ECLIPSE GUIDE

One of our very first blog posts as NPAN was a **Q&A with astronomer and night photographer Tyler Nordgren**. During that interview was the first we heard about this amazing event that would be occurring 18 months later: the 2017 total solar eclipse across the United States. Moreover, we learned it would pass over three national parks! To say we were excited is ... well, an astronomical understatement.

We're nearly ready to experience and photograph this uncommon celestial event. Are you ready to join us? If so, we hope you enjoy the next few pages, full of instruction, locations and recommended gear for photographing the biggest shadow in the world.

—Gabe, Tim, Matt, Lance & Chris



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www.Ruinism.com

TIM COOPER
www.TimCooperPhotography.com

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www.NationalParksAtNight.com

Night in Day

by GABRIEL BIDERMAN

How are you preparing for and shooting the eclipse?

In case you haven't heard the buzz yet, the continental United States will be experiencing a solar eclipse on August 21. If the weather is good, we will all be able to see ... most of it. But lots of lucky folks will be driving to a spot along the path of totality to experience something very rare and surreal: the total eclipse, when day turns into night. For approximately 1 to 2 minutes you'll be able to see the stars during the day and the wild corona light dance from behind the moon.

The last total solar eclipse to touch the lower 48 was on February 26, 1979. The last time we experienced a total solar eclipse crossing our entire nation from the Pacific to the Atlantic was on June 8, 1918. That was a long time ago; it's pretty rare.

The good news is that, at least this time around, it won't be rare for long. The next total solar eclipse in the U.S. after 2017 will be in 2024, when the path of totality will cross from Mexico into Texas and will leave via



Protect your eyes with solar glasses. (Helmet is optional.)

northern New York and New England on its way to New Brunswick and Newfoundland. So any specialized gear you get now, you can put to good use in seven years!

GEAR YOU NEED TO SEE AND CAPTURE

As you have probably guessed in life, it is not a good idea to stare at the sun. The most important thing you can purchase to prepare for the eclipse is a pair of solar glasses for your eyes and solar filters for your camera lenses. Technology continues to get better in this field and the newest international standard rating is ISO 12312-2. If you do not see this certification on the product, you shouldn't purchase it. Solar filters absorb the ultraviolet, visible and infrared energy of the sun, making our star safe to view and photograph.

B&H Photo, home of my day job, has been a great resource for embracing the best products and knowledge. To that end, I have been recently practicing

shooting the sun and want to share this knowledge with you.

As far as glasses go, any simple paper pair will do, as long as it has the aforementioned ISO rating. A cool thing that B&H is doing is packaging free solar glasses with most of their solar filters! So you can kill two birds with one stone, all while not killing your eyes or camera sensor.

Let's focus on the filters from a photographic point of view. There are three types of solar filters you can choose from:

- screw-in filter
- glass drop-in filter for a filter holder system
- inexpensive and universal paper or adjustable aluminum alloy filters that are easy to take on/off

The screw-in filter is the one I would least recommend. Even though it seems to be the most popular, think of this: The common strategy for shooting the eclipse is to have a filter over your lens so that you can capture a properly exposed and non-flaring sun. Once we enter the small window of totality, when the moon will eclipse the sun, it will be safe to take the filter off and adjust your exposure accordingly for that beautiful shot of dark sky and the white ring around the moon.

You must wait until after the “diamond ring effect”—when the sun flares one last time from behind the moon—before taking off the filter. You don't want to waste precious time (5 to 10 seconds) unscrewing a screw-in filter when you could instead take 1 to 2 seconds to remove a drop-in filter or universal filter cap. The average time of totality will be from 1 to 2 minutes and you want to photograph it but also expe-



Wine Country Filter Holder system and 100-400mm lens.

rience it. Don't waste precious time fumbling around with your gear!

If you want to look into the available filters and other eclipse equipment, an easy way is to search all the gear and articles that B&H has been working on for the last year. Type “Solar Eclipse” into the search engine at www.bhphotovideo.com and you'll be taken to a very resourceful page.

START PRACTICING NOW

The first time you shoot the sun shouldn't be on August 21. Get some solar filters and start practicing shooting the sun now! I've been doing this over the summer, which has given me a chance to test exposures and specific gear before the big day.

I recently purchased the **Solar Eclipse Filter by Lee** for my **Wine Country Filter Holder system**, as well as the **Daystar universal solar lens filter**. My **MrStarGuy Adjustable Objective filter** is on back order, but should be shipping soon.

Lee is one of the top-end filter companies. Their filter mentioned above is equivalent to a 20-stop neutral density, but also is ISO certified and should be used only for solar work—not for long-exposure landscape photography.

The Lee filter is made of glass, and I find the image quality is excellent. The suggested settings from Lee with this filter are 1/800, f/8, ISO 800. Think crazy eights! This was pretty spot-on while the sun was high in the sky around 2 p.m.

With Auto white balance, I found the Lee filter produced a clean white sun. I experimented with the white balance and preferred cranking it to 10,000 K for a nice yellow/orange sun that is more visually familiar.

I also tested the Daystar slip-on filter and found that to be of very good quality as well. It was a bit deeper orange/yellow than the Lee with the white balance set to 10,000 K. I also found the Daystar to be 1 1/2 stops faster than the Lee, as my final exposure setting was 1/500, f/5.6, ISO 800.

You can see all of these approaches compared on the next page.



Left and center were shot with the Lee Solar Eclipse Filter at 1/800, f/8, ISO 800, with Auto white balance (left) and at 10,000 K (center). Right shot with a Daystar filter at 10,000 K at 1/500, f/5.6, ISO 800.

LENS(ES) AND GAME PLAN

There are multiple ways to capture and create some unique images of the eclipse. Search **Google Images** to see what resonates with you.

I definitely recommend using a telephoto lens and getting a somewhat tight shot of the different phases of the eclipse. The careful thing to consider is not getting in too tight. When the total eclipse starts you'll see the breathtaking corona light start to spill out from behind the moon. This can spread pretty far and create some beautiful patterns. If you are in too tight, you'll frame it out.

When testing, I was using a 100-400mm lens on an APS-C crop sensor, and the far end of that focal range seemed like the sweet spot for a good telephoto capture. That's 600mm to 800mm with a full-frame sensor, which you can achieve with really big glass or with a 1.4X or 2X teleconverter. But if you have a

crop-sensor camera, that would be the one I'd lean on for this project.

The trick to the telephoto shots will be tracking the sun as it quickly moves through your frame. Depending on how tightly composed your shot is, this setup could require constant attention and adjustments. Having a sturdy tripod is a must, especially if you add a tracking device to a long lens and camera. Make sure your tripod head and legs are rated to hold the combined weight over a long period of time.

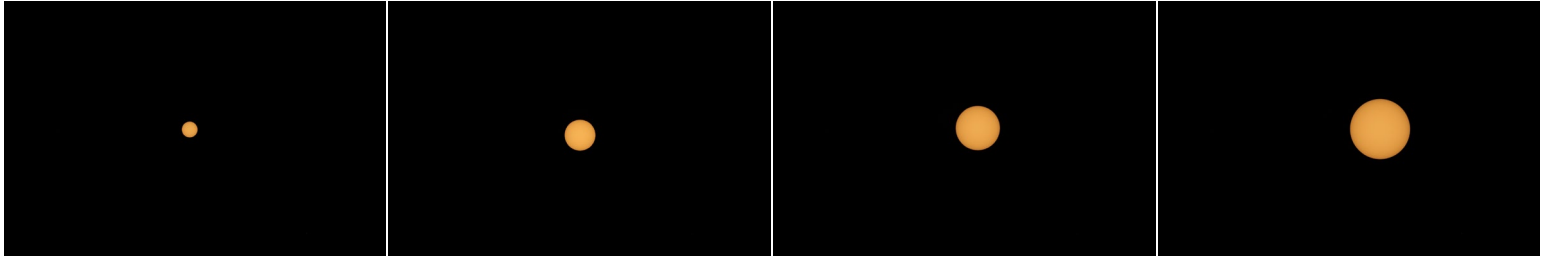
Many people will be using digiscoping (attaching a camera to their telescope) to get even closer images of the sun and eclipse. We really haven't experimented with digiscoping at NPAN, but our good friend Todd Vorenkamp at *B&H Explora* discusses those considerations in his very informative article, "**How to Photograph a Solar Eclipse.**"

I'd also bring another, separate camera setup for

capturing a wider view that includes the landscape. The telephoto phases of the eclipse are cool to capture, but they are generally featured against a dark black sky. If you use a medium telephoto or wide-angle, you can include some subject matter that gives your composition depth and scale. You'll still need to have that solar filter on to capture more phases of the sun, but you'll also want to get a properly exposed foreground—ideally once the uneclipsed sun is well out of the frame—to layer together in Photoshop.

Two tips to consider when using that technique:

- Underexpose the foreground shot so all the solar disks will stand out against that hopefully deep blue sky.
- Once the eclipse starts to happen, keep an eye on your settings and make adjustments to open up your exposure as the sun gets thinner and fainter.



The sun shot at an effective focal length of (from left to right) 150mm, 300mm, 450mm and 600mm.

BE FLEXIBLE AND KEEP AN EYE ON THE WEATHER

This is going to be the most viewed and recorded solar eclipse ever. You'll be able to watch it in and around populous cities such as Kansas City, St. Louis, Nashville and Charleston, as well as in national parks such as Great Smoky Mountains and Grand Teton, and in many rural national and state forests.

Do you want to experience this event in a city or town with tons of people and lots of rooftops and amenities, or do you want to go someplace more remote and get a darker sky?

Staying flexible with weather is key. There are plenty of apps (we like **Weather Underground**) that can share predicted cloud cover. It's a good idea to have a Plan B and C that are within a 1- to 3-hour drive from your Plan A. You obviously want to avoid overcast and thick cloud cover, but sometimes stray clouds and wisps are unavoidable. Do your best to adapt or adjust—we are wishing you the clearest of skies, of course!

Most hotels are sold out within the path of totality, but campgrounds and private property are “renting”

space to eclipse chasers. I will be leading a sold-out workshop with NPAN at a private ranch in the **Centennial Valley in Montana**, but we will dip down into Idaho to get into the path of totality. We will also be participating with Atlas Obscura and B&H Photo on a **Total Eclipse festival in eastern Oregon** that just sold out. (There is a wait list that they might open up—[click here](#) for more info.)

To find more events in areas that you will be close to, check out these listings:

- **American Astronomical Society**
- **NASA**
- **National Park Foundation**

DON'T FORGET TO ENJOY AND EXPERIENCE IT!

Sure, most of the United States will be watching the eclipse on TV, and that is ... two-dimensional. But to actually experience the eclipse is something very special. Animals and humans both react to this astronomical phenomenon in extraordinary ways, and nothing can really prepare you for when the darkness takes over the land and sky. There is a reason people become eclipse

chasers and travel the world to keep searching out this experience. Each eclipse and location is unique and different. We look forward to sharing photos of ours with you and vice versa.

A couple of other fun things to prep you for the eclipse:

- Read Tyler Nordgren's book *Sun Moon Earth—A History of Solar Eclipses from Omens of Doom to Einstein and Exoplanets*. We are also a big fan of Tyler's other book, *Stars Above, Earth Below—A Guide to Astronomy in National Parks*. He makes the science of astronomy very engaging, easy to understand and to get excited about.

- Send an eclipse to someone you love! The United States Postal Service has released a unique **Total Eclipse of the Sun forever stamp**. The stamps show the total eclipse, but when you touch them with your finger the eclipse reveals the moon. They used thermochromic ink that reacts to the heat of your finger! So stock up on these stamps and send a letter or post card from wherever you are experiencing the eclipse! 🌑



Parks going dark

by CHRIS NICHOLSON

38 amazing national lands for photographing the eclipse

The eclipse is not really a night thing, but definitely is a dark thing. Or maybe we can say it's two nights in one day. Either way, 2017 is a year with a celestial rarity: a full solar eclipse that will streak across the skies of the United States on August 21.

Is there any place better to view and photograph it than in a unit of the National Park Service? We think, probably not.

If you're of a similar mindset, you'll be happy to know that the eclipse's cross-country journey will in-

clude three national parks and several similar precious lands, including national monuments, national forests and national historic sites.

If you're inspired to photograph in these important places, here's your guide to finding them.

CONGAREE NATIONAL PARK

South Carolina—One of the least-visited national parks in the U.S. will also be one of the three that will have the totality pass directly overhead. The park’s “**Shadows and Science**” event will include ranger- and volunteer-guided hikes.

Viewing the eclipse in this swamplike floodplain forest will be somewhat surreal, to say the least. Congaree is a small park, but one of the most primal and most beautiful due to its untamed wildness.

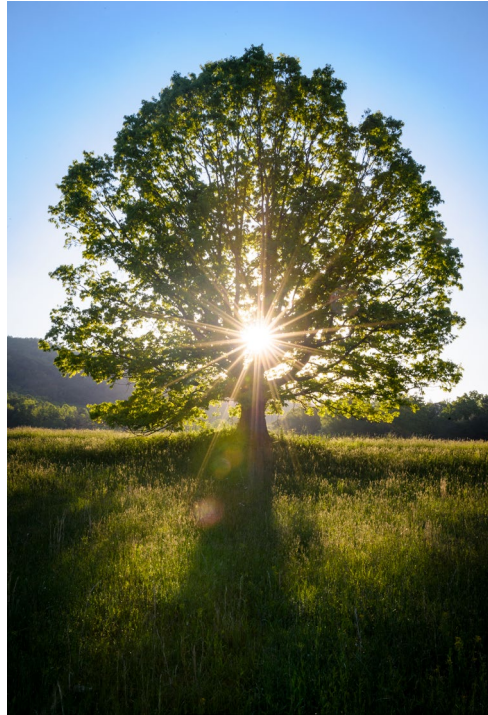
However, it should be noted that because Congaree is a forest park, unfettered sky views are scarce when compared to many other NPS units. If you want to see the sky here but avoid crowds, I suggest investing in the 10-mile trail hike to the Congaree River. Start early. And bring a macro lens to photograph the hundreds (thousands?) of spiders you’ll pass en route. Also, carry a telephoto for the snakes; there’s a bunch of those too. (I mentioned the word “primal,” right?)

GRAND TETON NATIONAL PARK

Wyoming—The entire Jackson Hole area is more than ready for the dark sun to pass overhead—in fact, it could be the hottest hotbed in the country for viewing the eclipse.

Grand Teton (pictured on previous page) is not a huge park like its northern neighbor Yellowstone, and there will be a lot of people visiting. So I recommend getting off the beaten path—ideally, up onto the mountain trails, or at least along the little-traveled, four-wheel-drive-only Grassy Lake Road.

Despite the certain crowds, there are few national parks more worthy to serve as a foreground for such



Great Smoky Mountains National Park

an amazing occurrence. The park is rife with both rustic and dramatic photography subjects, including old barns, wooden buck-and-rail fences, stands of aspen, and of course the sudden 7,000-foot rise of picturesque mountains from the western edge of the 15-mile-wide valley.

For more advice about viewing the eclipse passing

over one of the most dramatic alpine/valley landscapes in the U.S., see Grand Teton’s “**2017 Total Solar Eclipse**” webpage.

GREAT SMOKY MOUNTAINS NATIONAL PARK

North Carolina and Tennessee—The bad news is that Great Smoky Mountains is the most visited national park in the U.S. and midsummer is its busiest time of year, so chances are good that it will be a tad crowded when the sun goes out. The good news is that Great Smoky Mountains is the most popular park in the U.S. for good reasons, the totality of the eclipse will pass over the entire western half, and three awesome locations will be hosting official viewing events: Clingmans Dome, Oconaluftee and Cades Cove (one of my favorite photography spots in the whole park system, where I made the image at left).

The park is best known for its limitless views of mountain ranges cascading into the horizon. But other amazing photo locations include valleys, rivers and historic structures such as those found in Cades Cove.

See the Great Smoky Mountains’ “**2017 Solar Eclipse page**” for more information.

OTHER NATIONAL LANDS

As I mentioned before, the eclipse will also pass over other NPS units, all of which offer various opportunities for photography. National monuments are often just as beautiful as national parks—in fact, many of the latter started as the former, such as Death Valley, Acadia and Olympic. National historic sites can have a completely different kind of aesthetic, because they’re about preserving spaces and structures of historical

and cultural importance, as can national recreation areas, which are about having all sorts of fun.

In addition to the three national parks mentioned, the following national lands will also experience totality and/or host eclipse events:

AGATE FOSSIL BEDS NATIONAL MONUMENT

Nebraska—Photograph among the hills, wetlands and bluffs of this geologically rich patch of land that's been the site of active fossil discoveries for well over a century. Then stay for a night shoot; Agate Fossil Beds is 50 miles from the closest sizable town, which translates to very little light pollution.

BLUE RIDGE PARKWAY

North Carolina—Perhaps the country's most famous scenic byway, the Blue Ridge Parkway passes over mountains, through farmland, by historic sites, through stone tunnels and bridges, and more. It does all that for 469 miles in Virginia and North Carolina, but only southwest parts of the latter will see the total eclipse. Lots of places to watch; no traffic lights.

CHARLES PINCKNEY NATIONAL HISTORIC SITE

South Carolina—Shoot on this 28-acre remnant of the Snee Farm, a coastal plantation of a signer of the Declaration of Independence. Highlights include an 1828 farmhouse and a boardwalk interpretive trail that leads over a tidal marsh.

CRATERS OF THE MOON NATIONAL MONUMENT

Idaho—A vast lava-bed landscape provides creative photographers with surreal foreground material. The



Blue Ridge Parkway

national monument will be hosting a four-day event that will include star parties and lectures. The park itself will see only a partial eclipse, but staff will host a totality viewing in a nearby town. See their “[2017 Eclipse Across America](#)” webpage.

FORT DONELSON NATIONAL BATTLEFIELD

Tennessee—Another Civil War memorial, Fort Do-

nelson features artillery batteries, the Confederate Monument, views of the winding Cumberland River and more. For information on specific event plans, see their “[2017 Eclipse](#)” webpage.

FORT LARAMIE NATIONAL HISTORIC SITE

Wyoming—What started as a fur trade post eventually became the largest military post on the Northern

Plains throughout the 1800s. Explore the fort, the preserved structures and the flanking Laramie River. See the site's "2017 Great American Eclipse" webpage.

FORT SUMTER NATIONAL MONUMENT

South Carolina—The site of the first shots of the U.S. Civil War will be one of the last spots on American soil to see the eclipse. It's an island; a small one; you need to ride a boat to get there. Logistics and odds will be a challenge. As an alternative, view the event from anywhere in the beautiful historic city; see "2017 Eclipse Across Charleston" for more details.

HARRY S TRUMAN NATIONAL HISTORIC SITE

Missouri—Visit one of several spots, including Truman's house or his childhood farm home in Grandview. The former will have an attendance cap of only 35 people! See [their website](#) for more event info.

HOMESTEAD NATIONAL MONUMENT OF AMERICA

Nebraska—This preserved location commemorates the Homestead Act of 1862, which accelerated the westward expansion of the United States. Hiking trails explore bur oak woodland, 100 acres of tallgrass prairie, historic farmland and the rustic Palmer-Epard Cabin. The national monument will celebrate the eclipse with a **three-day festival**.

JOHN DAY FOSSIL BEDS NATIONAL MONUMENT

Oregon—Three units of the national monument offer geologic formations and scenic options such as the Clarno Palisades, Sheep Rock peak and the Painted Hills. See their [eclipse webpage](#) for site-specific info.

LAND BETWEEN THE LAKES NATIONAL RECREATION AREA

Kentucky and Tennessee—Land Between the Lakes is not an NPS unit, but is actually administered by the U.S. Forest Service—however, its nature fits well with the other sites in this list. This national recreation area rests on a peninsula between Kentucky Lake and Barkley Lake in Western Kentucky and Tennessee, and manages over 170,000 acres of forests, wetlands and open lands. The recreation area has a special news page about **what to expect on August 21**.

MANHATTAN PROJECT NATIONAL HISTORICAL PARK

Tennessee—One of the newest units on this list, Manhattan Project National Historical Park was a bit controversial when established in 2015, due to its sites' involvement with the creation of the atomic bomb. Perhaps there's a metaphor to be photographed at its Oak Ridge Unit in the eastern hills of Tennessee on



Fort Sumter National Monument

eclipse day? For specific events and plans, organized in conjunction with the American Museum of Science & Energy, see the park's "Solar Eclipse" webpage.

NINETY SIX NATIONAL HISTORIC SITE

South Carolina—An area of early settlement by European colonists, then later a strategic location in the Revolutionary War, this historic site features hiking trails, Star Fort Pond, and historic structures such as the Logan Log House and Black Swan Tavern. For day-specific details, see their webpage "Full Solar Eclipse: In the 'Path of Totality.'"

OBED WILD & SCENIC RIVER

Tennessee—Photograph along the tree-lined banks of the boulder-strewn river, or from the bottom or rim of the gorge, or frame the eclipse with the bluffs and rock formations along the trails. Obed also offers an annual photography contest, so if you get a great eclipse image, perhaps you can win! To learn more about locations good for viewing and photographing on August 21, see the unit's "Solar Eclipse" webpage.

SCOTTS BLUFF NATIONAL MONUMENT

Nebraska—Standing sentinel 800 feet above the North Platte River, Scotts Bluff has long been a navigational and scenic landmark for local peoples, from Native Americans to pioneers headed west to California and Oregon. The scenic Summit Road and miles of trails afford easy access to myriad photography subjects, including short- and mixed-grass prairie, wildflowers, native trees and shrubs, and geologic and historic features.

STONES RIVER NATIONAL BATTLEFIELD

Tennessee—One of the bloodiest battles of the Civil War was fought at Stones River. I always feel uncomfortable using places like this as a photography background, so when I do shoot, I try to do so in a way that reflects the sanctity and history of the space. Here, roads and seven miles of hiking trails lead to cultural landscapes, monuments, the weathered headstones of the national cemetery, and more. For details on site events planned for August 19 to 21, see “[2017 Solar Eclipse at Stones River](#)” at their website.

ULYSSES S. GRANT NATIONAL HISTORIC SITE

Missouri—Home of the general and 18th U.S. president, the property preserves the 19th century house, historic outbuildings and picturesque white wooden fences on just under 10 acres of land.

PARTIAL PLACES

If you can't get to a spot for the total eclipse, you can still try for photographing a partial eclipse in a national land. The following notable places will be outside the band of totality, but will still experience enough of an eclipse to be visually interesting:

- Aztec Ruins National Monument (New Mexico)
- Glen Canyon National Recreation Area (Utah)
- Tallgrass Prairie National Preserve (Kansas)
- Timucuan Ecological & Historic Preserve (Florida)

NATIONAL FORESTS

Several national forests will also be darkened by the eclipse. These spaces are maintained by the Depart-

ment of Agriculture and Bureau of Land Management for different purposes than NPS units, but offer many pretty spots to settle in for a day of solar watching and photography.

National forests can also be great places to go for a better chance at solitude, as they tend not to be strong tourist attractions like the national parks and monuments are.

National forests in the eclipse's path include:

- Salmon Challis and Sawtooth (Idaho)
- Mark Twain and Shawnee (Missouri)
- Nantahala (North Carolina)
- Willamette, Ochoco, Umatilla and Malheur (Oregon)
- Francis Marion (South Carolina)
- Chattahoochee (Tennessee)
- Bridger-Teton, Shoshone and Medicine Bow (Wyoming)

NOT A NATIONAL PARK, BUT ...

One final place that's a fantastic location to photograph an eclipse, even though it's not a national land, is **Carhenge** in Nebraska. Seriously. It might even be cooler than photographing an eclipse at Stonehenge.

LOGISTICS & PLANS

National parks tend to be big, as do many national monuments and national forests. Those other types of units, however, generally have space restrictions. Therefore it would be prudent to make sure you can get in before heading off the morning of August 21.

Check the links provided above, or Google the location websites, to see which require reservations,

tickets or pre-day head counts. Some of these sites will just close the gates when full, and you don't want to be stuck in traffic on Business Route Whatever when the moon does its magic.

For more information about all of the National Park Service sites that are disilluminated by or celebrating the eclipse, visit the department's official “[2017 Eclipse](#)” page. 🌑



Carhenge

The Right Stuff

by LANCE KEIMIG,
MATT HILL & CHRIS NICHOLSON

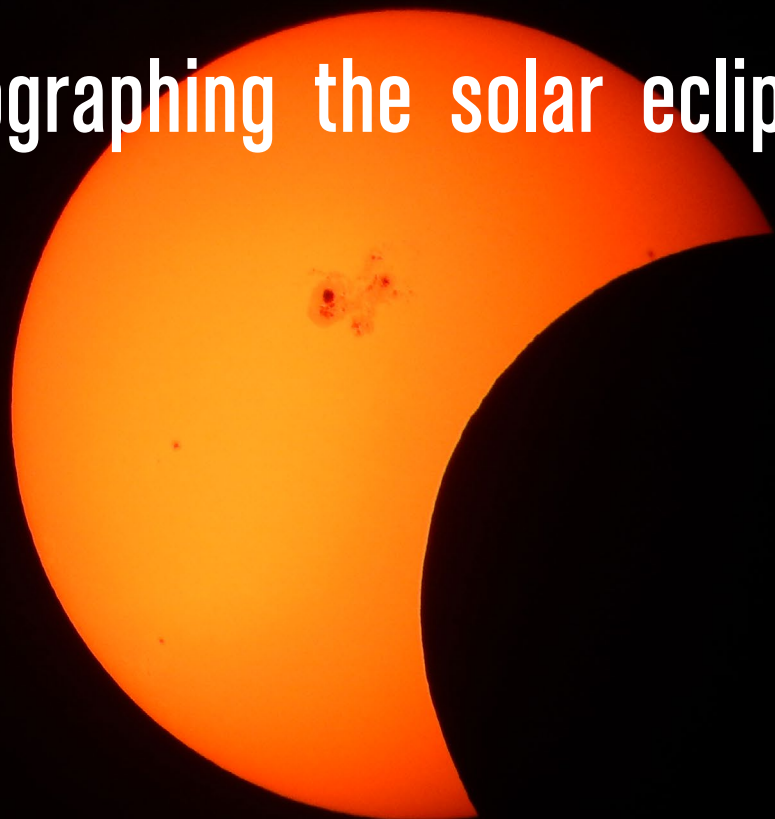
Gearing up for photographing the solar eclipse

Photographing—or even just viewing—a solar eclipse involves special gear. We'll admit some of this is for fun or for enhancing the experience, but some is also for preventing your eyes from being fried—or, perhaps even worse, your camera sensor.

The following pages certainly don't represent all the specialty equipment and eclipse-related products on the market, but they do offer a showcase of some items that have caught our eye.

From filters to posters, from books to T-shirts, from apps to stamps, here are our suggestions for items that will help you get ready for August 21.

(If you decide to purchase any of the gear in this guide, please consider using the bolded links, as many of them help earn a small commission that supports the National Parks at Night workshop program.)



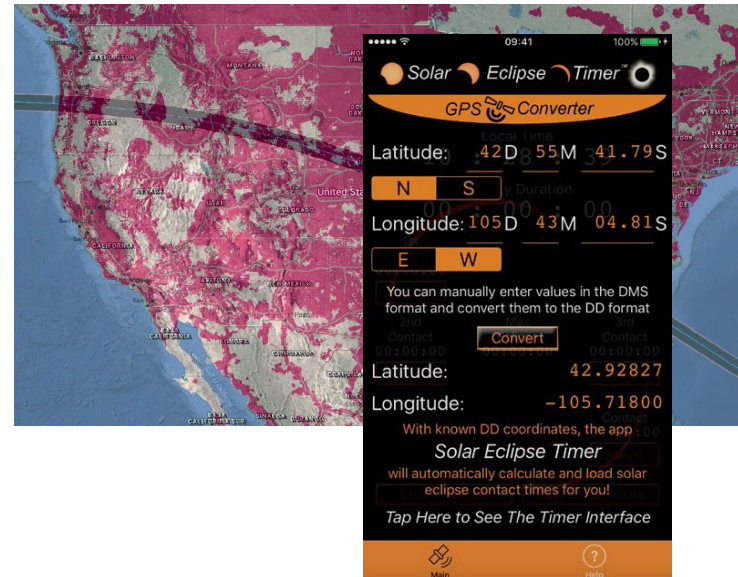


BAY PHOTO

What are you going to do with those great eclipse photos on August 22? Print them! Some of the most top-notch printing in the business today is being done by California-based **Bay Photo**. Their products are industry-leading, and include prints on metal, canvas, wood, tile and of course extremely high-quality papers. Other photo products include wood boxes, stickers, business cards, books, calendars, wraps, bamboo mounts ... you get the idea. If you've never worked with Bay Photo, they're eager for you to start; new customers receive 25 percent off their first order.

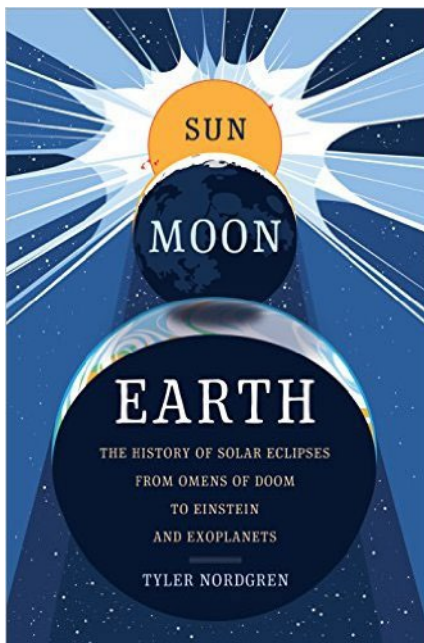
SOLAR ECLIPSE TIMER

No matter where in the path of totality you are, without expert advice on hand it can be hard to know exactly when that big old moon will block that big old sun. Enter **Solar Eclipse Timer**—expert advice in your hand, in the form of an app. Available for iOS and Android, Solar Eclipse Timer will tell you how to get into the path of totality, then when to look up (with protection, of course!). You don't need to tell the app where you are, because it finds you using the device's GPS.



TYLER NORDGREN

If you're looking for a perfect book about the solar eclipse, stop, because you just found it. Tyler Nordgren is a California-based astronomer and night photographer, and also author of *Stars Above, Earth Below: A Guide to Astronomy in the National Parks*. In his new book, *Sun Moon Earth: The History of Solar Eclipses from Omens of Doom to Einstein and Exoplanets*, Nordgren details ... well, the title kind of said it all already.



MANFROTTO

Photographers need support that is strong and stable, as well as easy to use in the dark. We also like a lack of weight, particularly because we're often carrying two tripods into the field for multiple setups. The **Manfrotto 190go!** exceeds all these needs as the perfect tripod for either a primary or secondary support system (or both!). It closes down to less than 18 inches and is available in aluminum and superlight carbon fiber versions.



U.S. POSTAL SERVICE

Eclipse stamps? How cool is that? Stamps that reveal the full moon when warmed by your touch? No way! The **Total Eclipse of the Sun stamp** is the first U.S. stamp to use thermochromic ink, which reacts to the heat of your touch. Placing your finger over the disc on the stamp causes the ink to change from black to clear to reveal an underlying image of the moon. The image reverts back to the black disc once it cools. Even if you can't make it to see the eclipse in person, the post office will help you to commemorate and memorialize it with these forever stamps!

COAST PORTLAND

Our favorite flashlights for light painting quickly during two minutes of eerie darkness. The **HP7R** outputs up to 300 lumens in a perfectly even beam, allowing for smooth painting of objects near or far, and features three power modes and a slide focus for honing or broadening the illumination. We're also big fans of the 185-lumen **HP5R**.

NPAN Benefit: 30 percent off at www.coastportland.com
(code: PARKSATNIGHT)



LIGHT PAINTING BRUSHES

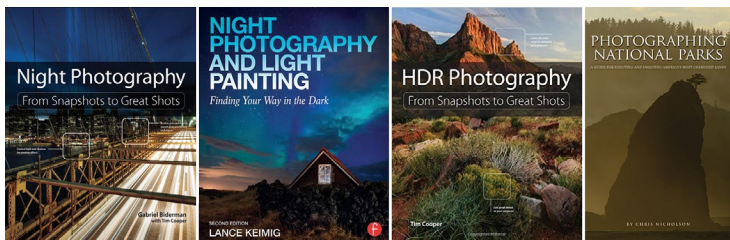
During the totality, the sky is dark. So is the landscape. Sounds like a great opportunity to be creative with artificial illumination! Light Painting Brushes offers a comprehensive set of unique light-writing tools that are sure to stir the creative juices of any low-light photographer. Their **Deluxe Starter Kit** includes universal flashlight connectors, along with tools for creating light orbs, light sculptures, light graffiti and anything else you can imagine.

NPAN Benefit: 20 percent off at www.lightpaintingbrushes.com (code: LKW_20)



MEADE INSTRUMENTS

Are you planning an eclipse viewing party with nine (or more) of your closest friends? If so, this 10-pack of **EclipseView Standard Solar Glasses** is just the thing. These basic viewing aids feature ISO-certified solar filters that block 99.999 percent of intense visible light while providing protection from 100 percent of harmful infrared (IR) and ultraviolet (UV) radiation, allowing them to be used to safely observe the sun. At two bucks a pair, and guaranteed to keep you from going blind when you look directly at the sun, what's not to love?



NATIONAL PARKS AT NIGHT BOOKS

National Parks at Night instructors have written definitive guides to popular photography subjects that can help you find a great space for capturing the eclipse, and then help you shoot once you get there. The complete set can keep the photographer well-informed and educated about topics ranging from national park locations to how to shoot in the dark, from how to combine exposures for accurately reproducing ambient light to how to add light to a dimly lit scene.

Photographing National Parks, by Chris Nicholson

HDR Photography: From Snapshots to Great Shots, by Tim Cooper

Night Photography And Light Painting: Finding Your Way in the Dark, by Lance Keimig

Night Photography: From Snapshots to Great Shots, by Gabriel Biderman

The Magic of Light Painting (e-book), by Tim Cooper

LEE FILTERS

Lee filters have a reputation for quality, and this 100mm square glass filter fits in standard holders. Neutral density filters allow you to photograph the sun without maxing out your exposure variables. The 100x100mm **Solar Eclipse Filter** is designed solely for solar and solar eclipse photography. It is not suitable for general long-exposure landscape photography, nor for direct solar viewing with the naked eye.



NIKON

Put simply, you can't get a better camera for low-light photography, particularly at this price point. At under \$2,000, the **Nikon D750** has everything a night photographer could want in a body right now: It has low noise at high ISOs, ISO invariance, ability to pull tremendous detail out of underexposed images, and a T (time) setting on the shutter speed dial, as well as being lightweight and compact. But really, it's all about the image quality, and the D750 outshines all the other options under the sun and stars. To level up even more, add one of the best lenses for low-light photography: the **Nikkor 14-24mm f/2.8**.



DAYSTAR FILTERS

The inexpensive Daystar Filters **90mm White-Light Universal Lens Solar Filter** allows you to safely view or photograph solar eclipses. It stops more than 99.999 percent of intense light, plus 100 percent of harmful IR and UV radiation. The filter reveals sunspots and super granules on the solar surface. The spring-folded design holds securely on the front of lenses and other optics. It will fit over sunshades and dew shields with an outside diameter from 85mm to 99mm (3.34 to 3.89 inches).



GITZO

You definitely want a ball head when photographing the eclipse, to make it easier to adjust to the sun moving across your frame. The **GH3382QD** Arcatype-compatible head is low-profile, low-weight and can hold a 40-pound camera/lens combo with no creep or fuss. Moreover, loosen the screw-knob lock and due to the tungsten disulfide coating, the ball moves 360 degrees as smooth as silk.

SPACE ART TRAVEL BUREAU

Want to commemorate the eclipse with a T-shirt crafted by an astronomer, night photographer and partner of the national parks? See this line by the **Space Art Travel Bureau**, with designs by Tyler Nordgren.



PEAK DESIGN

The spacious, robust yet exquisite **Everyday Backpack**, available in two sizes, holds just about anything you need when venturing into a moon-darkened landscape. It's adaptable, partly due to moveable dividers, and partly due to the integration of Peak Design's Capture Clip points that allow you to quickly attach or detach cameras or accessories.

NPAN Benefit: 10 percent off at www.peakdesign.com (code: SEIZENIGHT10)



MRSTARGUY

If you have a refractor telescope you use at night, grab MrStarGuy's **66-94mm Adjustable Objective White Light Solar Filter** to safely view the sun. It's also ideal for camera lenses without front filter threads or when conventional screw-on filters are unavailable. It's certified for safe direct solar viewing, which means the filter blocks greater than 99.99 percent of the intense visible white light from the sun plus 100 percent of harmful ultraviolet (UV) and infrared (IR) radiation.

CELESTRON

It you want to observe the eclipse up close with your eyes while your camera is doing its thing, grab the Celestron **9x63 SkyMaster DX Binocular White Light Solar Eclipse Viewing Kit**. Comes complete with long-distance binos, a tripod with a fluid pan head for smooth tracking, and a two-pack solar viewing filter kit that will protect your eyeballs while observing the eclipse of a lifetime.



CREATIVELIVE

CreativeLive offers some of the very best photography education on the internet, and our favorite (though we admit bias) is the **Night Photography Week** bundle we created with them last year. From the entire National Parks at Night crew, learn about gear, scouting, astro-landscapes, light painting, night portraiture and more. The course comprises nearly 18 hours of instruction in 82 class segments, plus bonus materials that include information on camera and light-painting gear, lists of apps to help with location scouting and night photography, and articles about topics such as camera settings and the 400 Rule.

MARUMI

The Marumi 16.5-stop 77mm DHG ND-100000 Solid Neutral Density 5.0 Solar Eclipse Filter is a premium option for photographing the eclipse without a color cast. Even density and color across the entire field is what makes this filter worth the high cost. An advantage of this model over other specialized eclipse filters is that this one is also suited for general purpose long-exposure photography, making the investment useful long after the eclipse has passed.



BENQ

When you get home, you'll want your images to look as amazing as the experience of actually being at the eclipse. Enter the BenQ **SW320 31.5" 16:9 4K Color Accurate IPS Monitor**. With its 3840 x 2160 resolution, 1,000:1 contrast ratio and 1.07 billion colors, you'll see unparalleled crystal-clarity during photo editing. The 10-bit display supports 99 percent of the Adobe RGB color space with uniform brightness from corner to corner. 🌲

BRAND PARTNERS

We're very fortunate to have the support of some brands that believe in photography and creativity as much as we do. Every brand that partners with us is one whose gear or services we use regularly, if not exclusively. Their vision creating products that enable creativity is something we appreciate as active artists and commercial photographers.

You can see the specific equipment we use on our **Gear** web-page. For some inspiration that reveals how we use some gear, visit the **NPAN** blog.

Each partner brings value for the workshop attendees, too! You will have access to benefits from our partners at the workshops. Not signed up yet? **Check out our workshops.**



LightPaintingBrushes.com

■ WANT TO LEARN MORE ABOUT SEIZING THE NIGHT?

Join the National Parks at Night team as we take you to magical and majestic destinations for extraordinary night photography adventure workshops. Our five enthusiastic veteran instructors hand-craft each workshop to provide a unique, world-class educational experience where you receive friendly, individual attention and create awe-inspiring images in settings of unparalleled natural beauty.

National Parks at Night is teaching in each park only once, so book now for a creative journey unlike any other. 2017 Passport Series locations include Great Sand Dunes and Olympic national parks, along with Adventure Series workshops in the Eastern Sierra, Centennial Valley and Westfjords (Iceland). 2018 workshops will be publicly announced August 19, 2017.



www.NationalParksAtNight.com

Visit the website for:

- Details on upcoming workshops
- Background on the NPAN instructors
- Recommendations on great gear
- Weekly blog posts with night photography tips, national parks news and more

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