

Dark Skies Exploration:

A Beginner's Guide

LIFE
UTAH
ELEVATED





Dinosaur National Monument Jeremiah Watt

Whether you're looking for easy entry into the world of dark skies (aka astrotourism), want to discover a new or different spot, or you want to go off the beaten path, Utah offers the most options for your stargazing adventure.

With so much of the world in perpetual twilight, many of us never see a naturally dark night sky and thus we yearn to stargaze, losing ourselves in a Milky Way trance.

Utah, part of **The Great Western Starry Way** of the Intermountain West, is lucky to boast the highest and finest concentration of **International Dark-Sky** parks and communities in the world.

What makes Utah so special? It is our numerous remote geographies, high elevation and arid climate, plus the steadfast efforts of those dedicated to protecting the sky from light pollution. These are the perfect ingredients for exceptional dark sky viewing.

Let your dark sky journey begin!

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[Find stories, videos and itineraries for exploring Utah's dark skies at visitutah.com/stars](https://visitutah.com/stars)

Explore *with a Purpose*

“Access to a dark night sky — to see and be inspired by the universe as it really is — should be a human right, not a luxury for the chosen few.”

Chanda Prescod-Weinstein

Theoretical physicist, from [“The Disordered Cosmos: A Journey into Dark Matter, Spacetime, and Dreams Deferred.”](#)

When looking up at the dark sky, our first instinct may be to peer inward and think about our place in the vast universe. Many say this experience is transformative. But if you also turn your gaze — and your actions — outward, it can benefit the community, neighbors, wildlife and the environment. With good planning, thoughtful choices and enough time to really explore, your engagement with Utah’s extraordinary night sky will be rich with lifelong memories.

So, how do you embark on this journey to explore Utah at night? It starts by understanding our relationship to light. In general, we humans don’t think much about the power of light. It’s an invisible force and basically intangible. Light affects everything, from how we go about our daily lives to how we interact with the world around us.

Now flip the switch and think about the incredible power of light and its effect on darkness. Eighty percent of Americans cannot see the Milky Way due to light pollution. Light impacts our health and that of wildlife — from a neighbor’s outside light shining through your window and inhibiting sleep to artificial light disturbing wildlife that depends on darkness to survive. Nearly seventy percent of mammal species are nocturnal.

But the beauty of astrotourism is that the experience allows for a deeper appreciation for the darkness and its positive effects on the environment, humans and our sense of place. Dark skies are also tied to our sense of rural character, said Bettymaya Foott, a Moab, Utah, native and director of engagement with the [International Dark-Sky Association](#). “Astrotourism provides an incredible opportunity for rural economic revitalization, with the added benefits of supporting local efforts and programs to lessen light pollution for the benefit of wildlife and the community,” she said.

Planning ahead for your trip is key — and easy — with so much of Utah’s unique landscape offering opportunities to stargaze. Take advantage of the numerous resources available to learn about your dark sky destination and lean on local experts for advice, guiding services and events.

Utahn Durand “Duke” Johnson has been staring at the night sky his entire life. He grew up on a farm in North Dakota experiencing with unaided eyes the dark sky and its billions of stars. He landed here as an adult, capturing through the lens of a camera the mystical solar system, framed by the geometric shapes of the state’s myriad landscapes.

“Every child, every human, should have access to dark skies,” said Johnson, a longtime astrophotographer and an associate director at the [Clark Planetarium](#) in Salt Lake City, which offers dome theater shows to learn about the solar system.

Johnson said the Clark Planetarium is a great resource to help you get started in planning your dark sky trip. Whether you have a little or a lot of time to explore, experts can help you personalize your trip based on what part of the celestial sky interests you most.

And Johnson’s insider tip? Allow yourself adequate time to immerse yourself in a dark sky place. Pick one spot in a state park and try out different locations and times of night within that area. Let it become familiar to you, so you can have a deeper connection to the place — and the universe.

“To experience the vastness of space and time helps put the Earth and our place on it in perspective,” he said. “It allows us to focus on the things that are important to us in our community, the environment and wildlife.”

Come Prepared, Leave Transformed

13 tips to help you plan ahead for an unforgettable dark sky trip in Utah

[Lunar calendar](#)

[Light Pollution Map](#)

[Dark sky meter app](#)

[Globe at night webapp](#)

[Meet Stargazers \(best locations for stargazing\)](#)

[Clear Sky Chart \(forecast information relevant to astronomical observing\)](#)

[Stellarium \(calculate the sun's position for sunset\)](#)

[American Meteor Society \(plan for media shower viewing\)](#)

[International Dark-Sky Association \(protecting dark skies & interactive map\)](#)

[The Consortium for Dark Sky Studies \(dedicated to the quality of night skies\)](#)

[Find stories, videos and itineraries for exploring Utah's dark skies at visitutah.com/stars](#)

Plan when and how to visit

To have the best viewing experience, time your trip around the moon phases. You don't want a full moon washing out the Milky Way. Visit in the week before or after a new moon. And while you can certainly venture out on your own in a designated or undesignated dark sky area, take advantage of local star parties, presentations and events offered at Utah state and national parks. (See more in the next section, "How to Stargaze in Utah")

Consider your comfort level in the dark

A crescent moon night can also enhance your view in that it allows you to experience the vast Utah landscape with some light at night but it's not so bright as to block out other celestial features. And for young kids who might be afraid, try a full moon walk or hike first to get them used to being outside in the dark that's not too dark.

Tell someone where you're going to be

Whether hiking or stargazing in Utah's backcountry, it's always a good idea to let someone know your whereabouts and when to expect you back.

Pack warm clothes

Even if you're planning to view the night sky during summer

months, keep in mind that Utah may have warm days, but the nights can get quite cool — even cold in higher elevations. Layer up and bring gloves and a hat.

Always bring water

Whether you're hiking to your viewing destination or hanging out in a parking lot, you may get thirsty and dehydrated. Bring plenty of water for yourself and your group — preferably in reusable bottles.

Snacks and warm beverages

Bring healthy snacks and food such as trailmix, snack bars, sandwiches, finger foods, hot chocolate and coffee or tea. Watching the night sky change can take a couple hours or more (including time for your eyes to adequately adjust to the dark), so be prepared with munchies. Pack out any trash you bring in.

Headlamp or flashlight with a red light

Red lights are best for night vision, versus bright white lights, which will stop your eyes from adjusting to the night and decrease your ability to see the stars clearly.

Camping chair or blanket

Be prepared to lounge back in a comfortable folding/camping chair or a blanket. The more settled in you are the better the viewing experience.

Binoculars

While you can get an amazing night view just with your naked eyes, any type of binoculars are a great tool to also aid in looking at different star clusters and planets.

Telescope

You don't need a telescope, but if you have one that's easy to transport, bring it along. You won't be disappointed.

Camera and tripod

If you want to test out your advanced photography skills, pack up your camera and tripod and experiment with different shutter speeds and settings. Read [these tips](#) on how to take photos of stars.

Extra batteries and external charger

As back-up, don't forget batteries for your headlamp or flashlight and an external charger for your phone.

Apps and websites for stargazing

There are many cell phone apps that identify constellations and stars, which come in night mode and won't ruin your eyes' adjustment to the darkness. Or, if you prefer a hand-held version, you can pick up a star chart at nearly any state park or national park visitor center.

How to Stargaze in Utah

The great advantage to astrotourism is that it doesn't depend on seasonality. You can see night or dark skies throughout the year.

From our northern hemisphere viewpoint, the Milky Way core (or bulge) is generally south on the horizon. However, the orientation of the galaxy differs throughout the year.

Of course, you'll want to take note of the weather and avoid

nights where cloud cover is prevalent or potential storms are on the horizon.

Make sure to build in a couple extra days for backup in case your designated stargazing day gets blotted out by clouds.

SUMMER

We see more of the Milky Way, its center, and the highest concentration of stars combining for the most luminous of views during the summer. Looking low on the southern horizon is the constellation of Sagittarius, and its brightest stars make a teapot shape, noted Foott, with the Milky Way rising as steam from the spout.

WINTER

In the winter months, we are looking toward the outside edge of the galaxy, with fewer stars that are less intense and more subtle. Winter is a wonderful time of year to experience stargazing in part because it's kinder to the non-night owls. There are more hours of darkness as the sun goes down earlier in the day and Utah's typical dry winter air also allows for clearer viewing.

VIEWING THE GALACTIC CORE

The central part of the Milky Way — the galactic core — shines nightly from March to November.

- **March–May:** The galactic core will first become visible a few hours before sunrise.
- **June–August:** View the Milky Way as soon as the sun sets for most of the night.
- **September–November:** The Milky Way will be best seen in the early evening.
- **November–February:** The galaxy core will not be visible in the northern hemisphere.

TIME OF MONTH

Plan your stargazing during a new moon or within a few days before or few days after. A new moon occurs when it is located between Earth and the sun. The moon is thus not visible from Earth, resulting in dark skies that are ideal to see the Milky Way and the faintest of celestial objects and phenomenon (details in dust lanes of the galaxy, fainter light against a dark background, etc.) Any light from the moon will wash out the night sky.

TIME OF NIGHT

Foott said the Milky Way is most clearly seen during true night, after the sun is 18 degrees below the horizon — typically an hour to an hour-and-a-half after sunset. During the northern hemisphere's summer months, that's after 10 p.m. And the longer you stay up, the more intense the sky becomes with stars beaming as the night gets darker.

FEAR OF DARKNESS

There are numerous ways to experience stargazing, even if someone is unnerved or fearful of the dark. "Going to view a dark sky is not saying there will be no light. It's about using the right types and amount of light pointed toward the ground," Foott said. "We want people to be comfortable and don't want them to be scared and in the dark."

When viewing a dark sky, utilize flashlights or headlamps that have a red light for night vision, versus bright white lights, which will impede your eyes from adjusting to the night and greatly decrease your ability to see the stars and the Milky Way clearly.

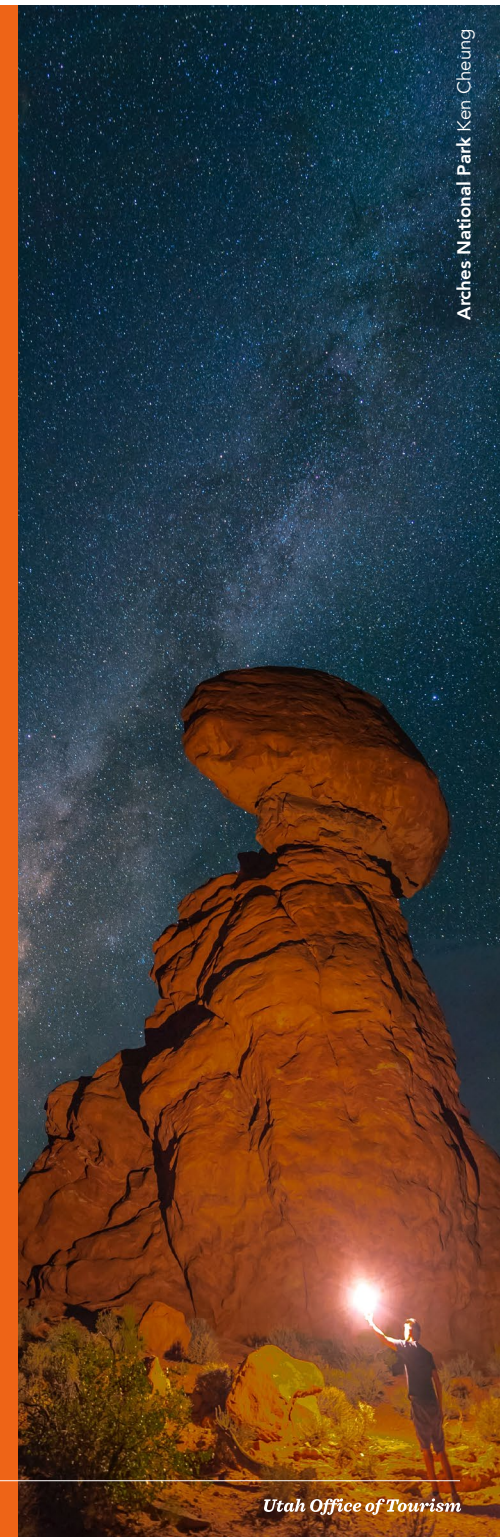
You can also ease into the natural nighttime environment through a full-moon hike, offered by numerous state and national parks or local astronomy clubs.

STARGAZING WITH KIDS

Kids can make the best astrotourists — maybe because their imaginations seem unlimited. The night sky is a way to keep their curiosity front of mind by encouraging them to find the constellations, a planet, or even make up their own stories about what they see. Kids start digging into the solar system around 3rd grade or even sooner.

You may be surprised at what they see and can point out to parents. They might get sleepy sooner than adults, so just make them comfortable, bring snacks and if they doze off, no problem.

Looking for something extra? The National Park Service offers a **Junior Ranger Night Explorer program**, encouraging young park visitors to explore the starry side of national parks.



Arches National Park Ken Cheung

Where to Stargaze

A quick drive from Salt Lake City to Antelope Island to a multi-day excursion deep in Monument Valley, numerous options await stargazers seeking to view the Milky Way of Utah's pristine and beautiful dark skies.

Utah is at the heart of a dense cluster of certified parks called The Great Western Starry Way from New Mexico to Montana. The Beehive State boasts some of the finest dark skies in the world where viewing the billions of stars in the Milky Way has become an increasingly popular pastime for all ages. In Utah alone, the **International Dark-Sky Association (IDA)**, with a mission to protect naturally dark places for present and future generations, has certified 23 (and counting) locations, including communities, parks, and protected areas.

"More than anything, it's important to experience dark skies without light pollution. With that in mind, you can go and enjoy the night sky wherever you want," said Bettymaya Foott, director of engagement with the IDA.

If you want to go a bit deeper to learn mythology or point to constellations and view the deep sky through a powerful telescope, it may be necessary to attend

a star party or guided program. Visit the websites for Utah's state and national parks to easily find upcoming free stargazing events, which typically include a ranger or interpretative-led talk. Numerous astrological societies and astronomy clubs across the state also host star parties as enthusiasts bring along their telescopes and amazing knowledge.

"As humans, we've been looking up in awe at the night sky as long as humans have been here. It's innate within us to lay out under the stars and enjoy ourselves and have a wonderful time — it can be life-changing," Foott said.

COVID-19 has impacted festivals, events and access to some resources or facilities. Check availability online in advance and note that hours may be limited or reservations required for some experiences. Start planning at visitutah.com/covid-19

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IDA ACCREDITED PLACES

Southeastern Utah

Goblin Valley State Park Austen Diamond

Arches National Park

After the sun sets and the sandstone has cooled you can see countless stars set against a pitch black night sky with majestic rock formations in frame. See the night sky like you may never have before.

[Learn More »](#)

Canyonlands National Park

Wave after wave of deep canyons, towering mesas, pinnacles, cliffs and spires stretch across 527 square miles. Outfitters in and around Canyonlands offer one-day to multi-day stargazing expeditions.

[Learn More »](#)

Dead Horse Point State Park

Dead Horse Point State Park was the first Utah State Park to achieve IDA certification. Except in winter, the park offers multiple evening events each month, such as night hikes, telescope programs and constellation tours. [Learn More »](#)

Goblin Valley State Park

Fun and goofy by day, slightly spooky at night, Goblin Valley sits on a remote corner of the Colorado Plateau and inside the San Rafael Swell, which means its location attracts a lot less crowds. It's one of the most spectacular — and ghoulish — places in the world to view the Milky Way. [Learn More »](#)

Goosenecks State Park

Goosenecks State Park is an easy-to-get-to area with a million-dollar view. Look down upon the San Juan River 1,000 feet below and see the results of 300 million years of erosion. Look up, and Goosenecks' night skies rival its sensational geological formations. People from around the world travel to this remote park to immerse themselves in its terrestrial and celestial magnificence.

[Learn More »](#)

Hovenweep National Monument

Hovenweep trails are open sunrise to sunset daily. Stargazing and exploring the night sky is allowed from the visitor center parking lot and campground. Rangers present stargazing programs in spring and summer.

[Learn More »](#)

Natural Bridges National Monument

Natural Bridges National Monument was the world's first Dark Sky Park due to its remoteness and dedication to zero light pollution. The park's visitor center, exhibits and campground are open year-round.

[Learn More »](#)

Rainbow Bridge National Monument

Rainbow Bridge National Monument is the first International Dark Sky Sanctuary in the National Park Service. The monument itself can only be accessed by boat on Lake Powell or by backpacking from Navajo Mountain, but the entire Glen Canyon National Recreation Area boasts dark skies.

[Learn More »](#)

IDA ACCREDITED PLACES

Southwestern Utah

Bryce Canyon National Park

Far from the light pollution of civilization, and protected by a special force of park rangers and volunteer Utah astronomy enthusiasts, Bryce Canyon is known as the last grand sanctuary of natural darkness and has one of the nation's oldest astronomy programs. During moonless and clear nights, 7,500 stars will welcome you to their domain. Bryce Canyon also has an annual Astronomy Festival. [Learn More »](#)

Capitol Reef National Park

Utah's hidden gem of a national park, Capitol Reef, is almost like a planet unto itself. Here you get a real feel for what the Earth might have been like millions of years before life appeared, when nothing existed but earth and sky. Pair your stay with a visit to Torrey, a certified Dark Sky Community. [Learn More »](#)

Fremont Indian State Park

Fremont Indian State Park is known for its captivating dark skies. Located in Fishlake National Forest, here you can explore the ancient petroglyphs and pictographs of the scenic canyon by day, and the Milky Way galaxy by cover of night. [Learn More »](#)

Kodachrome Basin State Park

Pillars shaded red, pink, white, yellow and gray are only the start to the greatness of Kodachrome. Due to its geographical remoteness, superb air quality, high elevation, low humidity and distance from urban areas, the park boasts one of the darkest skies remaining in the continental United States. Staff and volunteers offer astronomy events multiple times per year. [Learn More »](#)

Cedar Breaks National Monument

Far from any metro light pollution and high in altitude makes sleeping under the stars at Cedar Breaks' updated campground first class. Rangers hold stargazing programs throughout the summer months. [Learn More »](#)

IDA ACCREDITED PLACES

Northern Utah

East Canyon State Park Ryan Andreasen

Antelope Island State Park

View the beautiful dark skies from the west side of Antelope Island (opposite the urban-core lights) and it's easy to forget you're just an hour-and-a-half drive from Salt Lake City. Overlooking the Great Salt Lake at night with countless stars above makes for near-seamless stargazing. The park often presents dark sky programs and events to learn more about the Milky Way and beyond.

[Learn More »](#)

Dinosaur National Monument

The monument boasts some of the most magnificent Dark Skies in the state, perfect for stargazing and connecting with the monument's primordial foundation. Look for Dark Sky programs at the Split Mountain Campground. [Learn More »](#)

East Canyon State Park

Close to Salt Lake City, visitors to East Canyon at night are treated to an array of black skies and stary constellations. The park hosts dark sky star parties throughout the year, with scopes set up for night viewing.

[Learn More »](#)

Jordanelle State Park

Although the park is close to Park City, Midway and Heber City — the surrounding hillsides and mountains provide a blockade for light pollution. The park hosts dark sky events and its Rock Cliff Nature Area boasts the darkest skies in the park.

[Learn More »](#)

North Fork Park

This sprawling county park tucked into a canyon near Ogden is one of the few places you can still see the Milky Way near an urban center — in part because the mountains block light pollution from the Wasatch Front and Cache Valley and because of successful local efforts to limit light pollution in the park.

[Learn More »](#)

Rockport State Park

Rockport sits at a base elevation 6,000 feet above sea level in a rural valley between the Wasatch and Uinta mountain ranges. The surrounding mountains create a protective halo that blocks out light pollution. Park staff host public programs on best dark sky practices and the importance of dark skies for the area's nocturnal species.

[Learn More »](#)

Steinaker State Park

Located just north of Vernal and between Ashley National Forest and Dinosaur National Monument, Steinaker is a remote destination with welcoming accessibility for dark sky viewing. The park offers nighttime program ming right in the parking lot for visitors ready to soak in the vibrant Milky Way.

[Learn More »](#)

Timpanogos Cave National Monument

Famous for its spectacular caverns of helictites, stalactites and stalagmites, the cave has a new designation — the first National Park Service unit to be certified as an Urban Night Sky Place. The park offers popular summer night sky programs in American Fork Canyon. [Learn More »](#)



IDA ACCREDITED PLACES

Dark Sky Communities

Big Cottonwood Canyon Angie Payne

Helper

Located near [Nine Mile Canyon](#) and along the way to more popular Southern Utah adventures, this former mining and railroad town gives travelers a glimpse into a community of art, history and stories of the power of togetherness. The town rallied its locals to protect and share its natural dark skies, leading to its certification of being an [International Dark Sky Community](#). [Helper's](#) nearby Dark Sky Observers lead regular astronomy programs and special events in the area.

Torrey

Located just 8 miles from the west entrance of Capitol Reef National Park, [Torrey](#) is an idyllic little tree-lined, high-elevation town on the Capitol Reef Country Scenic Byway (S.R. 24) surrounded by rose-colored cliffs and green meadows. The town came together to protect its night skies by improving outdoor lighting ordinances and retrofitting dark-sky compliant lighting to minimize light pollution and strengthen the town's already close relationship with nature, place and the universe.

BEST OF THE REST: NON-ACCREDITED PLACES

Red Fleet State Park

Red Fleet is easily accessible at just a few miles north of Vernal and is home to numerous dinosaur tracks that are almost 200 million years old. Utah dark sky experts point to Red Fleet as a lesser-known, yet perfect venue for staying up late to view the Milky Way with unaided eyes. [Learn More »](#)

Coral Pink Sand Dunes State Park

The entire park, located southeast of Zion National Park, is open for hiking and playing in the sand, plus 90 percent of the dunes are open for off-highway vehicle riding. Camping options and a visitor center help you navigate the best viewing locations in the park. [Learn More »](#)

Wasatch Front Canyons

Simply drive up one of the canyons near Salt Lake City to ski areas such as Alta or Brighton and break out your binoculars for an easy-to-experience night sky. [Learn More »](#)

Gunlock State Park

For solitude and an off-the-beaten-path feel, northwest of St. George, the park is primitive with a small campground, boat ramp and beach. [Learn More »](#)

River Trip Stargazing

Outfitters in and around Canyonlands National Park offer one-day to multi-day stargazing trips. [Learn More »](#)

Guide written by Whitney Childers



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