

Nightscape

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From the Executive Director

Recently I have been reflecting on all that has transpired in our world over the past year and a half, and how drastically things have changed. Despite the huge challenges we've faced, IDA's global community has much to celebrate.

Leading into 2020 was a major win in the adoption of the world's first national light-pollution law in Mexico, which you can read more about in this issue. The IDA Fixture Seal of Approval program expanded internationally, and we celebrated the establishment of "dark-sky months" in Colorado, Michigan, and Utah.

In April, the appointment of a new IDA International Committee, with members on six continents, was a concrete step in building a more equitable dark-sky movement.

To further ensure that diverse voices are heard, I am pleased to welcome Megan Eaves as the new editor of *Nightscape*. A passionate IDA advocate based in the UK, Megan brings 15 years of publishing and international media experience to help grow *Nightscape* into a leading, global publication.

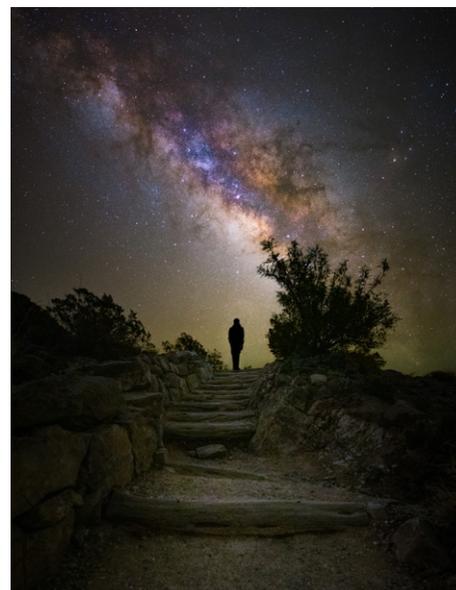
While celebrating our successes, we must remember that light pollution continues to worsen and remain vigilant to new threats. In July, along with astronomers and industry representatives, I attended the SATCON2 workshop to discuss how to address the impact that satellite swarms will have on the night sky. A paper co-authored by an IDA colleague predicted they have already increased the brightness of a truly dark sky by up to 10%. These swarms of satellites are expected to rise into the tens or even the hundreds of thousands in number by the end of the decade.

Resilience and patience are key to the global dark-sky movement. Through your support and tireless work over the long term, we have and will continue to make great strides toward a future where the benefits of a dark night and responsible lighting are available to all.



For the night,
Ruskin Hartley
ruskin@darksky.org

On the cover



Winner "Stairs to the Heavens" by Jai Shet

Big Bend National Park, Texas, US

This issue's cover photo is the winner of the Youth category in the 2021 Capture the Dark photo contest. See all the winners' stunning photographs on pages 8 to 15.

Meet the Editor

I am a storyteller. I have been writing since childhood, and it is both my passion and life's work. Growing up in rural New Mexico, my dad introduced me to the night sky through his big Meade telescope. We'd gaze up from our dirt drive, imagining what might be out there. My involvement in the dark-sky movement began from a loss of access to the night, after I moved to the US East Coast, then China, then Europe. I now live under constant skyglow in one of the world's most light-polluted cities, London.

In my career, I am grateful to have worked and written for publications, like *Lonely Planet* — where I was the North and Central Asia Editor for many years — CNN, the BBC, *The Independent*, and many others. But the chance to lead *Nightscape* is truly the greatest privilege of my career to date. It is the stories — your stories —



of the loss and especially the recovery of night that inspire me.

This issue is dedicated to the resilience and patience that advocacy requires. Within you will find:

- > success stories and encouragement from fellow advocates about playing the long game
- > a new “Meet A Member” column spotlighting our community of supporters
- > the winning photography from our annual “Capture the Night” photo contest
- > IDA’s annual financial report

Our goal is to grow *Nightscape* into the world’s leading dark-sky magazine, and in doing so, to amplify the diverse voices and perspectives that make up our global community of nocturnal conservationists.

I am looking forward to telling your stories. Thank you for the opportunity.

Megan Eaves
nightscape@darksky.org

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Nightscape

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Playing the long game

WORDS BY Megan Eaves



Photo by Ruslan Merziyokov, @astrorms (IG)

A seasoned environmental campaigner once gave me some advice that I've never forgotten: "Small wins add up to big change."

Consider for a moment the city of Flagstaff, Arizona. Its designation as the first IDA dark-sky place in 2001 was just one of many milestones dating back to 1958, when this community pioneered the world's first lighting ordinance designed to preserve the night for astronomy. Successful dark-sky advocacy, or environmental campaigning of any kind, takes resilience. And it takes a long time.

Few people understand this better than Fernando Ávila Castro, leader of IDA Mexico and a member of the technical staff of the Institute for Astronomy at the National Autonomous University of Mexico in Ensenada. Fernando was instrumental in the passing of a historic piece of federal legislation

this year, the first to recognize artificial light as an environmental pollutant. But it didn't happen quickly.

"It's been a long journey," he says. "The first ordinance in Mexico was in Ensenada, where the National Astronomical Observatory is located. And that was in 2006 — 15 years ago."

Long-term vision

For a decade and a half, Fernando and the many dedicated advocates and campaigners in Mexico have worked across the policymaking landscape, right up to the Chamber of Deputies, Mexico's lower house of Congress.

Their success in finally getting light pollution recognized in the nation's bedrock environmental-protection law depended on having a strategic, long-term approach. This centered on the fact that public light systems generally have a lifespan of between six and eight years, depending on environmental

conditions and wear-and-tear.

"The idea is that, within 10 years, the core infrastructure will comply with the new law," says Fernando.

Advocacy depends on the understanding that the work will take time. It's not feasible to replace every city lamppost or exterior light immediately. Many advocates proclaim their key to success has been in understanding and maneuvering government budgetary requirements and infrastructure timelines.

"You need to think in a long scale," says Fernando. "You have to be patient, you have to be stubborn. Local governments have a limited budget, they can't implement all our proposals right away. So we need to find ways to achieve what we want over the long term."

Persistence and patience

The story is the same for advocates working anywhere in the world.

Alejandro Sommer has been developing astrotourism and dark-sky policy in Argentina for a decade. Only now is he starting to see big payoffs, with the recent passing of a province-wide law for dark-sky protection in his province of Misiones.

Alejandro says the keys to his success were persistence, patience, and knocking on a lot of doors. He enlisted the help of a political advisor to better understand local policy-making and began hosting events to drum up interest.

"You never know who's going to hear your message. At the first astrotourism event, we had the ecology minister with us. I didn't know it at that time, but he would be the next governor. He actually saw the dark and really cared about it," says Alejandro.

Double-ended approach

In Ireland, the dark-sky movement →



“You have to be patient, you have to be stubborn.”

Fernando Ávila Castro
Mexico



“You never know who’s going to hear your message.”

Alejandro Sommer
Argentina



“It’s behavioral change you’re looking to implement.”

Georgia MacMillan
Ireland



“There is so much education that needs to be done.”

Rémi Boucher
Canada

started in the early 2000s with the formation of Dark Sky Ireland, but the country’s first dark-sky place — Kerry International Dark Sky Reserve — wasn’t designated until 2014. Advocate Georgia MacMillan, who subsequently set up Ireland’s first dark-sky park in County Mayo, continues to build on this foundation in advocating for both local and national light pollution legislation.

“I think you have to be very patient. That’s probably the biggest learning curve for me. It’s not going to happen quickly. It’s behavioral change you’re looking to implement, so that takes time,” says Georgia. She recommends that advocates use a double-ended approach, keeping pressure on the national authorities while generating support at the community level.

“I’ve had numerous discussions on the most effective way to make progress and I feel there is no single route,” Georgia explains. “Dark-sky policy is relevant to almost every department

within a government authority and at the same time, every subject in a school. We need to adapt our message to suit the recipient.”

Steps beyond International Dark Sky Place designation

Mont-Mégantic in Québec, Canada started its nocturnal protection efforts in 2003 and was designated the world’s first International Dark Sky Reserve in 2007. Since then, it has continued to expand light pollution policy across the surrounding area. Thanks to Mont-Mégantic’s efforts, the FQM (Québec’s Municipalities Federation) is now offering turnkey solutions for 2200K LED streetlights for municipalities across the province. They have also begun work to put dark-sky practices in place across Québec’s national parks system.

Scientific coordinator Rémi Boucher, who helps lead the Mont-Mégantic reserve, says that his ongoing work is about creating awareness.

“Don’t think it will go fast,” he says. “It is a slow and steady process. There is so much education that needs to be done. Lighting is something that an overwhelming majority of people, including professionals, don’t have any knowledge about.”

For Rémi, it’s passion for the night that has kept him going, even over the past year, when remote work and a reduction in public activities presented major challenges.

“Being able to live and work under a dark sky — working part of the year directly with people, and showing them the wonders of the night sky, really helps me stay grounded,” he says.

As advocates, we must constantly remind ourselves that change rarely happens in a swift moment, but instead as a series of small steps along a journey. So take inspiration from Mexico, Ireland, Argentina, and Canada: Play the long game. Be patient, be stubborn, and think long-term about what is possible in the future. ★



MEET A MEMBER

Roger Craig Smith

In this inaugural Meet a Member column, we get to know **ROGER CRAIG SMITH** — a voice actor, avid astrophotographer and IDA Delegate residing in central Idaho.



  @rogercraigsmith

Until recently you lived in Southern California, not necessarily a place known for dark skies. Where and when did you find a passion for astronomy and astrophotography?

The interest started in junior college, because the only class I enjoyed was astronomy — I hated everything else. So many times, I had my mind blown by those images and what

I was learning, but at that age I didn't have the means to pursue it. When my career started to pop for me, I bought my first little Orion telescope and put it up in the backyard. I found what I thought was a dim little star, low on the horizon, and through sheer luck, I was looking at Saturn. At first I thought it was a piece of clip art they stuck on the eyepiece — I couldn't believe what I was looking at. I could see the rings distinctly. From that point, I was totally hooked, and then started thinking about how to photograph it.

In 2016, I heard about the California Nightscapes workshop led by [IDA Delegate] Mike Shaw and [*National Geographic* photojournalist] Babak Tafreshi, and on a whim I decided to go. I went by myself, learned all the basics, and it just opened up Pandora's box.

At what point along this trajectory did you connect with IDA?

I realized that, through my interest in photography, I was really trying to fight light pollution by getting out of the city and searching for dark skies. Then I noticed that Mike Shaw had become an IDA Delegate, so I looked into it. I started spreading the word, asking people to follow IDA's [social media] accounts, and discussing how light pollution is the →

one form of pollution we could literally reverse if we wanted to. That's when Bettymaya [Foott, IDA's Director of Engagement] reached out and asked if I was interested in being a delegate. My first thought was, "How does that work? What can I do?", and really, it's just about promoting the work of IDA and spreading the word about light pollution.

Your Twitter account also shows off your passion for birding. Was your interest in birding sparked by your interest in dark skies?

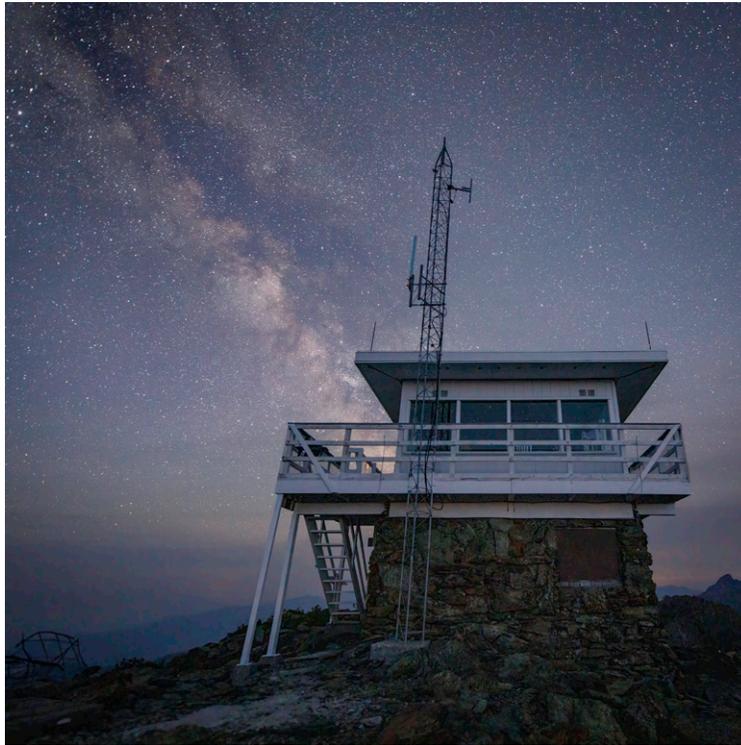
That was born out of trying to find a daytime pursuit for photography. But I've become fascinated with what these little critters are going through to survive. It sunk in early on in the pandemic — I was living in LA and put out a little fountain in my neighborhood. The more I sat there and watched, the more I picked up on their patterns and behaviors. Sometimes a mild curiosity in one area opens up other avenues you couldn't even fathom. I wanted to get better at photography and then found out about birds.

Babak [Tafreshi] had a whole special in *National Geographic* about light pollution and its effects on nature. One of the most iconic pictures was of birds and bats caught in a beam of light over the Luxor [hotel in Las Vegas]. This is happening every night, and there are many other horrifically bad examples in the built environment. The tie-in for me was that, if we don't watch what we're doing with light pollution, look what can happen. Birding, astronomy, nightscapes — it's all so closely tied.

Most memorable dark-sky experience?

For me it was during the 2016 workshop with Mike and Babak. It was our last night, and we were out in the Alabama Hills at the southern end of the Sierra Nevada Mountains [in California]. About 3am, after shooting nightscapes, Mike and I were chatting about life and had this realization that we were out in the middle of the desert, beneath the mountains

and navigating with no other source of light than what was above us. We started recognizing the many dimensions of light and dark in the sky. The bands in the Milky Way were darker than the dark sky. I think about that moment all that time. We both stopped mid-conversation to recognize, "Hey, we're out here avoiding things underfoot with just the starlight." No red light, no headlamps, no moon — the starlight



was the only light around us. We were just having a boring conversation about daily life, but surrounded by this incredible scenario playing out above us and around us.

What's one piece of advice you would give to a new member looking to get involved?

Honestly, I think the best way is by talking about your own involvement with IDA and sharing it with people who are receptive to it, without wagging your finger at them. Change can happen simply when you let people know you're involved and

the neat things you're learning. That you realized your own house light is polluting the neighborhood and how easily you can change it.

Advocacy for environmental issues is challenging — we're bombarded all day long by these complicated issues — but this is as easy as, "Turn your lights off." And, the more time you spend in the dark, the more you get comfortable with it and realize it's not some horrible thing. There's something to be said about our connection to the night sky — we evolved over thousands of years to look at the stars in awe, and it's only over the last 150 years or so that we've completely screwed that up.

Just by getting involved, financially paying into it, and talking about our connection, nature's connection, and the power that we have to make a big difference by turning off lights, you're going to be far more beneficial than you realize. ★

Capture the Dark
2021 Photo Contest
WINNERS



Winner
Connecting to the Dark

Imagery illustrating how the natural night provides perspective, inspiration, and leads us to reflect on our humanity and place in the universe.

“In Search of the Core”
by Egon Filter
Mostardas, State of Rio Grande do Sul, Brazil

PHOTOGRAPHY HAS THE POWER to transport us and inspire us to connect with and ultimately protect the night. In July, the International Dark-Sky Association hosted the second annual Capture the Dark Photography Contest. We received 1,122 entries from 66 countries across eight categories. Here we present the winning photographs, which portray both the beauty of a dark night and the negative impacts of light pollution.



Winner
International Dark Sky Place

Photography taken in the 170 protected lands and municipalities around the world that have been certified by IDA as International Dark Sky Places creating havens for astrophotographers.

“Arch Rock Panorama”
by Daniel Galluppi
Joshua Tree National Park, California, US



Winner
The Impact of Light Pollution

Photography that demonstrates the impact of light pollution on the environment, human health, and our access to the night sky.

“From Light to Dark”
by Noel Benadom
Pocatello, Idaho, US

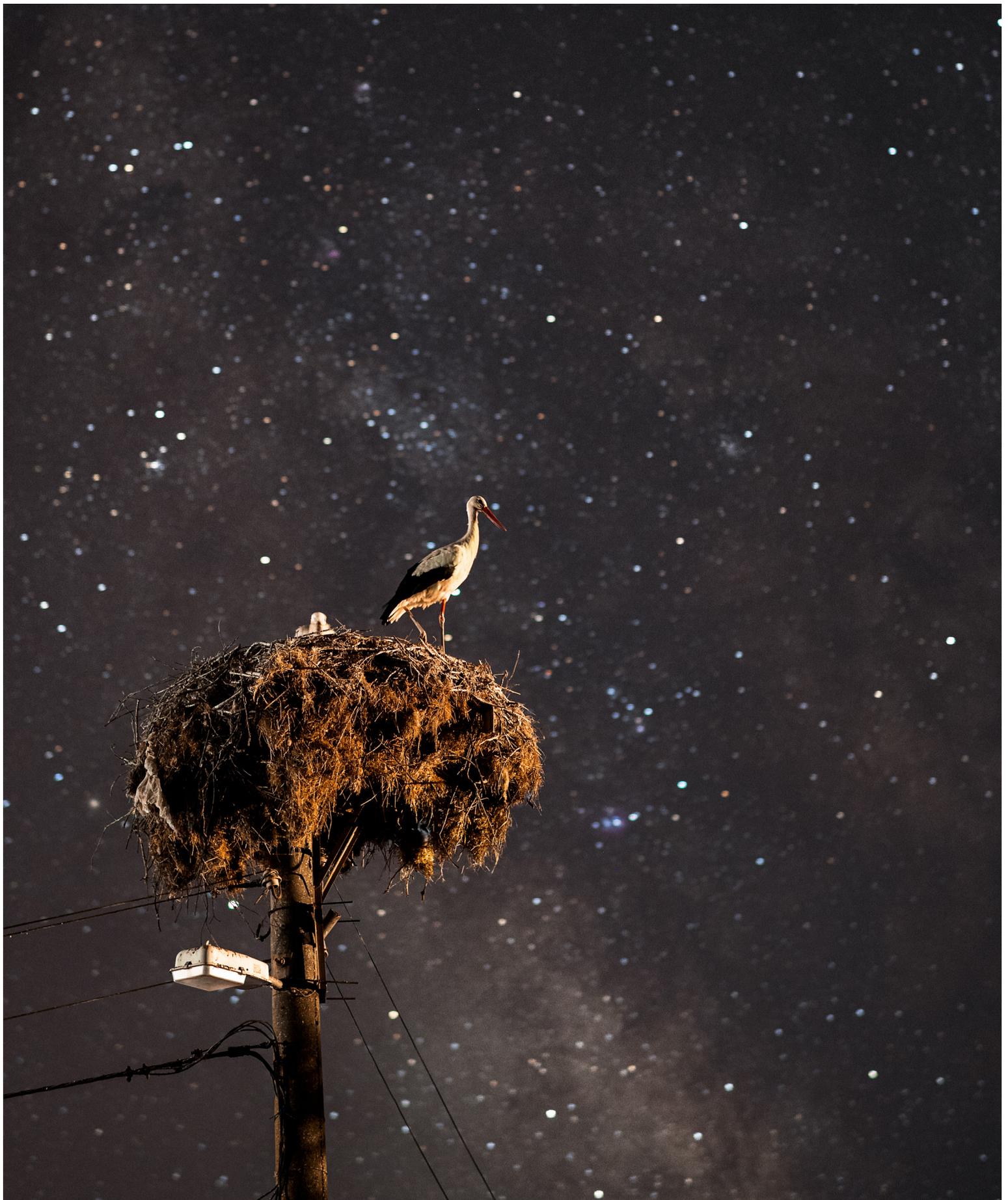




Winner
The Bright Side of Lighting

Photography that shows how lighting that follows the Principles for Responsible Outdoor Lighting can be beautiful, healthy, and functional.

“Star Trails Above the Grand Theater”
by Likai Lin
Zhuhai, Guangdong, China



Winner
Creatures of the Night

Images that capture how wildlife is impacted by light pollution.

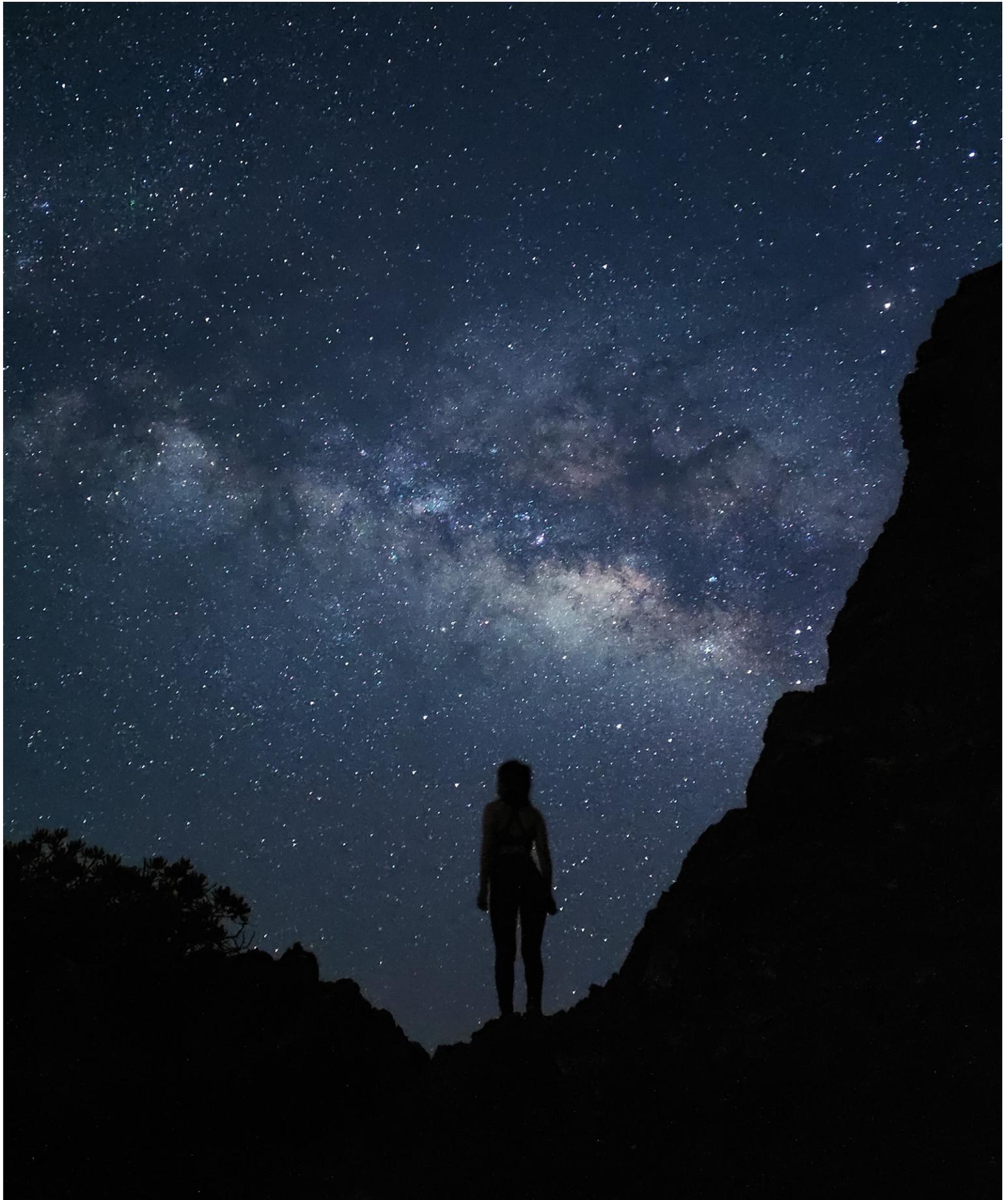
“Nesting Under the Milky Way”
by **Mihail Minkov**
Detelina village, near Varna, Bulgaria



**Winner
Deep Sky**

Photos of deep-space objects that portray the sense of wonder humans have felt looking up at the night sky for thousands of years.

**“Cold Orion Region with a Warm Heart”
by Antoine Grelin and Dalia Grelin
Las Vegas, Nevada, US**



Winner
The Mobile Photographer

Snaps from any category taken with a cell phone, tablet, or GoPro.

“Seaside”
by Ziyi Ye
Hainan province, China

Advocate highlights

California, US

Los Angeles County, which includes residential and lightly commercial communities bordering the Pacific Ocean and San Gabriel Mountains, confirmed a conversion to 2700K LED streetlights. The unincorporated community of **Altadena** promoted this initiative with the help of several dedicated IDA advocates. **Davis** was the first community in the state to commit to 2700K streetlights, representing an encouraging trend for lighting improvements across California.

Ireland

The **Friends of Mayo Dark Skies** launched a landmark pilot lighting plan in **Newport**, the gateway town to **Mayo Dark Sky Park**. The pilot aims to make Newport the first dark-sky town in Ireland. Mayo County Council has changed the lights on Newport's main street to 2700K, and the scheme has been extended to the village of **Bangor Erris**, which also borders the park.



Newly Certified International Dark Sky Places



Aurora over AMC Maine Woods

New Parks

- 1 AMC Maine Woods IDSP (Maine, US)
- 2 Chiricahua National Monument IDSP (Arizona, US)
- 3 Florissant Fossil Beds National Monument IDSP (Colorado, US)
- 4 Zion National Park IDSP (Utah, US)
- 5 Prineville Reservoir State Park IDSP (Oregon, US)
- 6 Curecanti National Recreation Area IDSP (Colorado, US)

New Communities

- 7 Crestone, Colorado (US)
- 8 Julian, California IDSC (US)
- 9 Nucla and Naturita, Colorado (US)
- 10 Pellworm Star Island (Germany)
- 11 Spiekeroog Star Island (Germany)

New Sanctuaries

- 12 Black Gap Wildlife Management Area (Texas, US)

New Urban Night Sky Places

- 13 Palos Preserves (Illinois, US)

India

In July, advocate **Deep Anand** launched “The Fallen Stars,” a two-month youth training program on dark-sky advocacy. The program helps students channel their skills into understanding the problem of light pollution, providing solutions and building a community in **India**. The program hosted several outreach events, including a film night, a webinar for schools and college students, and an astronomy quiz.

Dark Sky Month Celebrations

Three US states recently adopted official “dark-sky months”:

- April** Utah Dark Sky Month
- June** Colorado Dark Sky Month
- July** Michigan Dark Sky Awareness Month



Show your passion for the night!

A great way to support the IDA is to purchase our customized apparel, mugs, and totes.

bonfire.com/store/idadarksky



Join the Nighthawk Monthly Giving Club!

Nighthawk members provide a predictable foundation of operating income important for our work. Monthly giving has benefits for both you and IDA. As a small thank-you, when you join the Nighthawk Monthly-Giving Club with a monthly investment of \$10 you'll receive a Nighthawk member decal to show your support!

darksky.org/ways-to-give

2020 Impact Report

President's Message

Light pollution is expanding at twice the rate of the human population, putting the joys, wonderment, and habitats of all living creatures at critical risk. Yet, I remain optimistic in IDA's mission to protect the night. The dark-sky movement is growing thanks to the groundwork set forth by past presidents, former and fellow board members and staff, and the ongoing efforts of passionate Delegates and Advocates around the world. The board is also expanding in skill sets, time zones, and backgrounds.

In 2020, IDA designated 27 new International Dark Sky Places, and re-envisioned the Annual General Meeting, reaching new audiences around the globe. Internally, we recognized the need to address inclusion, diversity, equity, and access, and adopted these principles into our core values, while acknowledging the issue of light justice in communities around the world.

We have entered 2021 with a renewed outlook. With your support and advocacy, IDA can continue protecting the night for the benefit of all living creatures. Mother Nature has lessons for all of us. Whether we call it "Earth," "Tierra," or "Unci Maka," we all have the honor of sharing and protecting our home.



Wishing you a night full of joy, peace and wonder,
Diane Knutson
President, International Dark-Sky Association

IDA Board of Directors

- Diane Knutson, President, US
- Kellie Pendoley, Vice President, Australia
- Kim Patten, Treasurer, US
- Brad Schlesselman, Secretary, US
- Kevin Gaston, PhD, UK
- Laurel Alyn-Forest, US
- Dr. Alejandro Sanchez Miguel, PhD, Spain
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- Tom Reinert, US
- Sibylle Schroer, Germany
- Sergio Montúfar Codoñer, Guatemala
- Mike Simmons, US

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- Dan Oakley, International Dark Sky Places Committee, UK
- Connie Walker, Education Committee, US
- Kim Patten, Finance Committee, US
- Tom Reinert, Governance Committee, US
- James Lowenthal, Awards Committee, US
- Kellie Pendoley (Australia) and Alejandro Sanchez Miguel (Spain), International Committee

Reaching a Global Constituency

129,458 supporters and members representing 41 countries

Conservation

- ★ 110,000 square kilometers of protected land.
- ★ 27 new International Dark Sky Place (IDSP) designations, including simultaneous efforts in the UK resulting in Yorkshire Dales National Park and North York Moors National Park receiving Dark Sky Reserve designations on the same day in early December 2020. And for the first time in IDA history,

27

new International Dark Sky Places certified

110,000

square kilometers now under dark-sky protection

77million

visitors to International Dark Sky Places

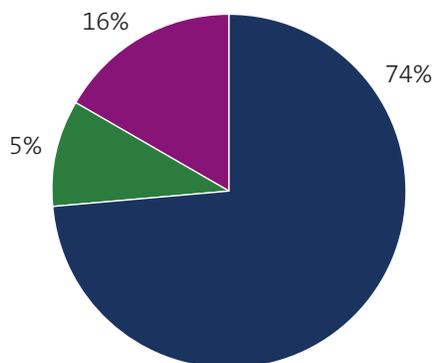
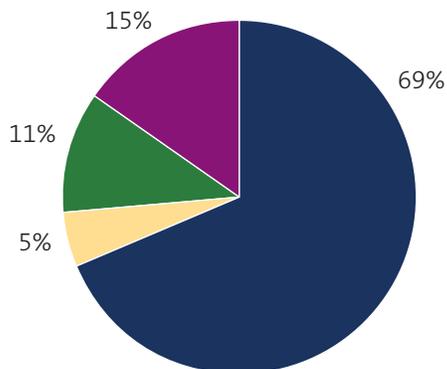
an entire country — the Pacific Island nation of Niue — was designated as a Dark Sky Place.

Engagement

- ★ 164 International Dark Sky Places welcomed more than 77 million visitors.
- ★ International Dark Sky Week reached an unmatched audience of over 400,000 people, demonstrating a renewed awareness of light pollution issues.
- ★ The Under One Sky global conference welcomed 752 participants from 51 countries in a 24-hour virtual event.
- ★ The Fixture Seal of Approval program engaged 12 new lighting companies. →

FY2020 Statement of Financial Activity

Fiscal year ending December 31, 2020



REVENUE

● Individuals	\$787,911
● Foundations & Corporations	\$173,844
● Program Revenue	\$58,382
● Other	\$124,918
Total Revenue	\$1,145,055

EXPENSE

● Program Services	\$649,654
● General Administrative	\$87,110
● Fundraising	\$144,641
Total Expense	\$881,405

This information is based on Reviewed Consolidated Financial Statements for the year ending December 31, 2020. For more detailed financial information, please visit darksky.org/about/funding

Special Thanks

The International Dark-Sky Association's Brand Partners are dedicated members of the dark-sky protection community from corporate and business sectors. They support program, outreach, education, and nocturnal conservation efforts. We are grateful for their support in 2020.

LEADING

Musco Lighting

GUIDING

Home Depot

Rémy Martin

Xanterra Grand Canyon Lodges

SUSTAINING

Oasis at Death Valley

Your True Nature

ALLY

Deneb

Holiday River Expeditions

Selux

- ★ Over 450 entries were submitted to the Capture the Dark astrophotography contest, representing 56 countries.

Empowering Chapters & Advocates

- ★ 731,217 individuals participated in IDSP programs globally.
- ★ Led by IDA Chapters and Delegates worldwide, our engagement programs reached more than 45,000 people with 600 dark-sky events.
- ★ IDA welcomed 52 new international Advocates, and now has representation from 36 countries, with Advocates on every continent.

52

new Dark Sky Advocates

Advocates in

36

countries

10million+

people attended dark-sky outreach programs

Advancing Policy & Science

The UK Leading the Way

In 2020, Member of Parliament (MP) Andrew Griffith and Astronomer Royal, Lord Martin Rees, formed an All-Party Parliamentary Group (APPG) for dark skies. APPGs are informal, cross-party groups of MPs and Members of the House of Lords, that can be influential in government. After a public consultation, the APPG for Dark Skies issued a 10-point light pollution plan, and is aiming for national legislation. Together, the APPG, Commission for Dark Skies, and IDA's Delegates are creating critical momentum to tackle light pollution in the UK.



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USA

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LIGHT TO PROTECT THE NIGHT

IDA's Five Lighting Principles for Responsible Outdoor Lighting

- 1 Useful**  **Use light only if it is needed**
All light should have a clear purpose. Consider how the use of light will impact the area, including wildlife and their habitats.
- 2 Targeted**  **Direct light so it falls only where it is needed**
Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.
- 3 Low Level**  **Light should be no brighter than necessary**
Use the lowest light level required. Be mindful of surface conditions, as some surfaces may reflect more light into the night sky than intended.
- 4 Controlled**  **Use light only when it is needed**
Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.
- 5 Color**  **Use warmer color lights where possible**
Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.