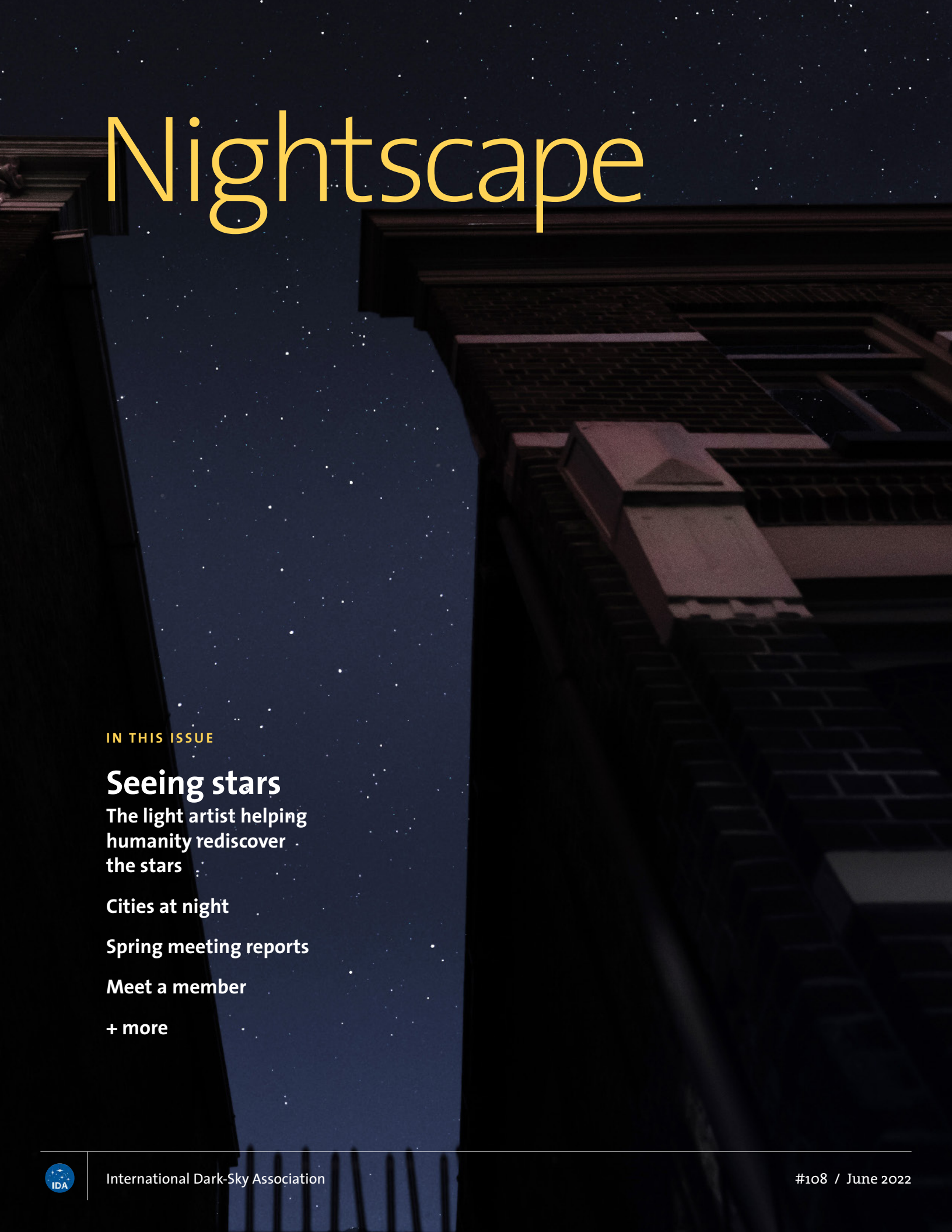
Nightscape



IN THIS ISSUE

From the
Executive Director

Recently, I traveled from my home outside Tucson, Arizona, for an event in New York City. Leaving in the early morning, the arc of the Milky Way greeted me overhead. Arriving in New York that evening, only the moon remained in the washed-out night sky.

Today, more than half of the world's population lives in urban areas; many in places like New York, where the light from countless fixtures obliterates the stars overhead. Is it any wonder that people feel disconnected from the natural world around them?

Many cities are working to rebuild these connections as they seek to become greener and more sustainable. They clean up the air, restore rivers, and invest in parks and green spaces close to where people live and work. Yet despite the ubiquitous and visible skyglow overhead, light pollution is not a priority for most cities.

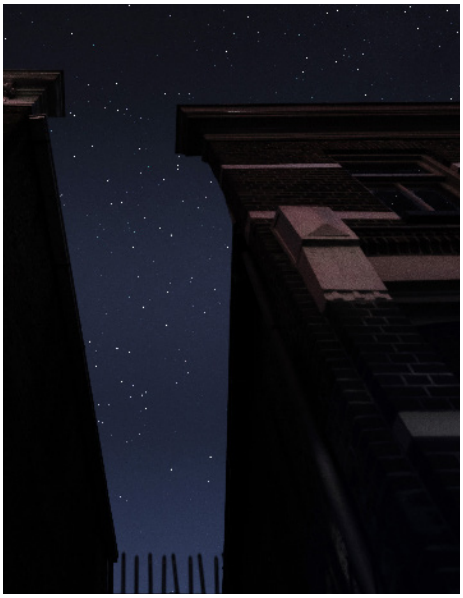
Daan Roosegaard, a conceptual artist based in Europe, is changing that. He seeks to inspire a connection between urban dwellers and the cosmos by turning off all the lights in a city for one night. Later this year, he will work with the city of Leiden in the Netherlands to restore the star-filled sky — his most ambitious project yet (read more on p.6).

For IDA to be successful in our mission to protect the night from light pollution, we must be relevant to people who live in urban areas. Projects like Daan's help spark the imagination and start a valuable conversation. With your support, IDA will continue that conversation and promote the responsible use of light as an essential key element of urban sustainability.

We will know we are successful when people care about the stars overhead as much as their parks, rivers, beaches, and oceans.

For the night,
Ruskin Hartley
ruskin@darksky.org
Tucson, Arizona, U.S.

On the cover



"Seeing Stars"
by Studio Roosengaarde

Seeing the stars in your own street might sound like a fairytale, but the Dutch city of Franeker is the first in the world to achieve this by switching off all of its lights as part of the project "Seeing Stars," created by UNESCO and Daan Roosegaarde. Our cover photo for this issue is of a darkened Franeker. The project aims to recognize the visible night sky as a universal heritage. For more info, see our feature on p.6.

From the Editor

Another International Dark Sky Week has come and gone with great success. For the second year in a row, we reached over one million people in at least 83 countries on social media, and saw 176 events held around the world — a significant increase from last year. Excitingly, Discovery released a dark-sky themed episode of "Nature in Focus," and IDA's Executive Director, Ruskin Hartley, held a live-stream conversation with the show's host and producer, Ian Shive. The advocate network in the U.S. also rallied to have dark-sky week proclamations in 22 communities across the country.

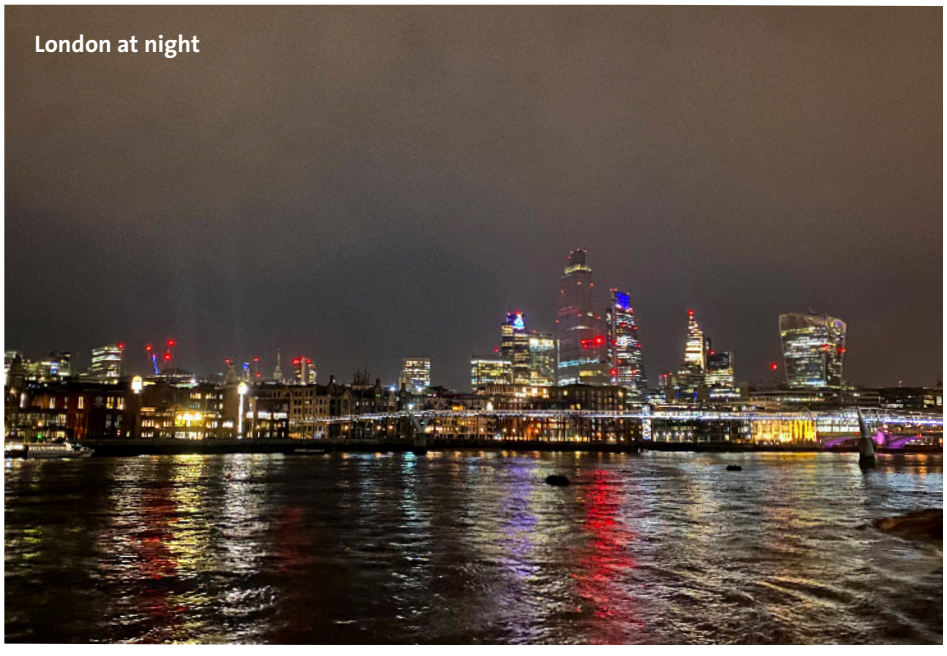
In this issue, we turn our focus to the epicenters of light pollution: cities. While protecting the night in remote landscapes is critical, it is ever more pressing that we address the root problem in urban areas where light pollution originates. Most of us live in cities or developed areas and there are many things we can do to develop better, healthier lighting that is neither wasteful nor harmful to people and nature. We are pleased to have a feature written by New Zealand-based advocate Kyra Xavia on the "Seeing Stars" project, which sees the lights turned off in two European cities.

Also within:

- Reports on spring conferences and meetings addressing light pollution
- Info on how to assess the lighting around your home
- Meet México City-based member Joshua Iván Muñoz Salazar
- Advocate highlights
- Newly certified International Dark Sky Places

As ever, if you would like to have your say on an issue or have a high-quality photograph that you'd love to see in print, get in touch and we may publish it in a future issue of *Nightscape*.

Megan Eaves
nightscape@darksky.org
London, U.K.



London at night

Credit: Megan Eaves

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Nightscape

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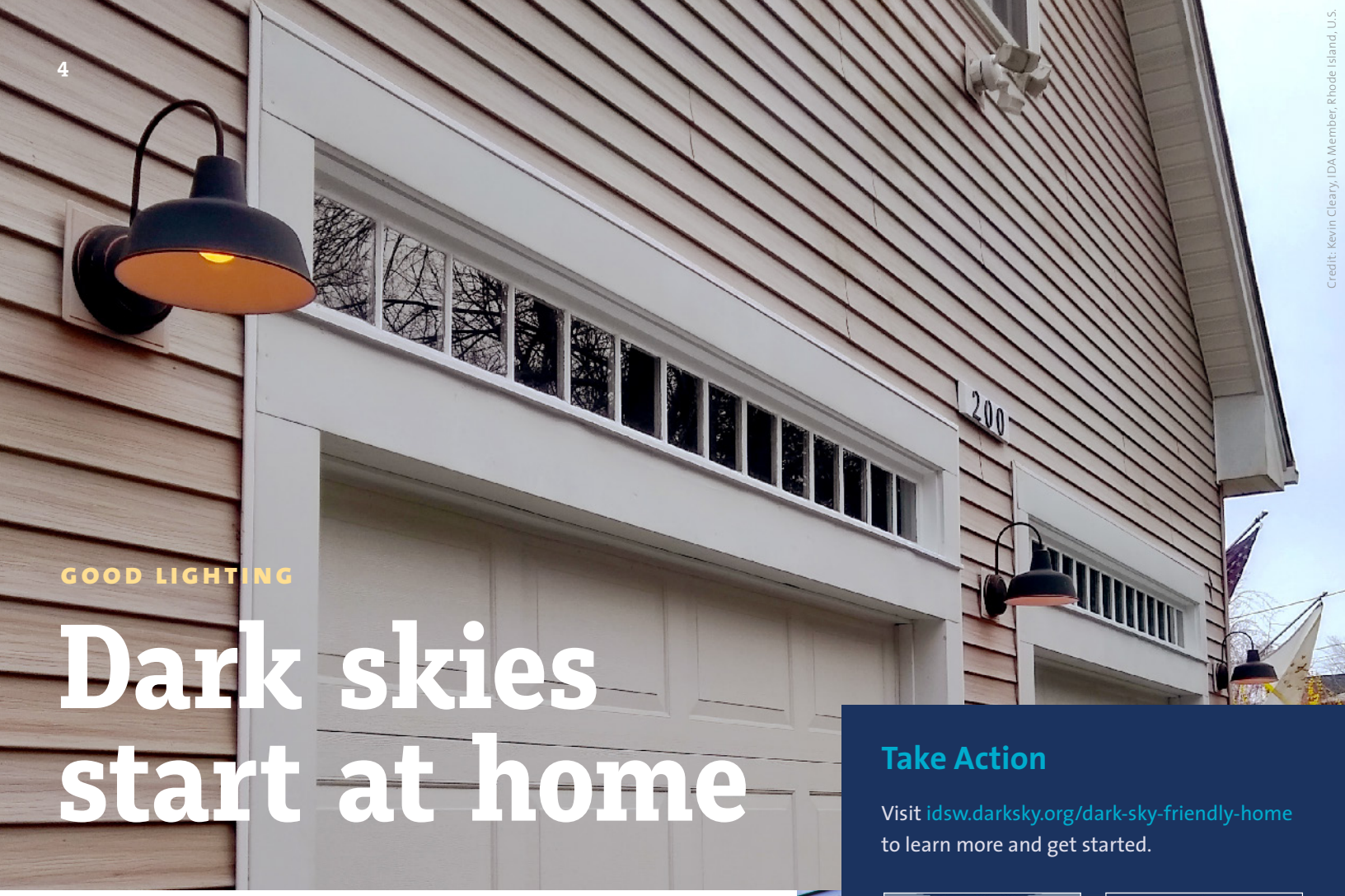


GOOD LIGHTING

Dark skies start at home

Take Action

Visit idsw.darksky.org/dark-sky-friendly-home to learn more and get started.

Want to protect the night from light pollution? Why not get started in your yard and ensure that your home lighting is both community and night-sky friendly by certifying your home with IDA's **Dark Sky Friendly Home Lighting Program**.

The program is based on the joint IDA–IES "Five Principles for Responsible Outdoor Lighting." By applying these principles, properly designed lighting at night can be beautiful, healthy, and functional. Projects that incorporate these principles, whether a residential home, a development, community, or region, will save energy and money, reduce light pollution, and minimize wildlife disruption.

The process is simple! Follow the step-by-step guide and conduct an outdoor-lighting assessment around your house, apartment building, property line, etc., to evaluate the impact of your light on the night. Most people will find that a few simple changes can lead to both beautiful and functional lighting without contributing to excessive light pollution.

After completing the steps to make your home dark sky friendly, you can download and display a Dark Sky Friendly Home Certificate!

Reports from

Spring 2022 meetings

Photos: Megan Eaves; illustration: Rae Goddard / paraphrase.studio

U.K. Dark-Sky Meeting

21–24 March
Exeter College, Oxford, U.K.
darkskymeeting.co.uk
groups.io/g/darkskiesandsociety

Representatives of the dark-sky community from the U.K. and Europe gathered at Exeter College at the University of Oxford (pictured) to discuss topics ranging from astrotourism and environmental philosophy to satellite data trends. Interactive workshops and focus groups allowed participants to explore solutions, future collaborations, and funding. As a result of the conference, the U.K. Dark Skies and Society Network was formed to share news, funding calls, upcoming meetings, and collaborations.

15th European Symposium for the Protection of the Night Sky

30 Apr – 2 May
Fulda International Dark Sky Community, Germany
lichtverschmutzung.de/symposium_2022

Held this year in the dark-sky community of Fulda, this symposium covered issues of light pollution, its causes, negative effects, and possible remedies. Some of the topics included measuring light pollution; dark-sky parks; astrotourism in Europe; efficient, dark-sky-friendly lighting; environmental impacts; and lighting regulations. IDA Executive Director Ruskin Hartley gave the opening address on the topic of "Under One Sky: growing the global dark-sky movement" and participants had the opportunity to join an evening tour of Fulda to see the dark-sky community's stellar work under a starry sky.

Responsible Outdoor Lighting at Night Online Conference (ROLAN)

12–13 May
Online
cibse.force.com/s/lt-event?id=a1E3Y000010eMEWUA2

Co-founded by IDA, the first international ROLAN conference saw virtual panel discussions on responsible outdoor lighting with practitioners, scientists, and lighting designers, with the aim of facilitating much-needed collaboration and support to improve lighting practice and enhance research. Thirty-one speakers from Europe and the U.S. gave insights on four themes: (1) losing our dark nights, (2) best practice to reduce light pollution, (3) legal aspects of light pollution, and (4) impacts of light exposure at night on the environment and humans.

Seeing stars

THE LIGHT ARTIST HELPING HUMANITY REDISCOVER THE STARS

WORDS BY Kyra Xavia

It may seem counterintuitive and radical for a light artist to create a project that turns lighting off, however that is exactly what Daan Roosegaarde has done. Collaborating with UNESCO, Roosegaarde Studio convinced Franeker, a city of about 12,000 in the Netherlands, to turn off its lighting in November 2021. Franeker seemed the ideal place to launch the project, as it's home to the world's oldest working planetarium — the Royal Eise Eisinga Planetarium (completed in 1781).

The initiative came about to give people a renewed sense of connection, belonging, and wonder by enabling city residents to experience something that's been impossible for decades: seeing a majestic, starry sky from their streets.

"It's very important for humanity to feel there is something much bigger than ourselves; that we're connected to nature and each other," Daan says. "We need to find a new perspective and new harmony, and 'Seeing Stars' does that."

For several hours on the night of the event, urbanites enjoy the best light show on Earth — one that's been silently and steadily stolen away over time by artificial light: starlight that has traveled vast distances across the cosmos.

The project offers city-dwellers the chance to appreciate the beauty of the nightscape and learn just how little light is needed to see, navigate, and feel safe. Daan himself noted that, with less light the eyes see well, highlighting the misconception that more light necessarily increases safety.

"It's a really simple idea but it's very complicated to execute," he says. First, organizers define the area where the lights will be turned off, and then apply for permits and sign-off from safety officers. Signage and staff indicate entry points to the dark zone.

"It's really a community project because citizens have to cooperate by closing their curtains and switching off the lights in stores. There are also crowd control and safety checks, plus billboards need to be switched off and the weather needs to cooperate," Daan explains.

Continued on page 7

Photo courtesy Daan Roosegaarde

Continued from page 6

Bringing Dutch stars back

"Seeing Stars" was so successful that a second event is planned in September 2022 in the larger city of Leiden, home of another historic European observatory. Both Dutch cities have an astronomical connection. Astronomer Jan Oort was born in Franeker in 1900 and later moved to Leiden, where he built one of the largest telescopes of the time.

"As artificial light increased," Daan adds, "Oort became frustrated and developed a switch to turn off Leiden's streetlights when he undertook observations. There's an urban myth [that] there's an 'Oort switch' somewhere in Leiden, and it's a lovely connection to this current project."

Daan also contacted Kathleen Ferrier, Chair of the Dutch UNESCO Commission, to see if UNESCO would support the project.

"The aim of UNESCO is to create peace in the mind of humanity and to encourage a sense of our own humility, which aligns perfectly with 'Seeing Stars'," says Kathleen. She believes "Seeing Stars" touches people deeply and encourages people to look at things from a different perspective.

Urban starry night

"Seeing Stars" raises awareness about the visibility of the night sky and creates an experience of awe for several hours one night.

"We focus on one date and people give lectures and bring telescopes. The intent is to make a big bang to show what's possible," Daan says, so that once the event is over, people may question why it was only for one night.

In Leiden, the project will have a strong citizen science element, with hundreds of telescopes to count the increase in visible stars and long-term research on how light impacts ecology. New software will map the darkened areas in each city using 3-D to show how many more stars are visible.

Other cities, including Miami, Reykjavík, Stockholm, Sydney, and Vienna, have expressed interest in holding "Seeing Stars" events and Daan is hopeful that the project will have a domino effect.

"This needs to be a bottom-up movement that comes from the people," he says. "Nobody agreed to losing the stars, it just happened, so we need to bring them back. It's good for people and it's good for nature."

Hold your own "Seeing Stars"

How can you organise a "Seeing Stars" event in your city? Studio Roosegaarde offers guidance on its website: https://studioroosegaarde.net/data/files/2022/01/503/seeing-stars-short-manual.pdf

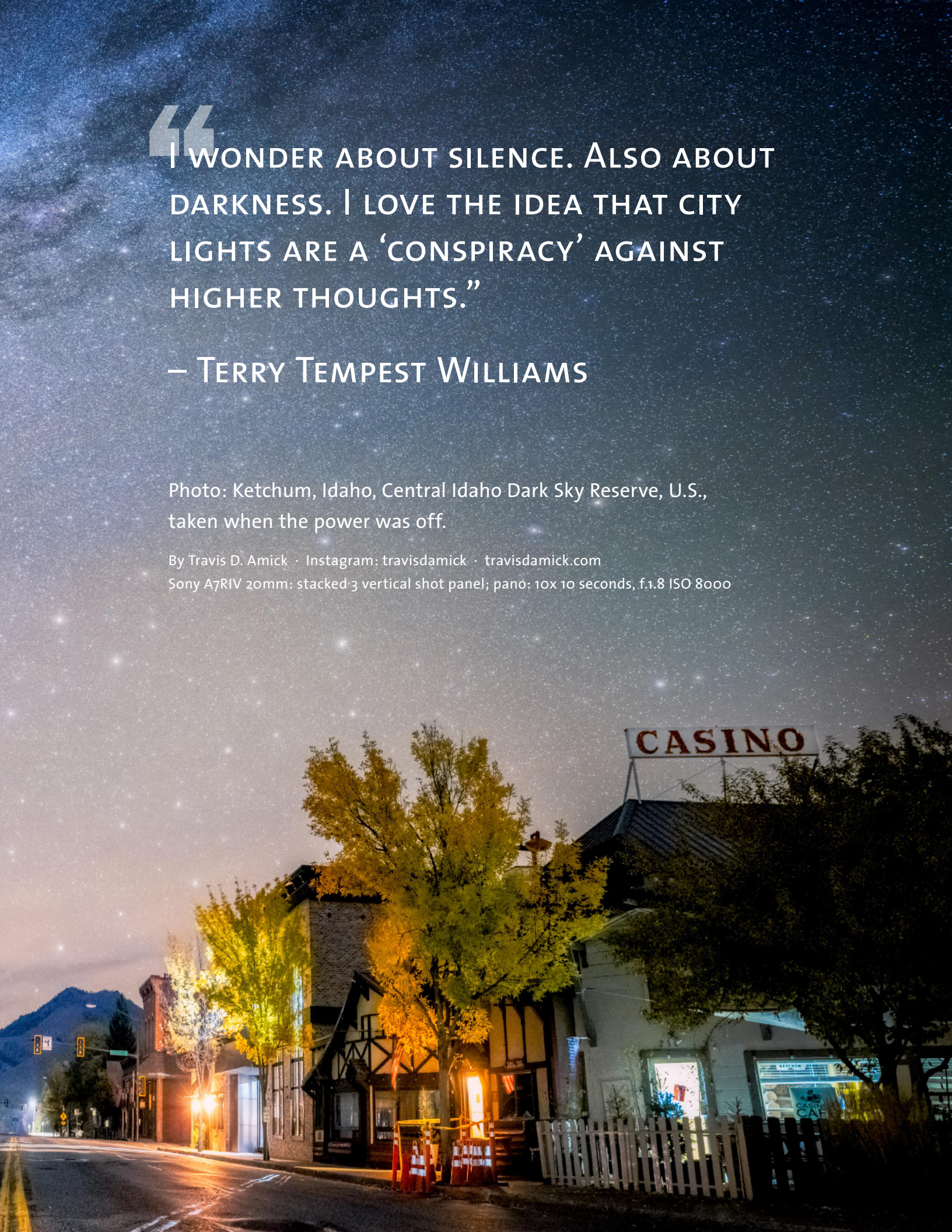
The studio is also working with IDA's Executive Director, Ruskin Hartley, to create a manual for municipalities to integrate this approach into policy.

"Light is my language, but here it's not about adding but removing," says Daan. "We've been told it's the era of abundance yet we have to accept our resources are limited. By removing something — turning lights off, preventing light pollution and saving energy — we get something extra back." ★

Kyra Xavia is an IDA advocate based in Dunedin, New Zealand.

Photo courtesy Daan Roosegaarde


Sun Valley



“I wonder about silence. Also about darkness. I love the idea that city lights are a ‘conspiracy’ against higher thoughts.”

– Terry Tempest Williams

Photo: Ketchum, Idaho, Central Idaho Dark Sky Reserve, U.S., taken when the power was off.

By Travis D. Amick · Instagram: travisdamick · travisdamick.com
Sony A7RIV 20mm: stacked 3 vertical shot panel; pano: 10x 10 seconds, f.1.8 ISO 8000

Cities at night

WORDS BY Megan Eaves

Cities, towns, and developed communities are often the main sources of light pollution. Today, 55% of the global population lives in urban areas and, according to the UN, that number will rise to 68% by 2050. Meanwhile, research released last year by the University of Exeter revealed that global light pollution has soared by some 270–400% over the last 25 years — much of it coming from urban areas. The **Cities at Night** project is building a map of Earth at night entirely in real color for the first time, which will help to detect excessive amounts and inefficient types of light.

Reducing global light pollution must start in cities. And since most of us live in urban areas, we can make a difference right on our own streets. Here's how.

Credit: Harun Mehmedinović, Gavin Heffernan / Skyglow Project

Credit: © Christian Tech / Tourismus Fulda

International Dark Sky Communities

Several communities are leading the way in light pollution reduction. The city of Flagstaff, Arizona, U.S. became the first International Dark Sky Place in 2001, having enacted the world's first outdoor lighting ordinance back in 1958. More recent additions include places like Fulda, Germany — a city of more than 68,000 located near the Rhön International Dark Sky Reserve. Fulda recognized that it was the reserve's most significant source of light pollution and took steps to control its outdoor lighting. It was certified as an International Dark Sky Community (IDSC) in 2019.

The municipality of Jesla, Croatia, home to around 3,600 residents, was designated an IDSC earlier this year after it retrofitted more than 1,000 public lights to fully shielded fixtures at 3,000K or below.

Even whole islands are going dark. Sark in the Channel Islands was one of the earliest dark-sky islands (designated in 2011), while North Ronaldsay in Scotland, and Pellworm and Spiekeroog off the north coast of Germany, were all certified as IDSCs in 2021.

In the U.K. and France, some towns have enacted "part-night lighting," whereby street lighting is switched off late at night. Some villages in Britain, like Brightwell-Cum-Sotwell in Oxfordshire, have resisted street lighting

Continued on page 11

Credit: A. Sánchez de Miguel, ESA, NASA

Continued from page 10

altogether, consistently voting against it at community meetings.

Dark-sky metropolis?

While it is easier to enact changes in smaller communities, important work is happening in major cities, too. In September 2021, Pittsburgh, U.S., adopted a dark-sky lighting ordinance that will replace 35,000 streetlights with IDA-compliant fixtures and install around 8,000 new ones. This is thanks to the work of IDA advocate Diane Turnshek. She tirelessly pursued conversations with politicians and city officials and helped draft the ordinance, proving that one passionate person can make a significant difference in the fight against light pollution. ★

How to get involved

Check the exterior lighting at your home using IDA's home lighting assessment (see p.4).

Talk to neighbors about your own lighting and offer to help with theirs.

Attend community meetings or events to raise awareness about light pollution.

Contact your local government or representatives about lighting policy.

Start a community group to advocate for better lighting practices in your area.

Host a night walk that includes urban wildlife watching and information on light pollution.

Work with environmental groups to ensure nocturnal biodiversity is not forgotten.

Write an op-ed for your local newspaper.

Give talks or presentations to local schools or scout groups.

Use social media to draw attention to lighting issues in your community.

Organize a "Seeing Stars" night (see p.6) in your town or city.

Read about urban lighting to expand your knowledge.

Resources & books

Cities at Night project
citiesatnight.org

Skyglow project
skyglowproject.com

The End of Night by Paul Bogard

Disenchanted Night by Wolfgang Schivelbusch

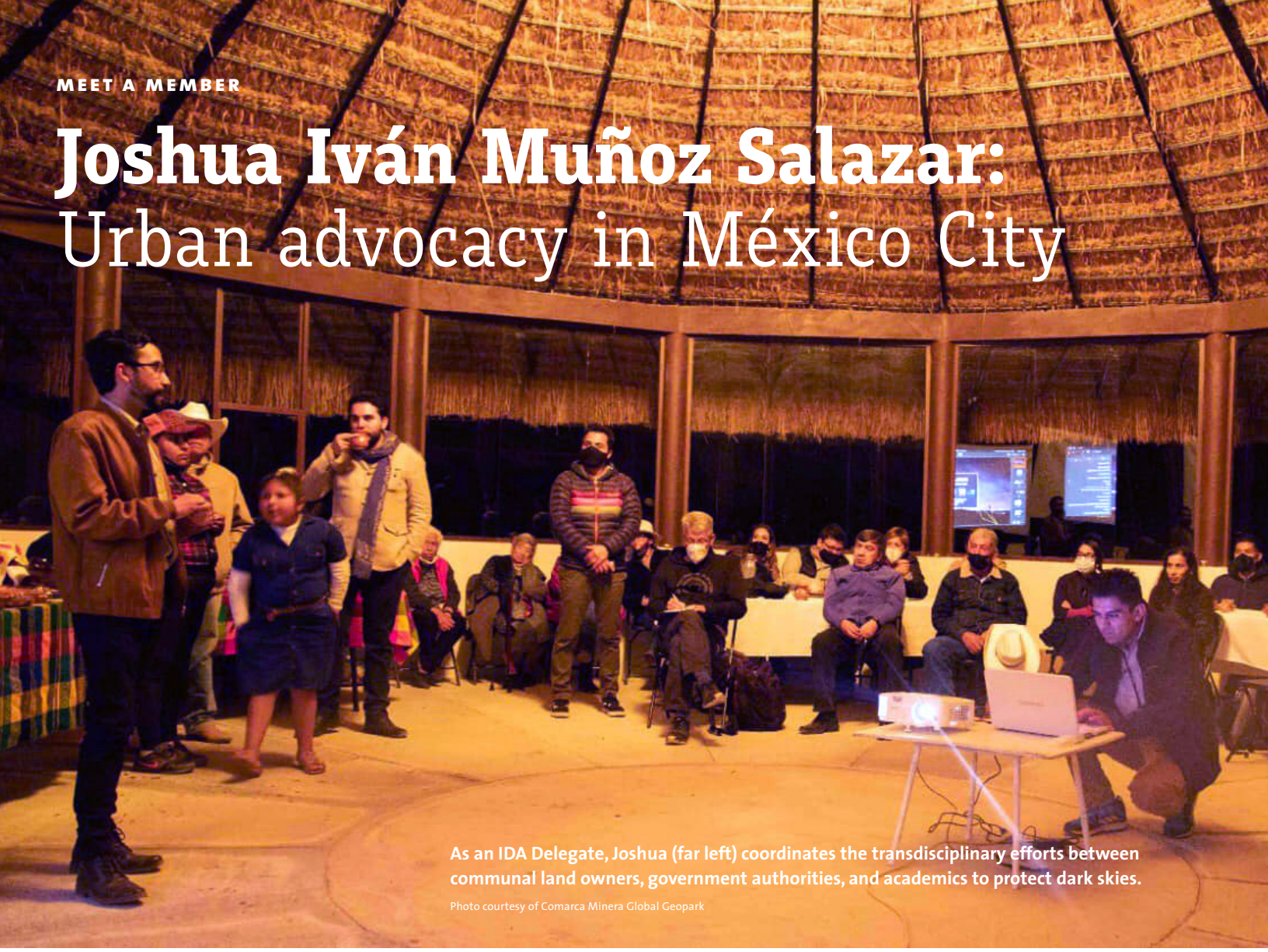
Nights in the Big City by Joachim Schlor

Dark Matters: A Manifesto for the Nocturnal City by Nick Dunn

Urban Lighting, Light Pollution and Society edited By Josiane Meier, et al

MEET A MEMBER

Joshua Iván Muñoz Salazar: Urban advocacy in México City



As an IDA Delegate, Joshua (far left) coordinates the transdisciplinary efforts between communal land owners, government authorities, and academics to protect dark skies.

Photo courtesy of Comarca Minera Global Geopark

In this issue, we get to know IDA advocate Joshua Iván Muñoz Salazar, who is researching light pollution in one of the world's biggest metropolises — México City.

How did you get interested in dark skies?

I studied my Bachelor of Science in Earth Sciences at the Universidad Nacional Autónoma de México and focused my research on light pollution in México City. In this project, I worked with Hector Lamphar (who's currently working with one of the superstars of light pollution research, Miroslav Kocifaj, from the Slovak Academy of Sciences) on a theoretical model to gauge light pollution levels in México City. It is one of the most populated cities in the world — eight million people — so light pollution is increasing.

What did your research focus on?

We talked with the 16 municipalities that make up México City, each of which has a lighting inventory. That was the most difficult thing because there is no standard format for the inventories. There are around half a million points of light in México City, which were the inputs for our model. The result was a theoretical map of light pollution distribution. Now, for my Master's in Sustainability Science, I'm working with Hannah Schrenk from Helmholtz Zentrum München, looking at how social and political practices are shaping the way that we use energy and light. We're trying to find out why people believe they need more light.

Tell us about your working group, Luces Sobre La Ciudad (Lights Above the City).

The government conducted research on the city's most urgent problems and listed light pollution as a major issue. Working groups were formed and academics were invited to research and communicate potential solutions. Led by Ana María Cetto, one of the most prolific scientists in México, we are a

Continued on page 13

Credit: Melissa López Portillo Purata

Credit: Fernando Tomás

Above: Joshua studies the lighting system of México City, one of the most light-polluted cities in the world.

Below: Peña del Aire, Huasca de Ocampo, Hidalgo, México, one of the last dark-sky oases in México and a UNESCO multi-designated area.

Continued from page 12

transdisciplinary group, with physicists, Earth scientists, health professionals, architects, etc. We're looking at both technical and social aspects of lighting. Later this year, we will present our recommendations to the government.

What are some of the social aspects of light pollution that you've discovered?

One of the most interesting things we've found is that people think, if the [public outdoor] lights are not turned on, they're not receiving the services that they pay for. So the local government is under a lot of pressure to have the lights on all the night.

People also believe they need light because they have levels of delinquency. In very populated municipalities, if there are not a lot of big, bright lights, people don't feel secure. But we know that delinquency and the amount of light are not related. Statistics from the policy unit here in México City found that delinquency and criminal activities occur at every hour of the day.

Do you think that light pollution problems are universal?

Personally, I think it's a very western or Global North vision that, if you spend a lot of resources, then you have progress in society. Cities nowadays are on 24 hours. They never sleep. So they turn on light all the time. I think it's related to an idea of development that is unsustainable. ★

Read more about Joshua at darksky.org/joshua-ivan-munoz-salazar-monthly-star

Credit: Juan López Hoyos

Advocate highlights

News snippets from our network of dark-sky advocates around the globe.

U.S.

Thanks to the work of IDA advocates, many cities, counties, and states across the U.S. adopted special proclamations for **International Dark Sky Week 2022**. These official documents issued by local government set forth the beauty and important heritage of star-filled skies and acknowledge light pollution as wasteful and harmful.

Kansas City, U.S.

Because of the work of advocates **DeAnn Gregory** and **Vayujeet Gokhale**, Kansas City adjusted its streetlight conversion plan to use only 3,000K, dark-sky-certified fixtures on all of its streetlights.

Bahrain

IDA advocate **Myriam Alqassab** and the **Bahrain Stargazers** group held a special event for Earth Day, with a program including light pollution talks, beach cleaning, sun observation, stargazing, and astronomy.

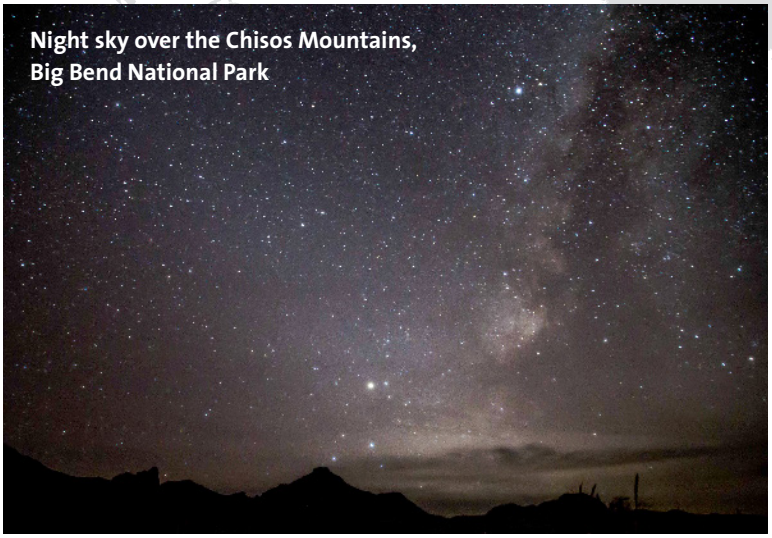
Newly Certified **International Dark Sky Places**

New Reserves

1. Greater Big Bend International Dark Sky Reserve (Texas, U.S., and Coahuila, México)

New Communities

2. Jelsa (Hvar, Croatia)
3. Blanco (Texas, U.S.)



Night sky over the Chisos Mountains, Big Bend National Park

Credit: U.S. National Parks Service / Public Domain

Pakistan

In Pakistan, the **Sustainable Development Policy Institute** held a webinar to initiate national dark-sky advocacy and create dialogue on dark-sky protection. Speakers included IDA advocate **Rayan Khan** and representatives from Pakistan's **National Energy Efficiency & Conservation Authority**, **Ministry of Climate Change**, the **Clean Lighting Coallition**, and the **International Astronomical Union**.

Treat yourself to dark skies!

Gift the night to yourself or a loved one by purchasing our customized apparel, mugs, and totes.

bonfire.com/store/idadarksky

Ask your employer to double your donation

Did you know that many employers **match your donations**? Current and past donations can be doubled or even tripled, adding to IDA's positive impact. Some companies will even match spouses' and retirees' donations. Ask your employer's HR department about **matching gift programs**.

For more info contact susan@darksky.org

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LIGHT TO PROTECT THE NIGHT

Five Principles for Responsible Outdoor Lighting

1 Useful

Use light only if it is needed

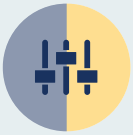
All light should have a clear purpose. Consider how the use of light will impact the area, including wildlife and their habitats.

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 Warmer

Use warmer color lights where possible

Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.