

# Nightscape

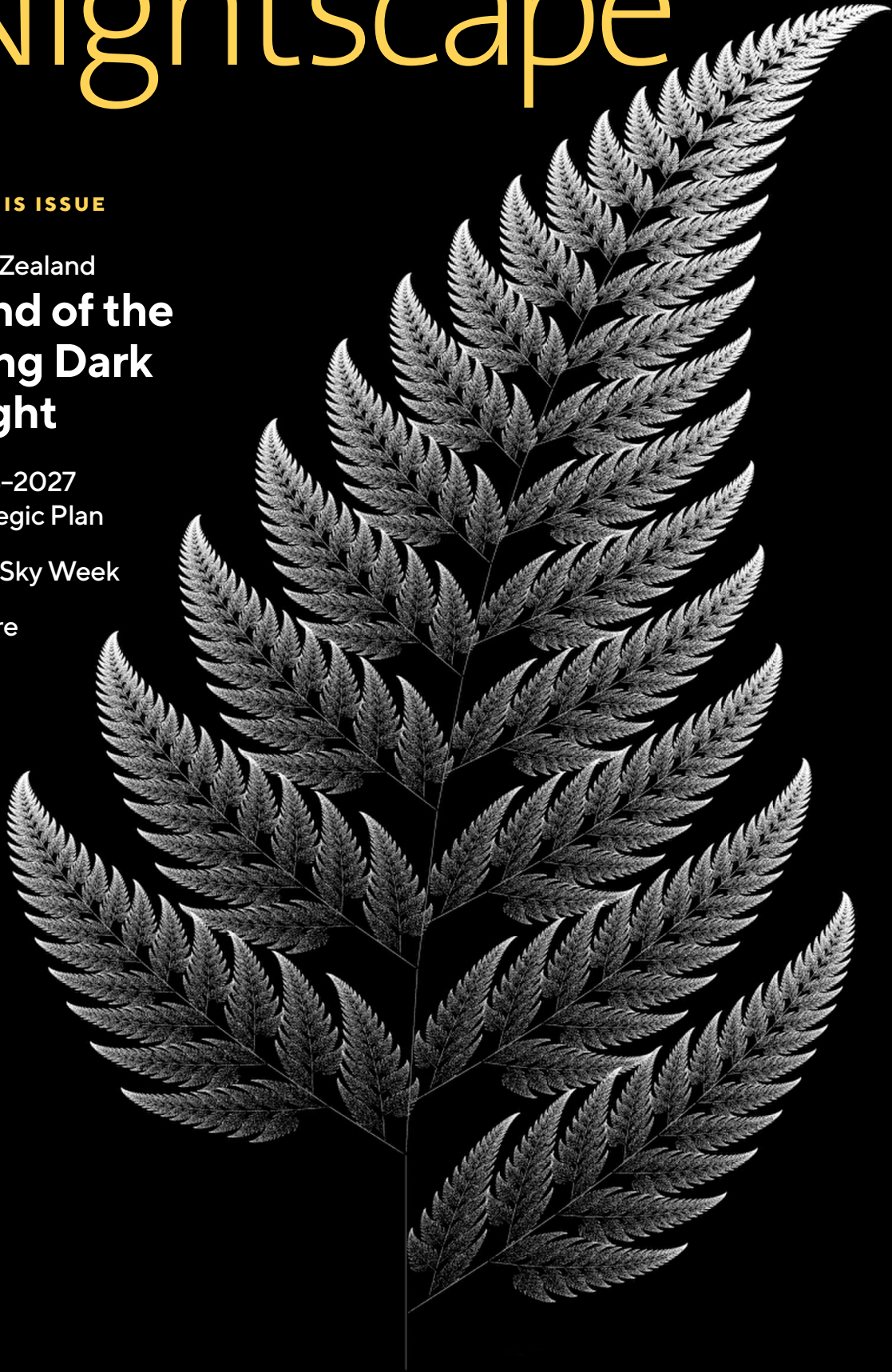
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**Land of the  
Long Dark  
Night**

2023-2027  
Strategic Plan

Dark Sky Week

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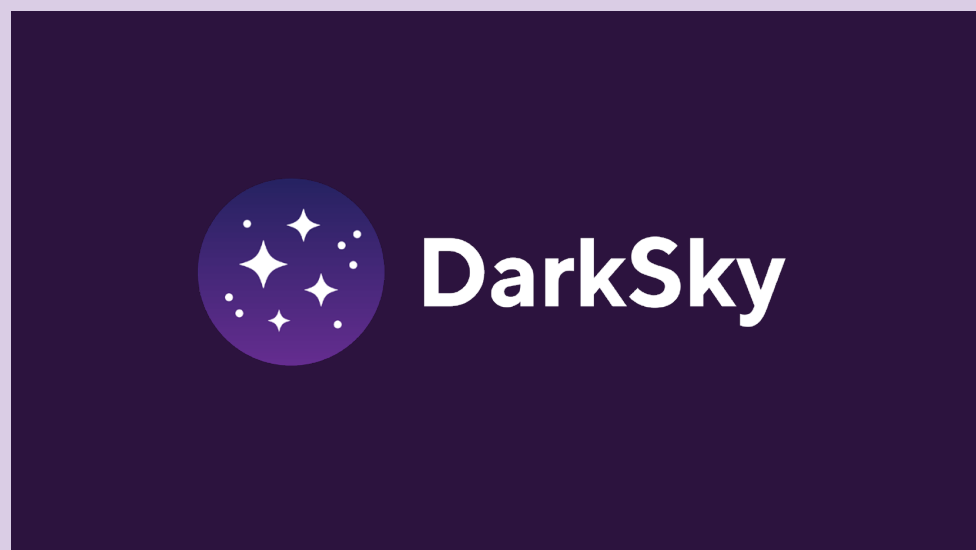


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## From the Executive Director

This year is one of change for the International Dark-Sky Association. In addition to a bold new strategic plan, we also have a new name: **DarkSky**.



Over a year-long period, the board, staff, and consultants conducted extensive research, including interviews with key stakeholders and surveys sent to all members. The new name, logo, visual identity, and website were developed in response to this feedback. Together they enable us to better serve our chapters, members, and the broader public interested in addressing light pollution.

Despite these changes, much remains the same, starting with our shared passion for star-filled nights and dislike of ugly, glare-bomb lights. As you will read in the article on the new strategic plan (p. 4), we are placing you – our members and advocates – at the center of what we do. You are the most effective advocates for change in your communities.

This year, we are developing tools and resources to make your work more effective. These include an online database of policies and case law developed in collaboration with the University of Arizona. We will also roll out a robust online learning program focused on applying our lighting principles to common situations, from streetlights to sports lighting. These will be released on our redesigned website over the next few months.

And for anyone planning a visit to Washington D.C., please visit the Smithsonian National Museum of Natural History. We are pleased to be part of a new exhibit – *Lights Out: Recovering Our Night Sky* – which showcases our International Dark Sky Places program and our Five Principles for Responsible Outdoor Lighting.



For the night,  
**Ruskin Hartley**  
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## Nightscape

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## From the Editor

In this issue of *Nightscape*, we focus on the Land of the Long White Cloud – New Zealand (Aotearoa) – and its efforts to become a Dark Sky Nation. I am fortunate to have family in New Zealand; my father, John Egenes, emigrated from the U.S. 17 years ago and is now a proud Kiwi citizen. He is also a dark sky advocate, and the one who introduced me to the night sky.

For this issue, I travelled to New Zealand and met with passionate dark sky advocates across the country, learning about their approaches to nocturnal conservation. My father and I visited Aoraki Mackenzie International Dark Sky Reserve to experience the vast South Island nights on an astrotour with Dark Sky Project. I spent a memorable evening soaking in the hot pools at Tekapo Springs under the cover of darkness.

I was struck by how prevalent the night sky is in Kiwi culture. From the many conservationists I met to the astrotourism businesses and dark-themed beers, the night sky seems to be everywhere. Even Air New Zealand's in-flight safety video features the Māori legend of the sky



Megan Eaves



Megan Eaves

father reminding passengers that the stars connect humanity, past and present.

My takeaway was that our efforts to restore the night can work. Yet even a place like New Zealand, which could rightly be seen as a pristine natural wonderland, is not immune to the dangers of light pollution. Conservation requires ongoing action to not only protect but restore lost environments. I think New Zealand is a wayshower to restoring the natural night.

In this issue:

- ◆ A feature on New Zealand's Dark Sky Nation efforts
- ◆ An update from Ruskin Hartley on DarkSky's new strategic plan
- ◆ Info about International Dark Sky Week 2023
- ◆ Advocate news and new International Dark Sky Places

As the Kiwis say: Kia ora!



**Megan Eaves**

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### On the cover



#### "Silver Fern"

Claudio Divizia / Shutterstock

An iconic symbol of New Zealand, the silver fern (*Cyathea dealbata*; ponga in Māori) is a species of tree fern only found in New Zealand. The undersides of its fronds have a silver-white color that reflects moonlight and it was historically used by Māori peoples for wayfinding – a natural method of lighting bush tracks at night. The silver fern is used often in Kiwi culture, including on flags, coats of arms, and logos such as those of Air New Zealand and the New Zealand national rugby union team, the All Blacks. Another popular symbol is the fiddlehead shape of a coiled frond – called koru in Māori – often used in jewelry, representing creation and the unfolding of new life.



# Introducing our 2023–2027 Strategic Plan

An update from CEO & Executive Director  
Ruskin Hartley on our new strategy



SkyGlow Project

Our message is simple: *darkness matters*. Over the past 12 years, we have lost it at an unprecedented rate. A 2023 study published in *Science* found that light pollution grew by 10% every year from 2011 to 2022.

The loss of the night sky is erasing a cultural heritage that extends back millennia and touches every society on the planet. But light pollution impacts more than our view of the stars. Light pollution harms biodiversity, wastes energy and contributes to climate change, and affects our quality of life.

We at DarkSky are committed to turning this around.

A look back over the past few years

reveals growth in our membership, capacity, and outcomes. Today, there are more than 200 International Dark Sky Places, thousands of DarkSky Approved lighting fixtures, 1,500 volunteer advocates active in 41 countries, and growing global interest documented in thousands of news stories yearly. Through our board, staff, chapters, volunteer advocates, and members, DarkSky has become a trusted voice for the value of natural darkness and the benefits of better-quality outdoor light.

In our new strategic plan, developed last year, we take a bold, direct, urgent, and optimistic approach to our attitude, collaboration, and inclusiveness.

The strategic plan challenges us to be more effective, powerful, and aligned around an overarching strategy. We will continue our commitment to a science-based approach to promoting the responsible use of outdoor light at night, increase our commitment to our global advocacy community, forge new collaborations, and bolster our focus on policy solutions.

At the core of the new strategic plan is the recognition that *artificial light at night is a pollutant*.

To borrow from one of our board members, Professor Kevin Gaston, our core challenge is to maximize the benefits of outdoor light at night while



simultaneously limiting its costs in environmental and financial terms.

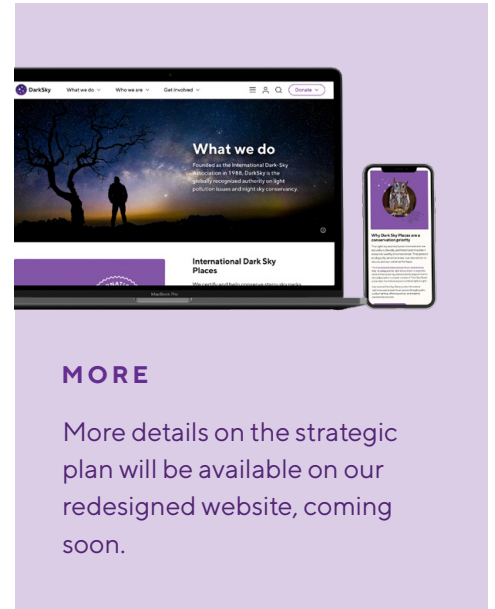
*It is time to move beyond protecting dark skies where they exist, to restoring the nighttime environment where it is lost.*

Natural darkness at night is not optional. It is an essential resource for people and nature.

To change the existing paradigm in which obtrusive light is growing from cities and communities to a future where cities and communities em-

brace responsible outdoor lighting, we must increase our impact at the local, regional, national, and international levels. To do this, we will recruit, mobilize, and support DarkSky advocates to advance policy solutions and work with industry and consumers to grow support for responsible outdoor lighting products.

Outlined below is a brief summary of our new strategic plan, including refreshed vision, mission, and value statements. We are excited about the work ahead and invite you to join us as we forge a bold new path. ✦



## New DarkSky Strategic Plan

### VISION

Natural darkness at night is protected worldwide as essential for people and nature.

### MISSION

To restore the nighttime environment and protect communities and wildlife from light pollution.

### VALUES

Passionate. Inclusive. Collaborative.  
Informed. Inspired. Global.

### ORGANIZATIONAL GOALS

#### DarkSky Policy

Activate advocates to lead movement-building DarkSky policies.

#### DarkSky Approved

Promote DarkSky best practices through the expansion of certification programs.

#### DarkSky Collaboration

Integrate DarkSky principles and approaches into global conservation themes.

**April 15–22, 2023**

# Discover the Night during International Dark Sky Week



Light pollution has far-reaching consequences that are harmful to all living things. Effective outdoor lighting reduces light pollution, leading to a better quality of life for all. The dark sky movement is working to bring better lighting to communities around the world so that all life can thrive.

International Dark Sky Week 2023, held from 15 to 22 April, is a week of nighttime events and opportunities to connect

over our shared goal to restore the night from light pollution. Whether you're an International Dark Sky Place, DarkSky chapter, delegate, supporter, or a casual follower, there are plenty of ways to get involved and celebrate.

Join us this year for International Dark Sky Week to learn more about the movement and discover the night where you live. Learn more and find an event near you at [idsw.darksky.org](https://idsw.darksky.org).



## 8 actions you can take this Dark Sky Week

**ACTION #1**

**Be a community scientist**



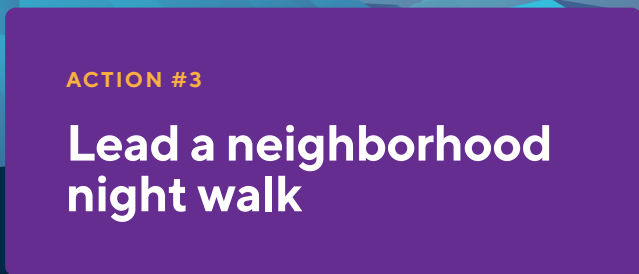
**ACTION #2**

**Inventory your home lighting**



**ACTION #3**

**Lead a neighborhood night walk**



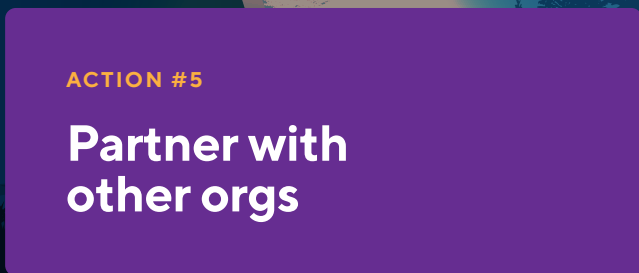
**ACTION #4**

**Become a Dark Sky Advocate**



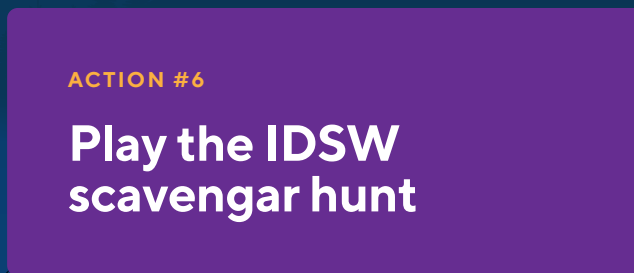
**ACTION #5**

**Partner with other orgs**



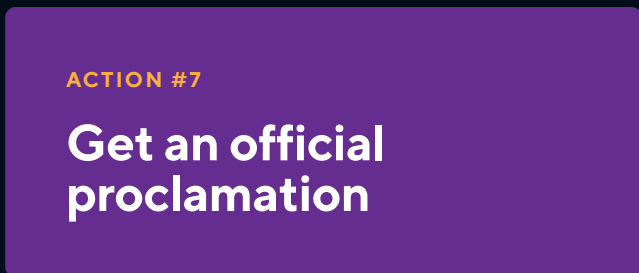
**ACTION #6**

**Play the IDSW scavenger hunt**



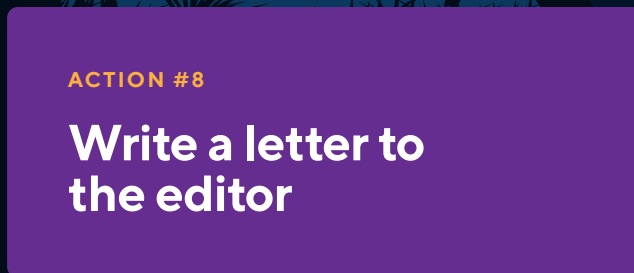
**ACTION #7**

**Get an official proclamation**



**ACTION #8**

**Write a letter to the editor**





“Night is not something to endure until dawn. It is an element like wind or fire. Darkness is its own kingdom; it moves to its own laws, and many living things dwell in it.”

– Patricia A. McKillip, from *Harpist in the Wind*







**Aoraki Mackenzie Dark Sky Reserve** – the village of Takapō's dark sky lighting as seen from Mount John Observatory during a tour with Dark Sky Project.

Photo by Igor Hoogerwerf / Dark Sky Project



# Land of the Long Dark Night

Could New Zealand become the first-ever “dark sky nation”? *Nightscape* Editor Megan Eaves travels there to find out how the Land of the Long White Cloud is preserving and restoring its dark nights.

BY MEGAN EAVES



Maki Yanagimachi / Dark Sky Project

*According to legend, a great warrior named Tamarereti took his waka (canoe) onto a lake and found himself far from home as night was falling. At that time, the sky was dark and starless, and Tamarereti was in danger from the taniwha, a water-dwelling monster. So he decided to sail back through the sky, scattering luminescent stones as he went. The wake of the canoe became the Milky Way and the stones became the stars.*

– Dr Rangi Matamua, Māori star lore expert and author of *Matariki: The Star of the Year*

At the top of Mount John, on the South Island of New Zealand (Aotearoa), astro-tour guide Heather recounted this story to me and a group of visitors as we stared up at the night sky. Though it was early January and mid-summer, the temperature dropped and we were

bundled into coats and hats, with the southern constellations gleaming overhead: Crux and two smudges — the Magellanic Clouds.

Mount John is the center of Aoraki Mackenzie International Dark Sky Reserve (IDSR), where I took my tour with Dark Sky Project (darkskyproj-

ect.co.nz), a successful astrotourism experience co-owned by Ngāi Tahu, one of the largest iwi (Māori tribes) in the country.

Recent headlines have touted New Zealand’s efforts to become a “dark sky nation,” which is not a designation that DarkSky has ever given out<sup>1</sup> — at least not yet. But the dedicat-

<sup>1</sup> In 2014, the Kaibab Paiute Indian Reservation in Arizona was designated as a Dark Sky Community and unofficially dubbed the “world’s first dark sky nation.” And in 2020, DarkSky designated an entire country — the Pacific island nation Niue — as a Dark Sky Sanctuary, but an official Dark Sky Nation designation does not currently exist.



as kauwae-runga containing celestial knowledge, creation stories, the pantheon, and time.

The night sky also informs the Māori lunar calendar, and on June 24, 2022, New Zealand for the first time celebrated Matariki as an official public holiday. Matariki is the Māori name of the Pleiades star cluster, whose first rising in late June or early July marks the beginning of the Māori new year.

New Zealand is renowned for its rich biodiversity and dramatic landscapes, including Aoraki Mackenzie IDSR, containing the country's highest peak and its namesake, Aoraki

Mount Cook. It is an alpine area with long, turquoise lakes shaped by glaciers and golden tussock hills ringed by snow-capped peaks.

New Zealand's diverse nocturnal plants and wildlife include the endemic silver fern, or ponga in the Māori language, shown on the cover of this issue — a symbol of New Zealand. The fern's undersides are a silverish color that reflects moonlight; Māori people used them as waymarkers to navigate bush pathways at night.

Endemic trees such as the kahikatea and kānuka provide habitats for several nocturnal animals, while the country's only native palm tree,

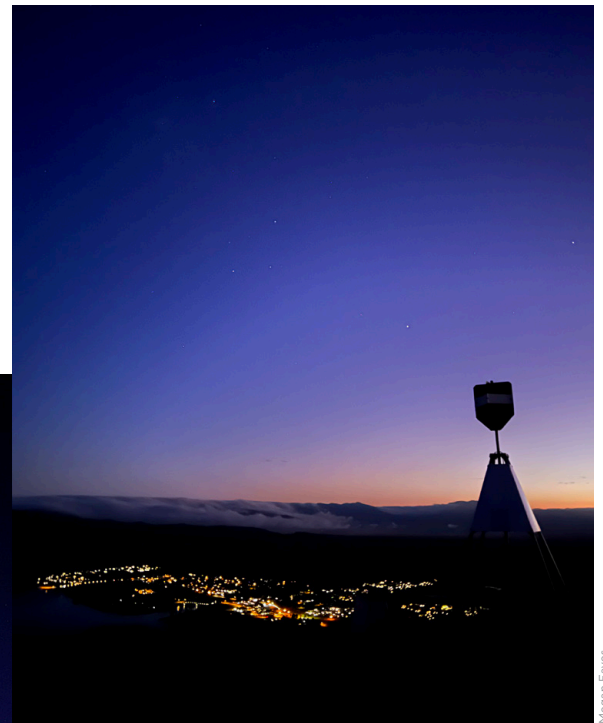
Dark sky lighting has reduced light pollution in the village of Takapō (right), the center of the Aoraki Mackenzie reserve.

A Dark Sky Project tour includes an introduction to Māori starlore and the Southern Hemisphere sky.

ed advocates in New Zealand, led by DarkSky Vice President Nalayini Brito Davies, have banded together, aiming to be the first to earn this new type of certification.

### Culture of Earth and Sky

The natural night has been preserved and utilized in New Zealand for centuries, particularly by the Indigenous Māori peoples, historically skilled Oceanic navigators who sailed by the stars. Māori astronomical knowledge, or tātai arorangi, is part of a body of knowledge known



Endemic kānuka trees (left background) provide habitats for nocturnal species like the batrachedra agaura moth and wētā cricket.



the nīkau, is an important food source for nocturnal species, including the threatened native wētā cricket. New Zealand has few day-flying butterflies, moths, and bees, so plants like the mahoe shrub evolved with flowers that

release perfumes at night to attract nocturnal pollinators.

Overall, New Zealanders seem to me to be very environmentally conscious, due in part to their location on an isolated and delicate island ecosystem, as

## New Zealand's Dark Sky Timeline

**1980s** – Lighting ordinances to protect Mt John Observatory

**2004** – Earth and Sky, the predecessor to Dark Sky Project, founded

**2012** – Aoraki Mackenzie International Dark Sky Reserve certified by IDA

**2017** – Aotea / Great Barrier Island certified as an International Dark Sky Reserve

**2019** – Starlight Conference is held in Takapō

**2020** – Rakiura / Stewart Island and Wai-iti Reserve certified as IDSPs

**24 June 2022** – Matariki celebrated as an official public holiday for the first time

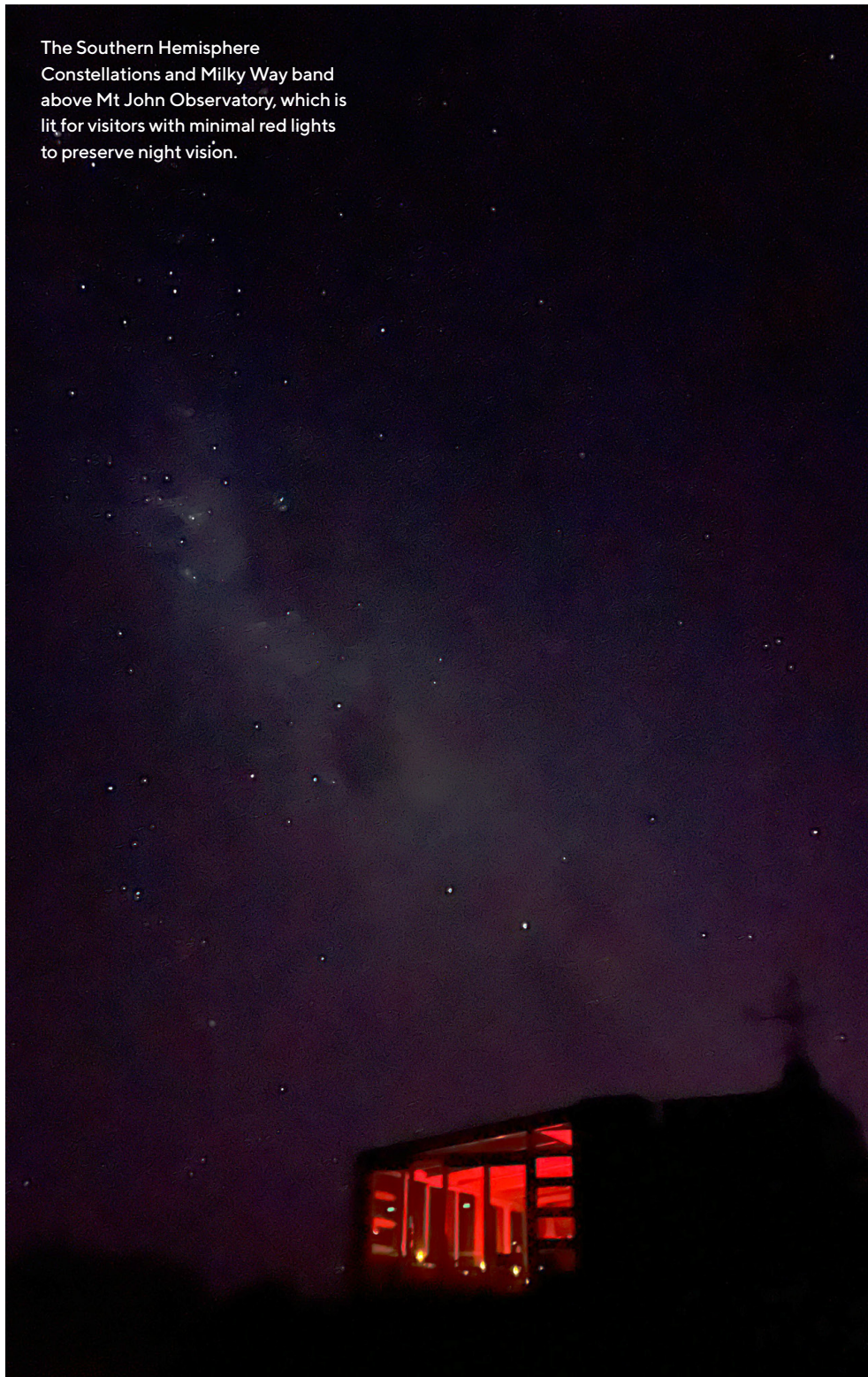
**Jan 2023** – Wairarapa Dark Sky Reserve becomes the first IDSR on the North Island

well as cultivating a culture of environmental education. Tourism is also a huge driver of environmental awareness and dark sky protection here. Around 10% of the approximately 3 million annual visitors are estimated to come for the night sky, including from countries like China where, pre-pandemic, there were direct flights to Aoraki Mackenzie for nature and night sky tourism.

### Becoming a Dark Sky Nation

In 2019, following the Starlight Conference held in Takapō, it was agreed New Zealand would pursue “Dark Sky Nation” status. To achieve this, the Dark Sky Network New Zealand was formed, led by Nalayini along

The Southern Hemisphere Constellations and Milky Way band above Mt John Observatory, which is lit for visitors with minimal red lights to preserve night vision.





with astronomer John Hearnshaw, Steve Butler (Royal Astronomical Society of New Zealand), and Gareth Davies (Dark Sky Places Committee). The network provides a forum for certified and aspiring Dark Sky Places to share experiences, access resources, and address cultural and biodiversity issues specific to New Zealand.

I asked Nalayini what it would take to achieve the certification, and she said the goal is to have more of New Zealand’s land area certified as International Dark Sky Places (IDSPs). Currently, there are 27 aspiring IDSPs in addition to the five already certified. While globally the Milky Way is now invisible to a third of humanity,

including most of Europe and North America, in New Zealand it is still visible from 96.5% of the landmass. Almost everywhere in the country is a 30-minute drive from a Dark Sky Place, including the center of the largest city, Auckland.

Nalayini points out that light emissions continue to grow around the world. “Having a dark sky is one thing,” she says. “But protecting it for future generations is another. We must demonstrate that we’ve protected a sufficient quantity of our land area. For me, that will happen when we have some national governmental support or policy in place.”

In early 2023, John Hearnshaw sub-

mitted a petition to the New Zealand Parliament requesting national legislation to reduce light pollution. If enacted, it would set controls on outdoor lighting, such as limits on streetlight emissions, reductions in urban blue light, a ban on searchlights and lasers, and curfews for commercial office buildings and shop windows.

New Zealand allows support for a Petition to Parliament to come from outside New Zealand as well as from within. DarkSky members around the world are asked to support the petition by signing it online by 23 April 2023:

<https://bit.ly/nzpetition>

Find out more about the New Zealand Dark Sky Network at [dsnnz.org](https://dsnnz.org). ✦

Right: Dark Sky Project guiding manager Adrien Vilquin-Barrajon leads a public tour of Mt John Observatory.

Below: The Dark Sky Project visitor center, home to the historic Brashear Telescope (bottom) opened in Takapō in 2019.



Megan Eaves

Dallas Poll / Dark Sky Project

# Advocate highlights

News snippets from our worldwide network of dark sky advocates

## A México

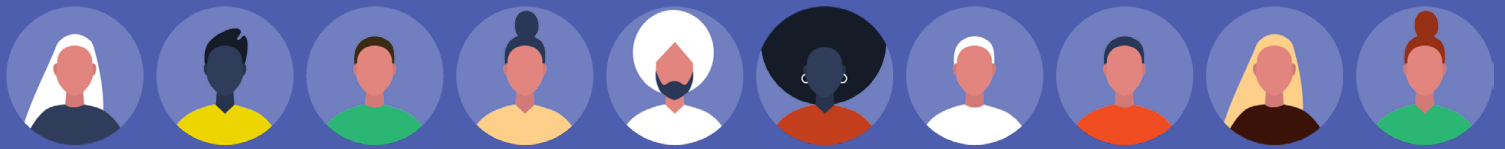
DarkSky Delegate **Juan Carlos Hernández Montes** of Querétaro, México presented a bill that reforms and adds provisions on light pollution to the State Environmental Code. The bill reduces the current 4000 K light temperature maximum to 3000 K. The standard is celebrating its 10th anniversary, so it can be adapted to current needs.

## B Czechia

Czech Delegate and astrophotographer **Petr Horálek** was featured in an ad for the Škoda car company, pictured driving an electric Enyaq Coupé iV vehicle to an overnight, dark sky photo shoot and discussing dark skies and light pollution issues on Škoda's website. [youtube.com/watch?v=gbh2XGJxSkQ](https://www.youtube.com/watch?v=gbh2XGJxSkQ)

## C U.K.

The House of Lords Science and Technology Committee launched an inquiry into the effects of artificial light and noise on human health thanks in part to the work of Advocate **Hannah Dalgleish**. The London Assembly also met with dark sky campaigners, including Advocate **Dan Oakley**, to discuss the impact of light pollution in the British capital.



## Newly certified International Dark Sky Places



Wairarapa Dark Sky Reserve, New Zealand

Glen Butler

### New Parks

- 1 City of Rocks National Reserve, Idaho, U.S.

### New Reserves

- 2 Wairarapa Dark Sky Reserve, Te Ika-a-Māui (North Island), New Zealand

### New Sanctuaries

- 3 Ynys Enlli International Dark Sky Sanctuary, Wales, U.K.



# News & notables



Global news from the movement to solve light pollution



Mitchel Lensink / Unsplash

## Did you know?

Sea turtles live in the ocean but hatch at night on the beach. Hatchlings find the sea by detecting the bright horizon over the ocean. Artificial lights draw them away from the ocean. In Florida alone, millions of hatchlings die this way every year.

[darksky.org/light-pollution/wildlife/](https://darksky.org/light-pollution/wildlife/)

## OVERHEARD

“Thanks to DarkSky there’s an ongoing effort to educate, reduce, and prevent light pollution. I’m so proud to be working with such a great organization helping to bring awareness to this issue.”

– Jeremy Evans



NOIRLab / NSF / AURA / P. Marenfeld

## IN CASE YOU MISSED IT

### IDA appeals SpaceX Gen2 satellite constellation

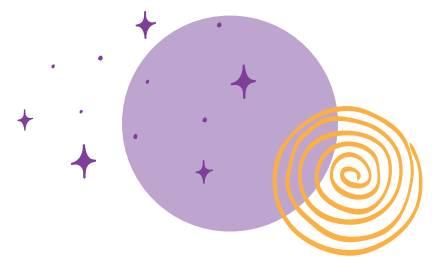
In late December DarkSky lodged an appeal with the U.S. Court of Appeals in response to an FCC authorization approving SpaceX to deploy and maintain a constellation of 7,500 satellites in low earth orbit.

[bit.ly/spacexappeal](https://bit.ly/spacexappeal)

## Join us for Night Matters

Paid DarkSky members have access to new benefits including invitations to “Night Matters,” a monthly series of online gatherings with speakers and topics concerning light pollution. These informative events provide actionable opportunities you can share with your community. An added bonus: If you can’t make a meeting, a recording will be available for you to watch at your leisure.

[darksky.org/night-matters](https://darksky.org/night-matters)



## Show your love of dark skies with a gift to a friend – or yourself

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

[bonfire.com/store/idadarksky](https://bonfire.com/store/idadarksky)

## Light Monitor Grant Program

In partnership with Asterion Foundation, our new pilot Light Monitor Grant Program provides Advocates, Chapters, and other volunteers with specialized devices to monitor the presence of visible artificial light at night.

[darksky.org/light-monitor-grant-program](https://darksky.org/light-monitor-grant-program)







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# Five Lighting Principles for Responsible Outdoor Lighting



DarkSky



Illuminating  
ENGINEERING SOCIETY

Responsible outdoor lighting is

## 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 Warm-colored

### Use warmer color lights where possible

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

