Richland Astronomical Society
The Warren Rupp Observatory

M111

February 2025

The newsletter of the Richland Astronomical Society and Warren Rupp Observatory

Bucyrus Little Theatre Presents "Silent Sky"

The Story of Henrietta Swan Leavitt

The Bucyrus Little Theater will be performing "Silent Sky" the story of Henrietta Swan Leavitt. She was the Harvard astronomer that discovered the relationship between the luminosity and periods of Cepheid variable stars. The Bucyrus Little Theatre is located at 130 Songer Ave, Bucyrus, OH 44820.

These are the showtimes:

Friday, March 7 at 7:30 p.m.

Saturday, March 8 at 2:30 p.m.

Saturday, March 8 at 7:30 p.m.

Sunday, March 9 at 2:30 p.m.

Boring Admin Stuff – Rosters

There are two "official" membership rosters for the RAS. The first is the roster of members maintained on the Night Sky Network (NSN). This roster serves as the club's mailing list for electronic communications, record of dues paid, etc. Members can update their data on this roster by logging in to the NSN and editing their profiles. Alternatively, changes can be submitted to the secretary who can also update the NSN profiles.

The second roster is the one that the club submits to the Astronomical League (AL). This roster is the basis for the dues the RAS pays to the AL and is used by observing program coordinators to verify that people submitting for completion of observing programs are indeed members. Additionally, the AL sends copies of the quarterly magazine, The Reflector, to the mailing addresses on this roster and notifications that the newest issue is available to the email addresses on this roster. This roster is maintained by the RAS Secretary.

Updates to the NSN roster do not automatically transfer to the AL roster. Please let the club secretary know a member's physical or email address has changed and needs to be updated on the AL roster.

Dues for 2025

As a reminder, all memberships expire at the end of the year and renewals should have been made by January 31st. Individual $50, Family $70, and $25 for students. Please let the secretary know if you have family members that need badges/membership cards. Dues payments can also be sent to the RAS post office box: Richland Astronomical Society, PO Box 700, Bellville, OH 44813. PayPal: PayPal Link for RAS Dues

How to submit content and suggestions

Please send any content submissions, questions, or suggestions to the RAS secretary at secretary@wro.org.

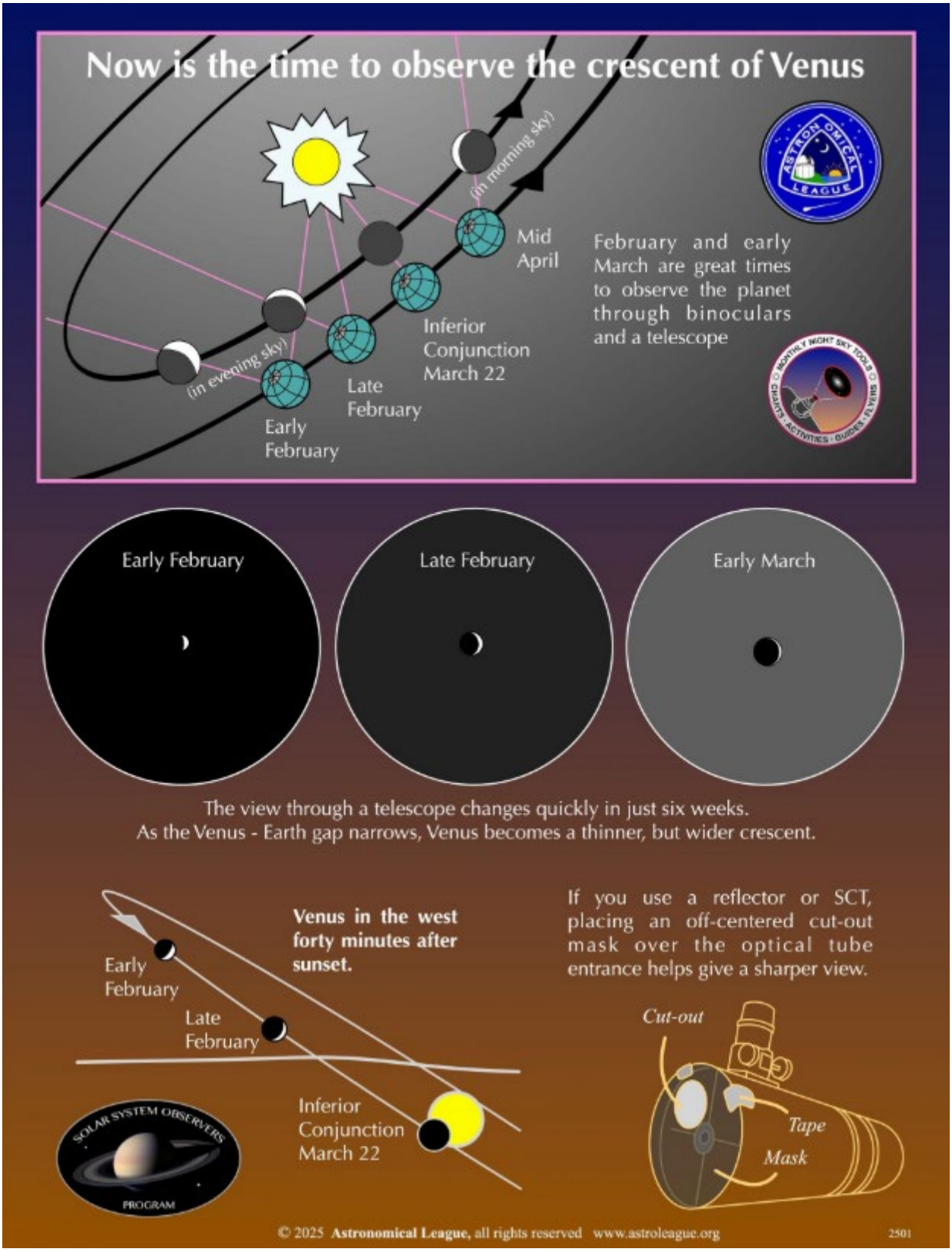
Special Notice Regarding the March 2025 Issue of the *Reflector*

As most of our readers probably have noticed in the last several years, the prices for many of the items we individually purchase have gone up considerably.

The printing industry has not been protected from these price increases. In fact, prices for printing paper and related expenses for the industry have increased even more dramatically than for other segments of the economy.

With all of these considerations, the League leadership has made the decision to change to a less expensive printer. Our new printing company will need ample time to set up the conversion between companies. Therefore, the March 2025 issue of the *Reflector* will be published in digital format only. We should have the new printing vendor firmly in place to hopefully insure a smooth experience with the June 2025 *Reflector*, the first issue printed by the new company.

Thanks for your understanding!


Now is the time to observe the crescent of Venus
(in morning sky)
Mid April
Inferior Conjunction March 22
Late February
Early February
(in evening sky)
February and early March are great times to observe the planet through binoculars and a telescope
Early February
Late February
Early March
The view through a telescope changes quickly in just six weeks.
As the Venus - Earth gap narrows, Venus becomes a thinner, but wider crescent.
Venus in the west forty minutes after sunset.
Early February
Late February
Inferior Conjunction March 22
SOLAR SYSTEM OBSERVERS PROGRAM
If you use a reflector or SCT, placing an off-centered cut-out mask over the optical tube entrance helps give a sharper view.
Cut-out
Tape
Mask
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Ever notice that while many people talk about light pollution, so few actually do anything about it?

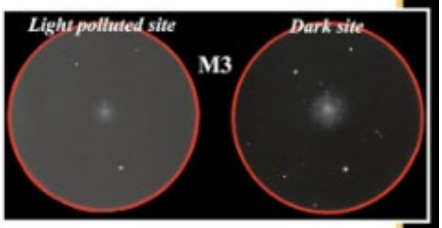
Dark Sky Advocate

An Astronomical League Observing Program like no other.

Welcome to the Dark Sky Advocate Observing Program!
If you have wanted to do something about a topic so important to our avocation – the loss of our dark skies due to needless light pollution – this is a way that you can help.

To become a Dark Sky Advocate, the Candidate must
1. understand the problem of light pollution,
2. know its causes and solutions, and
3. realize how it affects of society in general, and astronomy in particular.

These objectives are achieved by completing a number of weighted tasks to earn at least 150 points out of a possible 200. Here are a few:

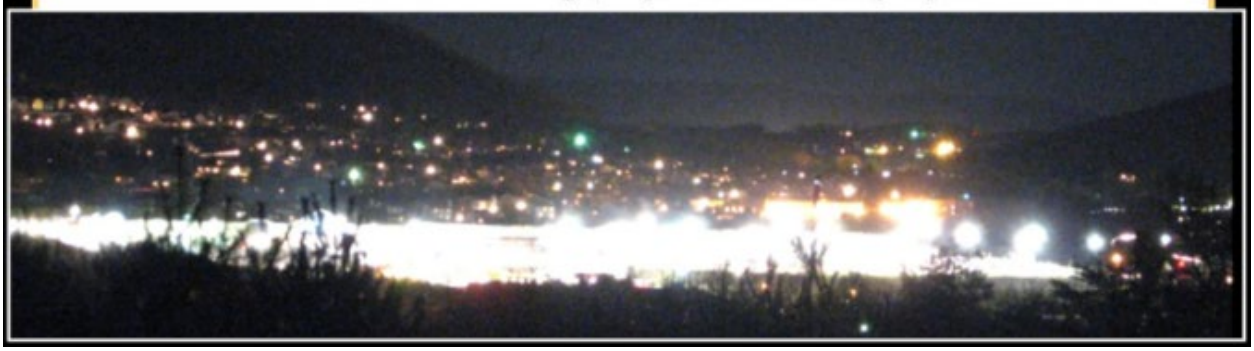


- Provide a copy of a local lighting ordinance.
- Obtain photos of good and bad lighting in your area.
- Estimate the limiting magnitude in and around your area.
- Conduct star counts of either Cygnus or Orion.
- Observe specific deep sky objects from light polluted and dark sky locations.

Demonstrate your knowledge of non-astronomical aspects of the issue.
- Find your annual electric rates as expressed in cents per kilowatt-hours, and compute the electrical cost of various fixtures.
- Submit material that discusses wildlife and light pollution.
- Submit material that discusses health issues and light pollution.
- Contact your local law enforecement agency to find out at what time of day most crimes are committed.

Public Enlightenment and Raising Awareness:
- Develop and deliver a presentation addressing the light pollution issue.
- Draft a letter to local government officials that describes the need for better outdoor lighting.
- Draft a letter to local businesses thanking them for their responsible lighting or informing them of the need for better lighting.

For full program details: https://www.astroleague.org/dark-sky-advocate-observing-award/



10th Anniversary!

2025 Astronomical League Sketching Award Competition

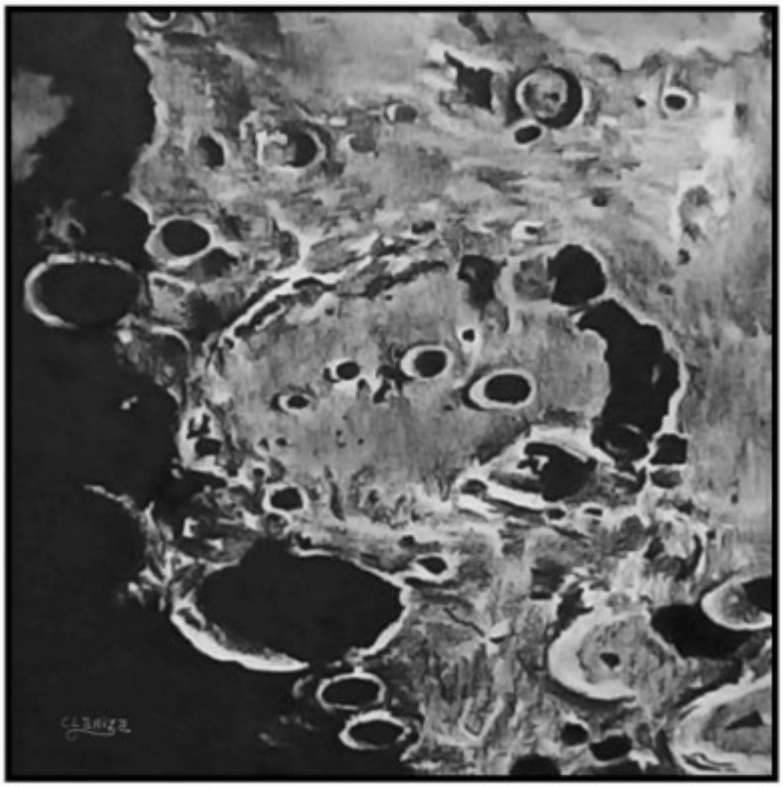
Do you have an astronomical themed sketch that you'd like to share with others?
The deadline is approaching to submit entrees into the 2025 AL Sketching Award competition.

Deadline: March 31

For complete information:
https://www.astroleague.org/astronomical-league-awards/

Submit entrees to: Sketch@astroleague.org

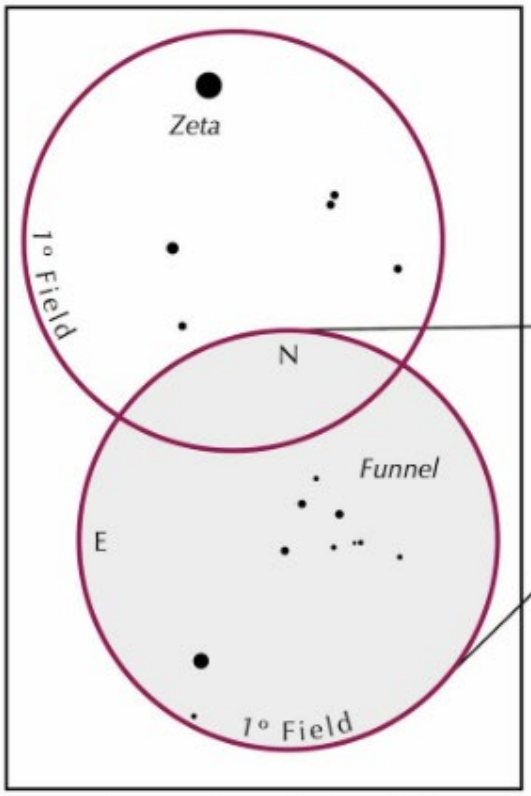
2024 First Place:
Clavius,
Clariza Kern,
Ponchatrain Astronomical Society

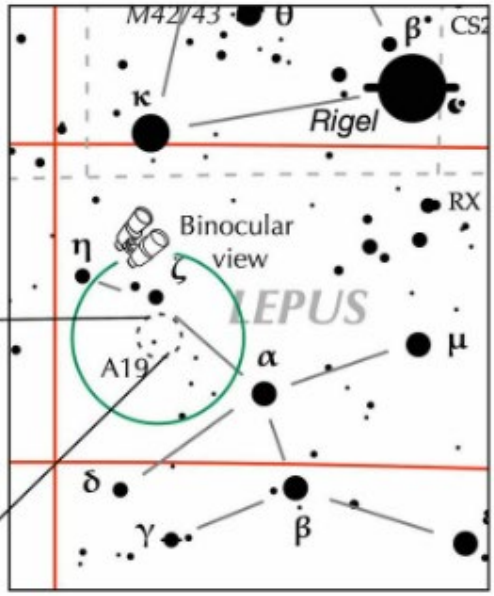


Remember: Deadline for entry: March 31

The Funnel, an asterism on the edge for binoculars

On the Astronomical League's Asterism list as no. 19





19 Asterism: the Funnel
Magnitudes: 8.1 – 9.6
Diameter: 30 arc–minutes

Can you trace the Funnel?

How to find the Funnel ...

1. Find the two lower stars of Orion, bright Rigel and Kappa Orionis.
2. 5° directly south of Kappa shines 3.5 magnitude Zeta Leporis
3. 1° south of Zeta lies the small asterism of seven eighth and ninth magnitude stars. This is approaching the lower limit of 10x50 binoculars.
4. When the asterism is centered in a 1° field, a sixth magnitude star lies near the southeast rim.

Use a tripod to help bring in the asterism's 8th and 9th magnitude stars.

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February Night Sky Notes: How Can You Help Curb Light Pollution?

By Dave Prosper
Updated by Kat Troche

Before and after pictures of replacement lighting at the 6th Street Bridge over the Los Angeles River. The second picture shows improvements in some aspects of light pollution, as light is not directed to the sides and upwards from the upgraded fixtures, reducing skyglow. However, it also shows the use of brighter, whiter LEDs, which is not generally ideal, along with increased light bounce back from the road. Image Credit: The City of Los Angeles

Light pollution has long troubled astronomers, who generally shy away from deep sky observing under full Moon skies. The natural light from a bright Moon floods the sky and hides views of the Milky Way, dim galaxies and nebula, and shooting stars. In recent years, human-made light pollution has dramatically surpassed the interference of even a bright full Moon, and its effects are now noticeable to a great many people outside of the astronomical community. Harsh, bright white LED streetlights, while often more efficient and long-lasting, often create unexpected problems for communities replacing their older streetlamps. Some notable concerns are increased glare and light trespass, less restful sleep, and disturbed nocturnal wildlife patterns. There is increasing awareness of just how much light is too much light at night. You don't need to give in to despair over encroaching light pollution; you can join efforts to measure it, educate others, and even help stop

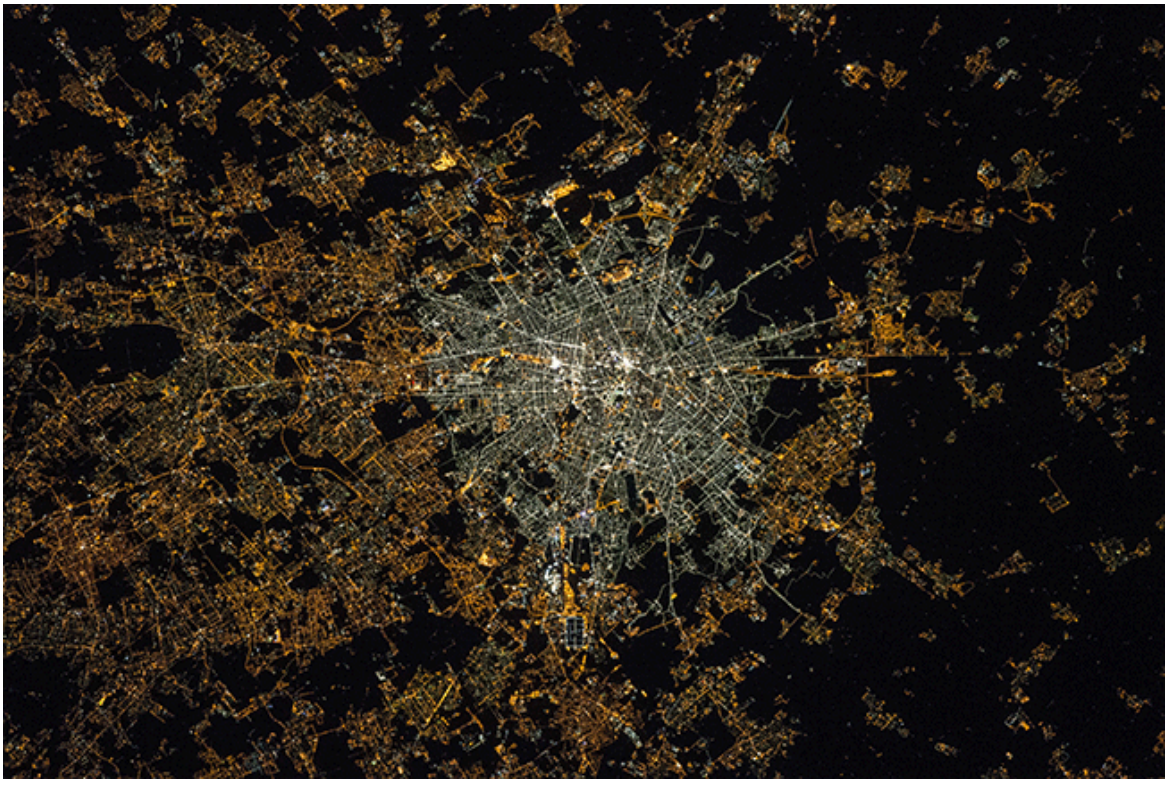
or reduce the effects of light pollution in your community.

Amateur astronomers and potential citizen scientists around the globe are invited to participate in the Globe at Night (GaN) program to measure light pollution. Measurements are taken by volunteers on a few scheduled days every month and submitted to their database to help create a comprehensive map of light pollution and its change over time. GaN volunteers can take and submit measurements using multiple methods ranging from low-tech naked-eye observations to high-tech sensors and smartphone apps.

Globe at Night citizen scientists can use the following methods to measure light pollution and submit their results:

- Their own smartphone camera and dedicated app
- Manually measure light pollution using their own eyes and detailed charts of the constellations
- A dedicated light pollution measurement device called a Sky Quality Meter (SQM).
- The free GaN web app from any internet-connected device (which can also be used to submit their measurements from an SQM or printed-out star charts)

Night Sky Network members joined a telecon with Connie Walker of Globe at Night in 2014 and had a lively discussion about the program's history and how they can participate. The audio of the telecon, transcript, and links to additional resources can be found on their dedicated resource page.



Light pollution has been visible from space for a long time, but new LED lights are bright enough that they stand out from older streetlights, even from orbit. Astronaut Samantha Cristoforetti took the above photo from the ISS cupola in 2015. The newly installed white LED lights in the center of the city of Milan are noticeably brighter than the lights in the surrounding neighborhoods. Image Credit: NASA/ESA

The International Dark-Sky Association (IDA) has long been a champion in the fight against light pollution and a proponent of smart lighting design and policy. Their website provides many resources for amateur astronomers and other like-minded people to help communities understand the negative impacts of light pollution and how smart lighting policies can not only help bring the stars back to their night skies but also make their streets safer by using smarter lighting with less glare. Communities and individuals find that their nighttime lighting choices can help save considerable sums of money when they decide to light their streets and homes "smarter, not brighter" with shielded, directional lighting, motion detectors, timers, and even choosing the proper "temperature" of new LED light replacements to avoid the harsh "pure white" glare that many new streetlamps possess. Their pages on community advocacy and on how to choose dark-sky-friendly lighting are extremely helpful and full of great information. There are even local chapters of the IDA in many communities made up of passionate advocates of dark skies.

The IDA has notably helped usher in "Dark Sky Places", areas around the world that are protected from light pollution. "Dark Sky Parks", in particular, provide visitors with incredible views of the Milky Way and are perfect places to spot the wonders of a meteor shower. These parks also perform a very important function, showing the public the wonders of a truly dark sky to many people who may have never before even seen a handful of stars in the sky, let alone the full glorious spread of the Milky Way.

More research into the negative effects of light pollution on the health of humans and the environment is being conducted than ever before. Watching the nighttime light slowly increase in your neighborhood, combined with reading so much bad news, can indeed be disheartening! However, as awareness of light pollution and its negative effects increases, more people are becoming aware of the problem and want to be part of the solution. There is even an episode of PBS Kid's SciGirls where the main characters help mitigate light pollution in their neighborhood!

Astronomy clubs are uniquely situated to help spread awareness of good lighting practices in their local communities to help mitigate light pollution. Take inspiration from Tucson, Arizona, and other dark sky-friendly communities that have adopted good lighting practices. Tucson even reduced its skyglow by 7% (as of 2018) after its own citywide lighting conversion, proof that communities can bring the stars back with smart lighting choices.

Originally posted by Dave Prosper: November 2018

Last Updated by Kat Troche: January 2025