



NR111

January 2025

The newsletter of the Richland Astronomical Society and Warren Rupp Observatory

Bruce Scodova Named Observatory Director Emeritus



Bruce Scodova was recognized at the December 2024 meeting for all his years of service to the club and the observatory. He was named Observatory Director Emeritus and presented with a plaque. A second plaque will be mounted in the dome. Bruce's association with the club goes back to before the Warren Rupp Observatory was built. He is in the process of building a home in Colorado but will remain a member of the RAS and we hope to see him on the hill many more times in the coming years.

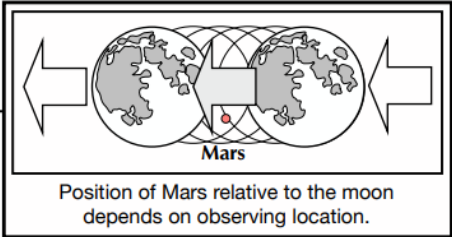
Dues for 2025

As a reminder, all memberships expire at the end of the year and renewals must be made by January 31st. Treasurer Pat Everly will be able to take payment at the January meeting. 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


How to submit content and suggestions

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

If you can see only one celestial event this January, see this one.



Position of Mars relative to the moon depends on observing location.



Lunar occultation of Mars across the contiguous United States: Jan. 13.
Extreme southern US sees Mars move behind the southern portion of the moon, and the northern US sees the planet move behind the northern portion of the moon.


Full Moon occults Bright Mars
In the evening hours of **January 13**, the brilliant full moon passes in front of bright Mars, which is near opposition. It may not be easy to spot because of the moon's bright glare!, but give it a try!

Approximate local times of disappearance and reappearance.
Begin viewing ten minutes before your estimated time. Mars' time and position of reappearance is difficult to judge since the planet lies concealed behind the moon beforehand.

City	Disappearance	Reappearance
Albuquerque	6:51 pm	7:52
Augusta	9:29	10:44
Atlanta	9:06	10:13
Boise	7:06	7:49
Boston	9:26	10:42
Chicago	8:08	9:16
Dallas	7:54	8:57
Denver	6:57	7:57
Kansas City	8:00	9:06
Memphis	8:00	9:07
Minneapolis	8:08	9:10
Los Angeles	5:51	6:45
Miami	9:30	9:53
New Orleans	8:00	8:59
New York	9:21	10:37
Phoenix	6:49	7:48
Salt Lake City	6:59	7:52
San Antonio	7:52	8:50
San Diego	5:49	6:45
San Francisco	5:58	6:45
Seattle	6:23	6:39
Washington DC	9:16	10:31

Be sure to use binoculars!

Occultations demonstrate the moon's eastward orbital motion as Earth's rotation causes it to move in a westward arc across the night sky.



Observing at Cherry Springs State Park (PA)

By Mitch Luman

Having recently relocated here from southern Indiana I was excited to learn that I was within driving distance of an eastern U.S. dark sky site that I have always wanted to check out. In September a friend and I had an opportunity to pack up our telescopes and observe at Cherry Springs State Park located in north central Pennsylvania. Although the skies were not as dark as I had hoped, I was indeed impressed with the facilities there and only marginally disappointed with the darkness of the skies. If you've been to Cherry Springs before, read on. There have been some major changes this past year.

Located south of the small town of Coudersport, Pennsylvania (Pop. 2,314), Cherry Springs State Park is an International Dark Sky Park, a designation reserved for a site recognized for the quality of its night sky and outdoor lighting protections. This article highlights what this location has to offer for amateur astronomers.



The Park can be divided into three main parts: a rustic campground with 30 non-electric sites (open seasonally) and an adjacent Night Sky Public Viewing Area on one side of the highway, and on the other side of the highway there's an excellent Overnight Astronomy Observation Field for stargazing with telescopes. The public viewing area is admission-free and the overnight observation area charges a fee of \$7 per night/person. You pay using provided fee envelopes. On the nights we were there, a volunteer in a blue vest canvassed the field checking to see if everyone paid. Tent and RV camping is permitted on the overnight observation field. For those in search of finer amenities, two Bed and Breakfast establishments, another

state park with showers (fee) and a general store are located nearby. Pets, green laser pointers, alcohol, white lights, and operating a motor vehicle on the field after dark are prohibited. On the Friday night we were there, a food truck was serving hot food.

If you have a telescope the overnight observation field is where you want to be. This lawn-like field is subdivided by four gravel roadway with evocative names like Gravity, Cygnus, Nova and Orion Avenue. Electricity, potable water and Wi-Fi is available on the field. Although the later was not working during our visit. Restrooms with non-potable water and flush toilets are located near the parking lot. Additional nearby activities include the some rather unremarkable restaurants in Coudersport and hiking in the nearby Susquehannock State Forest.





The Overnight Observing Field

So, how good are the skies? Based on the two clear nights that we were there, the skies were “fair” to “good”. The nights were at least equal to what you would experience on the best nights at the Warren Rupp Observatory. The seeing was decent, but the sky transparency and sky darkness was somewhat less than I imagined it would be. There was a small glow in the north from Coudersport, but that didn’t prevent the infrequent overhead clouds from appearing black—a sign of darker skies. Someone with a SQM meter dropped by and measured 21.6, but even so, none of my deep sky targets looked as good they usually appear from locations in the western U.S. such as TSP, NSP and Okie-Tex. With the naked eye, I could just barely make out 6th magnitude stars fifty degrees above the horizon, which translates to Bortle 4.0-4.5, which again, is about what you’d expect from a great night on the hill. If you are to believe the online dark sky maps, this location should perform way, way better than this, at least Bortle 3 or even Bortle 2. Needless to say, I was disappointed, but not discouraged. I will be back. For a refresher on the Bortle Scale visit: https://en.wikipedia.org/wiki/Bortle_scale

There was major construction and upgrades taking place while we were there. New visitor parking, anti-headlight berms, restrooms, paved pathways, light bollards, another rest room and a new amphitheater all were under construction. Most of this new construction was on the opposite side of the highway where the public hang out, but by the time you read this the Overnight Astronomy Observation Field will have a new entrance and a new paved parking lot accessible off of East Fork Road.



You can set up on the overnight field almost any night of the year, with the exception of weeks when two major star parties (Cherry Springs & Black Forest) and a Woodsman Show are being held. Check the Park website for these blackout dates.

Traveling from Ohio it’s about a five-hour drive. The park can be accessed from PA Route 44 either from the north or south using either I-90/I-86 or I-80.

More at: <https://www.dcnr.pa.gov/StateParks/FindAPark/CherrySpringsStatePark/Pages/default.aspx>





This article is distributed by NASA's Night Sky Network (NSN).

The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

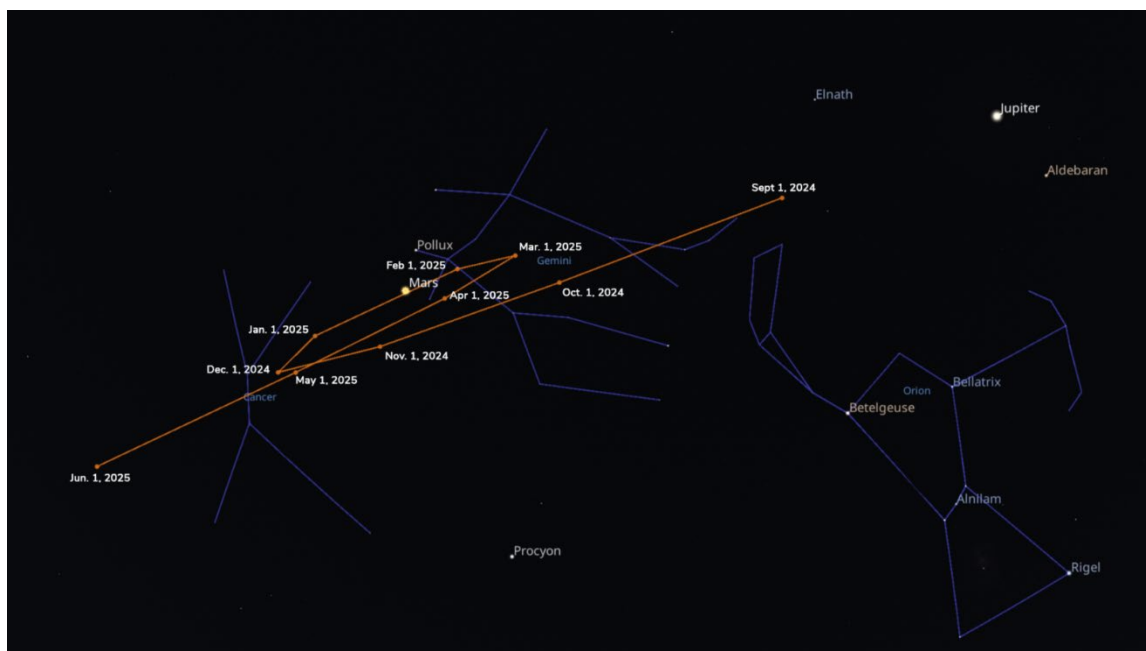
January's Night Sky Notes: The Red Planet

By Kat Troche

Have you looked up at the night sky this season and noticed a bright object sporting a reddish hue to the left of Orion? This is none other than the planet Mars! January will be an excellent opportunity to spot this planet and some of its details with a medium-sized telescope. Be sure to catch these three events this month.

Martian Retrograde

Mars entered retrograde (or backward movement relative to its usual direction) on December 7, 2024, and will continue throughout January into February 23, 2025. You can track the planet's progress by sketching or photographing Mars' position relative to nearby stars. Be consistent with your observations, taking them every few nights or so as the weather permits. You can use free software like Stellarium or Stellarium Web (the browser version) to help you navigate the night as Mars treks around the sky. You can find Mars above the eastern horizon after 8:00 PM local time.



This mid-January chart shows the path of Mars from September 2024 to June 2025 as it enters and then exits in retrograde motion. Mars appears to change its direction of motion in the sky because Earth is passing the slower-moving Mars in its orbit. Credit: Stellarium

Hide and Seek

On the night of January 13th, you can watch Mars ‘disappear’ behind the Moon during an occultation. An occultation is when one celestial object passes directly in front of another, hiding the background object from view. This can happen with planets and stars in our night sky, depending on the orbit of an object and where you are on Earth, similar to eclipses.



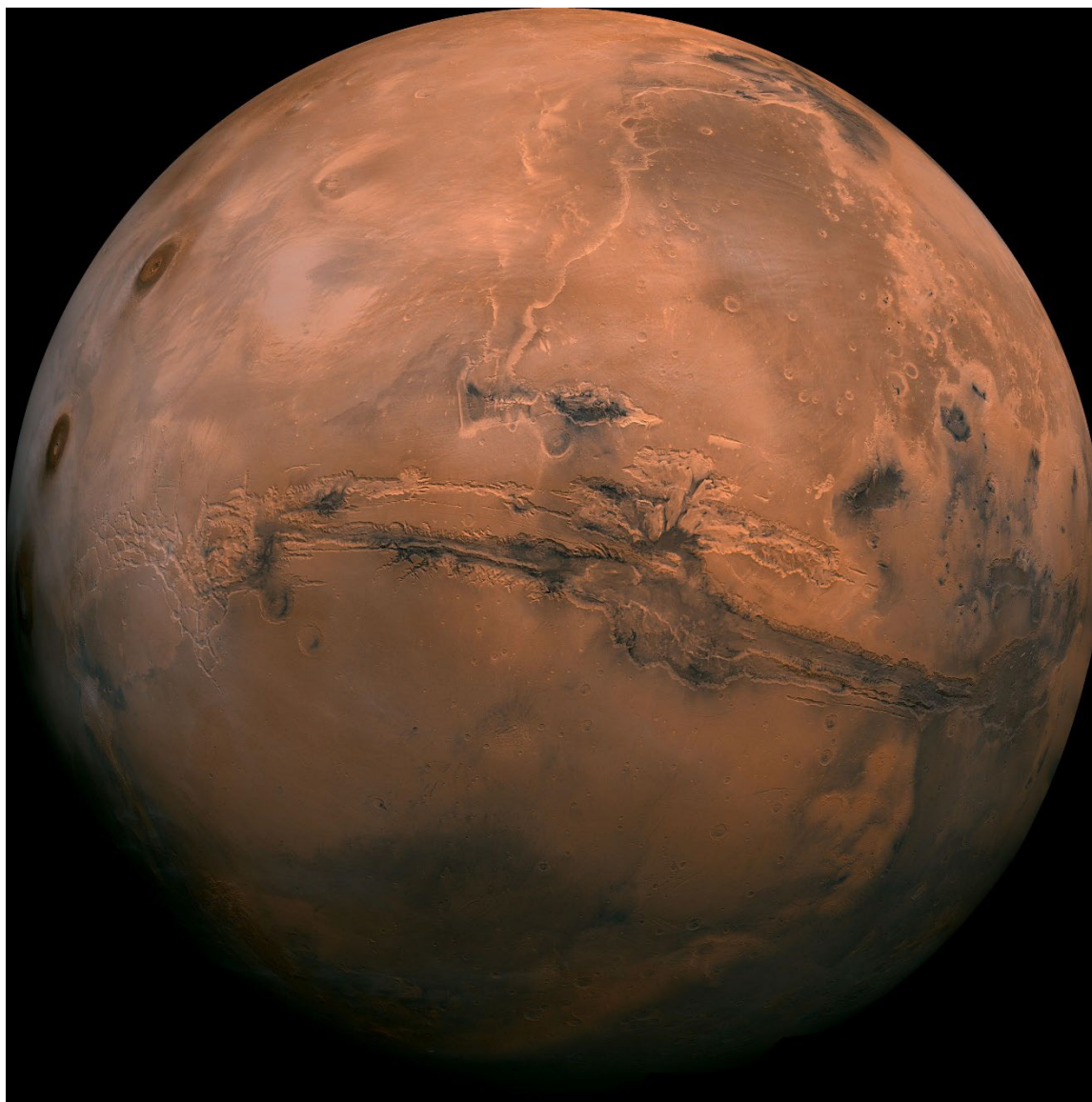
A simulated view of the Moon as Mars begins its occultation on January 13, 2025. Credit: Stellarium

Depending on where you are within the contiguous United States, you can watch this event with the naked eye, binoculars, or a small telescope. The occultation will happen for over an hour in some parts of the US. You can use websites like [Stellarium Web](#) or the Astronomical League’s [‘Moon Occults Mars’ chart](#) to calculate the best time to see this event.

Closer and Closer

As you observe Mars this month to track its retrograde movement, you will notice that it will increase in brightness. This is because Mars will reach opposition by the evening of January 18th. Opposition happens when a planet is directly opposite the Sun, as seen from Earth. You don’t need to be in any specific city to observe this event; you only need clear skies to observe that it gets brighter. It’s also when Mars is closest to Earth, so you’ll see more details in a telescope.

Want a quick and easy way to illustrate what opposition is for Jupiter, Saturn, Mars, or other outer worlds? Follow the instructions on our [Toolkit Hack: Illustrating Opposition with Exploring the Solar System](#) page using our [Exploring Our Solar System](#) activity!



A mosaic of the Valles Marineris hemisphere of Mars projected into point perspective, a view similar to that which one would see from a spacecraft. The mosaic is composed of 102 Viking Orbiter images of Mars. Credit: NASA/JPL-Caltech

Mars has fascinated humanity for centuries, with its earliest recorded observations dating back to the Bronze Age. By the 17th century, astronomers were able to identify features of the Martian surface, such as its [ice caps and darker regions](#). Since the 1960s, exploration of the Red Planet has intensified with robotic missions from various space organizations. Currently, NASA has [five active missions](#), including rovers and orbiters, with the future focused on human exploration and habitation. Mars will always fill us with a sense of wonder and adventure as we reach for its soil through initiatives such as the [Moon to Mars Architecture](#) and the [Mars Sample Return](#) campaign.



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Celebrating 20 Years: Night Sky Network

By Vivian White and Kat Troche

NASA's Night Sky Network is one of the most successful and longstanding grassroots initiatives for public engagement in astronomy education. Started in 2004 with the PlanetQuest program out of the Jet Propulsion Laboratory and currently supported by NASA's Science Activation, the Night Sky Network (NSN) is critical in fostering science literacy through astronomy. By connecting NASA science and missions to support amateur astronomy clubs, NSN leverages the expertise and enthusiasm of club members, who bring this knowledge to schools, museums, observatories, and other organizations, bridging the gap between NASA science and the public. Now in its 20th year, NSN supports over 400 astronomy clubs dedicated to bringing the wonder of the night sky to their communities across the U.S. and connecting with 7.4 million people across the United States and its territories since its inception.



International Observe the Moon Night, September 2024. Credit: Oklahoma City Astronomy Club/Dave Huntz

Humble Beginnings

It all started with an idea – astronomy clubs already do significant outreach, and club members know a lot about astronomy (shown definitively by founder Marni Berendsen's research), and they love to talk with the public. How could NASA support these astronomy clubs in sharing current research and ideas through informal activities designed for use in the places where amateur astronomers conduct outreach? Thanks to funding through NASA JPL's PlanetQuest public engagement program, the Night Sky Network was born in 2004, with more than 100 clubs joining in the first year.



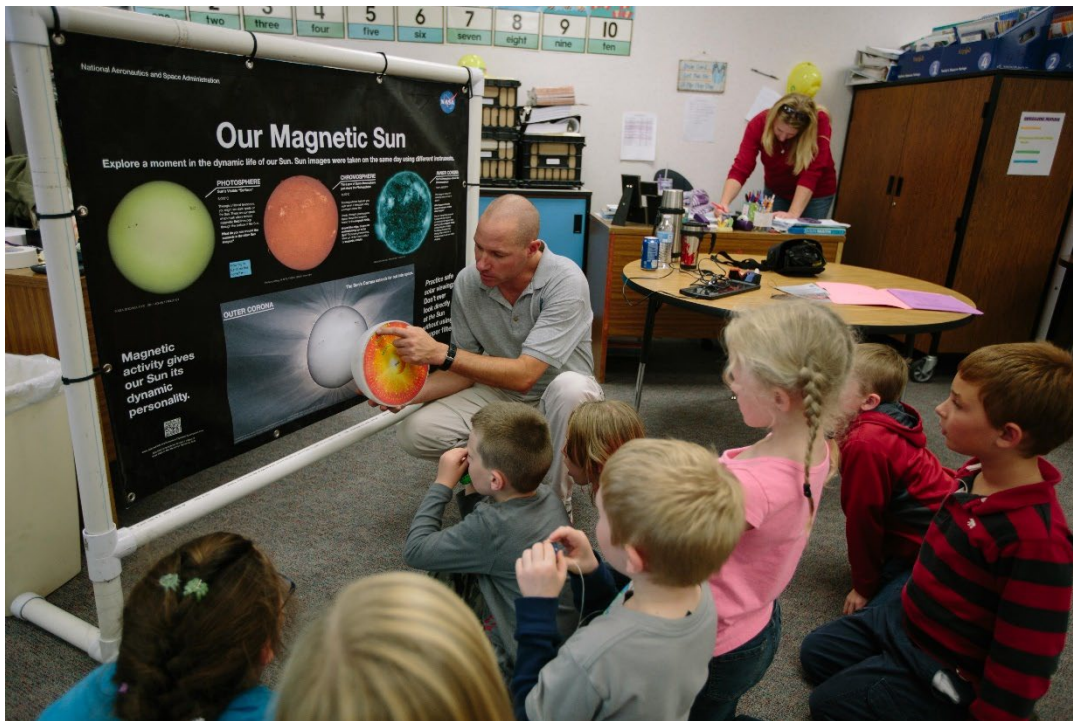
Raynham Public Observing Night, February 2004. Credit: Astronomical Society of Southern New England/Mark Gibson

As quoted from the first NSN news article, "NASA is very excited to be working closely with the amateur astronomy community," said Michael Greene, current Director of Communications and Education and former head of public engagement for JPL's Navigator Program and PlanetQuest initiatives. "Amateurs want more people to look at the sky and understand astronomy, and so do we. Connecting what we do with our missions to the sense of wonder that comes when you look up at the stars and the planets is one of our long-term objectives. We have a strong commitment to inspiring the next generation of explorers. Lending support to the energy that the amateur astronomy community brings to students and the public will allow NASA to reach many more people."

Taking off like a rocket, Night Sky Network had over 100 clubs registered on their website within the first year.

The Toolkits

Outreach Toolkits were developed to assist clubs with their endeavors. These kits include educational materials, hands-on activities, and guides for explaining topics in an accessible way. So far, 13 toolkits have been created on topics ranging from the scale of the universe to how telescopes work. To qualify for these free Toolkits, clubs must be active in their communities, hosting two outreach events every three months or five outreach events within a calendar year. Supplemental toolkits were also created based on special events like the solar eclipses and the 50th anniversary of Apollo's Moon landing. A new toolkit is being developed to teach audiences about solar science, and NSN is on track to support clubs well into the future.



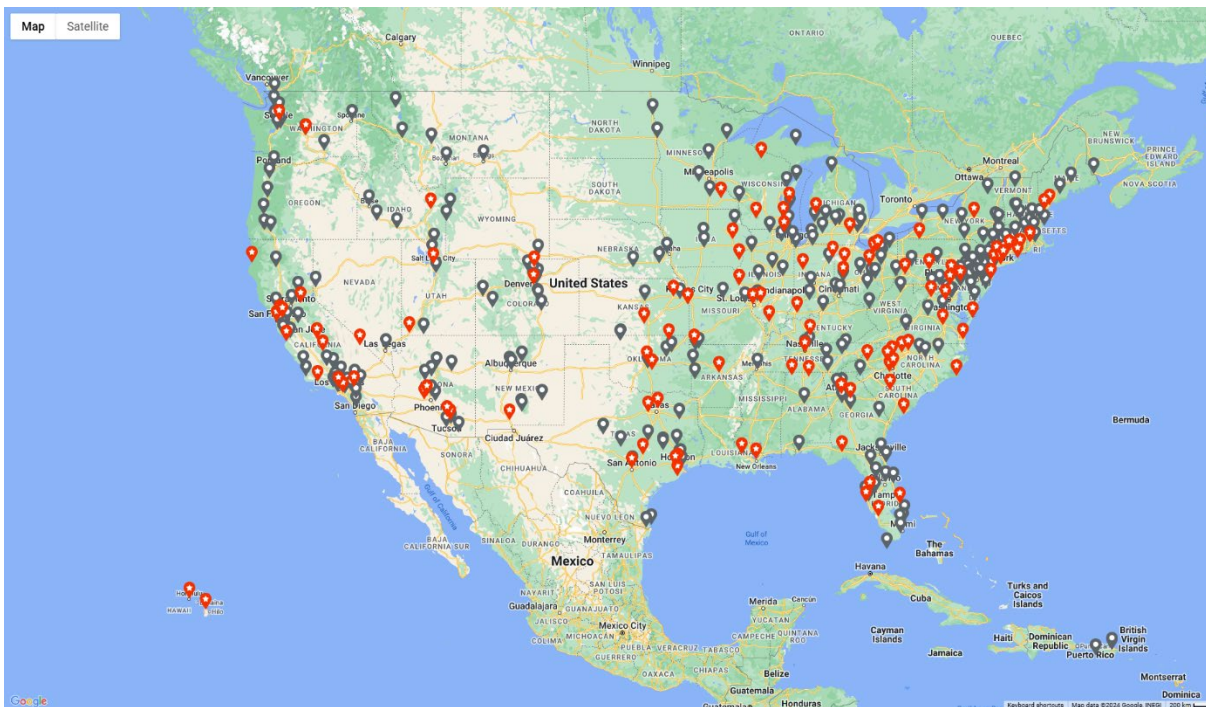
Rye Science Day, October 2014. Credit: Southern Colorado Astronomical Society/Malissa Pacheco

NSN also hosts archived video trainings on these toolkits and other topics via its YouTube channel and a [monthly webinar series](#) with scientists from various institutions worldwide. Lastly, a monthly segment called [Night Sky Notes](#) is produced for clubs to share with their audiences via newsletters and mailing lists.

Sharing the Universe

In 2007, a National Science Foundation grant funded further research into astronomy club needs. From that came three club resources: the [Growing Your Astronomy Club](#) and Getting Started with Outreach video series, an updated website with a national calendar, and club and event coordination. Now, you can find [hundreds of monthly events](#) nationwide, including virtual events you can join from anywhere.

Night Sky Network: Current and Future



Map of Night Sky Network clubs within the United States as of November 2024

As of November 2024, NSN has over 400 clubs as far north as Washington State, west as Hawaii, and south as far as Puerto Rico. Astronomy clubs worldwide share the wonder of the day and night sky with their communities, and the Night Sky Network is happy to support US clubs with public engagement tools. Through their outreach efforts, member clubs have reached more than 7 million people to date, and the community is still going strong. Find an upcoming star party near you on our [new public website](#).