

Skylights

Newsletter of the Astronomical Society of Northern New England



AUG2026

Skylights Editor:

Paul Kursewicz



Member of NASA's
Night Sky Network



**Astronomical League
Member**

ASNNE MISSION

ASNNE is an incorporated, non-profit, scientific and educational organization with three primary goals:

- 1) To have fun sharing our knowledge and interest with others.
- 2) To provide basic education in astronomy and related sciences to all who are interested.
- 3) To promote the science of Astronomy.

What's Up In August

By Bernie Reim

The month of August derives its meaning from the Latin word *augere*, which means to increase. Augustus was a title given to Roman Emperors and it means esteemed or venerable and worthy of respect. The fantastic highlights for this month of August will give all of us a chance to feel more esteemed and venerable as nature itself will be showing off with an excellent meteor shower with no moon to interfere, a near-total lunar eclipse that we CAN see without going anywhere, and to top it off, the universe's greatest display of power and majesty, at least for us earth-bound humans, a total solar eclipse on August 12.

Of course the universe has FAR more spectacular and powerful events to show us than "mere" solar eclipses, but we need huge telescopes in all wavelengths of light and even in gravitational wavelengths, which is nothing like the electromagnetic spectrum represented by photons of light, plus a knowledge of math and physics to really appreciate a common event like a merger of two black holes many times the mass of our relatively "little" daystar, the sun, which generates nearly the power of the original Big Bang itself on a daily basis somewhere in our vast but still very limited observable universe which is nearly 100 billion light years in diameter.

We have only been able to witness about 300 of these events since 2015 with our two LIGO observatories in Hanford, Washington, and Livingston, LA. This stands for Laser Interferometer Gravitational Wave Observatory. They don't look anything like a "normal" optical or even radio telescope. They each have two long arms of 2.5 miles each at right angles. A laser beam is shined into the instrument, then a beam splitter splits the light, sending identical beams along each arm. Secondary mirrors make the beam travel back and forth hundreds of times before returning to the beam splitter at the end. Any passing gravitational wave would cause the arms to minutely expand or contract, so that each beam travels a slightly longer or shorter distance compared to its counterpart. Then the beams would recombine out of phase and not cancel out, resulting in some light at the detector.

The idea is simple enough, but the accuracy required is phenomenal, and many other factors have to be taken into account, like the curvature of the earth itself over those short two and a half miles, tidal effects on the earth from the sun and the moon, tiny vibrations from any source, and many other factors. The gravitational wave only stretches and compresses the very fabric of space-time like ripples on a pond by one thousandth the width of the proton inside the nucleus of the atom.

Albert Einstein predicted that these gravitational waves must exist, but he never thought we would ever develop sensitive enough instruments to discover a fluctuation that tiny. The first black hole merger we definitely discovered happened 1.3 billion years ago since it was 1.3 billion light years away in a galaxy in the southern sky.

Just think about what the earth really looked like 1.3 billion years ago when this powerful event occurred. The single-celled prokaryotes with no nucleus had already ruled the earth for about a billion years, the oxygen revolution had occurred and the more evolved eukaryotes with a cell nucleus containing DNA were just evolving into multicellular organisms that set the stage for all future evolution on Earth that led to modern humans about 200,000 years ago and eventually to Albert Einstein himself that was smart enough to actually predict that such gravitational waves must exist. We finally found our very first one exactly 100 years after Einstein's Theory of General Relativity was published in 1915. Humans may be slow but we will get there eventually.

Three scientists won the Nobel Prize in physics in 2017 for this great feat of engineering, physics, and insight and vision into what is possible. They are: Rainer Weiss, Barry Barish, and Kip Thorne. Kip Thorne is best known of these three since he was the science advisor on the popular movie *INTERSTELLAR*, released in November of 2014.

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What's Up "Continued from page 1"

The remaining highlights for this month pale in comparison to the solar and lunar eclipses that will be visible. Unfortunately, the total solar eclipse on Wednesday afternoon, August 12, will only be about 20% partial for us here in Maine and it will be even less partial the farther south you go. Parts of Canada will see up to a 53% partial eclipse.

The moon's shadow will take a strange curved path over mostly water and uninhabited land for this eclipse. It will start in Northern Russia, curve over near the North Pole, continue down the entire coast of eastern Greenland, pass just west of Iceland, and end up over northern Spain at sunset before the moon's shadow lifts off the earth again over the Balearic Island of Mallorca in the Mediterranean Sea. Reykjavik will be in the path of totality, but not on the center line, so the eclipse will be shorter there and the weather in Iceland is not always great in summer like it will be in northern Spain.

I was told by an eclipse expert that Leon, Spain will be the best place to see this short eclipse near sunset. It will just miss Barcelona and Madrid, so those 5.2 million inhabitants will have to travel a few short miles to place themselves directly in the path of the moon's shadow if they want to experience this remarkable, and often only once-in-a-lifetime celestial and terrestrial event that will lift them right off the planet and give them an entirely new perspective of our place in space and the power and majesty of our sun, moon, and the earth that all 8.4 billion of us currently share.

Most of Europe will see at least a partial eclipse. Only 15 million people, mostly in northern Spain, live directly in the path of this fairly short total solar eclipse. I am sure many Europeans will travel directly into the path of totality to see the whole thing, but it will draw far fewer people than the great pair of U.S. eclipses of August 21, 2017 and April 8 of 2024. It is estimated that about 50 million people experienced the 2024 eclipse and even more people saw the 2017 great American total solar eclipse which only covered only this country from coast to coast, Oregon to South Carolina, from "sea to shining sea". The 2024 eclipse included parts of Mexico and Canada.

I recommend that you find your eclipse glasses from 2024 and make sure they don't have any tiny holes in them if you want to use them again. If they are not in perfect condition, get a new pair or a sheet of aluminized mylar or # 14 welder's glass to safely view this partial solar eclipse on Wednesday afternoon, August 12, starting at 1 pm EDT. The maximum will occur at 1:30 pm our time which is 7:30 pm in Spain. Also make some practice runs with your cameras and filters if you plan to photograph this partial eclipse.

Just because we are not in the path of totality for this eclipse, doesn't mean you can't see it anyway thanks to the "magic" of technology. Of course, that will never be as good as being there in person, but it will still be exciting and educational and if you saw any eclipses before, it will bring back some good memories.

There are several sources that will broadcast this great natural event; not like World Cup soccer, which is man-made. They are National Geographic, Slooh, and Scientific American, which will set up a live YouTube feed from the island of Ibiza starting at 1 pm our time. They will include live interviews with astronomers and photographers and many others that will add to your knowledge and enjoyment of this remarkable and fairly rare event.

The deep partial lunar eclipse will be visible over all of North and South America. It will be 96% covered by the shadow of the earth, so it will be almost as good as a total lunar eclipse when the moon remains completely immersed in our shadow for about one hour. The moon will turn some nice shades of orange and only 4% of it will remain directly in the sunlight in the earth's much fainter penumbral shadow.

The interesting and continually changing colors are caused by the atmosphere of the earth bending or refracting the sunlight around us like a giant lens and then onto the moon. It is mostly red and orange due to the longer wavelengths of light being scattered out, similar to a red sunset or sunrise. In a much more dramatic way to look at any lunar eclipse, just think that what you are really seeing with these colors that give you a lot of information about the condition of our atmosphere at the time, is the combined effect of all the sunrises and sunsets on earth at the same time then projected onto the moon!

This lunar eclipse will happen two weeks after the solar eclipse because we are in an eclipse season now with the earth, sun, and moon aligned just right. That happens every 6 months. This lunar eclipse will start on Thursday, August 27, at 10:33 pm EDT. The full moon will rise at sunset and soon thereafter enter our nearly one-million-mile-long shadow cone that we always project into space like a conical wizard's cap.

Maximum eclipse happens at 12:13 a.m. EDT and it is all over 99 minutes later on Friday morning the 28th. Try to get some good pictures of this event. Although not nearly as spectacular as a total solar eclipse, any lunar eclipse can still tell you many things about our place in space and the great motions and speeds of the sun, moon, and earth through space. Half the earth gets to see a lunar eclipse when it happens, so they are much more common than solar eclipses and you don't have to travel to see one.

A good way to remember August 27 is to remember that Mars made its closest approach to Earth in 60,000 years on August 27 of 2003. It was just under 35 million miles away. It can be up to 250 million miles from Earth at its farthest. Usually, it is closer to 50 million miles away, even at its closest approach which happens every 26 months. A hoax was perpetrated through the fairly new internet at the time that Mars would be as large as the full moon in our sky at that time. That hoax lasted for about 10 years thereafter, saying that Mars would be the size of the full moon every August 27!

Mars was actually about 60 times smaller than the full moon, which covers half a degree of the sky. Mars can get as large as 30 arc seconds of the sky, which is about the size that Venus is now, but that is still 60 times smaller than the full moon at 1800 arc seconds, or half a degree of the sky. You can measure one full degree of the sky by holding up your index finger at arm's length. A fist at arm's length covers 10 degrees. Right now, Mars is very small and only covers 5 arc seconds of our sky. Mars will be at its best at opposition on February 19 of 2027 and again on March 25 of 2029. Jupiter appears as our largest planet now, covering 32 arc seconds of our sky.

"Continued on page 3"

Moon Phases

Aug 6
Last Quarter

Aug 12
New

Aug 20
First Quarter

Aug 28
Full

Moon Data

Aug 9
Looking East-
Northeast 30min
before sunrise Moon
& Mars are closest to
each other

Aug 10
Moon Perigee
225,735

Aug 12
A Partial Solar
Eclipse. From
northern Maine the
Moon will cover 29%
of the Sun around
1:50pm.

Aug 20
Looking South-
Southwest 1hr after
sunset waxing
gibbous Moon siting
lower right of
Antares.

Aug 22
Moon at Apogee
251,432

What's Up "Continued from page 2"

Venus shines brilliantly at magnitude minus 4.4 now and will get even brighter to magnitude minus 4.6 by the end of this month when it will be only 39% lit by the sun and cover a full 30 arc seconds of our sky, or 1/60 the width of the full moon, which is half a degree. Venus now sets about 90 minutes after sunset and will spend this entire month in the constellation of Virgo, approaching its brightest star, Spica, to within 1.7 degrees on the last day of August. Watch for a waxing crescent moon to pass just 3 degrees south of Venus on the 15th.

Saturn now rises before 11 pm in Pisces. It is getting a little brighter and larger and closer each night on its way to its October 4, 2026 opposition when it will rise right at sunset and be at its closest and best and brightest for the year. It now covers 19 arc seconds of our sky and shines with a soft golden light at 0.5 magnitude, which is still about 40 times fainter than brilliant Venus.

Jupiter and Mercury make a nice return very low in our eastern morning sky 40 minutes before sunrise around the middle of this month. They will be less than half a degree apart just below M44, the Beehive open star cluster in Cancer the Crab.

Mars is in Taurus the Bull now and rises around 2:30 am. It shines at magnitude 1.3 and covers 4.8 arc seconds of our sky, but it is very slowly getting a little brighter and larger each morning on its way to its next opposition which won't happen until February 19 of next year. Compare the orange color of Mars and its brightness to nearby Aldebaran, a massive red giant star which marks the fiery eye of the bull in Taurus which is 65 light years away and 1.7 times the mass, 44 times the diameter, and 518 times the luminosity of our sun. Its name means "the follower" in Arabic because it always appears to follow the Pleiades open star cluster in Taurus, also known as the Seven Sisters, across the sky. In ancient Persia, it was also one of four "royal stars" that served as celestial guardians to the heavens and were sentinels of courage, power, and integrity, something all of us could use a lot more of, especially today.

Mars is now almost 6 magnitudes or 200 times fainter than Venus. Each magnitude equals 2.5 times difference in brightness and 5 magnitudes equals exactly 100 times difference in brightness. So, each magnitude is the fifth root of 100. It is a log arithmetic scale.

That covers all of the planets for this month. There are only two more highlights to cover, a nice comet in Pisces Austrinus, just below Capricornus, and a very favorable Perseid Meteor Shower. Comet 10P/Tempel, also known as Tempel 2, will pass perihelion, its closest approach to the sun on August 2. It could reach as bright as 7th magnitude, making it easily visible in binoculars. It rises late in the evening and will be high enough to view soon after midnight. It is best to look for it during the new moon around the middle of this month.

Be aware that this comet will pass very close to Mars many times in the far distant future and will have a good chance of actually hitting the red planet with continuing gravitational tugs from Jupiter, Ceres, and Mars itself. Hopefully there will be an intelligent civilization on Mars by then (maybe even our distant descendants) that will be easily able to blow up or divert this comet, which has a nucleus of 6 miles across. Even a little object much less than a football field across can cause a lot of damage if it impacts any planet.

The annual Perseid meteor shower begins on July 17 and will peak on Wednesday morning, August 12. It will last until August 24. That means that the trail of debris in space from its parent comet, 109P/Swift-Tuttle, which orbits the sun every 133 years, stretches over 60 million miles of space. At 67,000 miles per hour, the earth travels through 1.6 million miles of space every day around the sun. We are in this meteor shower for 37 days, so its debris trail is about 60 million miles wide. That is just one more example of our continuous and incredible motions through space around the sun and all the other motions that happen at the same time. For example, the moon continually moves about 2,000 miles an hour around the earth, which is its own width.

All of the Perseids will appear to emanate from one point in the sky in Perseus the Hero, called the radiant. Perseus will be low in the northeastern sky by 10 pm on the 12th. You will see more and more meteors as Perseus rises higher in your sky. Meteor showers usually tend to be better after midnight anyway since that is when the earth spins into the meteors instead of away from them, similar to snow on your windshield when driving. You could expect up to 100 meteors per hour from a good, very dark sky site with no trees or anything around to block any of the sky. The moon will not interfere at all since it is new and will cause a total solar eclipse a little later on that very eventful Wednesday, August 12 this month.

Even if you only see about 60 meteors an hour, or one a minute on the average, that will be very spectacular and probably the most meteors that most of you have ever seen. These are tiny pieces of comet dust smaller than a grain of sand that burn up high in our atmosphere at the edge of space about 60 miles straight up. The Perseids are among the fastest meteors, entering our atmosphere at about 40 miles per second on the average, which is just over twice as fast as the earth is always orbiting the sun. Many of these Perseids will leave bright fluorescent trails called persistent trains. The longer streaks will lie farther from the radiant in Perseus, so look about 45 to 50 degrees away from the northeast to catch these amazing glowing trails. Also try to get some photographs just by leaving your lens open on a tripod for a few minutes. Here you have yet one more incredible example of how alive the sky really is and our continuous motions through space and the nature of our protective and life-giving atmosphere and some of the myriad objects that we can encounter in space in our travels around the sun

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What's Up "Continued from page 3"

August 1. Helen Sawyer Hogg was born on this day in 1905. She got her PhD in astronomy at Radcliffe and ran the Harvard Observatory for a while. Her specialty was variable stars and globular star clusters. She wrote a book in 1976, *The Stars Belong to Everyone, How to Enjoy Astronomy*.

Aug.2. Mercury is at greatest western elongation from the sun this morning at 19 degrees.

Aug.3. The Messenger spacecraft was launched to Mercury on this day in 2004. We have never landed any spacecraft on Mercury because of its proximity to the sun and its powerful gravitational field and fast orbit around the sun. It takes more energy for a spacecraft to reach Mercury than Pluto. We did a close flyby of Pluto within less than 8,000 miles, or the diameter of the earth, on July 14 of 2015 with the New Horizons spacecraft launched on January 19 of 2006, the fateful year that Pluto was reclassified as a mere dwarf planet and declared no longer a full-fledged planet, which status it had enjoyed for 76 years since its discovery in 1930 by Clyde Tombaugh. The moon passes 7 degrees north of Saturn tonight at midnight.

Aug.4. The Phoenix mission was launched to Mars on this day in 2007. I personally talked to one of the co-investigators on this mission after her presentation at an astronomy event at UNH and she said that they had actually discovered some ancient microbial life about a foot below the surface near its North Pole where the Phoenix mission landed on May 25 of 2008.

Aug.5. Last quarter moon is at 10:21 p.m. EDT.

Aug.6. The Curiosity Rover was launched to Mars on this day in 2012. It discovered many interesting things about Mars and it is still operating along with the much newer Perseverance Rover, which landed there on February 18 of 2021. The Curiosity Rover discovered a diverse array of organic molecules, chemical and mineral evidence that Mars could have supported microbial life, strong evidence of former liquid water at its landing site, the Gale Crater, which once contained a calm lake of liquid water on the much warmer Martian surface. It also provided us many valuable insights into the Martian atmosphere and climate history.

Aug. 8. Paul Dirac was born on this day 1902 in Bristol, England. He was one of the pioneers of quantum mechanics and won the Nobel Prize in physics with Erwin Shrodinger in 1933 for their discoveries in quantum mechanics and quantum electrodynamics. Specifically, he discovered the existence of antimatter through his equations which also described the behavior of fermions, which are particles like protons and neutrons which have half integer spin and are actually composed of quarks. Unfortunately for Dirac, quarks were not even discovered until 1967.

Dirac also did a lot of work to find a unified field theory to connect General Relativity to Quantum mechanics, but never succeeded.

Aug.9. The moon passes 4 degrees north of Mars this morning at 2 am.

Aug.12. New moon is at 1:37 pm EDT. There will be a total solar eclipse today at the same time, but only visible from parts of Greenland, Iceland, and Spain. The Perseid Meteor Shower peaks this morning. Venus will be half lit by the sun.

Aug. 15. Venus is at greatest eastern elongation from the sun tonight at 46 degrees. Mercury passes less than one degree north of Jupiter this morning at 5 am.

Aug. 16. The moon passes 2 degrees south of Venus tonight. On this day in 0980, Avicenna was born in medieval Persia, now Iran. He was one of the most significant people of his time during the Islamic Golden Age. He is also known as the "Father of Modern Medicine". He was a polymath, physician, philosopher in the peripatetic style of Aristotle, chemist, and even musical theorist. He also wrote extensively to pass on his vast knowledge of the natural world.

Aug. 19. First quarter moon is at 10:46 p.m.

Aug.21. The moon passes 0.6 degrees south of Antares, the brightest star in Scorpius, this morning. The word Antares means "Rival of Mars". It is a red supergiant star marking the heart of Scorpius. It is one of the largest stars in our whole galaxy at 700 times the diameter of our sun and located about 500 light years away, similar to Betelgeuse in Orion. By comparison, Aldebaran, the red giant star near where Mars is now, is "only" 44 times the diameter of our sun.

Aug. 24. Timothy Ferris was born on this day in 1944 in Miami. He is a science writer and communicator that has written many books including *Seeing in the Dark*, and *Coming of Age in the Milky Way*.

Aug. 28. Full moon is at 12:19 am EDT. There is also a deep partial lunar eclipse today starting on the 27th at 10:33 pm. This is also known as the Sturgeon, Green Corn, or Blueberry Moon.

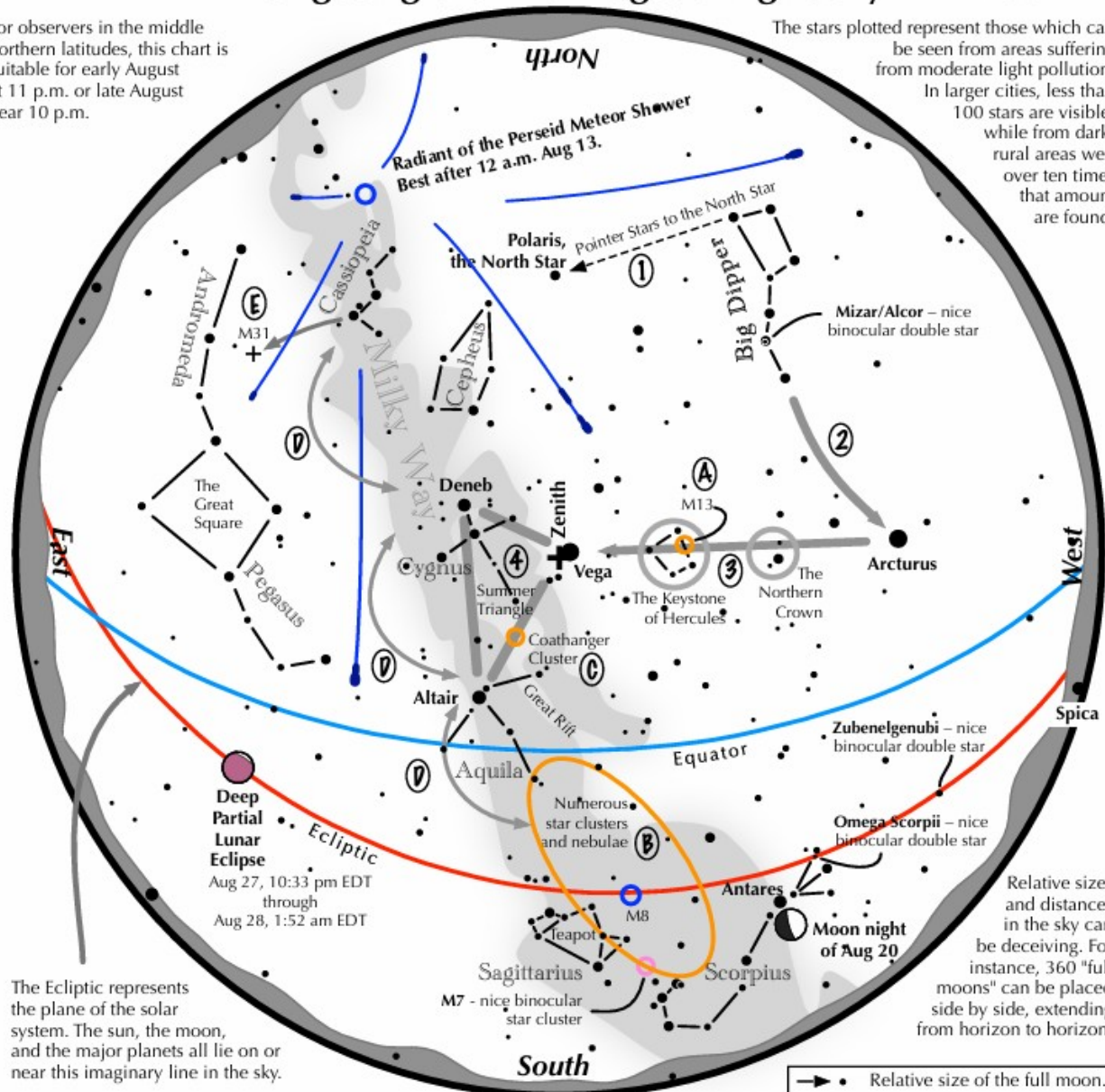
Aug.31. The moon passes 7 degrees north of Saturn this morning.

Navigating the mid August Night Sky

2026

For observers in the middle northern latitudes, this chart is suitable for early August at 11 p.m. or late August near 10 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Navigating the mid August night sky: Simply start with what you know or with what you can easily find.

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.
- 3 To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 4 High in the East lie the summer triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

- A:** On the western side of the Keystone glows the Great Hercules Cluster.
- B:** Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
- C:** 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D:** Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
- E:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

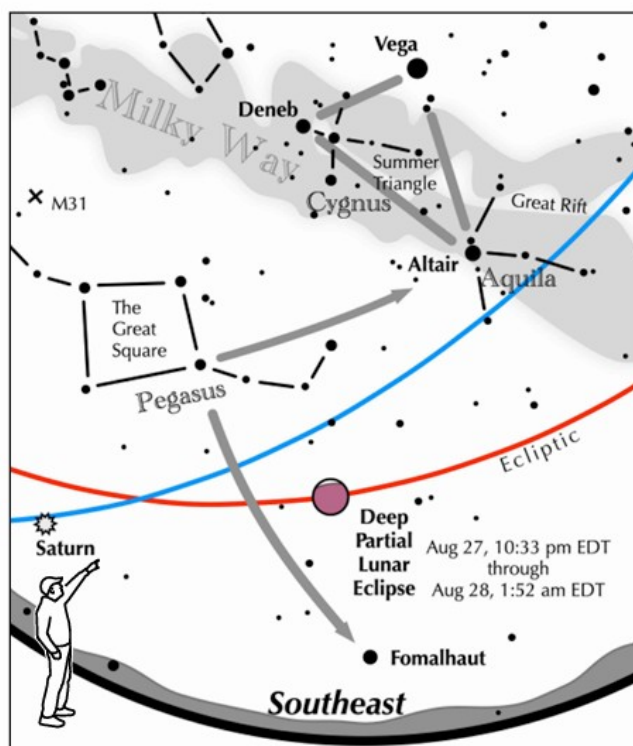
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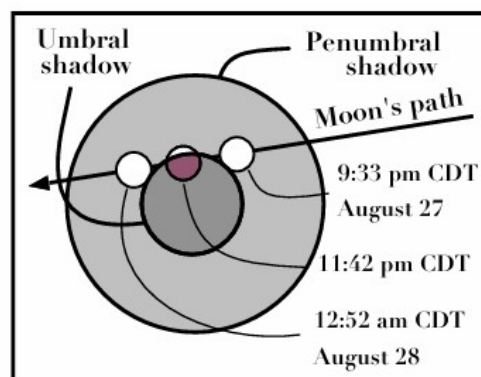
Partial Lunar Eclipse

Submitted By Paul Kursewicz

If you can observe only one celestial event in the evening this August, see this one.



View to the southeast
on August 27-28
Mid eclipse: Aug 27, 11:42 pm CDT



The Moon slides through a deep partial eclipse

In the late evening hours on August 27 into the early morning hours on August 28, the brilliant full moon slides into Earth's shadow.

- Even though the partial umbral eclipse begins at 9:33 pm CDT on Aug 27, any dark bite might not be noticed for another 5 minutes.
- At mid eclipse (11:42 pm CDT Aug 27) when 93% of the moon lies in the umbral shadow, what color is the moon? How red is it?
- Do you notice that the shadow's edge is not straight, but curved?

www.astroleague.org

Write-up and Photos Submitted By

Marty Burgess

Mosaic interrupted

A star, 20 times larger than our sun, exploded some 20,000 years ago.

The Cygnus Loop is a supernova remnant of that explosion. The edge of the expanding gasses cover 2,400 light years away from us and covers 125 light years of space. As wide as 6 moons across. Seen from my vantage point in an empty parking lot on the edge of Sebec lake it is expanding at 1.5million Kilometers per hour, yet appears frozen in space.

The lot is part of Peak Kenny State Park, with over 800 acres of old growth forest and lakefront shoreline in Dover Foxcroft Maine. A wonderful family camp, quiet, and organized with cheerful rangers and campers.

The Cygnus Loop includes areas know as NGC 6960 the Which's Broom, NGC 6992 the Eastern Veil, Pickering's Triangle and areas of nebulosity such as NGC 6974, NGC 6979.

Referred to as the Filamentary Nebula, Veil Nebula, or the Cirrus Nebula, it is easy to find with a 'goto' computerized mount and telescope.

Midnight.

The milky way arches across center stage above. The Northern Crown constellation awaiting its' anticipated new adornment off to the northwest (a recurring nova is on its schedule.)

The parking area is surrounded by tall sentinels of forest. On the north end, a beach exposes the expanse of Sebec Lake, with mountains and hillsides on the horizon. High thin clouds glow draped over the peaks in the distance.

The night settles into the soft murmur of trees, and the rustlings of night. The glassy expanse of lake water reflects the night's stars, gentle waves caressing the shore. Owls call for parliament to come to order, night life scurries about the underbrush, sounding larger than life. The mosquitoes and gnats retreating to the forest edge.

Stillness. Beauty. Calm that overwhelms the senses.

Joyous laughter and the squeals of adolescence rise out of the darkness. Tracking the sounds down the access road to the parking lot has my full attention. Perhaps a family with teens out to see the spectacular showcase of the Milky Way? Or was it the laughter of boys proving manhood by avoiding death as entertainment?

The possibility of my gear being run over has me rushing in the dark, I turn on the interior red lights of the van. The soft red glows out through the windows. Cameras blink their green indicator lights, reporting all was well. I remain hidden in darkness.

The pickup stops with a lurch. The driver, apparently startled by the sight the glowing red and green lights at the distant end of the parking lot. The laughter, once the courageous response to near missed disasters, falls silent. Movement in the pickup bed betrays the trucks purpose- a truck surfing expedition.

I turn the light on my forehead on. Red of course.

A glaring cyclops in the night.

WHAT THE F*** IS THAT, replaces laughter and squeals. GET THE F*** OUTA HEAR is now shouted as an order. The pickup, held together by memory, panels rattling, muffler no longer able to do its job, lurches forward, spins around, and speeds back into the darkness. Distant shouts of 'what the fuck was that', drifting through the forest canopy.

That was not the interruption noted earlier, not all of it anyway. In my rush to get some light on I nudged a tripod which altered the focal point. A minor annoyance. Well worth the enjoyment I found as an unknow alien on the shore of Sebec Lake.

The real interruption came from the North. Those thin clouds above the mountains, miles away on the horizon? They had moved south over the parking lot where I stood. So, I pack up return to camp and take a nap till dawn.

"Continued on page 8"



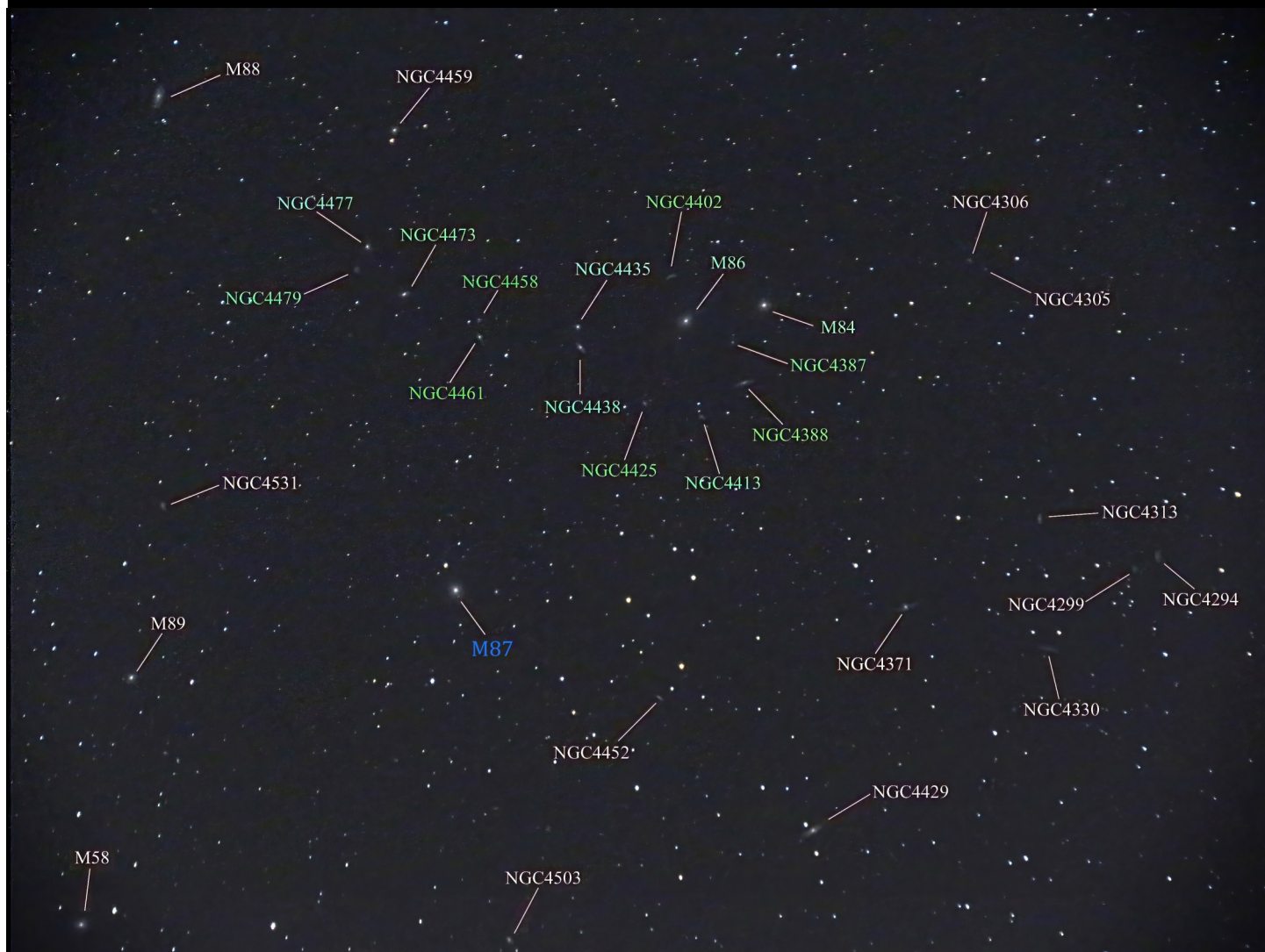
Point and Shoot Camera Astro-Imaging (no telescope)

Canon PowerShot SX50 HS

Submitted By Paul Kursewicz

Virgo Galaxy Cluster & M87

RAW mode, f/5.6, 450mm, ISO 800, 10 x 2 min, 4-25-19



I took this wide-field image of the Virgo Galaxy Cluster back in 2019. Just 10, two minute exposures stacked. So, only the brightest galaxies in this cluster will appear. I labeled 30 of them. The galaxies labeled in green belong to a asterism called Markarian's Chain (shown in detail on the following page). I labeled M87 in blue because it has a Jet being expelled from it. The remaining bright galaxies I labeled in white. The Virgo Cluster is the closest large cluster to us and contains about 2,000 members.

"Continued on page 10"

Astro-Imaging with a Dwarf3

Submitted by Paul Kursewicz

Markarian's Chain & M87

Dwarf3 Astro Mode with Astro Filter

Photo Editing Software Used: PixInsight & Photoshop

Multi Stacked Images on 4-9-26 & 4-12-26

SPECS: Each 90sec, 60gain, 62 subs.



Markarian's Chain is a curved line of galaxies that lie near the heart of the Virgo Cluster. At least seven of these galaxies are moving coherently with a common motion through space. The galaxies NGC 4435 & NGC 4438 (close pair 3rd in from the right of the curve) form a well known interacting pair known as the Eyes Galaxies. The dominant galaxy to the lower left of the chain is M87. It's a supergiant elliptical galaxy that lies at the center of the Virgo Cluster. It has a Jet of energetic plasma. I tried my best to flesh out the Jet using my photo editing skills, but was unsuccessful. But I did succeed in revealing the Jet with a different kind of astro-imaging set-up as shown on the following page.

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Astro-Imaging with a SmartEye

Submitted by Paul Kursewicz

Galaxy M87 & Jet

4.5-inch Orion EON ED Triplet Refractor, f/5.8, FL 805mm

IR-cut Filter, 143subs, 25sec, 350 Gain, 4-12-26

Fit Files stacked in Deep Sky Stacker — Total time: ~ 1hr

Photo Editing Software Used: PixInsight, Photoshop, Siril, AstroSurface



The Jet is extremely small. I kept my exposures short because I only wanted to capture the core of the galaxy. The inset in the lower left of my image is my RAW unedited image. You can just barely see the Jet. A lot of time was spent in the digital darkroom to flesh out the Jet to make it look as you see it here. There are two very small galaxies that are close to each other and near to the core of M87, they are often mistaken for the Jet.

Point and Shoot Camera Astro-Imaging (no telescope)

Canon PowerShot SX50 HS

Submitted By Paul Kursewicz

Sunspots 4478 & 4479

JPEG mode, f/6.5, 1/320sec, ISO 125, FL 1200mm, 6-29-26
Single Image Hand-held. Thousand Oaks Solar Filter.



One of the largest sunspot groups in recent history formed around the time of June, 29th, 2026. The lower pair is 4478 and the pair above it is 4479. Both sunspot groups were large enough allowing you to see them with the naked-eye (looking through a solar filter).

Sun Halo

Submitted by Paul Kursewicz

Camera: Canon PowerShot SX50 HS



June 2, 2026 3:04PM

I don't usually use my naked-eyes to look up at the Sun, but my wife and I were out birding and a bird flew overhead, and that is when I saw the Halo. Two jet trails accented the photo op. Among the best known halos is the [22° halo](#), often just called "halo," which appears as a large ring around the Sun or Moon with a radius of about 22° (roughly the width of an outstretched hand at arm's length). A Halo is an optical phenomenon produced by light interacting with light crystals in the atmosphere.

Enhance your view of Venus

Submitted by Paul Kursewicz



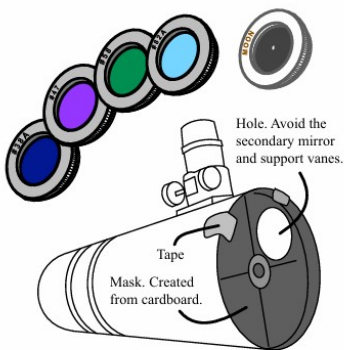
Enhance your view of the thin crescent of Venus



Venus is bright. So bright that its glare becomes interfering, especially when viewed in its beautiful crescent phase. Many people see it as a bright blur.

For a more satisfying view, take one or more of these steps:

1. Place a **moon filter** over the eyepiece.
2. Depending on telescope aperture, try **colored filters** such as #38A (dark blue), #47 (violet), and #58 (green). #82A (light blue) works well in general. They may bring out very subtle details in that planet's cloudtops. Because they transmit little light, the darker filters are better suited for apertures greater than 8-inches.



3a. Use an **aperture mask**. Since Venus is bright – really *too* bright – reducing the effective aperture won't hurt viewing. Doing so will also increase the scope's f ratio.

3b. If an SCT or reflector is used that has an aperture of 8-inches or larger, place an **off-axis mask** over the entrance of the optical tube. (Smaller apertures won't have the spacing for large enough holes.) Center the hole in the mask so that light enters the optical tube unobstructed, avoiding the secondary mirror and any vanes. The result – a dimmer, but sharper image.

4. **Daytime viewing.** Being higher above the horizon just might improve viewability!
 - Place the sun behind a building. Make sure you can't inadvertently view the sun.
 - Find the alt-az coordinates of Venus and its elongation from the sun.
 - Scan that area of the sky with binoculars. Once you spot it, aim your scope at it.
 - Consider using a variable polarizing filter, a Wratten #15 (deep yellow), or a #21 (orange) filter to improve sky contrast.

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Another way to enhance a view of Venus is with a camera. I took this picture of Venus (hand-held) in its Gibbous phase on 7-12-26. I used a Nikon Coolpix P1100 camera.

[754.6mm, f/8, 1/125sec, ISO 450]

Image by Paul Kursewicz

Adventures of a Vatican Astronomer

Submitted by Paul Kursewicz



On Saturday, May 2nd 2026, myself and two other club members went to St Martha's Church Hall in Kennebunk to see a presentation by former Vatican Observatory director Brother Guy Consolmagno. It was an interesting talk centering on how he became an astronomer and where that vocation has brought him.

Brother Guy is president of the Vatican Observatory Foundation in the research area of Asteroids and Meteorites. In 1996 Brother Guy along with six other scientists went to Antarctica in search for meteorites. The photo shows Br. Guy standing at base camp on the East Antarctic Plateau. The small tent was his home for six weeks. In Antarctica the black rocks stand out from the blue/white ice.

Br. Guy's knowledge and background includes a B.S. and M.S. in Planetary science from MIT and a PHD from the university of Arizona. After his post-doctorial fellowship at Harvard, Br. Guy joined the Peace Corps where he taught physics and astronomy in Kenya, followed by his entry in the Jesuit order.

Faith inspiring science: The Vatican Observatory is one of the oldest active observatories in the world, with its roots going back to 1582 and the Gregorian reform of the calendar. From that time, the Vatican has been advancing scientific inquiry and promoting awareness of how our universe works.

The Vatican also maintains a telescope in Arizona, the Vatican Advanced Technology Telescope. Dedicated in 1993, it is operated in conjunction with the University of Arizona.

Club Meeting & Star Party Dates

Date	Subject	Location
Aug 7	<u>ASNNE Club Meeting:</u> Club Meeting (in house & on Zoom): 7:30-9:30PM Zoom Link: https://us06web.zoom.us/j/5631683325 Guest Speaker: We do not have a guest speaker this month. Bernie Reim - "What's UP" Astro Shorts: (news, stories, jokes, reports, questions, photos, observations etc.)	The New School, Kennebunk, Me.
Last Month	Last month we had our meeting at Talmage Observatory at Starfield. This was our annual club picnic and starparty. Our president David Bianchi had a brief business meeting. After that Bernie did his What's Up presentation. The sky became clear just in time for the starparty.	
TBD	Club/Public Star Party: Weather permitting.	Talmage Observatory at Starfield West Kennebunk, Me.

Directions to ASNNE event locations

Directions to The New School in Kennebunk [38 York Street (Rt1) Kennebunk, ME]

For directions to The New School you can use this link to the ASNNE NSN page and then click on "get directions" from the meeting location. Enter your starting location to generate a road map with complete directions. It works great. http://nightsky.jpl.nasa.gov/club-view.cfm?Club_ID=137

Directions to Talmage Observatory at Starfield [Alewife Road, Kennebunk, ME]

From North:

Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for the ASNNE sign on the pole.

From South:

Get off the turnpike at exit 25 in Kennebunk. After toll both turn right on Rt 35. Go up over the turnpike and immediately turn right on Rt 35. About 4 miles along you will crest a hill and see a large field on your right. Continue until you reach the end of the field. Turn right into the Starfield Observatory site at the last telephone pole along the field. Look for the ASNNE sign on the pole. If you come to a very sharp 90 degree right turn you have just passed the field.

Principal Meteor Showers in 2026

January 4
Quadrantids

April 22
Lyrids

May 6
Eta Aquarids

July 30
Delta Aquarids

August 12
Perseids

October 9
Draconid

October 21
Orionids

November 9
Taurids

November 18
Leonids

November 26
Andromedids

December 14
Geminids

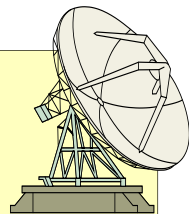
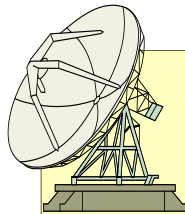
December 22
Ursids

Note: Dates are for maximum

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. **Dues (see page 23 for prices) are payable to the treasurer during November for the upcoming year.** New members who join during or after the month of July shall pay half the annual fee, for the balance of the year. Checks should be made payable to the Astronomical Society of Northern New England (A.S.N.N.E.). If you would like to mail in your dues, use the form on page 23. Or you can use PayPal via asnne.astronomy@gmail.com

A Member who has not paid current dues by the January meeting will be dropped from membership, (essentially a two-month grace period.) Notice of this action shall be given to the Member by the Treasurer. Reinstatement shall be by payment of currently due dues.



Got any News?

Skylights Welcomes Your Input.

Here are some suggestions:

***Book reviews -- Items for sale -- New equipment --
Ramblings -- Star parties -- Observing -- Photos.***

Our club has Merchandise for Sale at: <https://www.cafepress.com/shop/ASNNE/products>

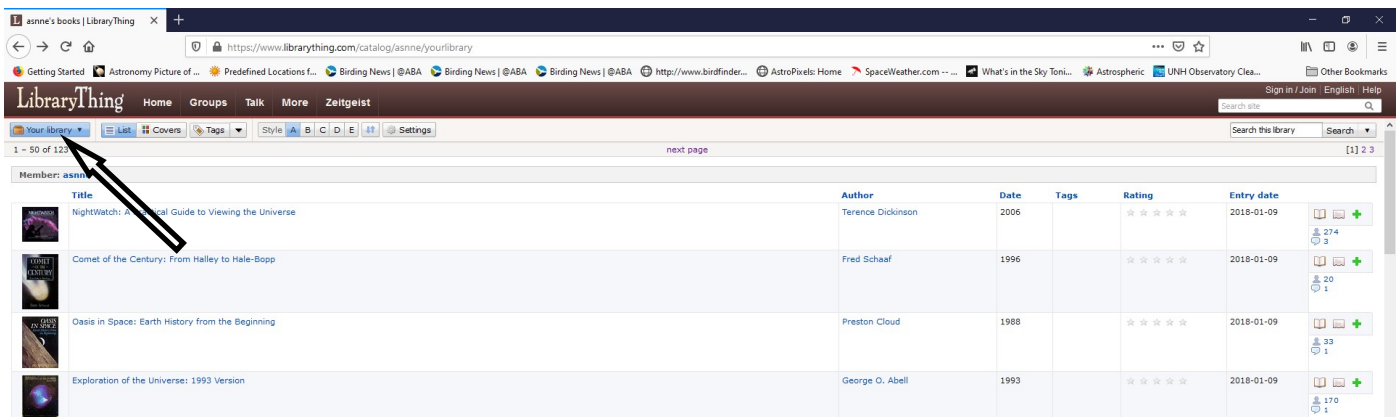


**ALL money raised goes to our operating fund.
Any design can be put on any item.**

Contact David Bianchi dadsnorlax@yahoo.com for further details.

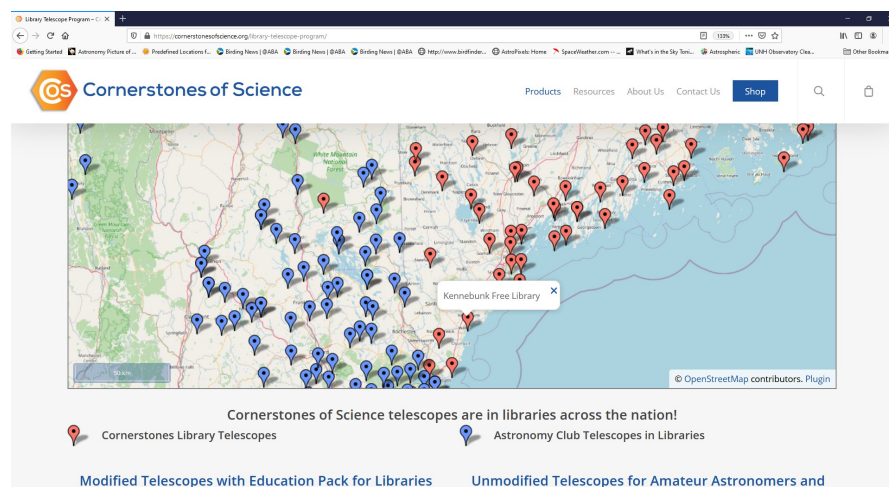
Astronomy Club & Library Resources

Our club has a library of astronomy books which are stored at The New School in Kennebunk, Maine (our monthly club meeting location). To request a book(s), contact one of the club officers. A listing of books is provided here: <https://www.librarything.com/profile/asnne> . After clicking on the link, a window will open. Click on “Your library” near the upper left corner (as shown by the arrow below). Then scroll down to the end of the page to go to the next page.



Would you like to borrow a telescope? While many astronomy clubs may have a scope to lend out, there are also many libraries which have telescopes for their guests to use. Here are a couple of links.

The following link will bring up an active map (see screen shot below) of the USA showing the libraries which have telescopes to lend out: <https://cornerstonesofscience.org/library-telescope-program/>



The below link will show a list of known participating library locations for the state of Maine.
<https://www.librarytelescope.org/locations/usa/maine>

To join **ASNNE**, please fill out the below membership form. *Checks should be made payable to:*
Astronomical Society of Northern New England (A.S.N.N.E). For more details, please visit our website:

<http://www.asnne.org>



Astronomical Society of Northern New England
P.O. Box 201
Kennebunk, ME 04043-1338

2026 Membership Registration Form

(Print, fill out and mail to address above) or Use PayPal via asnne.astronomy@gmail.com

Name(s for family): _____

Address: _____

City/State: _____ Zip code: _____

Telephone # _____

E-mail: _____

Membership (check one):

Individual \$50 _____ Family \$ 60 _____ Student under 21 years of age \$10 _____ Donation _____

Total Enclosed _____

Tell us about yourself:

1. Experience level: Beginner _____ Some Experience _____ Advanced _____

2. Do you own any equipment? (Y/N) And if so, what types?

3. Do you have any special interests in Astronomy?

4. What do you hope to gain by joining ASNNE?

5. How could ASNNE best help you pursue your interest in Astronomy?

6. ASNNE's principal mission is public education. We hold many star parties for schools and the general public for which we need volunteers for a variety of tasks, from operating telescopes to registering guests to parking cars. Would you be interested in helping?

Yes _____ No _____

7. ASNNE maintains a members-only section of its web site for names, addresses and interests of members as a way for members to contact each other. Your information will not be used for any other purpose. Can we add your information to that portion of our web site?

Yes _____ No _____

