

# Skylights

Newsletter of the Astronomical Society of Northern New England



Feb2024



Member of NASA's  
Night Sky Network



Astronomical League

## 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 February

By Bernie Reim

The month of February is named after the Roman festival Februa, which are rites of purification. The second day of this month is always Ground Hog Day, which marks the halfway point of winter. We will have at least 6 more weeks of winter here in New England regardless of whether or not Punxsutawney Phil sees his shadow.

There are several interesting highlights this month that will make it well worth braving the cold as winter settles in after a mild start. The nights are getting shorter, but they are still plenty long enough to take in all of the wonders of the sky that our little local slice of the galaxy can offer.

These highlights include a very close conjunction of our two neighboring planets, Mars and Venus late this month. Three planets, Mercury, Venus and Mars are still visible in the eastern morning sky until Mercury drops out early this month and Venus sinks lower even as Mars climbs higher. The second largest asteroid, Vesta will be visible in Taurus near M1, the Crab nebula. Not one but three comets will be visible this month with a small telescope. Jupiter in Aries the Ram and Uranus just to the east of it in Taurus the Bull are still visible, but getting a little fainter each night. This will be your last chance to catch Saturn in Aquarius in the evening sky. It will sink into the twilight around the middle of the month and will reappear in the morning sky in late March, about when spring starts. There are no major meteor showers until the Lyrids in early April, but you can see the zodiacal light in the western evening sky about an hour after sunset this month and next. This light is caused by the trillions and trillions of tiny dust particles from comets reflecting sunlight back to us. So you are essentially seeing all of the comet dust at once, but it is not falling through our atmosphere to burn up and create those brilliant flashes of light that are so thrilling and remind us that we have an atmosphere that only extends about 60 miles into space, which is extremely thin compared to our radius of 8000 miles.

The Winter Hexagon is now at its highest. It includes 8 of the brightest stars in the winter sky in 6 different constellations. You can start at the top with Capella in Auriga the Charioteer. Think of it as "cap on the sky". It is about two and half times as massive as the sun and 12 times as large. It is located about 42 light years away. Then move clockwise to Aldebaran in Taurus the Bull. This orange giant star is 65 light years away and about 40 times larger than our sun but only about twice as massive. It is orbited by at least one exoplanet, Aldebaran b, about 6 times larger than Jupiter. Then keep going another 15 degrees and you will encounter Rigel, a blue supergiant star in Orion. It is about 865 light years away, 80 times the diameter of our sun and 20 times as massive. It is only about 8 million years old but since it is burning through its fuel so fast, it will only live for about another million years. Then the supernova it will create will either become a neutron star or even a black hole if what are left is more than 3 solar masses.

Next you will encounter Sirius in Canis Major, the brightest star in the whole sky at minus 1.4 magnitude and only 8.8 light years away. Think of it as "seriously bright". It has a white dwarf orbiting it simply named Sirius b. A white dwarf is a dead star that shrank down to the size of the

earth after it blew up when it ran out of fuel and became a planetary nebula. That is the fate of about 90% of the stars in the galaxy including our own sun in about 5 billion years. Then you will run into Procyon in Canis Minor. It is about 12 light years away and twice the diameter of our sun. It also has a white dwarf orbiting it. Then close out the hexagon or winter circle with Castor and Pollux in Gemini. Castor, the mortal twin, is about 50 light years away and Pollux, the immortal twin is only 33 light years away and slightly orange in color.

Betelgeuse in the middle of this winter circle or winter hexagon marking the right shoulder of Orion is the most interesting of these 8 stars. Located about 600 light years away, it is 700 times the diameter of our sun and about 20 times as massive. It is one of only a handful of naked eye visible stars that may not even be there anymore since it ran out of hydrogen fuel and is now fusing helium into carbon.

You can create a very interesting historical clock when you relate the distances to these 8 stars to events that happened on Earth during that time in our history. That shows us how long the photons of light have been traveling from those stars to reach your eyes when you look at them on a nice clear night this month. Starting with Sirius, that would only take you back to 2015; the year 196 countries signed the Paris Climate Agreement. Procyon takes you back to 2012; the year the world was supposed to end according to some myths. Next in line is Pollux at 1991, about the time the internet became commercially available for everyone and when the Hubble Space Telescope was launched on April 24 of 1990, forever changing and expanding our view of the universe in many very significant ways. Capella brings you back to 1982. That is when ET became the highest grossing film of the decade. The first Space Shuttle, Columbia, was launched on April 12 of 1981. Then Castor takes you to the last time we walked on

*"Continued on page 2"*

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## What's Up "Continued from page 1"

the moon in December of 1972. Aldebaran brings you to 1960 when the first humans walked in space, just after the first satellite was launched in 1957.

Now there is a huge gap to the 1400's with Betelgeuse. The printing press was invented in 1436 by Johannes Gutenberg, a German goldsmith, forever changing the course of history and the way we communicate. Then the most distant star of this bright group is Rigel. Its light was traveling for about 865 years which brings us all the way back to the mid 1100's, known as the high Middle Ages, towards the end of the Dark Ages. This was a turbulent time on Earth as the pope instigated the Crusades against Muslims. This was just after the fall of the Western Roman Empire and just before the Mongol Empire under Genghis Khan conquered Persia in 1220.

There was also a brighter side to this time. The University of Paris was founded in 1150 and the famous Italian mathematician, Fibonacci introduced the concept of zero to Europe and the west, forever changing and improving how we do math and what we can learn from this universal language as we apply it. The Magna Carta was created and signed in England in 1215, limiting the power of the king which marked the beginning of modern-day democracy.

Most of the planetary action is still in the morning sky. They are all lined up within 13 degrees in the constellation of Capricorn when the month begins. Mercury and Mars are now over 3 degrees apart. They were less than one degree apart late last month. Then Mercury drops out of the picture in a few days heading towards its conjunction with the sun. It will show up as an evening planet again next month, reaching its highest in our sky towards the end of March about when spring starts.

The main highlight this month will be the very close conjunction of our two next-door planetary neighbors, Mars and Venus. Venus will pass just 0.6 degrees north of Mars on Thursday the 22<sup>nd</sup>, which is about the width of the full moon, which is half a degree. Notice that Venus is on the way down and Mars is on the way up. Venus will keep getting lower in our morning sky, but it won't disappear completely until May after which time it will just show up in our evening sky again about the time summer starts in June.

This is your last chance to catch Saturn in Aquarius. Notice that a very slender waxing crescent moon will be just below Saturn on the 10<sup>th</sup> half an hour after sunset in the western sky. We will not lose Jupiter until early May, after which time it will just show up again as a morning planet in June about when summer starts. The king of the planets is still higher and brighter than usual in Aries the Ram, moving in its normal eastward or direct, prograde motion towards the Pleiades open star cluster in Taurus. This cluster, also known as the Seven Sisters or Subaru in Japanese, also offers a great history lesson.

This cluster of 500 young stars is located about 400 light years away, which is the time that Galileo pointed the first telescope ever invented by humans to the heavens in 1609 to begin our significant era of discoveries beyond Earth that has only greatly accelerated since then. Galileo had no idea of the revolutionary recent discoveries like General Relativity and Quantum mechanics, but he was a very good scientist and made many important discoveries like some laws of physics, the moons of Jupiter, the rings of Saturn, the phases of Venus, sunspots on the sun, and many more that were not even believed when people saw them with their own eyes because they simply did not fit into their very limited perspectives at that time. I am sure we are guilty of much of that even today. Einstein had a great quote, "everything has changed except man's way of thinking". Let us not fall into the same traps again today and let us learn from our hard won history so that we can continue to grow and

evolve, living together peacefully and sharing our talents instead of fighting all the time.

The zodiacal light is best seen in February and March in the evening sky about an hour after sunset, when it is also called the false dusk. When it shows up an hour before sunrise in the morning sky in October and November it is called the false dawn. I have seen this phenomenon 3 or 4 times and it can be very subtle yet thrilling at the same time. It forms a pyramid or haystack of light which can shimmer almost as bright as the Milky Way galaxy at times from a dark sky site with no moon to interfere. This cone of light will extend through Aquarius, Pisces and Aries, engulfing Saturn, Neptune, and Jupiter, and right up to the Pleiades if all of the conditions are right.

Feb.2. Last quarter moon is at 6:18 p.m. EST.

Feb.4. Clyde Tombaugh was born on this day in 1906. He would discover Pluto using a blink comparator when he was just 24 on the 18<sup>th</sup> of this month in 1930. It remained a full-fledged planet for 76 years. The moon passes just 0.6 degrees north of Antares in Scorpius.

Feb.7. The moon passes 5 degrees south of Venus this morning.

Feb.8. Jules Verne was born on this day in 1828. The moon passes 4 degrees south of Mars this morning. The asteroid Vesta is stationary in Taurus.

Feb. 9. New moon is at 5:59 p.m.

Feb.10. The moon passes 1.8 degrees south of Saturn this evening.

Feb.14. On this day in 1990 Voyager 1 took the first portrait of planets including Earth and the moon from deep space, 3.7 billion miles away, beyond the distance to Pluto. This iconic image inspired Carl Sagan's book PALE BLUE DOT, a Vision of the Human Future in Space.

Feb.15. Galileo was born on this day in 1564. The moon passes 3 degrees north of Jupiter and Uranus this evening.

Feb. 16. First quarter moon is at 10:01 a.m.

Feb. 19 Nicolaus Copernicus was born on this day in 1473.

Feb.20. John Glenn became the first American to orbit Earth on this day in 1962.

Feb.22. Venus passes 0.6 degrees north of Mars this morning.

Feb.23. Supernova 1987a was first seen on this day in 1987. It was seen in the Large Magellanic Cloud, a satellite galaxy of our own. It actually exploded 160,000 years ago, since that is its distance from Earth.

Feb.24. Full moon is at 7:30 a.m. This is also known as the Snow or Hunger Moon.



## Moon Phases

**Feb 2**  
Last Quarter

**Feb 9**  
New

**Feb 16**  
First Quarter

**Feb 24**  
Full

## Moon Data

**Feb 7**  
Venus 5° north  
of Moon

**Feb 8**  
Mars 4° north  
of Moon

**Feb 10**  
Moon at perigee

Saturn 1.8° north  
of Moon

**Feb 12**  
Neptune .7° north  
of Moon

**Feb 15**  
Jupiter 3° south  
of Moon

Uranus 3° south  
of Moon

**Feb 25**  
Moon at apogee

## Sky Object of the Month – February

### NGC 1579 - Diffuse Nebula in Perseus (Magnitude 11 [est.], Size 12' X 8')

by Glenn Chaple

February is a great time of year to view the Trifid Nebula. I'm not talking about the one in Sagittarius (Messier 20) which won't even appear in the sky until just before sunrise. I'm referring to the reflection nebula NGC 1579 in Perseus whose photographic similarity to M20 earned it the nick-name the Northern Trifid.

William Herschel discovered this nebula on December 27, 1788 and cataloged it as his 217th Class I (Bright Nebulae) object. He described it as "Considerably bright, considerably large, much brighter in the middle."

NGC 1759 is located at 2000.0 coordinates 4<sup>h</sup>30<sup>m</sup>09.5<sup>s</sup> RA and +35°16'19" Dec. I star-hopped to the area by starting at the 4<sup>th</sup> magnitude star xi (ξ) Persei and moving 5 ½ degrees ESE to an attractive 3-star row comprised of 6<sup>th</sup> magnitude 55 and 56 Persei and the pretty double star Struve (Σ) 533 (magnitudes 7.3 and 8.5, separation 19.0"). NGC 1579 was a little over a degree NE of this star.

Although the Northern Trifid might be captured with small-aperture scopes in areas blessed with truly dark skies, it more realistically requires an aperture of 10 inches or more – especially from slightly light-polluted suburban skies. Magnifications of between 50XC and 100X work best.

Most sources place NGC 1759 at a distance of 2000 light years. This is a young star-forming region with an age of perhaps 1 million years.

\*The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It is open to anyone who is interested. If you'd like to contribute notes, drawings, or photographs, we'd be happy to include them in our monthly summary. Submit your observing notes, sketches, and/or images to Roger Ivester ([rogerivester@me.com](mailto:rogerivester@me.com)). To find out more about the Observer's Challenge, log on to [rogerivester.com/category/observers-challenge-reports-complete](http://rogerivester.com/category/observers-challenge-reports-complete).

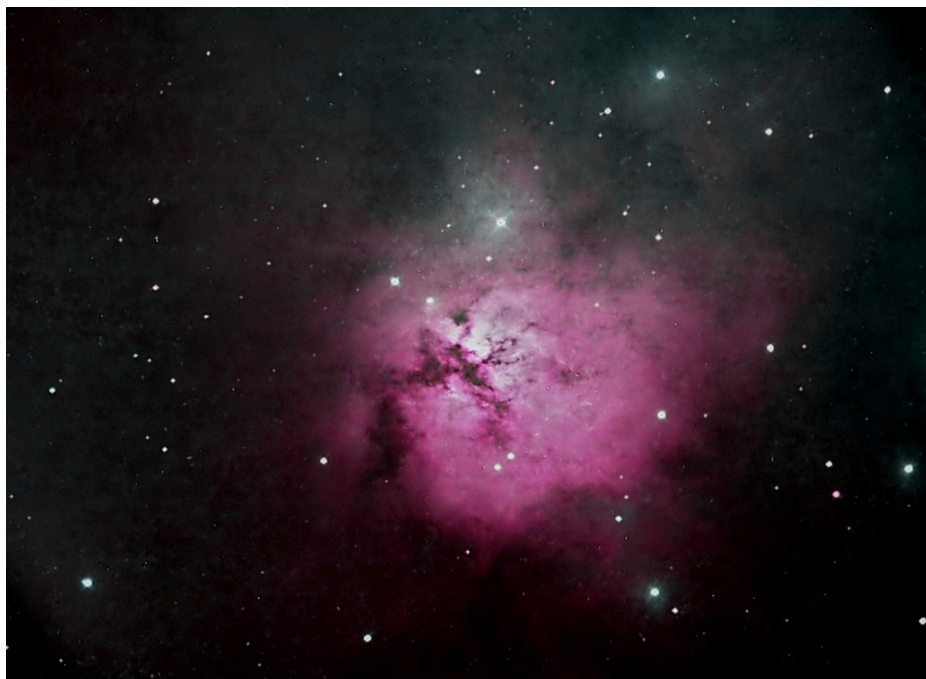
*"Continued on page 4"*

## NGC 1579 Finder Chart



## NGC 1579 Image

Mario Motta, MD (ATMoB)



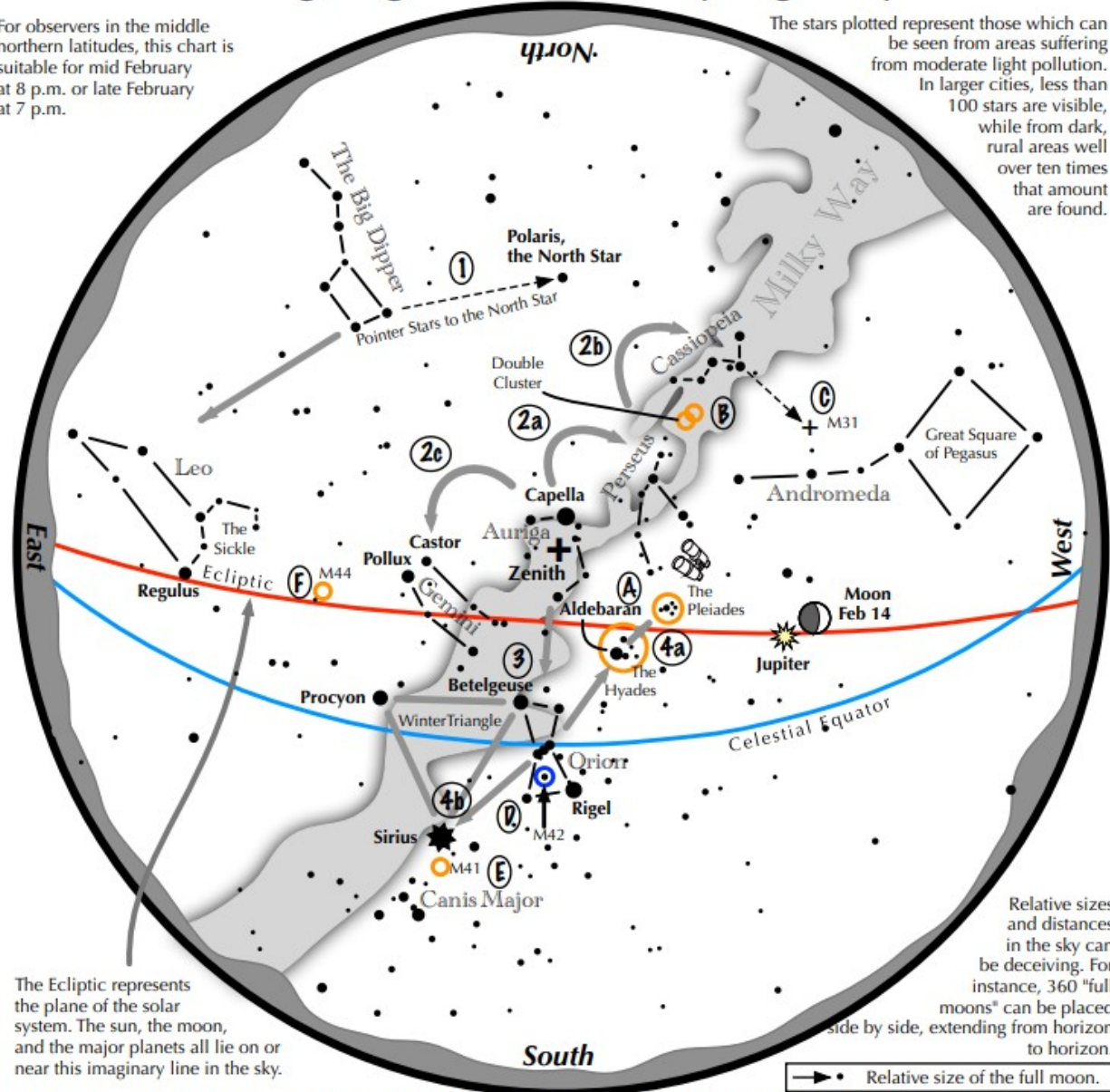
"I had some initial difficulty with this one. I took it in NB filters, but essentially no Sulfur signal and very weak O3, so color very poor.. I then took RGB, but.. very weak as well, and poor definition, so.. I then processed with Ha as red, and used B and G for color, and came out much better. Taken with my 32 inch F6.5 telescope, about 1.5 hours Ha, 40 min each R and G, processed in Pix."



## Navigating the mid February Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid February at 8 p.m. or late February at 7 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.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

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

- 1 Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star.
- 2 Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
- 3 Directly south of Capella stands the constellation of Orion with its three Belt stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
- 4 Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius, a member of the Winter Triangle.

#### Binocular Highlights

- A: Examine the stars of two naked eye star clusters, the Pleiades and the Hyades.
- B: Between the "W" of Cassiopeia and Perseus lies the Double Cluster.
- C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
- D: M42 in Orion is a star forming nebula. E: Look south of Sirius for the star cluster M41. F: M44, a star cluster barely visible to the naked eye, lies southeast of Pollux.



Astronomical League [www.astroleague.org/outreach](http://www.astroleague.org/outreach); duplication is allowed and encouraged for all free distribution.

## Principal Meteor Showers in 2024

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

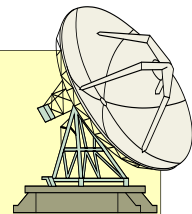
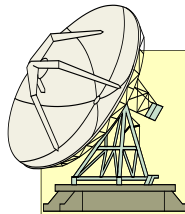
December 22  
Ursids

*Note: Dates are for maximum*

## MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 18 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 18. Or you can use PayPal via [asnne.astronomy@gmail.com](mailto: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: [www.cafepress.com/asnne](http://www.cafepress.com/asnne)**



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

Contact David Bianchi [dadsnorlax@yahoo.com](mailto:dadsnorlax@yahoo.com) for further details.



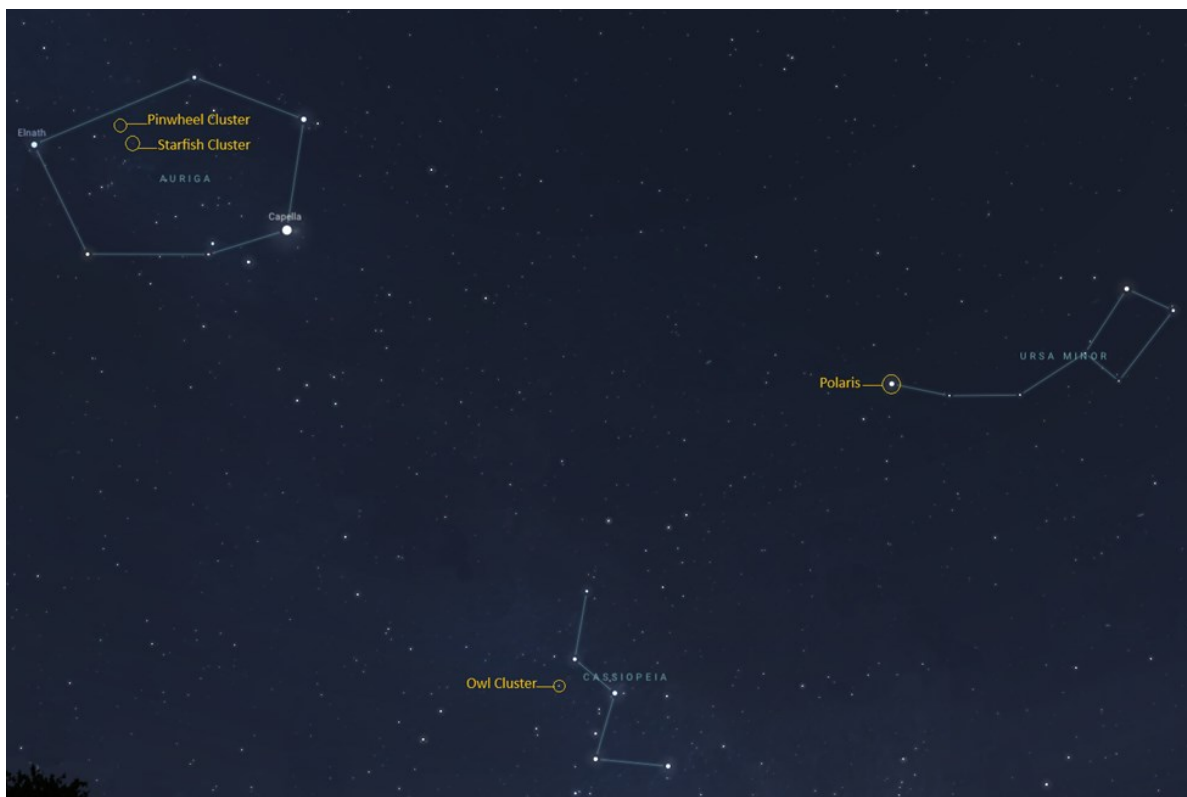
This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.org](https://nightsky.jpl.nasa.org) to find local clubs, events, and more!

## Constant Companions: Circumpolar Constellations, Part I

By Kat Troche

Winter in the northern hemisphere offers crisp, clear ([and cold!](#)) nights to stargazers, along with better views of several circumpolar constellations. What does circumpolar mean when referring to constellations? This word refers to constellations that surround the north and south celestial poles without ever falling below the horizon. Depending on your latitude, you will be able to see up to nine circumpolar constellations in the northern hemisphere. Today, we'll focus on three that have gems within: **Auriga**, **Cassiopeia**, and **Ursa Minor**. These objects can all be spotted with a pair of binoculars or a small to medium-sized telescope.

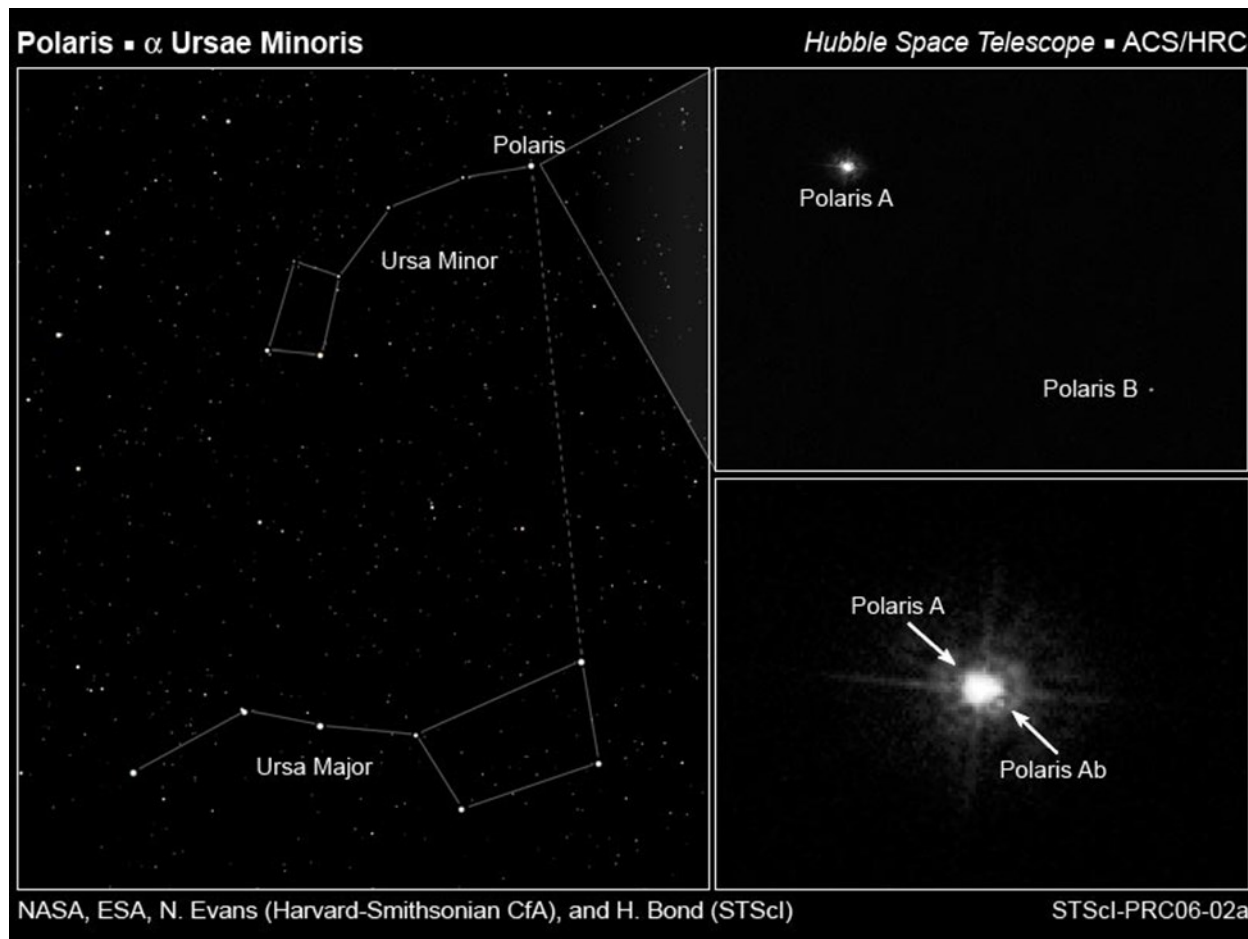


The counterclockwise circumpolar constellations Auriga, Cassiopeia, and Ursa Minor in the night sky, with four objects circled in yellow labeled: Pinwheel Cluster, Starfish Cluster, Owl Cluster, and Polaris.

**The Pinwheel Cluster:** Located near the edge of Auriga, this open star cluster is easy to spot with a pair of binoculars or small telescope. At just 25 million years old, it contains no red giant stars and looks similar to the Pleiades. To find this, draw a line between the stars Elnath in Taurus and Menkalinan in Auriga. You will also find the **Starfish Cluster** nearby.

*“Continued on page 8”*

**The Owl Cluster:** Located in the ‘W’ or ‘M’ shaped constellation Cassiopeia, is the open star cluster known as the **Owl Cluster**. Sometimes referred to as the E.T. Cluster or Dragonfly Cluster, this group of stars never sets below the horizon and can be spotted with binoculars or a small telescope.



A black and white image from the Hubble Telescope of the Polaris star system, showing three stars: Polaris A, Ab, and Polaris B. Credit: NASA, ESA, N. Evans (Harvard-Smithsonian CfA), and H. Bond (STScI)

**Polaris:** Did you know that [Polaris is a triple star system](#)? Look for the North Star on the edge of Ursa Minor, and with a medium-sized telescope, you should be able to separate two of the three stars. This star is also known as a [Cepheid variable star](#), meaning that it varies in brightness, temperature and diameter. It's the closest one of its kind to Earth, making it a great target for study and [conceptual art](#).

Up next, catch the King of the Planets before its gone for the season with our upcoming mid-month article on the [Night Sky Network](#) page through NASA's website!



## Point and Shoot Camera Astro-Imaging (no telescope)

**Canon PowerShot SX50 HS**

*Image & write-up submitted by Paul Kursewicz*

### **California Nebula**

**RAW Mode, FL 400mm, ISO 600, f/3.5, 20 x 5 min, Baader Filter, 11-12-23**



The **California Nebula** is a rather large emission nebula that is located in the constellation Perseus. It was named California because its shape is reminiscent to the US state. It's formed of gases that are ionized and made fluorescent by high-energy ultraviolet photons being emitted from a young, hot, blue star — Xi Persei (the bright star to its right). The nebula stretches out to about 100 light years and is about 1,000 light years away. It's very difficult to observe visually because it has a low surface brightness. The California Nebula lies in the Orion Arm of the Milky Way galaxy, which also contains our solar system and Earth, as well as the Orion Nebula, and the Pleiades.

*“Continued on page 10 ”*

From the pages of “Burnham’s Celestial Handbook” copyright 1978  
California Nebula (NGC 1499)



ZETA PERSEI REGION. Zeta is the brightest star on the print; Xi Persei and the nebula NGC 1499 are at the top.  
Lowell Observatory 5-inch camera photograph.

1423

I orientated the page to match my picture's orientation of the California Nebula. The 5-inch camera at Lowell Observatory took its image using red light. The Nebula was discovered by E. E. Barnard in 1884. As a matter of interest, the California Nebula transits in the zenith in central California as the latitude matches the declination of the object. The brightest star in the photo is Zeta Persei, magnitude 2.83, with an actual luminosity of about 6,300 times that of the Sun. Zeta is located in the Foot of Perseus.

## Point and Shoot Camera Astro-Imaging (no telescope)

**Canon PowerShot SX50 HS**

*Image & write-up submitted by Paul Kursewicz*

**Waxing Gibbous Moon & Jupiter (hand-held)**

**JPEG Mode, FL 627mm, ISO 500, f/5.6, 1/125 sec, 1-18-24**



As the sky began to darken on Thursday, January 18th, the bright planet Jupiter appeared high up in the sky a short distance to the lower right of a Waxing Gibbous Moon (about 59% illuminated). The Moon and Jupiter crossed the sky and set in the west after midnight. They were less than 3° apart so that in binoculars each were in the same field of view, and, revealing the Galilean Moons. The Moons are not visible in my image because the exposure was too short.

## **Astronomical Society of Northern New England (ASNNE) Membership Meeting Minutes of 5 January 2024**

**Business Meeting:** The Business Meeting was called to order at 7:08 by  
past-President Ian Durham. (Ian assumed the President's  
role, vice Bernie, as he would be shortly giving the  
Presentation.)

**Directors Present:** Bernie Reim, Vice President  
Carl Gurtman, Secretary  
Ian Durham, Treasurer  
Gary Asperschlager, Director

**Plus:** Paul Kursewicz, *Skylights* Editor

**Others Present:** There were an additional six people present at the Business Meeting, as well as three on Zoom..

**Secretary's Report:** The previous Minutes had been e-mailed out. There were no comments. The Minutes were accepted.

**Treasurer's Report:** There was no Treasurer's Report. However, Ian must soon pay the website's annual fee. This is \$150. The Board considers this too expensive, and Ian will look into alternatives. There will probably be a new expense, as we need to have our own Zoom capability; as opposed to depending on Ian's ability to Zoom.

Ian also reported that Club dues can now be paid by PayPal.

People using this method should send payments to PayPal via [asnne.astronomy@gmail.com](mailto:asnne.astronomy@gmail.com). Recently, there was a dues change. The new amounts are \$50 per single person; \$60 per family.

There is a PayPal surcharge. Once a member logs in to their PayPal account, from the top menu bar select [Send and Request], enter our email, (if the club name shows, select the club name that is displayed below or just use the email address), and when the [Next] button shows, click [Next]. The rest is just follow the prompts.

### **Old Business:**

ASNNE had been asked if we would provide a Presentation and stargazing on 19 January, or 16 February at the Seacoast Science Center (SSC). Carl took the lead for this, planning to be assisted by Bernie, Bern, and Gary; the same Outreach Team that gave the ASNNE Presentation at the Huttopia "glampground". However, Carl was recently appraised that the date has been decided to be in February, and that there will be a Presenter from the UNH Observatory, and no ASNNE Presenter is necessary. They would still like some stargazing. Carl responded that he is not a telescope owner, and suggested that someone else take the lead on this.

*“Continued on page 13”*



**New Business:** There was no New Business.

The Business Meeting was adjourned at 7:30 pm.

**Regular Meeting:**

**Regular Meeting:** The Regular Meeting was called to order at 7:35 pm by past-President Ian Durham.

**Directors Present:** Bernie Reim, Vice President

Carl Gurtman, Secretary

Ian Durham, Treasurer

Gary Asperschlager, Director

**Plus:** Paul Kursewicz, *Skylights* Editor

**Others Present:** There were an estimated twenty people physically present at the Regular Meeting, as well as six on Zoom.

Ian had the people present introduce themselves. It turns out, that many of the new people had heard about the Meeting by reading about it in one of the local newspapers. So, the Press Releases about the Meetings are doing their job successfully. Also, many of the newcomers specifically came for Ian's Presentation. We should take this lesson to heart, and obtain Presenters whenever we can.

**Presentation:**

During a recent visit to England, Ian visited the Royal Observatory at Greenwich. The Royal Observatory was commissioned in 1675 by [King Charles II](#). It played a major role in the history of [astronomy](#) and [navigation](#). With a far-flung Empire, and a very large Navy and Merchant Marine, proper navigation was of critical importance to England.

Currently a museum, the [Prime Meridian](#) passes through it, thus giving its name to [Greenwich Mean Time](#). The Royal Observatory was a center for the efforts to find an accurate method to determine longitude, and for the awarding of a prize to the person who found that method.

*“Continued on page 14 ”*

Ian's visit gave rise to this Presentation; titled *Measuring Time and Distance: Exploring the Royal Observatory in Greenwich, England*. Ian talked about the Royal Observatory's history, some of the things it pioneered and measured, the search for longitude, and showed photographs from his visit.

Originally the home of the Astronomer Royal, the first step in establishing longitude was setting a starting meridian, or the Prime Meridian, or Zero Meridian. The first Astronomer Royal, John Flamsteed, lived at Greenwich, as did his successor, the famous Edmond Halley (of comet fame). Astronomers Royal lived at the Royal Observatory until the mid-Twentieth Century. Several earlier Prime Meridians were established, and the Observatory's residences and observatories continued to grow. The Prime Meridian was finally established in 1884.

If you know the time at the Prime Meridian, and the time of local noon at your location, then you know your longitude. While several fairly esoteric methods were proposed to determine longitude, John Harrison, a carpenter, who was a self-educated watch-maker, made clock after clock, competing for the prize of 20,000 pounds, for the first to solve the problem of a way to establish longitude. While his clocks solved the problem, he ran into much opposition from scientists of the day, who could hardly credit that a mere "mechanic" could solve a problem that eluded them. It took the personal involvement of King George III, to see Harrison's solution recognized, and the money awarded. The four major Harrison's clocks, still working, are displayed in the Royal Observatory Museum.

Ian is a past President of our Society, and a Professor and Chair of Physics at Saint Anselm College. He is also a member of the Foundational Questions Institute (FQXi). His current research centers around foundational problems in physics, particularly the intersection of quantum mechanics, relativity, and information theory, as well as formal models of consciousness.

Dr. Durham's Presentation was excellent.

### **"What's Up?":**

Bernie gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of January. The month of January is named after the Roman god Janus, who faces both forward and backwards at the same

time. Janus is the god of transitions, passages, doorways, gates, and the god of all beginnings.

*“Continued on page 15”*

In January, is the annual Quadrantid meteor shower, peaking on the morning of Thursday the 4th. (Already past.) There are no naked-eye comets visible this month.

Bernie then covered "What Happened on this Day. . .", and the names of this month's moon.

Bernie's excellent presentation, in its entirety, can be found, this month, and every month, in *Skylights*, ASNNE's professional-quality newsletter; editor, Paul Kursewicz. *Skylights* may be found at: <http://www.asnne.org/newsletter.php>

**Astroshorts:** There were a few Astroshorts. Mostly, people talked about viewing the Geminid meteor shower, which peaked on the night of Wednesday, 13 December, into the morning of the 14th. Different observers saw markedly different numbers of meteorites. Those observed were very bright, and slow.

The Regular Meeting was adjourned at ~10:00 pm.

**Next Meeting:**

ASNNE's next Meeting on Friday, 2 February, 2024, at the New School, in Kennebunk, at 7:30 pm. The Business Meeting, same location; starts at 7:00 pm. All are welcome to attend the Business Meeting

At the February Meeting, Bernie Reim will discuss his trip to the McDonald Observatory in Fort Davis, Texas. It's home to some of the darkest skies and the largest telescopes in the United States.

Respectfully submitted,

Carl Gurtman

## Club Meeting & Star Party Dates

Date	Subject	Location
<u>Feb 2</u>	<p><b><u>ASNNE Club Meeting:</u></b></p> <p><b>Business Meeting starts prior to Club meeting.</b></p> <p><b>Club Meeting (in house &amp; on Zoom): 7:30-9:30PM</b></p> <p><b>Guest Speaker: Bernie Reim</b> will be our guest speaker. He will talk about his recent trip to Fort Davis, Texas where he visited McDonald Observatory. This area of Texas is known for very dark skies, and for large telescopes.</p> <p><b>Bernie Reim - "What's UP"</b></p> <p><b>Astro Shorts:</b> (news, stories, jokes, reports, questions, photos, observations etc.)</p>	<b>The New School, Kennebunk, Me.</b>
Last Month	Last month we met at The New School and also had our Meeting on Zoom. Ian was our guest speaker, he discussed his trip to the Royal Observatory at Greenwich, England. Bernie did What's Up and there were a few Astro Shorts.	
<b>TBD</b>	<b>Club/Public Star Party:</b> Dependent on the weather.	<b>Talmage Observatory at Starfield West Kennebunk, Me.</b>

### 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](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.

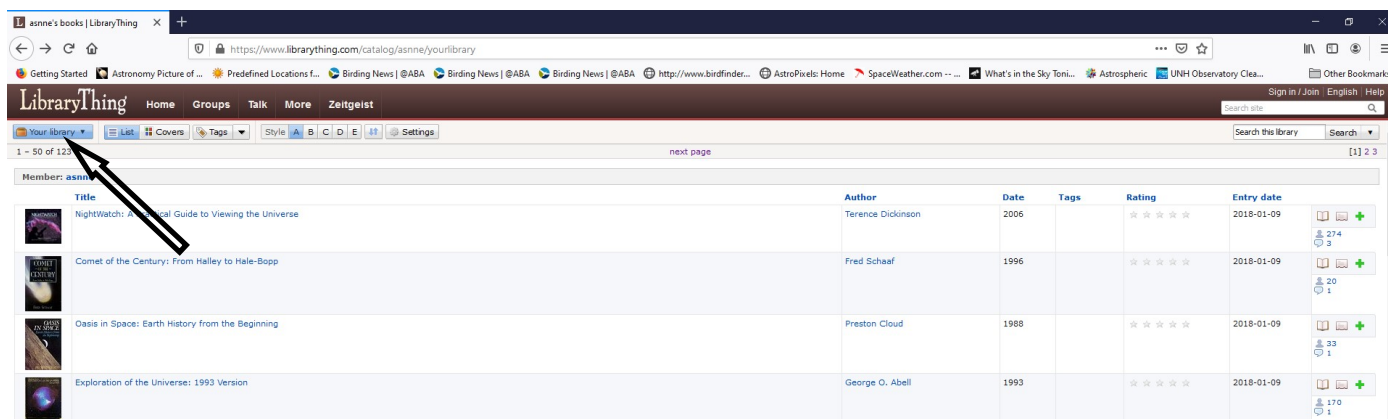
**From South:**

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.



# Astronomy Club & Library Resources

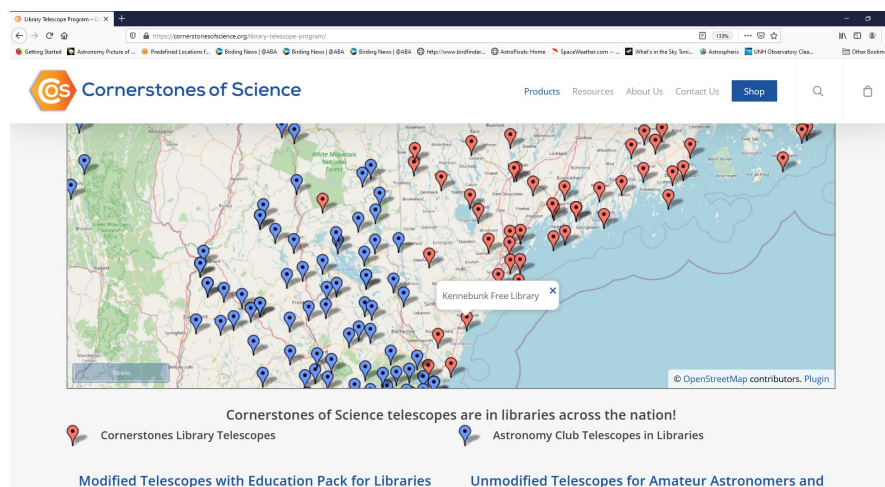
Our club has a library of astronomy books which are stored at The New School in Kennebunk, Maine (our monthly club meeting location). To request a book(s), contact one of the club officers. A listing of books is provided here: <https://www.librarything.com/profile/asmne> . After clicking on the link, 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.



Title	Author	Date	Tags	Rating	Entry date
NightWatch: A Practical Guide to Viewing the Universe	Terence Dickinson	2006		☆☆☆☆☆	2018-01-09
Comet of the Century: From Halley to Hale-Bopp	Fred Schaaf	1996		☆☆☆☆☆	2018-01-09
Oasis in Space: Earth History from the Beginning	Preston Cloud	1988		☆☆☆☆☆	2018-01-09
Exploration of the Universe: 1993 Version	George O. Abell	1993		☆☆☆☆☆	2018-01-09

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/>



Cornerstones of Science telescopes are in libraries across the nation!

- Cornerstones Library Telescopes
- Astronomy Club Telescopes in Libraries

● Modified Telescopes with Education Pack for Libraries     
 ● Unmodified Telescopes for Amateur Astronomers and

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 1338  
 Kennebunk, ME 04043-1338

**2024 Membership Registration Form**

(Print, fill out and mail to address above) or Use PayPal via [asnne.astronomy@gmail.com](mailto: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 \_\_\_\_\_

