

Skylights

Newsletter of the Astronomical Society of Northern New England



JAN2022



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 January

By *Bernie Reim*

The month of January is named for the Roman god Janus, who has two faces since he is facing forwards and backwards at the same time. Janus is the god of doorways, gates, and passages and the god of all beginnings.

So let us start over and make this year a much better year than the last one.

The sky above us will certainly hold plenty of interesting highlights in store for us. Every month and every season always presents a different sky to us as far as planets and potential comets and asteroids go. The constellations just cycle in a very predictable way, but the exact positions of all the other visible objects will never repeat even from night to night, similar to no two snowflakes being alike. So let us enjoy and appreciate each unique night this month and every month.

This year starts out in spectacular fashion with four of our five brightest planets all nicely lined up in the western evening sky right after sunset, which is a fairly rare occurrence by itself. Then the slender waxing crescent moon with its ethereal earthshine will add some grace and beauty to this already unusual line-up for several nights early this year, as if to point out and highlight each of the actors in this cosmic drama.

Other highlights include the annual Quadrantid meteor shower peaking on the third with no moon to interfere. Then we will have some good transits of some of the moons of Jupiter across the face of the planet including a rare double transit of Ganymede and Callisto on the 12th. I have seen several of these through telescopes before and they really give you a good sense of how our whole solar system works in miniature as you see these moons moving in real time right across the disk of Jupiter, the king of the planets. Then we will have two more comets this month, but they will not become as bright as Comet Leonard did last month. They are named Comet Borrelly and Comet 67P/Churyumov-Gerasimenko, but you will need a telescope to see them. The last highlight is that we are closest to the sun on January 4 at 2 am. We are always farthest away from the sun in early July, on or near the 4th. This is due to our elliptical orbit. It is nearly a circle, but not quite. We are about 3 million miles closer to the sun now than we will be in half a year.

The four bright planets that will ring in the New Year for us with their celestial celebration are, from highest to lowest, east to west, Jupiter, Saturn, Mercury, and Venus. We have been watching 3 of these, Jupiter, Saturn, and Venus since last summer,

but now our first planet, Mercury will join the trio to make it an even more interesting quartet. Strung together like beautiful pearls on a heavenly necklace, this temporary arrangement of planetary jewels will end after just a few nights into the New Year, since Venus will drop out quickly. If you had a telescope, you could even follow this string a little higher and it would include Uranus and Neptune, our last two planets.

The third rock from the sun, Earth, serves as our platform to see all of this drama unfolding in an ever-changing yet predictable way. Only Mars is missing in this great evening prime-time lineup of 6 of the 8 planets in our solar system. The Red planet rises around 6 am and brightens a little this month as it is slowly getting closer to us again as we are catching up with it in our orbits around the sun.

Then the remaining three, Jupiter, Saturn, and Mercury are also temporary as we lose both Mercury and Saturn just after the middle of the month, but not before they pass within just 3 degrees of each other on the 12th and 13th. Then Jupiter will be the lone survivor for the rest of the month.

To make this rare and memorable cosmic dance even more dramatic, the one day old waxing crescent moon will appear directly below Mercury on Monday evening the third. You may need binoculars to see it since it will be so thin. Try to see how much longer you can see Venus before it finally

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What's Up "Continued from page 1"

gets too low in our western sky. It will only be up above the horizon for another night or two after the third. Then Venus will just reappear as a morning planet around the middle of this month, rising in the east about an hour before sunrise and shining at a respectable minus 4.3 magnitude, which is over half a magnitude fainter than it reached early last month when it shone at its maximum brilliancy for the year at minus 4.9 magnitude. Our two neighboring planets, Mars and Venus, will be just 10 degrees apart in the morning sky towards the end of the month and they will be joined by a waning crescent moon on the 29th.

The Quadrantid meteor shower peaks on Monday night the third into Tuesday morning the 4th. There will no moon to interfere since it will be only a very thin waxing crescent moon that will set right after sunset. Remember that this is also the best night to see that quartet of planets along with the moon right before it sets. I certainly hope it will be clear because this could be one of the most memorable nights of the entire new year of 2022. That would be five solar system members including the moon all in close proximity low in the western evening sky along with tiny sand grain-sized pieces of a former comet nucleus named 2003 EH1 peppering the entire sky at irregular intervals for the rest of the night long after all four of the planets and the moon will have set below our horizon.

You can expect about 30 meteors per hour out of this shower this year. It has a very narrow peak of only 6 hours and this year that will occur at night over the other side of the world, otherwise we could be seeing over 100 meteors per hour right here. This is one of only two meteor showers each year that are caused by an asteroid instead of a comet. The other one is the Geminids which just happened during the middle of December.

I watched the Geminids for nearly two hours and saw 21 meteors. That is not a huge number for such a good shower, but the waxing gibbous moon was still up until nearly 3 am that night, and I gave up just before that time, otherwise I am sure I could have seen many more. It was great to get out in nature under the night sky for that long a period of time and to reconnect with its myriad inhabitants and their motions.

The winter hexagon was stunning as always with the 3 brilliant blue giant stars named Alnitak, Alnilam, and Mintaka forming the belt of the mighty hunter named Orion, lined up like the 3 pyramids of Giza. Below that the brightest star in the whole sky, Sirius, sparkled in all of its brilliancy, and the Pleiades, that intrepid little star cluster riding the back of Taurus the Bull, announced their subtle presence, crowding 500 stars into 1 degree of the sky. Also known as the Seven Sisters, they are located about 400 light years away from Earth. The light I was seeing from that open star cluster that night has been traveling towards me ever since Galileo became the first human in our entire history on Earth to turn a telescope skyward which began unveiling some of its well hidden mysteries essentially by just bringing them closer to us. That

completed the loop of travel time at the speed of light and brought that important moment in history to life for me in that moment and every moment that I look at the Pleiades.

The telescope was first turned to the heavens by Galileo in 1609. To help commemorate the 400th anniversary of that important event that changed the whole course of astronomy we created the International Year of Astronomy in 2009. That was a global effort to help the citizens of the world rediscover their place in the universe and develop a more personal sense of wonder and discovery in the process. That is exactly what I did that scenic night for nearly 2 hours. As the bitter wind was increasing in intensity, the moon was shedding its light gently over the partly frozen lake, occasionally becoming obscured as a thin and fluffy little cloud drifted in front of it creating a darker sky in which to catch more meteors for a moment. The ninth meteor I saw that night was a brilliant fireball, seemingly splitting the constellation of Leo right in half. That was a perfect location for it, since it reminded me the greatest event I had ever witnessed in astronomy, other than the total solar eclipse on August 21 of 2017, the Leonid meteor storm on November 18 of 2001. I saw nearly 1000 meteors per hour for 3 glorious hours that night right through until dawn started breaking ending that remarkable show.

Jan.1. On this day in 1801, G. Piazzi discovered the first and largest asteroid, Ceres, which is 600 miles in diameter.

Jan.2. New moon is at 1:33 p.m. EST.

Jan.3. The Quadrantid Meteor Shower peaks tonight. The moon passes just south of Mercury.

Jan.4. Earth is at perihelion at 2 a.m. The moon passes just south of Saturn.

Jan.5. The moon passes just south of Jupiter.

Jan.7. On this day in 1610 Galileo discovered 3 of the moons of Jupiter, Callisto, Io, and Europa. He would discover the biggest one, Ganymede, 6 days later.

Jan. 8. Stephen Hawking was born on this day in 1942.

Jan.10. Robert Wilson was born on this day in 1936. He won the Nobel Prize in physics in 1978 for his discovery of the cosmic microwave background radiation along with Arno Penzias using a radio telescope in NJ in 1964. This was an early proof of the Big Bang theory. He essentially saw the ever-present echo of this instant of all creation that is still everywhere even after 13.8 billion years. You can even see this for yourself without any expensive equipment. All you need is an old black & white TV. About 1% of the static "snow" between channels consists of this radiation, now red shifted and cooled to 2.7 degrees above absolute zero.

Jan.12. The moon passes near Ceres tonight.

Jan.14. On this day in 2005 NASA landed the Huygens probe on Titan, the largest moon of Saturn.

Jan.17. Full moon is at 6:48 p.m. This is also called the Wolf Moon.

Jan.19. On this day in 2006, the New Horizons mission was launched to Pluto and beyond, just half a year before Pluto was downgraded to an icy dwarf from full planet status. New Horizons got there on July 14 of 2015 to discover many fascinating things about this icy dwarf.

Jan.25. Last quarter moon is at 8:41 a.m.

Jan. 29. The moon passes near Mars and Venus this morning.

Moon Phases

Jan 2
New

Jan 9
First Quarter

Jan 17
Full

Jan 25
Last Quarter

Moon Data

Jan 1
Moon at perigee

Jan 3
Mercury 3° north
of Moon

Jan 4
Saturn 4° north
of Moon

Jan 5
Jupiter 4° north
of Moon

Jan 7
Neptune 4° north
of Moon

Jan 11
Uranus 1.5° north
of Moon

Jan 14
Moon at apogee

Jan 29
Venus 10° north
of Moon

Mars 2° north
Of Moon

OBSERVER'S CHALLENGE* – January, 2022

by Glenn Chapple

NGC 1501 – Planetary Nebula in Camelopardalis (Magnitude 11.5, Size 52")

There are two major reasons why this month's Observer's Challenge, the planetary nebula NGC 1501, is largely unobserved. First of all, it's located in the extremely faint circumpolar constellation Camelopardalis. Star-hoppers will have a rough time navigating around a constellation that lacks stars brighter than 4th magnitude. A second reason has to do with its published magnitude 13.0 in a number of web sources and observing handbooks. That's faint enough to scare away anyone observing with a small-aperture scope! But 13.0 is its photographic magnitude. Its visual magnitude is a more accommodating 11.5.

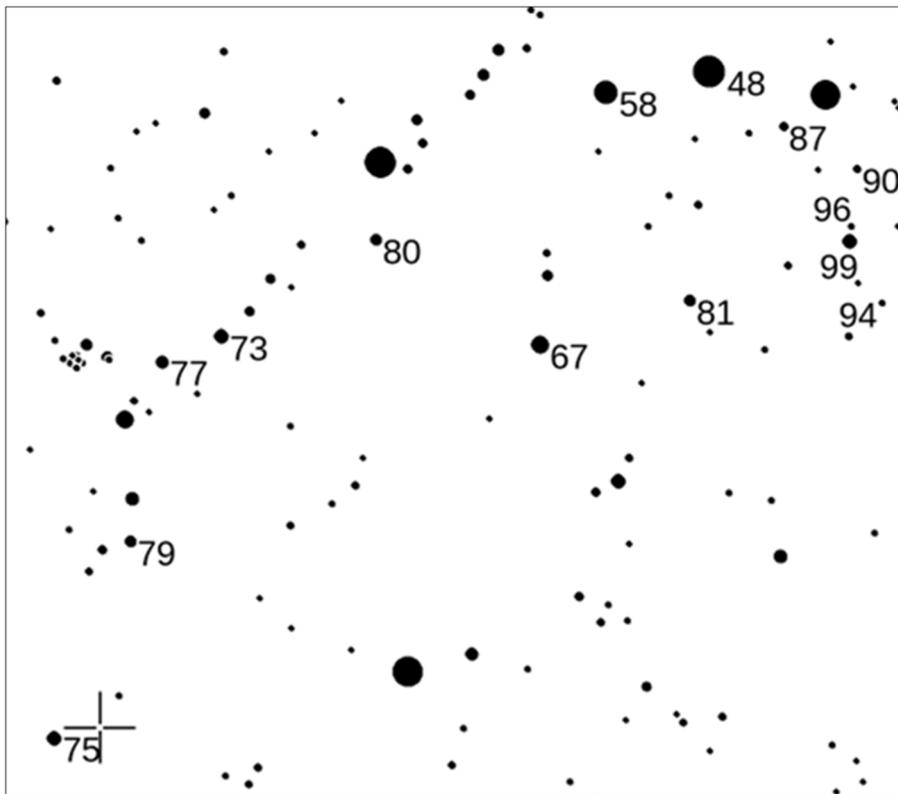
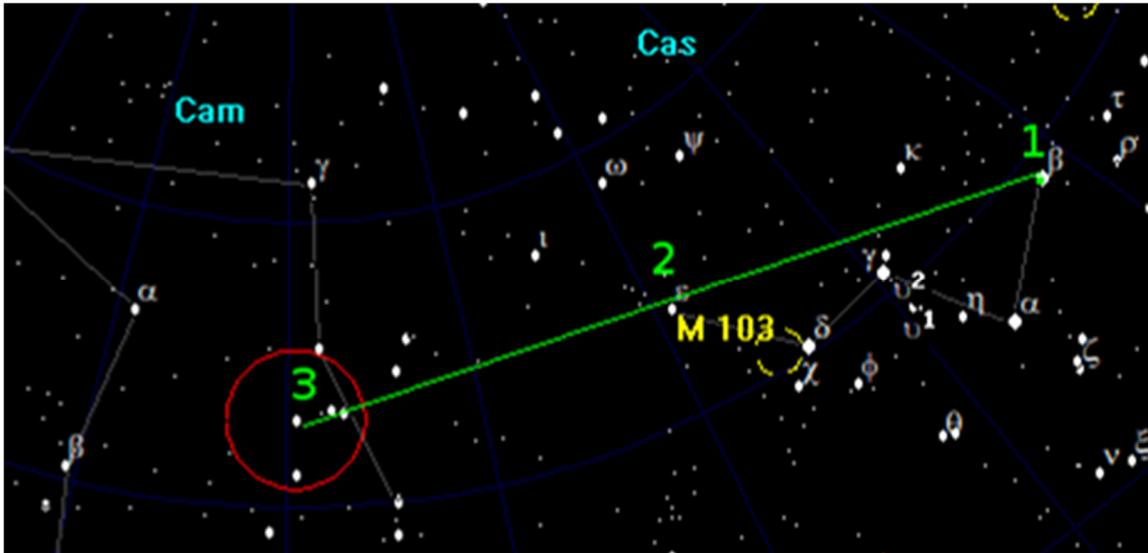
Although NGC 1501 can be viewed with small-aperture scopes under dark-sky conditions, its mottled appearance requires larger instruments. The 14.5-magnitude central star will challenge an 8-inch telescope. Embedded in the surrounding nebulosity like a pearl in a shell, it gives NGC 1501 its nick-name, the Oyster Nebula.

If you own a GoTo scope, you can get to the Oyster by punching in its 2000.0 celestial coordinates: RA 04^h 06^m 59.4^s, DEC +60° 55' 14.4". Star-hoppers can begin at nearby Kemble's Cascade- a remarkable asterism consisting of a 2½ degree-long near-straight chain of some 20 magnitude 7 to 10 stars punctuated near the middle by a 5th magnitude star. To find the Cascade, make a low-power (25-30X) search of the area marked by a line drawn from beta (β) to epsilon (ε) Cassiopeiae and extended an equal distance beyond (refer to finder Chart A). Once you've found it, keep the low power eyepiece in place and take a moment to admire this stunning stellar arrangement. At its southernmost end, you'll spot a tiny sprinkling of stars. This is the open cluster NGC 1502. A switch to a higher magnification (60-75X will reveal several dozen stars of 9th magnitude and fainter surrounding a pretty double star (Struve 485, magnitudes 6.9 and 6.9, separation 18 arc-seconds). If you had gone directly to NGC 1502 via GoTo technology, you would have missed an amazing asterism, a neat little star cluster, and an attractive double star. Your final leg of the star-hop takes you 1.4 degrees south of NGC 1502 (refer to Chart B). Once the Oyster comes into view, you'll want to switch to the highest magnification your telescope and the seeing conditions will allow.

My first encounter with NGC 1501 was via a 3-inch f/10 reflector (Edmund Scientific's Space Conqueror) on the evening of February 2, 1986. According to the notes I wrote in my logbook it was "very faint, but definitely seen. Visible at 60X." A sketch made with 120X shows the roundish form I saw. I was surprised to see this planetary at all, as my source gave a magnitude of 13.3, and I estimated it to be more like 11.0.

"Continued on page 4"

**FINDER CHART A Star-hopper's path to Kemble's Cascade
(binocular sky.com)**



FINDER CHART B

(Created using the AAVSO's Variable Star Plotter [VSP]. Stars plotted to magnitude 10.0. Numbers are stellar magnitudes, decimals omitted. Field is 3 degrees square, with north at the top. Kemble's Cascade is the chain of stars running diagonally from middle top to middle left. NGC 1502 appears just left of the magnitude 7.7 star in the Cascade. NGC 1501 is labeled with a + at bottom left.

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NGC 1501

Image by Mario Motta, MD (ATMoB) 1 hour each of Ha, O3, and S2, with 32 inch, and ASI 6200 camera.



*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). To find out more about the Observer's Challenge, log on to rogerivester.com/category/observers-challenge-reports-complete.

Principal Meteor Showers in 2022

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

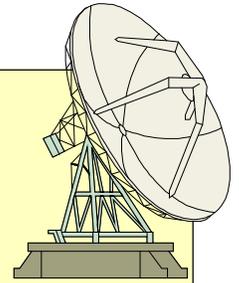
December 14
Geminids

December 22
Ursids

*Note: Dates are
for maximum*

Got any News?

Skylights Welcomes Your Input.



Here are some suggestions:

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

Benefits of Membership

- Attend our monthly meetings and club star parties
 - Our Monthly Newsletter: *Skylights*
 - Discounts on *Sky & Telescope*. and *Astronomy* magazine subscriptions
 - Automatic subscription to the Astronomical League's quarterly newsletter, *The Reflector*
 - With proper training, access to the equipment at ASNNE's Talmage Observatory at Starfield.
 - By special arrangement, free admission to the Southworth Planetarium at USM in Portland
- Enjoy sharing your interest and have fun learning about Astronomy!

Our Club has Merchandise for Sale at: 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 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 to find local clubs, events, and more!

Hunting the Hunter: Observing Orion

By David Prosper

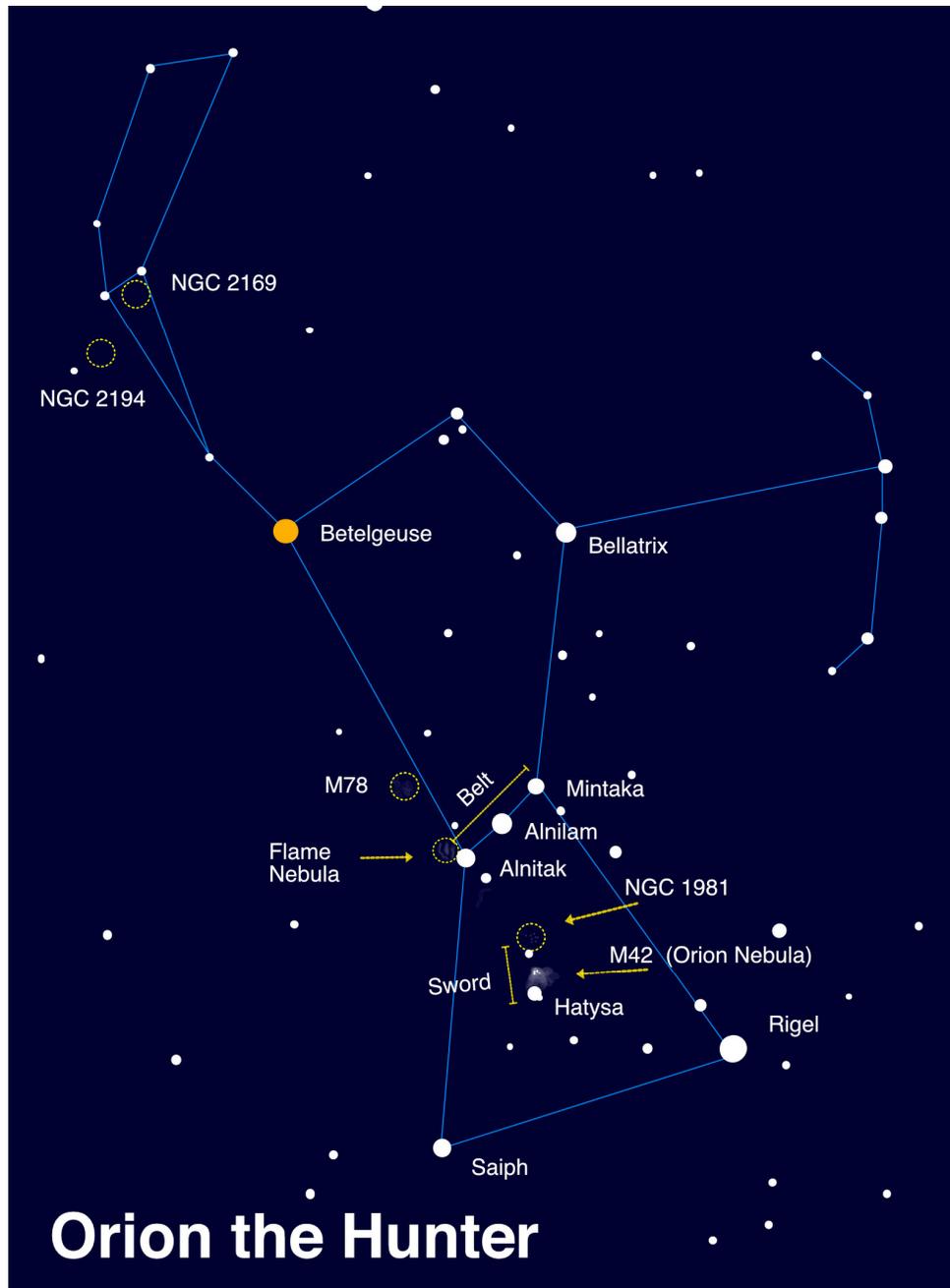
If you are outside on a clear January night, it's hard not to notice one distinctive star pattern above all: **Orion!** While we've covered Orion in earlier articles, we've never discussed observing the constellation as a whole. Perhaps you've received a new telescope, camera, or binoculars, and are eager to test it out. Orion, being large, prominent, and full of interesting, bright objects, is a perfect constellation to test out your new equipment and practice your observing skills - for beginners and seasoned stargazers alike.

In Greek mythology, Orion is a strong hunter, with numerous legends about his adventures. Being such a striking group of stars, cultures from all around the world have many myths about this star pattern. There are so many that we can't list them all here, but you can find a wonderful interactive chart detailing many cultures' legends on the Figures in the Sky website at figure-sinthesky.visualcinnamon.com.

What sights can you see in Orion? Look above the variable orange-red supergiant "shoulder star" Betelgeuse to find the stars making up Orion's "club," then move across from Betelgeuse towards the bright star Bellatrix (Orion's other "shoulder") and the stars of his bow and arrow - both essential tools for the Hunter. Many interesting sights lie near Orion's "belt" and "sword." Orion's belt is made up of three bright giant stars forming an evenly spaced line: Alnitak, Alnilam, and Mintaka. Move from the belt stars towards the stars Rigel and Saiph (Orion's "feet" or "knees") to arrive at Orion's distinctive Sword, parts of which may appear fuzzy to your unaided eyes. Binoculars reveal that fuzz to be the famed Orion Nebula (M42), perched right next to the star Hatysa! Diving in deeper with a telescope will show star clusters and more cloud detail around the Nebula, and additional magnification brings out further detail inside the nebula itself, including the "baby stars" of the Trapezium and the next-door neighbor nebula M43. Want to dive deeper? Dark skies and a telescope will help to bring out the reflection nebula M78, the Flame Nebula (NGC 2024), along with many star clusters and traces of dark nebula throughout the constellation. Very careful observers under dark clear skies may be able to spot the dark nebula known as the Horsehead, tracing an equine outline below both the Belt and the Flame Nebula. Warning: the Horsehead can be a difficult challenge for many stargazers, but very rewarding.

This is just a taste of the riches found within Orion's star fields and dust clouds; you can study Orion for a lifetime and never feel done with your observations. To be fair, that applies for the sky as a whole, but Orion has a special place for many. New telescopes often focus on one of Orion's treasures for their first test images. You can discover more of NASA's research into Orion's stars - as well as the rest of the cosmos - online at nasa.gov.

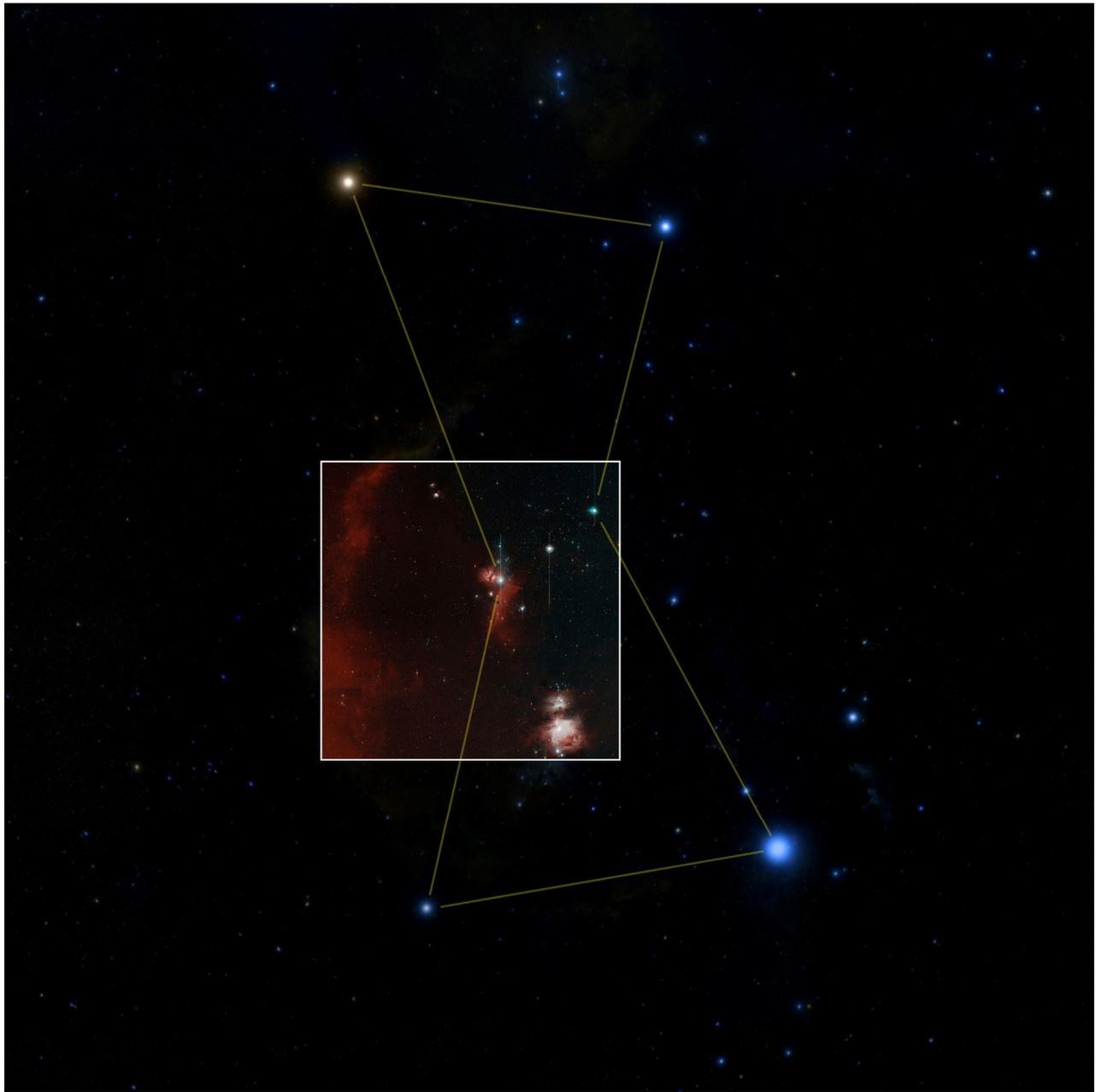
“Continued on page 8”



*Northern Hemisphere observers can find Orion during January evenings in the east/southeast skies. Can you spot the Orion nebula with your naked eye, in Orion's sword? How does it look via binoculars or a telescope? What other details can you discern? Please note that some deep sky objects aren't listed here for clarity's sake. For example, M43, a nebula located directly above M42 and separated by a dark dust lane, is not shown. Orion's Belt and Sword are crowded, since they star-forming regions! You can read more in our November 2019 article *Orion: Window Into a Stellar Nursery*, at bit.ly/orionlight.*

Image created with assistance from Stellarium.

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The inset image is the “first light” photo from the Zwicky Transient Facility, a large survey telescope designed to detect changes in the entire night sky by detecting “transient objects” like comets, supernovae, gamma ray bursts, and asteroids. For many astronomers, amateur and pro alike, Orion is often the “first light” constellation of choice for new equipment!

Image Credit: Caltech Optical Observatories

Point and Shoot Camera Astroimaging (no telescope)

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Mayall II (or G1)

Specs: JPEG mode, FL 2400mm, f/4, ISO 1600, 1 min exposure, 11-23-21



The fuzzy object that is being delineated by the two green lines in the top right hand corner of my picture is not a comet. Rather, it is a very special *globular cluster* — it's Extragalactic! It does not reside in our Milky Way Galaxy, but orbits M31, the Andromeda Galaxy. And I took its picture with just a camera and lens! How amazing is that? I found it on my third night out. Yes, it was challenging to locate this object, but well worth the effort. It is faint, having an apparent magnitude of +13.81. So, you would need a somewhat large aperture telescope to visually see it. **Mayall II** is also known as “Andromeda’s Cluster” and “Globular One” (**G1**), it is the most intrinsically bright globular cluster in the Local Group of galaxies, with an absolute visual magnitude of -10.94 and a luminosity of 2 million Suns. Mayall II lies 130,000 light years from the galactic nucleus of M31. It is located in Andromeda’s halo. With 10 million solar masses, it is more than twice as massive as Omega Centauri, the largest and most massive globular cluster in the Milky Way. G1 is also larger, with a tidal radius of 263.2 light years. Andromeda’s cluster (G1) appears similar to our galaxy’s clusters but lies almost 100 times farther away. The cluster is about 12 billion years old.

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Relative Location

I found the below picture on the internet. It shows the rough location of G1, it's shown in the outskirts. I also found some detailed star charts which pinpointed its location. G1 is the largest globular known overall, with a mass of about 10,000,000 Suns. The Hubble Space Telescope showed a non-luminous point mass of about 20,000 Suns at its core. Likewise, Messier 15 -- about 10% the mass of G1 -- showed that it also has a non-luminous point mass of about 4,000 Suns. Such objects can only be black holes. However, astronomers don't yet know if this is a universal phenomenon or something that's restricted to the largest globulars, and has a cutoff at some lower mass.

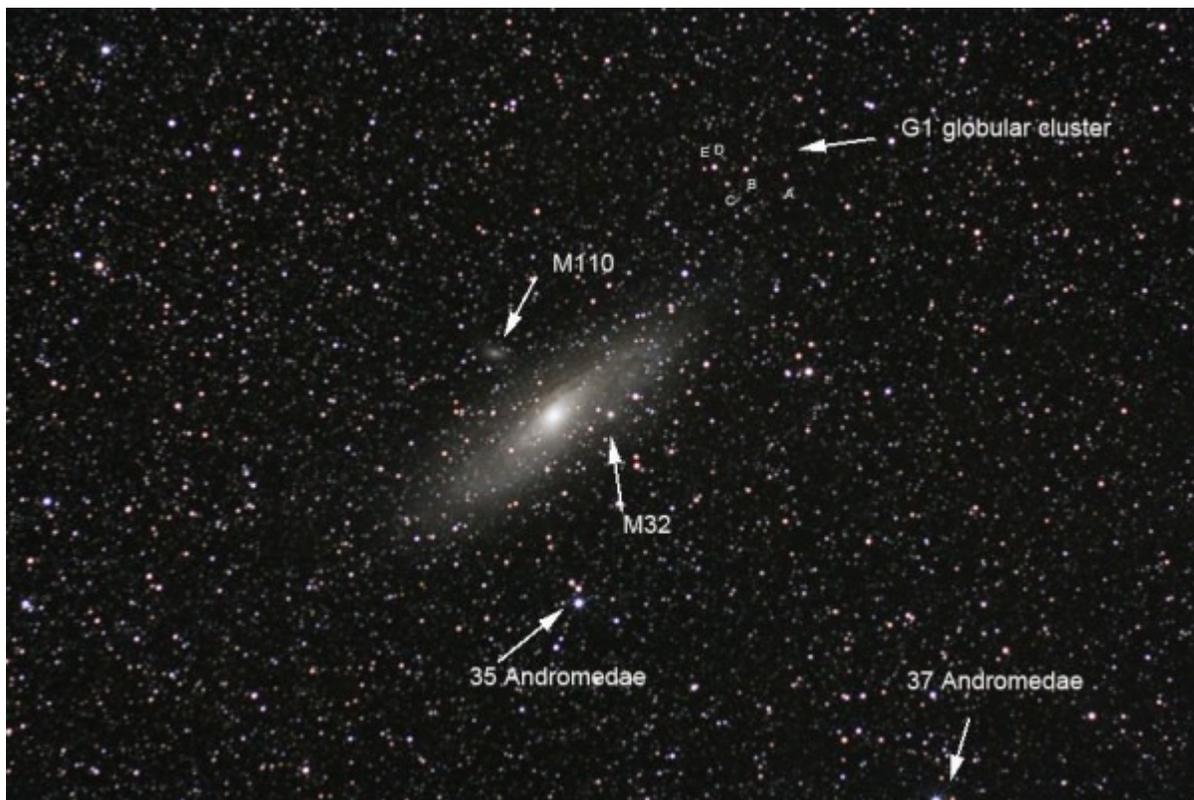


Image credit: George and Pat of <http://www.geoandpat.com/Georgesastrogalaxiesm31.html>.

Tale of a Christmas Comet

Submitted by Paul Kursewicz



I started my quest looking for **Comet Leonard** on 11-25-21. I did not see the comet. I then went out on the morning of 30th, at 4:30 am, and saw my first view of Leonard. Even with a pretty bright crescent Moon close by I was able to find it. Looking through 15x50 binoculars, the comet was faint but “large.” Using a fixed tripod, I took several 30 second exposures at 24mm. I then stacked the images in Photoshop and slightly cropped the image. Along the left had side of my picture is the Big Dipper. The really bright orange star at the very bottom of my image is Arcturus. A ways above Arcturus near the center of my picture is the large open cluster called Coma Berenices Hair. I put arrows pointing to the comet and to M3. Even though the comet looks small in my picture, it was about four times as large as M3 in my binoculars. And I saw a faint tail pointing to the 11 o’clock position. One other thing. The night before around 9:30 pm I saw a bright **Andromedid** meteor shoot through the lower section of Orion. My very first Andromedid! During most years the Andromedids display a low annual activity in November. But this time an outburst occurred two nights earlier on the 28th. That in turn allowed me to catch the rarity. The Andromedid meteor shower is best known for the impressive meteor storms in 1872 and 1885 that occurred shortly after the fragmentation of parent Comet 3D/Biela.

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Tale of a Christmas Comet

A Close Encounter with M3



On the morning of 12-3-21 I went out at 3:30 am to take a picture of Comet Leonard. The skies were mostly clear. At that time of morning the comet was still below my tree line. So I picked up my binoculars and began looking at the comet through some openings in the tree branches. I could see the tail much better this time out, it was fan-shaped. Around 4:00 am the comet just cleared my tree line. Before I could finish centering and then zooming in my camera lens on the comet and on the Globular Cluster M3 (bright object just above the comet), the clouds started to roll in. So I decided to take pictures as is. I could only get two images off before the clouds ruined the show. And the two pictures that I did get were through thin clouds. But I did walk away with the comet very close to M3.

SPECS: ISO 3200, f/4, FL 492mm, 2x 1min exposures shot through a thin layers of clouds.

“Continued on page 14

Tale of a Christmas Comet

A Long Thin Tail



If you look carefully at my picture you will notice that comet's tail extends out to the top edge of my image. This was taken on the morning of 12-7-21. Still could not see the comet naked-eye. The observed magnitude on this day was +7.0. I was finding it harder and harder to get a good picture of the comet. Each day the comet was getting lower and lower in the sky, and as a result, the sky was getting brighter. This picture is a stack of six 2 minute exposures and shot through a Moon Sky Glow Broadband Filter. I used a focal length of 388mm. In Photoshop, I stacked my pictures on the comet and not on the stars. It appears that the comet had lost its fan-tail and was now showing a long slender tail. I went out several more times to look for the comet, but this time, I was searching in the evening skies. I went out on Dec 12th (when the comet was closest to Earth), on the 17th (when the comet made a close approach with Venus), and on the 22nd. On each of these dates I could not see the comet in binoculars nor see it in any of my pictures. Being so low in the sky, the skies brightness washed out the comet. But, I had a very enjoyable time chasing this comet in the early morning skies. Looking forward to the next one!

[Astronomical Society of Northern New England \(ASNNE\) Meeting Notes of
3 December 2021](#)

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

Others Present: There were 14 people physically present, and four Members present by Zoom.

Note: Carl brought doughnuts and apple cider to this Annual Membership Meeting. Because of the Covid pandemic, there was no Pot-Luck Supper Party.

President *Pro Tem* Ian Durham called the Meeting to order at 7:00 pm. The Business Meeting was dispensed with.

As there was no Business Meeting, there was no formal Secretary's Report or Treasurer's Report.

Business Items reported on at the start of the Meeting:

Ian took action, and we now have the middle range of the "io", platform, called "Premium". This gives us much greater storage capacity, and the use of a calendar.

Ian has also paid a few bills.

Ian also mentioned that 2022 dues are due. Dues should be submitted to Ian.

We then went around the room, with each person, including the Zoom attendees, introducing him- or her-self, and a few words about his or her background and interests. During the introductions, people reported if they had seen notices of this (the December ASNNE) Meeting in newspapers. Carl had sent out a press release. The papers reported as carrying the information; (there may have been others), were;

The Kennebunk Post

The Biddeford Courier

The Weekly Sentinel

Regular Meeting:

David reported on the latest e-mail traffic he had received. A person wishes to visit the Talmage Observatory at Starfield just before Christmas. We will see if we can accommodate her.

Marge Baker wishes to donate to ASNNE the 8" Celestron telescope she had previously purchased from Peter Talmage.

“Continued on page 16

In the last Minutes I had credited David with updating our ASNNE Brochure. David noted that while he had made copies of the updated Brochure, the credit for updating it belongs to Ron Burk. Thank you, Ron!

On Monday, 29 November, we hosted a small troop of Brownies at the Talmage Observatory at Starfield. There were twelve Brownies, two troop leaders, and several parents who subsequently showed up. First, we laid out the Solar System to scale, and then we observed Venus, Jupiter, Saturn, and some clusters. The ASNNE Members present were Gary, David, Dwight, and Carl.

Board of Directors Election: As required by our By-Laws, a slate of Directors for 2022 was proposed by the 'old' Board of Directors at the November Business Meeting. A slate of five was proposed. The Slate as proposed was: Gary Asperschlager, Larry Burkett, Ian Durham, Carl Gurtman, and Bernie Reim. At the immediately following November General Meeting, Bern Valliere volunteered to be a Director. These six people are now the slate for the 2022 Board of Directors.

The slate was elected. Because Larry has not recently attended a Meeting, Ian will contact him to see if he is still interested in being a Director. If he is not, Ian will appoint Ron Burk in his stead.

At a subsequent Business Meeting, the Board will elect the 2022 Officers from their own ranks. As always, all Business Meetings are open to any interested ASNNE Member.

It was noted that David has procured a Speaker for January. This will not be an in-person event. Carl asked David to provide him with the Speaker's biographical data, and some information about the Presentation specifics, so he can include it in the press release for the next Meeting. Carl said that after Meetings with Presentations he will send out a press release, but not after Regular Meetings.

Regarding press releases, Sara will provide Carl with information about published community calendar booklets.

Carl noted that Starlady Joan's "Astronomy 101" had been very popular. Joan no longer teaches it: Carl asked if anyone was interested in re-starting those introductory lessons. Whoever does so need not be an expert in all things astronomical. There is also on-line help for those teaching an introductory course for amateurs, such as from the Astronomical Society of the Pacific.

"What's Up?": Bernie preceded his "What's Up?", by telling us about a guest he will soon have on his radio show, who will explore some aspects about the Universe.

Bernie then gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of December. December was the tenth month in the old Roman calendar.

Jupiter, Saturn, Mercury, and Venus are visible in the evening sky. Only Mars, is visible in the morning sky.

There will be a total solar eclipse over western Antarctica on the 4th.

A comet named Leonard should become visible to the naked eye by the second week of this month. There will be two good meteor showers, the Geminids on the 13th and the Ursids on the 22nd.

To top all of that off, the long-awaited James Webb Space Telescope is finally set to launch later this month (the launch date has slipped).

Bernie then covered "What Happened on this Day. . ."

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

Presentation: There was no formal presentation by a guest speaker.

AstroShorts:

Several Members presented Astroshorts.

Alex discussed aspects of his ham radio history, and several experiences. He has been a licensed ham for about sixty years. A recent highlight was the communication between a Maine school and the ham radio-licensed astronauts on the International Space Station. To organize this required a lot of planning, and approvals from NASA. Alex worked on arranging this.

Gary and Peter showed several of their remarkable astrophotographs. These were very well received.

The next ASNNE Meeting, the Annual Membership Meeting, will be at **7:30** pm, Friday, 7 January, 2022, at the New School in Kennebunk, Maine. The Regular Meeting will be preceded by a Business Meeting at 6:45 pm. All Members may attend the Business Meeting as they choose. There will be a remote Speaker. Because there's no Pot-Luck Supper, the Meeting time is unchanged.

Respectfully submitted,

Carl Gurtman

Club Meeting & Star Party Dates

Date	Subject	Location
<u>Jan 7</u>	<p><u>ASNNE Club Meeting:</u></p> <p>Business Meeting starts prior to Club meeting.</p> <p>7:30-9:30PM: Club Meeting</p> <p>Guest Speaker: Kerry-Ann Lecky Hepburn.</p> <p>Topic: Weather & Sky Photography.</p> <p>This will be a ZOOM presentation. To learn more about Kerry visit her website:</p> <p>http://www.weatherandsky.com</p> <p>Her deep sky objects are simply awesome!</p> <p>Bernie Reim - What's UP</p> <p>Astro Shorts: (news, stories, jokes, reports, questions, photos, observations etc.)</p>	The New School, Kennebunk, Me.
Last Month	Last month: We met at The New School. Due to COVID, there was no formal Christmas Party / Pot Luck. We did not have a guest speaker. Members gave Astro Shorts.	
<u>Jan 7</u>	Club/Public Star Party: If the weather is clear and if there is interest. And if our road is accessible.	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:

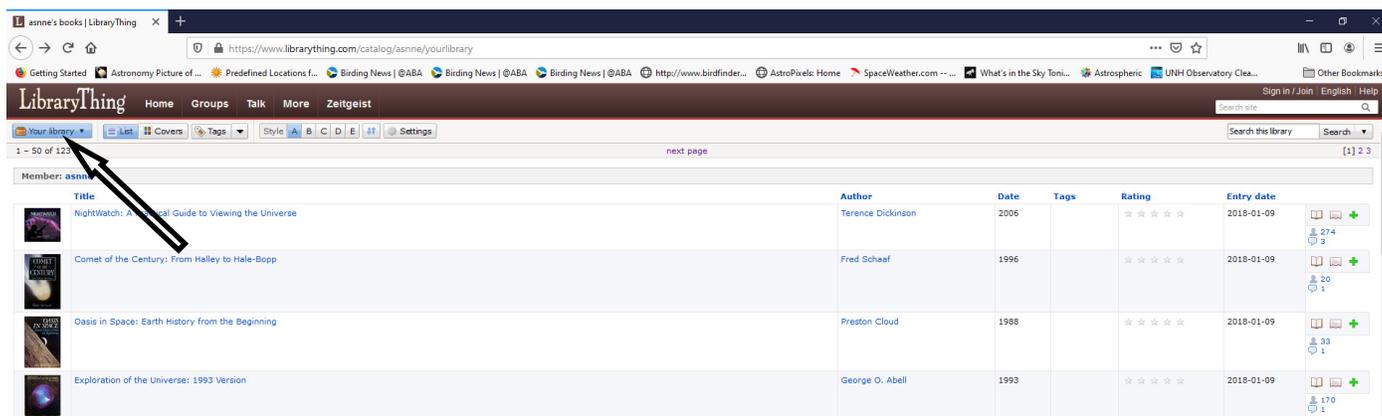
Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for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

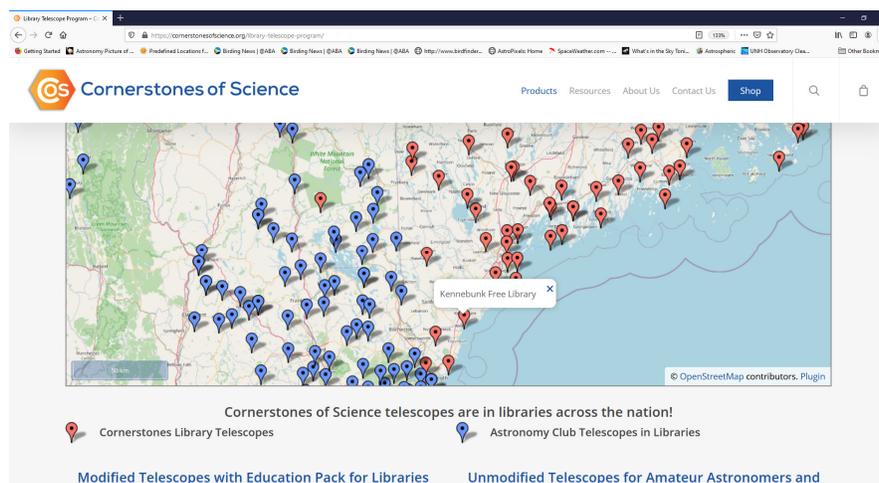
Astronomy Club & Library Resources

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.



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 1338
 Kennebunk, ME 04043-1338

2022 Membership Registration Form

(Print, fill out and mail to address above)

Name(s for family): _____

Address: _____

City/State: _____ Zip code: _____

Telephone # _____

E-mail: _____

Membership (check one):

Individual \$35 _____ Family \$ 40 _____ 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 _____

