

Skylights

Newsletter of the Astronomical Society of Northern New England



Nov2022



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 November

By Bernie Reim

The month of November can be a little bleak with the fall foliage fading out and the snows of winter not here yet, but there will be plenty of exciting celestial highlights to make up for any terrestrial shortfalls. These include three bright planets perfectly placed in our evening sky, Saturn, Jupiter, and Mars in that order, another comet that could become visible to the naked eye by early next year, a potentially better-than-average Leonid Meteor shower, and the second total lunar eclipse for our country this year during the early morning hours of November 8.

NASA just had a great success with its DART (Double Asteroid Redirection Test) mission hitting the tiny moon, Dimorphos, of an asteroid named Didymos, which means "twin" in Greek. This is the first time we ever changed the orbit of a natural body in our solar system in a planned and measurable way. This is part of our new planetary defense system using a kinetic impactor. DART weighed about half a ton and was only 6 feet long. It was like smashing a golf cart into the Great Pyramid of Giza.

This happened at 4 miles per second and 7 million miles away. After traveling for almost a year, it scored a near perfect bulls eye only 17 meters off dead center of this tiny 500-foot in diameter moonlet. The main asteroid is about 5 times that large. It made a crater about 50 feet in diameter, one tenth the size of the moonlet, and forced out a plume of dust and debris 6,000 miles long and visible from earth-based telescopes.

They already calculated that its orbit was shortened by 32 minutes from the roughly 12 hours it used to be. Anything over 1 minute shorter would have been a success. They are still working on some details, but now we know for sure that we can use this method with great success to save our precious planet from a deadly asteroid impact if we need to. DART was just a test on an asteroid's moon that was never in any danger of actually hitting the earth.

NASA has not been so successful yet with getting its Artemis mission off the ground, but it has been officially rescheduled for November 14, so that is also good news.

Three bright planets now rule our evening skies. Just this past summer none of the planets were visible in the evening sky since they were all morning planets, which is very unusual. Saturn is still in Capricorn since it spends over two years in each constellation. It will set first, around 10:30 pm by the end of the month. It dims a little more this month since we are getting farther ahead of it in our faster orbit around the sun. Its rings are tilted at only 15 degrees and are getting thinner to our line of sight, which happens once every 29 years, which is the time it takes Saturn to orbit the sun. They will disappear entirely by 2025, as they last did in 1996.

Jupiter rises before sunset and is still up for most of the night since it is only a little over a month past its best opposition in 59 years which happened on September 26. Jupiter will also fade a little more this month as we race farther ahead of it around the sun, but it is still much brighter than usual and about 20 times brighter than Saturn.

Mars will be the real "star" of the evening sky this month and next. The red planet is getting closer and brighter every night this month as we rapidly catch up with it in our faster orbit around the sun. It already started its retrograde or westward motion against the fixed background of stars and it will reach opposition early next month on the 8th. It now rises by 9 pm in Taurus and it will rise two hours earlier by the end of the month as it will also get considerably brighter and larger. It starts the month at minus 1.2 magnitude, a little fainter than our brightest star, Sirius, which always shines at minus 1.4 magnitude in Canis Major. Then it ends this month at a dazzling minus 1.8 magnitude, just one magnitude or 2.5 times fainter than Jupiter.

Notice how Mars forms an ever-changing triangle of orange objects in the Winter Hexagon. The orange giant star named Aldebaran in Taurus is about 15 degrees to its right and the red supergiant star, Betelgeuse in Orion, is about 20 degrees below it. Now is a good time to start looking at it through a telescope because you can see some great features on it like dark markings, both polar ice caps, and a little of its thin atmosphere. All of this makes it a much more real place, and we should learn much more about our neighboring planet soon since we will most likely be walking around on it by 2037.

Another comet was discovered in March of this year by the Zwicky Transient Facility at Mt. Palomar, which is a new wide field survey camera using the 48 inch Schmidt Telescope which also performed the original Mt. Palomar Sky Survey over 50 years ago. This is Comet C/2022 (ZTF) and is expected to peak at 5th magnitude by February, which makes it easily visible to the unaided eye.

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What's Up "Continued from page 1"

It only glows at 10th magnitude in Serpens Caput below Corona Borealis now, but it should get 100 times brighter over the next 3 months or so. It is on a parabolic path like all the comets in our solar system, originating in the Oort's cloud, which extends from 2000 to 100,000 astronomical units out, or 50 to 2500 times the distance to Pluto, which is about 40 A.U.

The annual Leonid Meteor shower is usually one of the 5 best meteor showers each year after the Geminids and Perseids. Even though a last quarter moon will rise around midnight this year to spoil much of the show, you can expect up to 250 meteors per hour during the morning of Saturday the 19th from a debris stream shed by its parent comet, 55P/Tempel-Tuttle back in 1733.

Every meteor shower is always better when its parent comet has just returned to shed much more debris into its permanent debris trail. Tempel-Tuttle orbits the sun every 33 years. Back in 1966 over 100,000 meteors per hour were seen from parts of our southwest and there were many great shows from 1999 through 2002. I well remember seeing nearly 1000 meteors per hour, classified as a true meteor STORM during the morning of November 18, 2001. It was right after 9/11 and there were almost no planes in the sky for the whole night. I saw an average of one meteor every 4 seconds and there was not a single lull of over 10 seconds, so it was basically raining meteors the entire night right up to the dawn. I saw up to 7 meteors in one single second all emanating from Leo the Lion, the radiant of this great shower.

There were about 30 of us at our new observatory in Kennebunk that we had just built the summer before. We also saw about 50 fireballs or bolides that night, which are caused by a pebble sized piece of this comet instead of just the dust that causes most of the meteors in any shower. Some of them were so bright that they would light up the whole sky as they exploded about 60 miles above us, right at the edge of space where the sky turns a permanent black as there are no more air molecules to turn the sky blue and let us breathe. Some of the twisting fiery trails lasted so long that many shorter meteors would streak right through those trails, truly a wonderful display of nature's awesome power, FAR more impressive than any human fireworks!

Usually you could expect something that magnificent out of the Leonids every 33 years, but that particularly spectacular show was caused by a much denser part of its trail that we will only pass through once every 99 years, so we have a long wait.

The last good highlight this month is another total lunar eclipse. That will start at 3 in the morning of Tuesday, Nov. 8, which also happens to be Sir Edmund Halley's birthday, just 366 years earlier. If he were around today, I am sure he would be impressed with how much more we know now than we did during his time, but maybe not with what we are doing with all that knowledge.

The umbral part of this lunar eclipse doesn't start until 4:09 am EST, when the moon starts to pass into the denser part of Earth's shadow. You won't really notice any darkening on the moon until that time. Then the total part begins at 5:16 and ends at 6:41 am when the whole moon will be completely immersed in our shadow. However, the sun will rise at 6:30 that morning and the full moon will set before it completely exits our shadow. That will be quite a sight to see the eclipsed moon setting as twilight dawns and the sun rises. I have seen dozens of lunar eclipses, but never one like this into sunrise.

The moon will be in Aries the Ram, near the Pleiades and Mars in Taurus. Watch how other celestial objects will become brighter as the moon gets darker. Jupiter will be just one constellation to the west in Pisces the Fish, but it will set soon after the eclipse starts. Our shadow

always stretches nearly a million miles into space, but only when the sun, Earth, and moon are in perfect alignment can we see our shadow projected onto the moon or stand at the very bottom of the moon's shadow cone as it just brushes across the earth, barely reaching us at all since it only extends about 250,000 miles into space at all times.

The exact color that the moon will take on during a total eclipse is always a mystery. It can range from dark gray, almost invisible, to a bright copper orange with a bluish rim. That is called the Danjon scale, which goes from 0 to 4, dark to bright. It depends on the exact composition of our atmosphere at the time and how many particulates are floating around in it. The only reason the moon does not disappear completely is that our life-giving atmosphere acts as a giant lens and bends a little reddened sunlight around Earth and onto the moon to give it that great three-dimensional appearance, as if you could just reach out and touch it, only 1.3 seconds away at the speed of light. A more dramatic way to look at this effect is that what you are really seeing reflected back to you from our only natural satellite is the combined effect of all of the sunrises and sunsets seen simultaneously. The opposite of that is true when you are in the moon's shadow for a few fleeting moments and you can see a 360 degree sunrise/sunset all around you at once, thereby becoming aware of the entire atmosphere of Earth instead of just the sunrise or sunset part.

Nov.1. First quarter moon is at 2:37 a.m. EDT.

Nov.3. On this day in 1957 the Soviets launched Sputnik 2, sending the first creature into space, a dog named Laika.

Nov.4. The moon passes near Neptune and Jupiter today.

Nov.6. On this day in 1572 Tycho Brahe found a supernova in Cassiopeia before the telescope was invented.

Nov.8. Full moon is at 6:02 a.m. EST. This is the Beaver or Frosty Moon. It will also be fully eclipsed by the earth this morning. Look for the planet Uranus just to the left and above the moon while it is in our shadow. Edmund Halley was born on this day in 1656. I first saw his comet on his birthday in 1985.

Nov.9. Carl Sagan was born on this day in 1934. Uranus is at opposition today in Aries.

Nov.11. The moon passes 2 degrees north of Mars today.

Nov.16. Last quarter moon is at 8:27 a.m. EST.

Nov.17. The Leonid meteor shower will peak this morning.

Nov.19. The American astronomer Eleanor Helin was born on this day in 1932. She was the lead investigator on NEAT (Near Earth Asteroid Tracking) and discovered several comets and asteroids.

Nov. 20. Edwin Hubble was born on this day in 1889.

Nov.23. New moon is at 5:57 p.m.

Nov. 24. Jupiter is stationary today, ending its retrograde motion.

Nov.28. The moon passes 4 degrees south of Saturn tonight.

Nov.30 First quarter moon is at 9:37 a.m. Mars comes closest to Earth today at 50.6 million miles away, but it will not reach opposition until December 8.



Moon Phases

Nov 1, 30
First Quarter

Nov 8
Full

Nov 16
Last Quarter

Nov 23
New

Moon Data

Nov 1
Saturn 4° north
of Moon

Nov 4
Neptune 3° north
of Moon

Jupiter 2° north
of Moon

Nov 8
Uranus 0.7° south
of Moon

Nov 11
Mars 2° south
of Moon

Nov 14
Moon at apogee

Nov 25
Moon at perigee

OBSERVER'S CHALLENGE* – NOVEMBER, 2022

By Glenn Chaple

NGC 7184 Barred Spiral Galaxy in Aquarius (Magnitude 10.9; Size 6.0' X 1.5")

Visual astronomers are always advised to observe a sky object when it's as high above the horizon as possible. This month's Observer's Challenge, the barred spiral galaxy NGC 7184, makes this piece of advice difficult to follow. Located in the constellation Aquarius at a declination of nearly -21 degrees, it's never very high above the southern horizon for astronomers living in mid-northerly latitudes.

NGC 7184 is located at the 2000.0 coordinates RA 22^h02^m39.8^s, Dec. -20°48'46". It can be found by star-hopping from the stars gamma (γ) and delta (δ) Capricorni (the stars that form the tail of the Sea-Goat). An alternate and more direct route can be had with a westerly star-hop from the 5th magnitude star 41 Aquarii.

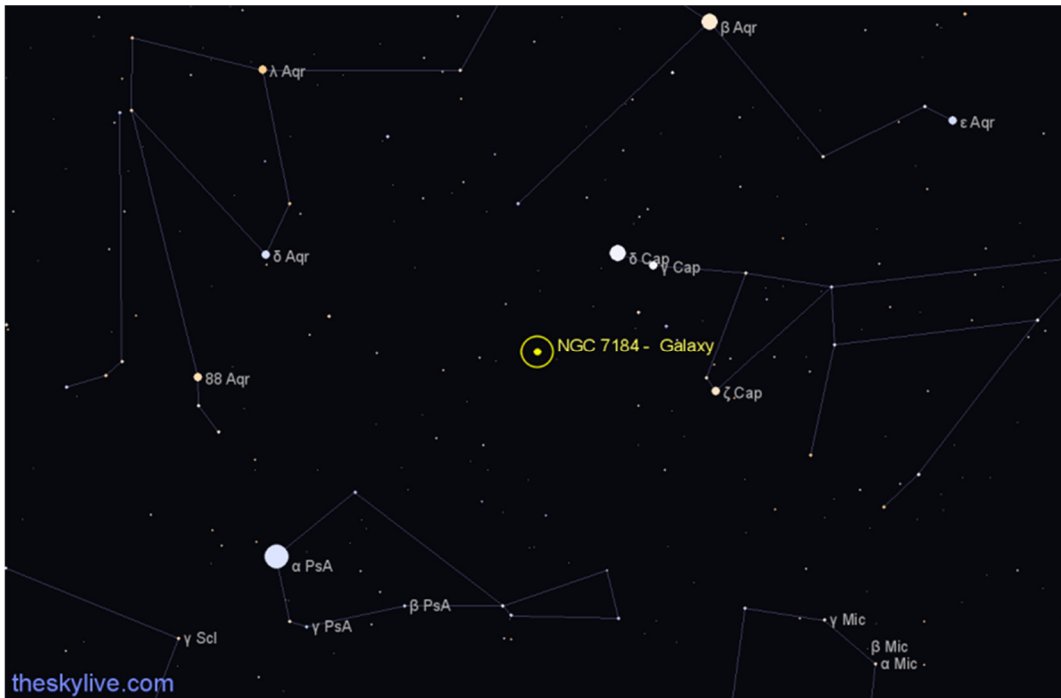
When William Herschel discovered this object on October 28, 1783, he described it as "Faint, considerably large, much extended, brighter in the middle, easily resolvable." Faint it is – especially if you live in an area cursed by a light-polluted southern horizon!

My initial attempt at NGC 7184 with a 10-inch f/5 reflector drew a blank – a bigger scope would be needed! A few night later, I teamed up with fellow ATMob member Steve Clougherty to use the club's 25-inch f/3.5 Dobsonian-mounted reflector. I was able to aim the big scope at the desired location, but it was Steve's trained eye that picked out NGC 7184. The 25-inch failed to reveal the outer spiral arms, capturing only a circular smudge that proved to be the galaxy's core. Bright lights from a shopping center a few miles to our south proved to be our undoing.

Imagers or visual observers working with medium to large aperture scopes under dark sky conditions will make out the details Steve and I missed. Most notable is a bright inner ring formed by the spiral arms. Whether you capture this intricate detail or merely catch a fleeting glimpse of a hazy circular smudge, you're looking at light that left this galaxy some 115 million years ago.

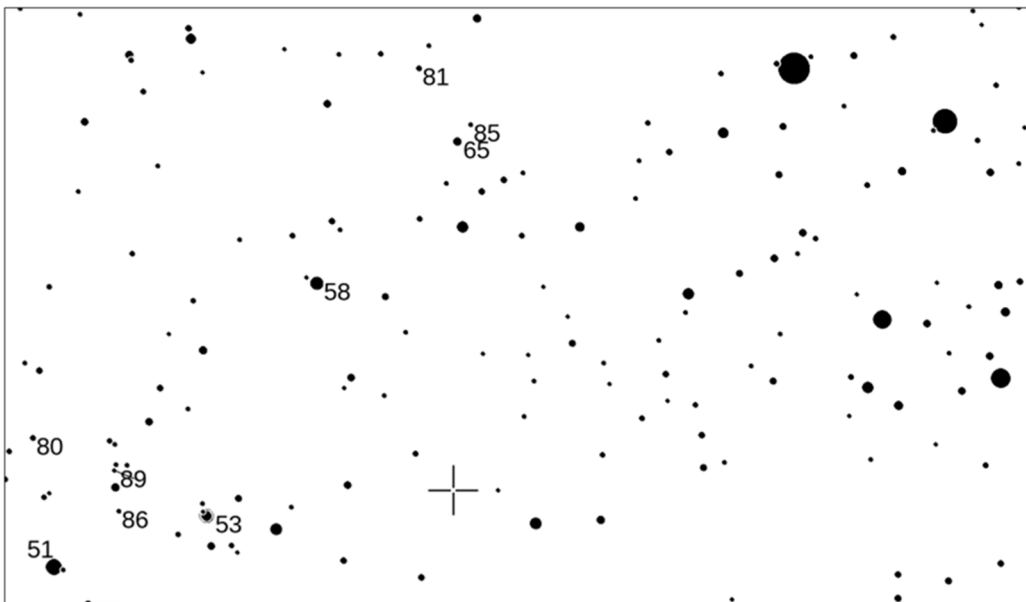
"Continued on page 4"

NGC 7184 Finder Chart A



NGC 7184 (magnitude: 10.9, size: 6.0' X 1.5')
 2000.0 coordinates RA 22^h02^m39.8^s, Dec. -20°48'46"

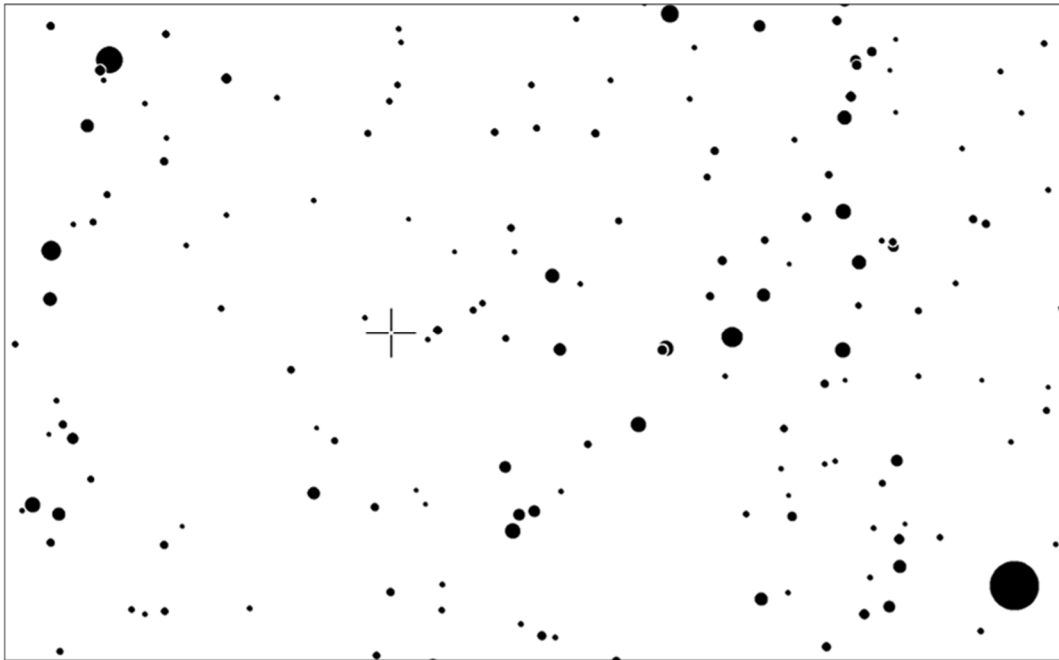
Wide-field chart. Bright stars in upper right are the "tail" stars in Capricornus. γ and δ Cap. Magnitude 5.1 and 5.3 stars at lower left are 41 and 47 Aquarii, just west of the Helix Nebula. North is up; limiting magnitude is 9.0.



"Continued on page 5"

NGC 7184 Finder Chart C

Stars to magnitude 13.5. Bright star at lower right is the star near the bottom center of Chart B.



NGC 7184 Image

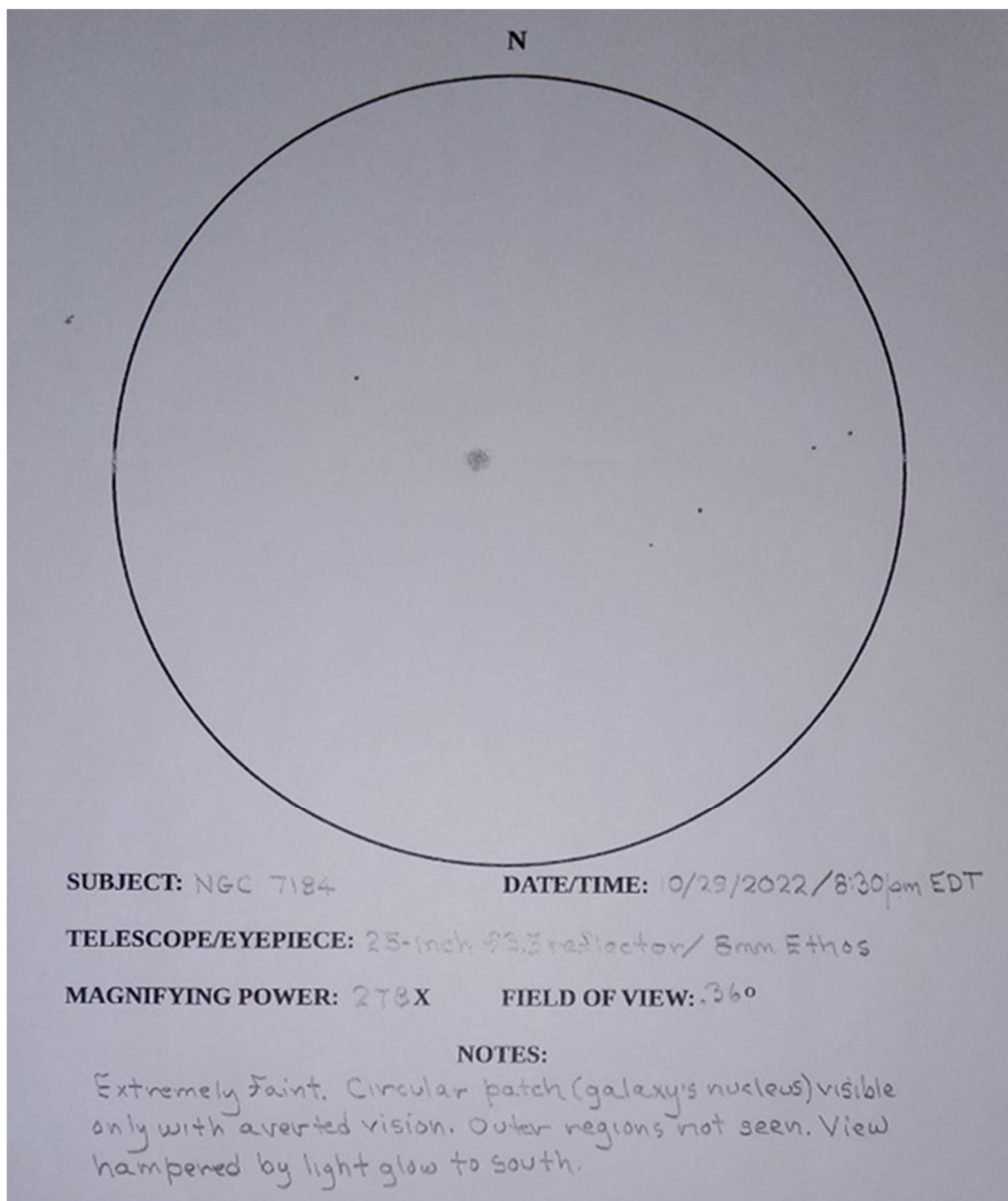
Mario Motta, MD. "Taken with my 32 inch F6.5, 1 hour Luminance, then 1 hour Blue, 30 min green, and 45 min red filters. I tried H alpha, but the signal was poor in that filter, did not include in processing. Taken with ZWO ASI6200 camera."



"Continued on page 6"

NGC 7184 Sketch

Glenn Chaple (ATMoB)



*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*

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 20 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 20.

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.

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!

Cepheus: A House Fit for a King

By David Prosper

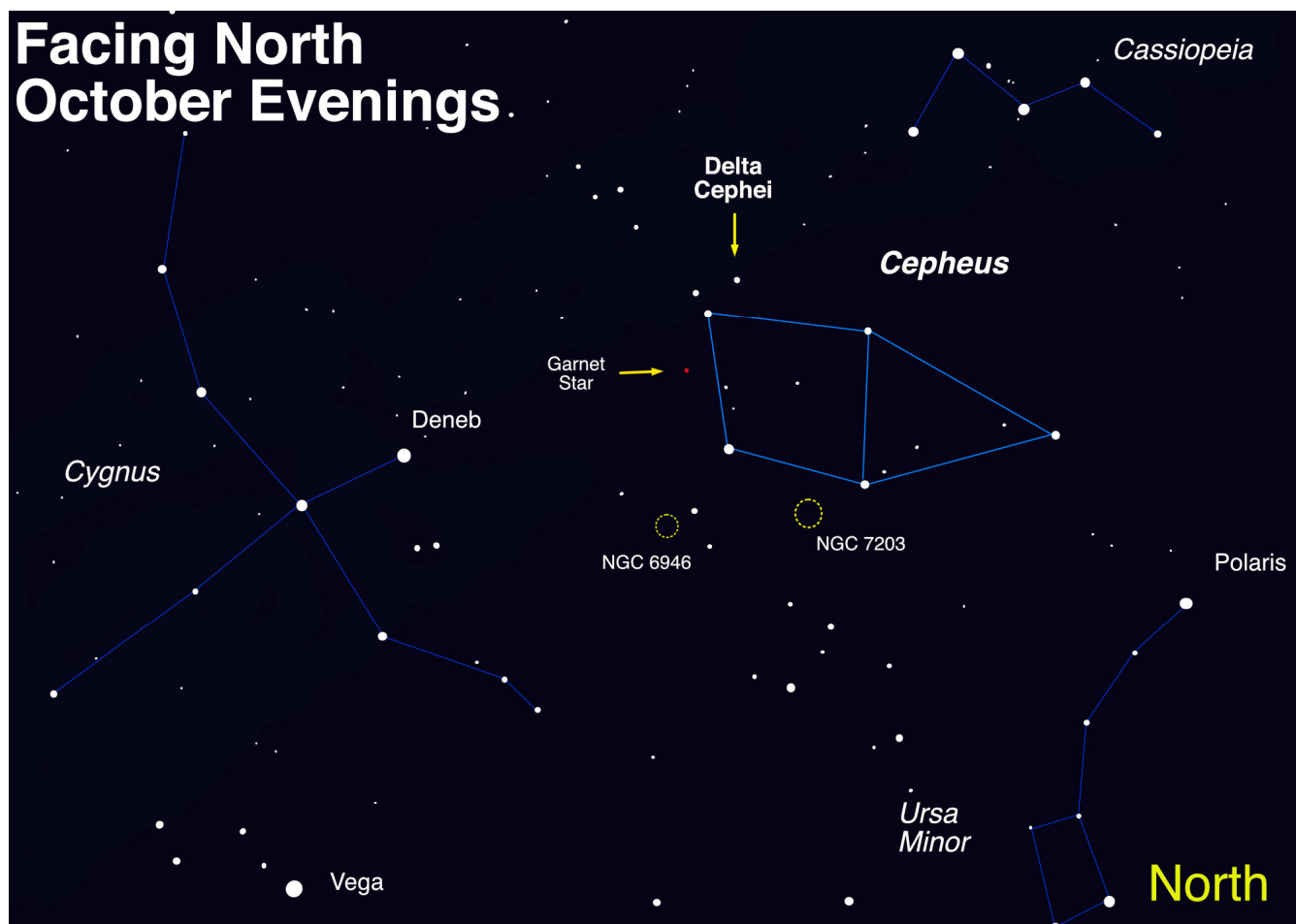
Sometimes constellations look like their namesake, and sometimes these starry patterns look like something else entirely. That's the case for many stargazers upon identifying the constellation of **Cepheus** for the first time. These stars represent Cepheus, the King of Ethiopia, sitting on his throne. However, many present-day observers see the outline of a simple house, complete with peaked roof, instead – quite a difference! Astronomers have another association with this northern constellation; inside its borders lies the namesake of one of the most important types of stars in modern astronomy: Delta Cephei, the original **Cepheid Variable**.

Cepheus is a circumpolar constellation for most observers located in mid-northern latitudes and above, meaning it does not set, or dip below the horizon. This means Cepheus is visible all night long and can be observed to swing around the northern celestial pole, anchored by Polaris, the current North Star. Other circumpolar constellations include Cassiopeia, Ursa Major, Ursa Minor, Draco, and Camelopardalis. Its all-night position for many stargazers brings with it some interesting objects to observe. Among them: the “Garnet Star” Mu Cephei, a supergiant star with an especially deep red hue; several binary stars; several nebulae, including the notable reflection nebula NGC 7023; and the “Fireworks Galaxy” NGC 6946, known for a surprising amount of supernovae.

Perhaps the most famous, and certainly the most notable object in Cepheus, is the star **Delta Cephei**. Its variable nature was first discovered by John Goodricke, whose observations of the star began in October 1784. Slightly more than a century later, Henrietta Leavitt studied the variable stars found in the Magellanic Clouds in 1908 and discovered that the type of variable stars represented by Delta Cephei possessed very consistent relationships between their luminosity (total amount of light emitted), and their pulsation period (generally, the length of time in which the star goes through a cycle of where it dims and then brightens). Once the period for a Cepheid Variable (or **Cepheid**) is known, its luminosity can be calculated by using the scale originally developed by Henrietta Leavitt, now called “Leavitt’s Law.” So, if a star is found to be a Cepheid, its actual brightness can be calculated versus its observed brightness. From that difference, the Cepheid’s distance can then be estimated with a great deal of precision. This revolutionary discovery unlocked a key to measuring vast distances across the cosmos, and in 1924 observations of Cepheids by Edwin Hubble in what was then called the Andromeda Nebula proved that this “nebula” was actually another galaxy outside of our own Milky Way! You may now know this object as the “Andromeda **Galaxy**” or M31. Further observations of Cepheids in other galaxies gave rise to another astounding discovery: that our universe is not static, but expanding!

“Continued on page 9”

Because of their importance as a “standard candle” in measuring cosmic distances, astronomers continue to study the nature of Cepheids. Their studies revealed that there are two distinct types of Cepheids: Classical and Type II. Delta Cephei is the second closest Cepheid to Earth after Polaris, and was even studied in detail by Edwin Hubble’s namesake telescope, NASA’s Hubble Space Telescope, in 2008. These studies, along with others performed by the ESA’s Hipparcos mission and other observatories, help to further refine the accuracy of distance measurements derived from observations of Cepheids. What will further observations of Delta Cephei and other Cepheids reveal about our universe? Follow NASA’s latest observations of stars and galaxies across our universe at [nasa.gov](https://www.nasa.gov).



The stars of Cepheus are visible all year round for many in the Northern Hemisphere, but fall months offer some of the best views of this circumpolar constellation to warmly-dressed observers. Just look northwards!
Image created with assistance from Stellarium: stellarium.org.

“Continued on page 10”

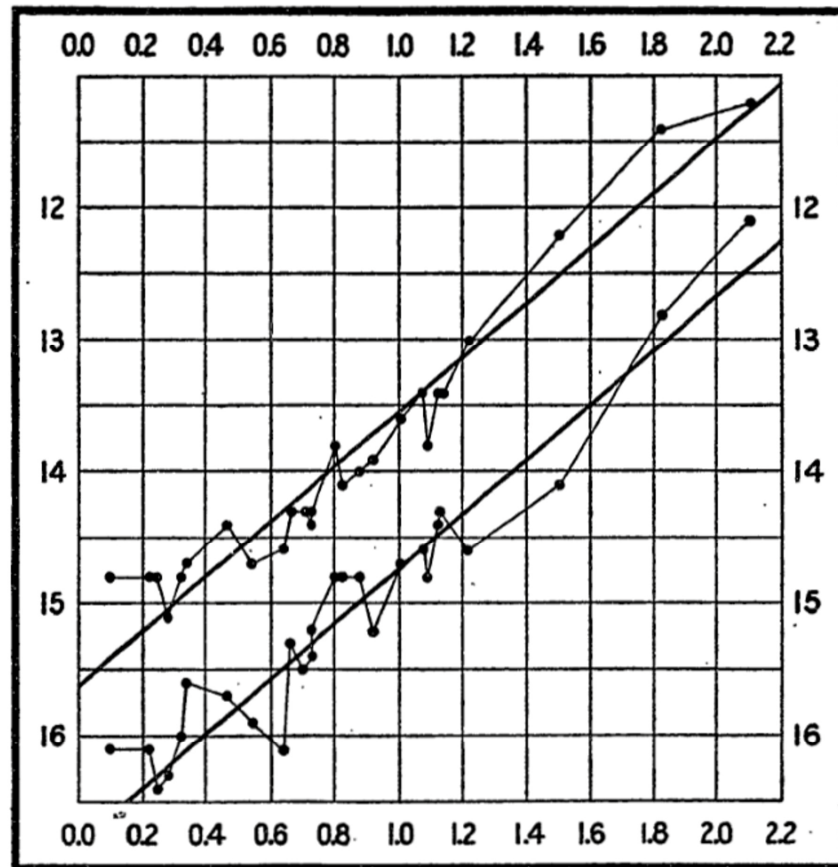


FIG. 2.

This historical diagram from Henrietta Leavitt's revolutionary publication shows the luminosity of a selection of Cepheid Variables on the vertical axis, and the log of their periods on the horizontal axis. The line drawn through these points shows how tight that relationship is between all the stars in the series. From Henrietta Leavitt and Edward Pickering's 1912 paper, "Periods of 25 Variable Stars in the Small Magellanic Cloud," a copy of which can be found at: <https://ui.adsabs.harvard.edu/abs/1912HarCi.173....1L/abstract>

Astrophotographer at Work

Photo submitted by April Nicholls



This wonderful night-scape picture was taken by April with her cell phone. I believe it was a 10 second exposure, hand held. The person in the image is me setting up my camera equipment. This was right after the star party when all of the visitors left to go home. As a bonus, April also captured the constellation Aquila, the Eagle. It's located directly above me. The three stars close together in a row represent the Eagle's upper torso and neck. The two bright separated stars just below the torso represent the Eagle's outstretched wings. The star just above my upper arm represents the Eagle's lower torso and feet area. While the star that represents the Eagle's tail feathers is hidden behind my lower arm. My target object that night was the "Silver Coin Galaxy." It is located in the constellation Sculptor, low in the southern sky. My picture of the "Silver Coin" appears on the next page.

Point and Shoot Camera Astroimaging (no telescope)

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Silver Coin Galaxy (NGC 253)

**SPECS: RAW mode, f/3.56, FL 1200mm, ISO 5000, 84 x 1min exposures, 10-21-22,
Baader Moon & Skyglow Filter**



NGC 253 is one of the brightest spiral galaxies visible and is located in the southern sky in the constellation Sculptor. But it is also one of the dustiest galaxies. I could not see this galaxy in my binoculars because the low southern sky at our observatory has too much light pollution. But I could see it in my camera's LCD screen by taking a 30 second exposure. It's dubbed the "Silver Coin Galaxy" for its appearance in small telescopes. It is more formally known as the Sculptor Galaxy. This dusty island universe lies a mere 10 million light-years away and is about 70 thousand light-years across. The high dust content accompanies frantic star formation, earning NGC 253 the designation of a starburst galaxy. It is also known to be a strong source of high-energy x-rays and gamma rays, likely due to a massive black hole near the galaxy's center. The Silver Coin Galaxy was discovered by Caroline Herschel in 1783 during one of her systematic comet searches. It's located at the center of the Sculptor group, one of the nearest groups of galaxies to the Milky Way.

Shop Talk: ASNNE's Donated Telescopes



Over time our club has been receiving donated telescopes. Some suggestions as to what to do with these telescopes are two fold: We could “sell” some, or keep some for “loaner scopes” (i.e., club members could borrow one of these scopes for their personal use). If I remember correctly we have five donated telescopes in our possession and a partial Dobsonian. I believe Wayne has one in his possession, as well as April (she has the one that is shown in the picture). On the day that Gary’s church group came out to our observatory, I arrived early to assemble the above scope. It does not have a motor drive, which means it cannot not track the stars. Tracking is done manually by the use of two slow motion controls. It does have some quirks. Some things tend to loosen up when in use. I did not have enough time to play around with it to find a fix. The view through the scope is very good, but I wish the finder scope had a right angle diagonal. That would make finding things a lot easier when pointed higher up in the sky. It appears to have a polar scope but I did not have time to check it out. By aligning the mount on Polaris, you would only need to use the declination slow motion control knob to keep things centered in the field of view. Without a motor drive this scope is not really designed to do long exposure astrophotography. I believe the objective lens is 6-inches and the optical design is a Maksutov-Cassegrain. So, it’s a good scope for observing. And it is very portable.

“Continued on page 14”

Another Donated Telescope



This telescope belonged to Peter Talmage, the person whom the observatory is named after. Peter made the mount, it is very sturdy. However, it's more bulkier than the scope on the previous page. Also, this telescope has tracking, so when the RA axis is pointed towards Polaris, it should keep things centered in the field of view (so no need for slow motion controls). We did not have time to test the tracking to see if it actually tracks. It has a hand controller and eye-pieces. The view through the scope is very good. It appears that two people are needed to assemble this scope. For example, Dave had to hold up the upper assembly (optics, fork arm, and drive mechanism) up against the top portion of the mount while I inserted three long bolts into three threaded holes that are on the back side of the drive mechanism. The upper assembly is rather heavy. Maybe there is a way for one person to assemble the scope but there was not enough time to experiment. The optical tube assembly looks like a Celestron 8-inch Schmidt-Cassegrain. It along with the accessories that are on the scope shelf go into the green box that is on the floor. There is a finder scope and a mounting bracket (probably for a camera). As for the other donated scopes, there is one really BIG one (some kind of reflector, 12 or 14 inches in diameter) that is very heavy to carry, located in the small shed. It has never been assembled. Also, Dave has a donated scope that is in storage at his house. I don't think that one has ever been assembled either. Lastly, if I'm correct, there is a 16-inch mirror and some related parts in the observatory that could be used to create a Dobsonian telescope.

Astronomical Society of Northern New England (ASNNE) Membership Meeting

Minutes of 7 October 2022

Business Meeting: The Business Meeting was called to order at 7:13 pm by
Vice President Bernie Reim

Directors Present: Ian Durham, President *Pro Tem* and Treasurer
Bernie Reim, Vice President
Carl Gurtman, Secretary
Gary Asperschlager, Director
David Bianchi, ASNNE E-Mail Manager

Others Present: Several Members drifted in and out of the Business Meeting, but no one consistently stayed.

Old Business: There was no Old Business. Tim & Peter have completed all the required repairs on the framework of the Talmage Observatory at Starfield. Thank-you!! The framework for supporting the roof rails has been replaced as necessary. The frayed cable has been replaced. The entrance ramp was replaced last year. The Observatory has been formally dedicated to the memory of Peter Talmage, and a plaque affixed and unveiled.

Eventually, some additional support installation has been suggested, the remaining cable should be replaced, and the shed painted or stained. However none of these improvements are urgent, and can be accomplished at a later date.

New Business: David reported that there are three requests for Star Parties. David also brought up that he has been contacted by a Ms Shay Bellas of Navitour, regarding promoting our Events. Carl responded that he has been in e-mail contact with her.

Gary wishes to address the need to plan ahead for holding Star Parties at for-profit venues in the Summer of 2023.

Both of the items needing volunteers will be brought up at the Regular Meeting, and volunteer assistance requested.

Currently, the cable across the driveway at the Talmage Observatory at Starfield is not locked. Ron will take care of that.

Regular Meeting:

Directors Present: Ian Durham, President *Pro Tem* and Treasurer
Bernie Reim, Vice President
Carl Gurtman, Secretary
Gary Asperschlager, Director
Bern Valliere, Director
David Bianchi, ASNNE E-Mail Manager

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Others Present: There were 16 people present in person, and 3 people present on Zoom.

President *Pro Tem* Ian Durham called the Regular Meeting to order at 7:35.

There were four new people; April, Rick, and Mark & Denise. They were introduced, and shared some of their astronomical history, and what they hoped to accomplish with ASNNE.

To summarize (for all); they have an interest in learning about astrophotography, and a shared hope to learn what is the best way to start observing. Regarding astrophotography, as a possible beginning, Paul K. shared some of his experience with a camera used directly, tracking the stars, but without the complication of a telescope. It was also suggested that ASNNE has quite a few smaller telescopes, which are available for the new (or any) Members to borrow, to become accustomed to telescopic observation, and to help decide what type of telescope they might ultimately wish to obtain.

One person was very aware of the psychological & emotional benefits of observing the stars in the dark night sky. Carl shared the experience of the previous evening where, at the Zoom Meeting of the Southern Maine Astronomers (SMA), he saw the film, *Defending the Dark; Preserving the Night Sky in Maine*. All aspects of the need to do this; energy, ecology, and mental health, were discussed.

Volunteers needed: David described the dates of the upcoming Star Parties; the first on 21 October, and the need to have volunteers. Several Members volunteered. Gary discussed the Presentations given this summer at two campgrounds, Huttopia, and Point Sebago. As these are for-profit venues, donations were required. These ventures earned \$5,000 for us. It's too early to ask for names for the Summer of 2023, but more people will make the work lighter. Due to the rapid turnover of campers, Presentations can be repeated.

Gary also noted that with the major improvements already accomplished at the Talmage Observatory at Starfield, and paid for; the structure, new cable, and new mower, we should be looking for ways to carefully invest our funds. Carl suggested we form two small committees; one to evaluate any improvements to the physical Observatory, and one to evaluate improvements to our observing equipment.

Carl noted that he issues ASNNE Press Releases, both of upcoming Meetings and Events, and post-Event Reports. If anyone sees ASNNE information in the Press, Carl requested the item be saved, source noted and item dated, and saved for him.

“Continued on page 17”

"What's Up?":

Bernie then gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of October, the first full month of Fall.

The nights are getting longer and the days cooler. The Winter Hexagon begins to appear over our eastern horizon before 10 pm. Jupiter is still quite close to opposition, since it reached opposition on 26 September. Saturn still looks bigger and brighter than usual since it just reached opposition on 14 August. It shines with a slightly golden light at 0.5 magnitude, or about 15 times fainter than

Jupiter. Mars is getting bigger and brighter and closer every night now, approaching its 8 December opposition.

We we will be able to see a total lunar eclipse on November 8 early in the morning just as the moon will be setting.

The Orionid meteor shower will take place from 2 October through 7 November, but it will peak on Friday morning the 21st. Its radiant in Orion will rise at 10:30 pm and the waning crescent moon will not rise until 3 am. You can expect about 20 meteors per hour from a dark sky site. Orionid meteors are amongst the fastest, with speeds about 40 miles per second.

Bernie then covered the astronomical calendar for October, including "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>

Boston Dynamics: David then projected a short documentary on the robots that Boston Dynamics have developed. Amazing; they have to be seen to be believed.

Astroshorts: Several Members provided Astroshorts.

Next Meeting: ASNNE's next Meeting will be on Friday, 4 November, 2022, at 7:30 pm at the New School in Kennebunk, Maine. There will be a short Business Meeting prior to the Regular Meeting, at 7:00 pm, at the same location. All Members are always welcome at the Business Meeting.

Respectfully submitted,

Carl Gurtman

Club Meeting & Star Party Dates

Date	Subject	Location
<u>Nov 4</u>	<p><u>ASNNE Club Meeting:</u></p> <p>Business Meeting at 7:00 pm.</p> <p>Club Meeting 7:30 to 10:00PM</p> <p>Guest Speaker: TBD.</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	We met at the New School last month. There was no guest speaker. We had four new people come to the meeting. Bernie did his What's Up. That was followed by Astroshorts. We ended the meeting by watching a short documentary about hi-tech robots.	
<u>TBD</u>	Club/Public Star Party: Weather permitting. Check before heading over.	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:

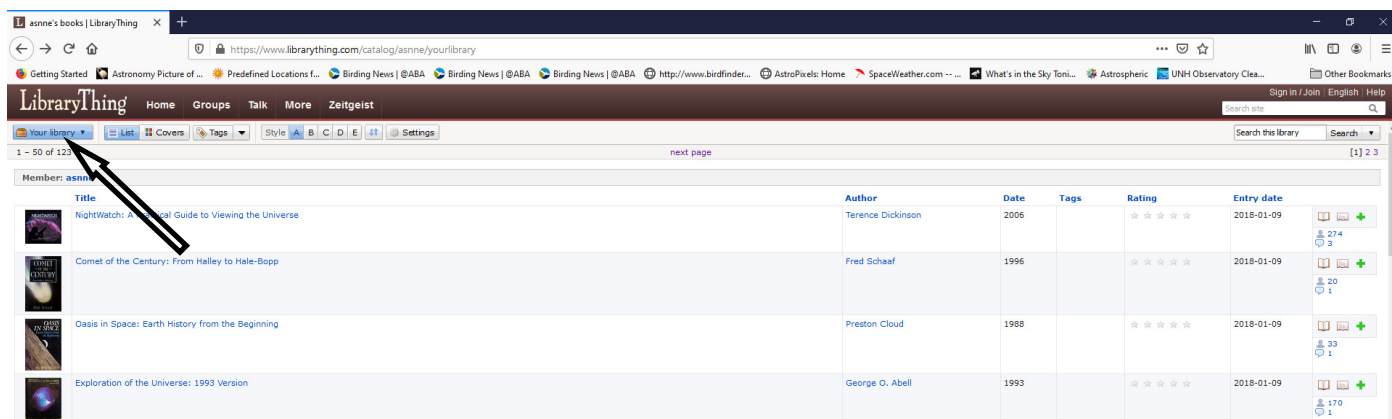
Get off the turnpike at exit 25 in Kennebunk. After toll both turn right on Rt 35. Go up over the turnpike and immediately turn right on Rt 35. About 4 miles along you will crest a hill and see a large field on your right. Continue until you reach the end of the field. Turn right into the Starfield Observatory 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

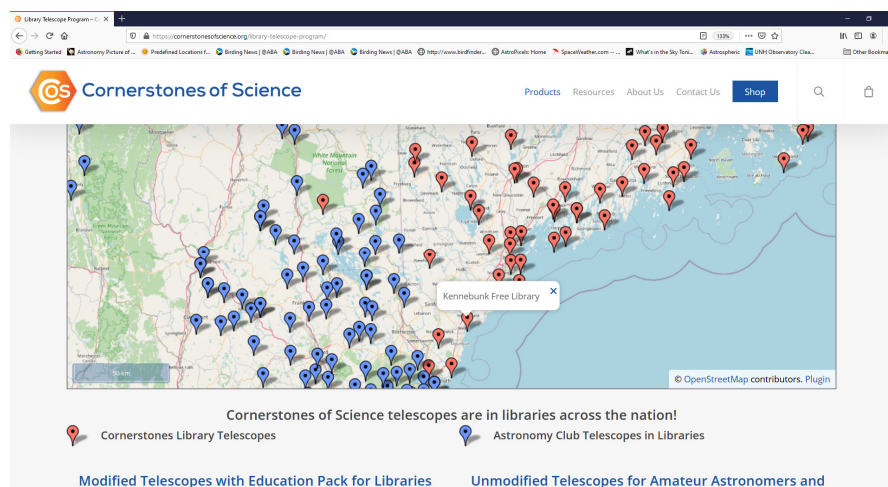
Our club has a library of astronomy books which are stored at The New School in Kennebunk, Maine (our monthly club meeting location). To request a book(s), contact one of the club officers. A listing of books is provided here: <https://www.librarything.com/profile/asmne>. After clicking on the link,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



The screenshot shows the LibraryThing website interface. The user is logged in as 'asmne'. The page displays a list of books in the user's library. The first book is 'NightWatch: A Practical Guide to Viewing the Universe' by Terence Dickinson, published in 2006. Other books include 'Comet of the Century: From Halley to Hale-Bopp' by Fred Schaaf (1996), 'Oasis in Space: Earth History from the Beginning' by Preston Cloud (1988), and 'Exploration of the Universe: 1993 Version' by George O. Abell (1993). The page also shows navigation options like 'List', 'Covers', and 'Tags', and a search bar.

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 screenshot shows the Cornerstones of Science website. The main feature is a map of the United States with numerous red and blue location markers. A pop-up window for 'Kennebunk Free Library' is visible. Below the map, there is text stating 'Cornerstones of Science telescopes are in libraries across the nation!' and a legend identifying 'Cornerstones Library Telescopes' (red pin) and 'Astronomy Club Telescopes in Libraries' (blue pin). At the bottom, there are two categories: 'Modified Telescopes with Education Pack for Libraries' and '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

2023 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 _____

