Skylights

Newsletter of the Astronomical Society of Northern New England

Jun 2023

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 June

By Bernie Reim

The month of June is named for the Roman goddess Juno, who is the wife of Jupiter. In Greek mythology she is named Hera. Its origin in Latin means "the younger ones".

June always marks the beginning of summer for us in the northern hemisphere. This month that will happen at exactly 10:58 a.m. on Wednesday the 21st. That marks the longest day and shortest night for us and the highest point in our sky that the sun will reach for the whole year. Our days will reach 15 and half hours long at our latitude of 43.5 degrees, nearly halfway from the equator to the North Pole. If your fly just 1600 miles north to the Arctic Circle, which is just north of the northern tip of Iceland, the sun would not set at all on this day.

If you could take a picture of the sun at high noon every few days from a fixed location for the whole year, it would trace out a slanted figure 8 called the analemma. The top marks the summer solstice, the bottom is the winter solstice and just below the cross over points is where you will find the sun on equinoxes.

The very short nights this month become even shorter when you add in the three levels of twilight, civil, nautical, and astronomical, which adds about another hour and a half on each side, so you are down to just 5 and a half hours of true darkness around the summer solstice. The beginning of astronomical twilight is defined as the sun being 18 degrees below the horizon.

There will still be several interesting highlights to look for this month regardless of the extremely short nights. These include brilliant Venus at its very highest and best for the year, both of our neighboring planets, Mars and Venus buzzing through the Beehive star cluster just 11 days apart, Venus closing in on Mars all month long but never quite catching it, Saturn becoming a late evening planet again towards the end of June, the asteroid Parthenope at opposition, another Comet LINEAR visible in a telescope in Aquila, and the waxing crescent moon passing near Venus on the summer solstice.

Our sister planet, Venus, is catching up with the slower moving Earth this month and will reach its greatest eastern elongation from the sun on June 4. This is when it is exactly half lit by the sun. It will be 45 degrees from the sun that day and not set until more than 3 hours after sunset, which is the latest it can ever set. After that it continues to get brighter and closer to us even as it is getting more crescent and less illuminated by the sun. Venus lines up with Castor and Pollux in Gemini on June 1. Then it crosses into Cancer the Crab two days later and then it will follow Mars right through the Beehive open star cluster on the 12th and 13th.

Then keep watching Venus as a slender waxing crescent moon passes within 3 degrees of the planet on the summer solstice. Mars will be just 4.5 degrees further east in Leo and the Beehive cluster that both planets just passed through a few days earlier will be 7 degrees to the west.

Mars passes through the Beehive cluster first, on the first and second days of this month, and then Venus follows it along the same ecliptic path 11 days later, on the 12th and 13th. Mars is still getting a little fainter each day as it falls farther behind Earth in its orbit. Look at the red planet with binoculars and you will see a brilliant ruby embedded in a sea of 100 or so fainter diamonds. Two exoplanets were discovered in this star cluster back in 2012 using the radial velocity method. You can think of them as two bees in the beehive. The Beehive open star cluster in Cancer, a huge swarm of stars, also known as M44 or Praesepe, which means manger or crib in Latin, consists of about 1000 stars located about 600 light years away from Earth. That means that the light you are seeing from the Beehive left there just before the Renaissance started and the printing press was invented in 1450.

The Hyades open star cluster nearby in Taurus is related to the Beehive since they both have a common origin.

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

The stars in both clusters are about the same age, 600 million years old, and they have similar motions through space. The Hyades are receding away from us at 43 km/second. The Hyades, which mark the V-shaped face of Taurus the bull, is the closest star cluster at only 150 light years away. It contains about 500 stars, similar to the Pleiades, which are about 400 light years away, but it is not related to them. The name Pleiades comes from the Greek, plein, which means to sail. So picture these 500 young stars sailing through space not far from us, their light leaving its source just as Galileo turned the first telescope to the heavens to begin the scientific age of discovery and the search for our true origins. His legacy has now been greatly extended through the remarkable discoveries of the James Webb Space Telescope.

The next time you look at the Hyades, which means "the rainmakers" in Greek, think of the revolutionary scientific discoveries being made around 1870 as the Civil War just ended and Edison invented the light bulb in 1879. James Clerk Maxwell combined electricity and magnetism allowing us to harness it to work for us in many different ways, and Nikola Tesla was in the process of inventing over 100 important new things including the Tesla coil, the radio, and attempting to distribute free unlimited power to everyone wirelessly through the air. His many inventions laid the foundation for most of our modern technology that we take for granted now as if it always existed. The entire population on Earth was only 1.3 billion back then. Now just China or India alone have more people than that and our total population of 8 billion is nearly 7 times greater than it was just 150 years ago. Much has changed and evolved since then. We are on the brink of a whole new scientific revolution now with A.I. and quantum computers which literally take us into the fourth dimension as they tap into all the possible states of the electron at once instead of just spin up or spin down.

Saturn begins the month rising at 1:30 am in Aquarius and it will rise well before midnight by the end of the month. The ringed planet will reach opposition in two months when it will be at its closest and best and brightest and rise at sunset.

Jupiter is now in Aries the Ram and is about two and a half hours behind Saturn. The King of the planets will rise at 4 am starting this month and at 2 am by the end of the month. Keep in mind that the JUNO spacecraft is still orbiting this planet every 43 days and still gathering lots of interesting information that we did not expect from Jupiter. Then ESA just launched JUICE, Jupiter Icy Moons Explorer, on April 14 of this year. It will reach Jupiter in July of 2031 and study its 3 ocean-bearing moons, Ganymede, Callisto, and Europa in great detail. It had a problem deploying its main antenna, but they just solved it.

Another Comet LINEAR discovered by the Lincoln Near-Earth Asteroid Research telescope in 2002 will be visible in a telescope this month in Aquila, which is part of the summer triangle. It will only reach 11th or 12th magnitude. It will be just below the Cepheid Variable star Eta Aquilae, or Bezek, which means "to scatter" in Arabic. This star varies from its brightest of 3.5 magnitude to its faintest of 4.3 every 7.17 days and is located about 1000 light years away. Another Cepheid variable star, Delta Cephei, varies between about the same brightness's every 5.37 days. Henrietta Swan Leavitt discovered this period-luminosity relationship of all Cepheid Variable stars back in 1908. They have periods of between 1 and 100 days. The longer the period, the brighter the star. There are about 1000 known Cepheid variable stars in our galaxy of 300 billion stars, so they are quite rare. Even Polaris, our current North Star is a Cepheid variable, but it does not change enough in brightness to notice without a good telescope.

There is another classic Cepheid variable that you can easily see change in brightness every night without any binoculars or telescopes. That is Zeta Geminorium, or Mekbuda, which means "the lion's paw". It can be found in the right leg of the lower stick figure in Gemini, the one with Pollux, the immortal twin as its head. Castor is the mortal twin above Pollux. That is close to where Venus and Mars are now located. Mekbuda has a similar period and distance and range of brightness. It varies from 3.7 to 4.3 every 10.15 days, making it intrinsically a slightly brighter star than Delta Cephei or Bezek.

June 3. Full moon is at 11:42 p.m. EDT. This is also called the Strawberry or Rose Moon. The largest telescope in the world at the time, the 200-inch Mt. Palomar telescope, was dedicated on this day in 1948. George Ellery Hale designed it. He also designed and built 3 other huge telescopes before this one, each one was the largest telescope in the world at the time, starting with the 40 inch refractor at the Yerkes Observatory in Wisconsin, which is still the largest refractor in the world.

June 4. Venus is at greatest eastern elongation from the sun today. The Compton Gamma Ray observatory was allowed to renter our atmosphere on this day in 2000, ending its very successful 10 year mission.

June 5. On this day in 1989 Voyager 2 made its closest approach to Neptune on its way out of the solar system. They were showing all of these great new images live from JPL as this was happening. It was called NEPTUNE ALL NIGHT. They discovered ice volcanoes on Triton, its largest moon, and many other interesting things. The last transit of Venus across the face of the sun occurred on this day in 2012. The next one will not happen until 2117. The last one before 2012 was on June 8 of 2004. I was lucky enough to see parts of both of those historical transits. No one alive now had seen the last one in December of 1882.

June 9. The moon passes 3 degrees south of Saturn this morning.

June 10. Last quarter moon is at 3:31 p.m.

June 13. On this day in 1983 Pioneer 10 left the solar system. The Japanese Hayabusa spacecraft, which means "peregrine falcon", returned the first ever samples of an asteroid to Earth on this day in 2010. They were from an asteroid named Itokawa.

June 14. The moon passes 1.5 degrees north of Jupiter this morning.

June 16. On this day in 1963 Valentina Tereshkova became the first woman in space and still has the only solo spaceflight by a woman.

June 18. New moon is at 12:37 a.m. Saturn is stationary ending its normal prograde motion and beginning its westward retrograde motion in Aquarius today.

June 21. The summer solstice is today at 10:58 a.m. The moon passes 4 degrees north of Venus tonight.

June 22. The moon passes 4 degrees north of Mars tonight.

June 26. First quarter moon is at 3:50 a.m.

June 29. George Ellery Hale was born on this day in 1868.

June 30. On this day in 1908 a comet or asteroid exploded a few miles above the earth creating a brilliant daytime fireball brighter than the sun. The impact had a force of 20 megatons of TNT, or 1000 times the power of the first atomic bomb. It leveled 80 million trees over 1000 square miles but no crater was ever found. Just 105 years later on February 15 of 2013 a much smaller chunk of rock just 65 feet across exploded over Chelyabinsk just 1200 miles southwest of Tunguska.

★

Moon Phases

June 3
Full

June 10
Last Quarter

June 18
New

June 26
First Quarter

Moon Data

June 6
Moon at perigee

June 9
Saturn 3° north of Moon

June 11
Neptune 2° north of Moon

June 14
Jupiter 1.5° south of Moon

June 15
Uranus 2° south of Moon

June 16
Mercury 4° south of Moon

June 21
Venus 4° south of Moon

June 22
Mars 4° south of Moon

Moon at apogee

OBSERVER'S CHALLENGE* – June, 2023 (Reprint 2020)

by Glenn Chaple

NGC 5689 – Lenticular Galaxy in Boötes (Mag: 11.9 Size: 3.3' X 1.0')

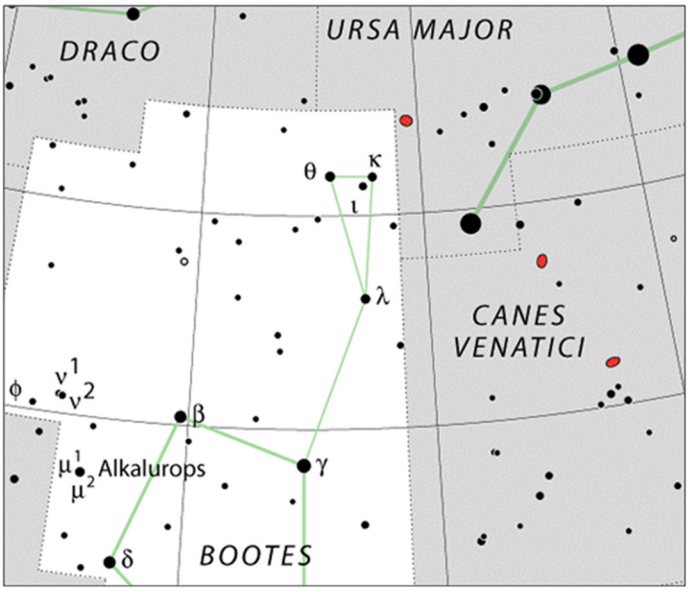
June is a difficult month for backyard astronomers here in the northern hemisphere. We battle fatigue (June sunsets are the latest of the year), haze and humidity, and – mosquitos. While yawning, sweating, and swatting, you'll be struggling to glimpse this month's Observer's Challenge, the 12th magnitude lenticular galaxy NGC 5689.

I went after NGC 5689 with a 10-inch f/5 reflector on a clear, moonless evening under typical suburban skies (limiting magnitude 5). To find the galaxy, I star-hopped, beginning from a triangle made up of the stars kappa (κ), iota (ι), and theta (θ), Boötis, located in the upper northwest corner of Boötes and east of the handle of the Big Dipper. From there, I traced a path to the 6th magnitude stars 24 Boötis and SAO45121. At 139X and using averted vision, I could barely make out a ghostly glow less than a degree south and slightly east of the latter star. The glimpses were so fleeting that I was unable to capture any detail. If I were to tackle NGC 5689 again, I would observe from a much darker site.

If you're limited to a small-aperture scope and/or skies compromised by artificial lighting, I encourage you to check out a trio of nearby double stars shown in Finder Chart B. Kappa (κ) Boötis is a charming magnitude 4.5 and 6.6 pair separated by 13.7 arc-seconds. Less than a degree southeast is iota (ι) Boötis whose magnitude 4.8 and 7.4 components are a roomy 38.9" apart. Both pairs are easily split at 30X. You'll need a boost in magnification (100X or more) to split 39 Boötis. In 2019, this magnitude 6.3 and 6.7 duo was separated by a mere 2.5". Both are mid F-class main sequence stars. Are you able to detect a subtle off-yellow hue?

NGC 5689 was discovered by William Herschel in 1787. Sources place its distance as somewhere between 100 and 120 million light years. In either case, the photons striking your retina left when dinosaurs ruled the earth.

Finder charts for NGC 5689
Chart A



constellation-guide.com (*from IAU and Sky and Telescope*)

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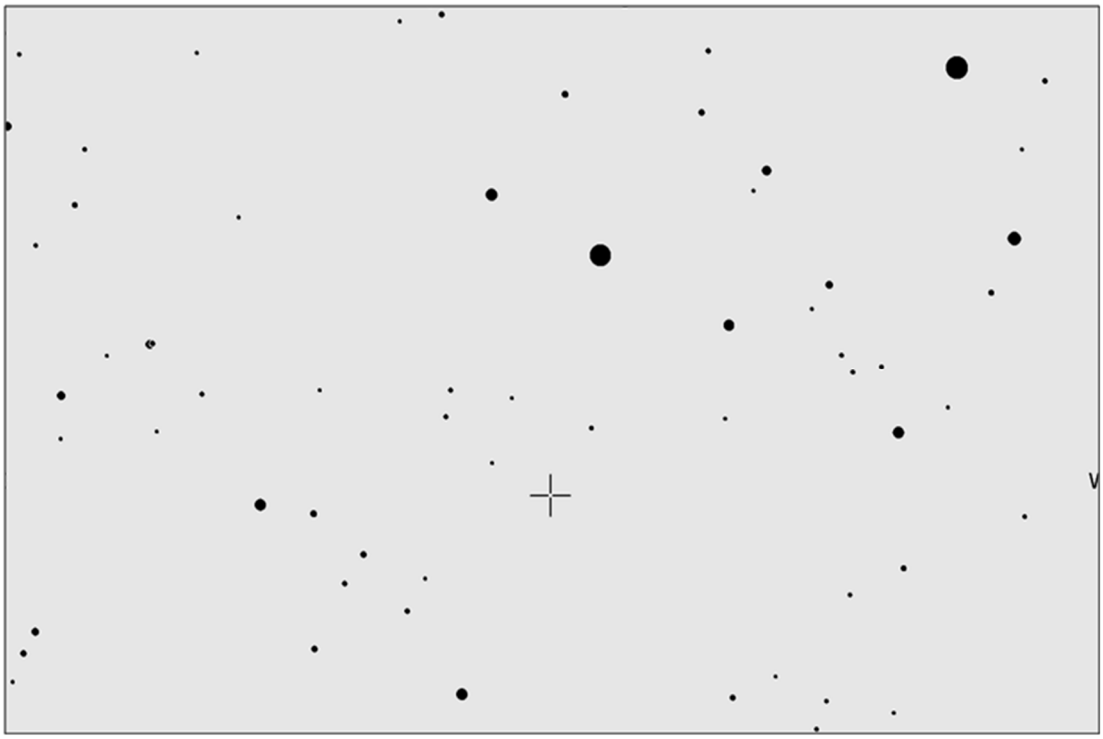
Chart B

theskylive.com

Chart C



From AAVSO Variable Star Plotter. Stars plotted to magnitude 11. North is up in this 2° by 3° field. Bright star at upper right is 24 Boötis. Bright star above center is SAO 45121.

"Continued on page 5 "

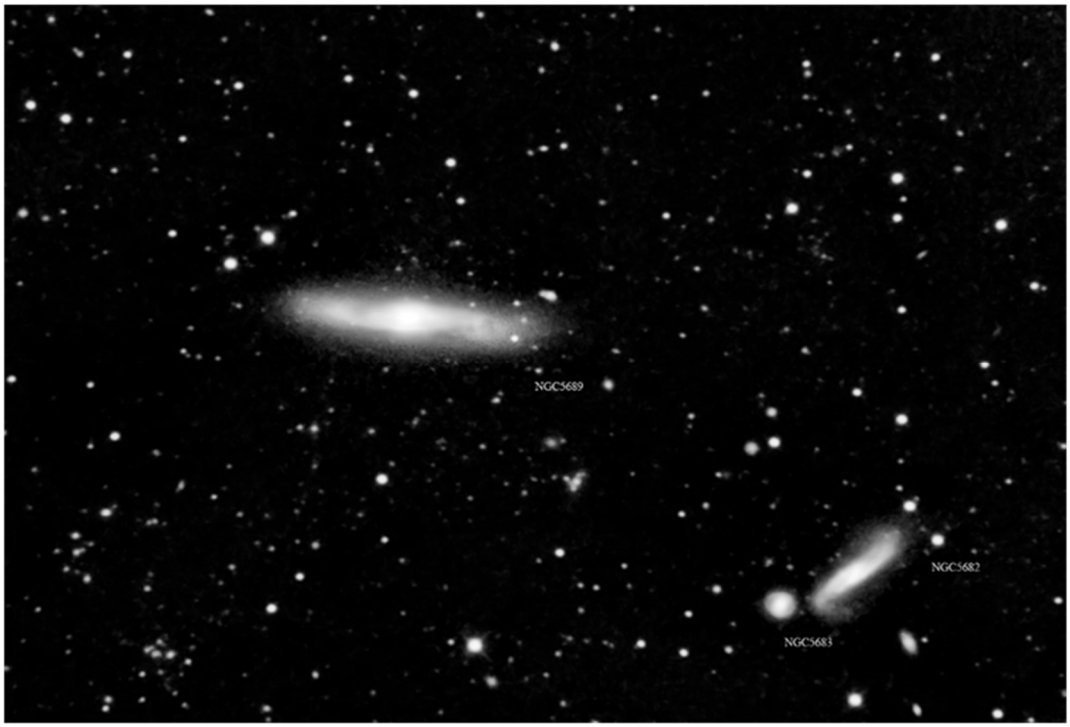


Image by Mario Motta (ATMoB) Taken through 32 inch scope with ZWO ASI6200 camera, 45 minutes total integration time, processed in Pixlnsight.

*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 2023

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

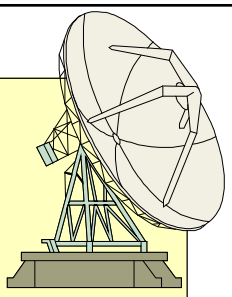
November 18
Leonids

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!

Look Up in the Sky - It's a Bird

Theresa Summer

Bird constellations abound in the night sky, including **Cygnus**, the majestic swan. Easy to find with its dazzling stars, it is one of the few constellations that look like its namesake and it is full of treasures. Visible in the Northern Hemisphere all summer long, there's so much to see and even some things that can't be seen. To locate Cygnus, start with the brightest star, **Deneb**, also the northeastern most and dimmest star of the Summer Triangle. The Summer Triangle is made up of three bright stars from three different constellations – read more about it in the September 2022 issue of Night Sky Notes. "Deneb" is an Arabic word meaning the tail. Then travel into the triangle until you see the star **Albireo**, sometimes called the "beak star" in the center of the summer triangle. Stretching out perpendicular from this line are two stars that mark the crossbar, or the wings, and there are also faint stars that extend the swan's wings.

From light-polluted skies, you may only see the brightest stars, sometimes called the Northern Cross. In a darker sky, the line of stars marking the neck of the swan travels along the band of the **Milky Way**. A pair of binoculars will resolve many stars along that path, including a sparkling open cluster of stars designated **Messier 29**, found just south of the swan's torso star. This grouping of young stars may appear to have a reddish hue due to nearby excited gas.

Let's go deeper. While the bright beak star Albireo is easy to pick out, a telescope will let its true beauty shine! Like a jewel box in the sky, magnification shows a beautiful visual double star, with a vivid gold star and a brilliant blue star in the same field of view. There's another marvel to be seen with a telescope or strong binoculars – the Cygnus Loop. Sometimes known as the **Veil Nebula**, you can find this supernova remnant (the gassy leftovers blown off of a large dying star) directly above the final two stars of the swan's eastern wing. It will look like a faint ring of illuminated gas about three degrees across (six times the diameter of the Moon).

Speaking of long-dead stars, astronomers have detected a high-energy X-ray source in Cygnus that we can't see with our eyes or backyard telescopes, but that is detectable by NASA's Chandra X-ray Observatory. Discovered in 1971 during a rocket flight, Cygnus x-1 is the first X-ray source to be widely accepted as a black hole. This black hole is the final stage of a giant star's life, with a mass of about 20 Suns. Cygnus x-1 is spinning at a phenomenal rate – more than 800 times a second – while devouring a nearby star. Astronomically speaking, this black hole is in our neighborhood, 6,070 light years away. But it poses no threat to us, just offers a new way to study the universe.

Check out the beautiful bird in your sky this evening, and you will be delighted to add Cygnus to your go-to summer viewing list. Find out NASA's latest methods for studying black holes at www.nasa.gov/black-holes.

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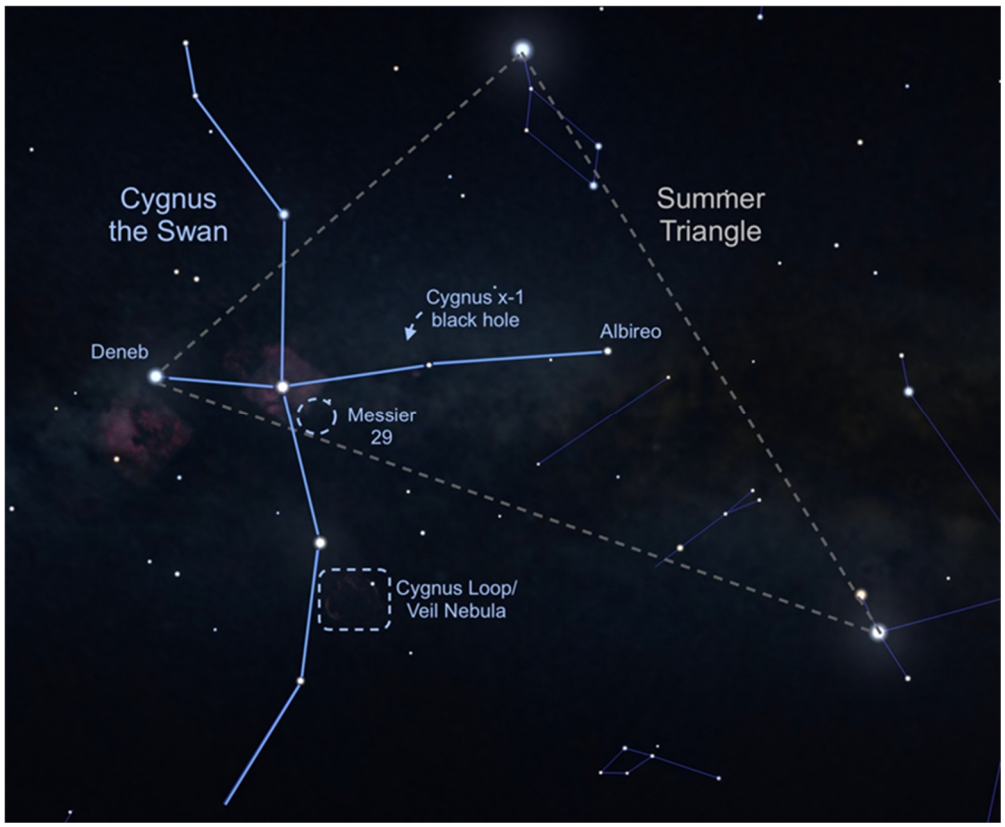
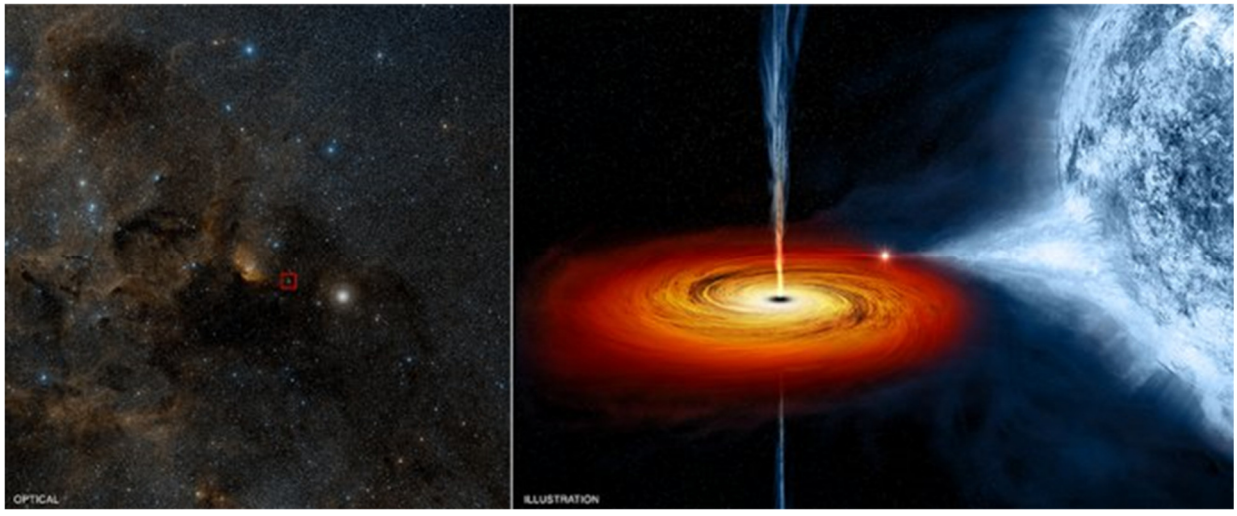


Look up after sunset during summer months to find Cygnus! Along the swan's neck find the band of our Milky Way Galaxy. Use a telescope to resolve the colorful stars of Albireo or search out the open cluster of stars in Messier 29. Image created with assistance from Stellarium: stellarium.org



While the black hole Cygnus x-1 is invisible with even the most powerful Optical telescope, in X-ray, it shines brightly. On the left is the optical view of that region with the location of Cygnus x-1 shown in the red box as taken by the Digitized Sky Survey. On the right is an artist's conception of the black hole pulling material from its massive blue companion star.

(Credit: NASA/CXC chandra.harvard.edu/photo/2011/cygx1/)

Point and Shoot Camera Astroimaging (no telescope)

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Supernova 2023ixf

RAW mode, FL 1200mm, f/3.5, ISO 2500, 40 x 1min 30sec seconds, Baader filter, 5-22-23

On May 19th, 2023 a bright supernova was discovered in the Pinwheel Galaxy (M101), which, being about 21 million ly away, makes it the closest supernova seen in the past five years, the second closest in the past 10 years, and the second supernova found in M101 in the past 15 years. The arrow in my image is pointing to SN2023ixf (what looks like a very bright star). It's a Type II Supernova, an explosion that occurs after a massive star runs out of nuclear fuel and collapses. I went out several days later and looked at SN2023ixf through my 12.5-inch Dob. The Moon was out in that part of the sky making the Pinwheel Galaxy hard to see , however, the supernova was very bright. SN2023ixf should remain visible in telescopes for at least a month, or even longer if it continues to brighten.

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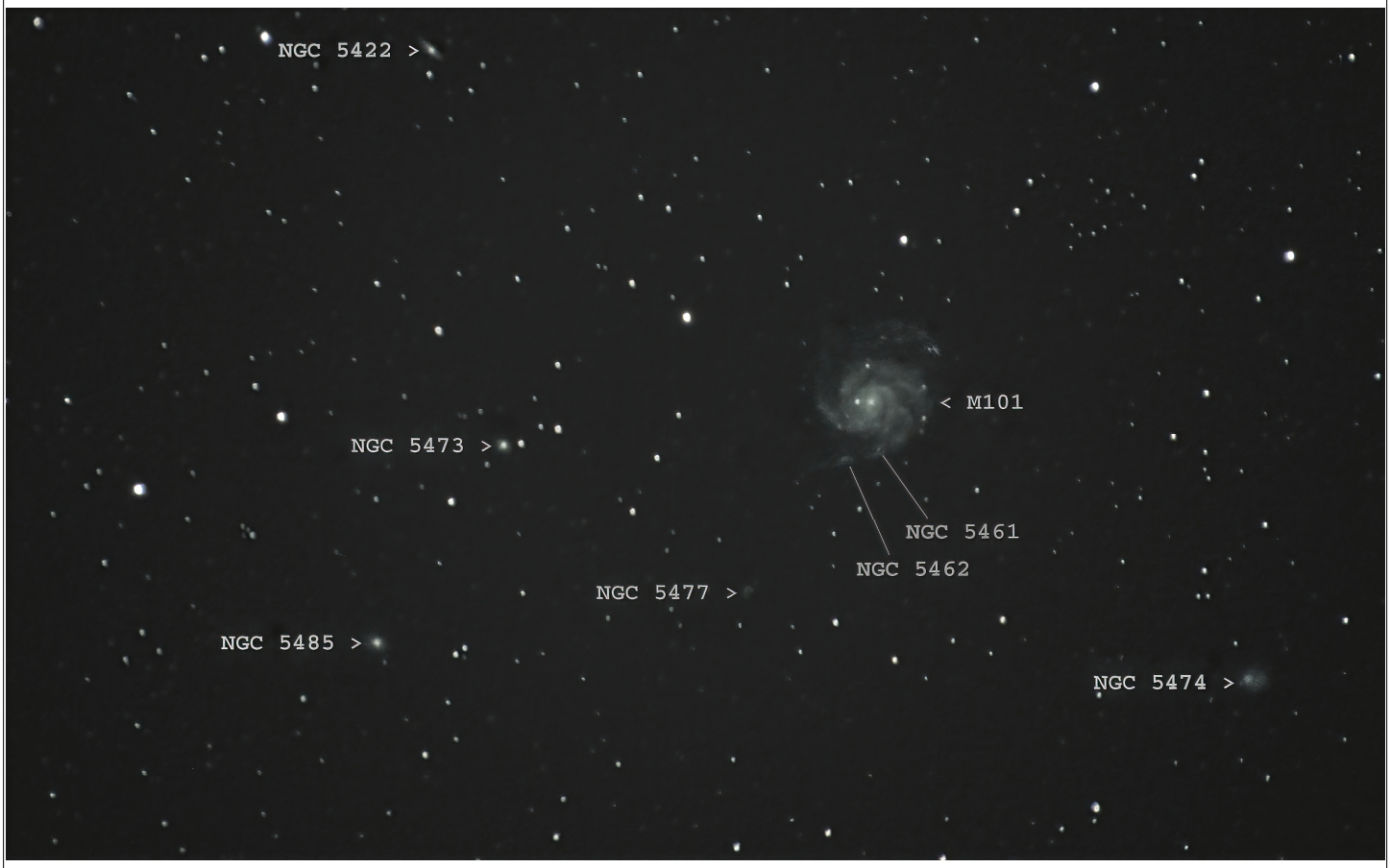
Pinwheel Galaxy (M101)

*** Without SN2023ixf ***

RAW mode, FL 1200mm, ISO 1600, 24 x 1min 30sec, 5-8-18.



I took this image of the Pinwheel Galaxy back on 5-8-18. The supernova occurred just to the right of NGC 5461. M101 is noted for its high population of H II regions, large and bright areas in space which are luminous with the emission spectrum of ionized hydrogen. Two can easily be seen here located in its outer spiral arm and are labeled NGC 5461 and NGC 5462. These Diffuse or Emission Nebula are typically places where star formation has recently taken place. NGC 5474 and NGC 5477 are two of several companion galaxies of M101, NGC 5474 being the closest. NGC 5422, NGC 5473, and NGC 5485 are back-ground galaxies.

2nd Annual See the Dark Festival

October 15-22 at Medawisla Lodge

Scheduled around the New Moon for optimal stargazing, the festival will provide the opportunity for guests to learn more about dark sky conservation and strengthen their appreciation of the ways in which they can make an impact. Consistent with the Appalachian Mountain Club's mission, the dark skies are an important ecological resource and a thrilling outdoor experience that should be conserved. In fact, AMC's Maine Woods International Dark Sky Park is one of the best places for stargazing in the region. Enjoy star themed dinners and desserts, plus expert presentations from astronomers, scientists, musicians, and artists. For more information on the the Dark Sky Festival, please visit: Festival — See the Dark

Programs and tours will be provided at no additional cost for guests staying overnight at the lodge. Evening dinner and presentation tickets will be available for those staying locally and are available by making dinner reservations directly through the lodge.

https://www.SeetheDark.org/festival

Astronomical Society of Northern New England (ASNNE) Membership

Meeting Minutes of 5 May 2023

Business Meeting: The Business Meeting was called to order at 7:06 pm by President Ian Durham.

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

Others Present: There were an additional two people present at the Business Meeting.

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

Treasurer's Report: The Treasurer reported that ASNNE has $5,257 on hand as of this date. Ian also reported that he will be going carefully through our accounts, to identify our actual yearly expenses. The Treasurer's Report was accepted.

Old Business:

Internship Request: No progress reported. Carl will contact George Grech.

Observatory Sign Down: No progress reported.

New Business:

Refreshments: Carl stated that he had brought refreshment to the Meeting again. He said there were two questions; 1.) Did the Board wish to continue having refreshments? 2.) How should these be paid for? ASNNE funds? Rotation among Members? The Board agreed that refreshments should be served. After Ian completes his review of our expenses, he will be in a better position to answer question two.

Presentations for Pay at "Glampgrounds": Gary had taken the lead at the Point Sebago location. We will be giving presentations there this summer. Bernie had taken the lead at Huttopia. We will also be giving presentations there this summer. That will be on Fridays. Carl plans to usually be the presenter there. There are a few more details to be worked out.

Donated Telescope: Gary picked up a telescope that was donated to ASNNE.

The Business Meeting was adjourned at 7:30 pm.

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Regular Meeting:

Regular Meeting: The Regular Meeting was called to order at 7:40 pm by President Ian Durham.

Directors Present: Ian Durham, President & Treasurer
Bernie Reim, Vice-President
Carl Gurtman, Secretary
Gary Asperschlager, Director
Bern Valliere, Director

Plus: Paul Kursewicz, *Skylights* Editor

Others Present: There were an additional ten people physically present. An additional six people participated on Zoom.

Introductions: Ian had everyone present, whether in person, or on Zoom, introduce themselves. The introduction were brief. There were three new people.

Request for Volunteers: Carl reported on the Presentations that will be given at Point Sebago & Huttopia this summer. Carl asked for Volunteers. While there are Presenters, they may not be available every week, and ASNNE can always use helpers at the Presentations, as well as helpers at our Star Parties.

Presentation: **Presentation:** Our presenter tonight is Paul Kursewicz, our *Skylights* Editor. Paul puts out, monthly, a professional-level publication, and is also a very accomplished astrophotographer. Not using a telescope, he uses a camera, a tracking device, and various software.

Paul and his wife were on vacation, and visited the Green Bank Radio Observatory, in Green Bank, West Virginia. Founded in 1957, it was the first national radio astronomy observatory. Set in the Allegheny mountains of West Virginia, the mountains themselves provide shielding from radio interference. Additionally, the Green Bank Observatory is set in a National Radio Quiet Zone, where radio transmission is forbidden. Guests cannot bring in any electronic devices, and are not allowed access to the radio telescopes themselves. However, there is a Science Center open to visitors.

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There are four active radio telescopes at Green Bank, and another four inactive ones. The pride of the Observatory is the Robert C. Byrd Green Bank Radio Telescope (GBT). It is the world's largest fully steerable radio dish telescope, is 100 meters in diameter, and has a collecting area of 2.3 acres!

Paul fully described his visit, showed many pictures he had taken, concentrating on the radio telescopes themselves

Paul and his wife also visited the Creation Museum in Petersburg, Kentucky. Among the exhibits was one of the best-preserved allosaurus dinosaur skeletons; 30 feet long and 10 feet high. Paul showed pictures of the allosaurus. The Museum also has an old planetarium projector, which was used by the US military to train NASA's Mercury astronauts.

The main feature of this part of Paul's Presentation, was his description of the Museum's collection of thirteen meteorites. Paul introduced this portion by describing the three main types of meteorites; stony meteorites, mainly rocks, composed mainly of silicate minerals; iron meteorites that are largely composed of metallic iron-nickel; and, stony-iron meteorites that contain large amounts of both metallic and rocky material. A sub-category are chondrite meteorites, which are meteorites containing chondrules; these are roughly spherical inclusions. The rarest are carbonaceous chondrite's, which are rich in organic materials.

Paul discussed these different types of meteorites, their relative abundances in meteorite falls, and showed pictures of them.

Paul also talked about the museum's observatory. One of their 16-inch telescopes, called the Johnson telescope, is associated with both the Apollo Moon landings and World War II. Paul also showed a photograph he had taken of the Apollo 15 landing site. The significance being, a captured Lunar Transient Phenomena (LTP) event, showing red and blue surface colors.

Back in 1994, Paul was a participating observer in the LTP Program. An LTP event is a short-lived light, color, or change in appearance on the surface of the Moon. In this program, observations of LTP events where paired, when possible, with photographs of the involved area taken from a lunar satellite. Though there are hypotheses, there is no agreed upon cause of LTP's. Paul showed light curves of observed LTP's. They still occur, and are still unexplained.

Of particular note was a darkening of the Picard Crater.

Paul's Presentation was very well-received.

"Continued on page 15"

Refreshments: There was a break for Refreshments.

Astroshorts: There was only one Astroshort. Sara Carter had a mini-Presentation on the Moon. Because of the tilt and shape of its orbit, we see the Moon from slightly different angles over the course of a month. This is called libation, and we see about 59% of the Moon's surface. Sara showed some pictures, but the video she had did not run.

"What's Up?": Before "What's Up?" Bernie noted that this was National Space Day (always the first Friday in May.) Also, he had had meteorologist Sarah Long on his radio show.

Bernie gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of May.

Because 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. Since "What's Up?" already exists in print. I will no longer excerpt it in the ASNNE Minutes. *Skylights* may be found at: http://www.asnne.org/newsletter.php

Next Meeting:

ASNNE's next Meeting will be on Friday, 2 June, 2023 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. As always, all Members are always welcome at the Business Meeting.

The Presentation at our June Meeting will be Peggy Schick, a professional astrologer. Astronomy is, after all, the daughter off astrology!

Respectfully submitted,

Carl Gurtman

Club Meeting & Star Party Dates

Date	Subject	Location
June 2	**ASNNE Club Meeting:** **Business Meeting starts prior to Club meeting.** **Club Meeting (in house & on Zoom): 7:30-9:30PM** **Guest Speaker:** Our guest speaker will be **Peggy Schick**, a professional astrologer. She is certified in Archetypal Astrology through the Institute of Transpersonal and Archetypal Studies, New York. **Bernie Reim** - What's UP **Astro Shorts:** (news, stories, jokes, reports, questions, photos, observations etc.)	**The New School, Kennebunk, Me.**
Last Month	**Last month we met at The New School and had several members attending via Zoom. Our guest speaker was Paul Kursewicz. Paul gave a presentation on his visit to Green Bank Observatory. Paul also visited the Creation Museum, and shared several astro related items which he saw there (two of which are historical). One of the historical items was related to a project that Paul took part in back in 1994 with the Association of Lunar & Planetary Observers, observing Lunar Transient Phenomena.**	
TBD	**Club/Public Star Party:** Dependent on the weather and if there is any interest in Winter (cold nights) observing.	**Talmage Observatory at Starfield West Kennebunk, Me.**

Directions to ASNNE event locations

Directions to The New School in Kennebunck [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

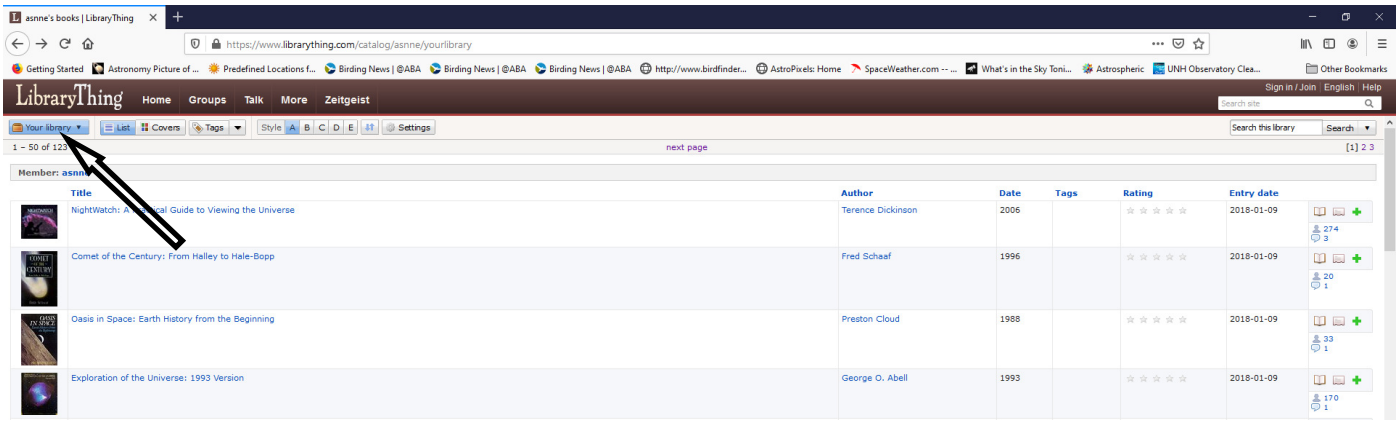
Directions to Talmage Observatory at Starfield [Alewive Road, Kennebunk, ME]

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.

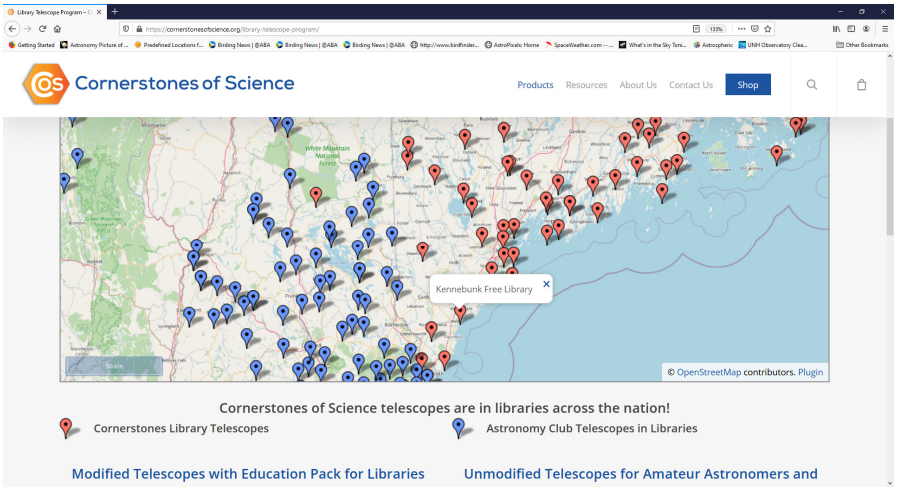
Astronomy Club & Library Resources

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/asnne . After clicking on the link, a window will open. Click on "Your library" near the upper left corner (as shown by the arrow below). Then scroll down to the end of the page to go to the next page.



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

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



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

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

Astronomical Society of Northern New England
P.O. Box 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_____