

Skylights

Newsletter of the Astronomical Society of Northern New England



AUG 2024

Skylights Editor:
Paul Kursewicz



Member of NASA's
Night Sky Network



**Astronomical League
Member**

ASNNE MISSION

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

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

What's Up In August

By Bernie Reim

The first of August always marks the midway point of summer for us in the northern hemisphere. The word derives its meaning from the Latin word "augere" which means to increase. Augustus was a title given to the Roman Emperor and it means esteemed, venerable, or worthy of respect.

We will have many chances this month to practice respect for the sky and the earth as the nights are slowly getting shorter again and the temperatures remain hotter than normal. The highlights this month include the most famous of all meteor showers, the Perseids on the 12th, and a couple of evening planets low in our western sky, Venus, and Mercury. Then Saturn rises a little earlier each day, starting this month out by rising around 10 pm and rising at 8 pm by the end of the month. The biggest asteroid, Ceres, will be at its best in Sagittarius at 8th magnitude and Comet 13P/Olbers will reach 8th or 9th magnitude in the Ursa Major this month. The best planetary conjunction this month will be Mars and Jupiter being only one third of a degree apart in Taurus one hour before sunrise on August 14, just 2 days after the Perseids peak. Then there are always some nice lunar conjunctions to look for and photograph. A potential great highlight anytime between now and the beginning of autumn or even sometime before the end of this year is the recurrent nova T Corona Borealis that I wrote about last month.

Venus is slowly climbing a little higher each night as it is catching up with us in its faster orbit around the sun. It is nearly fully illuminated by the sun now, but not very bright since it is small and farther from the earth than usual. Look for it very low in the western sky in Leo half an hour after sunset. Keep watching as a thin waxing crescent moon joins it on Monday evening the 5th. Look for Mercury just under 10 degrees below and to the left of Venus.

Mercury will disappear by the middle of the month as it goes through inferior conjunction with the sun on the 18th. Our first planet will reappear low in the morning sky about an hour before sunrise on the last day of this month. Mercury is now about 100 times fainter than Venus.

Then there will be a short gap in the planetary action in the evening sky before Saturn rises in the eastern part of Aquarius near Pisces at 10 pm. Its rings are nearly edge-on now, tilted at only 3 degrees, so it will not look that spectacular in a telescope, but it is still a great and unbelievable sight, especially if you have never seen it before. It is about the same brightness as Mercury, which is 100 times fainter than Venus. Saturn will reach opposition when it rises at sunset and remains in our sky all night long next month on September 8.

Then Mars rises next around 2 am in Taurus close to its brightest star, named Aldebaran. This is an orange giant star located 65 light years away. That means the light you are seeing from that star tonight left there in 1959, about the time our first satellite was launched and we started the space race with Russia. Aldebaran is only one tenth of a magnitude fainter than Mars and about the same orange color. Mars is still far ahead of us in our orbits but we are slowly catching up with it. That will happen in January of next year when Mars will reach opposition. Taurus will still look like it has two bright orange eyes, Aldebaran and Mars for all of this month and right into fall. Notice that Mars is only 5 degrees to the left of Aldebaran.

Then Jupiter rises about the same time in Taurus just to the left of Aldebaran and it appears 16 times brighter than Mars. We are also catching up with Jupiter in our orbits around the sun. That will happen on December 6 of this year, about 3 months after the Saturn opposition. Jupiter will begin its westward or retrograde motion on October 9th of this year after it traveled into Gemini. Notice the waning crescent moon just 5 degrees north of Jupiter and Mars on the 27th.

You can see Ceres now traveling through Sagittarius at 8th magnitude in a good pair of binoculars. That is our largest asteroid at 600 miles across, or about the size of Texas. Ceres is now also officially a dwarf planet and it was the first asteroid to be discovered on January 1 of 1801. The Dawn spacecraft visited Ceres and Vesta in 2015.

"Continued on page 2"

Inside This Issue

Club Contact List	Pg. 2
Moon Data	Pg. 3-6
Observer's Challenge	
August's Night Sky	Pg. 7
Meteor Showers in 2024	Pg. 8
Club Merchandise for Sale	
Club Membership Dues 2024	
August Night Sky Notes: Seeing Double	Pg. 9-11
Astro-Imaging with a Point & Shoot	Pg. 12-13
ASNNE 2024 Public Star Parties	Pg. 14
Club Info & Directions to ASNNE	Pg. 15
ASNNE Club & Library Resources	Pg. 16
Become a Member	Pg. 17

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What's Up "Continued from page 1"

Comet 13P/Olbers is now departing our skies as it is traveling through the Big Dipper into Coma Berenices. It is only about 9th magnitude so you will need a telescope or very good pair of binoculars to see it.

The last remaining highlight is the most famous of all meteor showers, the Perseids. It should be a good year for the Perseids since the first quarter moon sets around midnight that night which gives you the rest of the night to enjoy this great shower. Meteor showers are usually better after midnight anyway because that is when the earth turns into the shower instead of away from it. That is similar to the snowflakes on your windshield during a snowstorm. You would be looking out the back window before midnight and you would look at the front window driving right into the snow after midnight.

Caused by Comet 109P/Swift-Tuttle, you can expect up to 100 meteors per hour this year from a good dark-sky site. The shower actually starts on July 17 and lasts right through August 24, but it will peak on the Sunday the 11th and Monday the 12th. This comet has a fairly long orbital period of 133 years. It was last close to the sun and earth in 1992 and it will not return for 100 more years, in 2125. There were several years of really outstanding Perseid Meteors around the time of this comet's last return. Comet Swift-Tuttle is in the constellation of Hydra the Sea Snake now and you would need a good telescope to see it. The radiant is in Perseus, which rises in the northeast around 10 pm. Look about 30 to 40 degrees away from the radiant to catch most of the meteors, but they will be visible anywhere in the sky although you can trace each one back to this radiant in Perseus.

Then the last remaining highlight could be the best one, the sudden explosion of the "Blaze Star", T Corona Borealis. This is the brightest recurrent nova in our sky and it flares up about every 80 years. It is located 3,000 light years away just to the left and below the second star in Corona Borealis, a semicircle of stars that looks like an upside down crown. It could get as bright as Jupiter or Mars, but most likely it will get about as bright as Polaris, which is a second magnitude star, the 48th brightest star in our sky.

Aug. 1. Maria Mitchell was born on this day in 1818. She was the first professional American woman astronomer and she discovered a comet in 1847. She was also a naturalist and educator and has many other accomplishments.

Aug.3. The Messenger Space craft was launched to Mercury on this day in 2004. This was only the second mission ever to Mercury. The third one is en route now and will get there next year. It is called BepiColombo. Mercury is very difficult to get to because it is so close to the sun's strong gravitational fields. We have never landed anything on its surface. It takes 7 years and very complicated mathematics to get to Mercury. It only takes 7 years to get all the way to Saturn which is nearly one billion miles away while Mercury is only about 60 million miles away, or about 15 times closer than Saturn.

Aug.4. Mercury is stationary in the sky, about to begin its retrograde or westward motion. New moon is at 7:13 a.m. EDT. Venus passes 1.1 degrees north of Regulus in Leo this evening. The Phoenix mission was launched to Mars on this day in 2007. It landed near the Martian North pole and dug about a foot into the Martian regolith. I talked to one of the lead scientists on this mission after she gave a talk at the New England Fall Astronomy Festival at UNH in New Hampshire and she said they actually found some signs of life, but NASA never made this official for some reason.

Aug.5. Mars passes 5 degrees north of Aldebaran this morning. The moon passes 1.7 degrees north of Venus and 7 degrees north of Mercury this evening. Neil Armstrong was born on this day in 1930. He was the first human to walk on the moon on July 20 of 1969. His famous

quote "One small step for man, one giant leap for mankind" is still true today and can lead us on to many far more amazing discoveries than just walking on the moon.

Aug.6. The Curiosity Rover was launched to Mars on this day in 2012.

Aug. 8. The moon is at apogee or farthest from Earth today at 251,800 miles. Roger Penrose was born on this day in 1931. He is a British mathematician and astronomer who won the Nobel Prize in physics in 2020 along with Reinhard Genzel and Andrea Ghez. Mr. Penrose mathematically proved that black holes are an inevitable consequence of Einstein's General Theory of Relativity.

Aug.12. Erwin Schrödinger was born on this day in 1887. This Austrian physicist was a key contributor to the revolution in our understanding of quantum mechanics. He devised the famous thought experiment "Schrödinger's Cat" that illustrates the paradox of quantum superposition. The Perseid meteor shower peaks. It should be favorable this year with up to 100 meteors per hour possible from a dark sky site after the moon sets around midnight. First quarter moon is at 11:19 a.m.

Aug.13. George Gabriel Stokes was born on this day in 1819. He was an Irish physicist known for his work in fluid dynamics. He worked with the French physicist Claude-Louis Navier to develop the extremely difficult Navier-Stokes partial differential equations for accurately describing the flow of fluids. Air is only 800 times less dense than water, so these equations also apply to air flow. This is useful in weather predictions and also for accurate climate change models. Proving certain aspects of these critically important equations are one of only 7 remaining mathematical puzzles and conjectures that qualify for the million dollar millennium prize in mathematics. A few others include the Riemann Hypotheses and the P vs. NP problem. Solving any of these remaining great puzzles and mysteries in mathematics would greatly deepen our understanding of the world and benefit all of us in many ways.

Aug.14. The moon passes less than one tenth of a degree south of Antares in Scorpius at 1 am. Antares is an orange super giant star similar in size and distance to Betelgeuse in Orion and is about 700 times larger than our sun. The moon passes 0.3 degrees north of Jupiter this morning.

Aug.19. Full moon is at 2:26 p.m. EDT. This is also known as the Blueberry, Green Corn, or Sturgeon Moon. John Flamsteed was born on this day in 1646. He mapped and developed a catalog of 3000 stars and predicted 2 total solar eclipses among many other achievements. He was the first British Astronomer Royal, a post later held by Edmund Halley in 1720. Martin Rees is the current astronomer royal.

Aug.20. The moon passes half a degree north of Saturn around midnight tonight.

Aug.21. The moon is a perigee or closest to Earth today at 223,815 miles. This is the seventh anniversary of the Great American Total Solar Eclipse on August 21 of 2017. I saw this amazing event in Driggs, Idaho on a high plateau with a partial view of the Grand Teton Mountains.

Aug. 25. On this day in 2003 the Spitzer Infrared Space Telescope was launched as part of the great family of 4 space telescopes to study the heavens in different wavelengths. It stopped working in January of 2020.

Aug.26. Last quarter moon is at 5:26 a.m. Edward Witten was born on this day in 1951. He was the physicist who invented and worked on superstring theory.

Aug. 27. The moon passes 6 degrees north of Jupiter and 5 degrees north of Mars this morning in Taurus. Mercury is stationary again ending its retrograde motion.



Moon Phases

Aug 4
New

Aug 12
First Quarter

Aug 19
Full

Aug 26
Last Quarter

Moon Data

Aug 5
Mercury 7° south
of Moon

Venus 1.7° south
of Moon

Aug 8
Moon at apogee

Aug 20
Saturn 0.5° south
of Moon

Aug 21
Moon at perigee

Neptune 0.7° south
of Moon

Aug 25
Uranus 4° south
of Moon

Aug 27
Jupiter 6° south
of Moon

Mars 5° south
of Moon

OBSERVER'S CHALLENGE* – August

by Glenn Chaple

Messier 20 – Nebula/Cluster in Sagittarius (Mag: 6.3, Size: 30')

This second installment of the “Summer of Sagittarius” takes us to M20, nick-named the “Trifid Nebula.” Like last month’s Observer’s Challenge (M8, the “Lagoon Nebula”), the Trifid is a nebula/cluster complex. It is also 5200 light years away and may be associated with the Lagoon. Although not a naked eye target, the Trifid Nebula is easily located just 2 degrees north and slightly west of the Lagoon; in fact, they can be viewed together in the same low-power, wide-field telescopic view.

M20 was discovered by Charles Messier on June 5, 1764. William Herschel viewed it 20 years later and catalogued it as four separate objects. Oddly enough, his son John saw three segments of the nebula, and was the first to describe it as “trifid.”

My initial sighting of M20 occurred on the evening of August 20, 1977. Because I had just viewed M8 with my 3-inch f/10 reflector, I was able to note that M20 is much fainter. Sharing a one-degree field with M20 was the open cluster M21. Because of the low magnification used (30X), I failed to notice the Trifid’s bright embedded double star, identified by the William Herschel designation H N 6AC (magnitudes 7.6 and 8.7, spectral classes O8V and B6V, separation 10.7 arc-seconds). Two summers later, I resolved this pretty pair with the same 3-inch and a magnitude of 60X. A sketch of M20 I made while attending the 2012 Stellafane Convention and observing with a 4.5-inch f/8 reflector (magnifying power 75X) shows both nebulosity (just 2 areas) and double star.

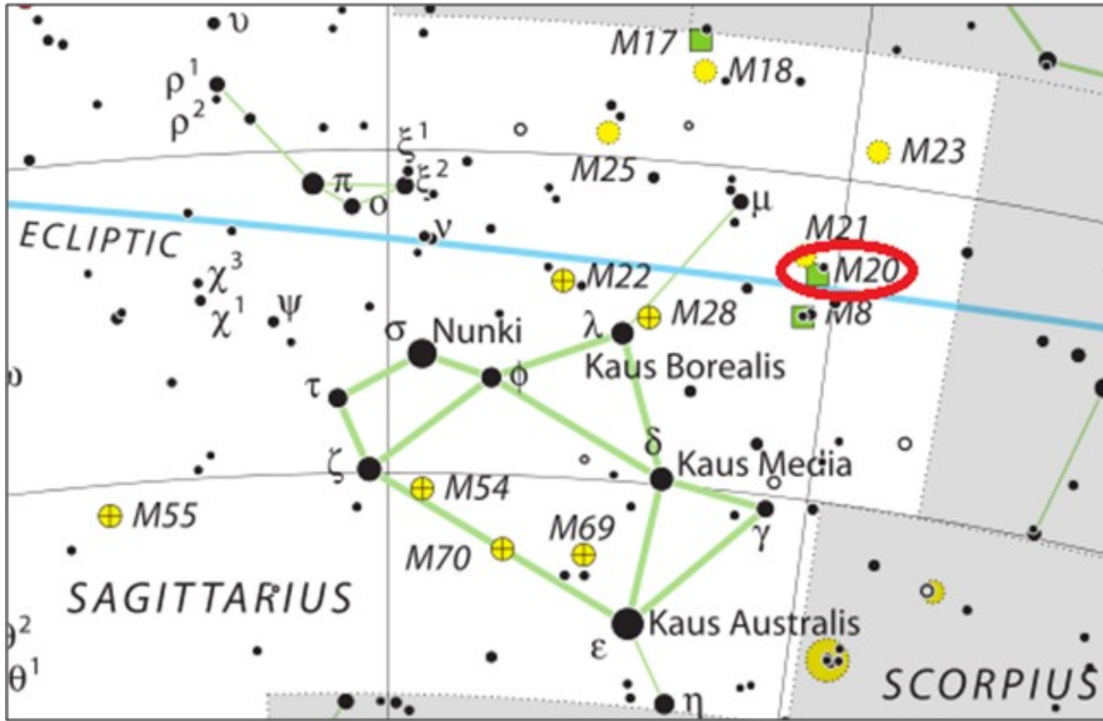
Compare my sketch with an image made by Mario Motta with a 32-inch scope. Not only are four lobes visible (what Stephen James O’Meara likens to as a “four-leaf clover”), but so is the intervening dark nebula (Barnard 85) that separates them. Also visible are the striking colors – red for the four-lobed part of M20 (an emission nebula) and blue for the area surrounding a 7th magnitude star further north (left in Motta’s image). Its bluish hue indicates that it’s a reflection nebula – a cloud of dust illuminated by the embedded star.

Here are some challenges you might consider while observing M20. Are you able to see the four lobes of O’Meara’s “clover?” He notes that the fourth leaf is fainter than the others, and jokingly adds that “you should feel lucky if you glimpse it!” Check out H N 6 with high magnification. Can you spot a magnitude 10.4 star just 6.2 arc-seconds north-northeast of the main star (essentially on the opposite side from its magnitude 8.7 partner)? This stellar pair bears the designation H N 40. Why two catalog identities for the same star? Don’t ask me. You’ll have to ask William Herschel, and he’s not around to provide the answer.

**The purpose of the Observer’s Challenge is to encourage the pursuit of visual observing. It is open to everyone who is interested. If you’d like to contribute notes, drawings, or photographs, we’ll 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 or access past reports, log on to rogerivester.com/category/observers-challenge-reports.*

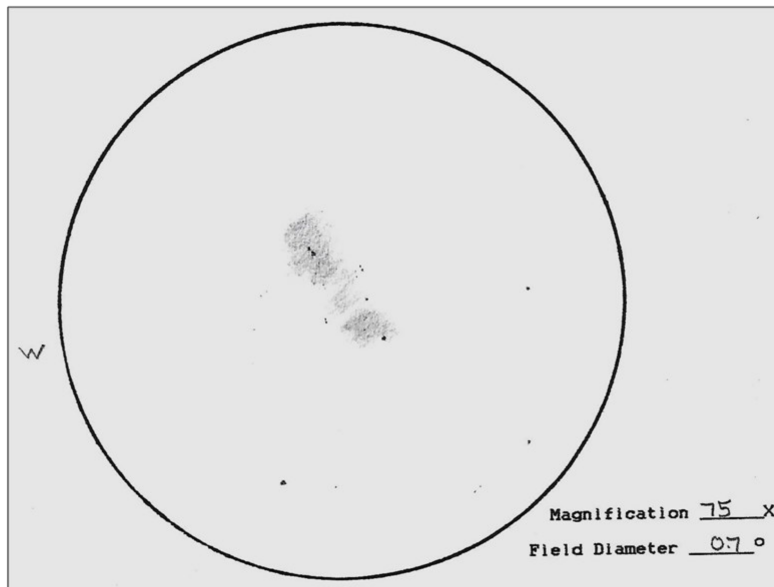
“Continued on page 4”

Finder Chart for M20 (The "Trifid Nebula")



www.messier-objects.com (chart from IAU and *Sky and Telescope*)

Images of Messier 20



M20, as seen with 4.5-inch f/8 reflector. Sketch by Glenn

“Continued on page 5”



M20 in R,G,B, Lum, and a bit of Ha, to produce a color image with both the emission and reflectance part of the nebula. total about 5 hours. Taken with 32 inch scope and ASI6200 camera North is to the left. Image by Mario Motta (ATMoB)

“Continued on page 6 ”

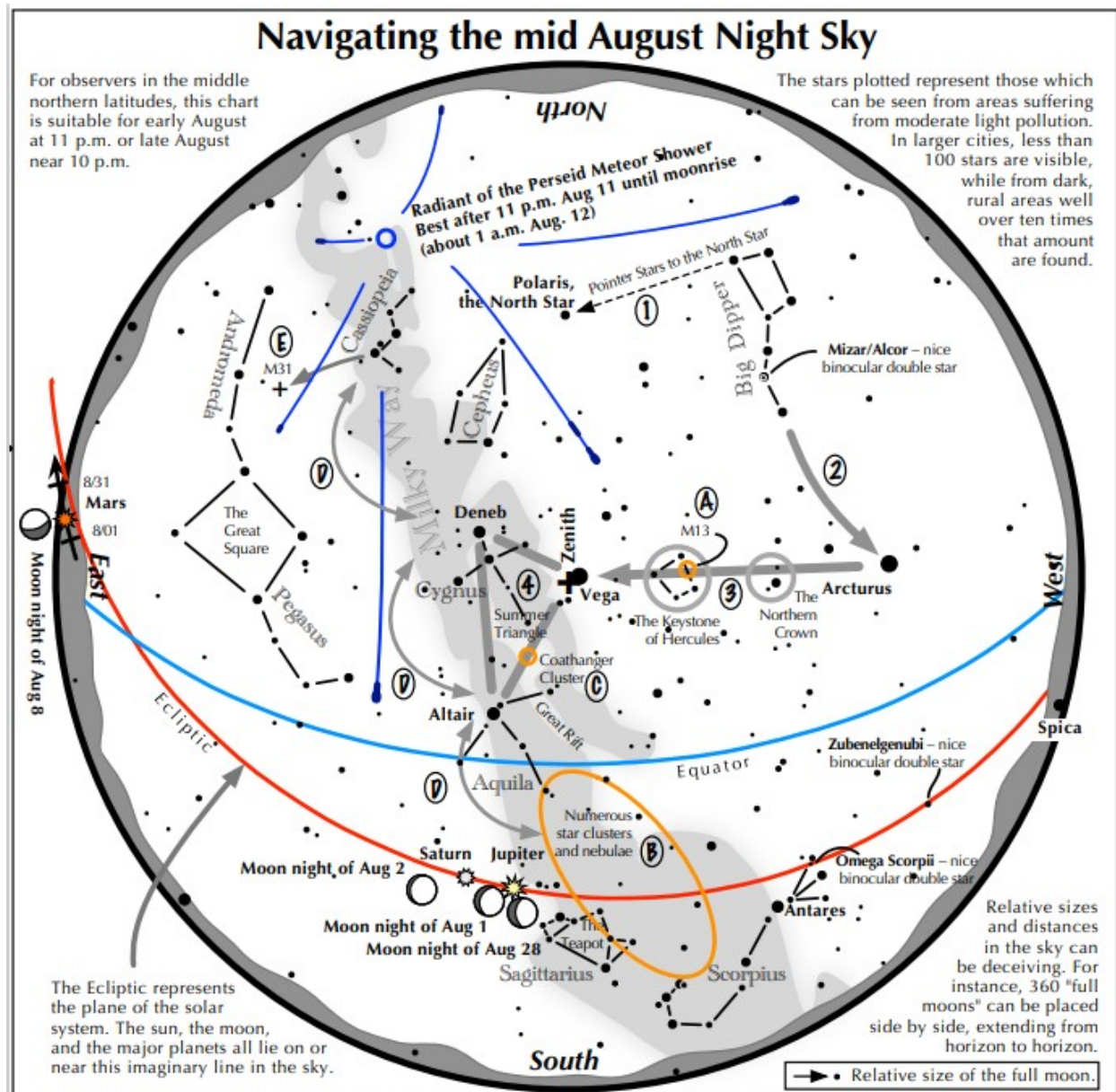
Lagoon & Trifid Nebula

Submitted by Paul Kursewicz

RAW, FL 136mm, ISO 1600, f/3.5, 6 x 1min, 8-17-17



EDITOR: This is a picture that I took of the Lagoon and Trifid Nebula while I was in Casper, Wyoming for the 2017 Total Solar Eclipse. I used my Canon PowerShot SX50 HS camera that was mounted on a camera tracker. Specs: RAW mode, FL 136mm, ISO 1600, 6 x 1 min each, 8-17-17. I recently re-edited my image using post processing techniques that were unknown to me back then. The Lagoon Nebula is the lower image, also known as M8. The Trifid Nebula above is also known as M20.



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

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

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster.

B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.

C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.

D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.

E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

Astronomical League www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.

Principal Meteor Showers in 2024

January 4
Quadrantids

April 22
Lyrids

May 6
Eta Aquarids

July 30
Delta Aquarids

August 12
Perseids

October 9
Draconid

October 21
Orionids

November 9
Taurids

November 18
Leonids

November 26
Andromedids

December 14
Geminids

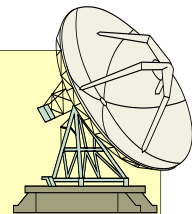
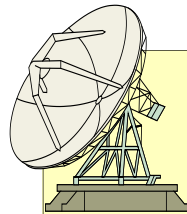
December 22
Ursids

Note: Dates are for maximum

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 17 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 17. Or you can use PayPal via asnne.astronomy@gmail.com

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



Got any News?

Skylights Welcomes Your Input.

Here are some suggestions:

Book reviews -- Items for sale -- New equipment --

Ramblings -- Star parties -- Observing -- Photos.

Our Club has Merchandise for Sale at: 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.



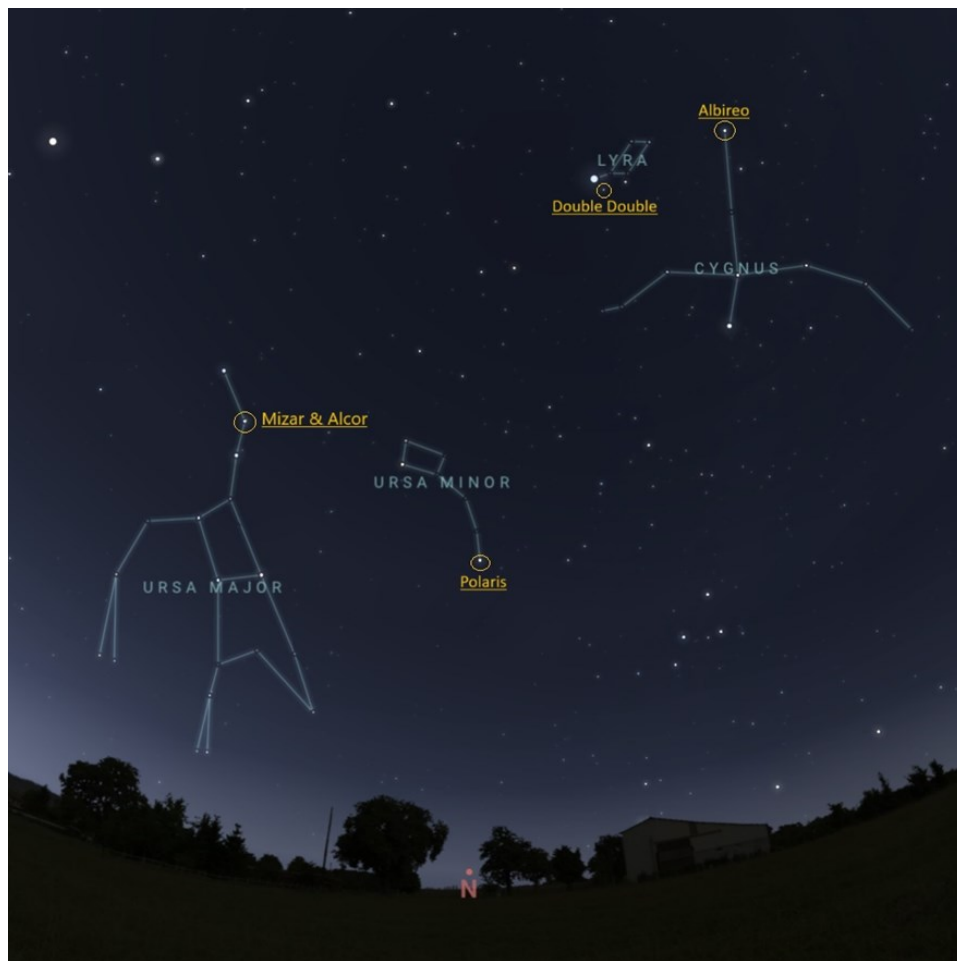
This article is distributed by NASA Night Sky Network

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!

August Night Sky Notes: Seeing Double

By Kat Troche

During the summer months, we tend to miss the views of Saturn, Jupiter and other heavenly bodies. But it can be a great time to look for other items, like globular star clusters such as Messier 13, open star clusters such as the Coma Star Cluster (Melotte 111), but also [double stars](#)!



Mid-August night sky constellations with the following multiple star systems highlighted: the Double Double in Lyra, Albireo in Cygnus, Polaris in Ursa Minor, Mizar and Alcor in Ursa Major. Credit: Stellarium Web

“Continued on page 10”

What Are Double Stars?

If you have seen any movies or read any books that refer to having two suns in the sky, that would be a *double star system*. These star systems typically come in two types – binary and optical doubles. Binary stars are two stars that are gravitationally bound and orbit each other, and optical double stars only *appear* to be close together when viewed from Earth, but in reality, are extremely far apart from another, and are not affected by each other's gravity. With a small telescope, in moderately light polluted skies, summer offers great views of these stellar groupings from the Northern Hemisphere:

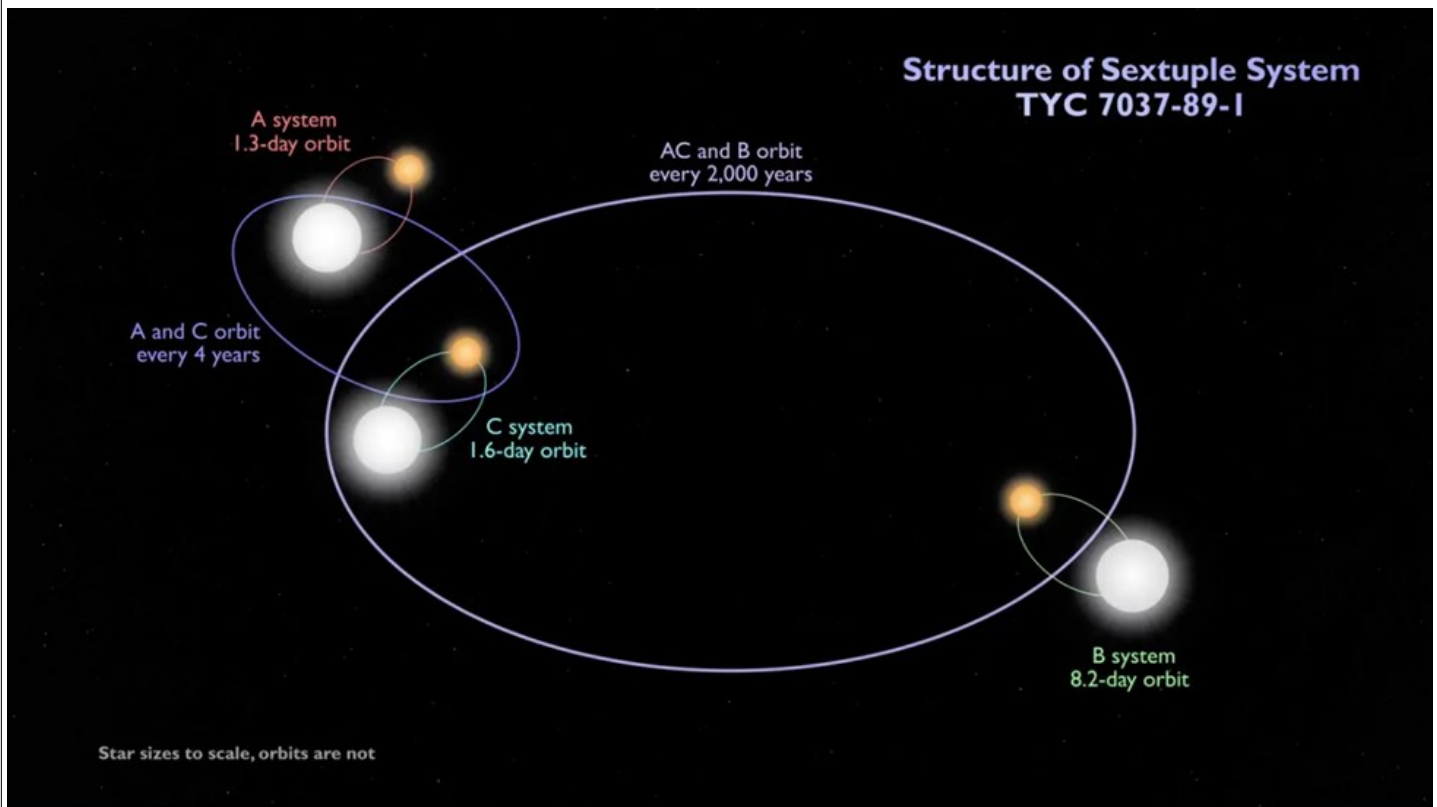
Double Double: also known by its technical name, Epsilon Lyrae, this multiple star system appears as one star with naked eye observing. But with a small telescope, it can be split into 'two' stars. A large telescope reveals Epsilon Lyrae's secret – what looks like a single star is actually a *quadruple* star system!

Albireo: a gorgeous double star set – one blue, one yellow – in the constellation Cygnus.

Polaris: while technically a multiple star system, our North Star can easily be separated from one star to two with a modest telescope.

Mizar and Alcor: located in the handle of the Big Dipper, this pair can be seen with the naked eye.

“Continued on page 11 ”



This schematic shows the configuration of the sextuple star system TYC 7037-89-1. The inner quadruple is composed of two binaries, A and C, which orbit each other every four years or so. An outer binary, B, orbits the quadruple roughly every 2,000 years. All three pairs are eclipsing binaries. The orbits shown are not to scale. Credit: NASA's Goddard Space Flight Center

Aside from looking incredible in a telescope or binoculars, double stars help astronomers learn about measuring the mass of stars, and about stellar evolution. Some stars orbit each other a little too closely, and [things can become disastrous](#), but overall, these celestial bodies make for excellent targets and are simple crowd pleasers.

Up next, learn about the Summer Triangle's hidden treasures on our mid-month article on the [Night Sky Network](#) page.

Point and Shoot Camera Astro-Imaging (no telescope)

Canon PowerShot SX50 HS

Tadpole Nebula (IC 410)

RAW Mode, FL 1200mm, ISO 900, f/3.5, 18 x 5min, 12-15-23

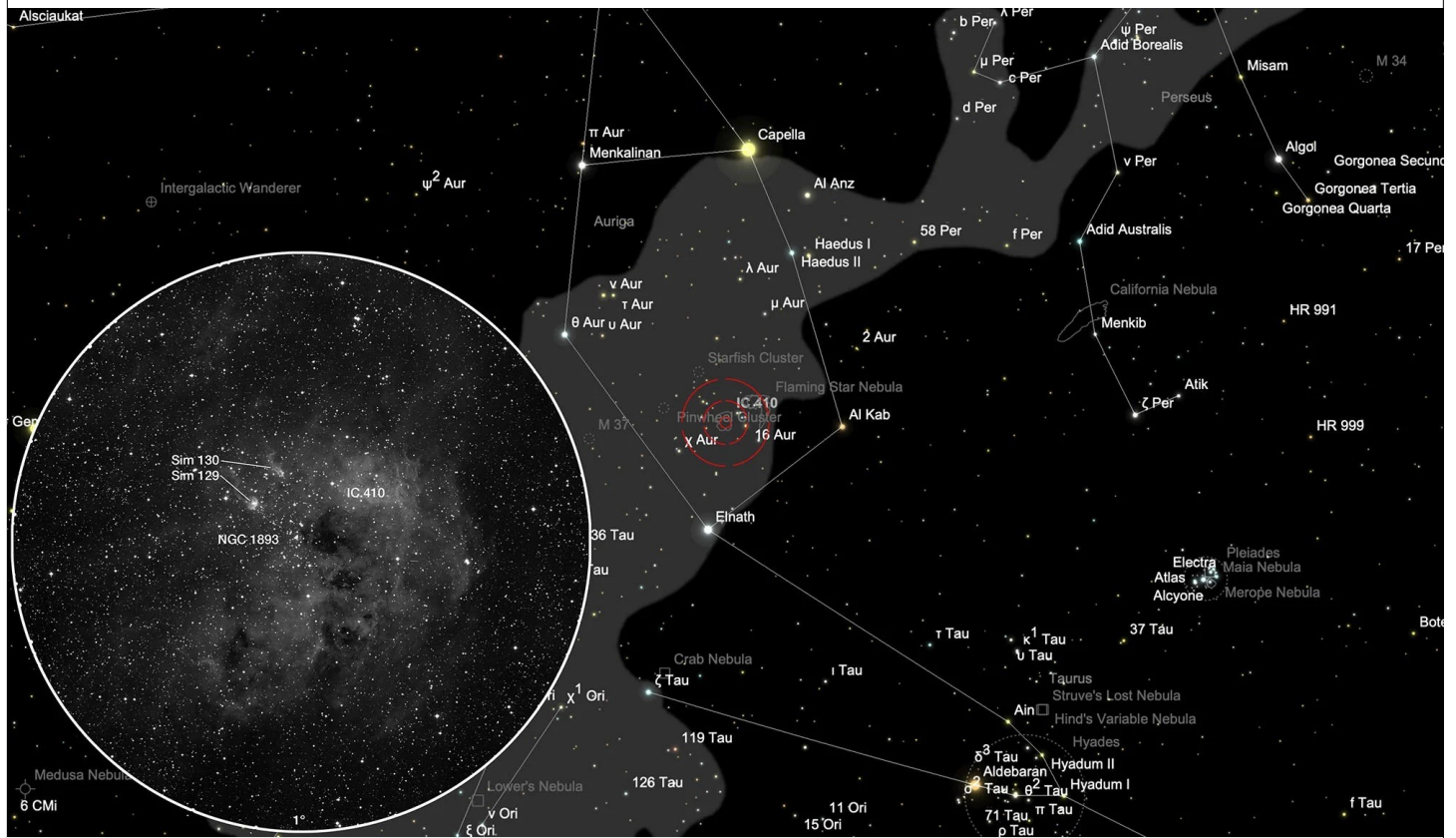
Baader Moon & Skyglow Filter



IC410 is an emission nebula located in the constellation of Auriga at about 12,000 ly from Earth. In my picture there are two small dense structures located at the 7 & 8 o'clock positions that resemble tadpoles. This is how the nebula got its name. Their tails point away from the center of the nebula. This is because of stellar winds and radiation pressure from the Open Cluster NGC 1893 (seen just above and to the right of the tadpoles). All of the gas structures in this nebula are lit by radiation from the stars in NGC 1893. The Tadpoles are about 10 light years long and are likely sites of ongoing star formation.

“Continued on page 13”

IC 410; NGC 1893; Sim 129 & Sim 130 Finder Chart (www.deepskycorner.ch)



The red bullseye depicts where the Tadpole Nebula (IC 410) is located within the constellation Auriga. Inside the large circle is a close-up of Tadpole Nebula and the Open Cluster NGC 1893. The cluster has an apparent magnitude of 7.5 and an apparent size of 11 arcminutes. It's an easy target for small telescopes. The tadpoles are singled out with catalog numbers: Sim 129 & Sim 130. They are gas globules, small dense knots of dust and cooler gas that give birth to young stars and have a magnitude of 10. The entire region of IC 410 is more than 100 light-years across. It's part of a larger star-forming region that is also home to the nearby Flaming Star Nebula (IC 405), which is much fainter than IC 410. A small telescope can see the Tadpole Nebula in good conditions. However, to see its horseshoe shape you will need a larger instrument.

ASNNE 2024 Public Star Parties

Submitted by Carl Gurtman

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David Bianchi, Club President

FOR: THE COMMUNITY CALENDAR

PUBLIC STAR PARTIES - AN OPEN INVITATION!

The Astronomical Society of Northern New England (ASNNE) has set its schedule for Public Star Parties through August, 2024. ASNNE extends an invitation to the General Public to attend. ASNNE operates its own observatory, the Talmage Observatory at Starfield, on State Route 35, in West Kennebunk, Maine.

At Public Star Parties, held in as much as possible in the dark of the Moon, the General Public, as well as ASNNE Members, are most cordially invited to observe the heavens through our large Club telescopes, as well as Member telescopes. Stars, visible planets, and deep sky objects can all be viewed. Experienced ASNNE Members are on hand to guide the observing, explain what is being seen, and answer questions..

There is no fee.

The Talmage Observatory at Starfield opens at 7:30 pm for these events. Detailed driving instructions may be found at: <http://asnne.org/where-to-find-us.php>

The dates for the Public Star Parties are as follows:

April 12 Rain date: April 13

May 10 Rain date: May 11

June 8th No rain date

July 5 Rain date July 6

August 9 Rain date August 10

ASNNE is a local association of amateur astronomers that meets monthly

at the New School, on Rte. 1, (York Street) in Kennebunk, Maine. Meeting are on the first Friday of each month; all those interested in astronomy are welcome; from stargazers and hobbyists, to serious observers, astrophotographers, and those interested in astronomical theory. The general public is also most cordially invited and welcome.

For more information about ASNNE, including directions and events, or to contact the Club, you may also visit us at www.ASNNE.org.

Club Meeting & Star Party Dates

Date	Subject	Location
<u>Aug 2</u>	<p><u>ASNNE Club BBQ:</u></p> <p style="text-align: center;">No Club Meeting at The New School</p> <p>Our August club meeting will be held at Talmage Observatory at Starfield. This will be our annual club BBQ. Bring your own Food and drink. We have two gas grills to use. I don't believe there is a set time to eat. Show up when you can. If the sky is clear we will open up the observatory and do observing. You can also bring your own scope.</p>	Talmage Observatory at Starfield West Kennebunk, Me.
Last Month	<p>Last month we had our meeting at The New School. A Zoom meeting was conducted also. We did not have a guest speaker. Bernie did his What's Up and certain club members shared their photos of the Total Solar Eclipse and the Northern Lights.</p>	
<u>Aug 9</u>	<p>Club/Public Star Party: Dependent on the weather. Rain date Aug 10th.</p>	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:

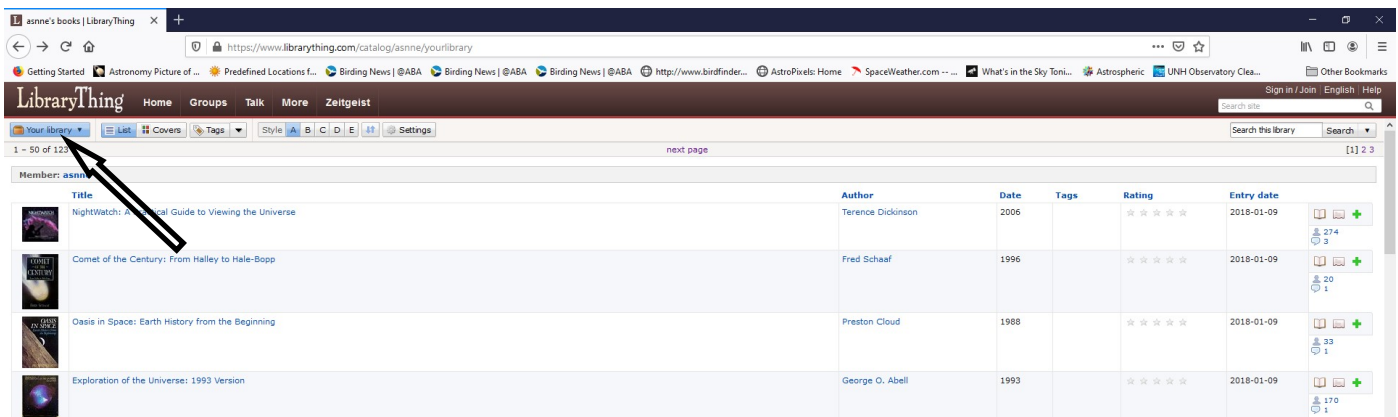
Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for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

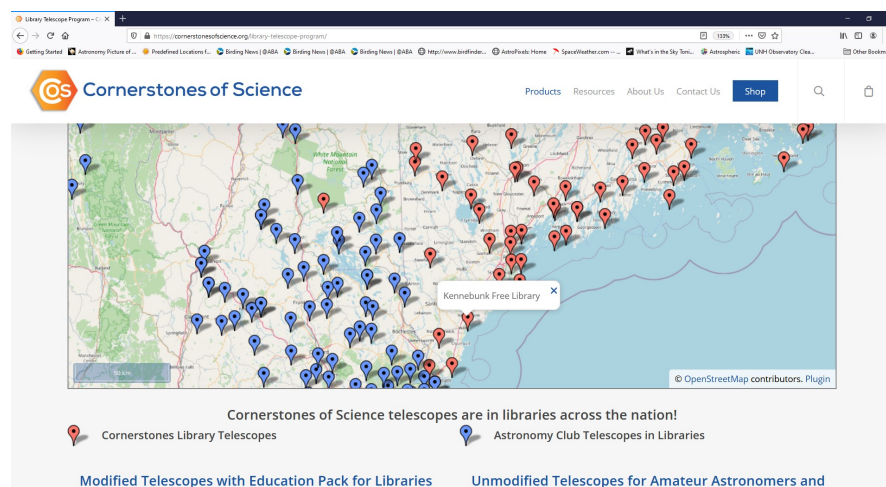
Our club has a library of astronomy books which are stored at The New School in Kennebunk, Maine (our monthly club meeting location). To request a book(s), contact one of the club officers. A listing of books is provided here: <https://www.librarything.com/profile/asmne> . After clicking on the link,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



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

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

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



Cornerstones of Science telescopes are in libraries across the nation!

- Red Pin: Cornerstones Library Telescopes
- Blue Pin: Astronomy Club Telescopes in Libraries

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

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

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



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

2024 Membership Registration Form

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

Name(s for family): _____

Address: _____

City/State: _____ Zip code: _____

Telephone # _____

E-mail: _____

Membership (check one):

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

Total Enclosed _____

Tell us about yourself:

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

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

3. Do you have any special interests in Astronomy?

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

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

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

Yes _____ No _____

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

Yes _____ No _____

