Skylights

Newsletter of the Astronomical Society of Northern New England

Oct 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 October

By Bernie Reim

The leaves have started to turn and soon much of new England will be ablaze with its famous flaming fall foliage. October always marks the first full month of autumn for us in the northern hemisphere. Just as our terrestrial landscape is transforming itself now so our celestial landscape above us is also undergoing its gradual annual change from our familiar summer constellations like the summer triangle and Sagittarius and Scorpius to the more brilliant stars of Orion and the winter hexagon.

Since any given star will rise 4 minutes earlier each night, this is a gradual transformation, but it is quite noticeable over a week or two. The sky will look the same at 10 pm tonight as it will look at 8 pm next month on the same date. It changes by 120 minutes or 2 hours each month and completes its cycle of 24 hours each year.

The nights have already been cooler and crisper and fall is usually the best time of year to get some consistently good skies for viewing before it gets too cold to stay out for long periods of time. It is always well worth going outside and looking up to enjoy and learn more about the many wonders that the cosmos is always offering us, but this is a particularly good month for that even as the nights are getting a few minutes longer each night.

The highlights this month include Mars getting a little closer and brighter each night as we are catching up with it in our respective orbits, Venus getting higher and brighter in our evening sky as it catches up with Earth in its faster orbit around the sun, Saturn still close to its best as an evening planet, some nice conjunctions of the moon and planets, the annual Orionid meteor shower which peaks on the 21st, and a potentially brilliant comet that could light up our evening skies early this month if it survives its always perilous journey around the sun. Along with all of that we are still waiting for the BLAZE STAR, T Corona Borealis, to erupt as a recurrent nova and suddenly become about 1,000 times brighter in our evening sky.

Mars now rises around midnight to begin this month and it will rise by 11 pm by the end of October. It is moving in its normal eastward or prograde motion through Gemini now and it will enter the constellation of Cancer the Crab on the 29th. The red planet will start its retrograde or westward motion on December 6 and it will reach opposition on January 16 and then it will end its retrograde about a month after that, on February 23 of next year.

Mars only reaches opposition every 26 months, so we only have about 4 months in every 26 months when Mars is close enough to Earth to spot some of its very interesting features in average amateur telescopes. That time will start near the end of this month. We have sent 39 missions to Mars, and only 15 of them have been successful. Mars and even the moon still present some serious challenges to land on, even without any humans on board.

Right now, we still have the Perseverance rover, nicknamed Percy, operating well and giving us new information almost daily. It landed on Mars on February 18 of 2021. It discovered many kinds of igneous rocks in Jezero crater along with "leopard spots" on a reddish rock that could indicate that microbial life was living on that rock and many others billions of yeas ago. It will dig up and leave some samples of Mars for a future mission to pick up and return to earth, which would be the first time we ever returned any sample of Mars to earth.

The only other way that we have found rocks from Mars on Earth was as meteorites from asteroids that hit Mars long ago and sent some material beyond the orbit of Mars that eventually encountered Earth as it partially burned up while entering our atmosphere as a brilliant meteor. We know all this by analyzing the rocks and matching them with what we know is on Mars right now, including having captured a little of its unique atmosphere inside the rock. Rare isotopes of neon, argon, xenon, and krypton trapped in this meteorite and others exactly matched the composition of the Martian atmosphere. We found a Martian meteorite near the South Pole in 1984 which we thought at one time even contained the remains of a once-living microbe on Mars, but that has not been proven beyond the shadow of a doubt.

Another first from the Perseverance Rover was the launching of a little helicopter named Ingenuity on Mars. It performed much better than expected, but its 72nd flight on January 18 of this year was its last one since it damaged its blades upon landing. I am sure we will fly around on Mars with much more sophisticated drones in the not- too -distant future as our technology improves. It was similar to flying a helicopter near the top of Mt. Everest on Earth since the atmosphere on Mars is only about 1 percent as dense as ours on our surface.

Venus is finally getting higher and brighter in our evening sky. It now sets fully 80 minutes after the sun in the western sky in the constellation of Libra the scales. Through a telescope you will see that Venus is 84 percent lit by the sun but it is getting less illuminated even as it is getting brighter since it is getting closer to us and larger in our sky as our sister planet is catch-

"*Continued on page 2*"

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

will pass very close to Venus on Saturday evening the 5th and Mercury will join Venus by the 24th, but it will remain very low in the sky and you may need binoculars to spot our first planet.

Since Saturn is just past opposition now, it will already be up in our eastern sky as soon as it gets dark enough to spot it. It is still in Aquarius. Since it takes nearly 30 years to orbit the sun, the ringed planet will spend over 2 years in each of our 12 zodiac constellations. I saw a great view of Saturn through one of the telescopes at our club's observatory in Kennebunk the other night with the shadow of the planet clearly visible on its rings along with 3 of its 146 moons. Its famous rings are now very thin, tilted open at only 5 degrees instead of its maximum of 27 degrees. The tilt will increase a little more and then it will decrease to zero in March of next year before they open up again. This whole cycle happens twice every 29 years. Saturn is slowly getting smaller and dimmer again as it gets farther away from Earth. It is currently almost 100 times fainter than Venus, which now shines at minus 3.9 magnitude while Saturn is 0.7 magnitude.

Jupiter continues to get higher and brighter and rises a little earlier each night as it is getting closer to Earth approaching its opposition on December 7 of this year. It now rises at 10 pm in Taurus and it will rise at 8 pm by the end of October. It will reach minus 2.7 magnitude, or only 3 times fainter than Venus. Notice that you can see all 4 of its large Galilean moons, Ganymede, Callisto, Io, and Europa with just a pair of binoculars.

The Orionid meteor shower peaks on Monday night the 21st. Unfortunately, the moon will be just 4 days past full, so it will interfere with the meteors when it rises around 9 pm and it will still be about 80 percent full in its waning gibbous phase. This shower will be active from October 2 through November 7. That is how long it takes the Earth to pass through all of the debris from Halley's comet.

The earth with all 8 billion of us aboard is always traveling through space around the sun at 18.6 miles per second or 67,000 miles per hour. The debris trail of Halley's comet that we are passing through right now is about 60 million miles wide, so it will take us 36 days to pass through all of it. We cover about 600 million miles of space each year as we are always orbiting the sun at that great speed. Even without the moon, you could only expect about 20 meteors per hour from a dark sky site from this shower. You will get another chance to see tiny pieces of Halley's Comet burn up 60 miles high in our atmosphere on May 4 and 5 of next year as we once again pass through the other side of this same debris trail of this most famous of all comets.

The last major highlight this month is a good possibility of seeing a very bright comet in our evening sky passing through Virgo into Serpens and Ophiuchus shortly after sunset from the 13th to the 21st. This is Comet C/2023 A3 (Tsuchinshan-ATLAS). Tsuchinshan means Purple Mountain in Chinese after the observatory that first discovered it in 2023.

Many comets do not survive their journey around the sun if they pass too close to its powerful gravitational field and huge mass in relation to the tiny mass of the comet whose nucleus is usually only about 5 miles across. Many comets actually hit the sun on their perilous perihelion passes and others get torn up or greatly diminished which just happened recently to a comet that we had great hopes for but did not make it around. I call all comets the great imposters of the solar system since they look so impressive with their tails spanning up to 100 million miles and their comas, caused by the sublimation of their material due to their heating up and their proximity to the sun, reaching about the diameter of the earth while their nucleuses are only a few miles across.

This comet could become the brightest since one since NEOWISE which became very bright and easily visible below the Big Dipper a few years ago during the peak of the pandemic.

Oct.1. The Yerkes 40 -inch refracting telescope was dedicated on this day in 1897. It was the largest telescope in the world at the time and it is still the largest refractor in the world now. It was designed by George Ellery Hale, who also designed and built the next 3 consecutive largest telescopes in the world culminating with the 200-inch Mt. Palomar reflector dedicated in 1948.

Oct. 2. New moon is at 2:49 pm. Since we are still in an eclipse season, there will be an annular solar eclipse in South America today. The moon is at apogee, or farthest from Earth today at 252,597 miles.

Oct. 4. The first satellite, Sputnik, was launched on this day in 1957, beginning the Space Age.

Oct. 5. Neil deGrasse Tyson was born on this day in 1958. The moon passes 3 degrees south of Venus this evening.

Oct.7. Niels Bohr was born on this day in 1885. He was one of the pioneers of the quantum mechanics revolution that gave us the knowledge to make most of our modern technology possible. The moon passes 0.2 degrees south of Antares this evening. The word Antares means "rival of Mars".

Oct. 9. Jupiter is stationary this morning, which marks the beginning of its retrograde motion. Kepler's Supernova was discovered by him on this day in 1604. It is a Type 1A supernova 20,000 light years away in the constellation of Ophiuchus near where the current comet will be visible soon.

Oct. 10. First quarter moon is at 2:55 p.m. EDT.

Oct. 14. The moon passes less than a degree north of Saturn this evening.

Oct. 15. Asaph Hall was born on this day in 1829. He was an American astronomer who discovered Phobos and Deimos, the two tiny moons of Mars on this day in 1877. Thomas Bopp was born on this day in 1949. He was one of the two astronomers, along with Alan Hale, that discovered Comet Hale-Bopp which in 1995 in Arizona. This became the brightest comet in nearly a century. Another once-in-a-life comet, Hyakutake was visible in March of 1996, the year before Hale-Bopp dominated the entire sky in March of 1997.

Oct. 17. Full moon is at 7:26 a.m. This is also known as the Hunter's Moon.

Oct.19. The Indian-American astronomer, Subrahmanyan Chandrasekhar, was born on this day in 1910. He discovered the Chandrasekhar limit of 1.44 solar masses that a red giant-white dwarf system will explode causing a Type 1A supernova which can used to determine distances to near the edge of the observable universe.

Oct. 21. The Orionid Meteor shower peaks tonight.

Oct. 22. Karl Jansky was born on this day in 1905. He invented the radio telescope and discovered radio waves from the center of our galaxy in August of 1931.

Oct. 23. The moon passes 3 degrees north of Mars this morning.

Oct. 24. Last quarter moon is at 4:03 p.m.

Oct. 25. Henry Norris Russell was born on this day in 1877. He created the Hertzsprung-Russell diagram to classify all stars in 1910.

★

Moon Phases

Oct 2
New

Oct 10
First Quarter

Oct 17
Full

Oct 24
Last Quarter

Moon Data

Oct 2
Moon at apogee

Oct 5
Venus 3° north of Moon

Oct 14
Saturn 0.1° south of Moon

Oct 15
Neptune 0.6° south of Moon

Oct 16
Moon at perigee

Oct 19
Uranus 4° south of Moon

Oct 21
Jupiter 6° south of Moon

Oct 23
Mars 4° south of Moon

OBSERVER'S CHALLENGE* – October, 2024

by Glenn Chaple

Messier 2 – Globular Cluster in Aquarius

(Mag 6.5; Size 6-8" [visual], 12-16' [photographically])

Autumn can be a wistful time of year for the globular cluster aficionado as the globular-rich constellations of summer, notably Ophiuchus, Scorpius and Sagittarius, are rapidly disappearing in the western sky. Fortunately, a few stragglers remain visible on October evenings, including the bright globular cluster Messier 2 (NGC 7089) in Aquarius.

Charles Messier found and cataloged it on the evening of September 11, 1760, 14 years to the day after it was stumbled upon by the Italian-born French astronomer Jean-Dominique Maraldi while observing de Chéseaux's Comet. To both Maraldi and Messier, the object appeared nebulous. It was William Herschel who, in 1783, was able to resolve M2 into its individual stars.

M2 is located at the 2000.0 coordinates RA $21^h33^m27{,}0^s$ and DEC -00°49'23.7", some 5 degrees north of the 3rd magnitude star beta (β) Aquarii and roughly 10 degrees east and slightly north of 3rd magnitude alpha (α) Aquarii. To find it manually, aim your telescope towards this location (refer to the accompanying finder chart) and conduct a low-power sweep until a hazy circular patch of light enters the field of view. From there, switch to higher magnifications for that "up close and personal" view.

M2 offers several challenges for the visual observer. 1. Can you see it with the unaided eye? At magnitude 6.3, M2 should be barely visible from a dark-sky location on a clear, moonless night. 2. What's the smallest aperture that will resolve M2 into its component stars? This would be an interesting activity for an astronomy club whose members would observe M2 with different-sized telescopes and compare notes. 3. Can you see a dark curving lane that crosses the northeast edge of M2? In The Messier Album, co-author John Mallas includes a sketch of M2 and the dark lane as they appeared in a 4-inch refractor.

Most resources cite a distance to M2 of 37,000 light-years. It has a calculated diameter of 150 to 175 light-years and contains an estimated 100,000 to 150,000 stars.

(NOTE: Messier 2 was previously featured as the August, 2009, Observer's Challenge)

*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.

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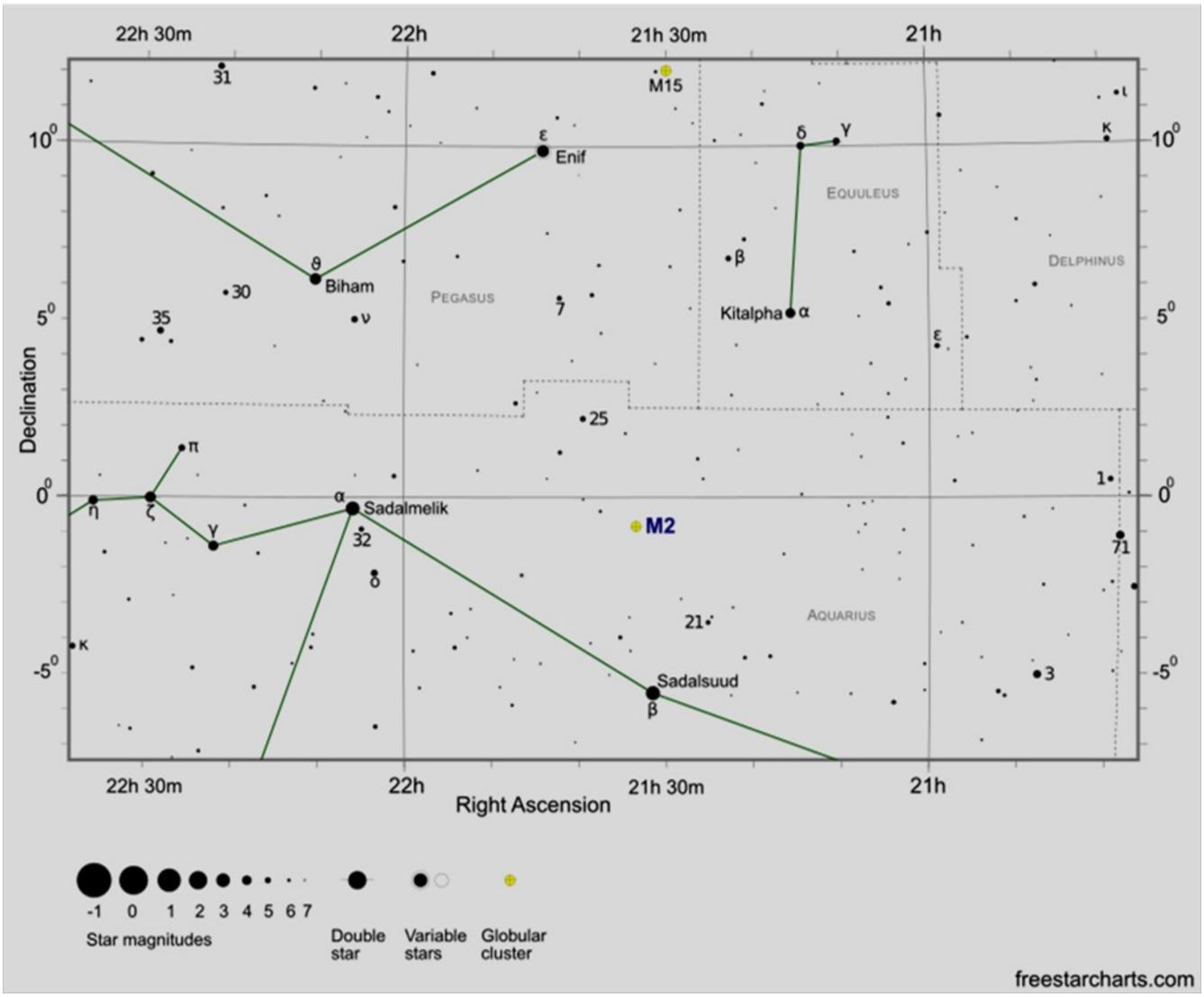
Messier 2 Finder Chart

(freestarcharts.com)

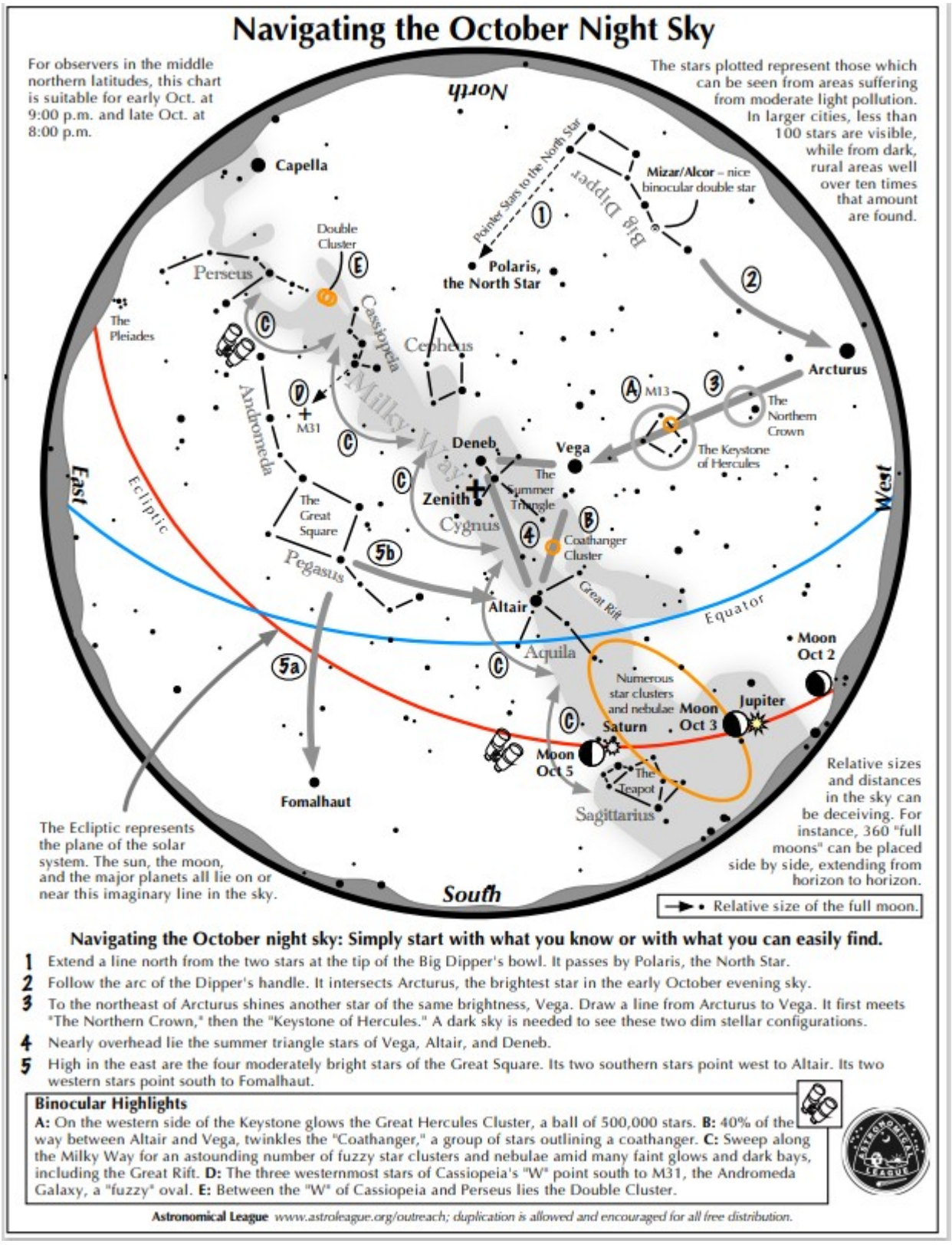


"Continued on page 5"

Messier 2 Image

Mario Motta, MD (ATMoB)

"M2 taken with the 32 inch F6 scope, about 60 minutes total imaging time, processed in pixinsight, no filters, original data taken in 2013, reprocessed."



Navigating the October 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 early October 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. Nearly overhead lie the summer triangle stars of Vega, Altair, and Deneb.
5. High in the east are the four moderately bright stars of the Great Square. Its two southern stars point west to Altair. Its two western stars point south to Fomalhaut.

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster, a ball of 500,000 stars. **B:** 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger. **C:** Sweep along the Milky Way for an astounding number of fuzzy star clusters and nebulae amid many faint glows and dark bays, including the Great Rift. **D:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **E:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster.

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

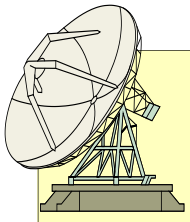
December 22
Ursids

Note: Dates are for maximum

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 22 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 22. 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.



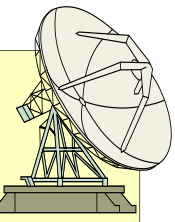
Got any News?

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: https://www.cafepress.com/shop/ASNNE/products

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!

October's Night Sky Notes: Catch Andromeda Rising!

By Dave Prosper
Updated by Kat Troche

If you're thinking of a galaxy, the image in your head is probably the Andromeda Galaxy! Studies of this massive neighboring galaxy, also called M31, have played an incredibly important role in shaping modern astronomy. As a bonus for stargazers, the Andromeda Galaxy is also a beautiful sight.

Spot the Andromeda Galaxy! M31's more common name comes from its parent constellation, which becomes prominent as autumn arrives in the Northern Hemisphere. Surprising amounts of detail can be observed with unaided eyes when seen from dark sky sites. Hints of it can even be made out from light polluted areas. Use the Great Square of Pegasus or the Cassiopeia constellation as guides to find it. Credit: Stellarium Web

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Have you heard that all the stars you see at night are part of our Milky Way galaxy? While that is mostly true, one star-like object located near the border between the constellations of Andromeda and Cassiopeia appears fuzzy to unaided eyes. That's because it's not a star, but the Andromeda Galaxy, its trillion stars appearing to our eyes as a 3.4 magnitude patch of haze. Why so dim? Distance! It's outside our galaxy, around 2.5 million light years distant - so far away that the light you see left M31's stars when our earliest ancestors figured out stone tools. Binoculars show more detail: M31's bright core stands out, along with a bit of its wispy, saucer-shaped disc. Telescopes bring out greater detail but often can't view the entire galaxy at once. Depending on the quality of your skies and your magnification, you may be able to make out individual globular clusters, structure, and at least two of its orbiting dwarf galaxies: M110 and M32. Light pollution and thin clouds, smoke, or haze will severely hamper observing fainter detail, as they will for any "faint fuzzy." Surprisingly, persistent stargazers can still spot M31's core from areas of moderate light pollution as long as skies are otherwise clear.

Generated version of the Andromeda Galaxy and its companion galaxies M32 and M110. Credit: Stellarium Web

"*Continued on page 10* "

Modern astronomy was greatly shaped by studies of the Andromeda Galaxy. A hundred years ago, the idea that there were other galaxies beside our own was not widely accepted, and so M31 was called the "Andromeda Nebula." Increasingly detailed observations of M31 caused astronomers to question its place in our universe – was M31 its own "island universe," and not part of our Milky Way? Harlow Shapley and Heber Curtis engaged in the "Great Debate" of 1920 over its nature. Curtis argued forcefully from his observations of dimmer than expected nova, dust lanes, and other oddities that the "nebula" was in fact an entirely different galaxy from our own. A few years later, Edwin Hubble, building on Henrietta Leavitt's work on Cepheid variable stars as a "standard candle" for distance measurement, concluded that M31 was indeed another galaxy after he observed Cepheids in photos of Andromeda, and estimated M31's distance as far outside our galaxy's boundaries. And so, the Andromeda Nebula became known as the Andromeda Galaxy.

While M31's disc appears larger than you might expect (about 3 Moon widths wide), its "galactic halo" of scattered stars and gas is much, much larger – as you can see here. In fact, it is suspected that its halo is so huge that it may already mingle with our Milky Way's own halo, which makes sense since our galaxies are expected to merge sometime in the next few billion years! The dots are quasars, objects located behind the halo, which are the very energetic cores of distant galaxies powered by black holes at their center. The Hubble team studied the composition of M31's halo by measuring how the quasars' light was absorbed by the halo's material. Credits: NASA, ESA, and E. Wheatley (STScI).

These discoveries inspire astronomers to this day, who continue to observe M31 and many other galaxies for hints about the nature of our universe. One of the Hubble Space Telescope's longest-running observing campaigns was a study of M31: the Panchromatic Hubble Andromeda Treasury (PHAT). Dig into NASA's latest discoveries about the Andromeda Galaxy, on their Messier 31 page.

Point and Shoot Camera Astro-Imaging (no telescope)

Canon PowerShot SX50 HS

Partial Lunar Eclipse

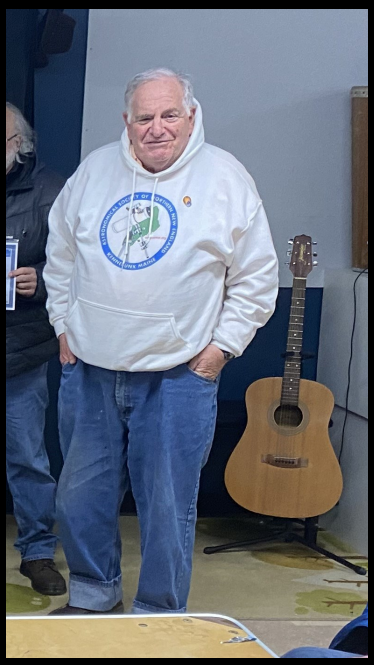
JPEG Mode, FL 1200mm, Auto Focus, Hand-Held, 9-17-24

Images are reduced from their original size

My Partial Eclipse sequence begins with the upper left image at 10:17 pm, and ends with the lower right image at 11:10 pm. The percentage of the Moon's area covered by Earth's umbra at mid-eclipse (10:44 pm) was about 8%. When a lunar eclipse happens, they're visible to an entire half of Earth. For this eclipse, the Northern Hemisphere was treated to the view, including all of North America (except Alaska). For those of us in the U. S., that means all lower 48 states had a view. The full moon for this eclipse was a Supermoon, second of the year.

In Memory: Carl Gurtman

Recently Carl was diagnosed with Lewy Body Dementia.
He departed on September 27, 2024. Carl will be dearly missed.



Club Meeting
April 2024

Christmas Party
January 2023

Club BBQ
September 2021

Carl as Poseidon
September 2017 Starfest

MABEL STERNS NEWSLETTER AWARD

RUNNER-UP: PAUL KURSEWICZ

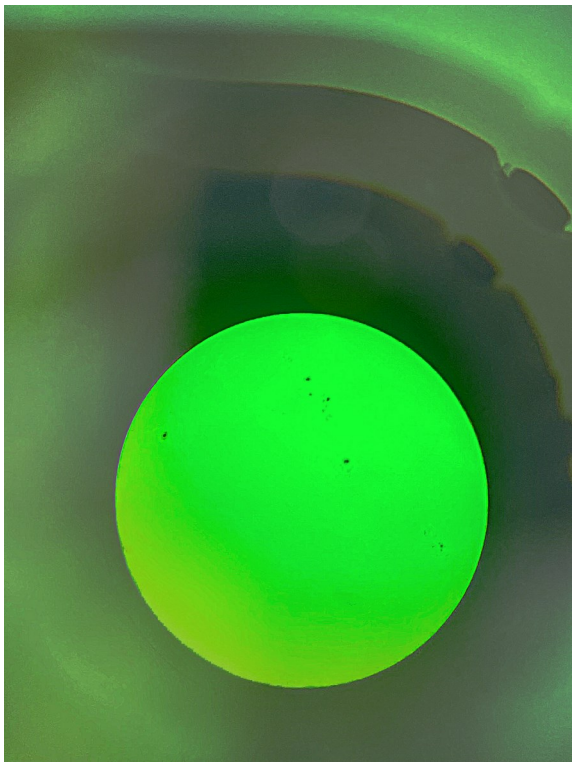
President David Bianchi presenting the Mabel Sterns Newsletter Award to Paul Kursewicz

I need to graciously thank club member **Carl Gurtman** for this award. He was the one who submitted my name to the Astronomical League. And now, every time I look at my award I will think of Carl. The year 2023 marked the 77th anniversary of the Astronomical League. During those years, the League has grown to nearly 23,000 members and has exceeded the magic threshold of 300 astronomical societies. Each year since 1998 the League recognizes some of the best newsletter editors in the nation. The Award is named in honor of the first newsletter editor of the League, Mabel Sterns. For the year 2024, I was Runner-Up. The League publishes a quarterly magazine called the Reflector. In their September 2024 issue the following is stated:

> ***Paul Kursewicz has been editor of Skylights, the newsletter of the Astronomical Society of Northern New England (ASNNE), for an extraordinary 18 years. The newsletter typically exceeds 20 pages and is beautifully illustrated. His content includes publicly available material and articles and photographs submitted by club members. Articles range from what's visible in the sky for naked-eye stargazers to articles of interest to advanced astrophotographers.***

Starfest Friday

Peter's 2-inch Baader Herschel Wedge



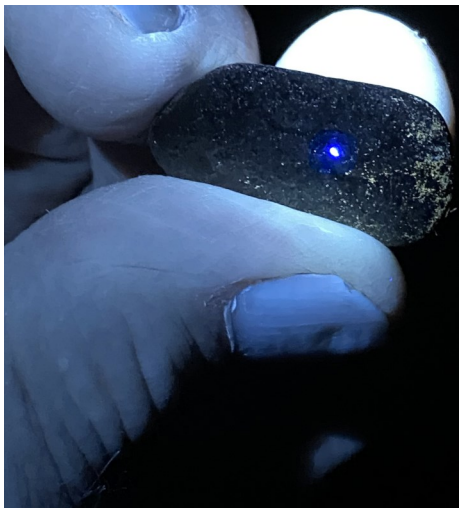
View through eye-piece

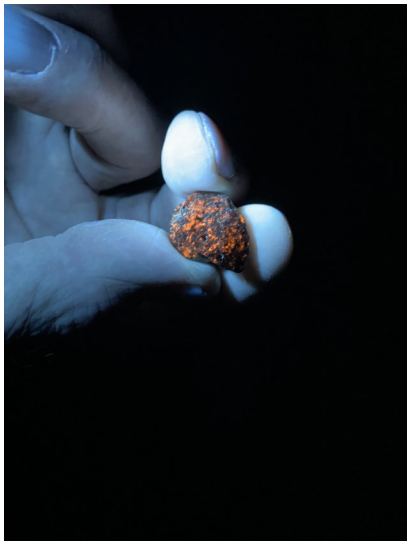
"Continued on page 15

Tent set-up

Jim and Dave doing maintenance
on the cable pulleys.

"Continued on page 16"





It was a cloudy night so when it got dark Peter suggested that we do some rock-hounding with his black light. We found some fluorescents right outside the observatory. Just above, the image on the left is being seen in white light (natural light). The image on the right is of the same rock, but seen in black light. Notice the fluorescents.

After most people left to go home Larry, Peter, and myself hung around for a while and we got to see NASA's Solar Sail Spacecraft pass overhead. A small pocket of somewhat clear sky opened up at just the right time. It was pretty bright, but not as bright as the space station.

"Continued on page 17"

Starfest Saturday

Dwight's Lunt 152mm Hα telescope set-up. Solar viewing on one side of the mount. And looking through Dwight's spectrometer on the other side of the mount.

"Continued on page 18"

Our Annual Starfest Concert Series

"Continued on page 19"

Club Meeting & Star Party Dates

Date	Subject	Location
Oct 4	**ASNNE Club Meeting:** **Business Meeting starts prior to Club meeting.** **Club Meeting (in house & on Zoom): 7:30-9:30PM** **Guest Speaker:** This month our guest speaker will be **Richard Lowe**. He will be talking about Solar Power. **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 had our annual Starfest weekend. Although clouds prevented us from doing night observing, we had a wonderful time. Solar viewing took place on Friday and Saturday. Club BBQ on Saturday, as well as the club raffle. Campfire at night.**	
TBD	**Club/Public Star Party: TBD**	**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

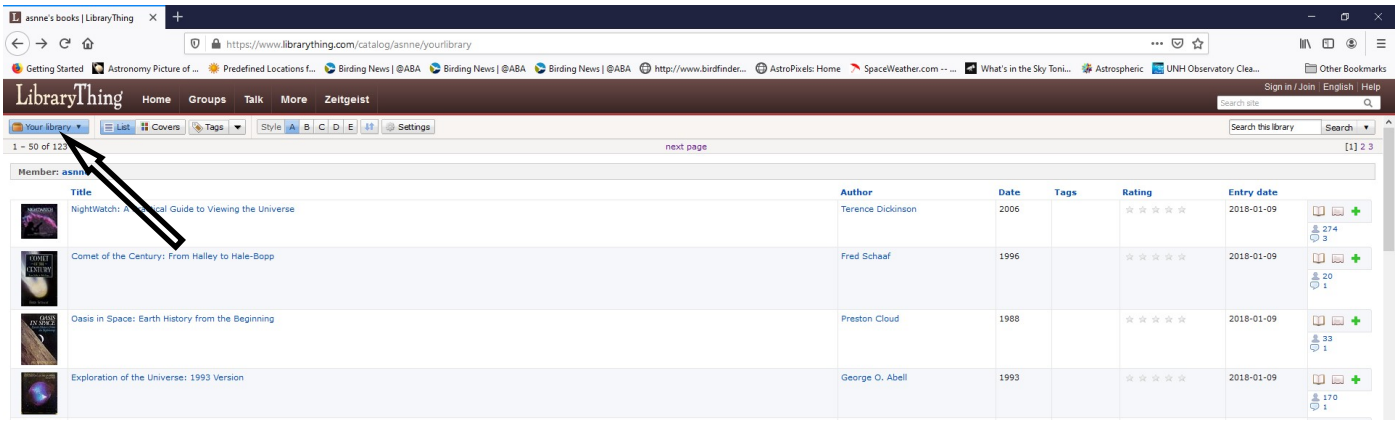
Directions to Talmage Observatory at Starfield [Alewive Road, Kennebunk, ME]

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.

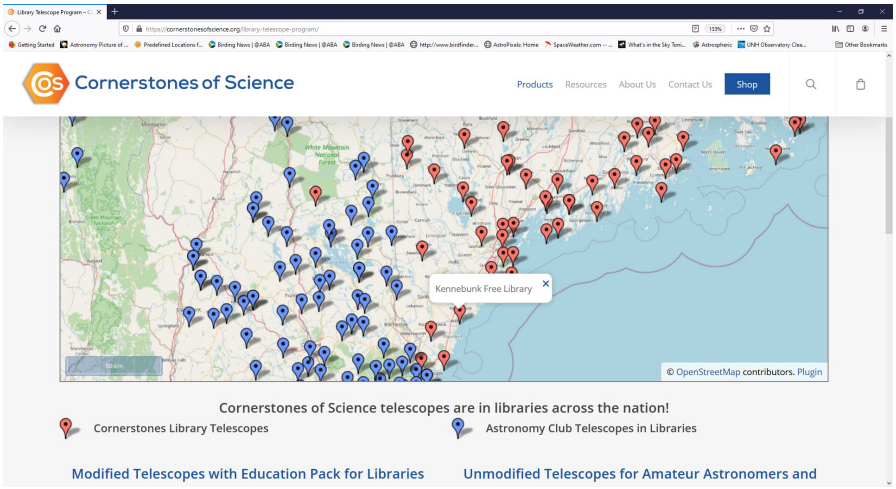
Astronomy Club & Library Resources

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

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_____