

Skylights

Newsletter of the Astronomical Society of Northern New England



FEB 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 February

By Bernie Reim

The month of February is named after the Latin word "februum" which means purification. Groundhog Day is on the second of this month, which also marks the half way point between the winter solstice and the spring equinox. Just like there are 4 seasons, there are also 4 cross quarter days marking the half way points of our four seasons. The one this month is also known as Candlemas in the Christian tradition and as Imbolc in the Celtic tradition that dates farther back.

This January was one of the warmest on record, almost a permanent January thaw, so it should get much colder this month. The days continue to get longer by 3 minutes each day all month long, leading to the day length being over 11 hours long by the end of this month. They were under 10 hours long to start February.

There will be many great highlights this month that will be well worth braving any cold that we may get to go outside and enjoy them and learn more about how our amazing solar system and universe really work from a first-hand perspective once you better understand what is happening. These include one last chance to see all 7 of our planets in the sky on the first of this month, 6 of them in the evening and Mercury in the morning. Just like Venus passed very close to Saturn last month, it will pass very close to Jupiter on the last day of this month. Then Jupiter will continue to sink even as Venus continues to climb higher until summer starts.

Watch for an even closer conjunction of Venus and Neptune in Aquarius on Valentine's Day. The pair will be only half a degree apart, which is the width of the full moon. You will need a good pair of binoculars to see Neptune, since it is nearly 12 magnitudes or about 40,000 times fainter than brilliant Venus. At a distance of 30.8 A.U., it takes light 4 hours to reach us from this lonely last outpost for a planet in our solar system. The light from Venus will reach us in just 12 minutes. Then there will be two asteroids at their best, Ceres and Pallas. There will be not one, but three comets visible this month with binoculars, the brightest of which, Comet C/2022 E3 (ZTF) will pass very close to Mars in Taurus on the 10th, and it may even become visible without binoculars. The other two comets are another ZTF comet (C/2020V2), passing through Cassiopeia and Perseus not far from the first ZTF comet, and then Comet 96P/Machholz low in the morning sky just below the Summer Triangle and Aquila the Eagle. After that we can expect 5 more fairly good comets, magnitude 10 or better, for the rest of this year.

The last remaining highlight this month, other than some more close conjunctions of the moon with some of our planets, will be the zodiacal light. Look for it starting around the middle of this month with no moonlight to interfere with its subtle glow. Look for a cone-shaped glow aligned with the ecliptic low on the western horizon about an hour after sunset. This faint light is caused by sunlight reflecting off solar system debris left by ancient comets in the ecliptic plane of our solar system. So even though there will be no more meteor showers until the April 22 Lyrids, which always fall on Earth Day, you can now see the combined effect of trillions of tiny pieces of all of the comets that have ever passed near the earth, at least within the last few thousand years. You can also look for the zodiacal light about an hour before dawn in October and November. The key is that the angle of our horizon to the ecliptic has to be at its steepest for us to see this subtle pyramid of light. This debris forms a permanent torus in the ecliptic plane of our solar system, but you can only see it when the angle is at its steepest. I have seen it 3 or 4 times and it is quite haunting and inspiring at the same time.

Watch Venus and Jupiter carefully all month as the much faster moving Venus is rapidly catching up with the king of the planets at a rate of exactly one degree per day. They begin 29 degrees apart and they will be just one degree apart in Pisces the Fish on the last day of this month low in the western evening sky

"Continued on page 2"

Inside This Issue

Club Contact List	pg. 2
Moon Data	pg. 3,4
Observer's Challenge	
Meteor Showers in 2023	pg. 5
Club Merchandise for Sale	
Spot the King of Planets: Observe Jupiter	pg. 6,7,8
Astro-imaging with a Point & Shoot	pg. 9,10
Comet C/2022 E3 ZTF	pg. 11,12
Club Meeting Minutes for January	pg. 13-15
Club Info & Directions to ASNNE	pg. 16
ASNNE Club & Library Resources	pg. 17
Become a Member	pg. 18

Club Contacts

Officers:

President:

Ian Durham
idurham@anselm.edu

Vice President:

Bernie Reim
berniereim@kw.com

Secretary:

Carl Gurtman
cgurtman@maine.rr.com

Treasurer:

Ian Durham
idurham@anselm.edu

Board of Directors:

Gary Asperschlager
gasperschlager@gmail.com

Larry Burkett
larrybu32@yahoo.com

Keith Brown
silverado93@twc.com

Star Party

Co-ordinator:

Carl Gurtman
cgurtman@maine.rr.com

Skylights Editor:

Paul Kursewicz
pkursewicz@myfairpoint.net

Website Manager:

Paul Kursewicz
pkursewicz@myfairpoint.net

NASA Night Sky Network

Co-ordinator:

Joan Chamberlin
starladyjoan@yahoo.com

JPL Solar System Ambassador:

Joan Chamberlin
starladyjoan@yahoo.com

E-mail coordinator

David Bianchi
dadsnorlax@yahoo.com

What's Up "Continued from page 1"

about an hour after sunset.

Moving from west to east, Venus, Jupiter, and Mars will all be strung across our evening sky like a celestial necklace of planetary pearls all month long. Notice that Mars is moving in its normal prograde or eastward motion in Taurus again and that is getting a little fainter and smaller and less orange each evening. It is about zero magnitude now and the same distance from us as our sun, just over 8 minutes away at the speed of light.

We will lose Saturn in our evening sky after the first of this month. Then the ringed planet will reappear in our morning sky next month.

The largest asteroid Ceres will be at its best on the 8th and the second largest asteroid, Pallas, will be at its best in Canis Major on the 12th. Pallas will reach 7.7 magnitude and will pass close to Sirius, the brightest star in our sky at minus 1.4 magnitude on the 25th. That is about 9 magnitudes or 4000 times brighter than Pallas, which is about 325 miles across. The German astronomer Heinrich Olbers discovered Pallas in 1802 by carefully comparing the sky against the current star charts of his time. Olbers is better known for his conjecture about why it is dark at night, called Olber's paradox. Edmund Halley and Johannes Kepler also seriously considered this paradox before Olbers did.

If the universe is static and infinite and eternal, your line of sight from Earth at night would always land on a star or galaxy, similar to seeing just trees as you look deeper into any forest that isn't planted in straight rows. So the simple fact that it is dark at night leads to a profound realization that the whole universe must be expanding and that the speed of light is limited. This was not proven until 1929 when Edwin Hubble measured the redshift of galaxies to show the rate of expansion of our universe.

Actually, all of this light from the Big Bang is still there, but it was shifted into the infrared part of our electromagnetic spectrum as the universe is expanding so that we can't see it with just our human eyes anymore. That is the main reason that the new James Webb Space Telescope is so effective, it can see much farther into the space and time of our expanding universe than any other telescopes ever could. We have now seen all the way back to about 200 million years after the Big Bang which happened 13.8 billion years ago. One great mystery is that we have discovered fully formed galaxies at that distance containing second generation stars like our own sun that is 4.6 billion years old.

You can see and hear some of this very cold 3 degree Kelvin cosmic microwave background radiation that has been so greatly red shifted over time for yourself without a million dollar radio telescope like the one Penzias and Wilson used to discover this in 1965 and for which they won the Nobel Prize in 1978. All you need is an old analog T.V. or radio. About one percent of the white noise and random static between channels comes directly from the very origin of our universe, this all pervading light that is still present. The rest of the static comes from other electromagnetic interferences including energy from the sun and lightning and other radio and T.V. stations.

Comet C/2022 E3 (ZTF) will zip right along at 6 degrees per night early this month in Cassiopeia. Then it slows down to 3 degrees per night as it enters Auriga and Taurus and passes close to Mars on the 10th and then it slows down to just one degree per night at the end of this month.

It could still become visible without binoculars and will most likely be the best comet of this year, so try to see it for yourself. From the perspective of our latest rover on Mars, Perseverance, this comet is visible at 6th magnitude and appears just two degrees away from Earth at minus second magnitude in the pink Martian sky.

Feb.3. The waxing gibbous moon forms a neat line with Castor and Pollux in Gemini tonight.

Feb.4. Clyde Tombaugh was born on this day in 1906. He would discover Pluto on February 18 of 1930. It was known as a full-fledged planet for 76 years until it was reclassified as an icy dwarf in 2006.

Feb.5. Full moon is at 1:29 p.m. EST. This is also known as the Snow, Ice, or Hunger moon. This will also be a micro moon, since it is just one day past its apogee, or farthest distance from Earth for the month. A super moon occurs when the full moon is within one day of perigee, or closest to Earth. The full moon always looks much larger on the horizon anyway due to the moon illusion, so you will probably not notice that it will be a little smaller than usual. The smallest micro moon is only 14% smaller than the largest super moon.

Feb. 8. Dwarf planet Ceres is stationary. Jules Verne was born on this day in 1828.

Feb. 10. Comet C/2022 E3 (ZTF) passes close to Mars in Taurus tonight.

Feb. 13. Last quarter moon is at 11:01 a.m.

Feb.14. Venus and Neptune will be only half a degree apart in Aquarius tonight.

Feb.15. Galileo was born on this day in 1564. He would improve the telescope in 1609 and he soon proved that the earth is not the center of our solar system or the universe.

Feb. 19. Nicolaus Copernicus was born on this day in 1473. He developed the heliocentric model of the solar system which was later proven by Galileo.

Feb. 20. New moon is at 2:06 a.m.

Feb. 21. The slender waxing crescent moon will pass close to Venus and Jupiter tonight and the next night.

Feb. 23. Supernova 1987a was discovered by Ian Shelton on this day in 1987. This was a massive star in the Tarantula nebula in the Large Magellanic Cloud, one of two satellites to the Milky Way Galaxy. It actually exploded 160,000 years ago, but was just seen in our sky in 1987. Pioneer 10 left our solar system on this day in 1990. That boundary is at about 120 A.U. or 3 times as far away as the average distance to Pluto.

Feb. 26. The moon passes between the Pleiades and the Hyades in Taurus tonight. Jupiter and Venus are less than 3 degrees apart low in the western sky this tonight.

Feb. 27. First quarter moon is at 3:06 am. The moon passes one degree north of Mars tonight.

Feb. 28. Jupiter and Venus are only one degree apart shortly after sunset in the western evening sky.



Moon Phases

Feb 5
Full

Feb 13
Last Quarter

Feb 20
New

Feb 27
First Quarter

Moon Data

Feb 4
Moon at apogee

Feb 18
Mercury 4° north
of Moon

Feb 19
Moon at perigee

Feb 21
Neptune 2° north
of Moon

Feb 22
Venus 2° north
of Moon

Jupiter 1.2° north
of Moon

Feb 25
Uranus 1.3° south
of Moon

Feb 27
Mars 1.1° north
Of Moon

OBSERVER'S CHALLENGE* – February, 2023

by Glenn Chaple

NGC 2024 "Flame Nebula" Emission Nebula in Orion Mag 7.2 (O'Meara), Size 30' X 30'

Our February Observer's Challenge, the emission nebula NGC 2024 (the "Flame Nebula") in Orion, tests our visual skills in two ways. A 7th magnitude object, as estimated by Stephen James O'Meara, its light is spread over an area the size of the full moon. Worse yet, the Flame is hidden by the glare from the nearby bright star zeta (ζ) Orionis (Alnitak).

The Flame Nebula was discovered by William Herschel on the night of January 1, 1786. He cataloged it as a Class V object (Very large nebulae) and wrote, "Wonderful black space included in remarkable milky nebulosity, divided in 3 or 4 large patches; cannot take up less than a half degree, but I suppose it to be much more extensive".

You won't need its 2000.0 coordinates, RA 5^h41^m54^s and Dec - 01°51'0.0" to find the Flame Nebula. It's just 15 arc-minutes ENE of Alnitak, the most southeasterly of Orion's three Belt stars. Seeing it visually requires moving Alnitak out of the field of view. Although a large-aperture scope is recommended, the Flame can be seen with small aperture instruments and medium magnifications, especially if skies are transparent and an O-III filter is used. O'Meara has glimpsed it with 7X50 binoculars, suggesting that Alnitak be blocked by a distant rooftop or sharp-edged structure.

Once you've (hopefully!) managed to capture the Flame Nebula, it's time to turn to another challenge - that pesky star Alnitak. At a visual magnitude of +2.0, it's the brightest spectral class O star in the sky. A hot blue supergiant, it's 20-30 times more massive than the sun and some 10,000 times more luminous. Alnitak has a visual companion - a blue-white giant of magnitude 3.7 situated some 2.4 arc-seconds to its SSE (Position Angle 166°). The pair may be split with a 3-inch scope and magnifying power of 150X, provided the seeing is steady. A third member, of 9th magnitude, lies 59 arc-seconds to the northeast.

The Flame Nebula is located about 1400 light years away. It has a diameter of approximately 6 light years.

**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.*

"Continued on page 4"

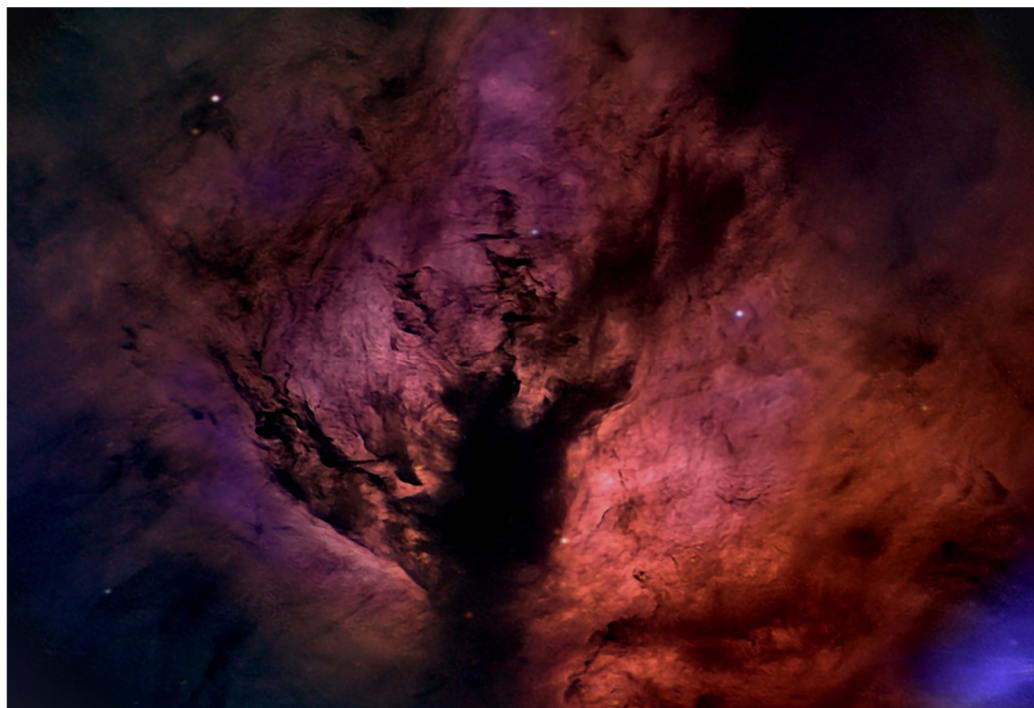
NGC 2024 Finder Chart

Image by Bob King (Astro Bob)



NGC 2024 Image

Mario Motta, MD. (ATMoB) "Taken with my 32 inch F6.5 telescope in Gloucester, MA, with ZWO ASI6200 camera. I used Red/Blue/Green filters, but also H alpha as there is some emission in H α . No significant O3 or S2 emission to be had in NB imaging here. Total of 3 hours imaging in all. Combined and processed in PixInsight, including the new BlurXterminator, giving crisp detail. Field of view is 24x16 arc minutes."



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

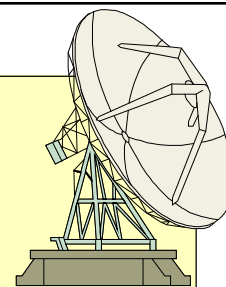
December 14
Geminids

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!

Spot the King of Planets: Observe Jupiter

By David Prosper

Jupiter is our solar system's undisputed king of the planets! Jupiter is bright and easy to spot from our vantage point on Earth, helped by its massive size and banded, reflective cloud tops. Jupiter even possesses moons the size of planets: Ganymede, its largest, is bigger than the planet Mercury. What's more, you can easily observe Jupiter and its moons with a modest instrument, just like Galileo did over 400 years ago.

Jupiter's position as our solar system's largest planet is truly earned; you could fit 11 Earths along Jupiter's diameter, and in case you were looking to fill up Jupiter with some Earth-size marbles, you would need over 1300 Earths to fill it up – and that would still not be quite enough! However, despite its awesome size, Jupiter's true rule over the outer solar system comes from its enormous mass. If you took all of the planets in our solar system and put them together they would still only be half as massive as Jupiter all by itself. Jupiter's mighty mass has shaped the orbits of countless comets and asteroids. Its gravity can fling these tiny objects towards our inner solar system and also draw them into itself, as famously observed in 1994 when Comet Shoemaker-Levy 9, drawn towards Jupiter in previous orbits, smashed into the gas giant's atmosphere. Its multiple fragments slammed into Jupiter's cloud tops with such violence that the fireballs and dark impact spots were not only seen by NASA's orbiting Galileo probe, but also observers back on Earth!

Jupiter is easy to observe at night with our unaided eyes, as well-documented by the ancient astronomers who carefully recorded its slow movements from night to night. It can be one of the brightest objects in our nighttime skies, bested only by the Moon, Venus, and occasionally Mars, when the red planet is at opposition. That's impressive for a planet that, at its closest to Earth, is still over 365 million miles (*587 million km*) away. It's even more impressive that the giant world remains very bright to Earthbound observers at its furthest distance: 600 million miles (*968 million km*)! While the King of Planets has a coterie of around 75 known moons, only the four large moons that Galileo originally observed in 1610 – Io, Europa, Ganymede, and Callisto – can be easily observed by Earth-based observers with very modest equipment. These are called, appropriately enough, the *Galilean moons*. Most telescopes will show the moons as faint star-like objects neatly lined up close to bright Jupiter. Most binoculars will show at least one or two moons orbiting the planet. Small telescopes will show all four of the Galilean moons if they are all visible, but sometimes they can pass behind or in front of Jupiter, or even each other. Telescopes will also show details like Jupiter's cloud bands and, if powerful enough, large storms like its famous Great Red Spot, and the shadows of the Galilean moons passing between the Sun and Jupiter. Sketching the positions of Jupiter's moons during the course of an evening - and night to night – can be a rewarding project! You can download an activity guide from the Astronomical Society of the Pacific at bit.ly/drawjupitermoons

“Continued on page 7”

NASA's Juno mission currently orbits Jupiter, one of just nine spacecraft to have visited this awesome world. Juno entered Jupiter's orbit in 2016 to begin its initial mission to study this giant world's mysterious interior. The years have proven Juno's mission a success, with data from the probe revolutionizing our understanding of this gassy world's guts. Juno's mission has since been extended to include the study of its large moons, and since 2021 the plucky probe, increasingly battered by Jupiter's powerful radiation belts, has made close flybys of the icy moons Ganymede and Europa, along with volcanic Io. In 2024 NASA will launch the Europa Clipper mission to study this world and its potential to host life inside its deep subsurface oceans in much more detail. Find the latest discoveries from Juno and NASA's missions at nasa.gov.

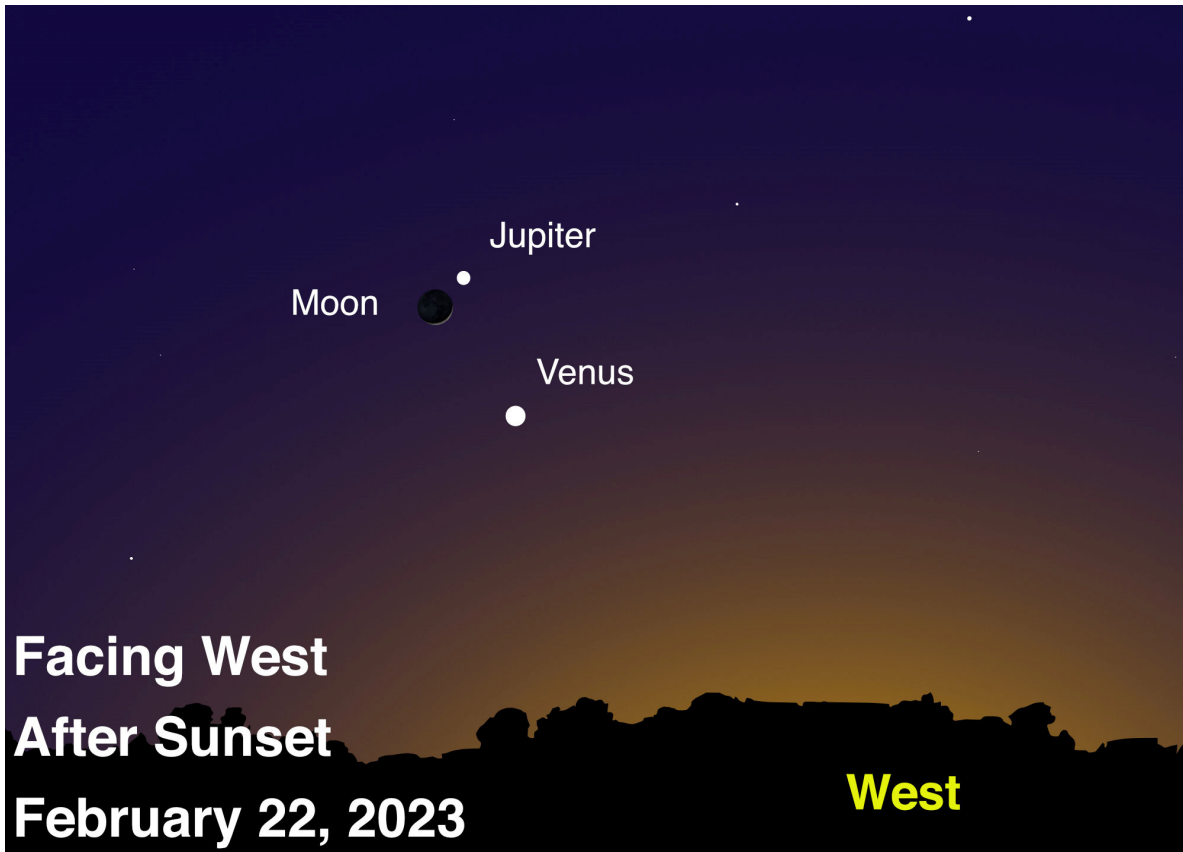


This stunning image of Jupiter's cloud tops was taken by NASA's Juno mission and processed by Kevin M. Gill. You too can create amazing images like this, all with publicly available data from Juno.

Go to missionjuno.swri.edu/junocam to begin your image procession journey – and get creative!

Full Image Credit: NASA/JPL-Caltech/SwRI/MSSS; Processing: Kevin M. Gill, license: CC BY 2.0) <https://creativecommons.org/licenses/by/2.0/> Source: <https://apod.nasa.gov/apod/ap201123.html>

“Continued on page 8”



Look for Jupiter as it forms one of the points of a celestial triangle, along with Venus and a very thin crescent Moon, the evening of February 22, 2023. This trio consists of the brightest objects in the sky – until the Sun rises! Binoculars may help you spot Jupiter's moons as small bright star-like objects on either side of the planet. A small telescope will show them easily, along with Jupiter's famed cloud bands. How many can you count? Keep watching Jupiter and Venus as the two planets will continue to get closer together each night until they form a close conjunction the night of March 1. Image created with assistance from Stellarium.

Point and Shoot Camera Astroimaging (no telescope)

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Skull Nebula (NGC 246)

RAW mode, FL 1200mm, f/3.5, ISO 3200, 130 x 1 min, Baader Moon & Skyglow Filter, 11-14-22

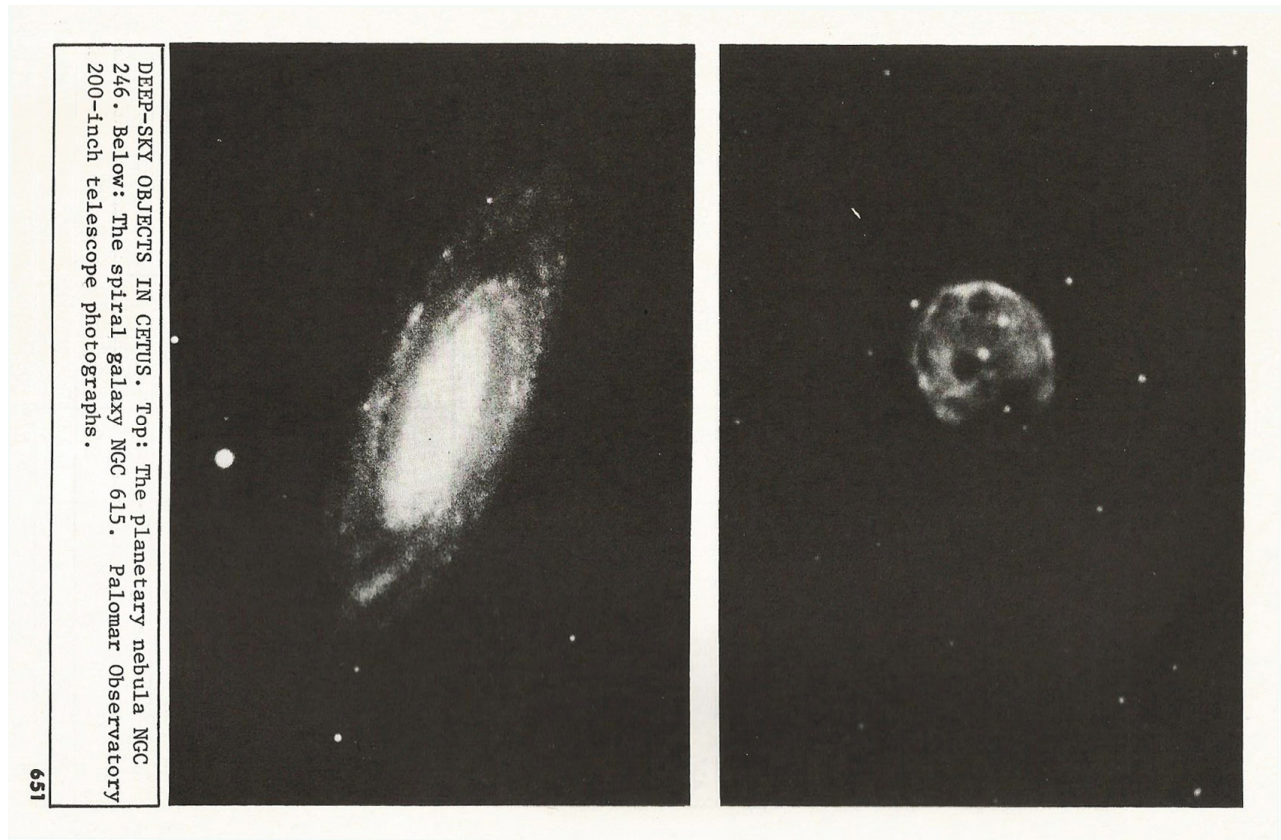


The **Skull Nebula** is a planetary nebula in the constellation Cetus and is located roughly 1,600 light-years away. The nebula is relatively small and dim, shining at 12th-magnitude. Its outer structure is shaped like an oval ring. From our vantage point, it has an angular resolution of just 3.7 arcmin. The diameter is about 2.3 light-years. The nebula is the dusty remnant of a stellar explosion, during which a Sun-like-star expelled its outer layers, leaving behind a white dwarf star (center of nebula). In 2014 astronomers discovered that the white dwarf is actually a three-star system. The trio make up the first ever triple star system found inside a planetary nebula. Visually NGC 246 is a challenge, especially from mid northern latitudes where it never rises very high in the sky. The fuzzy object to the lower left of Skull is NGC 255, a barred spiral galaxy.

“Continued on page 10”

From the pages of “Burnham’s Celestial Handbook” copyright 1978

Skull Nebula



The photo of the Skull Nebula (right image) was taken with the 200-inch Hale Telescope from Palomar Observatory. I rotated the page to match my picture of the Skull which was taken with a 2-inch diameter camera lens (no telescope). NGC 246's central star is whisking through space at about 50 miles per second. The planetary nebula continues to expand at 90,000 miles per hour. The original star that formed the Skull is completing its transition to the next phase in life, a small hot corpse known as a white dwarf. This planetary nebula was discovered by William Herschel in 1785.

Comet C/2022 E3 ZTF

Comet C/2022 E3 ZTF

Submitted by Paul Kursewicz



I took this picture of the comet on January 26th, around 11:45 pm. That's when the clouds started to break up into pockets of clear skies. This is a single image, wide angle shot, and only 30 seconds long. It shows where the comet was located relative to the Big Dipper (Upper right in photo) and the Small Dipper (Left of center in my photo). The arrow points at the comet. I was not able to view the comet with the naked-eye. Through binoculars the comet looked brighter and bigger than when I looked at it previously on the 22nd.

“Continued on page 12

Comet Close-Up

RAW mode, FL 1200mm, f/3.5, ISO 1600, Single 1 Minute Exposure



This is my 1200mm focal length shot. I had to limit my exposure to 1 minute because the pockets of clear skies would only last for about that long. And because of that, I was unable to take multiple images, and then stack them. But with this one image, and some brief editing, I was still able to capture the gas tail (although very faintly).

[Astronomical Society of Northern New England \(ASNNE\) Meeting Notes of
6 January 2023](#)

Record Note: At the time of this Meeting, the first heavy snowstorm of the season was raging. It was not a blizzard, and the roads were kept clear, and the Meeting was neither cancelled, nor re-scheduled. However, many Members elected not to travel in the storm.

Business Meeting: The Business Meeting was called to order at 7:12 pm by the
(2022) Vice President, Bernie Reim.

Directors Present: Gary Asperschlager, Ron Burk, Carl Gurtman, Bernie Reim, Bern Valliere.
Plus: Paul Kursewicz, *Skylights* Editor

Others Present: There were an additional six people physically present. David Bianchi, our ASNNE E-Mail Manager was not physically present, and valiantly attempted to get himself and three others to participate on Zoom (or another communications platform), but was not successful.

Old Business: There was no Old Business.

New Business:

Storm Damage. We recently had a powerful windstorm. This storm did significant damage to the Talmage Observatory at Starfield. Although the Observatory itself was unharmed, the shed at the Observatory had its door torn off, and the port-a-potty was blown over, and its top is missing. Ron had gone to the Observatory, and reported this damage to us. ASNNE owns the port-a-potty.

Ron effected temporary repairs to the shed door, and up-righted the port-a-potty. What remains to be done is permanent repairs to the shed door, a power wash-down of the port-a-potty, and its top replaced. Ron will contact Theo regarding permanent repairs.

Permanent Officers for 2023. In accordance with our By-Laws, a Board of Directors was elected at our December, 2022 Annual Membership Meeting. They were Gary Asperschlager, Ron Burk, Ian Durham, Carl Gurtman, Bernie Reim, and Bern Valliere. A seventh Director will later be appointed. At this Business Meeting, also in accordance with our By-Laws, the Board of Directors elected the 2023 Officers from the Board. We would have elected Ian Durham President, but we didn't wish to have one person with two permanent Offices, so we elected Ian President *Pro Tem* (again), and Treasurer (again). As in 2022, Bernie was elected Vice President, and Carl, Secretary.

“Continued on page 14”

Regular Meeting:

Directors Present: Bernie Reim, Vice President
Carl Gurtman, Secretary
Gary Asperschlager, Director
Ron Burk, Director
Bern Valliere, Director
David Bianchi, ASNNE E-Mail Manager
Paul Kursewicz, *Skylights* Editor

There were a total of 12 people physically present, and none on Zoom. (See above).

Vice-President Bernie Reim called the Regular Meeting to order at 7:35 pm.

Bernie had all the people present introduce themselves, with the emphasis on the new people, of whom there were four. Because there was no formal Presentation tonight, and with the storm-limited attendance, we were able to spend additional time on the introductions. People shared their backgrounds, astronomical history & interests, and what they hoped to accomplish with ASNNE.

"What's Up?":

Prior to his "What's Up?" presentation, Bernie discussed two astronomy-related books he's just read: *Searching for Stars on an Island in Maine*, blending science and spiritual observations, and *Star Wave*, about mind, consciousness and quantum physics.

Bernie then gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of January, named after Janus, the Roman god of beginnings and endings. Janus has two faces, so he is always facing backward and forwards, and is able to see the past and the future at the same time.

In January, seven planets are visible in the evening sky at the same time early this month

There will be the Quadrantid meteor shower on the 3rd, and a comet near Polaris that could become visible without binoculars by the end of the month. Mars ends its retrograde motion on the 12th

Look for Mercury during the first couple of evenings this year very low in the western sky, setting just an hour after sunset. Venus will be a few degrees above Mercury, and it will be exactly 100 times brighter than Mercury.

“Continued on page 15”

Mars and the waxing gibbous moon will pass within just a few arc minutes on Monday night the 30th, just after midnight.

Two of the 4 largest asteroids, Vesta and Juno, will pass close to each other and just below the planet Neptune in Aquarius and Pisces this month, but you will need binoculars to see them.

Comet C/2022 E3 (ZTF) has been around for a few months, but it is still getting brighter and may become naked-eye visible by the end of this month.

This will not be an ideal year for the Quadrantids, because they will peak on the 3rd, just 3 days before the full moon on the 6th. The waxing gibbous moon will rise around 2 pm on Tuesday the 3rd, and it will definitely spoil the show by the time the meteors reach their best rate of about 100 per hour a few hours after midnight.

Bernie then covered "What Happened on this Day. . .", and the names of this month's moon.

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

Astroshorts: Several Members provided Astroshorts. Carl discussed the book *The Antikythera Mechanism*, an ancient Greek computer from about 200 BCE, which completely upends what we all thought we knew about the Greeks and technology.

Next Meeting:

ASNNE's next Meeting will be on Friday, 3 February, 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.

Respectfully submitted,

Carl Gurtman

Club Meeting & Star Party Dates

Date	Subject	Location
<u>Feb 3</u>	<p><u>ASNNE Club Meeting:</u></p> <p>Business Meeting starts prior to Club meeting.</p> <p>Club Meeting: 7:30-9:30PM</p> <p>Guest Speaker: No guest speaker scheduled.</p> <p>Bernie Reim - What's UP</p> <p>Astro Shorts: (news, stories, jokes, reports, questions, photos, observations etc.)</p>	The New School, Kennebunk, Me.
Last Month	<p>Last month we met at The New School. The snow storm limited attendance and no one at the meeting was able to get Zoom to work. Bernie presented his What's Up article. After that, club members contributed to Astro Shorts.</p>	
<u>TBD</u>	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 Kennebunk [38 York Street (Rt1) Kennebunk, ME]

For directions to The New School you can use this link to the ASNNE NSN page and then click on "get directions" from the meeting location. Enter your starting location to generate a road map with complete directions. It works great. http://nightsky.jpl.nasa.gov/club-view.cfm?Club_ID=137

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

From North:

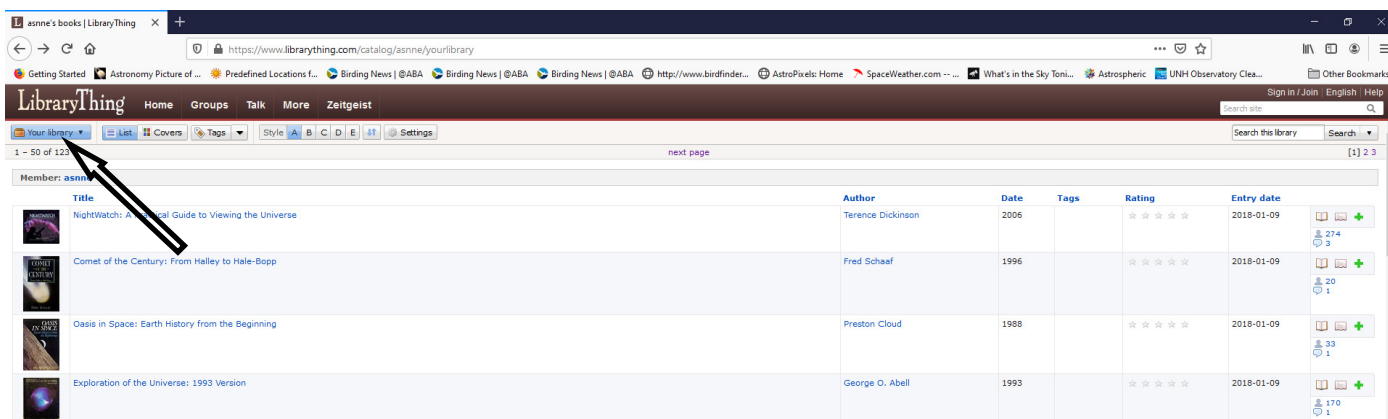
Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for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

From South:

Get off the turnpike at exit 25 in Kennebunk. After toll both turn right on Rt 35. Go up over the turnpike and immediately turn right on Rt 35. About 4 miles along you will crest a hill and see a large field on your right. Continue until you reach the end of the field. Turn right into the Starfield Observatory site at the last telephone pole along the field. Look for the ASNNE sign on the pole. If you come to a very sharp 90 degree right turn you have just passed the field.

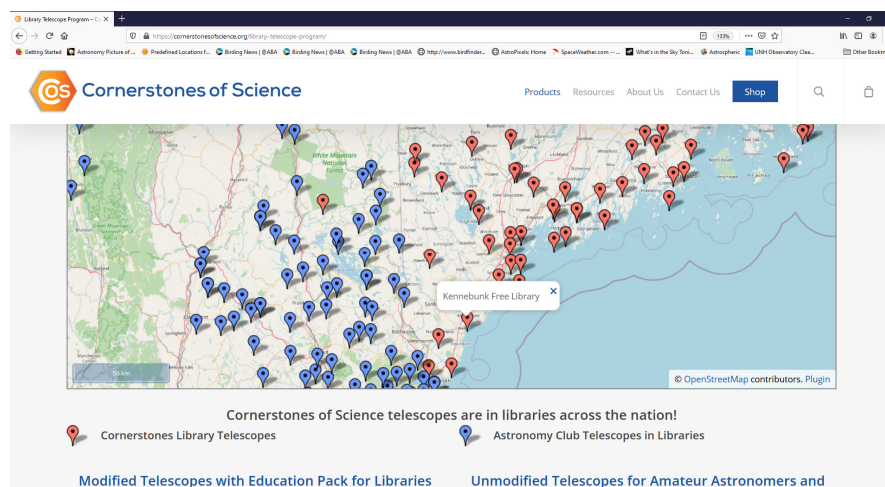
Astronomy Club & Library Resources

Our club has a library of astronomy books which are stored at The New School in Kennebunk, Maine (our monthly club meeting location). To request a book(s), contact one of the club officers. A listing of books is provided here: <https://www.librarything.com/profile/asmne> . After clicking on the link, a window will open. Click on “Your library” near the upper left corner (as shown by the arrow below). Then scroll down to the end of the page to go to the next page.



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

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



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

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



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

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 _____

