Skylights

Newsletter of the Astronomical Society of Northern New England

NOV2026

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 November

By Bernie Reim

The month of November can be bleak since most of the brilliant foliage will have faded by the end of this month as New England prepares for another winter. Due to a super El Nino, the predictions are for a warmer and wetter winter for the northeast. However, there are always still some very nice days in November to enjoy before winter sets in by the end of next month.

We also set the clocks back an hour on the first of this month as Daylight Saving Time ends. That means that the sun will suddenly set at 4:34 PM on Monday the second, the day before the big election day on November 3rd. Civil twilight will end at 5:02 pm, Nautical twilight at 5:36 pm, and it will be pitch black by 6:09 pm, which is called Astronomical twilight when the night officially begins. That is further defined as the sun reaching 18 degrees below our horizon. Each of the other twilights is defined by the sun getting another 6 degrees lower. After that the days will only keep getting shorter until winter starts on December 21. Astronomical twilight will end at 5:44 pm by the end of this month.

However bleak things may appear on Earth this month, the heavens above always hold many interesting highlights in store for us regardless of the seasons. This month that includes a close conjunction of Jupiter and Mars near Regulus in Leo on the 15th, a nice triple conjunction of the very thin crescent moon, Venus, and Spica in Virgo on the morning of the 7th, Neptune and Saturn still hanging out close together near their best in Pisces, the planet Uranus in Taurus along with the nearly full moon between Aldebaran and the Pleiades open star cluster at 9 pm on the 23rd, Mercury moving into our morning sky around the middle of this month, a thin crescent Venus reaching its greatest brilliancy for the year at minus 4.9 magnitude, the main-belt asteroid Vesta in the evening sky in Cetus the Whale, a comet traveling from Aquila the Eagle into Sagitta the Arrow, and another comet traveling through Cetus the Whale, and to top it off, a favorable Leonid Meteor Shower which peaks on the morning of the 18th in Leo the lion just above Venus in Virgo and right where Mars and Jupiter will gather.

Jupiter and Mars both continue to get a little bigger and brighter and closer and they rise a little earlier each night as the faster-moving Earth is catching up with them in our respective orbits around the sun. They are both still in prograde or direct eastward motion in Leo against the fixed background of stars. Jupiter will begin its retrograde motion on the 12th of next month and reach opposition on February 11 of next year.

Orange Mars rises first soon after midnight, followed by Jupiter half an hour later in Leo. Mars will start its own retrograde motion on January 10 of next year and reach its best at opposition on February 19 and then will return to its normal prograde motion on April 1 of next year.

Mars now shines at 0.7 magnitude, which makes it about 12 times fainter than Jupiter which is very bright at minus 2.1 magnitude and covering 37.3 arc seconds of the sky. Mars only covers 7.1 arc seconds of the sky now. Mars will double in size to nearly 14 arc seconds and get fully 6 times brighter than it is now when it hits its opposition in February of next year.

By comparison, the full moon covers half a degree of the sky which is 30 arc minutes which is also 1800 arc seconds since there are 3600 arc seconds in a full degree. There are 60 arc seconds in an arc minute.

Mars will be just 1.2 degrees north of Jupiter near Regulus in Leo on Sunday the 15th. Look for many nice transits of Jupiter's 4 large Galilean moons across its face through a telescope this month. Remember that you can see the 4 largest moons, Ganymede, Callisto, Io, and Europa, just in a good pair of binoculars, but you could not see the transits without a small telescope.

On November 4, the day after the election, Venus will be just 2 degrees south of Spica, the brightest star in Virgo at first magnitude.

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Club Contacts

Officers:

President:
David Bianchi
dadsnorlax@yahoo.com

Vice President:
Bernie Reim
bernard.reim@maine.edu

Secretary:
Sarah Myles
sarahdesignme@yahoo.com

Treasurer:
Ian Durham
idurham@anselm.edu

Board of Directors:

Gary Asperschlager
gasperschlager@gmail.com

Marty Burgess
martyfb7@gmail.com

Bernard Valliere

Star Party Co-ordinator:

Open Position

Skylights Editor:

Paul Kursewicz
pkursewicz@myfairpoint.net

Website Manager:

Open Position

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

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Venus is still near its brightest at minus 4.8 magnitude, which makes it about 250 times brighter than Spica. By the 7th of this month, the very slender waning crescent moon with earthshine will be just 2 degrees below Venus while Venus itself will be even a little closer to Spica. Try to take some pictures with your cell phones of this nice triple conjunction as it unfolds early this month in the eastern morning sky around 6 am.

Golden Saturn is still just 7 degrees below bluish Neptune in Pisces the Fish. They both rise just before sunset and become visible as soon as it gets dark enough, but you will need a good pair of binoculars or a telescope to see Neptune since it is 7 magnitudes or over 600 times fainter than 0.5 magnitude Saturn. Saturn takes nearly 30 years to orbit the sun once, so it will spend over 2 years in each zodiac constellation and Neptune takes 165 years to complete one orbit, so it will spend nearly 14 years in each zodiac constellation.

Taurus the Bull, part of the famous Winter Hexagon, now rises by 8 pm on the first of the month and even Orion the Hunter will be completely above the horizon by 10 pm. Look for the planet Uranus halfway between the orange star Aldebaran and the Pleiades open star cluster around 9 pm in the eastern sky. The full moon will join the trio on the evening of the 23rd, a few days before Thanksgiving.

Mercury will move into our morning sky by the 13th after its inferior conjunction with the sun on the 4th. Our first planet reaches greatest western elongation from the sun at 20 degrees on the 20th in the eastern morning sky. Mercury will be 62% lit by the sun that day and it will grow to 84% lit, similar to a waxing gibbous moon, by the end of the month. Venus is a large and thin crescent now that is only 13% lit by the end by the middle of this month in the morning sky.

The second biggest asteroid, Vesta, is doing a retrograde curve in Cetus the Whale this month which is near Saturn and Neptune. Vesta is 320 miles in diameter, or about the size of Arizona. Vesta will reach 6.5 magnitude, just beyond the visual limit of 6rth magnitude, so you would need a pair of binoculars to see it. Since Vesta was struck by a large object about a billion years ago when the whole solar system was still a dangerous place with a lot of major collisions, about 5% of all the meteorites now found on Earth can be directly traced back as having been part of Vesta at one time.

Comet 10P/Tempel is in Cetus the Whale now and will reach about 10th magnitude, so you would need a telescope to see it. Then Comet 161P/Hartley -IRAS is traveling northward from Aquila the Eagle into Sagitta the Arrow this month. The best time to see it is during the moon-free window this month near new moon from the 7th to the 14th and again at the end of this month. It will also reach about 10th magnitude and you should see a short, broad fan for a tail and a circular green coma that will make for some great pictures with a good telescope as it floats across the rich Milky Way region north of Altair, the brightest star in Aquila. Discovered in 1983 this comet returns every 21.5 years, but it will not be this bright again until 2069. Halley's Comet returns before that, in 2062.

The last big highlight this month is the annual Leonid Meteor shower. It lasts for most of the month, from the 6th to the 30th, but it will peak on Tuesday night the 17th into Wednesday morning the 18th. The moon will be just past first quarter, which means that it will set around midnight, which is perfect because most meteor showers get much better shortly after midnight because that is when the earth is spinning into the meteors instead of away from them similar to driving into the snow and looking out the front window of your car instead of the back window.

The radiant for this shower is in Leo the Lion, hence the name Leonids. All of the Leonids will appear to originate from that spot in the sky, but you will be able to see them anywhere in the sky, although you can trace every single one of them back to this radiant in Leo., You may see other meteors also, but if they don't originate from this spot, they are stray meteors and not Leonids. The constellation of Leo doesn't rise until about midnight anyway, so the timing is perfect. You can certainly start looking before then, but the moon will wash out most the meteors except for the brighter bolides until the moon sets around midnight.

A nice coincidence for the Leonids this year will be what else is visible in this part of the sky. Mars and Jupiter are very close together right at their radiant in Leo and Venus and Spica will be a few degrees to the lower left of this active area in the sky during this shower. So even if you don't see that many meteors, you can enjoy a dramatic and planet-filled sky that Wednesday morning the 18th around 5 am.

The peak rate this year is only predicted to be 15 meteors per hour from a dark-sky site with no trees around. Leonids are very swift, entering our atmosphere at around 40 miles per second, which is twice as fast as the earth is always orbiting around the sun. The Leonids are known to leave many glowing persistent trails, caused by slightly larger-sized pieces of its parent comet, Comet 55/P Tempel-Tuttle.

Most of the meteors you can see during any meteor shower are about the size of a grain of sand since they are just comet dust. If they are slightly larger, the size of a pebble, they would create a nice fireball and leave a trail that could last for many seconds up to a minute or so. Most meteors will only last for about a quarter of a second, so you have to be looking right at it to catch it at all.

Most of them burn up right at the edge of space about 60 miles high, also called the Karmen line. That is also about where most of the northern lights take place. That is where there are so few air molecules left in our atmosphere that the sky becomes black even in the daylight. The sky is only blue because the air molecules (mostly nitrogen and oxygen) scatter out the shorter blue wavelengths of light during the day closer to the earth's surface.

"*Continued on page 3* "

Moon Phases

Nov 1
Last Quarter

Nov 9
New

Nov 17
First Quarter

Nov 24
Full

Moon Data

Nov 2
Southeast 1hr before sunrise before sunrise a tight grouping of the Moon, Mars & Jupiter

Nov 7
45min before sunrise Moon joins Venus and are just a bit more than three Moon diameters apart

Nov 13
Moon at Apogee 252,040

Nov 25
Moon Perigee 223,288

Nov 30
1hr before sunrise Moon, Jupiter, Mars, and Regulus clump together and all can be seen together in a pair of 7x50 Binoculars

What's Up "*Continued from page 2*"

As soon as these tiny, sand grain-sized pieces of this comet encounter any resistance they will burn up. They are so bright because they generate this ionization energy because of their great speed. Comet 55P/Tempel-Tuttle was discovered in December of 1865, just after the Civil War ended in April of that year. This comet last returned in 1999, which created some great meteor showers for several years thereafter because the sun strips off more material from a comet when it is closest to the sun.

Its period is 33 years, so the next really good Leonid shower will happen in 2032. We cross right through this debris path every year at the same time, but a few years after its closest approach to the sun the rate will greatly increase because there will be so much more material in its trail. Comets are basically just dirty snowballs with a lot of ice and loose rock. The nucleus is only about 5 miles across, but its coma can be around the size of the earth and its tail can stretch 100 million miles into space at perihelion when it is closest to the sun.

The most dramatic and amazing event I ever saw in astronomy other than a total solar eclipse and powerful and colorful dancing displays of long-lasting aurora borealis was the 2001 Leonid Meteor shower. We had just built our new observatory in west Kennebunk the year before. The skies above us were strangely quiet during the night of the 17th into the 18th because this meteor shower occurred just over 2 months after 9/11/2001 and very few planes were allowed to fly until later that year.

About 30 of our club members of the Astronomical Society of Northern New England had gathered during the course of that very frigid but perfectly clear November night. We were all in for an experience of a lifetime. I had counted over 10 meteors in the less than one minute it took me to walk from our parking lot to the observatory about 30 years away. I stopped counting right after that, knowing that I could never keep up anymore at that frantic rate. I just settled in and enjoyed the show for the next 4 hours right up to twilight when the sky got too bright to see any more meteors.

We saw nearly 1000 meteors every hour for those 4 hours. That averages to one very 4 seconds. The neat thing was that there was never any lull more than 10 seconds long, which is very unusual. Even if you have 100 meteors per hour, which is an excellent rate for any shower, only attained by the Perseids every August 12 and the Geminids every December 13 under perfect conditions with no moon, you may still have lulls of many minutes with no meteors since they come in clumps.

At one time around 4:30 am I saw 7 meteors in one second attacking us from their radiant in Leo. It was literally raining meteors for that entire most memorable night. That is technically called a meteor storm and no longer just a shower.

The rate of all of these meteors was so prolific that I could actually sense the earth's motion through space for the first and only time so far. It is easy to sense our relatively slow rotation on our axis when you watch the full moon rise out of the ocean. That takes only 2 minutes in real time since the moon covers half a degree of the sky and the sky appears to rotate 15 degrees every hour based on our rotation towards the east at about the speed of sound, 750 mph.

However, the earth is always revolving around the sun at a much greater speed, 18.6 miles per SECOND, or 67,000 mph. That would bring you from NYC to LA in under 3 minutes! That speed is also exactly 10,000 times slower than the speed of light in a vacuum, which is 186,000 miles per SECOND. It was almost like a real-life version of that classic 1979 video game by Atari called ASTEROIDS. Fortunately, we did not have to shoot down any of these asteroids and there were no periodic UFOs to fire counter attacks on our spaceship Earth. It was just an absolutely awesome display of the peaceful power of nature all above us for anyone that made the effort to witness and enjoy this majestic event.

We also saw about 15 brilliant bolides or fireballs that night who's long, twisting trails lasted for over a minute even while several other shorter meteors would cut right through these dusty trails in space high above us. Some of these fireballs were so bright that they lit up the entire sky like a bolt of lightning. You could even see shadows on the ground as if a giant flashbulb went off that froze everything around us in a static and brilliant image as if everything was caught in a dream.

To top off that perfect out-of-this-world night, I even saw the zodiacal light for the first time in the southeast starting around 4:30 before dawn even started. You can look for that all this month if you have perfect conditions and no moon to shed any light since that is a very subtle and ephemeral phenomena. It is also called the false dawn. It is best seen when the angle of the ecliptic is at its steepest in relation to our horizon. That happens every September through mid-November in the morning sky and March and April about an hour after sunset in the evening sky, when it is called the false dusk. Remember that it is always there, but that is the only time you can see it in the sky.

The zodiacal light is caused by sunlight reflected off trillions of tiny dust particles trapped in the ecliptic plane of our solar system that came from comets and asteroids and also some dust from Mars as they recently discovered. It forms a haystack or pyramid of subtle light starting at the southeastern horizon that can stretch 30 degrees or more into the sky. This month it could stretch right from Venus in Virgo up to Mars and Jupiter in Leo to better define the ecliptic and add some more interest to this area of the sky.

We were not only watching about 1000 meteors per hour raining down all around us fairly close by, but we were at the same time witnessing the combined effect of countless trillions of dust particles from all the comets from eons past.

"Continued on page 4"

Nov.1. Last quarter moon is at 3:28 p.m. EST. Change the clocks back one hour this morning at 2am.

Nov.2. The moon passes 1.1 degrees south of Mars this morning and 0.5 degrees south of Jupiter. Harlow Shapley was born on this day in 1885. He was an American astronomer that helped discover the structure of the Milky Way galaxy and he worked with Edwin Hubble.

Nov.3. The moon passes 0.8 degrees south of Regulas and Venus passes 2 degrees south of Spica this morning.

Nov.3. Sputnik 2 was launched on this day in 1957, carrying the first living creature to orbit the earth, a dog named Laika.

Nov. 4. The northern Taurid meteor shower peaks this morning. Caused by Comet Encke, these are also called the Halloween Fireballs.

Nov. 7. The moon passes 1.1 degrees south of Venus this morning.

Nov.8. Edmund Halley was born on this day in 1656.

Nov.9. Carl Sagan was born on this day in 1934. New moon is at 2:02 am EST.

Nov. 11. Vesto Slipher was born on this day in 1875. He was an American astronomer who worked on stellar spectra and discovered galactic rotation.

Nov.14. Mars passes 1.2 degrees north of Jupiter this morning.

Nov.15. William Herschel was born on this day in 1738. He discovered the planet Uranus on March 13 of 1781.

Nov.17. First quarter moon is at 6:48 a.m. The Leonid meteor shower peaks tonight into the next morning.

Nov. 19. Venus passes 1.8 degrees north of Spica this morning.

Nov. 20. Edwin Hubble was born on this day in 1889. He first discovered that the entire universe was expanding in 1929 based on red-shift measurements of other galaxies. The moon passes 5 degrees north of Neptune this evening. Mercury is at greatest western elongation from the sun.

Nov. 22. Allen Stern was born on this day in 1957. He is the lead scientist on the New Horizons mission to Pluto and beyond. It discovered many amazing new things about Pluto when it got within just 7800 miles (less than the diameter of the earth, which is 8000 miles) of its surface on July 14 of 2015. Pluto has a bit of an atmosphere and cryovolcanoes and colorful nitrogen ice fields and countless other amazing and unexpected features and active processes. New Horizons then also made a close encounter with Arrokoth, another Kuiper belt object, on January 1 of 2019. It is now 6 billion miles away, about 2 billion miles beyond Pluto and still healthy and functioning well bringing us continual data from this area of our solar system.

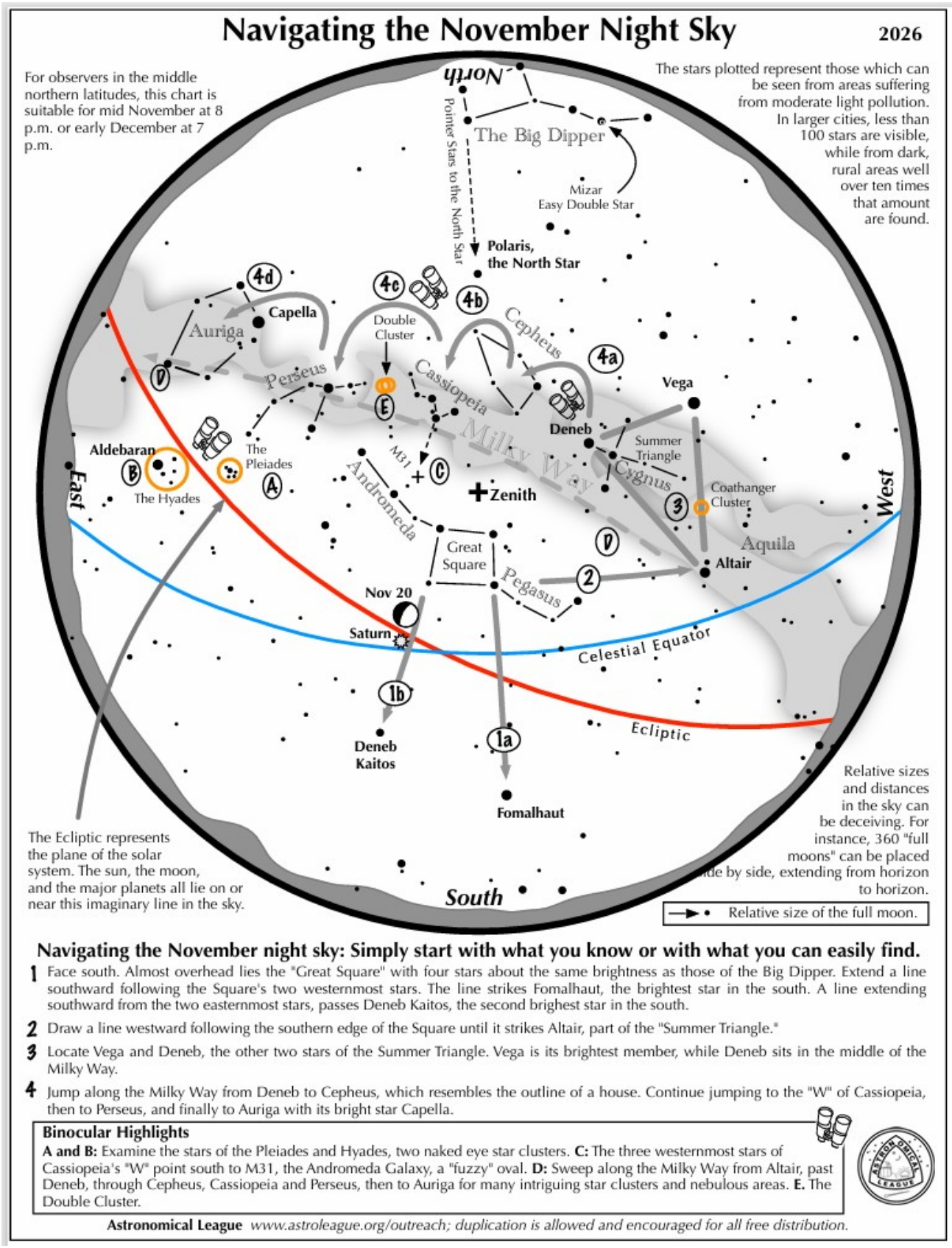
Nov. 24. John Brashear was born on this day in 1840. He was an American optician who built a beautiful 30 foot-tall 18-inch refracting telescope in 1894 that was used to make many discoveries on Mars and Saturn and other objects. Full moon is at 9:54 am. This is also called the Frosty or Beaver Moon. Mars passes 1.8 north of Regulus in Leo this morning.

Nov. 26. Chris Lintott, a British astronomer was born on this day in 1980. He is a professor at Oxford and he started the citizen science platforms named GALAXY ZOO and ZOONIVERSE that anyone can join to contribute useful and interesting citizen science data on a huge range of topics.

Nov. 27. Anders Celsius was born on this day in 1701. He was a Swedish astronomer, physicist, and naturalist that also developed the Celsius temperature scale.

Nov. 29. Christian Doppler was born on this day in 1803. He was the Austrian physicist who discovered the Doppler Effect in 1842. It is the change in frequency or wavelength of a wave relative to the observer as the wave source is moving towards or away from the observer. This works for sound as well as light (light is blue-shifted as it approaches and red-shifted as it recedes) and is the primary method to determine the speed and rotation of objects in space or even how fast you are driving or how fast you can hit or throw a ball or anything else. There is also Doppler radar now which greatly helps us in determining much more detail in weather phenomena including dangerous storms and hurricanes and tornadoes. Venus reaches its greatest brilliancy for the year at minus 4.9 magnitude even though it is only 25% illuminated by the sun similar to a waxing crescent moon. It is so brilliant now because it is so large and close to Earth. When it is fully illuminated at superior conjunction with the sun it is at its smallest and farthest away.

Nov.30. The moon passes 1.2 degrees south of Jupiter and 3 degrees south of Mars this morning.



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

1. Face south. Almost overhead lies the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend a line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the south. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second brighest star in the south.
2. Draw a line westward following the southern edge of the Square until it strikes Altair, part of the "Summer Triangle."
3. Locate Vega and Deneb, the other two stars of the Summer Triangle. Vega is its brightest member, while Deneb sits in the middle of the Milky Way.
4. Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, then to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas. **E.** The Double Cluster.

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Stars Above Katahdin October 3, 2026

Stacyville Maine

Submitted by Marty Burgess

An evening of optical delights

Friends of Katahdin Waters and Waters and the National Park Foundation with support from many sponsors, hosts an annual star party known as Stars Over Katahdin. Taylor's Katahdin View Camp on the edge of Katahdin Woods and Waters national Monument is the host site. Upon arrival you are greeted at the registration tent with a grand view of the eastern slopes of Mt. Katahdin and surrounding mountains and woodlands.

Fields, surrounded by apple trees and forests full of fall colors, are the gathering spaces for astronomers, volunteers and interested attendees. The deciduous forest glowed with red, yellow, green, and rust colors mixed amongst the green conifers on the wide slopes of the Longfellow Range of the Appalachians Mountains. The sky was decorated with contrails and cumulus clouds moving off to the south.

Campers and their tents were arranged along the southern edge of one field. This was connected by a short path through some trees to a larger field with 15 or more astronomers and their telescopes and imaging equipment stationed along its southern edge. A fire ring was located on the east side of the main field, while food trucks were by the parking area to the northeast. Trailer campers were off in a small clearing in the woods off to the east. Outbuildings, farm equipment, and the history of the site were spread around the camp. In the center of the main field, a local High School rocket club had three launch pads and rockets set to launch. Which was successful, announcing the beginning of the Star Party.

The first star viewed was our own sun. Several dedicated solar telescopes, and telescopes with solar filters provided views of prominences, filaments, and sunspots. As the sun set over the mountain range, it was viewed with a Dwarf Mini.

Venus was another daytime optical delight. Viewed through a10' dobsonian telescope, its bright crescent shape was easily seen at 4PM.

A fireside chat with dark sky discussions, bird migrations, and history of the area followed by the Burnurwurbskek Singers providing ancient songs as day transformed into night.

A front moved through, right on time, clearing all clouds from the dome of sky. Red lights came on and several hundred participants arrived to enjoy the delights of the sky.

There was a wide variety of optical delivery devices on site! A variety of refractors, reflectors, binoculars, and electronic devices provided extraordinary views of our sky. Each viewing optic had a different 'feel'. This variety delighted many participants. With apertures that ranged from 30mm to 14in with differing magnifications, provided wonderful variations of beauty.

Horizon to horizon was filled with bright stars. The milky way and constellations were easily viewed.

Saturn arose from behind the trees, brightly reflecting the sun as it passed behind branches and into clear skies. Its rings and some moons were visible with many of the telescopes. A real crowd pleaser!

The Western Veil NGC 6960, Pickering's Triangle NGC 6979, Eastern Veil NGC 6992, Eagle Nebula M16, globular and open clusters, Andromeda galaxy, the milky way, constellations, asterisms, meteors, double stars and more were sampled. It was a lovely buffet line of visual delights.

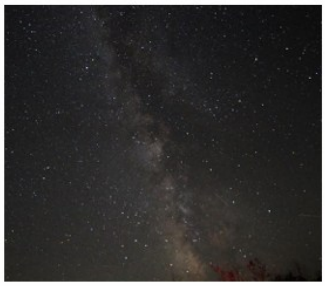
The crowd thinned by 10pm leaving a few imagers lingering in the darkened field. A faint aroura developed to top off the evening, providing a delightful ending to a beautiful evening.

The moon remained shy and hidden till late in the night. Not rising till 11:27pm and hiding behind by trees till after midnight, made for an evening of spectacular dark sky observing. With the milky way drifting above the Longfellow Range, stars shining brightly and the fire dying down, the few remaining folks wondered off to their sleeping stations.

The morning brought clear skies and stunning views of the eastern face of Mt. Katahdin. The palette of fall color on the Longfellow Range glowed in the morning sun providing a delightful backdrop for our departure.

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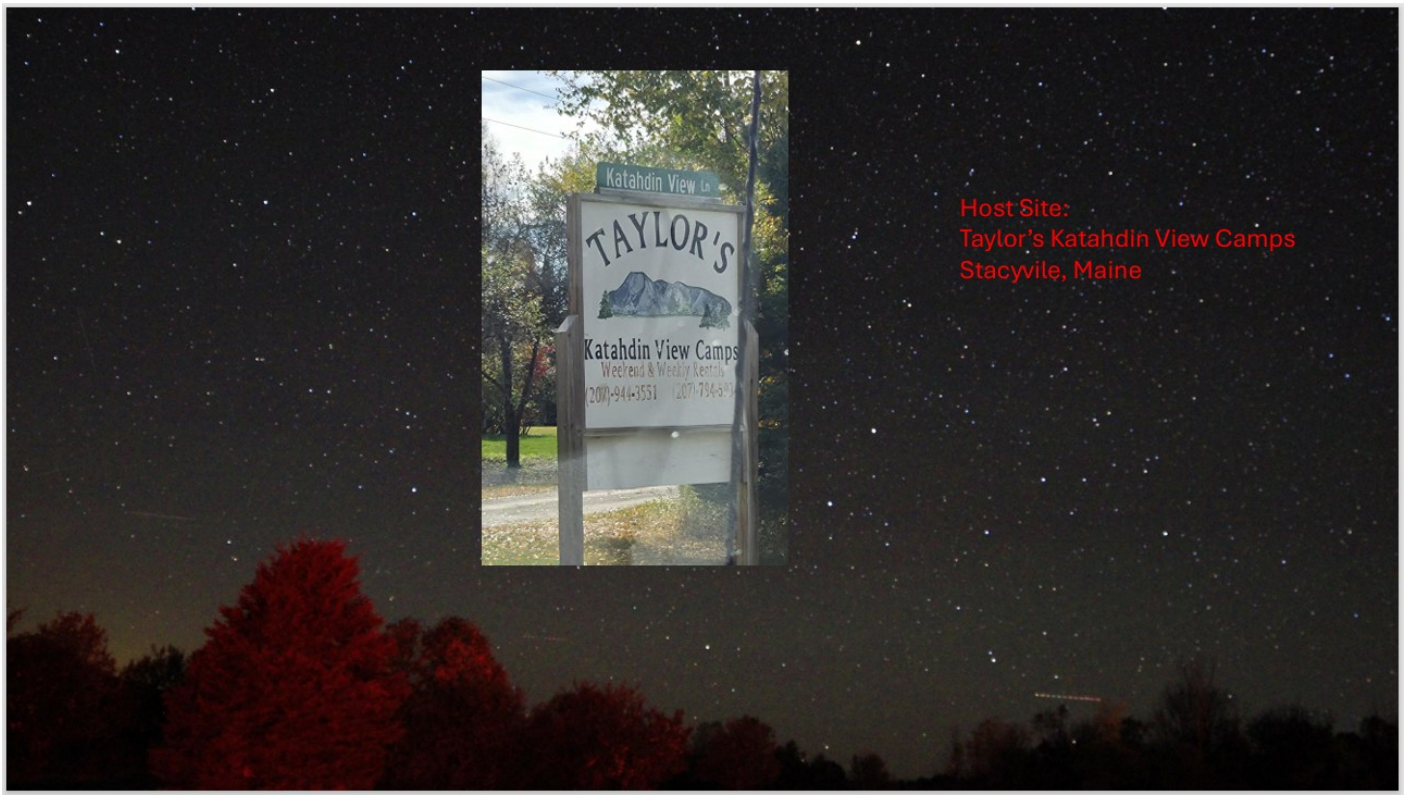


Photographs by
Marty Burgess
Samsung phone
Cannon EOS Rebel T7
Dwarf 3
Dwarf mini





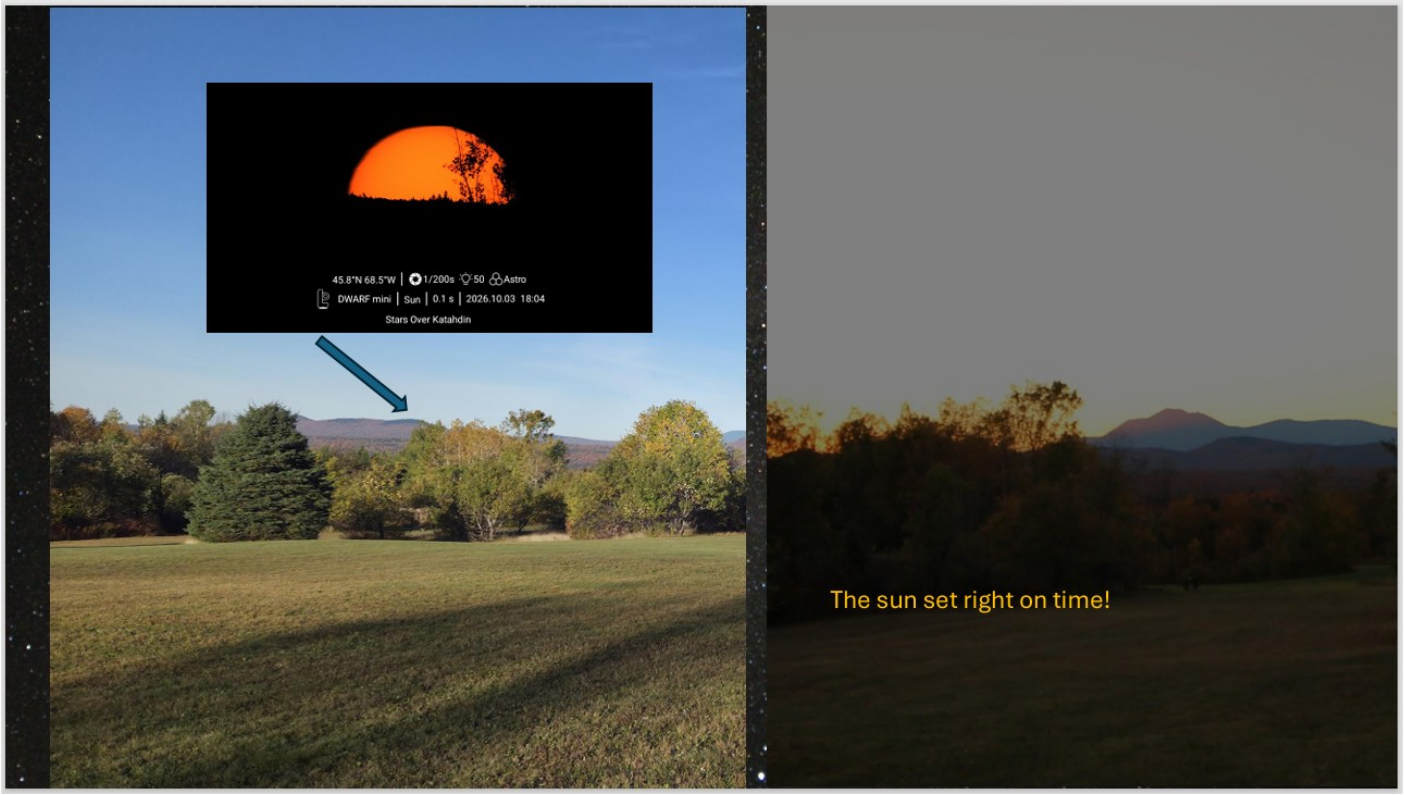
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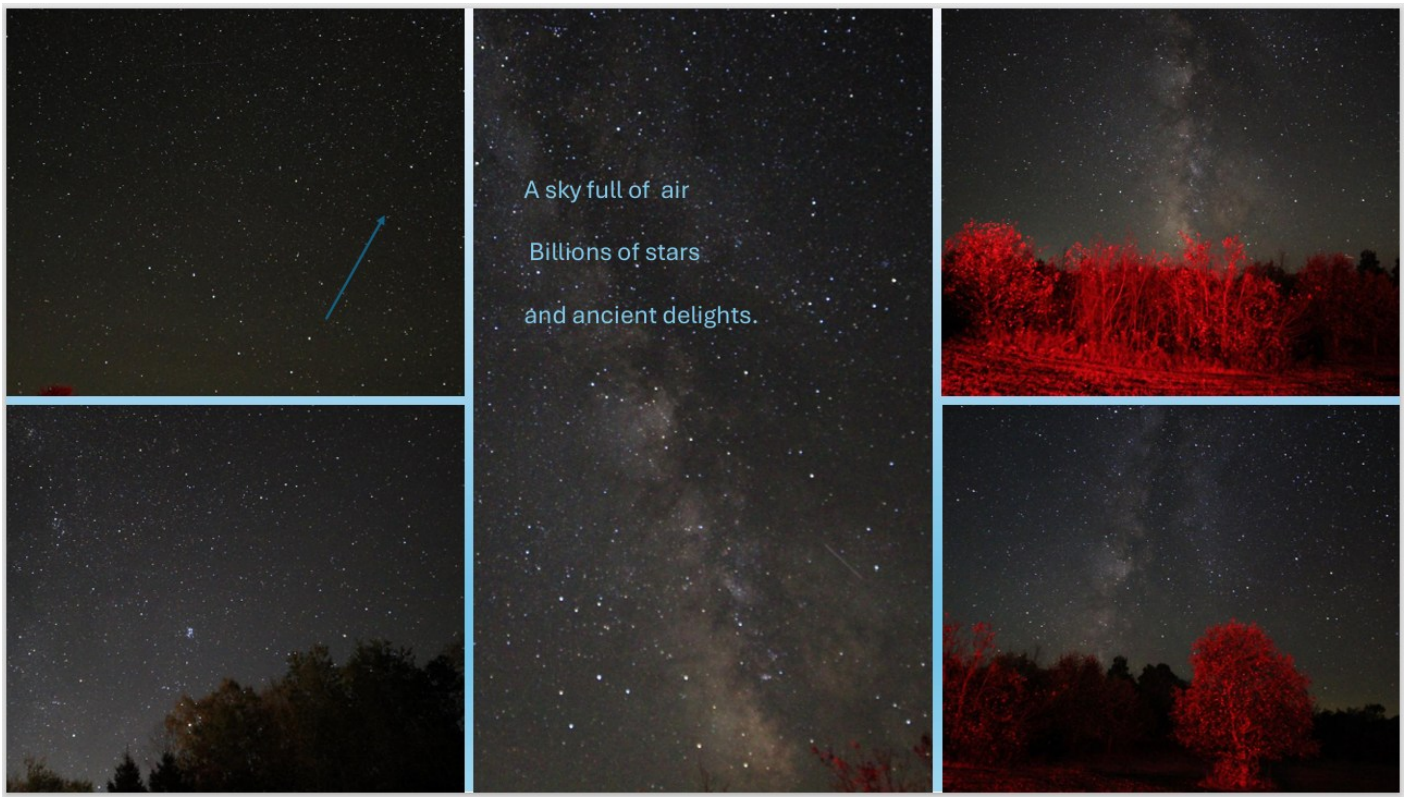


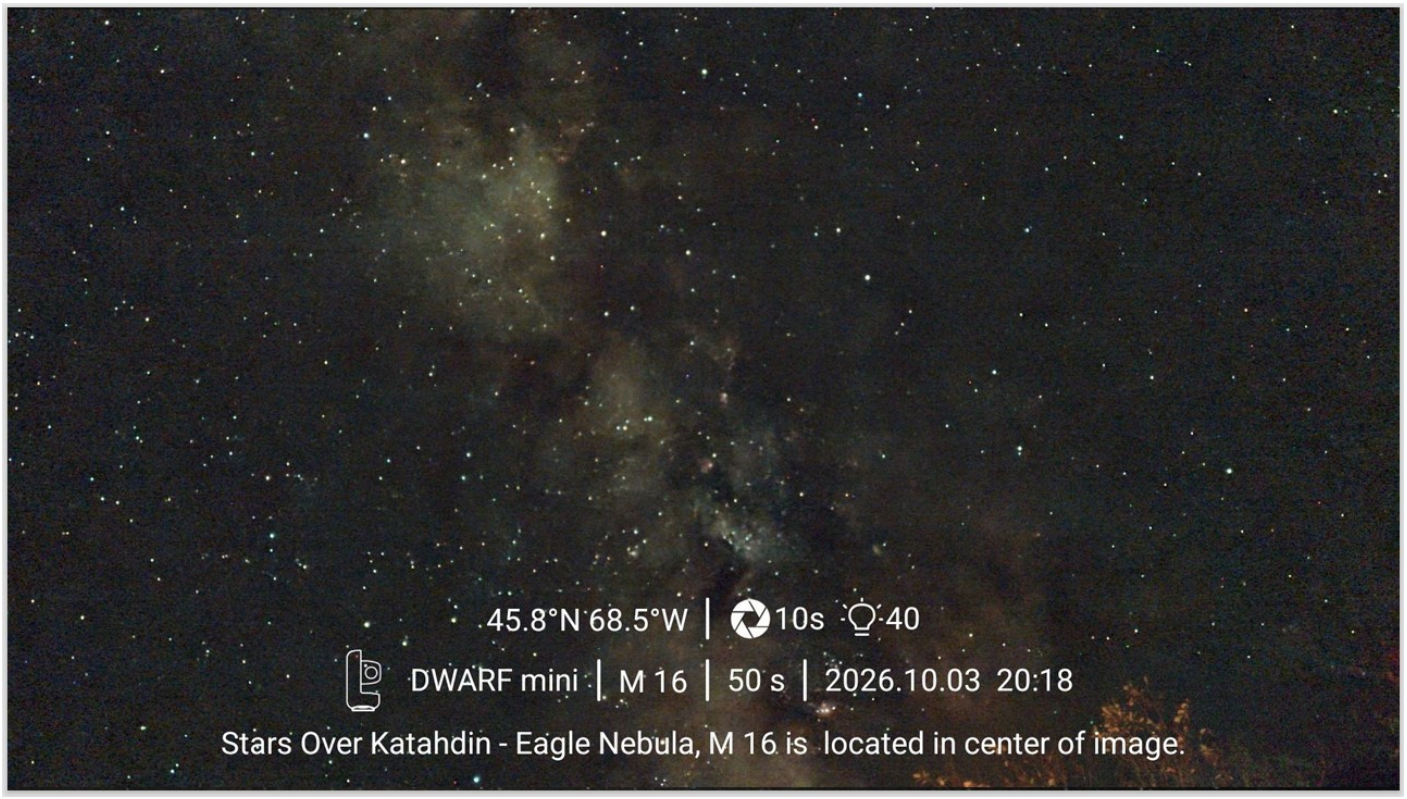
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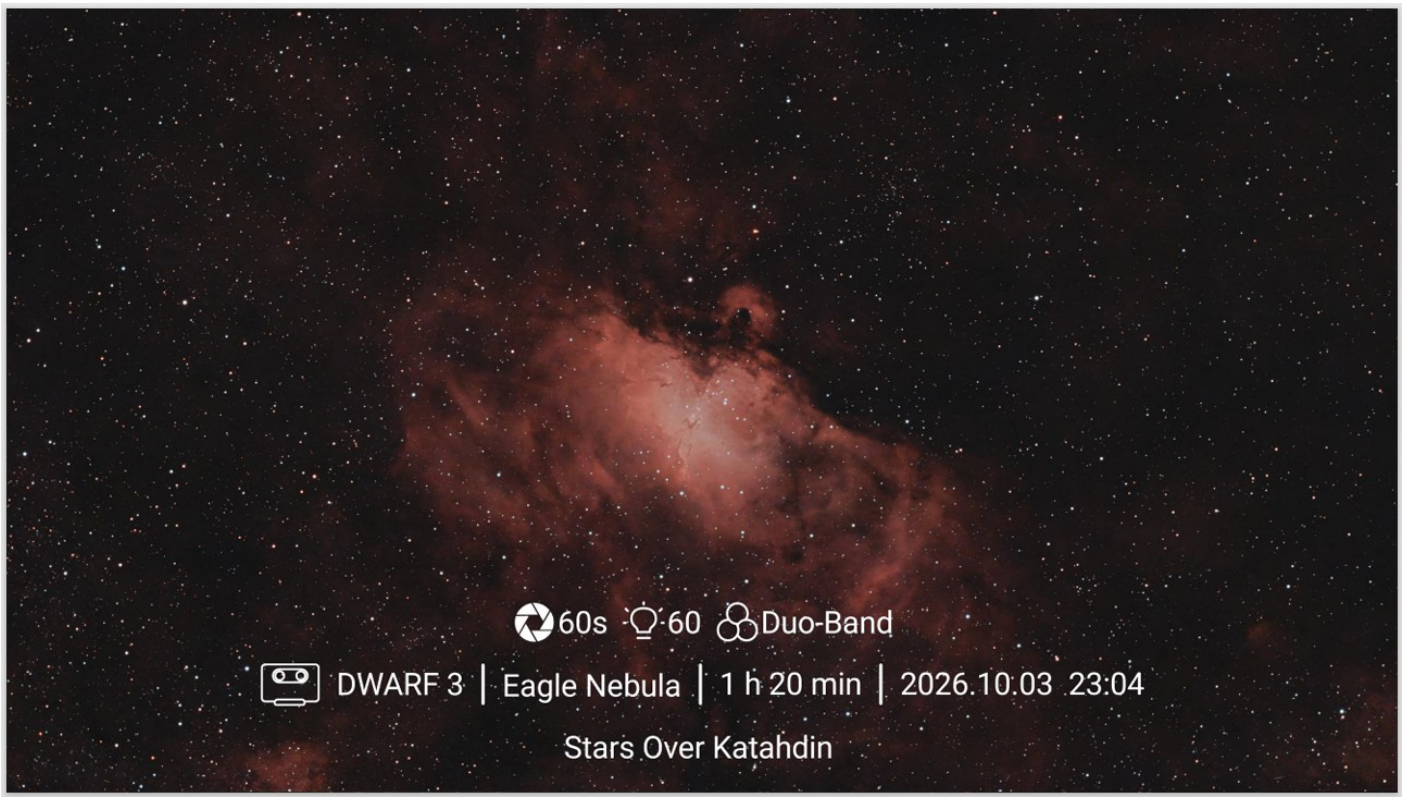


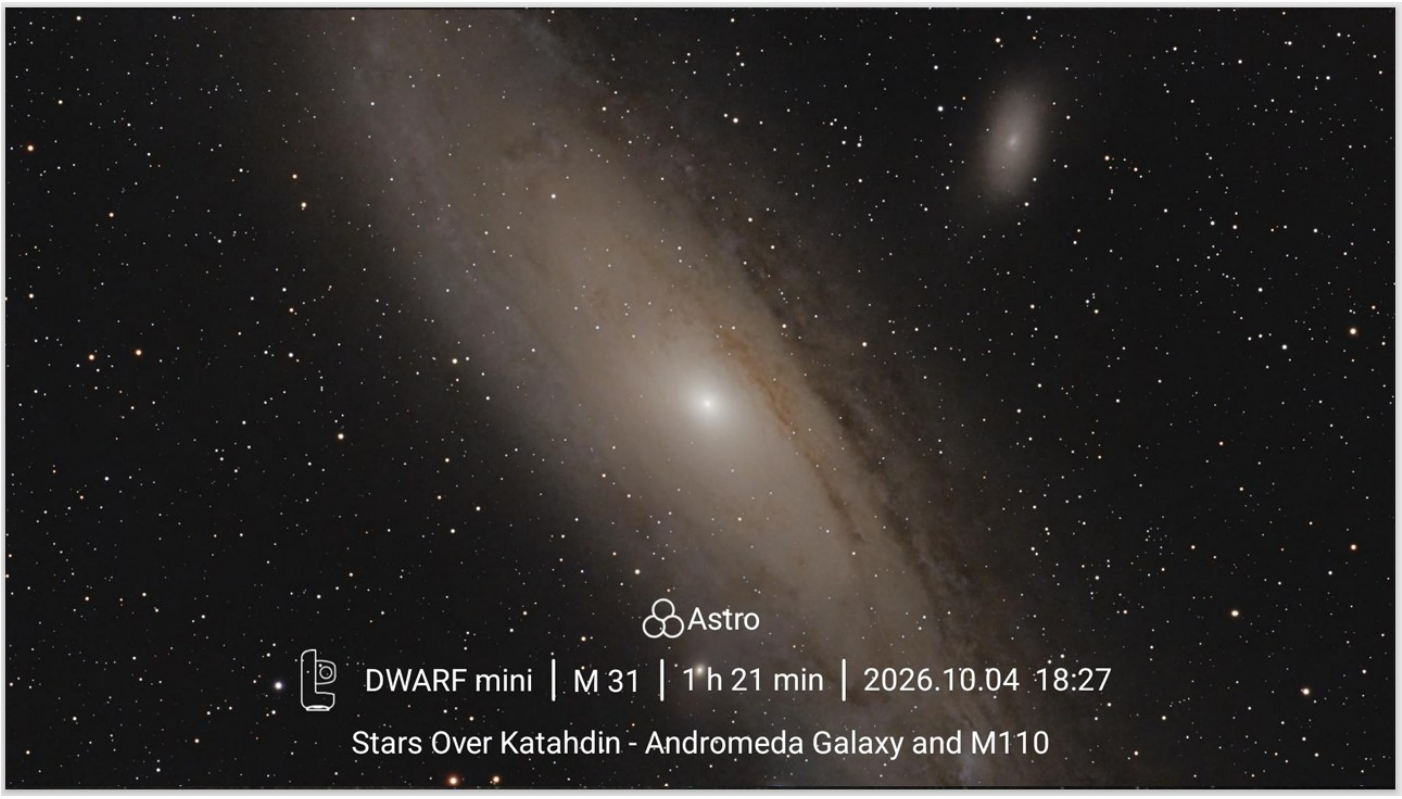
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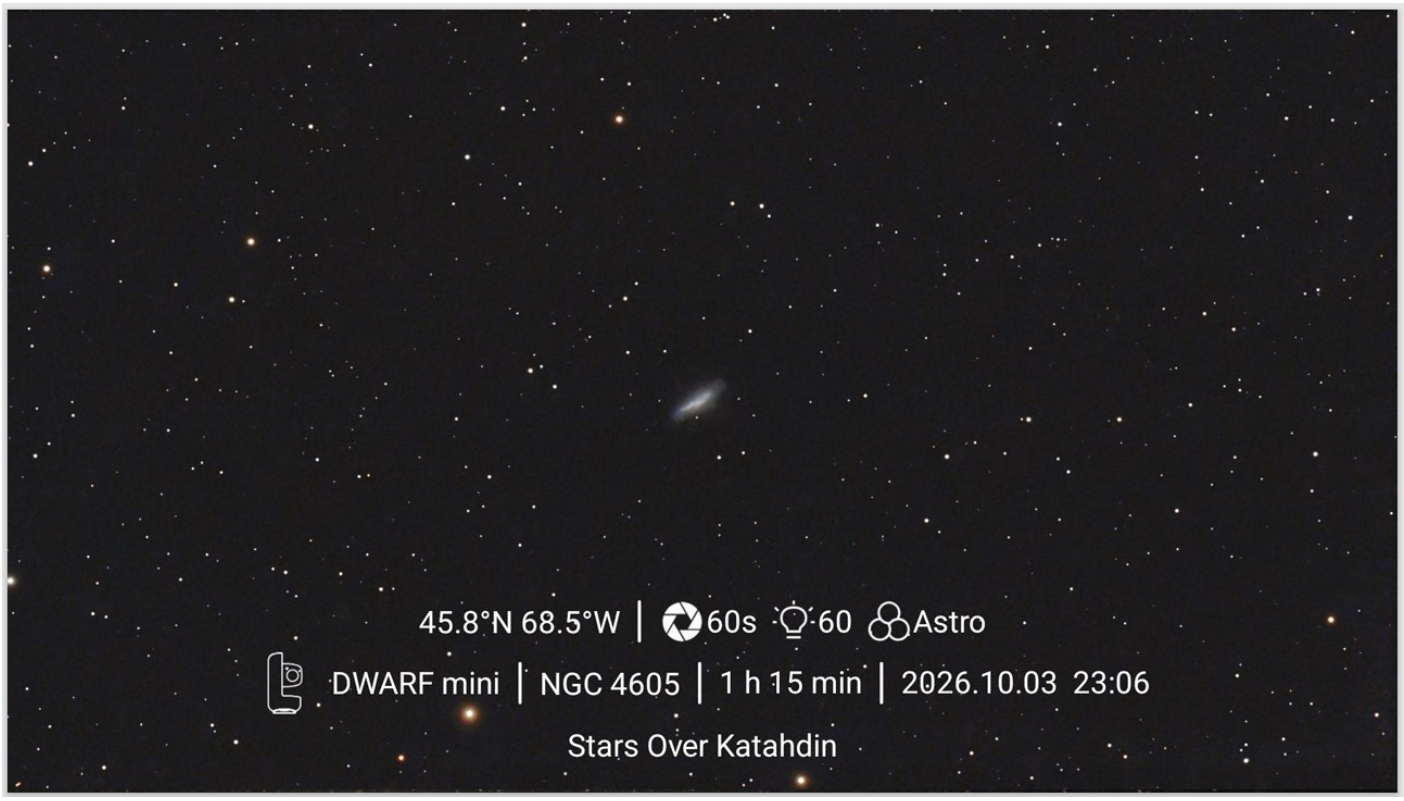


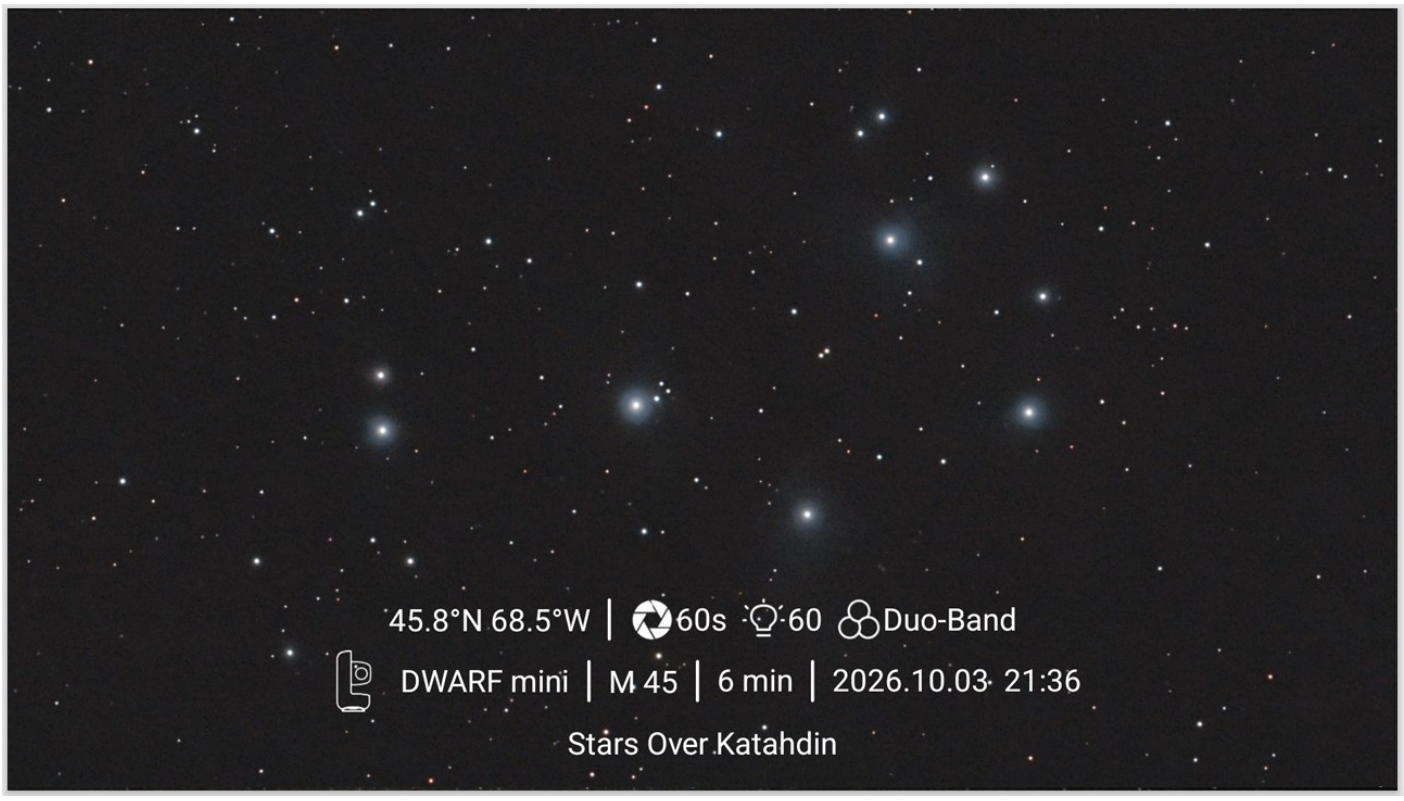
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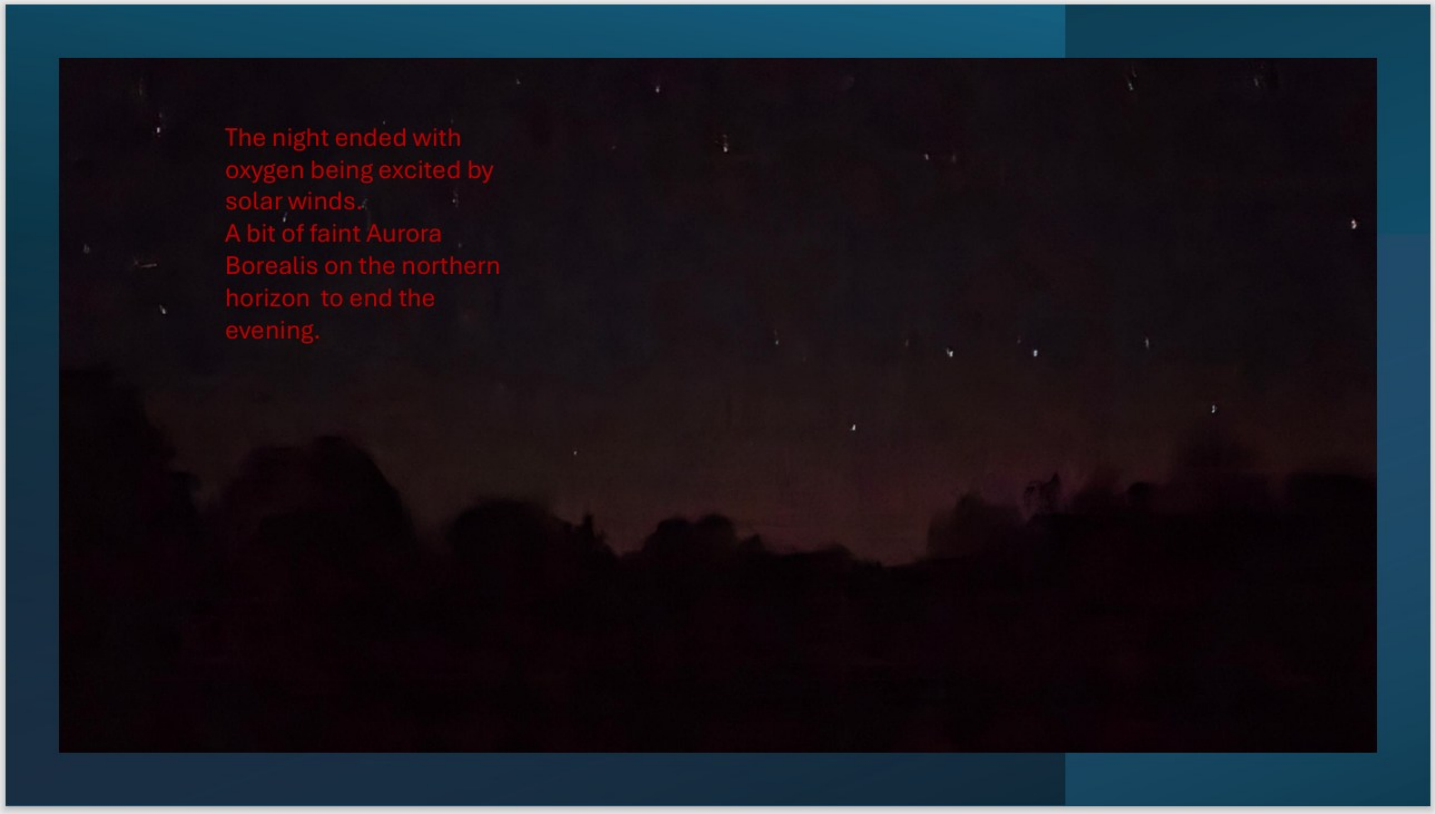


"Continued on page 12"





"Continued on page 13"


The night ended with
oxygen being excited by
solar winds.
A bit of faint Aurora
Borealis on the northern
horizon to end the
evening.

Point and Shoot Camera Astro-Imaging (no telescope)

Canon PowerShot SX50 HS

Submitted By Paul Kursewicz

Moon & Jupiter Occultation — Pre Eclipse

Fixed Tripod, JPEG mode, f/6.5, 1/4sec, FL 1200mm, ISO 400, 10-6-26

3:49:57 AM



Earth's moon moved directly in front of Jupiter in the early morning hours on October 6th. A sequence of pictures follows this one. I took all of my images by mounting my camera on a fixed Alt-Az tripod, then manually used the slow-motion controls to keep the Moon in the field of view.

"Continued on page 15"

Moon & Jupiter Occultation — Pre Eclipse

JPEG mode, f/6.5, 1/50sec, FL 4800mm, ISO 400, 10-6-26

4:14:19 AM



I zoomed in closer to take this image. How many moons can you see? The best answer is five: four orbiting Jupiter and Luna orbiting Earth. Lined up nearly vertically below our Moon, listed from bottom to top, are Jupiter's bright Galilean satellites: Ganymede, Io, Callisto, and Europa. Callisto, Ganymede, and Io are larger than Earth's Moon, while Europa is only slightly smaller.

"Continued on page 16"

Moon & Jupiter Occultation — Ingress

JPEG mode, f/6.5, 1/160sec, FL 4800mm, ISO 400, 10-6-26

4:21:05 AM



Ingress of Jupiter has begun. Io, Callisto, and Europa are now behind the 20% illuminated Moon.

"Continued on page 17"

Moon & Jupiter Occultation — Ingress

JPEG mode, f/6.5, 1/125sec, FL 4800mm, ISO 400, 10-6-26

4:21:32 AM



Jupiter is now half covered by the thin wanning crescent Moon.

"Continued on page 18"

Moon & Jupiter Occultation — Ingress

JPEG mode, f/6.5, 1/200sec, FL 4800mm, ISO 400, 10-6-26

4:21:54 AM



Jupiter (as well as Ganymede) can still be seen in this image, but just barely.

"Continued on page 19"

Moon & Jupiter Occultation — Ingress

JPEG mode, f/6.5, 1/10sec, FL 4800mm, ISO 400, 10-6-26

4:22:02 AM



Jupiter is now behind the bright limb of the Moon leaving only Ganymede in the sunlight. And in about an hour's time Jupiter and its moons will re-appear again from the dark limb of the Moon.

"Continued on page 20"

Moon & Jupiter Occultation — Egress

JPEG mode, f/6.5, 1/50sec, FL 1800mm, ISO 400, 10-6-26

5:23:07 AM



Egress has begun with Jupiter's re-appearance from the unlit side of the Moon (appearing almost out of empty space).

"Continued on page 21"

Moon & Jupiter Occultation — Egress

JPEG mode, f/6.5, 1/50sec, FL 1800mm, ISO 400, 10-6-26

5:23:32 AM



Jupiter is now about 3/4's visible.

"Continued on page 22"

Moon & Jupiter Occultation — Egress

JPEG mode, f/6.5, 1/100sec, FL 1800mm, ISO 400, 10-6-26

5:24:04 AM



The lunar limb took roughly **55 seconds** to uncover Jupiter completely.

"Continued on page 23"

Moon & Jupiter Occultation — Post Eclipse

JPEG mode, f/6.5, 0.3sec, FL 2400mm, ISO 400, 10-6-26

5:30:40 AM



It was extremely difficult to capture the moons of Jupiter on the unlit side of the Moon's limb. I had to position the camera in a verity of different positions until I found one that revealed the moons, the bright limb, and the Moon's earthshine.

"Continued on page 24"

Moon & Jupiter Occultation — Post Eclipse

JPEG mode, f/5, 1sec, FL 150mm, ISO 400, 10-6-26

5:36:14 AM



The occultation began at the Moon's bright sunlit edge but ended at the dark limb. Here is a parting shot to end the session. It was widely described as the best Jupiter occultation visible from North America since 2004.

Astro-Imaging with a SmartEye



Submitted by Paul Kursewicz

Supernova SN2026aaiv &
Deer Lick Group & Stephen's Quintet

SmartEye eye-piece, IR-cut Filter, 10-3-26
2.8-inch Evostar 72ED, Apo Refractor, f/5.8, FL 420mm
PNG File, Editing software: Photoshop, Photos, & PixInsight

Three for the price of one. First up, Supernova 2026aaiv located in the core of galaxy NGC 7331. The red indicator lines point to it. It was at magnitude 13 when I took the picture. Last year a different supernova appeared in the core, very unusual. Second up, are the fainter galaxies just below NGC 7331. Collectively they make up the Deer Lick Group. Third up, is Stephan's Quintet located near the top left corner in my image. Five galaxies are crammed in a tight 20 arc minute area of which four form the first compact galaxy group ever discovered.

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!

November's Night Sky Notes: Light-Day Away

By Kat Troche

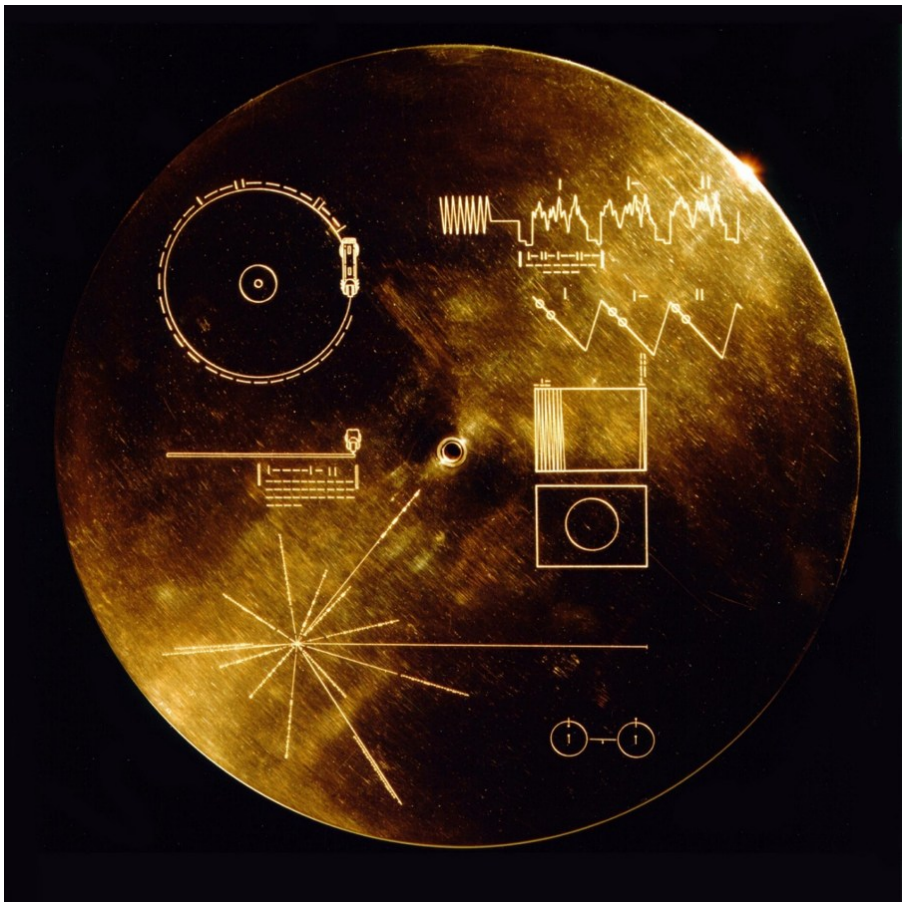


A travel poster of The Grand Tour. Credit: NASA/JPL

Twin Travelers

In 1977, NASA launched twin spacecraft Voyager 1 and 2, taking advantage of a once-every-175-year planetary alignment of the four largest planets in our solar system: Jupiter, Saturn, Uranus, and Neptune. Using six gravity assists between them, this Grand Tour gave us up-close views of the gas and ice giants, including several moons. By the 1980s, the two probes went their separate ways at Saturn. As Voyager 2 continued toward Uranus and Neptune, Voyager 1 grabbed one more portrait of the solar system (excluding Mercury and Mars), including a final image of the pale blue dot we call home.

"Continued on page 27"



The Golden Record cover shown with its extraterrestrial instructions. Credit: NASA/JPL-Caltech

Playlist

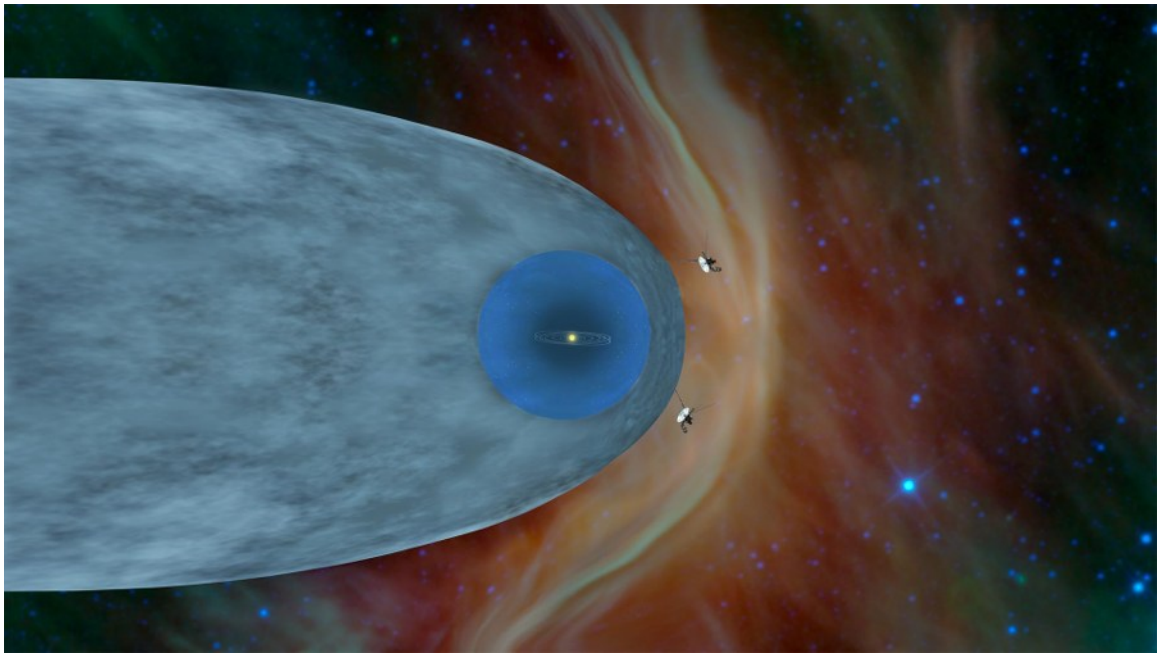
“Hello from the children of planet Earth.”

Every good road trip needs some music to match. In this case, each craft carries the Golden Record, a 12-inch phonograph record with spoken greetings in 55 languages, 27 musical tracks, 116 images, and other sounds from Earth. Each record is protected by an outer cover featuring etchings showing our Sun's location relative to 14 pulsars, along with instructions on how to play it. The design used various metals to protect the information encoded from space radiation: the record used copper and gold plating, and the cover used aluminum. The cover was electroplated with an ultra-pure sample of the isotope uranium-238. Uranium-238 has a half-life of 4.468 billion years.

“Continued on page 28”

Are We There Yet?

Did you know that a light-minute is a measure of distance, not time? In August 2012 and November 2018, Voyager 1 and 2 crossed the heliopause, the boundary where the Sun's solar wind meets the interstellar medium. Using NASA's Deep Space Network, Earth communicates with both spacecraft and tracks each on its journey. At the time of this article, the Canberra antenna tracked Voyager 1 at 25.80 billion km, or just over 16 billion miles.



This illustration shows the positions of NASA's Voyager 1 and Voyager 2 probes outside the heliosphere, a protective bubble created by the Sun that extends well past Pluto's orbit. The red wave in front of the light blue heliopause is the bow shock. Credit: NASA/JPL-Caltech.

On November 18, 2026, 49 years after its launch, Voyager 1 will cross the one-light-day mark, 16.1 billion miles from the Sun. You may have heard the term *light-year* in your favorite sci-fi movie or show, or when stargazing and referring to an object outside of our solar system. This video best demonstrates the different distances between the inner solar system, outer solar system, and beyond, using light measurements. Additionally, track each Voyager spacecraft here.

Club Meeting & Star Party Dates

Date	Subject	Location
Nov 6	**ASNNE Club Meeting:** **Club Meeting (in house & on Zoom): 7:30-9:30PM** **Zoom Link (if available):** **https://us06web.zoom.us/j/5631683325** **Guest Speaker:** No guest speaker this month. **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 meeting at The New School. Zoom was not made available. The two members (David & Ian) who know how to connect and use ZOOM at The New School were not present. Bernie led the meeting. He presented and challenged us with some astronomical related questions that he gave to his class.**	
TBD	**Club/Public Star Party: Weather permitting.**	**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.

Principal Meteor Showers in 2026

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

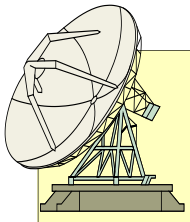
December 22
Ursids

Note: Dates are for maximum

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 32 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 32. 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.



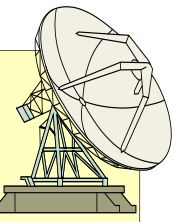
Got any News?

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





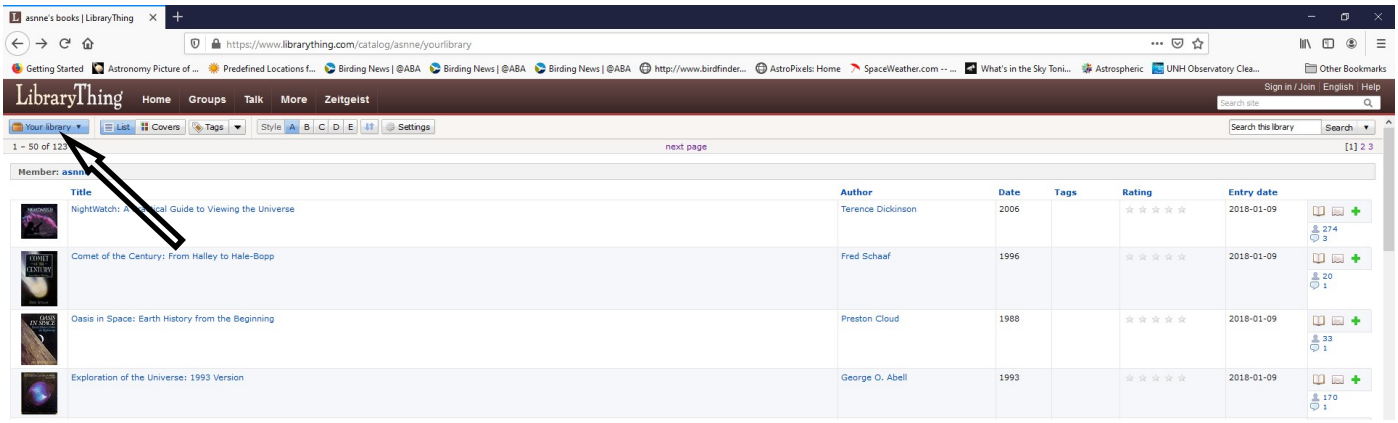


All money raised goes to our operating fund.
Any design can be put on any item.

Contact David Bianchi dadsnorlax@yahoo.com for further details.

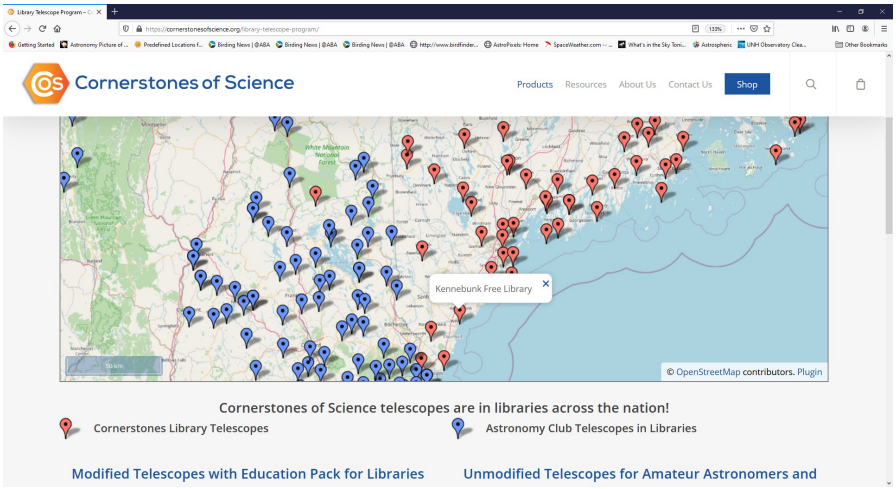
Astronomy Club & Library Resources

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 201
Kennebunk, ME 04043-1338

2027 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_____