



# the Skyscraper

vol. 51 no. 11  
November 2024

AMATEUR ASTRONOMICAL SOCIETY OF RHODE ISLAND \* 47 PEEPTOAD ROAD \* NORTH SCITUATE, RHODE ISLAND 02857 \* WWW.THESKYSCRAPERS.ORG

## In This Issue:

- 2 President's Message
- 3 Skylights: November 2024
- 5 Star Party Reports
- 8 Messier 2:  
Globular Cluster in Aquarius
- 9 Snowballs from Space
- 10 From the Annals of  
Popular Astronomy
- 12 AstroAssembly 2024  
Astro Imaging Winners
- 14 October 10, 2024  
Northern Lights
- 16 October 2024  
Comet C/2023 A3  
Tsuchinshan-ATLAS
- 21 The Sun, Moon &  
Planets in November

## Adventures with Space Junk by Stephen LaFlamme

**Saturday, November 2 @ 7:00pm EDT at Seagrave Memorial Observatory**  
In-person and on Zoom (Contact Linda Bergemann ([lbergemann@aol.com](mailto:lbergemann@aol.com)) for the Zoom link.

As we move forward into the 21st century, it has become a fact of life that technology is everywhere. This is very evident as we can testify to the influx of satellites and other space junk traversing our nighttime sky. This project started out as a gimmicky attempt to image the floating toolbag that was inadvertently released by a NASA astronaut. But it led to some eye-opening photos that offer us a glimpse of some of the silver birds that orbit the earth. Many surprises were uncovered as this dive into tracking satellites took some unexpected twists and turns, literally!! This presentation will enlighten you about some of the man-made objects lurking in the darkness of space. And this field will only grow larger in the future.

Stephen LaFlamme has been a die-hard amateur astronomer since his "discovery" of Venus during the summer of '78. After years of visual observing and note-taking, Stephen converted over to the electronic eye of CCD astronomy about twenty years ago. Astrophotography is a very frustrating and challenging endeavor, but the rewards eventually outweigh the hair loss. Some hobby highlights include a backyard observatory, two total solar eclipse ventures, study of Halley's Comet, locating a previously undocumented 'moving star', viewing of comet impacts on Jupiter, Astronomer of the Year for 2022, and a mountain of astro-photographs.



**Seagrave Memorial  
Observatory  
Open Nights**  
November 9, 16, 23, 30  
@ 7pm



See photos from October's spectacular aurora  
and comet displays on page 14.

# President's Message

by Linda Bergemann

During the month of October there was a flurry of astronomical activity. Many questions and lots of excitement about aurora and comets. I hope that you were able to get at least a glimpse of both.

In the midst of this activity, some of our members promoted gathering to observe the events at various locations around the state. And, gather they did. I saw pictures of the comet take from Fort Getty in Jamestown; Beavertail, also in Jamestown; and from the roof of Brown University's physics building. I shared many of the photos on our Facebook page. Let's keep this going.

Last year, I created a Message Group for Skyscrapers on the Night Sky Network named "Star Parties." Members of that group can email the other members of that group. Membership in that group is open to all members of Skyscrapers; you can add or remove yourself at any time. There are currently 22 members. So, if you are motivated to observe some night, and would like company, just blast out an email to invite other

like-minded members to join you. And, have a great night!

If you need assistance accessing the Night Sky Network or joining the message group - give me a call.

Warm wishes and clear skies,  
Linda

## New Members Welcome to Skyscrapers

Lawrence Ciummo  
of Bolton, MA

Robin Dawkins  
of Providence

Jamie Fenimore  
of North Kingstown

## Observing Events

### Open Nights at Seagrave\*

Nov. 9, 7-9 PM

Nov. 16, 7-9 PM

Nov. 23, 7-9 PM

Nov. 30, 7-9 PM

\* Members are encouraged to attend

### Off-site Public Observing

Callahan Elementary School,  
Harrisville, RI

Thursday, November 7, 7-8 PM

River Bend Farm, Uxbridge, MA  
Friday, November 8, 5:30-7:30 PM

Winman Middle School, Warwick, RI  
Friday, November 15, 6-8 PM

North Scituate Library, North  
Scituate, RI

Friday, November 15, 6-8 PM

"Moonrise on the Seekonk",  
Providence, RI

Saturday, November 16, 4:30 PM



## Skyscrapers Presentations on YouTube

Many of our recent monthly presentations on Zoom have been recorded and published, with permission, on the Skyscrapers YouTube channel. Go to the URL below to view recent presentations.

<https://www.youtube.com/c/SeagraveObservatorySkyscrapersInc>



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are held monthly, usually on the first or second Friday or Saturday of the month. Seagrave Memorial Observatory is open every Saturday night, weather permitting.

### Directions

Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

### Submissions

Submissions to The Skyscraper are always welcome. Please submit items for the newsletter no later than **November 15** to Jim Hendrickson at hendrickson.jim@gmail.com.

### E-mail subscriptions

To receive The Skyscraper by e-mail, send e-mail with your name and address to hendrickson.jim@gmail.com. Note that you will no longer receive the newsletter by postal mail.

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# Skylights: November 2024

by Jim Hendrickson

On the 23rd, the **Sun** enters Scorpius, where it will have its briefest traverse of any constellation, at just 6.5 days, before entering Ophiuchus, the only non-zodiacal constellation on the ecliptic, on the 29th.

The **Moon** is new on the 1st, beginning Lunation 1260.

Use the 2.3-day, 5.6% illuminated crescent Moon to find Mercury on the 3rd. Start looking about 30 minutes after sunset, low in the southwest, about 3° above the horizon. Once you locate the Moon, look 7.0° directly to its right. You may also notice Antares, in Scorpius, 1.5° to the northeast of the Moon.

On the 4th, the 10.8% illuminated crescent is just 3.7° below (south-southwest of) Venus.

The Moon is first quarter at 12:55am on the 9th, in Capricornus.

On the 10th, the 8-day waxing gibbous Moon is close to Saturn, coming to within 0.1° of the planet at 9:54pm. The following evening, the 11th, at 9:21pm, the Moon occults Neptune. The outer planet reemerges from behind the sunlit limb of the Moon 66 minutes later.

The full Beaver Moon occurs at 4:28pm on the 15th, in Taurus. It rises just 29 minutes before it reaches its full phase, and 25 minutes before the Sun sets. This, along with it being one of the most northerly full Moons of the year, will make for a very impressive and photogenic sight in the east-northeastern sky.

Just after dark, look for Uranus only 3.1° south of the Moon.

The full Moon transits at 11:43pm, when it will be 71.6° above the southern horizon. Beginning at 2:27am, and extending through 5:05am, the Moon occults the brighter members of the Pleiades cluster.

The full Moon sets at 7:41am on the 16th, 64 minutes after the Sun rises.

Early morning on the 17th, the Moon is 5.6° northwest of Jupiter.

On the 19th, the waning gibbous Moon is 2.1° south of Pollux, in Gemini, and on the following evening it can be found 2.1° north of Messier 44, the Beehive cluster, in Cancer.

The Moon is last quarter at 8:18pm on the 22nd, in Leo. When it rises just before midnight, find Regulus 3.9° to its west.

The waning crescent Moon occults first magnitude Spica, in Virgo, on the 29th. In-

gress occurs at 5:39am, and egress, from the darkened limb of the Moon, is at 6:52am, which is, unfortunately, during daylight.

**Mercury** is at maximum elongation on the 16th, at 22.5° west of the Sun. Latest Mercuryset for this elongation occurs at 5:26pm on the 17th, which is just over one hour after sunset.

Mercury is low in the southwest after sunset. Even though it is at maximum elongation next week, it sets only about 45 minutes after sunset.

**Venus** is now appearing noticeably higher in the sky each evening. By the end of November, it is setting nearly three hours after sunset.

Venus moves into Sagittarius on the 8th, and passes 1.2° south of Messier 8, the Lagoon Nebula, on the 12th.

You may notice that Venus has a companion on the 16th and 17th, as the magnitude 2.8 star Kaus Borealis (lambda Sagittarii), the star marking the top of the teapot asterism, lies just 0.5° west, and 0.7° east of Venus on these dates, respectively. Also on the 17th, observers with a large telescope, and looking for a bit of a challenge, may find the globular cluster NGC 6638 just 4 arcminutes north-northwest of Venus on that date. Somewhat less of a challenge, the large globular cluster Messier 22 lies 1.6° to the north of Venus on the 18th.

**Mars** is becoming quite prominent

## Events in November

01	08:47	<b>New Moon</b> (Lunation 1260)
02		Equation of Time = 16:30 (Sun Fast)
03	17:00	Moon 7.0° SE of Mercury
03	17:00	Moon 1.9° SW of Antares
04	17:00	Moon 3.7° SSW of Venus
09	00:55	<b>First Quarter Moon</b>
10	21:54	Moon 0.1° S of Saturn
11	21:21	Moon Occults Neptune (in 21:21, out 22:27)
12	18:00	Venus 1.2° S of M8
15	16:28	<b>Full Beaver Moon</b>
15	18:00	Moon 3.1° N of Uranus
16	02:00	Moon Occults M45
16	00:57	Saturn Stationary
16	21:45	Uranus Opposition
16	03:00	Mercury Greatest Elongation (22.5°W)
16	18:00	Venus 0.8° S of M28
17	05:00	Moon 5.6° NW of Jupiter
17	17:26	Latest Mercuryset
17		Leonid Meteor Shower
18	18:00	Venus 1.6° S of M22
19	20:00	Moon 2.1° S of Pollux
20	22:00	Moon 2.1° N of M44
22	20:18	<b>Last Quarter Moon</b>
23	00:00	Moon 3.9° E of Regulus
23	01:00	Sun in Scorpius
25	23:26	Mercury Stationary
27	05:39	Moon Occults Spica (1.0, in 05:39, out 06:52*)
29	13:00	Sun in Ophiuchus

Ephemeris times are in EDT (UTC-4) through November 2, EST (UTC-5) from November 3 for Seagrave Observatory (41.845N, 71.590W)

**If you can observe only one evening celestial event this month, consider this one:**

**View through 10x50 binoculars**

**Venus reveals celestial treasures**

Look to the south-southwest 75-90 minutes after sunset.

- On November 11 & 12, look for Venus low in the south-southwest. It will be the brightest object in the area.
- Use binoculars to view Venus. To its immediate upper right, subtly glows a nebulous star cluster, M8, nicknamed "the Lagoon Nebula" (4100 L-Y distant).
- To the upper right of M8 dimly glows another star forming nebula and cluster, M20, called "the Trifid Nebula" (5200 L-Y distant).

**South-southwest 75 minutes after sunset on Nov. 11 & 12.**



## ASTRONOMICAL LEAGUE Double Star Activity

in the late evening sky. Rising just after 11:00pm early in November, the Red Planet spends the month moving eastward through Cancer.

From the 3rd, Mars will be closer than 1.000 au from Earth, and its widening gibbous disk grows to 11.6 arcseconds by the end of the month.

Brightening past magnitude 0 on the 5th, Mars is now brighter than all of the stars in the Winter Hexagon except Sirius.

Throughout the second half of November, Mars is located within the same binocular field of view of Messier 44, the Beehive cluster.

**Jupiter** is now in our evening sky relatively early, rising before 7:00pm EST in early November, and before 5:00pm at the end of the month.

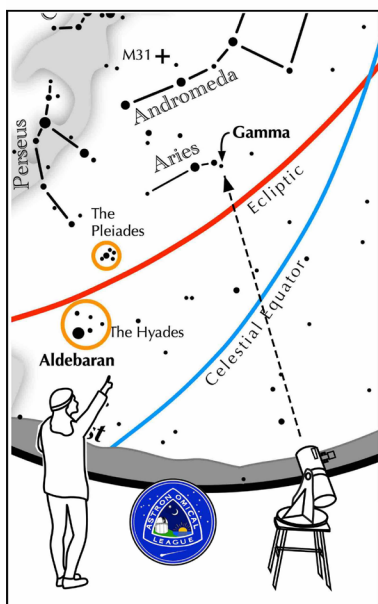
The waning gibbous Moon passes by on the 17th-18th.

During the first few days of November, Jupiter passes close to magnitude 6.5 100 Tauri, giving the appearance of a fifth Galilean moon.

On the 9th, at about 2:45am, Callisto appears over Jupiter's north pole.

On the 10th, all four Galilean moons form a slender rectangle to the east of the planet at 11:43pm.

On the 16th, as Io goes into shadow at 8:04pm, the remaining three moons are in tight formation to the west of Jupiter. By



### Other Suns: Gamma Arietis

**How to find Gamma Arietis on a November evening**

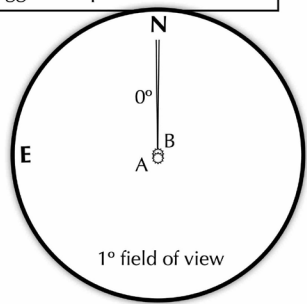
Face east. Locate the Pleiades. Aries lies to its upper right about the same distance that it is from the Hyades. Gamma is a dim star at the end of the string of stars that form Aries.

Suggested magnification: >50x  
Suggested aperture: >2 inches

#### Gamma Arietis

A-B separation: 7.5 sec  
A magnitude: 4.5  
B magnitude: 4.6  
Position Angle: 0°  
A & B colors: white, white

Also known as the "Ram's Eyes."



9:30pm, they appear in a line, from north to south, Europa, Ganymede, and Callisto. Io reappears at 10:49pm, then it forms a line with Ganymede and Callisto at 1:45am.

**Saturn** is best positioned for early evening observing throughout November. Located in Aquarius, it lies on the same meridian as Fomalhaut (alpha Piscis Austrini) and the western edge of the Great Square of Pegasus.

Saturn is no longer with us late into the night, and by the end of the month, it is setting before midnight.

On the 10th, watch for a very close pairing of Saturn and the waxing crescent Moon. The best viewing is between 9:30 and 10:00pm, when the pair is just 0.1° apart.

Saturn is stationary and resumes its prograde (eastward) motion on the 16th.

Saturn's ring plane angle remains at a relatively generous 6° in November, but will begin to narrow as we approach its equatorial plane crossing in March 2025.

November is the best month for observing **Uranus**, which reaches opposition on the 16th at a distance of 18.572 au.

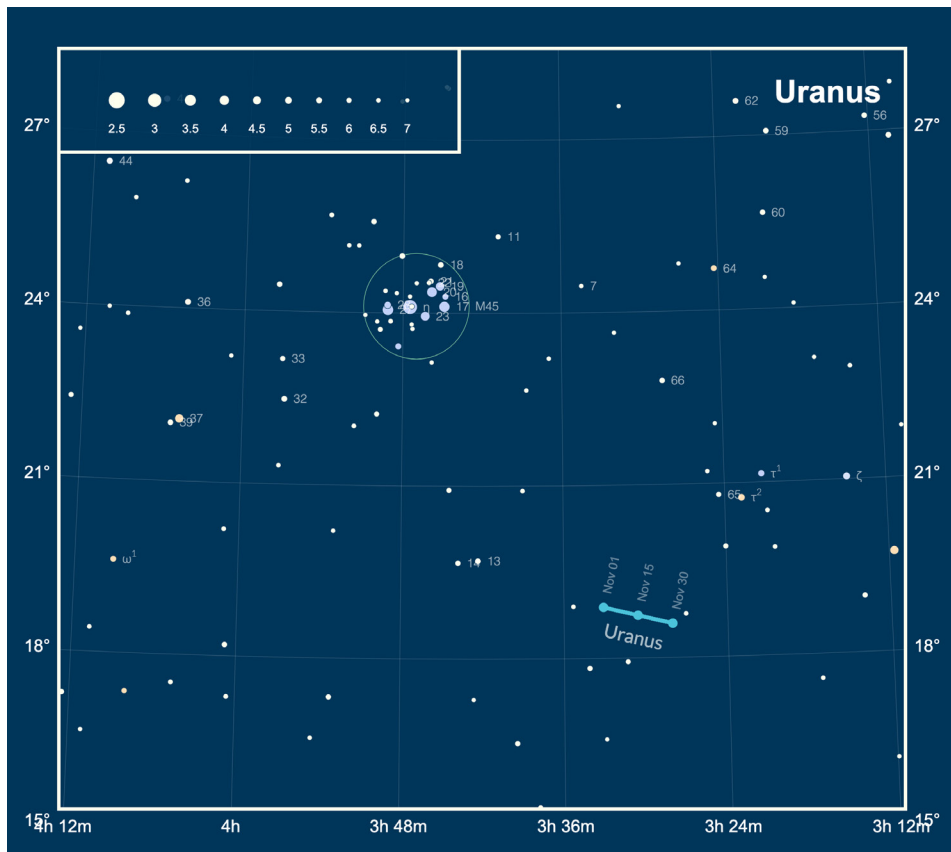
Uranus is at opposition next week, rising just after sunset, and is visible all night.

Located just 6° southeast of the Pleiades cluster, Uranus is quite easy to locate. From the westernmost bright stars of the Pleiades, move directly south 4.5° to find a pair of 6th magnitude stars, 14 and 13 Tauri, which are separated by 1/3° and lie on an east-west line. The nearest object of similar brightness to the west-southwest of this pair of stars will be the blue-green glow of Uranus.

**Neptune** is in Pisces. It is located in the southeast after sunset, and sets at 2:30am.

It can be found by looking for a quadrilateral of 4th and 5th magnitude stars located between the Cirlet and magnitude 3.6 iota Ceti, to the southeast. The quadrilateral consists of two parallel lines just under 1.0° apart, 2.5° tall, and aligned in a roughly south-southeast to north-northwest orientation, with the easternmost pair extending slightly longer to the north. Look at the northwestern star (27 Psc) and move 2.2° farther to the northwest to find Neptune, which is also 0.7° east of 20 Piscium.

A much easier opportunity to locate





Neptune occurs on the 11th, when the waxing gibbous Moon passes directly in front of, or occults, the distant planet. Beginning at 9:21pm, the magnitude 7.7 planet is covered by the dark limb of the Moon. Neptune reappears from behind the sunlit limb at 20:27pm.

**Ceres** is low in the southwest after sunset. It is moving eastward through Sagittarius, a few degrees west of the Herman's Cross asterism, composed of 58, 59, 60, and 62 Sagittarii. It is now magnitude 9.2, requiring telescopic observation. The waxing crescent Moon is 3.3° to its west-northwest on the 6th.

Vesta is in Virgo, and rises at about 3:00am. It is magnitude 8.2, and moving east-southeastward through the southern area of the Realm of the Galaxies.

In early November, comet **C/2023 A3 Tsuchinshan-ATLAS** is still well-placed in

the southwest after twilight, in Ophiuchus. It is located within the same binocular field of view as IC 4665, and it passes through a notable asterism known as Taurus Poni-atovii all this week (October 31-November 4).

The comet continues to gain distance, and passes 1 au on the 1st, when it still appears to be moving eastward at just over 1° per day.

The comet has faded beyond naked-eye visibility, but remains visible with binoculars, at least before the bright phases of the Moon mid-month.

C/2023 A3 crosses into Serpens on the 10th, and for the following few days it lies within the same binocular field of view as the open star cluster IC 4756.

The comet passes into Aquila on the 24th, where it will remain for the next several weeks as it recedes and fades from view.

November is the last opportunity to observe **Pluto** this season, until it rises again in spring 2025. Located near the border of Capricornus and Sagittarius, the magnitude 14.5 dwarf planet is 1.8° southeast of the globular cluster M75.

Both the Southern and Northern **Taurids** meteor showers are active in November, with the former peaking on the 4th-5th, and the latter peaking on the 11th-12th. Both showers produce low rates (about 5-10 per hour) of slow-moving meteors that appear to originate from their namesake constellation Taurus. The particles are remnants of periodic comet 2P/Encke.

The **Leonids**, typically a larger meteor shower that is composed of dust left behind by comet 55P/Tempel-Tuttle, are active all month, but peak on the night of November 17-18, when the Moon is nearly full.

## Star Party Reports

### Starts at Sunset (WaterFire), Providence September 12, 2024

By Francine Jackson

Once again, the City of Providence had one of its celebrations on its new pedestrian bridge on September 12, and Skyscrapers was invited to be a part of it. Jim Hendrickson and Francine Jackson brought their portable telescopes, and Fred Sammartino came with his binoculars. Although the event began in daylight, we were able to

show the Moon, with a promise that Saturn would be rising while we were on the bridge. We also aimed our equipment at other features around the neighborhood, such as the power plant, the new medical building, and other structures. Also, all around us the river began to glow, as it was a WaterFire evening.

Suddenly, between two buildings, the planet Venus peeked out of the clouds, allowing the public to see our closest plane-

tary neighbor for several minutes.

In addition, several people came over to ask about the possibility of buying a telescope for themselves, and asking for referrals. One couple, especially, had come from Boston, and, with suggestions from Jim, we were certain they would purchase their first scope the next day.

A major problem in that region is the light pollution, especially evident in the southeast, which for us meant that Saturn was never visible; however, we were glad Venus had made a visit, giving us one planet for the evening. Despite that, the promoters were glad we had been able to come, and assured us we would be called to return at their next fest.

### Steere Farm School, Harrisville October 11, 2024

By Dave Huestis

It had been 4-5 years since Skyscrapers, Inc., the Amateur Astronomical Society of Rhode Island, had provided a stargazing event for Steere Farm Elementary School in Pascoag, Rhode Island. Bad weather canceled many events, and the pandemic curtailed our activities for a while as well.

But on October 11, we were finally successful in sharing our love of astronomy with the Steere Farm School community.

Mother Nature provided some advance astronomical publicity the night before with a great display of the northern lights,







which many of our guests had observed. They thought that perhaps they would be treated to another beautiful display on the 11th. While the aurora did not materialize that evening, about 80 or so students and parents were treated to great views of several objects. We provided many handouts for them to enjoy after the program.

The seeing conditions were not ideal, as a thin haze permeated the sky. However, the waxing gibbous Moon and Saturn certainly wowed our guests.

Skyscrapers' members provided a wide variety of telescopes in many sizes: 80mm f/6 refractor; 5-inch Celestron reflector; 12.5" f4.8 dob; 4½" (105mm) Astroscan; 80 mm eon. Refractor; Celestron NexStar 8SE; SeeStar S50; William Optics Zenithstar 81mm APO; Celestron 80mm zoom spotting scope.

To provide some observational variety, some views were provided of Venus, Alcor and Mizar, the Coathanger cluster and M13.

Some comments to note:

It was the 13th birthday of a young girl who attended with her mom. For her b-day the girl had decided to attend our star party. I should have signed her up as a member immediately!

One young observer described Saturn with its edge on rings as "a snowball with and an icicle stuck through it".

One of the parents took a picture with her phone camera using the eyepiece adapter holder provided by one of our scope operators and was just thrilled. The kids loved

the moon and were amazed at the detail.

At the end of the night the PTO/PTA committee were already talking about a future star party due to the favorable comments by the students and parents.

Many thanks to the following Skyscrapers members who supported this successful event: Jim Hendrickson, Francine Jackson, Bob Janus, Chris Harkins, John Kocur, Ron

Zincone, Heidi Morgan, Laura Landen, Jim Meltzer, Peter Leveillee and yours truly.

Click on this link to see images posted by Jim Hendrickson: <https://flic.kr/s/aH-BqjBMWYz>

**Chase Farm, Lincoln  
October 16, 2024  
By Francine Jackson**

October 15, 2024 marked the third Starry, Starry Night at Chase Farm this year. Surprisingly, unlike other dates, the sky was perfectly clear, and after Francine's Power-Point, which included both the beautiful auroral display and the new comet, the group went outside, where Jim Hendrickson and Bob Janus had set up telescopes, including Francine's Astroscan. The Moon was spotlighted through that, and Jim and Bob hopped to Saturn, the comet, and several deep-sky objects. In addition, Denise Turco and Terry Turner had come, who also answered questions concerning the sky. The last persons left much later than scheduled, as happens every time at this event.

As ever, Kathy Hartley, the head of the Friends of Hearthiside, who requests these programs, assured us we'd be on next year's schedule, which we all agreed, as this program is always met with persons delighted to learn about the sky.

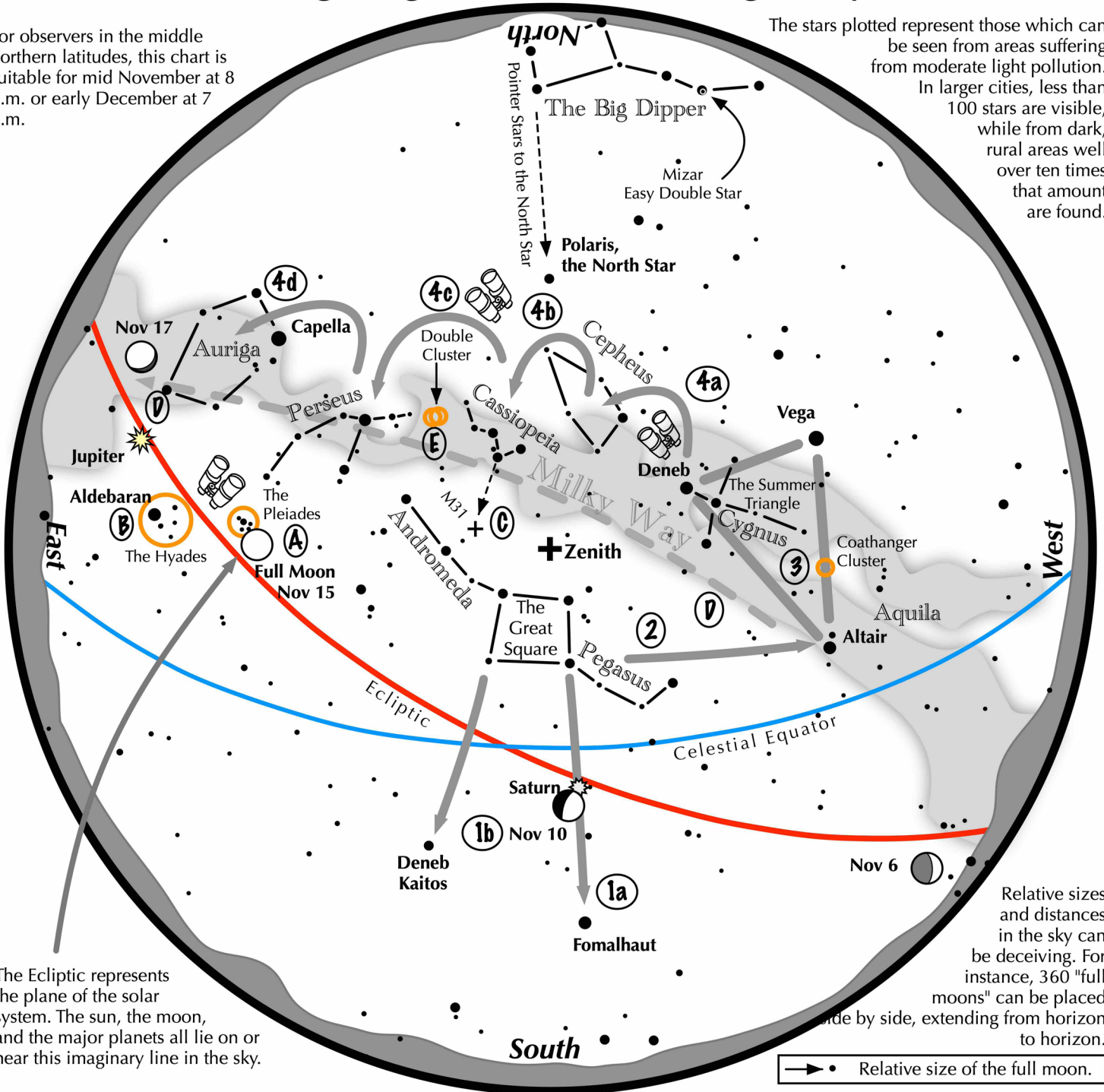




# Navigating the November Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid November at 8 p.m. or early December at 7 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

## 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 brightest 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.





# Observer's Challenge: Messier 2: Globular Cluster in Aquarius

by Glenn Chaple

(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.

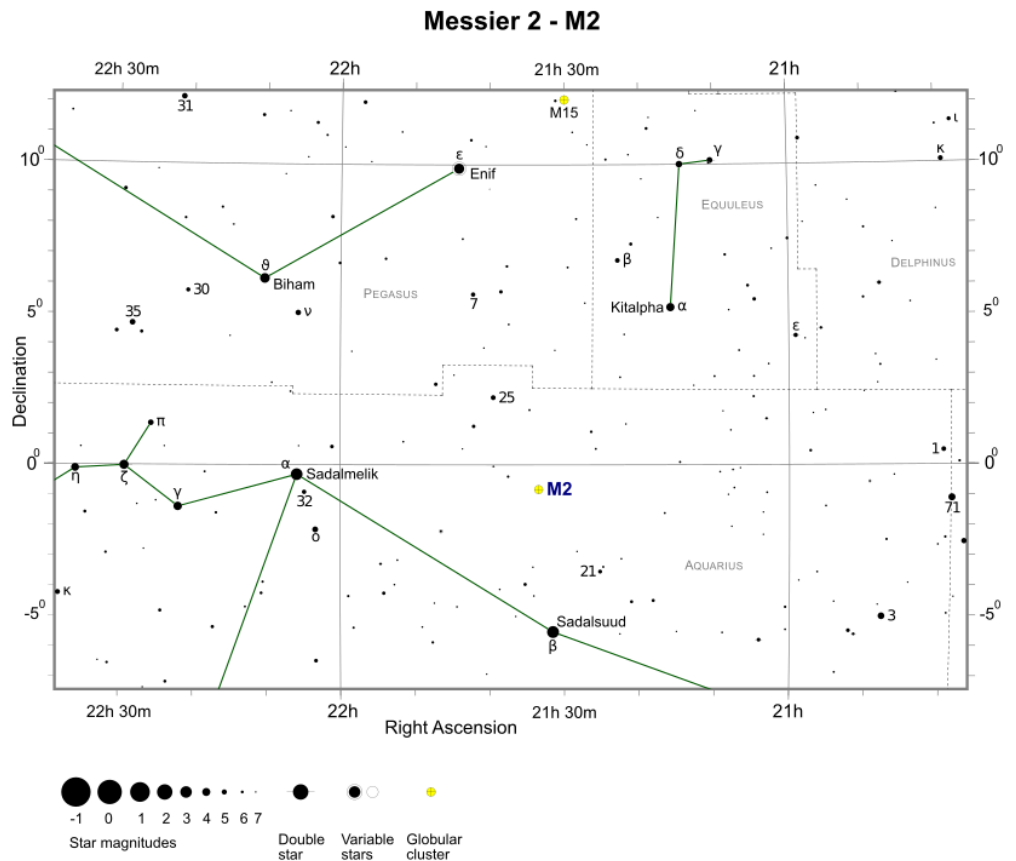
M2 is located at the 2000.0 coordinates RA 21h33m27.0s and DEC -00o49'23.7", some 5 degrees north of the 3rd magnitude star beta ( $\beta$ ) Aquarii and roughly 10 degrees east and slightly north of 3rd magnitude alpha ( $\alpha$ ) Aquarii. To find it manually, aim your telescope towards this location (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.



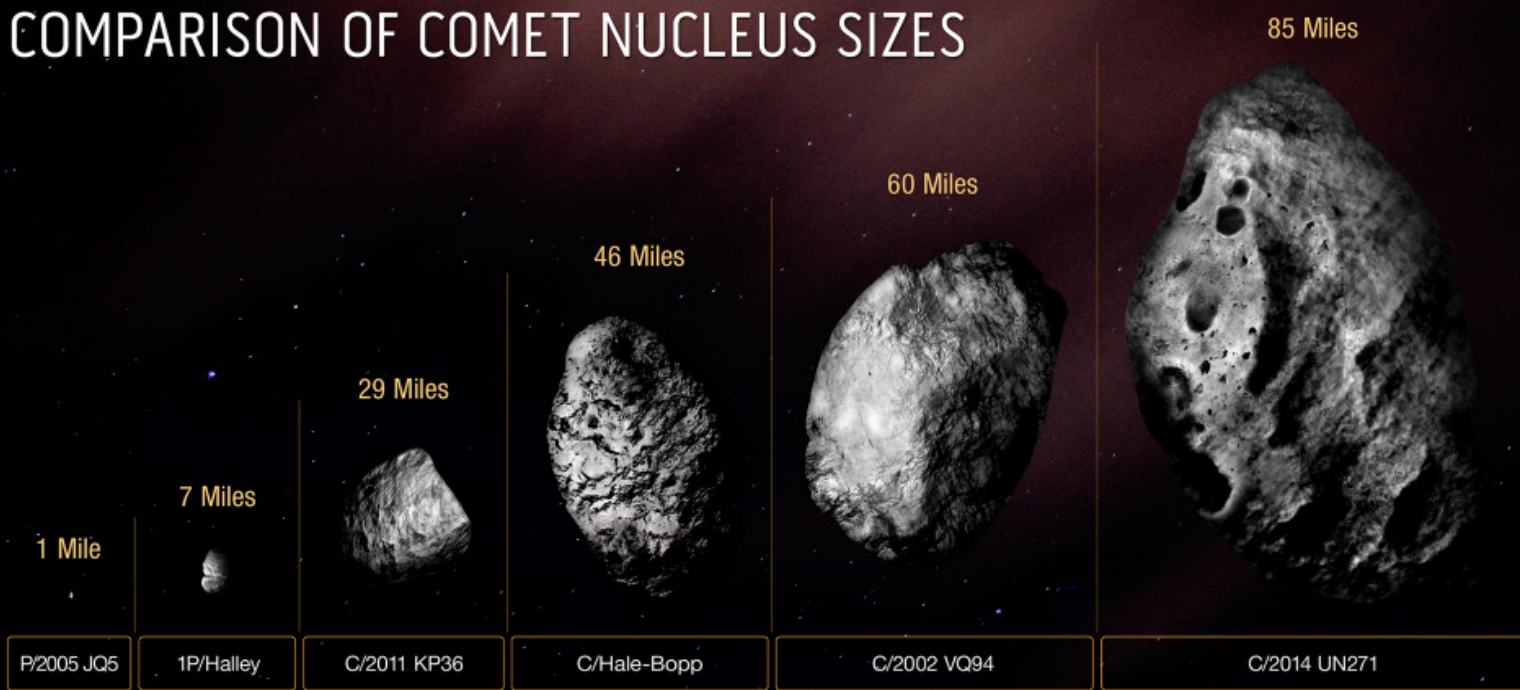
M2 taken with the 32 inch F6 scope, about 60 minutes total imaging time, processed in pixinsight, no filters, original data taken in 2013, reprocessed. Mario Motta



freestarcharts.com

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

# COMPARISON OF COMET NUCLEUS SIZES



Artist's Concept

## November's Night Sky Notes: Snowballs from Space

by Kat Troche

If you spotted comet C/2023 A3 (Tsuchinshan-ATLAS) in person, or seen photos online this October, you might have been inspired to learn more about these visitors from the outer Solar System. Get ready for the next comet and find out how comets are connected to some of our favorite annual astronomy events.

### Comet Composition

A comet is defined as an icy body that is small in size and can develop a 'tail' of gas as it approaches the Sun from the outer Solar System. The key traits of a comet are its **nucleus**, **coma**, and **tail**.

The **nucleus** of the comet is comprised of ice, gas, dust, and rock. This central structure can be up to 80 miles wide in some instances, as [recorded by the Hubble Space Telescope in 2022](#) – large for a comet but too small to see with a telescope. As the comet reaches the inner Solar System, the ice from the nucleus starts to vaporize, converting into gas. The gas cloud that forms around the comet as it approaches the Sun is called the **coma**. This helps give the comet its glow. But beware: much like Icarus, sometimes these bodies don't survive their journey around the Sun and can fall apart the closer it gets.

The most prominent feature is the **tail**

of the comet. Under moderately dark skies, the brightest comets show a dust tail, pointed away from the Sun. When photographing comets, you can sometimes resolve the second tail, made of ionized gases that have been electronically charged by solar radiation. These ion tails can appear bluish, in comparison to the white color of the dust tail. The ion tail is also always pointed away

from the Sun. In 2007, NASA's STEREO mission [captured images of C/2006 P1 McNaught and its dust tail](#), stretching over 100 million miles. Studies of those images revealed that solar wind influenced both the ion and dust tail, creating striations – bands – giving both tails a feather appearance in the night sky.



Comet McNaught over the Pacific Ocean. Image taken from Paranal Observatory in January 2007. Credits: ESO/Sebastian Deiries



## Coming and Going

Comets appear from beyond Uranus, in the Kuiper Belt, and may even come from as far as the Oort Cloud. These visitors can be **short-period** comets like Halley's Comet, returning every 76 years. This may seem long to us, but **long-period** comets like Comet Hale-Bopp, observed from 1996-1997 won't return to the inner Solar System until the year 4385. Other types include **non-periodic** comets like NEOWISE, which only pass through our Solar System once.

But our experiences of these comets are not limited to the occasional fluffy snowball. As comets orbit the Sun, they can leave a trail of rocky debris in its orbital path. When Earth finds itself passing through one of these debris fields, we experience meteor showers! The most well-known of these is the Perseid meteor shower, caused by Comet 109P/Swift-Tuttle. While this meteor shower happens every August in the northern hemisphere, we won't see Comet Swift-Tuttle again until the year 2126.

See how many comets (and asteroids!) have been discovered on [NASA's Comets](#)

[page](#), learn how you can [cook up a comet](#), and check out our mid-month article where we'll provide tips on how to take astrophotos with your smartphone!

This article is distributed by NASA's Night Sky Network (NSN). The NSN pro-

gram supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!



A view of the 2023 Perseid meteor shower from the southernmost part of Sequoia National Forest, near Piute Peak. Debris from comet Swift-Tuttle creates the Perseids. Credit: NASA/Preston Dyches

# From the Annals of Popular Astronomy

by Rick Lynch

In the late 1800s the astronomical publication of the time was the *Sidereal Messenger* started at Cincinnati Observatory and later moved to Goodsell Observatory of Carleton College in Minnesota. The *Sidereal Messenger* was a modest publication in size, catering to those interested in astronomy, the primary science of the time. The *Messenger* continued to be published for a few years only to be replaced by a new,

more comprehensive journal, *Popular Astronomy*.

*Popular Astronomy* became the leading astronomical publication with extensive worldwide circulation. It catered to professional and amateur astronomy audiences. Published on a monthly basis, its many pages contained extensive articles, calendar of astronomical events, observational reports, reports on amateur societies, and a

modest amount of advertising.

Over the last several months I have been reviewing the issues at Seagrave Observatory which belonged to Frank E. Seagrave. I have found much reference to Rhode Island astronomy and Skyscrapers, Inc. I thought copies of these entries would be of interest to our members as to our rich early history. Space permitting each issue of the *Skyscraper* will have a reprint.

## Popular Astronomy November/December 1936

Notes from Amateurs (monthly column)

**Meteors and Meteorites Section** by: C.P. Olivier A.M.S.

"A number of other reports were received from this country, F. Preucil at Joliet, Illinois, observed on October 29-20 with  $F=1.0$  from 10.55 to 11.56 C.S.T. and counted 27 meteors all of which he classifies as Orionids. Three were bright, and one of magnitude  $-3.0$  left a 25 second train. John L. Euart of the Skyscrapers, Rhode Island Amateur Astronomical Society, report that four members

observed at Scituate, Rhode Island, on the night of October 18-19. Between 13:30 and 15:00, three observers counted 79, 92, and 83 meteors, respectively; the fourth, observing for 75 minutes only, counted 67. These four hourly rates are 52.7, 61.3, 55.3, and 53.6, the average being 55.7. A fifth member of the party, Mrs.C.H. Smiley, plotted 34 meteors in the same 90 minutes, with Mr. Euart acting as recording assistant."

## Popular Astronomy June/July 1937

**The Fifth Year of the Rhode Island "Skyscrapers"**

The annual election and business meeting of Skyscrapers, Inc. (amateur astronomical society of Rhode Island) was held at Wilson Hall, Brown University, on June 1, 1936. The following officers

were elected: President, Mr. Franklin S. Huddy; Vice president, Mr. Fredrick W. Hoffman and Mr. John L. Euart; Secretary Treasurer, Mr. Donald S. Reed.

The program for the fifth year was as follows:



July 1, 1936	A large delegation attended the Third Annual Convention of the Amateur Telescope Makers of Boston at Harvard Observatory, Cambridge, Massachusetts.
July 15, 1936	Outdoor meeting at the home of Mr. and Mrs. Frank P. Sherman, Johnston, RI.
August 8, 1936	The Skyscrapers attended the 11th Annual Convention of the Springfield Amateur Telescope Makers at "Stellafane," Springfield, Vermont.
September 16, 1936	Mr. Francis Middleswart, of the department of Mathematics of Brown University, told of his sojourn in Paris and his visit to famous European observatories.
October 7, 1936	Mr. Ernest R. Hager gave an account of "The Beginnings of Astronomy at Brown University." Miss Della Patch spoke on "Astronomical Activities in the state of Washington."
November 19, 1936	The Frank Evans Seagrave Observatory at North Scituate, Rhode Island, was purchased by Skyscrapers Inc.
November 28, 1936	Mr. Wayne M. Faunce, Vice Director and Executive Secretary of the Museum of Natural History in New York City spoke on "Planetarium Patter."
January 6, 1937	Professor Charles H. Smiley of Brown University gave a lecture on "Eclipses."
January 27, 1937	The Skyscrapers gave a farewell dinner to Professor and Mrs. Charles H. Smiley, who were leaving for a sabbatical half year in California.
February 8, 1937	Miss Victoria E. Atwell gave an address on "Astronomy and King Charles II of England."
March 10, 1937	Professor Raymond C. Archibald of the Mathematics Department of Brown University spoke on "Simon Newcomb."
April 5, 1937	Professor Lawrence C. Wroth, Librarian of the John Carter Brown Library, gave an address on "Some Early Books on the Science of Navigation."
May 5, 1937	The Fifth Annual Dinner of the Skyscrapers was held at Faunce House, Brown University. Following dinner, the Skyscrapers and their guests heard Dr. Annie Jump Cannon, Curator of Astronomical Photographs at Harvard College Observatory, speak in Metcalf Hall, Brown University on "Reminiscences of an Astronomer." The lecture was illustrated by lantern slides.

Last year the organization was divided into various groups for special study and the following sections have been very active during the year, meeting once a month: Constellation, Mathematics, Photographic, Meteor, Variable Stars, and Telescope Making.

On November 19, 1936, the Skyscrapers Amateur Astronomical Society of Rhode Island was incorporated under the Rhode Island laws and its name was changed to "Skyscraper, Inc." On the same date, the society purchased the Frank Evans Seagrave Observatory at North Scituate, Rhode Island, which contains an 8-inch refract-

ing telescope which was made by Alvan Clark & Sons of Cambridge, Massachusetts.

The Schmidt F/1 camera, on which Mr. Harry A. MacKnight, Mr. Donald S. Reed, and Mr. Fredrick W. Hoffman have been working for over a year, is now completed and has been shipped to Professor Charles H. Smiley at Pasadena, California. Professor Smiley intends to use this camera to photograph the eclipse of the sun on June 8, 1937, in Peru.

Constance H. Reed, Secretary - May 21, 1937



**Cosmic  
Coffeehouse**

*Informal astronomy chat room  
meets on the 15th of each month at 7:00pm*

- interactive ZOOM format
- current news
- featured speakers
- equipment reviews
- observing notes
- fun 'n games

To receive your invite, send request to [Astro-Geek@comcast.net](mailto:Astro-Geek@comcast.net)

# AstroAssembly 2024 Astro Imaging Winners



## **Land/Starscape : Northern Lights by Laura Landen**

Fairbanks, AK , Sept. 11, 2024

Camera- Sony OM-1 mkii Lens – 8mm f/1.8  
fisheye Exp. 2sec. f/1.8 ISO 10,000

## **Solar System : Total Solar Eclipse by John Kocur**

April 8, 2024 Burlington, VT

Samsung S20, lens 13mm f/2.2 Exposure ½ sec.





## Deep Sky : Heart & Soul Nebula 4 Frame Panorama by Joe Zajac

Imaging Telescope: Skywatcher ESPRIT 100ED f/5.6 Imaging Cameras: ZWO ASI6200MM Pro @-20C Mount: Celestron CGEM Filters: SVBONY OIII 7nm · SVBony H-alpha 7nm · Baader SII 4nm,SVBony RGB Software: Celestron PWI Telescope Control Software · Astro Photography Tool (APT) · Open PHD Guiding Project PHD2 · Siril · TeamViewer · Topaz Labs DeNoise AI, MS ICE Guiding Telescope: SVBony SV106 60mm Guide Scope Guiding Cameras: ZWO ASI120MM Mini Acquisition: 5 Nights..7/26/24, 7/27/24, 9/8/24, 9/10/24, 9/11/24 Frames: SVBONY 2" OIII 9nm Filter: 4h 20m SVBONY 2" Ha 7nm Filter: 3h 55m BAADER 2" Sii 4nm Filter: 3h 55m SVBONY 2" R Filter: 1h 5m SVBONY 2" G Filter: 55m SVBONY 2" B Filter: 50m Total Integration: 15 HOURS Darks:10 Flats:10 Bias:20 Bortle Dark-Sky Scale: 5.00 Comments: 4 Full Frame Images Stitched. RGB for stars





October 10, 2024

# Northern Lights



## **Aurora Borealis & Milky Way by Ron Zincone**

Taken from Frosty Drew Observatory in Charlestown.

## **Aurora Borealis by Bob Horton**

I was on the roof of B&H, preparing for an astronomy lab when the auroral activity just suddenly burst into action. I have not seen an aurora this bright and with such vivid colors from RI since 1981.

The colors were every bit as striking visually as they appear in the photos.

I decided to head out to a dark sky location near my home in Foster, RI, along with a few friends. By the time we got there, the auroral activity had calmed down significantly, but it was still putting on a decent show. By this time, the colors were very subtle - you could just barely detect reds and greens, but the camera was able to show the colors easily.







## **Aurora Borealis over Providence by Jim Hendrickson**


The aurora was so bright and vivid, it was easily visible through twilight, and easily captured by cell phone cameras. Dan Lorraine snaps a picture of the aurora with the Providence skyline in the background and the Barus & Holley observatory in the foreground.



## **Aurora Borealis at Barus & Holley Observatory by Dan Lorraine**

Taken with a cell phone.





October 2024  
Comet C/2023 A3 Tsuchinshan-ATLAS

### Comet by Bob Horton

Durfee Hill Management Area on route 94 in Gloucester offers a nice view to the west. Here's one of my images from October 19

I think I saw a hint of the anti-tail in one of my 85mm telephoto shots (see attached), but the comet has definitely faded, and I had a challenging time seeing the comet without binoculars. The little parking area at Durfee Hill is perfect for viewing towards the west and north.



## Comet C/2023 A3 by Laura Landen

This was taken at Beavertail, Parking Lot #2, on Saturday, October 12. Lots of people there, mostly for the sunset. A couple of people came over to ask about where to look to see the comet. I was using an OM-1 mk ii camera with 40-150mm lens, at 150. There is a 2x crop factor, so 300mm full-frame equivalent. This is 9 images stacked in PhotoShop.



© Laura Landen



## **C/2023 A3 by Jim Hendrickson**

Rick Lynch, Dan Lorraine, Bob and Bette Horton and myself gathered at Fort Getty in Jamestown to observe the comet on October 13. After some clouds parted, the comet was visible to the naked eye with a 5° tail.



## **Comet C/2023 A3 by Conrad Cardano**

October 16, 7:20pm. Canon T1i Rebel camera, 85mm @ F5.6, 10sec exposure at iso 1600



**Comet C/2023 A3 by  
Jim Hendrickson**

Comet sets over Providence,  
October 15.





**Comet C/2023 A3 by  
Conrad Cardano**

October 16, 7:20pm. Canon  
T1i Rebel camera, 85mm @  
F5.6, 10sec exposure at iso  
1600





# The Sun, Moon & Planets in November

This table contains the ephemeris of the objects in the Solar System for each Saturday night in November 2023. Times in Eastern Daylight Time (UTC-4) through November 2 and Eastern Standard Time (UTC-5) from November 3. Ephemeris times are for Seagrave Observatory (41.845N, 71.590W).

Object	Date	RA	Dec	Const	Mag	Size	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
<b>Sun</b>	2	14 30.6	-14 50.0	Lib	-26.8	1934.1	-	-	-	0.992	07:20	12:29	17:38
	9	14 58.4	-16 56.1	Lib	-26.8	1937.6	-	-	-	0.991	06:28	11:30	16:31
	16	15 27.0	-18 48.1	Lib	-26.8	1940.7	-	-	-	0.989	06:37	11:31	16:24
	23	15 56.2	-20 23.8	Lib	-26.8	1943.5	-	-	-	0.988	06:45	11:32	16:19
	30	16 26.1	-21 41.1	Oph	-26.8	1945.9	-	-	-	0.986	06:53	11:35	16:16
<b>Moon</b>	2	14 44.2	-20 00.1	Lib	-6.2	1768.6	6° E	0	-	-	08:33	13:18	17:56
	9	21 09.7	-21 22.5	Cap	-11.9	1911.8	87° E	47	-	-	13:22	18:30	23:48
	16	3 32.0	22 27.2	Ari	-12.8	2000.0	176° W	100	-	-	16:41	00:46	08:59
	23	10 15.3	13 16.2	Leo	-11.8	1787.6	91° W	51	-	-	23:10	06:10	12:57
	30	15 19.8	-22 51.7	Lib	-8.1	1775.7	15° W	2	-	-	06:28	11:02	15:31
<b>Mercury</b>	2	15 44.6	-21 56.2	Lib	-0.2	5.4	19° E	85	0.455	1.259	09:07	13:45	18:23
	9	16 24.5	-24 11.6	Sco	-0.2	5.8	21° E	77	0.430	1.156	08:29	12:57	17:25
	16	17 00.2	-25 23.1	Oph	-0.2	6.6	23° E	64	0.395	1.026	08:41	13:04	17:27
	23	17 24.4	-25 19.6	Oph	0.2	7.7	21° E	43	0.355	0.873	08:36	12:59	17:22
	30	17 22.2	-23 46.2	Oph	2.0	9.2	13° E	14	0.321	0.731	07:55	12:25	16:56
<b>Venus</b>	2	17 08.4	-24 43.9	Oph	-3.9	14.5	38° E	77	0.728	1.169	10:42	15:08	19:34
	9	17 45.4	-25 28.0	Sgr	-3.9	15.1	40° E	75	0.728	1.123	09:55	14:18	18:40
	16	18 22.3	-25 36.5	Sgr	-4.0	15.7	41° E	73	0.728	1.077	10:05	14:27	18:49
	23	18 59.0	-25 09.4	Sgr	-4.0	16.4	42° E	70	0.727	1.029	10:11	14:36	19:01
	30	19 34.9	-24 07.7	Sgr	-4.0	17.2	43° E	68	0.727	0.981	10:14	14:44	19:14
<b>Mars</b>	2	8 06.8	21 42.1	Cnc	0.1	9.3	101° W	89	1.544	1.012	22:38	06:05	13:31
	9	8 16.8	21 26.2	Cnc	0.0	9.7	106° W	89	1.553	0.960	21:22	04:47	12:12
	16	8 25.1	21 15.0	Cnc	-0.2	10.3	111° W	90	1.562	0.910	21:03	04:28	11:52
	23	8 31.4	21 10.4	Cnc	-0.3	10.9	116° W	91	1.570	0.860	20:43	04:06	11:30
	30	8 35.5	21 14.1	Cnc	-0.5	11.5	122° W	92	1.578	0.813	20:19	03:43	11:07
<b>1 Ceres</b>	2	19 24.2	-29 15.5	Sgr	9.2	0.4	69° E	97	2.953	3.168	13:17	17:21	21:24
	9	19 33.5	-28 54.1	Sgr	9.2	0.4	64° E	98	2.955	3.259	11:57	16:02	20:08
	16	19 43.2	-28 30.1	Sgr	9.2	0.4	59° E	98	2.958	3.346	11:37	15:45	19:52
	23	19 53.3	-28 03.5	Sgr	9.3	0.4	54° E	98	2.960	3.429	11:18	15:27	19:37
	30	20 03.7	-27 34.2	Sgr	9.3	0.4	49° E	98	2.962	3.507	10:58	15:10	19:22
<b>Jupiter</b>	2	5 18.5	22 22.6	Tau	-2.5	46.1	140° W	100	5.063	4.266	19:43	02:12	09:40
	9	5 15.9	22 20.1	Tau	-2.6	46.8	147° W	100	5.066	4.204	18:13	01:41	09:10
	16	5 12.7	22 17.0	Tau	-2.6	47.4	155° W	100	5.068	4.154	17:42	01:11	08:39
	23	5 09.1	22 13.3	Tau	-2.6	47.8	163° W	100	5.070	4.118	17:12	00:40	08:08
	30	5 05.2	22 09.1	Tau	-2.6	48.0	171° W	100	5.072	4.096	16:40	00:08	07:36
<b>Saturn</b>	2	23 00.1	-8 42.5	Aqr	0.8	18.2	123° E	100	9.649	9.075	15:24	20:55	01:25
	9	22 59.6	-8 44.3	Aqr	0.9	18.0	116° E	100	9.646	9.177	13:56	19:27	00:57
	16	22 59.4	-8 44.1	Aqr	0.9	17.8	109° E	100	9.644	9.284	13:29	18:55	00:30
	23	22 59.6	-8 41.9	Aqr	0.9	17.6	102° E	100	9.642	9.396	13:01	18:32	00:02
	30	23 00.0	-8 37.8	Aqr	1.0	17.4	95° E	100	9.640	9.511	12:34	18:05	23:36
<b>Uranus</b>	2	3 34.4	18 57.8	Tau	5.6	3.8	164° W	100	19.563	18.607	18:14	01:28	07:42
	9	3 33.2	18 53.8	Tau	5.6	3.8	172° W	100	19.562	18.582	16:46	23:59	07:13
	16	3 32.0	18 49.7	Tau	5.6	3.8	179° W	100	19.561	18.572	16:18	23:31	06:44
	23	3 30.9	18 45.6	Tau	5.6	3.8	174° E	100	19.560	18.578	15:49	23:02	06:15
	30	3 29.7	18 41.5	Tau	5.6	3.8	166° E	100	19.559	18.599	15:21	22:33	05:46
<b>Neptune</b>	2	23 52.9	-2 12.7	Psc	7.8	2.3	137° E	100	29.896	29.158	15:53	21:47	02:41
	9	23 52.4	-2 15.4	Psc	7.8	2.3	130° E	100	29.896	29.246	14:25	20:19	02:13
	16	23 52.1	-2 17.5	Psc	7.8	2.3	123° E	100	29.895	29.343	13:58	19:52	01:45
	23	23 51.8	-2 19.0	Psc	7.8	2.3	116° E	100	29.895	29.449	13:30	19:24	01:17
	30	23 51.6	-2 19.9	Psc	7.9	2.3	109° E	100	29.895	29.561	13:02	18:52	00:50
<b>Pluto</b>	2	20 10.6	-23 23.3	Cap	14.5	0.2	80° E	100	35.131	35.295	13:34	18:06	22:38
	9	20 11.0	-23 22.2	Cap	14.5	0.2	73° E	100	35.136	35.416	12:07	16:39	21:10
	16	20 11.4	-23 20.8	Cap	14.5	0.2	66° E	100	35.141	35.533	11:40	16:12	20:43
	23	20 12.0	-23 19.2	Cap	14.5	0.2	59° E	100	35.145	35.645	11:13	15:45	20:17
	30	20 12.6	-23 17.4	Cap	14.5	0.2	52° E	100	35.15	35.749	10:46	15:18	19:50

# STARRY SCOOP

Editor: Kaitlynn Goulette



## WHAT'S UP

As the fall season progresses, Pegasus the flying horse along with Andromeda the princess move towards center stage, or due south after sunset. Following close behind is Perseus the hero, a constellation that contains several notable deep sky objects. The most famous of these include the Double Cluster (Messier 34), the California Nebula (NGC 1499), and the Little Dumbbell Nebula (Messier 76). Perseus also contains the variable star Algol, nicknamed the "Demon Star," which is the first eclipsing binary star to have been discovered. Algol represents the winking eye of a slayed monster and periodically varies in brightness.

After the last of the sunglow fades into darkness, many planets can be spotted dazzling in the sky. Venus, our "Evening Star," is visible low in the southwestern sky as it slowly rises higher as the month continues. Saturn can be spotted high overhead with a small telescope, revealing its rings that are positioned almost exactly edge-on. In the upcoming months they will become less and less visible and make for a spectacular treat. Jupiter and Mars rise in the east shortly after sunset and prepare for their oppositions in December and January, respectively.

November 15th marks the fourth and final supermoon in the repetitive displays we've experienced since August. In these past four months, the full moon has coincided with the moon's closest approach to Earth, or perigee. The unaided eye is capable of noticing a slight change in brightness and size, although it's very difficult to perceive.

This month we are treated to two meteor showers. The Taurid Meteor Shower runs annually from September 7th to December

10th and peaks on the evening of the 4th into the morning of the 5th. This shower is peculiar as it's produced by Earth traveling through two separate debris trails. Later in the month, the Leonid Shower peaks on the 17th and 18th. It runs yearly from November 6th to the 30th and has a cyclonic peak, which means that every 33 years thousands of shooting stars may be visible at its peak rather than the typical few dozen. The last cyclonic peak was in 2001. To best observe both showers, find a dark place after midnight.

## NOVEMBER'S SKY

**1: New Moon**

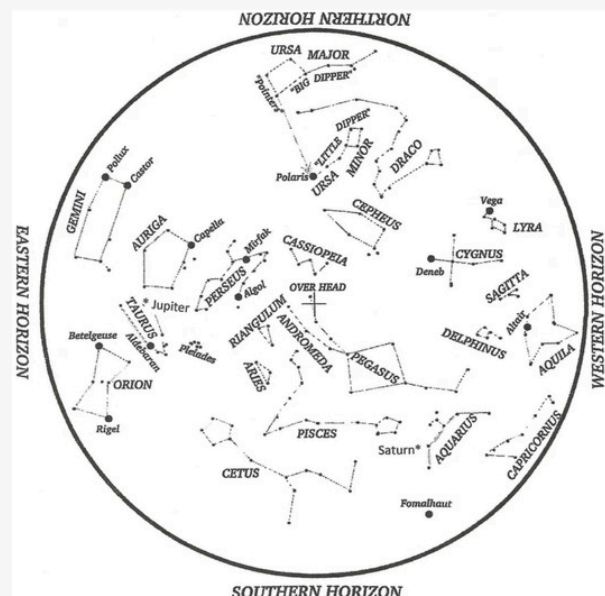
**4-5: Taurid Meteor Shower Peak**

**15: Full Moon, Supermoon**

**16: Mercury at Greatest Eastern Elongation**

**17: Uranus at Opposition**

**17-18: Leonid Meteor Shower Peak**



Credit: Roger B. Culver

Hold star map above your head and align with compass points.



## OBSERVATIONS

Recently, the Space and Astronomy Clubs in my hometown have been very active. Both the middle school and high school clubs are comprised of dedicated students whose passions for the night sky are evident in the many events they've hosted this year.

The annual Pumpkin Fest, held in my hometown, brought in thousands of attendees this year to enjoy the Halloween activities and treats offered. The clubs of the middle and high school both helped operate a 90mm Coronado solar telescope, borrowed from the Arunah Hill Nature and Science Center, allowing Pumpkin Fest attendees to view the sun in immense detail. My mother, Joy Goulette, set up her new SeeStar Smart Telescope and streamed live views of the sun to her iPad for younger kids to see. The clubs also had a booth with information on various astronomy topics and members provided guidance on viewing the comet that has been dazzling our evening skies.

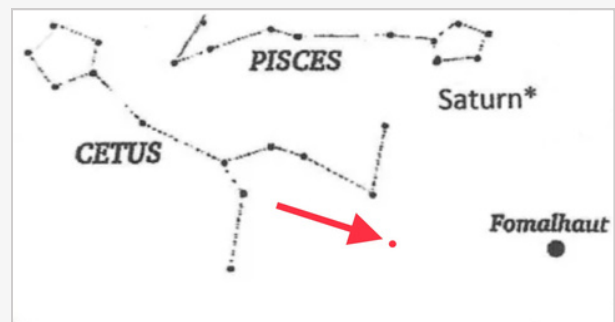
The WHS Space and Astronomy Club held a kickoff observing event and viewed the moon, Saturn, and Comet Atlas. We positioned our telescopes in the front field of our school where the trees allowed us to spot both the rising moon in the east and the setting comet in the west. High school students and their families were in attendance, along with many members of the middle school club.

The purpose of the Starry Scoop is to communicate current astronomy and space events. If you want to share your observations or get digital copies of the Starry Scoop, contact [starryscoop@gmail.com](mailto:starryscoop@gmail.com). The Starry Scoop is now on Facebook. Clear skies!

## OBJECT OF THE MONTH

The featured object for the month of November is the Sculptor Galaxy, designated NGC 253. As the brightest member of the Sculptor Group of galaxies, it claims its spot as one of the most prominent galaxies in the sky. It sits roughly 12 million light-years away and was discovered in 1783 by Caroline Herschel during a hunt for comets. This object has also earned the designation "starburst galaxy" as it's currently going through a period of vigorous star formation.

The Sculptor Galaxy is visible through a simple pair of binoculars, but a backyard telescope will reveal more details, resolving its disk-like shape with a large, oval central bulge. Good luck!



Sculptor Galaxy Map



The attendees of the WHS Space and Astronomy Club kickoff event pose for a photo with Comet Atlas in the background.

# Directions to Seagrave Memorial Observatory

## From the Providence area:

Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

## From Coventry/West Warwick area:

Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

## From Southern Rhode Island:

Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

## From Northern Rhode Island:

Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

## From Connecticut:

- Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
- or • Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

## From Massachusetts:

Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.



47 Peeptoad Road  
North Scituate, Rhode Island 02857