# the Skyscraper

vol. 53 no. 2
February 2026

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


## In This Issue:



Join us for Skyscrapers'

# February Presentation

## Featuring Greg Shanos

**This Will Be A Zoom-Only Meeting**
**Saturday, February 7, 2026**
**Social hour at 6:30pm, Presentation at 7:00pm**

**Join Zoom Meeting**
https://us06web.zoom.us/j/88410783281?pwd=Zag8gzTCWhxJ2TbWtJKPcxRay5hMg7.1
Meeting ID: 884 1078 3281 Passcode: 769813

## Journey to a Comet

Currently the internet is ablaze with the recent passage of interstellar Comet 3I/ATLAS, raising awareness for the general public. Greg will discuss the composition of comets, the six spacecraft that have visited various comets with a focus on organic molecules that have been discovered.

Greg Shanos became a Skyscraper member back in 1985 when he witnessed the apparition of Halley's Comet. Greg earned a double baccalaureate in both Pharmacy and Chemistry from the University of Rhode Island in 1984, a Master of Arts in Teaching from Rhode Island College in 1989 and a Doctor of Pharmacy degree from the University of Florida in 1999. Then in 1990 he married and relocated to Sarasota, Florida. During the COVID-19 shutdown of 2020, Greg once again became a member of Skyscrapers when the lectures were being live-streamed.

## Observing Events:

### Open Nights at Seagrave Observatory*

February 7, Closed
February 14, 7-9 PM
February 21, 7-9 PM
February 28, 7-9 PM

*Members are encouraged to attend

### Off-site Public Observing**

**Grace Pond, Mattapoisett MA**
Tuesday, February 17, 5:30 - 7:30 PM
Hosted by the Mattapoisett Land Trust
POC: Linda Bergemann

**Volunteers with telescopes, binoculars, or just a love of the night sky, are always welcome

# President's Message

**by Linda Bergemann**

January was not a good month for observing in Rhode Island. It was either freezing cold or snowing for all of our scheduled Open Nights. Lately, I have posted more closure notices on Facebook than open night invitations. I'm hoping that February gives us some opportunities to open the observatory and show our visitors some objects in the winter night sky. We will have to wait and see.

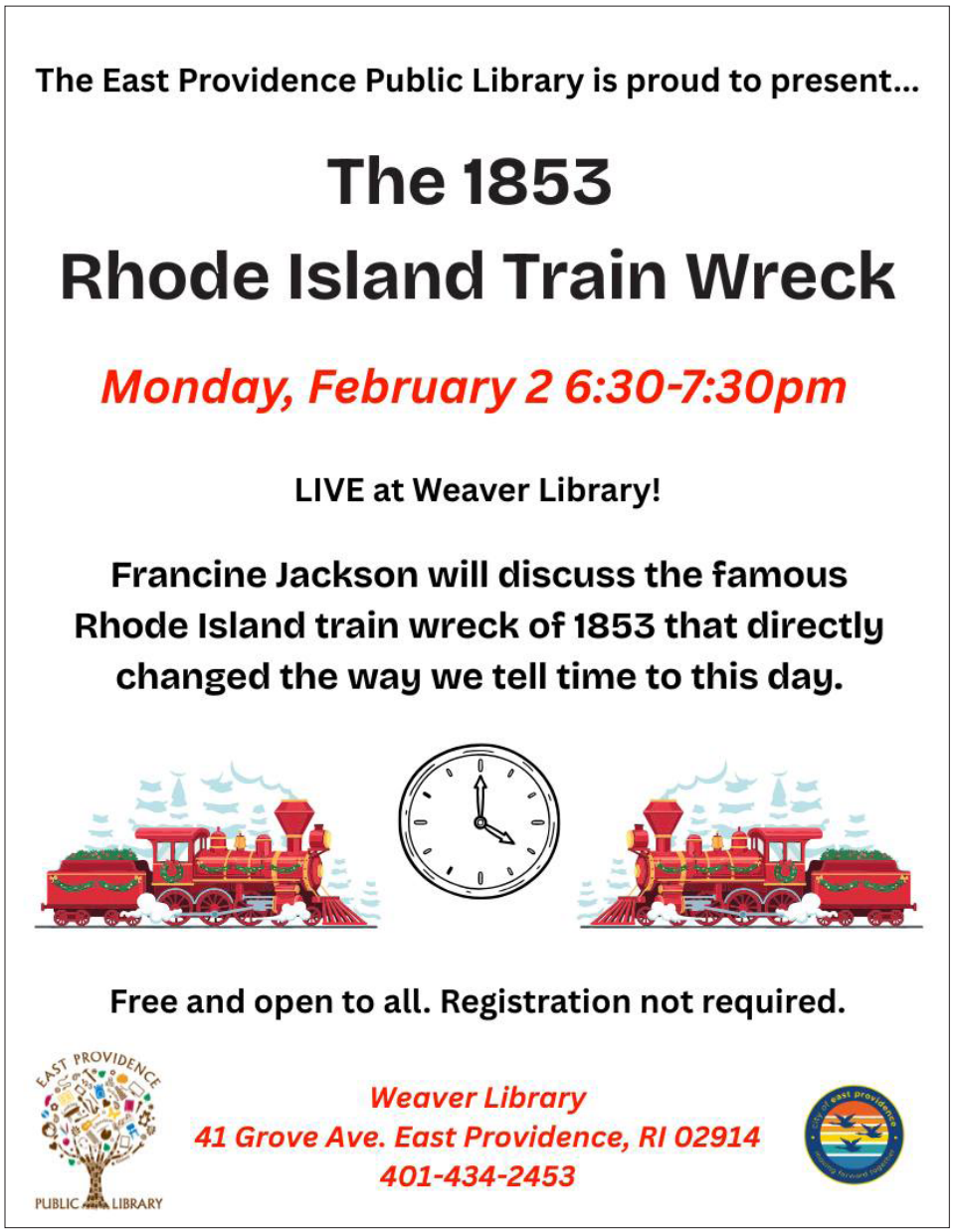
Because February weather has not cooperated with us much in the past, we have scheduled our monthly meeting/speaker to occur remotely only, via Zoom, with no in-person gathering. I realize that many will miss the socializing that occurs when we get together in person, but the likelihood of cancellation due to snowy weather conditions is high. While we could cancel at the last minute, logistics for meeting at the North Scituate Community House require significant advance effort by some key members. We decided that this effort was not worth it when technology allows us to plan and meet without closely monitoring the weather forecast. We plan to meet in-person in March, at the Community House.

My thanks to member Greg Shanos, who will present "Journey to a Comet" to us from his home on the Gulf Coast of Florida. He will likely be basking in 60 degree while we dig out from the latest snowfall.

Until next time,

Linda

401-322-9946 lbergemann@aol.com




*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 **February 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.

# Skylights: February 2026

by Jim Hendrickson

### The Sun

The first sunset in the 5:00pm hour is on the 1st of February. The Sun will continue to set later than 5:00pm until October 31.

Creeping farther northward as it moves eastward along its annual trip along the ecliptic, the Sun moves out of Capricornus and into Aquarius for a 25-day trek beginning on the morning of the 16th.

The 24th brings us our first day with at least 11 hours of daylight. We continue to experience longer daylight times through October 17.

The equation of time peaks at minus 14 minutes 10 seconds on the 12th. The is the amount of time that a sundial calibrated to mean solar noon will take to indicate actual measured solar noon. When the equation of time is negative, we say that the Sun is "slow." The most visible effect from this time discrepancy during the first few weeks of the year is the increasing rate at which sunsets become later each day, compared with how slowly the sunrises become earlier.

The Sun's "slowness" decreases from now through April 15, when it crosses the zero line and moves into the positive ("fast") range for a few weeks.

### The Moon

Early in the morning of the first, the nearly full Moon passes 2.0° west-northwest of the Beehive Cluster, Messier 44, in Cancer.

The full Snow Moon is at 5:09am on the 1st. It rises at 4:18pm, 12 minutes before sunset, transits at 18 minutes past midnight at an elevation 65.3°, and sets at 8:31am, 33 minutes after sunrise the following morning.

On the following evening, the 2nd, the 98.0% waning Moon occults Regulus. Although Regulus is a magnitude 1.4 star, the overwhelmingly bright Moon makes the event extremely difficult to observe without a telescope. The occultation begins at 8:53pm and ends 64 minutes later.

Another lunar occultation occurs on the 6th, with magnitude 4.7 χ Virginis. The sunlit limb of the 78.9% waning gibbous Moon hides the star at 3:07am, and it reappears from the dark limb at 4:22am.

On the 6th-7th, the Moon is 1.8° south-southwest of Spica, in Virgo. The Moon is last quarter, in Libra, at 7:43am on the 9th. Early on the 11th, the Moon is 3.2° east-southeast of Antares, in Scorpius.

New Moon is on the 17th, at 7:01am. This is the beginning of Lunation 1276. This new Moon results in an annular eclipse, but it will only be visible in the southern Indian Ocean and Antarctica.

On the very next evening, the 18th, the 1.4-day, 2.2% crescent Moon is just 0.8° southwest of Mercury. Also look for Venus directly below the Moon by 6.7°, low on the horizon.

The 6.9% crescent Moon is near Saturn and Neptune on the 19th.

The nearly first quarter Moon has a grazing occultation of the Pleiades on the 23rd. Of the brighter members of the cluster, only magnitude 5.8 Asterope (21 Tauri) is blocked by the lunar disk, passing behind the dark limb at 10:58pm, and emerging from the sunlit limb 40 minutes later.

The Moon is first quarter at 7:27am on the 24th, in Taurus.

On the morning of the 27th, the 79.7% gibbous Moon joins Jupiter, coming to within 2.9° to the north of the giant planet just before moonset. Close passings of the Moon and Jupiter provide an opportunity to gaze upon six solar system bodies simultaneously, as Jupiter's four Galilean satellites will all be visible until 1:02am, when Io dips into Jupiter's shadow. Use a small telescope to capture the view of the Moon and Jupiter together, and use enough magnification to keep both objects in the same view.

At about 9:00pm on the 27th, the waxing gibbous Moon lies along the line extending from Castor to Pollux, spaced approximately equally from Pollux as Pollux is from Castor.

Just as February began with the Moon passing the Beehive Cluster, the final evening of the month sees the 88.0% waxing Moon pass near the Beehive Cluster, M44, in Cancer, 1.9° east of it.

### The Planets

February brings one of the year's best apparitions of **Mercury** in the evening sky.

Look for a spectacular pairing of the 2.4% crescent Moon just 0.8° below Mercury on the 18th.

The innermost planet reaches greatest elongation of 18.1° east of the Sun on the 19th. Although this is one of the smallest possible elongations due to Mercury reach-

### Events in February

| | | |
|---|---|---|
| 1 | 05:00 | Moon (waxing 99.6%) 2.0° WNW of M44 |
| 1 | 17:00 | First 5:00pm Sunset (through October 31) |
| 1 | 17:09 | ● **Full Snow Moon** |
| 2 | 20:53 | Moon (waning 98.0%) occults Regulus (mag: 1.4; in: 20:53; out: 21:57) |
| 4 | 05:00 | Uranus Stationary |
| 6 | 03:07 | Moon (waning 78.9%) occults χ Vir (mag: 4.7; in: 03:07; out: 04:22) |
| 7 | 00:00 | Moon (waning 70.8%) 1.8° SSW of Spica |
| 9 | 07:43 | ◖ **Last Quarter Moon** in Libra |
| 10 | 12:00 | Moon (waning 39.1%) at Apogee (1.052 LD) |
| 11 | 04:00 | Moon (waning 32.3%) 3.2° ESE of Antares |
| 11 | 04:00 | Moon (waning 32.3%) 4.2° ESE of M4 |
| 12 | | Equation of Time = -14:10 (Sun Slow) |
| 15 | 05:00 | Sun Declination ½ to Equinox (-12° 43′ 09″) |
| 16 | 05:00 | Uranus Quadrature (90° E) in Taurus (mag: 5.7, dist: 19.457 au) |
| 16 | 08:00 | Sun in Aquarius (25d) |
| 17 | 07:01 | ○ **New Moon** (Lunation 1276) in Cancer |
| 18 | 18:00 | Moon (waxing 2.2%) 6.7° NE of Venus, 0.8° SW of Mercury |
| 18 | 18:56 | Mercury sets after astronomical twilight (through February 20) |
| 19 | 06:00 | Mercury Perihelion (0.307 au) |
| 19 | 14:00 | Mercury Greatest Elongation (18.1° E) in Aquarius (mag: -0.4, dist: 0.938 au) |
| 19 | 18:00 | Moon (waxing 6.9%) 3.6° N of Saturn |
| 20 | 19:00 | Saturn 0.8° SSE of Neptune |
| 21 | 18:58 | Latest Mercuryset |
| 23 | 19:00 | Moon (waxing 44.2%) 4.9° N of Uranus |
| 23 | 22:58 | Moon (waxing 45.2%) grazing occultation of M45 (Asterope - 21 Tau; mag: 5.8; in: 22:58; out: 23:38) |
| 24 | 06:28 | First day with 11 hours of daylight (11:01:50, through October 17) |
| 24 | 07:27 | ◗ **First Quarter Moon** in Taurus |
| 24 | 18:00 | Moon (waxing 55.1%) at Perigee (0.963 LD) |
| 25 | 19:00 | Moon (waxing 67.1%) 3.8° E of Elnath |
| 27 | 03:00 | Moon (waxing 79.7%) 2.9° N of Jupiter |
| 27 | 04:00 | Mars in Aquarius |
| 27 | 18:00 | Mercury 4.5° NW of Venus |
| 27 | 19:00 | Moon (waxing 86.3%) 3.6° SSE of Pollux |
| 28 | 13:00 | Mercury Farthest North (dec: -0.294°) |
| 28 | 19:00 | Moon (waxing 93.0%) 1.9° E of M44 |

Ephemeris times are in EST (UTC-5) for Seagrave Observatory (41.845N, 71.590W)

# Lunar Almanac
## February 2026

**1 Full Moon**
**17:09 EST** in Cancer

| Rise | Transit | Set |
|---|---|---|
| **16:50** | **00:18** | **07:31** |
| - | 65.3° | - |
| 64.1° | 180.0° | 291.5° |

**9 Last Quarter**
**07:43 EST** in Libra

| Rise | Transit | Set |
|---|---|---|
| **00:46** | **05:31** | **10:09** |
| - | 24.9° | - |
| 119.9° | 180.0° | 238.1° |

**17 New Moon**
**07:01 EST** in Capricornus

Lunation 1276

**24 First Quarter**
**07:27 EST** in Taurus

| Rise | Transit | Set |
|---|---|---|
| **10:00** | **18:07** | **02:20** |
| - | 75.5° | - |
| 53.0° | 180.0° | 309.0° |

| Date | Position | Phase | Distance |
|---|---|---|---|
| **10** 12:00 | Apogee | 39.1% ↙ | 1.052 |
| **24** 18:00 | Perigee | 55.1% ↖ | 0.963 |

ing perihelion on the same day, the ecliptic is angled sharply north relative to the celestial grid in the evening sky during this time of year, making this a rather favorable time to view the usually elusive planet. It is so favorable that the tiny planet is above the horizon outside of astronomical twilight for three evenings from the 18th to the 20th.

Mercury sets at 6:58pm on the 21st, the latest that it is visible during this apparition.

With Mercury being well above the horizon for much of the month, there will be plenty of opportunities to get a good view of the planet with a telescope.

Something to keep in mind is that when an inferior planet is at its maximum elongation, its disk is 50% illuminated, resembling a quarter Moon phase. During evening apparitions, the planet shows a gibbous phase before, and a crescent phase after its maximum elongation, respectively. Each evening, the planet's phase wanes as the planet's disk grows larger as it is getting closer to Earth, until it reaches inferior conjunction.

Although Mercury seldom appears larger than ten arcseconds, once it reaches its 50% illumination and goes into crescent, the phase can easily be seen in a small telescope with a modest amount of magnification.

While Mercury is the celestial spotlight of the evening twilight in February, **Venus**, for the first time in nearly a year, regains its position as the Evening Star.

Although it remains very low throughout the month, reaching an elongation angle of no more than 13° by the end of the month, the planet's brilliant -3.9 magnitude puts it within reach of observers with an unobstructed western horizon.

Venus is still rather distant, at over 1.6 au, so its gibbous disk remains a rather small ten arcseconds in a telescope.

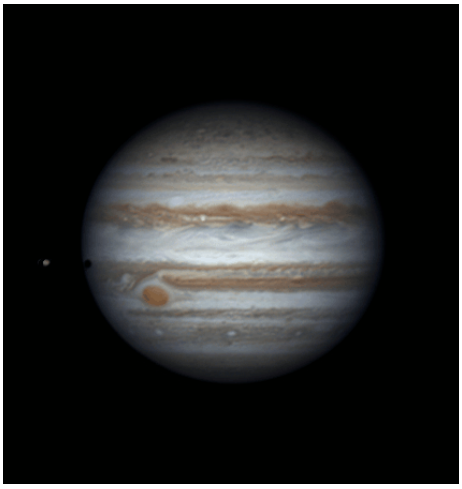
As the month progresses beyond its third week, Venus and Mercury get closer as the latter moves back towards the Sun. The two planets become as close as 4.5° on the 27th.

**Mars**, although it has crossed into the morning sky, is still too low and close to the Sun to be observed. Due to the position and orientation of the ecliptic angles in the predawn sky, we won't get a good look at Mars until June.

**Jupiter** is moving westward through Gemini, and is in a good position for observing all month.

During the first week of February, Jupiter forms a near-perfect line connecting Pollux, Alhena, and Betelgeuse. The exact alignment occurs on the 4th-5th.

An advantage for northern hemisphere observers of planets traversing Gemini on winter evenings is that they attain a rather high elevation, and remain well above the horizon for a considerable amount of time, unlike the horizon huggers of Scorpius, Ophiuchus, and Sagittarius. This results



in their light poking through much less of our atmosphere (something referred to as airmass), making them less susceptible to distortions that often degrade viewing.

The waxing gibbous Moon joins Jupiter on the morning of the 27th.

February is the last good month for observing **Saturn**, as the ringed planet approaches conjunction late in March, but you will need a clear western horizon to keep watching it.

Saturn continues to track eastward, along with Neptune, in Pisces. The two planets reach a minimum separation of just 0.8°on the 20th.

The ring inclination, which reached a minimum of less than 0.5° in November, has now opened to over 3.0°, and by month's end will be over 4.0°, giving Saturn its more familiar appearance.

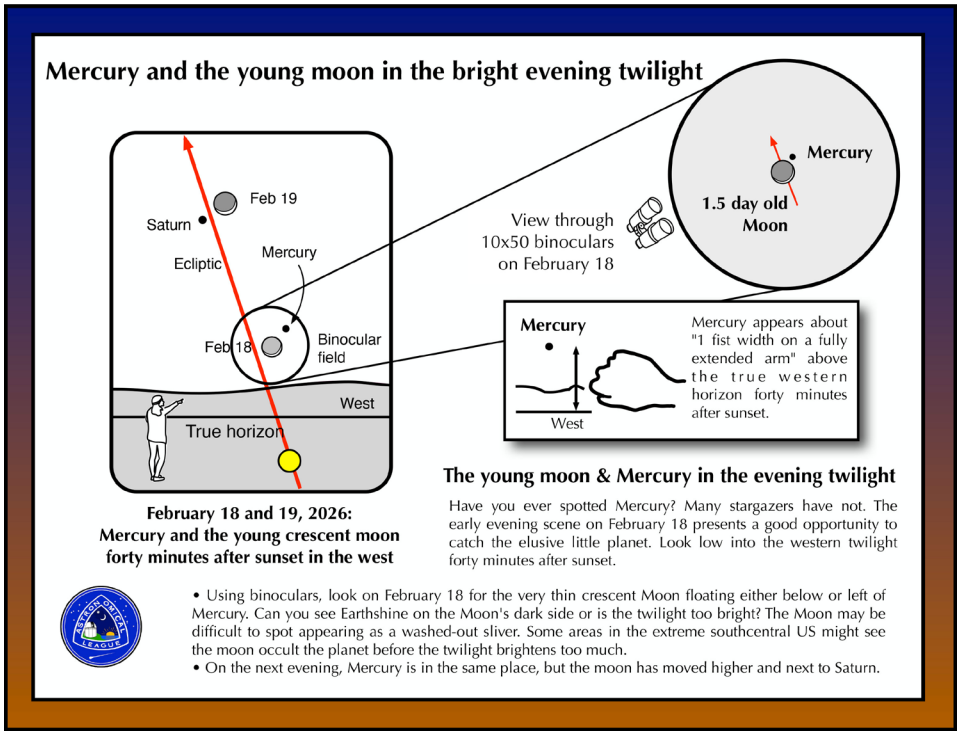
The Moon is located nearby on the 19th, with the Earthshine-adorned 6.9% crescent, Neptune, and Saturn all along a line that is 4.2° in length.

Saturn and Neptune, which have been together in the sky for the past few months, achieve their closest distance of 0.8° on the 20th. The two planets will not be this close again until 2061, the year Halley's Comet returns.

**Uranus**, in Taurus, concludes its retrograde path on the 4th, and resumes prograde (eastward) apparent motion. You'll then be able to notice it moving back towards 13 and 14 Tauri, the pair of 6th magnitude stars that we've been using as a guide to find the seventh planet.

On the 16th, Uranus reaches eastern quadrature, 90° elongation from the Sun. This means that the planet has reached its upper culmination before darkness sets in, and the peak season for observing will be coming to an end in a few weeks.

On the 23rd, the 44.2% crescent Moon, on its way to pass over the Pleiades, is 4.9°




northeast of Uranus. A wide-field telescope or large binoculars should be able to collect all three in the same view.

Our outermost planet is getting lower in the southwest during February evenings, but **Neptune's** continued proximity to Saturn results in it retaining a low level of difficulty to observe telescopically. As both planets have been relatively close over the past several months, they reach their closest, just 0.8°, on the 20th, when Saturn overtakes Neptune as both planets move eastward.

The waxing crescent Moon visits Neptune on the 19th, passing 2.9° to the north of the distant bluish planet.

## Minor Planets

February is still a good month to observe **Ceres** as it remains moderately high in the southwest in the hour after twilight.

Although Ceres is well over 3 au from Earth, its relatively large 950km diameter reflects enough sunlight that it remains relatively bright, compared to most other minor planets. Throughout February, it shines at magnitude 9.1, keeping it within reach of a small telescope on a dark night.

Located in Cetus until the 20th, when it crosses into Pisces, the star to guide us to the closest dwarf planet for much of February is magnitude 5.1 89 Piscium, which is located almost due west by 11.0° of Alrescha (α Piscium), the star shown as joining the two fishes in the classical constellation outline.

Located 5.0° southwest of 89 Piscium on the 1st, Ceres travels east-northeastward at about ⅓° per day. It passes just 2.3° southeast of the star by mid-month, and at the end of February it is 5.4° east of it, and 1.6° south-southeast of ν Piscium.

The magnitude 9.2 dwarf planet crosses into Pisces from Cetus on the 20th.

**Vesta**, which just passed conjunction late last month, is still behind the Sun and won't be visible until it rises before morning twilight in late May.

**Pluto**, which also passed conjunction in January, will not be observable until April.

**7 Iris** is at opposition in Sextans on the 27th. The 9th magnitude asteroid can be found within a few degrees of β Sextantis throughout the month, and it gets as close as 0.4° north of the star on the 24th-25th.

Earth is closest to Iris on the 20th, at a distance at 1.5 au.

**15022 Francinejackson** is in Virgo. The magnitude 19.5 asteroid is stationary on the 18th and is located just 0.6° north of Spica. It is estimated to brighten by a full magnitude when it is near opposition in early April.

## The Stars

Although we're still in the midst of winter, February brings some quite noticeable changes to our sky.

Over the course of its 28 days, we gain 64 minutes of daylight, closing the month with over eleven hours of daylight. Back at the solstice, we were deep into twilight at 5:00pm, but February begins with our first 5:00pm sunset. The angle of the midday Sun, as well as its rising and setting positions along the horizon, is changing markedly as we approach the equinox.

Cygnus, which has occupied a position in the northwestern sky during early evenings for quite some time, is finally dipping below the horizon to return to the morning sky. A fun experiment for observers with an unobstructed northern horizon is to see how late in the year the celestial swan's brightest star Deneb remains visible in the evening sky. If conditions are right, from our latitude in Rhode Island, it can be seen several days into March.

In the west, the Great Square of Pegasus assumes a diamond orientation, with the stream of stars marking Andromeda standing straight up from Alpheratz, the uppermost star of the Square.

In the southwest, the temporary "autumn triangle" asterism that was formed when Saturn joined Fomalhaut in Pisces Austrinus and Diphda in Cetus, has been truncated as the "loneliest" star, Fomalhaut, has now set, but another temporary formation has arisen with the expected brightening of the long-period variable Mira (omicron Ceti).

It may not be bright enough to notice at first, but if you've been watching the area of sky 35° due east of Saturn for a while, you just might gaze on a dark, moonless night, a part of the constellation Cetus that you may not at first recognize. For most of its 330-day period, Mira is well below naked-eye visibility, at about tenth magnitude, but it has recently brightened to its peak, and is expected to be naked-eye visible, at third magnitude, for at least part of February. Although this part of the sky is populated by dimmer stars, you may not be able to easily identify Mira at first. Another way to locate it is to draw a line between Menkar (α Ceti) and Diphda (β Ceti). Mira is ⅓ of the way along this line, or 13° southwest of Menkar.

Mira is a red giant star that has evolved beyond its helium fusion stage, and is fusing heavier elements, most notably carbon. It has a radius of about 500 suns (2.3 au), and shines with a luminosity of about 8,500 suns, much of it in the infrared. Its pulsations vary its spectral class from M5 to M9. Viewed in a telescope, Mira will appear distinctly red.

In the south, the prominent Winter Hexagon crosses the meridian much earlier in the evening, and by month's end, it is due south immediately following twilight. This makes it a good time to explore the winter Milky Way, which stretches southward from Auriga, through the border of Taurus and Gemini, Orion, Monoceros, Canis Major, Puppis, and if you have a low

southern horizon, Vela. This area of sky is rich in star clusters and even a few nebulae. Some of the lesser-observed Messier objects reside here, including M49, M50, and M93.

In the east, the constellations of spring, including Leo and Hydra, are coming into view during the evening hours, and in the northeast, we're still anticipating the outburst of the Blaze Star, T Coronae Borealis, to bring it into second magnitude range. Its host constellation, the Northern Crown, rises before midnight. Once you see magnitude 0.1 Arcturus in the eastern sky, Corona Borealis is visible about an hour later.

At approximately midnight in mid-February, the 10-hour line of right ascension crosses the local meridian. The most prominent feature along this line is the sickle asterism in Leo, which one can imagine as also representing a folded paper Valentine, as its stars also outline the left half of a heart shape.

Late-night observers will relish the fact that we're also now into galaxy season, as the spring sky has us looking out through the less dense regions of our home galaxy's north pole, giving us a good view of many of the galaxies in our cosmic neighborhood, which populates the constellations of Virgo, Leo, and Coma Berenices. The Moon is out of view during the second half of the month.

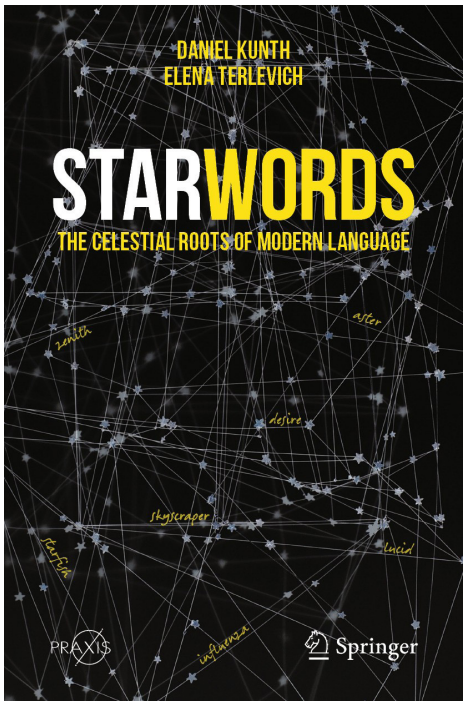
## Book Review

# Starwords:

## The Celestial Roots of Modern Language

by Daniel Kunth and Elena Terlevich, Chichester, UK: Praxis Publishing, 2024, ISBN 978-3-031-49023-1, softbound, $29.99, US

**Reviewed by Francine Jackson**




We probably don't even notice, as we use them daily, but it's amazing how many words in our language that originate from the sky. It took the book, *Starwords*, to show the reader how much we depend on celestial root words.

Even the non celestial-minded might enjoy finding, especially in early times, how useful looking up and determining how words in normal conversations manage to be related to what they can see overhead.

Just looking at our regular discussions: for example, Disaster – we all know what that means, but the two root words translate loosely to "bad star."; all the words with "luna" as a part in it – lunette, lunatic. In addition, every chapter gives a list of sayings utilizing the subject: Written in the stars; starry eyed; born under a lucky star.

With every topic you will find many fables and legends relating to the chapter: Why Sirius is so bright; why are certain breakfast foods shaped like a crescent; what is a mercurial?

The Glossary contains every word used in the book, including others containing the same root. Also, each person listed within the book is introduced.

For a book as small as this one is, *Starwords* is full of so much material the reader might not decide to read it in one sitting. Plus, perhaps having paper and pen available might be handy. There's so much within its pages, don't be surprised to find yourself keeping this book in easy reach. There will always be something of interest to learn.



**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

# Radio Astronomy Update

**by Conrad Cardano**

Now that I have most of the bugs works out, here are the results of 1 month's of data. Enjoy reading

Below is a photo of the scope. A 1-meter radio telescope is considered small. It is common for advanced amateurs to have a 2-meter or 3-meter scope (10 feet in diameter). At the end of the coaxial cable is a low-noise amplifier, filter, and software-defined-radio, which allows connection to a mini PC inside the dome.

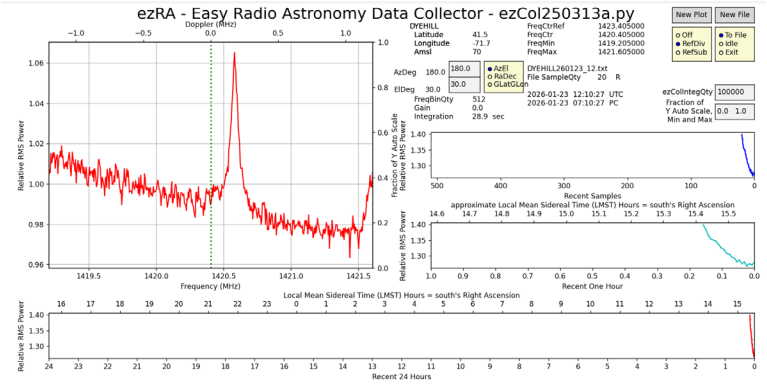

My data started by pointing the telescope at 30° above the horizon and along our meridian.

It was necessary to record data for 5 hours by letting the Milky Way drift across the center of the radio telescope. Stellarium software was very helpful in identifying where the Milky Way would be. The next day, I would move the scope up 5° and record for another 5 hours.

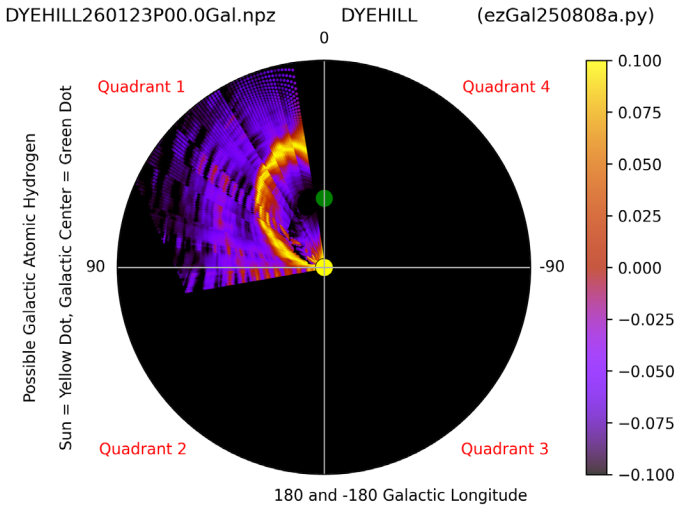
Each day's worth of data was only 5 megabytes.

Below is a photo of the PC screen. There is lots of free software to record the data. I use one called ezRA. You can see a peak near the 1420 MHz line. This is the neutral Hydrogen line from Hydrogen in our galaxy.

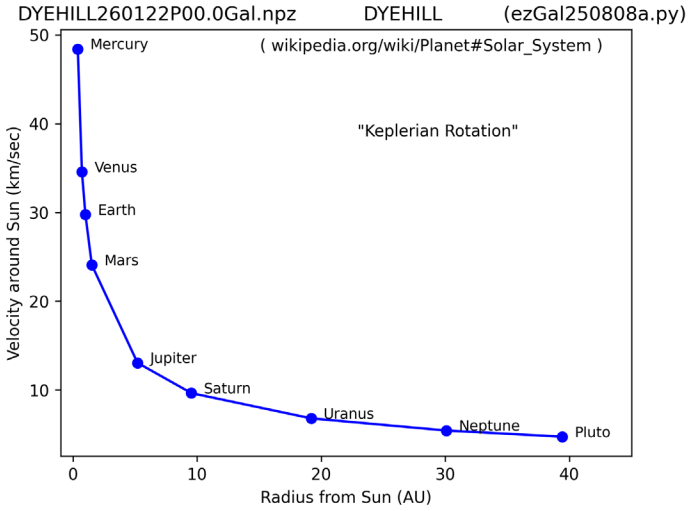
I have only recorded data from 1 quadrant of our galaxy.




Below is a photo of our galaxy. You can see some of the spiral arm structure in it. The yellow dot in the center is our Sun, and the green dot is the center of the Milky Way.

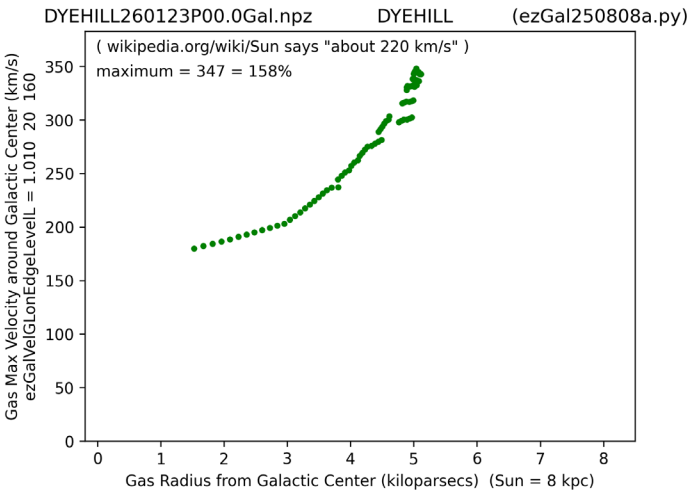



Next is an important graph of our solar system. Notice how the graph slopes downward as move away from the sun. As you move away from the sun, the velocity of the planets decrease.




Finally is an **very important** graph of our galaxy. Notice how the velocity increase as move away from the center.

Why? **dark matter!**

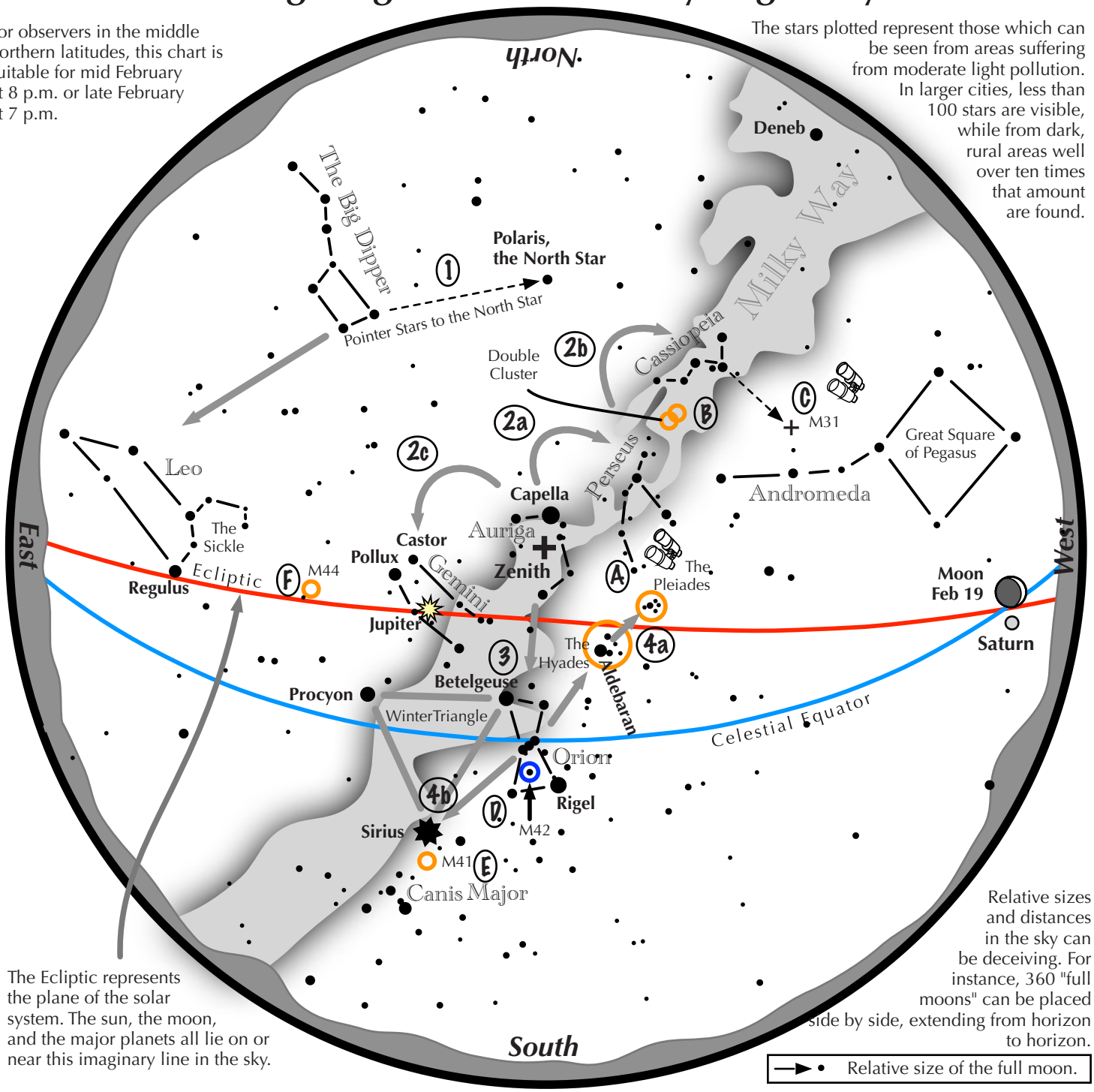


# Navigating the mid February Night Sky

2026

For observers in the middle northern latitudes, this chart is suitable for mid February at 8 p.m. or late February 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.




The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

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 February night sky: Simply start with what you know or with what you can easily find.

1. Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star.
2. Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
3. Directly south of Capella stands the constellation of Orion with its three Belt stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
4. Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius, a member of the Winter Triangle.

### Binocular Highlights

**A:** Examine the stars of two naked eye star clusters, the Pleiades and the Hyades.
**B:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster.
**C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
**D:** M42 in Orion is a star forming nebula. **E:** Look south of Sirius for the star cluster M41. **F:** M44, a star cluster barely visible to the naked eye, lies southeast of Pollux.

# The Sun, Moon & Planets in February

This table contains the ephemeris of the objects in the Solar System for each Saturday night in February 2026. Ephemeris times in Eastern Standard Time (UTC-5) for Seagrave Observatory (41.845N, 71.590W).

| Object | Date | RA | Dec | Const | Mag | Size | Elong | Phase(%) | Dist(S) | Dist(E) | Rise | Transit | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sun** | **7** | 21 22.6 | -15 22.4 | Cap | -26.8 | 1946.1 | - | - | - | 0.986 | 06:51 | 12:00 | 17:09 |
| | **14** | 21 50.3 | -13 05.5 | Cap | -26.8 | 1943.5 | - | - | - | 0.988 | 06:42 | 12:00 | 17:18 |
| | **21** | 22 17.3 | -10 38.1 | Aqr | -26.8 | 1940.7 | - | - | - | 0.989 | 06:33 | 11:59 | 17:27 |
| | **28** | 22 43.9 | -8 02.7 | Aqr | -26.8 | 1937.7 | - | - | - | 0.99 | 06:22 | 11:58 | 17:35 |
| **Moon** | **7** | 13 11.3 | -11 35.9 | Vir | -12.2 | 1795.0 | 118° W | 74 | - | - | 22:37 | 04:02 | 09:18 |
| | **14** | 19 02.6 | -27 13.2 | Sgr | -10.3 | 1777.7 | 41° W | 12 | - | - | 05:19 | 09:45 | 14:15 |
| | **21** | 0 52.4 | 8 46.8 | Psc | -10.6 | 1933.0 | 44° E | 14 | - | - | 08:17 | 15:17 | 22:32 |
| | **28** | 7 53.1 | 24 21.7 | Gem | -12.5 | 1955.1 | 136° E | 86 | - | - | 14:28 | 22:06 | 05:31 |
| **Mercury** | **7** | 22 10.6 | -12 41.4 | Aqr | -1.0 | 5.4 | 12° E | 91 | 0.349 | 1.247 | 07:31 | 12:50 | 18:10 |
| | **14** | 22 53.0 | -7 18.1 | Aqr | -0.8 | 6.2 | 16° E | 73 | 0.317 | 1.094 | 07:25 | 13:04 | 18:43 |
| | **21** | 23 22.1 | -2 27.2 | Psc | -0.1 | 7.5 | 18° E | 44 | 0.308 | 0.903 | 07:08 | 13:03 | 18:59 |
| | **28** | 23 26.9 | -0 10.4 | Psc | 2.0 | 9.3 | 13° E | 14 | 0.329 | 0.726 | 06:36 | 12:37 | 18:38 |
| **Venus** | **7** | 21 53.8 | -14 18.0 | Cap | -3.8 | 10.0 | 8° E | 99 | 0.728 | 1.693 | 07:20 | 12:32 | 17:44 |
| | **14** | 22 27.5 | -11 14.1 | Aqr | -3.8 | 10.0 | 9° E | 99 | 0.727 | 1.684 | 07:15 | 12:38 | 18:02 |
| | **21** | 23 00.4 | -7 55.6 | Aqr | -3.8 | 10.1 | 11° E | 98 | 0.727 | 1.673 | 07:08 | 12:43 | 18:19 |
| | **28** | 23 32.7 | -4 26.9 | Aqr | -3.8 | 10.2 | 13° E | 98 | 0.726 | 1.659 | 07:00 | 12:48 | 18:37 |
| **Mars** | **7** | 20 56.8 | -18 22.3 | Cap | 1.2 | 3.9 | 7° W | 100 | 1.397 | 2.371 | 06:39 | 11:34 | 16:28 |
| | **14** | 21 18.9 | -16 47.3 | Cap | 1.2 | 4.0 | 8° W | 100 | 1.393 | 2.362 | 06:27 | 11:28 | 16:29 |
| | **21** | 21 40.6 | -15 03.7 | Cap | 1.2 | 4.0 | 10° W | 100 | 1.389 | 2.353 | 06:15 | 11:22 | 16:30 |
| | **28** | 22 02.1 | -13 12.6 | Aqr | 1.2 | 4.0 | 11° W | 99 | 1.386 | 2.343 | 06:01 | 11:16 | 16:31 |
| **1 Ceres** | **7** | 1 14.7 | 0 36.5 | Cet | 9.1 | 0.4 | 59° E | 98 | 2.856 | 3.227 | 09:45 | 15:50 | 21:55 |
| | **14** | 1 22.7 | 1 46.6 | Cet | 9.1 | 0.4 | 55° E | 98 | 2.851 | 3.305 | 09:21 | 15:30 | 21:39 |
| | **21** | 1 31.1 | 2 57.0 | Psc | 9.1 | 0.4 | 50° E | 98 | 2.846 | 3.378 | 08:58 | 15:11 | 21:25 |
| | **28** | 1 39.9 | 4 07.5 | Psc | 9.1 | 0.4 | 46° E | 98 | 2.841 | 3.445 | 08:35 | 14:52 | 21:10 |
| **Jupiter** | **7** | 7 12.7 | 22 42.2 | Gem | -2.4 | 45.1 | 149° E | 100 | 5.225 | 4.359 | 14:15 | 21:45 | 05:16 |
| | **14** | 7 10.1 | 22 47.4 | Gem | -2.4 | 44.5 | 141° E | 100 | 5.228 | 4.425 | 13:44 | 21:15 | 04:46 |
| | **21** | 7 08.0 | 22 51.4 | Gem | -2.4 | 43.7 | 133° E | 100 | 5.230 | 4.503 | 13:15 | 20:46 | 04:17 |
| | **28** | 7 06.5 | 22 54.2 | Gem | -2.3 | 42.9 | 126° E | 99 | 5.233 | 4.590 | 12:46 | 20:17 | 03:48 |
| **Saturn** | **7** | 0 00.7 | -2 16.9 | Psc | 1.1 | 16.2 | 41° E | 100 | 9.507 | 10.228 | 08:41 | 14:35 | 20:29 |
| | **14** | 0 03.4 | -1 58.3 | Psc | 1.1 | 16.1 | 35° E | 100 | 9.505 | 10.299 | 08:15 | 14:10 | 20:06 |
| | **21** | 0 06.3 | -1 39.0 | Psc | 1.1 | 16.0 | 29° E | 100 | 9.503 | 10.360 | 07:49 | 13:46 | 19:42 |
| | **28** | 0 09.3 | -1 19.1 | Psc | 1.0 | 15.9 | 22° E | 100 | 9.501 | 10.410 | 07:24 | 13:21 | 19:19 |
| **Uranus** | **7** | 3 40.9 | 19 24.7 | Tau | 5.7 | 3.7 | 99° E | 100 | 19.484 | 19.301 | 10:59 | 18:14 | 01:30 |
| | **14** | 3 41.1 | 19 25.3 | Tau | 5.7 | 3.6 | 92° E | 100 | 19.482 | 19.419 | 10:31 | 17:47 | 01:03 |
| | **21** | 3 41.4 | 19 26.6 | Tau | 5.7 | 3.6 | 85° E | 100 | 19.481 | 19.539 | 10:04 | 17:20 | 00:36 |
| | **28** | 3 41.9 | 19 28.4 | Tau | 5.7 | 3.6 | 78° E | 100 | 19.480 | 19.656 | 09:37 | 16:53 | 00:09 |
| **Neptune** | **7** | 0 03.2 | -1 04.8 | Psc | 7.9 | 2.2 | 42° E | 100 | 29.884 | 30.608 | 08:39 | 14:37 | 20:36 |
| | **14** | 0 04.0 | -0 59.5 | Psc | 7.9 | 2.2 | 35° E | 100 | 29.884 | 30.685 | 08:12 | 14:11 | 20:09 |
| | **21** | 0 04.9 | -0 53.8 | Psc | 8.0 | 2.2 | 28° E | 100 | 29.883 | 30.749 | 07:45 | 13:44 | 19:43 |
| | **28** | 0 05.8 | -0 47.9 | Psc | 8.0 | 2.2 | 22° E | 100 | 29.883 | 30.802 | 07:18 | 13:17 | 19:17 |
| **Pluto** | **7** | 20 28.7 | -22 59.2 | Cap | 14.6 | 0.2 | 15° W | 100 | 35.448 | 36.400 | 06:30 | 11:03 | 15:37 |
| | **14** | 20 29.6 | -22 56.9 | Cap | 14.6 | 0.2 | 22° W | 100 | 35.452 | 36.369 | 06:03 | 10:37 | 15:11 |
| | **21** | 20 30.5 | -22 54.7 | Cap | 14.6 | 0.2 | 28° W | 100 | 35.457 | 36.325 | 05:36 | 10:10 | 14:44 |
| | **28** | 20 31.4 | -22 52.7 | Cap | 14.6 | 0.2 | 35° W | 100 | 35.462 | 36.268 | 05:10 | 09:44 | 14:18 |

## ARTEMIS II

# We Are Going Back to the Moon

**by Jim Hendrickson**

Here in early 2026, few people under the age of 60 have any significant memory of the Apollo Moon landings. Two generations of people have lived during times when no one has ventured to Earth's nearest celestial neighbor.

This will change very soon, as NASA and its international partners prepare to send four astronauts on a voyage around the Moon on the Artemis II mission.

Artemis II is scheduled to launch no earlier than February 6, 2026. In addition, there are several opportunities in the following days and weeks if the launch is delayed due to weather or technical issues. After the 6th, there are daily launch windows through February 11, after which the next opportunity, based on the position of the Moon, is from March 6-11, and another from April 1-6.

## Apollo: A Look Back

During a four year period from December 1968 to December 1972, nine Apollo mission flights sent 23 astronauts to the Moon, and returned them all safely home (while each Apollo mission had a crew of three, one astronaut, Jim Lovell, was a member of two separate flights). Six of those missions included lunar landings. Of the 23 men who flew to the Moon during the Apollo program of the late 1960s and early 1970s, only five are still with us.

Three additional Apollo lunar landings were planned for, a total of ten, but were cancelled by NASA in 1970, largely due to budgetary constraints.

Some of the surplus Apollo hardware would ultimately be employed for the Skylab program, putting America's first space station into orbit and sending three three-person crews (none of which were Moon mission flyers), for extended stays lasting up to 59 days. The Apollo-Soyuz Test Project in 1975 was the final operational mission using an Apollo spacecraft.

Much of the remaining unflown hardware, including two complete Saturn V launch vehicles, presently resides in museums.

The cancellation of Apollo led to the development of the venerable Space Shuttle program, which flew 355 astronauts on 135 missions on five different spacecraft over a 30-year period to achieve a variety of significant accomplishments, including living and working in space, scientific research, remote educational programs, delivery and retrieving of payloads, launching interplanetary space probes, on-orbit repair and serving, and of course, supporting the construction and operation of the International Space Station. But the Space Shuttle's capabilities were limited to low Earth orbit, and could not be used to send astronauts to more distant destinations.

In the decades since the conclusion of the Apollo program, several proposals were put forward to return astronauts to the Moon, but none made it as far as that goal. In 2011, NASA's Constellation program, which was to develop a pair of new launch vehicles and a new Multi-Purpose Crew Vehicle (MPCV), was cancelled due to budget concerns. Although the project was cancelled, some of its key components continued to be developed under what we now know as the Artemis program, notably, the MPCV (now Orion), and the heavy-lift launch vehicle, now the SLS.

The goals of Artemis have also shifted during the course of its development: from lunar exploration, to direct to Mars, and even a rendezvous with a near-earth object (NEO), before finally being solidified on a return to the Moon. All of the members of this new generation of lunar explorers were born after Apollo 17, the last lunar flight.

Opposite: The Space Launch System (SLS) rocket for the Artemis I mission stands at NASA Kennedy Space Center Launch Complex 39B with the full Moon in view on June 14, 2022. The Artemis I mission tested the rocket and Orion capsule's systems during a 22-day mission that launched in November 2022. Photo credit: NASA/Cory Huston

Artemis II NASA astronauts (left to right) Reid Wiseman, Victor Glover, and Christina Koch, and CSA (Canadian Space Agency) astronaut Jeremy Hansen stand in the white room on the crew access arm of the mobile launcher at Launch Pad 39B as part of an integrated ground systems test at Kennedy Space Center in Florida on Wednesday, Sept. 20, 2023. The test ensures the ground systems team is ready to support the crew timeline on launch day. Credit: NASA/Frank Michaux

## The Artemis II Crew

The crew of Artemis II was introduced at a NASA event on April 2, 2023. Compared to Apollo's three-person crew, Artemis flights will carry four astronauts, the Commander, Pilot, and two Mission Specialists.

**Gregory R. (Reid) Wiseman**, Commander, is from Baltimore, Maryland, and is 50 years old.

He was selected to NASA's Group 20 class in 2009 and has been to space once, serving as Flight Engineer during Expedition 40/41 on the International Space Station He departed Baikonur Cosmodrome on board Soyuz TMA-13M on May 28, 2014, and spent a total of 165 days, 8 hours, and 1 minute In space. He conducted two EVAs totaling 12 hours, 47 minutes. Wiseman returned to Earth on November 10, 2014.

Pilot **Victor Glover**, 49 years old from California, was selected for Group 21, the same astronaut class as Christina Koch. He served as pilot on the Crew-1 mission, the first operational flight of NASA's Commercial Crew Program, which launched a SpaceX Crew Dragon capsule on a Falcon 9 launch vehicle from Pad 39A at Kennedy Space Center, the same launch pad from which all of the Apollo flights to the Moon were launched. Departing on November 16, 2020, Glover spent 167 days in space, serving as Flight Engineer on Expedition 64/65. He conducted four EVAs totaling 26 hours, 7 minutes, and returned on May 2, 2021.

**Christina Koch**, Mission Specialist, is 47 years old and from Grand Rapids, Michigan. She was selected to NASA's Group 21 astronaut class in 2013 and has one prior spaceflight, which launched from Baikonur Cosmodrome on board Soyuz MS-12 on March 4, 2019 to serve as Flight Engineer during Expedition 59/60/61. During her 328 days, 13 hours, and 58 minutes in space, Koch participated in six EVAs, totaling 42 hours and 15 minutes. She returned on board Soyuz MS-13 on February 6, 2020.

Once onboard the International Space Station, Glover joined the crew of Expedition 64/65 as Flight Engineer, and con-

ducted four EVAs totaling 26 hours 7 minutes. He returned to Earth on May 2, 2021, splashing down in the Gulf of Mexico after a duration of 167 days, 6 hours, and 29 minutes in space.

Canadian Space Agency (CSA) astronaut **Jeremy Hansen**, from London, Ontario, Canada, is 50 years old and a member of NASA's Astronaut Group 20 class of 2009 as well as CSA's 2009 Group. He will serve as Mission Specialist for Artemis II, which will be his first space flight.

## How to Get to the Moon

The enormous Saturn V rocket was the only launch vehicle capable of sending astronauts to the Moon, but it hasn't been manufactured since 1968. Its workforce and tooling has long been retired, and most of the systems designed to operate it were dismantled before the Space Shuttle program began operations. As neither the Space Shuttle, nor any of the contemporary launch vehicles were designed for that capability, an entirely new spacecraft and launch vehicle was needed.

Artemis II will make use of the unimaginatively-named Space Launch System (SLS) Block 1 rocket. It consists of an 8.4 meter (27.6 ft) diameter core stage powered by four RS-25 engines that burn liquid hydrogen and liquid oxygen. The engines are leftovers from the Space Shuttle program, with performance improvements to provide a combined 9.1 mN (2.5 million pounds) of thrust. The core stage is augmented by a pair of 5-segment solid rocket boosters, similar to the 4-segment boosters used by the Space Shuttle, each providing 14.6 mN (3.3 million pounds) thrust, for a total thrust at liftoff of 39 mN (8.8 million pounds), which is 17% greater than that of the Saturn V.

The SLS Block 1 rocket is 98m (322 ft) tall, which is slightly less than the height of a Saturn V, and has a total mass at take-off of 2.6 million kg (5.8 million pounds), 18% more than Saturn V.

SLS Block 1 has a smaller upper stage than the Saturn S-IVB, which propelled the Apollo missions to the Moon. It also has a slightly reduced function on Artemis II. The Interim Cryogenic Propulsion Stage (ICPS), so named because it uses cold propellants (liquid hydrogen and liquid oxygen), and that there will be a more capable upper stage coming on SLS Block 1B which will launch Artemis IV, sends Orion into a highly elliptical orbit around Earth, but not quite all the way to the Moon. The remainder of the propulsion for the lunar transfer comes from Orion's service module.

Sitting atop the rocket is the 10.4 ton Orion crew capsule, which the Artemis II crew has named Integrity. With a diameter of 5m (16.5 ft.) and a height of 3.35m (11 ft), Orion has a habitable volume of 9.34 m3 (330 ft3), which is 64% larger than Apollo. Together with its 15.6 ton European Service Module (ESM), it is designed to carry a crew of four on deep space missions lasting up to 21 days.

In a notable departure from Apollo and Shuttle, which were powered by internal hydrogen fuel cells, Orion is powered completely by solar power and batteries, like the International Space Station. Its four large solar arrays span 19m (62.3 ft), and provide a maximum of 11.2 kW of power.

Artemis II will be the third orbital flight of an Orion spacecraft, and the first with crew on board.

Exploration Flight Test-1, the first Orion flight, launched on December 5, 2014 on a Delta IV Heavy rocket, was designed to test various spacecraft systems, including its re-entry heat shield and parachutes.

The second flight of Orion, Artemis I, was the first test flight of the full SLS launch vehicle, Interim Cryogenic Propulsion Stage, Orion capsule and European Service Module. The mission launched on November 16, 2022 and flew past the Moon, returning some spectacular imagery. Artemis I's Orion capsule splashed down in the Pacific Ocean after spending 25 days in space.

## Countdown to Launch

Artemis II will blast off from Launch Complex 39B at NASA's Kennedy Space Center in Florida, but it will make the first 7km (4.7 mi) leg of its journey to the Moon on the back of a massive crawler-transporter from the Vehicle Assembly Building. In a scene reminiscent of the Saturn V roll-out, the SLS rocket will already be integrated with its launch tower on what is known as the mobile launcher, unlike the Space Shuttle mobile launch platform configuration, which carried the shuttle stack without its service tower structures, which were located at the pad.

The countdown begins about 48 hours before launch, when engineering teams at three NASA centers convene and begin to power up and test systems on the spacecraft, launch vehicle, and ground support equipment.

A weather briefing is conducted about 10 hours before liftoff, and if reports are green, fueling begins soon after, with over 1,000 tonnes (2.2 million pounds) of cryogenic propellants loaded into the core and upper stages.

NASA will begin live launch broadcasts about four hours before launch, when the crew departs from the Neil A. Armstrong Operations and Checkout Building for the 16 km (10 mile) trip to the launch pad. Once strapped into their seats, the astronauts and teams on the ground continue to configure and test the ship's systems to make sure everything is ready for flight.

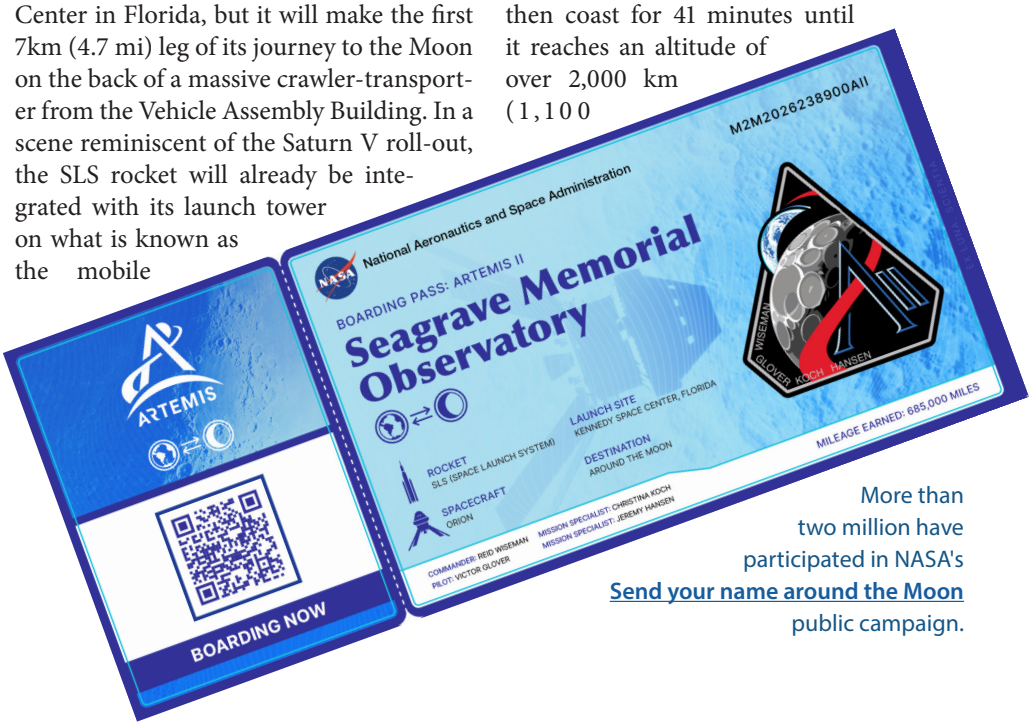
At liftoff, the SLS rocket's four main engines and two solid rocket boosters produce a combined 39 mN of thrust to send the most powerful rocket currently in service on its journey to the Moon.

As soon as it clears its launch tower, SLS rolls to a precise azimuth to place it into the correct orbit.

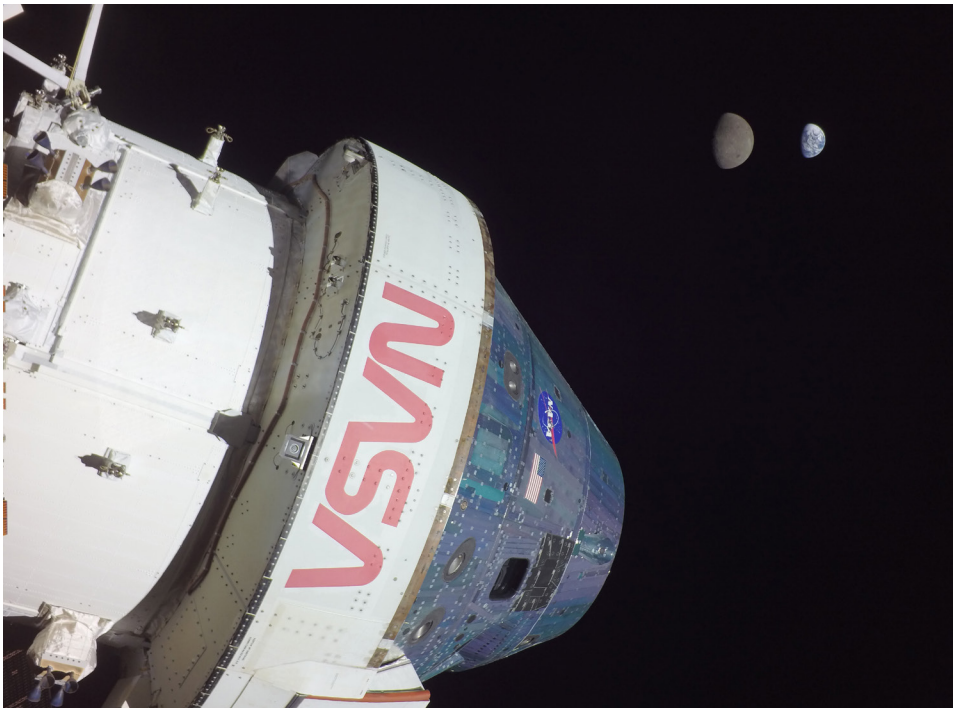
The solid boosters burn out and separate just over two minutes after liftoff

Main engine cutoff of the core stage engines occurs 8:06 minutes after liftoff, and the core stage separates 12 seconds later.

The ICPS upper stage and Orion will then coast for 41 minutes until it reaches an altitude of over 2,000 km (1,100




More than two million have participated in NASA's Send your name around the Moon public campaign.



Earth and Moon as seen by an external camera on the flight day 13 of the uncrewed Artemis I mission in 2022. The Artemis II astronauts will be the first astronauts since Apollo 17 in 1972 to fly around the Moon and see the lunar farside.. NASA Johnson Space Center photo

nautical miles), where it conducts a perigee boost maneuver, similar to the way in which the Space Shuttle would conduct its orbital maneuvering system burn after it separated from its external tank, but from a much higher range.

About an hour later, the ICPS RL-10 engine fires a second time for the apogee raise maneuver. This puts Orion into a 380 x 109,500 km (235 x 68,000 mile) orbit, where it will spend an additional 24 hours in orbit, during which it will conduct rendezvous and proximity maneuvers after separating from the ICPS.

In addition to delivering the Orion spacecraft to orbit, Artemis II will deploy four secondary payloads into Earth orbit. The four cubesats were developed by international partners, and carry various experiments and instruments to test technology, communications, and space weather.

If everything goes as planned, on day 2 of the mission, Orion's service module engine fires for 25 minutes to send the craft and its crew on a trajectory that takes it to a lunar flyby in a maneuver called a trans-lunar injection, something that a crewed mission has not executed since 1972. Trans-lunar injection brings the spacecraft into an area of space where the gravitational influence of the Moon is greater than that of Earth.

The highlight of the mission comes on day 6, when the Artemis II crew will come to within about 7,500 km (4,700 miles) of the lunar surface. We saw the cameras on board Artemis I return some spectacular images of the Earth and Moon together, but this time, Wiseman, Koch, Glover, and Hansen become the first humans in over 53 years to directly see the hidden side of the Moon.

Unlike Apollo 8, which inserted into lunar orbit, Artemis II will perform a lunar flyby and enter what is known as a free return, as the maneuver takes advantage of the Moon's and Earth's gravity to return the spacecraft without it having to fire its main propulsion system to significantly alter its trajectory.

The return trip takes another four days, after which the crew will splash down in the Pacific Ocean off the coast of California.

After their return, we will look forward to hearing Wiseman, Glover, Koch, and Hansen share their experiences on this momentous mission, and we will no longer be living in the time when "no one has flown to the Moon during my lifetime."

The Artemis program continues with an ambitious third flight that NASA says will launch by 2028. This 30-day mission involves a lunar landing of two of the four crew for a week-long stay near the south pole of the Moon. While the astronauts will fly from Earth to the Moon in an Orion capsule, they will use a lander that is being designed and tested by SpaceX to achieve the lunar landing.

The long-term goals of Artemis are not only to establish sustainable human presence on the Moon, but also to work towards the scientific exploration of Mars by inhabitants of Earth.

While these lofty ambitions may still be a long way off, we are hoping that the successful conclusion of Artemis II's return to the Moon inspires a new generation to explore the universe.

## Artemis II Mission Resources

**Artemis II Press Kit**
https://www.nasa.gov/artemis-ii-press-kit/

**Space Launch System Reference Guide for Artemis II**
https://www.nasa.gov/wp-content/uploads/2025/12/sls-5558-artemis-ii-sls-reference-guide-final-review-print.pdf

**Orion Reference Guide**
https://www.nasa.gov/wp-content/uploads/2023/02/orion-reference-guide-111022.pdf

**Orion's Service Module**
https://www.nasa.gov/wp-content/uploads/2018/07/orion_smonline.pdf

**Artemis II: Meet the Astronauts Who will Fly Around the Moon**
https://youtu.be/lPyl6d2FJGw

**Artemis II Mission Availability – Early 2026**
https://www.nasa.gov/wp-content/uploads/2026/01/artemis-ii-mission-availability.pdf

**Artemis II Posters**
https://images.nasa.gov/search?q=Artemis%20II%20posters&page=1&media=image&yearStart=1920&yearEnd=2026

**NASA Live**
https://www.nasa.gov/live/

# Astrophoto Gallery




## Southern Objects by Steve Hubbard

Opposite top: Caldwell 94 (NGC 4755) Jewel Box cluster in Crux; Opposite bottom: Our group standing in front of the 40" scope we got to use when we were in northern Chile. Top: Caldwell 92 (NGC 3372) Carina Nebula; Right: Large Magellanic Cloud. Taken with SeeStar S30 in November 2025 during a trip to Chile.


## Pleiades Cluster in Taurus by Jeff Padell

Taken January 12 with Seestar S30.

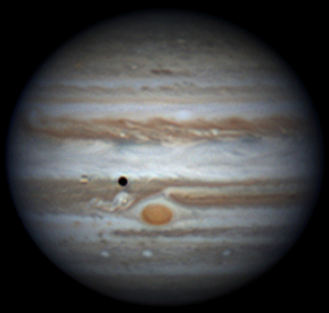

## Cluster in Nebulosity NGC 1975 in Orion by Jeff Padell

Taken January 12 with Seestar S50.

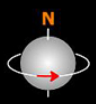
Jupiter
December 28, 2025
Shadow Transit Io

Gregory T. Shanos  Sarasota, Florida USA
Meade LX200GPS  250mm fl 2500mm  f/10
ZWO ASI 662MC one-shot color camera
Vernonscope 1.25x Barlow  fl 3200m f/12
Derotated 4 minutes in WinJupos

Magnitude:  -2.7
Diameter: 46.3″
Phase:  99.9%
Altitude: 83.5°
Seeing: 9/10 Excellent
Transparancy:  8/10 Clear, Humid
Resolution: 0.19″ /pixel



06h 21.1m UT
Astronomik  L2 UV/IR cut filter
CMI: 171.1°  CMII: 77.7°  CMIII: 324.4°




## Shadow Transit of Io by Greg Shanos

I rarely have Excellent seeing conditions, usually average to above average.  Exceptionally steady skies on December 28. Atmospheric steadiness (seeing) makes all the difference. I made an animation of the event.

## Crescent Moon over Pomham Rocks by Jim Hendrickson

The 3.2% crescent Moon sets over the festively-illuminated Pomham Rocks Lighthouse in East Providence on December 21, 2025.


Bob Horton and Francine Jackson give a presentation about the night sky and telescopes at the East Providence Weaver Library on Monday, December 1, 2025.


Jim Hendrickson, Linda Bergemann, and Francine Jackson attend a presentation about the Scituate Heritage Trail signage project at Hope Historical Society on January 10, 2026. Later in the spring, a Scituate Heritage Trail sign will be installed at Seagrave Memorial Observatory.


## Upcoming Presentations

**March 7**
at North Scituate Community House
Sam Birch, Brown University:
Dragonfly mission to Titan

**April 4 Annual Meeting**
at Seagrave Memorial Observatory
Steve Hubbard: The Lure of Southern Skies

**May 2**
at Seagrave Memorial Observatory
Charles Slatkin: The Wonder Project

**June 6**
at Seagrave Memorial Observatory
Dr. Ralph Milliken, Brown University

**July 11**
at Seagrave Memorial Observatory
Member Presentations

**August 1**
at Seagrave Memorial Observatory
Dr. Vijay Varma, University of Massachusetts, Dartmouth

## Full Wolf Moon & Jupiter by Jim Hendrickson

The full Moon appeared just 5°from Jupiter on January 3, 2026 following Skyscrapers January holiday potluck meeting and presentation in North Scituate.

Kalamazoo Astronomical Society KAS



# Erich von Däniken

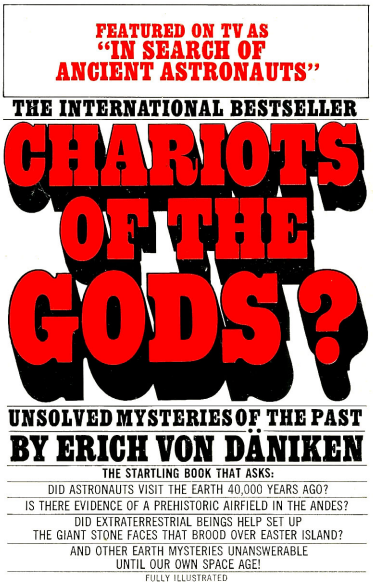
(1935-2026)

**by Francine Jackson**

In 1968, when Erich von Däniken was a 32-year-old hotel manager in Davos, Switzerland, he wrote "Chariots of the Gods," which to him explained how many of our mysteries – Easter Island's statues, the Pyramids, Peru's Nazca lines – were made by alien visitors. Without a smattering of evidence or science background, "*Chariots of the Gods*" sold hundreds of thousands of copies. It also spurred him to write dozens of similar themed books.

His critics, of course, were ripe with comments, mostly unflattering: "…(A) warped parody of reasoning… based on ignorance"; "Every time he (von Däniken) sees something he doesn't understand, he attributes it to extraterrestrial intelligence, and since he understands almost nothing, he sees evidence of extraterrestrial intelligence all over the planet"; "(A) mixmaster of facts, speculation rhetorical questions, that reading it left one's mind the consistency of a rich Swiss fondue." And yet, his books sold in the millions.

At his height of fame, von Däniken was traveling 100,000 miles a year, surveying sites, and lecturing to like-minded followers. Although he was imprisoned for fraud and embezzlement for over a year – during which time he wrote his second book – he never stopped the idea that aliens had to arrive here and "help" with some of the world's most fascinating mysteries. Erich von Däniken died in early January, at age 90.



# Astronomy's Problem with Satellite Megaconstellations

**by Francine Jackson**

As astronomy lovers, we often speak on the deteriorating skies brought on by over lighting; but, what about other disturbances that seem to be occurring?

One of the most bothersome problems, as documented in recent issues of both The Reflector and Science, is the number of Starlink satellites that are showing up in many peoples' astrophotos. The lines created by the satellites passing across the image destroy the beauty of the object being taken. At present, there are over 14,000 satellites in orbit, over two-thirds of them Starlinks, so almost any attempt at a long exposure is bound to have these streaks ruining the picture. At present, the International Telecommunication Union (ITU) is looking into the problem of managing the use of low Earth orbit and what is within it. Although it doesn't have enforcement powers as such, it is able to keep the information and send it to its 193 member organizations, in hopes they will all assist in keeping the satellite numbers as checked as possible.

In addition, this increase in low-Earth-orbit satellites is having an even greater effect on orbiting astronomical observatories. A study led by NASA focusing on two operating telescopes, Hubble and SPHEREx is estimating that a large number of images by these could be tainted by light emitted or reflected by satellites sharing their low-Earth orbits.

Their research results calculate that as of now about 40% of Hubble's images, and 96% of those by SPHEREx, could be contaminated by these other satellites' light. In addition, two upcoming telescopes, The European Space Agency's ARRAKIHS and the Chinese Xuntian observatories, could suffer the same problem. Hubble's lower percentage is due to its narrower field of view.

The observatories with much further orbits – James Webb, the ESA's Euclid, Nancy Grace Roman – will not be affected by this "contamination"; but, with the imaging that takes place here on Earth with those lower orbit facilities, there must be a way to lower the effects on both problems. At this time, the International Astronomical Union (IAU) Centre for the Protection of the Dark and Quiet Sky is looking into thus critical problem, both for those desiring to take beautiful images here, and those who collect the most information from our low-Earth observatories.

# Directions to Seagrave Memorial Observatory

www.theSkyscrapers.org

**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.

---

SKYSCRAPERS INC.

47 Peeptoad Road
North Scituate, Rhode Island 02857