the Skyscraper

vol. 53 no. 3
March 2026

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

In This Issue:

Observing Events:

Open Nights at Seagrave Observatory*

March 7, Closed

March 14, 8-10 PM

March 21, 8-10 PM

March 28, 8-10 PM

Off-site Public Observing**

None scheduled

*Members are encouraged to attend

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

Join us for Skyscrapers'

March Presentation

Featuring Featuring Dr. Samuel Birch, Brown University

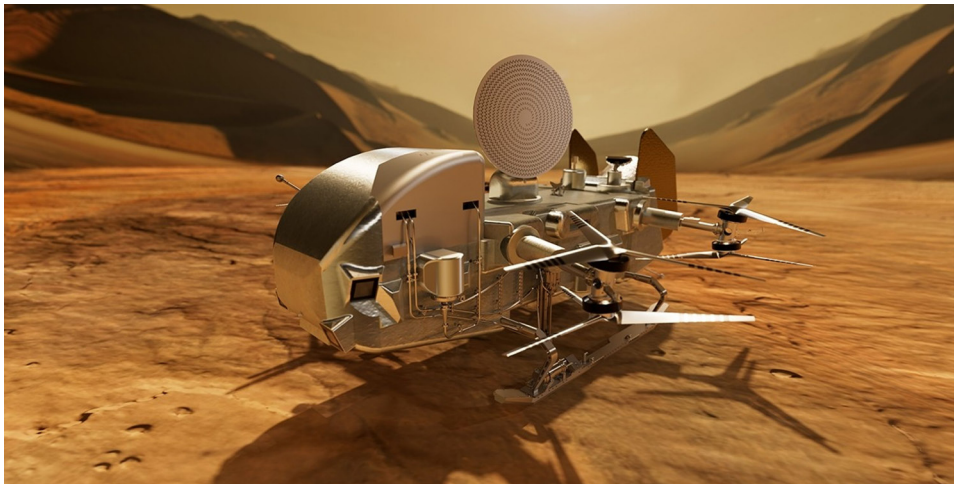
at North Scituate Community House, 546 West Greenville Rd.
Saturday, March 7, 2026
Social hour at 6:00pm, Presentation at 6:30pm

Join Zoom Meeting
https://us06web.zoom.us/j/86434366813?pwd=EPFJW1PttgDBXLm4cNRc4d3YkHKiEG.1
Meeting ID: 864 3436 6813 Passcode: 367216

Dragonfly Mission to Titan

Dragonfly may be the most ambitious science mission NASA has ever attempted: sending a car-sized, nuclear-powered octocopter to explore the surface of a distant ocean world. In a voyage straight out of science fiction, Dragonfly will deliver the most expansive suite of science instruments ever dispatched to another celestial body. Dragonfly will cover more than 50 miles of the organics-rich Titan surface, landing, collecting and returning results that could change our understanding of life in the universe. But Dragonfly won't carry out this task on its own. The mission includes a team of experts from around the world, collaborating to turn these game-changing space science and flight plans into reality. In this talk, I will detail Titan, why it's a world worth exploring, and how Dragonfly will go about doing so.

Sam is a geomorphologist and planetary scientist by training, and have been an assistant professor at Brown University since July 2023. His group combines remote sensing analyses of planetary surfaces, with theory, simulations, field work, and lab experiments. We apply any assortment of these tools to worlds like Titan, Earth, and Mars to understand what their fluvially- and aeolian-shaped landscapes record about their coupled climate-tectonic histories. We also look at icy worlds and small bodies like comets, using their landscapes to infer the nature of their materials and what they record about processes occurring the our solar system's protoplanetary disk.



President's Message

by Linda Bergemann

This has been quite a winter! I am looking forward to Spring this year more than usual. But, Spring brings with it administrative chores.

First up is our election of officers. Our nominations committee, headed by Michael Corvese, has been working to assemble a slate of officers to present at our March meeting. If you have any interest in running for a position or serving on a committee, please contact Michael before or at our meeting on March 7. Descriptions of all positions appear in our Constitution and ByLaws available on our website. Our election will take place beginning in late March and results reported at our April Annual Meeting. The election will be conducted electronically using Election Buddy. Members in good standing as of October 2025 are eligible to vote and will receive a ballot.

Next is annual dues. Our ByLaws dictate that dues for each of us are payable on April 1 of each year. I will be sending an email in the next week with a link to renew your membership through PayPal. This is the easiest way for us to manage our membership roster. If this method doesn't suit you and you pay by check or cash, please complete and include a membership application so we have a record of your payment. And, just a reminder that dues and AstroAssembly receipts are our primary means of supporting the Society's activities and maintaining Seagrave Memorial Observatory.

Also on my list of chores is our annual budget. Our annual expenditures are a little over $10,000, more if we undertake any special projects. I will be working with members of the Board of Directors and Board of Trustees over the next few weeks to develop a budget to present for approval at our Annual Meeting. If you have any activities or projects that you would like to see us pursue that will require funding, please let me know so it can be discussed and appropriately funded.

I think that's enough for this month! Thank you for supporting Skyscrapers.

Until next time,

Linda

401-322-9946 lbergemann@aol.com

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 **March 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: March 2026

by Jim Hendrickson

The arrival of spring brings some notable changes to our nights. During March, we will see rapidly decreasing darkness, as the hours of daylight exceed night. The bitter cold nights give way to the spring thaw, bringing the earthy scent and the sound of the spring peepers.

The change of season is also indicated in the stars we see in the evening sky. To the west, the Great Square of Pegasus is being consumed by the encroaching evening twilight, and the constellations heralding the arrival of spring are appearing in the east.

The old adage of March coming "in like a lion" is a reference to the celestial feline we know as Leo making its first evening appearance. Concurrent with Leo's ascension, the Great Bear, Ursa Major, is also rising into view.

The Winter Hexagon asterism, encompassing our familiar winter constellations, is high in the south after twilight early in the month, but notice how quickly it moves west of the meridian each evening.

We have some sights worth watching in our own solar system during the month of March.

The Sun

The annual shift forward to daylight time is at 2:00am on the 8th. We will now be in Eastern Daylight Time, four hours behind Coordinated Universal Time, until November 1.

The Sun moves into Pisces on the 12th, where it will reside for the next 37 days.

The first day of the year with at least 12 hours of daylight is the 17th, with the Sun rising at 6:53am and setting at 6:54pm. Daylight will remain longer than 12 hours until September 25.

Equinox is at 10:46am on the 20th. At this time, the Sun moves into the northern celestial hemisphere (positive declination), where it will remain until September 22nd.

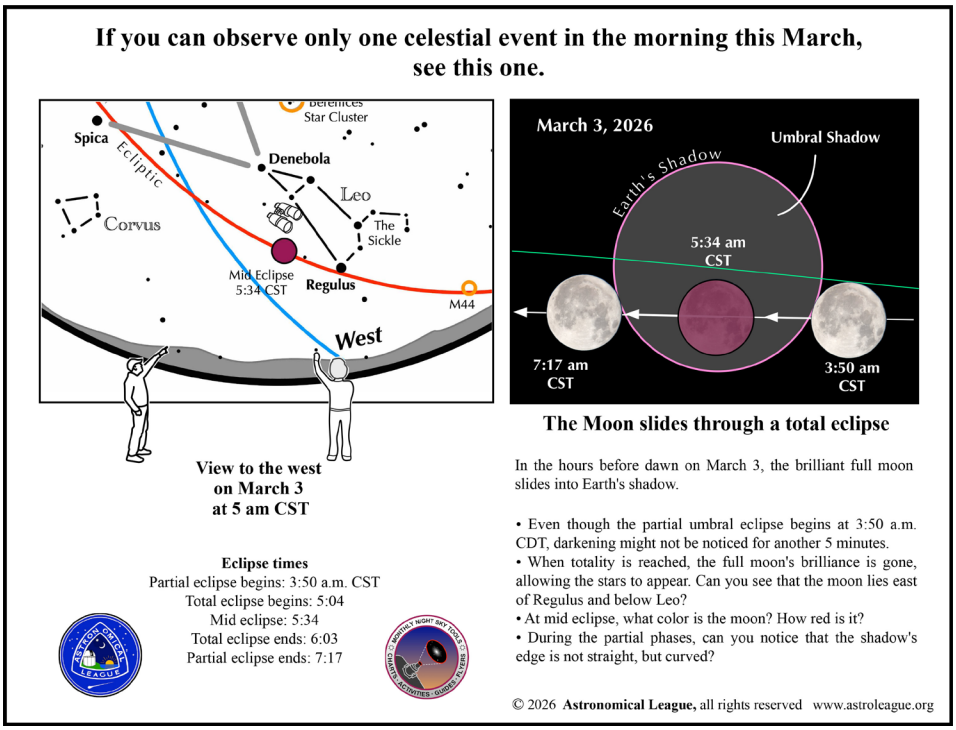
The first sunset in the 7:00pm hour is on the 22nd. Sunsets will continue to be later than 7:00pm through September 12th.

The Moon

The Moon passes 1.9° west of Regulus early in the morning of the 2nd.

March's full Moon, on the 2nd-3rd, brings the first of two lunar eclipses visible to us in 2026, and the only one that is total. The Moon rises at 4:56pm on the 2nd, 41 minutes before sunset. The Moon transits at 11:45pm at an elevation of 55.8°.

The eclipse begins when the Moon enters the penumbra (outer shadow) at 3:43am (P1). As this is the outer shadow, it may not be visible until it gets nearer to umbral eclipse start (U1) at 4:49am, which is five minutes into astronomical twilight. Totality (U2) begins at 6:03am, which is eleven minutes into civil twilight, with the



Events in March

1	19:13	Last day Neptune sets after astronomical twilight
2	05:00	Moon (waxing 98.6%) 1.9° W of Regulus
2	15:00	Pallas Conjunction
2	19:12	Last day Saturn sets after astronomical twilight
3	06:38	● **Full Worm Moon** in Leo (**Total Eclipse at Moonset**; in: 04:50; total: 06:04; max: 06:15; set: 06:19)
6	05:00	Moon (waning 91.0%) 4.1° W of Spica
7	06:00	Mercury Inferior Conjunction
8	01:00	Moon (waning 77.6%) 5.7° SSW of Zubenelgenubi
8	02:00	Eastern Daylight Time (UTC-04:00)
8	19:30	Venus 1.0° N of Saturn
10	06:00	Moon (waning 59.3%) 1.5° SW of Antares
10	10:00	Moon (waning 57.8%) at Apogee (1.052 LD) in Scorpius
11	03:00	Jupiter Stationary
11	05:38	◖ **Last Quarter Moon** in Ophiuchus
12	10:00	Sun in Pisces (37d)
13	04:59	Moon (waning 31.3%) occults τ Sgr (mag: 3.3; in: 04:59; out: 06:20N)
17	06:30	Moon (waning 3.1%) 3.5° S of Mercury
17	06:53	First day with 12 hours of daylight (12:00:32, through September 25)
18	21:23	○ **New Moon** (Lunation 1277) in Leo
19	19:30	Moon (waxing 1.0%) 6.9° W of Venus
20	10:46	**Equinox**
22	08:00	Moon (waxing 15.4%) at Perigee (0.954 LD)
22	11:00	Neptune Conjunction
22	19:00	First 7:00pm Sunset (through September 12)
22	23:00	Moon (waxing 20.4%) 3.6° W of M45
24	21:00	Moon (waxing 41.4%) 0.8° ESE of Elnath
25	09:00	Saturn Conjunction
25	15:18	◗ **First Quarter Moon** in Auriga
25	20:38	Venus sets after astronomical twilight (through July 25)
26	02:00	Moon (waxing 54.6%) 5.6° NW of Jupiter
26	07:00	Mars Perihelion (1.381 au)
26	22:00	Moon (waxing 64.5%) 3.1° SSW of Pollux
27	00:15	Moon (waxing 64.9%) occults κ Gem (mag: 3.6; in: 00:15; out: 01:15)
28	01:00	Moon (waxing 75.8%) 0.5° ENE of M44
29	21:00	Moon (waxing 90.7%) 3.0° ESE of Regulus
30	22:00	15022 Francinejackson Closest in Virgo (mag: 18.7, dist: 1.407 au)

Ephemeris times are in EST (UTC-5) through March 7 and EDT (UTC-4) after March 7 for Seagrave Observatory (41.845N, 71.590W)

Moon just 2.5° above the western horizon. The Moon begins setting at 6:16am, when its lower limb touches the horizon, and it is completely out of view three minutes later. Events we will not see, mid-eclipse is at 6:33am, totality ends (U3) at 7:02am, partial (umbral eclipse) ends at 8:17am, and penumbral ends (P4) at 9:23am.

During the Moon's waning gibbous phase, it passes 4.1° west of Spica on the morning of the 6th, and 1.5° southwest of Antares on the 10th.

Last quarter Moon is at 5:38am on the 11th, followed by its waning crescent phase.

The 31.3% waning crescent occults magnitude 3.3 τ (tau) Sagittarii, the easternmost star of the teapot asterism, on the 13th. The magnitude 3.3 star goes behind the sunlit limb of the Moon at 4:49am, and reappears from behind the dark limb at 6:20am, in nautical twilight.

New Moon is at 9:23pm on the 18th, marking the start of Lunation 1277. On the following evening, spot the 22-hour old,

Lunar Almanac
March 2026

3 Full Moon
06:38 EST in Leo

Rise	Transit	Set
16:57	**23:45**	**06:19**
-	55.8°	-
76.9°	180.0°	278.6°

11 Last Quarter
05:38 EDT in Ophiuchus

Rise	Transit	Set
02:37	**06:51**	**11:03**
-	19.0°	-
129.5°	180.0°	230.3°

18 New Moon
21:23 EDT in Pisces

Lunation 1277

25 First Quarter
15:18 EDT in Auriga

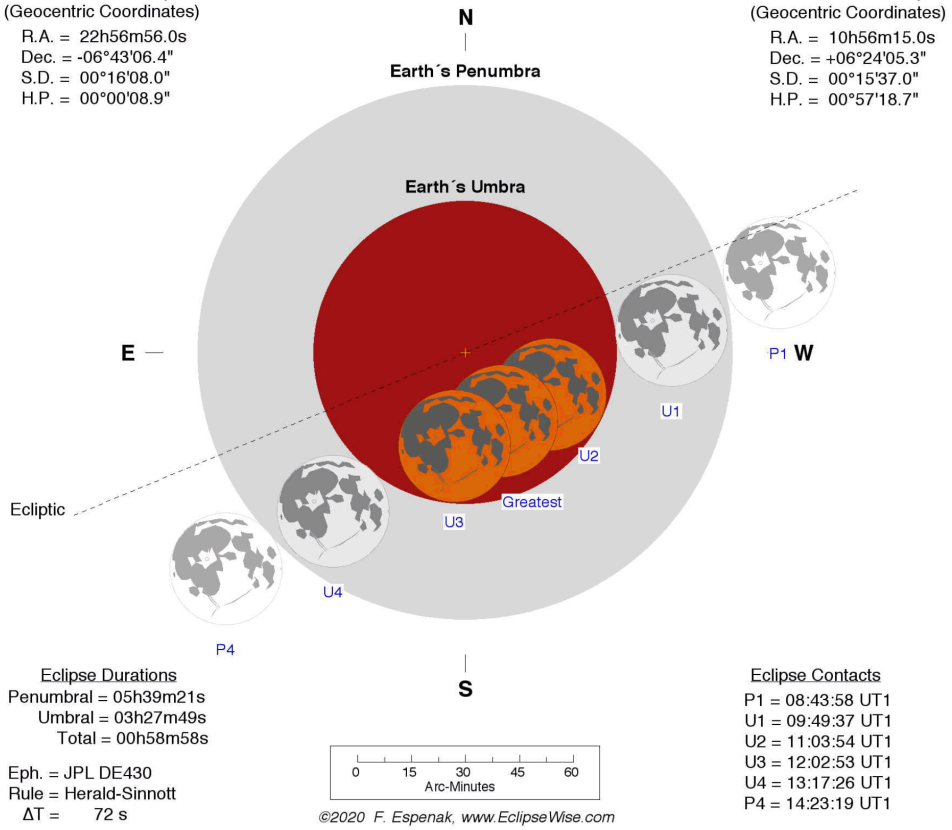
Rise	Transit	Set
10:52	**19:06**	**03:14**
-	75.6°	-
51.0°	180.0°	307.7°

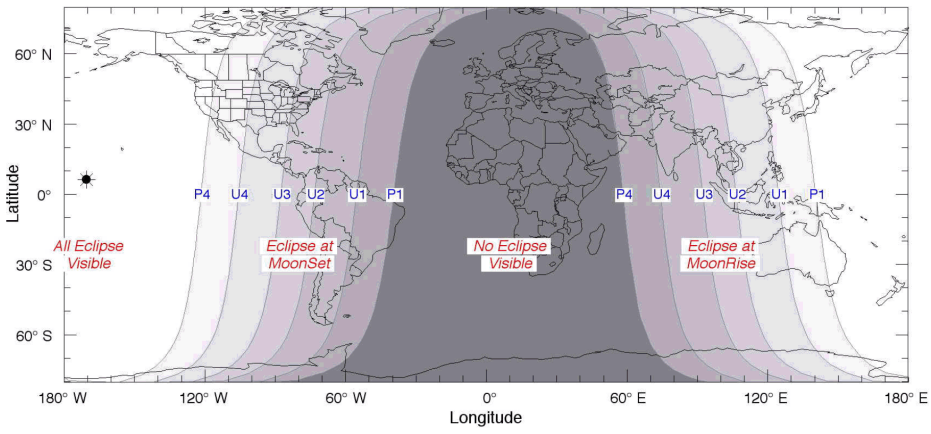
Date	Position	Phase	Distance
10 10:00	Apogee	57.8% ↙	1.052
22 08:00	Perigee	15.4% ↖	0.954

Total Lunar Eclipse of 2026 Mar 03

Greatest Eclipse = 11:34:52.1 TD (= 11:33:40.0 UT1)

Penumbral Magnitude = 2.1858 Gamma = -0.3765 Saros Series = 133
Umbral Magnitude = 1.1526 Axis = 0.3596° Saros Member = 27 of 71





COURTESY OF *21ST CENTURY CANON OF LUNAR ECLIPSES*, FRED ESPENAK, ASTROPIXELS PUBLISHING, 2020

1.0% illuminated crescent 6.9° west (about the 4 o'clock position) of Venus in the twilight sky. The Moon sets an hour after sunset.

You'll have a far easier time seeing the Moon on the following night, the 20th, when the 4.9% crescent sets over two hours past sunset.

On the 22nd, the 20.4% crescent Moon is 3.6° west of the Pleiades cluster.

Just as it's getting dark on the 24th, the 41.4% crescent Moon is 0.4° south of Elnath (beta Tauri).

The Moon is first quarter at 3:18pm on the 25th, in Auriga.

On the 26th, the gibbous Moon is near Pollux, in Gemini, and a few degrees east of Jupiter.

The 64.9% gibbous Moon occults κ (kappa) Geminorum for 60 minutes beginning at 12:15 am on the 27th. κ Gem is a binary star system 141 light years away. Its primary is a class G8 giant, with a Sun-like companion star 7 arcseconds to the southwest.

A good sight for small telescope observers occurs just after 1:00am on the 28th, when the 75.8% waxing gibbous Moon is within 0.5° of the Beehive Cluster, M44.

The Planets

In early March, **Mercury** rapidly drops out of view in the evening sky after sunset, but this is still a good time to observe it. Through a telescope it shows a dramatic thin crescent over 9 arcseconds across. Observing it on subsequent nights will reveal the illuminated crescent getting noticeably thinner.

Mercury spent February at a higher elevation than Venus in the evening sky, but it trades places with the brilliant planet on the 1st.

The innermost planet is at inferior conjunction on the 7th, but due to its apparent position well north of the ecliptic, it remains above the horizon both after sunset and before sunrise on the 5th and 6th. This is a similar configuration to the last inferior conjunction of Venus in March 2025, but significantly more challenging to observe.

Upon returning to the morning sky, Mercury remains low due to the shallow elongation angle compared to that it experienced in the evening sky for the past few weeks.

The 3.1% waning crescent Moon is 3.5° south of Mercury on the 17th.

During the final days of March, Mercury rises just under an hour before sunrise. Observers with a clear eastern horizon and a larger telescope can see the innermost planet progressing through its waxing crescent phase.

If you haven't yet noticed the presence of brilliant **Venus** in the western sky after sunset, you will very soon. It sets over an hour after sunset. Known as the Evening Star when it is on the eastern side of the Sun, the third brightest object in the sky sets over an hour after sunset in early March, and over 90 minutes later at the end of the month.

Each evening it gets closer to Saturn until the 8th, when it is just 1.0° north of the ringed planet.

Venus is in Pisces, but clips into the northwestern corner of Cetus on the 12th through 13th.

While Venus is very bright, at magnitude -3.9, it is still quite distant, and shows a small, 10-arcsecond, nearly fully-illuminated globe through a telescope.

Beginning on the 25th, and through July 25, Venus sets outside of astronomical twilight, when the Sun is greater than 18° below the horizon and the sky is darkest.

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.

Observers looking for a challenge may try to spot the Red Planet on the morning of the 16th, when it will be directly below Mercury by 3.5°.

Jupiter is high in the south during the early evenings at the beginning of March, and it is the brightest starlike object in the sky once Venus sets.

The giant planet concludes its retrograde apparent motion on the 11th. It will appear stationary in central Gemini, and slowly resume an eastward apparent motion. Take note of how its position relative to Castor and Pollux changes over the coming weeks.

A total eclipse of the Moon will be visible early in the morning of March 3. The Moon enters totality just before moonset, which will appear similar to this photo of the November 8, 2022 total lunar eclipse from Chase Farm in Lincoln, with the Moon low on the eastern horizon as the sky brightens. The table at right gives the sequence of events and circumstances for observers in Rhode Island.

Time (EST)		Event	Lunar Elevation
3:43am	P1	**Penumbral Eclipse Start**	**27.5°**
4:44am		Astronomical Twilight	16.5°
4:49am	U1	**Partial (Umbral) Eclipse Start**	**15.6°**
5:17am		Nautical Twilight	10.5°
5:52am		Civil Twilight	4.3°
6:03am	U2	**Total Eclipse Start**	**2.2°**
6:16am		Moonset Start	0°
6:17am		Sunrise	
6:19am		Moonset	
6:33am		Mid-Eclipse	
7:02am	U3	Total Eclipse End	
8:17am	U4	Partial (Unbral) Eclipse End	
9:23am	P4	Penumbral Eclipse End	

At mid-month, it appears on the meridian just as twilight fades, and it is notably west of the meridian towards the end of the month.

Saturn is getting lower in the west after sunset. The 2nd is the last night it sets after astronomical twilight, but observers with a clear western horizon will be able to observe it for a few more days early in the month.

On the 8th, the ringed planet is 1.0° south of Venus, and on the 10th, it is 2.9° directly below Venus. The separation between the two planets increases by more than 1.0° each evening following, as Saturn gets more difficult to observe, setting before the end of nautical twilight.

Saturn is in conjunction on the 25th, bringing to a conclusion its synodic cycle that was most notable for the recent ring plane crossing. The next ring plane crossing cycle begins in 2038.

Saturn remains out of view for the next few weeks, and will become visible again in May.

After Jupiter, **Uranus** is the only other planet that remains in good viewing position throughout March. The seventh planet shines at magnitude 5.8 and is still easy to locate within the same binocular field of view as the Pleiades cluster, in Taurus.

A pair of 6th magnitude stars 4.0° south of the Pleiades can be used to track the eastward motion of the seventh planet in March.

Uranus encounters the westernmost of the pair, 13 Tauri, on the 17th, when it will be 0.2° south of the star.

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.

Uranus is just 5 arcminutes south of 14 Tauri, the westernmost star, on the 26th. The seventh planet continues moving eastward by 2.4 arcminutes per day.

Neptune is getting difficult to observe due to its low elevation. On the 1st, it sets outside of astronomical twilight for the last time this season, effectively ending the observing season of our most distant planet.

Observers with a clear horizon and a large telescope may be able to spot Neptune 0.6° east-northeast of Venus on the 6th, and 0.6° southwest of Venus on the 7th.

Neptune is in conjunction on the 20th, and will not be visible until May.

Minor Planets

Pluto remains lost in the glow of twilight. We'll be able to observe it again in late April.

Dwarf planet Ceres can still be observed in Pisces in March, but it is getting lower in the southwest, and will soon be out of view. Shining at magnitude 9.2 from a distance of over 3.5 au, it is 1.0° south-southeast of magnitude 4.5 ν (nu) Piscium on the 3rd, moving east-northeastward at 0.4° per day. On the 10th, it is 3.7° northwest of Alrescha (α Piscium), and 4.0° north of the star on the 17th.

Makemake is at opposition on April 1, making March and April the best months to observe the distant dwarf planet, although at its great distance of 51.8 au, its brightness doesn't change much more than a tenth of a magnitude beyond its closest brightness of 17.0. It is located in eastern Coma Berenices, about ⅓ of the way between the Messier globular clusters M53 and M3. Its apparent daily motion is about 1 arcminute per day in a west-northwesterly direction.

Our brightest asteroid, 4 Vesta, is too low in morning twilight to observe in March.

2 Pallas is in conjunction on the 2nd. The solar system's second-largest asteroid becomes visible in the morning sky in May.

Asteroid 15022 Francinejackson has its first closest approach to Earth since it was named in February 2025. Located in Virgo at a distance of 1.407 au, the 2-4 km asteroid shines at a meager 18.7 magnitude, making it accessible only to deep sky imagers.

On the 28th, Francinejackson is just 0.2° from NGC 4958, a magnitude 10.8 lenticular galaxy.

Stars & Galaxies

The stars align (or rather, the galaxies are aligned) during the third week of March, when the night side of Earth is oriented towards our Milky Way's galactic pole. This gives us the best view of the universe beyond our home galaxy, particularly the Virgo Cluster and other associated galaxy groups covering the nearby constellations of Leo, Coma Berenices, and Ursa Major.

This is also, coincidentally, the best time of the year to attempt to observe all 110 objects from Messier's Catalog from mid-northern latitudes, and 2026 gives us a New Moon on the 18th, setting up for the darkest possible conditions for the annual Messier Marathon.

An observer attempting to complete the full marathon must find a suitable location away from lights and clear of obstructions on the western, southern, and eastern horizons, and be prepared to remain at the site from sunset until sunrise – an approximate 12-hour duration.

The trick to getting the Messier Marathon off to a good start is to knock off a trio of face-on spiral galaxies that are low in twilight: M74, M77, and M33. If there is anything more difficult than beginning the Messier Marathon, it is ending it, as the final object, the magnitude 7.7x globular cluster M30 in Capricornus, is still very low in the sky through brightening twilight. The later you conduct a Messier Marathon, the easier M30 is to observe, but on the flip side, you also have a greater chance of not seeing the first three galaxies. The ideal dates range from March 20-24th, and if you choose March 20, use the 4.7% crescent Moon to locate M74, which will be 3.8° almost directly above it.

One pair of galaxies that you'll encounter midway through the Messier Marathon are among the best in the northern sky: M81 and M82 in Ursa Major. Being the two most northern Messier objects, they are circumpolar, and technically visible any time of the night or year, however, late evenings in March are when they reach their upper culmination and are in the best position for observing. And what's better than putting a single object in your telescope than viewing

Upcoming Presentations

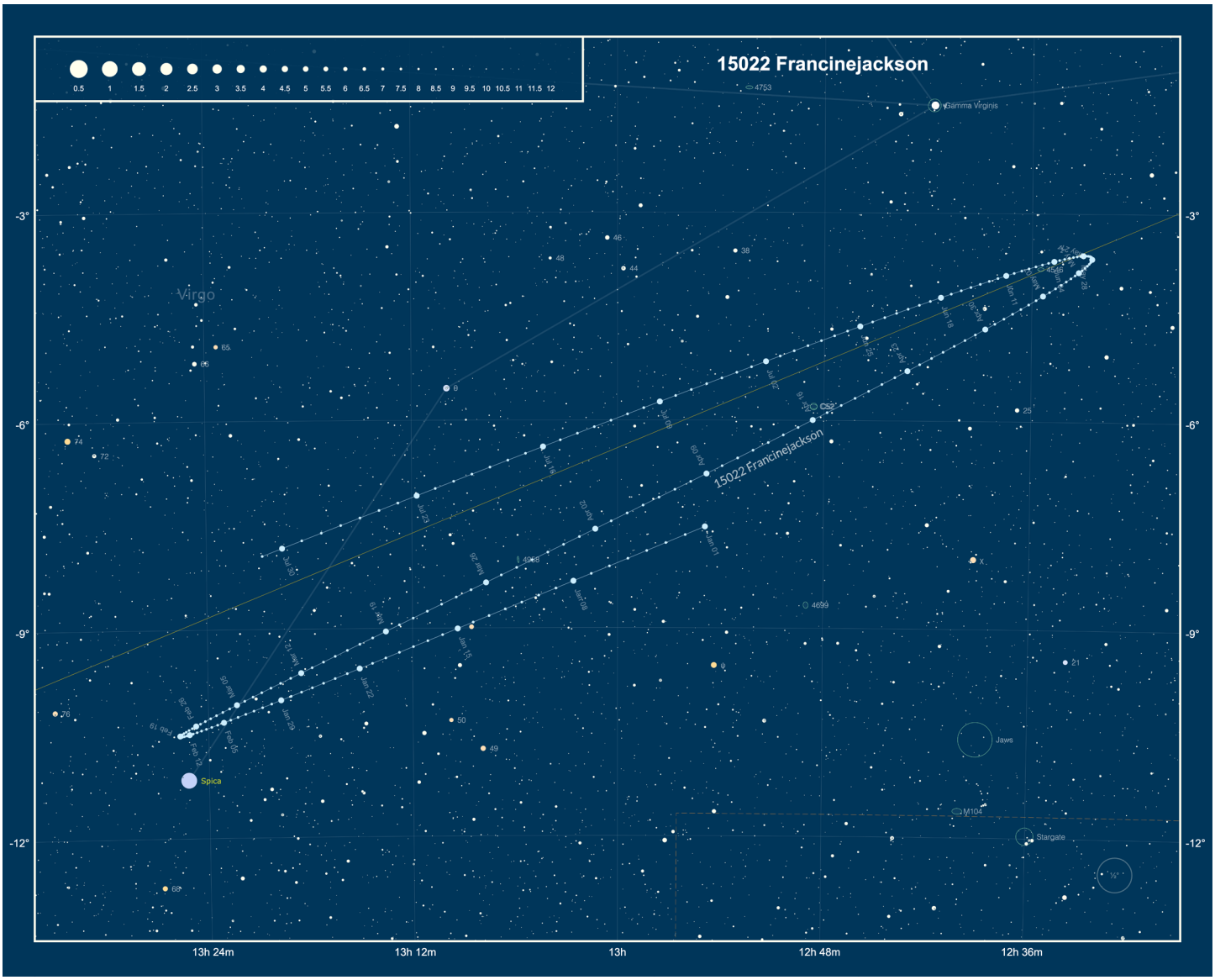
April 4 Annual Meeting
at Seagrave Memorial Observatory
Steve Hubbard: The Lure of Southern Skies

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



a pair of them? M81 and M82 make one of the prettiest object pairs visible in a small telescope on a dark night.

Lying just over 20° from the North Celestial Pole and 10° northwest of Dubhe, the outermost star in the bowl of the Big Dipper, M81 and M82 deliver their 12 million year old light together in an eyepiece that affords at least a one-degree field of view. They were discovered by German astronomer Johann Elert Bode on December 31, 1774, more than six years before Messier added them to his catalog, hence they are often referenced as Bode's Nebaulue (before the nature of galaxies was determined by Hubble in the 1920s, they were referred to as nebulae).

The combined light of M81's 250 billion suns adds up to visual magnitude 6.9, making it one of the brightest galaxies in the sky. Spanning over 25 arcminutes in the sky, it is about 96,000 light years across, and contains 210 known globular clusters, making it similar to the Milky Way in size and globular cluster population. Its central black hole, at 70,000 solar mass, is 16 times more massive than the Milky Way's.

Thirty-three years ago, M81 drew the scrutiny of astronomers when the Type IIb supernova SN 1993J peaked at magnitude 10.7 in March of that year.

Viewed in a large telescope or in images, M81 exhibits a nearly perfect, undistorted spiral structure, indicating that it has not had any recent interactions or mergers. Its nearby companion, M82, is quite the contrast.

Classified as irregular, M82 is known as a starburst galaxy, as it has undergone an abnormally high amount of star formation over the past half billion years, likely due to tidal interactions with M81. It contains over 100 clusters of many thousands of hot, massive stars

Through a telescope it appears similar to an edge-on galaxy, offset about 20° from the perpendicular line towards M81. Its 30 billion suns give it a visual magnitude of 8.4, and is even brighter in the infrared. Two large lobes of hydrogen extend out from the galaxy's poles, away from its hidden 30 million solar mass black hole.

M82 produced a Type Ia supernova, SN 2014J, which peaked at magnitude 10.5 in January of that year.

Take a cosmic journey to M81 and M82 and enjoy this striking pair of galaxies in the northern circumpolar sky.

Lastly, the recurring nova, T Coronae Borealis, also called the Blaze Star, is visible nearly all night, rising out of the northeast mid-evening early in the month, and just past twilight at the end of March. After an approximately 80-year quiescent period, during which it remains at 10th magnitude, it is expected to briefly spike to 2nd magnitude. The last outburst of T CrB occurred in February 1946, so we're expecting the next outburst any day now.

A Century Ago:

Goddard's Rocket Reaches for the Stars

A century ago this March, during a sunny afternoon on a snow-covered farm just 28 miles north of Seagrave Memorial Observatory, an engineer from Worcester, Massachusetts set out to conduct a momentous experiment. A spindly contraption having the appearance of being cobbled together with surplus plumbing and farm equipment, yet being a precision-engineered flying machine, hopped off its launch stand, sped across a field, and would eventually bridge the gap between science fiction and space flight.

Robert Hutchings Goddard certainly didn't invent the field of rocketry, as we know from a poem written by Francis Scott Key in 1814, a century before Goddard received his first patent. In what would later become America's national anthem, Key wrote of "the rockets' red glare," a reference to the siege weapons used by the British Royal Navy during their overnight attack on Baltimore's Fort McHenry during the War of 1812. These rockets, constructed of iron casings packed with gunpowder and attached to a long stick, were not much more technologically advanced than those used during the Song dynasty in China over a half millennium earlier.

Robert Goddard was born in Worcester in 1882, and took up an interest in science at an early age. As a teen, his enthusiasm for space flight was sparked after reading H. G. Wells's War of the Worlds, and in the autumn of 1899, he climbed a cherry tree to prune it, during which he had a vision of creating a machine that could travel to Mars. He would later write that, "I was a different boy when I descended the tree from when I ascended, for existence at last seemed very purposive." Every year thereafter, he would observe October 19 as "Anniversary Day."

Goddard earned his bachelor's degree in physics at Worcester Polytechnic Institute, and pursued his PhD in physics at Clark University, where he would later serve as a research fellow, and eventually chair the department. He filed for, and received, his first patent in the field in July 1914 for a multi-stage solid propellant apparatus. A week later, he was granted another patent (US 1,103,503), the first pertaining to liquid propulsion.

Seeking funding for his research, Goddard submitted to the Smithsonian Institution a detailed report of his work up to 1916, referred to as A Method of Reaching Extreme Altitudes. The work would be published a few years later, and although it was largely a treatise in the theory and engineering of rocket propulsion, one of its concepts contained calculations for sending a one-pound payload of flash powder to the surface of the Moon as a hypothetical experiment to be observed from Earth. As the public was not ready to accept rocketry and space travel as a serious concept, he received much ridicule by the press. Because of this, he preferred to work either privately or with a close cohort of colleagues.

Goddard recognized that hydrogen would be an efficient liquid propellant for rocket engines, but the methods for processing and handling the 14 K (−434 °F) cryogenic fuel would not be achieved for a few more decades, so he chose readily available gasoline to fuel his rocket.

The apparatus appeared simple, but was relatively complex, using advanced methods that are still in use a century later.

The fuel system was pressurized using nitrogen, an inert gas, which delivered fuel from the tank at the aft end (bottom) of the rocket to the combustion chamber at the forward end. Gas pressurization is still used in modern rockets, which typically use helium for its lower mass. The liquid oxygen slowly boiled off and generated its own autogenous pressurization.

The combustion chamber was capped by an injector plate, with holes drilled for the pressurized fuel and oxidizer to flow through, similar to those used in modern rocket engines. The fuel was ignited by a spark plug.

The rocket nozzle, from which exhaust gases are propelled out of the combustion chamber and directed away from the intended direction of travel, was based on the De Laval design, which had been in use in steam turbines.

At a height of 11 feet (3.3 meters) and a diameter of 6" (150 cm), the rocket weighed 11 pounds (4.1 kg).

On the afternoon of March 16, 1926, in a field on his aunt's farm in Auburn, Massachusetts, Goddard switched on the rocket's fuel valves and ignitor from behind a blast shield. The rocket fired for several seconds before lifting off its launch stand to a height of 12.5 meters (41 feet), and travelled laterally across the field for a total distance of 56 meters (184 feet) during its 2.5 second flight. The rocket's total thrust was just 9 lbf (40 N).

As he further refined his rocket designs, newer models would adopt the more familiar configuration of having the combustion chamber and nozzle at the aft end of the rocket.

From the 1930s onward, Goddard conducted his experiments in Roswell, New Mexico, a more suitable location due to its remoteness and more favorable weather conditions. From there, he continued to develop and improve his rocket designs, including gyroscopic stabilization, nozzle cooling, thrust vectoring, and thin-walled fuel tanks, all of which are used on modern rockets.

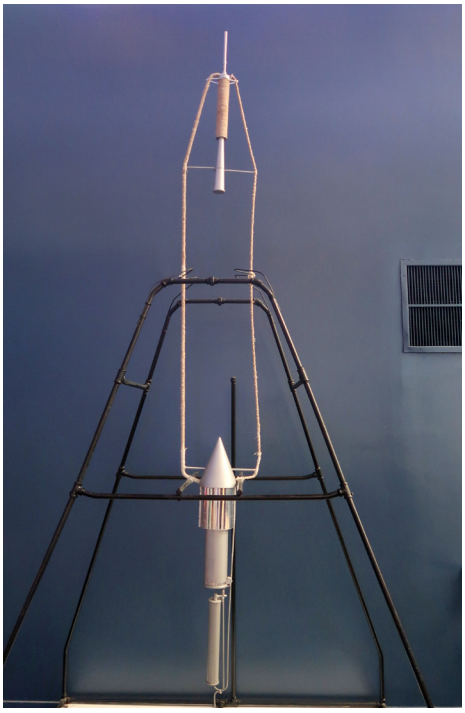
Unfortunately, his work received less attention within the United States than it did in Germany. Much of America's effort during the Second World War was conducted by the Jet Propulsion Laboratory at CalTech, while Goddard worked with the Navy to develop fuel pumps for hypergolic propellants for a JATO system for Navy seaplanes. JATO, or jet-assisted take-off, is a system of rocket packs designed to shorten the take-off run of an aircraft, with the terms jet and rocket being used interchangeably. This technology would eventually be transferred to Reaction Motors, Inc., and be installed on the Bell X-1 experimental rocket plane, with which Chuck Yeager flew the first supersonic flight in late 1947.

Only after Goddard's death during the waning days of the Second World War would his contributions to the field of rocketry gain much wider recognition, and his life and work would come to be celebrated in many ways.

Much of modern life is built upon Goddard's pioneering legacy, from global communications, weather forecasting, satellite navigation, and of course, pictures from orbiting observatories like the Webb Telescope..

Today, Goddard's launch site is marked by a granite obelisk adjacent to the ninth fairway on the Pakachoag Golf Course. It was designated a National Historic Land-

Opposite: Robert Goddard stands beside his rocket on a field in Auburn, Massachusetts in March 1926 shortly before sending it on a historic flight. Above: The site of Goddard's first liquid-fueled rocket flight is marked by a granite obelisk on the Pakachoag Golf Course in Auburn, MA.



A 100% scale replica of Goddard's first liquid-fueled rocket can be seen at the Museum of Science's Charles Haden Planetarium in Boston.

mark in 1966. A full-scale replica of the rocket on its launch stand is on display outside the Charles Hayden Planetarium at the Museum of Science in Boston.

In 1959, the newly formed National Aeronautics and Space Administration announced a new Space Projects Center to be opened in Greenbelt, Maryland to research, develop and test spacecraft for America's space program. The center would open on March 16, 1961, the 35th anniversary of Robert Goddard's first liquid rocket flight, under the name Goddard Space Flight Center.

On May 19, 1968, his alma mater dedicated the Robert Hutchings Goddard Library in his memory. The dedication was reported by the national press, and was attended by dignitaries such as Edwin "Buzz" Aldrin (just two months before he became the second person to walk on the Moon) and Werner von Braun.

A 93-kilometer crater on the eastern limb of the Moon is named for Goddard. Located at 15.15N, 89.13°E, the crater is best viewed during favorable eastern libration angles during the Moon's waxing phases only.

9252 Goddard (9058 P-L), a 12-kilometer asteroid that orbits in the main asteroid belt 3.1 au from the Sun is named for the rocket pioneer.

Some notable achievements using liquid-fueled rockets

October 24, 1946: A V-2 rocket, captured by the US Army at the end of World War II, was launched from White Sands, NM, to an altitude of 65 miles, where it took the first photo of Earth from space.

January 2, 1959: The USSR's Luna 1, launched on a Luna 8K72 3-stage liquid-propellant rocket from Baikonur Cosmodrome, became the first craft to achieve Earth escape velocity. It was designed to impact the Moon, but missed its mark by 6,000 kilometers and went into heliocentric orbit, where it remains today.

November 27, 1963: An Atlas rocket launches the Centaur upper stage from Cape Canaveral, marking the first successful flight of a liquid hydrogen/liquid oxygen (hydrolox) rocket engine, the RL-10, a version of which is still flying and will be used on NASA's upcoming Artemis II crewed mission to the Moon.

July 14, 1965: NASA's Mariner 4 probe, lofted by an Atlas Agena D rocket from Cape Canaveral eight months earlier, became the first spacecraft to visit Mars, passing within 9,846 kilometers (6,118 miles) of the planet, and sending back 22 images of its surface.

November 16, 1967: NASA's Surveyor 6 became the first craft to use rocket propulsion to lift off from another celestial body, the Moon.

December 8, 1968: Launched from LC-39A at Kennedy Space Center on Florida's Cape Canaveral, a three stage liquid propellant Saturn V rocket became the first flight to send humans to a destination beyond Earth, the Moon. To this day (as of February 2026), the Saturn V remains the most powerful all-liquid fueled rocket to lift a payload beyond Earth. NASA's SLS rocket is more powerful, but uses a combination of solid and liquid propellant, and SpaceX's Super Heavy/Starship is all liquid, but it has yet to lift a payload into orbit - it is expected to achieve that goal later in 2026.

March 2, 1972: An Atlas-3C rocket lifted off from Cape Canaveral Launch Complex 36 carrying NASA's Pioneer 10, the first spacecraft to reach solar escape velocity, to date one of only five spacecraft to do so.

No earlier than April 1, 2026: A NASA Space Launch System rocket, using a liquid-fueled core stage, is set to lift off from LC-39B at Kennedy Space Center, carrying four Artemis II mission astronauts on a trip around the far side of the Moon, and to the farthest distance from Earth than any crewed mission to date.

November 19, 2026: Launched nearly a half-century ago on a Titan-3 from Cape Canaveral, NASA's Voyager 1 interstellar probe will reach the astonishing distance of one light day (25.9 terameters (10^{12}), 173.145 au) from Earth.

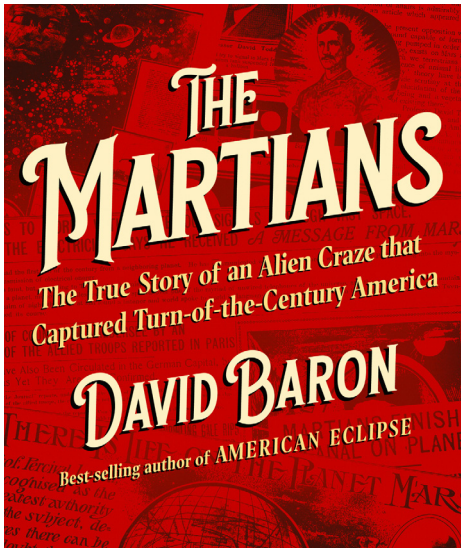
NASA's Goddard Space Flight Center in Greenbelt, Maryland has a visitor center and behind the scenes facilities tours where one can witness construction and operations of active and future missions.

Book Reviews

The Martians:
The True Story of an Alien Craze that Captured Turn-of-the-Century America

By David Baron, New York: Liveright Publishing Company, 2025, ISBN 978-1-324-09066-3, hardbound, $29.99, US

Reviewed by Francine Jackson



Ron Zincone was right.

If ever a person wanted to learn about the planet Mars and its effect on former financier Percival Lowell, this is the book to choose. The author, in addition to becoming familiar with the life of this infamous character, has delved into his friends and family, and all they did to, in many way, encourage Lowell, or do their best to bring him "back to Earth."

It was a family catastrophe that brought Lowell to think about more than just living his affluent lifestyle; learning of the alleged "canals" on Mars seemed perfect. He had observed the planet as a kid through his tiny telescope, but the allure of the possibility of life on the planet was too much for him to ignore. He grasped the writings of Schiaparelli, despite so many more who tended to consider this a fabrication.

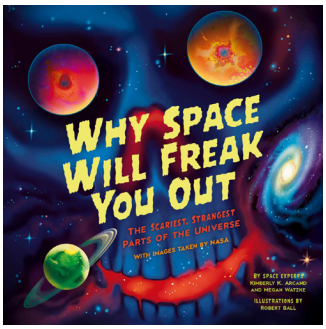
Assisting Lowell, in addition to several scientists who picked up the sword of life on Mars, science fiction writers came to the fray, pushing the possibility of life on Mars, and keeping it in peoples' minds.

One scientist who became allied with Lowell was David Peck Todd, who, with his wife Mabel, became proponents of martian life. Todd had been an eclipse follower – although his record for seeing them was abysmal – who, among other attempts to further the cause of life on our neighboring planet, actually dismantled his college telescope and traveled with it to Chile, in order to have as perfect a sky with which to observe and photograph Mars as clearly as possible. Also, in his later years, Todd convinced the U.S. military to have periods of radio silence, in hopes the martians' communication would be picked up.

Anther early proponent of life was Nikola Tesla, who spend much of his time attempting to send or receive martian signals. Even he, near the end of his life, had second thoughts on the practice.

The lists of both opponents and protagonists of Lowell fill much of 19th century and early 20th century scientists. Those who opposed him did so till the end; those who did rally for him did, like Todd and Tesla, slowly hold themselves back on their support as time went by, especially with such "evidence" of possible illusion, as per Maunder's experiment with children.

Except for a couple slight errata involving Todd and his wife, this book is an absolute treasure trove of an incredible adventure in a man's positivity in what in essence wasn't. It balances the decades of martian observing with concurrent martian travels, courtesy the best science fiction of its times. For anyone searching for the "truth" of next-door alien civilizations, this book is well worth the read.



Why Space Will Freak You Out: The Scariest, Strangest Parts of the Universe

By Kimberly Arcand and Megan Watzke, with illustrations by Robert Ball
Naperville, IL: Sourcebooks Kids, 2026, ISBN 978-1-4642-2709-7, Softbound, $12.99, US

Reviewed by Francine Jackson

If you've ever wondered whether it could be an easy ride through the universe, you might want to read this book first. While looking up at the beauty of the sky, it might be difficult to imagine what could happen to you.

Open up to any page: Let's start here in our solar system. Our closest planetary neighbor, beautiful Venus. It can choke, crush and roast you! Saturn is a "deadly mosh pit," whose lovely rings, by the way, will pelt you to oblivion.

Or, let's venture to some of our exoplanets, those outside of our own system. There you might find yourself facing a planetary zombie, a planet so dark it will equate to walking on a lump of coal, or another that rains glass – death by a thousand paper cuts.

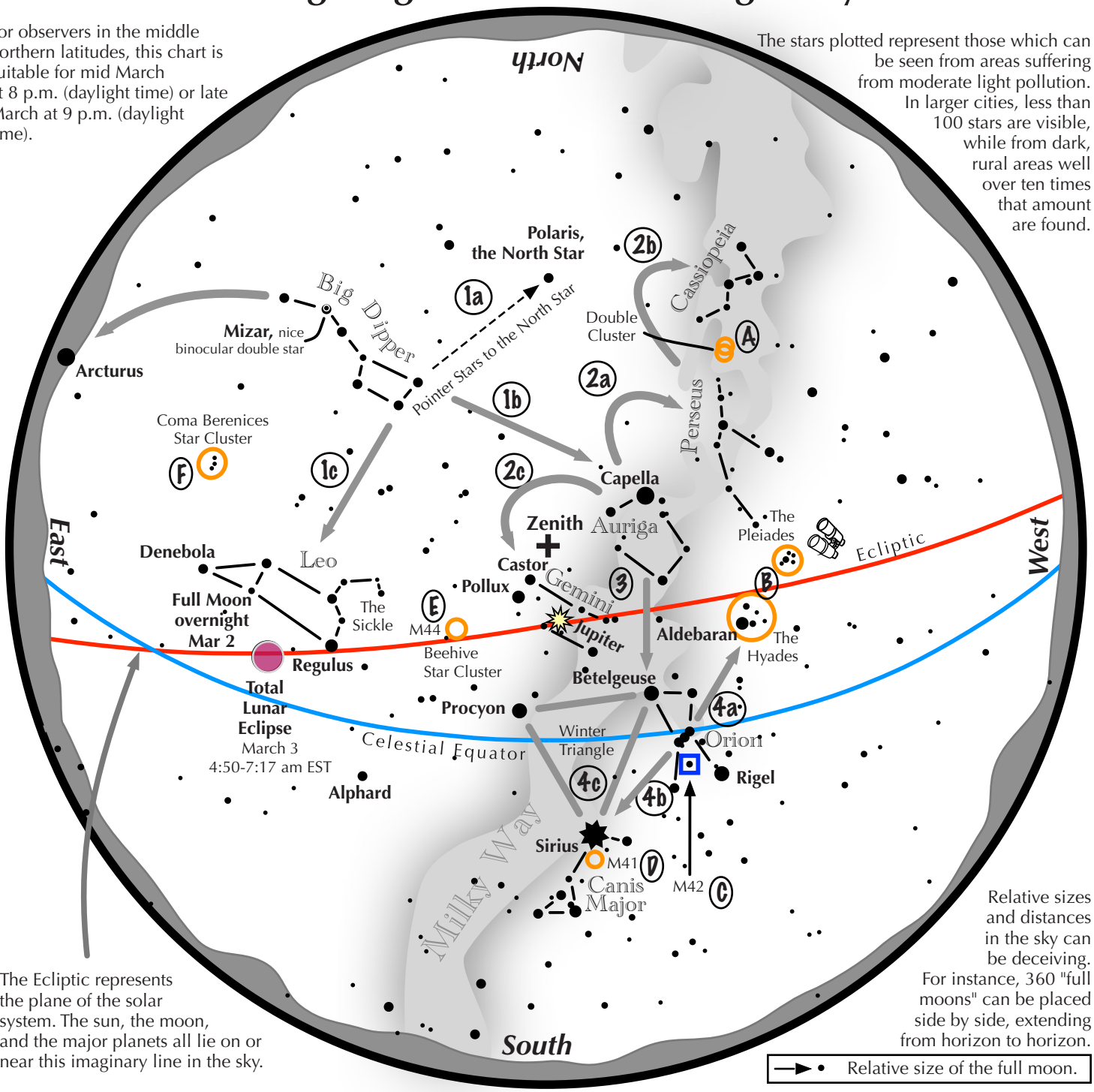
Perhaps you might want to visit other celestial bodies. Many stars and galaxies are just as difficult to get close to. There are those exploding, radiating gamma rays – not a good thing – and, don't forget spaghettification by black hole.

Despite the title of this book (It could be called how the universe is trying to kill you) it is a great read for everyone. It is listed as juvenile nonfiction; however, the vocabulary might be a bit above the age listed, but the illustrations are sure to entertain even the youngest reader. Perhaps, the best way to enjoy this book is to have a parent read it to a child, in a kind of tongue-in-cheek format, to assure that, although all this "danger" might be out there, as long as you're here on Earth, there's nothing to worry about. Yet. Enjoy.

Navigating the mid March Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 p.m. (daylight time).

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 March 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. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
2. From Capella jump northwestward along the Milky Way 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. It is a member of the Winter Triangle.

Binocular Highlights

A: Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.

The Sun, Moon & Planets in March

This table contains the ephemeris of the objects in the Solar System for each Saturday night in March 2026. Times in Eastern Standard Time (UTC-5) through March 7, Eastern Daylight Time (UTC-4) after March 7. Ephemeris times are for Seagrave Observatory (41.845N, 71.590W).

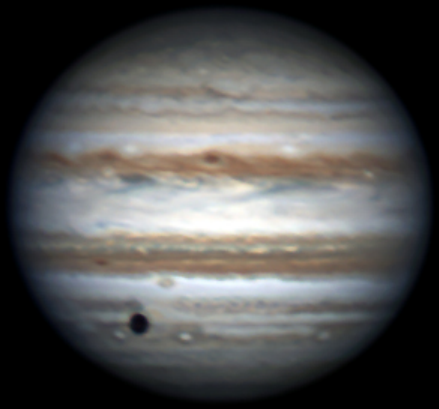
Object	Date	RA	Dec	Const	Mag	Size	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
Sun	**7**	23 10.0	-5 21.7	Aqr	-26.8	1934.3	-	-	-	0.992	06:11	11:57	17:44
	14	23 35.8	-2 37.0	Psc	-26.8	1930.7	-	-	-	0.994	06:59	12:55	18:52
	21	0 01.4	0 09.0	Psc	-26.8	1926.9	-	-	-	0.996	06:47	12:53	19:00
	28	0 26.9	2 54.3	Psc	-26.8	1923.2	-	-	-	0.998	06:35	12:51	19:07
Moon	**7**	13 40.5	-14 58.8	Vir	-12.4	1795.3	138° W	87	-	-	21:25	02:38	07:43
	14	19 37.7	-25 40.4	Sgr	-11.1	1781.2	61° W	26	-	-	04:52	09:25	14:05
	21	1 27.8	13 00.6	Psc	-9.5	1957.8	26° E	5	-	-	07:46	15:03	22:35
	28	8 35.7	21 17.9	Cnc	-12.3	1933.7	118° E	74	-	-	14:31	21:52	05:00
Mercury	**7**	23 07.7	-1 38.0	Psc	6.1	10.7	4° E	1	0.367	0.629	05:55	11:49	17:43
	14	22 45.4	-5 02.4	Aqr	3.0	10.7	13° W	8	0.406	0.628	06:18	12:01	17:43
	21	22 39.1	-7 30.9	Aqr	1.3	9.7	22° W	24	0.438	0.692	05:54	11:29	17:03
	28	22 50.0	-8 05.0	Aqr	0.7	8.6	27° W	38	0.459	0.784	05:40	11:13	16:47
Venus	**7**	0 04.5	-0 52.4	Psc	-3.8	10.3	14° E	97	0.725	1.644	06:51	12:52	18:54
	14	0 36.2	2 43.7	Cet	-3.8	10.4	16° E	96	0.724	1.626	07:42	13:56	20:11
	21	1 07.9	6 17.4	Psc	-3.8	10.5	18° E	95	0.723	1.606	07:33	14:00	20:28
	28	1 40.0	9 44.2	Psc	-3.8	10.7	19° E	94	0.722	1.583	07:25	14:05	20:45
Mars	**7**	22 23.2	-11 15.2	Aqr	1.2	4.0	13° W	99	1.384	2.333	05:47	11:09	16:32
	14	22 44.0	-9 12.6	Aqr	1.2	4.0	14° W	99	1.382	2.322	06:33	12:03	17:33
	21	23 04.5	-7 05.9	Aqr	1.2	4.0	16° W	99	1.381	2.312	06:18	11:56	17:34
	28	23 24.9	-4 56.3	Aqr	1.2	4.1	17° W	99	1.381	2.301	06:03	11:48	17:34
1 Ceres	**7**	1 49.1	5 17.5	Psc	9.1	0.4	41° E	99	2.836	3.508	08:12	14:34	20:56
	14	1 58.5	6 26.9	Psc	9.1	0.3	37° E	99	2.831	3.564	08:50	15:16	21:42
	21	2 08.2	7 35.5	Cet	9.1	0.3	32° E	99	2.826	3.615	08:28	14:58	21:28
	28	2 18.2	8 42.9	Cet	9.1	0.3	28° E	99	2.821	3.660	08:06	14:40	21:15
Jupiter	**7**	7 05.8	22 55.8	Gem	-2.2	42.0	119° E	99	5.235	4.686	12:17	19:49	04:20
	14	7 05.7	22 56.3	Gem	-2.2	41.1	112° E	99	5.238	4.788	12:50	20:21	03:53
	21	7 06.4	22 55.7	Gem	-2.1	40.2	105° E	99	5.240	4.896	12:23	19:54	03:26
	28	7 07.6	22 53.9	Gem	-2.1	39.3	98° E	99	5.243	5.006	11:57	19:28	02:59
Saturn	**7**	0 12.4	-0 58.7	Psc	1.0	15.9	16° E	100	9.498	10.447	06:58	12:57	18:55
	14	0 15.5	-0 38.1	Psc	1.0	15.8	10° E	100	9.496	10.473	07:32	13:32	19:32
	21	0 18.7	-0 17.4	Psc	0.9	15.8	4° E	100	9.494	10.487	07:07	13:08	19:09
	28	0 21.9	0 03.2	Psc	0.9	15.8	3° W	100	9.492	10.488	06:41	12:44	18:46
Uranus	**7**	3 42.6	19 30.8	Tau	5.8	3.6	71° E	100	19.479	19.771	09:10	16:26	23:42
	14	3 43.5	19 33.6	Tau	5.8	3.5	65° E	100	19.477	19.882	09:43	16:59	00:16
	21	3 44.5	19 36.9	Tau	5.8	3.5	58° E	100	19.476	19.987	09:16	16:33	23:50
	28	3 45.6	19 40.6	Tau	5.8	3.5	51° E	100	19.475	20.084	08:50	16:07	23:24
Neptune	**7**	0 06.7	-0 41.8	Psc	8.0	2.2	15° E	100	29.883	30.841	06:51	12:51	18:50
	14	0 07.7	-0 35.5	Psc	8.0	2.2	8° E	100	29.883	30.866	07:24	13:24	19:24
	21	0 08.6	-0 29.2	Psc	8.0	2.2	2° E	100	29.883	30.878	06:57	12:58	18:58
	28	0 09.6	-0 22.9	Psc	8.0	2.2	5° W	100	29.883	30.876	06:30	12:31	18:32
Pluto	**7**	20 32.1	-22 51.0	Cap	14.6	0.2	42° W	100	35.467	36.200	04:43	09:17	13:51
	14	20 32.9	-22 49.6	Cap	14.6	0.2	49° W	100	35.472	36.120	05:16	09:50	14:24
	21	20 33.5	-22 48.5	Cap	14.6	0.2	55° W	100	35.477	36.032	04:49	09:23	13:57
	28	20 34.1	-22 47.7	Cap	14.6	0.2	62° W	100	35.481	35.935	04:22	08:56	13:31

Photo Gallery

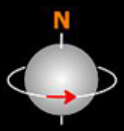
Jupiter at Opposition
January 10, 2026
Shadow Transit of Callisto

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

Magnitude: -2.7
Diameter: 46.6″
Phase: 100%
Altitude: 56°
Seeing: 6/10 Average
Transparancy: 9/10
Clear, Humid

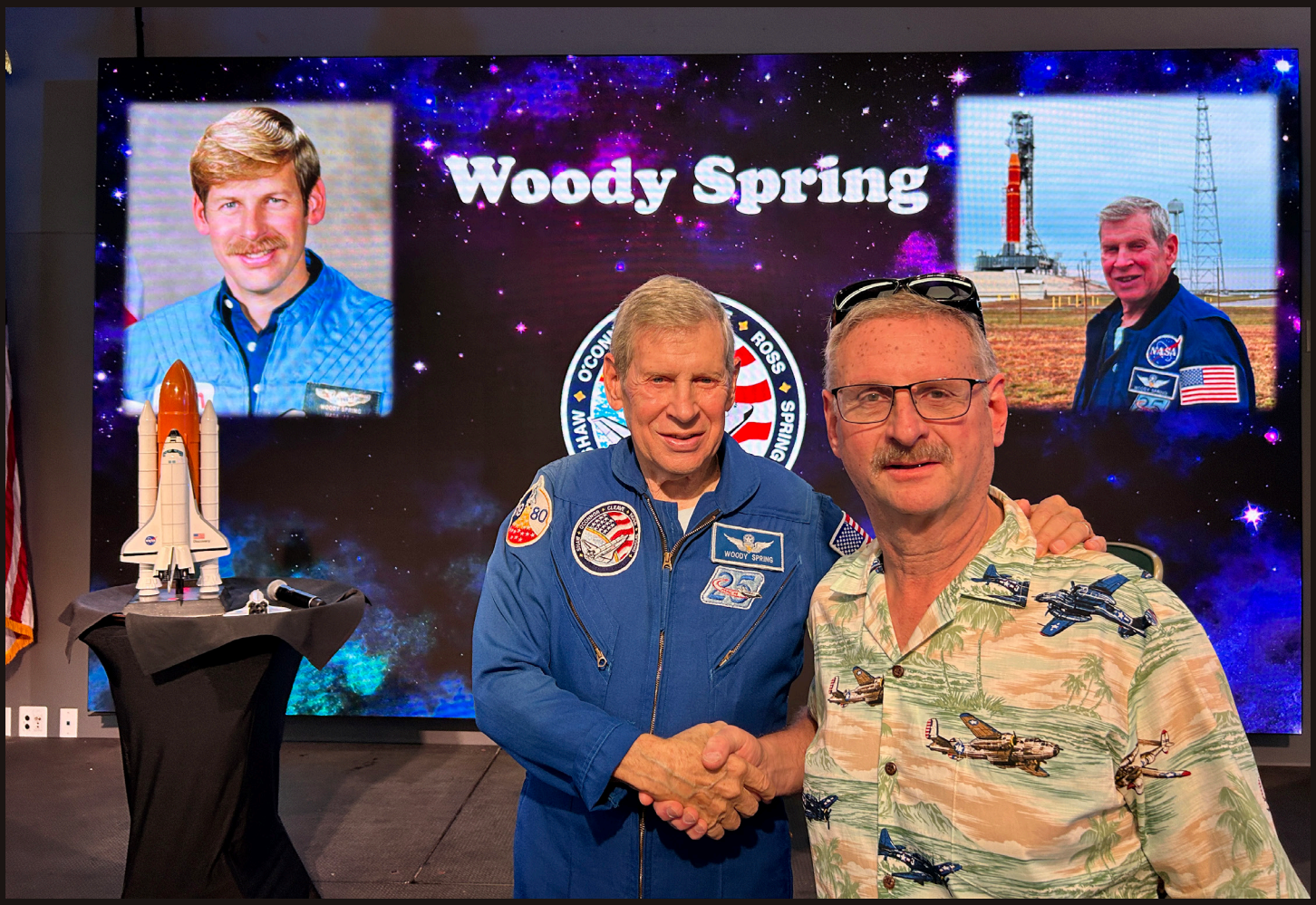


08h 04.9m UT
Astronomik L2 UV/IR cut filter
CMI: 128.9° CMII: 295.7° CMIII: 185.9°



M81 & M82 by Jeff Padell

Galaxy pair in Ursa Major taken January 6 with Seestar S50.



A Meeting With Astronaut Woody Spring by Steve Hubbard

I was just in Florida for 10 days and was lucky enough to be there when Woody Spring was at the Kennedy Space center visitor center.

I got to meet him again after many years since he came and talked to Skyscrapers.

Some of us have been around long enough to remember his visit to Seagrave in 1986.

He looked a bit different then. He's 82 now and still sharp and spry.

He grew up in Harmony and has fond memories of our observatory where he looked at Saturn.

He flew on STS-61B Atlantis and sadly it was just 6 weeks before the Challenger blew up so he never got to fly again.

We still have pics from his flight on the meeting room walls.

Observatory Under The Blizzard by Conrad Cardano

February 22, 2026

Francine Jackson gave a presentation about the Valley Falls train wreck at the East Providence Weaver Library on Monday, February 2, 2026. The 1853 train wreck highlighted the need for standardized time.

Members of Skyscrapers attended Astronomy on Tap #8 at Narragansett Brewery on Tuesday, February 10th for featured talks:

"A Star is Torn" by Daniel Paradiso, Department of Physics at Syracuse University and

"Listening to the Universe" by Prof. Robert Coyne, Department of Physics, University of Rhode Island.

The event was attended by Skyscrapers memberes Francine Jackson, Jim Hendrickson, Jay and Lisa Baccala. We were also joined during the early part of the program by Roger Hart, physics professor at CCRI.

Team Skyscrapers (Francine and Jim) won 2nd place in the astronomy trivia.

Follow Astronomy on Tap Rhode Island www.instagram.com/aotri24

The next event is scheduled for Tuesday, April 21.

Blizzard of '26
by Bob Janus

Taken from Peeptoad Road on Thursday, February 26, three days after the record-setting snowstorm dropped 28 inches on North Scituate.

March 2026 Volume 72

STARRY SCOOP

Editor: Kaitlynn Goulette

WHAT'S UP

In the early morning hours of March 3rd, stargazers around the world have the opportunity to witness a total lunar eclipse. Often referred to as a "blood moon," this event takes place when the sun, earth, and moon align in a straight line. The moon appears red because sunlight passes through Earth's atmosphere, scattering shorter blue wavelengths and allows the red and orange tones to reach the lunar surface. This is the same effect that is responsible for the vivid colors at sunrise and sunset. Most of the United States will be able to experience totality. In New England, viewers will see the eclipse unfold near sunrise, with totality occurring from about 6:00am to 7:00am and sunrise around 6:20am.

The March Equinox takes place this month on the 20th, marking the first day of spring in the Northern Hemisphere and the first day of fall in the Southern Hemisphere. The sun will be positioned directly over Earth's equator, resulting in nearly equal lengths of day and night worldwide. In the weeks that follow, daylight hours will continue to increase, and temperatures will gradually warm as summer approaches.

Throughout the month, the planets continue their steady "wandering" across the sky, shifting their positions from night to night against the seemingly fixed backdrop of stars. Jupiter shines high in Gemini and will remain an excellent telescopic target in the weeks ahead. By the end of the month, Venus will once again live up to its reputation as the brilliant "Evening Star." Mercury and Mars are visible in the morning sky, giving early risers an opportunity to catch them before sunrise.

Leo the lion leads the crusade of spring constellation that will soon dominate our sky. Its mane of bright stars creates the shape of a sickle or backward question mark, which makes it easy to identify. Cancer the crab, another iconic spring constellation, can be found just west of the lion. It contains the Beehive Cluster, or Messier 44, which can even be seen without a telescope. On February 28th, the moon will appear nearby, adding to the view.

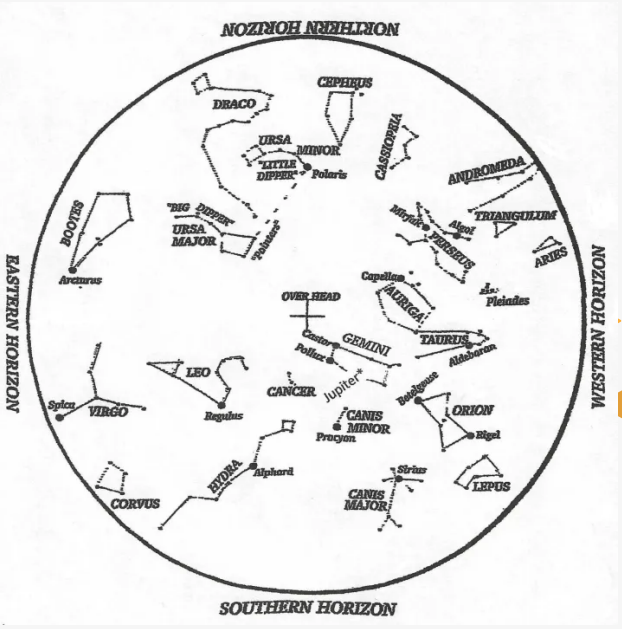
MARCH'S SKY

3: Full Moon

3: Total Lunar Eclipse

19: New Moon

20: March Equinox



Credit: Roger B. Culver

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

OBSERVATIONS

I had the opportunity to visit Harvard's Center for Astrophysics and their main campus to explore the Astrophysics Department and attend their Public Observatory Night program.

Over the years, I have learned that Harvard has a rich history in astronomy and astrophysics, with important contributions from the Harvard Observatory and pioneering scientists like the "Harvard Computers." During my visit, I met many individuals who shared their passion for astronomy outreach, describing how they engage fellow students and the public through lectures, telescope nights, and public programs.

The public observatory night program is a prime example of bringing the heavens to others. At the most recent event, two Harvard researchers gave a presentation on the birth, evolution, and death of stars. Following the talk, attendees were invited to tour the historic Great Refractor telescope, built in 1847, offering a connection to both the past and present of astronomy.

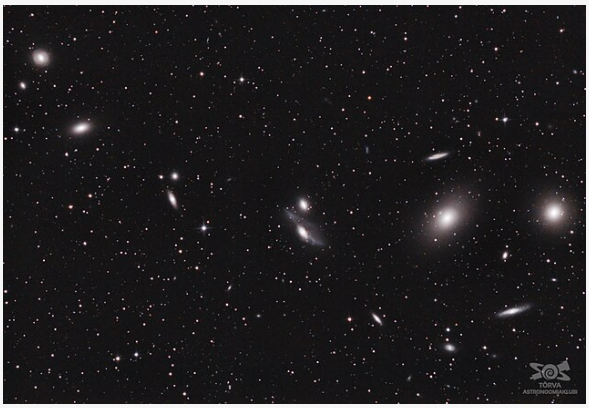
The snow-covered rooftop prevented us from using Harvard's telescopes for stargazing, but I still greatly enjoyed the lecture and the conversations I shared with fellow astronomy enthusiasts.

The "Starry Scoop" recently reached its five-year anniversary and to celebrate this milestone, I have launched a new radio show titled "Starry Scoop Live." To watch new episodes, find me on Facebook, Instagram, YouTube, or contact me at starryscoop@gmail.com. Thank you to all my readers for the support I've received throughout the years.

OBJECT OF THE MONTH

The featured object for the month of March is Markarian's Chain, a sequence of galaxies that helps form part of the larger Virgo Cluster. From our vantage point on Earth, these galaxies create a curved line that is a popular target for astronomers and astrophotographers. At its center lies two iconic interacting galaxies, often called Markarian's Eyes.

Find Markarian's Chain in Virgo, just east of the star Denebola in Leo the lion. A pair of binoculars can be used to view the brightest galaxies of the chain, but a telescope resolves more detail. Good luck!



Markarian's Chain
Photo Credit: Wikimedia Commons, Taavi Niittee

I enjoyed my visit to the Harvard College Observatory.
Photo Credit: Donald Goulette

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