the Skyscraper

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January 2026

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

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Join us for Skyscrapers'

January Monthly Meeting and Holiday Potluck

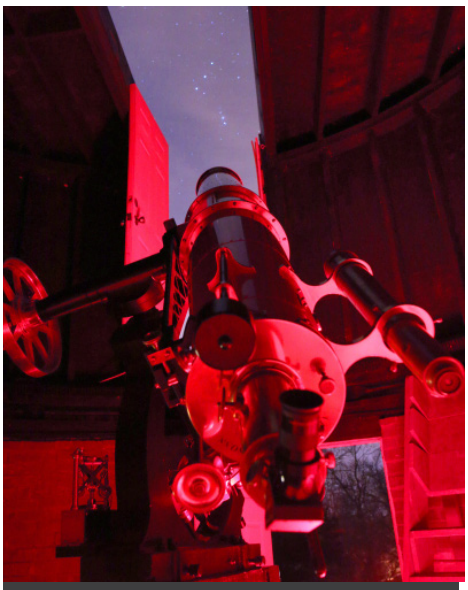
Featuring Author Eddie Guimont

at North Scituate Community House, 546 West Greenville Rd.
Saturday, January 3, 2026
Doors Open @ 4:30pm Dinner @ 5:00pm Presentation @ 6:00pm

Join Zoom Meeting
https://us06web.zoom.us/j/84705051321?pwd=RyHkh8IRRAzMwa01UDRINxFIjXqxso.1
Meeting ID: 847 0505 1321 Passcode: 581691

Dr. Edward Guimont is chair of the Department of History and Cultural Studies at Bristol Community College in Fall River, Massachusetts. He is a historian of colonialism and science, as well as a scholar on Providence weird fiction author H. P. Lovecraft. With Horace Smith, he is coauthor of the monograph When the Stars Are Right: H. P. Lovecraft and Astronomy (Hippocampus Press, 2023). His next book, The Power of the Flat Earth Idea, will be published in 2026 by Palgrave Macmillan.

Mark Twain was born in 1835, the same year Halley's Comet appeared. Near the end of his life, Twain became convinced he would die with the comet's return in 1910, which he did. This talk will explore not only the cultural impact of comets during Twain's life, but Twain's broader interest in astronomical discoveries of his day, which astronomy books he read, fiction he wrote that dealt with astronomy, and which works of early space fiction he read.



Observing Events:

Open Nights at Seagrave Observatory*

January 3, Closed
January 10, 7-9 PM
January 13, 7-9 PM
January 20, 7-9 PM
January 27, 7-9 PM

*Members are encouraged to attend

President's Message

by Linda Bergemann

It's been a very busy holiday season for me. More often than not, I don't know what day of the week it is. But, I do know that the New Year is upon us. It's time to think of wrapping up our fiscal year and planning for the next. And, that means our annual election.

Please consider running for a leadership position in Skyscrapers. Our election will be held at our Annual Meeting in April. Positions that will be filled include President, Vice-President, Recording Secretary, Treasurer, two Members-at-Large, and one Trustee. Descriptions of all positions appear in our Bylaws which can be found at this link: http://www.theskyscrapers.org/stuff/contentmgr/files/2/e8f8ce834c789925f5caa9fcc5ff7a97/files/skyscrapers_inc_constitution_and_bylaws_2024.pdf

If you have any interest and want to know more, please speak with me or one of the other current board members. Advanced observing skills are not required; just a desire to educate the membership and the general public on matters pertaining to astronomy.

Happy New Year,
Linda
401-322-9946
lbergemann@aol.com

Upcoming Presentations

February 7
on Zoom
Speaker TBD

March 7
at North Scituate Community House
Speaker TBD

April 4 Annual Meeting
at Seagrave Memorial Observatory
Speaker TBD

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 **January 15** to Jim Hendrickson at hendrickson.jim@gmail.com.

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

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Skylights: January 2026

by Jim Hendrickson

January's nights are getting a bit shorter, but also colder, as we reach the lowest average temperatures of the year during the second half of the month, but don't let the cold keep you from seeing some of the interesting sights happening this month..

The Sun

The latest sunrise of 2026 is on January 3 at 7:13am. Not accounting for the Daylight Time shift in March, this is nearly three full hours later than the earliest sunrise in late June, but we'll need to wait another four weeks until we see the Sun rise before 7:00am again.

Just after noon on the same day, Earth reaches perihelion, the closest point in its orbit around the Sun. At this time, we are 0.98330 au from the Sun, which is 96.720% of the aphelion distance in July. At its closest, the Sun appears largest in our sky, the edge of its photosphere stretching to a maximum 1950.9 arcseconds, or 32.5 arcminutes.

After a 33-day trek through Sagittarius, dipping through the southerlnmost segment of the ecliptic, the Sun moves into Capricornus late on the 19th, where it will spend the next 27.5 days.

The first sunrise before 7:00am is on the 30th, and the first day with ten hours of daylight is the 31st. Daylight hours will remain longer than ten hours through November 10.

The 31st sees our final sunset before 5:00pm for nine entire months.

The Moon

The **Moon** joins the Pleiades cluster in Taurus early in the morning of the 31st, although we don't get to see an occultation from New England this time. A quick look with binoculars will reveal the 91% gibbous Moon, the Pleiades, and magnitude 5.8 Uranus all within the same view. Uranus is 5.0° southeast of the Moon.

The first Full Moon of 2026, and the most northerly of the year, occurs at 2:03am on the 3rd. The Worm Moon rises at 3:24pm on the afternoon of the 2nd. As this occurs during daylight (the Sun sets 62 minutes later), this arrangement makes for superb photographic opportunities as the Moon rises, and attains a respectable elevation in the northeastern sky, all within the golden hour.

At a yearly high elevation of 75.4°, the 99.8% illuminated Moon transits at 11:38pm, and sets in the west-southwest at 7:46am, again, within the golden hour.

The following evening, the third, finds Jupiter just 3.0° to the southwest of the rising Moon, and early in the evening of the 4th, the 95.9% waning gibbous Moon passes within one degree north of the Beehive Cluster, Messier 44, in Cancer.

The waning gibbous Moon is 3.4° east-southeast of Regulus, in Leo, on the morning of the 6th.

An interesting and easy to observe phenomenon that occurs fairly often is a lunar occultation of a relatively bright star. January offers us two events to watch, while the Moon is going through its waning gibbous phase. A small telescope with a modest amount of magnification works best.

The first occultation, beginning at 9:57pm on the 6th, is that of the magnitude 3.8 star ρ (rho) Leonis. The class B1 blue supergiant star with a luminosity 150,000 times that of the Sun lies at an extraordinary distance of over 2,000 light years. The star remains hidden behind the Moon for 62 minutes, and should be easy to spot as it reappears out from beyond the Moon's darkened limb.

At 1:09am on the 10th, the 53.3% illuminated Moon passes in front of ψ (psi) Virginis, a class M3 red giant star located 540 light years away. The magnitude 4.8 star reappears beyond the Moon's darkened limb at 2:17am.

Watch for more lunar occultations later in 2026, including two of Jupiter, three of the Pleiades, a daytime occultation of Venus, and several stars brighter than 5th magnitude.

The Moon is last quarter at 7:48 on the 10th, in Virgo. At 1:00am on the following evening, it rises just 4.4° southeast of (directly below) Spica, the constellation's brightest star.

The 16.9% crescent Moon is 3.8° west-southwest of Antares on the morning of the 14th.

The Moon is new at 2:52pm on the 18th, marking the start of Lunation 1275.

The Moon is in its waxing crescent phase this week. Look for the Earthshine illuminating the dark part of the Moon's globe.

On the 20th, the 4.4% crescent appears just 1.2° north-northeast of Deneb Algedi (δ Capricorni). On the 22nd, find Saturn 6.0° east of the 17.4% crescent, and on the 23rd, the 26.0% crescent is 5.5° northeast of Neptune.

The Moon is first quarter at 11:47pm on the 25th, in Aries.

The Moon goes through its waxing gibbous phase this week.

As twilight fades on the 27th, the 70.2%

Events in January

01	17:00	Moon (waxing 96.5%) at Perigee
01	20:00	Moon (waxing 97.3%) 0.5° SSE of Elnath
03	02:03	● **Full Wolf Moon**
03	07:13	Latest Sunrise
03	12:16	Earth at Perihelion (0.983302 au)
03	16:00	Quadrantids
03	18:00	Moon (waning 99.3%) 3.0° NE of Jupiter
03	21:00	Moon (waning 99.1%) 3.0° S of Pollux
04	20:00	Moon (waning 95.9%) 0.9° NE of M44
06	06:00	Moon (waning 82.7%) 3.7° ESE of Regulus
06	17:00	Venus Superior Conjunction
06	21:57	Moon (waning 82.4%) occults ρ Leo
09	12:00	Mars Conjunction
10	01:09	Moon (waning 53.3%) occults ψ Vir
10	07:48	◖ **Last Quarter Moon**
10	09:00	Jupiter Opposition
11	01:00	Moon (waning 43.4%) 4.4° SE of Spica
13	16:00	Moon (waning 21.5%) at Apogee
14	06:00	Moon (waning 16.9%) 3.8° WSW of Antares
18	14:52	○ **New Moon** (Lunation 1275)
19	00:00	Jupiter 0.4° N of Wasat
19	21:00	Sun in Capricornus (27.5d)
20	18:00	Moon (waxing 4.4%) 1.2° NNE of Deneb Algedi
21	11:00	Mercury Superior Conjunction
22	20:00	Moon (waxing 17.4%) 6.0° W of Saturn
23	10:00	Pluto Conjunction
23	18:00	Moon (waxing 26.0%) 5.5° NE of Neptune
25	22:00	Moon (waxing 49.0%) 4.2° SSE of Sheratan
25	23:47	◗ **First Quarter Moon**
27	18:00	Moon (waxing 70.2%) 1.0° NE of M45
28	20:00	Vesta Conjunction
29	04:00	Moon (waxing 83.2%) 1.8° WSW of Elnath
29	17:00	Moon (waxing 88.0%) at Perigee
29	17:00	Venus 0.7° NW of Mercury
30	06:59	First Sunrise Before 7:00am
31	00:00	Moon (waxing 96.1%) 3.2° NNE of Jupiter
31	06:58	First 10 hours of daylight

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

Lunar Almanac
January 2026

3 Full Moon
02:03 EST in Gemini

Rise	Transit	Set
15:24	**23:38**	**07:46**
-	75.4°	-
51.2°	180.0°	307.2°

10 Last Quarter
02:48 EST in Virgo

Rise	Transit	Set
23:49	**05:27**	**10:55**
-	37.6°	-
101.7°	180.0°	255.1°

17 New Moon
09:52 EST in Sagittarius

Lunation 1275

25 First Quarter
18:47 EST in Aries

Rise	Transit	Set
10:13	**17:20**	**00:42**
-	64.0°	-
70.5°	180.0°	294.3°

Date	Position	Phase	Distance
1 17:00	Perigee	96.5% ↖	0.937
13 16:00	Apogee	21.5% ↙	1.055
29 17:00	Perigee	88.0% ↖	0.952

Moon is just 1.0° northeast of the Pleiades cluster. An occultation occurs, but unfortunately during daylight for us in Rhode Island. The next occultation of the Pleiades we'll be able to see, although just a grazing one, occurs on February 23.

On the 29th, the 83.2% Moon is 1.8° west-southwest of Elnath (β Tauri).

The nearly full Moon joins Jupiter on the 31st, appearing just 3.2° to the north-northeast of the giant planet.

The Planets

Mercury is visible low in the southeastern sky, rising about 45 minutes before sunrise. By the second week of January it becomes too difficult to observe as it approaches superior conjunction.

Mercury joins the parade of planets that go through superior conjunction this month, reaching that point in its orbit relative to Earth on the 21st. We'll be able to observe Mercury in the evening sky again at the end of the month.

As January comes to a close, Mercury and Venus are just beginning to become visible low in the west-southwest after sunset. On the 29th find Mercury 0.7° southeast of Venus. Mercury overtakes Venus and becomes easier to observe each evening following.

Also approaching superior conjunction is **Venus**, which it passes on the 6th. Our most brilliant planet will become visible in the evening sky towards the end of January, when it will join Mercury in the bright twilight glow.

Joining the parade of planets going through conjunction in January is **Mars**, which gets to its point opposite the Sun from Earth on the 9th. We haven't seen the Red Planet in many weeks, and it will be out of view until late March, when it returns to the morning sky.

With both Venus and Mars passing superior conjunction at nearly the same time, this is a good time to compare the apparent motions of the two planets in our sky. Notice how Venus, an inferior planet, moves from the morning sky to the evening sky before and after superior conjunction, but Mars, a superior planet, moves from the evening sky to the morning sky.

These opposing motions are due to the velocities of the planets in their orbits relative to that of Earth. The inferior planets, those with orbits closer to the Sun than Earth, move around the Sun faster than Earth. After passing behind the Sun, they appear to be moving in an easterly direction relative to the Sun. The superior planets, with orbital velocities slower than Earth, appear to be moving "backwards" because Earth moves faster, and therefore overtakes them in their orbits.

Jupiter shines brilliantly in the east-northeast just as twilight fades. Shining at magnitude -2.7 in Gemini, it is 35 times brighter than Pollux, the star immediately to its north, and outshines all other objects visible in the January night sky except the Moon (Venus, although brighter, is not visible to us at this time).

The just-past-full Moon joins the giant planet on the 3rd.

Jupiter reaches opposition on the 10th in Gemini. The planet shines at its brightest (magnitude -2.7) and appears at its largest (46.6 arcseconds) of the entire year. The giant planet's position well north of the celestial equator this year gives it notable prominence during the late evening hours.

A unique observing challenge to engage in at this time would be to try to detect a shadow cast by our solar system's largest planet. To do so, choose a moonless night and find a place that is isolated from as much ambient light as possible. Use a smooth, flat white surface (the surface of freshly fallen snow is too rough for this experiment to work), and a small, opaque object with a straight edge. When Jupiter is high in the sky around midnight, place your shadow-casting edge just above the plain white surface and look for the shadow.

Another variation of the experiment that may be easier to achieve results is to use a camera obscura. Put a clean pinhole (about 2mm or ⅛") in a dark card, and hold it about 30cm/1ft above the white projection card. A distinct bright point should reveal the focused light of Jupiter.

In a similar vein of experiencing Jupiter's brilliance without optics, take a night hike through the woods, particularly a pine grove during the winter months, and notice how Jupiter's shine dapples into the forest.

Watching Jupiter's satellites transit the planet at or near opposition presents a demonstration of the narrow offset angle of their shadows. Several events occur during these evenings that demonstrate this geometry to dramatic effect. On the 6th, watch the largest moon in the solar system, Ganymede, move across Jupiter's cloudtops, with its shadow preceding it by just 20 minutes.

Take note how the shadows are to the west (east on the planet's globe) of the moons casting them prior to opposition on the 10th, and east of the moon (westward on the planet) following opposition. The transit closest to the time of opposition is that of Callisto, which begins at 2:18am EST on the 10th, and its shadow follows just two minutes behind.

Other times of moon transits to watch: Ganymede shadow and moon transit be-

ginning at 8:58pm on the 6th, offset by 10 minutes; Europa shadow and moon transit beginning at 11:40pm on the 7th, offset by 6 minutes; Io and its shadow begin transiting at 4:16am on the 11th, offset by 2 minutes; Io and its shadow again transit beginning at 10:42pm on the 12th, offset by 4 minutes; and Ganymede transit beginning at 12:34am on the 14th, with its shadow following 24 minutes later.

Jupiter is still at its yearly best, shining at a brilliant magnitude -2.7 in Gemini. The giant planet spends the third week of the month near Wasat (δ Gem), a 3.8 magnitude star, coming to just 0.4° to the north of the star on the 19th.

Wasat, a class F0 subgiant star that lies 59 light years away, is a binary star. Listed on the Astronomical League's Double Star Observing Program, its secondary component is 5.5 arcseconds from the primary, and shines at magnitude 8.2.

Wasat is notable due to the proximity of Pluto in early 1930 when Clyde Tombaugh discovered the tiny, distant planet on large photographic plates taken with the 13-inch telescope at Lowell Observatory. Wasat is the brightest star present on these plates.

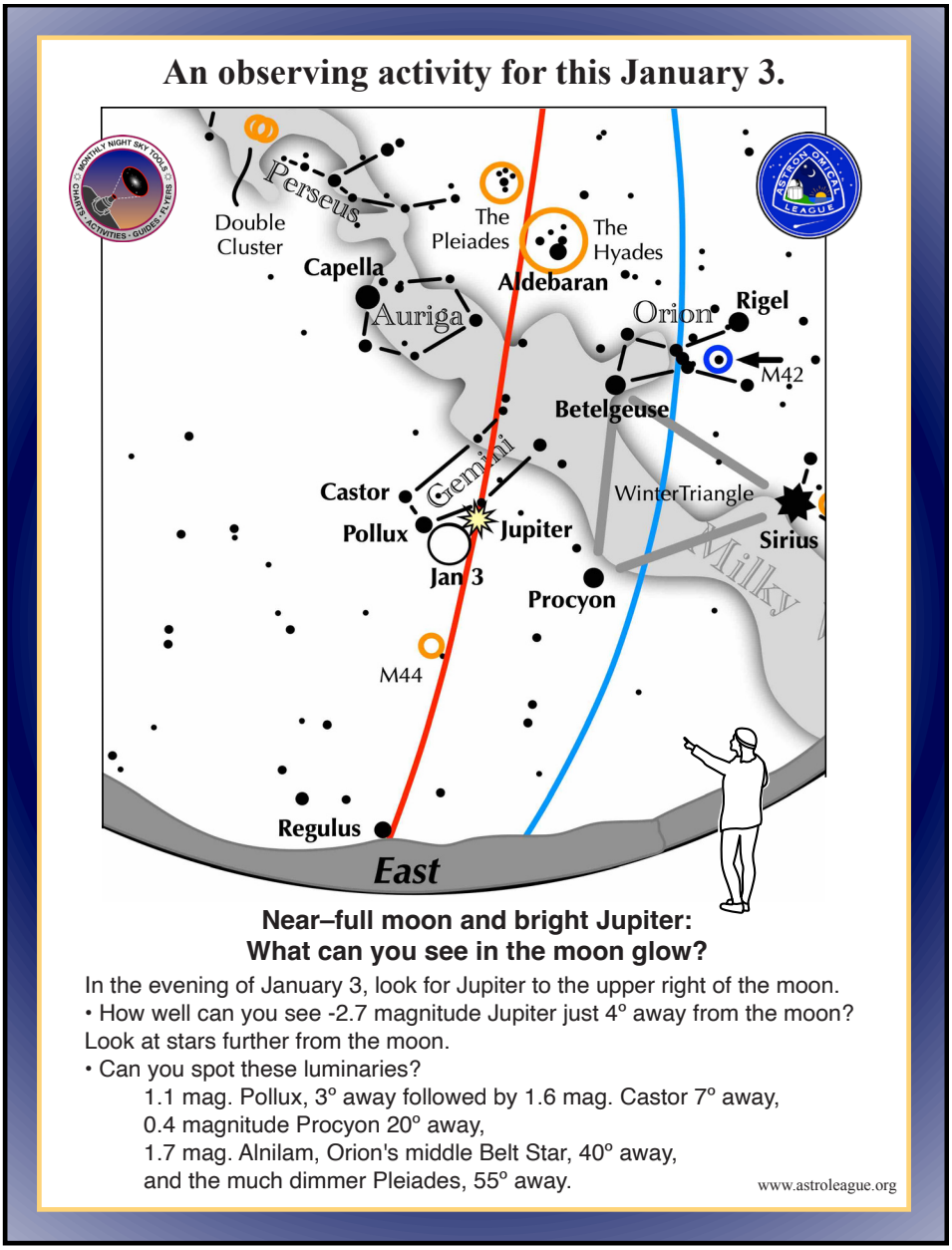
Saturn is now just past the meridian after twilight. The ring plane angle continues to widen, now at over 1°, and the shadow cast by the rings is still clearly visible across the planet's globe.

Saturn, moving eastward through Aquarius, is no longer the brightest planet in the evening sky, having ceded its prominence to Jupiter, rising in the east-northeast among the season's brightest stars.

Although the ring plane (and that of the orbits of its major moons) remains at a narrow 1.4°, the lower position of the planet in the sky, as well as its increasing distance, will make observing the transits and eclipses of its mid-sized moons more challenging as the month progresses. After this month, we will get a few more opportunities to observe these events later in the year, which will be the final time until another decade has elapsed..

The temporary "autumn triangle" of which Saturn has anchored the northern vertex, and including the stars Fomalhaut and Diphda over the past few months, is moving steadily lower in the southwest as January progresses, with Fomalhaut setting before the end of astronomical twilight during the final week of the month.

Saturn leaves Aquarius and crosses into Pisces on the 15th. The next time the ringed planet will be within Aquarius is March 2052.



As January draws to a close, Saturn's observing season is rapidly coming to an end, as indicated by its increasingly lower position in the southwestern sky after twilight. It sets by 9:00pm.

Uranus is just over 4.5° south of the Pleiades cluster in Taurus. It is well-placed for observing throughout the evening hours in January, and you can easily track its motion with binoculars using the east-west pair of 6th magnitude stars 13 and 14 Tauri. Its apparent distance to 13 Tauri, the westernmost of the pair, doubles from 0.4° to 0.8° as Uranus continues to move retrograde (westward) over the length of the month.

Neptune, as with Saturn, is west of the meridian following twilight during early January evenings, signaling that their observing season has progressed beyond the halfway point. As Saturn moves eastward at a faster pace than Neptune, the apparent distance between the two planets shrinks from 3.4° to just 2.0° over the course of the month. This distance between the two planets continues to decrease until February 20, when they will be separated by just 0.8°.

Minor Planets

Pluto is in conjunction on the 23rd. It won't become visible again until May, and reaches opposition in July.

Vesta is at conjunction on the 28th, and will not be visible until late May.

Ceres is moving northeastward through Cetus. In early January, it can be found 13° east of Saturn, and passing 2.0° southeast of magnitude 5.6 13 Ceti. The dwarf planet shines at magnitude 8.9.

Mid-month, Ceres is located 2.6° south-southwest of 4.8 magnitude 20 Ceti. At a distance of just under 3 au, it shines

at magnitude 9.0, making it visible in small telescopes. At the end of January, it is 3.3° east of 20 Ceti.

Asteroid **433 Eros** is located near Messier 33, the Triangulum Galaxy, during the first days of the month. It crosses directly in front of the galaxy on the 5th-6th, shining at magnitude 10.2.

Meteor Showers

This is a rather unfavorable year for the January 3rd peak of the **Quadrantids**, one of only two known meteor showers to have originated from an asteroid (2003 EH). This shower usually produces high rates, but on a very short maximum, this year expected to be at about 4:00pm EST. The radiant, a point in northern Bootes, is just circumpolar at our latitude, but becomes more favorably elevated past 11:00pm, past the peak hours and when the sky will be brilliantly illuminated by the 99.0% Moon.

The Stars

The new year brings with it a new view of the stars beyond. The Summer Triangle, which has been a fixture of the western sky for a substantial portion of the old year, is finally dipping below the horizon during the early evening hours, although the near-circumpolar Deneb will remain with us for a few more weeks.

Andromeda, Cassiopeia, and the other constellations of autumn have crested, but remain high enough for easy exploration during January's evening hours.

But as we're now in the first full month of winter, the highlights of the January sky include the bright winter constellations. This year, Jupiter is embedded in the largest and brightest of the seasonal asterisms, the **Winter Hexagon**. Let's take a tour of the stars making up the asterism, starting at Sirius.

Otherwise known as the Dog Star, for its position in the Big Dog constellation of Canis Major, **Sirius** is the most brilliant star in our night sky, not because of its luminosity, but due to its proximity. While not the closest star to our solar system, at 8.6 light years, it lies just over twice the distance of the closest star, Proxima Centauri. Sirius is the brightest, closest, and most southerly point of the Winter Hexagon.

Sirius has a mass 2.1 times greater than the Sun, and shines with 26 times its luminosity.

The Dog Star has an absolute magnitude of 1.43. By comparison, the Sun's absolute magnitude is 4.83.

A distinct marker of the new year is Sirius transiting the meridian at about midnight, although at our longitude the actual midnight transit of the night sky's brightest star occurs three nights earlier. This is a good time to note that stars rise, transit, and set four minutes earlier each night.

Sirius has a magnitude 8.4 white dwarf companion star that orbits once every 50.1 years. Although the pair is currently (2026) near its maximum separation of ten arcseconds, the 9,000-fold difference in brightness makes this an exceptionally challenging object to resolve. A large aperture telescope using high magnification under a night of very steady seeing still requires a good deal of patience on the part of the observer.

Moving northward and clockwise around the Hexagon, we come next to **Procyon** (α Canis Minoris), the second-closest of the stars, at 11.2 light years away. Procyon is a class F5 subgiant with a mass 1.4 times that of the Sun, and shines with a luminosity seven times greater. Procyon is the 4rd brightest star in the Winter Hexagon, and the 8th brightest in the sky overall. Its absolute magnitude is 2.66.

Like its brighter neighbor Sirius, Procyon is also orbited by a companion white dwarf star which is equally as challenging to observe.

The next vertex in the Hexagon is comprised of the two brightest stars in Gemini, Pollux and Castor.

Pollux, although the brighter of the twins at magnitude 1.2, holds the constellation's beta designation normally assigned to the second-brightest star. It is a class K0 giant and lies at a distance of 34 light years, just slightly greater than the distance at which absolute magnitude is calculated, which results in it having a slightly brighter value of 1.08. Its luminosity is 46 times greater than the Sun, and it holds 1.8 times the Sun's mass. Pollux is the 17th brightest star in the sky.

Some observations of Pollux have suggested a yet to be confirmed exoplanet roughly twice the mass of Jupiter with an orbital period of 1.6 years.

Castor (α Geminorum), the dimmest star of the Winter Hexagon, is a class A1 main sequence star that lies at a modest distance of 51 light years. Castor is actually a sextuplet system, but a telescope reveals only the two brighter components, separated by 5.5 arcseconds and of magnitudes 1.9 and 3.0, giving the system a combined magnitude of 1.6. The A and B components have masses of 2.4 and 1.9 Suns, and shine with 37 and 13 times the Sun's luminosity. The remaining stars in the system are red dwarfs, with Castor C being resolvable as a single 9.1 magnitude star 71 arcseconds southwest of the primary AB pair.

Castor is the 23rd overall brightest star in the sky, and the absolute magnitude of the primary component is 1.93.

The northern tip of the Hexagon is marked by its second-brightest star, and the sixth brightest star in the night sky, **Capella** (α Aurigae). A relatively nearby star, at just 43 light years, Capella owes its brightness not to a single star, but a pair of stars so close as to be unresolvable in amateur telescopes. They consist of a three times solar mass class G8 giant, and a 2.5 solar mass G0 giant, with luminosities of 93 and 64 Suns, respectively, that orbit each other every 104 days at a distance of just 0.72 au, roughly the size of the orbit of Venus.

As Capella lies at 129% of the standard distance at which absolute magnitude is calculated, its value of 0.296 is only slightly higher than its apparent magnitude of 0.08.

Capella's declination of +46° makes it nearly circumpolar from our latitude, resulting in it being above the horizon for 21 ½ hours every day. There is no time of the year when Capella is not visible at some time during the night, even in early June when its position is least favorable and nights are short.

The next stop along the Hexagon is **Aldebaran** (α Tauri), which is 67 light years from our solar system. At first glance, it may appear to be part of the Hyades cluster, as it lies on the southeastern edge of it. The Hyades, also known as Caldwell 41, Melotte 25, and Collinder 50, is 150 light years away, more than twice the distance of Aldebaran, making the star's position a line-of-sight coincidence rather than a physical association.

Aldebaran glows with an orange hue due to its classification as a K5 giant star. It holds just 1.7 times the Sun's mass, but glows with over 400 times its luminosity, giving it an absolute magnitude of -0.641. Aldebaran is the 5th brightest of the asterism's stars, and the 14th brightest overall.

While it's not part of the outer outline of the Winter Hexagon, **Betelgeuse** (α Orionis) is the brightest star that lies within it, and its brilliance and distinct color make it hard to pass over.

Betelgeuse is magnitude 0.5, but has been known to vary by as much as a full magnitude, and some observers can even

detect changes in its color over the long term.

Betelgeuse is a class M1 red supergiant, perhaps the most famous of the type, and we often get asked if it has already gone supernova, but due its distance we just haven't seen it yet. There is still a bit of uncertainty about its precise distance, but many figures put it somewhere around 500 light years. Although that's a long time for us on Earth, it is a tiny slice of time, cosmologically speaking. While not completely out of the question, if Betelgeuse were to go supernova within 500 years (from our perspective), we would likely be seeing obvious signs that it was nearing its end. Adding two orders of magnitude, Betelgeuse is much more likely to pop in the next 50,000 years than in the next 500, but keep watching it.

Betelgeuse holds 15 times the Sun's mass and shines with 85,000 times its luminosity, giving it an absolute magnitude of about -5.85.

While we tend to think of stars as mere points of light in our telescopes, Betelgeuse was the first star to have its angular diameter directly measured by means of interferometry. At 47 milliarcseconds, resolving Betelgeuse would be the equivalent of being able to see the Rhode Island State House on the surface of the Moon. That large diameter also translates to it having a physical radius of over 4 au – if Betelgeuse were to substitute our own Sun, it would extend 80% the way to Jupiter; however, its outer envelope consists of a complex and chaotic system of interacting layers of gas and dust, that defining an actual "surface" of the star would be difficult and imprecise.

Rounding out the Winter Hexagon is the most distant, most massive, and most luminous of its member stars, **Rigel** (β Orionis). Almost exactly 100 times the distance to Sirius, Rigel is a class B8 blue supergiant that shines with the luminosity of 85,000 Suns and has an absolute magnitude of -7.85. It has a mass of about 20 times that of the Sun, and its radius has been measured to be 73 times that of the Sun. If Rigel were at the center of our solar system, it would be 88% the size of Mercury's orbit. Being a massive, hot star, it exists on a much-abbreviated lifecycle compared to lower mass stars like our Sun. As such, it is only about 10 million years old, and has nearly exhausted fusible hydrogen in its core, and is beginning to fuse helium. It will meet its eventual fate as a Type II supernova.

Aiming your telescope at Rigel reveals not only its dazzling blue-white hue, but also a magnitude 6.8 companion located 9.7 arcseconds away. Of the 100 stars on the Astronomical League's Double Star Observing Program list, Rigel is the one with the brightest primary.

We often use our telescopes to explore the Moon, planets, and deep-sky objects, but neglect to occasionally stop and explore individual bright stars and ponder what it is that makes them unique. Take some time this winter to look at the Winter Hexagon.

The much anticipated outburst of the Blaze Star, **T Coronae Borealis**, from its quiescent tenth magnitude up to second, remains in our future, with no indicator as to when it may occur. The star, located 5.0° east of Alphecca and 1.0° south-southeast of epsilon CrB, rises by 1:30am in early January, but as with any observation, it is best to wait another hour or two before it attains a high enough elevation to see it reasonably well. By late January, it is optimally visible just past 1:00am.

Lastly, January brings us into galaxy season, when the band of the Milky Way sits along the horizon and our upward gaze shows us what's beyond our home galaxy's clutter of stars, gas, and dust. By the third week of the month, when the Moon is waning, early morning observers will be able to explore the galaxy-rich constellations of Ursa Major, Coma Berenices, Virgo, and Leo. With the Messier Marathon being just two months away, the chilly January mornings are a good time to practice finding many of these faint fuzzies.

2026 Notable Events

Feb 2 Moon occults Regulus

Feb 19 Mercury Greatest Elongation (Evening)

Feb 23 Moon occults Pleiades

Mar 3 Total Lunar Eclipse

Apr 3 Mercury Greatest Elongation (Morning)

Apr 23 Venus near Uranus

Jun 9 Venus near Jupiter

Jun 15 Mercury Greatest Elongation (Evening)

Jun 16 Moon, Mercury, Venus & Jupiter Conjunction

Jun 17 Moon occults Venus

July 4 Mars near Uranus

Aug 2 Mercury Greatest Elongation (Morning)

Aug 7 Moon occults Pleiades

Aug 12 Partial Solar Eclipse

Aug 15 Venus Greatest Elongation

Aug 28 Partial Lunar Eclipse

Sep 26 Neptune Opposition

Oct 4 Saturn Opposition

Oct 6 Moon occults Jupiter

Oct 12 Mercury Greatest Elongation (Evening)

Oct 27 Moon occults Pleiades

Nov 20 Mercury Greatest Elongation (Morning)

Nov 26 Uranus Opposition

Nov 30 Moon, Jupiter, Mars & Regulus Conjunction

Dec 21 Moon occults Pleiades

Book Review

Maui the Sky Lifter: A Tongan Tale

by Joseph Ciotti, illustrated by Abby Worthley Jefferson, Honolulu: Dragonfly Cove Press, 2025, ISBN 9798993399300, hardbound, $25.19 US

Reviewed by Francine Jackson

How often does a book surround the reader with not only a good story, but a look into a culture not often thought about?

Maui is a young man who, like the rest of the civilization, cannot walk upright, as the sky is so close to the earth that its inhabitants have to crawl; also, the land was dark, as there was so little light able to penetrate the clouds.

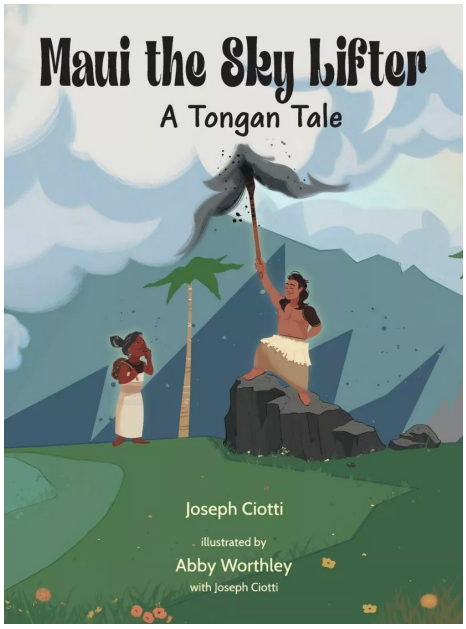
As Maui was cooking one day, the ash from the smoke was so intense it blackened him in soot, and made him very thirsty. It was then he saw Tu'ilo'oa carrying shells filled with water. When Maui asked for some, he made his boast of pushing up the sky.

Once Maui did so, Tu'ilo'oa kept prodding him to push the sky higher and higher, until it is where we see it today.

Maui isn't the only family member important in the story of this land; his brothers also have a great responsibility, as well as his father. Even Maui's son has an importance in the creation of the good land we have inherited. As a result of this, many of Maui's family are represented in Tonga by the stars of Orion's belt. Each one is given a special term of respect for what they've done for us.

Equally important in this book is the set of illustrations, created by both the author and Abby Worthley. Their colors keep the flavor and culture with the reader as the story of the sky continues. And, at the last page, we seem to have an "Easter egg" as to the possibility of a follow-up?

Maui the Sky Lifter is both a beautiful book and a beautiful story. The work of Maui to make Earth a better place has no equal in sky stories from other cultures. It is surely one to remember when introducing the sky to children.



Solstice Shadow by Jim Hendrickson

The shortest day casts the longest shadow. Francine Jackson demonstrates the position of the Sun during the December 21 solstice. This picture was taken by Jim Hendrickson at solar noon, 11:44am, on the solstice in Chase Farm in Lincoln.

NGC2264 the Cone and Christmas Tree Nebula by Jeff Padell

I combined images I took with the Canary Islands and Chile 17" telescopes. Processed in Pixinsight then Lightroom and Photoshop. 40 minutes of images

First Light of a New Scope by Conrad Cardano

Surprise, it's not an optical scope. It is a radio telescope. I have it outside right now to take it's first image of our galaxy. Don't expect to get a picture like the Andromeda Galaxy. Actually, it takes many accumulations to put together something. More to come...

NGC 891 by Jeff Padell

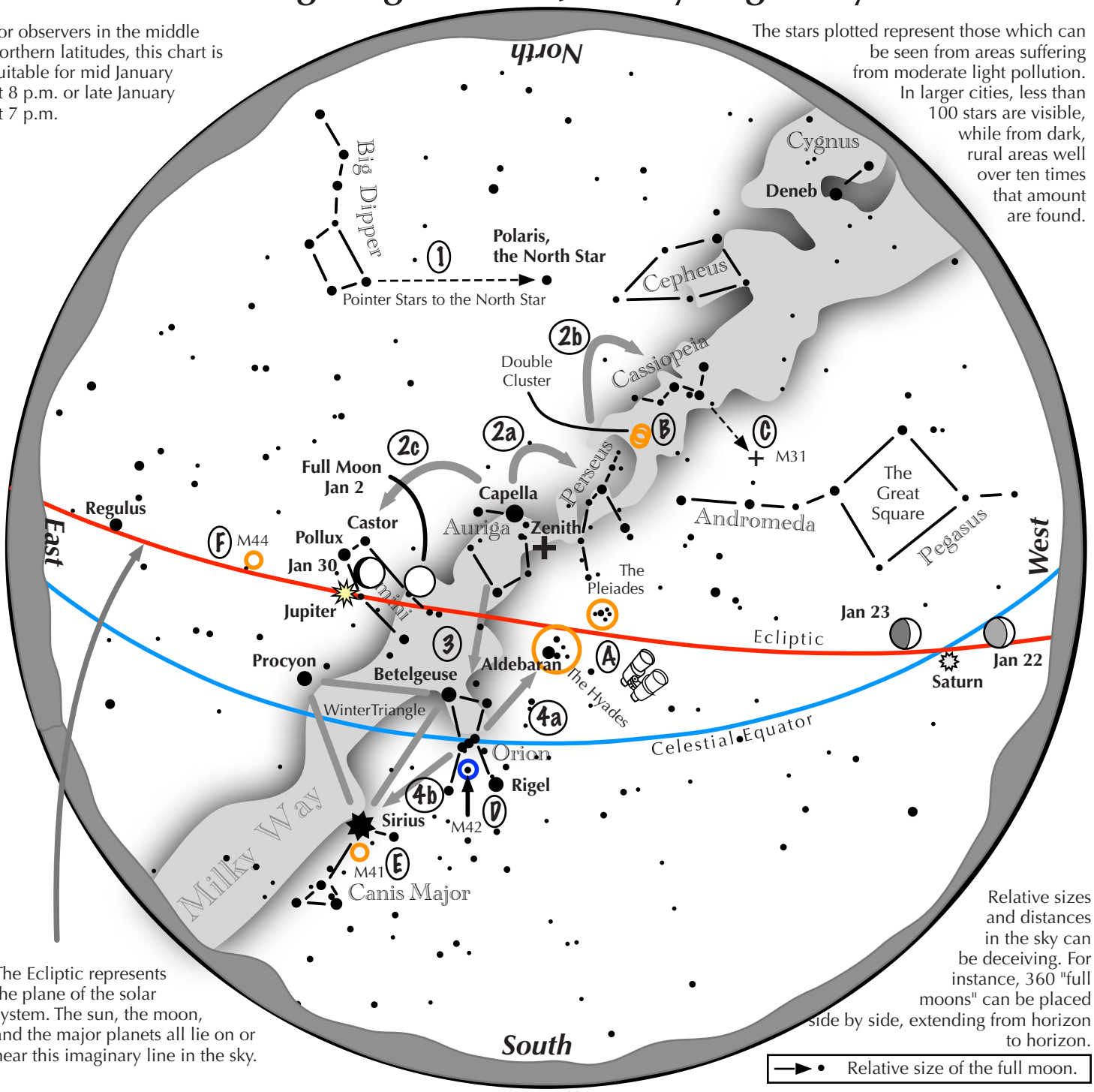
Edge-on galaxy in Andromeda, taken with Seestar S50 on November 24, 2025.

Navigating the mid January Night Sky

2026

For observers in the middle northern latitudes, this chart is suitable for mid January at 8 p.m. or late January 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 winter 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 Castor and Pollux of 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 to the red star Aldebaran, then to the Hyades, and the Pleiades star clusters. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius.

Binocular Highlights

A: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **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 to the southeast of Pollux.

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The Sun, Moon & Planets in January

This table contains the ephemeris of the objects in the Solar System for each Saturday night in January 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	**3**	18 54.8	-22 50.5	Sgr	-26.8	1951.8	-	-	-	0.983	07:13	11:50	16:28
	10	19 25.4	-21 59.3	Sgr	-26.8	1951.6	-	-	-	0.983	07:12	11:53	16:35
	17	19 55.6	-20 47.0	Sgr	-26.8	1950.8	-	-	-	0.984	07:10	11:56	16:43
	24	20 25.3	-19 15.4	Cap	-26.8	1949.7	-	-	-	0.984	07:05	11:58	16:51
	31	20 54.3	-17 26.4	Cap	-26.8	1948.1	-	-	-	0.985	06:59	11:59	17:00
Moon	**3**	6 33.7	27 21.0	Gem	-12.8	2006.3	173° E	100	-	-	16:40	00:42	08:31
	10	12 42.5	-7 55.5	Vir	-11.9	1789.2	97° W	57	-	-	23:48	05:26	10:55
	17	18 25.5	-28 13.2	Sgr	-8.9	1770.5	21° W	3	-	-	06:43	11:02	15:25
	24	0 16.0	3 53.4	Psc	-11.2	1914.6	62° E	27	-	-	09:48	16:31	23:27
	31	7 11.8	26 20.4	Gem	-12.7	1983.5	154° E	95	-	-	15:31	23:23	07:01
Mercury	**3**	18 07.5	-24 12.8	Sgr	-0.4	4.8	11° W	96	0.465	1.392	06:36	11:05	15:34
	10	18 55.5	-24 16.1	Sgr	-0.6	4.7	7° W	98	0.465	1.424	06:56	11:25	15:54
	17	19 44.5	-23 11.3	Sgr	-0.8	4.7	4° W	100	0.451	1.429	07:12	11:47	16:22
	24	20 33.9	-20 53.9	Cap	-1.0	4.8	3° E	100	0.425	1.406	07:24	12:09	16:54
	31	21 23.1	-17 22.2	Cap	-1.0	5.0	7° E	98	0.389	1.349	07:30	12:30	17:31
Venus	**3**	18 51.2	-23 29.9	Sgr	-3.8	9.9	1° W	100	0.728	1.710	07:15	11:48	16:20
	10	19 29.3	-22 41.0	Sgr	-3.8	9.9	1° E	100	0.728	1.711	07:22	11:58	16:35
	17	20 06.9	-21 18.2	Sgr	-3.8	9.9	3° E	100	0.728	1.709	07:26	12:08	16:51
	24	20 43.5	-19 24.3	Cap	-3.8	9.9	4° E	100	0.728	1.706	07:26	12:17	17:08
	31	21 19.2	-17 02.8	Cap	-3.8	9.9	6° E	100	0.728	1.701	07:24	12:25	17:26
Mars	**3**	19 02.2	-23 34.7	Sgr	1.2	3.9	2° E	100	1.427	2.409	07:26	11:57	16:29
	10	19 25.5	-22 56.4	Sgr	1.2	3.9	1° W	100	1.420	2.403	07:18	11:53	16:27
	17	19 48.7	-22 05.4	Sgr	1.2	3.9	2° W	100	1.413	2.396	07:10	11:48	16:27
	24	20 11.6	-21 02.2	Cap	1.2	3.9	4° W	100	1.407	2.388	07:01	11:44	16:27
	31	20 34.4	-19 47.5	Cap	1.2	3.9	5° W	100	1.402	2.380	06:50	11:39	16:28
1 Ceres	**3**	0 42.4	-4 57.0	Cet	8.9	0.4	85° E	97	2.879	2.789	11:50	17:35	23:20
	10	0 47.6	-3 54.0	Cet	9.0	0.4	80° E	97	2.875	2.881	11:24	17:12	23:01
	17	0 53.5	-2 48.7	Cet	9.0	0.4	74° E	97	2.870	2.972	10:58	16:51	22:44
	24	1 00.0	-1 41.6	Cet	9.1	0.4	69° E	97	2.866	3.061	10:33	16:30	22:27
	31	1 07.1	-0 33.0	Cet	9.1	0.4	64° E	98	2.861	3.146	10:09	16:10	22:10
Jupiter	**3**	7 31.4	22 01.5	Gem	-2.5	46.4	172° W	100	5.213	4.238	16:54	00:21	07:48
	10	7 27.4	22 11.0	Gem	-2.5	46.5	180° W	100	5.215	4.232	16:22	23:50	07:18
	17	7 23.4	22 20.0	Gem	-2.5	46.4	172° E	100	5.218	4.241	15:50	23:18	06:47
	24	7 19.5	22 28.4	Gem	-2.5	46.1	164° E	100	5.220	4.266	15:18	22:47	06:16
	31	7 15.9	22 35.9	Gem	-2.5	45.7	156° E	100	5.223	4.305	14:46	22:16	05:46
Saturn	**3**	23 50.0	-3 32.6	Aqr	1.2	17.0	74° E	100	9.518	9.747	10:52	16:42	22:31
	10	23 51.6	-3 20.3	Aqr	1.2	16.8	67° E	100	9.516	9.856	10:26	16:16	22:06
	17	23 53.6	-3 06.4	Psc	1.2	16.6	60° E	100	9.514	9.960	09:59	15:51	21:42
	24	23 55.7	-2 51.1	Psc	1.2	16.5	54° E	100	9.511	10.058	09:33	15:25	21:17
	31	23 58.1	-2 34.5	Psc	1.1	16.3	47° E	100	9.509	10.147	09:07	15:00	20:53
Uranus	**3**	3 42.7	19 29.9	Tau	5.6	3.8	135° E	100	19.490	18.779	13:18	20:34	03:50
	10	3 42.0	19 27.8	Tau	5.6	3.7	128° E	100	19.489	18.868	12:50	20:06	03:21
	17	3 41.5	19 26.2	Tau	5.7	3.7	121° E	100	19.487	18.966	12:22	19:38	02:53
	24	3 41.1	19 25.1	Tau	5.7	3.7	114° E	100	19.486	19.072	11:54	19:10	02:25
	31	3 40.9	19 24.6	Tau	5.7	3.7	106° E	100	19.485	19.185	11:26	18:42	01:58
Neptune	**3**	0 00.4	-1 24.4	Psc	7.9	2.3	77° E	100	29.885	30.092	10:55	16:52	22:49
	10	0 00.8	-1 21.6	Psc	7.9	2.3	70° E	100	29.885	30.208	10:28	16:25	22:22
	17	0 01.3	-1 18.2	Psc	7.9	2.3	63° E	100	29.884	30.320	10:01	15:58	21:55
	24	0 01.9	-1 14.2	Psc	7.9	2.2	56° E	100	29.884	30.424	09:33	15:31	21:29
	31	0 02.5	-1 09.7	Psc	7.9	2.2	49° E	100	29.884	30.521	09:06	15:04	21:02
Pluto	**3**	20 24.0	-23 12.4	Cap	14.6	0.2	21° E	100	35.423	36.343	08:44	13:16	17:49
	10	20 24.9	-23 09.7	Cap	14.6	0.2	14° E	100	35.428	36.383	08:17	12:50	17:23
	17	20 25.9	-23 07.0	Cap	14.6	0.2	7° E	100	35.433	36.409	07:50	12:23	16:56
	24	20 26.8	-23 04.3	Cap	14.6	0.2	4° W	100	35.438	36.420	07:24	11:57	16:30
	31	20 27.8	-23 01.7	Cap	14.6	0.2	8° W	100	35.443	36.417	06:57	11:30	16:03

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