



the Skyscraper

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July 2025

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

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July Meeting:

Member Presentations & Member Star Party

**Saturday, July 12 @ 6:30pm EDT
at Seagrave Memorial Observatory**

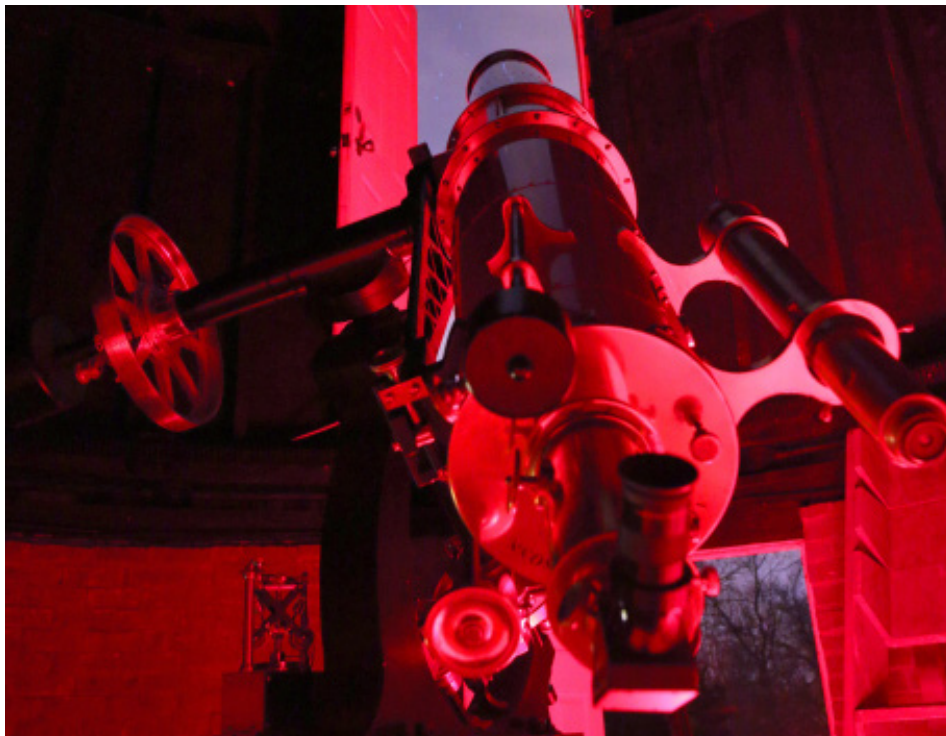
Social Hour 6:30pm. Presentations at 7pm. Observing at 9:30pm (weather permitting)
[In-person and on Zoom](#)
<https://us06web.zoom.us/j/87338930081?pwd=IMhrkhx7Jd3O2ScGHdQt5ISzP5W9Lw.1>

Come to the meeting and hear from our members on various topics in a series of short talks. We are still looking for one or two talks to fill the slate. So if you have an interesting topic, a recent trip, or a project you have in progress that you would like to share with the group, please contact me to secure a time slot. Currently, we have the following talks:

Michael Kerr: Blood Rain, Candle Dragons, and Merry Dancers (Auroras)

Greg Shanos: Alternative Resources for Meade Product Owners

Michael Corvese: Sky Kids Program



Observing Events:

Open Nights at Seagrave*

July 5, 9-11 PM
July 12, 9-11 PM
July 19, 9-11 PM
July 26, 9-11 PM

*Members are encouraged to attend

Off-site Public Observing*

River Bend Farm, Uxbridge MA
Friday, June 11, 9:00 - 10:30 PM

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

President's Message

by Linda Bergemann

Some are aware that I have been absent from Skyscrapers' activities since Achilles surgery in February. My lack of mobility still requires the use of a walker, and jaunts in the dark, on uneven ground, are still too risky. But, I did get to visit with a small group of members at our observatory during the June 23 streaming of the Vera C. Rubin Observatory First Look. If you haven't yet seen the spectacular images that the telescope has captured, check them out at <https://rubinobservatory.org/gallery>. Thank you Ian Dell'Antonio and Michael Corvese for hosting this event.

And, speaking of telescopes... Are you aware of the Library Telescope Program? The library telescope program places telescopes in local public libraries, allowing general access to the scope since they can be put into circulation just as a book. Started in 2008 by the New Hampshire Astronomical Society, the program is now international. Skyscrapers began participation in 2017 with the donation of

three Orion 4.5" StarBlast telescopes to RI libraries. Since then, we have assisted five libraries in purchasing telescopes, and we have donated three additional telescopes, awarded to us by the Astronomical League Horkheimer Charitable Fund, to local libraries. This year, we have included monies in our budget to purchase one library telescope for donation to an area library. If you have a local library that you think would like to have a small, portable and easy-to-use telescope to loan to their patrons, please drop me a note. Based on your input, the Board of Directors will decide which library will get this year's Library Telescope. Help introduce your neighbors to the night sky!

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 **July 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: July 2025

by Jim Hendrickson

Earth reaches the most distant point in its orbit around the Sun, known as **aphelion**, on July 3. At about 4:00pm, we will be at a distance of 1.016644 au (152.1 million km, 8.5 light minutes) from the Sun. This is 0.03332 au (4.99 million km, 12.71 lunar distances, 16.6 light seconds) more distant than we were at perihelion, which occurred on January 3.

While it may not be apparent yet that the amount of daylight is getting shorter, the last day of the year with 15 hours of daylight is July 10.

The Sun moves from Gemini to Cancer on the 20th, and is located 1.0° south of the Beehive Cluster, M44, on the 29th.

The **Moon** reaches its first quarter phase at 3:30am on the 2nd, in Virgo. On the evening of the 3rd, the 8-day gibbous is 2.3° south-southeast of Spica, that constellation's brightest star.

Watching the Moon occult, or pass in front of, a bright star is one of the most dramatic yet simple to observe phenomena, easily visible with small telescopes or binoculars.

The Moon moves nearly imperceptibly slow in our sky, and stars are so distant that they have no discernible size, that when they pass behind the limb of the Moon they appear to wink out and reappear instantaneously. Witnessing these events through the eyepiece of a telescope is quite memora-

ble, and the opportunity to see one occurs just after midnight on the 6th-7th, when the 86% illuminated gibbous Moon occults Fang (pi Scorpii), a magnitude 2.9 class B star that is 337 light years distant. The occultation begins when the darkened limb of the Moon passes in front of the star at 1:01am. The star reemerges from the north-eastern limb of the Moon at 2:00am, just a few minutes before moonset.

On the evening of the 7th, the Moon is 4.1° east-southeast of Antares, the class M supergiant marking the heart of Scorpius.

The Moon is full at 4:37pm on the 10th, and rises in the southwest at 8:47pm.

While June's Strawberry Moon was the most southerly of the year, July's Full Buck Moon is nearly as low, culminating at just 21.7° over the southern horizon at 1:12am on the 11th. The Moon reaches its most southerly declination on the 10th, which can be observed when the Moon transits at 19.5° above the southern horizon at 12:18am.

The Moon is last quarter, in Pisces, at 8:38pm on the 17th.

On the morning of the 16th, bring out binoculars or a telescope with very low magnification to see the 68.9% waning gibbous Moon, Neptune, and Saturn all within a 3° field of view. The best alignment occurs at about 3:00am-4:00am.

On the 20th, the waning crescent Moon can be seen very close to the Pleiades. It

will, in fact, begin to occult the brightest stars of the cluster, but that doesn't begin until 4:38am, when the sunlit limb of the Moon passes over magnitude 3.7 Electra. This is, unfortunately for us, well into nautical twilight, making the occultation quite difficult to observe. However, admiring the view of the 24% illuminated crescent, with Earthshine, positioned just west of the cluster in the hours before twilight will be quite easy.

Don't miss the 2.6% illuminated, 27-day-old Moon near Jupiter on the morning of the 23rd. The pair is separated by 4.6°, and rises just before 4:00am, about 100 minutes before sunrise.

The Moon is new at 3:11pm on the 24th, marking the beginning of Lunation 1266.

On the 25th, the 2-day crescent Moon is 1.3° east-southeast of Regulus, in Leo, and two nights later, it is 3.3° south-southeast of Mars.

During the first week of July, **Mercury** puts on a good show in the west-north-western sky after sunset, visible for 90 minutes past sunset on the 1st, and reaching its greatest elongation of 25.9° east of the Sun on the 4th.

Turning a larger telescope to the innermost planet reveals its tiny crescent, and on the 2nd, it will be within 1.0° southwest of the open cluster M44, the Beehive.

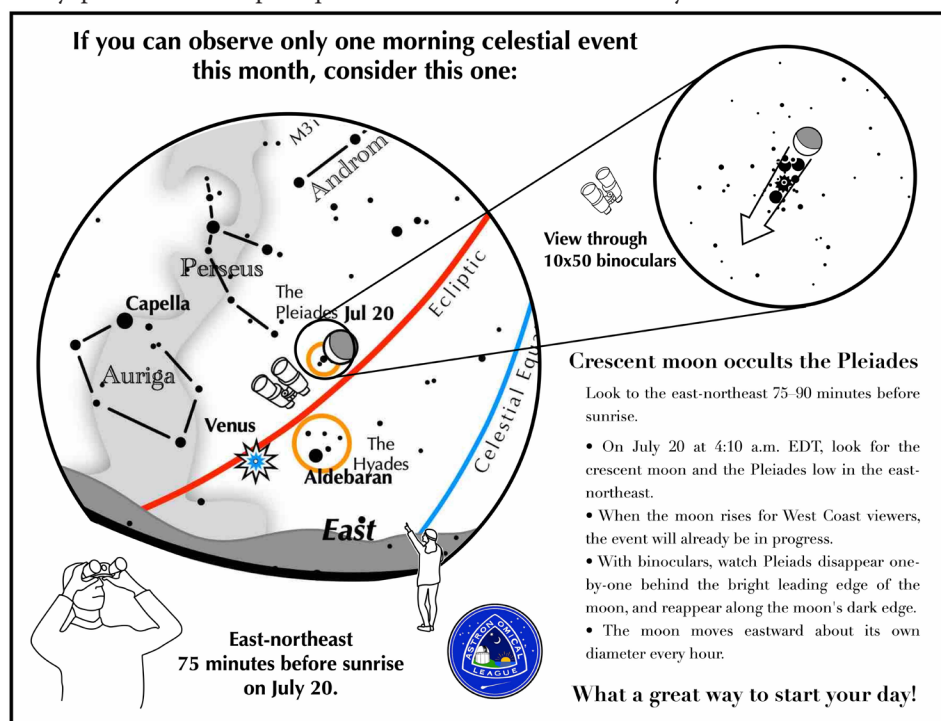
Mercury becomes difficult to observe by mid-month, so try to get a view of Mercury's crescent phase through a telescope before it dips too low later in the month. It reaches inferior conjunction on the 31st, and becomes visible again in the morning sky during the second week of August.

Venus is still putting on a good show in the morning sky. Moving eastward through Taurus, it rises about 2.5 hours before sunrise. The brilliant planet is within a binocular field of Uranus all week, passing as close as 2.4° south-southeast of the seventh planet on the 4th.

Venus appears near the Hyades cluster during the second week of July, providing an impressive view in binoculars. On the 13th, Venus is closest to the bright star Aldebaran, which will be 3.2° to the south of it.

Earliest Venusrise occurs at 2:35am on the 15th.

The crescent Moon is 7.6° above the brilliant planet on the 21st.



Events in July

2	15:30	First Quarter Moon
3	16:00	Earth Aphelion (1.016644 au)
3	22:00	Moon 2.3° SSE of Spica
4	00:00	Mercury Greatest Elongation (25.9° E)
4	03:00	Venus 2.4° SSE of Uranus
5	10:30	Neptune Stationary
6	04:00	Saturn 1.0° S of Neptune
7	01:01	Moon occults Fang (pi Sco; mag 2.9; in: 1:01; out: 2:00)
7	22:00	Moon 4.1° ESE of Antares
7	22:00	Moon 5.2° ESE of M4
9	22:00	Moon 4.1° ENE of Kaus Media
9	22:00	Moon 4.7° SSE of M22
10	05:20	Last day with 15 hours of daylight (15:01:10)
10	16:37	Full Buck Moon
11	22:00	Moon 2.1° E of Pluto
13	04:00	Venus 3.2° N of Aldebaran
14	03:57	Saturn Stationary
15	02:01	Moon occults phi Aqr (mag 4.2; in: 2:01; out: 3:13)
15	02:35	Earliest Venusrise
15	04:00	Uranus 4.3° SSE of M45
16	02:00	Moon 2.4° NNW of Saturn
16	03:00	Moon 1.5° NNW of Neptune
17	03:23	Mercury Stationary
17	20:38	Last Quarter Moon
20	04:38	Moon occults M45
20	16:00	Sun in Cancer (21d)
22	03:00	Moon 4.3° E of Elnath
23	04:00	Moon 4.6° NE of Jupiter
24	15:11	New Moon (Lunation 1268)
25		Equation of Time = -6:34 (Sun Slow)
25	01:00	Pluto Opposition (mag. 14.4, 34.299 au)
26	21:00	Moon 1.3° ESE of Regulus
28	21:00	Moon 3.3° SSE of Mars
30		Southern Delta Aquariids Meteor Shower
30		Capricornid Meteor Shower
31	19:41	Mercury Inferior Conjunction

Ephemeris times are in EDT (UTC-4) for Seagrave Observatory (41.845N, 71.590W)

On the 26th, Venus is located close to Tianguan (zeta Tauri). Turn your telescope to Venus and find M1, the Crab Nebula, just 0.5° north of the brilliant planet's gibbous globe.

Finally, for two days beginning on July 29, Venus passes through the non-zodiacal constellation Orion, crossing through the extreme northernmost segment marking the tip of the hunter's club. It then crosses into Gemini, where it will be within the same binocular field of view of the open cluster M35, from which it will be just 2.4° south-southeast of on the 2nd.

Crawling eastward through Leo, **Mars** is losing its prominence as an evening planet. At the start of July, it sets less than three

hours after sundown, and has faded to just a bit dimmer than Regulus, but remains slightly brighter than Denebola, the two brightest stars in its host constellation.

The Red Planet is over 2 au distant beginning on the 12th, and its diminutive globe is less than 5 arcseconds across, making its surface details very difficult to observe.

Mars becomes a resident of Virgo on the 28th. While it is still brighter than many of its surrounding stars, you'll need a clear western horizon to continue to observe it, as it is only with us for about two hours after sunset in late July.

The 5.7% illuminated crescent Moon lies 3.3° to its east-southeast on the 26th.

Jupiter rises within an hour of sunrise, and remains difficult to view in early July. Later in the month, the giant planet begins to come into view low in the east-northeast before sunrise.

The waning crescent Moon is 8° directly above (northwest of) Jupiter on the 21st, and its slender 2.6% illuminated crescent is 4.6° to the northeast (left) of Jupiter on the 23rd.

Jupiter rises before the onset of astronomical twilight by the end of the month.

Saturn becomes an evening planet in July, rising before midnight beginning on the 7th.

Now that Saturn is well above the horizon during hours of darkness, transits of the shadow of its largest Moon, Titan, are more readily visible for us. A favorable one occurs on the 2nd, beginning at about 3:30am. Titan's umbra, or inner shadow, is less than one arcsecond, so steady seeing and a large telescope will improve chances of a successful observation. Planetary imagers will also want to give these a try.

Watch for subsequent shadow transits at 16-day intervals through October 6, after which Titan's orbital plane is too far offset from Saturn's ecliptic plane for the shadow to intersect the globe of the planet.

The distant planet Neptune lies just to the north of the ringed world. Although the two planets have different apparent motions, with Saturn moving more swiftly than Neptune, they will remain quite close to each other throughout the year. Their closest appearance occurs on the 6th, when they are separated by just 1.0°.

Saturn reaches its stationary point, and begins its apparent retrograde motion on the 14th. It will continue to move westward until November 28.

A second transit of Titan's shadow on Saturn's cloud tops begins at about 3:00am

on the 18th.

The 69% illuminated waning gibbous Moon is 2.4° south of Saturn on the 19th.

2025 is an exceptional year to observe our solar system's two outermost planets, **Uranus and Neptune**, not due to any special circumstances of their individual appearances, but because of their positions in close proximity to brighter, easy to locate objects.

First is Uranus, in Taurus, which is now within the same binocular field of view as the Pleiades cluster. From the Pleiades, move southward by 4.3° to find 13 and 14 Tauri, a pair of 6th magnitude stars separated by ½° that are oriented roughly west-to-east. Continue following the line connecting these stars eastward and slightly north, about 1.3°, to find the magnitude 5.8 pale blue-green orb of Uranus. At the end of the month, the distance spans to 2.4°.

On the morning of the 4th, Uranus lies in a line between Venus and the Pleiades, with Uranus 2.4° north-northwest of Venus.

On the morning of the 8th, a line drawn from Aldebaran, through Venus, leads directly to Uranus.

Uranus is closest to the Pleiades cluster, just 4.1° to its north-northwest, on the 15th.

Neptune is in Pisces and is very easy to locate due to its position just 1.0° north of Saturn.

The waning gibbous Moon is 1.5° north-northwest of Neptune on the 16th. Use a wide-field telescope or large binoculars to see the waning gibbous Moon, Neptune, and Saturn all in the same view.

Minor Planets

Ceres is moving eastward through Cetus. At the beginning of July, it shines at magnitude 9.0, and can be found 14° east-southeast of Saturn. On the 4th, use 25 Ceti as a guide, as the star is 0.5° north of the dwarf planet.

Ceres is within 2.5 au from Earth on the 26th.

Pluto is located in Capricornus, 8.5° south of Dabih (beta Capricorni) and 3.8° east-southeast of the globular cluster M75.

Pluto is at opposition on the 25th, at a distance of 34.299 au and magnitude 14.4. The New Horizons probe, which visited Pluto a decade ago, is now 27 au more distant.

Asteroid 2 Pallas remains near the high point of its orbit, and is well-placed for observing during July evenings within Delphinus. Its 9th magnitude glow can be seen 1.2° north-northwest of the globular cluster

Caldwell 42 (NGC 7006) in early July. As the month progresses, it moves towards the familiar diamond asterism marking the body of the dolphin. On the 23rd, it is 0.4° north-northwest of the star marking the dolphin's nose, gamma Delphini. On the 30th, it is 0.2° southeast of Sualocin (alpha Delphini).

At the end of July, Pallas shines at magnitude 9.4 from a distance of 2.51 au.

While Vesta is becoming more distant, passing 1.5 au on the 1st, its 7th magnitude shine remains within binocular visibility.. Early in the month, it is within 1.0° west of magnitude 5.40 106 Virginis. From there, it moves approximately 1/4° per day in a southeasterly direction away from Syrma (iota Virginis). It crosses into Libra on the 13th. On the 30th and 31st, it lies midway between mu Virginis and Zubenelgenubi (alpha Librae).

Asteroid 6 Hebe is in Aquarius and becomes binocular visible in July. It starts at magnitude 9.0, about 3.0° west-northwest of lambda Aquarii, and arcs southeastward through its stationary point on July 14, then continues moving southward as it brightens to magnitude 8.2 by the end of the month, when it lies 0.4° west of the face-on spiral galaxy NGC 7371, about 2.8° north-northwest of the magnitude 4.0 star tau Aquarii.

Late July sees three **meteor showers**. The Southern delta Aquarids, a relatively low-rate showers whose origin is not yet know, with certainty, peaks on the night of the 29th-30th, when the 27.1% waxing crescent Moon sets early enough to not interfere with observations.

Peaking the same night, slowly entering particles from comet 169P/NEAT provide for an estimated ZHR of 5 for the alpha Capricornids.

Finally, although the peak doesn't occur until mid-August, the Perseids are active from mid July. As the bright Moon will interfere with seeing this shower's dust particles cast off from comet 109P/Swift-Tuttle, it may be worth being patient for the lower rates seen well before peak.

A recent astronomical trivia event posed the question "Which of these constellations is not visible during July?" Among the choices were Pegasus, Pisces, Scorpius, and Gemini. The intended "correct" answer was, of course, Gemini, but at mid-northern latitudes, Gemini can indeed be observed during July. For the first few days of the month, generally up to the 4th, Castor and Pollux can be seen twinkling through twilight low in the northwest. Additionally,



The Astronomical League
Open Cluster Program

M6 & M7

When these two big, bright, and beautiful open star clusters appear in the early evening in mid June, summer is not far behind.



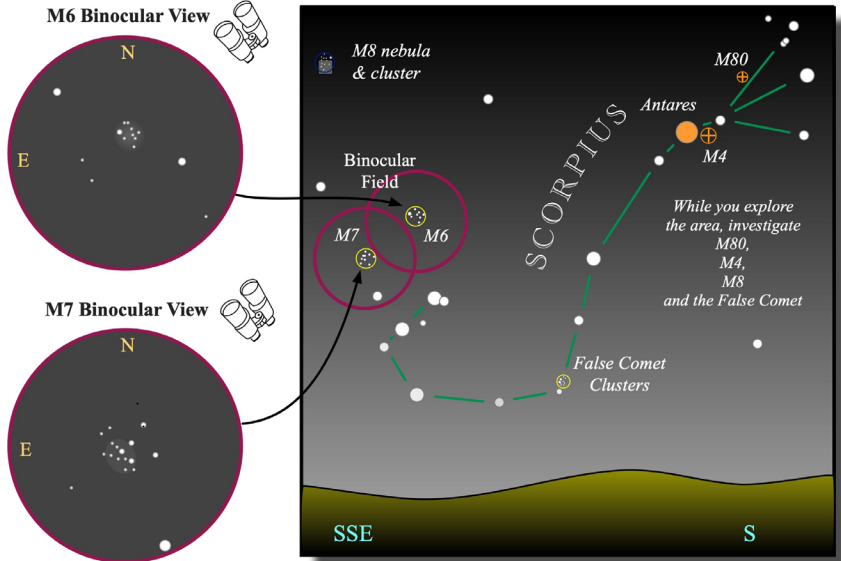
If you have recently begun your journey under the stars, why not whet your appetite by exploring southeastern Scorpius and its two wonderful open star clusters, M6 & M7. You will return to them year after year!

While they are visible to the unaided eye from a dark location, binoculars help greatly.

1. Identify Scorpius standing low in the south-southeast on a late spring or early summer evening. As summer proceeds, it is found low in the south, then low in the southwest in the early fall.
2. From red Antares, direct your gaze southward down the scorpion's back, then turn eastward.
3. When its tail hooks northward, continue the length of that hook.
4. M6 and M7 should be plainly visible in the binocular field.

M6:
A faint hazy glow is seen by the unaided eye from a dark, clear site. Two dozen stellar lights can be discerned with 10x50 binoculars.

M7:
A glittery glow is easily spotted off the scorpion's tail by the unaided eye. Binoculars reveal many faint stars.



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if you observe Jupiter any time this month, you're looking at Gemini.

As darkness sets in, Arcturus becomes visible overhead, but notably west of the meridian. The great bear Ursa Major is oriented nose-down, with the familiar Big Dipper oriented in its summer position, pouring the contents of its bowl out high over the northwestern horizon.

Some of the bright galaxies of spring are still positioned high enough for viewing in the early evenings of July, but they'll soon be out of sight as their host constellations Leo, Virgo, and Coma Berenices sink lower into the west as the month progresses.

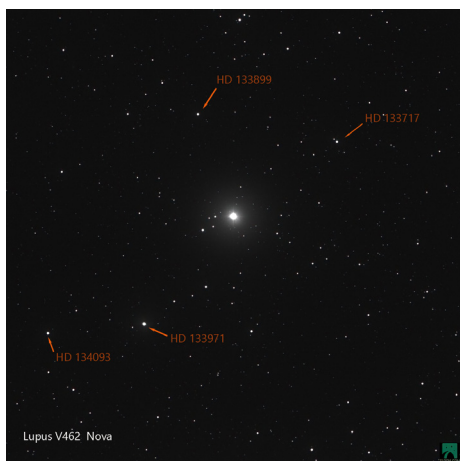
The southern sky is dominated by Scorpius and Sagittarius, two constellations that contain some of the season's best celestial wonders, as well as the core of the Milky Way. Let's take a look at two star clusters in Scorpius that are best seen on clear, moon-

less July evenings: Messier 6 and 7.

Located just a binocular field off the stinger of Scorpius, the pair of star clusters are easy to locate from locations with a clear southern horizon.

Messier 6, the more northern of the pair, contains about 120 member stars, and covers an area of sky slightly smaller than the full Moon. The cluster's brighter members are said to resemble the shape of a butterfly, hence its nickname, the Butterfly Cluster. Of all the objects in the Messier catalog, M6 lies the closest, in apparent angular separation, to the center of the Milky Way – just 3.4°. Although the cluster appears visually close to the galactic center, its distance of 1590 light years puts it at only 1/16th the distance from our solar system to the middle of the Milky Way.

Travel 3.5° southeast to find the other cluster, Messier 7. Egyptian astronomer



Jeff Padell took this image with the Australian Slooh scope on June 22.

Ptolemy noted the presence of this cluster as a nebulous patch behind the stinger of Scorpius in about the year 130, making M7 one of the earliest discoveries of a nonstellar object that we now refer to as the deep sky. To credit his discovery, it has been given the nickname Ptolemy's Cluster.

Containing about 80 stars sprinkled across an area just over 1.0° in width, M7 has a combined magnitude of 3.3, making it an easy object even under a bright sky. M7 holds the distinction of being the most southerly object in the Messier catalog.

Look overhead late in the evening to find the most prominent pattern in the summer sky, the Summer Triangle. The three brightest stars in the triangle belong to three different constellations.

Altair, in Aquila, the eagle, is one of the closest stars to us, at 16.7 light years. It is a class A7 main sequence star about 1.7 times as massive as our Sun, and shining with

about ten times the luminosity. Altair has one of the fastest rotation periods of any known main sequence star, about 10 hours, about the same as Jupiter. It rotates so fast that it is about 14% oblate.

Moving northward along the western edge of the triangle, we next find Vega, the brightest star in Lyra, the harp. It is a class A0 main sequence star located about 25 light years away. Vega has 2.3 times the mass of our Sun, 36 times its luminosity, and shines with a cool blue-white color at magnitude 0. At around 400 million years old, Vega is one of the youngest stars in our stellar neighborhood.

Moving eastward to Deneb, the most northern of the three stars in the Summer Triangle, this star marks the tail feathers of Cygnus, the swan. Although only slightly dimmer than the other two stars in the triangle, Deneb is markedly more distant, about 1900 light years. Deneb is quite massive – the class A2 blue supergiant star is about 16 times that of the Sun, and radiates with over 50,000 times its luminosity, which allows it to be seen so easily from such a great distance. A very young star, at just over 10 million years, Deneb will eventually end as a Type II supernova.

While we've been anticipating the outburst of the Blaze Star, T Coronae Borealis, another nova has unexpectedly brightened in the southern constellation Lupus, the wolf. Designated **V462 Lupi**, or Nova Lupi 2025, it was discovered by the All-Sky Automated Survey for Supernovae (ASAS-SN) on June 12, reached a peak magnitude of 5.5 in late June, and is expected to slowly fade.

Lupus, the nova's host constellation, may

not be well-known to observers in New England, but there is a good chance you may have gazed at its stars on a dark spring night while exploring its more notable neighboring constellation to the northeast, Scorpius.

V462 Lupi lies at a declination of $-40^\circ 8'$, about equal to that of the southernmost portion of the stinger of Scorpius, which clears our southern horizon by just 8° . This gives it both a very narrow window of visibility, as well as some notable constraints on being able to observe it. First, you will need a relatively unobstructed southern horizon, then you'll need favorable weather, specifically, transparent skies, something July evenings are statistically unlikely to provide. Even on a perfectly clear and transparent night, an elevation of 8° corresponds to an airmass of 7, and a stellar object in this position has an extinction of two whole magnitudes.

Timing is also critical. Not only is the nova past the meridian and getting lower in the sky by the end of twilight, the waxing Moon introduces additional skyglow that will make a successful observation challenging beyond the first few days of July. By the time Moonlight is out of view, from the 13th and beyond, the nova lies at an elevation of less than 6° post-twilight, and likely will have faded significantly.

At minimum, you'll need a small telescope to begin the hunt. With low-to-medium power, locate the horizontal pair of stars gamma and delta Lupi, separated by 2.6° . Simply follow this line westward another 2.5° and you've reached the location of V462 Lupi.

Fred Espenak, Mr. Eclipse, dies at 73

by Francine Jackson

Probably no one will be able to top the number of eclipses Fred Espenak has viewed, but, unfortunately, he will never be able to add more to his list. Espenak, known as Mr. Eclipse, succumbed to idiopathic pulmonary fibrosis (chronic, progressive lung disease) on June 1, 2025.

Known as Mr. Eclipse, for his viewing 52 solar eclipses – 31 of which were total – through his 50-year observing history, Espenak wrote several books about them, including co-writing 2006's "Five Millennium Canon of Solar Eclipses" with meteorologist Jean Meeus; he also was responsible for four websites devoted to celestial statistics, including MrEclipse.com.

For many of us who have seen a total solar eclipse, we can very much agree with Mr. Espenak who, on seeing his first as a teenager in 1970: "You will realize for the first time what the meaning of awesome is." Fred Espenak was 73.





Skyscrapers gather for Rubin Observatory's First Look

By Francine Jackson & Jim Hendrickson

Following Ian Dell'Antonio's June 7 presentation, over a dozen Skyscrapers met at Seagrave Memorial Observatory on Monday, June 23rd, for a Rubin First Look Watch Party to view the [live presentation](#) of first images from the Vera C. Rubin Observatory. This opening has been one of the greatest anticipated events in the scientific world, as the images that were to be released were the best ground-based ever created. With the largest camera in the world attached to a unique, 8.4-meter, triple-mirror configuration, what came out could

only be considered fabulous.

Approved in 2010, with construction begun several years later, the Vera Rubin Observatory, located on Cerro Pachón in Chile at 2,647 meters, can image the entire Southern Hemisphere in 3 to 4 nights, and can reach to about 45 degrees to the north. Its observation program, known as Legacy Survey of Space and Time (LSST) is planned to operate continuously for the next decade.

LSST will also be cataloging thousands of new asteroids, most notably those that

potentially come near our planet. Its unique capabilities can also measure the variations of RR Lyrae stars to better understand the scale and structure of the Milky Way galaxy, and by extension, the nature and evolution of galaxies across the universe.

In addition, the observatory is promoting collaboration with citizen science groups and projects to encourage public participation in research and discovery using LSST data, and to inspire the next generation of scientists to look toward disciplines in science-related fields.

Explore Rubin Observatory...by the numbers

<https://rubinobservatory.org/explore/how-rubin-works/numbers>

Welcome to Rubin's cosmic treasure chest

<https://rubinobservatory.org/news/rubin-first-look/cosmic-treasure-chest>

Rubin's Opening Act — a Swarm of New Asteroids

<https://rubinobservatory.org/news/rubin-first-look/swarm-asteroids>

Rhythms in the Stars

<https://rubinobservatory.org/news/rubin-first-look/rhythm-stars>

Trifid and Lagoon Nebulae

<https://rubinobservatory.org/news/rubin-first-look/trifid-lagoon>

Skyviewer

<https://skyviewer.app/>

Citizen Science

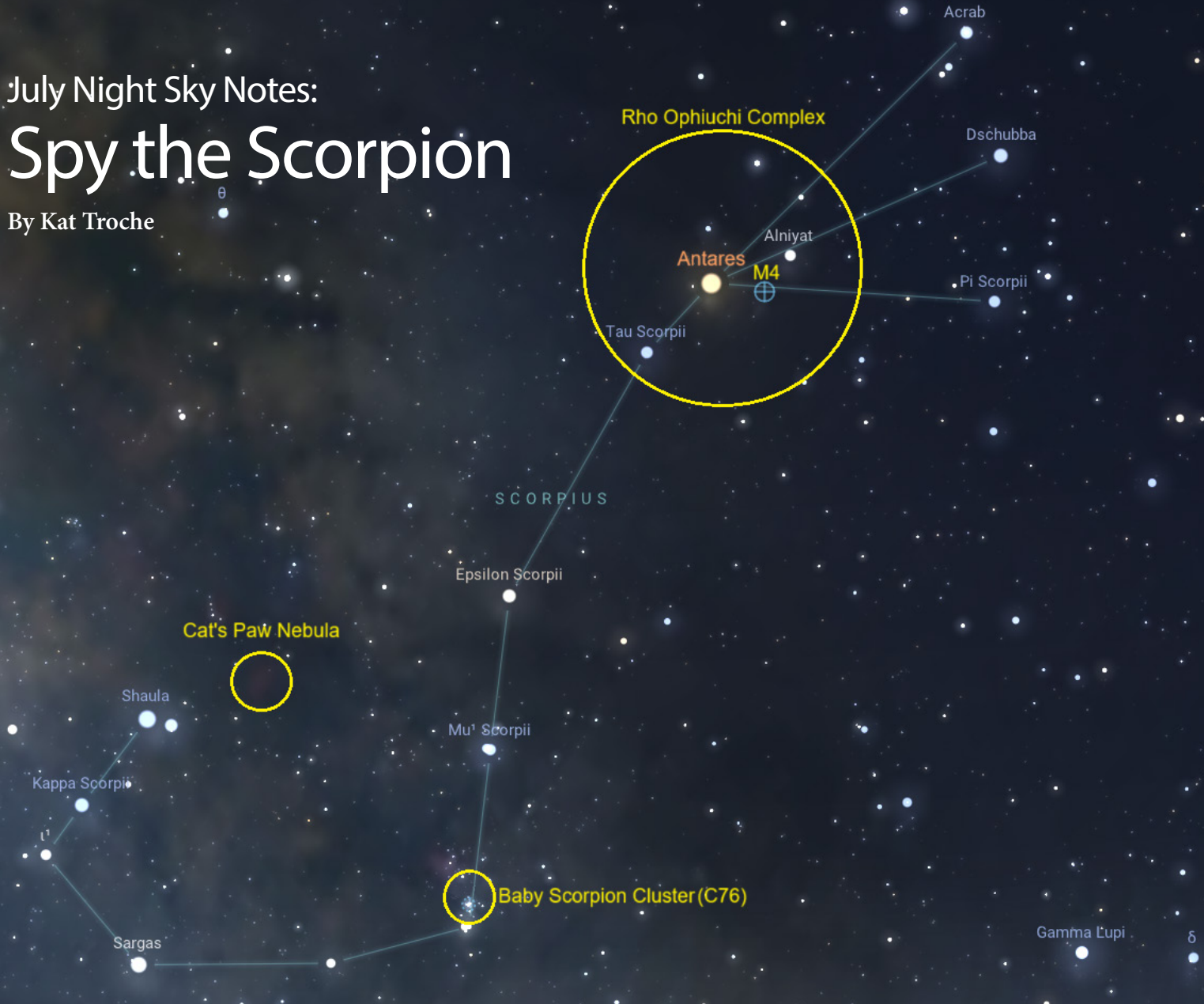
<https://rubinobservatory.org/for-scientists/citizen-science>



 <https://flic.kr/s/aHBqjCjw6n>

July Night Sky Notes: Spy the Scorpion

By Kat Troche



As summer deepens in the Northern Hemisphere, a familiar constellation rises with the galactic core of the Milky Way each evening: Scorpius the Scorpion. One of the twelve zodiacal constellations, Scorpius contains many notable objects, making it an observer's delight during the warmer months. Here are some items to spy in July:

- **Antares:** referred to as “the heart of the scorpion,” this supergiant has a distinct reddish hue and is visible to the naked eye. If you have good skies, try to split this binary star with a medium-sized telescope. Antares is a double star with a white main-sequence companion that comes in at a 5.4 magnitude.

- **Messier 4:** one of the easiest globular clusters to find, M4 is the closest of these star clusters to Earth at 5,500 light years. With a magnitude of about 5.6, you can spot this with a small or medium-sized tele-

scope in average skies. Darker skies will reveal the bright core. Use Antares as a guide star for this short trip across the sky.

- **Caldwell 76:** If you prefer open star clusters, locate C76, also known as the Baby Scorpion Cluster, right where the ‘stinger’ of Scorpius starts to curve. At a magnitude of 2.6, it is slightly brighter than M4, albeit smaller, and can be spotted with binoculars and the naked eye under good sky conditions.

Lastly, if you have an astrophotography set up, capture the Cat's Paw Nebula near the stinger of Scorpius. You can also capture the Rho Ophiuchi cloud complex in the nearby constellation Ophiuchus. Brilliant Antares can be found at the center of this wondrous structure.

Manaiakalani

While many cultures tell tales of a ‘scorpion’ in the sky, several Polynesian cultures see the same stars as the demigod Māui's fishhook, Manaiakalani. It is said that Māui didn't just use his hook for giant fish in the sea, but to pull new islands from the bottom of the ocean. There are many references to the Milky Way representing a fish. As Manaiakalani rises from the southeast, it appears to pull the great celestial fish across a glittering sea of stars.

Measure Your Darkness

While you can use smartphone apps or dedicated devices like a Sky Quality Meter, Scorpius is a great constellation to measure your sky darkness with! On a clear night, can you trail the curve of the tail? Can you see the scorpion's heart? Use our free printable Dark Sky Wheel, featuring the stars of

Scorpius on one side and Orion on the other for measurements during cooler months. You can find this resource and more in the [Big Astronomy Toolkit](#).

This article is distributed by NASA's Night Sky Network (NSN). The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit go.nasa.gov/nightskynetwork to find local clubs, events, and more!

Opposite: The star map of the Scorpius constellation highlights the star Antares and several notable deep-sky objects like the Rho Ophiuchi Complex, Messier 4, the Cat's Paw Nebula, and Caldwell 76, the Baby Scorpion Cluster. Credit: Stellarium Web

Right: A digital map of the Rho Ophiuchi Complex. Credit: Stellarium Web



Book Review

Night Magic

by Leigh Ann Henion, New York: Algonquin Books of Chapel Hill, 2024, ISBN [978-164375-336-2](#), hardbound, \$30.00 US

Reviewed by Francine Jackson

The full name of this book is “Adventures among Glowworms, Moon Gardens, and other Marvels of the Dark.” The premise of it is the author’s nighttime treks to organizations that introduce the public to nature only found in darkness.

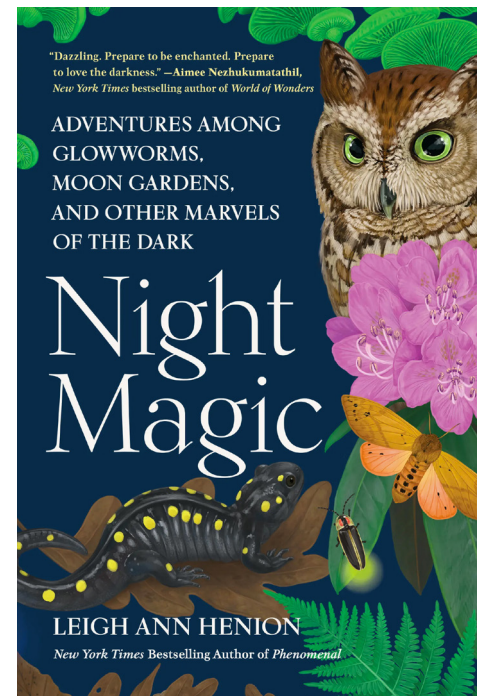
Living in a region where night walks can be done without many streetlights and roaring traffic, the author joins others to attempt to observe the main glowing flora and fauna that so many of us have never seen or possibly never heard of: Finding caterpillars that will become beautiful moths at the annual Mothapalooza; losing her fear of bats by joining the overnight Bat Blitz; spending time with night-moving salamanders.

Often she takes her young son with her, hoping he will become aware of the wonders of the night that so many miss, and surprisingly, he does begin to see why his mother is so adamant to be have him understand what so many are not aware: the owls in her neighbor’s tree, the amazingly

different colors present on fireflies, even the array of flowers that bloom only after the Sun sets.

Also, the author attends a “firemaking” class, learning to start a fire using only what nature donates. This is surprisingly more difficult than she could ever have dreamed. And then, her mentor asks her a question she never believed she would hear when it’s time to leave: What would she like to do with her fire? How does a fire “power down” naturally?

This book has to be read slowly, as there is so much to learn. It introduces the concept of the natural world at night, when people normally aren’t looking for the varied plants and animals that depend on darkness to perform beautifully. The author, in alerting the reader to what most of us are missing by staying inside after dark, clearly admits that by writing this book, she understands she can’t save the planet from light pollution, but she does hope that the reader will stop and think of the wonders



that are waiting for all of us in the dark. All we have to do is venture outside, and hope the area around us is dark enough to see what is waiting for us, often just in our backyards.

Night Magic was the first book of choice for the newly formed [DarkSky book club](#). For all of us star lovers, this is a wonderful way to introduce the public to the need for darker evenings.

V462 Lupi When the Universe Gives You Lemons – Make Lupi-nade

by Greg Shanos

T Coronae Borealis, abbreviated T CrB, also known as the “Blaze Star” is a recurrent nova which last brightened in 1946. Professional astronomers predicted it would brighten again by September 2024. As of mid-2025, T CrB has not yet gone nova but when it does happen, its apparent brightness is predicted to be naked eye at magnitude +2.

T Coronae Borealis is a classical nova involving a white dwarf accreting hydrogen rich material from a companion star usually a red giant. The accreted hydrogen builds up and leads to a thermonuclear explosion that results in the sudden brightness of the star. The white dwarf is not destroyed in the process.

While waiting for the Blaze Star to brighten, another nova occurred that took astronomers by surprise. The new nova was detected in the constellation Lupus the wolf. Therefore, when the universe gives you lemons- make LUP-nade.

Nova Lupi 2025 officially designated V462 Lupi was first discovered on June 12, 2025, by the All-Sky Automated Survey for Supernovae, a network of 20 worldwide robotic telescopes. When Nova Lupi 2025 was first detected to outburst, it was +8.7 magnitude and has since rapidly brightened to +5.7 magnitude, which is on the verge of naked eye visibility. This star is normally at magnitude +22.3 and therefore brightened by 3.3 million times! Since this is its first recorded eruption, it is unknown how long V462 Lupi will be visible to the naked eye. It could take from a few days to a few months to dim from its previous level. V462 Lupi was determined to be a classical nova just like T CrB.

Observers from a latitude around 40 degrees North will find Nova Lupi 2025 low in the sky at approximately 10 degrees above the southern horizon at around 10:30 p.m. local time. The further south you are the nova will appear higher in the sky. From the Florida Keys V462 Lupi will be 25 degrees above the southern horizon. Therefore, the best way to view the nova is on a clear

night with an unobstructed view down to the horizon. The coordinates for V462 Lupi are RA 15h 08m 03.27” and DEC -40° 08’ 35.1”. Simply input these coordinates into your Go To telescope and the nova will be centered in the field of view.

This was my first observation of a nova. I was surprised how bright the star appeared in my Seestar S50 smart telescope. I will be

monitoring and imaging this star throughout the coming months as it begins to fade. I encourage all amateur astronomers to attempt an observation/image of this once in a lifetime event. Consider submitting your observations to the American Association of Variable Star Observers (AAVSO).

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- 7) V462 Lupi | Wikipedia.org
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- 8) AAVSO published observations of magnitudes for Nova V462 Lupi
https://apps.aavso.org/webobs/results/?star=000-BQF-448&num_results=200
- 9) Special thanks to Russell Pinizzotto PhD President of the Southern Maine Astronomers for his valuable assistance in identifying the nova against the background stars in my Seestar image.
<https://www.southernmaineastronomers.org/>



Image of **T Coronae Borealis** on June 24, 2025 at 11:33pm local time or June 25, 2025 3h 33m Universal Time near the zenith. The skies were moonless, clear, and hazy at Bortle 6. The easiest way to find T CrB in the Seestar is to input the elliptical galaxy IC4587 at mag +14.3. The Blaze Star will be the nearest bright star to the galaxy at approximately +10 magnitude. Image is the result of 10 second exposures totaling 5 minutes in equatorial mode. Straight out of the Seestar with no post processing. Image was taken by the author from Longboat Key (Sarasota), Florida T CrB has yet to go nova.

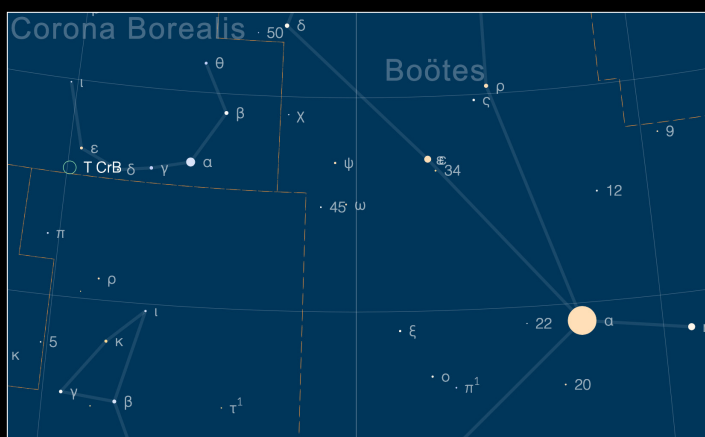
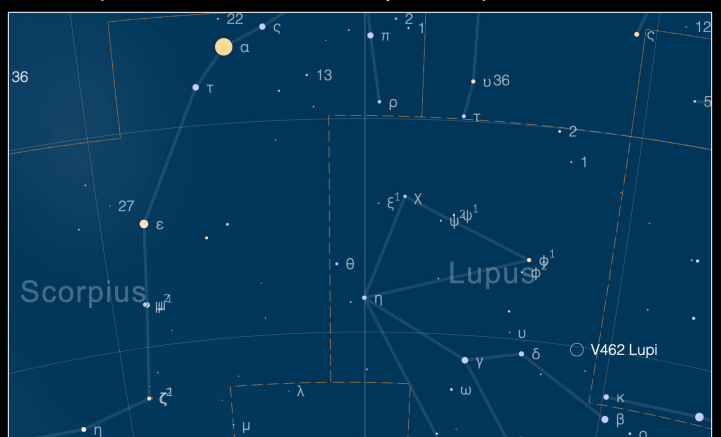


Image of **V462 Lupi** taken on June 24, 2025 at 11:08pm local time or June 25, 2025 at 3h 08m Universal Time. The skies were moonless, clear and hazy right down to the horizon at Bortle 6. The nova was 22 degrees above the horizon at this time. The bright star at the bottom center of the image is HR Lupi which is at magnitude +5.8. Note that the Nova Lupus is approximately the same magnitude. Image is the result of 10 second exposures totaling 5 minutes in equatorial mode. Straight out of the Seestar with no post processing. The image was taken by the author from Longboat Key (Sarasota), Florida. Note that V0462 Lup in the watermark is officially V462 Lupi.



Navigating the mid July Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid July at 11 p.m. or late July near 10 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.

North

East

West

South

Equator

Ecliptic

Summer Triangle

Coathanger Cluster

Great Rift

Numerous star clusters and nebulae

The Teapot

Sagittarius

Scorpius

False Comet

Antares

Zubenelgenubi – nice binocular double star

Omega Scorpii – nice binocular double star

Arcturus

The Northern Crown

The Keystone of Hercules

Vega

Deneb

Cygnus

Aquila

Altair

Polaris, the North Star

Pointer Stars to the North Star

Big Dipper

Alcor/Mizar – nice binocular double star

Coma Berenices Star Cluster

Denebola

July 01

July 28

July 28

July 30

July 03

Spica

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

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the July evening sky, then continues to Spica. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 3 To the northeast of Arcturus shines another star of similar brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 4 High in the East lies the Summer Triangle stars of Vega, Altair, and Deneb.
- 5

Binocular Highlights

- A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
- B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
- C: On the western side of the Keystone glows the Great Hercules Cluster, containing nearly 1 million stars.
- D: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- E: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.

Astronomical League www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.

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.

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The Sun, Moon & Planets in July

This table contains the ephemeris of the objects in the Solar System for each Saturday night in July 2025. Times in Eastern Daylight Time (UTC-4). 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	5	6 57.6	22 46.6	Gem	-26.8	1887.9	-	-	-	1.017	05:17	12:51	20:24
	12	7 26.2	21 57.5	Gem	-26.8	1888.1	-	-	-	1.017	05:22	12:52	20:21
	19	7 54.5	20 50.0	Gem	-26.8	1888.7	-	-	-	1.016	05:27	12:52	20:17
	26	8 22.3	19 25.2	Cnc	-26.8	1889.7	-	-	-	1.016	05:34	12:52	20:10
Moon	5	14 14.2	-18 07.2	Vir	-12.1	1788.3	114° E	70	-	-	16:03	20:52	01:33
	12	20 30.5	-23 29.7	Cap	-12.6	1849.1	166° W	98	-	-	21:24	02:05	06:54
	19	2 23.6	17 30.4	Ari	-11.7	1928.9	77° W	39	-	-	00:18	07:47	15:30
	26	9 24.0	17 10.5	Leo	-8.3	1887.9	15° E	2	-	-	07:23	14:33	21:29
Mercury	5	8 46.2	17 47.9	Cnc	0.5	8.2	26° E	40	0.454	0.820	07:30	14:39	21:47
	12	9 04.1	14 57.7	Cnc	1.0	9.4	24° E	28	0.466	0.719	07:30	14:27	21:24
	19	9 07.9	12 56.8	Cnc	1.7	10.6	19° E	15	0.464	0.638	07:13	14:02	20:51
	26	8 57.1	12 22.8	Cnc	2.9	11.4	11° E	5	0.449	0.592	06:36	13:23	20:09
Venus	5	3 55.1	17 44.0	Tau	-4.0	17.5	43° W	65	0.727	0.967	02:38	09:48	16:59
	12	4 27.2	19 20.0	Tau	-4.0	16.6	42° W	68	0.727	1.020	02:36	09:53	17:11
	19	5 00.4	20 36.5	Tau	-4.0	15.8	41° W	71	0.726	1.072	02:36	09:59	17:22
	26	5 34.4	21 29.9	Tau	-3.9	15.1	39° W	73	0.725	1.122	02:39	10:05	17:32
Mars	5	10 48.0	8 40.3	Leo	1.5	4.8	57° E	93	1.636	1.953	10:06	16:39	23:12
	12	11 03.2	7 00.8	Leo	1.5	4.7	54° E	93	1.630	1.999	10:00	16:27	22:54
	19	11 18.5	5 18.4	Leo	1.6	4.6	52° E	94	1.624	2.043	09:54	16:15	22:35
	26	11 34.0	3 33.6	Leo	1.6	4.5	49° E	94	1.618	2.085	09:48	16:03	22:17
1 Ceres	5	1 05.9	-5 12.7	Cet	9.0	0.4	90° W	97	2.963	2.782	01:14	06:57	12:41
	12	1 11.0	-5 05.6	Cet	8.9	0.5	95° W	97	2.962	2.687	00:51	06:35	12:19
	19	1 15.4	-5 04.4	Cet	8.8	0.5	101° W	97	2.960	2.593	00:28	06:12	11:56
	26	1 18.9	-5 09.4	Cet	8.7	0.5	107° W	97	2.957	2.502	00:04	05:48	11:31
Jupiter	5	6 24.9	23 11.5	Gem	-1.8	32.0	8° W	100	5.147	6.153	04:43	12:16	19:49
	12	6 31.8	23 07.5	Gem	-1.7	32.1	13° W	100	5.149	6.136	04:23	11:55	19:28
	19	6 38.6	23 02.4	Gem	-1.8	32.2	18° W	100	5.152	6.110	04:02	11:34	19:06
	26	6 45.3	22 56.3	Gem	-1.8	32.4	23° W	100	5.154	6.075	03:42	11:13	18:45
Saturn	5	0 10.5	-1 19.3	Psc	1.0	17.8	101° W	100	9.574	9.322	00:04	06:02	11:59
	12	0 10.7	-1 19.7	Psc	0.9	18.0	108° W	100	9.572	9.209	23:37	05:34	11:32
	19	0 10.7	-1 22.1	Psc	0.9	18.2	115° W	100	9.570	9.101	23:10	05:07	11:04
	26	0 10.3	-1 26.5	Psc	0.9	18.4	121° W	100	9.568	8.998	22:42	04:39	10:36
Uranus	5	3 51.0	19 55.4	Tau	5.8	3.5	43° W	100	19.522	20.248	02:24	09:42	17:00
	12	3 52.3	19 59.3	Tau	5.8	3.5	50° W	100	19.520	20.162	01:57	09:16	16:34
	19	3 53.5	20 02.8	Tau	5.8	3.5	56° W	100	19.519	20.068	01:31	08:49	16:08
	26	3 54.5	20 05.9	Tau	5.8	3.5	63° W	100	19.518	19.965	01:04	08:23	15:41
Neptune	5	0 10.1	-0 21.1	Psc	7.9	2.3	101° W	100	29.889	29.677	00:01	06:01	12:02
	12	0 10.1	-0 21.8	Psc	7.9	2.3	108° W	100	29.889	29.563	23:33	05:34	11:34
	19	0 09.9	-0 23.1	Psc	7.8	2.3	114° W	100	29.889	29.454	23:05	05:06	11:07
	26	0 09.7	-0 24.9	Psc	7.8	2.3	121° W	100	29.889	29.350	22:38	04:38	10:39
Pluto	5	20 25.1	-23 05.5	Cap	14.4	0.2	160° W	100	35.298	34.342	21:44	02:17	06:50
	12	20 24.5	-23 08.5	Cap	14.4	0.2	167° W	100	35.303	34.314	21:16	01:49	06:21
	19	20 23.8	-23 11.4	Cap	14.4	0.2	173° W	100	35.308	34.299	20:48	01:21	05:53
	26	20 23.1	-23 14.4	Cap	14.4	0.2	176° E	100	35.313	34.299	20:20	00:52	05:25

A Look Back:
*Highlights
from the 2004
Skyscrapers Trip
to White Mountain,
California*

By John Kocur

Back in July 2004, The Skyscrapers Astronomy Club took a trip to White Mountain Research Station, CA, to do astrophotography. The facility belongs to the University of California and is used for ecological research. 21 members in our group flew to Las Vegas, rented SUVs, and traveled to Furnace Creek resort at Death Valley. After a one night stay, we drove through Death Valley, to Bishop, CA, and then to WMRS.

White Mountain's peak is at elevation 14,252 ft. WMRS is at 10,150 ft. We stayed there for 5 days, had comfortable bunk rooms, and great catered meals by the house chef. The weather was perfect and the night sky was spectacular. There were no clouds at night, no

light pollution, and had a new Moon. The Milky Way was stunning in its beauty and would cast my hand's shadow as I held it over the ground. The North American Nebula could be seen naked eye.

I will never forget this experience as long as I live. Friends of club member Al Hall brought a 22 inch Dobsonian telescope to add to our amazing adventure. Side trips during the day were hiking in the area, visiting the Bristlecone Pine Forest, Owens Valley Radio Astronomy facility, and Mono Lake. After our stay, we headed back to Furnace Creek and explored Death Valley.

I would have never attempted a trip like this without the combined efforts by the Skyscrapers membership.



Opposite: Milky Way by John Kocur. Canon AE1 with 50mm prime focus lens, F 1.8, Ektachrome 200 slide film, 18 minute exposure, manually guided; Above: Group photo at entrance to Death Valley



Entrance to Furnace Creek Ranch



Death Valley crazy panoramic shot of John Kocur and Jim Hendrickson with 2 different photographers. He took a picture of me and I took a picture of him.



Al Hall and Dick Parker
at floor of Death Valley,
temperature 132 degrees.

The Road Runner and Wile E.
Coyote made an appearance.

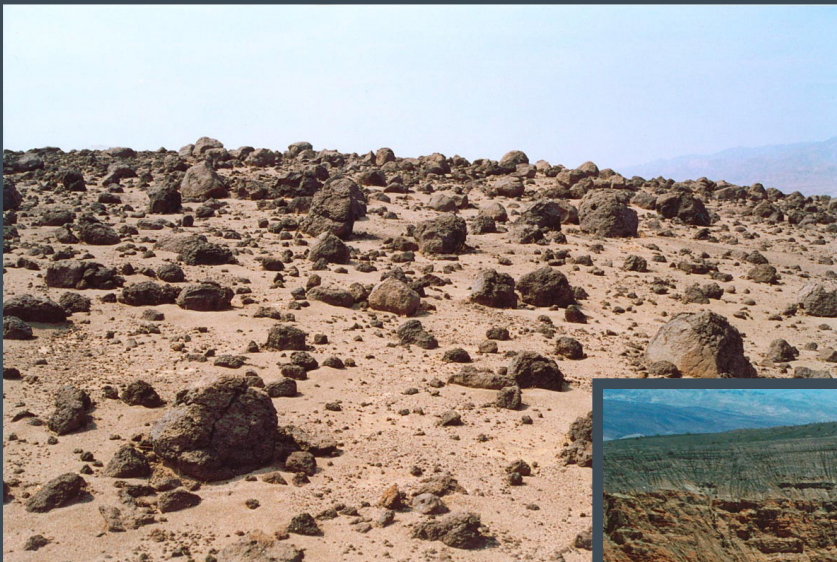


Badwater Basin, lowest
place in North America



Wildlife

Scott Tracy on the Devil's
Golf Course, Death Valley



Mars like landscape at Death
Valley by Jim Hendrickson

Ubehebe volcanic cinder cone
crater by Jim Hendrickson



Death Valley photo
by John Kocur



Aerial photo of White Mountain and map - Wikipedia



As you can see by the map, we covered a lot of ground and wasted no time with so much to do and see.



Through the mountain pass.

Lupine, Sage, & Sierra Nevada Mountains.
Photo by Dan Lorraine.



Road to White Mountain, in the background. Sage brush everywhere. Photo by John Kocur

Sierra Nevada Mountains snow capped peaks in July. Photo by John Kocur





Above: White Mountain panoramic shot by John Kocur. Summit is in the distance. It certainly lives up to its' name. Left: We have arrived.



WMRS facility



Above left: The Compound, from mountain vantage point approximately 600 ft. above WMRS. Some telescope equipment can be seen in the courtyard. Photo by Jim Hendrickson; Above right: Moonset at White Mountain by Ken Dore

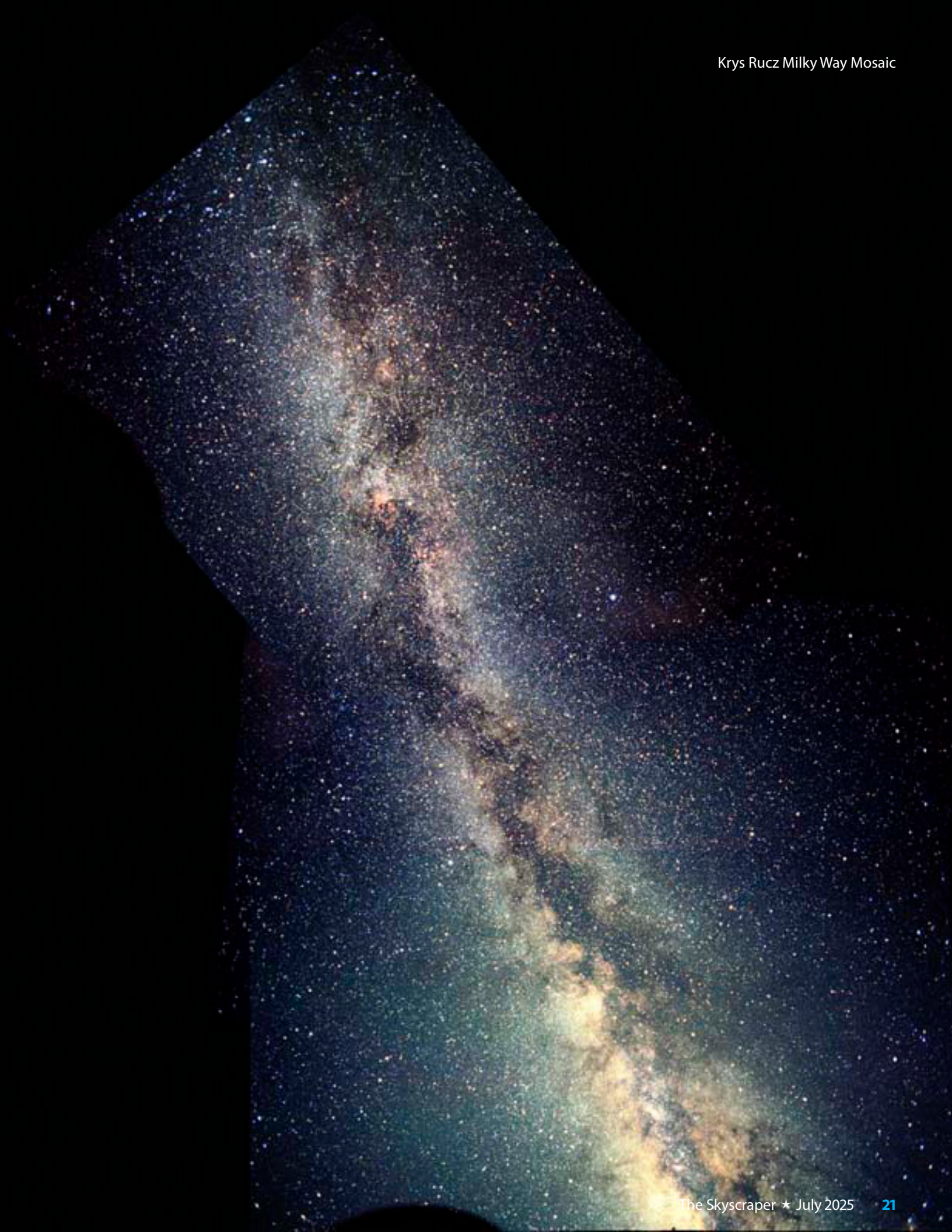


Above left: Glenn Jackson and Krys Rucz; Above right: Jerry Jeffery, Ken Dore, and Richard Arnold

Steve Hubbard & John Kocur



Left: Getting things ready; Right: 22-inch Dobsonian



Cygnus, North American
Nebula, and Coat Hanger
Cluster by John Kocur.



John Kocur's first image.

M 31 by Al Hall



Milky Way by Krys Rucz



Above left: Dick Parker, Scott Tracey, and Josh Cohen; above right: Bristlecone Pine Forest; Left: Bighorn Sheep by Josh Cohen



Below: Owens Valley Radio Astronomy Station and Mono Lake by Dan Lorraine





Dead Bristlecone Pine
by John Kocur

Below left: Artist Pallet, Death Valley by Dan Lorraine; Below right: Crescent Moon, Furnace Creek by Dan Lorraine



Crescent Moon & Mars by Bob Horton

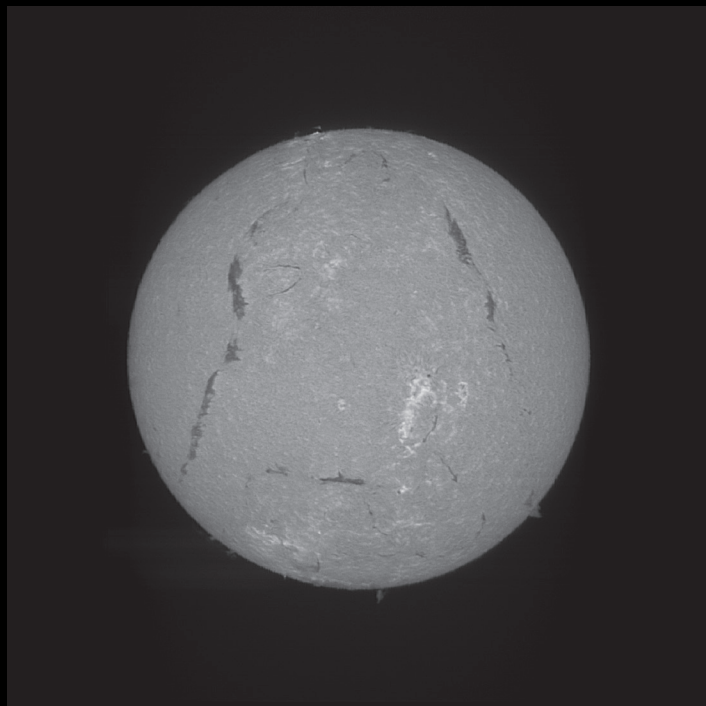
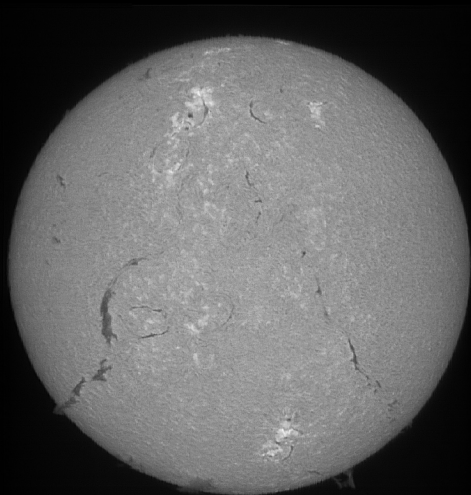
Mars was just above the Crescent Moon on June 29. The Moon is purposely overexposed to bring out the Earthshine on the dark portion of the Moon. Taken with a Nikon 1,000mm F11 mirror-lens.



Deep Sky by Steve Hubbard

Taken with a 6" f8 refractor and Sharp Cap live stacking, about 5 to 10 minutes worth of stacking. Lots of light pollution, Bortle 7 skies. ZWO 294MC camera used. M 13 (left) & M 57 (right)





Solar Activity by Conrad Cardano

Left: I just did this before the clouds came in. This was a video shoot of the sun on the morning of June 20, 2025. I took 7 x 1800 frame video of the sun. Scope: WO 71mm f/5.9 apo; Camera: ASI294MM; SOLEX solarheliograph with 2400 l/mm grating; processed with Spec-Init; Stacked with Autostakkert.

Right: Solar flare captured on June 23.

Titan Shadow Transits by Greg Shanos

I was fortunate enough to image the Shadow Transit of Saturn on June 16th. Here were my observing conditions at 4:30 am local time- horrrific!

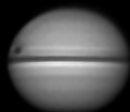
I set up at 2:30am and I was able to see Polaris, Deneb and Vega to align on. Saturn was low on the horizon. The weather conditions continued to deteriorate throughout the night. My last image was at 5:00 am through thick clouds. At 5:40AM I felt raindrops and quickly put my telescope, computer and camera in the garage. It down poured a couple of minutes later- my tripod, table and chair were soaked! Total of 0.10 inches (2.5mm). Does not sound like much however the rain came down all at once!

Below are the only images I was able to obtain. The image at 8h 42.6m UT (4:26.8 am) local time was the best. The Shadow would have been near the center of the disk if the weather was more cooperative. I am fortunate to have these images and all my equipment intact.

Saturn
May 31, 2025
Shadow Transit of Titan

Gregory T. Shanos Sarasota, FL
Meade LX200GPS 250mm fl 2500mm f/10
ZWO ASI 462 MM monochrome camera
Vernonscope 1.25x Barlow
Derotated 6 minutes with WinJupos

Magnitude: +1.1
Diameter: 16.8"
Phase: 99.8%
Altitude: 34°
Seeing: 4/10 Below Ave, Windy
Transparency: 4/10 Through Clouds, Humid



09h 40.1m UT
Baader 610nm R+IR longpass filter
CMI: 359.9° CMII: 313.8° CMIII: 213.1°



Saturn
June 16, 2025
Shadow Transit of Titan

Gregory T. Shanos Sarasota, FL
Meade LX200GPS 250mm fl 2500mm f/10
ZWO ASI 462 MM monochrome camera
Vernonscope 1.25x Barlow
Derotated eight minutes with WinJupos

Magnitude: +1.1
Diameter: 17.2"
Phase: 99.7%
Altitude: 35°
Seeing: 4/10 Below Ave
Transparency: 3/10 Poor, Through Clouds



08h 42.6m UT
Baader 610nm R-IR longpass filter
CMI: 155.4° CMII: 313.8° CMIII: 193.8°



STARRY SCOOP

Editor: Kaitlynn Goulette

WHAT'S UP

July brings a stunning planetary display that dazzles the night sky. Mars makes an appearance in the evening hours and sinks closer to the tree line as the weeks progress. The morning sky brings much more excitement with Saturn, Venus, and Jupiter spanning the ecliptic in the hours before sunrise. Saturn rises at about 11pm midmonth and is closely joined by the moon on the 16th. Venus, located in Taurus, shines as the brightest starlike object in the sky and is located near Jupiter. Throughout July, Jupiter slowly rises out of the sun's glow and becomes more visible as the month comes to an end.

This month brings the heart of the Milky Way to center stage for stargazers. The galactic center lies nearby the constellations Scorpius and Sagittarius and holds a supermassive black hole that is over four million times the mass of the sun. From the southern horizon rises the edge-on Milky Way, stretching overhead through Cygnus and northward to Cassiopeia. Throughout this region lies countless deep sky objects that can be spotted with a telescope or pair of binoculars.

The Delta Aquarid meteor shower peaks on the evening of the 28th and morning of the 29th, producing a display of roughly 20 meteors an hour. It runs annually from July 12th to August 23^d and is the byproduct of two comets: Marsden and Kracht. This shower is best viewed from a dark place after midnight. The crescent moon sets early on the evening of the peak, making for a great display.

Four hundred fifteen years ago, Galileo Galilei published his findings after becoming the first to point a telescope to the heavens. He constructed his own telescope in 1609 and spent the following years discovering the craters of the moon, Galilean moons of Jupiter, phases of Venus, rings of Saturn, and much more. Galileo's observations proved that the earth wasn't positioned at the center of the solar system and marked the beginning of modern astronomy.

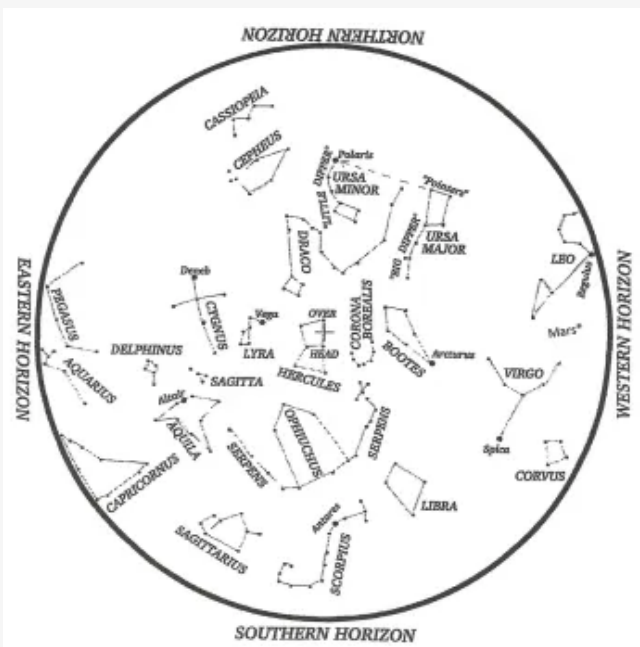
JULY'S SKY

4: Mercury at Greatest Eastern Elongation

10: Full Moon

24: New Moon

28-29: Delta Aquarid Meteor Shower



Credit: Roger B. Culver

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

OBSERVATIONS

With the beginning of summer and the end of the school year, I've found myself with extra free time recently. Together with my father, sister, and astronomy friends, I've enjoyed observing the night sky from my driveway.

My good friend Teagan Chisholm-Godshalk joined the Westfield High School Space and Astronomy Club earlier this year and for months, she's taken part in several observing events. She's been an important contributor at our club meetings but has never learned how to operate a telescope. One evening, I invited her over to my house, made hot cocoa, and set up my 8-inch Dobsonian telescope. This type of telescope is beginner friendly and offers enough magnification for the views to be eye-catching.

We began our night by targeting the waxing gibbous moon. To get started, Teagan aligned the telescope with a nearby tree that happened to share the moon's longitude. From there, she slowly guided the scope upward, inching toward her target until the bright, dazzling craters came into view. She centered the moon in the eyepiece, fine-tuned the focus, and studied the rugged details along the terminator, which is the dividing line between day and night on the moon.

Unfortunately, the weather was not on our side and our hunt for other targets came to an end. In the future, I hope to continue stargazing with Teagan and other members of the high school club.



The "Starry Scoop" recently reached its five-year anniversary and to celebrate reaching 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 July is the Cat's Eye Nebula, or NGC 6543. This planetary nebula was discovered in 1786 and became the first object of its type to be studied with spectroscopy in 1864. Located 31,000 light-years from Earth with a magnitude of 8.1, this striking nebula attracts astrophotographers with its intricately layered, onion-like shells of ejected mass.

Find the Cat's Eye Nebula five degrees east of Aldhibah, a star in Draco. A telescope is needed to observe this object in detail. Good luck!



Cat's Eye Nebula

Photo Credit: NASA, ESA, HEIC, and The Hubble Heritage Team (STScI/AURA)



Waxing Gibbous Moon

Photo Credit: Kaitlynn Goulette

Directions to Seagrave Memorial Observatory

From the Providence area:

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

From Coventry/West Warwick area:

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

From Southern Rhode Island:

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

From Northern Rhode Island:

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

From Connecticut:

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

From Massachusetts:

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



47 Peeptoad Road
North Scituate, Rhode Island 02857