Skywatchers

Newsletter of the China Lake Astronomical Society

N O V 0 3 , 2 0 2 5 C L A S M E E T I N G 7 : 3 0

This Month Issue

Messier 63, also named "Sunflower Galaxy" — Keith Weisz

:Remote Observatory operation

Presenter: Keith Weisz

Abstract: Keith will talk about his observatory at his house. This will include the hardware, software and how it fits together. He will then operate his observatory remotely.

Meeting & Program Refreshments: 7:00 PM Announcements : 7:30 Program: 7:45

Program to be announced

Maturango Museum

Meetings and programs are open to the public, and are held at Maturango Museum on the first Monday of every month (or the following Monday for holidays).

RAPID BRIGHTENING OF COMET 3I/ATLAS:

Spacecraft monitoring the sun witnessed a dramatic surge in the brightness of Comet 3I/ATLAS as it plunged toward its Oct. 29th perihelion. Qicheng Zhang (Lowell Observatory) and Karl Battams (U.S. Naval Research Laboratory) reported the phenomenon in a preprint submitted to the *Astrophysical Journal Letters* on Oct. 28th.

"The reason for 3I's rapid brightening, which far exceeds the brightening rate of most Oort cloud comets, remains unclear," the authors say. While Earth-based telescopes lost sight of the comet during its close approach to the sun, coronagraphs on spacecraft like STEREO-A, SOHO, and NOAA's GOES-19 satellite never stopped watching. The composite image, above, shows how the comet looked to these instruments.

NOAA's CCOR-1 coronagraph did the best job resolving the comet, showing a 4-arcminute-wide coma (atmosphere), while SOHO's C3 coronagraph collected the best color data, revealing the comet to be bluer than the sun. The blue color hints that glowing gas, not dust, now dominates its brightness. Zhang and Battams analyzed coronagraph data from September and October. They found that 3I/ATLAS has been increasing in brightness as the 7.5th power of decreasing distance from the sun--twice as fast as it was brightening earlier this year. This might be caused by a surge in water sublimating from the comet's core, they speculated in the paper. "Our cursory analysis of this data indicates the comet will likely emerge from solar conjunction considerably brighter than when it entered," they say. This bodes well for the future.
Europe's JUICE spacecraft will encounter the comet for a closer look starting Nov. 2nd. Its instruments will benefit from the increased brightness. Moreover, telescopes on Earth will regain the ability to image 3I/ATLAS in late November and December when the interstellar object fully emerges from the glare of the sun.

Source: https://www.spaceweather.com

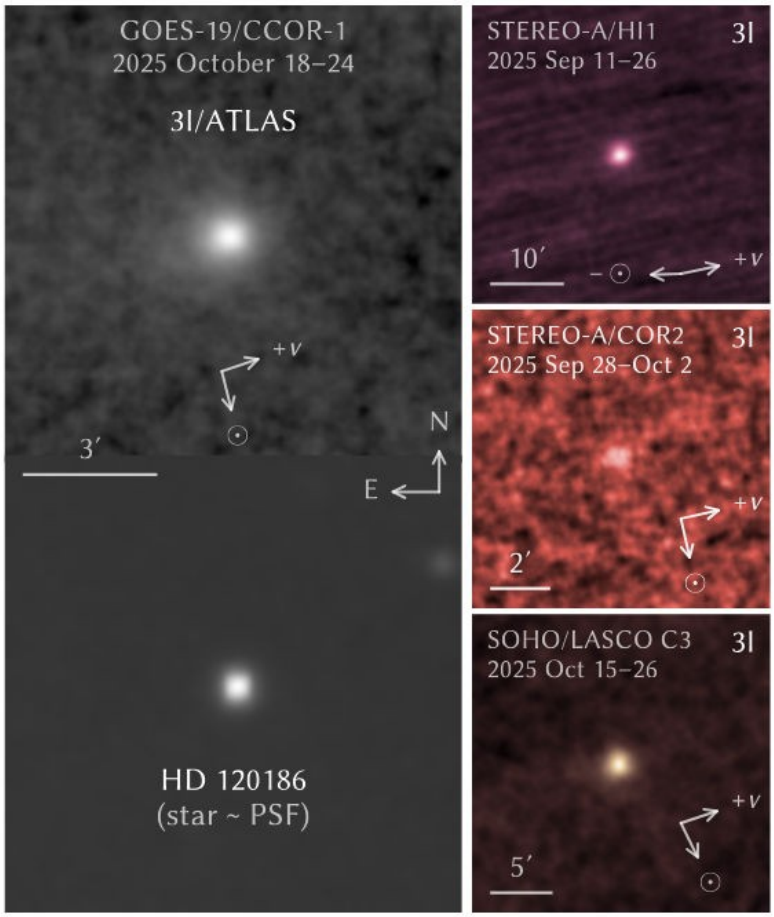
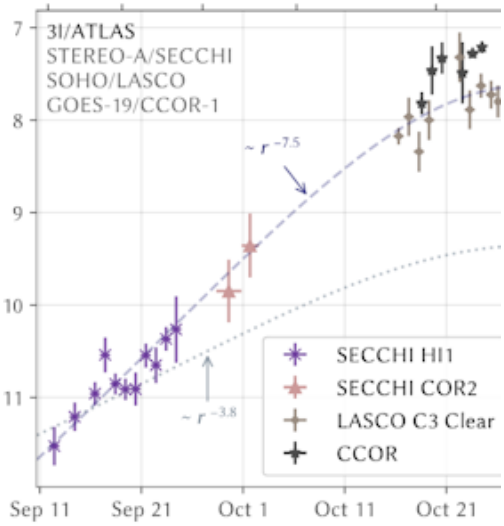


Figure 1. Left: Stack of all CCOR-1 frames of 3I/ATLAS (top), and an equivalent stack centered on a nearby star on the same frames, approximating the PSF (bottom). Right: Similar stacks of all HI1 (top), COR2 (middle), and LASCO C3 Clear (bottom) frames of 3I. All stacks are aligned with north up. The heliocentric velocity ($+v$), and sunward ($\odot$) or antisunward ($-\odot$) directions are labeled for the comet at the midpoint time.



AI restores James Webb telescope's crystal-clear vision

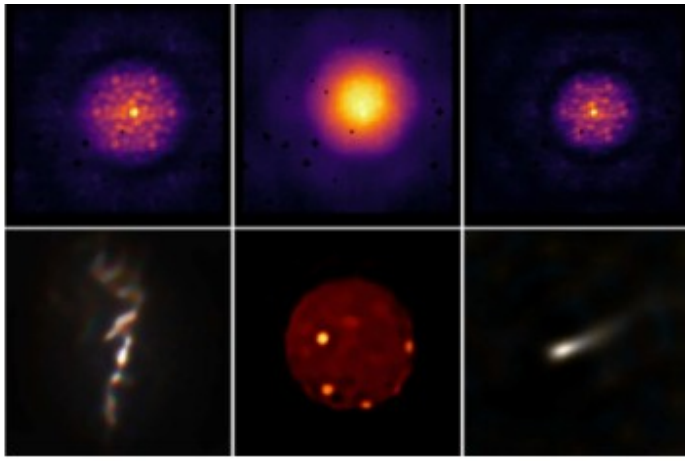
Two Sydney PhD students have pulled off a remarkable space science feat from Earth—using AI-driven software to correct image blurring in NASA's James Webb Space Telescope. Their innovation, called AMIGO, fixed distortions in the telescope's infrared camera, restoring its ultra-sharp vision without the need for a space mission.

Two PhD students from Sydney have helped restore the sharp vision of the world's most powerful space observatory without ever leaving the ground. Louis Desdoigts, now a postdoctoral researcher at Leiden University in the Netherlands, and his colleague Max Charles celebrated their achievement with tattoos of the instrument they repaired inked on their arms -- an enduring reminder of their contribution to space science. **A Groundbreaking Software Fix**

Researchers at the University of Sydney developed an innovative software solution that corrected blurriness in images captured by NASA's multi-billion-dollar James Webb Space Telescope (JWST). Their breakthrough restored the full precision of one of the telescope's key instruments, achieving what would once have required a costly astronaut repair mission. This success builds on the JWST's only Australian-designed component, the Aperture Masking Interferometer (AMI). Created by Professor Peter Tuthill from the University of Sydney's School of Physics and the Sydney Institute for Astronomy, the AMI allows astronomers to capture ultra-high-resolution images of stars and exoplanets. It works by combining light from different sections of the telescope's main mirror, a process known as interferometry. When the JWST began its scientific operations, researchers noticed that AMI's performance was being affected by faint electronic distortions in its infrared camera detector. These distortions caused subtle image fuzziness, reminiscent of the Hubble Space Telescope's well-known early optical flaw that had to be corrected through astronaut spacewalks.

Solving a Space Problem from Earth

Instead of attempting a physical repair, PhD students Louis Desdoigts and Max Charles, working with Professor Tuthill and Associate Professor Ben Pope (at Macquarie University), devised a purely software-based calibration technique to fix the distortion from Earth. Their system, called AMIGO (Aperture Masking Interferometry Generative Observations), uses advanced simulations and neural networks to replicate how the telescope's optics and electronics function in space .



Sharpening the JWST images: top row is raw data images of galaxy NGC 1068, Jupiter's moon Io and Wolf-Rayet star 137 (or WR 137). The bottom row shows sharpened or 'deblurred' images after being processed by the pipeline developed by Louis Desdoigts and Max Charles. Credit: Max Charles/University of Sydney

By pinpointing an issue where electric charge slightly spreads to neighboring pixels -- a phenomenon called the brighter-fatter effect -- the team designed algorithms that digitally corrected the images, fully restoring AMI's performance.

"Instead of sending astronauts to bolt on new parts, they managed to fix things with code," Professor Tuthill said. "It's a brilliant example of how Australian innovation can make a global impact in space science."

Sharper Views of the Universe

The results have been striking. With AMIGO in use, the James Webb Space Telescope has delivered its clearest images yet, capturing faint celestial objects in unprecedented detail. This includes direct images of a dim exoplanet and a red-brown dwarf orbiting the nearby star HD 206893, about 133 light years from Earth.

October 27th, 2025

Source: AI restores James Webb telescope's crystal-clear vision | ScienceDaily

China Lake Astronomical Society
Membership or Renewal 2025

Name:_____

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Phone:_____Email:_____

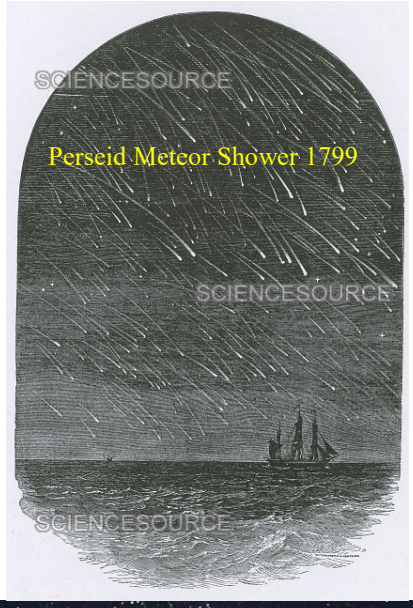
Yearly Membership $ 25 (*due in January*) Family $ 40 Youth 18 & under $ 10.
Checks or Money Orders accepted _____

Contact Roger Brower 760-446-0454 (email brower@iwvisp.com)
Make Checks or Money Orders Payable to China Lake Astronomical Society.(CLAS)

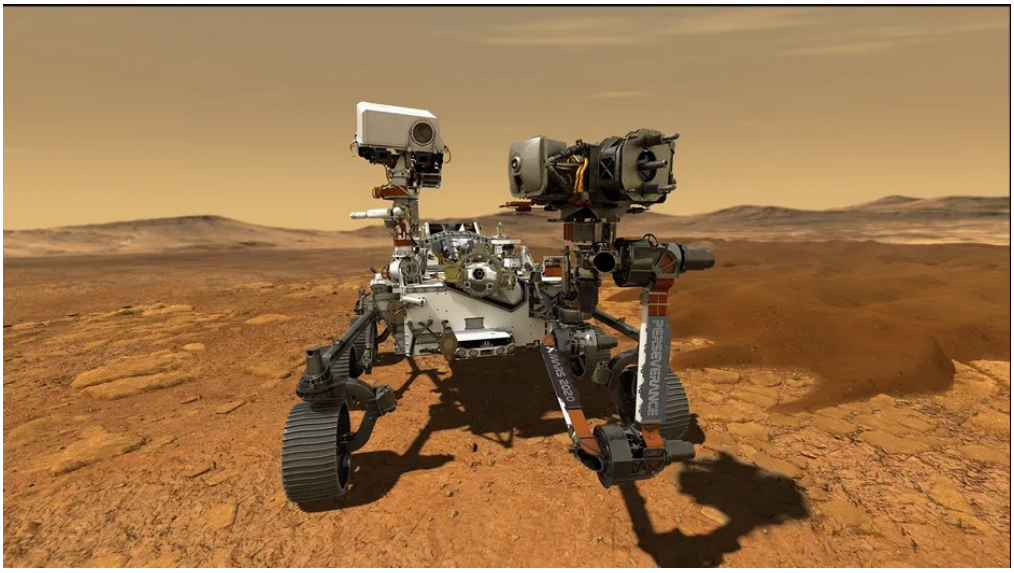
Roger Brower, Treasurer
China Lake Astronomical Society
P.O. Box 1783
Ridgecrest, CA 93556.

Perseid Meteor Shower 2025

From the 2 images attached this years Leonid shower will not be as dramatic. The photograph taken 1999 from Monument Valley closely depicts what we saw from Highway 395 north of Kramer Junction. Our group saw as many as half a dozen at any one moment from horizon to horizon.
The source of the Leonid meteor shower is **comet 55P/Tempel-Tuttle**. As the comet orbits the sun, it leaves a trail of dust and debris in its wake. Each year, Earth passes through this stream of debris, and the particles burn up in the atmosphere, creating the "shooting stars" we see.
Predicted peak: The peak is predicted** for 18 UTC on November 17, 2025.
When to watch: Watch late on the night of November 16 until dawn on November 17. The morning of November 18 might be worthwhile, too.
Duration of shower: November 3 through December 2. This time period is when we're passing through the meteor stream in space!
Radiant: Rises around midnight, highest in the sky at dawn.
Nearest moon phase: In 2025, the new moon falls at 6:47 UTC on November 20. So the slender waning crescent moon will not interfere with meteors in 2025.
Expected meteors at peak, under ideal conditions: Under a dark sky with no moon, you might see 10 to 15 Leonid meteors per hour.



NASA detects potential signatures of life hidden in Mars rocks



Collected sample: NASA's Perseverance rover gathered rock samples in Mars's Jezero Crater from an area called the Bright Angel formation, including a rock nicknamed 'Cheyava Falls'

Biosignatures detected: A sample known as 'Sapphire Canyon' shows potential biosignatures, chemical signs that could originate from biological activity

Rock composition: The rocks are sedimentary (clay and silt) and rich in organic carbon, sulphur, oxidised iron and phosphorus.

Mineral indicators: Two iron-rich minerals, vivianite and greigite, were found. Both can be associated with microbial activity when found on Earth

Abiotic possibility: Although these minerals are promising, they can also form through non-biological processes (e.g. inorganic chemistry under certain conditions), so the biological origin is not confirmed

Environmental conditions: The studied rocks do not show indications of high heat or strongly acidic conditions, making non-biological origins less likely in this case

Game changer? The find comes from relatively young sediment compared to other, older rock formations, suggesting Mars may have remained habitable later into its history than previously thought

Scientific process: Results are peer-reviewed (published in Nature) and data have been shared with the scientific community so further confirmation of a biological origin can be pursued.

Further reading & source:NASA detects potential signatures of life hidden in Mars rocks | BBC Sky at Night Magazine

The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

WWW.SKYMAPS.COM

NORTHERN HEMISPHERE
NOVEMBER 2025

Sky Calendar – November 2025

Follow us on Bluesky skymaps.com/bsky/

2 **Venus 3.5° NNE of Spica** at 8h UT (16° from Sun, morning sky). Mag –3.9.
2 **Moon near Saturn** at 9h UT (evening sky). Mag. 0.9.
5 **Southern Taurid meteor shower peaks.** Active from Sept 23 to Dec 8. Associated with Comet 2P/Encke.
5 **Full Moon** at 13:19 UT. Supermoon.
5 **Moon at perigee** (closest to Earth) at 22:40 UT (distance 356,833km; angular size 33.5').
6 **Moon near the Pleiades** at 17h UT (morning sky).
8 **Comet C/2025 A6 (Lemmon)** at perihelion. Mag. 4.6.
9 **Mercury 3.9° NW of Antares** at 5h UT (24° from Sun, evening sky). Mags. 0.4 and 1.0.
10 **Moon near Jupiter** at 10h UT (morning sky). Mag. –2.4.
12 **Northern Taurid meteor shower peaks.** Active from Oct 13 to Dec 2. Occasional bright fireball.
12 **Last Quarter Moon** at 5:28 UT.
13 **Moon near Regulus** at 1h UT (morning sky).
13 **Mercury 1.2° SSW of Mars** at 4h UT (15° from Sun, evening sky). Mags. 1.3 and 1.4.
17 **Leonid meteor shower peaks.** Arises from debris ejected by comet 55P/Tempel-Tuttle. Produces very fast meteors (70 km/sec). Expect 10 to 15 meteors/hour under dark skies.
17 **Moon near Spica** at 11h UT (morning sky).
18 **Mars 4.0° N of Antares** at 15h UT (14° from Sun, evening sky). Mags. 1.4 and 1.0.
19 **Moon near Venus** at 5h UT (12° from Sun, morning sky). Mag. –3.9.
20 **Moon at apogee** (farthest from Earth) at 3h UT (distance 406,691km; angular size 29.4').
20 **New Moon** at 6:47 UT. Start of lunation 1273.
20 **Mercury at inferior conjunction** with the Sun at 9h UT. The innermost planet passes into the morning sky.
28 **First Quarter Moon** at 6:59 UT.
29 **Moon near Saturn** at 17h UT (evening sky). Mag. 1.1.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (USA Eastern Standard Time = UT – 5 hours.)

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS
EARLY NOV 8 PM
LATE NOV 7 PM

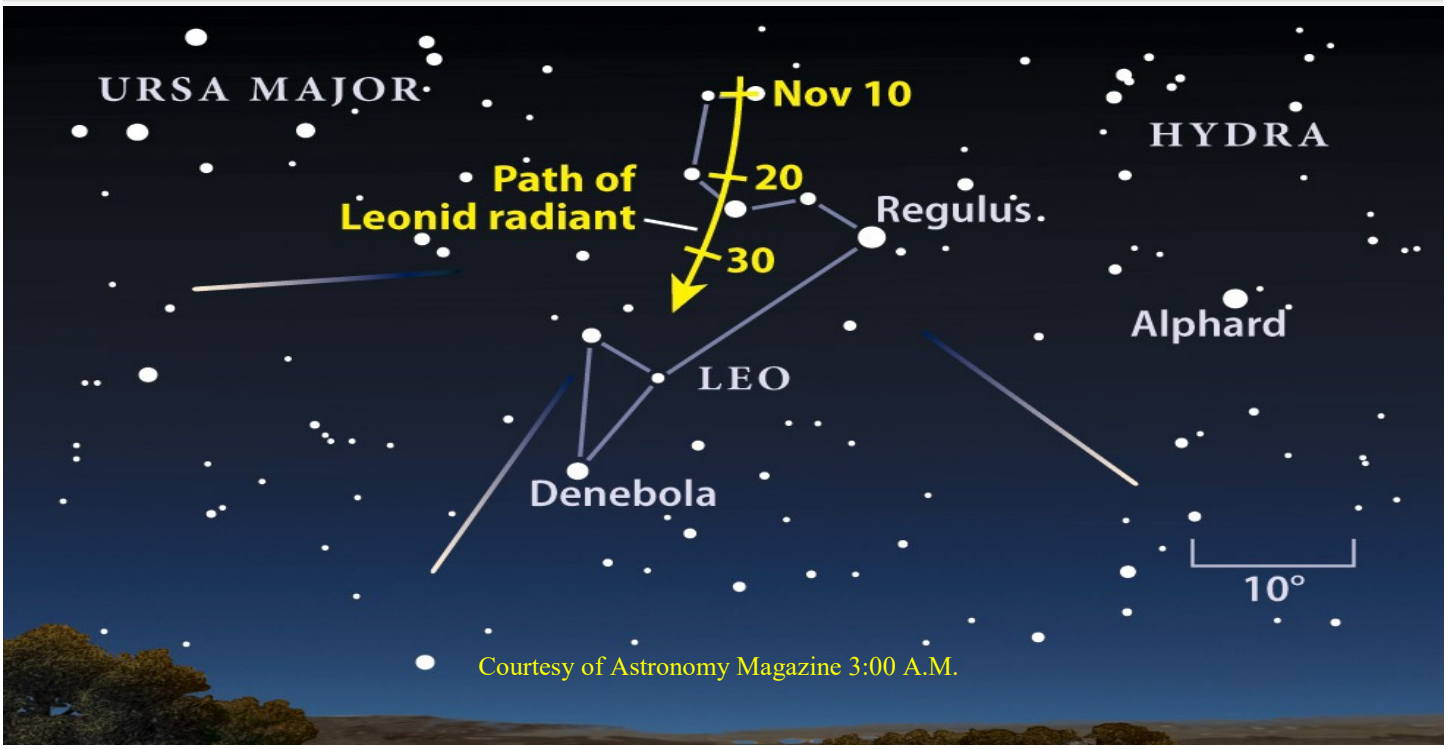
SKY MAP DRAWN FOR A LATITUDE OF 40° NORTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

NORTH
EAST
SOUTH
WEST
NE
NW
SE
SW

URSA MAJOR
URSA MINOR
DRACO
CASSIOPEIA
CEPHEUS
BOOTES
CORONA BOREALIS
HERCULES
LYRA
CYGNUS
OPHIUCHUS
AQUILA
SAGITTARIUS
CAPRICORNUS
PEGASUS
Great Square of Pegasus
PISCES
AQUARIUS
ARIES
TAURUS
CETUS
ERIDANUS
FORNAX
SCULPTOR
PISCIS AUSTRINUS
GRUS
Saturn
Uranus
Neptune
Deneb
Altair
Vega
Arcturus
Capella
Rigel
Sirius
Procyon
Pollux
Regulus
Spica
Antares
Fomalhaut
Alpha Cen
Rigil Kent
Hadar
Achernar
Canopus
Acrux
Mimosa
Gacrux
Alpha Cru
Beta Cru
Shaula
Kaus Australis
Nunki
Ecliptic
Celestial Equator

Symbols
Galaxy
Double Star
Variable Star
Diffuse Nebula
Planetary Nebula
Open Star Cluster
Globular Star Cluster

Star Magnitudes -1 0 1 2 3 4



Courtesy of Astronomy Magazine 3:00 A.M.

About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.

Variable Star – A star that changes brightness over a period of time.

NORTHERN HEMISPHERE NOVEMBER 2025

CELESTIAL OBJECTS

Skymaps.com

Easily Seen with the Naked Eye

Altair	Aql	★	Brightest star in Aquila. Name means "the flying eagle". Dist=16.7 ly.
Capella	Aur	★	The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
δ Cephei	Cep	★	Cepheid prototype. Mag varies between 3.5 & 4.4 over 5.366 days. Mag 6 companion.
Deneb	Cyg	★	Brightest star in Cygnus. One of the greatest known supergiants. Dist=1,400±200 ly.
α Herculis	Her	★	Semi-regular variable. Magnitude varies between 3.1 & 3.9 over 90 days. Mag 5.4 companion.
Vega	Lyr	★	The 5th brightest star in the sky. A blue-white star. Dist=25.0 ly.
Algol	Per	★	Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
Fomalhaut	PsA	★	Brightest star in Piscis Austrinus. In Arabic the "fish's mouth". Dist=25 ly.
Pleiades	Tau	○	The Seven Sisters. Spectacular cluster. Many more stars visible in binoculars. Dist=399 ly.
Hyades	Tau	○	Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.
Aldebaran	Tau	★	Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.
Polaris	UMi	★	The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly.

Easily Seen with Binoculars

M31	And	⌀	The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.
M2	Aqr	◎	Resembles a fuzzy star in binoculars.
η Aquilae	Aql	★	Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 ly.
M38	Aur	○	Stars appear arranged in "pi" or cross shape. Dist=4,300 ly.
M36	Aur	○	About half size of M38. Located in rich Milky Way star field. Dist=4,100 ly.
M37	Aur	○	Very fine star cluster. Discovered by Messier in 1764. Dist=4,400 ly.
μ Cephei	Cep	★	Herschel's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 days.
Mira	Cet	★	Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 days.
χ Cygni	Cyg	★	Long period pulsating red giant. Magnitude varies between 3.3 & 14.2 over 407 days.
M39	Cyg	○	May be visible to the naked eye under good conditions. Dist=900 ly.
ν Draconis	Dra	★	Wide pair of white stars. One of the finest binocular pairs in the sky. Dist=100 ly.
M13	Her	◎	Best globular in northern skies. Discovered by Halley in 1714. Dist=23,000 ly.
M92	Her	◎	Fainter and smaller than M13. Use a telescope to resolve its stars.
ε Lyrae	Lyr	★	Famous Double Double. Binoculars show a double star. High power reveals each a double.
R Lyrae	Lyr	★	Semi-regular variable. Magnitude varies between 3.9 & 5.0 over 46.0 days.
IC 4665	Oph	○	Large, scattered open cluster. Visible with binoculars.
6633	Oph	○	Scattered open cluster. Visible with binoculars.
M15	Peg	◎	Only globular known to contain a planetary nebula (Mag 14, d=1"). Dist=30,000 ly.
Double Cluster	Per	○	Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
M25	Sgr	○	Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 ly.
253	Scl	⌀	Fine, large, cigar-shaped galaxy. Requires dark sky. Member of Sculptor Group.
Mizar & Alcor	UMa	★	Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.
Cr 399	Vul	○	Coathanger asterism or "Brocchi's Cluster". Not a true star cluster. Dist=218 to 1,140 ly.

Telescopic Objects

γ Andromedae	And	★	Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
7009	Aqr	✦	Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.
7293	Aqr	✦	Helix Nebula. Spans nearly 1/4 deg. Requires dark sky. Dist=300 ly.
γ Arietis	Ari	★	Impressive looking double blue-white star. Visible in a small telescope. Sep=7.8".
η Cassiopeiae	Cas	★	Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orbit=480 years. Sep=12".
Albireo	Cyg	★	Beautiful double star. Contrasting colours of orange and blue-green. Sep=34.4".
61 Cygni	Cyg	★	Attractive double star. Mags 5.2 & 6.1 orange dwarfs. Dist=11.4 ly. Sep=28.4".
γ Delphini	Del	★	Appear yellow & white. Mags 4.3 & 5.2. Dist=100 ly. Struve 2725 double in same field.
β Lyrae	Lyr	★	Eclipsing binary. Mag varies between 3.3 & 4.3 over 12.940 days. Fainter mag 7.2 blue star.
M57	Lyr	✦	Ring Nebula. Magnificent object. Smoke-ring shape. Dist=4,100 ly.
M17	Sgr	□	Omega Nebula. Contains the star cluster NGC 6618. Dist=4,900 ly.
M11	Sct	○	Wild Duck Cluster. Resembles a globular through binoculars. V-shaped. Dist=5,600 ly.
M16	Ser	□	Eagle Nebula. Requires a telescope of large aperture. Dist=8,150 ly.
M1	Tau	□	Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
M33	Tri	⌀	Fine face-on spiral galaxy. Requires a large aperture telescope. Dist=2.3 million ly.
M81	UMa	⌀	Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope.
M82	UMa	⌀	Close to M81 but much fainter and smaller.
M27	Vul	✦	Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly.

Brown Road Star Party Location

Dark Sky star parties are held on BLM land off Brown Road (Old Hwy 395) south of Ridgecrest.

The dirt road should not be a problem for cars.

From the intersection of China Lake Blvd and Hwy 395, cross 395 to Brown Rd and continue 2.3 mi.

Look for an orange cone and turn here to the left.

Follow this dirt road 0.4 mi. to the star party location.

NOTE: After dark, please **avoid using car bright headlights.**
At the location, use a red flashlight or other dim light pointed down.

NOVEMBER DAILY CELESTIAL CALENDAR

2 The Moon passes 4 deg north of Saturn, 3 A.M. PST

2 The Moon passes 3 deg north of Neptune, 9 A.M. PST

,

5 Full Moon occurs at 5:19 A.M. PST

5 The Moon is at Perigee (221,726 miles from Earth), 2:27 P.M. PST

6 The Moon passes 5 deg north of Uranus 9:00 A.M. PST

9 Mercury is stationary, 3 P.M. PST

10 The Moon passes 4 deg north of Jupiter, 12:00 A.M. PST

11 Jupiter is stationary, 12:00 P.M. PST

12 Last Quarter Moon occurs at 9:28 A.M. PST

12 Mercury passes 1.3 deg south of Mars, 11:00 A.M. PST

12 The Moon passes 1.0 deg north of Regulas 4:00 P.M. PST

17 The Moon passes 1.2 deg south of Spica, 3 A.M. PST

17 Leonid meteor shower peaks

19 The Moon passes 6 deg south of Venus, 1 A.M. PST

19 The Moon is at apogee (252,706 miles from Earth) 6:48 P.M. PST

19 New Moon occurs 10:47 P.M. PST

20 Mercury is in inferior conjunction 1:00 A.M. PST

21 Uranus is at opposition 4:00 A.M. PST

23 Mercury passes 1.1 deg north of Venus, 9 P.M. PST

25 The Moon passes 0.4 deg north of Pluto, 6:00 A.M. PST

26 Jupiter passes 7 deg south of Pollux, 11:00 A.M. PST

28 First Quarter Moon occurs at 1:59 A.M. PST

28 Saturn is stationary 5:00 P.M. PST

29 The Moon passes 4 deg north of Saturn 11 A.M. & 3 deg north of Neptune 6 P.M. PST

2025 & 2026 New Moons

- November 19th, 2025
- December 19th, 2025
- January 18th, 2026
- February 17th, 2026
- March 18th, 2026
- April 17th, 2026
- May 16th, 2026
- June 14th, 2026
- July 14th, 2026
- August 12th, 2026
- September 10th, 2026 Nov 08th, 2026
- October 10th, 2026 Dec 08th, 2026

Star Parties for Red Rock Ricardo Station

- *Nov 22*

Brown Road Star Parties

Nov 14th

Location of Brown Road Star Parties found on page 8

Maturango Museum

Quarter Moon Star Party at Maturango - Nov 1

Quarter Moon Star Party

Quarter Moon Star Party at Maturango - Jan 24

Club Information

Monthly Skywatchers Newsletter.

Our newsletter is sent by email once a month to those who have subscribed. You do not have to be a member. Subscribe at a meeting or online at ChinaLakeAstro.org/subscribe

Annual Membership Dues

- Individual $25.00 per year.
- Family $ 40
- Youth 18 & under $10

Officers

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VICE-PRESIDENT – Keith Weisz

SECRETARY – Vacant

TREASURER – Roger Brower

NEWSLETTER EDITOR – Ted Hodgkinson ghodkinson@sbcglobal.net

Club Information

Meetings of the China Lake Astronomical Society are held at the Maturango Museum 7:00 P.M. on the first Monday evening of each month, except when the first Monday is a holiday.

WESTERN AMATEUR ASTRONOMERS WEB SITE http://www.waastro.org/