



The Newsletter of the Kern Astronomical Society

The New Syzygy

number 596

may 2025



Our regular monthly meeting will be held at

Round Table Pizza

4200 Gosford Rd, Bakersfield, CA 93313

May 2

Social Hour @ 6:00p

Meeting @ 7:00p



facebook.com/groups/syzygy



kernastro.org



kernastronomicalsociety@gmail.com

UPCOMING EVENTS

Star Party

May 24th at the Frazier Mountain Trailhead, weather permitting.

[Click for map](#)

Club Events

May 3 - Annual Club Picnic at Jastro Park from 10a - 2p

August 24 - Mount Wilson Observatory. **This event is full!**

NEW MEMBERS

Frank & Diana Ripepi and Bethany Banks have joined the Kern Astronomical Society! Please give them a warm welcome when you see them next!



EUROPA CLIPPER

Presented by **Sarah Elizabeth McCandless**

NASA's Europa Clipper spacecraft launched in October 2024 and will conduct a detailed survey of Jupiter's icy moon Europa to determine whether there are places below the surface that could support life. The spacecraft will arrive at Jupiter in 2030, and once in orbit around Jupiter, it will conduct nearly 50 flybys of Europa, shifting its flight path for each encounter to soar over a different location so that it eventually scans almost the entire moon.



Sarah Elizabeth McCandless works for NASA's Jet Propulsion Laboratory (JPL) as a navigation engineer. She has flown eleven different missions exploring our solar system, including the Mars Perseverance rover, Artemis I, Psyche, and Europa Clipper. Working as an "interplanetary Google maps", she ensures we know a spacecraft's location and can precisely predict its trajectory to ensure successful orbit insertion about or landing on another planet or body. In 2024, she was selected for NASA's Human Exploration Research Analog (HERA) Campaign 7 Mission 3 and served as an "analog astronaut", simulating a mission to Mars for 45 days at NASA's Johnson Space Center. McCandless earned a Bachelor of Science in Aerospace Engineering and minor in French at the University of Kansas, and earned a Master of Science in Aerospace Engineering at the University of Texas at Austin, focusing on orbital mechanics. Outside of work, she enjoys running, camping, piloting Cessna 172s and traveling with friends and family.



UPCOMING SPEAKERS

June 6	Dr. Tom Hoffman	NEO Surveyor
July	No Meeting	No Meeting
Aug 1	Daniel Huecker	Dark Sky Festival
Sep 5	No Program	Club Elections
Oct 3	Dr. Henry Stone	Endurance Rover Project
Nov 7	Dr. Linda Spilker	Cassini Mission
Dec 5	No Guest, but...	Dessert Party!!

KAS Information

Since 1956, the Kern Astronomical Society has promoted community awareness of current events in astronomy and provides a forum for sharing of knowledge and experiences among amateur astronomers. Annual membership is \$25.00 which also provides membership in the Amateur Astronomical League, access to their newsletter (Reflector Magazine), and participation in observational programs.

Star Parties & Outreach

The Kern Astronomical Society typically has two Club Star Parties each month depending on the weather. Our Club Parties are held on Saturdays nearest the New Moon. We also host Public Star Parties at various locations around town during April - October. These parties are held on Saturdays nearest the first quarter Moon. In addition, we also host Lunar, Solar, and Planetary viewing for public schools. Requests may be directed to our Star Party Coordinator.

Club Equipment

The Kern Astronomical Society has telescopes and accessories (listed below) available for loan to Club Members in good standing. Members are encouraged to borrow the different types of telescopes in stock (especially if you are considering purchasing one). Trying out different sizes and types of telescopes can help you make an informed decision about purchases. If you have a Club telescope in your possession, you will be expected to participate in at least one public star party.

- **6" f/6, 8" f/6, 10" f/5.6, 13" f/4.5 Dobsonian Telescopes**
- **Parks Jovian 90**
- **3½" f/13 Maksukov-Cassegrain**
- **4" f/15 Unitron Refractor**
- **8" Solar Filter**
- **Assorted Eyepieces**

The Evening Sky Map

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

Sky Calendar – May 2025



Follow us on Bluesky
skymaps.com/bsky/

- 1 Asteroid 4 Vesta at opposition at 12h UT. Mag. 5.7.
- 1 Moon near M35 Cluster at 12h UT (51° from Sun, evening sky).
- 4 Moon, Mars and Beehive Cluster (M44) within circle 2.6° diameter at 1h UT (evening sky). Mag. 1.0.
- 4 First Quarter Moon at 13:52 UT.
- 5 Mars 0.6° NNE of Beehive Cluster (M44) at 14h UT (evening sky). Mag. 1.0.
- 5 Moon near Regulus at 21h UT (evening sky).
- 5 Eta Aquariid meteor shower peaks. Most active for 7 days around this date. Associated with Comet Halley. Very fast, bright meteors, up to 50 per hour. Best seen from the tropics and southern hemisphere a few hours before dawn. Viewing conditions are ideal in 2025 for this major meteor shower.
- 10 Moon near Spica at 6h UT (evening sky). Occultation visible from southern Pacific Ocean.
- 11 Moon at apogee (farthest from Earth) at 1h UT (distance 406,244km; angular size 29.4').
- 12 Full Moon at 16:57 UT.
- 14 Moon near Antares at 2h UT (morning sky). Occultation visible from Argentina, Chile, Uruguay and the Falkland Islands.
- 14 Asteroid 3 Juno at opposition at 6h UT. Mag. 10.1.
- 20 Last Quarter Moon at 11:59 UT.
- 22 Moon near Saturn at 16h UT (morning sky). Mag. 1.1.
- 23 Moon near Venus at 19h UT (morning sky). Mag. -4.4.
- 26 Moon at perigee (closest to Earth) at 1:32 UT (distance 359,022km; angular size 33.3').
- 27 New Moon at 3:03 UT. Start of lunation 1267.
- 28 Moon near Jupiter at 14h UT (20° from Sun, evening sky). Mag. -1.9.
- 28 Moon near M35 Cluster at 22h UT (25° from Sun, evening sky).
- 30 Mercury at superior conjunction with the Sun at 4h UT (not visible). The innermost planet passes into the evening sky.
- 31 Moon near Beehive Cluster (M44) at 11h UT (evening sky).

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

All times in Universal Time (UT). (USA Eastern Daylight Time = UT – 4 hours.)



Help Support The Evening Sky Map

Freely shared with sky watchers worldwide since January 2000

Shop: skymaps.com/amazon/ • Donate: skymaps.com/donate/
Recommended Telescopes & Products at: skymaps.com/astro/

NORTHERN HEMISPHERE MAY 2025

SKY MAP SHOWS HOW
THE NIGHT SKY LOOKS

EARLY MAY 10 PM

LATE MAY 9 PM

(Add 1 Hour For Daylight Saving)

SKY MAP DRAWN FOR

A LATITUDE OF 40°

NORTH AND IS

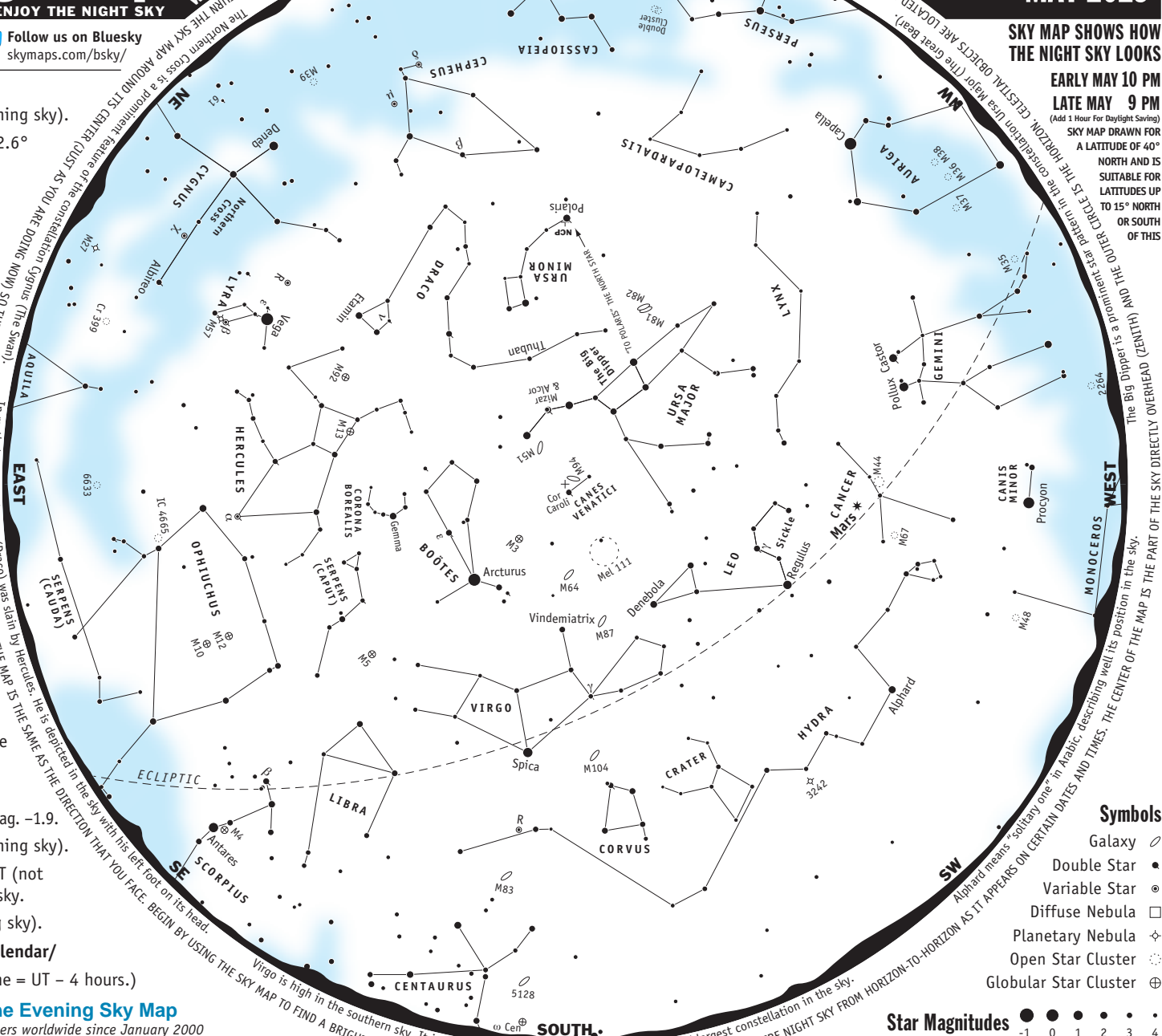
SUITABLE FOR

LATITUDES UP

TO 15° NORTH

OR SOUTH

OF THIS



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 MAY 2025 CELESTIAL OBJECTS Sky maps.com

Easily Seen with the Naked Eye

- | | | |
|------------|-----|---|
| Capella | Aur | • The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly. |
| Arcturus | Boo | • Orange, giant K star. Name means "bear watcher". Dist=36.7 ly. |
| Procyon | CMi | • Greek name meaning "before the dog" - rises before Sirius (northern latitudes). Dist=11.4 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. |
| Castor | Gem | • Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly. |
| Pollux | Gem | • With Castor, the twin sons of Leda in classical mythology. Dist=34 ly. |
| α Herculis | Her | • Semi-regular variable. Magnitude varies between 3.1 & 3.9 over 90 days. Mag 5.4 companion. |
| Regulus | Leo | • Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly. |
| Vega | Lyr | • The 5th brightest star in the sky. A blue-white star. Dist=25.0 ly. |
| Antares | Sco | • Red, supergiant star. Name means "rival of Mars". Dist=135.9 ly. |
| Polaris | UMi | • The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly. |
| Spica | Vir | • Latin name means "ear of wheat" and shown held in Virgo's left hand. Dist=250 ly. |

Easily Seen with Binoculars

- | | | |
|---------------|-----|--|
| M44 | Cnc | • Praesepe or Beehive Cluster. Visible to the naked eye. Dist=590±20 ly. |
| M3 | CVn | • Easy to find in binoculars. Might be glimpsed with the naked eye. |
| μ Cephei | Cep | • Herschel's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 days. |
| Mel 111 | Com | • Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=283 ly. Age=400 million years. |
| 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. |
| R Hydrae | Hya | • Long period variable. Mag varies between 3.0 & 11.0 over 390 days. Brilliant red. |
| 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. |
| M12 | Oph | • Close to the brighter M10. Dist=18,000 ly. |
| M10 | Oph | • 3 degrees from the fainter M12. Both may be glimpsed in binoculars. Dist=14,000 ly. |
| IC 4665 | Oph | • Large, scattered open cluster. Visible with binoculars. |
| 6633 | Oph | • Scattered open cluster. Visible with binoculars. |
| M4 | Sco | • A close globular. May just be visible without optical aid. Dist=7,000 ly. |
| M5 | Ser | • Fine globular star cluster. Telescope will reveal individual stars. Dist=25,000 ly. |
| 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

- | | | |
|---------------|-----|---|
| ε Boötis | Boo | • Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8". Difficult to split. |
| M67 | Cnc | • Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly. |
| M94 | CVn | • Compact nearly face-on spiral galaxy. Dist=15 million ly. |
| η Cassiopeiae | Cas | • Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orbit=480 years. Sep=12". |
| 5128 | Cen | • Bisected by a wide obscuring lane. Strong radio source. Dist=14 million ly. |
| M51 | CVn | • Whirlpool Galaxy. First recognised to have spiral structure. Dist=25 million ly. |
| M64 | Com | • Black-Eye Galaxy. Discovered by J.E. Bode in 1775 - "a small, nebulous star". |
| 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". |
| 3242 | Hya | • Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly. |
| M83 | Hya | • Classic face-on spiral. Discovered in 1752 by Lacaille. In attractive star field. |
| γ Leonis | Leo | • Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4". |
| 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. |
| M81 | UMa | • Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope. |
| M82 | UMa | • Close to M81 but much fainter and smaller. |
| M87 | Vir | • Supergiant galaxy with supermassive black hole at its core. Dist=53.5 million ly. |
| M104 | Vir | • Sombrero Galaxy. Almost edge-on spiral galaxy. Protruding central core. |
| γ Virginis | Vir | • Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005. |
| M27 | Vul | • Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly. |