



The Newsletter of the Kern Astronomical Society No. 577 October 2023

KAS Open Meeting

***First Friday of
Every Month***

***Round Table Pizza,
4200 Gosford Road,
Suite 101, Bakersfield, CA***

***Dinner & Social 6:30 pm
Meeting/Program 7:30 pm***

Our regular monthly meeting will be held on October 6th at Round Table Pizza at 4200 Gosford Road.

Join us on Facebook: <https://www.facebook.com/groups/syzygy/>

Visit our Web Page at <https://www.kernastro.org>

Contact us at kernastronomicalsociety@gmail.com



Reach for the Stars



Upcoming Programs

October – Nick Strobel – OSIRUS-REx (Origins, Spectral Interpretation, Resource Identification, and Security-Regolith Explorer)

November – Europa Clipper

December – Annual Christmas Party

Upcoming Events

10/7 – Last Quarter Moon Star Party at Chuchupate

10/14 – New Moon Star Party at Chuchupate

10/18 - Emerson Middle School star party

10/20 - Girl Scouts star party

10/20 - Boy Scouts star party

10/21 - International Observe the Moon star party

10/24 - Stella Hill Elementary School star party

Look for more information on these events on the club Facebook page and in your e-mail. Also, Darren will be providing details at our October meeting.

**October 21st is International
Observe the Moon Day**



Time to renew your Kern Astronomical Society membership

The Kern Astronomical Society Board would like to have all renewal dues paid by Christmas 2023. Your renewal notice will be available at our next meeting on Friday October 6th. Please review it to make sure all of your information is correct. Our dues for the 2023 /2024 year will be \$25. Please be prepared to pay your dues by bringing a check [Made out to Kern Astronomical Society] or cash. We do not accept credit cards. If you are unable to attend our next meeting, your renewal invoice will be emailed to you.

On another note, you should be receiving the Reflector magazine. You have the choice of receiving it in paper or electronic form. Paper is the default format, but if you prefer to receive the electronic copy, simply let Ron Church [church.ronirpc@gmail.com] know and he will change it for you. If the paper copy is fine, you don't need to do anything. On the other hand, if you don't want to receive the Reflector magazine at all, in any format, just let Ron Church know.

Sequoia Dark Sky Festival

KAS was well represented at the Sequoia Dark Sky Festival last month. The event was covered by the Visalia Times-Delta. Thanks to all our members who helped make this a successful event for Sequoia National Park. Following are some photos by Gary Kazanjian representing the Visalia Times-Delta and by our club members at the camp site.







The Evening Sky Map

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

NORTHERN HEMISPHERE
OCTOBER 2023

Sky Calendar – October 2023

- 2 Moon near Jupiter at 2h UT (morning sky). Mag. -2.8.
- 3 Moon near the Pleiades at 7h UT (morning sky).
- 6 Last Quarter Moon at 13:48 UT.
- 8 Moon near Beehive cluster M44 at 16h UT (morning sky).
- 9 Venus 2.3° SSW of Regulus at 16h UT (46° from Sun, morning sky). Mags. -4.5 and 1.4.
- 10 Moon at apogee (farthest from Earth) at 4h UT (distance 405,426km; angular size 29.5').
- 10 Moon near Regulus at 14h UT (morning sky).
- 10 Moon near Venus at 16h UT (46° from Sun, morning sky). Mag. -4.5.
- 14 Annular Solar Eclipse from 16:10 to 19:49 UT with greatest eclipse at 17:59 UT. Path of annularity extends across western USA, Central America, Columbia & Brazil. Partial eclipse in the Americas.
- 14 New Moon at 17:54 UT. Start of lunation 1247.
- 18 Moon near Antares at 14h UT (evening sky). Occultation visible in eastern Europe & Middle East.
- 22 Orionid meteor shower peaks at 0h UT. Arises from the debris field of Comet Halley. Active from October 2 to November 7. Produces very fast (67 km/sec), generally faint meteors (20 per hour). Radiant located near Orion's club asterism.
- 22 First Quarter Moon at 3:29 UT.
- 22 Venus at dichotomy (D-shape) at 22h UT (morning sky).
- 23 Venus at greatest elongation west at 9h UT (46° from Sun, morning sky). Mag. -4.4.
- 24 Moon near Saturn at 11h UT (evening sky). Mag. 0.7.
- 26 Moon at perigee (closest to Earth) at 3:03 UT (distance 364,872km; angular size 32.7').
- 28 Partial Eclipse of the Moon from 18:02 to 22:26 UT, with mid-eclipse at 20:14 UT. Visible from eastern Americas, Europe, Africa, Asia and Australia.
- 28 Full Moon at 20:23 UT.
- 29 Moon near Jupiter at 7h UT (midnight sky). Mag. -2.9.
- 30 Moon near the Pleiades at 17h UT (morning sky).

More sky events and links at <http://Skymaps.com/skycalendar/>
All times in Universal Time (UT). (USA Eastern Daylight Time = UT - 4 hours.)



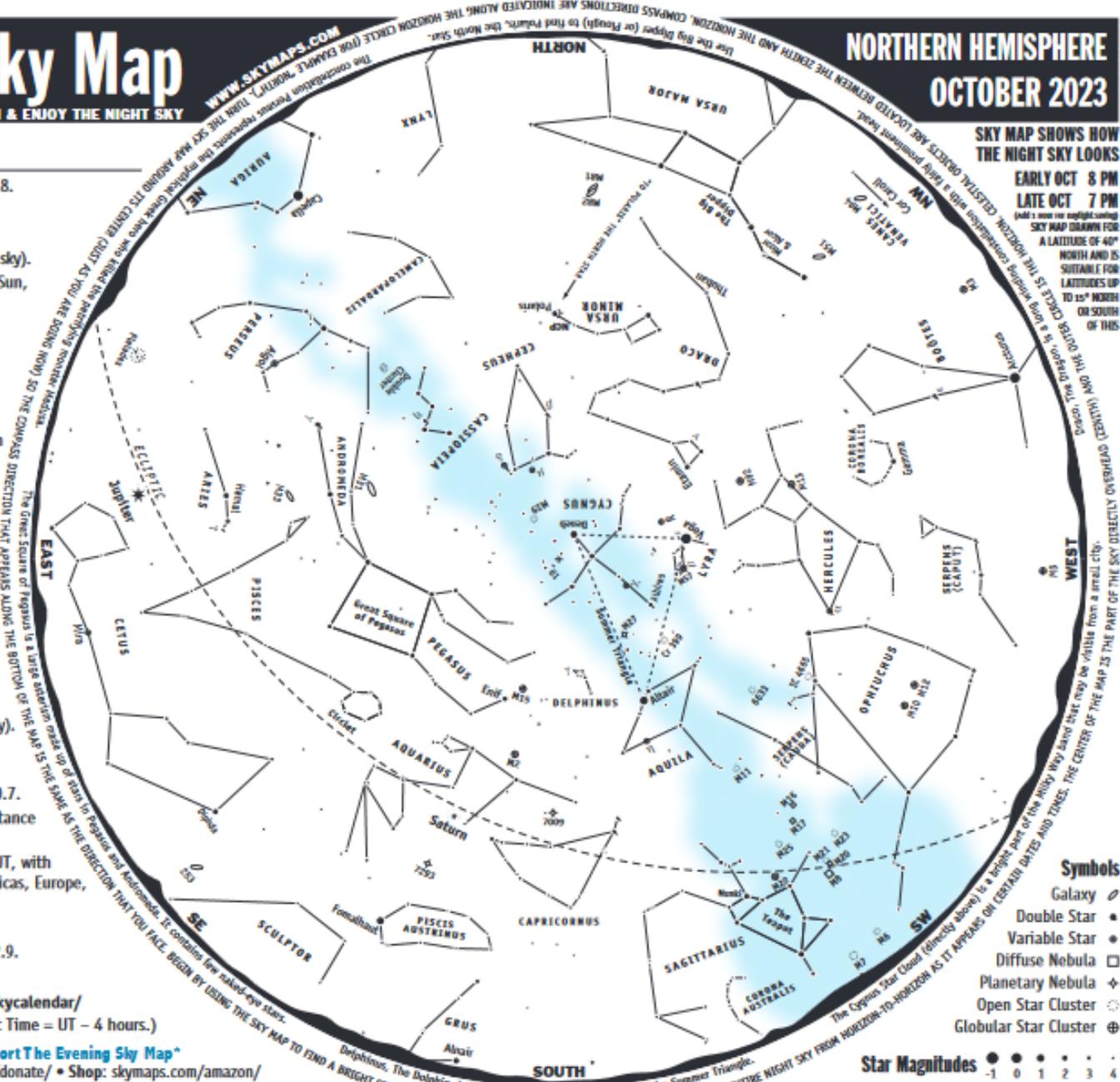
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Donate: skymaps.com/donate/ • Shop: skymaps.com/amazon/
Buy Astronomy Products: skymaps.com/agency/ or skymaps.com/store/
* Freely shared with thousands of sky watchers each month since January 2000

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY OCT 8 PM

LATE OCT 7 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



Symbols

- Galaxy ☁
- Double Star ●●
- Variable Star ●
- Diffuse Nebula □
- Planetary Nebula ◇
- Open Star Cluster ○
- Globular Star Cluster ⊕

Star Magnitudes ● ● ● ● ● ●
-1 0 1 2 3 4

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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.

NORTHERN HEMISPHERE
OCTOBER 2023

CELESTIAL OBJECTS

Sky maps
.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. |
| Arcturus | Boo | • Orange, giant K star. Name means "bear watcher". Dist=36.7 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. |
| ε 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=380 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=2.93 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. |
| μ Cephei | Cep | • Herschel's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 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. |
| 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. |
| 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. |
| M8 | Sgr | • Lagoon Nebula. Bright nebula bisected by a dark lane. Dist=5,200 ly. |
| M25 | Sgr | • Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 ly. |
| M22 | Sgr | • A spectacular globular star cluster. Telescope will show stars. Dist=10,000 ly. |
| Mizar & Alcor | UMa | • Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion. |
| Cr 399 | Vul | • Coalhanger 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. |
| 7203 | 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". |
| M51 | CVn | • Whirlpool Galaxy. First recognised to have spiral structure. Dist=25 million ly. |
| η Cassiopeiae | Cas | • Yellow star mag 3.4 & orange star mag 7.5. 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. |
| M23 | Sgr | • Elongated star cluster. Telescope required to show stars. Dist=2,100 ly. |
| M20 | Sgr | • Trifid Nebula. A telescope shows 3 dust lanes trisecting nebula. Dist=5,200 ly. |
| M21 | Sgr | • A fine and impressive cluster. Dist=4,200 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. |
| 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. |
| M27 | Vul | • Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly. |

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Kern Astronomical Society InfoShare

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 and 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, 3 ½" f/13 Maksukov-Cassegrain, 4" f/15 Unitron Refractor
- 8" Solar Filter
- Assorted eyepieces

Privileges and Benefits of Membership in the Kern Astronomical Society

- 1) Hold an elected position as an Officer or Board Member in the Society
- 2) Vote in the election process and on business at meetings
- 3) Go on sponsored field trips to various astronomy related events (i.e. Mt Wilson Observatory, Panamint Springs Dark Sky, etc.)
- 4) Membership in the Astronomical League which includes subscription to Reflector Magazine
- 5) Discount for Sky and Telescope Magazine
- 6) Access/use of club telescopes and related equipment / Help with use of equipment by members
- 7) You are covered under the Society's insurance at related events

KAS Club Officers/Board Members

President:	Tom Henderson	tomhenderson123@att.net
Vice President:	Diane Franco	dianef02@yahoo.com
Secretary	Rod Guice	stargazer10000@gmail.com
Star Party / Event Coordinator	Darren Bly	dcbly@bak.rr.com
Member at Large	John Hester	jh191623@gmail.com
Member at Large		
Educational Committee Chair		
Educational Youth Ambassador		
Newsletter Editor	Timothy Stoner	desert_enduro@hotmail.com
Webmaster	Ivan Aburto	ivanaburto88@gmail.com

Kern Astronomical Society

New Membership/Renewal 2023 - 2024

Date: _____

Name: _____

Family Members: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email:** _____

My check # _____ in the amount of \$ _____ is enclosed.

Yearly Membership \$25

Make checks payable to: KAS (or) Kern Astronomical Society

You can also mail this form and check to:

Kern Astronomical Society
5501 Stockdale Hwy #10241
Bakersfield, CA 93389

** Please provide the email address where you wish to receive the KAS newsletter (if different than above)

“SYZYGY”: _____