number 603

2025

Our regular monthly meeting will be held at

# Round Table Pizza

4200 Gosford Rd, Bakersfield, CA 93313

# December 5

Social Hour @ 6:00p Meeting @ 7:00p



facebook.com/groups/syzygy



kernastro.org



kernastronomicalsociety@gmail.com

#### **UPCOMING EVENTS**

#### **Star Party**

December 20th at the Frazier Mountain Trailhead, weather permitting.

**Click for map** 

#### **BC Planetarium Show**

February 26, 2026. Details on page 2.

#### PUBLIC OUTREACH

Lincoln Jr High - 12/17, 5:30-7p

**Volunteers Needed** – Cesar Chavez Elementary – 5-6:30p

#### IN THE SKY

Geminid Meteor Shower – Dec 13-14, peaks after midnight

# **VOLUNTEERS NEEDED**

If you're interested in helping assist in any of our public outreach meetings, please email us and let us know! kernastronomicalsociety@gmail.com

#### MEMBERSHIP NOTICE

Remember, your annual dues are due! \$35 by cash or check, \$36 by Venmo at the meeting.

#### 2025-26 KERN COUNTY ASTRONOMICAL SOCIETY SCHEDULE

**REMINDER** – Below is a list of our upcoming meetings for the 25-2026 club year. Monthly club meetings will be held at the Round Table Pizza at 4200 Gosford Rd. from 6pm to roughly 9pm. Monthly board member meetings are held the last Thursday of every month at 5060 California Ave #600 from 6pm to 7pm. We would like to remind everyone that club members are welcome to join our board meetings!

### **BOARD MEETINGS**

October 30

November 20 \*

December 18 \*

January 29

February 26

March 26

April 30

**May 28** 

June - no meeting

July 30

August 27

September 24

\* Moved one week early due to holidays

## **CLUB MEETINGS**

**November 7** 

**December 5** 

January 9

February 6

March 6

April 3

May 1

June 5

July – no meeting

August 7

September 4



# HOW BIG? HOW FAR?

# **BC Planetarium Show Presented by Dr. Nick Strobel**

KCAS members have the wonderful opportunity to enjoy an exclusive show at the Bakersfield College William M. Thomas Planetarium titled *How Big? How Far?* 

Tickets will be on sale at the December, January, and February KCAS club meetings.

Only 72 seats are available and this show sells out, so act quickly!

Thursday, February 26, 2026 Bakersfield College \$10 per ticket \$5 parking

#### Doors close at 7pm.

The Kern County Astronomical Society would like to thank Dr. Strobel for all his work in bringing us these amazing shows!



# **UPCOMING SPEAKERS**

Dec 5 No Guest, but... DESSERT PARTY!

Jan 9 TBA

Feb 6 Robert Crewdson – Club Member Meteorites

Mar 6 Tim Elam – Local Geologist San Andreas / Earthquake Faults

Apr 3 Angela Dorsey – JPL TBA

May 1 Sam Rose – Caltech TBA

Jun 5 Sarah Elizabeth McCandless – JPL NEO Surveyor

Aug 7 Daniel Huecker – Sequoia Parks Conservancy – Dark Sky Festival

Sep 4 Rod Guice – Club Member Milankovitch Cycle



#### **KAS Information**

Since 1956, the Kern County 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 \$35.00 which also provides membership in the Amateur Astronomical League, access to their newsletter (Reflector Magazine), and participation in observational programs.

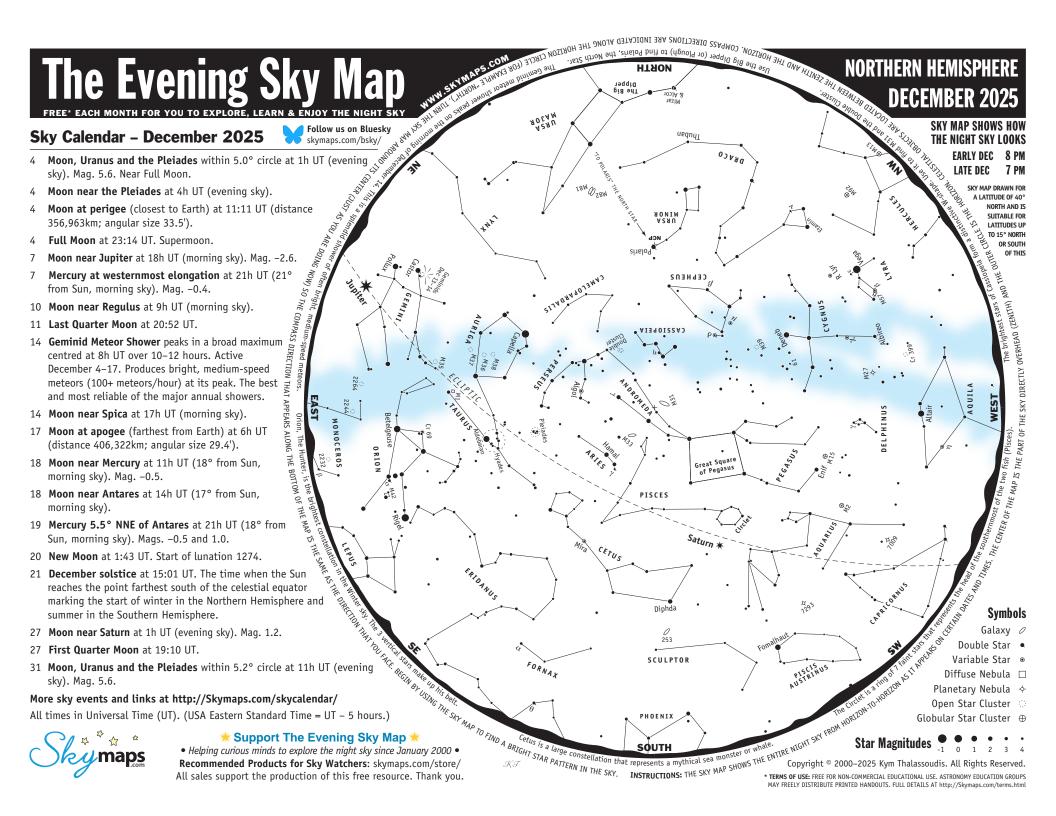
# Star Parties & Outreach

The Kern County 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 County 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



#### **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 DECEMBER 2025

Fomalhaut

M31

#### **Easily Seen with the Naked Eye**

Altair	Aql	<ul> <li>Brightest star in Aquila. Name means "the flying eagle". Dist=16.7 ly.</li> </ul>
Capella	Aur	• The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
δ Cephei	Сер	Cepheid prototype. Mag varies between 3.5 & 4.4 over 5.366 days. Mag 6 companion.
Deneb	Cyg	<ul> <li>Brightest star in Cygnus. One of the greatest known supergiants. Dist=1,400±200 ly.</li> </ul>
Castor	Gem	<ul> <li>Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly.</li> </ul>
Pollux	Gem	• With Castor, the twin sons of Leda in classical mythology. Dist=34 ly.
Vega	Lyr	• The 5th brightest star in the sky. A blue-white star. Dist=25.0 ly.
Rigel	0ri	• The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.
Betelgeuse	0ri	• One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
A I I	D	Farmer adjusted biometry Manufolds and between 2.4.9.2 ( and 2.007 days

Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
 Brightest star in Piscis Austrinus. In Arabic the "fish's mouth". Dist=25 lv.

And O The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million 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=65 ly.

Polaris UMi • The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly.

#### **Easily Seen with Binoculars**

M2	Agr	Ф	Resembles a fuzzy star in binoculars.
n Aguilae	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 Cyqni	Cyq	•	Long period pulsating red giant. Magnitude varies between 3.3 & 14.2 over 407 days.
M39	Cyq	0	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.
M35	Gem	0	Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.
M92	Her	0	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.
Cr 69	0ri	0	Lambda Orionis Cluster. Dist=1,630 ly.
M42	0ri		The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years.
M15	Peg	$\oplus$	Only globular known to contain a planetary nebula (Mag 14, d=1"). Dist=30,000 ly.
Double Cluster	Per	0	Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
253	Scl	0	Fine, large, cigar-shaped galaxy. Requires dark sky. Member of Sculptor Group.
Cr 399	Vul	0	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	<b></b>	Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.
7293	Aqr	<b></b>	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.
θ Eridani	Eri	•	Striking blue-white double star. Mags 3.2 & 4.3. Visible in a small telescope. Sep=8.2".
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.
σ Orionis	0ri	•	Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.
<b>→</b> M1	Tau		Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
M33	Tri	0	Fine face-on spiral galaxy. Requires a large aperture telescope. Dist=2.3 million ly.
M81	UMa	0	Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope.
M82	UMa	0	Close to M81 but much fainter and smaller.
M27	Vul	÷	Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly.
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