The New Syzygy

The Newsletter of the Kern Astronomical Society No. 575 August 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 August 4th 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

August – TBD
August – Nominations open for Club Officers. Election will be held at the Sept meeting.
September – Election of Club Officers
September – TBD
October – TBD

Upcoming Events

August 12 – KAS Perseid meteor shower overnight star party at Chuchupate.

August 19 – New moon star party at Chuchupate.

August 26 – Possible solar viewing at Buena Vista Museum

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 August meeting.

Election of Club Officers

Per Article III Section 3 of our Constitution, the annual election of club officers will take place at the September meeting. Nominations will open at the August meeting. It is acceptable to self-nominate. The following positions are filled by election: President, Vice President, Secretary, Treasurer, and Star Party / Events Coordinator. All of these positions are eligible to be co-chaired (duties shared) which is a great way to get involved in the club.

Note: Members at Large are appointed by the President and other non-elected positions including Newsletter Editor and Webmaster are by volunteer.

The Sequoia Dark Sky Festival will be held on September 9. More information is available at https://www.sequoiaparksconservancy.org/darkskyfestival-547103.html.

Perseid Meteor Shower Overnight Star Party

We are fortunate this year to have the Perseid Meteor Shower fall on a Saturday night (August 12 / 13). The club is planning for an all night star / meteor party at our regular spot (Chuchupate – Frazier Mountain Trailhead). Get there early as you can expect a full parking lot. Detailed information will be provided at the August meeting.

From the Editor:

August is just about the perfect month for an all night long star party. And for 2023, August is packed with all sorts of fun easy to observe astronomical events. The month starts off with a Supermoon on August 1st with the moon at perigee (closest to Earth) at 11 pm. Then the Perseid Meteor Shower will reach its peak on the night of August 12 / 13 which just happens to be a near moonless Saturday night ! The Perseids are made of tiny space debris from the comet Swift-Tuttle and are named after the constellation Perseus because the direction, or radiant, from which the shower seems to come from in the sky lies in the same direction as the constellation Perseus. At maximum we can expect to see from 60 to 100 meteors an hour. Near midnight the Milky Way will stretch across the sky from the tail of Scorpio in the southwest to Perseus rising in the northeast. Should be a great photo opportunity with the chance to catch a meteor. On August 13th Venus passes through inferior conjunction (between earth and the sun) and quickly moves into the morning sky becoming easily visible by the end of the month. Then on the night of August 24th, the first quarter moon occults the bright stat Antares. This is best viewed through a telescope. Unfortunately the occultation (disappearance) begins before sunset for west coast viewers but re-appearance happens near 7:44 P.M. when Antares will re-appear on the bright side of the moon. All month Saturn is visible throughout the night (reaching opposition on the 27th) and Jupiter is well placed for viewing in the east rising around midnight. And as the wee hours after midnight progress all of our favorite winter constellations begin rising including Orion and just before dawn and you might even get a glimpse of the star Sirius. Then on the night of August 30th we have a second full supermoon occurring just after sunset and only 9.6 hrs after perigee. Let's hope for clear skies !

The Evening Sky Map

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

NORTHERN HEMISPHERE
AUGUST 2023

Sky Calendar – August 2023

1 **Full Moon** at 18:32 UT. The first of two Full Moons this month.

2 **Moon at perigee** (closest to Earth) at 5:58 UT (distance 357,311km; angular size 33.4'). Only 11.4 hours after Full Moon.

3 **Moon near Saturn** at 13h UT (morning sky). Mag. 0.6.

8 **Moon near Jupiter** at 9h UT (morning sky). Mag. –2.4.

8 **Last Quarter Moon** at 10:29 UT.

9 **Moon near the Pleiades** at 15h UT (morning sky).

10 **Mercury at greatest elongation** east at 2h UT (27° from Sun, evening sky). Mag. 0.4.

13 **Perseid meteor shower peaks** at 7h UT. Peak lasts about 12 hours. Active from July 14 to September 1. Produces swift, bright meteors (50-75 per hour) with persistent trains. Best viewed after midnight. Excellent viewing conditions in 2023.

13 **Mercury 4.7° WSW of Mars** at 8h UT (31° from Sun, evening sky). Mags. 0.5 and 1.8.

13 **Venus at inferior conjunction** with the Sun at 11h UT. The brightest planet passes into the morning sky.

16 **New Moon** at 9:38 UT. Start of lunation 1245.

16 **Moon at apogee** (farthest from Earth) at 12h UT (distance 406,635km; angular size 29.4').

18 **Moon near Mercury** at 19h UT (evening sky). Mag. 0.8.

19 **Moon near Mars** at 2h UT (evening sky). Mag. 1.8.

21 **Moon near Spica** at 13h UT (evening sky).

24 **First Quarter Moon** at 9:57 UT.

25 **Moon near Antares** at 3h UT (evening sky). Occultation visible from USA and southern Canada.

27 **Saturn at opposition** (opposite the Sun) at 8h UT. The planet is at its closest and brightest at Mag. 0.4. Saturn's rings are visible even in a small telescope.

30 **Moon at perigee** (closest to Earth) at 16:00 UT (distance 357,181km; angular size 33.5'). Only 9.6 hours before Full Moon.

30 **Moon near Saturn** at 21h UT (midnight sky). Mag. 0.4.

31 **Full Moon** at 1:36 UT. A Blue Moon and the closest Supermoon in 2023.

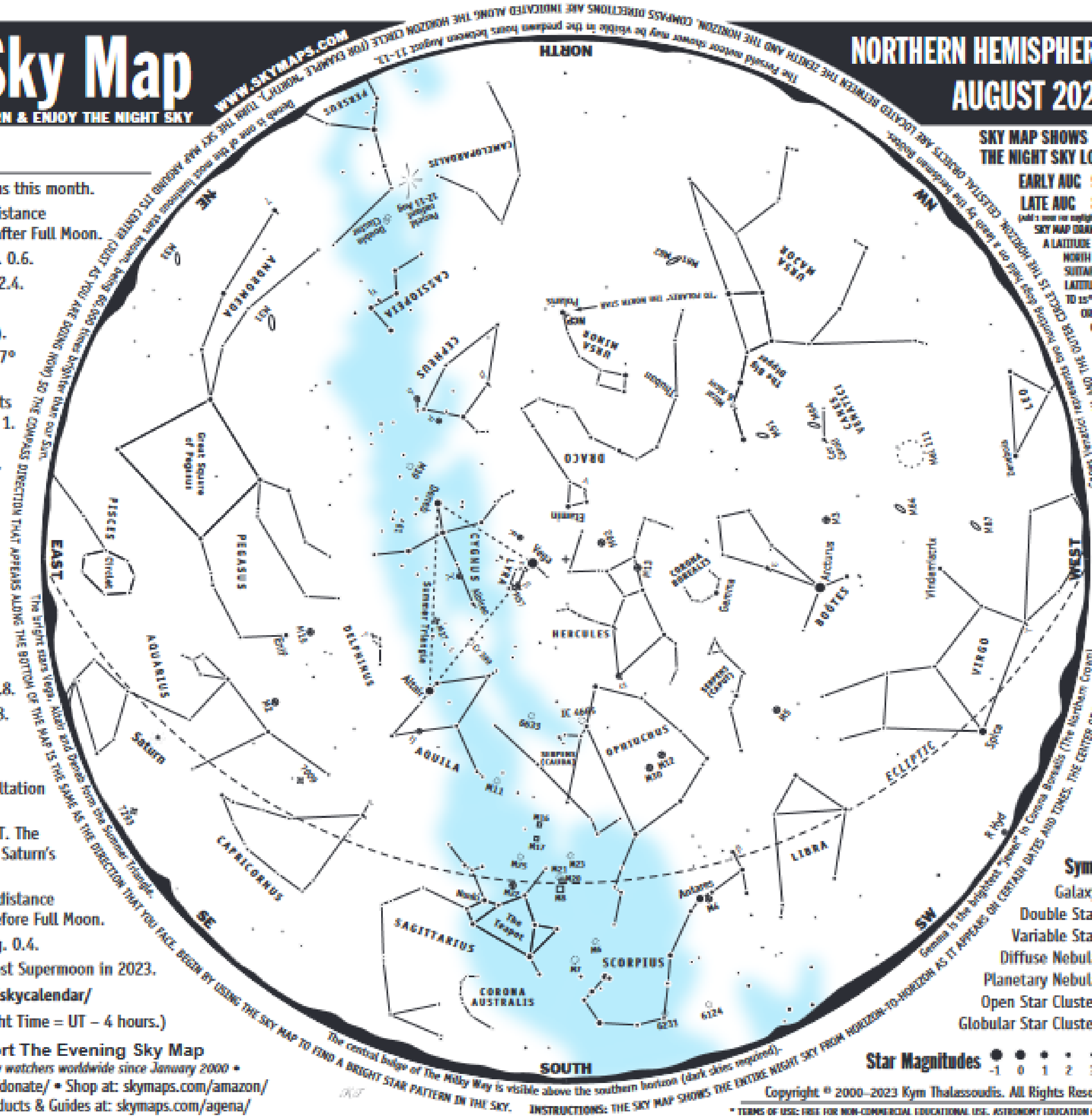
More sky events and links at http://Skymaps.com/skycalendar/

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

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY AUG 9 PM
LATE AUG 8 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

Help Support The Evening Sky Map

• freely shared with sky watchers worldwide since January 2000 •

Donate at: skymaps.com/donate/ • Shop at: skymaps.com/amazon/

Quality Astronomy Products & Guides at: skymaps.com/agena/

INSTRUCTIONS: THE SKY MAP SHOWS THE ENTIRE NIGHT SKY FROM HORIZON-TO-HORIZON AS IT APPEARS ON CERTAIN DATES AND TIMES. THE CENTER OF THE MAP IS THE PART OF THE SKY DIRECTLY OVERHEAD (ZENITH) AND THE OUTER CIRCLE IS THE HORIZON. CELESTIAL OBJECTS ARE LOCATED BETWEEN THE ZENITH AND THE HORIZON. COMPASS DIRECTIONS ARE INDICATED ALONG THE HORIZON CIRCLE (FOR EXAMPLE, NORTH). TURN THE SKY MAP AROUND ITS CENTER (JUST AS YOU ARE DOING NOW) SO THE COMPASS DIRECTION THAT APPEARS ALONG THE BOTTOM OF THE MAP IS THE SAME AS THE DIRECTION THAT YOU FACE. BEGIN BY USING THE SKY MAP TO FIND A BRIGHT STAR PATTERN IN THE SKY.

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 AUGUST 2023

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.
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.
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.
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

M31	And	⬭	The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.
η Aquilae	Aql	•	Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 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.
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.
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.
M4	Sco	●	A close globular. May just be visible without optical aid. Dist=7,000 ly.
M6	Sco	○	Butterfly Cluster. 30+ stars in 7x binoculars. Dist=1,960 ly.
M7	Sco	○	Superb open cluster. Visible to the naked eye. Age=260 million years. Dist=780 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

7009	Aqr	✧	Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.
ε Boötis	Boo	◔	Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8". Difficult to split.
M94	CVn	⬭	Compact nearly face-on spiral galaxy. Dist=15 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".
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.
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.

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:	Gregg Pytlak	ggpytlak@yahoo.com
Vice President:	Diane Franco	dianef02@yahoo.com
Secretary	Rod Guice	stargazer10000@gmail.com
Star Party / Event Coordinator	Darren Bly	dcbly@bak.rr.com
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Educational Committee Chair		
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Webmaster	Ivan Aburto	ivanaburto88@gmail.com

Kern Astronomical Society

New Membership/Renewal 2023

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": _____