



The Newsletter of the Kern Astronomical Society No. 584 May 2024

Our regular monthly meeting will be held on **May 3rd** at
Lengthwise Brewing Company at **7700 District Blvd**

Social hour at 6:30 pm followed by meeting at 7:30 pm

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 Events

Club Picnic, May 18th – The club picnic this year will be at Centennial Park on Montclair St. We will be looking for volunteers to cook and help with setup and tear down.

Star Parties – Chuchupate Site: Star parties are scheduled for May 4th and June 1st. Darren Bly will keep us updated on conditions as we get closer to the dates.

Club Member Telescope Expo – We will be holding a telescope expo on June 15 (7:00pm - 11:00pm) at the Pyles Boys Camp Group Picnic Area behind the Kern River Golf Course. What is a Telescope Expo? This is an opportunity for club members to bring their telescopes out and learn how to set it up AND use it! We will have several experienced members on hand to help you and teach you things about how to find interesting things to look at with your scope. Don't have a scope? No worries, come on out and use the various telescopes that will be set up and see which one is the best fit for you!

Buena Vista Museum - Science Saturday

The next Science Saturdays will be May 27 and June 29, solar viewing.

Looking Ahead

We are setting up a trip to the Mt. Wilson 100" telescope. The tentative date is Sunday, August 4 (Sunday night - Monday morning). The current estimate for per person cost is \$300, which includes transportation. Let us know if you're interested. We need to get a deposit in to secure the date.

Upcoming Programs

May – Omer Blaes – Gravitation Waving

The release of gravitational binding energy as material falls onto a dense gravitating object is responsible for some of the brightest sources in the universe. The physics of these accretion flows is enormously complex, involving plasma physics, magnetohydrodynamics, turbulence, and dynamically important photon pressure. I and my collaborators study this physics using the tools of supercomputer simulations as well as analytic theory of instabilities and photon-matter interactions, in order to help illuminate the rich phenomenology associated with accretion onto compact objects. Recent examples of our work include the discovery that opacity-driven convection can significantly enhance turbulent angular momentum transport in dwarf nova outbursts around white dwarfs; the dynamics of photon bubbles in radiation pressure dominated, magnetically confined accretion columns on neutron stars; and the discovery that observed variability in quasars can be driven by convection in the ultraviolet emitting regions of their accretion disks.

Although having been born and having spent his early childhood in the US, Professor Blaes spent his formative years growing up in the UK, where he earned his BSc in Astrophysics from Queen Mary College, University of London. He then moved to Italy and earned his DPhil from the International School for Advanced Studies (SISSA) in Trieste, Italy. He returned to the US as a Chaim Weizmann Research Fellow in Theoretical Physics at the California Institute of Technology, and then spent time as a Research Associate at the Canadian Institute for Theoretical Astrophysics at the University of Toronto. He joined the faculty of the Physics Department at UCSB in 1993, and was Physics Department Chair from 2010 to 2013. He is currently a Scientific Editor of the journal *Monthly Notices of the Royal Astronomical Society*.

July – No Meeting

June – Linda Spilker – Voyager Mission

August – Bonnie Buratti – Europa Clipper

From the Editor

Hello fellow club members! I'm Scott Herrick and I'll be assuming newsletter duties starting this month. I will be keeping this format very similar for the for now but if you have any recommendations, please reach out to me at ScottHerrick@kget.com – Thank you!

If you haven't had a chance yet, be sure to go to the KAS Facebook page at <https://www.facebook.com/groups/syzygy/> and check out all the amazing photos that were taken at the 2024 Eclipse event!



Courtesy of Jose Rodriguez

The Evening Sky Map

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

WWW.SKYPAPS.COM
The Northern Cross is a prominent feature of the constellation Cygnus (The Swan).
In mythology, the dragon (Draco) was slain by Hercules. He is depicted in the sky with his left foot on his head.

NORTHERN HEMISPHERE MAY 2024

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

Sky Calendar – May 2024

- 1 Last Quarter Moon at 11:27 UT.
- 4 Moon near Saturn at 0h UT (morning sky). Mag. 1.2.
- 4 Moon, Mars and Neptune within circle 4.1° diameter at 19h UT (44° from Sun, morning sky). Mags. 1.1 and 7.9.
- 5 Eta Aquarid meteor shower peaks. Most active for 7 days around this date. Associated with Comet Halley. Very fast, bright meteors, up to 40 per hour. Best seen from the tropics and southern hemisphere a few hours before dawn.
- 5 Moon near Mars at 3h UT (morning sky). Mag. 1.1. Occultation visible from Madagascar.
- 5 Moon at perigee (closest to Earth) at 22:08 UT (distance 363,163km; angular size 32.9°).
- 6 Moon near Mercury at 6h UT (26° from Sun, morning sky). Mag. 0.7.
- 8 New Moon at 3:23 UT. Start of lunation 1254.
- 9 Moon near the Pleiades at 1h UT (evening sky).
- 9 Mercury at greatest elongation west at 21h UT (26° from Sun, morning sky). Mag. 0.5.
- 14 Moon near Beehive cluster M44 at 2h UT (evening sky).
- 15 First Quarter Moon at 11:48 UT.
- 15 Moon near Regulus at 23h UT (evening sky).
- 17 Moon at apogee (farthest from Earth) at 19h UT (distance 404,640km; angular size 29.5°).
- 18 Jupiter at conjunction with the Sun at 19h UT. The largest planet passes into the morning sky.
- 18 Asteroid 2 Pallas at opposition at 23h UT. Mag. 9.0.
- 20 Moon near Spica at 12h UT (evening sky).
- 23 Full Moon at 13:55 UT.
- 24 Moon near Antares at 4h UT (morning sky). Occultation visible from SE USA, Caribbean, Central America, and West Africa.
- 30 Last Quarter Moon at 17:12 UT.
- 31 Moon near Saturn at 9h UT (morning sky). Mag. 1.2. Occultation visible from southern South America.

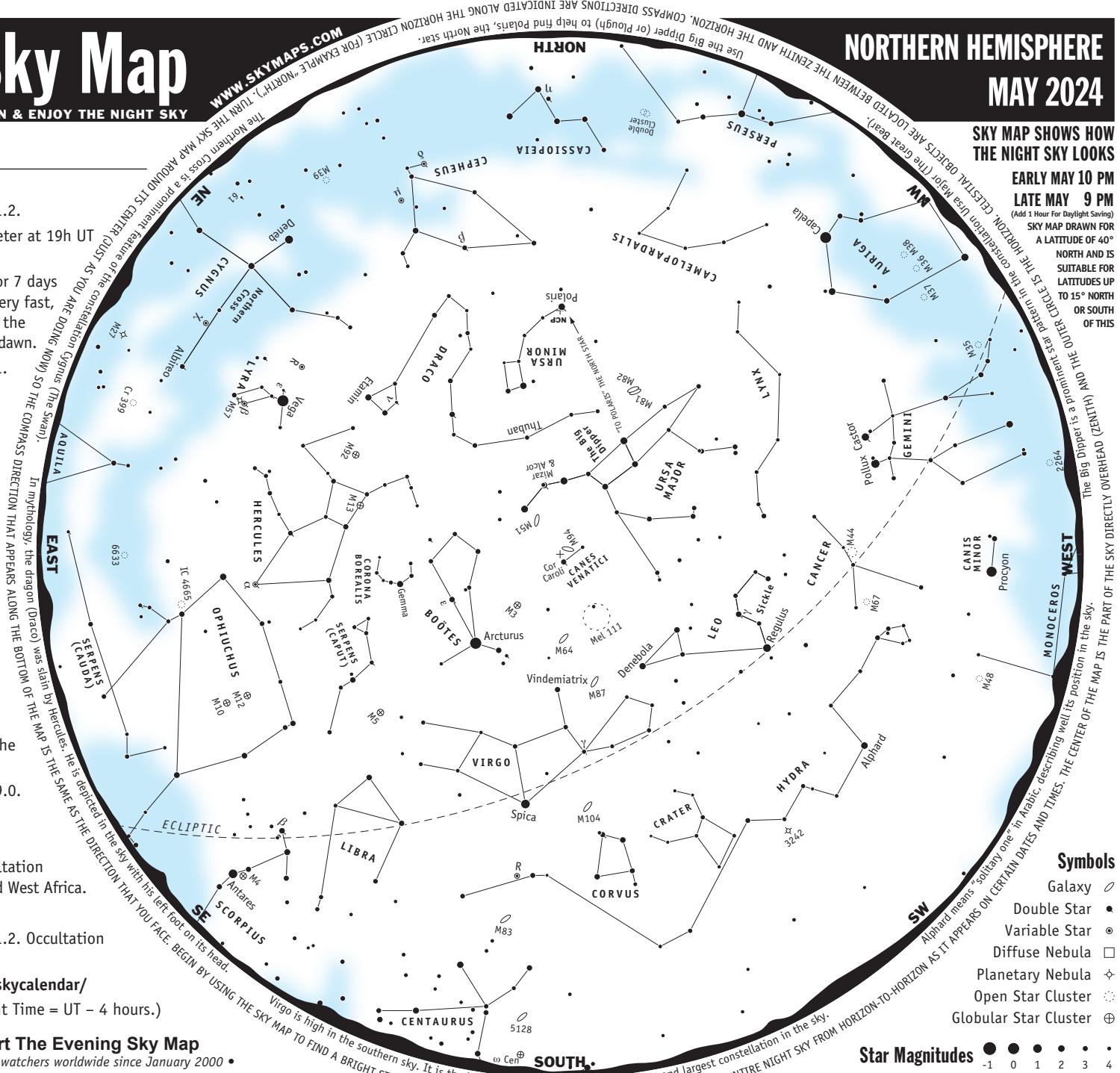
More sky events and links at <http://Skymaps.com/skycalendar/>

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 •
Donate at: skymaps.com/donate/ • Shop at: skymaps.com/amazon/
Quality Astronomy Products & Guides at: skymaps.com/agency/



Symbols

- Galaxy
- Double Star
- Variable Star
- Diffuse Nebula
- Planetary Nebula
- Open Star Cluster
- Global Star Cluster

Star Magnitudes

- 1
- 0
- 1
- 2
- 3
- 4

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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 POSITION 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.

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

NORTHERN HEMISPHERE MAY 2024 CELESTIAL OBJECTS



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 "Broccchi'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.

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	Mike Ponek	mponek@bak.rr.com
Newsletter Editor	Scott Herrick	sherrick@nexstar.tv
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”: _____