The New Syzygy

The Newsletter of the Kern Astronomical Society March 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

Upcoming Meetings

March - Tim Stoner - Rambling through the Winter Sky
April - Tim Elam - San Andreas Along Gorman
May - Mark Zaslove – Astrophotography
June - TBD
July - No Meeting

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

Membership Renewal

We thank you once again for taking this extraordinary journey with us! We sincerely hope that you will continue exploring the Universe with us by renewing your membership! There is so much more to discover! Renew your membership and renew your commitment to science!

Thank you,

Diane Franco

It's time for membership renewal. Just $25 gets you and your family membership in the Kern Astronomical Society for the following year. Renewing now really helps us budget for next year's activities and future speakers. You can renew at the meetings (cash or check) or use the form at the end of the newsletter and send it with a check to our mailbox address. The benefits of membership are listed in the InfoShare section at the end of the newsletter.

March Events

March 12 – Last quarter moon star party at Chuchupate.

March 19 – New moon star party at Chuchupate.

March 20 – Spring Equinox

WindWolves Spring Festival

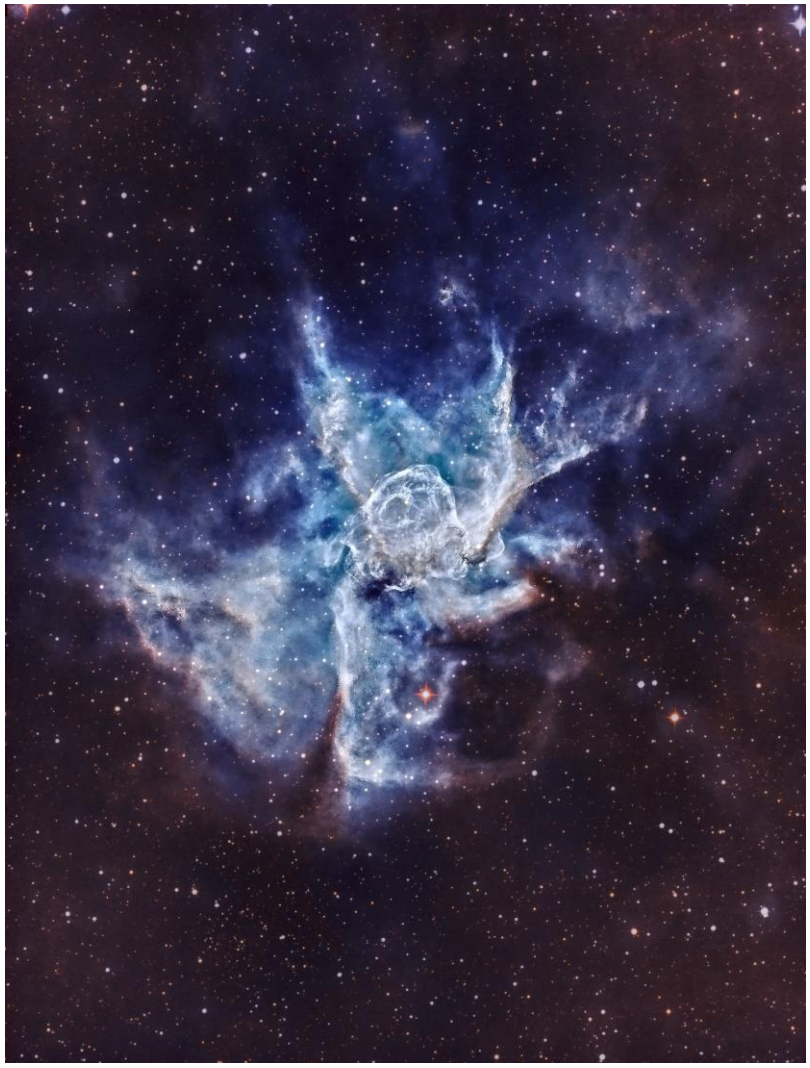
KAS will **NOT** be officially participating in the WindWolves Spring Festival this year due to logistical issues with equipment placement and support. However, this is a great event for the family to attend and with all the rain we expect plenty of wildflowers.

Spring Ahead: The Spring Equinox occurs when the apparent path of the sun along the ecliptic crosses the celestial equator heading northward as seen from Earth. On the Gregorian calendar, the spring equinox can occur as early as March 19th or as late as March 21st. For a common year the computed time slippage is about 5 hours 49 minutes later than the previous year, and for a leap year about 18 hours 11 minutes earlier than the previous year. Balancing the increases of the common years against the losses of the leap years keeps the calendar date of the March equinox from drifting more than one day from March 20 each year. For 2023, the equinox occurs at 2:23 PM (PDT) on March 20th.

KAS Astrophotography

Flaming Star Nebula – IC405 – Emission Nebula in Auriga

Spider Nebula – IC417 – Emission Nebula in Auriga



Thor's Helmet Nebula – NGC2359 – Emission Nebula in Canis Major

All photographs taken by John Hester with a 12" Newtonian Reflector at Lockwood Valley, CA.

The Evening Sky Map

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

NORTHERN HEMISPHERE
MARCH 2023

Sky Calendar – March 2023

Get Sky Calendar on Twitter
http://twitter.com/skymaps

2 **Venus 0.5° NNW of Jupiter** at 6h UT (31° from Sun, evening sky). Mags. −4.0 and −2.1.

3 **Moon at apogee** (farthest from Earth) at 18h UT (distance 405,889km; angular size 29.4′).

4 **Moon near Beehive cluster M44** at 8h UT (evening sky).

6 **Moon near Regulus** at 5h UT (evening sky).

7 **Full Moon** at 12:42 UT.

10 **Moon near Spica** at 14h UT (morning sky).

14 **Moon near Antares** at 2h UT (morning sky).

15 **Last Quarter Moon** at 2:09 UT.

17 **Mercury at superior conjunction** with the Sun at 11h UT. The inner planet passes into the evening sky.

19 **Moon at perigee** (closest to Earth) at 15:10 UT (distance 362,696km; angular size 32.9′).

19 **Moon near Saturn** at 18h UT (morning sky). Mag. 0.9.

20 **Dwarf planet 1 Ceres at opposition** at 21h UT. Mag. 6.9.

20 **Vernal equinox** at 21:23 UT. The time when the Sun reaches the point along the ecliptic where it crosses into the northern celestial hemisphere marking the start of spring in the Northern Hemisphere and autumn in the Southern Hemisphere.

21 **New Moon** at 17:26 UT. Start of lunation 1240.

22 **Moon near Jupiter** at 21h UT (evening sky). Mag. −2.1. Occultation visible from northern South America.

24 **Moon near Venus** at 11h UT (36° from Sun, evening sky). Mag. −4.0. Look out for this spectacular sight! Occultation visible from parts of Asia and Africa.

26 **Moon near the Pleiades** at 2h UT (evening sky).

28 **Moon near Mars** at 14h UT (evening sky). Mag. 0.9.

29 **First Quarter Moon** at 2:32 UT.

31 **Moon at apogee** (farthest from Earth) at 11h UT (distance 404,919km; angular size 29.5′).

31 **Moon near Beehive cluster M44** at 15h UT (evening sky).

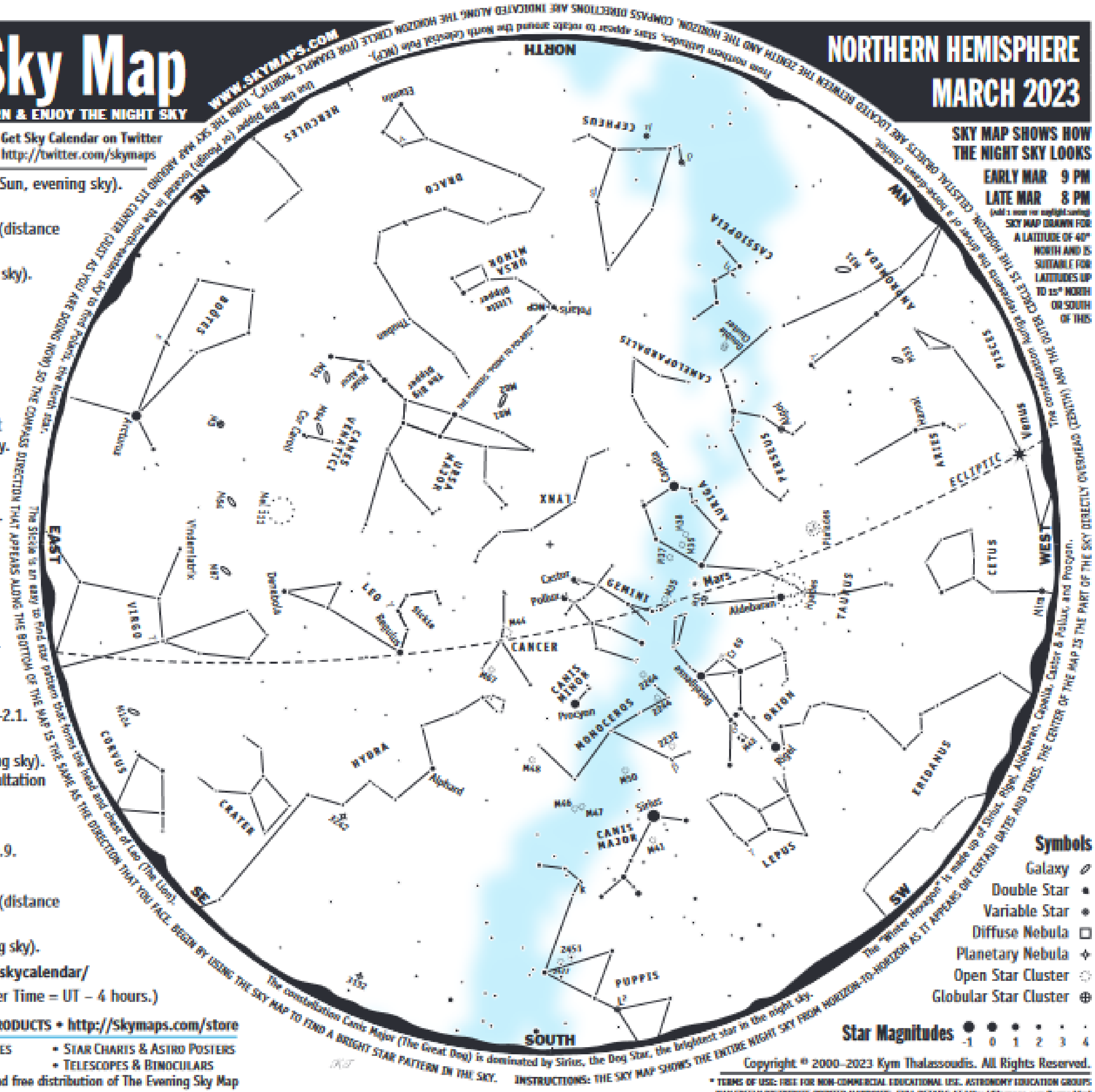
More sky events and links at http://Skymaps.com/skycalendar/

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

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY MAR 9 PM
LATE MAR 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

SAVE ON RECOMMENDED PRODUCTS • http://Skymaps.com/store

- Star Atlases & Planispheres
- Books for Sky Watchers
- Star Charts & Astro Posters
- Telescopes & Binoculars

Help support the production and free distribution of The Evening Sky Map

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

MARCH 2023

CELESTIAL OBJECTS

Skymaps.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.
Sirius	CMa	●	The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 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.
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.
Regulus	Leo	●	Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly.
Rigel	Ori	●	The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.
Betelgeuse	Ori	●	One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
Algol	Per	◔	Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
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=66.7 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=2.5 million 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.
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.
M41	CMa	○	First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.
Mel 111	Com	○	Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=288 ly. Age=400 million years.
M35	Gem	○	Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.
M48	Hya	○	12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly.
γ Leporis	Lep	◔	Visible with binoculars. Gold & white stars. Mags 3.6 & 6.2. Dist=30 ly. Sep=96.3".
2232	Mon	○	A large scattered star cluster of 20 stars. Dist=1,300 ly.
2244	Mon	○	Surrounded by the rather faint Rosette Nebula. Dist=5,540 ly.
M50	Mon	○	Visible with binoculars. Telescope reveals individual stars. Dist=3,000 ly.
Cr 69	Ori	○	Lambda Orionis Cluster. Dist=1,630 ly.
M42	Ori	□	The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years.
Double Cluster	Per	○	Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
M47	Pup	○	Bright star cluster. 15+ stars in 7x binoculars. Dist=1,500 ly.
M46	Pup	○	Dist=5,400 ly. Contains planetary NGC 2438 (Mag 11, d=65") - not associated.
Mizar & Alcor	UMa	◔	Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.

Telescopic Objects

γ Andromedae	And	◔	Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
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.
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. Dist=19 ly. Orbit=480 years. Sep=12".
M64	Com	⬮	Black-Eye Galaxy. Discovered by J.E. Bode in 1775 - "a small, nebulous star".
3242	Hya	✦	Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly.
γ Leonis	Leo	◔	Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4".
β Monocerotis	Mon	◔	Triple star. Mags 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3".
2264	Mon	○	Christmas Tree Cluster. Associated with the Cone Nebula. Dist=2,450 ly.
σ Orionis	Ori	◔	Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.
k Puppis	Pup	◔	Telescope easily shows two blue-white stars of almost equal brightness. Sep=9.9".
M1	Tau	□	Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 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.
γ Virginis	Vir	◔	Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005.

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		
Educational Youth Ambassador		
Newsletter Editor	Timothy Stoner	desert_enduro@hotmail.com
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": _____