



The Newsletter of the Kern Astronomical Society    No. 565    October 2022

### ***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 7<sup>th</sup> 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](mailto:kernastronomicalsociety@gmail.com)



**Reach for the Stars**



## October Speaker: Rod Guice – Climate Change (Continued from the August Presentation)

### Upcoming Meetings

October – Rod Guice – Climate Change

November – Briley Lewis – “Life in the Universe”

December – Annual Christmas Party

**October Star Parties** – Last Quarter Moon star party at Chuchupate on October 22<sup>nd</sup>.

### October Events

- Oct 6 – Star Party at Nichols School. Check your e-mails for details.
- Oct 28 & 29 – Panamint Springs Star Party. More details on this event at the October meeting



## **Statement to Membership from your President: Gregg Pytlak**

**This is in part, my statement to membership that I read at the last regular (elections) meeting. It now contains updates and revisions.**

**I would like to thank the membership for their patience and participation in this election process. Now I would like to invite you, the members, to possibly participate further by inviting you to attend a Board Meeting or to seriously consider co-chairing a position on the Board. Per our Constitution, all of the officers' positions can be co-chaired. If you have ever thought about helping out the club, now is the time. We, as officers of the club, would welcome your interest and could explain the duties and responsibilities of each office. You could be appointed "temporarily" as a co-chair. This would be a great way to "get your feet wet" in a leadership position.**

**I am now addressing the younger members of the Kern Astronomical Society, the ones that aren't quite senior citizens. As you may have noticed, none of us up here (the Board of Directions) could be considered young. Some of us are in our seventies, some of us are approaching that number, a few are younger. Some of us are experiencing major health issues. At this age, you never know. As of now, our wonderful and very competent Treasurer, Pamela Miller, is stepping down for health reasons. While we will miss her as a Board member, we wish her the best, a speedy recovery and a return to health. I want to thank member Ron Church for stepping forward to co-chair and now, chair the Treasurer's position. He was elected as co-chair at the last meeting and will have to hit the ground running through this transition to the office of Treasurer. Thank you, Pam, and thank you, Ron.**

**On a personal note, while I am happy to lead KAS for this term, there will not be another. This is the fourth year for me and a four-year term is long enough. You, as members, deserve some fresh perspective, energy and leadership. I expect to be traveling with my newly retired wife next summer. It has been an honor and a pleasure to serve as your President. As an aside, do not expect our VP to "move through the chairs" as your President next year. She is a past President and has served in that position for six years. She does a wonderful job as VP arranging our speakers for the meetings and as the liaison for our meeting location at Round Table Pizza, as well as her other duties.**

**It is time for you, the members, to take an active part in this club, in this hobby we so enjoy. Please give these ideas some consideration.**

**Thank you, Gregg Pytlak**

# Sequoia Dark Sky Festival

What a Dark Sky Festival! Everything was compressed into one day.

On the plus side: It was good to see people we haven't seen since before Covid. Good speakers this year, KAS may have two new guest speakers.

On the negative side: Much of the park was closed or only partially open. Food was hard to come by. With Lodgepole mostly closed all the speakers were at the Giant Forest Museum and it's 20 miles from our campsite.

The star party was wild. It really started at 8pm instead of 9pm. In the three hours we hosted over 800 people and some said it was around 1000 people. While everyone was fantastic, one young man really outdid himself. Maddox Pytlak was incredible. Bouncing between the two bright planets and explaining what they were looking at, he was really in his element.

Another high point was that Gregg Pytlak and I received a personal thank you on behalf of KAS from the Superintendent of Sequoia and Kings Canyon Parks, Clay Jordan.

This was Katie Wightman last Festival. We have worked with her for seven Dark Sky Festivals, five in person. KAS presented her with a thank you card and some flowers. She will be missed.

Darren Bly



It was great to attend Dark Sky Festival after 2016 (Last time I attended). There were around 25 telescopes. Fabulous response from people for the star party at Wuksachi Lodge.

Prashant Vaidya

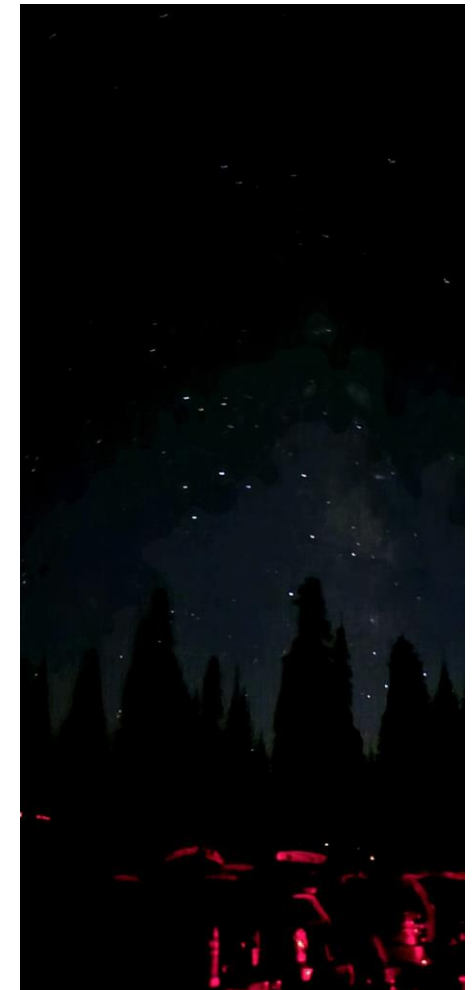






What an amazing astronomical adventure!!! 🤩🏕️🌲🌟 Thank you KAS for lending us a 'scope and letting us participate in an awesome event. It was really nice chatting with & getting to know people around the campfire. 🔥 Chris Alvarado & I did some solar viewing, learned about the evolution of galaxies & the antikythera mechanism before heading out for the star party. 📡🪐 We were awe-struck watching the newly launched Starlink satellite train 🌠🌠🌠 fly across the clear, dark sky resembling Santa's sleigh (or maybe it was 🎅). It was really rewarding providing many people their first live look at planets Jupiter & Saturn and witnessing their wonder and receiving their appreciation. I don't think I sat down for more than 5 min total the entire night as the line for our 'scope seemed endless! So much fun! 😊

Moksha Badarayan



# WIN THIS 8" TELESCOPE



KAS members can win this 8" Orion Dobsonian telescope complete with 5 eyepieces, a 2x barlow, a laser collimator and a set of filters.

Tickets are \$5 each or three for \$10, BUT if you do not own a telescope this large you will receive 2 tickets for \$5 or 5 for \$10.

Tickets available at KAS meetings until the drawing.

The drawing will be held at our December holiday meeting on Friday December 2<sup>nd</sup>.



**THIS DRAWING IS FOR KAS MEMBERS ONLY**



# The Evening Sky Map

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

## Sky Calendar – October 2022

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

- 3 First Quarter Moon at 0:14 UT.
- 4 Moon at perigee (closest to Earth) at 16:41 UT (distance 369,325km; angular size 32.4').
- 5 Moon near Saturn at 19h UT (evening sky). Mag. 0.5.
- 8 Moon near Jupiter at 21h UT (evening sky). Mag. -2.9.
- 8 Mercury at greatest elongation west at 21h UT (18° from Sun, morning sky). Mag. -0.5.
- 9 Full Moon at 20:54 UT.
- 12 Moon near Uranus at 7h UT (morning sky). Occultation visible from NW USA, Alaska, Canada and Greenland. Mag. 5.7.
- 13 Moon near the Pleiades at 7h UT (morning sky).
- 14 Moon near Aldebaran at 0h UT (morning sky).
- 15 Moon near Mars at 4h UT (morning sky). Mag. -0.9.
- 17 Moon at apogee (farthest from Earth) at 10h UT (distance 404,328km; angular size 29.6').
- 17 Last Quarter Moon at 17:15 UT.
- 18 Moon near Beehive cluster M44 at 21h UT (morning sky).
- 20 Moon near Regulus at 18h UT (morning sky).
- 21 Orionid meteor shower peaks at 10h 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 Venus at superior conjunction with the Sun at 21h UT (not visible). Venus is passing into the evening sky.
- 25 New Moon at 10:47 UT. Start of lunation 1235.
- 25 Partial Eclipse of the Sun at 11:00 UT (greatest). Visible from Europe, NE Africa, Middle East and west Asia. Begins 8:58 UT. Ends 13:02 UT.
- 28 Moon near Antares at 5h UT (evening sky).
- 29 Moon at perigee (closest to Earth) at 14:27 UT (distance 368,291km; angular size 32.4').
- 30 Moon at southernmost declination (-27.5°) at 1h UT.

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



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

- STAR ATLASES & PLANISPHERES
  - STAR CHARTS & ASTRO POSTERS
  - BOOKS FOR SKY WATCHERS
  - TELESCOPES & BINOCULARS
- All sales support the production and free distribution of The Evening Sky Map.

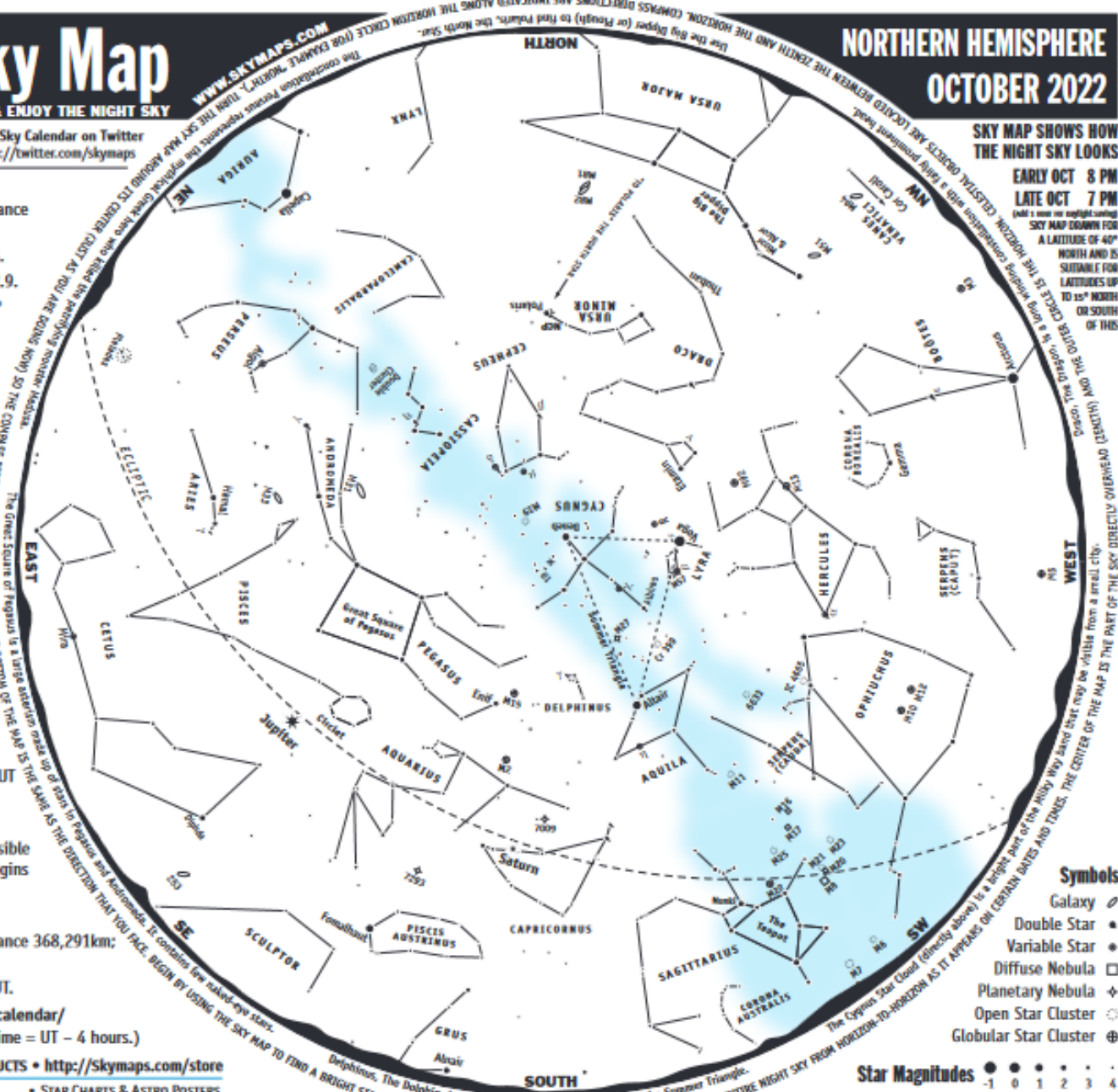
## NORTHERN HEMISPHERE OCTOBER 2022

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.

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

NORTHERN HEMISPHERE  
OCTOBER 2022

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.
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.
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	• 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=0.8".
7009	Aqr	• Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.
7293	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. Dist=19 ly. Orbit=680 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 bisecting 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:	Gregg Pytlak	<a href="mailto:gpytlak@yahoo.com">gpytlak@yahoo.com</a>
Vice President:	Diane Franco	<a href="mailto:dianef02@yahoo.com">dianef02@yahoo.com</a>
Treasurer	Ron Church	<a href="mailto:Church.Ron@ircsp.com">Church.Ron@ircsp.com</a>
Secretary	Rod Guice	<a href="mailto:stargazer10000@gmail.com">stargazer10000@gmail.com</a>
Star Party / Event Coordinator	Darren Bly	<a href="mailto:dcbly@bak.rr.com">dcbly@bak.rr.com</a>
Member at Large	John Hester	<a href="mailto:jh191623@gmail.com">jh191623@gmail.com</a>
Member at Large	Darrell Miller	<a href="mailto:dqmpsm2@yahoo.com">dqmpsm2@yahoo.com</a>
Educational Committee Chair		
Educational Youth Ambassador		
Newsletter Editor	Timothy Stoner	<a href="mailto:desert_enduro@hotmail.com">desert_enduro@hotmail.com</a>
Webmaster	Ivan Aburto	<a href="mailto:ivanaburto88@gmail.com">ivanaburto88@gmail.com</a>

# Kern Astronomical Society

## New Membership/Renewal 2022 - 2023

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Family Members: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email:\*\* \_\_\_\_\_

My check# \_\_\_\_\_ for (or cash) 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:

**KAS**

**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": \_\_\_\_\_