



The Newsletter of the Kern Astronomical Society No. 583 April 2024

Our regular monthly meeting will be held on **April 12<sup>th</sup>** 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](mailto:kernastronomicalsociety@gmail.com)



Reach for the Stars



## Upcoming Events

April 27<sup>th</sup> – Last quarter moon star party at Chuchupate

Buena Vista Museum Science Saturdays will take place April 27, May 25 and June 29. This is a day event so solar scopes are needed.

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.

## Upcoming Programs

April – **Meeting will be on second Friday (April 12) due to eclipse** – Share your eclipse experience

May – Omer Blaes – Gravitation Waving

June – Linda Spilker – Voyager Mission

July – No Meeting

August – Bonnie Buratti – Europa Clipper

## From the Editor

The time has come to pass the privilege of monthly newsletter editor on to another member. As many of you know, Tammy and I have moved to Thousand Palms in the Coachella Valley and are selling our Bakersfield home. We'll still get back to the Bakersfield area from time to time to visit family and hopefully attend a KAS meeting or star party. Taking over as newsletter editor will be Scott Herrick.

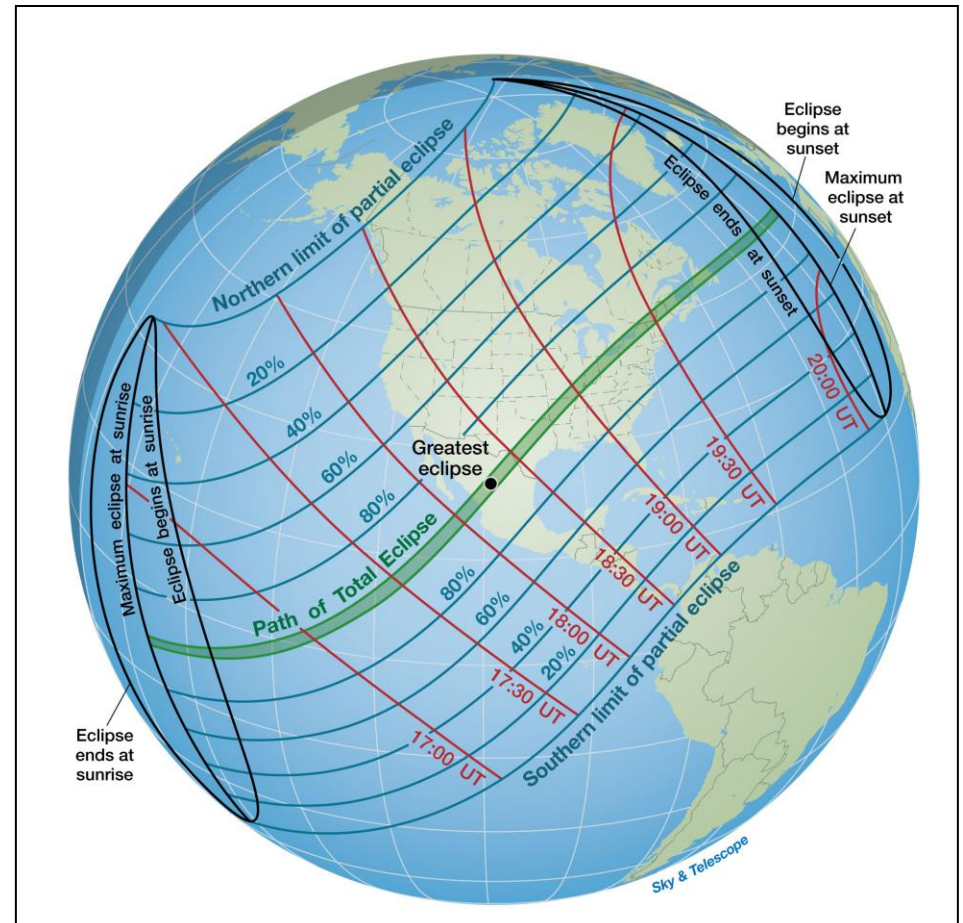
Tim Stoner

# The Great American Eclipse

Totality watchers get the best show, but far more people will be in partial-only territory. Here's how to make the most of it.

How partial, and when? If you're almost anywhere in North or Central America, you will get at least a partial eclipse on April 8th. The red lines give the Universal Time (UT) of mid-eclipse. (Eastern Daylight Time is UT minus 4 hours, CDT is UT minus 5 hours, MDT is UT minus 6 hours, and PDT is UT minus 7 hours.) The blue lines tell the eclipse magnitude — the percent of the Sun's diameter covered — at that time. Mark your spot, and interpolate between the lines.

Sky & Telescope. Source: Fred Espenak



# 2024 DARK SKY FESTIVAL

SAVE THE DATES

SEPTEMBER 6-8, 2024

**MORE INFORMATION IS COMING SOON**



# The Evening Sky Map

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

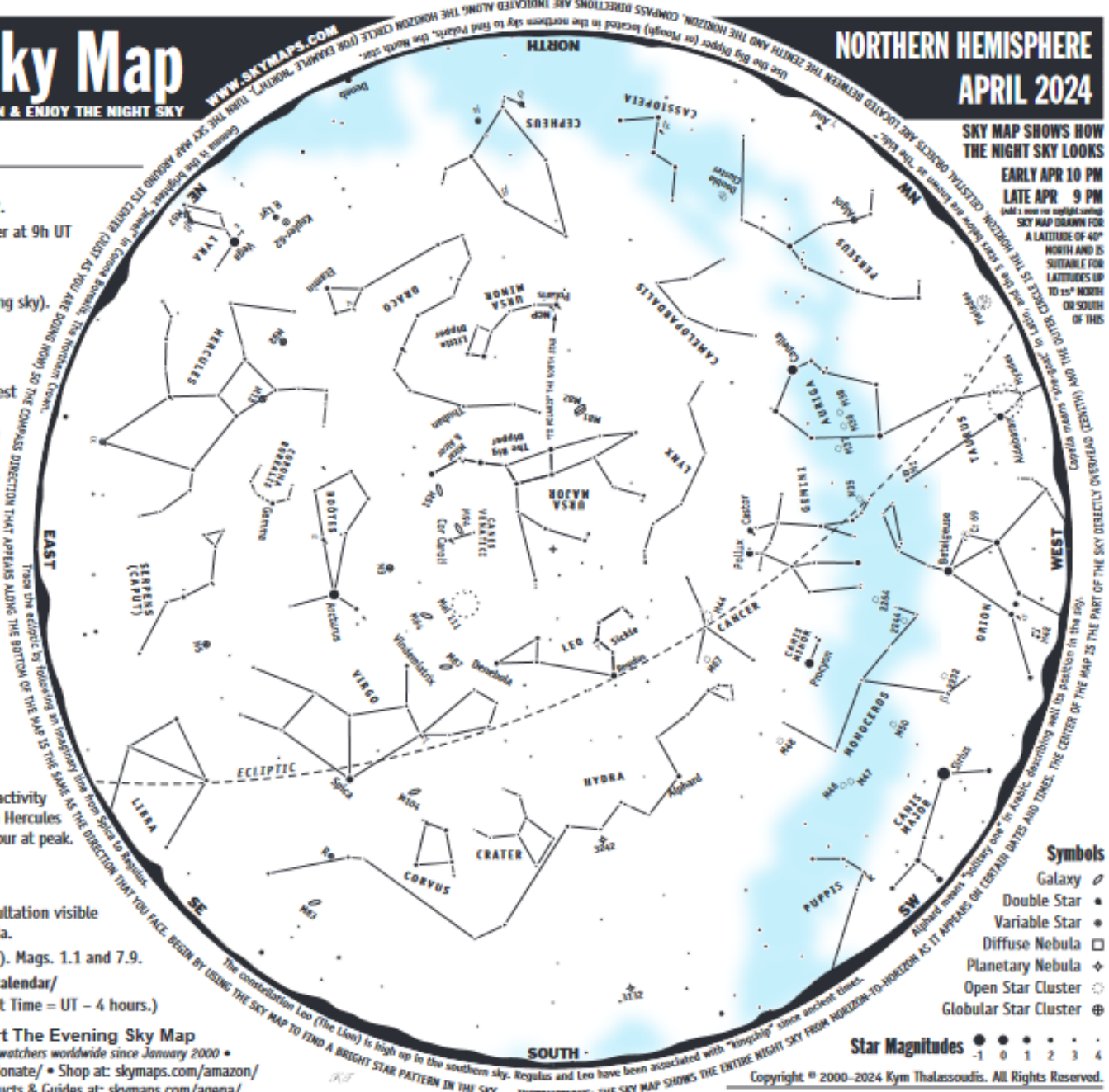
**NORTHERN HEMISPHERE**  
**APRIL 2024**

## Sky Calendar – April 2024

- 2 Last Quarter Moon at 3:15 UT.
  - 6 Moon near Mars at 6h UT (morning sky). Mag. 1.2.
  - 6 Moon, Mars and Saturn within circle 3.0° diameter at 9h UT (morning sky). Mags. 1.2 and 1.1.
  - 6 Moon near Saturn at 11h UT (morning sky).
  - 7 Moon near Venus at 17h UT (15° from Sun, morning sky). Mag. -3.9.
  - 7 Moon at perigee (closest to Earth) at 17:46 UT (distance 358,850km; angular size 33.3").
  - 8 Total Solar Eclipse from 16:39 to 19:55 UT, greatest eclipse at 18:17 UT (duration 4m 28s). Totality visible along narrow path crossing Mexico, eastern USA and south-eastern Canada. Partial eclipse visible across all of North America (except Alaska), Hawaii and parts of Central America.
  - 8 New Moon at 18:22 UT. Start of lunation 1253.
  - 10 Moon near Jupiter at 20h UT (evening sky). Mag. -2.0.
  - 10 Mars 0.44° NNW of Saturn at 21h UT (37° from Sun, morning sky). Mags. 1.2 and 1.1.
  - 11 Moon near the Pleiades at 14h UT (evening sky).
  - 11 Mercury at inferior conjunction with the Sun at 23h UT. The innermost planet passes into the morning sky.
  - 15 First Quarter Moon at 19:13 UT.
  - 18 Moon near Regulus at 16h UT (evening sky).
  - 20 Moon at apogee (farthest from Earth) at 2h UT (distance 405,623km; angular size 29.5").
  - 22 Lyrid meteor shower peaks at 7h UT (timing and activity is variable). Active April 14-30. Radiant is between Hercules and Lyra. Expect 10 to 20 bright, fast meteors per hour at peak.
  - 23 Moon near Spica at 5h UT (evening sky).
  - 23 Full Moon at 23:50 UT.
  - 26 Moon near Antares at 22h UT (morning sky). Occultation visible from the Middle East, southern India and Indonesia.
  - 29 Mars 0.04° SE of Neptune at 5h UT (morning sky). Mags. 1.1 and 7.9.
- 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/](http://skymaps.com/donate/) • Shop at: [skymaps.com/amazon/](http://skymaps.com/amazon/)  
 Quality Astronomy Products & Guides at: [skymaps.com/agenal/](http://skymaps.com/agenal/)



**SKY MAP SHOWS HOW THE NIGHT SKY LOOKS**

**EARLY APR 10 PM**  
**LATE APR 9 PM**

(all times in daylight saving time)  
**SKY MAP DRAWING FOR A LATITUDE OF 40° NORTH AND IS SUITABLE FOR LATITUDES UP TO 25° 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  
APRIL 2024

CELESTIAL OBJECTS

Sky maps  
.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. |
| 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.               |
| Vega       | Lyr | • The 5th brightest star in the sky. A blue-white star. Dist=25.0 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.             |
| 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.    |
| Spica      | Vir | • Latin name means "ear of wheat" and shown held in Virgo's left hand. Dist=250 ly.             |

## Easily Seen with Binoculars

- |                |     |   |
|----------------|-----|---|
| 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=500±20 ly.                  |
| M3             | CVn | • Easy to find in binoculars. Might be glimpsed with the naked eye.                       |
| Mel 111        | Com | • Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=283 ly. Age=400 million years.          |
| v Draconis     | Dra | • Wide pair of white stars. One of the finest binocular pairs in the sky. Dist=100 ly.    |
| M35            | Gem | • Fine open cluster located near foot of the twin Castor. Dist=2,800 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.                     |
| M48            | Hya | • 12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly.             |
| R Hydrae       | Hya | • Long period variable. Mag varies between 3.0 & 11.0 over 390 days. Brilliant red.       |
| R Lyrae        | Lyr | • Semi-regular variable. Magnitude varies between 3.9 & 5.0 over 46.0 days.               |
| 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.  |
| 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.            |
| 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. |

## Telescopic Objects

- |               |     |   |
|---------------|-----|---|
| z 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.                     |
| 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 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.                     |
| 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.  |
| 3132          | Vel | • One of the brightest planetaries. Magnitude 10 central star. Dist=2,600 ly.                 |
| 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.       |

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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:	Tom Henderson	<a href="mailto:tomhenderson123@att.net">tomhenderson123@att.net</a>
Vice President:	Diane Franco	<a href="mailto:dianef02@yahoo.com">dianef02@yahoo.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>
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# 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”: \_\_\_\_\_