



The Newsletter of the Kern Astronomical Society    No. 544    January 2021

# The January meeting has been Cancelled.

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**



## An Important Message from the Board

To our membership,

It is with great sadness and much thought and discussion, that the KAS Leadership has moved to “put on hold” the club’s “business activities” only. We will revisit our status after January 15, 2021. With that said, Star Parties, membership and a more compact newsletter will continue. We will hold election of officers as soon as it is practical to do so for candidates as well as the membership.

As of now, all of the current officers of the club have agreed to stay on, with one exception, in their current positions.

This decision was not made lightly but the restrictions of the pandemic have dictated this outcome. We hope that you, the membership, understand.

Thank you to all Board Members for their support and to our membership for your patience, perseverance and understanding.

Respectfully yours,

Gregg Pytlak, President

## KAS Star Parties

Possible dates for Star Parties at Chuchupate are January or 9 (Last Quarter Moon) and January 16 (New Moon). Watch for updates via e-mail and/or Facebook.

# The Great Conjunction of December 2020

I hope everyone had a chance to see and or photograph the Great Conjunction of Jupiter and Saturn. A few of us traveled to the mountains for a colder view while others observed from the comforts of home. Congratulation on all the photographs.



Dec 17 by: Tim Stoner



Dec 19 at Chuchupate by: Heather Ponek



Dec 19 at Chuchupate by: Heather Ponek



Dec 19 at Chuchupate by: Tim Stoner





Dec 19 at Chuchupate by: Ivan Aburto



Dec 19 at Chuchupate by: Tim Stoner



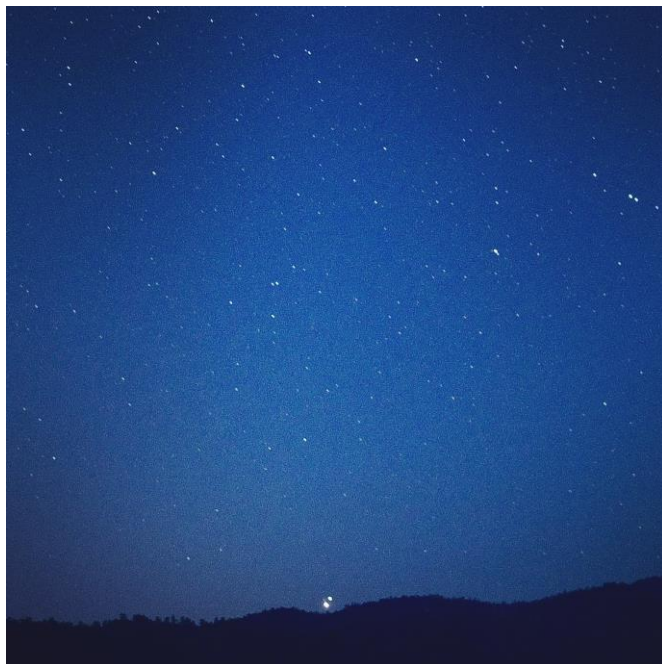
Dec 20 practice run by: Darren Bly



Dec 20 by: Darren Bly



Dec 20 Cell Phone through  
Eyepiece by: Jason Bratu



Dec 20 at Chuchupate by: Kevin Cincuenta Shah



Dec 20 at Chuchupate by: Kevin Cincuenta Shah



Dec 21 Cell Phone through Eyepiece by: Prashant Vaidya



Dec 21 from Bakersfield by: Kevin Cincuenta Shah



Dec 21 from Culver City by: Kelly Rich



Dec 21 from Ridgecrest by: Debbie Crutchfield Pio



Dec 21 from Ballinger Canyon by: Tim Stoner



Winter Sky Rising



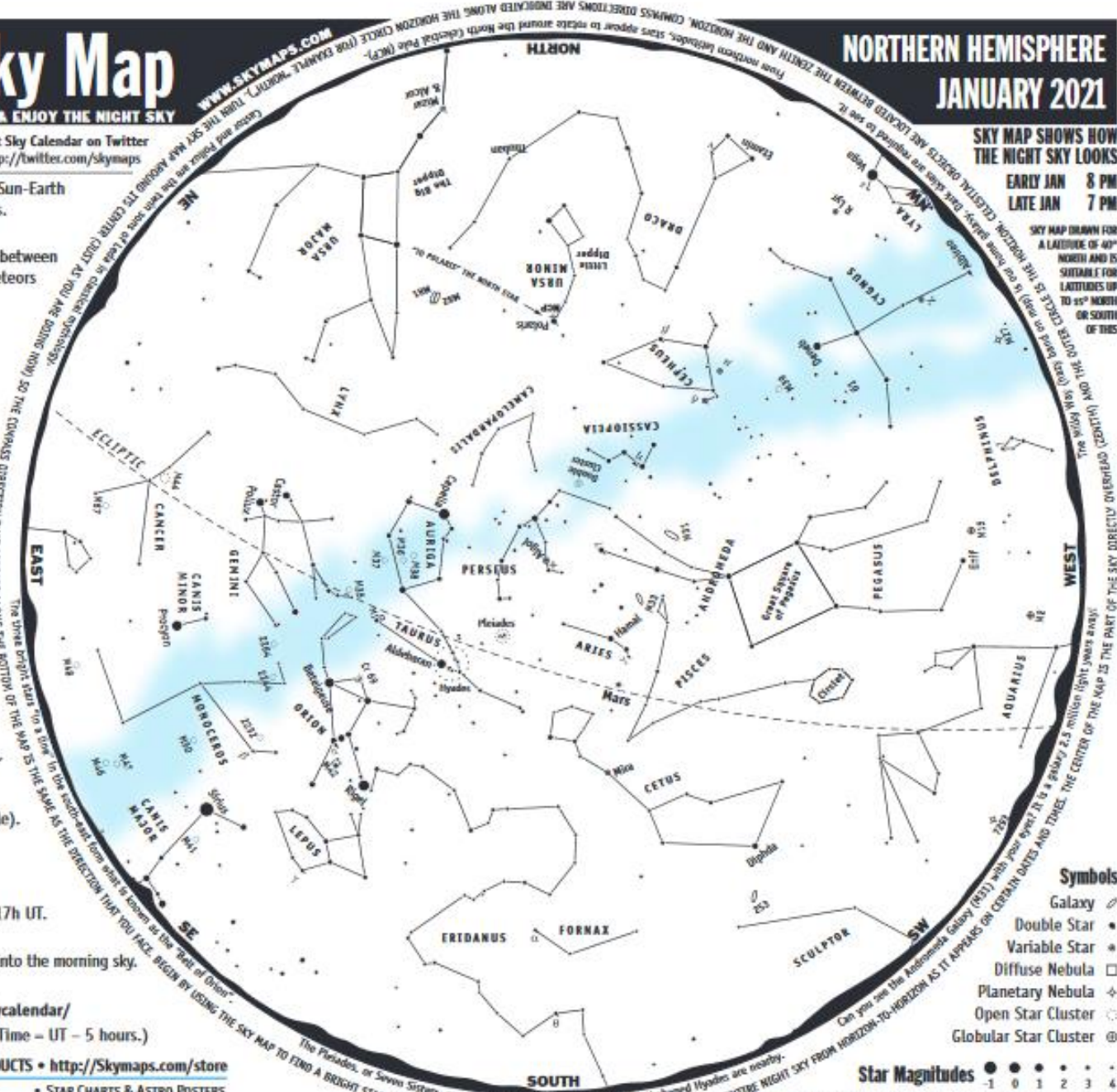
**FREE\* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY**

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

- More sky events and links at <http://Skymaps.com/skycalendar/>  
All times in Universal Time (UT). (USA Eastern Standard Time = UT - 5 hours.)

- STAR ATLASES & PLANISPHERES
- STAR CHARTS & ASTRO POSTERS
- BOOKS FOR SKY WATCHERS
- TELESCOPES & BINOCULARS

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









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

EARLY JAN	8 PM
LATE JAN	7 PM

SKY MAP DRAWN FOR  
A LATITUDE OF 40°  
NORTH AND IS  
SUITABLE FOR  
LATITUDES UP  
TO 15° NORTH  
OR SOUTH  
OF THE

### Symbols

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

Star Magnitudes ● ● ● ● ● ●  
-1 0 1 2 3 4

Copyright © 2000–2020 Kym Thalassoudis. All Rights Reserved.

\* TERMS OF USE: FREE FOR NON-COMMERCIAL EDUCATIONAL USE. ASTRONOMY EDUCATION GROUPS MAY FREELY DISTRIBUTE PRINTED HANDOUTS. FULL DETAILS AT <http://Skyworks.com/terms.html>



## 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  
JANUARY 2021

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.         |
| 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.             |
| 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.                        |
| Vega       | Lyr | • The 5th brightest star in the sky. A blue-white star. Dist=25.0 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.          |
| M2             | Aqr | • Resembles a fuzzy star in 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=590 ±20 ly.                       |
| M41            | CMa | • First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.            |
| μ Cephei       | Cep | • Herschel's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 days.               |
| Mira           | Cet | • Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 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.          |
| M35            | Gem | • Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.                        |
| γ Leporis      | Lep | • Visible with binoculars. Gold & white stars. Mags 3.6 & 6.2. Dist=30 ly. Sep=96.3".           |
| 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.  |
| M42            | Ori | • The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years. |
| 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.             |
| 253            | Scl | • Fine, large, cigar-shaped galaxy. Requires dark sky. Member of Sculptor Group.                |
| 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".                |
| γ Arietis     | Ari | • Impressive looking double blue-white star. Visible in a small telescope. Sep=7.8".             |
| M67           | Cnc | • Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly.               |
| η Cassiopeiae | Cas | • Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orbit=480 years. Sep=12".               |
| 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.          |
| θ Eridani     | Eri | • Striking blue-white double star. Mags 3.2 & 4.3. Visible in a small telescope. Sep=8.2".       |
| 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.                        |
| α Orionis     | Ori | • Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field. |
| M1            | Tau | • Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 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.                   |
| M82           | UMa | • Close to M81 but much fainter and smaller.   |



## 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

### KAS Board Members

President:	Gregg Pytlak	ggpytlak@yahoo.com
Vice President:	Diane Franco	dianef02@yahoo.com
Treasurer:	Mary Hanel	hanel1125@att.net
Secretary:	Angel Gil	angel.gil3021@email.bakersfieldcollege.edu
Equipment Chairman:	Darren Bly	dcbly@bak.rr.com
Star Party Coordinator:	Darren Bly	dcbly@bak.rr.com
Educational Committee Chair	Walter Albrecht	melchior1472@gmail.com
Educational Youth Ambassador	Claire Im	claire2133@gmail.com
Newsletter Editor	Timothy Stoner	desert_enduro@hotmail.com

# Kern Astronomical Society

Membership New/Renewal    March 2021/2022

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

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

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

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

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

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

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

My check# \_\_\_\_\_ for (or cash) the amount of \$ \_\_\_\_\_ is enclosed.

(Check box)

Yearly Membership    ☒    \$25    March 2020 – March 2021

Make checks payable to: KAS (or) Kern Astronomical Society

You can also mail 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”: \_\_\_\_\_