



The Newsletter of the Kern Astronomical Society    No. 553    October 2021

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***KAS Open Meeting***

*First Friday of  
Every Month*

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*Round Table Pizza,*  
*4200 Gosford Road,  
Suite 101, Bakersfield, CA*

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*Dinner & Social 6:30 pm  
Meeting/Program 7:30 pm*

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**Our regular monthly meeting will be held on October 1<sup>st</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**



## Important Messages from the Board

**Membership:** We will be collecting annual membership fees for 2022 at the September and subsequent meetings throughout the remainder of the year. New members can join for our annual fee which will cover the remaining months of 2021 and year 2022. Annual membership is \$25. There is an application form at the end of the newsletter.

**Election of Club Officers:** Our annual election of club officers will be postponed until after the first of the year. So far, most of the current officers have been contacted and have confirmed that they will remain in their positions until a new election is held. However, we are in need of someone to fill the club secretary position. If interested, please e-mail Gregg Pytlak at [gpytlak@yahoo.com](mailto:gpytlak@yahoo.com). Here is a description of the duties:

### **Secretary Position Duties from the Club Bylaws:**

Section 4: The Secretary shall keep records, submit notices, and make reports to the members and Board of Directors, and perform such duties as are incidental to the office. The secretary must assist the treasurer in record keeping of the KAS membership list updated by administering sign in sheets at all meetings.

## Upcoming Star Parties

Last quarter moon star party on October 2. New moon star party on October 9. Check the KAS Facebook page or your e-mails for updates as smoke and fire conditions can change rapidly.

## Upcoming Meetings

October – Astrophotography 101 – Tim Stoner

November – TBD

December – Christmas Party

## KAS Outreach

Barnes and Noble has asked us to hold a public star party in their parking lot on October 16. The star party will last from 7:00 PM until 9:30 PM. We usually start setting up after 6:00 PM. Barnes and Noble is located at 4001 California Ave.

## Dark Sky Trip

KAS has reserved the Group Camp Ground at Panamint Springs Resort for the nights of 11/5 and 11/6. Most of us will arrive on Saturday but there are a few that will arrive on Friday. There will be more information at the meeting and in e-mails this month. Take a look at the site's website for more information about it. <https://www.panamintsprings.com/>. This is a very dark site, MUCH darker than our normal site.



# Barnes and Noble Public Star Party – September 18





# The Evening Sky Map

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

## Sky Calendar - October 2021

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

- 1 Moon near Beehive cluster M44 at 16h UT (morning sky).
- 2 Mercury 1.5° SSW of Spica at 10h UT (15° from Sun, evening sky). Mags. 1.9 and 1.0.
- 3 Moon near Regulus at 10h UT (morning sky).
- 6 New Moon at 11:05 UT. Start of lunation 1222.
- 8 Moon at perigee (closest to Earth) at 17:28 UT (distance 363,386 km; angular size 32.9').
- 9 Mercury at inferior conjunction with the Sun at 16h UT. Mercury passes into the morning sky.
- 9 Moon near Venus at 21h UT (evening sky). Mag. -4.2.
- 10 Moon near Antares at 9h UT (evening sky).
- 13 First Quarter Moon at 3:26 UT.
- 14 Moon near Saturn at 9h UT (evening sky). Mag. 0.5.
- 15 Moon near Jupiter at 13h UT (evening sky). Mag. -2.6.
- 16 Venus 1.4° NNE of Antares at 21h UT (47° from Sun, evening sky). Mags. -4.3 and 1.0.
- 20 Full Moon at 14:56 UT.
- 21 Orionid meteor shower peaks at 5h 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. Visibility is reduced due to bright moonlight this year.
- 23 Moon near the Pleiades at 10h UT (morning sky).
- 24 Moon near Aldebaran at 4h UT (morning sky).
- 24 Moon at apogee (farthest from Earth) at 15h UT (distance 405,615 km; angular size 29.5').
- 25 Mercury at greatest elongation west at 5h UT (18° from Sun, morning sky). Mag. -0.5.
- 28 Venus at dichotomy (D-shape phase) at 14h UT (evening sky).
- 28 Last Quarter Moon at 20:06 UT.
- 29 Moon near Beehive cluster M44 at 0h UT (morning sky).
- 29 Venus at greatest elongation east at 21h UT (47° from Sun, evening sky). Mag. -4.4.
- 30 Moon near Regulus at 19h UT (morning sky).

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 2021

SKY MAP SHOWS HOW  
THE NIGHT SKY LOOKS

EARLY OCT 8 PM

LATE OCT 7 PM

(add 1 hour on daylight saving)

SKY MAP DRAWN FOR

A LATITUDE OF 40°

NORTH AND IS

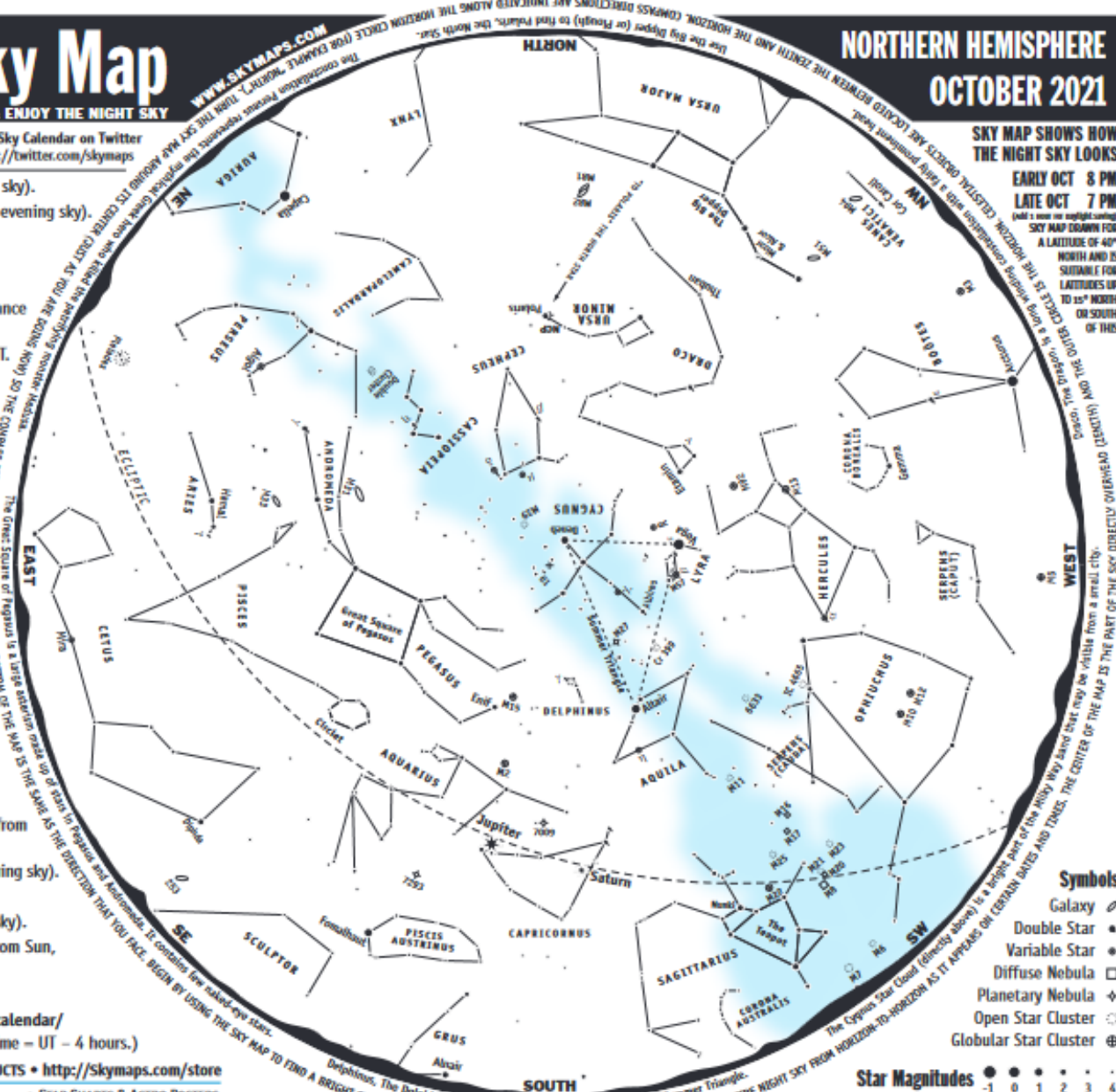
SUITABLE FOR

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 2021

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.
Algot	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=2.03 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=480 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 trisecting 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

### KAS Club Officers and Support Staff

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	Pam Miller	<a href="mailto:dgm2@yahoo.com">dgm2@yahoo.com</a>
Secretary		
Star Party / Event Coordinator	Darren Bly	<a href="mailto:dcbly@bak.rr.com">dcbly@bak.rr.com</a>
Educational Committee Chair		
Educational Youth Ambassador		
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# Kern Astronomical Society

## Membership New/Renewal 2022

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”: \_\_\_\_\_