The New Syzygy

The Newsletter of the Kern Astronomical Society No. 546 March 2021

The March 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

Reach for the Stars

An Important Message from the Board

To our Membership:

I hope that 2021 finds you safe and well. Months ago, when we suspended club operations we said we would revisit the situation in January, 2021. Well, it is now a new year. With the current state of affairs, it does not look like we will be able to conduct a meeting anytime soon. Therefore, the Board of Directors has decided to continue our suspended status until April or May of 2021. We will continue to follow the state and local recommendations to keep us safe.

Again, thank you for your patience and understanding in this matter. Stay healthy and safe.

Gregory Pytlak

President

2021 Membership

To our Membership:

The KAS Board of Directors has approved a proposal for the club to carry (pay) your membership dues for 2021. If you were a member last year, KAS will renew your membership at our expense. We value your membership and participation.

Upcoming Star Parties

Possible dates for Star Parties at Chuchupate are March 6 (Last Quarter Moon) and March 13 (New Moon). Watch for updates via e-mail and/or Facebook.

Some changes to our Board of Directors

Our Treasurer, Mary Hanel is resigning as KAS Treasurer as of February 1. Mary signed up for KAS Treasurer for one year, two years max, in fall 2017 and stayed on for 2020 with the arrival of the pandemic.

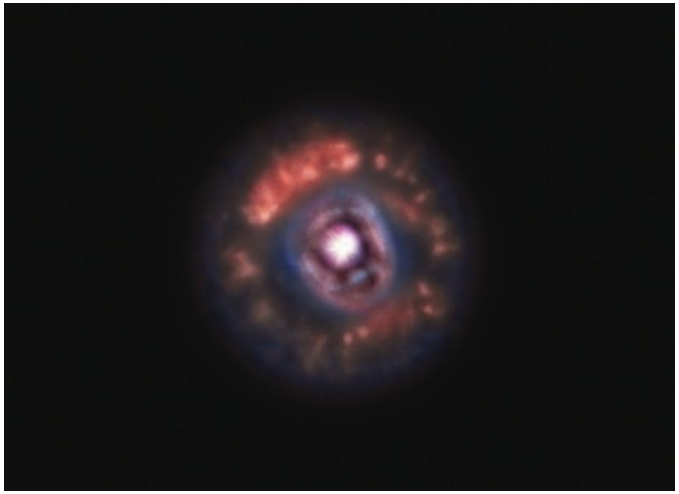
“I want to thank Mary on behalf of the Board of Directors and the Membership for doing an outstanding job in this most important and difficult task over a very long time. She has done a wonderful job keeping the club going, handling everything that came her way with grace and professionalism. Thank you Mary! (and Greg who is not the treasurer) I'm going to miss your delivery of the Treasurer's report.” Gregg Pytlak

Per Mary's recommendation, club member Pam Miller has agreed to take over the duties of the Treasurer and the Board has approved this and appointed Pam as the temporary Treasurer until we can take a proper vote by the membership.

We would also like to welcome Ivan Aburto as the new Webmaster.

Once club meetings resume we will be able to proceed with an official election of officers.

KAS Astrophotography



Planetary Nebula in Gemini (NGC 2392) by: Kyle Druey

The Moon by: Carol Hoffman Zamora

The Evening Sky Map

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

NORTHERN HEMISPHERE
MARCH 2021

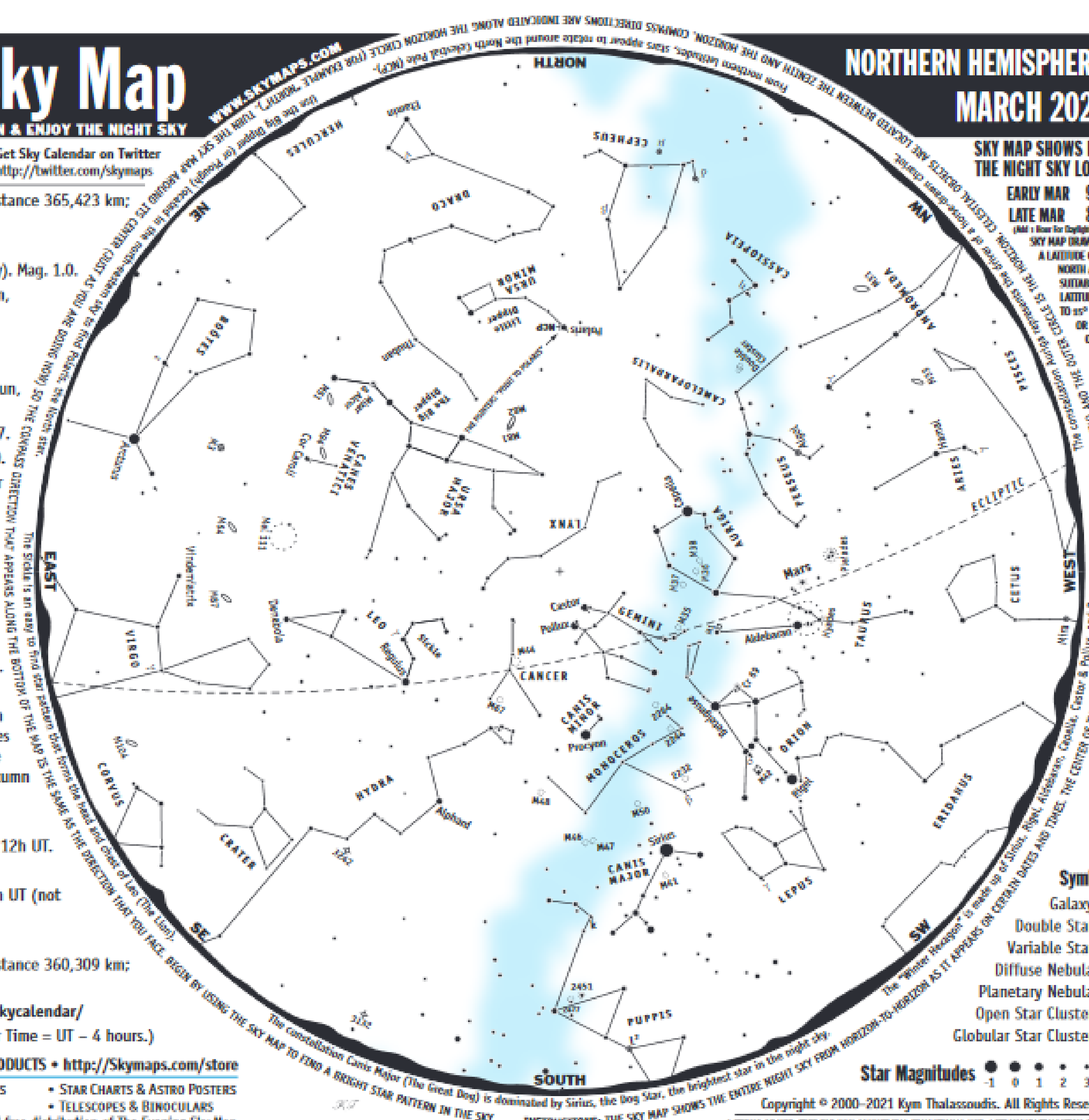
Sky Calendar – March 2021

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

2 **Moon at perigee** (closest to Earth) at 5:17 UT (distance 365,423 km; angular size 32.7').
2 **Moon near Spica** at 12h UT (morning sky).
4 **Mars 2.6° SE of the Pleiades** at 16h UT (evening sky). Mag. 1.0.
5 **Mercury 0.3° N of Jupiter** at 7h UT (27° from Sun, morning sky). Mags. 0.2 and –2.0.
5 **Moon near Antares** at 17h UT (morning sky).
6 **Last Quarter Moon** at 1:31 UT.
6 **Mercury at greatest elongation west** (27° from Sun, morning sky) at 11h UT. Mag. 0.2.
10 **Moon near Saturn** (morning sky) at 1h UT. Mag. 0.7.
10 **Moon near Jupiter** (morning sky) at 18h UT. Mag. –2.0.
10 **Moon, Mercury and Jupiter** within circle of diameter 5.3° (30° from Sun, morning sky) at 22h UT. Mags. 0.1 and –2.0.
11 **Moon near Mercury** (morning sky) at 4h UT. Mag. 0.1.
13 **New Moon** at 10:22 UT. Start of lunation 1215.
18 **Moon at apogee** (farthest from Earth) at 5h UT (distance 405,253 km; angular size 29.5').
19 **Moon near the Pleiades** at 2h UT (evening sky).
19 **Moon near Mars** (evening sky) at 19h UT. Mag. 1.2.
19 **Moon near Aldebaran** at 19h UT (evening sky).
20 **Vernal equinox** at 9:40 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 **First Quarter Moon** at 14:41 UT.
24 **Moon near Beehive cluster M44** (evening sky) at 12h UT.
26 **Moon near Regulus** at 4h UT (evening sky).
26 **Venus at superior conjunction** with the Sun at 6h UT (not visible). Venus is passing into the evening sky.
28 **Full Moon** at 18:49 UT.
30 **Moon at perigee** (closest to Earth) at 6:16 UT (distance 360,309 km; angular size 33.2').

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.

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

CELESTIAL OBJECTS

NORTHERN HEMISPHERE MARCH 2021

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 Bootis	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

KAS Board Members

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