KAS KernAstro.org

The New Syzygy

The Newsletter of the Kern Astronomical Society

number 602 | 2025

Our regular monthly meeting will be held at

Round Table Pizza

4200 Gosford Rd, Bakersfield, CA 93313

November 7

Social Hour @ 6:00p
Meeting @ 7:00p

facebook.com/groups/syzygy | kernastro.org | kernastronomicalsociety@gmail.com

UPCOMING EVENTS

Star Party

November 15th at the Frazier Mountain Trailhead, weather permitting.

Click for map

PUBLIC OUTREACH

Nichols Elementary STEAM event – 11/12, 5-7p
Prosperity Elementary School – 5-6p
Emerson Middle School – 11/19, 5:30-7p

IN THE SKY

Leonid Meteor Shower – Nov 16-17 after midnight

VOLUNTEERS NEEDED

If you're interested in helping assist in any of our public outreach meetings, please email us and let us know!
kernastronomicalsociety@gmail.com

NEWEST MEMBERS

Be sure to welcome our latest members Sarah Lee, Jeff Compton, and Thomas Silas.

CASSINI MISSION

Presented by Dr. Linda Spilker

Dr. Linda J. Spilker is a JPL Fellow, Senior Research Scientist and planetary scientist at NASA's Jet Propulsion Laboratory who has participated in NASA and international planetary missions for over 45 years. She is currently serving as the Voyager Project Scientist. Her mission roles have grown to encompass mission leadership as well as design, planning, operation and scientific data analysis. Prior to Voyager, Spilker was the Cassini Project Scientist, leading a team of over 300 international scientists to maximize the scientific return of the Cassini mission within cost and schedule. She worked in a science role on the Cassini project for 30 years, and was a Co-I with the Cassini Composite Infrared Spectrometer (CIRS) team. She led the CIRS ring team focusing on thermal infrared studies and modeling of Saturn's rings to address questions of the rings' origin and evolution. She led the science preparation of two Cassini Senior Review Proposals, in 2012 and 2014, both of which received Excellent ratings. She also participated in a 2023 Voyager Senior Review proposal.

Cassini was one of the most ambitious efforts ever mounted in planetary exploration. A joint endeavor of NASA, ESA (the European Space Agency), and the Italian space agency ASI, Cassini was a sophisticated robotic spacecraft sent to study Saturn and its complex system of rings and moons in unprecedented detail.

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UPCOMING SPEAKERS

Dec 5 No Guest, but... Dessert Party!!

2026 List TBA

2025-26 KERN COUNTY ASTRONOMICAL SOCIETY SCHEDULE

Below is a list of our upcoming meetings for the 25-2026 club year. Monthly club meetings will be held at the Round Table Pizza at 4200 Gosford Rd. from 6pm to roughly 9pm. Monthly board member meetings are held the last Thursday of every month at 5060 California Ave #600 from 6pm to 7pm. We would like to remind everyone that club members are welcome to join our board meetings!

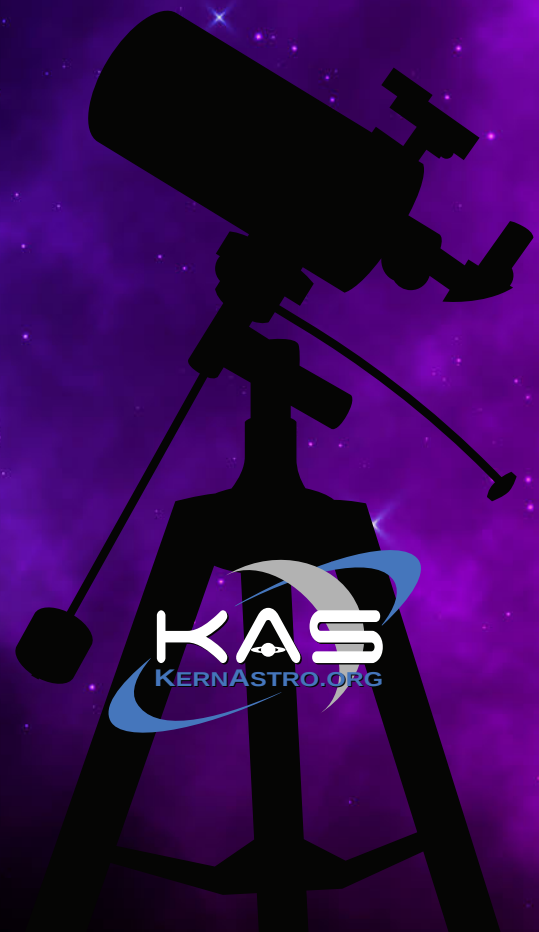
BOARD MEETINGS

October 30
November 20 *
December 18 *
January 29
February 26
March 26
April 30
May 28
June - no meeting
July 30
August 27
September 24

*** Moved one week early due to holidays**

CLUB MEETINGS

November 7
December 5
January 9
February 6
March 6
April 3
May 1
June 5
July - no meeting
August 7
September 4



KAS Information

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 & 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**
- **3½” f/13 Maksukov-Cassegrain**
- **4” f/15 Unitron Refractor**
- **8” Solar Filter**
- **Assorted Eyepieces**

The Evening Sky Map

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

NORTHERN HEMISPHERE
NOVEMBER 2025

Sky Calendar – November 2025

Follow us on Bluesky
skymaps.com/bsky/

2 **Venus 3.5° NNE of Spica** at 8h UT (16° from Sun, morning sky). Mag −3.9.

2 **Moon near Saturn** at 9h UT (evening sky). Mag. 0.9.

5 **Southern Taurid meteor shower peaks.** Active from Sept 23 to Dec 8. Associated with Comet 2P/Encke.

5 **Full Moon** at 13:19 UT. Supermoon.

5 **Moon at perigee** (closest to Earth) at 22:40 UT (distance 356,833km; angular size 33.5').

6 **Moon near the Pleiades** at 17h UT (morning sky).

8 **Comet C/2025 A6 (Lemmon)** at perihelion. Mag. 4.6.

9 **Mercury 3.9° NW of Antares** at 5h UT (24° from Sun, evening sky). Mags. 0.4 and 1.0.

10 **Moon near Jupiter** at 10h UT (morning sky). Mag. −2.4.

12 **Northern Taurid meteor shower peaks.** Active from Oct 13 to Dec 2. Occasional bright fireball.

12 **Last Quarter Moon** at 5:28 UT.

13 **Moon near Regulus** at 1h UT (morning sky).

13 **Mercury 1.2° SSW of Mars** at 4h UT (15° from Sun, evening sky). Mags. 1.3 and 1.4.

17 **Leonid meteor shower peaks.** Arises from debris ejected by comet 55P/Tempel-Tuttle. Produces very fast meteors (70 km/sec). Expect 10 to 15 meteors/hour under dark skies.

17 **Moon near Spica** at 11h UT (morning sky).

18 **Mars 4.0° N of Antares** at 15h UT (14° from Sun, evening sky). Mags. 1.4 and 1.0.

19 **Moon near Venus** at 5h UT (12° from Sun, morning sky). Mag. −3.9.

20 **Moon at apogee** (farthest from Earth) at 3h UT (distance 406,691km; angular size 29.4').

20 **New Moon** at 6:47 UT. Start of lunation 1273.

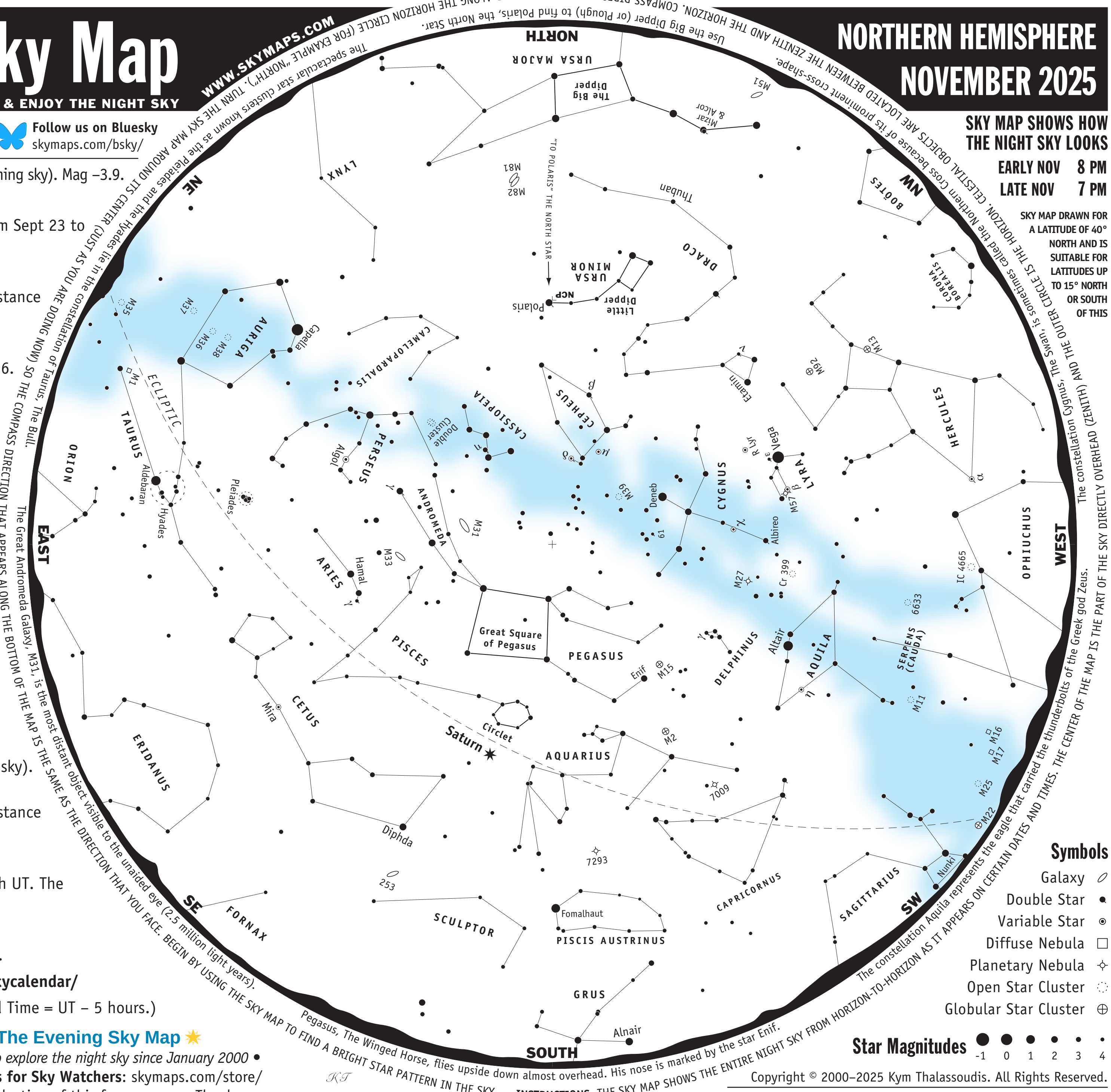
20 **Mercury at inferior conjunction** with the Sun at 9h UT. The innermost planet passes into the morning sky.

28 **First Quarter Moon** at 6:59 UT.

29 **Moon near Saturn** at 17h UT (evening sky). Mag. 1.1.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (USA Eastern Standard Time = UT − 5 hours.)



SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY NOV	8 PM
LATE NOV	7 PM

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

Skymaps.com

Support The Evening Sky Map
• Helping curious minds to explore the night sky since January 2000 •
Recommended Products for Sky Watchers: skymaps.com/store/
All sales support the production of this free resource. Thank you.

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
NOVEMBER 2025

Skymaps.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.
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=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.
η Aquilae	Aql	◉	Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 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.
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.
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.
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.
M25	Sgr	⁘	Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 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.
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=9.8".
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".
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.
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.
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.
M27	Vul	✧	Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly.