The Astrogator

Grand Strand Astronomers Club Newsletter

Volume #4, Issue #1
March 1, 2026

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Grand Strand Astronomers Leadership

Ian Hewitt – Executive Officer
John DeFreitas – Treasurer
Gerald Drake – Secretary
Tim Kelly – Newsletter Co-Editor

Club Announcements

Club Social Media

Grand Strand Astronomers:
https://www.gsastro.org/

Grand Strand Amateur Astronomy Club:
https://www.facebook.com/groups/gsatro/

Upcoming Club Events

Hampton Dark Sky Observing:
March 14, 2026

Indoor Zoom Meeting:
March 26, 2026

Remarks From the Editor:

Welcome to Volume #4 Issue #1 of the Grand Strand "Astrogator" Astronomers Club Newsletter. The newsletter is now officially four years old. Not bad for a young and growing club. We now have distributed 39 issues of our newsletter to both members and other interested parties.

I want to thank Gerald for taking over the editor's duties during my downtime. During this time, he made improvements to the newsletter, which has been evolving from its concept.

Dues for 2026 - Reminder

Our membership runs from January to December of each year, so now it is time to pay dues for 2026. Membership in the Grand Strand Astronomers is only $25.00 per year. Part of this goes toward your Astronomical League's membership and Reflector Magazine. The rest goes toward our minimal operating expenses. So, please rejoin if you haven't already. You can pay online by going to https://www.gsastro.org/joinrenew/.

You can also mail in a check to Grand Strand Astronomers, 1771 Alford Rd, Conway, SC 29526.

February Meeting Recap

Submitted by: Gerald Drake

The meeting was held on February 26, 2026, via Zoom with Ian welcoming everyone and asking what is new with all. Tim is taking back the newsletter after recovering from some health issues. We're glad he's back.

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Gerald gave a brief report on the Playcard public outing held on February 12. You can see his written report in this month's newsletter. All in all, it was a good outing.

Our next observing session is scheduled for March 14 at Hampton. We had a lengthy discussion about making this a Messier Marathon. Ian checked online to see if M33, M71, and M74 objects can be seen at sundown. As the year goes on, these will fall below the horizon; so, holding the Marathon in March gives you the best shot at seeing 109 objects. M72, M73, and M30 will be difficult to catch before the sun rises and washes them out. You'll need a clear view of the South East horizon to catch these. Ian discussed where best to set up at Hampton for this, such as close to the rail fence. Ian will contact Hampton to request to do the Messier Marathon on the 14th of March, with a possible inclement weather alternative date of the 21st.

The weather forecast for the Lunar Eclipse is not looking good. See Ken's eclipse info below.

We discussed plans to hold a telescope clinic. We had wanted to use the Carolina Forrest Library for this as it is a good location, but they have some time limitations that make holding a meaningful clinic difficult. Ian suggested we could use Coastal Carolina where we can go from classroom to parking lot for hands-on demonstrations. We will make plans to hold this in April. It could be on a Saturday or on a weeknight and would start at 6:30. More to come on this. We'll advertise through Facebook and maybe local newspapers.

Ken shared the following March 2026 Sky Events:

- o Venus will be visible again after sunset
- o On March 1, it sets an hour after sunset
- o On March 31, it sets 90 minutes after sunset (just after twilight ends)
- o There is a conjunction with Saturn March 8 (1.1 degree)
- o Nice paring with the moon on March 19 – 20
- o In 2026, Venus never sets more than 2-¾ hours after the sun
- o Observing Canopus, the 2nd brightest star, but low in the sky.
- o Almost directly due south of Sirius
- o Highest early March at around 8 PM EST.
- o Observing from Myrtle Beach it's only about 4 degrees high at most.
- o Total Lunar Eclipse is on March 3.
- o Best visibility will be from US west coast, Hawaii, Alaska, Fiji…

From Myrtle Beach:

- § Patial Eclipse begins at 4:50:07 AM
- § Totality begins at 6:04:34 AM
- § Sunrise is at 6:30 AM
- § Maximum Eclipse is at 6:33:46 AM (after sunrise)
- § Totality Ends at 7:02:49, but the moon will be below the horizon
- § From our location, we'll need clear sky and a clear view of the low western horizon

Daylight Savings Time begins March 8th. So "Spring Ahead"

- o The Spring Equinox is March 20
- o The Sun will be moving north along the ecliptic, And will cross the Celestial equator on this date
- o There will be a nice paring of the Moon and Jupiter March 25-26

Other topics:

Tim said he is starting a new segment on 88 constellations where he'll focus on the mythology of each constellation in alphabetical order for the next 88 issues of the newsletter. All thought that was a good idea.

We discussed holding a joint meeting again with other clubs and a special speaker. Tim has been in contact with the VP of the Astronomical League who gives presentations regularly to clubs. He will contact him to see if he is interested in doing on with us and other clubs and will see what topics he likes to cover. More to come on this.

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We had a brief discussion on how to light up the legs of a tripod to keep from tripping over them in the dark. Maybe use red LED's powered by a small battery pack. Simple design with a battery, resistor, and LED.

The meeting was adjourned!

Playcard Enviromental Learning Center

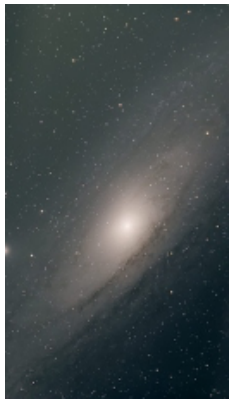
Submitted by: Gerald Drake

The Grand Strand Astronomers held their first public outing of 2026 with the Playcard Environmental Learning Center located near Loris, SC on Thursday, February 12. Ben Abercromie is the director there and he really appreciated us coming out. Ian, Gerald, and Ken represented GSA. There were between 12 to 15 people of all ages that joined us.

The skies were pretty cloudy to start off with which made star alignment difficult, but Jupiter was visible early and as the night went on the constellations were evident.

Gerald brought his CPC 9.25 which showed some good images of Jupiter and Orion Nebula. He also used a laser pointer to show the Winter Hexagon asterism. Ken brought his homemade Newtonian (which is awesome) and was able to share the following:

· Jupiter with its 3 moons in a nice close grouping
· Orion Nebula (M42)
· Open Cluster M35 in Gemini
· Cluster M41 in Canis Major
· Pleiades (M45)
· Double Cluster in Perseus
· Uranus as a nice small bluish disc.
· Castor in Gemini as a close double



Ian brought his SeeStar and spent a lot of time explaining how it worked and sharing the images he was capturing. Here are a few samples with just some quick processing:

Most of the attendees were new to the hobby and really appreciated the help they got from us. Some brought their own telescopes and was able to get help on using them. Some wanted to know the basics on how to use the planisphere. They asked a lot of good questions. Many expressed interest in joining our club.

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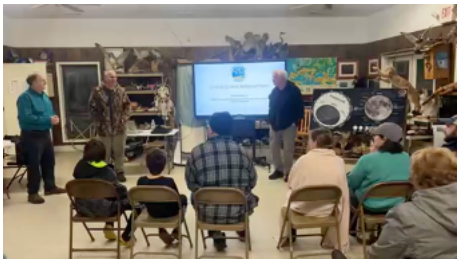

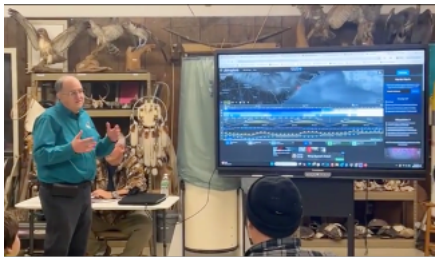

After observing a while, Ben called everyone into the classroom where Gerald presented some telescope basics and Ian shared programs and apps that are helpful for astronomers. Ken shared some upcoming events to watch for such as the lunar eclipse on March 3.

The presentation with question and answer session was livestreamed on Facebook. You can see it by going to: https://www.facebook.com/search/top?q=playcard%20environmental%20education%20center

It turned out to be a great night.

Astrophotography

Copyright: ESA/Hubble & NASA, B. Balick (U. Washington)

The Egg Nebula from the Hubble Telescope Image Credit &

Explanation: Ever wonder what it would look like to crack open the Sun? The Egg Nebula, a dying Sun-like star, can unscramble this question. Pictured is a combination of several visible and infrared images of the nebula (also known as RAFGL 2688 or CRL 2688) taken with the Hubble Space Telescope. The star has shed its outer layers, and a bright, hot core (or "yolk") now illuminates the milky "egg white" shells of gas and dust surrounding the center. The central lobes and rings are structures of gas and dust recently ejected into space, with the dust being dense enough to block our view of the stellar core. Light beams emanate from that blocked core, escaping through holes carved in the older ejected material by newer, faster jets expelled from the star's poles. Astronomers are still trying to figure out what causes the disks, lobes, and jets during this short (only a few thousand years!) phase of the star's evolution, making this an egg-cellent image to study!

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The March Night Sky

Flandrau Science Center & Planetarium
Submitted by: Tim Kelly

Stars and Constellations:

In March, the winter portion of the Milky Way continues to streak across the sky. The fall constellations are now getting low in the west, with Pegasus now partly below the horizon. The winter constellations are now in the middle of the sky, and some of the spring constellations are beginning to come up. Leo the lion is just above the horizon in the east, and the Big Dipper (Ursa Major) is now up in the northeast

Interesting Stars Visible in February and March (from 7-10 pm)

Name / Designation	Apparent Magnitude (lower = brighter)	Distance (light-years)	Notes
Sirius	-1.44	8.6	
Arcturus	-0.05	36.7	
Capella	0.08	42	
Rigel	0.18	770	
Procyon	0.4	11	
Betelgeuse	0.45	427	
Aldeberan	0.87	65	
Spica	0.98	262	
Pollux	1.16	38	
Markab	1.25	140	
Regulus	1.36	77	means "Little King"
Castor	1.58	52	
Polaris	1.97	431	
Alpheratz or Sirrah	2.07	97	
Mirach	2.07	199	
Algol	2.09	93	variable star
Denebola	2.14	36.2	
Almak	2.1 / 5.0 & 6.3	355	triple star system w/ 64 yr orbit
Eta Cassiopeiae	3.5 / 7.4	19	480 yr orbit

Solar System:

Mercury is visible in the evening sky for much of February. But it passes between us and the Sun in early March and then emerges in the morning sky at the end of the month.

Venus comes up in the evening sky in late February and slowly gets higher throughout March.

Mars is still lost in the glare of the Sun during February but will emerge in the morning sky in early March.

Jupiter is in Gemini, climbing from about 30° up in the east in early February to almost directly overhead by the end of March.

Saturn is in Pisces, starting off around 30° up in the west-southwest after sunset but slowly descends until it disappears in early March. It then passes behind the Sun later in the month.

Jupiter Great Red Spot Transits in February and March (from 7-10

Note: The GRS is visible on the disk of Jupiter for 50 minutes before and after meridian transit time.

DATE	MERIDIAN TRANSIT TIME
03/05/26	07:37 PM
03/07/26	09:16 PM
03/12/26	08:24 PM

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03/17/26	07:33 PM
03/19/26	09:12 PM
03/24/26	08:21 PM
03/26/26	10:00 PM
03/29/26	07:30 PM
03/31/26	09:09 PM

Calendar of Night Sky Events:

Date	Event
03/03/26	Full Moon and Total Lunar Eclipse. — Visible from Tucson. Learn more!
03/07/26	Mercury inferior conjunction. — Passing between us and the Sun.
03/07/26	Appulse of Venus and Neptune. — Separated by 0.07°.
03/08/26	Appulse of Venus and Saturn. — Separated by 0.9°.
03/11/26	Last Quarter Moon.
03/15/26	Appulse of Mercury and Mars. — Separated by 3.4°.
03/18/26	New Moon.
03/20/26	Earth at northward equinox. — Beginning of our Spring.
03/22/26	Neptune at conjunction. — Passing behind the Sun.
03/25/26	Saturn at conjunction. — Passing behind the Sun.
03/25/26	First Quarter Moon.

Deep Sky:

The Winter Milky Way is now prominent in the sky. There are many spectacular deep sky objects we can see now. Starting with open clusters, we first have the Pleiades (Seven Sisters, M45) nearly in the middle of the sky. Next to that, the Hyades cluster (C41) makes up the face of Taurus the bull. Also nearby, the constellation of Auriga contains M36, M37, and M38, which are visible with binoculars. We also have Perseus's Double Cluster (C14) still fairly high in the northwest, and the Beehive (Praesepe, M44) up in the east.

This is not a good time of year to see globular clusters, as most of them are concentrated in the summer sky. The brightest one we can see now is M79 below Orion in Lepus the hare, but it is nearly 8th magnitude.

For nebulae, we have the spectacular Orion Nebula (M42) now prominent in the south. This is the closest star-forming region to our solar system. We also have some good planetary nebulae, which come from dying stars. The Blue Snowball (C22) in Andromeda is towards the west, the Eskimo (C39) in Gemini is high in the east, and the Owl (M97) in Ursa Major is low in the northeast.

And now the galaxies: Our neighbor the Andromeda Galaxy (M31) is now heading towards the west and is visible on dark nights with the naked eye. Also nearby is the Triangulum Galaxy (M33), visible with binoculars. In Ursa Major to the northeast we have Bode's Galaxy (M81) and the Cigar Galaxy (M82), close enough to be seen together in a low-power telescope.

Interesting Deep Sky Objects to Observe during February and March (from 7-10 pm)

Designation	Name	Apparent Magnitude	Apparent Size	Distance (light-years)	Type
Messier 45	Pleiades	1.6	110'	440	open cluster
Messier 31	Andromeda Galaxy	3.4	3° x 1°	2,900,000	spiral galaxy
Messier 44	Beehive Cluster	3.7	95'	577	open cluster
Messier 42	Orion Nebula	4	85' x 60'	1400-1600	diffuse nebula

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Messier 33	Triangulum Galaxy	5.7	67' x 42'	3,000,000	spiral galaxy
Messier 3	(in Canes Venatici)	6.2	18'	34,000	globular cluster
Messier 81	Bode's Galaxy	8.5	21'	1,200,000	spiral galaxy
NGC 3242	Ghost of Jupiter	8.6	25"	1400	planetary nebula
Messier 82	Cigar Galaxy	9.5	14'	1,200,000	galaxy

Cosmic Microwave Background

You may have heard about the Cosmic Microwave Background before, but what exactly is this radiation that we find all around us?

The CMB (or at least a similar concept) was hypothesized as far back as 1896, but it was discovered in 1964 as a persistent “noise” that appeared to come equally from all directions. The CMB has a spectrum corresponding to a blackbody at 2.7 kelvins, with variations of only around 0.0001 kelvin. This is taken as confirmation of the Big Bang.

What we’re seeing is the plasma that filled the universe in the early period before atoms existed. It would have appeared like a thick bright fog, but as the young universe expanded it cooled to the point where electrons could combine with protons, converting the plasma into neutral hydrogen. This transition started roughly 300,000 years after the Big Bang at a temperature of around 3000 K (orange-yellow light), and it took around 100,000 years for the universe to become fully transparent. The last photons emitted by the plasma have been redshifted by the continued expansion of our universe by a factor of about 1100, which is why it shows up as only 2.7 K (microwaves) to us today.

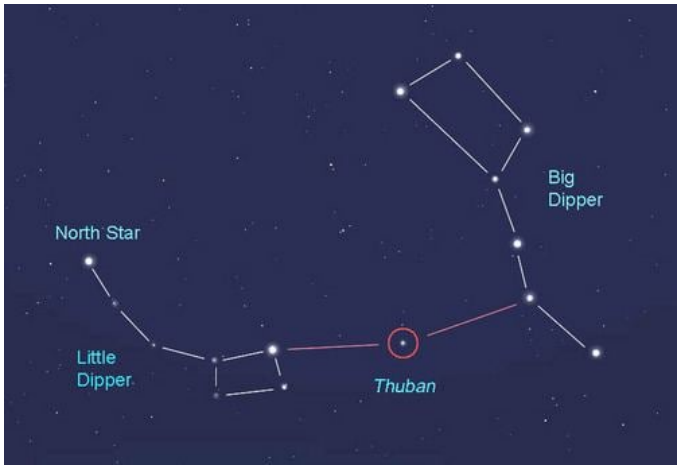
Thuban, the Other North Star

Ken Graun
Submitted by: Tim Kelly

Around 1900 BC, Kochab, in the bowl of the Little Dipper, took over as the North Star until Polaris became closer to the North Celestial Pole.

Thuban is approximately in the middle of Draco, so this was the reason that its name has the meaning, “Whole of Draco,” because all of Draco circled around Thuban when it was the pole star.

LOCATING THUBAN



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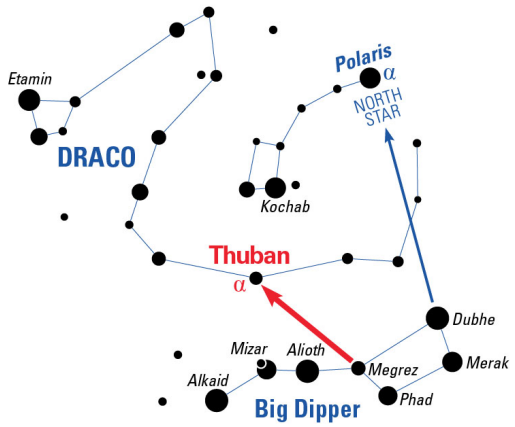
As long as the sky is reasonably dark, Thuban is easy to find. The other two stars of the Big Dipper's bowl point to Thuban—see chart below.

FACTS ABOUT THUBAN
Magnitude: +3.65. Some historical evidence suggests that Thuban may have been brighter in the past, maybe shining at magnitude 2.
Distance: 310 light years or 1,823 trillion miles, that is, 1,823,000,000,000,000 miles.
Mass: Thuban has 3.4 times more matter than our Sun. Diameter: 5.7 times the diameter of our Sun, so it is considered a white giant star.

Facts about Polaris: Polaris shines at about magnitude 2. It is about 433 light years away and has a diameter 30 times greater than our Sun. It is considered a giant star and has a mass of about 7.5 times that of our Sun.

Brightness Comparison: If the Sun, Polaris and Thuban were placed side by side, Polaris would be about 2,200 times brighter than our Sun with Thuban 300 times brighter than our Sun.



Greek letters are assigned to the brightest stars within each constellation of the Northern Hemisphere. The brightest star in each constellation is designated by the first letter of t he Greek alphabet, alpha or . However, since Thuban was once the pole star, it got designated alpha even though it is not the brightest star in Draco.

Observatories In South Carolina

Author: Kyle Denny
Submitted by: Tim Kelly

Observatories are home to some of the biggest and most impressive telescopes in the world. As many amateur astronomers know, there are numerous ways to experience the night sky beyond looking through a telescope in your own backyard. South Carolina has impressive observatories that offer a wide variety of star parties, tours, and observatory programs that will expand your knowledge of astronomy and your love of the night sky, whether you are new to astronomy or have been in the hobby for years.

For your convenience, we have compiled an alphabetical list of observatories in South Carolina that offer programs for the public.

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CHARLES E. DANIEL OBSERVATORY

This observatory is located in Greenville, South Carolina and is part of the Roper Mountain Science Center.

Telescopes

The Charles E. Daniel Observatory features a very historic 23″ refractor telescope, the eighth largest of its kind in the nation.

Visiting

As a Greenville County Schools facility, the Daniel Observatory is open to the public only during special events. On select Friday evenings, the observatory is open for limited public observation, in conjunction with programs shown in the planetarium.

FMU OBSERVATORY

The FMU Observatory opened in 1981. Located on the far south end of the Francis Marion University Campus in Florence, South Carolina, it provides visitors with a chance to view the sky through a variety of different instruments and telescopes.

Telescopes

The FMU Observatory features a variety of telescopes such as SkyQuest IntelliScope, Schmidt-Cassegrains, Achromatic Refractor, Schmidt-Newtonian and a Classic Dobsonian.

Visiting

This observatory holds scheduled Public Nights. The schedule for these events can be found on their website here.

MILTON MEMORIAL OBSERVATORY

This observatory is located in Columbia, South Carolina on the Horseshoe of the USC Columbia Campus.

Telescopes

The featured telescope at the Melton Observatory is a 16-inch Cassegrain telescope.

Visiting

This observatory holds scheduled Public Nights. Melton Observatory opens on Monday nights from 9:00-11:00 p.m., weather permitting.

To find out if the observatory is going to be open on a particular Monday night, you can call the observatory at 803-777-8104.

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The 88 Constellations

Ken Graun
Submitted By: Tim Kelly

Flash Notice!

Technically, the Big Dipper is NOT a constellation, but part of the constellation called Ursa Major or Big Bear. However, the Big Dipper is a very prominent set of stars and one that most people more easily recognize. Its two end stars in the bowl is also a “stepping stone” or pointer to the North Star and its handle curves/points to the star Arcturus and on to Spica.

LISTING KEY
NAME of CONSTELLATION

3-letter Abbreviation, Meaning of Name, *Latin Gentitive*

There is a discussion at the end of this listing which includes an explanation of the Latin Genitive.

ANDROMEDA, And, Daughter of Cassiopeia, *Andromedae*
ANTLIA, Ant, Air Pump, *Antliae*
APUS, Aps, Bird of Paradise, *Apodis*
AQUARIUS, Aqr, Water Bearer, *Aquarii*
AQUILA, Aql, Eagle, *Aquilae*

ARA, Ara, Altar, *Arae*
ARIES, Ari, Ram, *Arietis*
AURIGA, Aur, Charioteer, *Aurigae*
BOOTES, Boo, Herdsman, *Bootis*
CAELUM, Cae, Engraving Tool, *Caeli*

CAMELOPARDALIS, Cam, Giraffe, *Camelopardalis*
CANCER, Cnc, Crab, *Cancri*
CANES VENATICI, CVn, Hunting Dog, *Canum Venaticorum*
CANIS MAJOR, CMa, Big Dog, *Canis Majoris*
CANIS MINOR, CMi, Little Dog, *Canis Minori***CAPRICORNUS**, Cap, Sea Goat, *Capricorni*
CARINA, Car, Ship’s Keel, *Carinae*
CASSIOPEIA, Cas, Queen of Ethiopia, *Cassiopeiae*
CENTAURUS, Cen, Centaur, *Centauri*
CEPHEUS, Cep, King of Ethiopia, *Cephei*

CETUS, Cet, Whale, *Ceti*
CHAMAELEON, Cha, Chameleon, *Chamaeleontis*
CIRCINUS, Cir, Drawing Compass, *Circini*
COLUMBA, Col, Dove, *Columbae*
COMA BERENICES, Com, Berenice’s Hair, *Comae Berenices*

CORONA AUSTRALIS, CrA, Southern Crown, *Coronae Australis*
CORONA BOREALIS, CrB, Northern Crown, *Coronae Borealis*
CORVUS, Crv, Crow, *Corvi*
CRATER, Crt, Cup, *Crateris*
CRUX, Cru, Southern Cross, *Crucis*

CYGNUS, Cyg, Swan, *Cygni*
DELPHINUS, Del, Dolphin, *Delphini*
DORADO, Dor, Goldfish, *Doradus*
DRACO, Dra, Dragon, *Draconis*
EQUULEUS, Equ, Little Horse, *Equulei*

ERIDANUS, Eri River, Eridanus, *Eridani*
FORNAX, For, Furnace, *Fornacis*
GEMINI, Gem, Twins, *Geminorum*
GRUS, Gru, Crane, *Gruis*
HERCULES, Her, Strongman/The Son of Zeus, *Herculis*

HOROLOGIUM, Hor, Clock, *Horologii*
HYDRA, Hya, Sea Serpent, *Hydrae*
HYDRUS, Hyi, Water Snake, *Hydri*
INDUS, Ind, Indian, *Indi*
LACERTA, Lac, Lizard, *Lacertae*
LEO, Leo, Lion, *Leonis*
LEO MINOR, LMi, Little Lion, *Leonis Minoris*
LEPUS, Lep, Hare, *Leporis*
LIBRA, Lib, Scales, *Librae*
LUPUS, Lup, Wolf, *Lupi*

LYNX, Lyn, Lynx, *Lyncis*
LYRA, Lyr, Lyre, *Lyrae*
M ENSA , Men, Table Mountain, *Mensae*
MICROSCOPIUM, Mic, Microscope, *Microscopii*
MONOCEROS, Mon, Unicorn, *Monocerotis*

MUSCA, Mus, Fly, *Muscae*

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NORMA, Nor, Level, *Normae*
OCTANS, Oct, Octant, *Octantis*
OPHIUCHUS, Oph, Snake Holder, *Ophiuchi*
ORION, Ori, The Hunter, *Orionis*

PAVO, Pav, Peacock, *Pavonis*
PEGASUS, Peg, The Winged Horse, *Pegasi*
PERSEUS, Per, Rescuer of Andromeda, *Persei*
PHOENIX, Phe, Phoenix, *Phoenicis*
PICTOR, Pic, Easel, *Pictoris*

PISCES, Psc, Fishes, *Piscium*
PISCIS AUSTRINUS, PsA, Southern Fish, *Piscis Austrini*
PUPPIS, Pup, Ship's Stern, *Puppis*
PYXIS, Pyx, Ship's Compass, *Pyxidis*
RETICULUM, Ret, Eyepiece Reticle, *Reticuli*

SAGITTA, Sge, Arrow, *Sagittae*
SAGITTARIUS, Sgr, Archer, *Sagittarii*
SCORPIUS, Sco, Scorpion, *Scorpii*
SCULPTOR, Scl, Sculptor's Apparatus, *Sculptoris*
SCUTUM, Sct, Shield, *Scuti*

SERPENS, Ser, Snake, *Serpentis*
SEXTANS, Sex, Sextant, *Sextantis*
TAURUS, Tau, Bull, *Tauri*
TELESCOPIUM, Tel, Telescope, *Telescopii*
TRIANGULUM, Tri, Triangle, *Trianguli*

TRIANGULUM AUSTRALE, TrA, Southern Triangle, *Trianguli Australis*
TUCANA, Tuc, Toucan, *Tucanae*
URSA MAJOR, UMa, Big Bear, *Ursae Majoris*
URSA MINOR, UMi, Little Bear, *Ursae Minoris*
VELA, Vel, Sail, *Velorum*

VIRGO, Vir, Virgin, *Virginis*
VOLANS, Vol, Flying Fish, *Volantis*
VULPECULA, Vul Little Fox, *Vulpeculae*

Historical Origin of the Constellations

Most constellations visible from the northern hemisphere originated from the Greeks, as recorded by Ptolemy in his first century book, *The Almagest.* Coma Berenices and Crux were added around 1603 and Plancius added Camelopardalis and Monoceros in 1613. In 1690, Hevelius added Lacerta, Leo Minor, Lynx, Scutum, Sextans and Vulpecula. At the very end of the 1600's, the Dutchmen, Pieter Dirkszoon and Frederick de Houtman created 12 southern hemisphere constellations, namely: Apus, Chamaeleon, Dorado, Grus, Hydrus, Indus, Musca, Pavo, Phoenix, Triangulum Australe, Tucana and Volans. In 1756, the Frenchman Nicolas Louis de Lacaille added the last 14 of the southen hemisphere constellations, namely: Antlia, Caelum, Circinus, Fornax, Horologium, Mensa, Microscopium, Norma, Octans, Pictor, Pyxis, Reticulum, Sculptor and Telescopium. He also split the extremely large constellation, Argo Navis (Ship Argo, sailed by Jason and the Argonauts), into Vela, Puppis and Carina.

Trivia

1) Serpens, the Snake, is the only constellation split between two parts of the sky. The Snake is being held by Ophiuchus and lies across his

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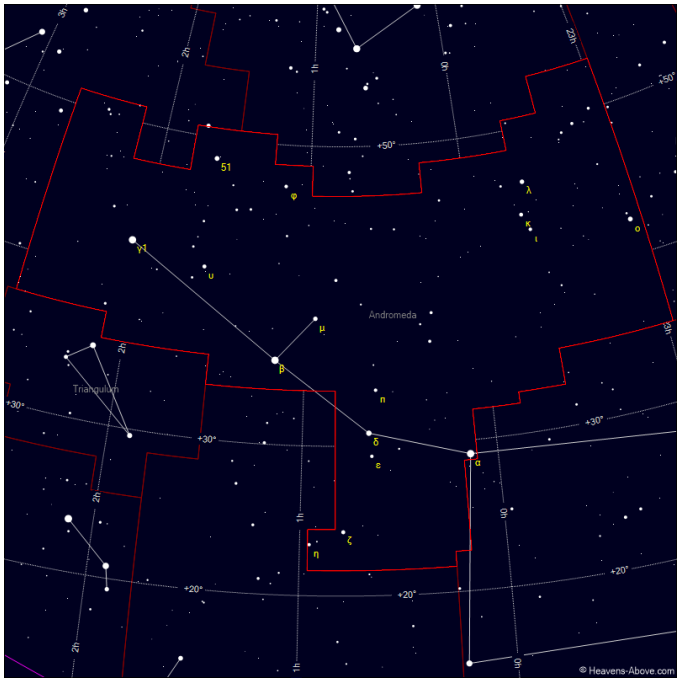
body. The tail, known as Serpens CAUDA is located to the east or left of Ophiuchus and the head, known as Serpens CAPUT, is located to the west or right of Ophiuchus. 2) Technically, Ophiuchus is the 13 constellations of the zodiac because part of its boundary (and foot) crosses the ecliptic. 3) Crux occupies the least area in the sky and Hydra the most area.

Latin Genitive
Genitive refers to a grammatical case resulting in a spelling variation of a word that indicates or implies a relationship of possession. Genitives are not used in modern English. Where they exist, they are a holdover from Latin and other languages. Genitives of the constellations are still used today in conjunction with the Bayer letters, Flamsteed numbers or similar designation to “name” stars. For example, the “alpha” star in Orion, as asigned by Bayer, but best known as Betelgeuse, could also be referred to as alpha Orionis, where Orionis is the genitive form of Orion, indicating possession of the alpha star. Betelgeuse can also be indicated as 58 Orionis when referring to it by its Flamsteed number. Most of us have heard of Alpha Centauri, one of the closest stars to us. This is its gentitive name using its Bayer letter designation. This star is also commonly called by its name, Rigel Kentaurus.

Constellation of the Month: Andromeda

Heavens Above
Submitted by: Tim Kelly



Mythology of the Constellation Andromeda

The story of Andromeda, daughter of King Cepheus and Queen Cassiopeia, of Ethiopia, brings together many notable names of legend. Her mother's boastfulness and pride greatly angered the sea gods and this resulted in Andromeda being sacrificed in order to appease them. Knowing full well that she would be at the mercy of the sea monster, Cetus, the King and Queen allowed their young daughter to be chained to a rock on a cliff overlooking the sea. However fate, in the person of Perseus, intervened. Riding home on the winged horse Pegasus, he heard Andromeda's screams as Cetus approached her. Holding high the head of Medusa (see legend of Perseus) he charged towards the monster who was instantly turned to stone as he looked upon the severed head. Taking great care to prevent Andromeda from looking at the head, he then released her from her chains. The young couple immediately fell in love and, as Perseus had just saved their daughter's life,

Cepheus and Cassiopeia readily consented to their marriage.

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STAR CHART FOR MID-LATITUDES OF THE NORTHERN HEMISPHERE

What's Out Tonight?

OPTIMIZED FOR 1½ HOURS AFTER SUNSET
but can be used after that for several more hours.

March 2026 Sky Chart

Instructions

Face North, South, East or West, then rotate the chart so your direction is at the bottom. Match the biggest stars on the chart to the brightest stars in the sky. The center of the chart is the top of the sky.

FREE

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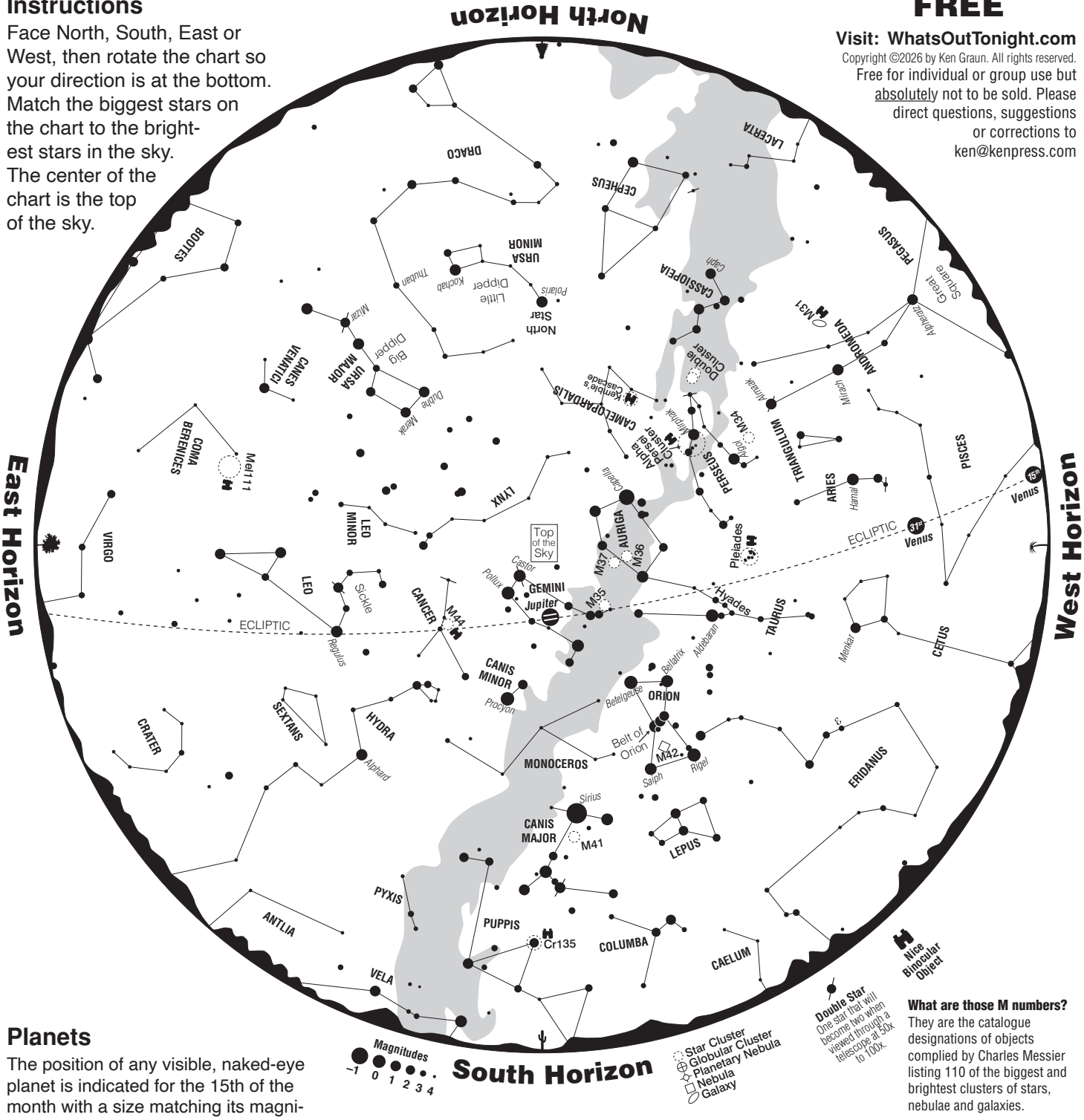

What are those M numbers?
They are the catalogue designations of objects complied by Charles Messier listing 110 of the biggest and brightest clusters of stars, nebulae and galaxies.

Planets

The position of any visible, naked-eye planet is indicated for the 15th of the month with a size matching its magnitude. If the planet moves significatnly during a month, other positions will be noted with dates. The **ECLIPTIC** is the path of the Sun through the sky but the planets and Moon move along it, too. It passes through the constellations of the zodiac.

March 2026 Planet Notes (15th of each month)

Venus, at magnitude –3.9, sets in the west 1 hour after the Sun. **Mars**, at magnitude +1.2, in Aquarius, rises in the east 30 minutes before the Sun. **Jupiter**, at magnitude –2.3, in Gemini, sets in the west about 4 AM. **Saturn**, at magnitude +0.9, in Pisces, sets in the west about 30 minutes after the Sun.

Distances planets are from Earth the 15th of this month:
Venus: 151,000,000 miles, **Mars**: 216,000,000 miles
Jupiter: 447,000,000 miles, **Saturn**: 974,000,000 miles.

March Notes

The bright Winter constellations of CANIS MAJOR/MINOR, ORION, GEMINI, TAURUS and AURIGA dominate the southern sky with Canis Major sitting due south, home to Sirius, the brightest star in the entire sky. Orion's *Betelgeuse*, with *Sirius* and *Procyon,* form the **Winter Triangle**. The three stars, *Mintaka*, *Alnilam* & *Alnitak* (from highest to lowest) form the **Belt of Orion** and point to *Sirius*. Standing on its side, in the east, is LEO with its reverse question mark (the Sickle) punctuated by the kingly star, *Regulus*. Between it and Genini is the faint constellation CANCER containing the Beehive cluster, a very nice sprinkle of stars seen easily with binoculars. Near the horizon, directly behind Leo is Coma Berenices that has a sprinkle

SELECTED Clusters, Nebulae, Galaxies +

ly = Light year, a unit of distance. 1 ly = 6 trillion miles.
Our Moon (and Sun) spans 30' (30 arc minutes) or 1/2°.

- **Alpha Persei Cluster**. Distance: 600 ly / Diameter: 31 ly / Mag 1.2 / Spans 3° / 30 stars. In PERSEUS.
- **Andromeda Galaxy**. Companion to our Milky Way Galaxy. Distance: 2,400,000 ly / Diameter: 120,000 ly / Mag 3.5 / Spans 3° x 1°. In ANDROMEDA.
- **Castor Double Star**. Favorite double star. Need a telescope with 50x to 100x to see Castor separate into two stars. Magnitudes of two stars are 1.9 and 3.0. In GEMINI.
- **Double Cluster**. Two side-by-side clusters. Distances: 7,200 ly / Diameters: 63 ly / Mag 3.5 / Span 1° / 320 stars total. Best in a telescope but visible with eyes in dark skies. In PERSEUS.
- **M35**. Cluster. Distance: 3000 ly / Diameter: 24 ly / Mag 5 / Spans 28' / 200 stars. In GEMINI.
- **M34**. Large Cluster. Distance: 1,400 ly / Diameter: 14 ly / Mag 5.2 / Spans 35' / 60 stars. Try with binoculars, too. In PERSEUS.
- **M36**. Cluster. Distance: 3,700 ly / Diameter: 13 ly / Mag 6.0 / Spans 12' / 60 stars. Try with binoculars, too. In AURIGA.
- **M37**. Cluster. Distance: 4,200 ly / Diameter: 29 ly / Mag 5.6 / Spans 24' / 150 stars. Try with binoculars, too. In AURIGA.
- **M42**. **Orion Nebula.** Brightest nebula in the northern sky. About 30 ly in diameter and 1,760 ly away. Mag 4 / Spans 1°.
- **M44**. **Beehive** Cluster. Distance: 610 ly / Diameter: 16 ly / Mag 3 / Spans 1.6° / 50 stars. In CANCER.
- **Pleiades**. Cluster. Spans about 2° in sky or 4 Moon diameters. To the eyes, it looks like a little dipper but it is NOT the Little Dipper! Distance: 440 ly / Diameter: 15 ly / Mag 1.2 / 100 stars. In TAURUS.

Observing Tips for above Objects

If possible, observe at a dark location and when the Moon is not bright. A bright Moon will make it more difficult to see the stars and impossible to see clusters, nebulae and galaxies. Only a small telescope at lower magnifications, around 50x, is required to see the objects listed above. The planets and Moon are best observed with a telescope around 50x or more! To get a feel for the size of objects, the Moon extends 30' (30 arc minutes). The binocular objects are best with binoculars because these objects are large in size—telescopes have too much magnification.

Meteor Showers

Next up are the **LYRIDS** which peak around **April 22** with 15–20 meteors/hour.

Brightest Stars

Aldebaran. In TAURUS. Magnitude +1. Distance: 65 ly. Orange Giant star 45 times the diamter of our Sun.

Betelgeuse. In ORION. Magnitude +0.56. Distance: 428 ly. Red Supergiant with a diameter 650 times the Sun's.

Capella. In AURIGA. Magnitude +0.1. Distance: 42 ly. Diameter: 15 times the Sun's. It's actually 4 orbiting stars.

Castor. In GEMINI. Magnitude +1.6. Distance: 52 ly. Favorite double star that is twice the diameter of the Sun.

Mirach. In ANDROMEDA. Magnitude +2.1. Distance: 199 ly. Diameter: 89 times the Sun's.

Mirphak. In PERSEUS. Magnitude +1.8. Distance: 592 ly. Diameter: 64 times the Sun's.

Polaris. In URSA MINOR. Magnitude +2. Distance: 431 ly. 2,400 times brighter than the Sun. Supergiant star.

Pollux. In GEMINI. Magnitude +1.2. Distance: 34 ly. Diameter is 8.8 times the Sun's & 46 times brighter.

Procyon. In CANIS MINOR. Magnitude +0.4. Distance: 11.4 ly. Diameter is 2 times the Sun's & 7.5 times brighter.

Rigel. In ORION. Magnitude +1.3. Distance: 3200 ly. Diameter: 222 times the Sun's. Blue-White Supergiant.

Sirius. Rising in CANIS MAJOR. Magnitude –1.44. Distance: 8.6 ly. The very brightest star in the whole sky but some planets, like Jupiter and Venus, are brighter. It has a diameter 1.8 times that of the Sun and is 23 times brighter. 7th closest star to us.

Mythology

FOR THE CENTRAL CONSTELLATIONS, NORTH TO SOUTH

King **CEPHEUS** and Queen **CASSIOPEIA** ruled Ethiopia. Their daughter **ANDROMEDA** is being rescued by **PERSEUS** from the Sea Monster, **CETUS**. Andromeda was to be sacrificed to Cetus because Cassiopeia boasted of her and her daughter's beauty.

AURIGA, the Charioteer supervised the royal livestock, including a goat that provided milk for growing Jupiter.

The Pleiades or Seven Sisters rise before **ORION**, out-of-reach of his amorous clutches. Orion is a great Hunter and battles the Bull, **TAURUS**. Below his feet is **LEPUS**, the Hare. At his back is the ultimate prize for any hunter, the Unicorn, **MONOCEROS**. His Big and Little Hunting Dogs, **CANIS MAJOR** and **MINOR** follow. **ERIDANDUS**, the River is before Orion, representing the water of life.

GEMINI is the warlike Twins, Pollux and Castor, protectors of seafarers. Pollux is immortal but Castor is not.

Regulus, the brightest star in **LEO**, the Lion has several meanings including regal, king and mighty. Before him is **CANCER**, the Crab sent to prevent **HERCULES** from killing the nine-headed **HYDRA** as one of his twelve labors toward a virtuous life.

Moon Phases

- ○ **Full Moon**. Tuesday, **March 3**, 5:37 am, CT
- ◐ **Third** or **Last Quarter**. Wednesday, **March 11**, 4:38 am, CDT
- ● **New Moon**. Wednesday, **March 18**, 8:23 pm, CDT
- ◑ **First Quarter**. Wednesday, **March 25**, 2:17 pm, CDT

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March 2026 Sky Chart

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Clusters, Nebulae & Galaxies

An **Open Cluster** is a group of several to hundreds of stars that were born out of the same nebula cloud. A group often forms a pretty pattern. The Pleiades and Praesepe are great examples. Open clusters reside in our Milky Way Galaxy. Our Sun is no longer in its group.

Globular Clusters look like fuzzy balls because they contain tens of thousands stars held together by their mutual gravity. There are 150+ of them that surround our Milky Way Galaxy like a halo—about 30 brigher ones visible from the northern hemisphere. M22 in SAGITTARIUS and M13 in HERCULES are favorites.

A **Planetary Nebula** is an old term that has nothing to do with the planets. Instead, it is a round or symmetrical nebula that is the shed atmosphere of a dying star. At its center is a white dwarf star. When our Sun dies, it will create a planetary nebula. These objects have diameters of a few light years and are located in our galaxy. The Ring Nebula, M57, in LYRA is a favorite.

A **Nebula** is a giant hydrogen gas cloud that is located in our galaxy. Within these clouds, concentrations of gas can occur and gravitationally condense to form stars and accompanying planets. A set of stars created by a nebula is known as an Open Cluster. The Orion Nebula, M42 is a favorite.

Galaxies contain billions of stars. All galaxies are beyond our Milky Way Galaxy, where our Sun resides. When you are observing a galaxy, you are looking through our galaxy into the true depths of the universe. The Andromeda Galaxy, M31 can be seen with the naked eye.

At arm's length...

One thumb width is 4 Moon diameters.

Orion's height is one hand span.

The width of a fist spans the Big Dipper's bowl.

Double Stars

A Double Star is a star that looks like one star but when magnified sufficiently (from 6x to 200x+), it separates into two or more stars. Some are very pretty because of contrasting colors. *Castor* in GEMINI is a favorite and *Albireo* in CYGNUS is very much enjoyed for its blue & gold colors.

Moon

Starting from New Moon, the Moon cycles through phases every 29 days, 12 hours, 44 minutes, 3 seconds. It is 2,160 miles in diameter and averages 239,000 miles from Earth. A New Moon is not visible in the sky because the Moon is positioned very close to the Sun. Solar eclipses occur at New Moon. The best time to observe the Moon is during a phase because the craters appear their sharpest near the terminator, the line that separates the lighted side (day side) from the dark side (night side).

Cycle of Moon Phases

Planets

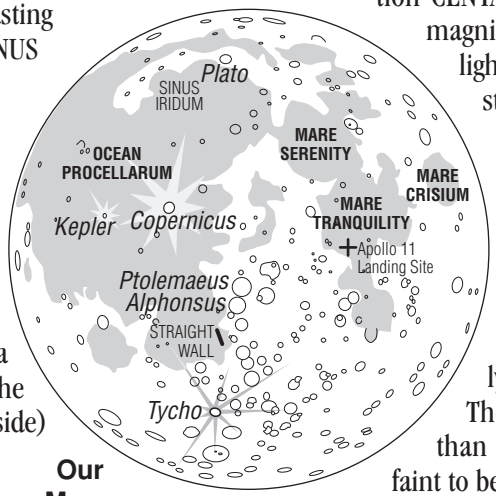
The planets are best observed with a telescope using magnifications from 50x to 250x but 100x+ is dependent on a steady night sky. The five naked-eye planets are Mercury, Venus, Mars, Jupiter and Saturn. Venus is the brightest "star" and hangs close to the Sun, so you see it for a short time in the west after sunset or in the east before sunrise. Jupiter can be out all night and always outshines any star. Everyone enjoys its cloud bands and four Galilean moons that are easily visible at 50x and possible with well-focused binoculars. Saturn has its beautiful rings. Mars gets close to Earth every 2 years at which time it is very bright. This is the best time to observe it but you need higher magnifications around 150x+ to more easily see the surface coloration.

	Diameter In Miles	Rotation Its Day	Distance from Sun In Miles	Revolution Its Year
SUN	865,000	30 days	—	—
MERCURY	**3,032**	**59 days**	**36,000,000**	**88 days**
VENUS	7,521	243 days	67,000,000	225 days
EARTH	**7,926**	**24 hours**	**93,000,000**	**365 days**
MARS	4,228	24.6 hours	142,000,000	687 days
JUPITER	**88,844**	**9.8 hours**	**484,000,000**	**11.8 years**
SATURN	74,900	10.2 hours	887,000,000	29 years
URANUS	**31,764**	**17.9 hours**	**1,800,000,000**	**84 years**
NEPTUNE	30,777	19.2 hours	2,800,000,000	164 years
PLUTO*	**1,433**	**6.4 days**	**3,700,000,000**	**248 years**

*Demoted to a Dwarf Planet in 2006 because it is part of an outer debris field.

Light Year (ly) & Nearest Stars

A Light Year (ly) is a *unit of length* and is equal to the distance light travels in 1 year. Since light moves at the speed of 186,282 miles a second, 1 light year is nearly 6 trillion miles long. The closest star visible to the naked eye is the southern hemisphere *Alpha* (α) *Centauri* or *Rigel Kentaurus* in the constellation CENTAURUS. It shines brightly at magnitude –0.27 and is just 4.4 light years away. The very closest star is *Proxima* in CENTAURUS at just 4.22 ly away but at magnitude +11, it's too faint to see with the eyes. The second closest star visible to the naked eye is *Sirius* at 8.6 ly followed by *Epsilon* (ε) *Eridani* at 10.5 ly and *Procyon* at 11.4 ly. There are several stars closer than these three but they are too faint to be seen with the naked eye.



Our Moon

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More Celestial Tidbit about . . .

. . . the M-number Designations.

The Frenchman, Charles Messier, from Paris, during the mid-1700s compiled the very first catalogue of what is known today as Deep Sky Objects, which are clusters of stars, nebulae and galaxies. As the leading observational astronomer of his time he catalogued these non-stellar objects because such a catalogue did not exist, discovering a total of 110. Since he was the first to compile such a catalogue, his listing included most of the biggest and brightest objects that can be seen from the northern hemisphere—he used the equivalent of 4-inch diameter telescopes. Even though there are other, more comprehensive catalogues, Messier's is still used today but with an added M placed in front of his numbering. His catalogue serves beginning amateurs well as a first foray into observing Deep Sky Objects.

. . . the Constellations.

There are a total of 88 constellations in the sky. Each constellation has a boundary. If you include the boundary areas, CRUX (visible from the southern hemisphere) occupies the least area and HYDRA the most.

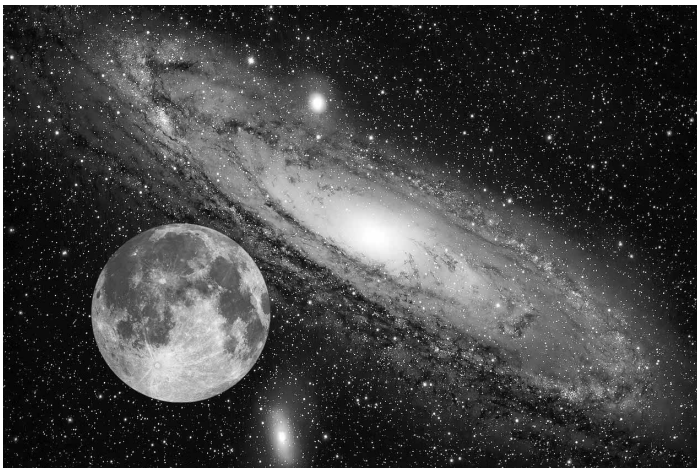
SERPENS is the only constellation that is split between two parts of the sky—on opposite sides of OPHIUCHUS. The eastern part is known as SERPENS Cauda (Cauda means tail) and the western part is known as SERPENS Caput (Caput means head).

In the northern hemisphere, we use the same constellations described by (visible to) the ancient Greeks, but a few have been added since then.

Brightest Naked-eye Stars

	CONSTELLATION	MAG.
Sun		**–26.73**
[Full Moon]		–12.7
[Venus] average brightness		**–4.1**
[Jupiter] average brightness		–2.2
Sirius	**Canis Major**	**–1.46**
Canopus*	Carina	–0.72
Arcturus	**Bootes**	**–0.04**
Rigel Kent*	Centaurus	–0.27
[Saturn] average brightness		**0.0**
Vega	Lyra	+0.03
Capella	**Auriga**	**+0.08**
Rigel	Orion	+0.11
[Mercury] average brightness		**+0.23**
Procyon	Canis Minor	+0.34
Achernar*	**Eridanus**	**+0.50**
[Mars] average brightness		+1.0

*Southern Hemisphere



The Moon and the Andromeda Galaxy never get this close to one another in the sky, but this photo shows their comparative size. If Andromeda was very bright, as pictured, it would take 6 Moons to span its length. This image of the galaxy does not show the extremities of the galaxy. Many galaxies and nebulae span an area in the sky greater than that of the Moon, but because they are very faint, this evades attention and these faint objects do seem smaller than the Moon when viewed in a telescope—but they are not!

. . . the Stars.

The names of many stars are derived from Arabic. About 5,000 stars can be seen with the naked eyes—this includes both hemispheres. With a good dark sky, many people can see to about magnitude +6. Stars twinkle because of turbulence in the atmosphere and twinkle most when low in the sky because their pinpoint light gets easily refracted from different and moving layers of the atmosphere.

Greek Star Designations. Many of the "brighter" stars in the northern hemisphere have an associated lowercase Greek letter designation. This starts anew with each constellation and usually with the brightest star designated alpha (α) and so on down the line. Of course, many of these designated stars are named, too. These Greek letter designations were assigned by Johann Bayer in the early 1600s.

. . . the Milky Way.

The Milky Way Band is the faint glow from most stars that make up our Milky Way Galaxy. Our Sun and its accompanying solar system reside in the Milky Way Galaxy, which consists of hundreds of billions of stars all gravitationally bound to one another. The shape of our galaxy is that of a flat dish with a central bulge and having an overall diameter of around 100,000 light years. The direction to the center of our galaxy is between the constellations SAGITTARIUS and SCORPIUS, which happens to be the brightest part of the Milky Way Band. The Andromeda Galaxy is in the constellation ANDROMEDA, is a companion galaxy to ours, and can just be seen with the naked eyes under dark skies. If you could see its full extent, it would span 6 Moon diameters—there are plenty of pictures on the internet of this beautiful galaxy. Our galaxy and Andromeda are part of the Local Group of about 30 galaxies—most are on the smaller size. There are a few hundred billion galaxies in the Universe.

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