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.

March 2020 Sky Chart

**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 significantly 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 2020 Planet Notes**

**Venus** (15th of month), at magnitude –4.3, sets in the west about 4 hours after the Sun. **Mars**, at magnitude +1.0, in Sagittarius, rises in the east around 4:30 AM. **Jupiter**, at magnitude –2.0, in Sagittarius, rises in the east about 4:30 AM. **Saturn**, at magnitude +0.7, in Sagittarius, rises in the east about 5 AM. SO, Mars, Jupiter & Saturn are close to one another in the early morning sky!

Distances planets are from Earth the 15th of this month:

- **Venus**: 73,000,000 miles, **Mars**: 147,000,000 miles
- **Jupiter**: 521,000,000 miles, **Saturn**: 976,000,000 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 Gemini 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.

Clusters, Nebulae, Galaxies +

- Andromeda Galaxy. Companions to our Milky Way Galaxy. Distance: 2,400,000 ly / Diameter: 120,000 ly / Mag 3.5 / Spans 3° x 1°. In ANDROMEA.
- 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.
- M34. Large Cluster. Distance: 1,400 ly / Diameter: 14 ly / Mag 5.2 / Spans 35° / 60 stars. Try with binoculars, too. In PERSEUS.
- 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

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 100x. 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 to 20 meteors/hour.

Brightest Stars

- 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. ERIDANUS, 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

- First Quarter. Monday, March 2, 1:57 pm, CT
- Full Moon. Monday, March 9, 12:48 pm, CT
- Third or Last Quarter. Monday, March 16, 4:34 am, CDT
- New Moon. Tuesday, March 24, 4:28 am, CDT

What’s Out Tonight?

March 2020 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 of stars held together by their mutual gravity. All of the globulars that can be seen in the sky are part of our Milky Way Galaxy, and there are about 200 of them that surround our galaxy like a halo. M22 in SAGITTARIUS is a northern favorite.

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.

Nebulae 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. The nebulae we can see are inside our galaxy.

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.

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 CYGNIUS is well liked 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).

Planets

The planets are best observed with a telescope using magnifications from 50x to 200x. The five naked-eye planets are Mercury, Venus, Mars, Jupiter and Saturn. Venus is extremely bright and hugs 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 4 Galilean moons and cloud bands, easily visible at 50x. It is possible to see the moons with well-focused binoculars. Saturn is everyone’s favorite because of its beautiful rings. Mars gets close to Earth about 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 see the surface coloration.

Light Year (ly) & Nearest Stars

A Light Year (ly) is a unit of length and is equal to the distance light travels in one year. Since light moves at the rate of 186,282 miles a second, one light year is nearly 6 trillion miles long. The closest nighttime star visible to the naked eye is Alpha (α) Centauri in the constellation CENTARUS. Alpha Centauri shines brightly at magnitude −0.01 and is just 4.4 light years away. The very closest star to the naked eye is Proxima in CENTARUS at just 4.22 ly away. It is too faint to see with the eyes because it shines at magnitude +11. 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.