What's Out Tonight?
May 2020 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.

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.

May 2020 Planet Notes

**Venus** (15th of month), at magnitude –4.4, sets in the west about 2.5 hours after the Sun. **Mars**, at magnitude +0.2, in Aquarius, rises in the east around 2:30 AM. **Jupiter**, at magnitude –2.5, near Capricornus, rises in the east about 1 AM. **Saturn**, at magnitude +0.5, in Capricornus, rises around 1 AM behind Jupiter. SO, Jupiter & Saturn are fairly close to one another.

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

**Venus**: 32,000,000 miles, **Mars**: 104,000,000 miles

**Jupiter**: 429,000,000 miles, **Saturn**: 890,000,000 miles.

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May Notes

Near the top of the sky are two promiment constellations, LEO with its reverse question mark, the Sickle, punctuated by the kingly star, Regulus, and Ursa Major, containing the Big Dipper (the “backs” of Leo and the Big Dipper face each other). The handle of the dipper curves and points to the star Arcturus in Bootes and continuing the curve, points to Spica in Virgo. In front of LEO is Cancer containing the sprinkle of stars known as the Beehive. Less known and to Leo’s rear, is another sprinkle of stars in Coma Berenices. Both sprinkles can be seen easily with binoculars and appear, to the eyes, as fuzzy patches in dark skies. At one time, the Beehive was thought of as the whiskers of Leo with the sprinkle of stars in Coma Berenices as the end of its tail.

Clusters, Nebulae, Galaxies +

- ly = light year, a unit of distance. 1 ly = 6 trillion miles.

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.


Mizar. Two stars with good eyes or binoculars. Three stars with a telescope at 50x. Located in the handle of the Big Dipper.


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

The Eta Aquarids peak around May 5 with 60 meteors/hour.

Brightest Stars


- Arcturus. In Bootes. Magnitude -0.04. Distance: 37 ly. Diameter: 26 times the Sun’s. It’s an Orange Giant.

- 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.


- 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.

- Regulus. In Leo. Magnitude +1.4. Distance: 78 ly. Diameter: 3.5 times the Sun’s & 140 times brighter.

- Spica. In Virgo. Magnitude +1.1. Distance: 262 ly. Actually two close stars revolving around each other in 4 days.

- Vega. In Lyra. Magnitude +0.0. Distance: 25 ly. Rotates on axis once every 12.5 hours. Mass is about 2.3 times our Sun.

May Mythology

FOR THE CENTRAL CONSTELLATIONS, NORTH TO SOUTH

Arcas and his beautiful mother, Callisto were turned into the Little and Big Bears, Ursa Minor and Major because of jealous Juno, wife of promiscuous Jupiter.

During a war between the Titans and Olympians, Draco, the Dragon was flung to the North and frozen in place by the cold. 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.

Corvus was a bird placed in the heavens on Hydra’s back by Apollo for being slow for bringing water and lying about his tar
dines. Crater represents the container of water that is always out of reach of Corvus.

When Virgo, the Virgin is in the night sky, crops grow. The growing season ends when, in the early evening, she sets on the western horizon.

Canes Venatici are the Hunting Dogs of Bootes who is sometimes seen as a Ploughman. Corona Borealis is the crown of Bacchus, the god of wine.

May Moon Phases

- Full Moon. Thursday, May 7, 5:45 am, CDT
- Third or Last Quarter. Thursday, May 14, 9:03 am, CDT
- New Moon. Friday, May 22, 12:39 pm, CDT
- First Quarter. Friday, May 29, 10:30 pm, CDT

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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.

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. 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 Cygnus 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).

Cycle of Moon Phases

What's Out Tonight?

Sky Chart Supplement

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 hugds 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 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.