

19. Night Sky

The solar system is made up of our sun, its planets, their moons, and other celestial objects.

The Moon

The moon is the closest celestial object to the earth, trapped in earth's gravitational pull. The same side or face of the moon is always facing earth. The moon influences the earth's tides and the weather. The full moon rises at sunset and sets at dawn. It is at its highest in the sky in December.

The moon makes a monthly (29 days) orbit around Earth and goes through different phases. As it goes through its phases, the moon appears to grow (wax), shrink (wane) or disappear (new moon).

Planets

Five planets can be seen at different times of the year. All will be found somewhere in the "Plane of the Ecliptic," the plane of the Solar System, described in the sky by the path the sun and the moon follow from rising to setting. Mercury is seldom seen because of its close proximity to the sun. On those rare occasions, it is a fairly dim, low "star" in the East or West, where the sun is just below the horizon and there is a clear view of that horizon at dawn or sunset, depending on whether Mercury is a morning or evening "star." Venus is our brightest evening or morning "star," depending on its orbit. Mars, at opposition (directly opposite the sun) is at its brightest when closest to Earth every 25 ½ months. Jupiter is seen for about 5 months in the morning and 5 months in the evening. It is usually the brightest object in the night sky (besides the moon). Saturn, almost as bright, is visible most of the year, looking yellowish. Its rings can be seen with a small telescope.

Meteors or "shooting stars" can be seen streaking through the night sky. These small rocks, even down to the size of grains of sand, are burning up in the Earth's atmosphere. The strongest annual meteor showers are the Perseids, peaking around August 12, and the Geminids, peaking around December 13. They are named for the constellation from which direction they seem to come.

Comets are irregular lumps of ice and rock, left-over debris from the formation of the solar system. One or two major comets come into view every decade as they approach the sun on their elliptical orbits. The sun will vaporize ice surface creating a gas tail up to millions of miles long.

Constellations are mythically named groups of stars. The stars in the groups may not be anywhere near each other in distance, but are close in direction from the Earth's vantage point. In fact, some "stars" aren't single stars at all, but are themselves groups of stars.

As the Earth travels in its yearly orbit of the sun, the night sky is exposed to different parts of the solar system, exposing different stars, constellations, and views of the Milky Way. Nearly 6,000 stars can be seen with the naked eye and many other night objects can be seen with the aid of a telescope.

Star maps may be found on the internet or in books which make the night sky more interesting.