STAR TRAK: August 2010

August 2 2010

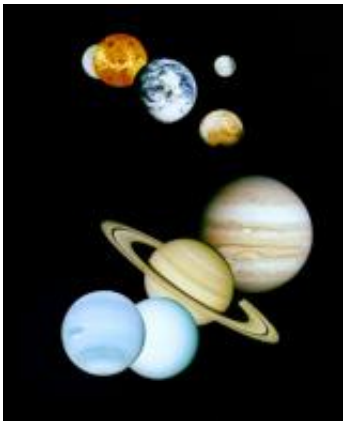

Photo courtesy of NASA

Every three years, the same phase of the moon happens on about the same date of each month. The annual Perseid meteor shower of August last happened in a moonless sky in 2007, so this year if the sky is clear when the Perseids peak before dawn on Aug. 12 and 13, there will be an unhindered display of silent fireworks.

This shower is one of the most popular every year because it happens on warm summer nights, when gazing at the starry sky is always enjoyable. There may be as many as 100 bright meteors per hour, some with smoke trails that last several seconds after the meteor has vanished.

The Perseids will be visible for most of August, though there will be fewer meteors to see the farther from the peak date you watch. If the

peak on Aug. 12-13 is hidden by clouds, try looking for meteors again as soon as the night sky is clear.

To minimize the effect of local light pollution, which can obscure as many as half of the meteors, try to avoid artificial lights. Face east if you have a clear view in that direction, and look about half-way up the sky from the horizon. You won't need binoculars or a telescope -- the meteors move much too fast for that. The chances of seeing a fireball will be greatest near dawn, when Earth will be moving head-on into the meteor stream.

The Perseids may appear anywhere in the sky, but they will seem to originate from a point called the radiant in the constellation Perseus, which gives the meteors their name. The higher the radiant is above the northeastern horizon, the more meteors will be visible. Perseus is just north of the W-shaped constellation Cassiopeia in the Milky Way, with the bright stars Capella and Aldebaran and the Pleiades star cluster below it. Meteors near the radiant will have short trails because we see them nearly end on, while those far from the radiant will look longer because they are seen from the side.

A computer simulation of meteors streaking from the Perseid shower's radiant can be seen at www.shadowandsubstance.com/ .

Most meteor showers happen when Earth crosses the orbit of a comet, and the Perseids come from Comet Swift-Tuttle. The meteors are caused by particles released from the comet's nucleus and left behind in space. As Earth plows through this stream of debris, ranging in size from sand grains to pebbles, each particle slams into our atmosphere at a speed of more than 50 kilometers per second and burns up almost instantly from friction with air molecules. The resulting heat momentarily creates a streak of glowing air that we see as a meteor (sometimes called a "shooting star" or "falling star"). All of this happens about 50 miles

above the ground, regardless of how close some meteors may appear.

More information about the Perseids and other meteor showers is available at www.skyandtelescope.com/observing/objects/meteors .

Planets

Look low in the west an hour after sunset to see Venus, Mars and Saturn performing a stately dance during August. Brilliant white Venus will far outshine its two companions, and it will brighten even more as the month passes. Yellow Saturn and red-orange Mars will be close together to the upper left (south) of Venus, which will gain ground on both of them during the first week. The three planets will cluster most tightly on the evening of Aug. 7, when Venus will pass just below Saturn. By the last week of the month, Venus and Mars will leave Saturn behind as they close in on the bright star Spica in the constellation Virgo the Maiden.

Jupiter will rise in the east around the time Saturn is setting in the west during August. Wait until the planet is reasonably high, when it will be a splendid sight in a telescope. Jupiter will be at its best next month, but already it outshines everything except Venus and the moon.

Mercury will be very low in the west-southwest a half-hour after sunset as the month begins, but binoculars may be needed to pick it out of the bright glow of evening twilight. It will set about a half-hour after that for the first week, and by mid-month it will disappear into the solar glare.

Moon phases

The moon will be at third quarter on Aug. 3, new on Aug. 9, at first quarter on Aug. 16 and full on Aug. 24.

Provided by Indiana University