

CELESTIAL MARIPOSA

# Mostly dark with a chance of meteors

By MANNY LEINZ

Have you ever looked up and seen a meteor flash across the night sky? If you’ve not had this experience — or even if you have — this month is a great opportunity to get in touch with these celestial visitors.

So what exactly are meteors, or “shooting stars” as many people know them? Meteors are mostly tiny bits of cosmic debris — many no larger than a speck of dust or grain of sand — that brilliantly vaporize during their short but very rapid journey through our atmosphere.

Traveling at speeds of up to 160,000 mph — more than 50 times the speed of a rifle bullet — they usually burn up high in our atmosphere, leaving a brief flash or streak. Rarely, larger meteors, some weighing hundreds of pounds or even tons, make it to the Earth’s surface where they earn the designation of meteorite.

Meteors can be seen in the sky on any given night, but occasionally the number of meteors can increase dramatically. During such times we are said to experience a meteor shower.

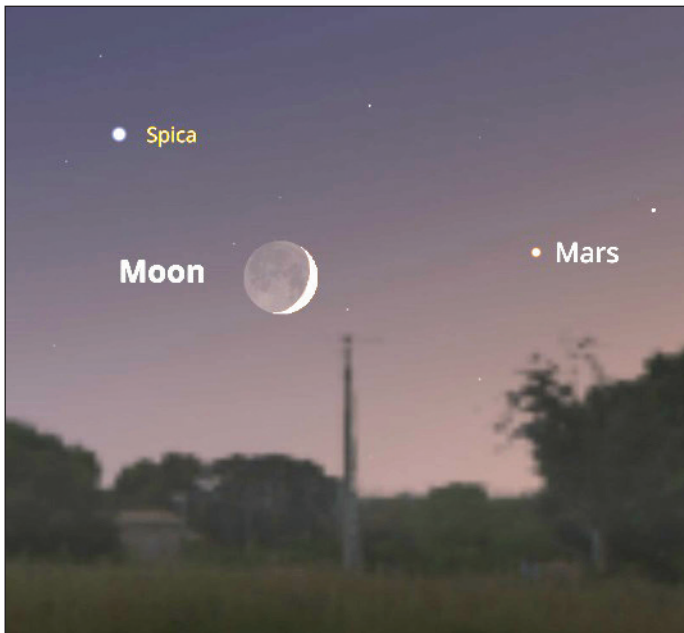
These showers happen at the same time every year; or stated another way, when the Earth is at the same point in its orbit around the Sun. That’s because meteor showers are most often associated with comets. These comets, often described as “dirty snowballs,” shed dust and particles as they round

the Sun from the farthest reaches of the solar system. When the Earth passes through this debris field, the same time every year, we get a meteor shower.

During the dark hours of Aug. 11-13, we will experience what many consider to be the best shower of the year. Much as rain drops appear to come from a single point in the sky, due to perspective, individual meteors in the shower can be traced back to a particular point, called the radiant.

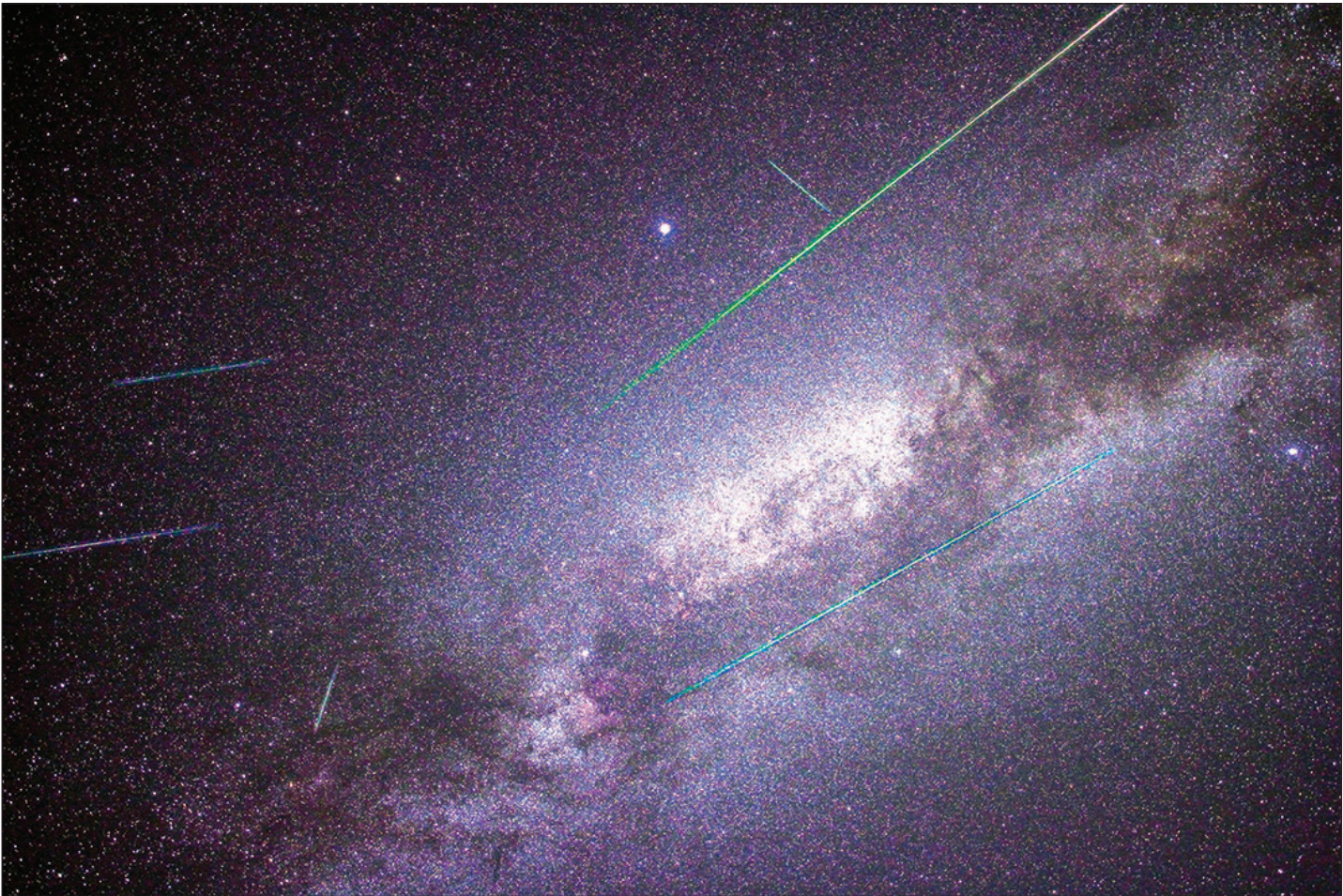
Meteor showers are named for the constellation where the radiant appears, therefore in the case of this month’s shower, since the radiant is in the constellation of the Greek mythological hero Perseus, the shower is known as The Perseids.

What’s the best way to enjoy the Perseid meteor shower? Thankfully, the only optical equipment you need is the two eyes you were born with! No binoculars or telescope are required — or even helpful.



On August 26th look very low to the west 45 minutes after sundown to see Mars and the crescent Moon near the bright star, Spica.

You want the biggest field of view you can get, because meteors can appear anywhere in the sky. Other useful items are a lounge chair — you don’t want to have to crane your neck — warm clothes, snacks and maybe a hot beverage if it’s cold out. You may also want to consider some bug repellent to ward off the mosquitoes. Give yourself at least an hour or two relaxing under the night sky to let your eyes adapt to the dark and to increase your chances of seeing a bright meteor. This year, unfortunately, the Moon is on the scene in a major way during the shower’s peak days, which will wash out many of the dimmer meteors. Your best bet in dealing



Several meteors – Perseids and others – leave luminous trails across the Milky Way during the Perseid Shower. I took this composite image over a period of three hours on August 13, 2018 from Bootjack

with the Moon is to face away from it toward the darkest part of your sky; remember, meteors can appear anywhere! Another option is to go out late, after the Moon sets, during the first days in August. There will be less meteors overall, but the dimmer ones will be much easier to see.

### Finding your way around the sky

While you are in your lounge chair waiting for meteors would be a great time to get more acquainted with what’s in the night sky. Last month I discussed how to get yourself oriented and find north at night (see my July 3 article on page B4 of the Gazette).

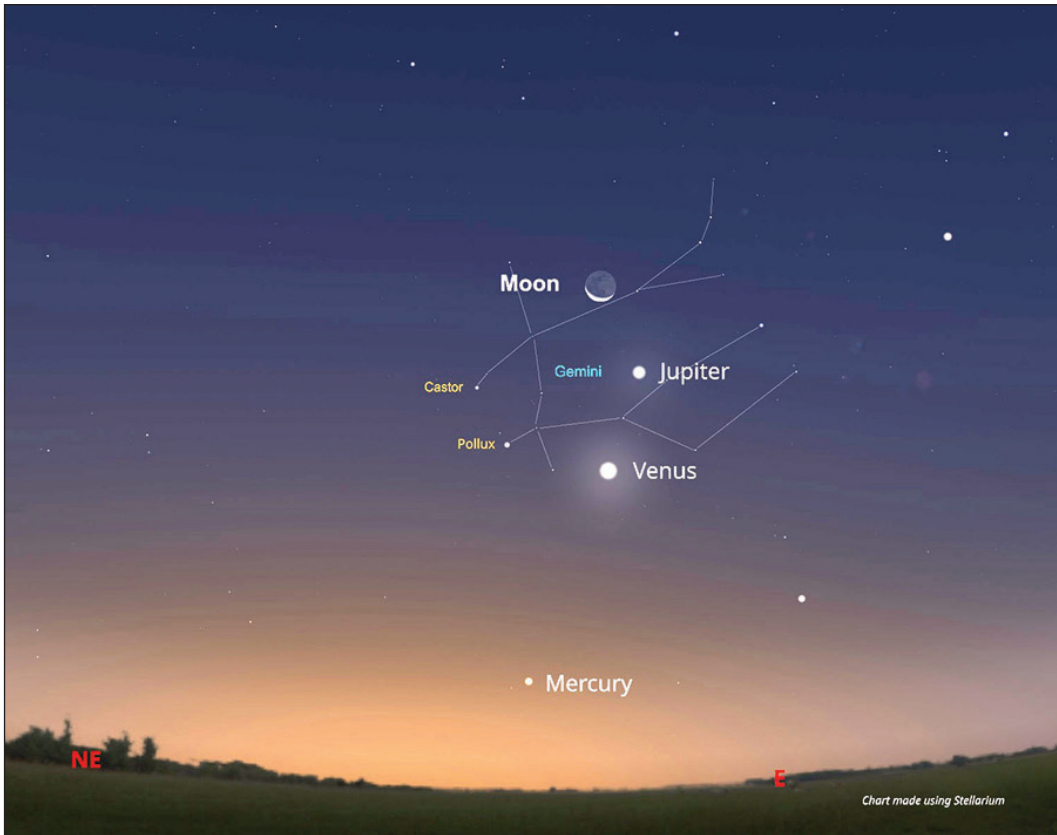
Today we’ll build on that knowledge to find some bright stars and major summer constellations. Using this month’s night sky chart, turn the page so that the “N” is closest to you. Find the Big Dipper and follow the lowest two stars up and to the right to find Polaris, the North Star.

Continue scanning to the right (east) and you will find a group of six stars roughly arranged in the shape of the number “3.” That’s Cassiopeia, the vain queen of Greek mythology, who due to her boastfulness was cast into the sky. Continuing further to right, near or below the northeastern horizon, lies Perseus, home of the Perseid Meteor shower’s radiant.

Now look nearly straight up to find one of the brightest stars in the sky. That’s Vega — Arabic for falling, or landing — in the small constellation of Lyra, the Lyre. Vega forms one of three vertices of “The Summer Triangle,” the other two being the bright stars Altair in the constellation of Aquila, the Eagle, and Deneb in the constellation of Cygnus, the Swan.

You’ll see lines on the star chart showing Cygnus’ wings and neck outstretched as he flies toward the south along the smoky band of the Milky Way.

Turn the sky chart so that the “S” is nearest you and follow the Milky Way south toward the horizon to find two more important summer constellations: Sagittarius, the Archer, and Scorpius, the Scorpion.



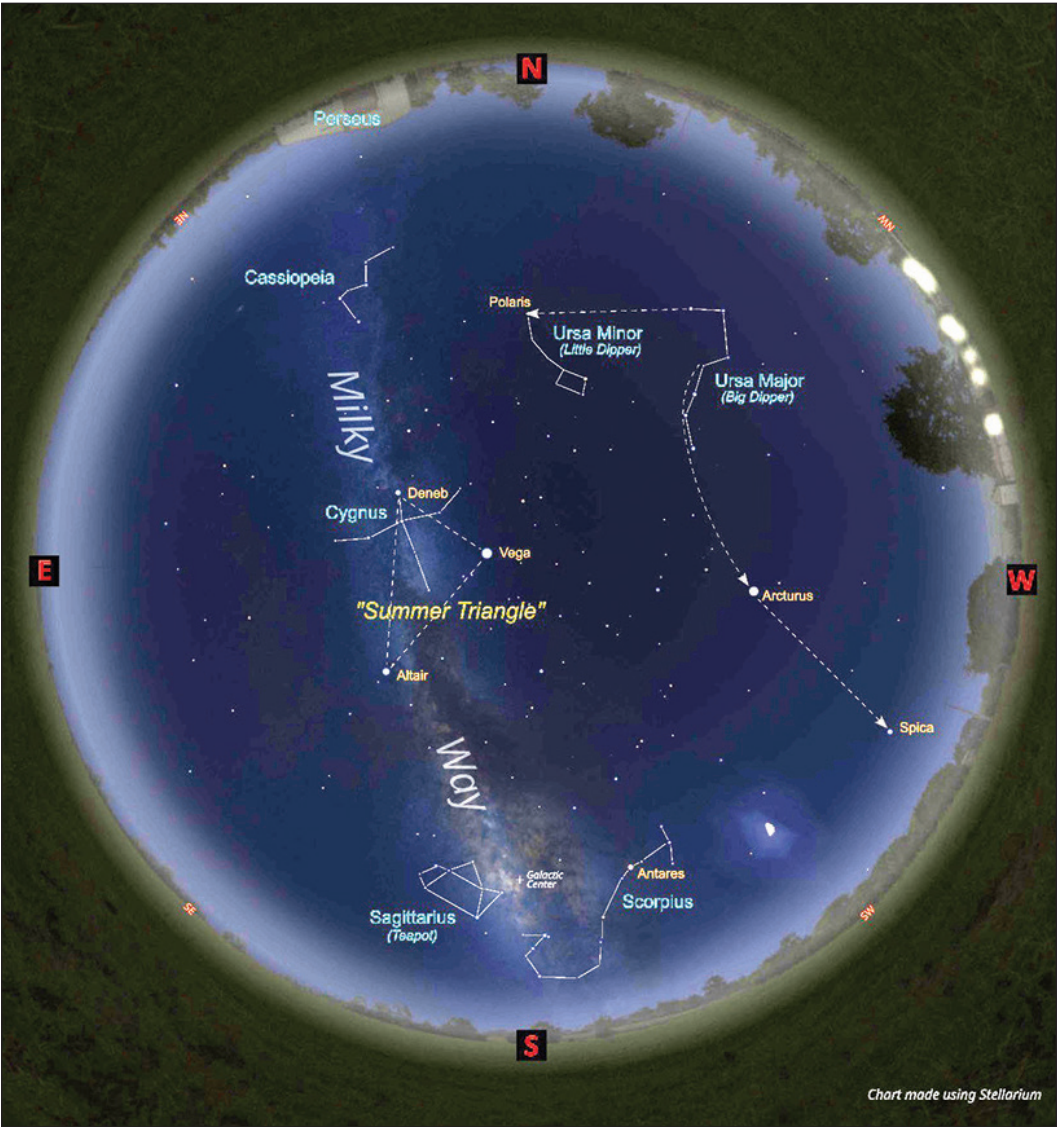
On August 19th at about 5:30 AM look to the east to see Jupiter and Venus hanging below the crescent Moon. As a bonus, Mercury will be low to the horizon.

Sagittarius is generally considered to be a Centaur, drawing a bow, but the grouping of stars — called an asterism — really looks much more like a teapot. In fact, the center of our Milky Way galaxy is in the direction where the “steam” just comes out of the spout of the teapot! As you face south, just to the right (west) of Sagittarius, Scorpius rides low, the stars of his tail curling up to form his stinger. The bright star Antares — meaning rival of Mars in ancient Greek because of its reddish color — forms the heart of the scorpion. Moving back to the Big Dipper, we follow the arc of the handle stars to the red star Arcturus in the constellation Boötes, The Herdsman. A good way to remember Arcturus’ name is that to find it, you “arc to Arcturus.” Finally, from Arcturus we look down very low to the western horizon to find Spica in the constellation of Virgo, the Virgin. You can remember Spica’s name because from Arcturus you “Spike to Spica!”

Manny Leinz is a long-time amateur astronomer and night sky photographer. He and his wife live part time in Bootjack where they also have an observatory.

Celestial Highlights for August, 2025		
August 1		The <u>F</u> irst <u>Q</u> uarter <u>M</u> oon rises in the constellation Libra at 1:57 PM – you can see it in the daytime! - and sets at 12:07 AM on August 2nd.
August 3		In the early evening the <u>M</u> oon will be in the south, in the constellation Scorpius. You will find the bright orange star <u>A</u> ntares just about one degree above the Moon.
August 9		The <u>M</u> oon is opposite the Sun in the sky, and so is fully illuminated – a Full Moon. It rises at 8:32 PM and sets at 7:34 AM on August 10 <sup>th</sup> , and so will be in visible all night in the constellation Aquarius.
August 11		Go out after 11 PM and look for yellowish Saturn about five degrees below the Moon to the east. It will look like a bright star with the naked eye or binoculars. Saturn’s rings, nearly edge-on now, can be seen with a small telescope.
August 12		Don’t miss seeing <u>V</u> enus and <u>J</u> upiter less than one degree apart in the constellation Gemini to the east. You’ll need to get up early, though - between 5:00 and 5:30 AM! Watch Jupiter and Venus slowly drift apart on the coming mornings – Jupiter rising and Venus setting. Both planets will look like bright stars with the naked eye or binoculars. Jupiter’s Moons may be seen in a small telescope.
August 12-13		The <u>P</u> erseid <u>M</u> eteor <u>S</u> hower will reach its maximum on this night, although meteors can also be seen before and after this date, too. For a better chance to see meteors, face away from the Moon toward the darkest portion of your sky.
August 15		The <u>L</u> ast <u>Q</u> uarter <u>M</u> oon rises in the constellation Aries at 11:26 PM. It reaches its highest point in the sky (transit) at 6:04 AM on August 16 <sup>th</sup> and sets at 2:45 PM.
August 19		You’ll need to get up early once again to see three planets below the thin crescent <u>M</u> oon to the east: reddish <u>M</u> ercury, low on the horizon, and then moving higher, <u>V</u> enus and then <u>J</u> upiter. Binoculars will be helpful to see Mercury, which will quickly be lost in the Sun’s glare as sunrise approaches.
August 24		Our <u>M</u> ilky <u>W</u> ay Galaxy is easiest to see around this date of the <u>N</u> ew <u>M</u> oon. Go someplace away from bright lights and allow your eyes to adapt to the dark for at least 30 minutes. The Milky way will stretch in a high arc from horizon to horizon! You may still spot an occasional Perseid Meteor, too.
August 26		About 45 minutes after sundown look for reddish <u>M</u> ars to the right of the slim crescent Moon very low to the west. The bright star <u>S</u> pica can be found just above and to the left of the Moon. Binoculars will help in finding Mars.

Celestial Highlights for August



The Mariposa Night Sky on August 1st at 10 PM – How to find some bright stars and summer constellations.