

August Skies over the Pinnacles

Cosmic Candy Store




Those of us with a passing interest in astronomy can usually name one annual meteor shower, the August Perseids. Let's take a closer look at the terms I just used. An annual meteor shower occurs at about the same time each year because there are traces left behind by comets, those ancient remnants left over from when our solar system was first formed four to five billion years ago. Think of these traces as being like the exhaust trails, or contrails left behind by high altitude airplanes. As the earth moves along its orbit we are carried through these trails from time to time. I was reminded of this when we were treated to a visit by comet Neowise in July.



I took this picture of Comet Neowise on the morning of July 11. See the glowing head of the comet? That's actually sunlight reflecting off the dust produced when the sun heats the ice that makes up most of the comet's head. Comets are mostly ice with some sandy material mixed in. That sandy material forms the 'comet contrails' that create meteor showers in our upper atmosphere when the earth sweeps through. So why is this month's meteor shower called the 'Perseids'? As we are carried along with our planet, we travel along a nearly circular path as we orbit the sun. This is a BIG orbit and at any given time, we are heading toward a point in space for a few days that is the location a certain constellation. On August 11-12 we will be heading for the area of space that appears to be occupied by the constellation, Perseus. That's also when we are hurtling through the 'contrail' left behind by a comet called Swift-Tuttle. By the way, this comet is on a long trajectory that may eventually put it on a collision course with earth, but not for a very long time.

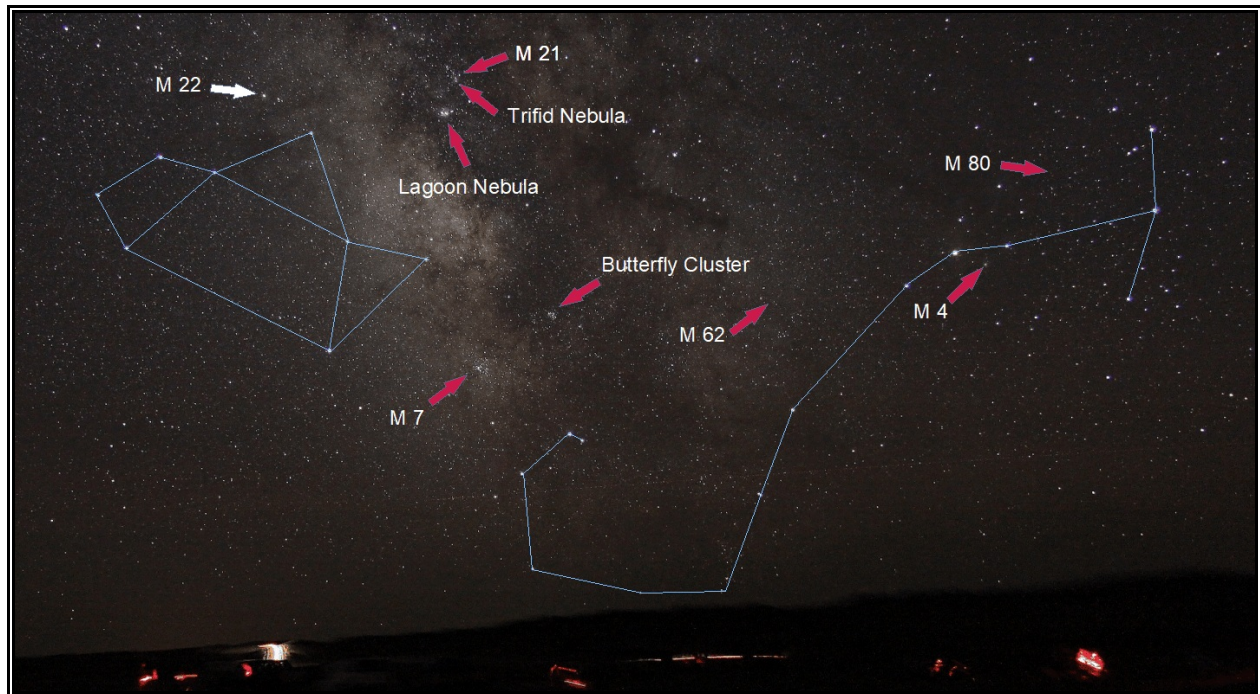
If you and your family plan to view the Perseid Meteor Shower, scout out a site that will be as free of artificial light as possible and don't stay up. Instead, set your alarm for 3AM and enjoy the full splendor of this spectacle when the constellation Perseus is high in the morning sky. You can also enjoy the lovely sunrise! (As long as the weather cooperates.) As you can see below, the last quarter moon, which rises around midnight, will interfere with some of the dimmer meteors that night. The time spent under a starry sky in the wee hours, when the world around you is quiet is, well, magical!

August's four principal phases of the moon

August 3	Full Moon	
August 11	Last Quarter	
August 19	New Moon	
August 25	First Quarter Moon	

'Sweets' for the Eye

July and August are my favorite months for what we amateur astronomers call "faint fuzzies". That's because we get to peer into downtown Milky Way, similar to the way restaurants will appear as you approach a city on a long road trip. Go to a place away from human-made light pollution and look to the southern sky. I took this picture below from a western dark-sky site.



The teapot shaped constellation on the left is called Sagittarius and the big fishhook on the right is Scorpius. I've highlighted some of the bright 'fuzzies' for you. As a challenge, print this page, grab a small telescope or binoculars and find as many of these 'sweets' as you can. If you like, you can go to a website like the Sea and Sky at <http://www.seasky.org/astronomy/astronomy-messier-1to10.html> to identify these Messier objects, designated with the letter 'M'. Charles Messier was an 18th century comet hunter in France who noted the location of about 100 'faint fuzzies', so he wouldn't confuse them with a newly discovered comet.

Dance of the Planets

Continuing to dominate the southern sky in August are the two largest planets of our solar system, Jupiter and Saturn. They will be separated by a distance similar to the bowl of the Big Dipper. That's about one hand-width held out at arm's length. They are up together in the southeastern sky at dark. Both distant planets are about as close as they get in July and August. Not sure you see them? Here's a trick. Most of the time, stars twinkle and planets don't. To the naked eye, Jupiter's color is the same as straw and Saturn appears a little dimmer and grayer. Not that you'll need it because there are no bright stars nearby. Here's a mid August finder chart for Jupiter and Saturn.



The time is around 11PM. The patch of sky in this chart includes the area in the previous picture. If you have good eyes and good binoculars, you might just be able to glimpse some of the bright moons of Jupiter. In order to see Saturn's rings you'll need a telescope that can magnify at least 50 times, or 50X.

The planet Mars rises 3 hours after sunset in August. You might have noticed news reports of three separate spacecraft are being sent to the red planet. That's because the orbits of Mars and Earth are bringing the two planets almost as close together as we ever get! That also means that Mars is growing brighter in the sky. Start looking for Mars around midnight in August!



Happy Stargazing!

For more detailed celestial information, check out skyandtelescope.org.