





# July Skies over the Pinnacles

July 2022

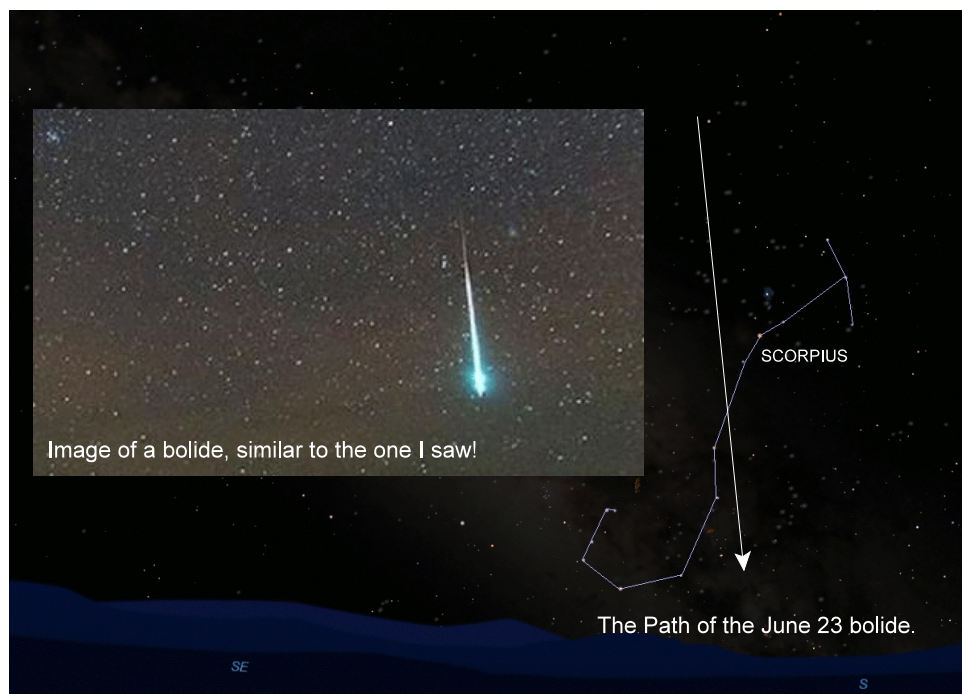
## July's Four Principal Phases of the Moon

July 7	First Quarter	
July 13	Full Moon	
July 20	Last Quarter	
July 28	New Moon	

## Expect the Unexpected

What a silly phrase! It's like asking the question: "What if an immovable object is hit with an irresistible force?" The unexpected, sometimes the wonderful, happens. The trick is to be ready to calmly witness the event so you can recall it as accurately as you can. This is what happened to me on Thursday, June 23. It was 10:44 PM and I had been tinkering with my telescope for a long time that evening. As I sat down for a break I happened to be taking in the beautiful southern night sky around the constellation Scorpius, when a fabulously bright meteor cut the scorpion in half. I could see that the meteor had become visible from nearly straight up because the fast- disappearing tail was still visible. It exploded near Scorpius' bright star, Antares, lighting up a small band of clouds that obscured part of the constellation. In a few seconds, all that remained was a fading, ruler-straight line of ionized air. The explosion appeared green but I've learned that this color is what our eyes are most sensitive to. Maybe it wasn't so green as I remembered. Technically a very bright meteor is called a **fireball**, and may be nearly as bright as the planet Venus. I suppose what I observed was a **bolide** or exploding meteor. A quick check on the origin of the word reveals a ancient Greek word meaning "missile" or "javelin". The explosion that night was several times the brightness of Venus and, I'm sure, it cast a shadow.

The chances of seeing a **fireball** or **bolide** increases if you go outside between midnight and dawn and during an annual meteor shower. Generally, the more you look, the more you see. Don't expect to be rewarded every time you look upward at night, but you never know.



For more information about meteors, check out the August, 2021 "Skies over the Pinnacles".

# Attractions in July

**July 2**

Just as it's getting dark, look low in the western sky to see the crescent Moon neatly nestled in the "sickle" of the constellation Leo. The "sickle" represents the lion's mane.

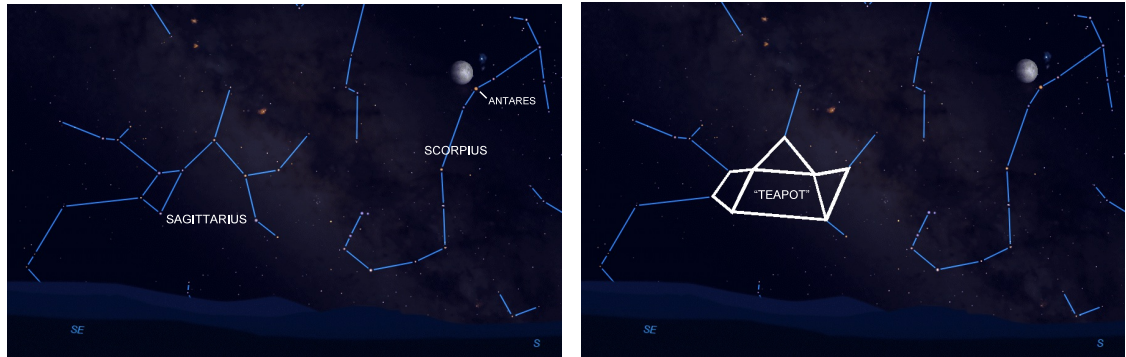


**July 4**

Happy Independence Day! It's also on this day that the Earth, moving along on its oval orbit arrives at this greatest distance from the Sun. This is called aphelion and we will be 3.4% farther from the Sun than we are in January. The closest point is called Perihelion.

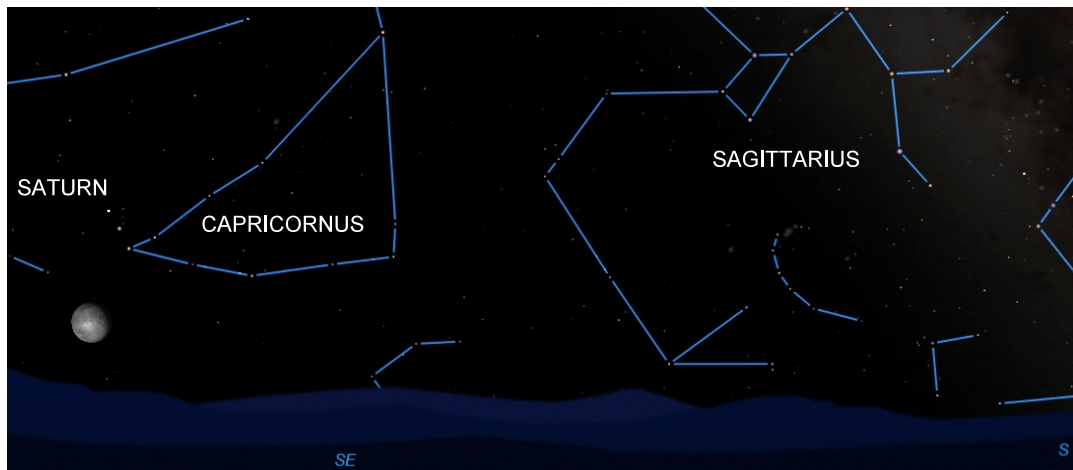
**July 10**

The gibbous Moon looks perilously close to the heart of the scorpion as she is parked next to the bright red star, Antares. To the left of Scorpius, the scorpion, is Sagittarius, that most astronomers call "the teapot". On a clear night, you can see steam rising from the spout. That's near the core of the Milky Way! Sagittarius is the half-man/half horse from Greek Mythology.



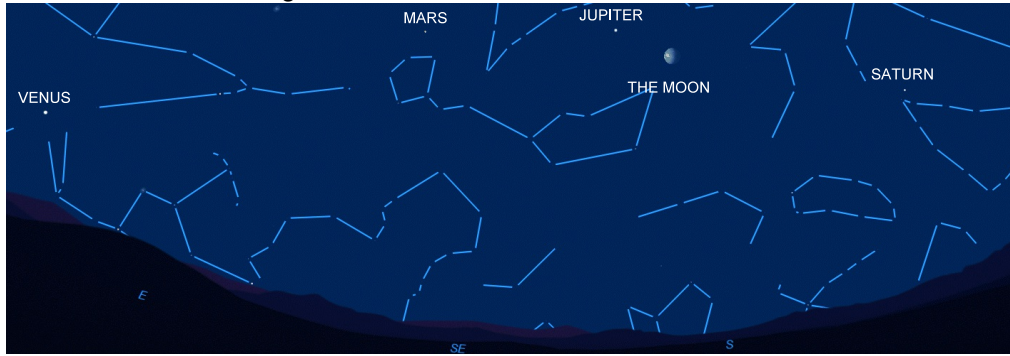
**July 15**

You may be getting your first glimpse of ringed Saturn as it rises in the evening as it is "pushed" above the eastern horizon by the past-full Moon. Look southeast a little before midnight.



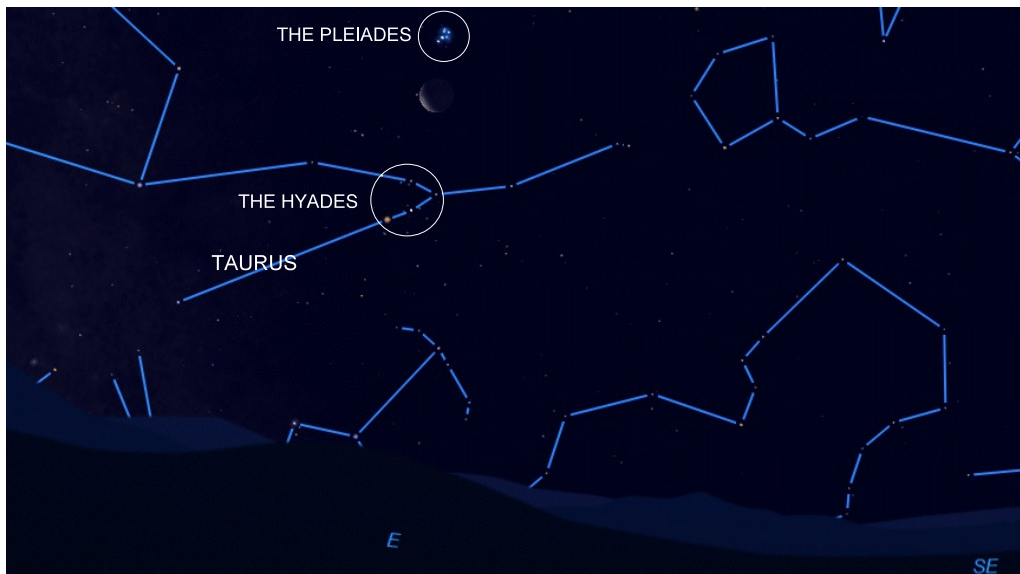
**July 17**

Get up before the sky begins to lighten before sunrise to catch a quietly awesome sight. You can't miss bright Venus low in the east. Now look to the gibbous Moon and then look left and above the Moon to see gas giant, Jupiter, and further left to our neighbor, red Mars. Now look well to the right of the Moon and see ringed Saturn.



**July 23**

In a repeat performance, the Moon can be seen before sunrise between the two largest star clusters (as seen from Earth), the Pleiades and the Hyades, in the constellation, Taurus, the bull. This frequent show really impressed the ancient ancient Egyptians.



**July 29-30**

Get up around 3AM (if you can!) and catch one of the lesser known meteor showers. It's called the Southern Delta Aquariid Meteor Shower. As the Earth travels along it's orbit, certain constellations come into view "just ahead" of us. Think of making a wide turn in a car. As you move, whatever the car points at during our turn appears in front, but only for a short time. That's why the meteors from the dust in the Delta Aquariid cloud appear to come at us from the direction of the star Delta Aquarius. If you head out to see this shower, you will probably see 12 - 25 meteors per hour before it gets light.

