

WEEKLY STARGAZERS' NEWSLETTER

by Dr. Bob

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These are the notes that I use for the weekly radio broadcast on Rome Radio Station WLAQ AM 1410 and FM 96.9. The program airs at 7:50 a.m. each Tuesday morning. The radio station also has a live FaceBook broadcast at the same time: WLAQ-Rome. Send questions to: ryoung@highlands.edu

Etowah GYSTC
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OBSERVATION PERIOD:
08/09/22 – 08/15/22

FUN FACT of the Week:

The entire asteroid belt's total mass is just about 3% of the Moon's mass!

The asteroid belt is a region in the solar system located between the orbits of Jupiter and Mars. Astronomers report that the region is home to 1.1 to 1.9 million asteroids larger than 0.6 miles (1 km) in diameter and millions of smaller ones. However, the greatest part of the asteroid belt's mass comes from several big ones, like Vesta, Pallas, and Hygiea, with diameters less than 600 kilometers. Ceres, which is 950 km in diameter and the largest asteroid in the region, accounts for 25% of the asteroid belt's entire mass.

MOON FOR THE WEEK:

The Moon will be Full on Thursday, August 11th. The Moon will rise at sunset and set at sunrise the next morning. As we will discuss in a section below, this month, the Moon will be a Supermoon.



Full Moon

As a reminder, a Supermoon is a Full moon during the time the Moon is in Perigee, closest approximation to the Earth. This year, the Moon will be 359,828 kms from the Earth at its Perigee. This is nearly 12 percent closer to the Earth than it was on July 26th during its Apogee when it was 406,275 kms away.

The Full Moon in August is called the Full Sturgeon Moon. The native American fishing tribes are given credit for the naming of this Moon, since sturgeon, a large

fish of the Great Lakes and other major bodies of water, were most readily caught during this month. A few tribes knew it as the Full Red Moon because, as the Moon rises, it appears reddish through any sultry haze. It was also called the Green Corn Moon or Grain Moon.

HORIZON TO HORIZON PLANET VIEW

The sun rises at 6:57 a.m. (EDT) and sets at 8:35 p.m. (EDT). Just like last week, the Sun appears to be in the constellation Cancer, the Crab, as seen from Earth. Additionally, the Earth getting closer to the Sun. Last week it was 1.0150 AUs from the Sun this week it is 1.0139 AUs away so it is getting subtly closer.

This week, the Sun will reach an altitude of 71.7 degrees above the horizon at the meridian compared to 73.9 degrees last week.

The Planets:

With the planets continually changing we have to keep a close eye on just where they are each morning and evening. This week Venus, Mars, Jupiter, and Saturn are morning planets. The first planet to rise is **Saturn**. It rises at 8:53 p.m. and can be seen all night long. This means that Saturn is an evening planet if you can stay up late. The next planet to rise is **Jupiter**. It rises at 10:58 p.m. and will be a nice view all night long and well into the morning.

The next planet to rise is **Mars**, it rises at 1:08 a.m. If you are a “late stay upper”, you will watch Mars, rise in the east and by the wee hours of the morning, it will be fairly high in the Eastern sky. **Venus** is the next planet in the series. It rises in the east at 5:22 a.m. so you will be able to see it peeking above the Eastern horizon just before daybreak.

Mercury is the final planet to view. This elusive planet sets at 9:34 a.m. and can be seen in the West just after sunset. The planet is going to be a difficult target so do not give up on seeing it.

MARS ROVER PERSEVERANCE

To get regular and current updates on the progress of NASA's Perseverance rover on Mars, go to the website:

<https://www.space.com/news/live/mars-perseverance-rover-update>

SATELLITES FOR THE WEEK (ISS PASSES):

Oops, this is not a good week for ISS passes. We will try again next week!

CELESTIAL FEATURE OF THE WEEK:

Perseid Meteor Shower & The 4th Supermoon of 2022:

August 11th features two amazing events on the same evening: Perseid Meteor Shower and the fourth and final Supermoon of 2022! While these are amazing events, they somewhat conflict with each other. Ideal conditions for the Perseid Meteor shower (or any other meteor shower for that matter) coincides with a NEW MOON not a FULL MOON. None the less, the Perseid Meteor shower always gives a good show with some bright meteors traversing across the celestial sphere in a spectacular fashion.

Perseid meteor shower will peak on the evening of August 11 and early morning of August 12. With the Moon rising at sunset and setting at sunrise, the Moon will be providing a great deal of moonglow all night long, drowning out the dimmer meteors. With this in mind, the best time to look is when the Moon is lowest on the horizon. That would be shortly after Sunset and shortly before sunrise.

Perseid Meteors are made of tiny space debris from the comet Swift-Tuttle. The Perseids are named after the constellation Perseus. This is because the direction, or radiant, from which the shower seems to come in the sky lies in the same direction as the constellation Perseus, which can be found in the north-eastern part of the sky.

While the skies light up several time a year by other meteor showers, the Perseids are widely sought after by astronomers and stargazers. This is because at its peak, one can see 60 to a 100 meteors in an hour from a dark place when the Moon is not such a pesky nuisance. This year, you should be able to see 20 or so per hour even with the Moon's glare.

How to Watch Meteor Showers

Check the weather: Meteors, or shooting stars, are easy to spot, all you need is clear skies and a pair of eyes, no equipment.

Get out of town: Find a place as far away as possible from artificial lights
Prepare to wait: Bring something to sit or lie down on, face the northern sky, and maybe some snacks too. Stargazing and meteor watching is a waiting game, so get comfortable.

SPACE HISTORY OF THE WEEK

August 12, 1977, Space Shuttle Enterprise was given its first glide test.

Yes, it was named after the StarTrek Enterprise. This particular version of the Space Shuttle did not have a heat shield nor any engines. It was designed to see how it would glide in the Earth's atmosphere. Afterward there was discussion on retrofitting it for future flights but it was more expensive to retrofit it than it was to build another one.

It currently is at the Smithsonian in Washington, D.C.

QUESTION OF THE WEEK:

**I heard something about a Supermoon this week. What is a Supermoon?
Travis M.**

Yes, We have a Supermoon this month! According to one definition of Supermoon, this Supermoon is the fourth of the year: May 16th, June 14th, July 13th, and August 11th.

How do we define a Supermoon? Generally speaking, a supermoon is a full moon that appears "larger than a typical full moon" due to it being closer to Earth.

The broad definition of a Supermoon is, it is a **new or full** moon that occurs when the Moon is near perigee (the point in the Moon's orbit where it is closest to Earth). By this definition, there can be several supermoons in a year. This term "supermoon" was coined by astrologer Richard Nolle in 1979 and specifies that the Moon must be within 90% of perigee.

Strict Definition: A supermoon is the single closest **new moon and full moon** of the year. This means that there can be only two supermoons each year (a full moon supermoon and new moon supermoon).

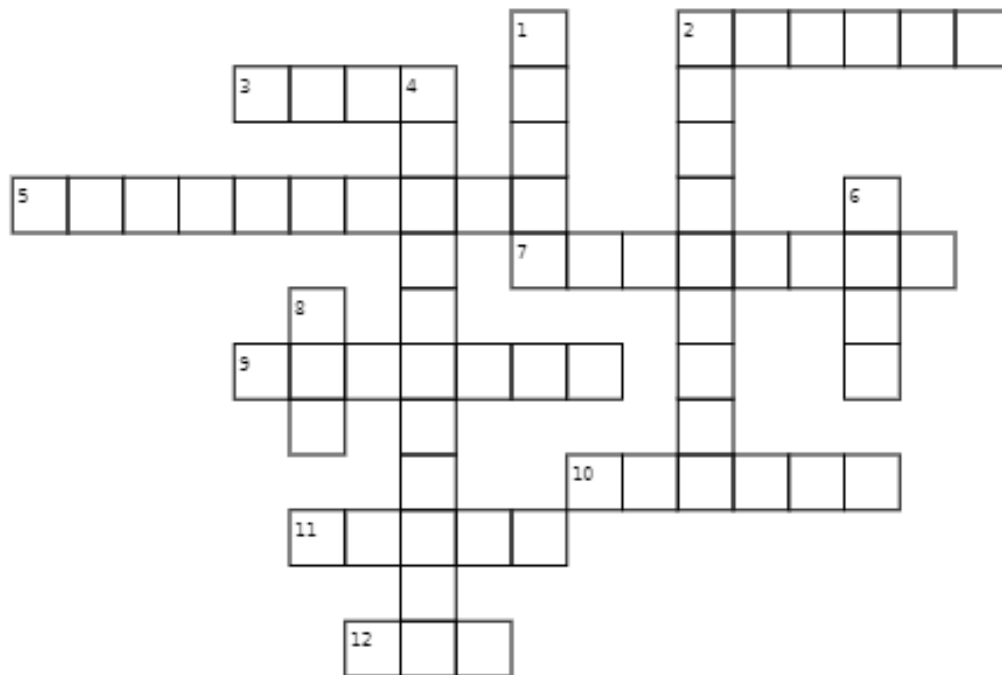
Now, most folks go by the broad definition, since it's much more interesting for the possibility of have multiple supermoons instead of just one or two. Plus, "supermoon" tends to refer only to full moons, rather than both full and new moons. (This makes sense, given that new moons are essentially invisible from Earth.)

How Many Supermoons Are There in 2022?

Different publications use slightly different thresholds for deciding which full Moons qualify as supermoons, but here at the Old Farmer's Almanac, we follow the broad definition described above.

According to this definition, in 2022, the full Moons of May, June, July, and August all qualify as supermoons—reaching 90% of perigee, the Moon's closest approach to Earth.

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Down:

1. The largest asteroid in asteroid belt accounting for 25% of the entire mass of belt.
2. The Full or New Moon that happens close to perigee.
4. Where is the first Space Shuttle test glider stored?
6. How many Supermoons are going to take place in August 2022 by the common definition of Supermoons?
8. The phases of the Moon that are associated with the Supermoon, _____ and Full.

Across:

2. The first planet to rise in the East in the east, 8:53 p.m.
3. The Red Planet rises in the East at 1:08 a.m.
5. The first Space Shuttle glider to be given its maiden glide test on August 12, 1977.
7. A name given the August Full moon by the native American fishing tribes.
9. Meteor shower that peaks on August 11th.
10. The constellation that the Sun is in at this time as seen from Earth.
11. The comet that produces the Perseid meteor shower, _____ - Tuttle
12. If we use the strict definition for Supermoon, how many would there be each year?