

WEEKLY STARGAZERS' NEWSLETTER

by Dr. Bob

Volume 6, Issue 32

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
Website QR code



OBSERVATION PERIOD:
08/16/22 – 08/22/22

FUN FACT of the Week:

As the Earth orbits the Sun, it travels at a blistering of 66,000 miles an hour! The Earth travels about 9.4×10^8 kms (940,000,000 kms) or 5.8×10^8 miles (580,000,000 miles) in a year!

MOON FOR THE WEEK:

The Moon will be in Third Quarter on Friday, August 19th. The Moon will cross the **meridian** at sunrise on Friday. Look for it to get closer and closer to the Eastern horizon during the week before sunrise.



On Friday, the Moon will be 400,166 kms (248.65 miles) from the Earth. Notice that this is further away than last week, during the Supermoon.

HORIZON TO HORIZON PLANET VIEW

The sun rises at 7:05 a.m. (EDT) and sets at 8:23 p.m. (EDT). Just like last week, the Sun appears to be in the constellation **Leo**, the Lion, as seen from Earth. Additionally, the Earth getting closer to the Sun. Last week it was 1.0139 AUs from the Sun this week it is 1.012 AUs away so it is getting subtly closer.

This week, the Sun will reach an altitude of 68.3 degrees above the horizon at the meridian compared to 71.7 degrees last week.

The Planets:

Mercury sets in the evening sky at 7:36 p.m. which is about 30 minutes after the Sun. This should mean that you might get a good glimpse of this elusive planet low on the western horizon after sunset.

Venus rises at 4:51 a.m. which is a little more than two hours before the Sun. Since Venus is so bright, you should not have any trouble spotting it, as long as you have a good low eastern horizon and clear skies.

Mars, the Red Planet, rises at mid-night so if you stay up late at night you will see it rise in the East and cross the sky until sunrise the next morning. The best time to spot it is in the early morning before sunrise. Mars is at the meridian at 6:00 a.m. so look for it near the meridian just before sunrise.

Jupiter rises in the East at 8:54 p.m. so you will be able to see this planet all night long. Jupiter crosses the meridian at 3:00 a.m. so by sunrise, it will be well past the meridian toward the western horizon.

Saturn at 6:01 p.m. The Ringed Planet is a great evening sky object. Saturn crosses the meridian at mid-night so it is high all night long.

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):

19 Aug	-1.2	06:28:44	10°	S	06:31:02	17°	SE	06:33:20	10°	E	visible
21 Aug	-3.3	06:27:01	10°	SW	06:30:20	60°	SE	06:33:37	10°	NE	visible
22 Aug	-2.2	05:40:25	21°	S	05:41:47	29°	SE	05:44:45	10°	ENE	visible

CELESTIAL FEATURE OF THE WEEK:

Aquila the Eagle:

Aquila lies astride the celestial equator. The alpha star, Altair, is a vertex of the Summer Triangle asterism.

The constellation is best seen in the summer as it is located along the Milky Way. Because of this location along the line of our galaxy, many clusters and nebulae are found within its borders, but they are dim and there are few galaxies.

On the evening of Dec 2, 1999, I took a picture of Aquila from my back yard. When I compared the stars in the picture with a star map, I saw an extra star! I assumed it was a problem with my picture. In February 2000, Sky and Telescope magazine had virtually a duplicate picture of the one I took. Only this was taken by a nova hunter. I took a picture of a nova that was visible for only a few days before it disappeared – only I did not know what I had captured!

SPACE HISTORY OF THE WEEK

August 18, 1868: Sir J. Norman Lockyer (1836-1920) discovers helium in the Sun. He was a British astronomer and a respected scientist in his day.

Today Lockyer is perhaps better known for his astronomical interpretations of ancient and prehistoric sites. More specifically the *Heel Stone* of Stonehenge. Lockyer attempted to calculate back from the point where the sun now rose on midsummer's dawn in 1901 to determine when it would have risen precisely over the *Heel Stone* and thereby establish the date when Stonehenge was built.

August 20, 1977: The US launched Voyager 2, an unmanned spacecraft carrying a 12-inch copper phonograph record containing greetings in dozens of languages, samples of music, and sounds of nature, hoping for a response from any other minds in the universe. It is 131 AUs from the Sun now..(over 10 trillion miles from the Sun).

It is interesting to wonder what medium we would use today if we were to resend this message: do you think we would use a phonograph record? In the days of CDs and DVDs how many of us have even seen a phonograph record lately?

QUESTION OF THE WEEK

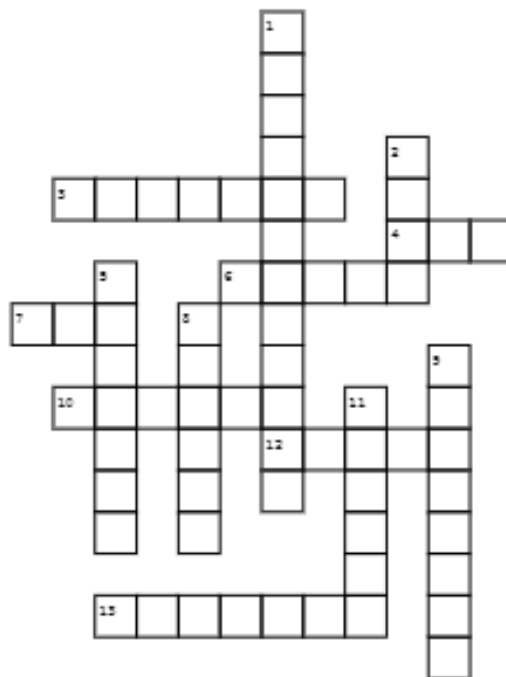
Dr. Bob, I heard that scientists know the temperature of stars. How can they possibly know that, since they are so far away? Chase W.

Great question, Chase. Stars are much too distant to have any way to determine their temperature until we simply look at the star. The brightness of the star and its color tell us a lot about the star.

Think about a rainbow, all the colors that you can see: ROYGBV. Each of those colors has a different wavelength and therefore different amount of energy. Astronomers use that to determine the temperature. The hottest stars will have a peak of color in the ultraviolet region of the spectrum (20,000 degrees). A yellow-white star is about 7,000 degrees. A yellow star is about 6,000 degrees (the sun). At 4,000 and 3,000 degrees the stars are yellow and red.

Whiter the star hotter the star, more red the star, cooler it is.

The Stargazers' Newsletter : 08-16-22



Down:

1. Last Martian rover to be sent to the Red Planet
2. Red Planet
5. The satellite that is 131 AUs from the Sun, carrying 12-inch copper phonograph record.
8. The constellation called the Eagle
9. The Zenith to Nadir line running due south from an observer's perspective.
11. Brightest star in Aquila the Eagle

Across:

3. Largest planet in the solar system, larger than Earth by more than a thousand times.
4. Which color of star is the coolest?
6. Planet that rises about 2 hours before the Sun
7. The constellation that the Sun is in currently as seen from Earth.
10. The Ringed Planet, the 6th planet from the Sun.
12. What about stars tell us the temperature of the star?
13. Discovered Helium in the Sun in 1868.