

# WEEKLY STARGAZERS' JOURNAL

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

## OBSERVATION PERIOD:

05/10/22 – 05/16/22

## FUN FACTS:

Saturn is the ringed planet and has the most moons of any planet in the Solar System; 82, last count.

## MOON FOR THE WEEK:

The Moon will be at Full on Monday, May 16<sup>th</sup>.

The name of the Full Moon in May is the Full Flower Moon. May, In most areas, flowers are abundant everywhere during this time. Thus, the name of this Moon. Other names include the Full Corn Planting Moon, or the Milk Moon.

The Moon will be rising later each evening until it rises at sunset on the 16<sup>th</sup>. This is a good time to look at the features on the Moon to the West or left side.

This month, the Moon will slide into the Earth's shadow and produce a total lunar eclipse. The only time that a total lunar eclipse can occur is during a Full Moon. On the other hand, during a New Moon the Earth can slip into the shadow of the Moon producing a Solar Eclipse. It is not uncommon for a Solar Eclipse to follow a Lunar Eclipse two weeks later, although they are rarely seen at any one location.



This Total Lunar eclipse will begin around 11:00 p.m. on May 15<sup>th</sup>, reach the peak at 12:15 a.m., and end the totality at 12:54 p.m. (EDT). This means that we will be able to see the entire totality during Sunday Night (5/15) / Monday Morning (5/16). The only question is, what will the weather be like?

During totality the Moon will turn reddish, hence the name Blood Moon.

### **HORIZON TO HORIZON PLANET VIEW**

The sun rises at 6:43 a.m. (EDT) and sets at 8:30 p.m. (EDT). The Sun is in Aries the Ram and it is still increasing its distance from the Sun in its orbit. Currently the Earth is 1.0086 AUs or 93,755,227 miles from the Sun.

This week, the sun is 73.5 degrees which is higher than the 71.6 degrees altitude last week.

### **The Planets:**

All of the planets are visible this week. The morning skies have Venus, Mars, Jupiter, and Saturn. The first planet to rise in the East is Saturn. It rises at 2:57 a.m., nearly 4 hours before the Sun. The next planet to rise is Mars, the Red Planet. It rises at 4:06 a.m. The third planet to rise is Jupiter, the largest planet. Finally, before sunrise the brightest planet, Venus rises almost two hours before the Sun.

The evening holds the dim, elusive planet, Mercury. For this one, look low on the Western horizon after sunset. You will need good clear skies and no outside lights to pick this one out.

A couple of things to know about the naked eye planets.

**Mercury** is the closest planet to the sun and it has the greatest difference in daytime to nighttime temperatures.

**Venus** is the second planet from the Sun and it is called Earth's Twin. Venus goes through phases like the Moon.

**Mars** is the Red Planet. It has two moons and there are polar caps made up of ice and carbon dioxide.

**Jupiter** is the largest planet that is more than a thousand times larger than the Earth. It is made up of Hydrogen and Helium.

**Saturn** is the Ringed Planet made up of Hydrogen and Helium as well. Saturn is about 700 times larger than Earth.

## 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):

<a href="#">13 May</a>	-3.9	21:51:17	10°	SW	21:54:35	67°	SE	21:57:53	10°	NE	visible
<a href="#">13 May</a>	-0.5	23:29:46	10°	WNW	23:31:37	14°	NNW	23:33:29	10°	N	visible
<a href="#">14 May</a>	-0.8	04:23:42	10°	NNW	04:26:03	18°	NNE	04:28:24	10°	ENE	visible
<a href="#">14 May</a>	-3.5	05:59:45	10°	WNW	06:02:56	44°	SW	06:06:07	10°	SSE	visible
<a href="#">14 May</a>	-3.1	21:03:13	10°	SSW	21:06:14	33°	SE	21:09:16	10°	ENE	visible
<a href="#">14 May</a>	-1.1	22:40:23	10°	W	22:43:01	21°	NNW	22:45:38	10°	NNE	visible
<a href="#">15 May</a>	-0.3	03:36:03	10°	N	03:37:25	12°	NNE	03:38:46	10°	NE	visible
<a href="#">15 May</a>	-3.9	05:11:14	10°	NW	05:14:33	89°	N	05:17:53	10°	SE	visible

## STAR PATTERNS IN THE SKY

### Arcturus in Bootes

Constellation Boötes has the brightest star in the northern celestial hemisphere. With a visual magnitude of  $-0.05$ , it is the fourth brightest star in the night sky, after  $-1.46$  magnitude Sirius,  $-0.86$  magnitude Canopus, and  $-0.27$  magnitude Alpha Centauri. It is a relatively close star at only 36.7 light-years from Earth, and, together with Vega and Sirius, one of the most luminous stars in the Sun's neighborhood.

Arcturus is a type K0 III orange giant star, with an absolute magnitude of  $-0.30$ . It has likely exhausted its hydrogen from its core and is now in its active hydrogen shell burning phase. It will continue to expand before entering horizontal branch stage of its life cycle.

### Bootes:

The name comes from the Greek meaning herdsman or plowman (literally, ox-driver).

One of the 48 constellations described by the 2nd century astronomer Ptolemy, Boötes is now one of the 88 modern constellations. It contains the fourth brightest star in the night sky, the orange-hued Arcturus. Boötes is home to many other bright stars, including eight above the fourth magnitude and an additional 21 above the fifth magnitude, making a total of 29 stars easily visible to the naked eye.

## **SPACE HISTORY OF THE WEEK**

**1963, May 15, Faith 7 was launched...** last of the Mercury program mission flights and final manned space mission of the U.S. Mercury program, launched on May 15, 1963 from Launch Complex 14 at Cape Canaveral, Florida.

The spacecraft, named Faith 7, completed 22 Earth orbits before splashing down in the Pacific Ocean, piloted by astronaut Gordon Cooper, then an Air Force major. The mission marked the last time an American was launched alone to conduct an entirely solo orbital mission.

The space programs prior to the Space Shuttle program included: Mercury (1961-64); Gemini (1965-67); Apollo (1968-73).

## **QUESTION OF THE WEEK**

**I heard there will be a lunar eclipse this week. I also heard that it is called a Blood Moon during totality. Why do they call it a Blood Moon? Sylvia L.**

As the moon passes into the Earth's shadow during the eclipse, it looks like a quick version of a monthly change of the Moon's phases. Once the shadow of the Earth fully covers the moon, it will turn red. That's because the Earth's atmosphere serves like a filter for various wavelengths of visible light.

Because the long waves of the visible spectrum penetrate the atmosphere the most, the only light reaching the moon is the longer wavelengths, colored red. It's the same premise that makes sunrises and sunsets red. Therefore, you're seeing the light of ever simultaneous sunrise and sunset projected onto the

moon. These long red waves of the spectrum turn the moon red during totality; hence, the Blood Moon.