

# 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

**OBSERVATION PERIOD:**  
09/13/22 – 09/19/22

Etowah GYSTC  
Website QR code



## **FUN FACT of the Week:**

Jupiter's largest moon, Ganymede, has a salty ocean that contains more water than on Earth. The moon is larger than Mercury and if it were orbiting the Sun instead of Jupiter, it would be a planet. Ganymede is one of the four moons that Galileo saw in 1610.

Ganymede was discovered by Italian astronomer Galileo Galilei on Jan. 7, 1610. The discovery, along with his discovery of three other large moons around Jupiter, was the first time a moon was discovered orbiting a planet other than Earth.

## **MOON FOR THE WEEK:**

The Moon will be Third Quarter on Full Moon on Saturday, September, 9/17.

Currently, the Moon is 381,394 kms (236,987 miles) from Earth. Last week the Moon was just at perigee (364,492 kms). This is when Moon is a close to the Earth as it gets during an orbit. On September 19<sup>th</sup>, the Moon will be a Apogee, it furthest distance, 404,556 kms away. To convert kms to miles, multiply kms by 0.62 miles/km.



Third Quarter

## **HORIZON TO HORIZON PLANET VIEW**

The sun rises at 7:22 a.m. (EDT) and sets at 7:51 p.m. (EDT). As with the past couple weeks, the Sun still in the constellation **Leo**, the Lion. In addition to the Moon getting closer to the Earth, the Earth is getting closer to the Sun. Last week it was 1.008 and this week it is 1.0063 AUs away!

The Sun will reach an altitude of 59.7 degrees above the horizon. Last week the Sun was at an altitude of 62.4 degrees above the horizon by comparison.

### **The Planets:**

**Mercury** sets in the evening sky at 8:17 p.m. which is 45 minutes after the Sun. If you have a good low horizon you might get a glimpse of this elusive planet. Mercury crosses the meridian at 2:37 p.m., near mid-day.

**Venus** rises at 6:32 a.m. which is an hour before the Sun. Since Earth's Twin is so bright, it would be easy to see in the morning sky, if it were higher. Unfortunately, right now it is still a bit too low to be seen very well. Venus crosses the meridian at 12:58 p.m., shortly after lunch.

**Mars**, with its two moons, rises at 11:55 a.m.. The Red Planet should be seen in the East and cross the sky until sunrise the next morning 1:58 a.m. The best time to spot it is in the early morning before sunrise. Mars crosses the meridian at 6:58 a.m. so if you are looking before sunrise, it will be just east of the meridian. To know you are seeing this red planet, look for its amber hue. It is pretty bright and will be easy to spot.

**Jupiter** rises in the East at 8:33 p.m. By mid-night it will be high in the eastern sky. It will cross the meridian at 3:08 a.m. If you get up before sunrise, it will be to the right of the meridian and very bright. Jupiter is an easy planet to view, all you need is clear skies. If you have a pair of binoculars, you can easily see the four Galilean Moons. In all, Jupiter has 79 moons. With a small telescope you might also be able to see the Great Red Spot in its surface.

**Saturn** rises at 6:28 p.m. and can be seen all night long. The Saturn is a great evening sky object. The Ringed Planet crosses the meridian at 11:42 a.m., just

before mid-night, so it is high in the sky all night long. It takes a telescope with a magnification of at least 40x to see the rings of the rings.

## 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 Sep</a> | -3.0 | 20:44:55 | 10° | SSW | 20:47:57 | 33° | SE  | 20:49:24 | 22° | E  | visible |
| <a href="#">13 Sep</a> | -0.4 | 22:22:03 | 10° | W   | 22:22:22 | 12° | W   | 22:22:22 | 12° | W  | visible |
| <a href="#">14 Sep</a> | -2.3 | 21:32:56 | 10° | WSW | 21:36:03 | 35° | NW  | 21:36:49 | 31° | N  | visible |
| <a href="#">15 Sep</a> | -3.5 | 20:44:06 | 10° | SW  | 20:47:25 | 67° | NW  | 20:50:46 | 10° | NE | visible |
| <a href="#">16 Sep</a> | -0.9 | 21:33:48 | 10° | WNW | 21:35:51 | 15° | NNW | 21:37:47 | 11° | N  | visible |

## CELESTIAL FEATURE OF THE WEEK:

### Circlet of Pisces

Pisces is a constellation of the zodiac. Its name is the Latin plural for fish. It lies between Aquarius to the west and Aries to the east. The ecliptic and the celestial equator intersect within this constellation and in Virgo.

The vernal equinox (September 22) is currently located in Pisces, due south of  $\omega$  Psc, and, due to precession, slowly drifting below the western fish towards Aquarius.

The circlet is an asterism within Pisces along its northern component.

M74 is a loosely wound spiral galaxy in Pisces, found at a distance of 30 million light years. It has many clusters of young stars and the associated nebulae,

showing extensive regions of star formation. It was discovered by Pierre Méchain, a French astronomer, in 1780.

## **SPACE HISTORY OF THE WEEK**

### **September 15, 1965 - First episode of Lost in Space**

Lost in Space is an American science fiction television series following the adventures of a family of pioneering space colonists who struggle to survive in a strange and often hostile universe after their ship was sabotaged and thrown off course. It was created and produced by Irwin Allen, filmed by 20th Century Fox Television, and broadcast on CBS. The show ran for three seasons, with 83 episodes airing between 1965 and 1968. The first television season was filmed in black and white, with the second and third seasons filmed in color.

Its mission is to take a single family (the Robinsons) on a five-and-a-half year journey to an Earth-like planet orbiting the star Alpha Centauri. The Robinson family consists of Professor John Robinson, his wife Maureen, and their three children: Judy, Penny, and Will. The family is accompanied by U.S. Space Corps Major Donald West.

### **September 15, 1968: Zond 5 launched and became the first circumlunar spaceflight with living creatures on board.**

Zond 5 launched on September 15 and became the first spacecraft to circle the Moon and return to land on Earth. On September 18, the spacecraft flew around the Moon. The closest distance was 1,950 km. High-quality photographs of the Earth were taken at a distance of 90,000 km. A biological payload of two Russian tortoises, wine flies, meal worms, plants, seeds, bacteria, and other living matter was included in the flight.

On September 22, the reentry capsule entered the Earth's atmosphere but could not perform a skip reentry due to a failure of the guidance system. Landing was supposed to occur in Kazakhstan, but instead Zond 5 splashed down in the Indian Ocean and was successfully recovered by the USSR recovery ships.

Although the ballistic reentry would have been bad for human occupants, it did not appear to affect the biological specimens, all of which were alive and well when the descent module was finally opened four days after landing. It was announced that the tortoises had lost about 10% of their body weight but

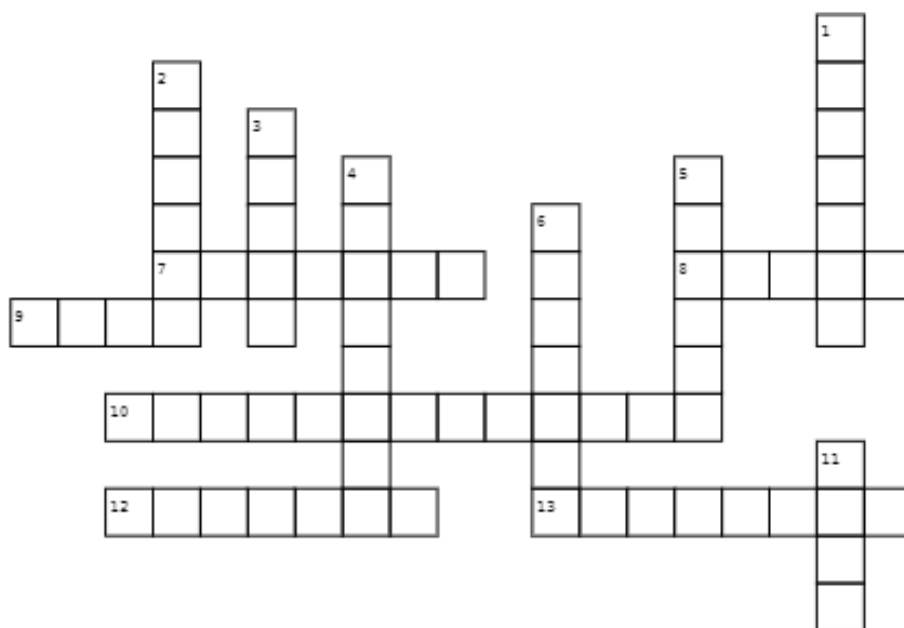
remained active and showed no loss of appetite. This spacecraft was planned as a precursor to a manned lunar spacecraft.

## **QUESTION OF THE WEEK**

### **What causes the autumnal and vernal equinoxes?**

As the earth orbits the sun, the tilt of the earth's axis causes the sun to change position relative to the earth's equator. During our summer, the sun is positioned above the equator and higher in the sky. We have long days during this time of the year. During our winter, the sun is much below the equator and thus short days. As the sun passes from above the equator to below the equator.. it passes over the equator.. thus equinoxes... autumnal (fall) and vernal (spring) equinoxes.

# The Stargazers' Newsletter - 9/13/22



## Down:

1. Planet that sets in 45 minutes after the Sun.
2. The constellation that the Sun is in during the Vernal Equinox.
3. The planet that is referred to as Earth's Twin.
4. The moon around Jupiter that has more water than Earth.
5. The planet with the brightest rings and 82 moons.
6. The outer planet with 79 moons.
11. The space craft that was launched on September 15 and became the first spacecraft to circle the Moon,

## Across:

7. The sun passes from above the equator to below the equator.. it passes over the equator during the \_\_\_\_\_.
8. The phase of the Sun that occurs this Saturday.
9. The planet that crosses the meridian at 6:58 a.m.
10. The position of the Sun where the stars look like a lion, the \_\_\_\_\_ Leo.
12. Who discovered Ganymede?
13. Lost in Space is an American science fiction television series family.