

# 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:**  
01/17/23 – 01/23/23

Etowah GYSTC  
Website QR code



**FUN FACT OF THE WEEK:**



Comet C/2022 E3 (ZTF) viewed through a telescope on December 24, 2022. It will reach its nearest point to Earth in early February. Dan Bartlett

Comet C/2022 E3 (ZTF), named for its discovery last March at the Zwicky Transient Facility in California, will reach its closest position to the sun on Thursday night, January 12, before proceeding en route toward our planet. The mass of ice and organic material will reach its closest point to Earth—just over 26 million miles away—on February 2.

Stargazers should have the best chance of seeing the comet on January 21, when the new moon phase will “provide the ideal dark skies needed to spot” it, per Space.com’s Robert Lea. On January 30, it will appear near the North Star, report Don Machholz and Eddie Irlzarry of EarthSky.

### **MOON FOR THE WEEK:**

The Moon is New on Saturday, January 21<sup>st</sup>. On the 21<sup>st</sup> the Moon will be a perigee, the closest distance to the Earth at 356,596 kms away.



To convert kms to miles, multiply kms by 0.62 miles/km.

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

The sun rises at 7:06 a.m. and sets at 5:55 p.m. This means that there are 10 hrs. and 49 mins of daylight compared to 10 hrs. 2 minutes last week.

The Sun is still in the **constellation Sagittarius**. Sagittarius is a southern hemisphere constellation which can be seen low on the horizon from the mid-northern hemisphere latitudes.

The is Earth 0.9837 AUs from the Sun. It is 34.9 degrees altitude when it crosses the meridian, the highest point in the sky as it crosses from East to West. We will see that the Sun will continually get higher and will remain up longer each day as the seasons change.

### **The Planets:**

**Mercury** rises at 6:30 a.m. This is about 30 minutes before the Sun. This means that you might be able to see the elusive planet low on the eastern horizon at sunrise. The planet will be getting higher in the morning each week.

**Venus** rises at 9:05 a.m. which is about 2 hrs. after sunrise. Venus sets at 7:27 p.m. which is 1.5 hrs after sunset. You will begin to see it high in the evening sky. This is when the planet Venus is called the Evening Star.

**Mars** rises up in the eastern horizon at 2:02 p.m. and will be up all night long, The Red Planet crosses the meridian at 9:18 p.m. It will be easy to see this planet with its amber hue. Mars sets in the western sky at 4:33 a.m. Mars has two moons, Phobos and Demos.

**Jupiter** crosses the meridian at 5:10 p.m. leading Mars by 30 degrees or so. Jupiter is the largest planet in the solar system by far, more than 1,000 times larger than the Earth. This huge planet is very bright and easy to spot with the naked eye. The four Galilean Moon are visible with nothing more than a pair of binoculars: Io, Callisto Ganymede, and Europa. This planet sets at 11:09 p.m. This planet is like a small solar system with its 79 moons.

**Saturn** crosses the meridian at 5:10 p.m. as the sun begins to head toward the western horizon. As the skies darken, it will become much easier to spot to the right (west) of Jupiter. While Saturn is not as large as Jupiter, Saturn, **Ringed Planet**, has 82 moons, the most moons of any planet in the solar system. The planet sets in the west at 8:01 p.m.

### 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="#">17 Jan</a>	-1.8	19:30:46	10°	W	19:33:26	21°	NNW	19:34:19	19°	N	visible
<a href="#">18 Jan</a>	-2.5	18:41:30	10°	WSW	18:44:37	35°	NW	18:47:44	10°	NNE	visible
<a href="#">19 Jan</a>	-0.9	19:32:27	10°	NW	19:33:05	10°	NNW	19:33:43	10°	NNW	visible
<a href="#">20 Jan</a>	-1.3	18:41:59	10°	WNW	18:44:04	15°	NNW	18:46:08	10°	N	visible

## **STAR PATTERNS IN THE SKY**

**The Winter Hexagon or Winter Circle/Oval** is an asterism appearing to be in the form of a hexagon with vertices at Rigel (Orion), Aldebaran (Taurus), Capella (Auriga), Pollux (Gemini), Procyon (Canis Minor), and Sirius (Canis Major).

It is mostly upon the Northern Hemisphere's celestial sphere. On most locations above the equator this asterism is prominently in the sky from approximately December to March.

This is a wonderful asterism to help you get a feel for the relative locations for many constellations.

## **SPACE HISTORY OF THE WEEK**

**Jan 19, 1747: Johann Bode was born.**

A German astronomer known for his reformulation and popularization of the Titius–Bode law. Bode determined the orbit of Uranus and suggested the planet's name.

His name became attached the 'law' discovered by Johann Daniel Titius in 1766. Bode first makes mention of it in the *Anleitung zur Kenntniss des gestirnten Himmels* in a footnote, and although it is often officially called the Titius–Bode law, it is also commonly just called Bode's law. This law attempts to explain the distances of the planets from the Sun in a formula although ironically it breaks down for the planet Neptune which was later discovered in Berlin. It was the discovery of Uranus at a position predicted by the law which aroused great interest in it. There was actually a gap (with no planet) between Mars and Jupiter, and Bode urged a search for a planet in this region which culminated in a group formed for this purpose, the so-called "Celestial Police". However before the group initiated a search, they were trumped by the discovery of the asteroid Ceres by Giuseppe Piazzi from Palermo in 1801, at Bode's predicted position.

**Jan 20, 1930: Edwin “Buzz” Aldrin was born.**

An American engineer and former astronaut. As the Lunar Module Pilot on Apollo 11, he was one of the first two humans to land on the Moon, and the second person to walk on it. He set foot on the Moon at 03:15:16 on July 21, 1969 (UTC), following mission commander Neil Armstrong. He is a former U.S. Air Force officer with the Command Pilot rating.

## **Jan 22, 2003: Pioneer 10's last signal to Earth**

After more than 30 years, it appears the venerable Pioneer 10 spacecraft has sent its last signal to Earth. Pioneer's last, very weak signal was received on Jan. 22, 2003.

Pioneer 10 was built by TRW Inc., Redondo Beach, Calif., and was launched March 2, 1972, on a three-stage Atlas-Centaur rocket. Pioneer 10 reached a speed of 32,400 mph needed for the flight to Jupiter, making it the fastest human-made object to leave the Earth; fast enough to pass the moon in 11 hours and to cross Mars' orbit, about 50 million miles away, in just 12 weeks.

Currently Pioneer 10 is 132,724 AUs from the Sun. An AU is about 92.9 million miles.

### **QUESTION OF THE WEEK:**

**Dr. Bob, I have heard you mention the term "asterism". I have seen the definition but could you talk about it for a minute and explain it for me?**

**Bruce R.**

An asterism is a shape made from stars that are within and across constellations.

I have named several examples:

Keystone in Hercules

Backward Question Mark in Leo

Teapot in Sagittarius

Sword or Belt in Orion

Great Square in Pegasus

Northern Cross in Cygnus

Fishhook in Scorpius

Ice Cream Cone in Bootes

"W" in Cassiopeia

Coathanger in Vulpecula