

WEEKLY STARGAZERS' NEWSLETTER

by Dr. Bob

Volume 6, Issue 42

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:
10/23/22 – 10/31/22

Etowah GYSTC
Website QR code



FUN FACT OF THE WEEK:

One of the largest stars known to astronomers is UV Canis Majoris. This star is a red-hypergiant and is 2.8 billion times larger than the Sun, by volume. If it were in place of the Sun, its surface would be between the orbits of Jupiter and Saturn!

STAR PARTY , October 28th or 29th: Georgia Highlands (GHC) and Georgia Youth Science and Technology Center (GYSTC) will cohost a star party on Friday evening (10/28) with a cloud-out session on Saturday (10/29) at the Bishop Observatory. Unfortunately the weather report does not look good for this weekend. If it is cloudy, we will have to reschedule the event. Go to the QR code for special directions about the star party. We will update the event on Friday around noon. **Do not come to the observatory unless the StarParty has been given the “OKAY”, weather wise.**

MOON FOR THE WEEK:

The Moon will be **New** today (10/25). The Moon will be phasing from Third Quarter to New during the week. This means that during the first of the week, the Moon will be rising at midnight and by sunrise it will be crossing the meridian at sunrise. By the end of the week it will rise just before sunrise. The best time to view the Moon will be early in the day as the Moon will be setting about midday. As you observe the



Moon, you will be able to see the features to the western side (left side) and its features.

During the week the Moon will be getting closer as it moves from Apogee toward **Perigee**. Currently, the Moon is 403,384 kms (250,651 miles) from the Earth and is getting closer. At perigee, on October 29th, the Moon will be 368,291 kms (228,845 miles).

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

HORIZON TO HORIZON PLANET VIEW

The sun rises at 7:54 a.m. (EDT) and sets at 6:56 p.m. (EDT). This means that there is 11 hrs. 2 minutes of daylight hours this week compared to 11 hrs. 14 minutes last week or 12 minutes fewer minutes daylight than last week. The Sun is still in the **constellation Virgo**, the Maiden. The Earth is now 0.994 AUs from the Sun. Last week it was 0.996 AUs from the sun, which is closer than last week. As we have discussed, the Earth is getting closer and closer to the Sun until the Earth reaches perihelion on January 4th.

As a review, one Astronomical Unit is about 93 million miles. Thus, the current distance to the Sun is 1.49×10^8 kms or 0.92×10^8 miles.

The Sun will reach an altitude of 43.8 degrees altitude when it crosses the **meridian** as compared to 45.9 degrees altitude last week.

The Planets:

Mercury rises at 7:06 a.m. That is about 45 minutes before the Sun. Look for it low on the Eastern horizon before sunrise.

Venus (Earth's Twin) rises at 7:57 a.m. which is 3 minutes before the Sun. Venus is too close to the horizon at sunrise to view.

Mars rises in the East at 9:56 p.m. The Red Planet will be up all night long. By 5:03 a.m. it crosses the meridian, so it is high in the South before sunrise.

Jupiter rises in the East at 5:34 p.m. Jupiter crosses the **meridian at 11:29 p.m.** You can easily see this planet to the East after sunset and virtually all night long. If you have a pair of binoculars, look at it to see the cloud belts and 4 Galilean Moons whirling about it.

Saturn rises at 3:39 p.m. and can be seen dimly at sunset close to the meridian. It will set in the early morning sky before sunrise but it is a great celestial object most of the night. The **Ringed Planet** crosses the meridian at 8:52 p.m. making this planet in a perfect location to study. This planet has the beautiful ring system and has the most moons of any planet in the solar system.

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):

There are no visible passes of the International Space Station this week.

CELESTIAL FEATURE OF THE WEEK:

Triangulum

Triangulum is a small constellation in the northern sky. Its name is Latin for "triangle", derived from its three brightest stars, which form a long and narrow triangle. Known to the ancient Babylonians and Greeks, Triangulum was one of the 48 constellations listed by the 2nd century astronomer Ptolemy.

There are three star systems with known planets located in Triangulum.

The constellation contains several galaxies, the brightest and nearest of which is the Triangulum Galaxy or Messier 33—a member of the Local Group. A distant member of the Local Group, it is about 2.3 million light-years away, and at magnitude 5.8 it is bright enough to be seen by the naked eye under the darkest skies. It is a spiral galaxy with a diameter of 46,000 light-years and is thus smaller than both the Andromeda Galaxy and the Milky Way.

A small constellation, Triangulum is bordered by Andromeda to the north and west, Pisces to the west and south, Aries to the south, and Perseus to the east.

Triangulum ranks 78th of the 88 constellations in size.

SPACE HISTORY OF THE WEEK

1877, Oct 25: Henry Norris Russell born

an American astronomer who, along with Ejnar Hertzsprung, developed the **Hertzsprung–Russell diagram (1910)**. In 1923, working with Frederick Saunders, he developed Russell–Saunders coupling which is also known as LS coupling.

The idea that a star's properties (radius, surface temperature, luminosity, etc.) were largely determined by the star's mass and chemical composition, which became known as the Vogt-Russell theorem

1977, Oct 26: Fifth and final glide test of Space Shuttle Enterprise

The first orbiter of the Space Shuttle system. Rolled out on September 17, 1976, it was built for NASA as part of the Space Shuttle program to perform atmospheric test flights after being launched from a modified Boeing 747. It was constructed without engines or a functional heat shield, and was therefore not capable of spaceflight.

1964 Oct 29: First flight of Lunar Landing Research Vehicle

Success of the two LLRVs led to the building of three Lunar Landing Training Vehicles (LLTVs) an improved version of the LLRV, for use by Apollo astronauts at the Manned Spacecraft Center in Houston, Texas, predecessor of NASA's Johnson Space Center. One LLRV and two LLTVs were destroyed in crashes, but the rocket ejection seat system recovered the pilot safely in all cases.

Neil Armstrong, Apollo 11 commander, said his mission would not have been successful without extensive training on the LLTVs. Selection for LLTV training was preceded by helicopter training.

QUESTION OF THE WEEK

Dr. Bob, my folks took me to the Air Show this weekend at the airport. The jets were amazing. Someone said that they can go more than Mach 1. What does that mean? Kevin R.

Mach 1 means that something is traveling the speed of sound.

We reported a couple of weeks ago that the first manned supersonic flight occurred on 14 October 1947.

Captain Charles "Chuck" Yeager piloted USAF aircraft Bell X1 #46-062, nicknamed Glamorous Glennis for his wife. The airplane was drop launched from the bomb bay of a modified B-29 Superfortress bomber and reached Mach 1.06 (700 miles per hour).

The QYON S-211 Jet Demo Teams is the first Brazilian Team air sports team. They performed at the Wings over North Georgia Air Show this past weekend at Richard Russell Airport.

The speed of sound is dependent on temperature and pressure of the air so the actual speed changes to altitude and temperature.

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