

# WEEKLY STARGAZERS' NEWSLETTER

by Dr. Bob

Volume 6, Issue 33

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:**  
08/23/22 – 08/29/22

Etowah GYSTC  
Website QR code



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

Neutron stars rotate at a speed of 600 times per second.

They are extreme objects that measure between 6 to 12 miles (10 and 20 km) across and are tremendously dense in mass — imagine squeezing an object twice the Sun's mass into a small city. They are so dense that just a teaspoon of star material can weigh 4 billion tons, which is approximately as much as the entire human population.

When formed, neutron stars can rotate up to at least 60 times per second, and under specific circumstances, they can increase that speed to a mind-boggling 600 times per second.

Closest Neutron Star detected so far is between 250 and 1,000 light years from Earth in the constellation Ursa Major. It was detected by NASA's Swift X-ray telescope in August 2007.

## **MOON FOR THE WEEK:**

The Moon will be New on Saturday, August 27<sup>th</sup>. The Moon will cross the meridian at 2:05 p.m. on Saturday, August 27<sup>th</sup>.

The Moon is at apogee today, August 22<sup>nd</sup>. It is 405,418 km (253,779 miles) from the Earth today.



New Moon

## **HORIZON TO HORIZON PLANET VIEW**

The sun rises at 7:10 a.m. (EDT) and sets at 8:14 p.m. (EDT). This week the Sun appears to be in the constellation **Leo**, the Lion. Additionally, the Earth is getting closer to the Sun. Last week it was 1.012 AUs from the Sun this week it is 1.010 AUs away this week so it is getting subtly closer. On January 4<sup>th</sup>, the Earth will reach perihelion and will be 0.9838 AUs from the Sun.

This week, the Sun will reach an altitude of 67.3 degrees above the horizon which is lower than it was last week (68.3 degrees above the horizon).

### **The Planets:**

**Mercury** sets in the evening sky at 9:15 p.m. an hour 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 5:55 a.m. which is about an hour before the Sun. Even it is so close to the Eastern horizon at sunrise, you should still be able to see it, as long as you have a good low eastern horizon and clear skies.

**Mars**, the Red Planet, rises just after 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 crosses the meridian at 7:29 a.m. so if you are looking before sunrise, say about 6:00 a.m., it will be just to the left of the meridian (eastward). Look for the amber hue of this planet. It is pretty bright and will be easy to spot.

**Jupiter** rises in the East at 9:48 p.m. By mid-night it will be pretty high in the eastern sky. If you get up before sunrise and look for it, 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.

**Saturn** rises at 7:43 p.m. and can be seen all night long. The Ringed Planet is a great evening sky object. Saturn crosses the meridian at 1:01 a.m. 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):**

<a href="#">22 Aug</a>	-2.2	05:40:23	21°	S	05:41:46	29°	SE	05:44:44	10°	ENE	visible
<a href="#">23 Aug</a>	-1.1	04:54:02	15°	ESE	04:54:02	15°	ESE	04:55:22	10°	E	visible
<a href="#">23 Aug</a>	-3.0	06:26:57	12°	WSW	06:29:44	38°	NW	06:32:54	10°	NNE	visible
<a href="#">24 Aug</a>	-3.8	05:40:29	57°	WSW	05:41:02	75°	NW	05:44:23	10°	NE	visible
<a href="#">25 Aug</a>	-1.6	04:53:57	27°	ENE	04:53:57	27°	ENE	04:55:40	10°	NE	visible
<a href="#">25 Aug</a>	-1.6	06:27:08	10°	WNW	06:29:20	16°	NNW	06:31:31	10°	N	visible
<a href="#">26 Aug</a>	-2.3	05:40:13	25°	NW	05:40:28	25°	NW	05:43:18	10°	NNE	visible
<a href="#">27 Aug</a>	-1.3	04:53:31	21°	NNE	04:53:31	21°	NNE	04:54:53	10°	NE	visible

### **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.

Iota Trianguli is a notable double star system, and 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.

The first quasar ever observed, 3C 48, also lies within Triangulum's boundaries.

Quasars show a very high redshift, which is an effect of the metric expansion of space between the quasar and the Earth. When the observed redshift of quasars is interpreted in terms of Hubble's law, it is inferred that quasars are very distant objects. Quasars inhabit the very center of active, young galaxies, and are among the most luminous, powerful, and energetic objects known in the universe, emitting up to a thousand times the energy output of the Milky Way, which contains 200–400 billion stars. This radiation is emitted across the electromagnetic spectrum, almost uniformly, from X-rays to the far-infrared with a peak in the ultraviolet-optical bands, with some quasars also being strong sources of radio emission and of gamma-rays.

### **SPACE HISTORY OF THE WEEK**

August 27, 1984: Teacher in Space was announced.

TISP was announced by President Ronald Reagan on August 27, 1984. The teacher would fly as Payload Specialists and return to their classrooms after flight. More than 40,000 applications were mailed to interested teachers while 11,000 teachers sent completed applications to NASA. Each application included a potential lesson that would be taught from space while on the Space Shuttle. The applications were sorted and then sent to the various State Departments of Education, who were then responsible for narrowing down their state applicants to a final set of two each. These applicants were notified of their selections and were gathered together for further selection processes down to ten finalists. These were then trained for a time, and in 1985 NASA selected Christa McAuliffe to be the first teacher in space, with Barbara Morgan as her backup. McAuliffe was a high school social studies teacher from Concord, New Hampshire. She planned to teach two 15-minute lessons from the Space Shuttle.

### **QUESTION OF THE WEEK**

**Are citizens who go into “space” on ... civilian enterprises considered astronauts? Gary J.**

What Gary is talking about is the private companies launching vehicles into space with passengers. Vehicles like Space X, Blue Origin, Virgin Galactic, and Starship. So, what are the conditions that determine whether an individual aboard a vehicle that is delivered into “Space” is called an Astronaut? Do you

have to go into space to be called an astronaut or are all individual in the NASA Astronaut Training Program already Astronauts?

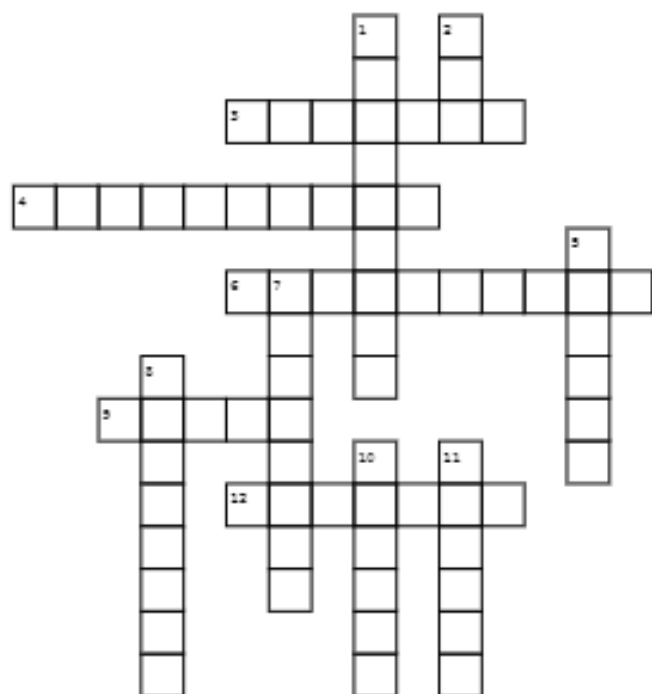
Three agencies in the United States can designate people as astronauts: NASA, the FAA and the U.S. military. Each has a different definition of who qualifies for the title, but with NASA and the military, the distinction is reserved for only their employees who meet specific criteria.

The Commercial Space Astronaut Wings Program was created by Patti Grace Smith, the first chief of the F.A.A.'s commercial space office, to promote the private development of human spaceflight — a mandate from a 1984 law that aimed to accelerate innovation of space vehicles. The program began handing out pins to qualified individuals in 2004, when Mike Melvill, a test pilot who flew the Scaled Composites SpaceShipOne plane, became its first recipient. To qualify for the commercial astronaut wings under the original guidelines, a person had to reach an altitude of at least 50 miles, the marker of space recognized by NASA and the U.S. Air Force, and be a member of the spacecraft's "flight crew."

The question becomes, who will receive the Commercial Space Astronaut Wings. The Federal Aviation Administration (FAA) has changed their qualifications for commercial astronaut wings, and Blue Origin's first flight crew might no longer be eligible. That, however, doesn't change whether or not they are astronauts.

After December 31, 2021, the Commercial Astronaut Wings program was suspended. The individuals will still be called astronauts if they meet the altitude requirements by each agency.

# The Stargazers' Newsletter 8-23-22



## Down:

1. The Commercial Space \_\_\_\_\_ Wings Program was created by Patti Grace Smith and in 2004 program began handing out pins to qualified individuals.
2. This week the Sun appears to be in the constellation \_\_\_\_\_.
5. The first \_\_\_\_\_ ever observed, 3C 48, lies within Triangulum's boundaries.
7. Quasars show a very high \_\_\_\_\_, which is an effect of the metric expansion of space between the quasar and the Earth
8. Mars crosses the \_\_\_\_\_ at 7:29 a.m.
10. Red \_\_\_\_\_ rises just after mid-night.
11. In 1985, NASA selected Christa McAuliffe to be the first teacher in space, with Barbara \_\_\_\_\_ as her backup.

## Across:

3. \_\_\_\_\_ stars rotate at a speed of 600 times per second.
4. On January 4th, the Earth will reach perihelion as it orbits the Sun.
6. The constellation contains several galaxies, the brightest and nearest of which is Messier 33.
9. \_\_\_\_\_ rises at 5:55 a.m. which is about an hour before the Sun.
12. a teaspoon of Neutron star material can weigh 4 \_\_\_\_\_ tons.