

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:
08/02/22 – 08/08/22

Etowah GYSTC
Website QR code



FUN FACT of the Week:

What is the boundary of Space? At first this seems to be a simple question with a singular answer, but that is not the case. When it was just National Aeronautics and Space Administration (NASA) and the U.S. Air Force that were reaching the altitudes of "Space" it was up to them to define. They stated that the edge of space begins 12 miles south of the Kármán line, an altitude of 50 miles is where the Earth's atmosphere "blends into space."

Now that other agencies and private citizens are reaching into space, it becomes more of an issue. The Fédération Aéronautique Internationale (FAI) sets the boundary at 62 miles.

According to experts at National Oceanic and Atmospheric Administration (NOAA), an altitude of 600 miles is this point where you escape the Earth's atmosphere completely and is space.

MOON FOR THE WEEK:

The Moon will be First Quarter on Friday, 8/5. The Moon will cross the meridian at sunset giving the observer a wonderful opportunity to see the right side of the Moon as the terminator moves across the surface during the week.



The Moon will be 375,204 kms (233,141 miles) from the Earth when it is at First Quarter. If you have been following the issues, you know that the Moon is decreasing its distance from the Earth as it heads toward perigee week after

next. The size of the Moon will appear to be 31.85 minutes of arc.. a little more than half a degree.

HORIZON TO HORIZON PLANET VIEW

The sun rises at 6:51 a.m. (EDT) and sets at 8:43 p.m. (EDT). Just like last week, the Sun appears to be in the constellation Cancer, the Crab, as seen from Earth. Additionally, the Earth getting closer to the Sun. Last week it was 1.0157 AUs from the Sun this week it is 1.0150 AUs away so it is getting subtly closer.

Today, the Sun will reach an altitude of 73.9 degrees above the horizon at the meridian compared to 75.3 degrees altitude last week. Isn't it odd that as the season moves toward winter, the Earth gets closer to the Sun? Actually, we know that it is not the distance to the Sun that determines the seasons but rather it is the tilt of Earth's axis. During our summer, the northern hemisphere is tilted toward the Sun and during our winter the northern hemisphere away from the Sun. The tilt causes a change in length of daylight hours and higher position of the Sun as it crosses the meridian during the summer months.

The Planets:

The pre-dawn sky holds four naked-eye planets Saturn, Jupiter, Mars, and Venus. **Saturn** is close to the western horizon at sunrise because it rises in the East at 9:26 p.m. That means, you will be able to see Saturn all night long! The next planet to rise in the East is **Jupiter**. It rises at 11:29 p.m. so if you stay up pretty late, you will be able to see it all night long too.

Mars is the next planet in the early morning parade. It rises at 1:23 a.m. and by sunrise, it will be to the left of the meridian, glowing in its amber hue.

If you are an early riser and the skies are clear, you will easily be able to see Jupiter moving toward the western horizon before sunrise. The next planet in the parade is the Red Planet, **Mars**. It rises in the east a little more than an hour after Jupiter, at 1:35 a.m. Next comes the brightest of them all, Venus, Earth's Twin. **Venus** rises in the east at 4:59 a.m. If you get up before sunrise, you will need good low eastern horizon to see this beautiful planet. Venus is very bright and you will have no trouble seeing it, if you have a nice low horizon

The last naked eye planet is **Mercury**. It has moved around the Sun and is now low on the Western horizon at sunset. It is very low and close to the Sun so it will be a real challenge to spot. As was mentioned in earlier issues, as the weeks proceed, we will be getting a better view low on the Western horizon.

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):

02 Aug	-3.4	21:54:46	10°	NW	21:58:02	56°	SW	21:59:29	29°	SSE	visible
03 Aug	-3.7	21:06:11	10°	NW	21:09:30	71°	NE	21:12:49	10°	SE	visible
04 Aug	-1.3	21:55:11	10°	W	21:57:22	16°	SW	21:59:32	10°	S	visible
05 Aug	-2.2	21:05:56	10°	WNW	21:08:55	31°	SW	21:11:54	10°	SSE	visible

STAR PATTERNS IN THE SKY

Coat Hanger Cluster

Most stargazers have heard of such beautiful open star clusters as the Pleiades, Hyades and the Beehive. Amazingly, not everyone has heard of the Coat Hanger?

This a great week with no moon to take some time and look into the sky with your binoculars. Turn your binoculars east-southeast and look halfway between the bright stars Vega (in Lyra) and Altair (in Aquila) and discover Brocchi's Cluster (the Coat Hanger) in the constellation of Vulpecula, the Little Fox.

With the two bright stars as your guide, you should be able to locate this asterism with a little effort.

This asterism is made up of 6 stars in a line and 4 stars forming an arc within the middle of the 6, making a beautiful Coat Hanger. This object is very much worth the effort to locate.

SPACE HISTORY OF THE WEEK

August 5th, 1930: Neil Armstrong was born

Neil Alden Armstrong (August 5, 1930 – August 25, 2012) was an American astronaut and the first person to walk on the Moon. He was also an aerospace engineer, naval aviator, test pilot, and university professor. Before becoming an astronaut, Armstrong was an officer in the U.S. Navy and served in the Korean War. After the war, he earned his bachelor's degree at Purdue University and served as a test pilot at the National Advisory Committee for Aeronautics High-Speed Flight Station, now known as the Dryden Flight Research Center, where he logged over 900 flights. He later completed graduate studies at the University of Southern California.

August 5th, 1969: Mariner 7 flies by Mars.

The Mariner program was a program conducted by the American space agency NASA in conjunction with Jet Propulsion Laboratory (JPL) that launched a series of robotic interplanetary probes designed to investigate Mars, Venus and Mercury from 1962 to 1973.

Of the ten vehicles in the Mariner series, seven were successful and three were lost.

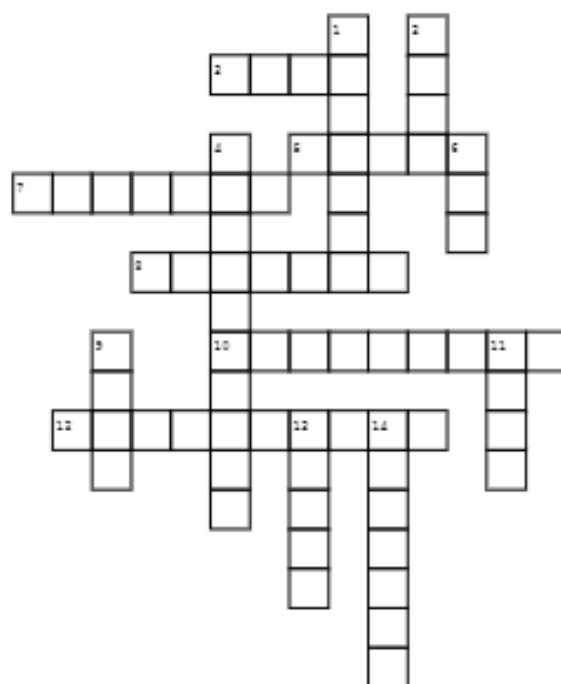
Mariners 6 and 7 were identical teammates in a two-spacecraft mission to Mars. Mariner 6 was launched on February 24, 1969, followed by Mariner 7 on March 21, 1969. They flew over the equator and southern hemisphere of the planet Mars.

August 8, 1978: Pioneer-Venus 2 Launched.

The Pioneer Venus project was part of the Pioneer program consisting of two spacecraft, the Pioneer Venus Orbiter and the Pioneer Venus Multiprobe, launched to Venus in 1978. The program was managed by NASA's Ames Research Center.

The Pioneer Venus Orbiter entered orbit around Venus on December 4, 1978, and performed observations to characterize the atmosphere and surface of Venus. It continued to transmit data until October 1992.

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Down:

1. The robotic interplanetary probes designed to investigate Mars, Venus, and Mercury.
2. The Red Planet that is the third planet to rise in the East in the early morning.
4. What is happening to the distance between the Sun and Earth?
6. How many vehicles were part of the Mariner series?
9. The number of naked-eye planets seen in the early evening sky.
11. National Aeronautics and Space Administration
13. The side of the Moon lit this week.
14. The cluster in the Summer Triangle that is called the Coat Hanger.

Across:

3. National Oceanic and Atmospheric Administration
5. What is the phase of the Moon this week?
7. The part of the Moon's orbit that it is heading toward now.
8. The only planet to rise in the Western sky at sunset.
10. The first person to walk on the Moon.
12. The two Pioneer Venus spacecraft, Orbiter and _____