

WEEKLY STARGAZERS' NEWSLETTER

by Dr. Bob

Volume 6, Issue 20

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:

05/24/22 – 05/30/22

FUN FACTS:

The four outer planets in the Solar System are called Gas Giants (Jupiter, Saturn, Uranus, and Neptune). Jupiter and Saturn are made from Hydrogen and Helium. Neptune and Uranus have mantles that are mainly composed of compressed, slushy water and ammonia. These "Ice Giants" have rocky, icy cores that are also proportionally larger than the amount of gas they contain, unlike the other Gas Giants (Jupiter and Saturn).

MOON FOR THE WEEK:

The Moon will be New on Monday, May 30th.

This means that the Moon will be waning all week long from 3rd Quarter to New.

The Moon orbits the Earth in an elliptical path. As a result, sometimes the Moon is closer to the Earth and sometimes it is further away. This past couple weeks it was at its closest approach, Perigee. Next week the Moon will be increasing its distance from Earth on a daily basis until it will be at Apogee. More about that in next week's issue.



New Moon

The Moon will be rising in the predawn sky until it is lost in the early morning Sun's glare next week.

HORIZON TO HORIZON PLANET VIEW

The sun rises at 6:34 a.m. (EDT) and sets at 8:42 p.m. (EDT). The Sun is in the constellation Taurus the Bull and it is still increasing its distance from the Sun in its orbit. Currently the Earth is 1.0125 (94,117,755 miles) which is further away than last week 1.0111 AUs (93,987,617 miles) which is 130,138 miles further away!!!

This week, the sun is 76.4 degrees above the horizon which is higher than last week 75.0 degrees. The seasons are really changing, which is caused by the tilt of the Earth's axis, 23.5 degrees. The days are getting longer and the Sun is getting higher in the sky as it crosses the Meridian.

The Planets:

The closest planet to the Sun, Mercury, rises at 6:35 a.m. That means that we will not be able to see Mercury this week. The first time in a while that we are not able to see all five naked eyed planets.

The predawn skies still hold Venus, Mars, Jupiter, and Saturn. Of the morning planets, Venus rises last, at 4:47 a.m. The first planet to rise in the early morning is Saturn. It rises at 2:07 a.m. and by Sunrise it is very high in the sky. The next planet that rises is Mars and quickly followed by Jupiter.

On May 29th, **Mars and Jupiter will be in conjunction.** This means that they will rise at the same time and seem to almost overlap. This should not be a surprise since they have been getting closer and closer by the week.

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):

28 May	-2.0	22:50:21	10°	NNW	22:53:08	24°	NE	22:53:08	24°	NE	visible
29 May	-1.4	22:02:41	10°	N	22:04:50	16°	NNE	22:06:45	11°	ENE	visible
29 May	-1.1	23:38:33	10°	NW	23:39:39	19°	WNW	23:39:39	19°	WNW	visible
30 May	-1.1	21:15:31	10°	N	21:16:27	11°	NNE	21:17:23	10°	NE	visible
30 May	-3.4	22:50:22	10°	NW	22:53:18	63°	NNW	22:53:18	63°	NNW	visible

STAR PATTERNS IN THE SKY

Corvus the Crow--

A wonderful constellation is the little rectangle of Corvus the Crow. It can be found in the south after sunset at this time of year. It is pretty close to the bright star Spica in Virgo the Maiden.

To find Spica, follow the arc of the handle of the big dipper to Arcturus and on to Spica. Once you find Spica, you'll recognize the constellation Corvus. It's always near the star Spica and in a small rectangle shape.

In Greek mythology, Corvus was seen as the cupbearer to Apollo, god of the sun. In ancient Israel, Corvus wasn't a crow. Instead, it was seen as a raven. In China, this grouping of stars had more distinction as an Imperial Chariot, riding on the wind.

Corvus contains no Messier objects. It has several galaxies and a planetary nebular observable with amateur telescopes

In Action Comics (January 2013), which was published 7 November 2012, American astrophysicist, Neil Tyson appears in the story, in which he determines that Superman's home planet, Krypton, orbited the red dwarf LHS 2520 in the constellation Corvus, 27.1 light-years from Earth. Tyson assisted DC Comics in

selecting a real-life star that would be an appropriate parent star to Krypton, and picked the star in Corvus, and which is the mascot of Superman's high school, the Smallville Crows.

One of the legends associated with Corvus is that a crow stopped on his way to fetch water for Apollo, in order to eat figs. Instead of telling the truth to Apollo, he lied and said that a snake, Hydra, kept him from the water, while holding a snake in his talons as proof. Apollo saw this to be a lie, however, and flung the crow (Corvus), cup (Crater), and the snake (Hydra) into the sky. He further punished the wayward bird by making sure that it would forever be thirsty, both in real life and in the heavens, where the Cup is barely out of reach.

SPACE HISTORY OF THE WEEK

1962, May 24th: Scott Carpenter was first American to eat food in space.

Aboard Aurora 7 an American naval officer and aviator, test pilot, aeronautical engineer, astronaut, and aquanaut. He was one of the original seven astronauts selected for NASA's Project Mercury in April 1959. Carpenter was the second American (after John Glenn) to orbit the Earth and the fourth American in space, following Alan Shepard, Gus Grissom, and Glenn. His death on October 10, 2013 left Glenn as the last surviving Mercury 7 member.

Data ^[209]					
Mission	Call-sign	Pilot	Launch time	Duration	Orbits
Mercury-Redstone 3	<i>Freedom 7</i>	Shepard	14:34 on May 5, 1961	15 m 22 s	0
Mercury-Redstone 4	<i>Liberty Bell 7</i>	Grissom	12:20 on July 21, 1961	15 m 37 s	0
Mercury-Atlas 6	<i>Friendship 7</i>	Glenn	14:47 on February 20, 1962	4 h 55 m 23 s	3
Mercury-Atlas 7	<i>Aurora 7</i>	Carpenter	12:45 on May 24, 1962	4 h 56 m 5 s	3
Mercury-Atlas 8	<i>Sigma 7</i>	Schirra	12:15 on October 3, 1962	9 h 13 m 15 s	6
Mercury-Atlas 9	<i>Faith 7</i>	Cooper	13:04 on May 15, 1963	1 d 10 h 19 m 49 s	22

May 25th, 1961, JFK's moon landing speech

Excerpts from his speech:

“from 40 cents per person per week to more than 50 cents a week for every man, woman and child in the United States, for we have given this program a high

national priority--even though I realize that this is in some measure an act of faith and vision, for we do not now know what benefits await us.”

“But it will be done. And it will be done before the end of this decade.”

There are more than 2,000 spinoffs from the Apollo Moon Mission efforts that would not exist without the NASA program. These range from food processing, to health care products. Just imagine what the Mars missions will provide from the research and developments necessary for that effort.

1951, May 26th, Sally Ride was born

Sally Kristen Ride (May 26, 1951 – July 23, 2012) was an American physicist and astronaut. Born in Los Angeles, she joined NASA in 1978 and became the first American woman in space in 1983. She remains the youngest American astronaut to have traveled to space, having done so at the age of 32.[1][2] After flying twice on the Orbiter Challenger, she left NASA in 1987. She worked for two years at Stanford University's Center for International Security and Arms Control, then at the University of California, San Diego as a professor of physics, primarily researching nonlinear optics and Thomson scattering. She served on the committees that investigated the Challenger and Columbia space shuttle disasters, the only person to participate on both. Ride died of pancreatic cancer on July 23, 2012.

1959, May 28th, First primates in space, Able and Baker

1959, First primates to go into space on a suborbital trip and safely return: They were Able, a rhesus monkey, and Miss Baker, a squirrel monkey. Able died June 1, 1959 following a surgical procedure to remove infected electrode implants. Able was preserved, and is now on display at the Smithsonian Institution's National Air and Space Museum. Baker died November 29, 1984, at the age of 27 and is buried on the grounds of the United States Space & Rocket Center in Huntsville, Alabama.

QUESTION OF THE WEEK

I have heard that the largest mountain on Mars is about three times the size of the largest mountain on the Earth. Mars is smaller than the Earth, how can it be that it has a larger mountain? Lewis S.

1. Lower gravity allows volcanoes to grow higher - *if* you have them.
Since Mars has less mass than Earth, the surface gravity on Mars is less than the surface gravity on Earth. The surface gravity on Mars is only about 38% of the surface gravity on Earth, so if you weigh 100 pounds on Earth, you would weigh only 38 pounds on Mars.
If we use the Mars global datum, we find the tallest mountains on each planet to be:

Earth: Mt. Everest 8.848 km

Mars: Olympus Mons: 21.9 km

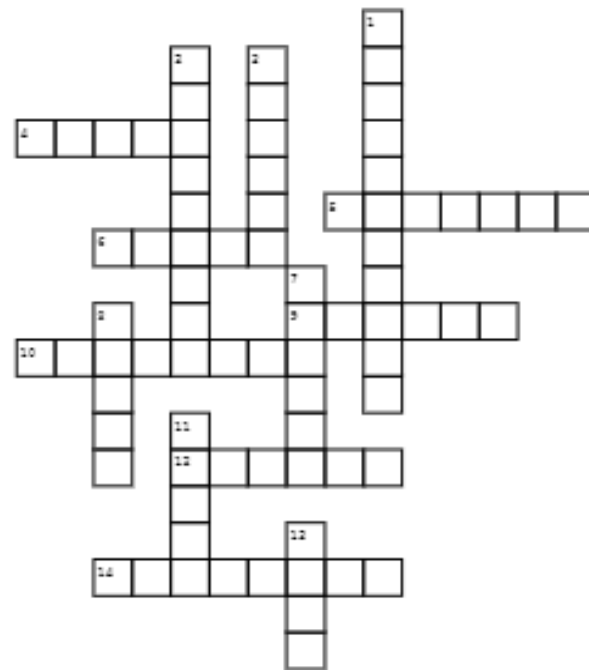
Showing that Mars' greatest mountain is 2.4 times the height of Earth's greatest mountain.

2. Mars is large enough to have had volcanoes in its past (though it does not have active volcanoes now).
3. Weathering is very low on Mars, so large volcanoes *stay* large.
4. Mars probably didn't have any (or much) plate tectonics in its past. This means that heat from the interior had only a few places to escape from (hot spots) rather than all sorts of places to leak out (like the Ring of Fire).

Combine all of this together, and you get a small number of huge eruptions on a low gravity planet with very little weathering.

The Stargazers' Newsletter

Crossword Puzzle 05-24-22



Down:

1. What is the largest mountain in the Solar System?
2. Who was the first American astronaut to eat food in space?
3. The Sun is in the constellation _____ as the Earth makes its way in its orbit.
7. The Moon will be changing in view this week from 3rd Quarter to New.
8. The star in Virgo the Maiden that helps find the constellation, Corvus the Crow.
11. What are the names of the first primates in space? (Able and _____)
13. Who is the only person to have participated in both the Challenger and Columbia investigations?

Across:

4. The mantle of Uranus and Neptune is made up of compressed _____ and Ammonia.
5. The two planets that are in conjunction this week in the early morning sky, Mars and _____.
6. The last planet to rise in the early morning.
9. What NASA missions to the Moon produced more than 2,000 research and development spinoffs.
10. Whose sci-fi character's home planet, Krypton, is in the constellation Corvus the Crow.
12. Next week the Moon will be at _____ in its orbit about the Earth.
14. The highest position of the Sun during the day, which is due South.