

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

Etowah GYSTC
Website QR code



OBSERVATION PERIOD:

09/23/22 – 10/03/22

FUN FACT OF THE WEEK:

One day of Venus is longer than one year on Venus.

Venus has a slow axis rotation which takes 243 Earth days to complete its day. The orbit of Venus around the Sun is 225 Earth days, making a year on Venus 18 days less than a day on Venus.

MOON FOR THE WEEK:

The Moon will be First Quarter on Sunday, 10/02. This is a good time to watch the Moon low on the western horizon each evening. Since the Moon was New on Sunday (9/25) it will show up just after sunset each evening. If the skies are clear, watch as it is higher each evening at sunset by about 15 degrees. By next Sunday (10/02), it will be at the meridian at sunset. Also watch as the phase of the Moon waxes toward First Quarter, you can see the terminator cross from the right limb toward the mid-line



The Moon is 384,250 kms (238,762 miles) from the Earth today (9/26). To convert kms to miles, multiply kms by 0.62 miles/km.

DART successfully crashes into Earth

On November 24, 2021, NASA began a mission that concluded last evening (9/26/22) at 7:14 p.m. EDT. NASA crashed the DART (Double Asteroid Redirection Test) satellite into the asteroid Dimorphos. Dimorphos, a 525 foot

wide asteroid, is covered in boulders. According to NASA, it is a "loosely consolidated rubble pile", similar to some of the other small asteroids that have been observed. This was the first effort to test the effects of crashing a satellite into an asteroid to measure how much of its direction can be affected. The objective of this test is to be the "first planetary defense test" to see if an Earthbound asteroid could be redirected in such a way as to NOT collide with Earth.

HORIZON TO HORIZON PLANET VIEW

The sun rises at 7:31 a.m. (EDT) and sets at 7:33.m. (EDT). The Sun is still in the constellation Virgo, the Maiden. The Earth is now 1.003 AUs from the Sun. This is closer than it was last week when it was 1.0045 AUs from the Sun. As a review, one Astronomical Unit is about 93 million miles.

The Sun will reach an altitude of 54.7 degrees altitude which is lower than it was last week when it was 57.0 degrees above the horizon. This is expected but it is interesting to observe and record.

The Planets:

Mercury rises shortly before sunrise but it is still too close to the horizon to be seen.

Venus rises at 6:58 a.m. which is 30 minutes before the Sun. Venus is still pretty low on the horizon to be seen very clearly in the predawn sky unless you have a good horizon.

Mars rises in the East a little before midnight so if you are one who stays up late, you might get a glimpse of it before you go to sleep. If you get up early in the morning, you should be able to see it close to the meridian at sunrise. The Red Planet can be seen crossing the meridian at 6:31 a.m. Mars is best seen an hour or so before sunrise.

Jupiter rises in the East at 7:37 p.m. Jupiter crosses the meridian at 1:40 a.m. If you get up before sunrise, Jupiter will be lower toward the western horizon and very bright. This Gas Giant is the largest planet in the Solar System. It is larger than all of the other planets put together. If you have a pair of binoculars, you can

easily see the four Galilean Moons. Jupiter has a total of 79 moons, last count. With a small telescope you might also be able to see the Great Red Spot in its surface.

Saturn rises at 5:35 p.m. and can be seen all night long. The Saturn is one of the best objects to be seen with a small telescope. The Ringed Planet crosses the meridian at 10:48 p.m. While the outer planets have more moons than the inner planets, Saturn 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):

Date	Brightness (mag)	Start			Highest point			End			Pass type
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.	
30 Sep	-0.8	21:33:53	10°	NNW	21:34:24	13°	NNW	21:34:24	13°	NNW	visible
01 Oct	-1.9	20:45:33	10°	NNW	20:47:42	19°	NNE	20:47:42	19°	NNE	visible
02 Oct	-1.5	19:57:28	10°	N	19:59:05	13°	NNE	20:00:42	10°	ENE	visible
02 Oct	-1.1	21:32:50	10°	NW	21:33:57	20°	NW	21:33:57	20°	NW	visible
03 Oct	-3.5	20:44:07	10°	NW	20:47:24	50°	NE	20:47:24	50°	NE	visible

CELESTIAL FEATURE OF THE WEEK:

Sagitta (the arrow)

One of my favorite constellations, Sagitta's name is Latin for "arrow", and it should not be confused with the larger constellation Sagittarius, the archer. I like it because you can easily see it in binoculars and it has a beautiful deep sky object in it.

Although Sagitta is an ancient constellation, it has no star brighter than 3rd magnitude and has the third-smallest area of all constellations.

It was included among the 48 constellations listed by the 2nd century astronomer Ptolemy, and it remains one of the 88 modern constellations defined by the International Astronomical Union.

Sagitta is located within the boundary of the Summer Triangle near the apex of Altair.

Messier 71 is a very loose globular cluster mistaken for quite some time for a dense open cluster. It lies at a distance of about 13,000 light-years from Earth

SPACE HISTORY OF THE WEEK

1988, September 29: First Satellite from Alaska was launched

The first orbital launch from the Kodiak Launch Complex was an Athena I rocket which carried out the Kodiak Star mission for NASA and the Space Test Program, launching Starshine 3, Sapphire, PCSat, and PICOSatS

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1995, September 30: last transmission from Pioneer 11 was detected

Pioneer 11 was the first spacecraft ever to encounter Saturn. It paved the way for the even-more-sophisticated Voyager and Cassini spacecraft.

Pioneer 11 is still sailing away from Earth, even though its transmissions died.

As far as scientists know, it's off towards the center of our Milky Way galaxy, that is, generally in the direction of our constellation Sagittarius.

1958, October 1: NASA was founded

The National Aeronautics and Space Administration (NASA) is the United States government agency responsible for the civilian space program as well as aeronautics and aerospace research.

President Dwight D. Eisenhower established the National Aeronautics and Space Administration (NASA) in 1958[5] with a distinctly civilian (rather than military) orientation encouraging peaceful applications in space science.

QUESTION OF THE WEEK

From listening to your weekly segment, I am thinking about getting a telescope. What kind of telescope should I get?

Tracy M.

This is a very good question and there is not easy answer to this one. However, as silly as this sounds, the **best telescope** is the one you will most likely USE! If your telescope is too big to transport or too complicated for you to use, you end up using it as a clothes rack in the basement or closet.

Think about getting a telescope that will allow you to see some planets and deep sky objects but at the same time is portable.

Questions you need to consider: What is your level of interest and expertise in stargazing? Will you have to travel somewhere to get away from city lights in order to see the sky? What kind of objects do you want to see? How much are you willing to pay for a telescope?

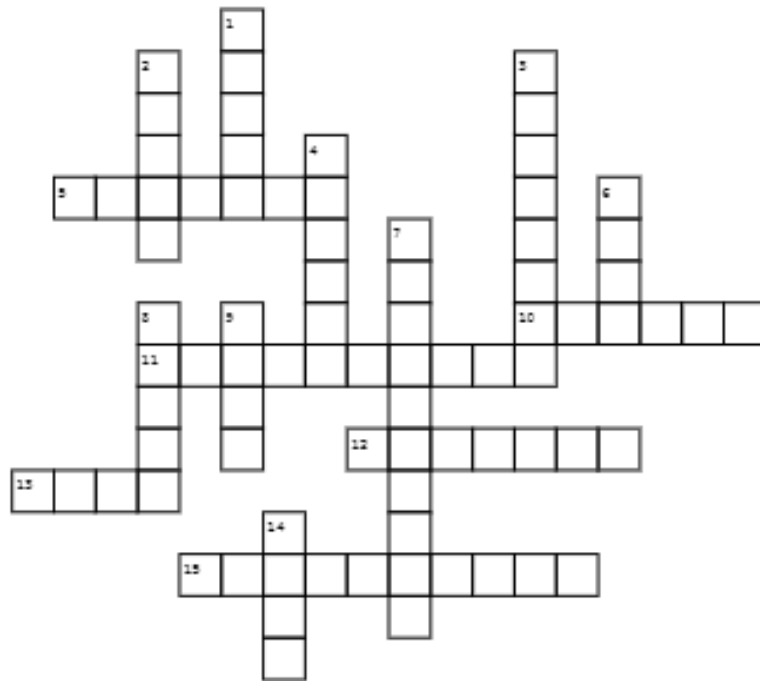
Beginners should start with a pair of binoculars and a good star book like the National Audubon Society Field Guide to the Night Sky. There are a lot of books but that is one of my favorites. You have to know the sky before you will get anything from a telescope.

Intermediates can go to a reflecting telescope from 4-8 inches. I suggest a Dobson mount rather than an equatorial mount. They are much easier to use and find objects.

Advanced observers know the sky and are looking for more and better equipment to reach deeper into the sky. This means telescopes that are 8 inches and up: reflecting, refracting, and cassegrains with equatorial mounts and computer drives.

The main thing is that you find a telescope that you **will use**. Too often telescopes are purchased for the Wow Factor! I understand that but before long they are used to take up space in someone's den or basement. Start out slow and progress as your interest evolves.

The Stargazers' Newsletter 9/27/22



Down:

1. The side of the Moon that is lit during the First Quarter.
2. The constellation in which the Sun is currently located.
3. What kind of cluster is M71 in Sagitta?
4. Which planet has the most moons?
6. Which agency was founded on October 1, 1958?
7. What did this article suggest as the first optical instrument for beginning stargazers?
8. The only planet whose day is longer than its year.
9. What is the best kind of telescope for stargazers? One that is _____
14. The satellite that was launched on November 24, 2021 to strike an asteroid.

Across:

5. A constellation within the boundary of the Summer Triangle.
10. From which state was the satellite launched on September 30, 1995.
11. Which American president was in office when NASA was founded?
12. Which planet is low on the western horizon at sunrise?
13. Which planet is along the meridian at sunrise?
15. The asteroid that was struck by the DART satellite at 7:15 p.m. EDT, on September 26, 2022.

