

WEEKLY STARGAZERS' NEWSLETTER

by Dr. Bob

Volume 6, Issue 28

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:
07/26/22 – 08/01/22

Etowah GYSTC
Website QR code



FUN FACT of the Week:

The Sun is the temperature of an exploding hydrogen bomb; it is hot enough to sustain the thermonuclear reactions that convert hydrogen atoms into helium. The Sun consumes about 5 billion kilograms (**5 million tons**) of its nuclear hydrogen fuel every second.

MOON FOR THE WEEK:

The Moon will be New on Thursday, 7/28. This means the Moon will rise in the East just before Sunrise until Thursday and shortly after Sunset later in the week.

As we have been talking about for the past week or so, the Moon will be at Apogee today. That means that the Moon will be 406,275 kms (873,819 miles) from Earth.



New Moon

Today, the angular measure of the of the Moon is 29.42 minutes of arc, which is less than the angular measure last week of 30.85 minutes of arc.

HORIZON TO HORIZON PLANET VIEW

The sun rises at 6:47 a.m. (EDT) and sets at 8:47 p.m. (EDT). This 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 1.016 AUs

from the Sun this week it is 1.0157 AUs away so it is getting subtly closer than it was.

Today, the Sun is 75.3 degrees altitude as it crosses the meridian as compared to 76.7 degrees last week. The days are getting shorter and the sun is not getting as high as it did during the end of June. It won't be too long before we will begin to notice the cooling weather.. but not yet!

The Planets:

The four largest naked eye planets can be seen in the early evening and early morning skies: Venus, Mars, Jupiter, and Saturn. **Saturn** rises in the East at 9:51 p.m. and can be seen all night long until the predawn sunrise. This means The next planet to rise is **Jupiter**. It rises at 11:53 p.m. By sunrise, Jupiter is still very high in the predawn sky.

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.

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):

28 Jul	-2.1	22:44:30	10°	NNW	22:47:08	25°	NNE	22:47:08	25°	NNE	visible
29 Jul	-1.5	21:56:31	10°	N	21:58:44	17°	NNE	22:00:26	12°	ENE	visible
29 Jul	-0.9	23:32:26	10°	WNW	23:33:19	17°	WNW	23:33:19	17°	WNW	visible
30 Jul	-3.2	22:43:55	10°	NW	22:46:39	56°	NNW	22:46:39	56°	NNW	visible
31 Jul	-3.0	21:55:35	10°	NNW	21:58:47	40°	NE	22:00:04	27°	E	visible
01 Aug	-2.1	21:07:27	10°	NNW	21:10:14	24°	NE	21:13:00	10°	E	visible
01 Aug	-2.1	22:44:02	10°	WNW	22:46:27	26°	WSW	22:46:27	26°	WSW	visible

STAR PATTERNS IN THE SKY

Sagitta, the Arrow

Sagitta is a small but fun constellation in the northern sky.

Its name is Latin for "arrow", and it should not be confused with the larger constellation Sagittarius, the archer.

Although Sagitta is a small constellation and it has no star brighter than 3rd magnitude it is an ancient constellation. 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.

By size, Sagitta is 86th of 88 constellations in the night sky.

Sagitta is located to the north of the equator, but can be seen from everywhere on Earth except within the Antarctic Circle.

There are two star systems within Sagitta that have been found to have planets.

Sagitta is one of my favorite constellations because it looks like what it depicts and it has a cool deep sky object within its boundary. There is a pretty globular cluster along its shaft, M71.

M71 is a globular cluster that is about 13,000 lys from the Sun and has a mass of about 17,000 solar masses. It is about 26 lys in diameter.

Unlike other galaxies which by definition are outside the Milky Way Galaxy, this globular cluster is within the Milky Way.

When you get a chance, go out with a small telescope or pair of binoculars and find Sagitta within the Summer Triangle and look for the Sagitta Globular Cluster.

Meteor Shower this week:

As the Earth races around the Sun in its annual course, there are times when it crosses the path of comet debris trails. When the Earth crosses the debris trail, we get to see a meteor shower. There are dozens of these showers during the year and they occur like clockwork.

On July 28-29 the Earth will pass through the debris trail from Comet 96P/Machholz which produces the Southern Delta Aquarids.

The nominal peak is around July 27-30, but, unlike many meteor showers, the Delta Aquarids lack a very definite peak, it peaks over a two week period. These medium-speed meteors ramble along fairly steadily throughout late July and early August.

An hour or two before dawn usually presents the most favorable view of the Southern Delta Aquarids.

The moon will be in a perfect phase for viewing this meteor shower, nearly New.

When to watch: Watch late July through early August, mid-evening to dawn. There's a nominal predicted peak on July 29, 2022. But don't worry too much about that peak date. Delta Aquariid meteors fly for weeks!

Duration of shower: July 18 to August 21.

Expected meteors at peak, under ideal conditions: The Delta Aquariids' maximum hourly rate can reach 20 meteors in dark skies with no moon, when the radiant is high in the sky. If you're watching in early August, you'll be adding that number to however many Perseids you see.

Note: Like May's Eta Aquariids, July's Delta Aquariids favors the Southern Hemisphere. About 5% to 10% of the Delta Aquariid meteors leave persistent trains, glowing ionized gas trails that last a second or two after the meteor has passed.

SPACE HISTORY OF THE WEEK

July 31, 1999, the ashes of astrogeologist Eugene Shoemaker were deposited on the Moon. One of his many claims to fame was in 1994, fragments of Comet SL-9 impacted with Jupiter (Shoemaker-Levy). Shoemaker was co-discoverer of Comet SL 9.

FYI:

Gene Roddenberry (August 19, 1921 – October 24, 1991), creator of Star Trek. Ashes were launched into orbit.

Clyde Tombaugh (February 4, 1906 – January 17, 1997), American astronomer and discoverer of Pluto in 1930. A small sample of Tombaugh's ashes are aboard New Horizons, the first spacecraft to attempt to pass by and photograph Pluto. This is the first sample of human cremated remains which will escape the solar system to travel among the stars.

Other famous celebrities whose ashes are scheduled to be sent into space include:

James Doohan, (March 3, 1920 – July 20, 2005), actor best known for his portrayal of Scotty in the television and film series Star Trek

L. Gordon "Gordo" Cooper, Jr. (March 6, 1927 – October 4, 2004), American astronaut. He was one of the original Mercury Seven pilots in the Project Mercury program, the first manned space effort by the United States.

QUESTION OF THE WEEK:

I have been thinking of giving my niece a star name. Are these certificates of star names real and how are stars given their name? George T.

Did you know that every star you can see (about 2,000 of them) in the sky has a name?

Sometimes that name dates back thousands of years. For other stars, the vast majority of them, the name is a catalog number. In any case naming stars is important; it helps astronomers be very precise and specific about the stars they study.

So, how DID stars get their names?

Well, for most stars, the named stars get their name from a mix of Latin, Greek and Arabic terms. It is true that in some cases they have more than one name or designation.

About 1,900 years ago the Egyptian astronomer Claudius Ptolemy wrote the Almagest. This manuscript was a Greek text that recorded the names of stars as they had been named by various cultures.

The art of giving stars proper names has been lost on modern culture. Today, in vast majority of cases, stars are simply given a numerical descriptor to signify their position in the night sky. That number is associated with a particular star catalogue, which groups stars together by some particular property, or by the instrument that made the initial discovery of radiation from that star in a particular waveband. All astronomers around the world agree to use the same numerical descriptions so as to avoid confusion

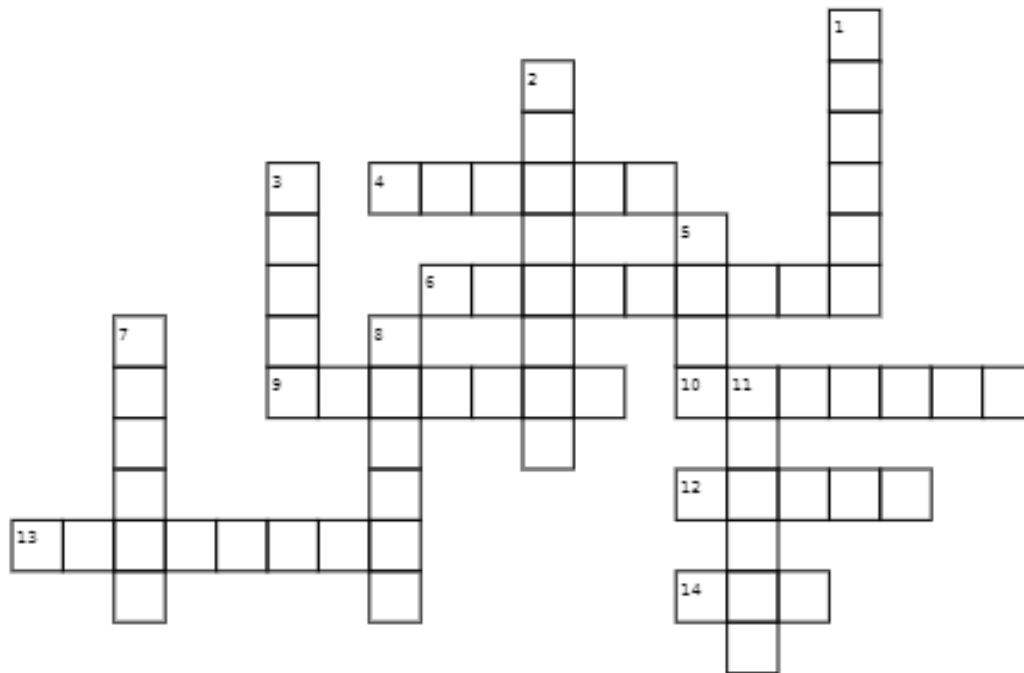
The primary, and universally recognized authority on star names (and pretty much all things astronomy) is the International Astronomical Union (IAU). It does not recognize names given to stars by outside companies, and its main job is to maintain the correct lists of names of all celestial objects.

Sometimes stars are "named" by means of a star-naming company. Chances are that you have heard of this practice, or even participated yourself. You pay a small fee and you can have a star named after you or someone you love.

While nice, the problem is that these names are not actually recognized by any astronomical body and you aren't going to see it referred to by your name in the papers.

Some facilities (Planetariums) sell your name on a star or, if they are building an addition, on a brick in the building. They make it very clear that there's no official standing of the name. However, your donation goes for a good educational cause and helps the planetarium do its job of teaching astronomy.

The Stargazers' Newsletter 7-26-22



Down:

1. The constellation that the Sun appears to be in this week.
2. The Sun is at the temperature of an exploding _____ bomb.
3. Which planet is lowest on the Eastern horizon at Sunrise?
5. What is the Red Planet.
7. What kind of shower is the Southern Delta Aquarids?
8. Which planet rises in the East at 10:00 p.m. this week?
11. What is the position of the Moon this week?

Across:

4. What day is the International Space Station the brightest this week?
6. Whose ashes were placed on the Moon in 1999?
9. What is happening to the apparent size of the Moon this week?
10. What is the name of the constellation that is called the Arrow?
12. Is the Sun getting higher or lower in the sky as it crosses the meridian this week?
13. What kind of cluster is M71 in Sagitta?
14. The phase of the Moon this week.