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:
09/17/24 – 09/23/24

FUN FACT OF THE WEEK

C/2023 A3, also known as Tsuchinshan–ATLAS (Chi/nan) and considered "the comet of the century," will appear in all its splendor in our sky during September and October 2024. Due to its characteristics, astronomers believe it will be exceptionally bright, similar to Halley's comet in 1986 or NEOWISE in 2020.

Comets are unpredictable. And there's no way to know at this time exactly how bright Comet A3 will become. But preliminary estimates suggest it might reach magnitude 4 to 3 (the lower the number, the brighter) around the time of its closest approach to the sun – or perihelion – on September 27.

The exciting part might come afterwards. It could grow as bright as magnitude 2.5 to 2 during closest approach to Earth on October 12. Or maybe even slightly brighter if we are lucky (or fainter if we're unlucky), since comet behavior is so difficult to predict.

So Comet A3 isn't going to be a Comet of the Century. But if it continues to perform well, it might be the brightest comet of the year.

MOON FOR THE WEEK:


Full Moon

The Moon is Full today, Tuesday, September 17th, and it will rise in the East at sunset. It will be directly overhead by mid-night. As we have discussed before, the Moon moves 15 degrees eastward daily. The Moon will be seen in the early morning as it wanes from

Full toward third Quarter. During the waning portion of the phases of the Moon, the right side will be illuminated.

The September Full Moon is called the Full Corn Moon and the Harvest Moon. This full Moon corresponds with the time of harvesting corn. It is also called the Barley Moon, because it is the time to harvest and thresh the ripened barley. The Harvest Moon is the Full Moon that is nearest the autumnal equinox (September 22nd), which can occur either in September or October.

The Moon will be at perigee on Wednesday, September 18th. This means that the Moon will be as close to the Earth as it gets along its monthly trip around the Earth, 357,286 km away.

The Sun --
The Sun rises at 07:26 hrs (7:26 a.m.) this week and sets at 19:42 hrs (7:42 p.m.)

This means that the Sun is above the horizon for Sun is “up” for 12 hrs. and 16 minutes. Clearly the days are getting shorter as we approach the Autumnal Equinox. In addition to the days getting shorter, the Sun does not get as high as it did a few weeks ago.

The Sun climbs to an altitude of 57.2 degrees this week. The Sun is in the constellation Virgo, the Maiden.

The Earth is currently 1.004 AUs from the Sun, closer than last week. Remember the closest approach the Earth makes to the Sun is at Perihelion around January 2-3 each year; about two weeks following the Winter Solstice. Until then, the Earth will continuously be getting closer to the Sun.

The Autumnal Equinox is Sunday, September 22nd. This is when the Sun is directly over the equator resulting in a day with 12 hours of day and 12 hours of night. In some communities, people go out to balance an egg on its end on a sidewalk. Try it, it works. Never mind that you can do it any day of the year, it is just a way to celebrate the equinox. In Rome, often you will find folks at the Clocktower doing just that.

PLANETS

Mercury: This week Mercury rises in the East around 6:18 a.m. and sets at 19:14 (7:14 p.m.) Since the planet rises about an hour before the Sun, you might get a glimpse of it before sunrise.

Venus rises in the East at 9:36 a.m. and sets in the west at 20:57 (8:57 p.m.). It sets about an hour and a half after sunset. You should be able to see Venus in the early evening sky low on the western horizon. When you can see Venus in the evening, it is called the Evening Star.

Mars rises in the East at 1:20 a.m. which is more than 3.0 hours before the Sun, making Mars is wonderful object in the predawn sky. Look for its amber hue in the early predawn sky. Mars is in the constellation Taurus.

Jupiter rises in the East at 12:18 a.m. which is also about three hour before the Sun. Look low on the eastern horizon before sunrise to see this planet. You will notice that Jupiter and Mars are very close together. It should be very bright in the sky. If you have a pair of binoculars, you should be able to see the four Galilean Moon (Io, Europa, Ganymede, and Callisto).

Saturn rises in the East around 7:33 p.m. This means that you can see Saturn practically all night long, from sunset until sunrise. Saturn is an easy target in the late night sky until the early morning.

MARS ROVER PERSEVERANCE

To get regular and current updates on the progress of NASA's Perseverance 5rover on Mars, go to the websitehis :
https://www.space.com/news/live/mars-perseverance-rover-update

Satellites of the Week:

There are no good bright passes this week.

STAR PATTERN IN THE SKY

SEPTEMBER 22 (FIRST DAY OF AUTUMN… AUTUMNAL EQUINOX: 2:01 PM EDT)

SPACE HISTORY OF THE WEEK

September 21, 1866: HG Wells was Born

He was a prolific English writer in many genres, including the novel, history, politics, social commentary, and textbooks and rules for war games.
Wells is now best remembered for his science fiction novels and is called a "father of science fiction", along with Jules Verne.

His most notable science fiction works include The Time Machine (1895), The Island of Doctor Moreau (1896), The Invisible Man (1897), and The War of the Worlds (1898).

He was nominated for the Nobel Prize in Literature four times.

September 22, 1990: Pioneer 10 reaches 50 AUs from Sun

Pioneer 10 (originally designated Pioneer F) is an American space probe, weighing 258 kilograms (569 pounds), that completed the first mission to the planet Jupiter.

Pioneer 10 became the first spacecraft to achieve escape velocity from the Solar System. This space exploration project was conducted by the NASA Ames Research Center in California, and the space probe was manufactured by TRW Inc.

Pioneer 10 was assembled around a hexagonal bus with a 2.74 meters (9 ft 0 in) diameter parabolic dish high-gain antenna, and the spacecraft was spin stabilized around the axis of the antenna. Its electric power was supplied by four radioisotope thermoelectric generators that provided a combined 155 watts at launch.

It was launched on March 3, 1972, by an Atlas-Centaur expendable vehicle from Cape Canaveral, Florida.

Currently it is 116.84 AUs from the sun, in the constellation Taurus, the Bull. It is 16.18 light hours from the earth.

September 23, 1846: JG Galle discovers Neptune.. 170th anniversary

Neptune is one of the four Gas Giants in our solar system and is the 7th planet from the sun.

September 23, 1962: The TV program The Jetsons" premiered.
For TV buffs, we can report that the animated futuristic program Jetsons made their premier.

QUESTION OF THE WEEK
What does it mean when they say light-year? Is the time of light somehow different than other years? Devon B.

This is a great question. First of all, a light-year is a unit of measure of distance. It is how far light travels in a year: 6 trillion miles or 9.5 trillion Kms (that is 12 zeros).

Ok, why use light-year instead of miles or kilometers. I think the equivalent I just gave you tells the story. Working with numbers that START with 12 zeros is a clue. It is like measuring the distance between Rome and Atlanta in inches. Say Atlanta is 65 miles, that would be about 4 million inches…. Not a very useful unit of measure.

Distance to the nearest star would be 24 trillion miles instead of 4 light-years.
Distance to the edge of our home galaxy is 240,000,000,000,000,000,000

240 followed by 18 zeros

240 quintillion

Instead of 30,000 light-years