

# CENTI ASTRO-SPACE ACTIVITIES



## **COSMIC DIMENSIONS**

January 2022 V. 1 Issue 1

Welcome to the first newsletter you are receiving from Centi Astro-Space Activities for 2022. I hope all of you had a happy and glorious holiday. Although you are receiving this issue later than I had planned, future issues will be sent 3 to 5 days before the beginning of the month. This first issue will introduce you to the following:

- WHAT'S UP IN THE NIGHT SKY FOR JANUARY
- FAMOUS FEMALE ASTRONOMER
- IMPORTANT SPACE MISSIONS PLANNED FOR 2022
- LAUNCH OF THE JAMES WEBB TELESCOPE
- SPACE PIC OF THE MONTH
- COURSES BEING OFFERED
- BENEFITS OF SPACE EXPLORATION
- COSMIC TIDBIT
- READERS OPINIONS
- JANUARY ASTRONOMY JOKE
- SPACE QUOTE
- INSPIRATIONAL QUOTE

## **WHAT'S UP IN THE NIGHT SKY FOR JANUARY**

Night Sky Notebook

<https://www.youtube.com/watch?v=Qf3dfdQVfIU>

## **FAMOUS FEMALE ASTRONOMER**

Caroline Herschel (1750-1848)

- Country: born in Germany, active in the UK
- Notable discoveries: several comets and deep-sky objects

Caroline Lucretia Herschel – the younger sister of the famous astronomer William Herschel – had many firsts to her credit:



- the world’s first professional female astronomer who received a salary for her work;
- the first woman in England to hold an official government position (assistant of the court astronomer);
- the first woman to become an Honorary Member of the Royal Astronomical Society.

Caroline Herschel discovered eight comets and fourteen deep-sky objects. The objects she discovered include a periodic comet 35P/Herschel-Rigollet and a dwarf elliptical galaxy M110 – a satellite of the Andromeda Galaxy.

Objects named in honor of Caroline Herschel: asteroid 281 Lucretia; open clusters NGC 2360 (Caroline’s Cluster) and NGC 7789 (Caroline’s Rose).

Source: *Star walk*

## IMPORTANT SPACE MISSIONS PLANNED FOR 2022

### Artemis 1



NASA’s uncrewed mission [Artemis 1](#) is aimed to pave the way for future exploration of the Moon. During the mission, the Orion spacecraft (launched by the super heavy-lift vehicle called Space Launch System) will spend six days in orbit around our natural satellite. If Artemis 1 is a success, the next mission — Artemis 2 — will be a crewed flight to the Moon’s orbit. Artemis 1 is expected to launch no earlier than February 2022.

### Luna 25

Another lunar mission planned to be launched next year is [Luna 25](#) by the Russian space agency Roscosmos. It will be the first Russian mission to the Moon’s surface since Luna 24 in 1976. During the mission, the Luna 25 spacecraft will land near the lunar south pole at the Boguslavsky crater and study the composition of the polar regolith. The launch of Luna 25 is scheduled for July 2022.



### Psyche



NASA’s mission [Psyche](#) was named after its object of study — the large metallic asteroid 16 Psyche located in the main asteroid belt. Scientists believe that this asteroid could be the iron core of a protoplanet the size of Mars. The Psyche spacecraft will enter the asteroid’s orbit and study its geology, shape, elemental composition, and other parameters. This mission is expected to increase our

understanding of planetary formation. Psyche is scheduled to launch in August 2022.

### ExoMars 2022

[ExoMars](#) is a joint program of the European Space Agency (ESA) and Roscosmos. During the ExoMars 2022 mission, the Russian-built lander Kazachok will place ESA’s Rosalind Franklin rover on the surface of Mars. The rover’s main objective will be to look for signs of past life on the Red Planet. The ExoMars 2022 mission is planned for launch in September 2022.



Source: *Star walk*

## LAUNCH OF THE JAMES WEBB TELESCOPE

NASA's new [James Webb Space Telescope](#) successfully launched on Saturday Christmas Day (Dec. 25) atop an Ariane 5 rocket that lifted off from a spaceport in Kourou, French Guiana.

Just one day after its Christmas launch into space the space telescope unfolded what scientists

call a gimbaled antenna assembly that carries the high-rate data dish responsible for beaming Webb's observations of the early universe back to Earth.

"This antenna will be used to send at least 28.6 Gbytes of science data down from the observatory, twice a day," NASA officials wrote [in a mission update](#). "The team has now released and tested the motion of the antenna assembly — the entire process took about one hour."

The \$10 billion Webb space telescope is designed to [study the earliest stars in the universe](#) and other cosmic mysteries. It is the largest and most powerful telescope ever launched into space.

Saturday's antenna deployment was the latest in a monthlong series of steps to prime the space telescope for its deep-space observing mission. [Webb is currently on a 29-day journey](#) to a stable point in space called Lagrange Point 2, or L2, which is nearly 1 million miles (1.6 million kilometers) from Earth. It is from there that the infrared space telescope will observe the universe.

In addition to the antenna deployment and testing, Webb flight controllers activated the telescope's temperature and strain gauges for the first time, according to NASA's update. Those gauges will allow flight controllers to monitor the Webb space telescope's temperature and structural health in the days to come.

Having an accurate reading of Webb's temperature and structural loads is key for mission scientists and engineers because one of the most harrowing periods for the space telescope is still ahead: deployment of its huge sunshield.

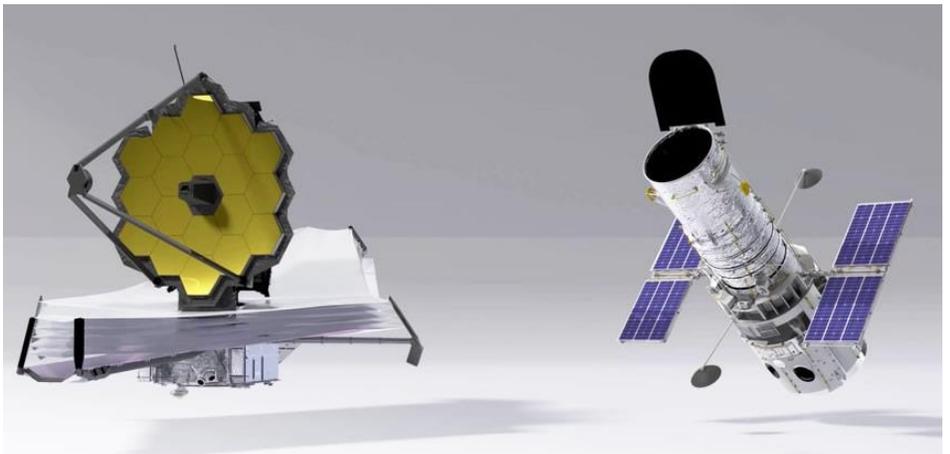
The James Webb Space Telescope is an infrared observatory designed to make the most detailed observations ever, but only if it can be kept cold enough. To do that, Webb will unfurl a huge multi-layered sunshield the size of a tennis court that will unfold in stages over the first eight days after launch. The first step in that deployment process is expected to begin Tuesday (Dec. 28), three days into the mission.

The next immediate step for the Webb space telescope will be a second mid-course correction burn, a maneuver designed to refine its course toward L2. That maneuver, the second of three planned burns, is expected to be completed later in the day on Monday (Jan 3, 2022).

You can follow its progress on this NASA

website: [www.jwst.nasa.gov/content/webbLaunch/whereIsWebb.html](http://www.jwst.nasa.gov/content/webbLaunch/whereIsWebb.html)

The JWST is the latest and greatest viewport to the wider physical universe beyond Earth.



Source: [Space.com](#)

## SPACE PIC OF THE MONTH



Quadruple Lunar Halo Over Winter Road Image Credit & Copyright: [Dani Caxete](#)

### ★ ★ ★ ★ ★ ★ ★ COURSES BEING OFFERED ★ ★ ★ ★ ★ ★ ★

**Three** six module courses are being offered online in **February** and are geared for ages 8 and above. Students can take these courses by themselves or with a parent. **No extra charge for the parent.** Courses include:

**First Steps: Humans Walk on the Moon!** The Apollo 11 human mission to the Moon and the first astronauts to walk on the surface will be covered.

Time & Dates: **Tuesdays 6:30 - 7:30 PM February 1, 8, 15, 22, March 1, 8 Tuition: \$55.00**

**Cosmic Tidbits** Learn interesting facts about our solar system in “down-to-earth” terms

Time & Dates: **Wednesdays 6:30 - 7:30 PM February 2, 9, 16, 23, March 2, 9 Tuition: \$55.00**

**Spinoffs from Space Exploration** Learn how space exploration benefits humanity

Time & Dates: **Thursdays 6:30 - 7:30 PM February 3, 10, 17, 24, March 3, 10 Tuition: \$55.00**

**Take all 3 courses and the third one is 50% off (\$27.50)**

**Each course includes: online face-to-face contact, videos, lessons, hands-on activities.**

**Registration begins Monday, January 24<sup>th</sup> and ends Saturday, January 29<sup>th</sup>**

**Please share with friends and family**

**For more information, please call or email us. See contact information on page 6.**

## BENEFITS OF SPACE EXPLORATION

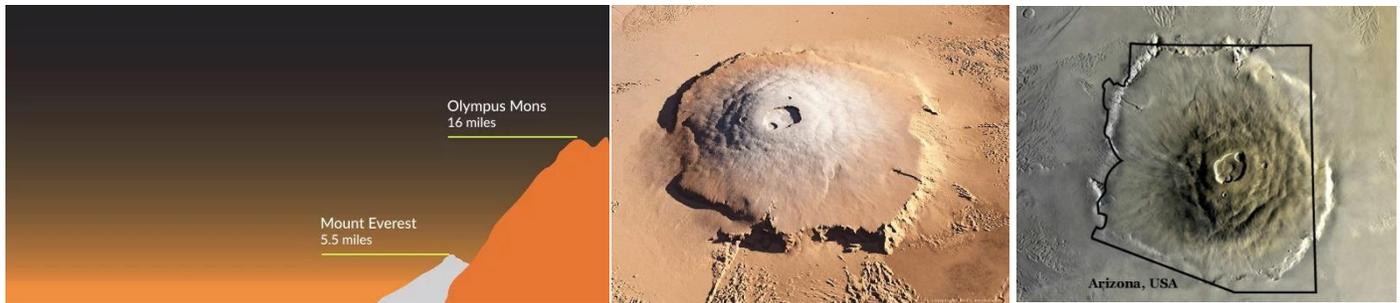
What things were invented because of space travel?

Inventions we use every day that were actually created for space exploration

- Artificial limbs.
- Scratch-resistant lenses.
- Insulin pump.
- Firefighting equipment
- DustBusters.
- LASIK.
- Shock absorbers for buildings
- Solar cells.

# COSMIC TIDBIT

The highest mountain discovered is the Olympus Mons, which is located on Mars.



Its peak is 16 miles (25 km) high, making it nearly 3 times higher than Mount Everest. And not only is it tall, but it's also 374,015 ft<sup>2</sup> (114,000 m<sup>2</sup>) wide – that's an area the size of Arizona!

## READERS OPINIONS

I need your help with what you would be interested in seeing in future newsletters. Below are the topics. I need to know what you feel would be interesting and informative and of importance to you. If you could take a few minutes and let me know what should be included and what should be eliminated this would help me in the development of this publication. All you have to do is send me an email listing **INCLUDE** with the numbers after that and **ELIMINATE** with the numbers to eliminate.

1. **WHAT'S UP IN THE NIGHT SKY (FOR EACH MONTH)**
2. **OBSERVING TIPS**
3. **PRODUCT REVIEWS**
4. **FAMOUS and/or IMPORTANT ASTRONOMERS / SPACE SCIENTISTS / EDUCATORS**
5. **EVENTS CALENDAR**  
Inform readers about where I will be in person, about online events and live streams.
6. **VIDEO PODCAST INTERVIEWS W/ KEY PEOPLE IN ASTRONOMY AND SPACE SCIENCE**
7. **ASTRO-SPACE PICS OF THE MONTH**
8. **SPACE SCIENCE UPDATES**
9. **MY BLOG POST EXCERPTS with a LINK TO POST**
10. **COURSES I WILL BE OFFERING - CURRENTLY AND FUTURE**
11. **HANDS-ON SPACE SCIENCE ACTIVITIES**
12. **SPACE SPINOFFS - BENEFITS OF SPACE EXPLORATION**  
These are short facts that deal with comparisons, size, distance, etc. Cosmic tidbits will also be offered as one to 6 module courses.
13. **COSMIC TIDBIT**
14. **BOOKS & ARTICLES I AM READING**

**15. READERS OPINIONS**

My readers opinions are important and will help with what I offer in future news.

**16. CONTESTS - GIVE AWAYS**

**17. ASTROSPACE JOKE of the MONTH**

**18. SPACE QUOTES BY FAMOUS PEOPLE**

**19. INSPIRATIONAL QOUTES OF THE MONTH**

***ASTROSPACE JOKE of the MONTH***

Have you heard about the new restaurant on the moon?

The food is good, but there's just no atmosphere.

***SPACE QUOTE OF THE MONTH***

“One should always know that earth is actually a cradle that is of humanity but the mankind here can never stay in this cradle for ever.” -- ***Konstantin Tsiolkovsky***

***INSPIRATIONAL QUOTE OF THE MONTH***

“What you get by achieving your goals is not as important as what you become by achieving your goals.” -- ***Zig Ziglar***

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