



CENTI ASTRO-SPACE ACTIVITIES

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Well, it is officially Spring. Along with that we have the lingering snow, rain and sunshine in my area. We moved the clocks forward. I personally like it better when it gets darker later. Hopefully it will be permanent. I am still looking for contributors for future issues. Anyone (elementary school age to adult) interested in contributing articles, photos, pictures, etc. should contact me. You will get full credit for your submissions. Below is a list of what is covered in this issue.

- WHAT'S UP IN THE NIGHT SKY FOR APRIL
- FIRST 3D PRINTED ROCKET LAUNCHED
- PRIVATE SPACE COMPANY WORTH NOTING
- FAMOUS SCIENTIST
- SPACE PIC OF THE MONTH
- INTERESTING FACTOIDS
- SCIENTIFIC SALAD FOR ASTRONAUTS
- SPACE POEM

WHAT'S UP IN THE NIGHT SKY FOR MARCH

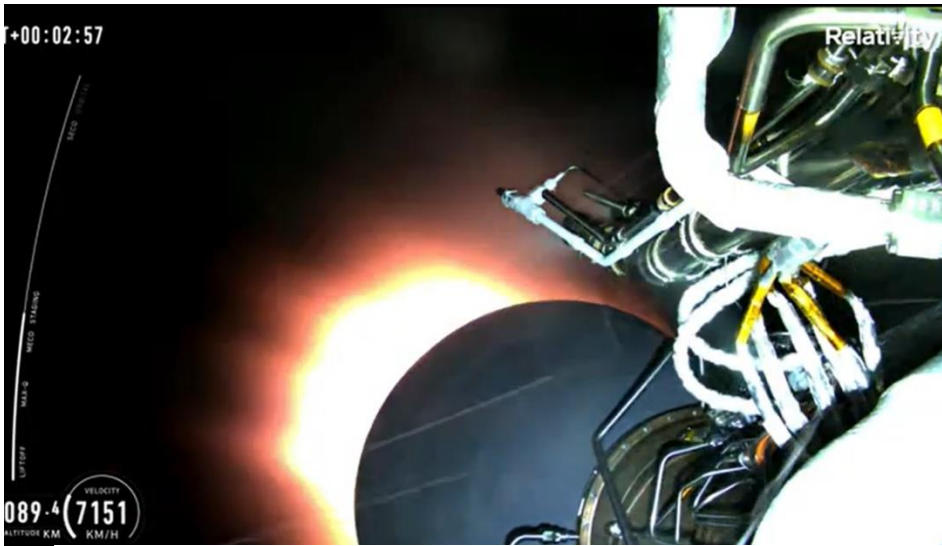
Presented by

Bill McClain <https://www.youtube.com/watch?v=EdpfF5Tjeoc>

Tonight's Sky: April <https://www.youtube.com/watch?v=DZrVZ4Sn228>

Relativity Space launches world's first 3D-printed rocket on historic test flight, but fails to reach orbit

By Mike Wall March 22, 2023



The second stage of Relativity Space's first Terran 1 rocket comes to life briefly after stage separation during a test launch on March 22, 2023. It failed to reach orbit. (Image credit: Relativity Space)

The world's first 3D-printed rocket didn't earn its wings during its launch debut late Wednesday (March 22), but it did notch some important milestones.

The Relativity Space rocket, [called Terran 1](#), lifted off from Launch Complex 16 at Florida's [Cape Canaveral Space Force Station](#) at 8:25 p.m. EST (0025 GMT on March 23), kicking off a test flight called "Good Luck, Have Fun" (GLHF).

Terran 1 performed well initially. For example, it survived Max-Q — the part of flight during which the structural loads are highest on a rocket — and its first and second stages separated successfully. But something went wrong shortly thereafter, at around

three minutes into the flight, when the rocket failed to reach orbit. To read more click:

https://www.space.com/relativity-space-terran-1-test-launch-failure?utm_term=D66A7F3E-FC72-4CF0-BBC7-9BBE5286D454&utm_campaign=58E4DE65-C57F-4CD3-9A5A-609994E2C5A9&utm

PRIVATE SPACE COMPANY WORTH NOTING

Firefly Aerospace



Firefly Aerospace Inc. ("Firefly") is an American end-to-end space transportation company committed to providing economical and convenient access to space for small payloads through the design, manufacture, and operation of reliable [launch](#) and [spacecraft](#) vehicles. Firefly's launch vehicles utilize common technologies, manufacturing infrastructure, and launch capabilities, providing LEO launch solutions for up to ten metric tons of payload. Combined with Firefly's in-space vehicles,

such as the [Space Utility Vehicle \(SUV\)](#) and [Blue Ghost Lunar Lander](#), Firefly provides the space industry with a single source for missions from LEO to the surface of the Moon or beyond. Firefly is headquartered in Cedar Park, TX. Check out their website at: <https://fireflyspace.com/>

NASA elects **Firefly Aerospace** for Mission to Moon's Far Side in 2026

By Andrew Jones March 17, 2023

NASA has selected Firefly Aerospace to land payloads on the moon and send another into orbit to provide communications with the lunar far side.

The mission will use Texas-based Firefly Aerospace's robotic [Blue Ghost lander](#) to safely deliver two payloads to the far side of the moon, which permanently faces away from [Earth](#).

The launch will first send the European Space Agency's (ESA) Lunar Pathfinder communications and navigation satellite into an elliptical orbit around [the moon](#) to relay signals between Earth and the payloads on the surface. To read more click: https://www.space.com/moon-far-side-mission-firefly-aerospace-2026?utm_term=D66A7F3E-FC72-4CF0-BBC7-9BBE5286D454&utm_campaign=58E4DE65-C57F-4CD3-9A5A-609994E2C5A9&utm



Artist's illustration of Firefly's Blue Ghost lunar lander delivering NASA's LuSEE-Night radio telescope to the far side of the moon. (Image credit: Firefly Aerospace)

FAMOUS SIENTIST

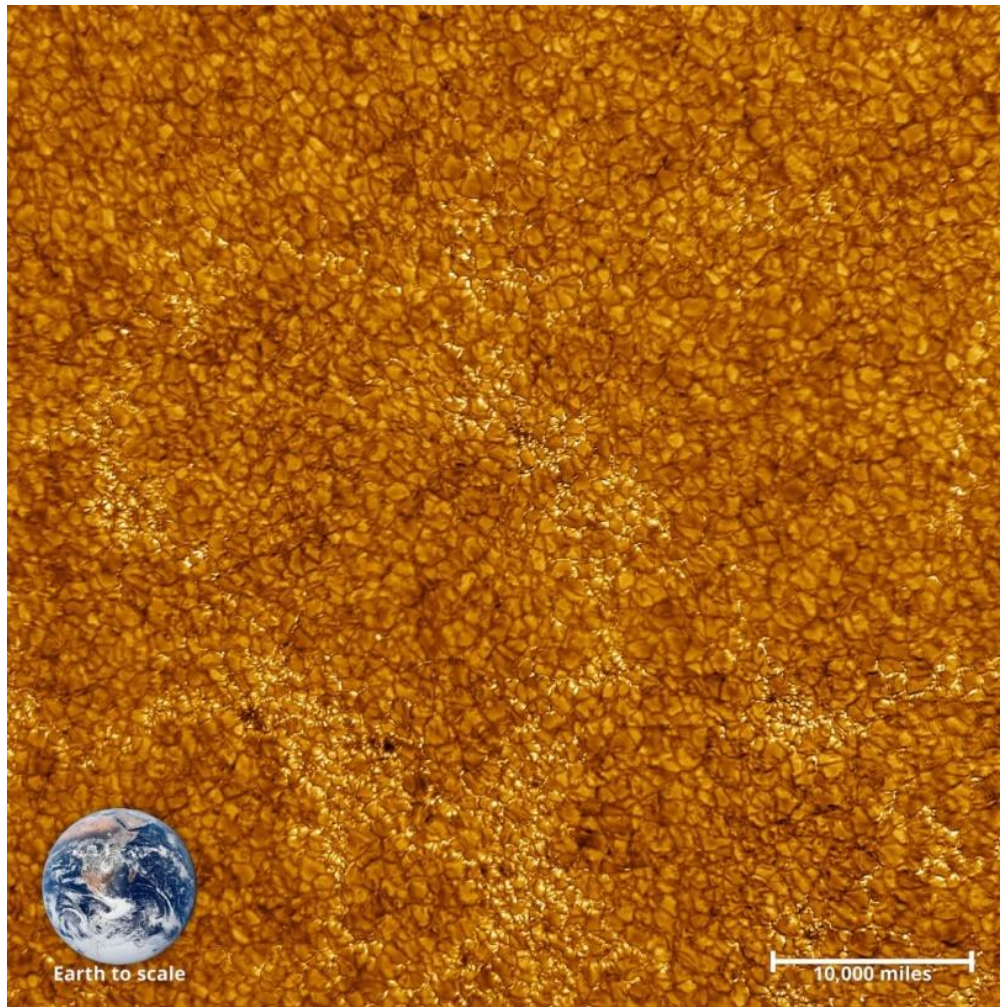
Nancy Roman (1925-2018) Astronomer / "Mother of Hubble"

As a child, Nancy Roman's mother took her on walks to show her flowers, birds and trees. Her mother also pointed out constellations. It was those stars in the night sky that grabbed Nancy's attention. The woman who would become known as "the mother of Hubble" said she had decided by seventh grade to become an astronomer. She succeeded. Roman received her doctorate in astronomy from the University of Chicago in 1949. A decade later, she started working at NASA, where she became the first chief of astronomy in the Office of Space Science, and the first woman to hold an executive position at the space agency. A NASA interview was done. To view this click on the link: <https://solarsystem.nasa.gov/people/225/nancy-roman-1925-2018/>



Nancy Grace Roman (1925-2018), NASA's first chief astronomer, is known as the 'Mother of Hubble.' In a time when women were discouraged from studying math and science, Roman became a research astronomer and was instrumental in taking NASA's Hubble Space Telescope from an idea to reality and establishing NASA's program of space-based astronomical observatories. In this image from the early 1970s, Dr. Roman is shown at NASA's Goddard Space Flight Center in Greenbelt, Maryland. Credit: NASA

SPACE PIC OF THE MONTH



The world's most powerful solar telescope is now operational, and it's already blowing our minds. This image from the National Science Foundation's Daniel K. Inouye Solar Telescope in Hawai'i shows a region of the surface of the [Sun](#) 82,500 kilometers across. The Earth is overlaid for scale, really driving home just how huge this area is. *Image credit: NSO/AURA/NSF. To read more click: <https://nso.edu/press-release/u-s-national-science-foundation-celebrates-the-inauguration-of-its-daniel-k-inouye-solar-telescope/>*

INTERESTING FACTOIDS

At 6,000° Celsius (11,000° Fahrenheit), the surface of the Sun is undeniably hot. But it's cool compared to the center of the Sun, which reaches temperatures of 15,000,000° Celsius (about 27,000,000° Fahrenheit).

Humans fear what we don't understand, so it's no surprise that space has always had a place in the horror genre. From alien creatures to the terrifying abyss itself, the Cosmos and its many mysteries are the perfect inspiration for a scary story.

Although volcanic activity used to be rampant in the Solar System, it's now rare. Other worlds have active cryovolcanism (ice volcanoes), but Earth, Io, and now Venus are the only worlds known to currently have rocky, lava-spewing volcanoes.

A scientific salad for astronauts in deep space

The ingredients were chosen for their nutritional value, as well as how easy they'll be to grow with the limited room and resources available on a spacecraft.

By [Tom Metcalfe](#) | Published: Wednesday, March 15, 2023

An international team of scientists have developed a “space salad” that can keep astronauts well-nourished on future missions into deep space.

The salad consists of seven ingredients — soybeans, poppy seeds, barley, kale, peanuts, sunflower seeds, and sweet potatoes, all in carefully measured amounts — that can be grown in small enclosures on a spacecraft and fulfill the nutritional needs of astronauts on long-duration trips.

Researchers from Australia, the U.K., and the U.S. chose the ingredients based on their nutritional value, growth rate, water and space requirements, and the amount of inedible waste produced. To read more

click: https://astronomy.com/news/2023/03/a-scientific-salad-for-astronauts-in-deep-space?utm_source=acs&utm



Researchers have developed a salad, seen here, made of ingredients that not only can be grown on a spacecraft, but also provide optimal nutrition.

State of Sky

The sky... a half from a whole in the
middle of which is the Man.
Man, encompassed both by Sky and Earth.
Man, as a link between Earth and Sky.

By Valentin Grigor

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