

COSMIC DIMENSIONS

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**CENTI ASTRO-SPACE
ACTIVITIES**

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Hello and welcome to the June edition of COSMIC DIMENSIONS, the newsletter that explores the mysteries of the solar system and beyond. In this issue, we will dive into topics such as:

- What's up in the night sky for June
- The latest discoveries and breakthroughs with the JWST
- Famous Astronaut Judith Resnik
- Everyday NASA spinoffs
- Interesting quote of the month

Whether you are a curious beginner or a seasoned enthusiast, COSMIC DIMENSIONS will take you on a journey of wonder and awe. So sit back, relax, and enjoy the ride!

- WHAT'S UP IN THE NIGHT SKY FOR JUNE
- UAE to Land a Probe on an Asteroid
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WHAT'S UP IN THE NIGHT SKY FOR JUNE

Presented by

Adventure Science center - Bill McClain

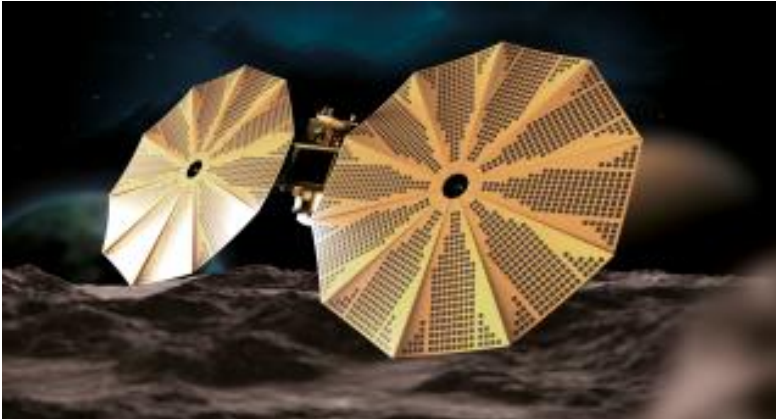
<https://www.youtube.com/watch?v=8mETX7pb5Ho>

Tonight's Sky: June

<https://www.youtube.com/watch?v=MVucw2mdHEc>

UAE to Land a Probe on an Asteroid Between Mars and Jupiter in 2034

By [Elizabeth Howell](#) May 28, 2023



Artist's impression of the United Arab Emirates' MBR Explorer asteroid-studying spacecraft. (Image credit: UAE Space Agency)

An asteroid that may host life's building blocks will get a visit from a United Arab Emirates (UAE) spacecraft about a decade from now, if all goes according to plan.

In [October 2021](#), the UAE announced that it plans to launch an ambitious mission to the [asteroid belt](#) in 2028. That mission will visit seven different space rocks, and even land on one of them, an asteroid called (269) Justitia.

On Sunday (May 28), the nation gave us some new information about this bold [asteroid](#) mission — including its name,

the Emirates Mission to the Asteroid Belt (EMA). Click on the link to read more:

<https://www.space.com/uae-asteroid-mission-details-landing-2034>

JAMES WEBB TELESCOPE DISCOVERS GARGANTUAN GEYSER ON SATURN'S MOON, BLASTING WATER HUNDREDS OF MILES INTO SPACE

By [Isobel Whitcomb](#) May 29, 2023

Scientists caught Saturn's icy moon Enceladus spraying a "huge plume" of watery vapor far into space — and that plume likely contains many of the chemical ingredients for life.

Scientists detailed the eruption — glimpsed by the [James Webb Space Telescope](#) (JWST) in November 2022 — at a conference at the Space Telescope Science Institute in Baltimore on May 17.

"It's immense," [Sara Faggi](#), a planetary astronomer at NASA's [Goddard Space Flight Center](#), said at the conference, according to [Nature.com](#). According to Faggi, a full

research paper on the massive plume is pending. To read more click on the following link:

<https://www.space.com/james-webb-telescope-discovers-gargantuan-geyser-on-saturn-moon>



An illustration of NASA's Cassini orbiter soaring through a giant vapor jet over the moon Enceladus (Image credit: NASA/JPL-Caltech)

FAMOUS ASTRONAUT

Judith Resnik April 5, 1949 - January 28, 1986

by Lynn Cohen



In Brief

Judith Resnik studied electrical engineering at Carnegie Tech (now called Carnegie-Mellon) before working in the missile and surface radar division of RCA. In 1971, she moved to Washington, D.C., where she earned a PhD in engineering from the University of Maryland while working as a biomedical engineer in the neurophysics lab of the National Institutes of Health. In 1977, Resnik decided to apply to NASA and became one of six women accepted to the program. Resnick began as a specialist in operating the remote control mechanical arm that moved objects outside the spacecraft. In 1984, on her first space flight with the shuttle *Discovery*, she unfurled the 102-foot-long solar sail that was to be used to capture the sun's energy. The *Challenger* mission was her second space launch. Seventy-three seconds into the flight, the shuttle exploded, killing the entire crew.

Overview

One of the seven crew members who died in the tragic explosion of the space shuttle *Challenger* on January 28, 1986, Judith ("J.R.") Resnik was a pioneer for women entering NASA's space program, and the second American woman astronaut to travel in space.

The first Jew and second woman to travel to space, Judith Resnik lost her life in the tragic explosion of the space shuttle Challenger in 1986, in which six other astronauts were killed: NASA

A talented scientist and a private individual, Resnik gave her deepest loyalties to her father, her career, and her close friends. Although she avoided publicity whenever possible, she was fun-loving and spirited; her romantic crush on actor Tom Selleck was often a source of good-natured teasing among her coworkers. Click on the link to read more:

<https://jwa.org/encyclopedia/article/resnik-judith>

SOURCE: *The Shalvi/Hyman Encyclopedia of Jewish Women*

STAR CAUGHT SWALLOWING A PLANET

by: Camille M. Carlisle MAY 3, 2023

The dinner bell has struck for a star in the constellation Aquila, the Eagle. Reporting in the May 4th *Nature*, Kishalay De (MIT) and a team of astronomers watched the star belch and brighten in a way that suggests **it swallowed a closely orbiting planet.**



Astronomers have observed the first compelling evidence of an aging Sun-like star engulfing an exoplanet.

International Gemini Observatory / NOIRLab / NSF / AURA / M. Garlick / M. Zamani

The star in question is a nondescript Sun-like star about 12,000 light-years away. Pre-outburst observations indicate it was slightly bloated, perhaps twice as wide as the Sun, and entering its golden years. This time in a star's life can be a dangerous one for planets. As the star finishes fusing the hydrogen in its core, it brightens and swells. Eventually, it can swell enough to engulf the closest worlds, destroying them in a fiery furnace.

Observations indicate that 30% of all Sun-like stars in our galaxy will eat at least one planet as they evolve. This includes our own Sun, which in several billion years will balloon to envelop Mercury, Venus, and, perhaps, Earth — although astronomers disagree about whether our planet will skirt destruction. (It will certainly be burnt to a crisp, even if the rock itself survives.) The future victims also include roughly 90% of all the exoplanets we've detected so far, most of which nestle close to their stars. Click on the link to read more: <https://skyandtelescope.org/astronomy-news/star-caught-swallowing-a-planet/>

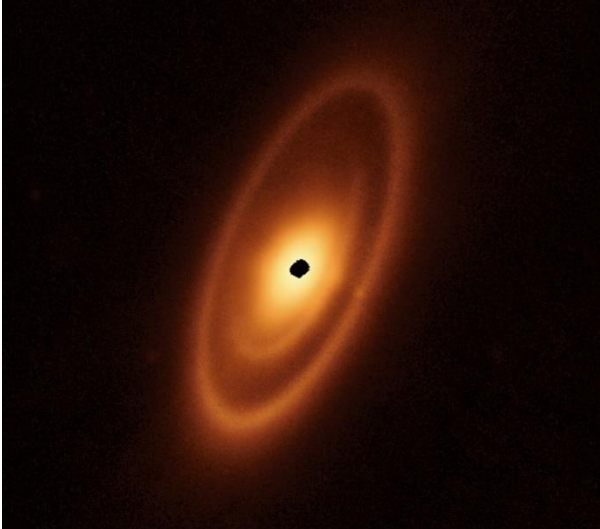
SPACE PIC OF THE MONTH



Lightning cavorts through Jupiter's thunderclouds (illustrated) at a rhythm akin to bolts in Earth's skies.
GERALD EICHSTÄDT, MSSS, SWRI, JPL-CALTECH/NASA

THE JAMES WEBB SPACE TELESCOPE REVEALS FOMALHAUT'S DISK IN UNPRECEDENTED DETAIL

by: Kit GilChrist May 8, 2023



Fomalhaut, a bright, young star 25 light-years away in the constellation Piscis Austrinus, illuminates a disk of planet-forming debris. Such debris disks contain clues about exoplanets and even smaller bodies that would otherwise remain hidden.

Andr s G sp r (University of Arizona) and his team present in *Nature Astronomy* images of the Fomalhaut system taken by the Mid-Infrared Instrument (MIRI) aboard the James Webb Space Telescope (JWST). The images reach a resolution and sensitivity far beyond the capability of earlier instruments. The team also analyzed new images taken by Hubble's Space Telescope Imaging Spectrograph, in which the star's light is blocked using a coronagraph.

Previously, Hubble, the Spitzer Space Telescope, and other telescopes have shown a far-out debris ring surrounding Fomalhaut that's akin to the Kuiper Belt in our solar system. Analysis of the system's brightness at different wavelengths had also suggested the presence of a dusty inner disk. Now, the new JWST images reveal unprecedented detail, including a new belt inside the first, an extended inner disk, and a gap between the two. They

This image of the dusty debris disk surrounding the young star Fomalhaut is from JWST's Mid-Infrared Instrument. It reveals an inner belt, akin to the solar system's asteroid belt but dustier and more extended; an intermediate belt; and a previously imaged outer belt that's analogous to our Kuiper Belt. The inner two belts had never been imaged before.

NASA / ESA / CSA / A. Pagan (STScI) / A. G sp r (University of Arizona)

also show what might be a dust cloud in the outer, previously detected ring.

“My first thought was: ‘Wow!’,” remarks Samantha Lawler (University of Regina, Canada), who wasn't involved in the study. “I spent a lot of time imagining possible orbital configurations for this system, so I was super-excited to see these detailed JWST images showing new belts and a new dust cloud.” Click on the link for more information: <https://skyandtelescope.org/astronomy-news/the-james-webb-space-telescope-reveals-fomalhauts-disk-in-unprecedented-detail/>

NEW EXOPLANET RESEARCH INDICATES HOW VOLCANOES COULD GENERATE ALIEN LIFE ON OTHER WORLDS

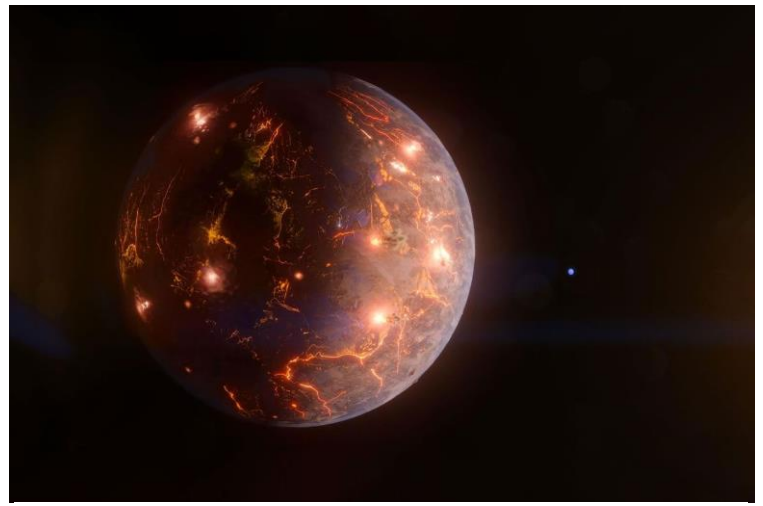
What a new exoplanet LP 791-18d tells astronomers about volcanoes and extraterrestrials

By: Nicole Karlis MAY 24, 2023 5:30AM (EDT)

Astronomers have discovered **yet another exoplanet** to add to their growing list of other worlds that exist outside of our solar system. While thirty years ago, nobody knew if exoplanets existed, astronomers have quickly realized that they are quite common in the universe. Now the biggest question is how many exoplanets exist that are similar to Earth and might even harbor

extraterrestrial life? This is why astronomers are so intrigued by a new exoplanet dubbed LP 791-18d.

Astronomers documented the details of a newly discovered exoplanet, published last week in the journal *Nature*, thanks to observations using data from NASA's [Transiting Exoplanet Survey Satellite](#) (TESS) and 127 hours of data from the retired [Spitzer Space Telescope](#). According to the paper, the exoplanet is located in our very own Milky Way about 90 lightyears away from us. Unlike Earth, the exoplanet is tidally locked, meaning that the same side constantly faces its host star, which is a small red dwarf in the Crater constellation.



LP 791-18 d, shown here in an artist's concept, is an Earth-size world about 90 light-years away. (NASA's Goddard Space Flight Center/Chris Smith (KRBwyle))

Despite these differences, LP 791-18d does have some Earth-like qualities. For example, the group of astronomers estimate that it's slightly more massive and larger than Earth. It's also in its host star's [habitable zone](#), meaning that liquid water could exist on its surface. Perhaps most intriguing is there is also compelling evidence to suggest that it's partly covered in volcanoes. To read more click the link:

<https://www.salon.com/2023/05/24/new-exoplanet-research-indicates-how-volcanoes-could-generate-alien-life-on-other-worlds/>

10 EVERYDAY NASA INVENTIONS AND SPIN-OFFS YOU CAN FIND IN YOUR HOME

by: All About Space Magazine May 28, 2023



We have NASA to thanks for these 10 everyday items. (Image credit: Future)

Many tools, machines and facilities within your home have their origins in research undertaken by NASA over the past 50 years.

Technology originally designed to aid space exploration and land a human on [the moon](#) — an endeavor instigated by U.S. President John F. Kennedy in 1961, where he announced a series of exciting new missions including the groundbreaking [Apollo program](#), has been successfully spun off to create some of the staple day-to-day products we now take for granted.

From golf balls to gamepads and computers to crash helmets, [NASA's](#) technology has been

picked up and adapted by specialist companies who have brought it into the public commercial sphere, delivering new and revolutionary products that have transformed how people live their lives and interact with their environment. To read more and learn about these 10 inventions and spin-offs click the link: <https://www.space.com/10-everyday-nasa-inventions-spin-offs-in-you-home>

WOULD YOU GO TO THE MOON?

In the email I sent with the May newsletter the question was, "If you had a chance to go to the Moon with the Artemis mission, would you say yes or no?"

A response received was, "Yes, we would go to the Moon in a heartbeat!"

There have been quite a bit of news reports on UFOs. A few years ago, our government admitted to studying them for quite some time. The Pentagon has a special department to study and research the information that they receive. NASA has set up a special department also.

The question for June is actually two. They are as follows.

1. *Have you ever encountered what you believe was a UAP / UFO?*
2. *What do you think is a possible explanation for UAPs / UFOs?*
 - A. *Natural Phenomena*
 - B. *Extraterrestrial Visitation*
 - C. *Interdimensional Visitation*
 - D. *Time Travelers*
 - E. *Secret Government / Military Projects*
 - F. *Other (What other explanation do you propose?)*

INTERESTING QUOTE

"One of the basic rules of the universe is that nothing is perfect. Perfection simply doesn't exist. Without imperfection, neither you nor I would exist." – **Stephen Hawking**

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