Astronomy News

KW RASC FRIDAY JANUARY 22 2021

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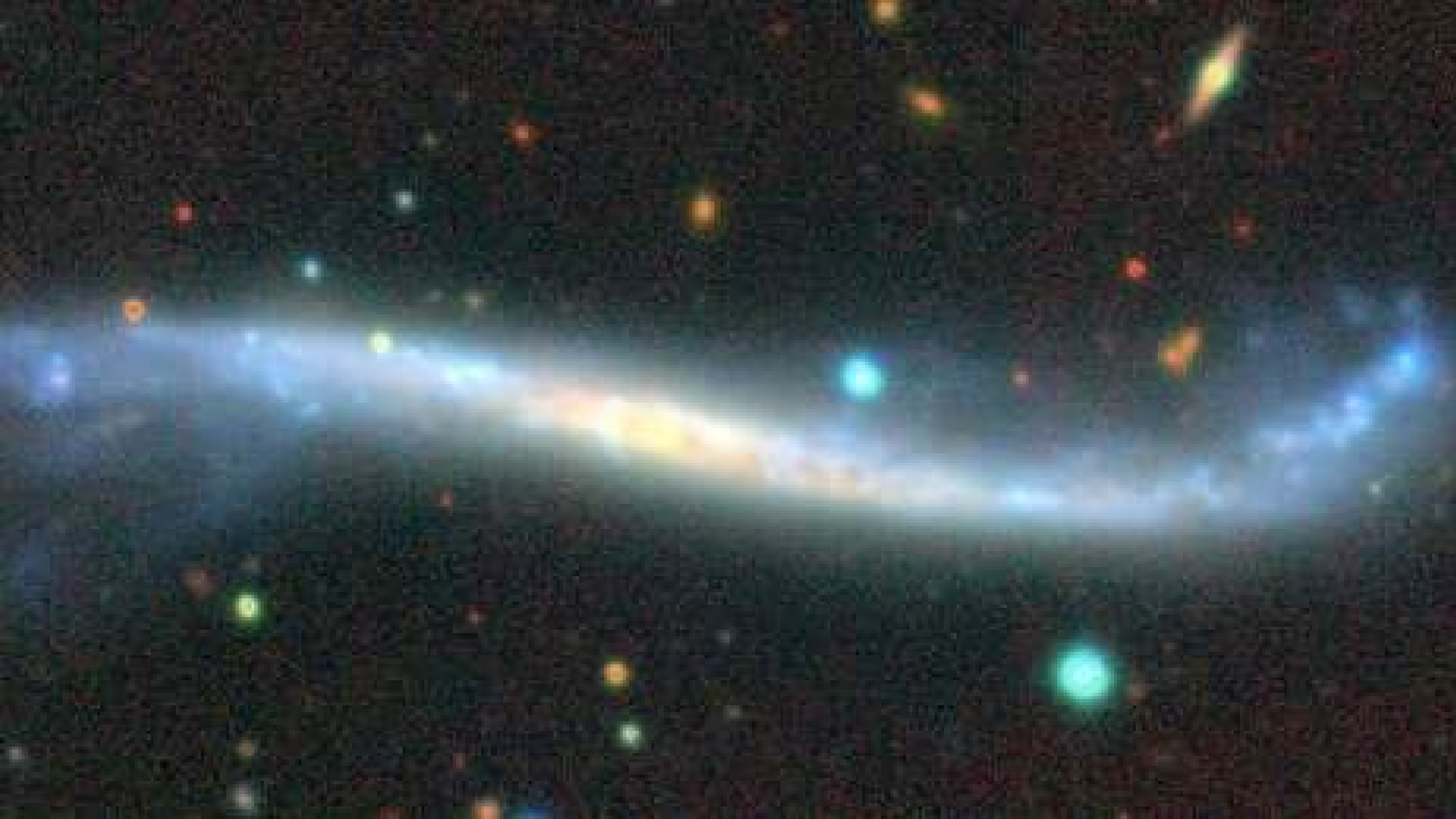
Astronomers estimate Titan's largest sea is 1,000-feet deep

- https://phys.org/news/2021-01-astronomers-titan-largest-sea-feet.html
- Far below the gaseous atmospheric shroud on Saturn's largest moon, Titan, lies Kraken Mare, a sea of liquid methane. Cornell University astronomers have estimated that sea to be at least 1,000-feet deep near its center—enough room for a potential robotic submarine to explore.
- Earlier scientists had speculated that Kraken may be more ethane rich, both because of its size and extension to the moon's lower latitudes. The observation that the liquid composition is not markedly different from the other northern seas is an important finding that will help in assessing models of Titan's Earth-like hydrologic system.
- Beyond deep, Kraken Mare also is immense—nearly the size of all five Great Lakes combined.
- Titan represents a model environment of a possible atmosphere of early Earth, Poggiali said.

NASA test of mega Moon rocket engines cut short

- https://phys.org/news/2021-01-nasa-mega-moon-rocket-short.html
- NASA conducted a test firing of the engines for its giant Space Launch System (SLS) lunar rocket on Saturday but they shut down earlier than planned, the space agency said.
- The "hot-fire" test at the Stennis Space Center in Mississippi was supposed to last a little over eight minutes—the time the engines would burn in flight—but they shut down just over a minute into the burn.
- "Although the engines did not fire for the full duration, the team successfully worked through the countdown, ignited the engines, and gained valuable data to inform our path forward.“
- It is not yet known what caused the early shutdown but SLS program manager John Honeycutt told reporters they had seen a flash in a thermal protection blanket on one of the engines and were analyzing the data.



The Milky Way does the wave

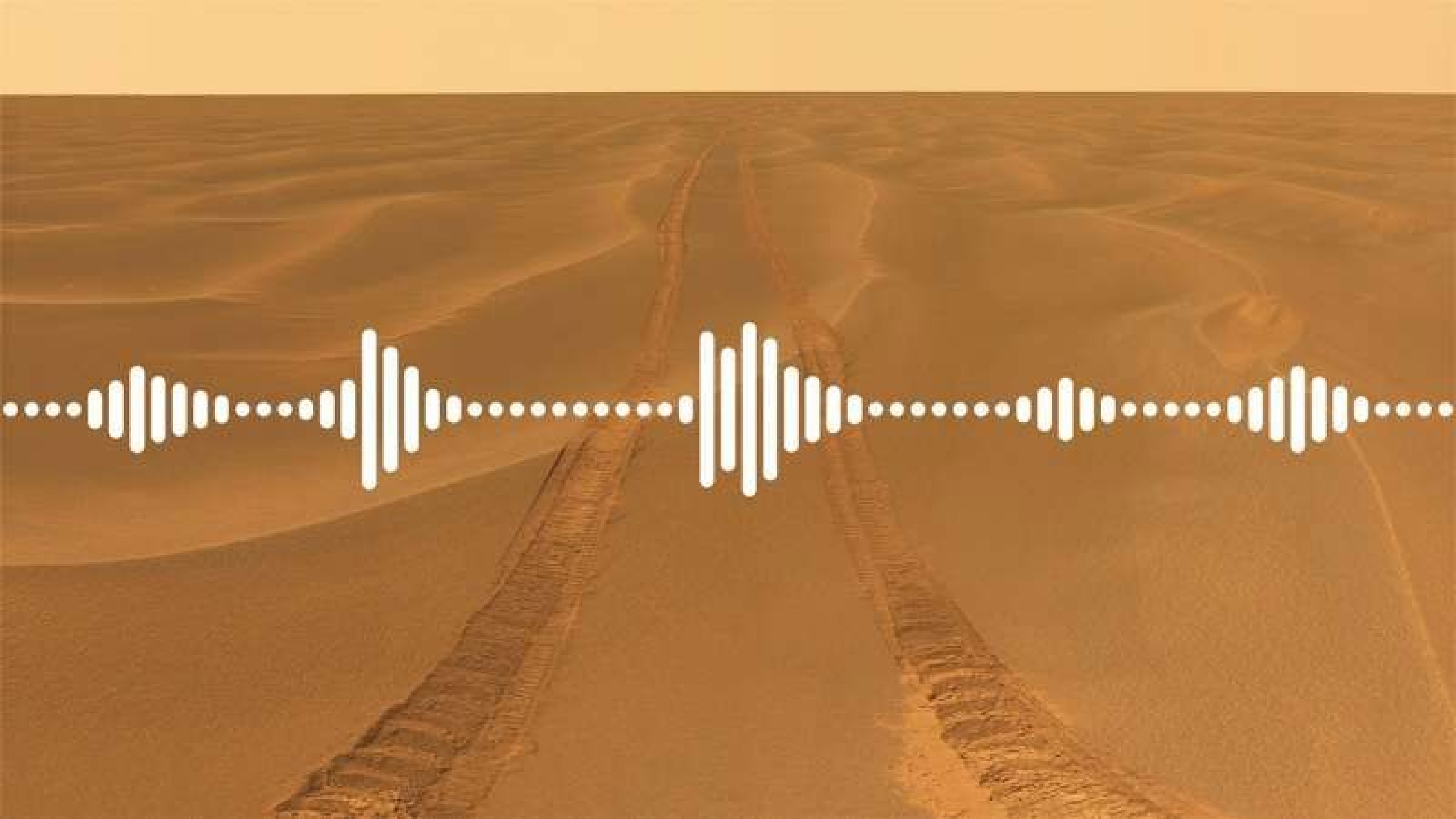
- https://phys.org/news/2021-01-milky.html
- In results announced this week at the 237th Meeting of the American Astronomical Society, scientists from the Sloan Digital Sky survey present the most detailed look yet at the warp of our own galaxy.
- "Our usual picture of a spiral galaxy is as a flat disk, thinner than a pancake, peacefully rotating around its center," said Xinlun Cheng of the University of Virginia, the lead author of the study. "But the reality is more complicated.“
- Astronomers have known for decades that many spiral galaxies actually have disks with a slight twist to them, like a potato chip or a vinyl record left out too long in the sun. Such twists occur in about 50 to 70% of spiral galaxies, including our own Milky Way.
- Surprisingly, however, we do not know much about the warp in the Milky Way.
- Using the Sloan Digital Sky Survey data, they were able to get a more detailed look than ever before, finding that not only is the galaxy's disk warped, the warp travels around the galaxy once every 440 million years.

RIP: Mars digger bites the dust after 2 years on red planet

- NASA declared the Mars digger dead Thursday after failing to burrow deep into the red planet to take its temperature.
- Scientists in Germany spent two years trying to get their heat probe, dubbed the mole, to drill into the Martian crust. But the 16-inch-long (40-centimeter) device that is part of NASA's InSight lander couldn't gain enough friction in the red dirt. It was supposed to bury 16 feet (5 meters) into Mars, but only drilled down a couple of feet (about a half meter).
- Following one last unsuccessful attempt to hammer itself down over the weekend with 500 strokes, the team called it quits.
- "We've given it everything we've got, but Mars and our heroic mole remain incompatible," said the German Space Agency's Tilman Spohn, the lead scientist for the experiment.

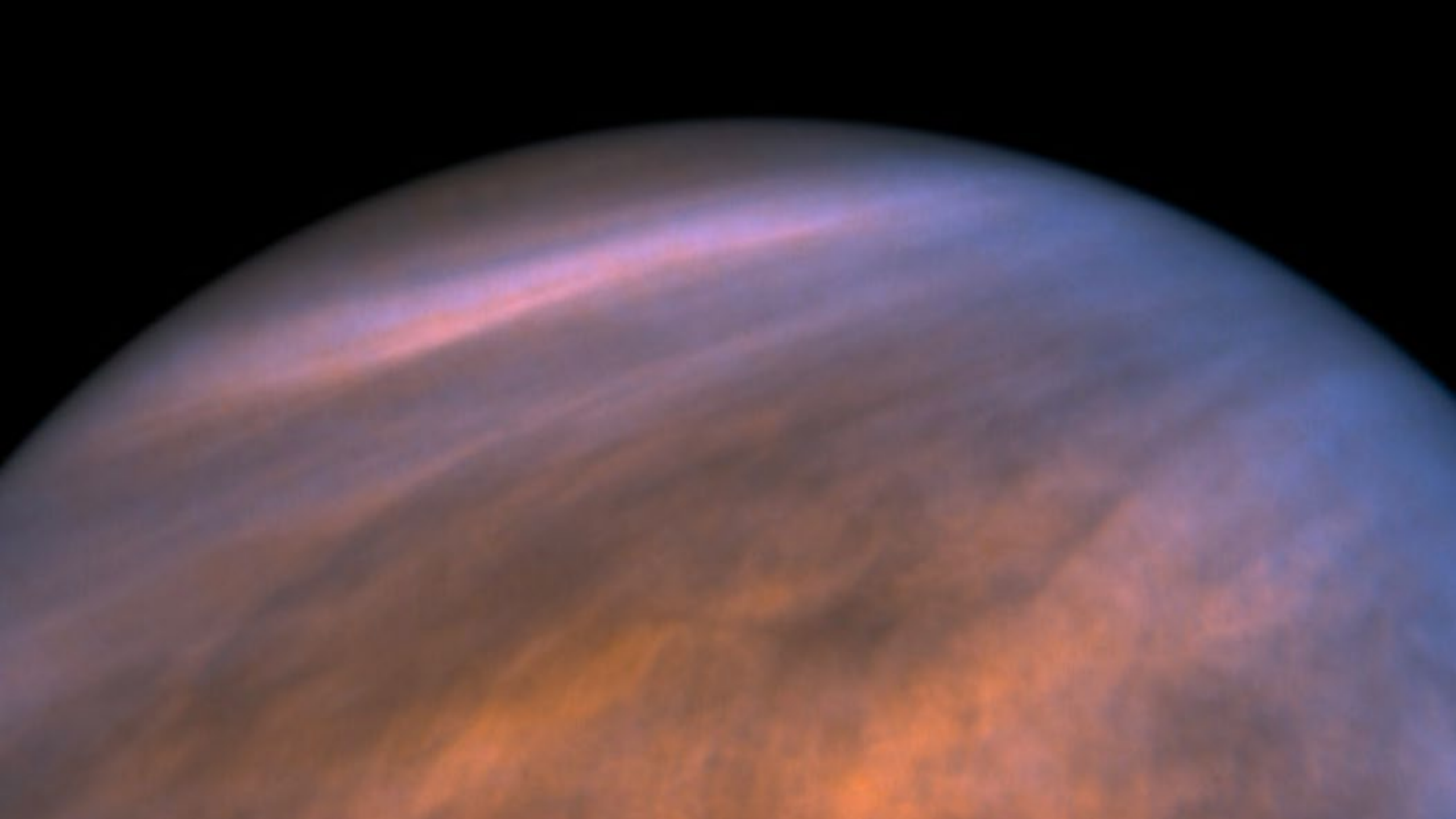
Researchers rewind the clock to calculate age and site of supernova blast

- https://phys.org/news/2021-01-rewind-clock-age-site-supernova.html
- The victim is a star that exploded long ago in the Small Magellanic Cloud, a satellite galaxy to our Milky Way. The doomed star left behind an expanding, gaseous corpse, a supernova remnant named 1E 0102.2-7219, which NASA's Einstein Observatory first discovered in X-rays. Like detectives, researchers sifted through archival images taken by Hubble, analyzing visible-light observations made 10 years apart.
- To calculate an accurate explosion age, the astronomers picked the 22 fastest moving ejecta clumps, or knots. The researchers determined that these targets were the least likely to have been slowed down by passage through interstellar material. They then traced the knots' motion backward until the ejecta coalesced at one point, identifying the explosion site.
- According to their estimate, light from the blast arrived at Earth 1,700 years ago, during the decline of the Roman Empire. However, the supernova would only have been visible to inhabitants of Earth's southern hemisphere. Unfortunately, there are no known records of this titanic event.



Mars 2020 Perseverance rover to capture sounds from the red planet

- https://phys.org/news/2021-01-mars-perseverance-rover-capture-red.html
- When the Mars Perseverance rover lands on the red planet on Feb. 18, 2021, it will not only collect stunning images and rock samples; the data it returns may also include some recorded sounds from Mars.
- The rover carries a pair of microphones, which—if all goes as planned—will provide interesting and historic audio of the arrival and landing at Mars, along with sounds of the rover at work and of wind and other ambient noise.
- The way many things sound on Earth would be slightly different on the red planet. That's because the Martian atmosphere is only 1% as dense as Earth's atmosphere at the surface and has a different makeup than ours, which affects sound emission and propagation. But the discrepancy between sounds on Earth and Mars would be much less dramatic than, for example, someone's voice before and after inhaling helium from a balloon.
- https://mars.nasa.gov/mars2020/participate/sounds/

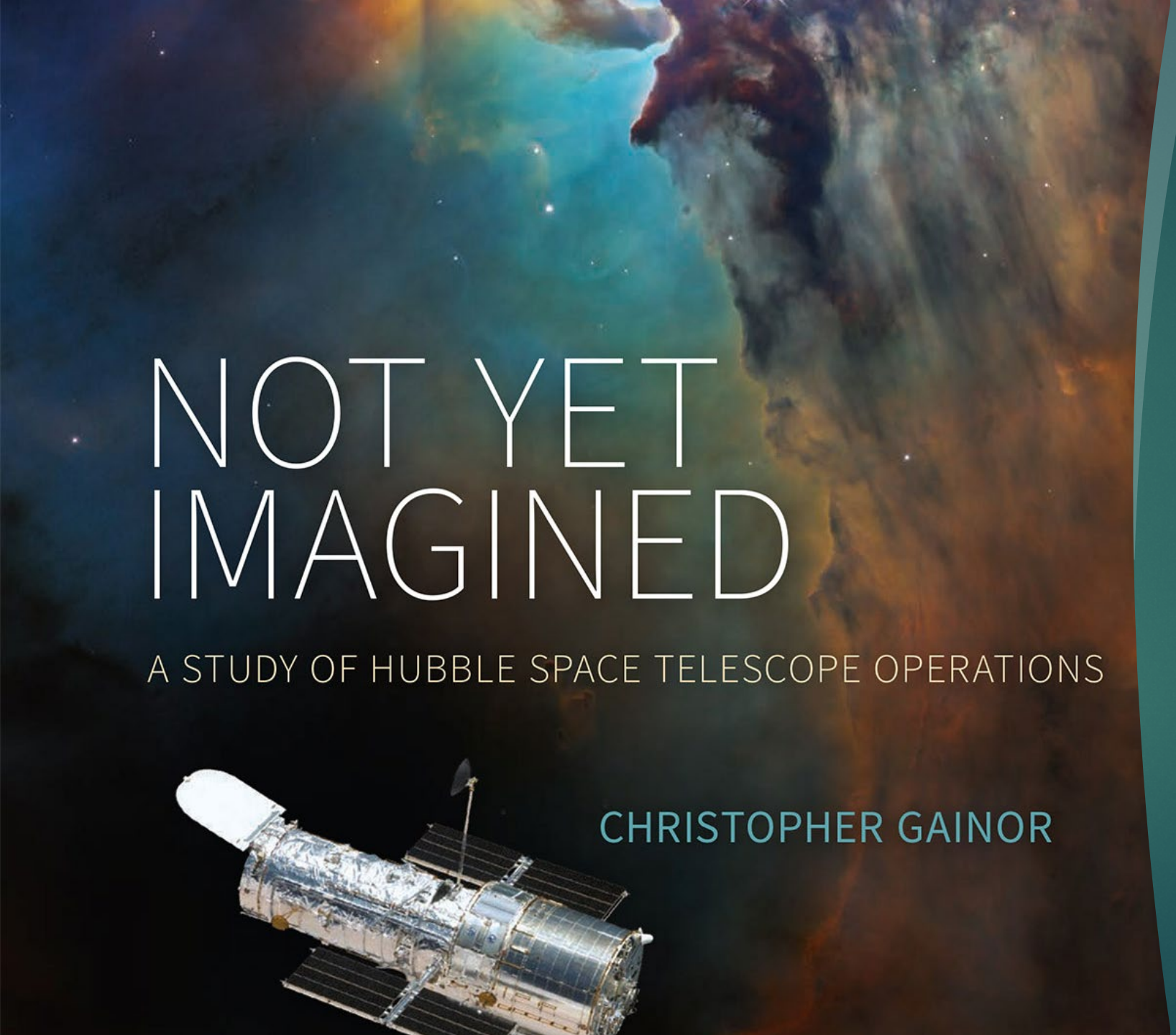


Why Do So Many Astronomy Discoveries Fail To Live up To the Hype?

- https://science.thewire.in/the-sciences/astronomy-discoveries-hype-venus-phosphine-bicep2-ftl-neutrinos-dark-matter-public-trust-science/
- We switched on their TVs to "Good Morning Britain" on the morning of September 15, 2020, were greeted by news not from our own troubled world, but from neighbouring Venus. Piers Morgan, one of the hosts, was talking about a major science story that had surfaced the previous day, informing his viewers that "there may be some form of life on Venus."
- It was, in brief, the big astronomy story of 2020 – or at least it was poised to be, if the results held up. Within weeks of the initial publication, however, doubts surfaced. Some astronomers questioned the methodology behind the data analysis; it's possible, they argued, that the purported signal wasn't due to phosphine at all, but rather due to sources in the Earth's atmosphere or possibly in the telescope itself. Another team of astronomers reanalysed some of the data and concluded there was "no statistically significant detection of phosphine."
- How science works……

Astronomers want to plant telescopes on the Moon

- https://astronomy.com/news/2021/01/astronomers-want-to-plant-telescopes-on-the-moon
- For decades, even before the iconic Hubble telescope took flight, astronomers have been launching spacecraft into orbit in the hopes of avoiding atmospheric effects that blur images taken by telescopes on Earth. But to catch clear signals of some cosmic objects, even those orbits aren't high enough.
- A group of astronomers now make the case for assembling and planting telescopes on the Moon. In a series of newly published papers, they argue that our lunar neighbor, especially its far side, makes an excellent place for telescopes in the radio and infrared range. These telescopes could discover and study potentially life-friendly planets outside our solar system and explore the little-understood "dark ages" of the young universe, around a million years after the Big Bang, when the first stars formed.
- That's the idea behind a proposed mission called FARSIDE that Burns is leading. The plan is for a robotic lunar rover to set up an array of antennas that could scan the entire sky over a range of low radio frequencies. Its main objectives would include identifying life-friendly planets through their magnetic fields as well as monitoring energetic particles released by the host stars. If NASA proceeds with the project, construction of the telescope could begin in the late 2020s and be deployed soon afterward.



Questions?

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