

"If you wish to make an apple pie from scratch, you must first invent the universe." Carl Sagan



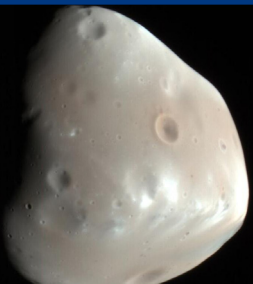
# Astro

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## Martian Moon's Orbit Hints at an Ancient Ring of Mars

Scientists from the SETI Institute and Purdue University have found that the only way to produce Deimos's unusually tilted orbit is for Mars to have had a ring billions of years ago. While some of the more massive planets in our solar system have giant rings and numerous big moons, Mars only has two small, misshapen moons, Phobos and Deimos. Although these moons are small, their peculiar orbits hide important secrets about their past.

[Phys.org](https://www.phys.org)



## Historic Test Flight

On Saturday (May 30), SpaceX launched its first-ever crewed mission, a test flight called Demo-2 that sent NASA astronauts Bob Behnken and Doug Hurley to the International Space Station (ISS).

The liftoff was the first orbital crewed launch to depart from American soil since NASA retired its space shuttle fleet in 2011. And a record number of people tuned in to watch the milestone online, agency officials said.

[Space.com](https://www.space.com)



## Perseverance Mars Rover's Extraordinary Sample-Gathering System



While many people think of the Perseverance rover as one robot, it's actually akin to a collection of robots working together. Located on the front of the Perseverance rover, the Sample Caching System itself is composed of three robots, the most visible being the rover's 7-foot-long (2-meter-long) robotic arm. Bolted to the front of the rover's chassis, the five-jointed arm carries a large turret that includes a rotary percussive drill to collect core samples of Mars rock and regolith (broken rock and dust).

*MarsDaily.com*

## Oumuamua May Be a Hydrogen Iceberg

Oumuamua, the first known interstellar object to pass through Earth's solar system, has been called many things: a comet, an asteroid, a cylinder-shaped spaceship. Now it has a new description: Astronomers at Yale and the University of Chicago say it's a hydrogen iceberg. Although hydrogen is the most common element in the universe it is rarely found in solid form, which requires extremely cold temperatures. Frozen hydrogen does, however, offer a compelling mechanism for acceleration. A study based on the researchers' findings has been accepted by the *Astrophysical Journal Letters*.





## Pluto's Strange Atmosphere Just Collapsed



The dramatic fall in atmospheric pressure on Pluto is much larger than astronomers expected. Pluto's atmosphere is hard to observe from Earth. It can only be studied when Pluto passes in front of a distant star, allowing astronomers to see the effect the atmosphere has on starlight. When this happened in 2016, it confirmed that Pluto's atmosphere was growing, a trend that astronomers had observed since 1988, when they noticed it for the first time.

*Astronomy.com*

## There are Three Eclipses in a Month!

Beginning on June 5, we'll have 3 eclipses in one lunar month. It'll be the last time this happens until the year 2029. From 2000-2050, there are 3 eclipses in one lunar month 14 times. Meanwhile, in a calendar month, 3 eclipses are rare. In 2020, we'll have three eclipses in one lunar month – the period of time between successive new moons or full moons – in June and July 2020. This time period during which eclipses are possible is also called an eclipse season. We won't have three eclipses in one eclipse season again until the year 2029.



*EarthSky.org*

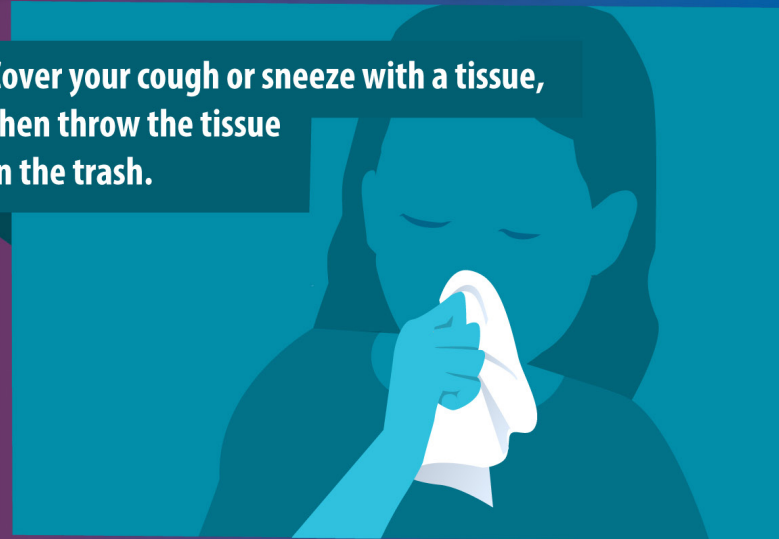


## How to Protect Ourselves?

Avoid close contact with people who are sick.



Cover your cough or sneeze with a tissue, then throw the tissue in the trash.



Avoid touching your eyes, nose, and mouth.



Clean and disinfect frequently touched objects and surfaces.



Stay home when you are sick, except to get medical care.



Wash your hands often with soap and water for at least 20 seconds.





## Astronomy Picture of the Day

### Portrait of NGC 3628

Image Credit & Copyright: *Stefano Cancelli (1963-2020), Paul Mortfield*

Sharp telescopic views of NGC 3628 show a puffy galactic disk divided by dark dust lanes. Of course, this deep portrait of the magnificent, edge-on spiral galaxy puts some astronomers in mind of its popular moniker, the Hamburger Galaxy. It also reveals a small galaxy nearby, likely a satellite of NGC 3628, and a faint but extensive tidal tail. The drawn out tail stretches for about 300,000 light-years, even beyond the right edge of the wide frame. NGC 3628 shares its neighborhood in the local universe with two other large spirals M65 and M66 in a grouping otherwise known as the Leo Triplet. Gravitational interactions with its cosmic neighbors are likely responsible for creating the tidal tail, as well as the extended flare and warp of this spiral's disk. The tantalizing island universe itself is about 100,000 light-years across and 35 million light-years away in the northern springtime constellation Leo.

[apod.nasa.gov](http://apod.nasa.gov)



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