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Global Friendship Through Space Education



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First Crewed Artemis Moon Landing Delayed Until At Least 2025

NASA administrator Bill Nelson today announced a new timeline for near-term Artemis missions, pushing back the first post-Apollo lunar landing until at least 2025.

The schedule changes were driven by budgetary constraints, COVID delays, infrastructure and testing delays for the Space Launch System (SLS), and more than six months of litigation related to Blue Origin’s unsuccessful legal challenge to NASA’s selection of rival SpaceX as the sole winner of the lunar lander contract.

[Astronomy.com](https://www.astronomy.com)



SpaceX Shows Off Epic Photo of Starship

SpaceX test-fired Starship SN20 on Friday (Nov. 12) at its Starbase facility near the South Texas village of Boca Chica. The test was brief, only a few second, in a “static fire” to see how engines performed together. It was the company’s first test to feature six Raptor engines simultaneously. Earlier tests of SN20 featured only two engines and the company’s suborbital launches of previous prototypes had up to three.

In May, SpaceX submitted its plan for that first Starship orbital flight. It called for the company’s Super Heavy 4 booster to launch SN20 into orbit and then splash down in the Gulf of Mexico about 20 miles (32 km) offshore.

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

A Chunk of Chinese Satellite Almost Hit the International Space Station



Earlier this week, the International Space Station (ISS) was forced to manoeuvre out of the way of a potential collision with space junk. With a crew of astronauts and cosmonauts on board, this required an urgent change of orbit on November 11. This week's incident involved a piece of debris from the defunct Fengyun-1C weather satellite, destroyed in 2007 by a Chinese anti-satellite missile test. The satellite exploded into more than 3,500 pieces of debris, most of which are still orbiting. Many have now fallen into the ISS's orbital region.

Phys.org

Astronaut Training in the Land of Volcanoes

A team of astronauts, engineers and geologists is travelling to Spain's Canary Islands, one of Europe's volcanic hot spots, to learn how to best explore the Moon and Mars during ESA's Pangaea geological training course. This edition's participants are ESA astronaut Andreas Mogensen, ESA engineer Robin Eccleston and NASA astronaut Kathleen Rubins, who is part of the group of NASA astronauts selected to potentially land on the Moon for the Artemis missions, where research on lunar geology will be crucial.



MarsDaily.com

Fungi Were Able to Absorb Radiation on the ISS



According to the paper, published in pre-print format on BioRxiv earlier this month, a special type of fungi that thrives in high radiation environments called *Cladosporium sphaerospermum* could form a living shield around astronauts in space. The fungus not only blocks radiation, but actually uses it to grow, through a process called radiosynthesis: it pulls energy from radiation, just as most plants pull energy from sunlight via photosynthesis. That will be helpful for protecting future deep space voyagers.

Technology.org

The Moon's Top Layer Alone Has Enough Oxygen to Sustain 8 Billion People for 100,000 Years

In October, the Australian Space Agency and NASA signed a deal to send an Australian-made rover to the Moon under the Artemis program, with a goal to collect lunar rocks that could ultimately provide breathable oxygen on the Moon. According to the paper there is actually plenty of oxygen on the Moon. It just isn't in a gaseous form. Instead it's trapped inside regolith — the layer of rock and fine dust that covers the Moon's surface. If we could extract oxygen from regolith, would it be enough to support human life on the Moon?



Technology.org

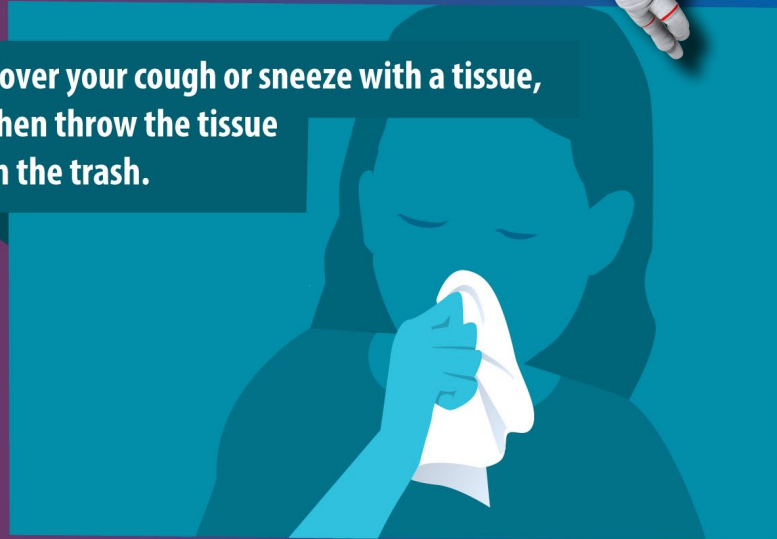
How to Protect Ourselves?



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

Light Pillar over Volcanic Etna

Image Credit & Copyright: *Giancarlo Tinè*

What happening above that volcano? Something very unusual -- a volcanic light pillar. More typically, light pillars are caused by sunlight and so appear as a bright column that extends upward above a rising or setting Sun. Alternatively, other light pillars -- some quite colorful -- have been recorded above street and house lights. This light pillar, though, was illuminated by the red light emitted by the glowing magma of an erupting volcano. The volcano is Italy's Mount Etna, and the featured image was captured with a single shot a few hours after sunset in mid-June. Freezing temperatures above the volcano's ash cloud created ice-crystals either in cirrus clouds high above the volcano -- or in condensed water vapor expelled by Mount Etna. These ice crystals -- mostly flat toward the ground but fluttering -- then reflected away light from the volcano's caldera.

apod.nasa.gov



Space Camp Turkey, Aegean Free Zone 35410 Gaziemir, Izmir / Turkey

Phone : +90 232 252 35 00 Fax : +90 232 252 36 00

Email: info@spacecampturkey.com

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