

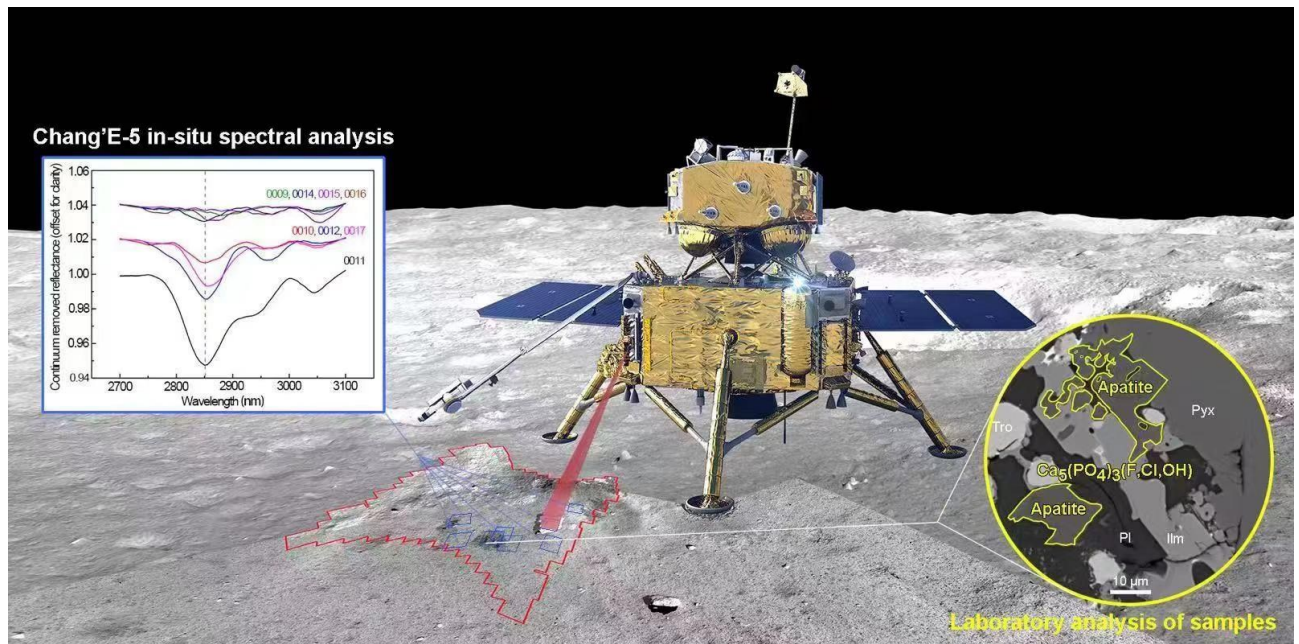
# Space News from Planet Earth - 20 JUNE 2022

A bi-monthly newscast edited by Cole Armagost

Our selection of news relevant for Civilian Space Development

## 1 China's moon sample-return mission finds water evidence twice over

By Andrew Jones – space.com



China's Chang'e 5 lunar landing and sampling mission found water in the 'Ocean of Storms,' both through on-site analysis and in materials delivered to Earth.

Chang'e 5 since December 2020 is drilling down for and scooping lunar samples.

Recently, an ascent vehicle returned Chang'e 5's samples to Earth.

The lander's spectral scan of the surface and analysis of the samples in laboratories on Earth both show the presence of water in the region.

"For the first time in the world, the results of laboratory analysis of lunar return samples and spectral data from in-situ lunar surface surveys were used jointly to examine the presence, form and amount of 'water' in lunar samples," co-author Li Chunlai, a planetary scientist at the National Astronomical Observatories of the Chinese Academy of Sciences (NAOC), said in a statement.

Li said future Chang'e missions will also focus on water to build a bigger picture of lunar water, and particularly on potential water-ice at the lunar south pole with [Chang'e 7](#).

## 2 SpaceX's Starship will be ready for 1st orbital flight in July, Elon Musk says

By Mike Wall – space.com



But it's unclear if Starship will actually get off the ground next month.

"Starship will be ready to fly next month. I was in the high bay & mega bay late last night reviewing progress," Elon said via Twitter June 14.

"We will have a second Starship stack ready to fly in August and then monthly thereafter," Musk added in another tweet.

Much of this prep work involves building and testing Raptors, the next-generation engine that will power Starship.

Hardware readiness won't guarantee a July Starship flight, however. The FAA just required more than 75 things that SpaceX must do to mitigate its impact on the surrounding area, a biodiversity hotspot.



### 3 First tower segment for SpaceX's Starship launch site moves to pad 39A at Kennedy Space Center

by Stephen Clark, June 16, 2022



The first segment of a new launch tower for SpaceX's Starship rocket moved across the Kennedy Space Center late Wednesday to pad 39A, where the company is poised to erect a second structure for Starship launch at the Cape Canaveral spaceport, similar to the one already existing at the company's Starbase factory and test site.

Five more launch pad tower segments are currently visible outside SpaceX's Roberts Road site, where the company is also building a Starship factory next to a hangar used for refurbishment of Falcon 9 rocket boosters and fairings.

The move of the first launch tower segment to 39A late Wednesday occurred two days after SpaceX's plans to fly the full Starship stack from Texas received preliminary environmental approval from the Federal Aviation Administration. SpaceX previously secured environmental approval in 2019 for Starship launches from Kennedy.

Elon Musk, SpaceX's founder and CEO, said earlier this year that the Starship base in South Texas will primarily be used for research and development and test flights, with Florida likely to be the home base for operational launches and landings.

SpaceX is also considering building a third Starship launch pad in Florida at an undeveloped site on the northern part of the Kennedy Space Center.

## 4 Sierra Space to start astronaut training program



by Jeff Foust spacenews.com — June 14, 2022

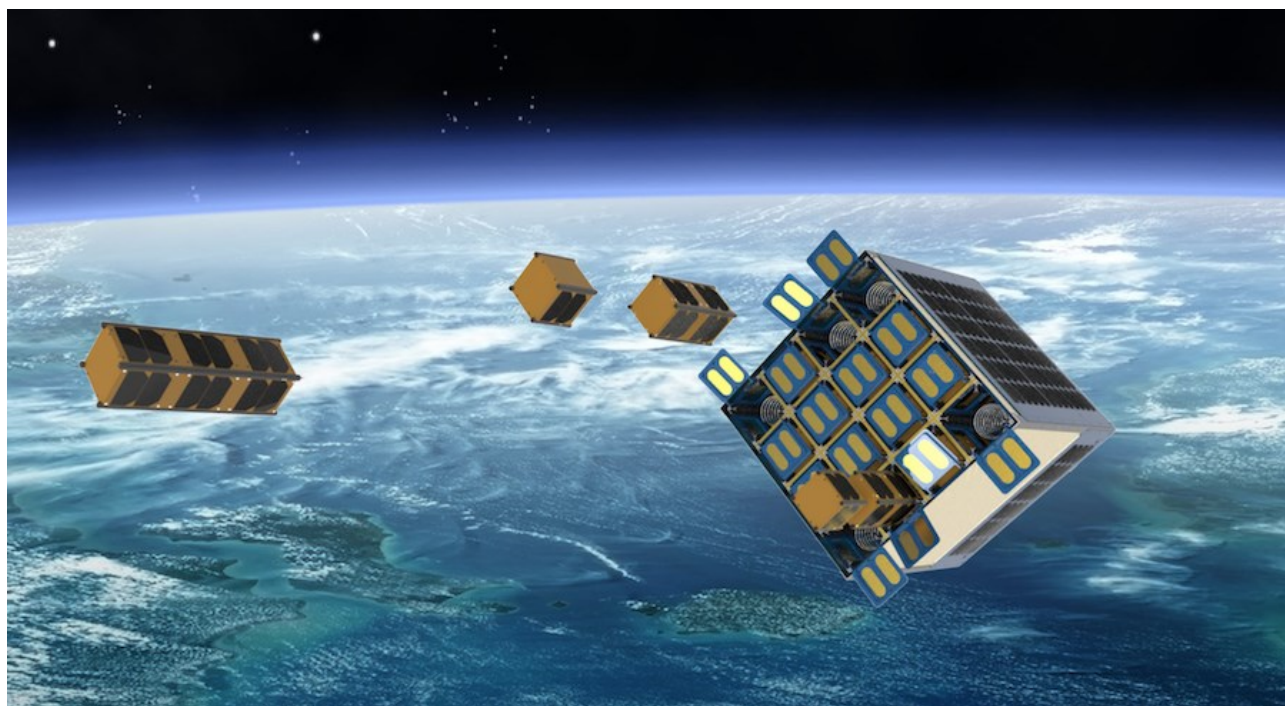
Sierra Space is creating an astronaut training program led by a company executive and former NASA astronaut as another step in developing a crewed version of its Dream Chaser vehicle and a commercial space station.

The company announced June 14 it was opening a commercial human spaceflight training center and astronaut training academy at its offices at the Kennedy Space Center. Janet Kavandi, a former NASA astronaut and president of Sierra Space, will lead the center.

“The commercialization of space, starting with low Earth orbit, will require an innovative new approach to the selection, training and preparation of the large numbers of women and men that we will need to live and work in space,” Tom Vice, chief executive of Sierra Space, said in a statement. “Janet has an unequalled level of expertise and experience that uniquely qualifies her for this one-of-a-kind role.”

## 5 D-Orbit charts ambitious course for space logistics business

by Debra Werner spacenews.com — June 15, 2022



Space logistics company D-Orbit announced a \$2 million contract June 9 with the European Space Agency to upgrade production of its ION Satellite Carrier.

The Italian firm plans to offer a wide range of satellite services from active debris removal to space-based cloud computing.

ESA will fund D-Orbit’s campaign to improve the performance and reduce the cost of ION, the vehicle that transports cubesats and microsatellites from the point where a large rocket drops them off to their desired orbital destinations.



About a dozen companies around the world are developing orbital transfer vehicles. For now, D-Orbit is the only company with a commercial flight-proven vehicle.

D-Orbit intends to offer satellite services including inspection, refueling and small repairs.

Active debris removal is part of the service, today in low-Earth orbit, later in geostationary orbit. In future, debris recycling and in-orbit manufacturing.

D-Orbit employs about 200 people, with the majority based near the firm's Como, Italy headquarters. In addition, D-Orbit has offices in Portugal, the United Kingdom and Falls Church, Virginia.

## 6 SLS test launch



After at least 16 delays, and 5 years of added time to its schedule, NASA's Space Launch System (or SLS) began a wet dress rehearsal in preparation for a planned launch this fall. SLS is slotted to be NASA's deep space launch vehicle throughout the 2020s, and is a critical pillar of the ARTEMIS program, which endeavors to put men and women on the moon again and eventually bring them to Mars. If SLS launches before SpaceX Starship, it will be the largest rocket ever launched in human history.

The ongoing wet dress rehearsal began on the 18th of June and will end today. The test is critical for SLS, and if it passes successfully, it will likely be followed by a manned launch planned for August.

## 7 Space Renaissance & Partners, Events and Activities

- 1) **The Space Renaissance Art & Science Festival** will be held in Berlin, from 7 to 9 of July 2022. The 3 days conference will host several artists and experts of space matters and programs from Europe, US and other Countries. And, of course, a large representation of the German space community.
- 2) The Space Renaissance Academy has kicked-off the **SRI Ambassadors High Level Training Course**. The Calendar of the lectures in 2022 is now published on the SR Academy website <https://academy.spacerenaissance.space>, where it is also possible to register to attend the lectures. Registration is free for SRI members, while we ask for a free donation by non members. The first lecture, to be given June 26<sup>th</sup>, is "Utopian thinkers and Space Philosophy".

- 3) **SRI has kicked-off its internship programme.** Already 3 conventions were signed with universities, to allow our interns to get credits by this activity. They are already helping in the frame of the SR Academy, to build our lectures, and to search world wide literature for adding references to our works (papers, presentations, projects). The Statement of Work for the available internship roles is published on the SRI website [spacerenaissance.space](https://spacerenaissance.space), where it is also possible to apply for the open positions.
- 4) SRI and ACES World Wide are working to organize a **special workshop at UN session** of September 2022, on the theme of space safety and space science & exploration sustainability. More info to come.