

China's Chang'e 5 mission lands on the Moon



China's Chang'e 5 mission, tasked with bringing a sample of lunar dirt back to Earth, successfully landed on the Moon on Tuesday, marking the third time that China has placed a robotic spacecraft on the lunar surface. The lander will soon begin digging up samples of lunar soil, which will be returned to our planet later this month.

Chang'e 5 launched from China's Wenchang Spacecraft Launch Site on November 23rd, flying to space on top of a Long March 5 rocket. It's a complex mission consisting of four main spacecraft that will all work together to bring between 2 to 4 kilograms of lunar dirt back to Earth. The quartet traveled to the Moon attached together and got into lunar orbit on November 28th.

Two of those four spacecraft include a lander and an ascent vehicle, which are stacked on top of each other. On November 28th, the pair separated from the third spacecraft, Chang'e-5's service module, which remained in orbit around the Moon. The lander and ascent module touched down on the lunar

surface today, according to CGTN, though a time was not provided.

Now over the next few days, the lander will use a robotic arm to drill into the lunar dirt and scoop up rocks, storing them inside a sample container. Once the sample is collected, the robotic arm will transfer the container to the ascent module on top of the lander. Then it'll be time for Chang'e-5's second takeoff, with the ascent module blasting off from the lander with the sample in tow. The ascent module will meet up with the service module in orbit, and together the spacecraft will head back to Earth.

The sample will eventually be transferred to the fourth spacecraft, a reentry capsule tasked with bringing the material to the ground. It's unclear exactly when that landing will take place, but it could occur around December 16th or 17th. China is targeting somewhere in Inner Mongolia for the landing spot.

If all goes to plan, China will become one of three countries to bring back samples from the Moon. US astronauts retrieved lunar soil samples during the Apollo missions in the 1960s and 70s, and the former Soviet Union brought back lunar material through a series of robotic missions in the 1970s. In fact, the last successful lunar sample return mission occurred in 1976 with the Soviet Union's Luna 24 mission. With Chang'e-5, China could bring the first material back from the Moon in nearly half a century.

Chang'e-5 isn't the only mission that could bring rocks from another world to Earth this month. Japan's Hayabusa2 mission, which has been in space since 2014, is slated to return a sample of material from an asteroid named Ryugu this weekend. That means Earth could get two precious samples of unspoiled space rocks in December 2020.

Kim Lyons contributed to this report.

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