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Company apologizes after test rocket crashes

By CUI JIA
cuijia@chinadaily.com.cn

Chinese commercial space launch company Beijing Tianbing Technology, also known as Space Pioneer, issued a public apology on Tuesday after a test of the first stage engines of its Tianlong-3 rocket failed in Henan province, causing explosions in a mountainous area that disturbed residents.

Tianlong-3, a two-stage kerosene-liquid oxygen rocket comparable to SpaceX's Falcon 9, experienced the failure during a test of its nine first-stage engines in the city of Gongyi on Sunday.

At 3:43 pm, the engines were fired according to plan, and the engine thrust reached 820 metric tons.

However, a structural failure caused the rocket to detach from its launchpad unexpectedly and blast off. The engines were then switched off by the computer onboard and the rocket crashed in a mountainous area about 1.5 kilometers away, Space Pioneer said.

Many people in Gongyi watched the rocket's descent and posted footage of it exploding in flames on social media sites. No casualties had been reported, the company said on Sunday.

In a statement issued on Tuesday, Space Pioneer sincerely apologized to the public for the incident, saying it had caused unnecessary disturbance to people's lives.

The testing facility is far from the city center, it said, and all the people living nearby had been evacuated before the test. Damage to people's houses is being assessed, and the company said it will compensate people for their losses.

Space Pioneer described the test as "most challenging" and said there are high risks and uncertainties behind every breakthrough.

It vowed to put the safety of people's lives and property first in the future and ensure that all tests are carried out safely and rigorously.

The company added that it hopes the public will continue to support the development of China's commercial space industry.

Chang'e missions have changed the face of lunar exploration

Quentin Parker
The author is director of the University of Hong Kong's Laboratory for Space Research.

They did it!

On June 25, the sample-return capsule of Chang'e 6 skipped off the Earth's atmosphere on first approach, as a special braking maneuver was done to lose excessive reentry speed, and then landed safely under parachute in the Inner Mongolia autonomous region at 2:07 pm Beijing time. Thus, the 53-day effectively flawless mission finally came to its amazingly successful denouement. Make no mistake, this was an unprecedented human achievement. It marked the first time in history that material from the moon's far side has been transported to Earth. It promises a veritable cornucopia of scientific and geological delights. There will be all sorts of implications for our understanding of how the moon and, indeed, the Earth formed and even how the building blocks of life may have been seeded through the heavy bombardment of the Earth-moon system by comets and asteroids. These brought, we think, large amounts of water to our world.

Why is this particular lunar mission so important? Because if you look at a map of the moon, the near and far sides appear very different, almost as if they do not belong together. The near side has large, apparently smooth regions called mare — the result of volcanism and large lava lakes forming in the more recent past. This is why they are much less heavily cratered. Hence, the Apollo missions, and more recently, the Chang'e 5 mission, returned younger moon rock samples. The far side, by contrast, has virtually no such features but has a very heavily cratered terrain that is older and not disturbed by volcanic activity. A firm explanation for this has so far eluded scientists. They are hoping the assumed more ancient moon rock from Chang'e 6 may help provide some answers. The sampled material was taken from the far side region of the lunar South Pole in the so-called South Pole-Aitken basin. Here a massive impact billions of years ago left a large depression in the lunar surface up to 13 kilometers deep compared to the exterior surrounding area. Geologists hope that some ancient lunar material from deep within the lunar mantle may have been regurgitated to the surface by the massive impact and so, with luck, may form part of the sample returned to Earth.

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The astonishing Chang'e 5 and 6 sample-return missions that China has accomplished may take some by surprise, but if so, they have not been paying attention! This is already the fourth successful soft landing on the moon for China's lunar Chang'e series and only the second time any spacecraft has landed on the lunar far side — both were Chinese. The lunar far side is the face that is never seen on Earth due to the exciting lockstep orbital and rotational periods for the moon where it turns on its axis over one month at precisely the same time as the moon takes to orbit the Earth — some great animations on the web demonstrate how it works.

The mission was as complex and technically challenging as it is scientifically significant.

Just landing on the moon is a major feat. This is as recent partial failures of Japanese and US private-led lunar missions have recently shown. To do it twice on the challenging far side is another level altogether. This is because there is no direct line of sight for communication with the Earth, necessitating the dispatch of special "Magpie bridge" Queqiao relay satellites.

The whole process bodes well for the Chang'e 7 and Chang'e 8 missions scheduled for 2026 and 2028. I cannot help but remark that the University of Hong Kong's Lab for Space Research (HKU-LSR) signed a memorandum of understanding on June 14, to be an equal partner in a small widefield telescope on the upcoming Chang'e 7 lunar lander. The International Lunar Observatory Association (ILOA) based in Hawaii leads the mission. This is a rare but welcome example of the collaboration between the American and Chinese lunar missions. The ILOA and HKU-LSR parties signed in Beijing, all while the Chang'e 6 spacecraft was patiently waiting in lunar orbit for the perfect trajectory to start its three-day journey home. With this small telescopic camera on Chang'e 7, we hope to produce an iconic, color image of the majestic Galactic plane rising above the surface of the Shackleton crater to inspire the next generation of students in a similar way to the famous Earthrise photo over the moon taken during the Apollo program. We can hope.

Interestingly, on arrival, as I left the Beijing airport train en route from terminal 3 to the baggage hall, I passed a long series of display posters in both English and Chinese advertising Earth Environment Day. Two of the posters caught my eye as they juxtaposed images of the American Space Shuttle on one and an Apollo astronaut on the moon on the other. To my mind, that China would even do this shows a level of respect, acceptance, and, yes, admiration for the past achievements of the US space program, which China is now doing so well to emulate. The other sentiment I felt was one of hope. Hope that with scientific cooperation in the exploration of our solar system and beyond, we can collectively walk a saner and more productive path for all humankind.

The views do not necessarily reflect those of China Daily.