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# CHINA DAILY

香港版  
HONG KONG  
WEEKEND  
EDITION

October 23-24, 2021

中國日報

[www.chinadailyhk.com](http://www.chinadailyhk.com) HK \$10

## Mars rover, orbiter set to resume operations

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China's Mars rover and the orbiter of the Tianwen 1 mission are resuming operations after a month-long suspension caused by the sun disrupting signals between Earth and Mars, according to the China National Space Administration.

Mission controllers have re-established their tracking, communication and control of the orbiter and the Zhurong rover, the administration said in a brief statement on Friday.

When the sun is directly between Earth and Mars, solar electromagnetic radiation substantially increases and strongly disrupts communications between the craft and Earth.

Chu Yingzhi, deputy project manager of the Tianwen 1's orbiter, explained that such a "sun outage" occurs every 26 months and affects all Martian probes.

Zhang Rongqiao, the Tianwen 1 mission's chief designer at the China National Space Administration, said that the Zhurong rover would continue traveling southward toward an ancient coastal area on Utopia Planitia, a large plain within the largest known impact basin in the solar system, while the orbiter will enter a new Mars orbit to carry out a remote-sensing global survey of the Red Planet and will continue relaying signals between Zhurong and Earth.

Chu said once the orbiter enters the new orbit in early November,

all of the seven scientific devices such as the Mars mineral spectrometer and the high-resolution camera will be activated to gather information about the planet's geological structures, soil types, spatial environments and atmospheric ionized layer as well as other crucial elements.

Before the suspension, Zhurong had traveled nearly 1,100 meters on the Martian surface and was in good condition with sufficient energy, Zhang said.

The core component of the Tianwen 1 mission — the country's first interplanetary adventure — the 240-kilogram Zhurong has outlasted its three-month life expectancy with all of its predetermined tasks completed.

The 1.85-meter-tall rover, now several million kilometers from Earth, is the sixth rover on Mars, following five others launched by the United States.

Tianwen 1, named after an ancient Chinese poem, was launched on July 23 last year from the Wenchang Space Launch Center in Hainan province and traveled more than 470 million km and carried out several trajectory maneuvers before entering Martian orbit on Feb 10. Zhurong touched down on the planet on May 15 and separated from its landing platform a week later.

The mission has generated more than 420 gigabytes of primary data, with Zhurong alone having obtained about 10 GB of primary data, according to sources at the space administration.