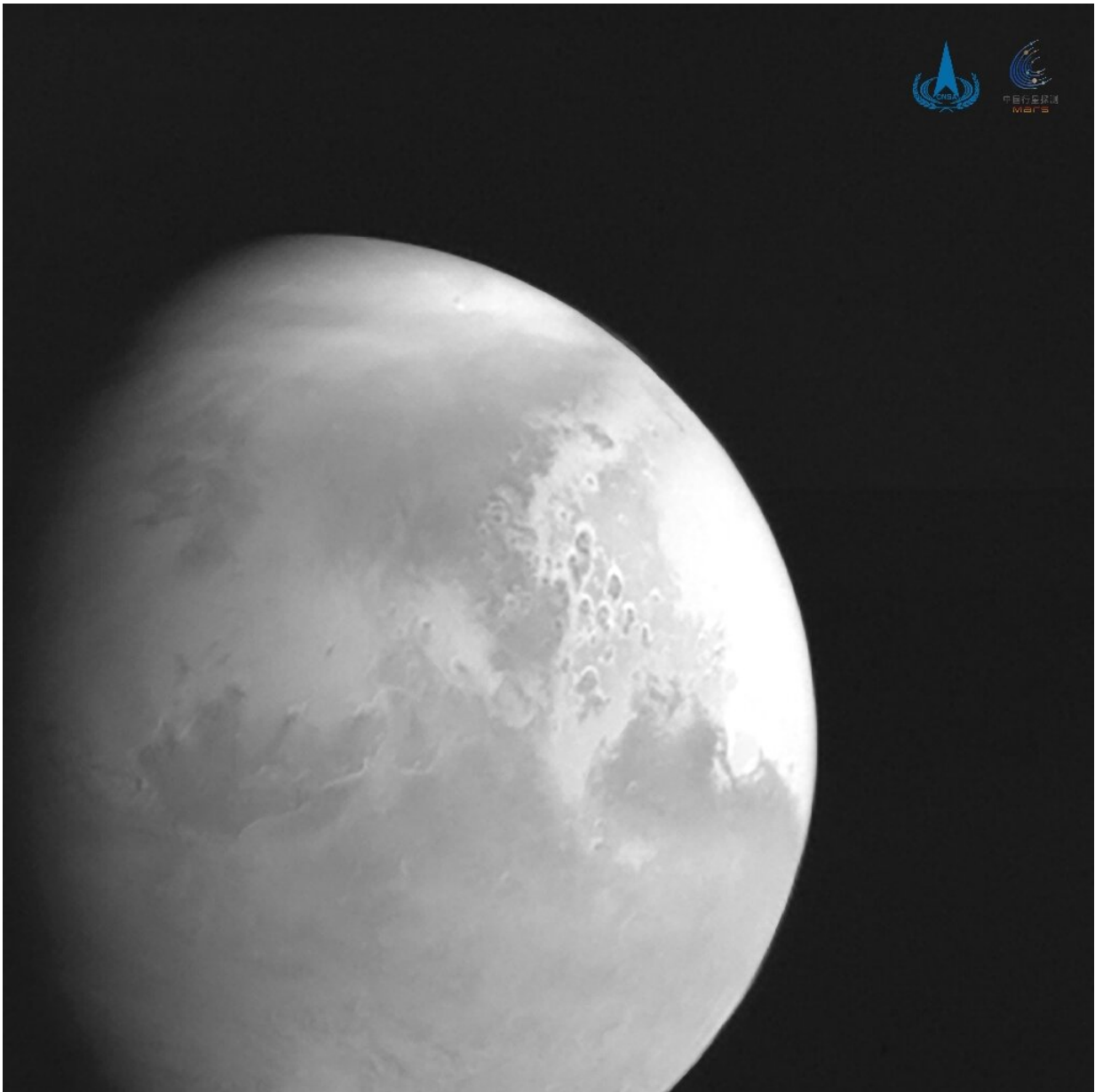


China's Mars probe sends back video of Red Planet

February 12 2021



A probe from China's Tianwen-1 mission - which translates as 'Questions to Heaven' - is expected to touch down on Mars in May

China's space agency released video footage from its spacecraft circling Mars on Friday, two days after it successfully entered the planet's orbit in Beijing's latest ambitious space mission.

In the video, published by state broadcaster CCTV, the surface of the planet is seen coming into view out of a pitch black sky against the outside of the Tianwen-1, which entered the orbit of the Red Planet on Wednesday.

White craters are visible on the planet's surface, which fades from white to black through the video as the probe flies over the course of one Martian day, said official news agency Xinhua.

The five-tonne Tianwen-1—which translates as "Questions to Heaven"—includes a Mars orbiter, a lander and a solar-powered rover and launched from southern China last July.

It is the latest step in Beijing's space programme, which aims to establish a crewed space station by 2022 and eventually put an astronaut on the moon, and has opened up a new, extraterrestrial arena for US-China competition.

Tianwen-1 launched around the same time as a rival US mission, and is expected to touch down on the surface of the planet in May.

Its success comes the same week as the United Arab Emirates' "Hope" probe also successfully entered Mars' orbit—making history as the Arab world's first interplanetary mission.

China Mars mission

Beijing has poured billions into its military-run space programme, with hopes of having a crewed space station by 2022 and of eventually sending humans to the Moon

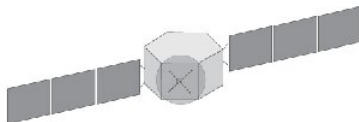


Mission:
Tianwen 1

First mission to study the planet with an orbiter, a lander and a rover

Lift off: Wenchang, Hainan
July 23, 2020

Enters Mars orbit: Feb 10, 2021

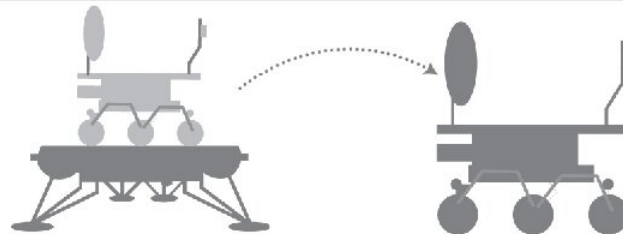


ORBITER

Carries the lander and rover until release

Instruments:

- ▶ Communication link
- ▶ Instruments for atmospheric data
- ▶ Medium and hi-res cameras to look for dunes, glaciers, volcanoes
- ▶ Subsurface radar to peer 100 m deep to search for water and ice



LANDER

Landing site yet to be confirmed. Two suitable locations identified

Stages activated autonomously:

- ▶ Parachutes towards surface
- ▶ Hovers in final stages powered by retrorockets
- ▶ Settles on four legs
- ▶ Ramp expands to allow rover to drive off

ROVER

Schematic diagrams

Expected roaming duration: 90 days

Instruments:

- ▶ To analyse soil and atmosphere
- ▶ Capture images
- ▶ Chart maps
- ▶ Spectrometer to study composition of soil and rocks
- ▶ Look for water and past signs of life

Source: [Nature/sciencemag.org/space.com/China state media](https://www.nature.com/science/nature) **AFP**

Factfile on China's expedition to the Red Planet. Its probe entered the Martian orbit on February 10 according to state media

Chinese scientists hope to land a 240-kilogram (530-pound) rover in May in Utopia, a massive impact basin on Mars. Its orbiter will last for a Martian year.

For the three-month study of the planet's soil and atmosphere, the mission will take photos, chart maps and look for signs of past life.

The probe has already sent back its first image of Mars—a black-and-white photo that showed [geological features](#) including the Schiaparelli crater and the Valles Marineris, a vast stretch of canyons on the Martian surface.

Mars has proved to be a challenging target, with most missions since 1960, sent by Russia, Europe, Japan and India, ending in failure.

NASA's Perseverance, which is set to touch down on the Red Planet on February 18, will become the fifth rover to complete the voyage since 1997—and all so far have been American.

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