

China's Tianwen-1 Mars mission takes off

written by iaseexam.com | 24/07/2020



China successfully launched its first Mars probe, Tianwen-1, on Thursday from the Wenchang Spacecraft Launch Site in the southern island province of Hainan.

The probe includes an orbiter and a rover and it is expected to reach Mars in February to explore the planet for 90 days, according to China National Space Administration (CNSA). Tianwen-1 will join eight spacecraft - American, European and Indian - either orbiting Mars or on its surface with other missions underway or planned.

Key Highlights

- Tianwen 1, or Quest for Heavenly Truth 1, will fulfill three scientific objectives: orbiting the red planet for comprehensive observation, landing on Martian soil, and sending a rover to roam the landing site. It will conduct scientific investigations into the planet's soil, geological structure, environment, atmosphere, and water.
- The Long March 5 rocket, the nation's biggest and most powerful, will transport the robotic probe to the Earth-Mars transfer trajectory before the spacecraft begins its self-propelled flight toward Mars' gravity field.
- According to China Aerospace Science and Technology Corp, a State-owned space conglomerate, the probe will travel for about seven months before it reaches Mars, which at the farthest point of its orbit is about 400 million kilometers from Earth and 55 million kilometers at the nearest point.
- It said the probe consists of three parts - the orbiter, the lander, and the rover -and they will separate in Mars orbit. The orbiter will remain in the orbit for scientific operations and relay signals while the lander-rover combination makes an autonomous descent and landing.

- The orbiter will map the planet's morphology (formation) and geological structures using the Mars-Orbiting Subsurface Exploration Radar instrument. It will also observe the soil characteristics and water-ice distribution.
- The rover has six wheels and four solar panels and carries six scientific instruments. It weighs over 200 kilograms and will work for about three months on the planet, designers said. China aims to catch up with India, the US, Russia, and the EU to reach the red planet.
- China's previous attempt to send an exploratory probe to Mars called Yinghuo-1, in a Russian spacecraft in 2011 failed as shortly after the launch it was declared lost and later burnt during re-entry.
- China's Mars probe is the second such mission launched this month. A United Arab Emirates spacecraft to go to Mars was launched from Japan on July 20, in what is the Arab world's first interplanetary mission.

SOURCE:*Business Standard, BBC News*