

India's first Mars satellite 'Mangalyaan' enters orbit

Applause broke in the control room out as the probe entered Mars' orbit→



- ① India has successfully put a satellite into orbit around Mars, becoming the fourth nation or geo-bloc to do so.
The Mangalyaan robotic probe, one of the cheapest interplanetary missions ever, will soon begin work studying the Red Planet's atmosphere.
- ② A 24-minute engine burn slowed the probe down enough to allow it to be captured by Mars's gravity.
Indian Prime Minister Narendra Modi said the country had achieved the "near impossible".
- ③ Only the US, Russia and Europe have previously sent missions to Mars, and India has succeeded on its first attempt - an achievement that eluded even the Americans and the Soviets.
- ④ From early in the morning, there was an atmosphere of excitement and tension at the Indian space agency's mission tracking centre in Bangalore.
- ⑤ Scientists, many of them women and several of them young, were seated in front of their computer monitors tracking the progress of Mangalyaan.
- ⑥ Giant screens above their heads fed a steady stream of data, graphics and sequence of operations. The first whoops broke out when Mangalyaan successfully fired up its liquid engine, the first in a series of critical moves to make sure that the spacecraft was able to get into the planet's gravitational pull.
- ⑦ Then there was an agonising 20 minutes, when Mangalyaan disappeared behind Mars and beyond contact. But there was no mistaking the moment, when the scientists all rose as one, cheered, clapped, hugged each other and exchanged high-fives — confirmation that Mangalyaan was now on an elliptical orbit around Mars.
- ⑧ After PM Modi's congratulations, they poured out into the open and the bright sunlight, beaming as they took in the adulation.
"Thrilled to be a part of history," one young scientist told me. "It's like hitting a golf ball from Bangalore to London and getting it into the hole in one go," deputy operations director, BN Ramkrishna said. "It's got to be that precise."
- ⑨ Mr Modi congratulated the scientists and said: "Today, all of India should celebrate our scientists. Schools, colleges should applaud this."
"If our cricket team wins a tournament, the nation celebrates. Our scientists' achievement is greater," he added.
- ⑩ The total cost of the Indian mission has been put at 4.5bn rupees (\$74m; £45m), which makes it one of the cheapest interplanetary space missions ever. Nasa's recent Maven mission cost \$671m.
- ⑪ The Mangalyaan probe will now set about taking pictures of the planet and studying its atmosphere. One key goal is to try to detect methane in the Martian air, which could be an indicator of biological activity at, or more likely just below, the surface.
- ⑫ Mangalyaan - more formally referred to as Mars Orbiter Mission (MOM) - was launched from the Sriharikota spaceport on the coast of the Bay of Bengal on 5 November 2013.
- ⑬ The satellite joins four other missions that are circling the planet: Maven (US), Mars Odyssey (US), Mars Reconnaissance Orbiter (US) and Mars Express (Europe). 【09/24/2014/BCC】

①interplanetary 惑星間の ②engine burn エンジンの燃焼 gravity 重力 elude 成し遂げられない ⑥feed (情報などを) 供給する whoops わあー、やったー(という歓喜・驚き等)の叫び声 gravitational pull 引力 ⑦ elliptical 楕円の ⑧adulation はなはだしい称賛 precise one go 一回で

★Ice breaker for active discussion★

1. What is this news article all about? What does "Mangalyaan" mean?
2. What's the importance of space exploration? Why do many countries try to send many probes to space?
3. Tell me something that you know about Mars. Why are the people on the globe interested with this planet?
4. What is your image of India? Please describe the picture in the article.
5. Mars is being explored as a prospect for human occupation.

Would you like to have the chance to be one of the pioneers in exploring the planet?

6. Japan is mostly focused on sending satellites or probes to orbit the Earth.

Why do you think our country is not yet risking on sending probes to other planets?

7. Please make sentences using the following words; interplanetary, probe, gravity, elude, atmosphere, adulation, precise, one go and feed.

サンスクリット語で「マンガル」は「火星」を表し「ヤーン」は「乗り物」の意味。インドは宇宙開発を経済発展のための1つの手段として位置づけており、インド宇宙開発の父ヴィン・サハバイの指導のもと、早くから数々のプログラムに積極的に取り組んできた。1980年、国産SLVロケットにより国産衛星ロヒニ1号を打ち上げることに成功し、世界で7番目の自力での人工衛星打ち上げ国となった。火星探査計画は2012年8月に発表され、わずか1年3ヵ月後に打ち上げまでこぎつけた。総予算は45億ルピー(およそ80億円)で、他国に比べて低予算。先進国に比べて低コストの宇宙開発を進め、経済再生を図り、日本や中国を上回る技術力を誇示することで、アジアでの存在感を強める狙いもある。