



China Schedules Mars Probe Launch

According to a story from Agence France-Presse (AFP), a collaborative space mission planned for later this year may give a new meaning to "Red October." The governments of Russia and China are planning to launch China's first Mars probe in October 2011.

The AFP reports:

The probe, Yinghuo-1, was due to blast off in October 2009 with Russia's "Phobos Explorer" from the Baikonur Cosmodrome in Kazakhstan but the launch was postponed, the official Xinhua news agency said.



Quoting an unnamed expert at the China Academy of Space Technology, the report said the blast-off had been pushed back to October this year. It added that China planned to launch a Mars probe on its own in 2013.

According to previous reports, the orbiter is due to probe the Martian space environment with a special focus on what happened to the water that appears to have once been abundant on the planet's surface.

China's space program has made significant progress in recent years, but the announcement of the planned launch of the Yinghuo-1 probe highlights the extent of America's lead in the exploration of the Red Planet. For example, NASA's Spirit and Opportunity rovers landed on Mars in January 2004 with a planned 90-day mission; seven years later the Opportunity rover continues to function and expand mankind's knowledge of Mars, and there are still hopes that communication with Spirit may be restored (the rover has been silent since March 2010).

Undeniably, the Chinese are eagerly and effectively developing a capacity in space exploration which could soon rival that of the United States. For example, China's Chang'E 2 probe is currently orbiting the moon and is returning detailed images of the lunar surface at resolutions which approach the level of those generated by NASA's Lunar Reconnaissance Orbiter.

The Yinghuo 1 probe is intended to orbit Mars for approximately one year, studying the planet's upper atmosphere, but an equally important goal is to demonstrate that the Chinese space program is capable of executing such a mission so far from Earth. As Emily Lakdawalla astutely observed in her blog for The Planetary Society:

Although the science goals of Yinghuo-1 are important, clearly the mission's main importance is to be a first test of the Chinese space agency's ability to meet the challenges unique to flying deep space missions. China, of course, has substantial experience launching and operating spacecraft (including human missions) in Earth orbit. But deep space missions have their own set of challenges. Operating a spacecraft where there is a significant communications delay due to the great distances involved; maintaining three-axis control, pointing alternately to the Sun, Earth, Mars, and Phobos-Grunt, without the benefit of ground control networks and navigational



Written by **James Heiser** on January 6, 2011



satellites to help in localizing the spacecraft; maintaining spacecraft health through a nearly year-long hibernation in cruise, and only then deploying its solar panels; and dealing with the extremes of temperature associated with the cruise, varying distance to Mars, and periods spent in Mars['] shadow. Yinghuo-1 will be a first test of China's ability to meet these challenges, blazing the first trail through the wilderness for future missions.

NASA's next Mars lander, *Curiosity*, is scheduled for launch not long after the Russian and Chinese missions are on their way to Mars. The "space race" to Mars may be transpiring at a much slower pace than the lunar jaunt in the 1960s, but it is being "run," nonetheless.





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