

Space Studies of the Earth-Moon System, Planets, and Small Bodies of the Solar System (B)  
Technologies and Instrumentations for Solar System Exploration (B0.4)

## **MMX ROVER IDEFIX, READY FOR LAUNCH**

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Idefix is a rover aboard the JAXA Martian Moons eXploration (MMX) mission. MMX is going to explore both martian moons, Phobos and Deimos, and return samples from Phobos back to Earth. Idefix is going to be delivered to the surface of Phobos where it will perform in-situ measurements and provide ground truth complementary to orbiter measurements and analyses of the returned samples. The payload of Idefix consists of a stereo pair of cameras looking ahead (NavCam) to image the area in front of the rover and characterizing the small-scale geological and spectrophotometric properties of Phobos' regolith in order to understand its origin and evolution, two cameras looking at the wheel-surface interface (WheelCam) to investigate the properties and dynamics of the regolith, a Raman spectrometer (RAX) to measure the mineralogical composition of the surface material and a radiometer (miniRAD) to measure the surface brightness temperature and determine thermal properties of both regolith and rocks. The cameras will serve for both, scientific and technological needs, including rover navigation and surface characterization to prepare the MMX main spacecraft landing and sampling.

The rover will be delivered to the surface of Phobos by the MMX main spacecraft from an altitude of about 40 m. After the descent and bouncing phase, it will upright itself and operate for about 100 days on the surface of Phobos, investigating terrain and mineralogy along its path.

Idefix is attached to the main spacecraft and, as it has undergone all system tests, will be shipped to the Tanegashima Space Center, ready for launch. The launch of MMX is planned for October 2026, the rover delivery to Phobos is currently foreseen for late 2028 or early 2029. The rover is a contribution by the Centre National d'Etudes Spatiales (CNES) and the German Aerospace Center (DLR) with additional contributions from INTA (Spain), TU Tokyo and JAXA.