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A ROVER FOR THE MMX MISSION TO PHOBOS

Abstract

The Mars Moon Explorer (MMX) is a mission by the Japan Aerospace Exploration Agency, JAXA, to the Martian Moon Phobos. It will primarily investigate the origin of this moon by bringing samples back to Earth and deliver a small (about 25 kg) Rover to the surface.

The Rover is a contribution by the Centre National d'Etudes Spaciales (CNES) and the German Aerospace Center (DLR). Its currently considered scientific payload consists of a thermal mapper (mini-RAD), a Raman spectrometer (RaX) as well as a gravimeter (GRASS). The cameras (a stereo pair looking in front as well as two cameras investigating the wheel-soil interaction) will serve for both, technological and scientific needs.

The MMX rover will be delivered from an altitude of <100 m and start uprighting and deploying wheels and a solar generator after having come to rest on the surface. It is planned to operate for three months on Phobos and provide unprecedented science while moving for several tens to hundreds of meters.

MMX will be launched in September 2024 and injected into Mars orbit in 2025, the Rover delivery and operations are foreseen for 2026.