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Overview of the ExoMars Payload

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Abstract

The ExoMars mission will be launched in 2016 with the primary scientific objective to establish whether life ever existed, or is still active on Mars today. It will deploy a Rover able to travel several kilometres searching for traces of past and present signs of life. It will do this by collecting and analysing samples from within surface rocks and from subsurface drilling, down to a depth of 2 m. The very powerful combination of mobility and access to subsurface locations, where organic molecules may be well-preserved, is unique to this mission.

During the second ExoMars Payload Confirmation Review (PCR2) which took place in Jan-March 2009, the instrument baseline was re-examined in terms of relevance to the science priorities but also in terms of compliance with the mission resources, schedule and budget. This resulted in the revised ExoMars Payload complement which is composed of the following instruments:

- Survey instruments: PanCam (Panoramic Camera system) and WISDOM (Water Ice and Subsurface Deposit Observation on Mars);
- Analytical Laboratory instruments: MicrOmega infrared microscope, Raman spectrometer, MOMA (Mars Organic Molecule Analyser) and MARS-XRD (X-ray diffractometer);
- Drill-integrated instrument Ma_Miss (Mars Multispectral Imager for Sub-surface Science).

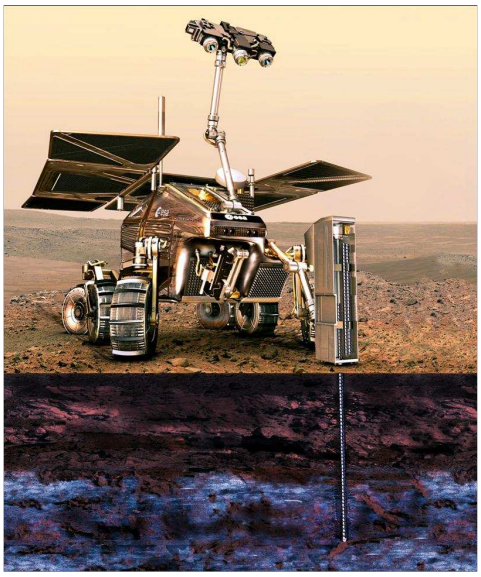

Figure 1: ExoMars Rover with Drill
(artist view, credit: ESA)

All the ExoMars instruments went through their Preliminary Design Reviews end 2008/beginning 2009. This talk will give an overview on the recent engineering developments of these payloads and related support systems (Analytical Laboratory and Drill).