

SEARCH FOR LIFE ON MARS, THE EXOMARS ROVER MISSION AND THE CLUPI INSTRUMENT

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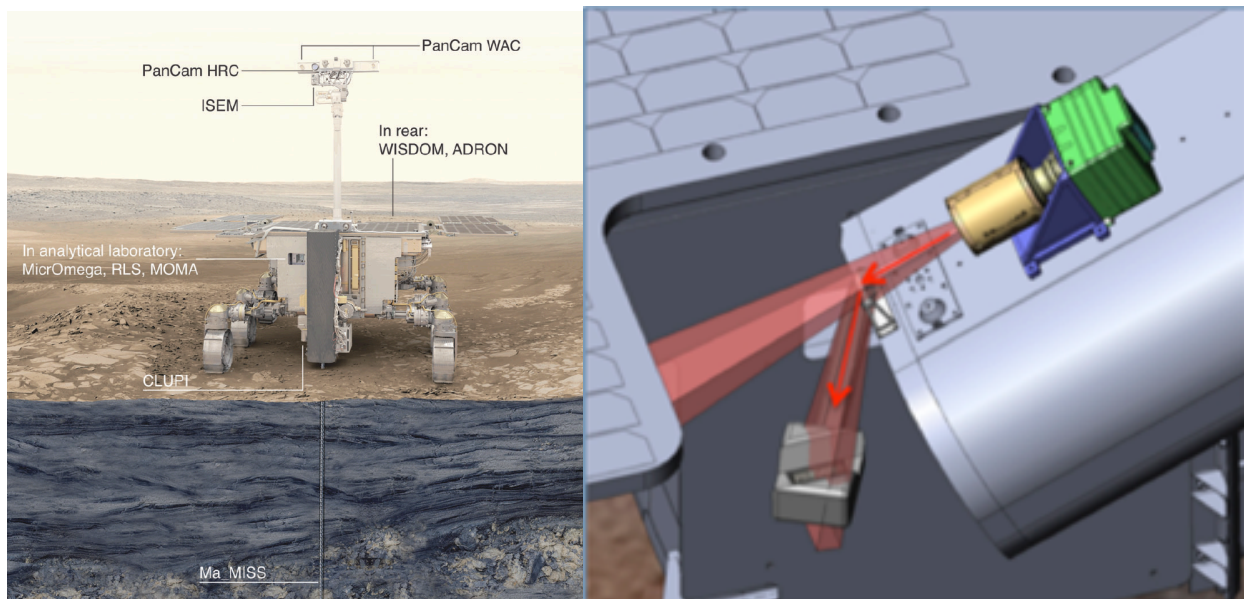
The presentation will address the ExoMars 2020 rover mission in a first part and focus on one of the key science instruments CClose-UP Imager CLUPI accommodated on the drill box of the rover.

The ExoMars rover will travel across the Martian surface to search for signs of life. It will collect samples with a drill and analyse them with next-generation instruments. ExoMars will be the first mission to combine the capability to move across the surface and to study Mars at depth down to 2m.

The ExoMars Mission 2020 is a joint astrobiology mission of the European Space Agency (ESA) and the Russian space agency Roscosmos to search for evidence of life on Mars. The mission, with a Proton rocket launch date of July 2020 and a Mars landing date of Mars 2021, will deliver a Russian surface platform and a European rover to the surface of Mars equipped with various instruments for investigating the surface and, for the first time, the subsurface of Mars until 2m of depth. One of these instruments –a CClose-UP Imager called CLUPI– will allow for taking images to obtain visual information similar to that from a geologists hand lens.

The CLUPI instrument on-board the ESA ExoMars Rover is a powerful high-resolution color camera specifically designed for close-up observations. Its accommodation on the movable drill allows multiple positioning. CLUPI will contribute to the rover mission by surveying the geological environment, acquiring close-up images of outcrops, observing the drilling area, inspecting the top portion of the drill borehole (and deposited fines), monitoring drilling operations, and imaging samples collected by the drill.

The science objectives of the instrument are geological characterization of rocks in terms of texture, structure, and color and the search for potential morphological biosignatures. We present the CLUPI science objectives, performance, and technical description, followed by a description of the instrument's planned operations strategy during the mission on Mars.



Left: ExoMars Rover equipped with a suite of Instrument payload; **Right:** CLUPI Instrument looking at the Mars sample in the drawer before analysis in the laboratory inside the rover

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