ExoMars-2020 Landing Platform scientific payload

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ExoMars is a joint project between ESA and Roscosmos to develop and launch two ExoMars missions - in 2016 and 2020. The first mission is currently in progress, studying Mars' atmospheric composition in unprecedented details.

The second ExoMars mission is scheduled to be launched in Aug 2020 to target an ancient location at Oxia Planum interpreted to have strong potential for past habitability and for preserving physical and chemical biosignatures. The mission will deliver a Landing Platform with instruments for atmospheric and geophysical investigations and a Rover tasked with searching for signs of extinct life. The ExoMars rover will have the capability to drill to depths of 2 m to collect and analyze samples that have been shielded from the harsh conditions prevailing on the surface, where radiation and oxidants can destroy organic materials.

The Landing Platform is equipped with a set of instruments (LPSP – Landing Platform Scientific Payload) to study the Martian environment at the landing site. After the Rover egress the Landing Platform will serve as a long-lived stationary platform with expected lifetime of one Martian year.

LPSP consists of 13 instruments with total mass of 45 kg. LPSP is being developed by Space Research Institute of RAS (Moscow, Russia) with contributions from Belgium, Sweden, Spain, Finland, Czech Republic, France and Italy. LPSP will have strong synergies with other parts of ExoMars mission, thus extending the scientific output of whole project.

The main objectives of LPSP are:

- Context imaging
- Long-term climate monitoring and atmospheric investigations.
- Studies of subsurface water distribution at the landing site.
- Atmosphere/surface volatile exchange.
- Monitoring of the radiation environment.
- Geophysical investigations of Mars' internal structure

LPSP Flight Models have been delivered and integrated on board of ExoMars 2020 descent module in TAS-F (Cannes, France).