



Urey onboard Exomars: Searching for life on Mars

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Exomars is currently under development as the flagship mission of ESA's exploration program Aurora. A fundamental challenge ahead for the Exomars mission is to search for extinct and extant life. The Urey instrument (Mars Organic and Oxidant Detector) has been selected for the Pasteur payload and is considered a key instrument to achieve the mission's scientific objectives. Urey can detect organic compounds at unprecedented sensitivity of part-per-trillions in the Martian regolith. The instrument will target several key classes of organic molecules such as amino acids, nucleobases, amines and amino sugars and polycyclic aromatic hydrocarbon (PAHs) using state-of-the-art analytical methods. Chemosensor oxidant sensors will provide complementary measurements by simultaneously evaluating the survival potential of organic compounds in the environment. The Urey instrument concept has tremendous future applications in Mars and Moon exploration in the framework of life detection and planetary protection.