

The Quest for Organic Carbon on Mars

We are entering an era of Mars exploration in which organic carbon detection, characterization, and structural identification will be key to addressing some of the outstanding science objectives of the Mars Exploration Program. Success of these missions will depend on technical, scientific, and strategic elements--all of which are strongly determined based on terrestrial experience and knowledge of organic matter formation, concentration, and preservation. Analog studies including Precambrian sediments, modern endolithic communities, and experiments help us fine-tune these approaches, but we also need to expect the unexpected. This presentation will provide perspective on the challenges of detecting organic carbon on Mars, how we may achieve such detections with the in situ instruments, such as the SAM (Science Analysis at Mars) instrument suite onboard Curiosity, the rover for the 2011 Mars Science Laboratory mission.

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