

Title:

506-4 - Biomarker and Geochemical Assay Validation in Mars Analog Sites: Lessons from the FELDSPAR (Field Exploration and Life Detection Sampling for Planetary Analog Research) Project

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Abstract:

Missions looking for signs of life on other worlds can often only take a few samples once they arrive. Making sense of these "few and far between" observations is easier if we know what a "normal" level of variation for that kind of planet is. Recent eruption sites in Iceland are good places to learn about this, because they have very little life present and the same types of rocks as many places on Mars. We have visited several of these sites in Iceland and

tested many different kinds of measurements: the energy available for life, the amount of DNA (an important biological molecule) present, the relative amounts of different kinds of micro-organisms, and the specific minerals that make up the rocks and ground. In addition to recommendations for future expeditions, we have also shown that using early on-site measurements to choose later on-site sample sites is very helpful in reducing the number of sample sites needed.

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