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Abstract

Mars Analog Science in Antarctica

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We conducted a scientifically and technologically interdisciplinary investigation the Antarctic Dry Valleys, to understand the signature of climate variability as written into the soils and to quantify the abundance of life's building blocks there and at the ice-soil boundary. Our field campaign will provide a thorough examination of the Dry Valley's physical and chemical nature, using an integrated analysis of multiple data sets. Since the Antarctic dry valleys are among the coldest, driest places on Earth, they are an end-member environment that can be used for comparison to less harsh regions on Earth and more extreme environments on other planets. To that end, we leverage the mission return of the currently funded NASA Phoenix Mars mission, which will land between 65-72°N in late-May 2008, by providing a direct comparison of the two analogous regions. In addition, the Antarctic field work has enhanced the validation of two Phoenix instruments, thereby strengthening the Phoenix data interpretation and perhaps allowing for an increased understanding of the different evolutionary paths of these two planets. The field experience and preliminary results will be discussed.

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