Hawaiian-Style Lava Flow on Mars

Eos Research Spotlight: Tracing the Steps of Hydrothermal Activity in Hrad Vallis, Mars


Key Points: Geomorphological characterization and numerical modeling of ice stability shows that flow units near Hrad Vallis are pāhoehoe (Hawaiian-style lava), not mud flow deposits.

The emplacement time of a pāhoehoe flow of the observed thickness (50 m) would require decades (16–36 years).

Lava-induced hydrothermal systems in Hrad Vallis may have created habitable niches for life.

The authors acknowledge funding from the NASA Planetary Geology and Geophysics Program (NNX13AR14G) NASA Planetary Science Division (80NSSC17K0307), and NASA Earth and Space Sciences Fellowship Program (NNX16AP09H).