

NASA'S JOURNEY TO

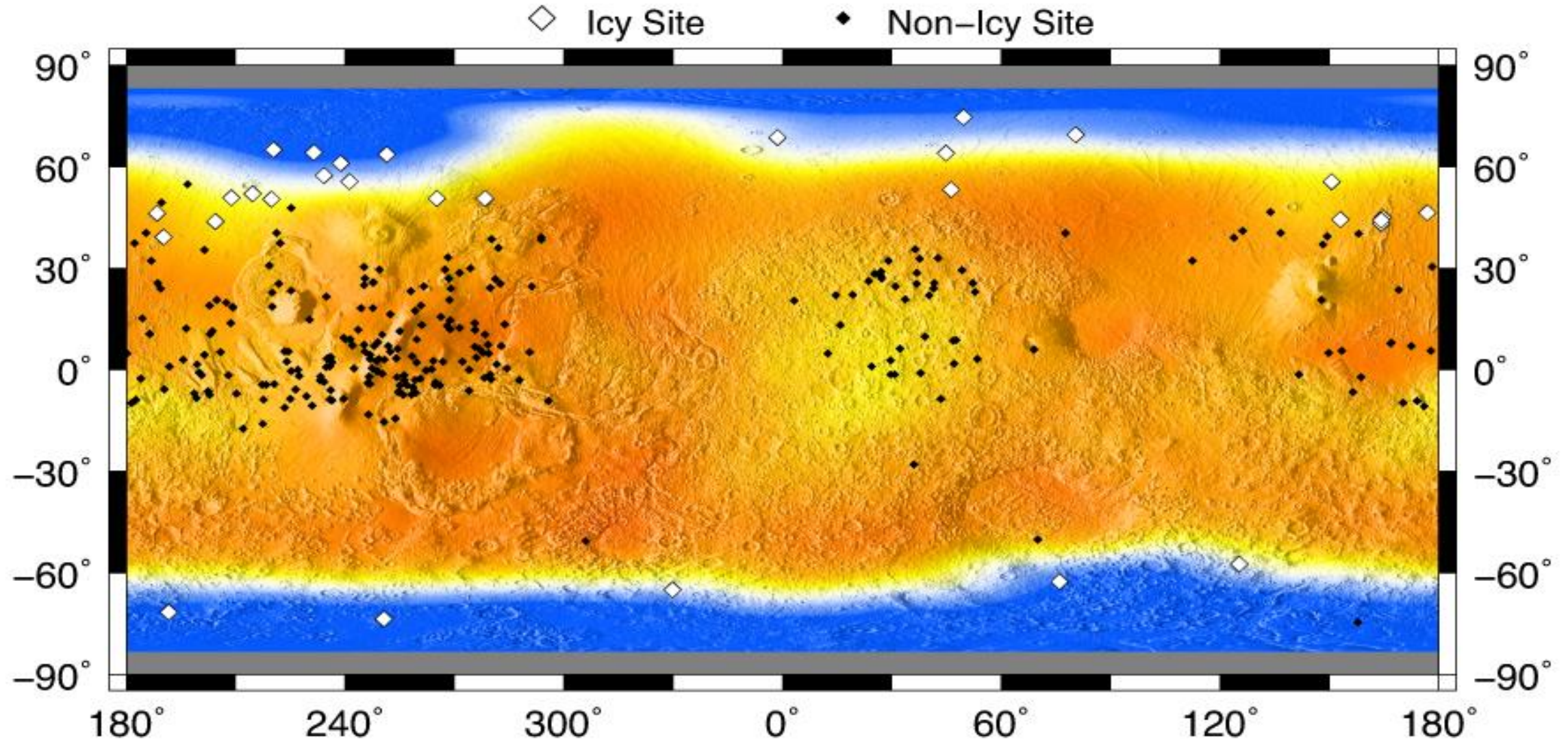
MARS

Michael Meyer, Lead Scientist
Mars Exploration Program

Mars Liquid Water

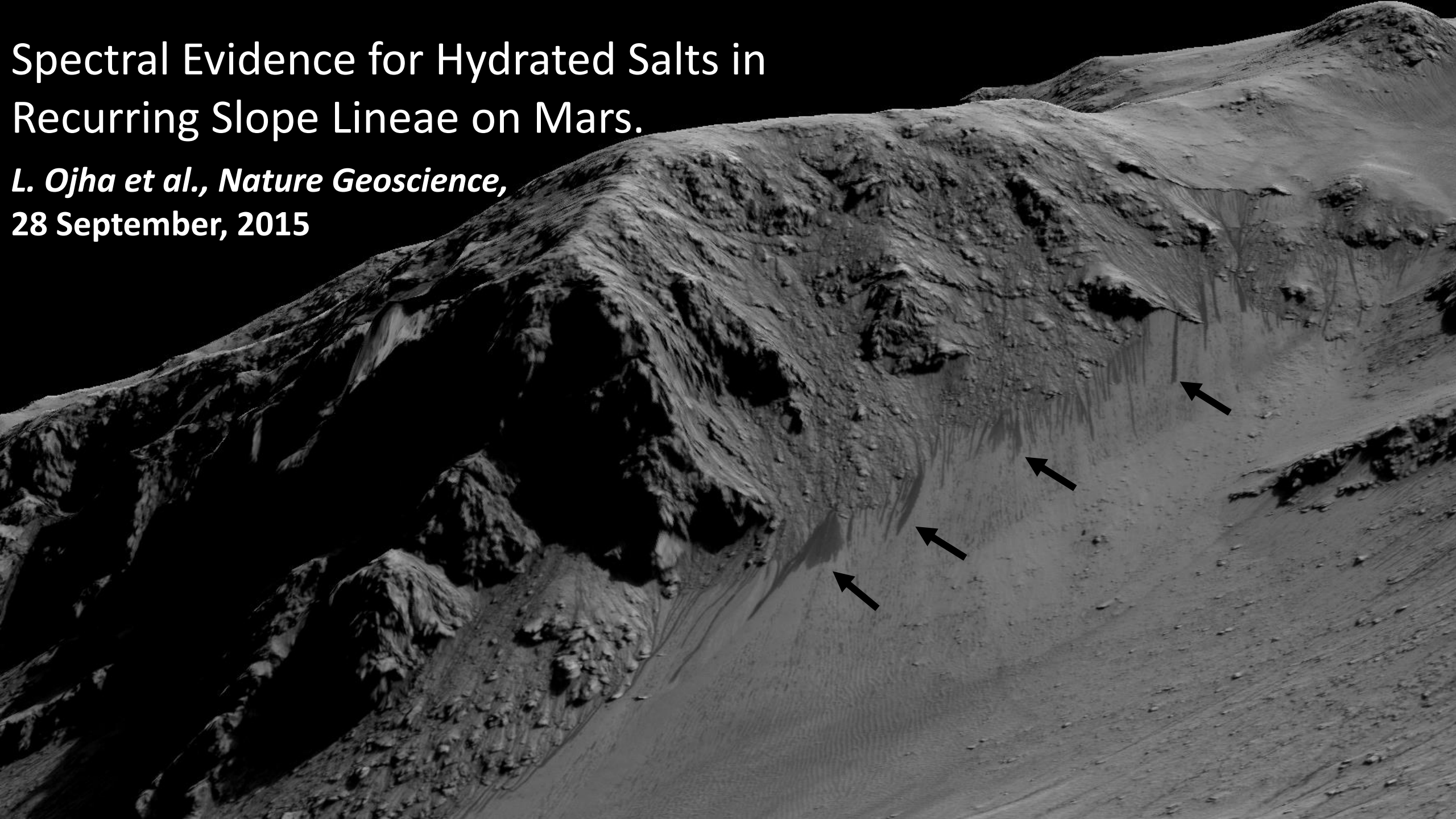
NAC
NOVEMBER 2, 2015

Near Sub-Surface Ice from Craters



Spectral Evidence for Hydrated Salts in Recurring Slope Lineae on Mars.

L. Ojha et al., Nature Geoscience,
28 September, 2015



Spectral evidence for hydrated salts in recurring slope lineae on Mars

Lujendra Ojha, Mary Beth Wilhelm, Scott L. Murchie, Alfred S. McEwen,
James J. Wray, Jennifer Hanley, Marion Massé & Matt Chojnacki

Nature Geoscience 8, 829–832 (2015) doi:10.1038/ngeo2546

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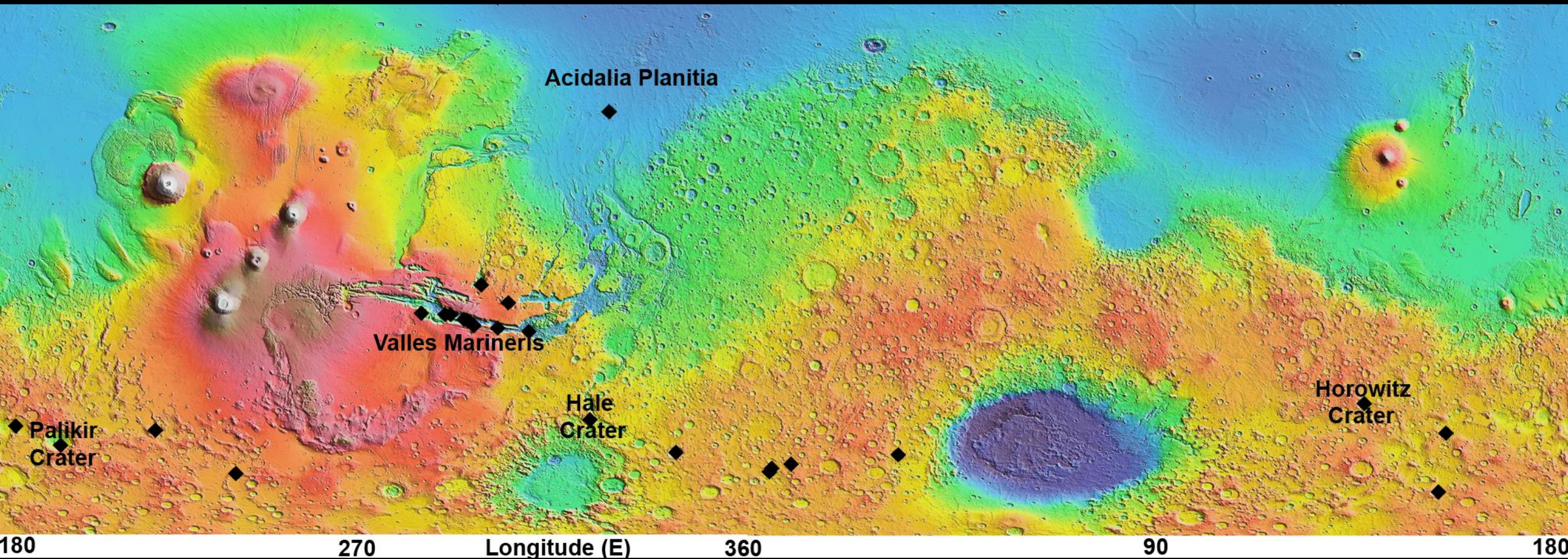
1 km



02 January 2007



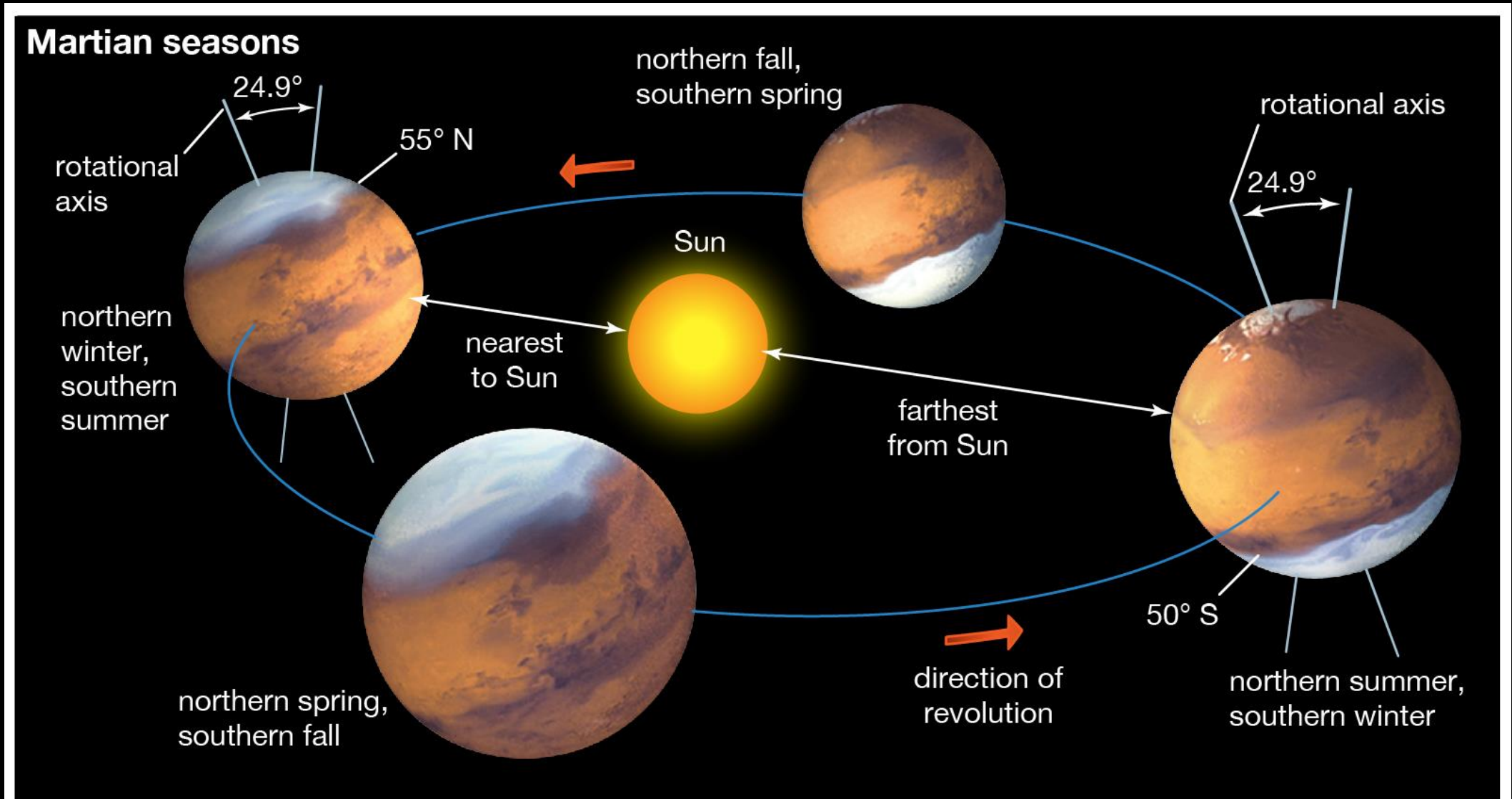
Where do we see these features on Mars?



Red/Yellow areas = high-elevation
Green/Blue areas = low-elevation

Map from *McEwen et al., 2014.*

When do these features form?

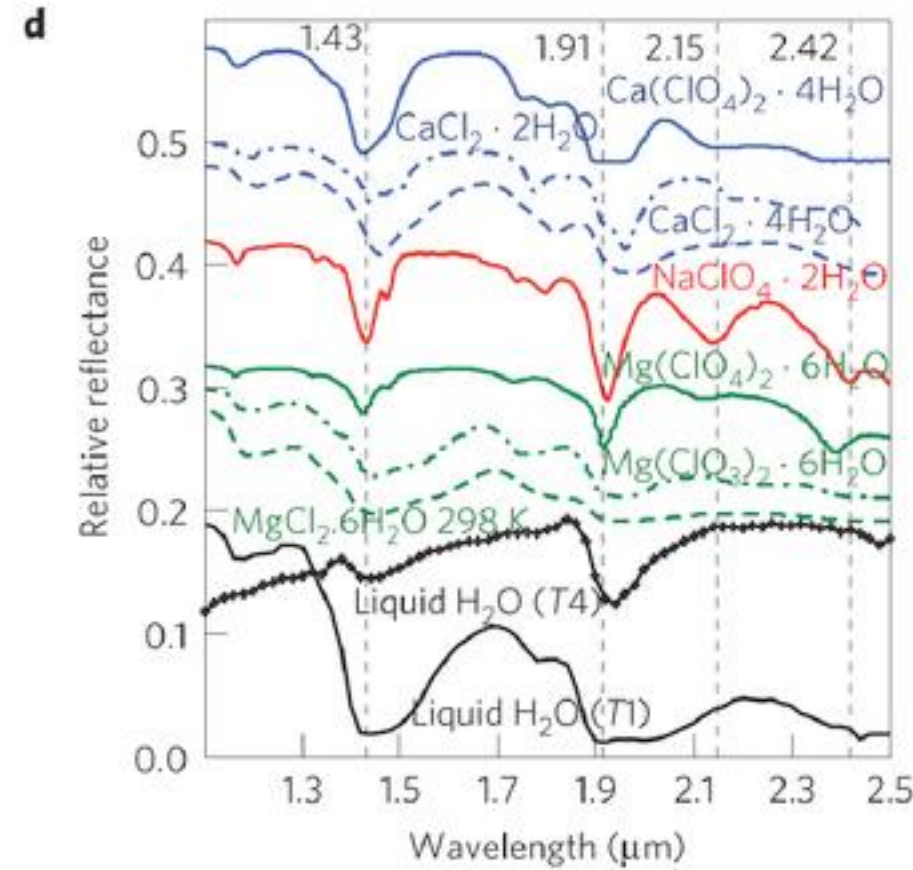
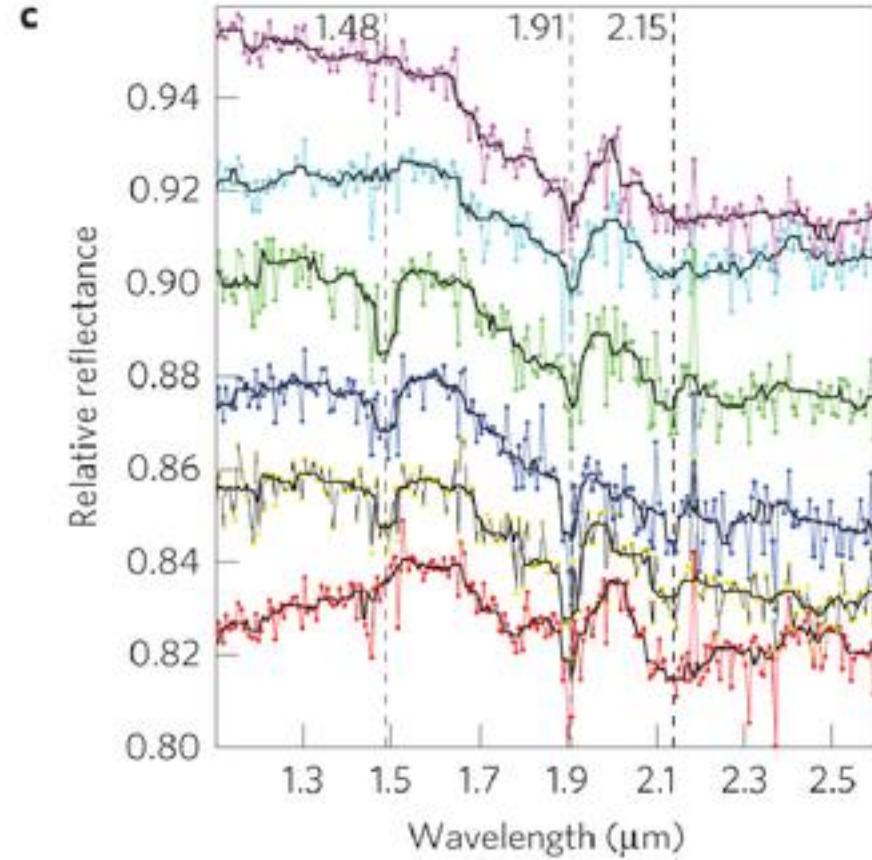


Spectroscopy

CRISM on board Mars
Reconnaissance
Orbiter



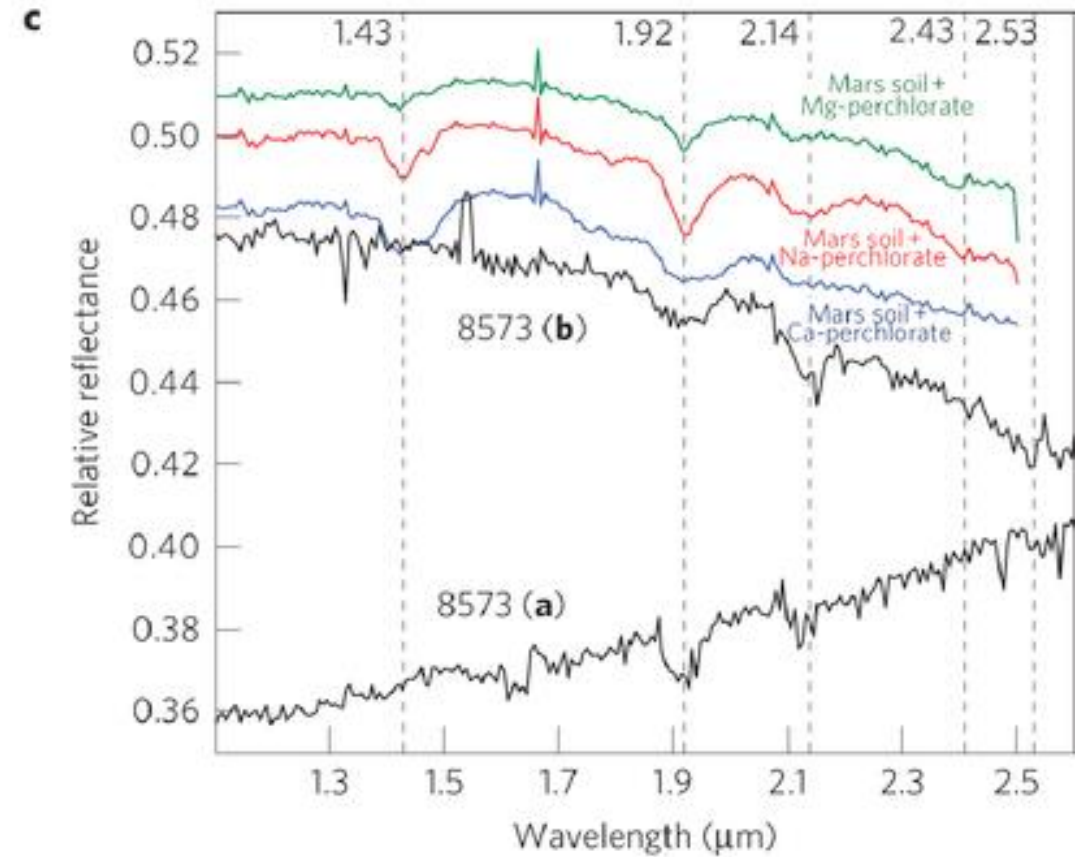
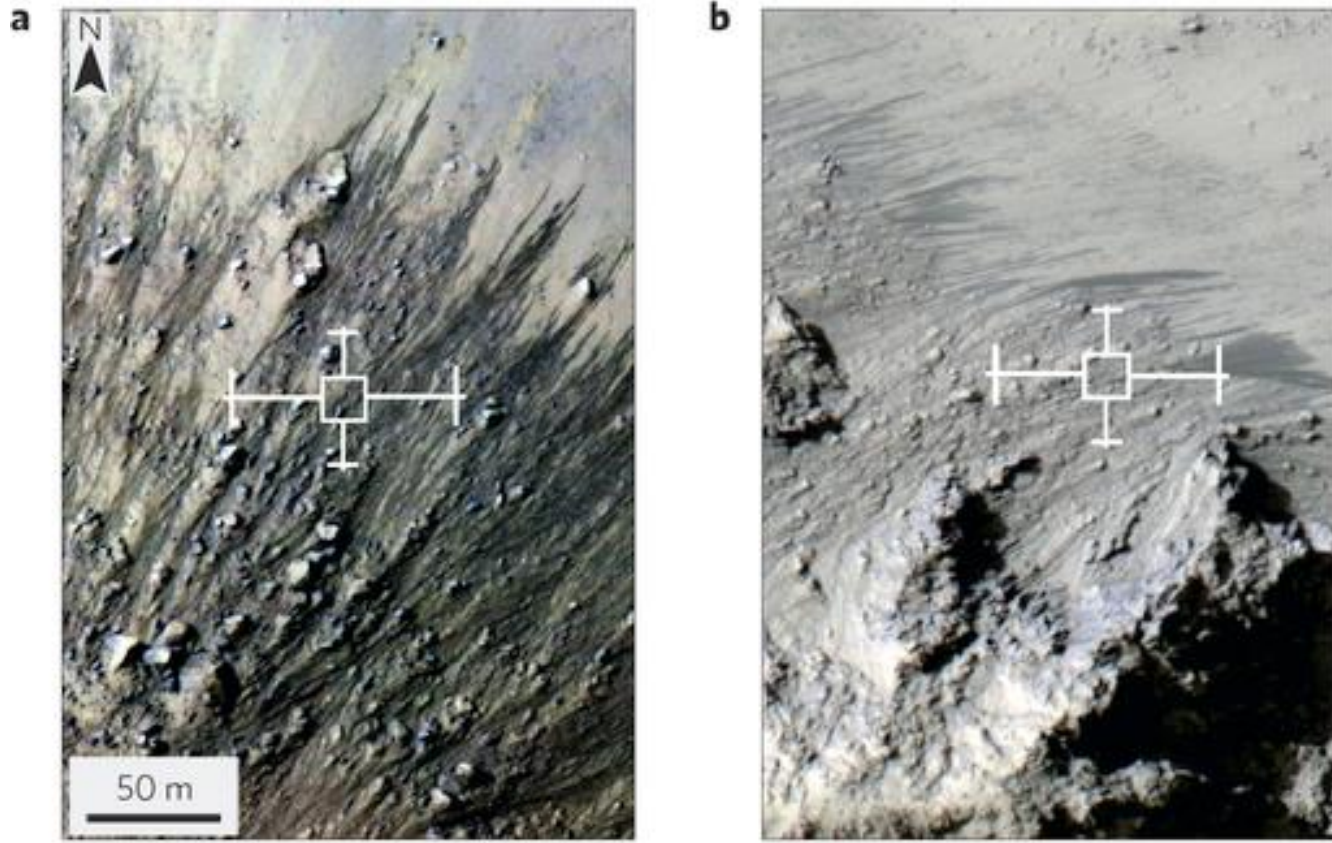
Palikir Crater



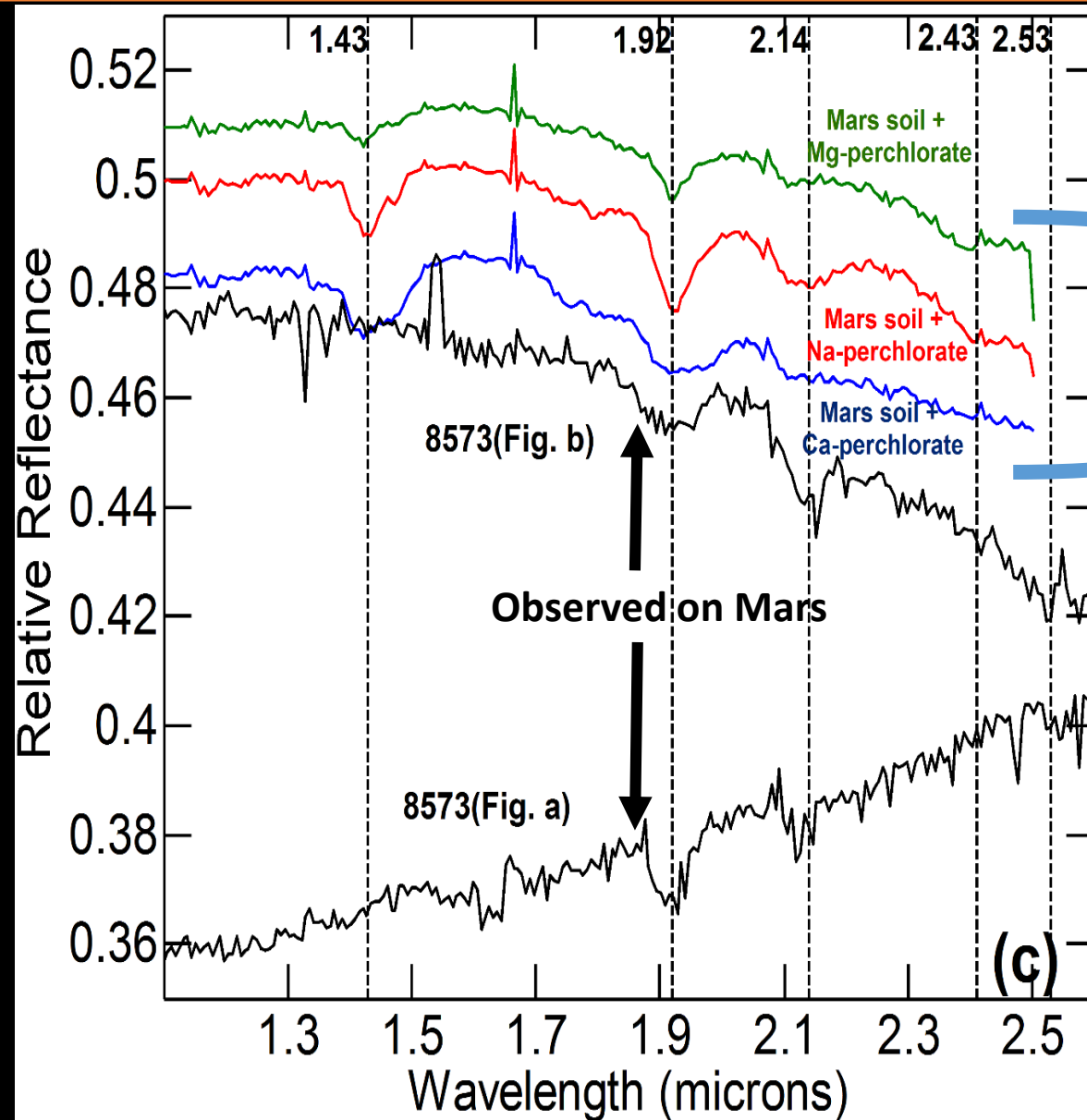
Results from Spectroscopy



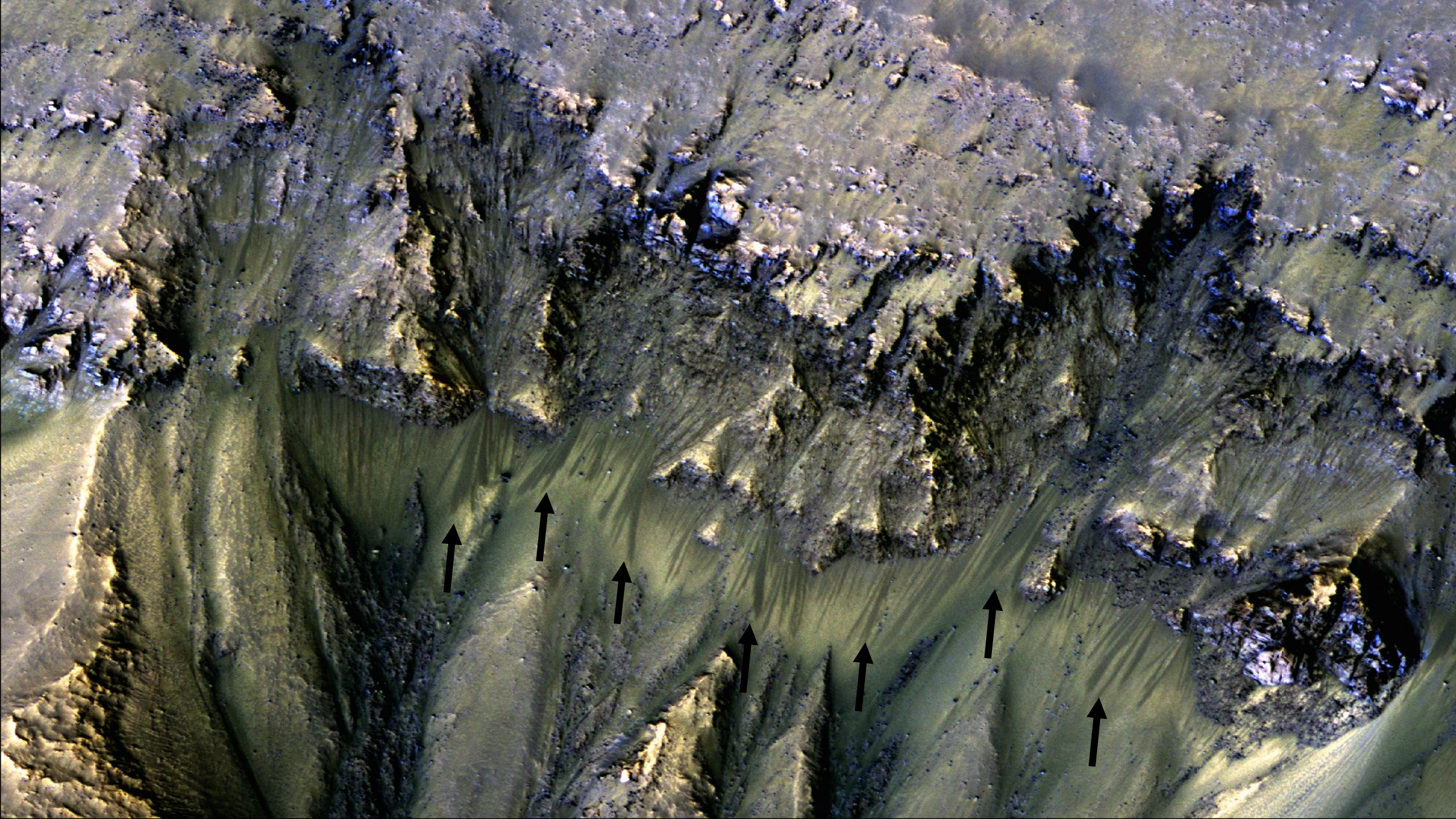
Horowitz Crater



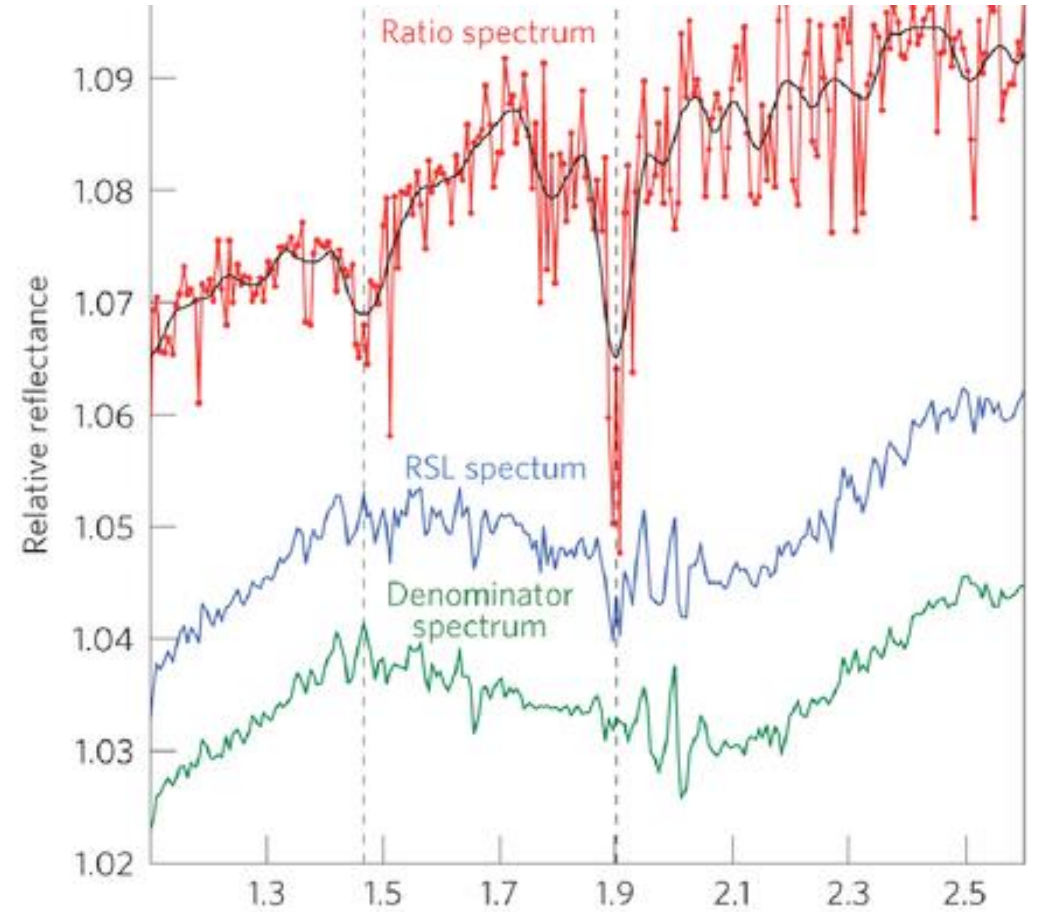
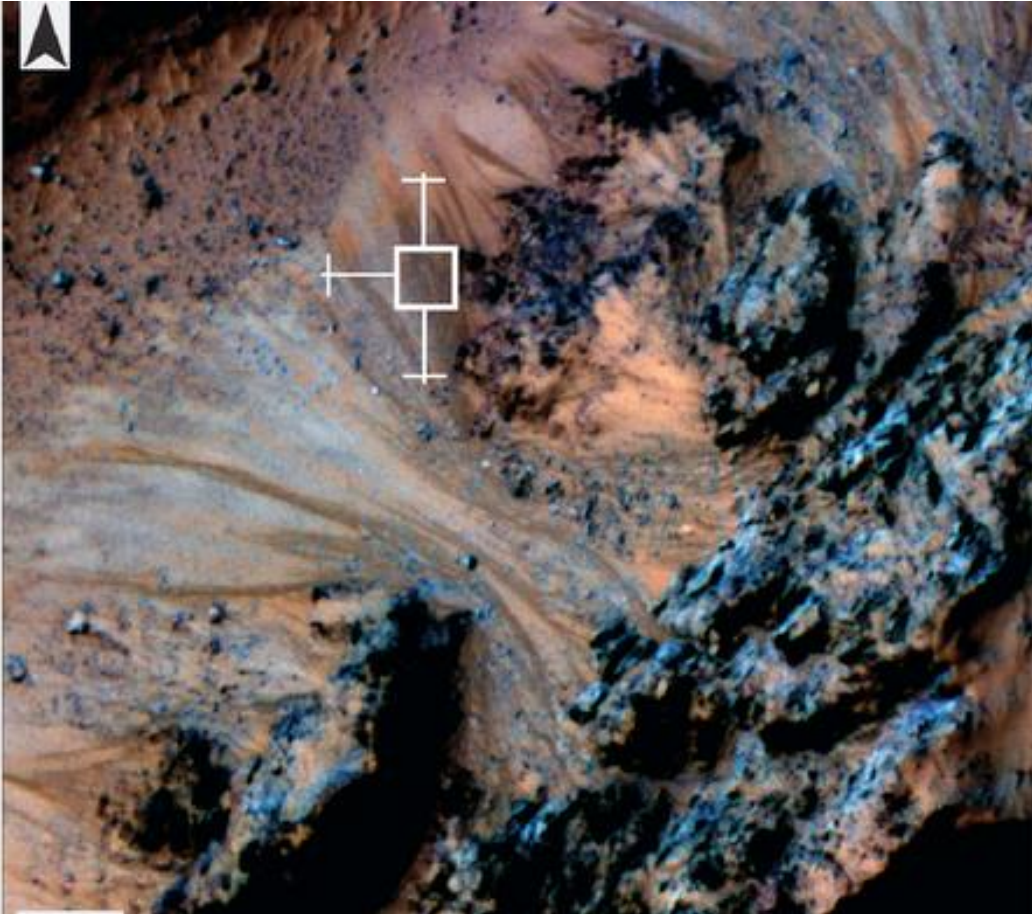
Results from Spectroscopy



Laboratory Observations



Hale Crater



Implication for Water on Mars

Stability of Pure Water on the Surface of Earth

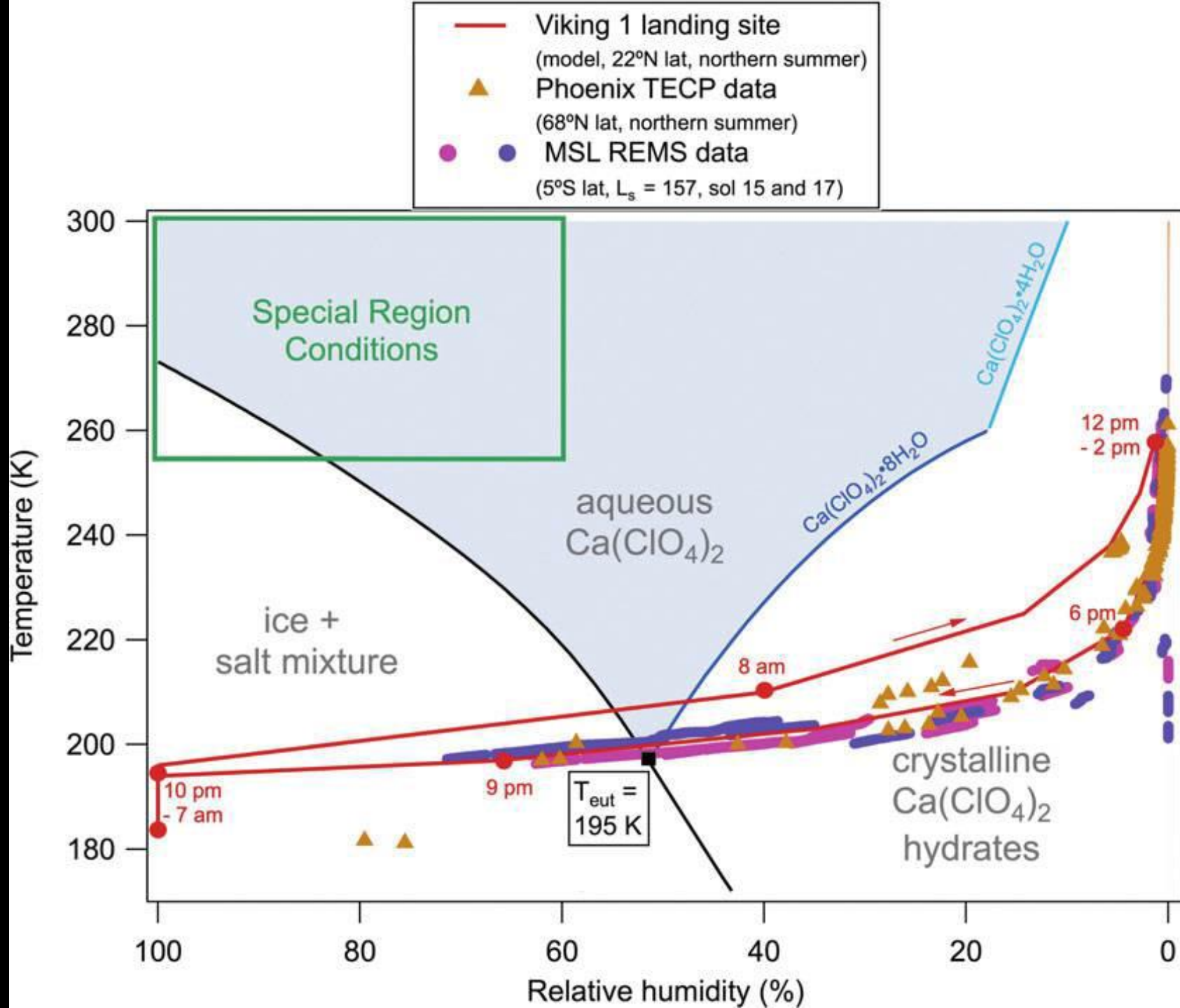


Stability of Pure Water on the Surface of Mars

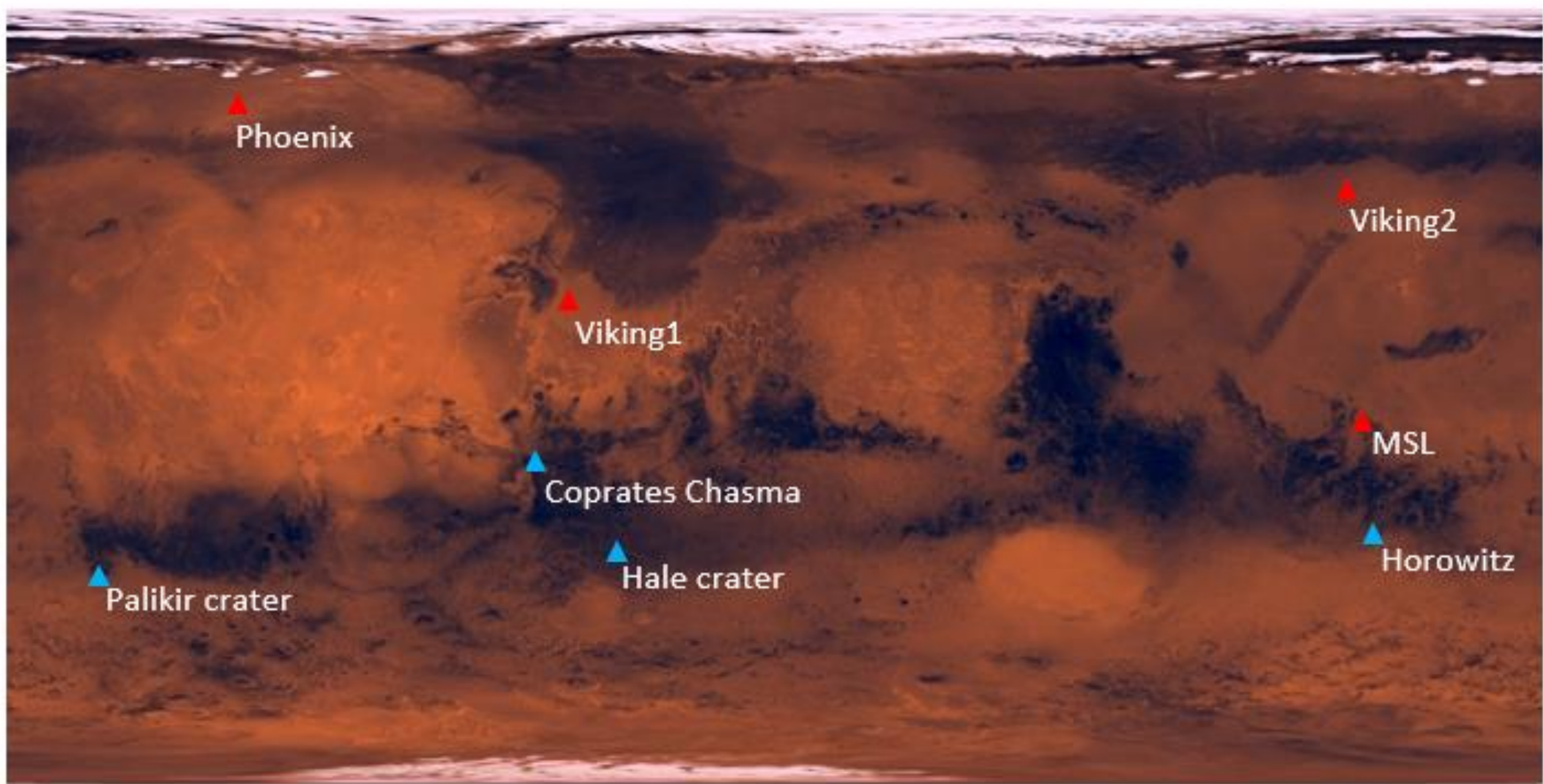


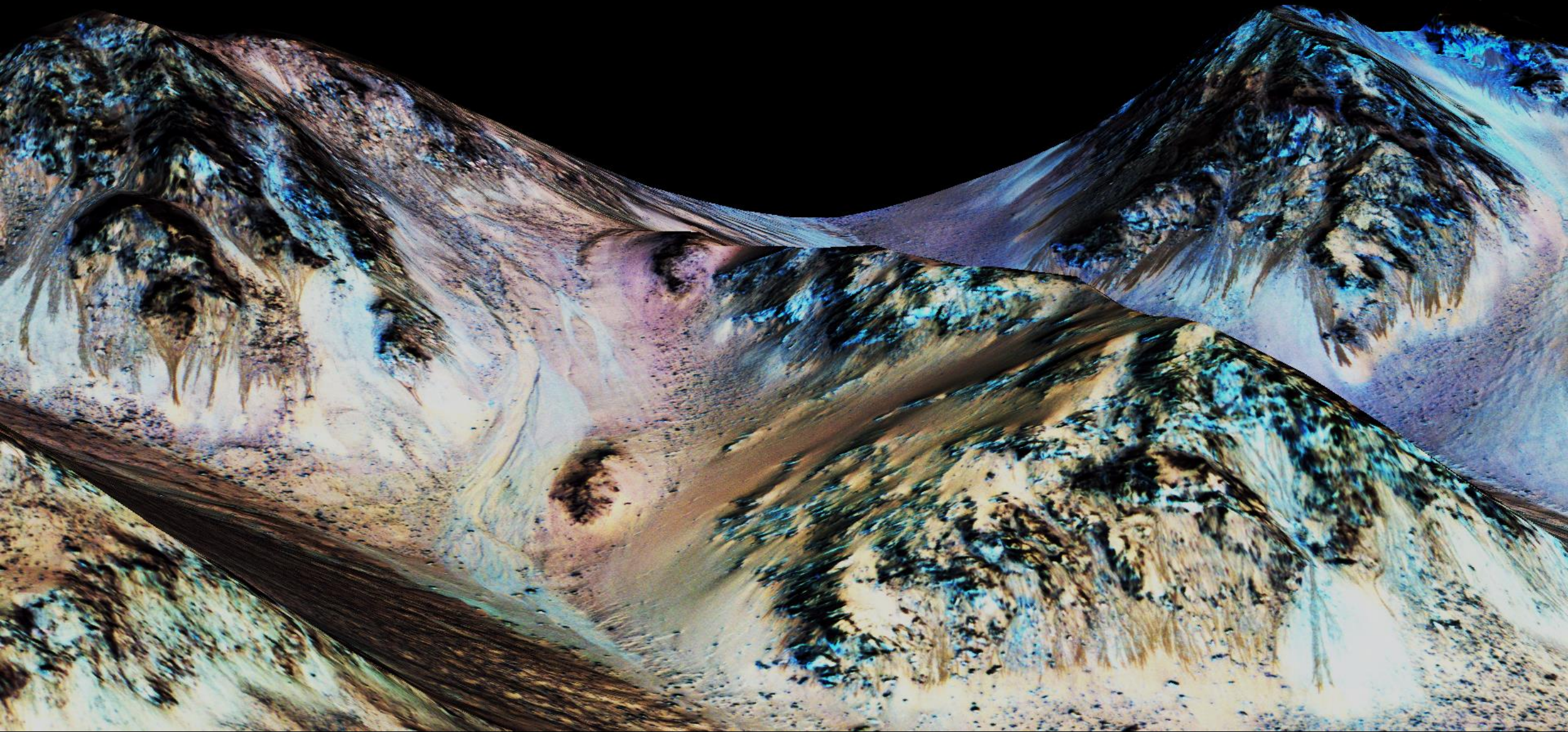
Stability of Perchlorate-brine on the Surface of Mars





Distribution of Perchlorates on Mars





These results may point to more habitable condition on the near surface of Mars than previously thought.