

Abstract Submitted
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Bio-habitability Indicators on Polar Mars found by the 2007 Phoenix Mars Scout Mission SUZANNE M.M. YOUNG¹, Phoenix Science Team, Durham, NH — The Phoenix Mars Scout landed on 25 May 2008 at the northern polar latitude of 68N and longitude 234E (areocentric). Analyses included excavating the Mars regolith with a robotic arm and delivering samples to payload instruments including a scanning calorimeter-mass spectrometer (TEGA) and an electrochemical analyzer, (WCL). This exciting mission has been used to inspire many students from junior high through graduate school. The instruments on board are often utilizing very basic physical and chemical properties to make small discoveries that feed into very large questions. Students can have some of the excitement of arriving at answers themselves or discovering how their lessons connect directly to some of NASA's largest initiatives. The work reported here addresses the implications of the Phoenix observations for the prospects of Mars biohabitability. TEGA confirmed the presence of water ice in the regolith, not bound as a chemical ligand. The salts by WCL offer evidence for the past presence of liquid water on Mars. Sources of bio-energy, key bio-elements and ions, and environmental toxicity and pH will also be discussed.

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