

Jet Propulsion Laboratory
California Institute of Technology

4800 Oak Grove Drive
Pasadena, CA 91109-8099

(818) 354-4321



To: Mars Science Community
Re: Landing Site Down-selection
Date: 13 November 2008

On November 5, 2008, representatives of the MSL project management, engineering, and science teams met along with members of the external MSL landing site steering committee and selected review board members to discuss the engineering assessment of landing safety, basic traversability, and the current status of predicted actuator thermal performance, in order to combine this information with the science rankings from the 3rd Community Workshop recommended to the PSG. Based on assessment over the past months, the project resources and timeline allow only 3 or 4 sites to have the full data acquisition and detailed analyses required for final approval by next spring.

The Science Ranking from the 3rd community workshop and vetted without change by the MSL PSG was expressed in 3 groups from most preferable (Group 1) to least preferable (Group 3):

Group 1: Holden, Eberswalde, Gale

Group 2: Mawrth, Nili

Group 3: Miyamoto, S. Meridiani

The Engineering Ranking (focused on EDL risk at this workshop) was divided into 2 groups (Group 1 most safe, Group 2 less safe, but see note on Nili), ignoring science Group 3 sites:

Group 1: Holden, Gale, Mawrth

Group 2: Eberswalde (risk still fairly low for portions of ellipse surveyed, but potential high slopes and rock coverage issues in remainder of ellipse)

“Group 2.5”: Nili (highest risk site due to high altitude pushing parachute deploy mach number and general timeline margin across the board). Felt by some EDL SRB members to be in a separate risk group due to nearly unacceptable overall risk.

Since the motor actuator performance at low temperatures currently looks promising based on preliminary testing, the project feels that the colder southern sites are still viable and acceptable to advance, particularly in light of their top science ranking, but it should be understood that continued uncertainty, lack of a demonstrated test of lifetime, and other threats may cause these sites to become less preferable in the final selection next year.

By comparing the science and engineering groupings, it was clear that Holden and Gale are in Group 1 for both and should clearly be finalists. Mawrth advanced next due to being in Group 1 engineering and Group 2 science. It was then decided that the 4th and final site to advance should clearly be the last “Group 1” science site, Eberswalde, due to its strong science value to the community for further data acquisition and safety assessment.

Therefore the final 4 sites selected for further analysis are:

Holden

Gale

Mawrth (ellipse placement #2)

Eberswalde

We thank all members of the international Mars community and the project engineering team for their contributions to this process, and we are pleased that we are able to advance the top 4 science sites for our finalists.

Michael Watkins

MSL Mission Manager

John Grotzinger

MSL Project Scientist

Ashwin Vasavada

MSL Deputy Project Scientist