MSL Status/Update for MEPAG

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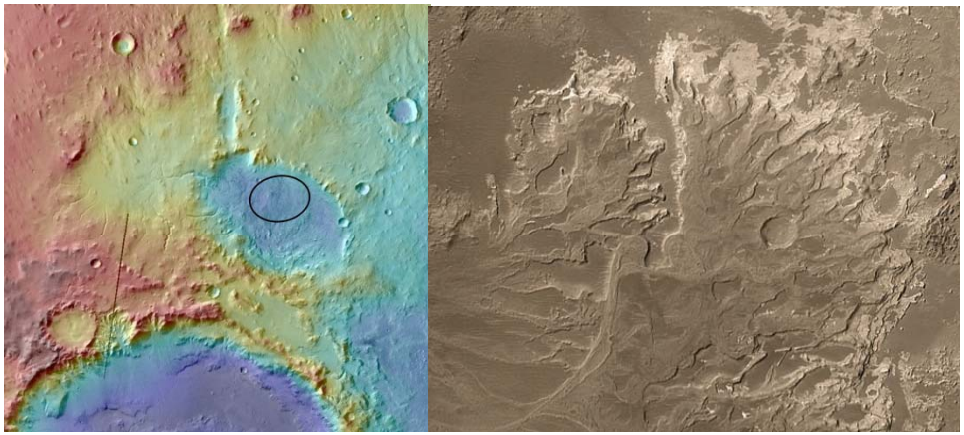
MSL Project Science Office
MEPAG Meeting March 3, 2009

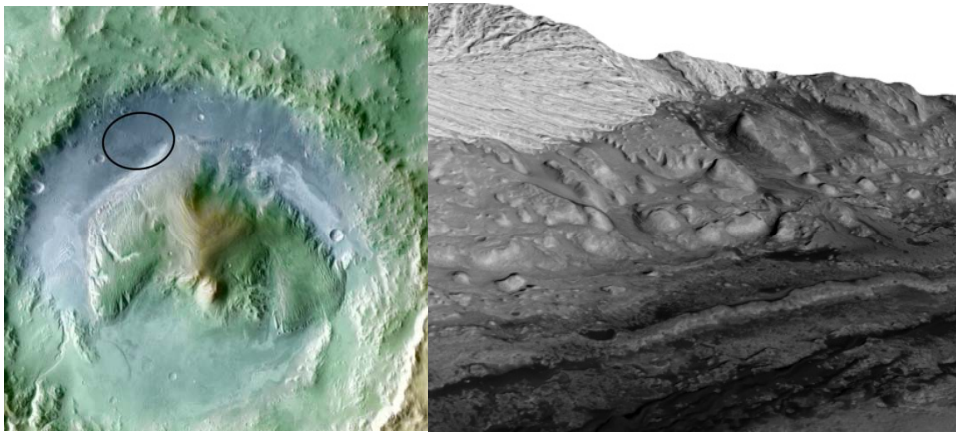
Science Impacts of 2011 Re-Plan

- Science payload and supporting capabilities remain intact; no significant augmentations or descopes. Payload Flight Models will all be received at JPL by the end of calendar 2009.
- Additional time to address actuator technical issues (including cold-temperature performance) and the build & test of the Sample Acquisition, Processing, and Handling System will have a positive impact on science return.
- Project may baseline 5 day/wk operations after Sol 180 to cut Phase E costs; impacts mission return but has some justification from MER experience.
- Four candidate landing sites from 2008 remain in the baseline and so far are compatible with the 2012 arrival conditions. Project will work with the Landing Site Steering Committee in FY10 to consider whether a single additional site is warranted by any late-breaking discoveries (e.g., MRO, MEX, ODY, *methane, carbonates, and chloride deposits).*

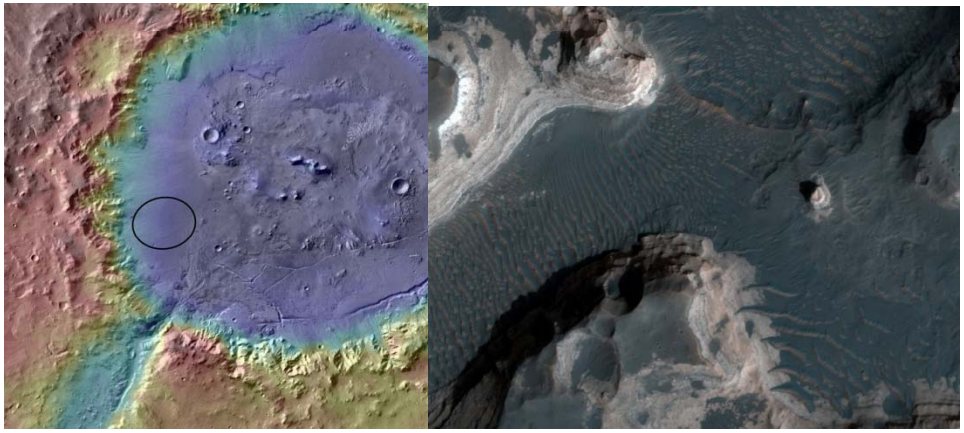
Four Candidate Landing Sites



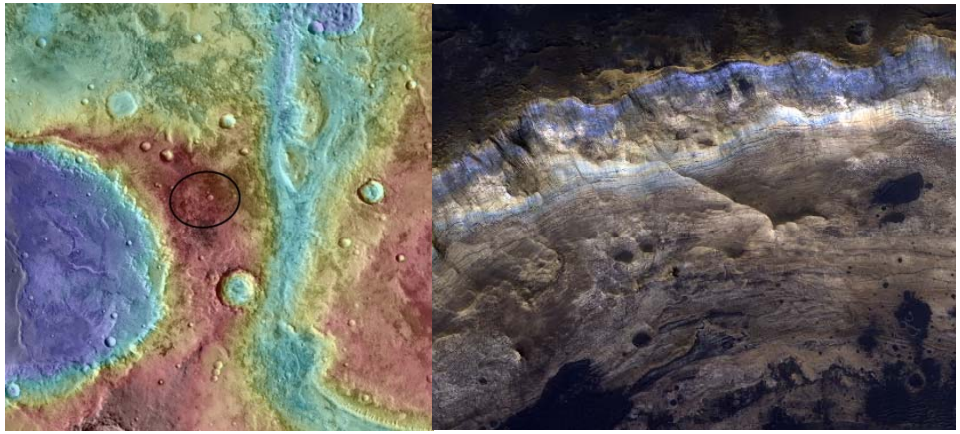
Eberswalde Crater (24°S, 327°E, -1.5 km) contains a clay-bearing delta formed when an ancient river deposited sediment, possibly into a lake.



Gale Crater (4.5°S, 137°E, -4.5 km) contains a 5-km sequence of layers that vary from clay-rich materials near the bottom to sulfates at higher elevation.



Holden Crater (26°S, 325°E, -1.9 km) has alluvial fans, flood deposits, possible lake beds, and clay-rich sediment.



Mawrth Vallis (24°N, 341°E, -2.2 km) exposes layers within Mars' surface with differing mineralogy, including at least two kinds of clays.

Tentative upcoming dates for science community involvement

Sedimentology / Stratigraphy Workshop ~ Mar 2010
1 week of talks and field trip based in El Paso, TX

MSL Landing Site Workshop #4 ~ Oct 2010

MSL Landing Site Workshop #5 and selection ~ Apr 2011

MSL Biosignature / Carbon Compound Preservation Working Group

Solicited by John Grotzinger (MSL Project Scientist) and Michael Meyer (MSL Program Scientist and Mars Program Lead Scientist), on behalf of the MSL PSG

Working Group Members:

Roger Summons (MIT; Working Group Chair)
Jan Amend (Washington University, St. Louis)
Roger Buick (University of Washington)
George Cody (Carnegie)
Dave DesMarais (Ames Research Center; CheMin Instrument Team)
Gilles Dromart (Ecole Normal Superior Lyon; ChemCam Instrument Team)
Jen Eigenbrode (Goddard Space Flight Center; SAM Instrument Team)
Andy Knoll (Harvard University)
Dave Bish (Indiana; CheMin Instrument team)
Dawn Sumner (UC Davis; MARDI, MAHLI, Mastcam Instrument Teams)

Meeting convened in Pasadena in December 2008

MSL Biosignature/Carbon compound Preservation Working Group

The charge of this Working Group is to assess the potential diversity of biosignature/organic compound preservation windows that may be recorded in the ancient terrains that MSL will be exploring.

This group is considering the range of possibilities in a general sense and also the specific opportunities identified at the candidate landing sites, as well as instrument capabilities and detection limits. The group was provided a set of detailed questions to address.

A report will be generated and put on the MEPAG web site.

Science Payload