NASA Advisory Council
Subcommittee Recommendation

Subcommittee Name: Planetary Science

Chair: Sean Solomon

Date of Public Deliberation: 9 January 2009

Date of Transmission to Science Committee: 21 January 2009

Short title of the proposed Recommendation
Development of robust mission cost estimates should begin at the mission concept phase and be used as part of NRC studies.

Short description of proposed Recommendation

The PSS recommends that, on the basis of the Mars Science Laboratory (MSL) experience, procedures be put in place to develop robust estimates of mission cost as early as the mission concept phase, and that those procedures be implemented as part of the upcoming decadal survey for solar system exploration.

Major reasons for proposing the Recommendation

As the PSS noted in its October 2008 report, the history of multiple major increases to mission cost for MSL is a poor model for future missions, particularly at the flagship scale, and it is important that the causes of recurring cost growth be understood so that lessons learned can be applied henceforth. The PSS specifically recommended: "*At the earliest appropriate time, NASA should conduct an external review to assess the causes of the MSL cost overruns and to recommend those changes to cost estimation procedures and project management needed to prevent similar situations for future missions.*" The PSS is pleased to hear that PSD will be implementing this recommendation once key personnel from the MSL project have the discretionary time to participate in such a review without jeopardizing the MSL development and testing schedule. The subcommittee hopes that such a review can be completed before the start of the next major mission within PSD so that the lessons learned from the exercise can be fully exploited.

Consequences of no action on the proposed Recommendation

In the absence of this recommendation, future missions, especially flagships, may suffer from similar patterns of uncontrolled cost increases. In a flat budget environment, this could be devastating to NASA's program of robotic exploration of the Solar System.