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SPACE EXPLORATION SYMPOSIUM (A3)
Mars Exploration – Part 2 (3B)

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NASA MARS EXPLORATION PLANNING: PROGRAM REMEDIATION, PLANETARY PROTECTION REQUIREMENTS

Abstract

Recent budget cuts and programmatic decisions by NASA and the US Federal Government have resulted in a dramatic truncation of the NASA Mars Exploration Program. As of this submission, the last-scheduled US Mars mission is MAVEN, an atmospheric-focused orbiter set for launch in 2013. Nonetheless, the NASA Associate Administrator for Science Mission Directorate has given a charge to create a new framework for the NASA Mars strategy, continuing a focus on both science and support for future human missions. An interim report of this Mars Program Planning Group (MPPG) is due March 15, and the committee will complete its work this summer with a report available for review by the Mars community, independent organizations such as the US National Research Council's new Committee on Astrobiology and Planetary Science, NASA upper management, and for possible incorporation in future US budgets. The work of this group will have implications for planetary protection activities in support of Mars exploration, both in the areas of mission support and technology development, as well as for the requirements to be placed on the mission itself in accordance with COSPAR and NASA (and possibly international-partner) planetary protection policies [cf., 1, 2, 3]. In situ analytical capabilities may be needed to address questions relevant to astronaut health, as well as forward contamination of Mars and backward contamination of the Earth by returned martian materials. COSPAR guidelines on human missions to Mars [1] will form the basis for setting requirements relevant to future human missions, which must be informed using results obtained by the precursor robotic missions that are intended to be the output of the MPPG.

Ref. [1] COSPAR: Planetary Protection Policy (revised 24 March 2011). COSPAR, Paris, France, 2011. [2] National Aeronautics and Space Administration, Biological contamination control for outbound and inbound planetary spacecraft, NPD 8020.7G, Washington, DC, 2008. [3] European Space Agency, ESA planetary protection requirements, ESSB-ST-U-001, Noordwijk, 2012.