

HUMAN EXPLORATION OF THE SOLAR SYSTEM SYMPOSIUM (A5)
Joint Session on Going To and Beyond the Earth-Moon System: Human Missions to Mars, Libration
Points and NEO's (4-D2.8)

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AN AFFORDABLE SYSTEM FOR HUMAN MISSIONS TO MARS

Abstract

The International space community has declared that our unified long term goal is for a human mission to Mars but major work remains to define how it will be done. In May of 2013, a “Humans to Mars (H2M)” conference was held in Washington DC to discuss the requirements and technology developments necessary to field a human mission to Mars. The authors on this paper all participated in a panel which described potential mission architectures and technology gaps which must be addressed. We will summarize the findings from the H2M conference and attempt to capture some of the key points of discussion and debate. We will expand on these H2M conference findings to describe a “stepping stone” based approach that charts a path starting at ISS operations today and ultimately leading to a crewed mission to the surface of Mars. Cislunar infrastructure and heavy lift capability will be key to this approach and we will show links to other relevant work in this area.