

IAA Study Group Status Report

Responsible Commission: 3

Study Number and Title: SG 3.27 - Towards the utilization of the Moon, Preparing for Mars Exploration

Short Study Description (repeat from Study Group Proposal):

the Moon a viable stepping stone for future human Mars exploration? Multiple studies performed over the last 20+ years have considered the question of the Moon's utility as a first step toward eventual human Mars exploration. The results have been anything but conclusive; study outcomes are highly dependent upon initial ground rules and assumptions. A comprehensive, unbiased assessment is required to provide policy makers with the information they may need to make exploration planning decisions in the months and years ahead.

This approach has the advantage of allowing to test technologies which are required to perform a successful human Mars mission in a place which is closer and more easily reachable than the Red Planet. The experience gained exploring and exploiting a hostile world like the Moon will make it easier and safer to perform human Mars missions. It has however disadvantages and risks too: if we need to explore the Moon first, the timeframe in which a Mars mission can be performed stretches, and the cost of the combined Moon-Mars exploration is larger.

The goal of the proposed study is clarifying to address of answer the following questions:

- *Is it useful to proceed to lunar exploration and utilization before attempting human Mars exploration?*
 - *Does it increase substantially the time required to mount a Mars exploration?*
 - *Is it affordable to proceed to the exploration of both worlds?*
 - *How is exploration goals synergetic with the economic utilization of the Moon?*
 - *What are the appropriate roles of governments and private organizations in Moon and Mars exploration?*
- A further aim of the study is to supply recommendations about the technological and scientific effort which is deemed as required for reaching the mentioned goals.*

Progress in past six months:

The membership has been defined and the potential members have been contacted.

A paper to assess a starting point was presented to the 10th IAA Symposium on the Future of Space Exploration: Towards the Moon Village and Beyond, Torino, June 2017

Website Study Information update: (please give any update regarding Study Group Membership, documents, Study Plan and Schedule):

No update

Issues requiring resolution? (recommend approach):

None

Product Deliveries on Schedule? (If modified explain rationale):

Yes

Study Team Member Changes? (List any Study Team Members that you wish to discontinue, and provide names plus contact coordinates of any Members you wish to add on the second page of this Study Update form.) Note: Complete contact information including email, tel. and fax must be provided for all additions. Only Members with complete contact information will be listed and receive formal appointment letters from the IAA Secretariat.)

No change

Name of person providing Study Group Status (Study Group Chair or Co-Chair):

Giancarlo Genta
Study Group Chair

Status Report Date: **February 19, 2018**

Study Team Membership Changes

No change