

Proposal for Forming an IAA Study Group SG 3.27

Title of Study: Towards the utilization of the Moon, Preparing for Mars Exploration

Proposer(s):

Giancarlo Genta

Primary IAA Commission Preference:

3 Space Technology & Systems Development

Secondary IAA Commission Interests:

5 Space Policy, Law & Economics

Members of Study Team

Chair(s):

Giancarlo Genta

Oleg Ventskovsky (TBC)

Secretary:

Les Johnson (TBC)

Other Members:

(Open to members and non- members of the Academy)

Art Dula

Bernhard Hufenbach

Nick Kanas

Susan Mc Kenna

Maria Antonietta Perino

Christian Sallaberger

Jean-Marc Salotti

(all TBC)

Others (TBD)

Short Description of Scope of Study

Overall Goal:

Is 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

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Instructions and application form: see: "Scientific Activity" section at <http://iaaweb.org/content/view/256/393/>

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.

Methodology:

(Email works, workshops, stand alone conferences, interim publications, etc.)

The work will be carried on mainly through email, with two yearly meetings in occasion of the Academy meeting in Paris in March and the IAC. Further meeting can be held in occasion of some IAA symposia.

Time Line:

The study is planned to start in April 2016 and to end in March 2019

Final Product (Report, Publication, etc.):

Report

Target Community:

Support Needed:

Potential Sponsors:

To be returned to the IAA Secretary General Paris

by fax: 33 1 47 23 82 16 or
by email: sgeneral@iaamail.org

Date: February 15, 2016

Name: Giancarlo Genta

(No Signature required if document authenticated).