Proposal for Forming an IAA Study Group SG 3.17

Title of Study: Space Mineral Resources – Challenges and Opportunities

Proposer(s): Mr. Arthur M. Dula

Primary IAA Commission Preference: 3, Space Technology & Systems Development

Secondary IAA Commission Interests: 1, Space Physical Sciences; 3 Law, Economics & Policy

Members of Study Team

Chair(s): Mr. Arthur M. Dula, + TBD

Secretary: Ms. Anat Friedman

Other Members:

Mr. Roger Lenard
Mr. Hans E. W. Hoffmann
Mr. Bohdan I. Bejmuk
Dr. George C. Nield
Professor Li Furong
Mr. Hiroshi Yoshida
Professor Oleg Alfanov
Others TBD

Short Description of Scope of Study

Overall Goal:

To provide a logical, systematic and practical road map to promote and encourage near term evaluation, development and use of space mineral resources (SMR) in space

Broad areas outline of the proposed study:

1. Type, location and extent of SMR; Lunar, Asteroid, Mars, others.

2. Current technical state of the art in the identification, recovery and use of SRM in space and on the Earth that identifies all required technical

processes and systems, and that makes recommendations for specific technology developments that should be addressed near term at the system and subsystem level to make possible prospecting, mineral extraction, beneficiation, transport, delivery and use of SMR. Particular attention will be dedicated to study the transportation and retrival options available for SRM .

3. Analysis of the legal, regulatory and policy issues that control, limit, promote and are related to the development and use of SMR in space and on the Earth, including right to use SMR under current international and national laws, with identification of unresolved legal and regulatory issues and recommendations for action to resolved potential roadblocks.

4. Analysis of business and business issues related to development and use of SMR in space and on the Earth with pro forma case studies. Particular attention will be paid in evaluating the economical aspects related to the SRM. A broad spectrum of potential stakeholders, including international mining and resource development firms, banking and capital market will be identified

5. Development of several specific technical, legal and economic "road maps" for SMR development and use in space and on the Earth.

6. Conclusions and recommendations.

N.B.: Although some books and/or scholarly and popular papers have heretofore been published on space mineral resources, to the best of the proposer's knowledge no comprehensive summary of the current literature on this subject is now publicly available. Unlike space solar power, space mineral resources has not been the subject of government or industry funded studies. This proposed IAA study would be the first comprehensive study of the subject and thus should be of significant value to its development for the benefit of humanity.

Intermediate Goals:

Form subcommittees of experts in the areas of technology, economics, law and policy by mid November 2012.

Establish technical means for holding regular electronic meetings of the study group and it's subcommittees by the end of November 2012. Set a regular schedule of meetings, assign responsibilities and agree on a schedule of work by the end of December 2012.

Invite participation of existing stakeholders in Canada and Australia to coordinate cooperation between the study committee and planned conferences in those

countries in 2013 to allow the study group to obtain a broad spectrum of opinions from experienced mineral extraction, processing and marketing firms.

Work with IAA Commission 3 to present a draft report as part of the IAA activities to be held in conjunction with the 64th IAC in October 2012 in Beijing, PRC.

Methodology: Hold regular electronic meetings of the study group. Agree to specific assignments and deadlines once the work outline has been drafted. This study is a volunteer effort, but it will be managed professionally and there will be a clear understandings and acceptance of rolls and responsibilities.

Time Line: October 2012 to October 2014

Final Product (Report, Publication, etc.)

Cosmic Study report published by IAA or other Sponsor
Publication in an aerospace journal (TBD)
Workshop in the period of the IAC in 2013 in Beijing in October 2013 or earlier
Press conference with the main outcome of the Cosmic Study

Target Community:

Commercial space scientific, technical and business community;

Mineral extraction, processing and marketing firms worldwide;

Space policy makers and officials responsibile for assuring adequate future supply of critical minerals;

Capital and banking groups that finance aerospace, mineral extraction and processing;

Aerospace engineers and space scientists.

Support Needed:

None identified at this time.

Potential Sponsors:

The Heinlein Prize Trust
Excalibur Exploration Limited

Planetary Resources
The International Space University
others TBD

To be returned to the IAA Secretary General Paris *by fax: 33 1 47 23 82 16 or*
by email: sgeneral@iaamail.org

Date: November 5 , 2012

(No Signature required if document authenticated).

Follow-up Section for IAA use only

Initial Phase

Application received:

Commission Approved:

SAC Approved:

Web Site Section opened:

Members Formally Appointed by IAA:

Final Phase

Peer Review by Commission Completed:

Recommended by the Commission:

Final Report Received:

SAC Approved:

BOT Accepted:

Publisher Selected:

Study Published: