

International Academy of Astronautics (IAA)
Agenda of meeting - Study Group 3.26 "Space Mineral Resources #2"
2nd meeting in Bremen, Germany on October 2th, 2018



Minutes of Space Mineral Resources IAA Study Group 3.26

2 October 2018; 1130-1330

CCB Humboldt, IAC 2018, Bremen Germany

The meeting was convened at 1130 hours. There were 16 persons present with persons coming in and out during the meeting. Numerous entities and countries were represented. The meeting agenda is attached, the attendance list is attached. The engineering projects at the University of New Mexico and the Arizona State University were described. The two student exercise examples are illustrative of the exciting new world of "new actors." Each of these examples indicate the remarkable excitement by university students using the SMR field. The UNM project involved developing the equations for penetration of various types of lunar soil based on terrestrial penetration approaches and performing a series of experiments. A video of one of the experiments by the UNM students was shown. The engineering project at the ASU was described including the design and building of a satellite (lower winch station) for the Zodiac Planetary Services concept. Because of this excitement, a new chapter in the study group report has been recommended. The status of the SMR #2 report was reviewed, with an indication that the case studies and the legal section were the most well-developed at this time. The meeting was opened for discussion in what manner it would be best to do the report. A new chapter labeled (some variant of) new SMR actors in the space resources arena was agreed to by those present. The thrust of this chapter will be the identification of "new actors" participating in the burgeoning field of SMR beyond LEO (see below). Suggested action is a short write-up (2-3 pages) of new actors in this area to be sent to Pete Swan or Roger Lenard. The objective of this chapter is the exposure of 10-12 new small entities in the SMR arena. The postulated composition of the permanently shadowed regions of the lunar poles based on the LCROSS experiment was discussed. The new Master's program at the Colorado School of Mines was discussed, with Robert Mueller mentioning that there are at least 3 universities e.g., University of Central Florida providing on-line courses in the area of space mineral resources. A notional schedule for the release of the new SMR book for review and comment was floated, (15 November inputs for new actors, 31 December 2018 input Hague Working Group summary, 31 December KSC student contest summary (5-10 pages)). The next deadline is 15 February 2019 for the draft full report completed. The follow deadline is a 30-day review by the Study Group, 15 March 2019, which includes review comments which becomes the final report. Final report turned into Commission III for review on 15 March 2019. Final report submission to the SAC 15 April 2019. After

Contact Information:

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Peter Swan, peteswan-1@gmail.com

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SAC review, report to be published by the Heinlein Trust Foundation. Numerous members of this group agreed to support the review. An important aspect of getting students involved and excited is the promise of a future job, emphasized many times. This is a very important motivating factor.

During the meeting, a number of action items were identified and a responsible person for addressing it was completed:

Suggested new Chapter: New Actors-Deadline 15 November 2018

All: short write-up of your company's participation in the SMR area. Send to Pete Swan or Roger Lenard

All: Forward request for new actor identification to known new actors by you and your company

Summary of The Hague Working Group-deadline draft 31 December 2018

Action: Mike Simpson ~5 page write-up of the Hague Working Group recommendations on space mineral resources.

Action: Roger and Pete. Final version of report 15 March 2019 to Michael Simpson for release to selected members of the Hague Working Group.

Summary of Student Excavation Competitions draft due: 31 December 2018

Robert Mueller: Develop a 5-10 page summary of the student excavation competitions and the results.

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Date: Tuesday 2, October 2018

Time: 1130-1330

Place: CCB Humboldt room

Bremen Conference Center

Chair: Chair: Art Dula, Slave labor: Roger Lenard and Pete Swan, Secretary: Anat Friedman,

Contributors: Micael Simpson, Susan Lawlor McKenna, Ian Burke

- Welcome and Introductions (sign-in list)
- Status of Chapters
- UNM Engineering Student Project
- ASU Engineering Student Project
- Future schedule
- Volunteers to Review
- IAC-2019 Washington DC
- Adjourn

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Appendix 1: List of Attendees

Name	E-mail	Country	Affiliation
Simpson, Michael	mkscms@gmail.com	USA	
Hightower, Buckner	buckhightower@gmail.com	USA	
Cannelli, Ian	ian.cannelli@esa.int		
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McKenna-Lawlor, Susan	stil@mu.de	le	
Lenard, Roger	rxlenard@gmail.com	USA	
Broz, Jakub	Broz.kuba@gmail.com		
Neugebauer, Florian	fn@ptsScientists.com		

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Name	E-mail	Country	Affiliation
Chrzanowski, Garritt	Garritt.c@gmail.com		
Lee, Tai sik	Tai-sik.lee@moonvillage.org		
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Marquis, Kyle	elykmarquis@gmail.com	CN	

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