



Lunar Surface Innovation

C O N S O R T I U M

LSIC ISRU Focus Group Monthly

<http://lsic.jhuapl.edu/>

<http://lsic-wiki.jhuapl.edu/> (“Confluence” sign-up required)

August 10, 2022

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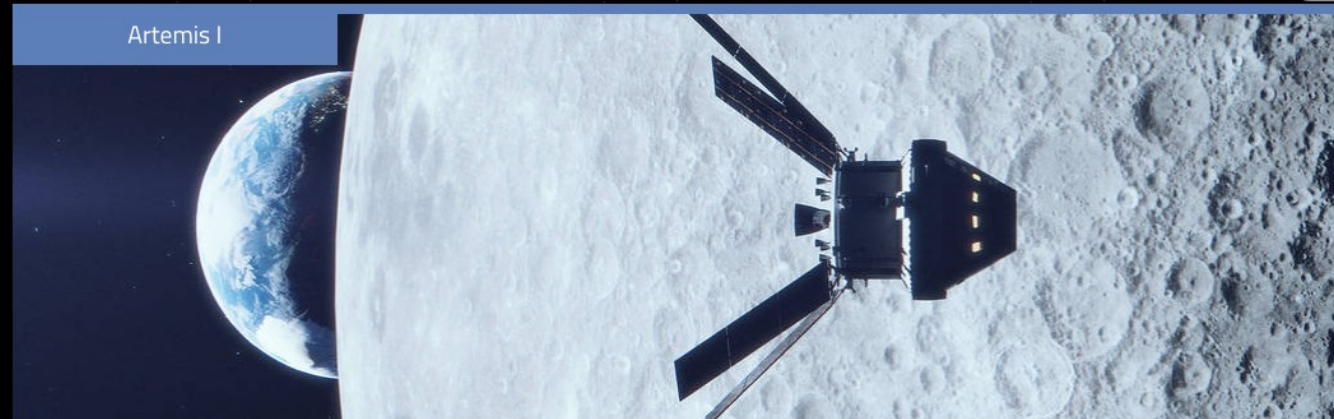
Agenda

- Our Agenda will be as follows:
- General updates and house-keeping from Karl and Yours Truly
 - APL is happy to consult as appropriate with ISRU and related technologies. We can provide advice on how to build for launch and operating in extreme environments. We are considering posting guidelines and holding “Office Hours”. Comments solicited.
 - NASA funding opportunity update
- Data Buys: Ben Bussey
- Jeff Plate, volatile prospecting
- Clive Neal on LSSW #17 “Defining a Coordinated Lunar Resource Evaluation Campaign
- Kirby Runyon on Moon 101 teaser (if we have time)
- Coffee and Donuts discussion: “If you had \$1 billion, what would you do on the Moon?”

- Notable news

SPACEFLIGHT NOW

SpaceX's 2nd Starship launch pad at Super Heavy static fire



Aug 4, 2022

Additional Artemis I Test Objectives to Provide Added Confidence in Capabilities



Upcoming Meetings

Some upcoming IRSU related meetings you might not be aware of

- **LEAG**. 23- 25 August. Hybrid. Laurel, MD. Abstracts (already due).
- **IAC**. 18-22 Sept. Paris, France. In-person. Abstracts (already due).
- **Lunar Surface Science Workshop**. Sept. [“Lunar Resource Evaluation Campaign - Implementing”](#)
- **NASA TechRise 2022; Entries Due Oct. 24:**
<https://www.futureengineers.org/nasatechrise>
- **SBIR Ignite: “The Small Business Innovation Research (SBIR) Ignite Solicitation is a limited pilot program focused on technologies with a strong commercial pull.” —closes Sept. 1**
<https://sbir.nasa.gov/solicit/80089/detail?l1=97183>
- **Break the Ice Challenge due Sept. 30**
- **LSSW Prospecting follow-on workshop will be in October**
- **LSIC Fall Meeting (next slide)**



Fall LSIC Meeting

- November 2-3, 2022
- University of Texas-El Paso
- Abstracts Due Sept. 13; submission begins mid-August (soon!)
- Focus will be on how the 6 Focus Areas (think ISRU!) relate to Excavation and Construction.
- <https://lsic.jhuapl.edu/Events/Agenda/index.php?id=350>



Credit: UTEP

Community Interest in Data Buys

<https://forms.gle/tuhzwAUaQLDivQ2D7>



LSII | Data Buys

- NASA is interested to learn more about the interest in the LSIC community of NASA conducting data buys from commercial providers
- There are two types of data to consider
 - Data acquired as a by product of landing on the Moon
 - Dedicated data that require a specific instrument to be flown
- What kind of data access is required?
 - Does NASA buy an entire data set and put it in PDS?
 - Do users buy data directly from the providers?



LSII | By-Product Data

- Data acquired as a by product of landing on the Moon
 - Environmental Data
 - Radiation, thermal, illumination, dust, volatiles
 - Descent & Landing Imagery
 - Images of terrain during descent, surface panorama after landing
 - Landing & Post-landing effects
 - Plume/surface interactions
 - Technology/System Performance
 - Navigation performance, comm performance, landing precision, hazard detection and avoidance
- Are there additional data sets you would want?
- Are there data sets the lander will naturally acquire, but perhaps you need a variation of those data, e.g. a certain data set to be acquired at a higher cadence?



LSII | New Data Sets

- What data would enhance your ability to plan lunar surface operations?
- Data sets that require a dedicated instrument to be flown
 - E.g. New topography, or mineral map data sets
 - Could be either an orbital or surface data set
- Monitoring Data for Situational Awareness
 - Rover locations and movement
 - Charging operations
 - Search and Rescue for lost rovers
 - Comm quality/performance



LSII | General thoughts/questions

- Are there any Data privacy, Intellectual Property or Distribution Concerns
- Are these data global or regional in nature?
- Is there a different financial value for different data qualities, e.g. spatial or spectral resolution?
- What does this data set enable?
- How do you put a value on a data set (financial or otherwise)?
- What is the value of this data set to your LSIC/STMD/ESDMD, etc. mission?
- If you are a potential provider, what level of funding, if successful, is required for you to consider acquiring these data?
- Is the data you want a one-time acquisition? Every landing?
- Do you need it only for a particular region



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Topical Discussion

Jeff Plate, *Watts, Griffis and McOuat Limited* | *Geological and Mining Consultants*

Volatile Prospecting Data Analytics

Topical Discussion

Clive Neal, University of Notre Dame
LSSW 17 Prospecting Outbrief



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Coffee and Donuts: What ISRU Activity Would you Do on the Moon for \$1 billion?