

# Notes from Dust Mitigation Monthly Meeting

August 2020

## Notes From Discussion

::LSIC information presented by Jorge Nunez, refer to slides::

- Recap of Lunar Surface Science Workshop
- Upcoming funding opportunities
  - LuSTR
  - Big Idea Challenge
- Discussion of potential Dust Mitigation workshop

Question from Ryan Kobrick:

- Could Dust Mitigation be further broken down in human systems & robotic systems
  - Jorge responded that that would be a good breakdown point, suggested continued conversation on the topic
  - Michael Johansen added that a tree of breakdowns could be created, starting with operations expected on the Moon, then what technologies are needed for those operational scenarios, then what systems are needed for that technology, a the subsystems to power those, etc.
  - Don Barker added things could be further broken down into what's needed for the 2024 goals versus what is needed for more long-term goals (sustained presence vs initial steps)
- Should the International Conference on Environmental Systems next year be a good target for LSIC publications

Question from Ben Bussey:

- Asked if, for the year one goal, it was okay to propose things which at least could lead to requiring a flight demonstration, something with a terrestrial component moving towards the Moon
  - Jorge responded yes, both long and short term goals were acceptable, even in combination.

Recap of Lunar Surface Science Workshop by Addie Dove

- Presentations from workshop should be available shortly (refer to link in notes from chat)
- Encouraged folks to read the reports from the workshop

Jorge Núñez asked if specific actions / recommendations would be coming out of reports.

- Addie answered that the reports are intended as guidance internally within NASA and for the community. Reports should reflect the state of the field right now

- Michael Johansen added that those reports and others make their way into NASA's dust mitigation strategy

Question from Morgan Gendel:

- Curious about how much is known about composition of lunar dust, specifically if there is iron.
  - Addie Dove responded that what we know from the samples taken from Apollo sites has been well characterized across all but the smallest particle size ranges (below one millimeter).
- Morgan further asked if there were resources available to get to that information
  - Ben Bussey asked for participants to submit their similar needs and solutions for finding resources
  - Don Barker added that LPI was a great resource for that material, and the Lunar Source Book (see link in notes from chat)
  - See multiple resource links in chat

Andrea Harman requested that participants fill out the Capabilities Database to answer questions like Morgan's

- Michael Johansen asked if NASA's capabilities were included in that database
  - Jorge answered that he hadn't been clear on what was internal to NASA, but would work with Michael to get information included.

::Presentation from Ron Creel, refer to slides::

Question from Jorge Núñez:

- Asked to confirm that Ron's approach was to keep astronauts outside the habitat
  - Ron responded affirmatively and referred to the mudrooms in use at the Antarctic base
- Jorge asked about suit maintenance, as ISS currently does
  - Ron responded that filtration systems could be used in the mudroom / airlock

Question from Michael Johansen:

- Asked about structure of LSIC fall meeting.
  - Jorge confirmed that there would be invited talks on the first day with breakout groups on the second day, with focus groups mixed together for cross-pollination of ideas
- Michael Johansen asked that NASA contacts be included in conversations about planning that event

::Quick overview of Confluence::

- Confluence accounts are available for free for LSIC members
- To request a Confluence account, contact Andrea Harman ([ams573@alumni.psu.edu](mailto:ams573@alumni.psu.edu))

## Notes From Chat

ISRU Supply and Demand Industry Day 17 September  
(<http://lsic.jhuapl.edu/Events/103.php?id=103>)

Lunar Science Workshop Website (where presentations will be housed):  
<https://lunarscience.arc.nasa.gov/lssw/>

Lunar Dust Resources  
[https://www.lpi.usra.edu/publications/books/lunar\\_sourcebook/](https://www.lpi.usra.edu/publications/books/lunar_sourcebook/)  
<https://www.lpi.usra.edu/lunar/strategies/index.shtml#hazards>  
<https://ntrs.nasa.gov/citations/20190027643>

LSIC Capabilities Database looking for entries: <https://forms.gle/1inBRsVjtxE4C8HJA>

Patrick Suermann asked that since volatiles are usually quickly evaporating terrestrial, but would sublime on the Moon, what is being considered in Volatiles category?

Margaret Proctor asked if dust behavior changes from vacuum to air environment  
Addie Dove answered that significant chemical changes can occur on the surfaces of dust grains when exposed to air, and relative role of electrostatic vs. other cohesive behaviors changes significantly.

Patrick Suermann asked “missing agglutinated elements of regolith?”