

Notes from Extreme Access Monthly Meeting

January 2021

Quantitative Info

22 total attendees, 21 via app and 1 via phone.

12 members, 6 staff, and 4 non-members participated.

Notes

For links to Confluence discussion pages, visit the Extreme Access space on Confluence: <https://lsic-wiki.jhuapl.edu/x/XoAZ>

LSIC members can request Confluence access by emailing Andrea Harman at ams573@alumni.psu.edu.

Introduction of New Team Members ::refer to presentation::

- Welcome to Sarah Withee, electrical engineer at Johns Hopkins Applied Physics Laboratory

Upcoming Meetings / Opportunities ::refer to presentation::

- Deadline for abstract submissions to the Dust Mitigation workshop has been extended to 22 January

Communications ::refer to presentation::

Technology Spotlight - Dr. Issa Nesnas, JPL ::refer to presentation::

- Sarah Withee asked: What are you using as the power system for this?
- Issa Nesnas answered: Lander from which rover is deployed could provide power.

- Sarah Withee asked: Is there an advantage to having a larger mass (e.g. does it improve mobility)?
- Issa Nesnas answered: The bigger the wheels, the better. Payload also drives size.

- Sarah Withee asked: What was the mass of the rover shown in the photograph?
- Issa Nesnas answered: 150-160kg.

- John Verboncoeur asked: Is the tether spooling around the axle so cliff edge points are static to reduce wear?
- Issa Nesnas answered: Yes.

Open Floor

- Sarah Withee invited conversation about a potential lunar shed for rovers.

- Issa Nesnas stated that building an enclosure to efficiently retain higher temperatures could help wear on batteries from very low temperatures, but balance amount of energy needed for enclosure vs heat needed simply to keep the rover warm itself.

- Sarah Withee stated that a shed could also be a communications relay station so rovers wouldn't have to be burdened with carrying around powerful communications equipment.
- Issa Nesnas agreed.

- Joseph Galante stated that such a shelter would provide thermal protection, recharging, data relay, but it's critical to recharge batteries and prevent cold damage. He also stated that being able to get into the shed easily would be important for dusty rovers.
- Sarah Withee asked what issues dust would cause with rovers making their way back to the shed.
- Joseph Galante answered that the shed could provide a beacon for navigation for easier docking, make a big sign easy for optical systems to find when dust has been kicked up.

- Joseph Galante stated that another concern was how to get robots to plug in for charging, perhaps wireless charging is best.
- Issa Nesnas responded that his group decided to use inductive charging.

- Chuck Lauer suggested dedicating a subgroup to further exploring the concept of a shed. And volunteered to lead in the chat