

Notes from Extreme Environments Monthly Meeting

September 2020

Notes From Discussion

- Focus Group Updates
 - Submit information to Capabilities Database (see link in notes from chat)
 - Communications Environment subgroup has been moved to the Extreme Access focus area, though cross-collaboration will continue going forward
 - New NASA point of contact will be announced soon - thanks to Mark Hillburger (previous POC), and will work with him for structures and materials concerns
 - LSIC Fall Meeting will be 14-15 October (virtual, hosted by Arizona State University)
 - General focus is framing things in the context of power
 - Focus groups will interface to address surface power issues and interrelationships among focus areas
 - Abstracts for the poster session are due 11 September
 - October meeting will likely be rescheduled for 06 October to accommodate fall meeting, look for final confirmation of date change shortly

- Task 1 Overview
 - First task is to come up with Extreme Environments engineering requirements and what aspects of the lunar environment are driving those requirements
 - Second task is to identify capabilities and technology gaps
 - Task three is identifying facilities needed to mature technologies
 - Number of Extreme Environment subgroups have worked over the summer towards Task 1

- Task 1 Subgroup Updates & Discussion
 - Illumination Environment (Craig Peterson)
 - ::refer to quad chart::
 - Identified need to study illumination opportunities like operating during lunar night using earthshine
 - Radiation Environment (Lawrence Heilbronn)
 - ::refer to quad chart::
 - Group will be focusing over the next month on developing a more precise definition of the radiation environment from galactic cosmic rays and solar particle events
 - Collecting most recent information to define more accurate definition of radiation environment for crewed and uncrewed missions on the lunar surface
 - Also interested in prediction of electronics effects
 - Likely meeting again in two weeks to sort through collected information
 - Thermal Environment (Ahsan Choudhuri)
 - ::refer to quad chart::
 - Group has met several times, have monthly tagup scheduled on the first Tuesday of each month.
 - Focusing on thermal physical properties of lunar regolith
 - Collected literature, synthesized, and producing a small white paper from findings (expected 15 October)

- Also planning to look into thermal physical property distribution of lunar regolith, planned output for December.
- Vacuum Environment (Stephen Indyk)
 - ::refer to quad chart::
 - Planning to meet before October
 - Collecting publications to establish the state of the art
 - Also collecting information about plume environments on the lunar surface
- Confluence wiki Demo & Discussion
 - To sign up for a free LSIC Confluence account, contact Andrea Harman (ams573@alumni.psu.edu)

Notes From Chat

Capabilities Database link: <https://forms.gle/y7bXdmHPJH6rBtbCA>

LSIC Confluence: Isic-wiki.jhuapl.edu

Question from Dr. Chris Shove: on wiki tech dones and gaps

Link from Naveen Vetcha: <https://go.nasa.gov/32b2S4A>