

# Notes from Surface Power Monthly Meeting

*July 2020*

## Notes From Discussion

### LuSTR

- Ray Beach provided overview of LuSTR (see slide)
- Aiming to move things from academic to industrial world, to higher TRL levels
- Topic areas:
  - Flexible power distribution for mobile applications
  - Advanced radiation tolerance
  - Low temperature batteries
  - Advanced power system control for interoperability

### Reference Missions

- Work is ongoing at NASA to provide information re: reference missions

### Subgroups

- Framing of example scenario:
  - Keeping a cell phone charged in New Mexico so you have your cellphone in a week - security commodities
  - What will be needed in 15 years so astronauts don't have to have all supplies flown in
  - How will communication network be set up
- Recommendation to divide nuclear subgroup into "fission" and "radioisotopes"
- How can contributions from international partners be incorporated?
  - Wes going to follow up w/answer
- Reminder from Ray to keep the focus on pushing technology to higher TRL levels

### Year One Goals

- Get a definition for what Artemis means by 'sustained presence'
- Focusing on interoperability of fielded systems
- Determining level 0 requirements for power on the lunar surface
- Concern about dramatically underestimating the need for power (re: Desert Rats)

## Resources

- Reference Missions Google Doc: <https://docs.google.com/document/d/1MIGjFotvytE7TbGazP5rym24hT2UcOOmwhvOwQs77vo/edit?usp=sharing>
- Surface Power Subgroups Google Doc: [https://docs.google.com/document/d/1nXr0zbpWiQPxkrn5Syzql6FR\\_QYzRNoq7qWanlv4lnw/edit?usp=sharing](https://docs.google.com/document/d/1nXr0zbpWiQPxkrn5Syzql6FR_QYzRNoq7qWanlv4lnw/edit?usp=sharing)
- Year-one Goal Google Doc: <https://docs.google.com/document/d/1dzuavhthjiLoB8jmfMn-HRiRYPBkog1ANI2aQcFOrgE/edit?usp=sharing>
- LinkedIn LSIC group: <https://www.linkedin.com/groups/13861869/>
- Recommendation from Chuck Finley to integrate DoD opportunities into funding list

## Reference Missions

- Craig Peterson offered TransAstra's NIAC phase 1 study of lunar polar propellant mining outpost mission
  - Also recommended Icarus paper "A geologic model for lunar ice deposits at mining scales" from Kevin Cannon & Daniel Britt as a reference for water mining missions
- Dennis Poulos recommended looking at mid-latitudes as well

## Advocacy for "Permanent" presence vs. "Sustained"

- Suggestion from Dennis Poulos to focus on permanent, not sustained presence
- Seconded by Clive Neal, asserting it will enable int'l cooperation / commercial partnerships
- Thirded by Chuck Lauer
- Fourthed by Angeliki Kapoglou