Panel 2 Observations

**General Observations:**
- There was convergence on L1/L2 based missions as achievable, affordable, and applicable to a lunar scenario.
- The Moon offers unique commercial promise compared to other destinations.
- Good exploration value, including science on the Moon.
- Good test bed for sustainability and long durations.
Panel 2 Findings

◆ **Message**

- Improve overall Moon Next message (Why the Moon? Why humans? Why robots? How does it lead to Mars?) What type of commercial markets are enabled? Short-term (10 yr) versus long-term (25 yr) strategy for the Moon?
- And how do robotic and/or commercial endeavors fit those horizons?

◆ **Cost**

- Issue: Moon seems to be a location that we can get to early, affordably and is extensible to deep space operations for many capabilities, but the surface scenario as depicted is perceived as unaffordable
- Impact to the GER:
  - Reevaluate the surface elements and their cost/necessity

◆ **Early opportunities**

- Issue: We need to accelerate ISS testing and first lunar missions
- Impact to the GER:
  - Use assets on hand to do some early near-term missions
  - Assess L1/L2 missions as ways to accomplish early missions including operating assets on the Moon (tele-presence?)

Human Exploration Community Workshop on the GER
Panel 2 Findings

- **Habitat at L1/L2**
  - Should deployment of a habitat and L1/L2 be included in the GER?

- **ISRU**
  - Consensus that ISRU was important and relevant. Is worthy of demonstration to provide the data for further evaluation.
  - Consider being more explicit with respect to ISRU in the GER and how it will be tested/proven

- **Alternate assets**
  - Assess alternative/additional capabilities for programmatic resiliency, e.g., transportation, ground-based assessments of existing core samples
    - Smaller CPS
    - Reusable landers
    - SEP for cargo