

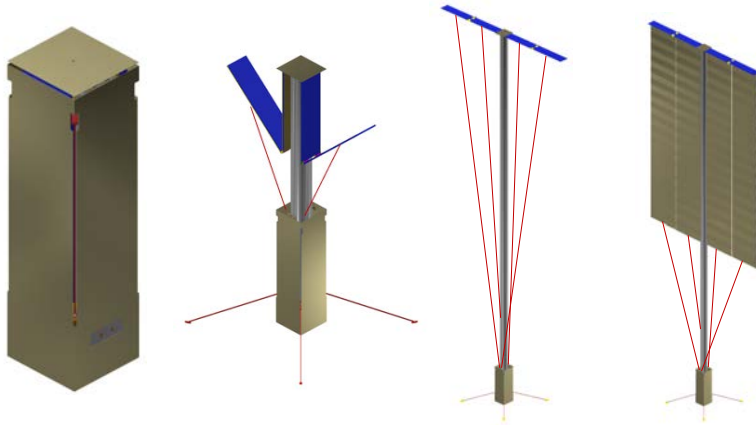
Lunar Array Mast & Power System (LAMPS)

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LSIC Surface Power Telcon on VSAT

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LAMPS



From left to right: stowed; partially deployed; fully extended, fully deployed

Key Features

- Lunar power station designed to provide 10kW of continuous power at beginning of life
- 18 meter, single-axis tracking solar array boom for the southern polar region of the moon.
- Capable of multiple autonomous deployment/retract cycles
- Fully transportable per NASA requirements
- Heritage technologies developed/under development for lunar environment
 - Mechanisms for dusty environment drilling
 - Avionics and power electronics
 - Thermal control system designed for lunar diurnal cycle

Key Technologies

- DIABLO compact deployable mast
- DragonSCALES modular silicon solar cells
- Dust tolerant electrical connectors developed for lunar application

Development Team Partners

- Honeybee Robotics Exploration Systems
 - Altadena California - www.honeybeerobotics.com
- mPower Technology
 - Albuquerque New Mexico – www.mpowertech.com

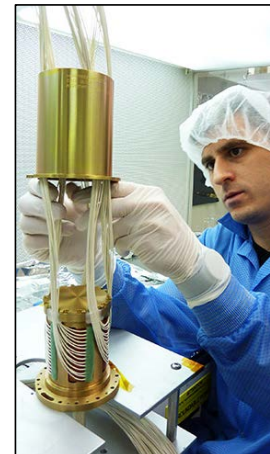


DragonSCALES are customized solar modules composed of silicon cells interconnected on a very flexible substrate, resulting in a low mass and minimized stowage volume design

- LAMPS architecture was developed with HBR extensive experience technologies designing for cryogenic and dusty environments
 - HBR will leverage lunar specific technologies from VIPER, PRIME-1, LISTER, PlanetVac, and 3PO payloads planned to fly to the Moon in 2022 and 2023
 - HBR Lunar and Martian drilling systems are designed for penetrating tens and hundreds of meters on the Moon and Mars
 - Stowed volume, mass, robotic assembly/disassembly, force/torque, power transfer, and dust challenges are the same in LVSAT application
- mPower's lightweight solar cells based on DragonSCALES enable low mass and minimized stowage volume design



Dust tolerant connectors and mechanisms being tested in TVAC with various lunar simulants



HBR has experience with cable management in extreme environments (at left Glory twist capsule, at right 110m deep-drill campaign Greenland)

