



SolarHub

Maxar's Lunar Vertical Solar Array Technology

Presented to the Lunar Surface Innovation Consortium (LSIC)
2021-05-27

**COMMERCE EAR-99 / NOT CONTROLLED
PUBLIC RELEASE**

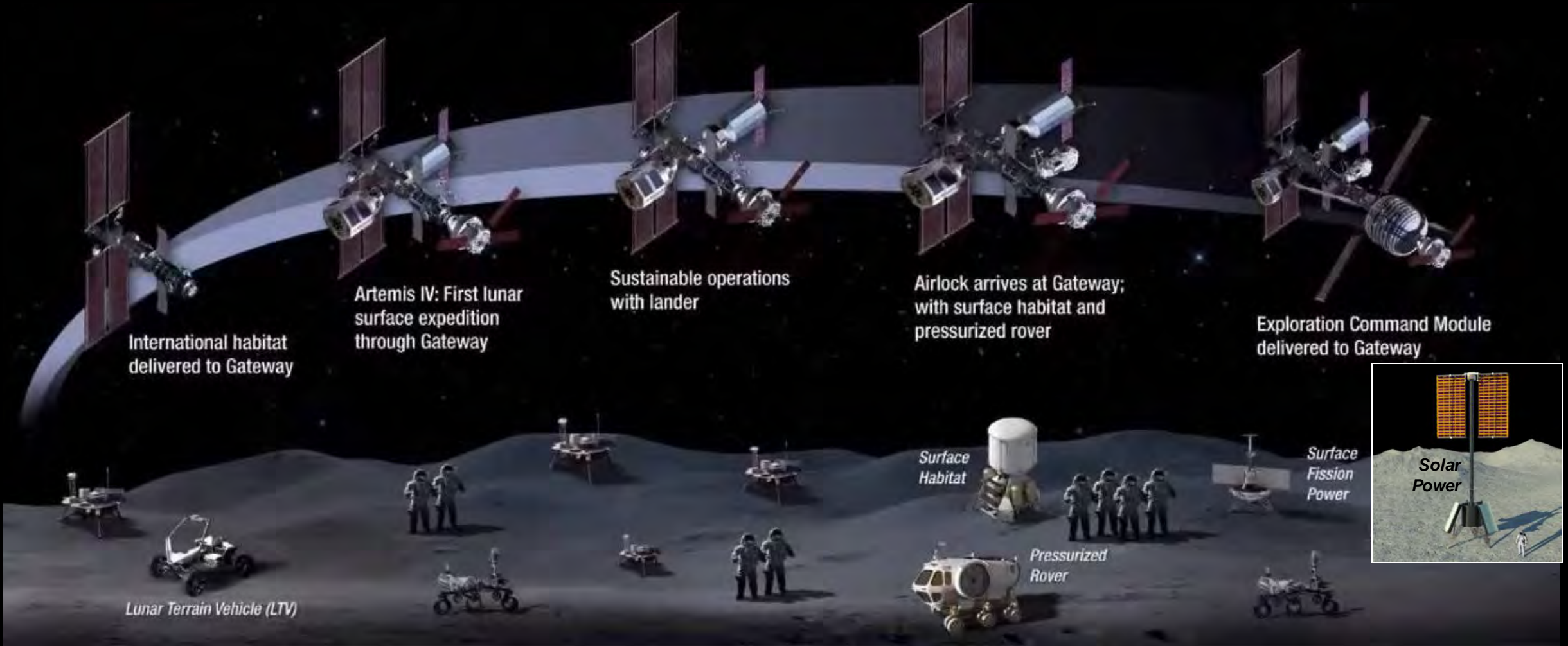
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Approved for External Release

MAXAR



MAXAR AND LUNAR EXPLORATION





A MISSION PARTNER WITH PROVEN HERITAGE

With more than 60 years of experience, Maxar is a trusted partner for government and commercial missions. Our renowned Space Infrastructure capabilities date back to the Apollo Moon landing and continue to serve the most demanding missions:

- Communications and Earth observation
- Space exploration
- Solar electric propulsion
- On-orbit servicing and assembly

285+

Maxar-built spacecraft
launched

2,750

Combined
years on orbit

80+

Communication
satellites on orbit

2.4+

Billion people rely on
broadcasting services powered
by Maxar-built satellites



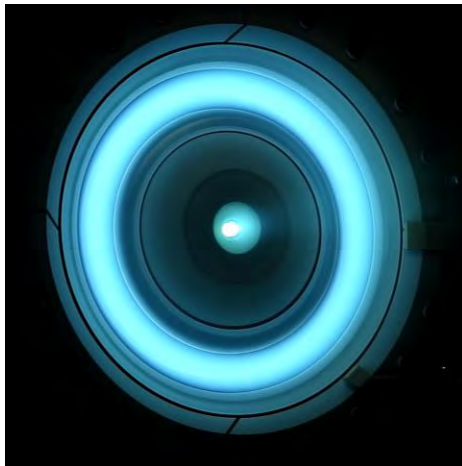
MAXAR IS A GLOBALLY TRUSTED LEADER DELIVERING SPACE INFRASTRUCTURE AND EARTH INTELLIGENCE





MAXAR SPACE INFRASTRUCTURE

- 60+ years building high reliability spacecraft
- Launched 285+ LEO & GEO satellites
- Leader in Solar Electric Propulsion (SEP)
- High heritage in:
 - power management and distribution
 - high power, high voltage systems
 - communication systems
 - thermal control



6kW SEP hot fire test March 2021



Psyche delivered to JPL April 2021

Psyche spacecraft
chassis, power &
propulsion



Lunar Gateway Power &
Propulsion Element (PPE)



WORLD'S LEADING PROVIDER OF PLANETARY AND SPACE ROBOTICS FOR 20+ YEARS

Mars Surveyor 2001



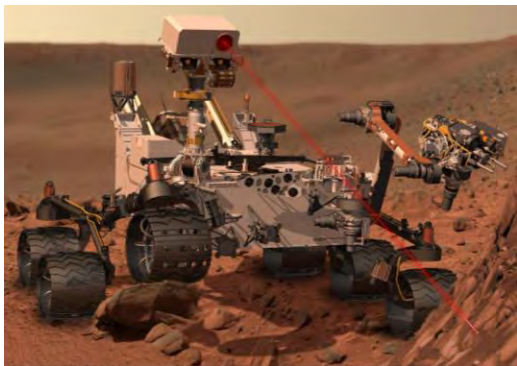
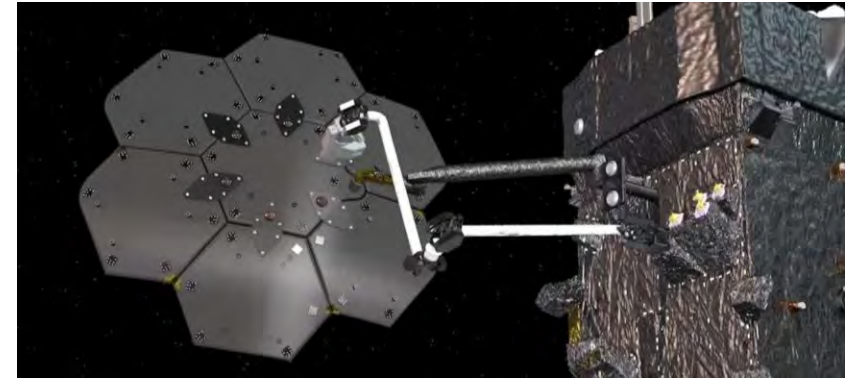
Mars Exploration Rovers (Spirit and Opportunity)



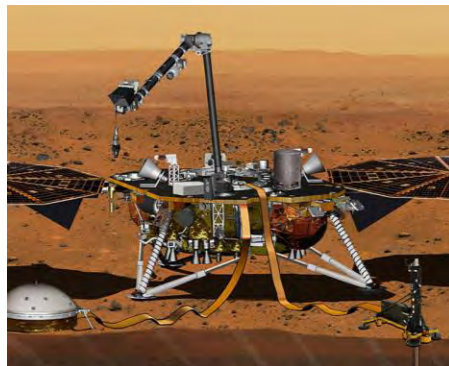
Mars Phoenix Lander



SPIDER In-Space Assembly Demo



Mars Curiosity Rover



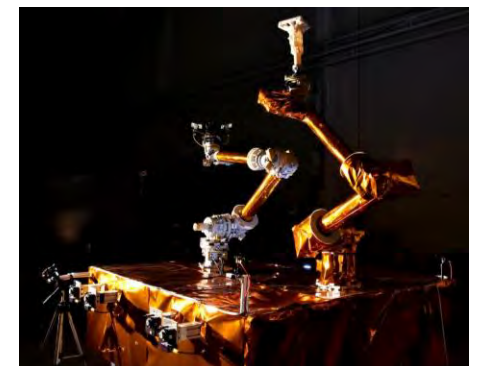
Mars InSight Lander



Mars Perseverance Rover Sample Handling Assembly



Masten XL-1 Lunar Lander



RSGS and OSAM-1 In-Space Servicing Missions



PIONEERING ADVANCED TECHNOLOGIES FOR LUNAR ROBOTICS AND EXPLORATION

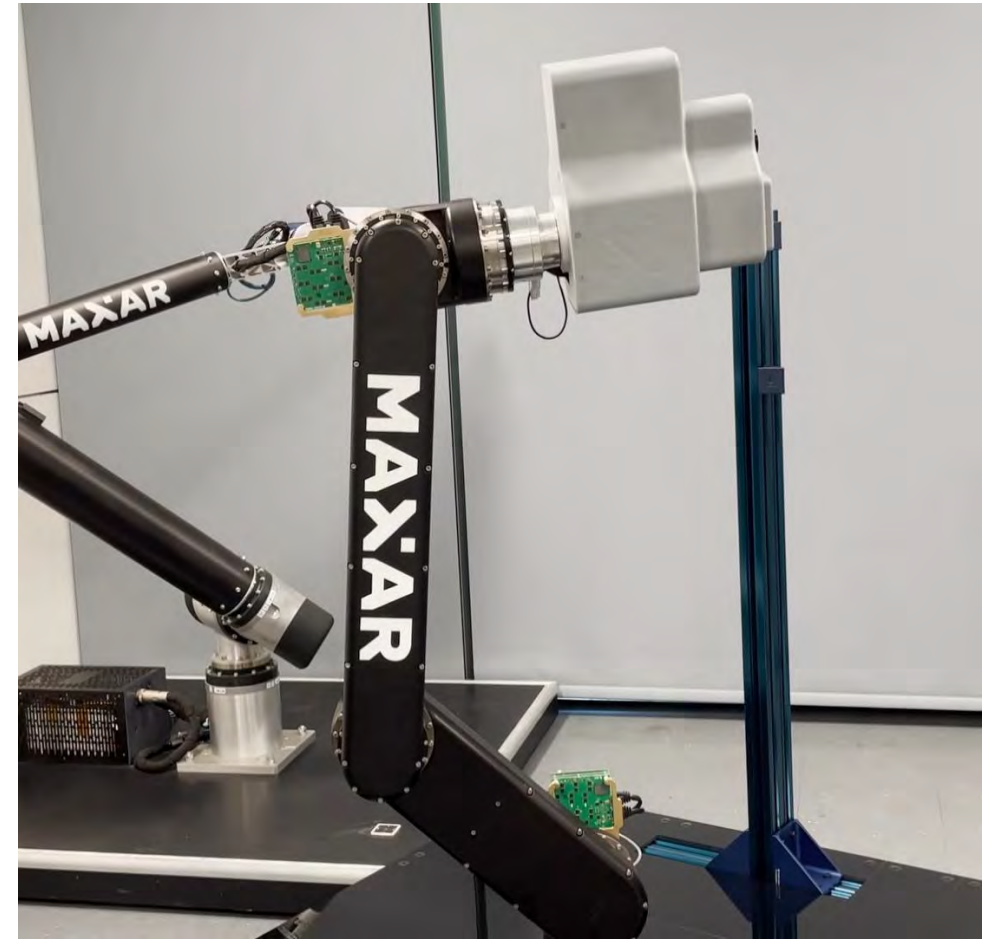
- Ongoing development in light weight, low cost, low power robotics and mobility to support lunar exploration goals
- Next robotic arm on the Moon (SAMPLR)
- Revolutionary Under-Actuated architecture
- Rover Technology Testbed



Rover Technology Testbed
Demonstrating Active Suspension



Under-Actuated Technology Prototype

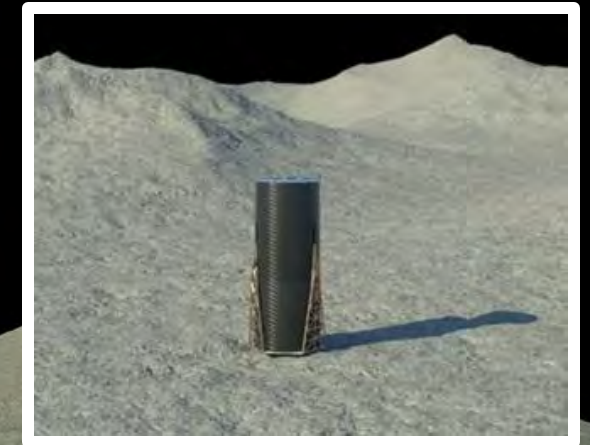


Next Generation Lunar Arm Prototype



SolarHub

- Maxar's SolarHub is an autonomously deployable and relocatable 10 kW lunar surface solar array system
- SolarHub draws upon:
 - Maxar's high-heritage, high-reliability components derived from the commercial communications satellite industry
 - Maxar's dust-tolerant robotic mechanisms working 15+ years on Mars, and flying to the Moon in 2022
 - Innovative technologies including lightweight solar cell, deployable boom, and dust shielding
 - Partnerships with NASA Langley and NASA KSC
- In its vertical solar array blanket configuration, SolarHub is efficient for the low illumination angles near the lunar poles
- The scalable SolarHub system will support the development of the power infrastructure required for a sustained and growing human and robotic presence on the lunar surface



Stowed Configuration

MAXAR

[MAXAR.COM](https://www.maxar.com)