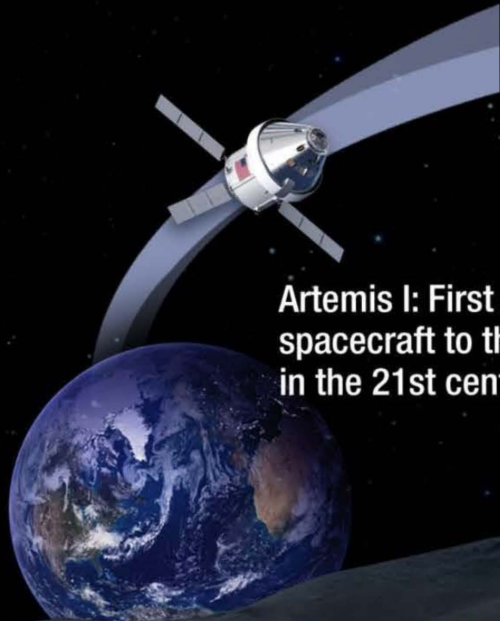


Getting to the Moon with xEMU



Artemis Phase 1: Path to The Lunar Surface



Artemis I: First human spacecraft to the Moon in the 21st century

Commercial Lunar Payload Services

- CLPS-delivered science and technology payloads

Early South Pole Mission(s)

- First robotic landing on eventual human lunar return and In-Situ Resource Utilization (ISRU) site
- First ground truth of polar crater volatiles

Large-Scale Cargo Lander

- Increased capabilities for science and technology payloads

Humans on the Moon - 21st Century

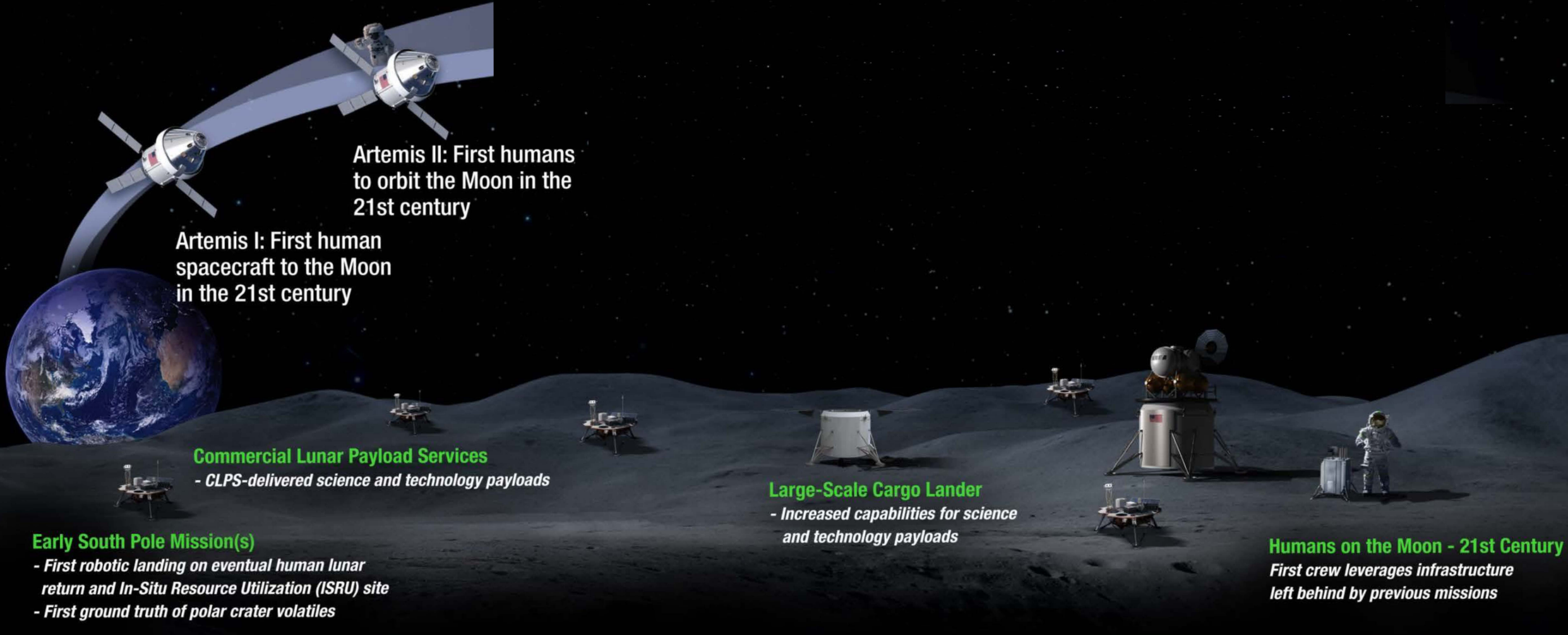
First crew leverages infrastructure left behind by previous missions

LUNAR SOUTH POLE TARGET SITE

2020

2024

Artemis Phase 1: Path to The Lunar Surface

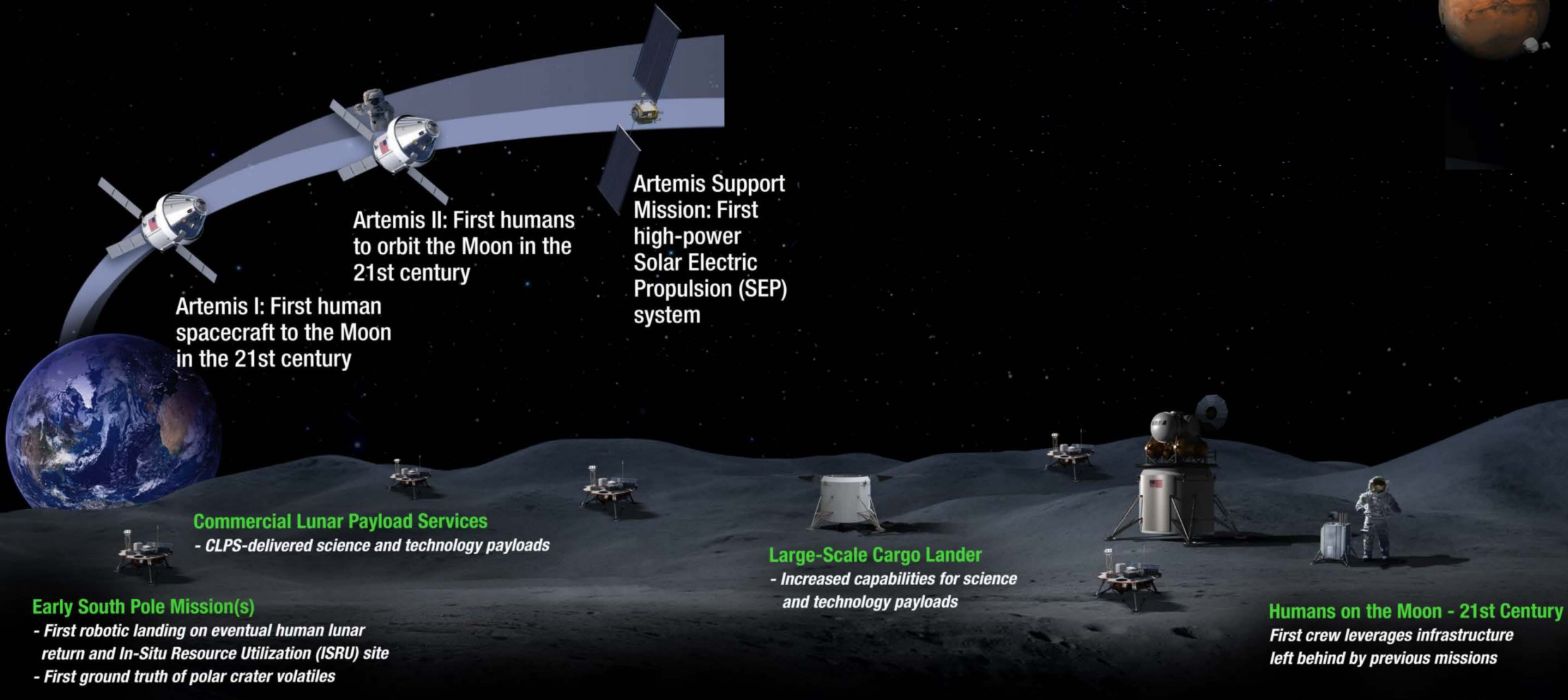


LUNAR SOUTH POLE TARGET SITE

2020

2024

Artemis Phase 1: Path to The Lunar Surface



Artemis I: First human spacecraft to the Moon in the 21st century

Artemis II: First humans to orbit the Moon in the 21st century

Artemis Support Mission: First high-power Solar Electric Propulsion (SEP) system

Commercial Lunar Payload Services
- CLPS-delivered science and technology payloads

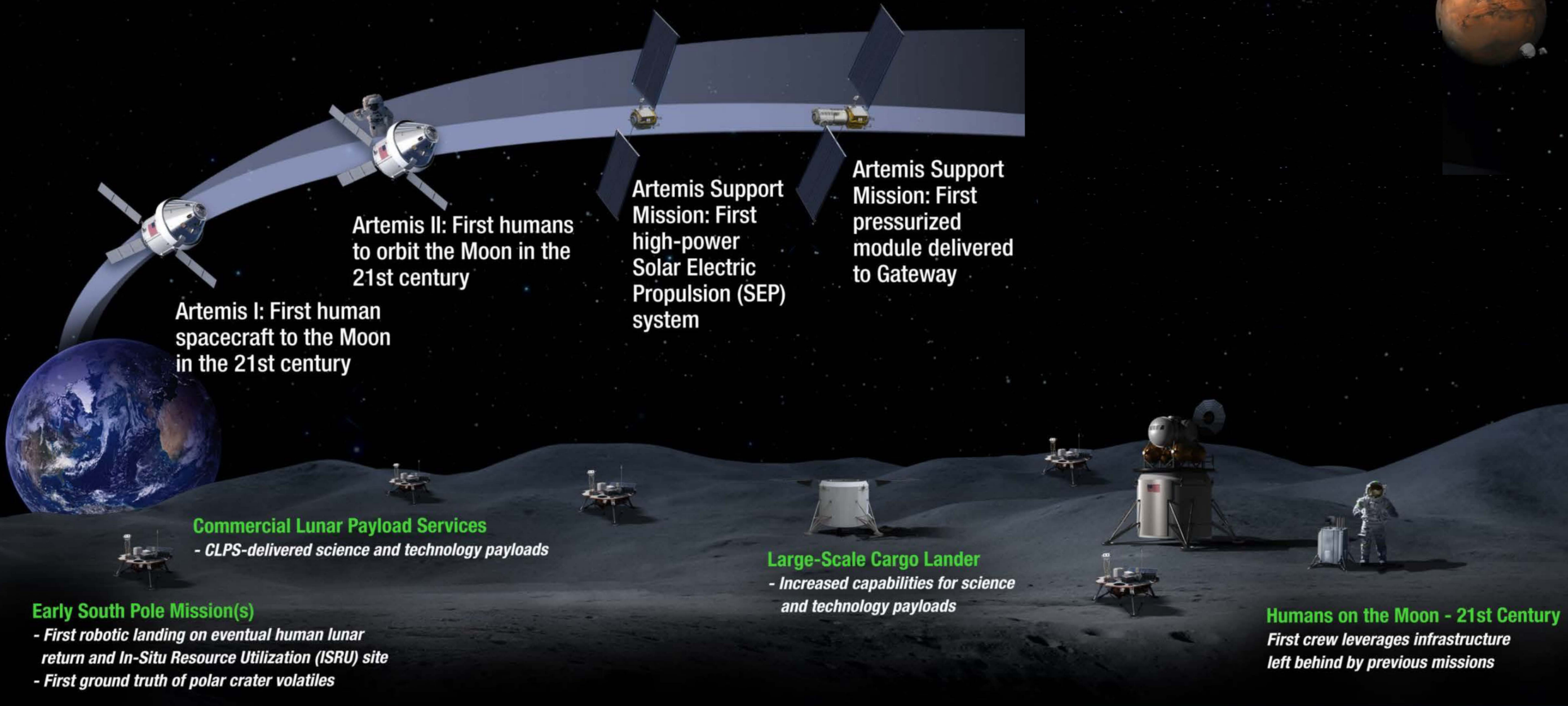
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LUNAR SOUTH POLE TARGET SITE

Artemis Phase 1: Path to The Lunar Surface

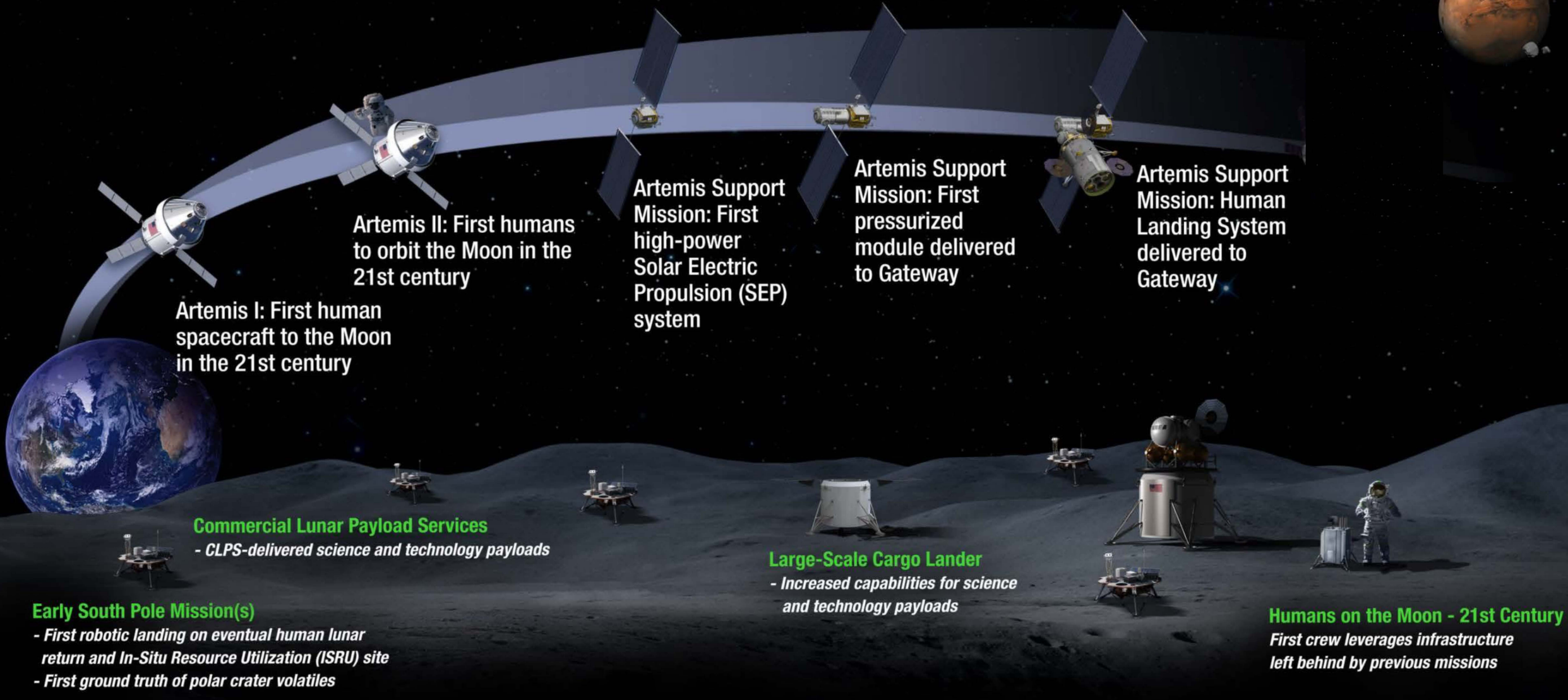


LUNAR SOUTH POLE TARGET SITE

2020

2024

Artemis Phase 1: Path to The Lunar Surface

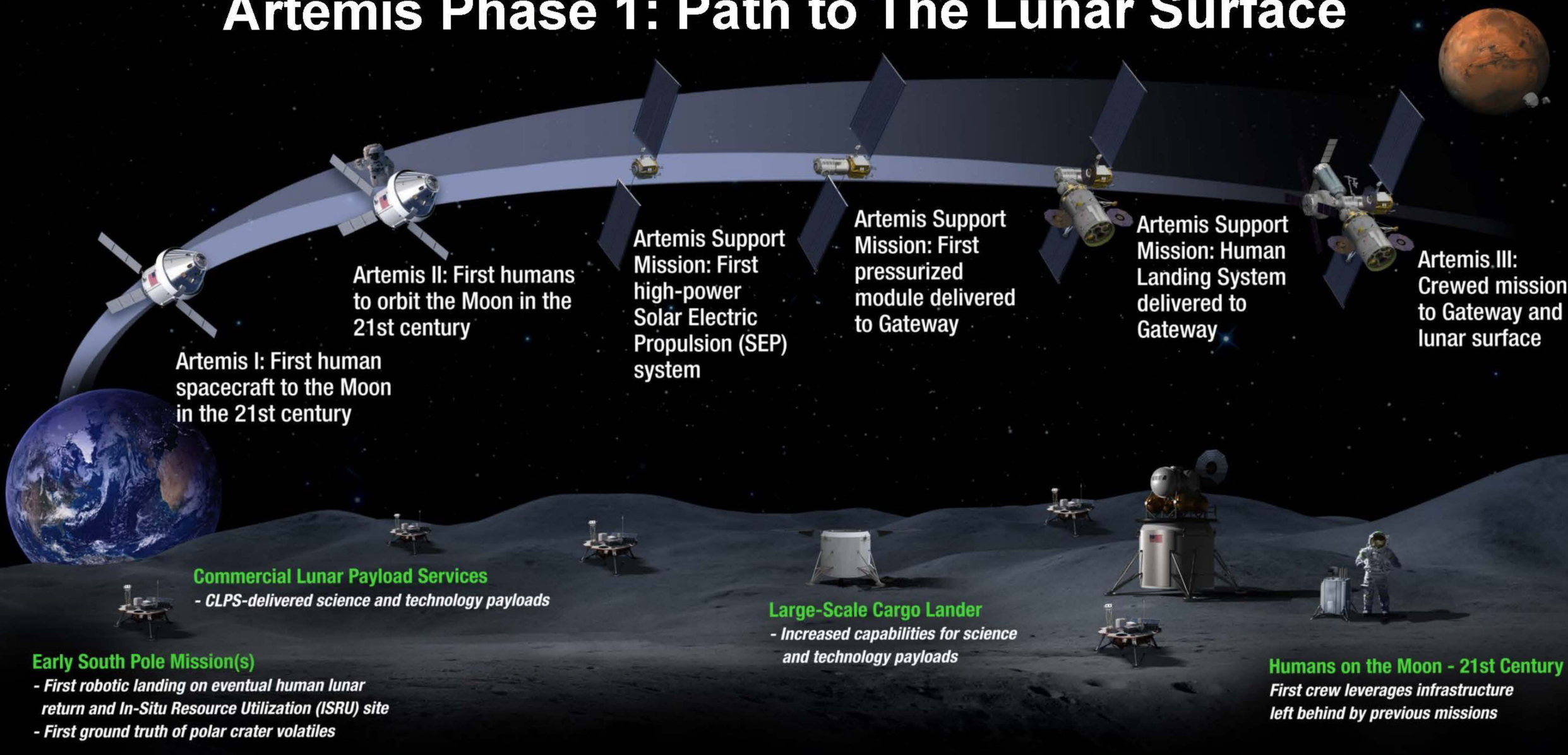


LUNAR SOUTH POLE TARGET SITE

2020

2024

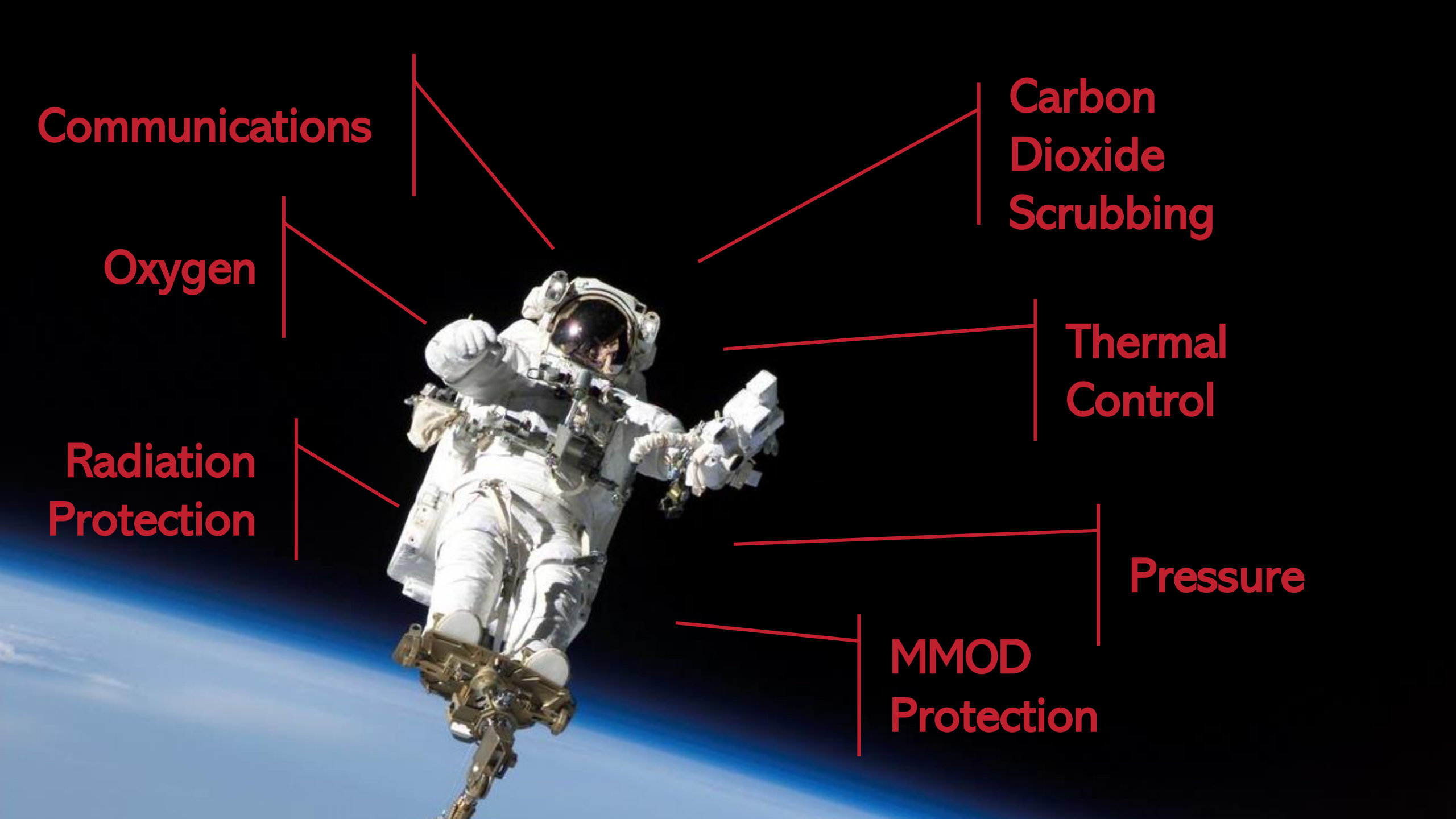
Artemis Phase 1: Path to The Lunar Surface



LUNAR SOUTH POLE TARGET SITE

2020

2024



Communications

**Carbon
Dioxide
Scrubbing**

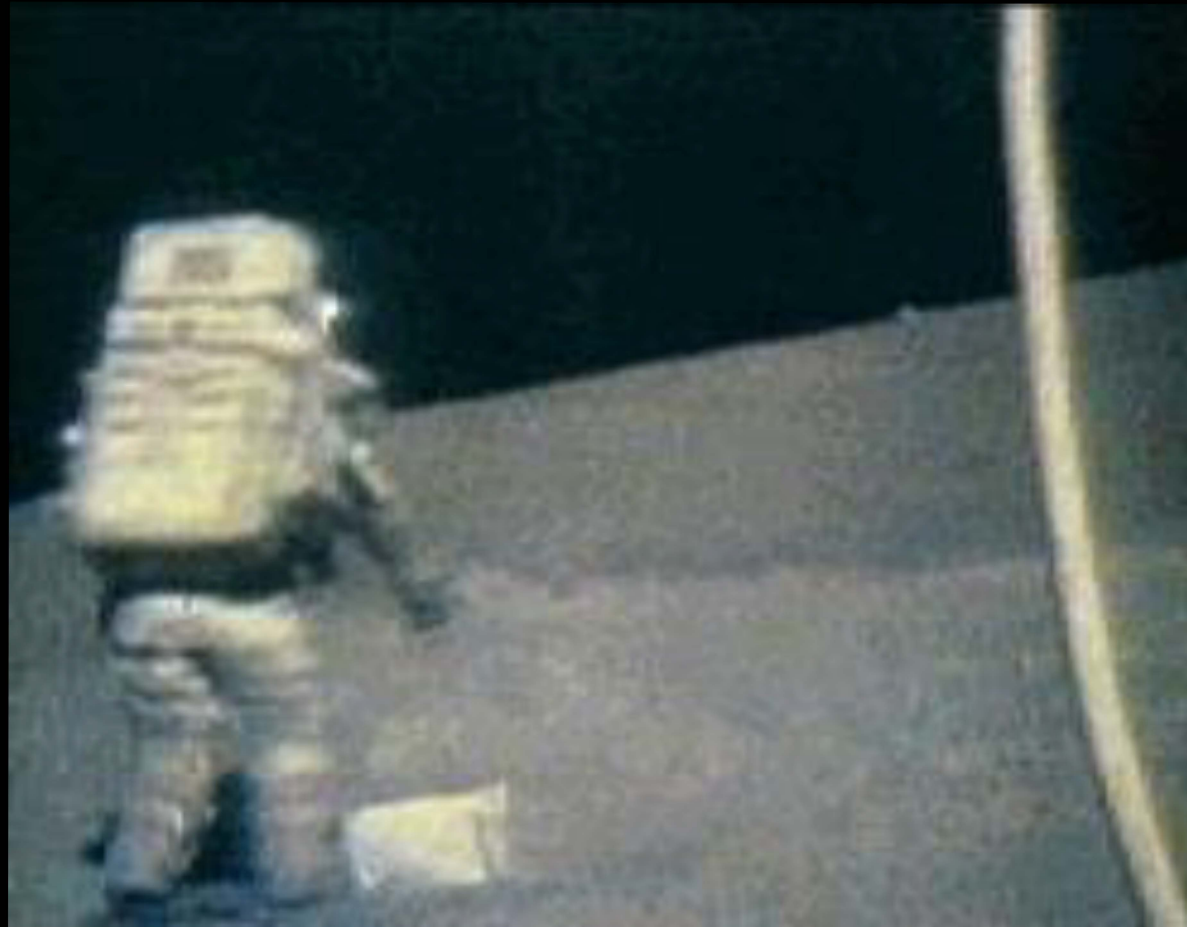
Oxygen

**Thermal
Control**

**Radiation
Protection**

Pressure

**MMOD
Protection**



EXPLORATION EXTRAVEHICULAR MOBILITY UNIT (xEMU)

National Aeronautics and
Space Administration



- High Speed Data Comm.
- HD Video and Lights
- Informatics Display and Control**
- Integrated Communications (No Snoopy Cap)
- Automated Suit Checkout
- Enhanced Upper Mobility**
- Environment Protection Garment (EPG) w/Dust Mitigation
- Planetary Mobility**



- 4.3 – 8.2 psi Variable Pressure
- 1 Hr. Emergency Return
- Vacuum Regenerative CO2 Removal System**
- Membrane Evaporation Cooling**
- Modular/ORU PLSS Design
- Rear Entry Ingress/Egress**

The xEMU is the spacesuit that will be worn by the first woman and next man to walk on the Moon. The new generation of technologies and capabilities incorporated into this spacesuit enable spacewalks (EVAs) in deep space, on the lunar surface, and on Mars.

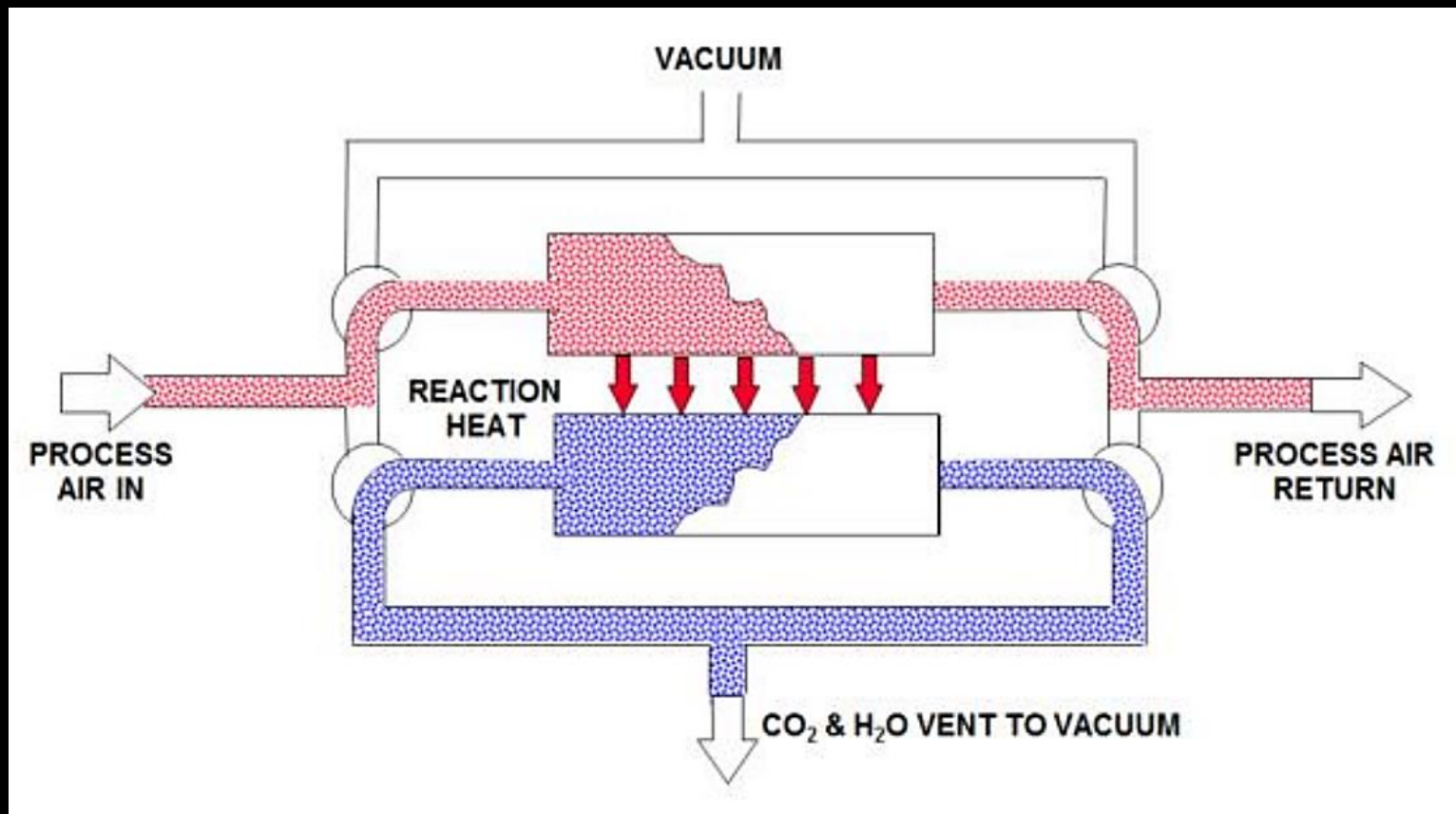


Space Suit
TIME

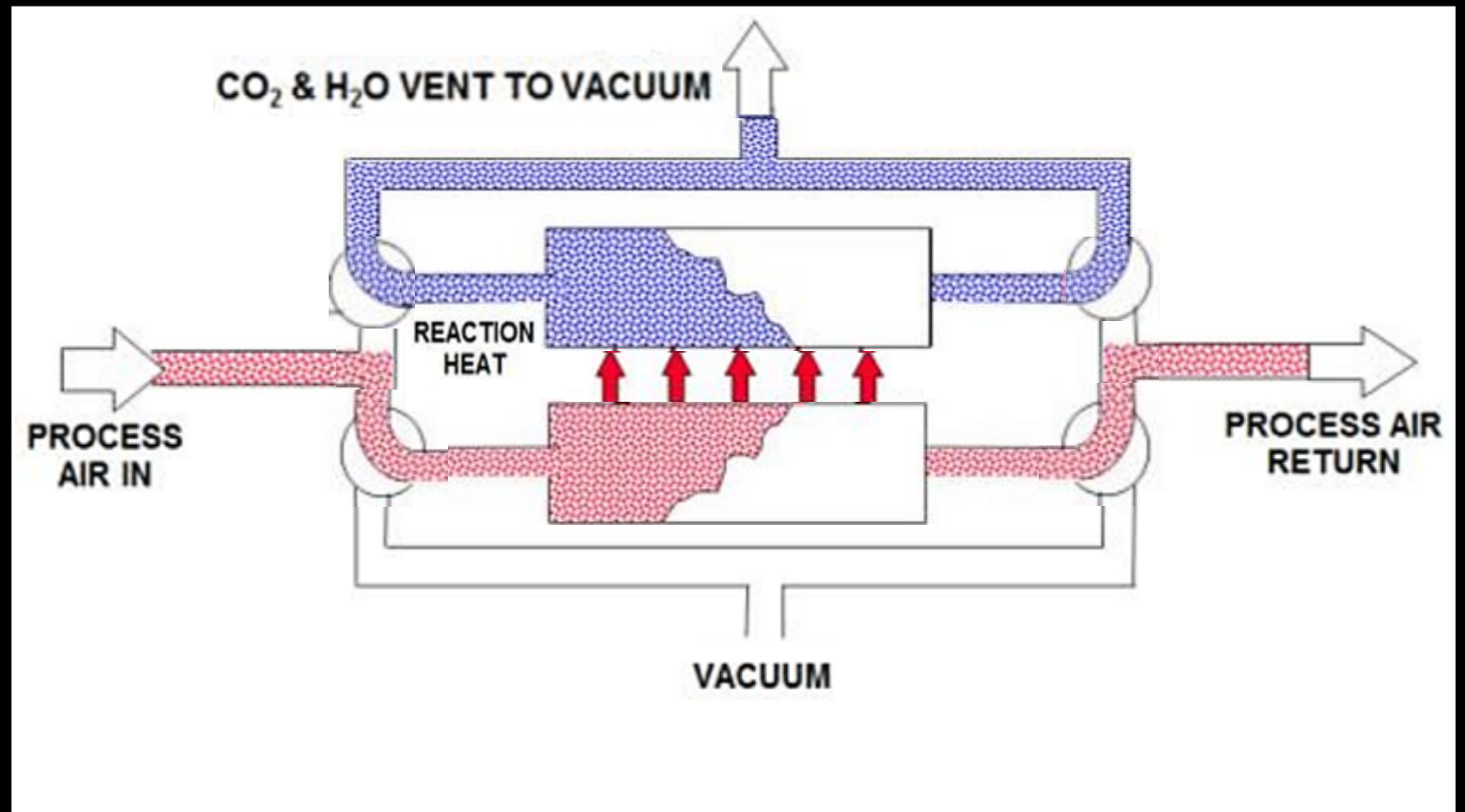




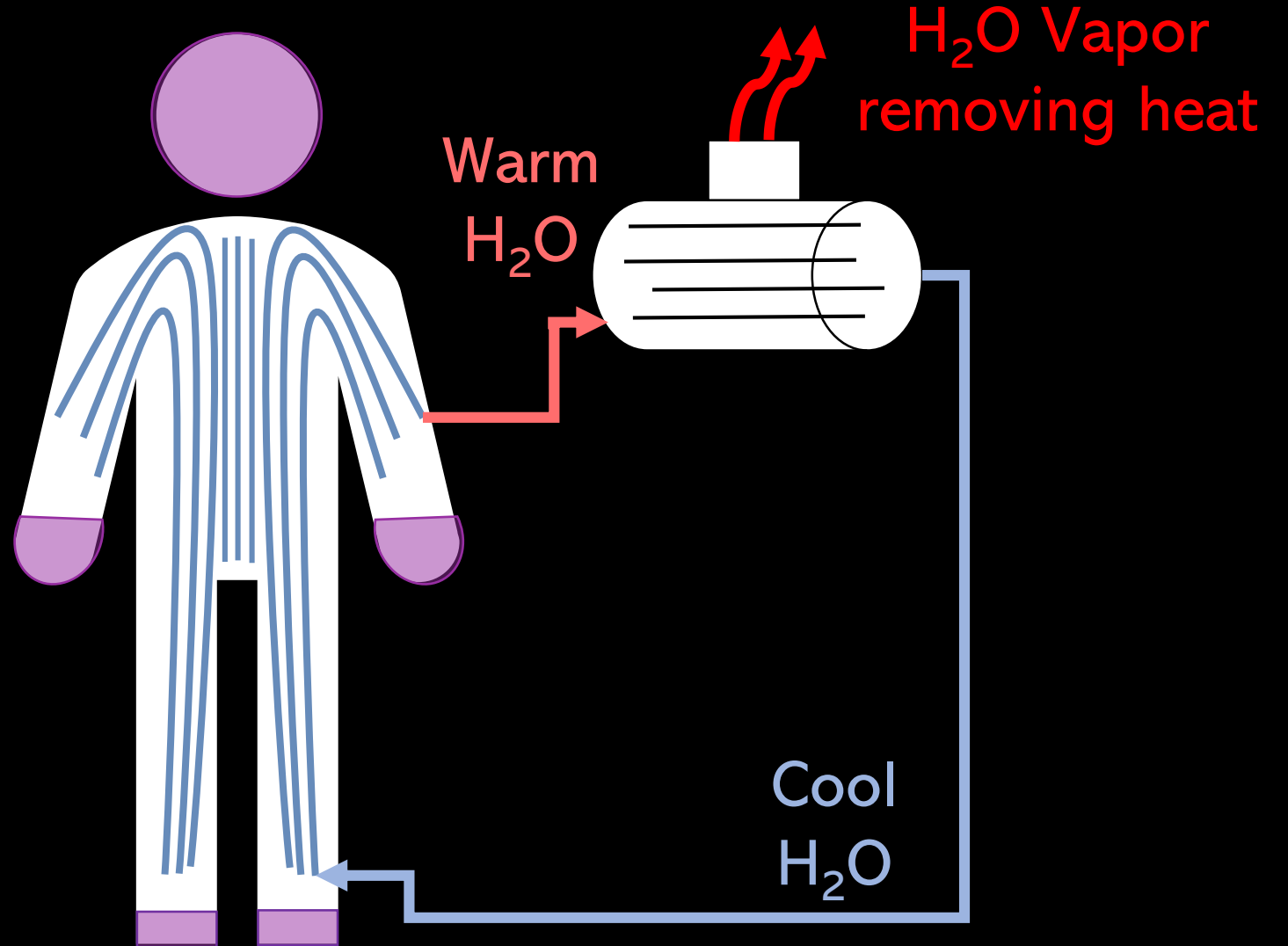
Rapid Cycle Amine (RCA) Bed



Rapid Cycle Amine (RCA) Bed



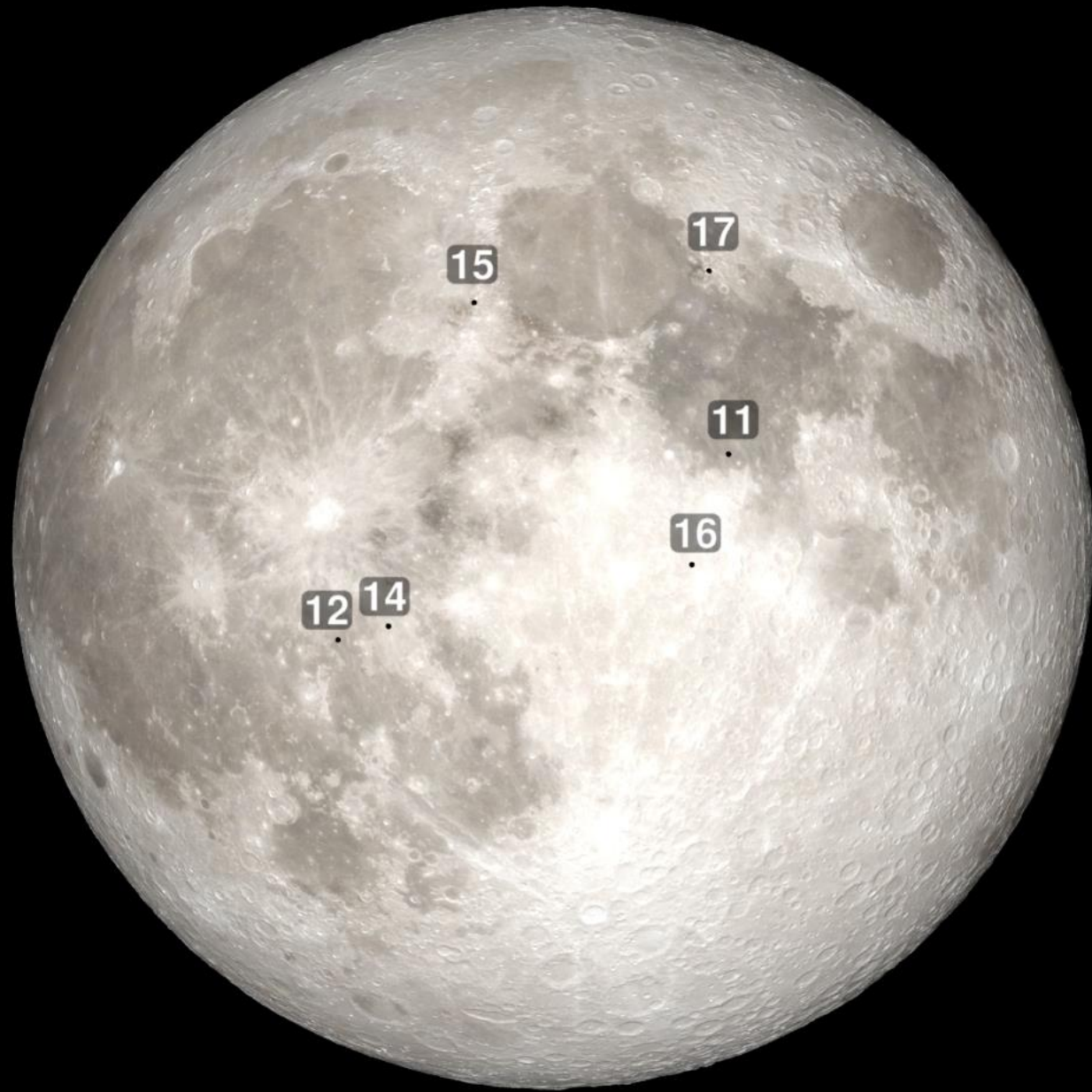
Spacesuit Water Membrane Evaporator (SWME)











15

17

11

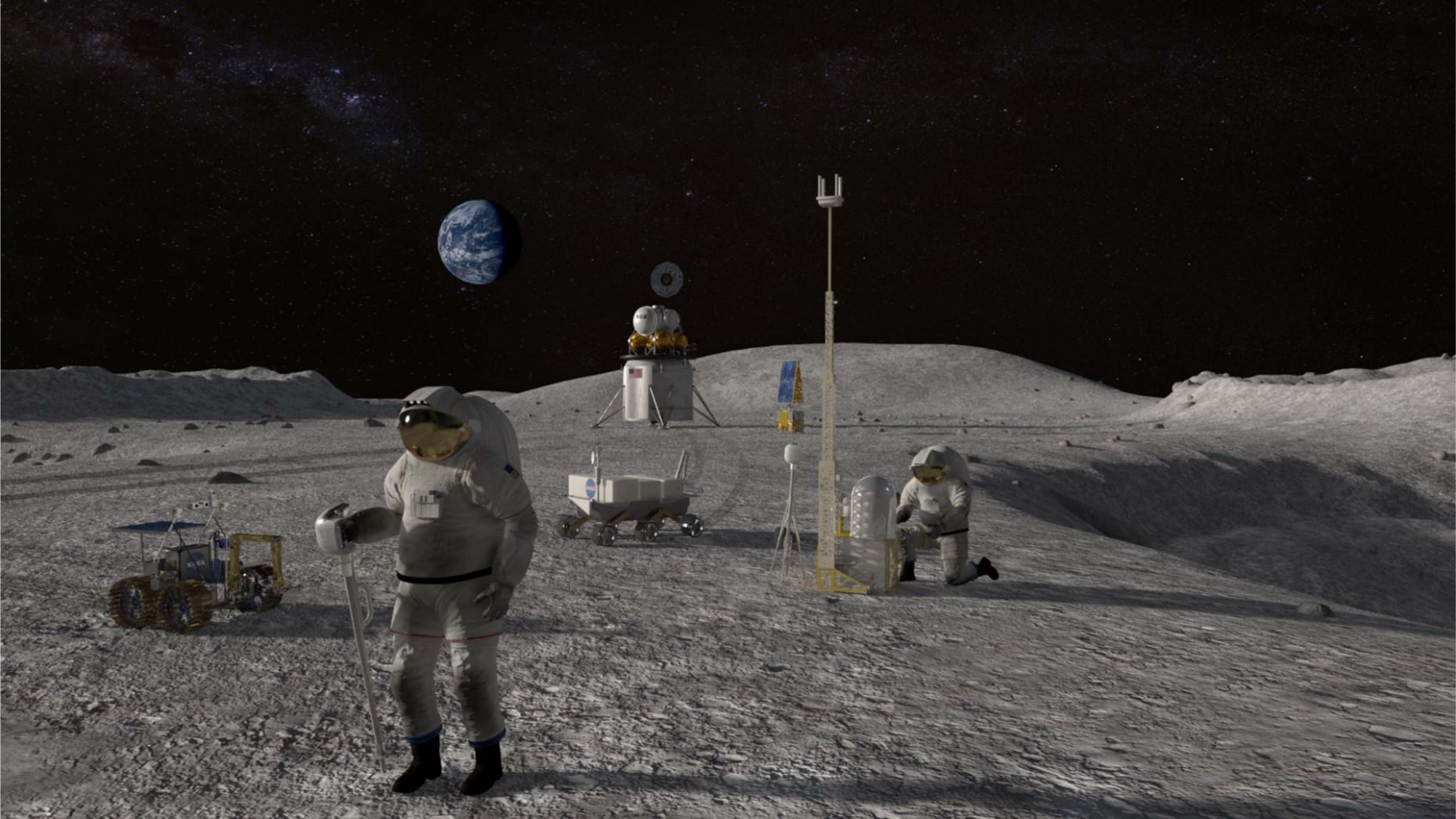
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12

14







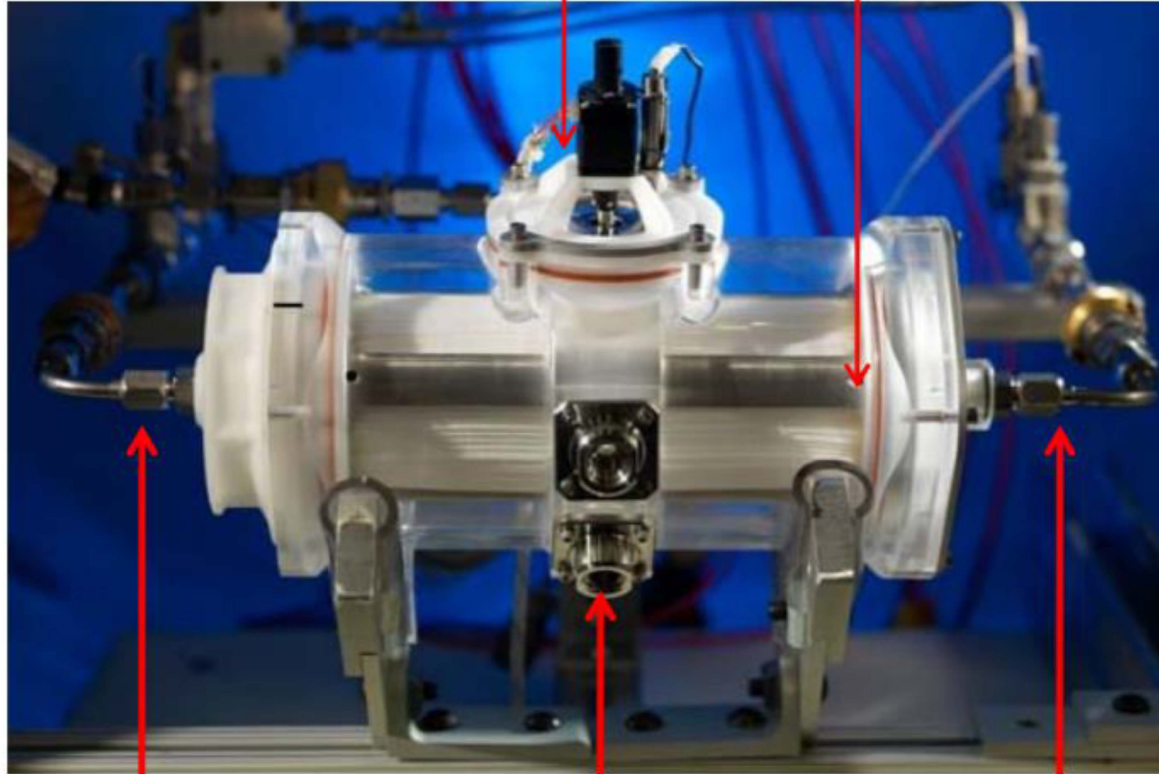
Backup Slides

Back Pressure

Valve

Cage

**Valve
Position
Sensor**

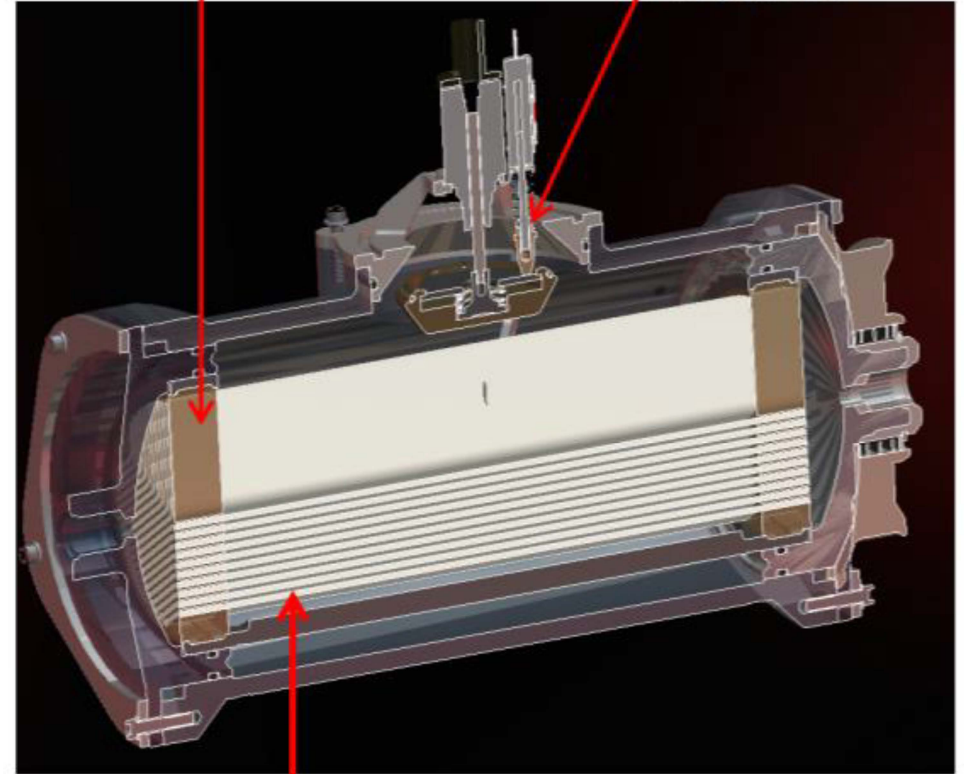


**Water Inlet
(warm water
from LCVG)**

**Instrumentation
Ports**

**Water
Outlet
(cool water
to LCVG)**

**Polyurethane
Plug**



**Hollow
Fibers**