National Aeronautics and Space Administration

11th NASA Space Exploration & Space Weather Workshop

ARTEMIS

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Crew Health and Safety is a customer…

…a greedy customer

…may I have more Sir?

More What?

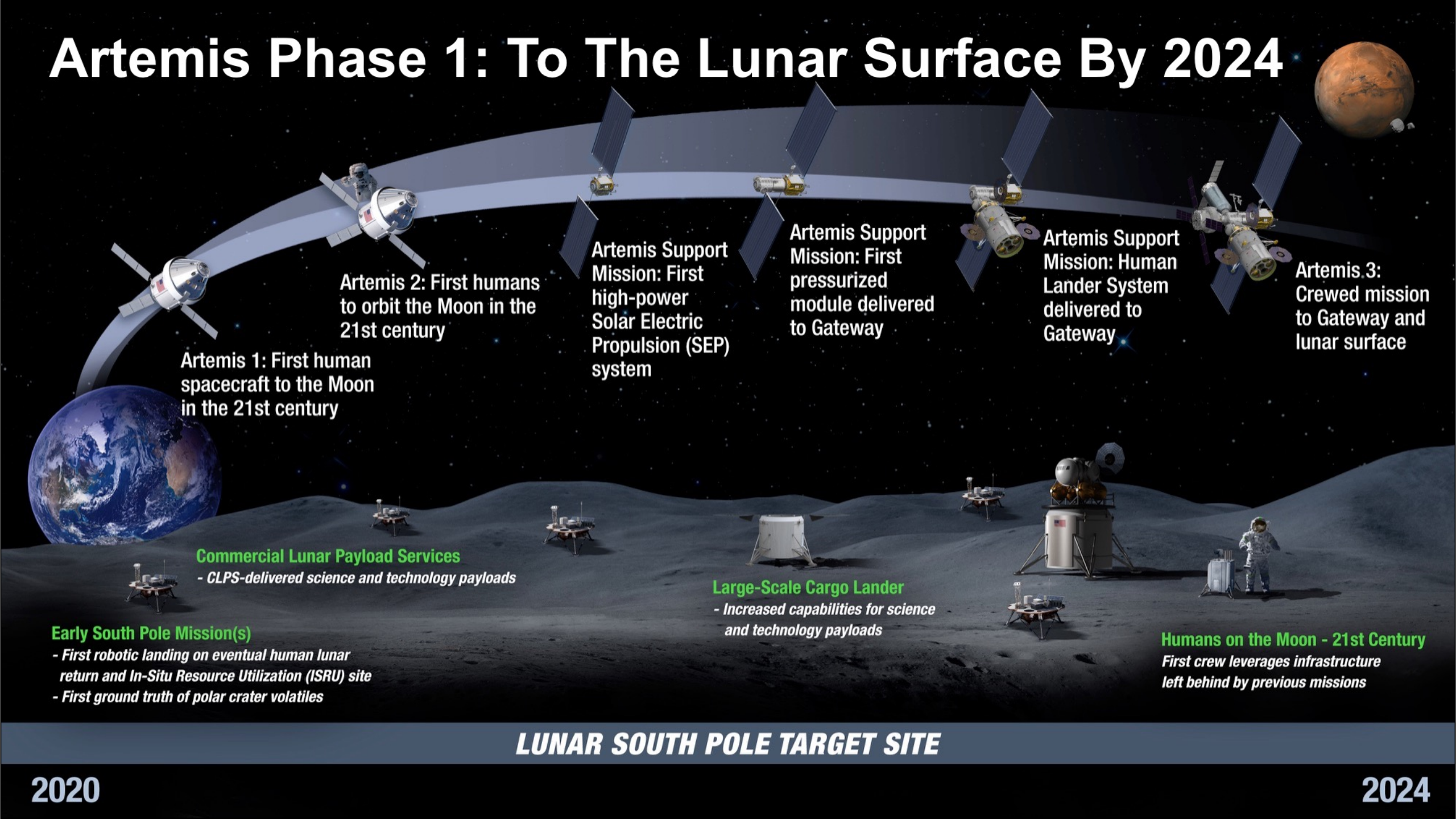
- Spacecraft
- Monitoring
- Forecasting
- Modeling
- Shielding
- Pharmaceuticals
- Faster transportation
- *Infinite supply of money*
- *OR, all this with the same amount of money*

The NASA Charge to the Moon

Land the first American woman and next American man on the Moon by 2024; sustained presence on and around the Moon by 2028

“Use all means necessary” to ensure mission success

Artemis Phase 1: To The Lunar Surface By 2024



LOW EARTH RETURN

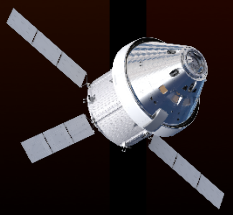
250 MILES
3 HOURS
17,500 MPH
3,000°F

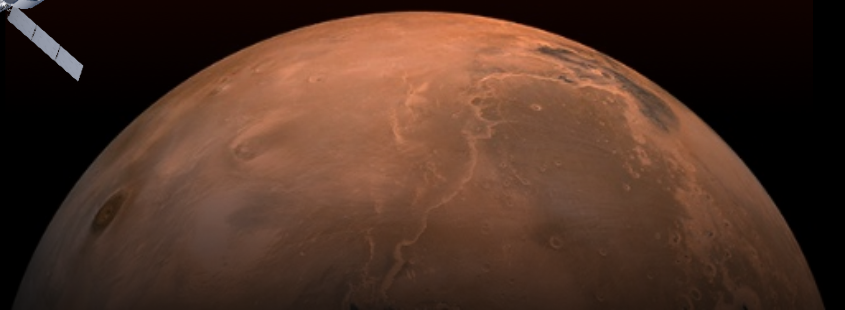
LUNAR RETURN

240,000 MILES
3 DAYS
24,700 MPH
5,200°F

MARS RETURN

39,000,000 MILES
9 MONTHS
26,800 MPH
6,200°F





The Power of SLS and Orion

ORION

The only spacecraft capable of carrying and sustaining crew on missions to deep space, providing emergency abort capability, and safe re-entry from lunar return velocities

SLS

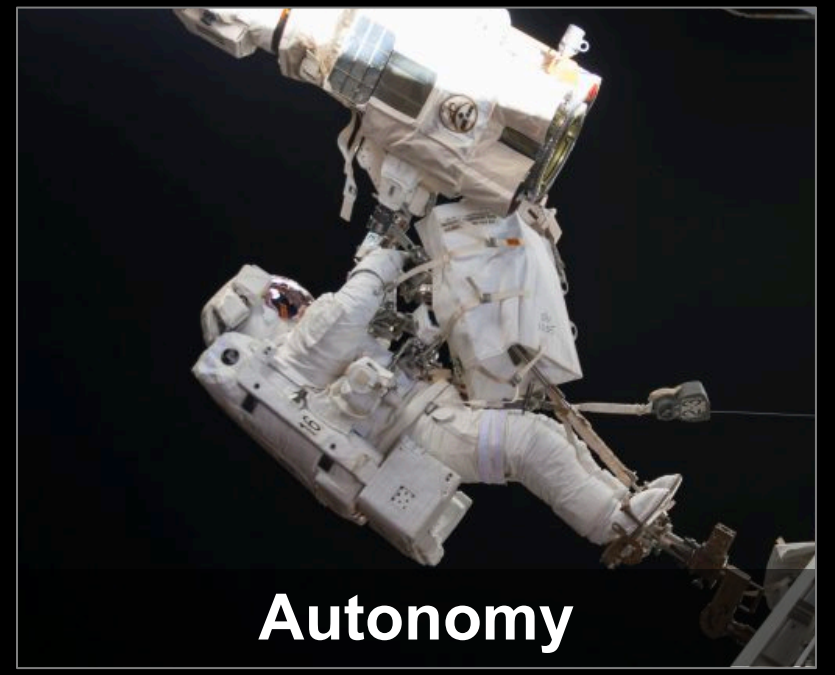
The only rocket with the power and capability required to carry astronauts to deep space onboard the Orion spacecraft

NATIONAL CAPABILITY

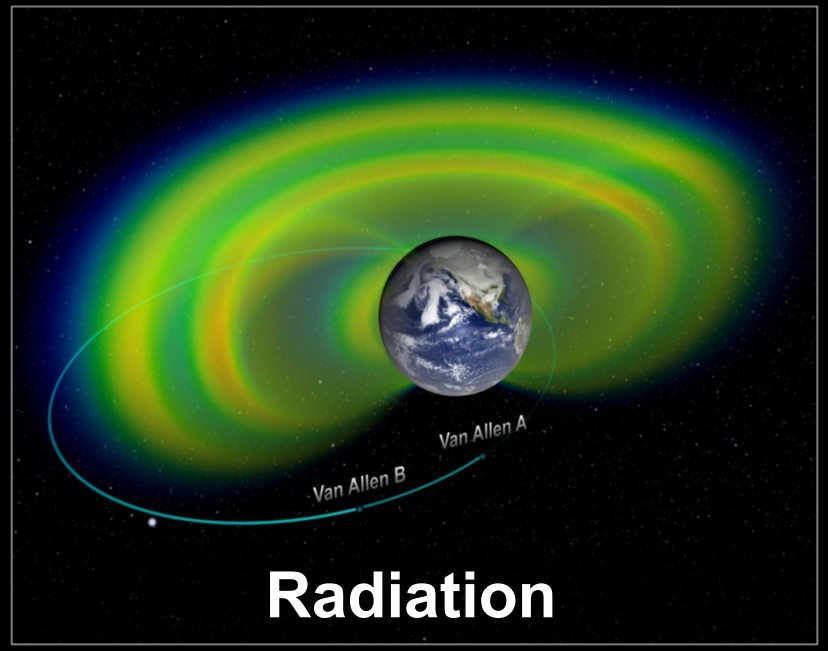
The SLS and Orion programs (including Exploration Ground Systems support at Kennedy Space Center) leverages over 3,800 suppliers and over 60,000 workers across all 50 states

Launch

Reentry & Recovery


Autonomy

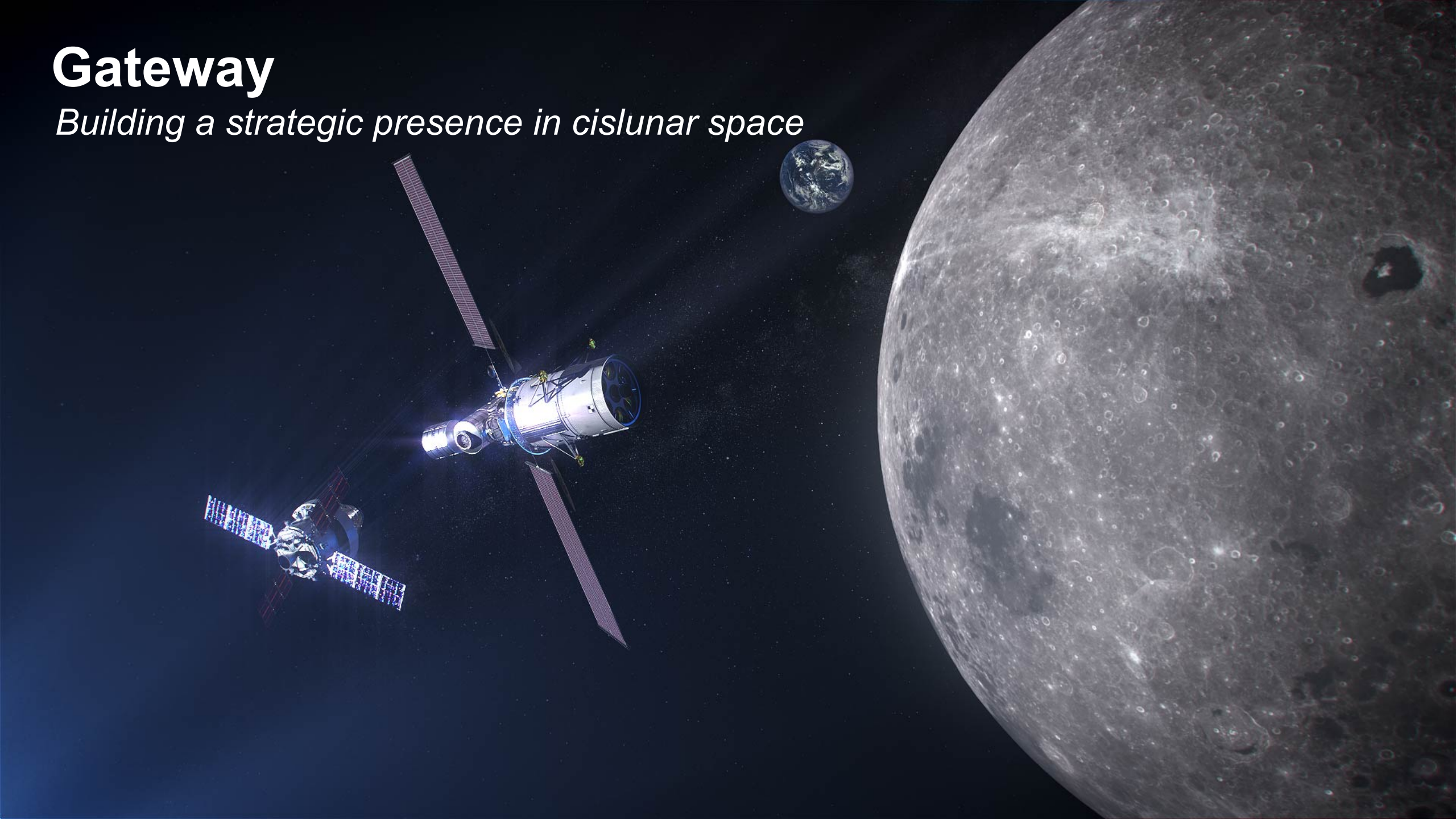
Communications


Van Allen A
Van Allen B
Radiation

Human Health

Gateway

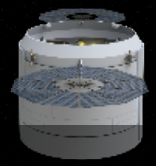
Building a strategic presence in cislunar space



Human Landing System

Providing crew access to the lunar surface

HLS Notional Transportation Elements

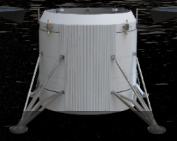


Transfer

+

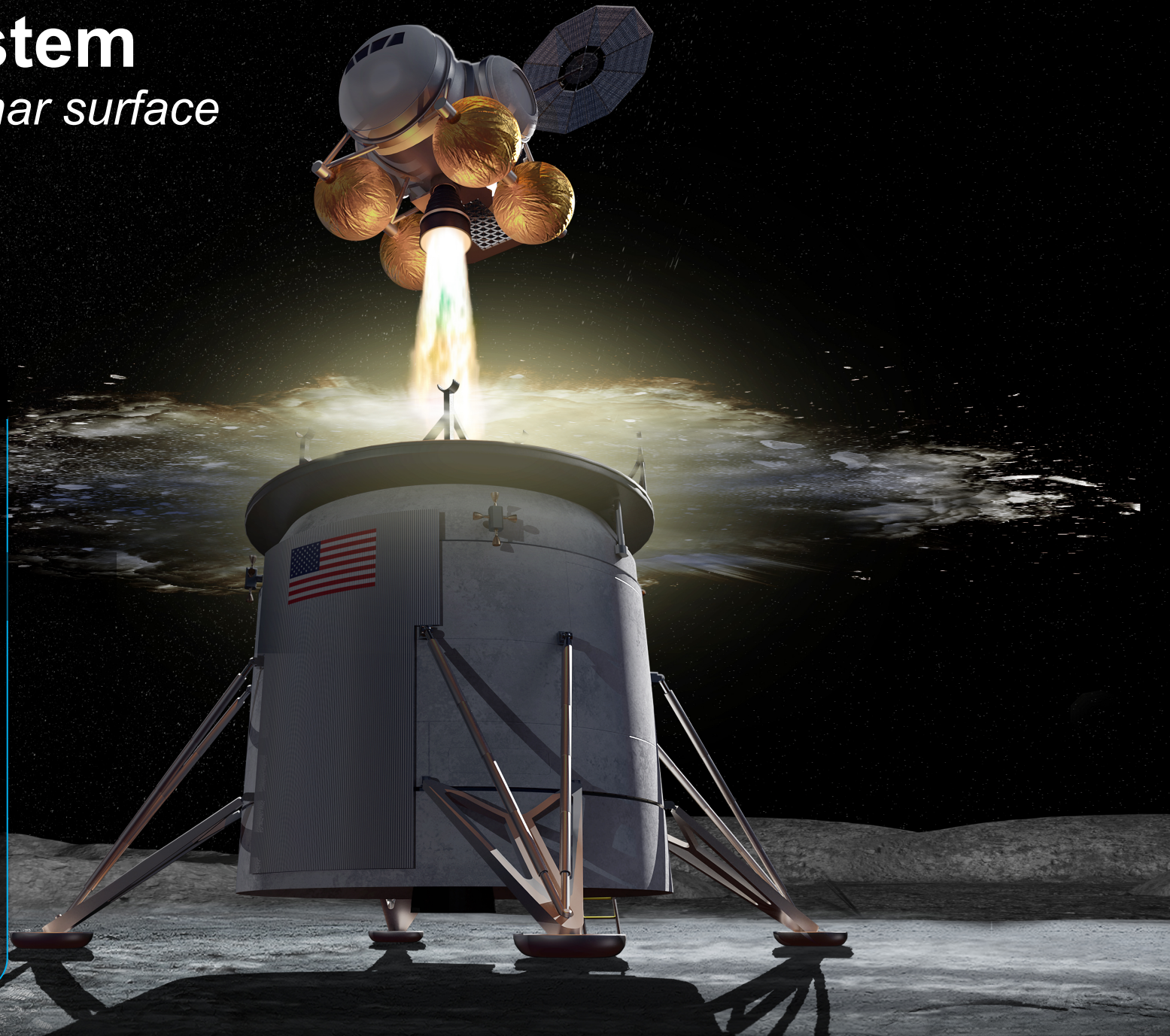
Ascent

+



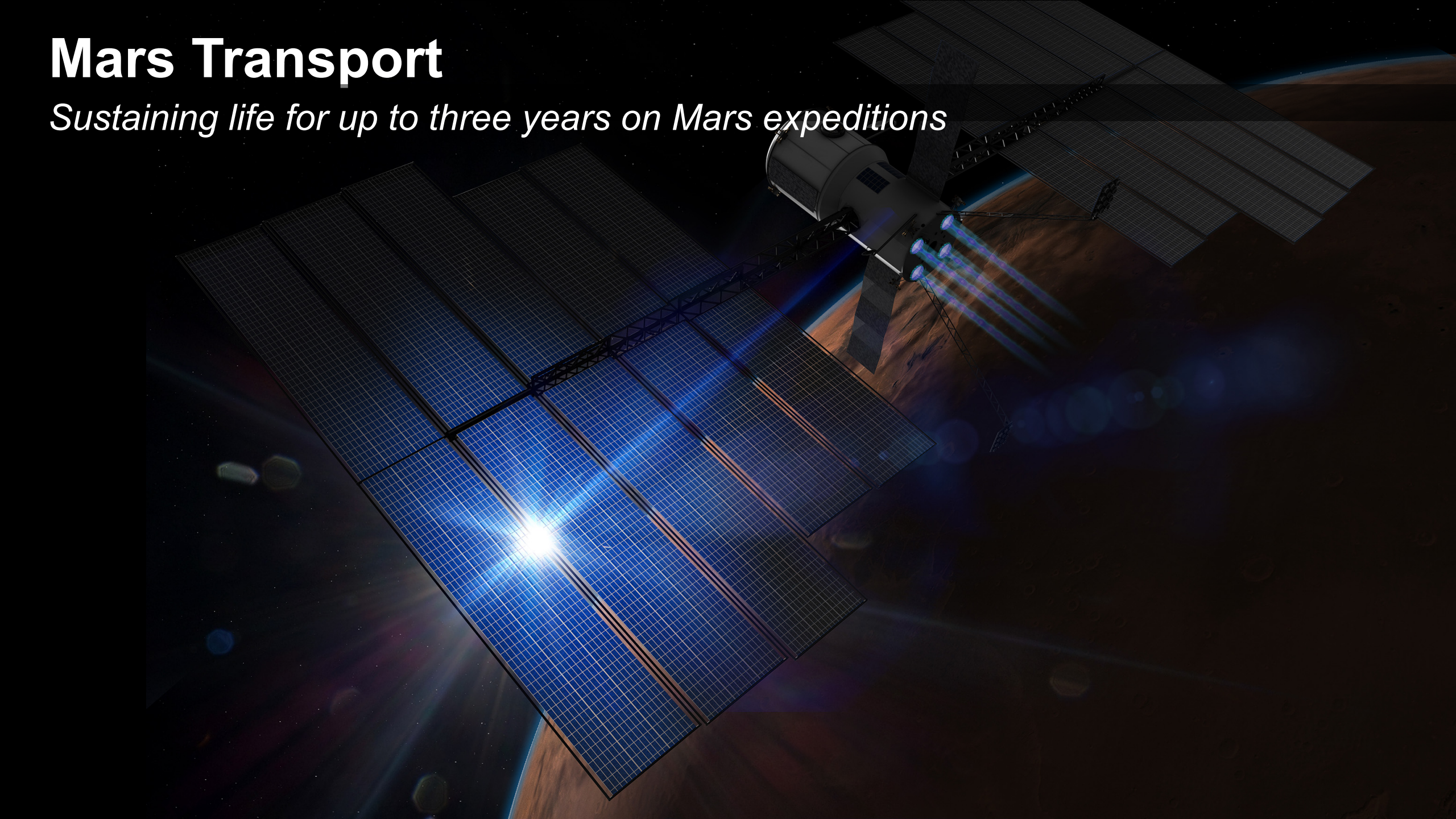
Descent

Aggregate at Gateway



Mars Transport

Sustaining life for up to three years on Mars expeditions



LONE STAR

JIM BUCHLI
Kennedy Space Center
VISITOR COMPLEX

QUESTIONS?