National Aeronautics and Space Administration

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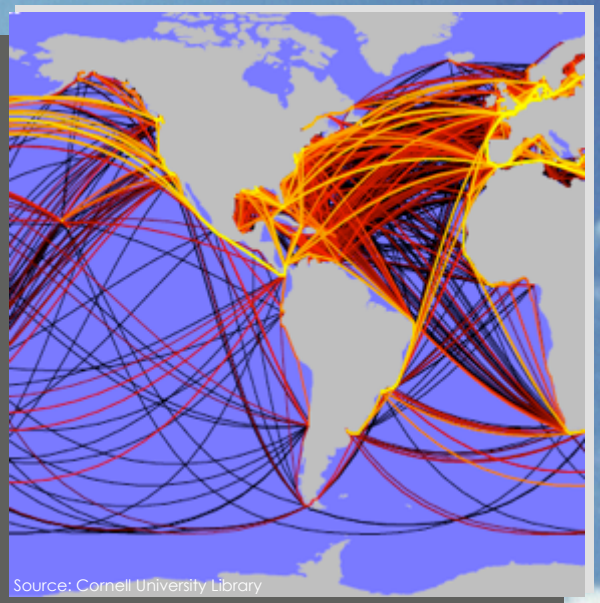
SPACE LAUNCH SYSTEM

A TRANSFORMATIVE CAPABILITY FOR SPACE EXPLORATION

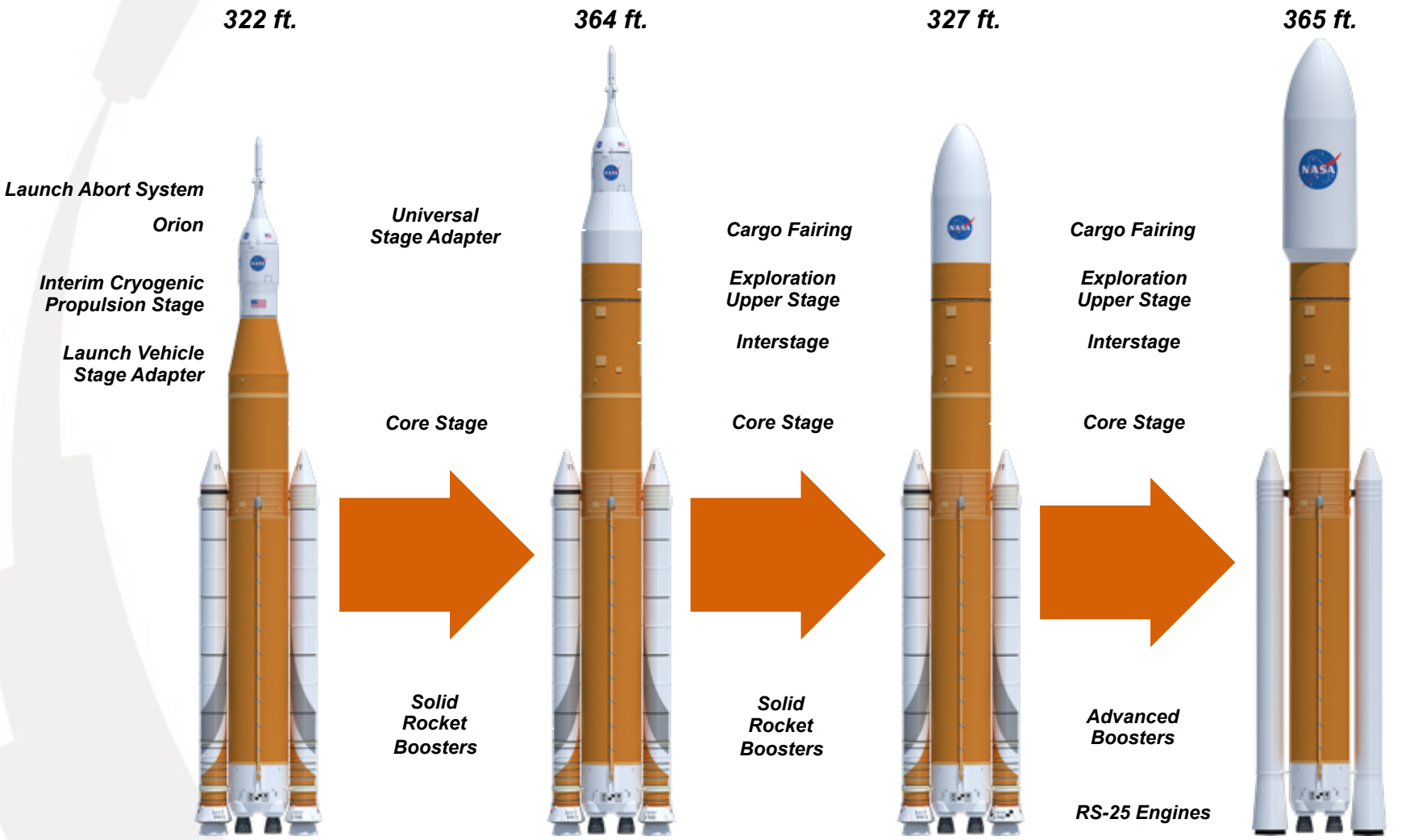
Dr. Kimberly F. Robinson
Strategic Communications Manager

THE STORY SO FAR



REINVENTING ORBIT

AN EVOLUTIONARY CAPABILITY



PROGRESS TOWARD FIRST LAUNCH


Core stage production

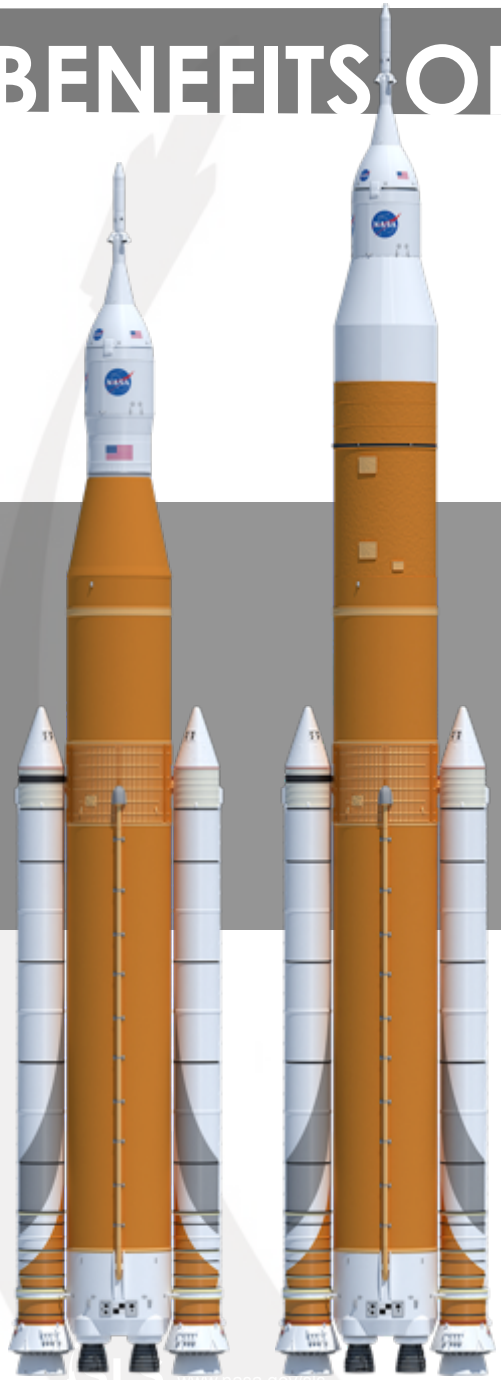

Engine testing


Second stage testing

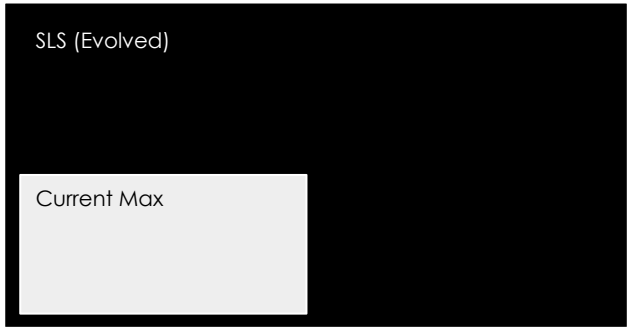

Stage adapter welding


Booster testing

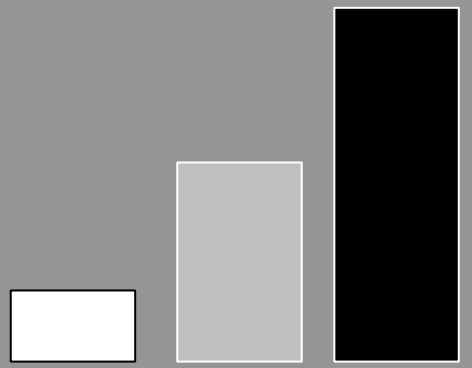
BENEFITS OF SLS



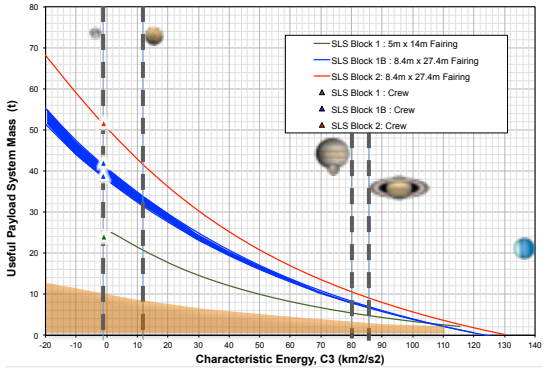
VOLUME



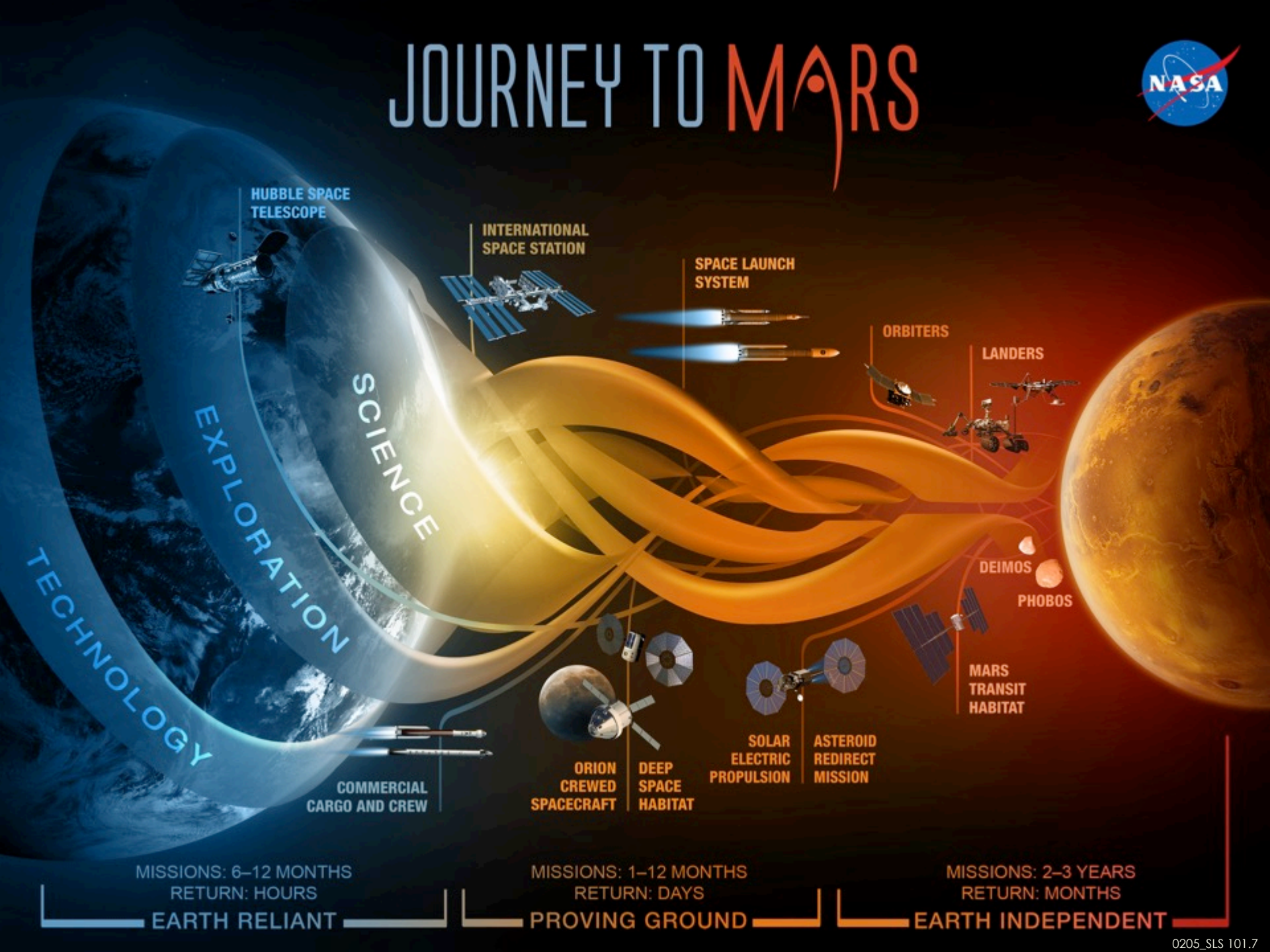
MASS



C3



JOURNEY TO MARS



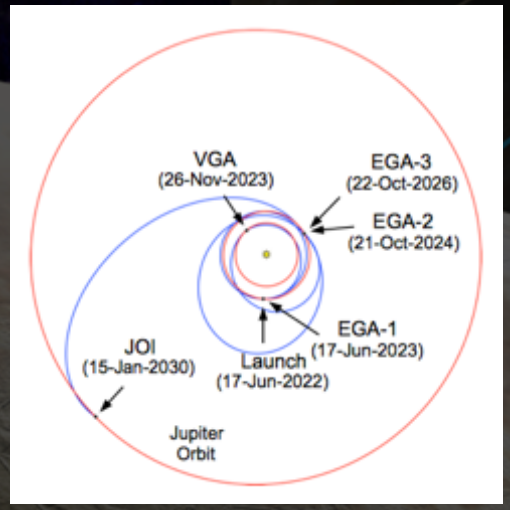
MISSIONS: 6–12 MONTHS
RETURN: HOURS
EARTH RELIANT

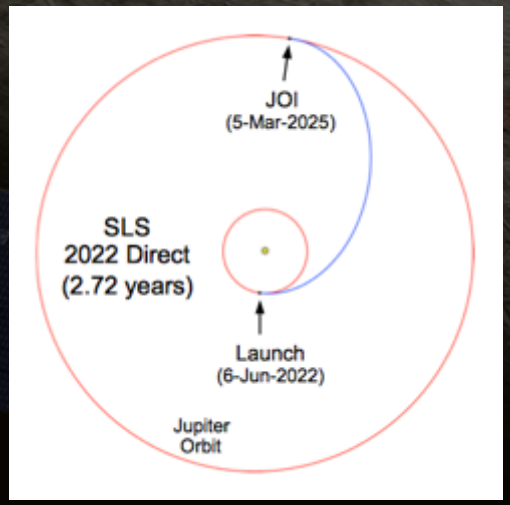
MISSIONS: 1–12 MONTHS
RETURN: DAYS
PROVING GROUND

MISSIONS: 2–3 YEARS
RETURN: MONTHS
EARTH INDEPENDENT

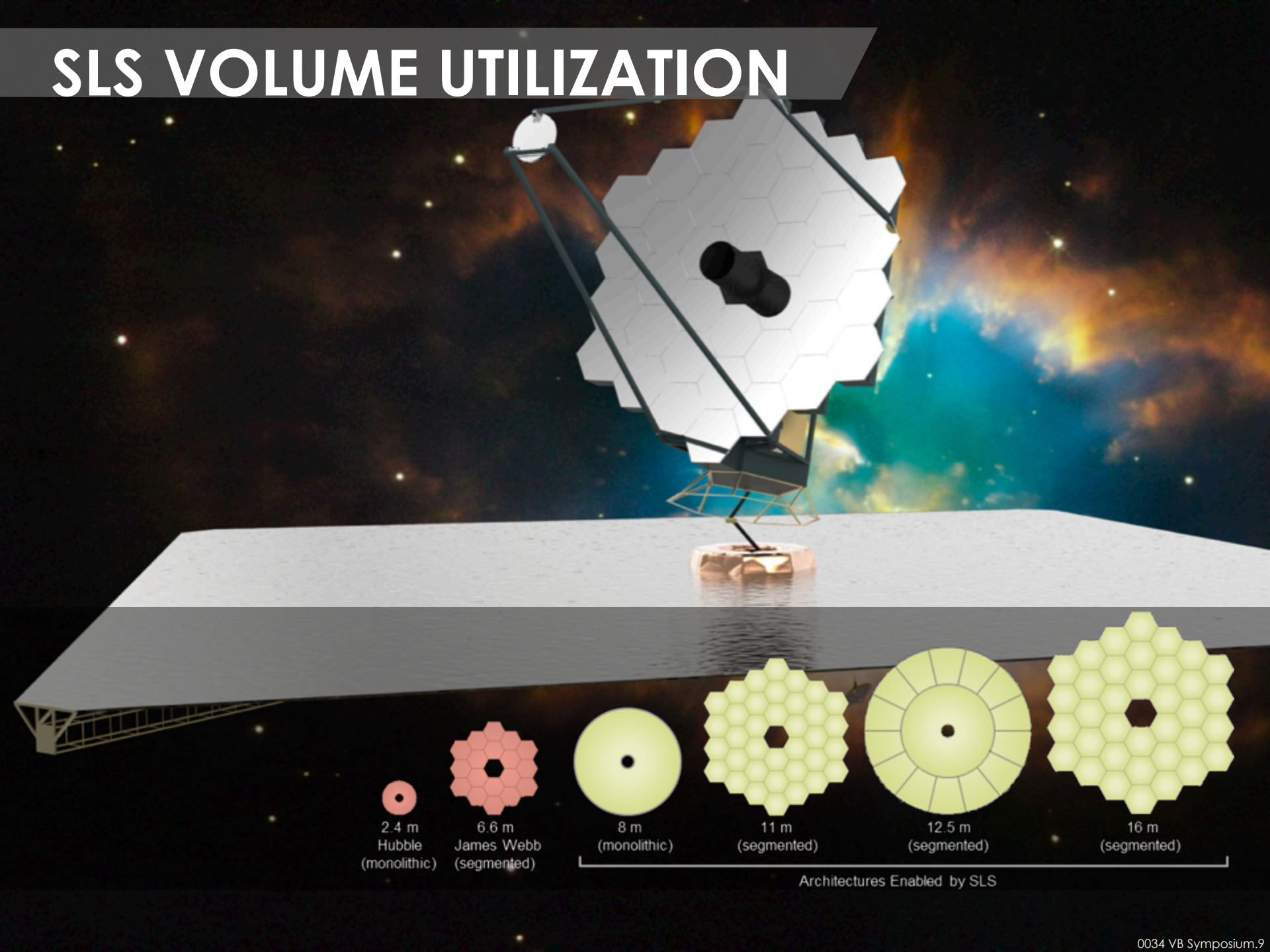
0205_SLS 101.7

SLS C3 UTILIZATION

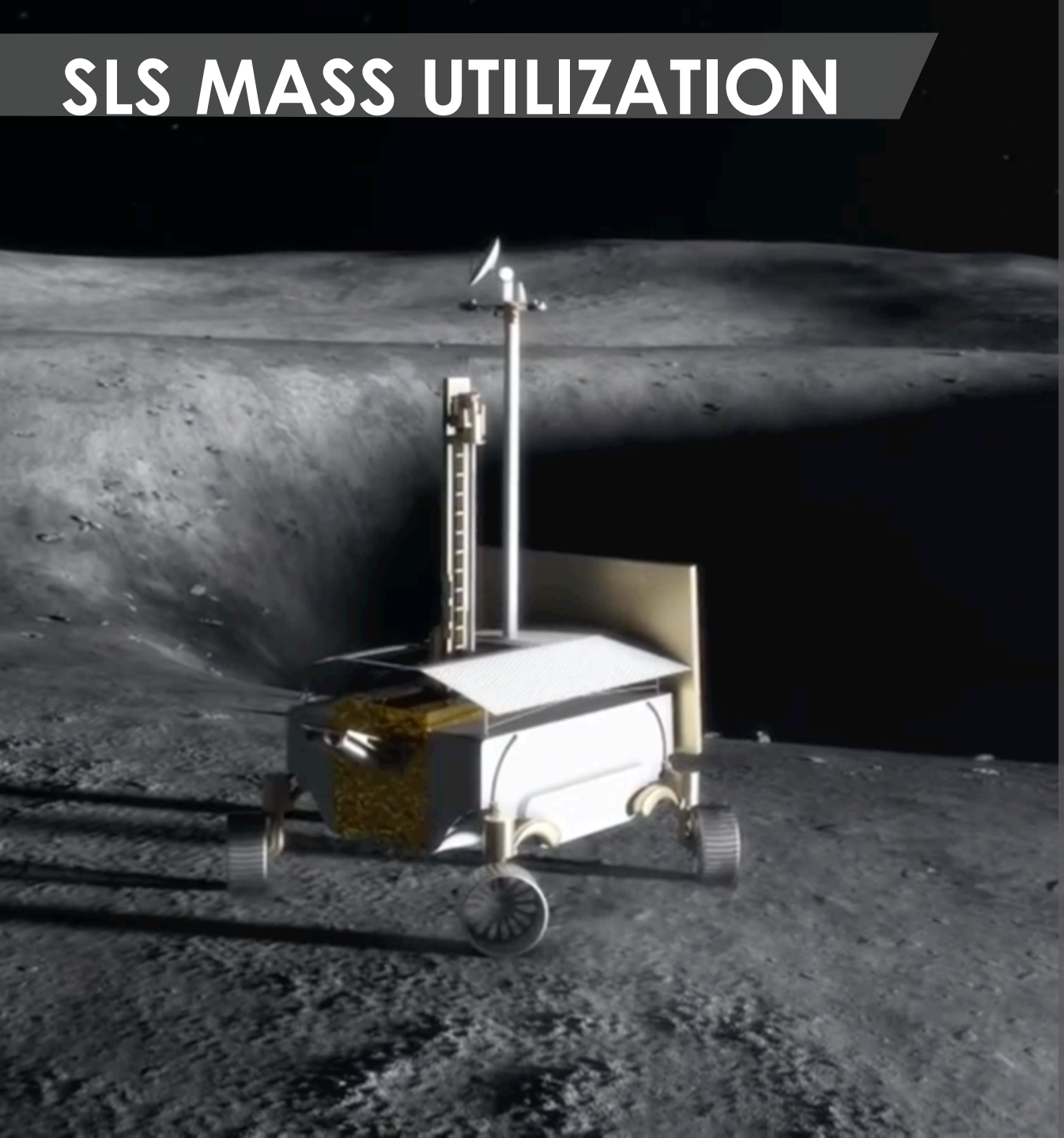




SLS VOLUME UTILIZATION



SLS MASS UTILIZATION



SLS SMALLSAT UTILIZATION

Along with Orion, the first SLS launch will carry 13 6U smallsats, representing multiple disciplines and partners. The smallsats will be deployed from the Orion Stage Adapter.

SUN

- CuSP (Southwest Research Institute)

MOON

- Lunar Flashlight (NASA)
- Lunar IceCube (Morehead State University)
- LunaH-Map (Arizona State University)
- Omotenashi (JAXA)

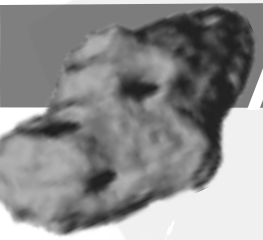
EARTH

- EQUULEUS (JAXA)
- Skyfire (Lockheed Martin)

AND BEYOND

- Biosentinel (NASA)
- ArgoMoon (ESA/ASI)
- Three Centennial Challenge Winners (TBD)

ASTEROID



- NEA Scout (NASA)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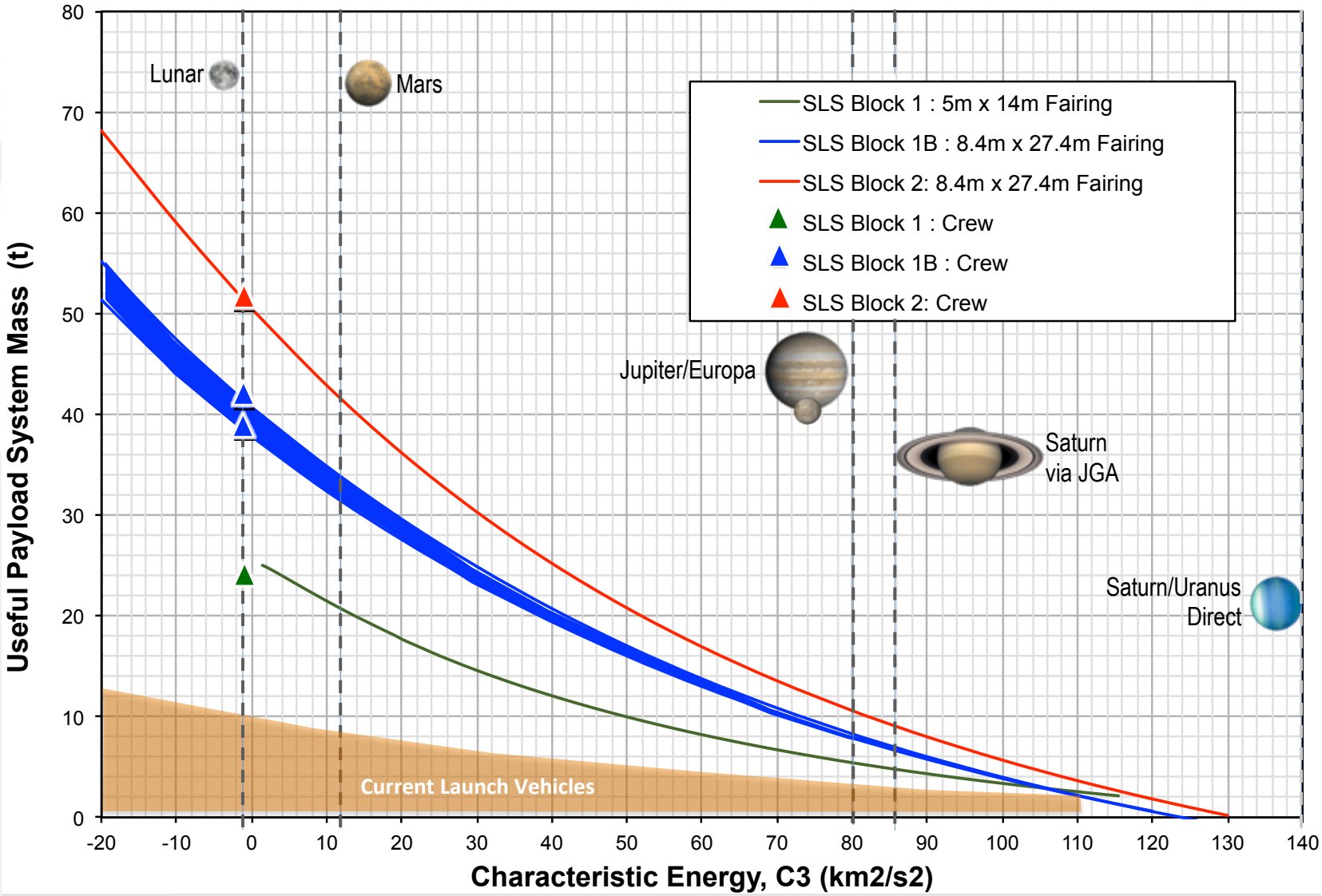
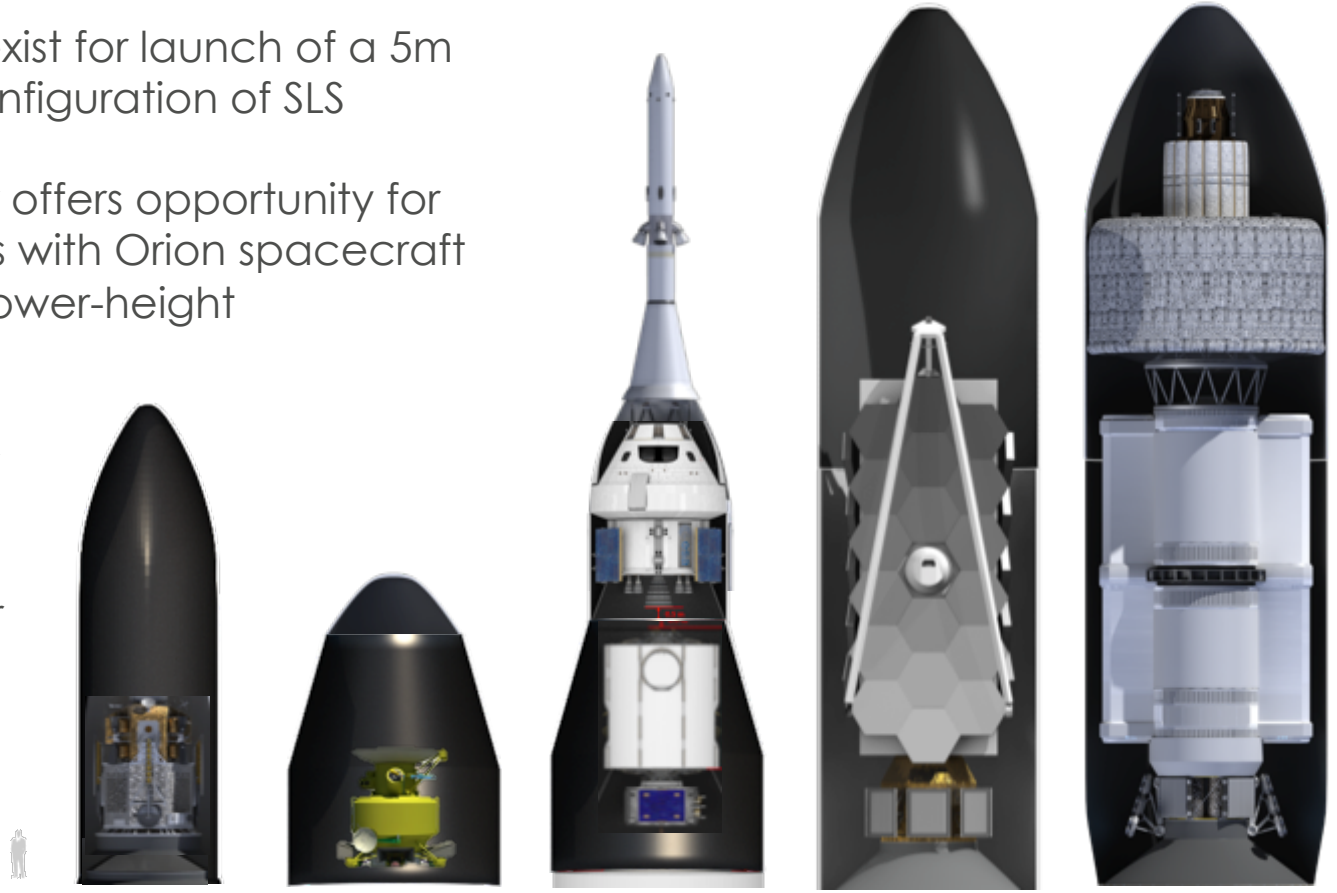
SLS MISSION CAPTURE



PAYLOAD ACCOMODATIONS

FAIRING AVAILABILITY

- Potential opportunities exist for launch of a 5m fairing on the Block 1 configuration of SLS
- Universal Stage Adapter offers opportunity for co-manifested payloads with Orion spacecraft or near-term 8.4-meter lower-height accommodations
- Universal Stage Adapter accommodations early as soon as second flight of SLS; 8.4- and 10-meter fairings available in the mid- and late-2020s, respectively



	5m fairing w/ science payload	Science Missions	Orion with short-duration hab module	8m fairing with large aperture telescope	10m fairing w/notional Mars payload
total mission volume = ~	250m3	400m3	400m3	1,200m3	1,800m3