

SPACE LAUNCH SYSTEM PROGRAM REVIEW

Steve Creech

**SLS Spacecraft Payload
Integration & Evolution Manager**

David Hitt, SPIE

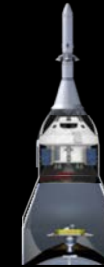
7 June, 2018

SLS ENABLES HUMAN AND ROBOTIC EXPLORATION



VOLUME

- **Five times more volume** than any contemporary heavy lift vehicle
- **Only vehicle** that can carry the Orion and a co-manifested payload to the Moon



Orion
with
Science
Missions



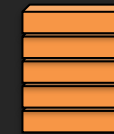
8m fairing
with large
aperture
telescope

MASS

- Block 1: Can launch **60% more mass** than any contemporary launch vehicle
- Block 2: Mars-enabling capability of **greater than 45 metric tons** to Trans Lunar Injection



Contemporary
Heavy Lift



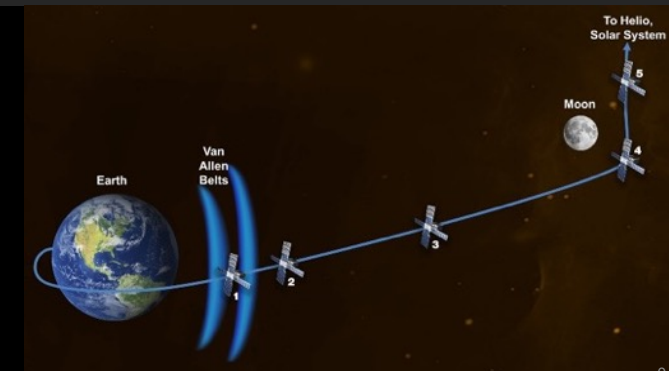
SLS Block 1
Exploration
Class



SLS Block 2
Exploration
Class

DESTINATIONS

- Enables larger payloads to **deep space destinations**
- **Reduce transit times by half or greater** to the outer solar system





SLS EVOLVABILITY



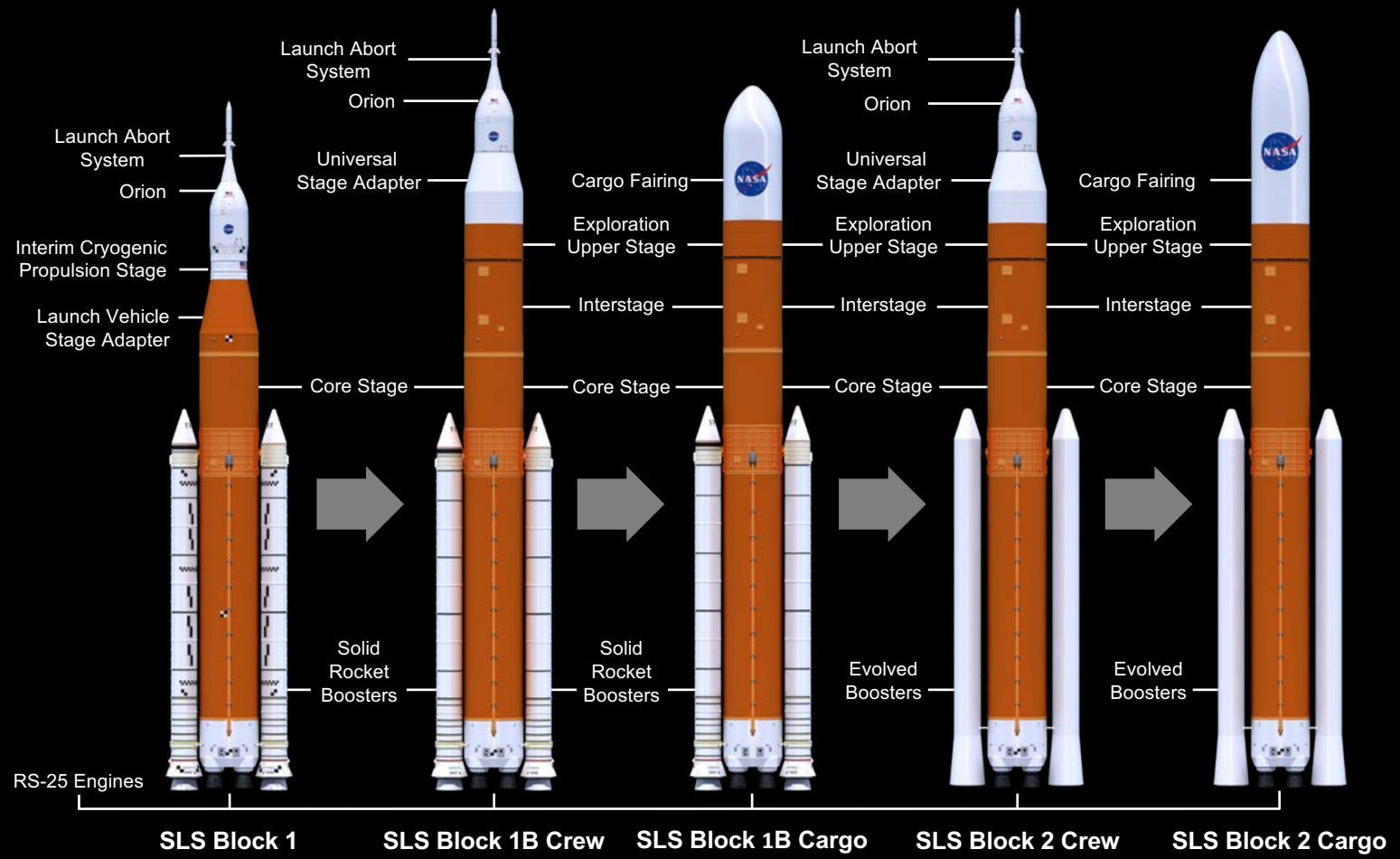
Foundation for
a generation
of deep space
exploration

Trans-Lunar Injection (TLI) is a propulsive maneuver used to set a spacecraft on a trajectory that will cause it to arrive at the Moon. A spacecraft performs **TLI** to begin a lunar transfer from a low circular parking orbit around Earth.

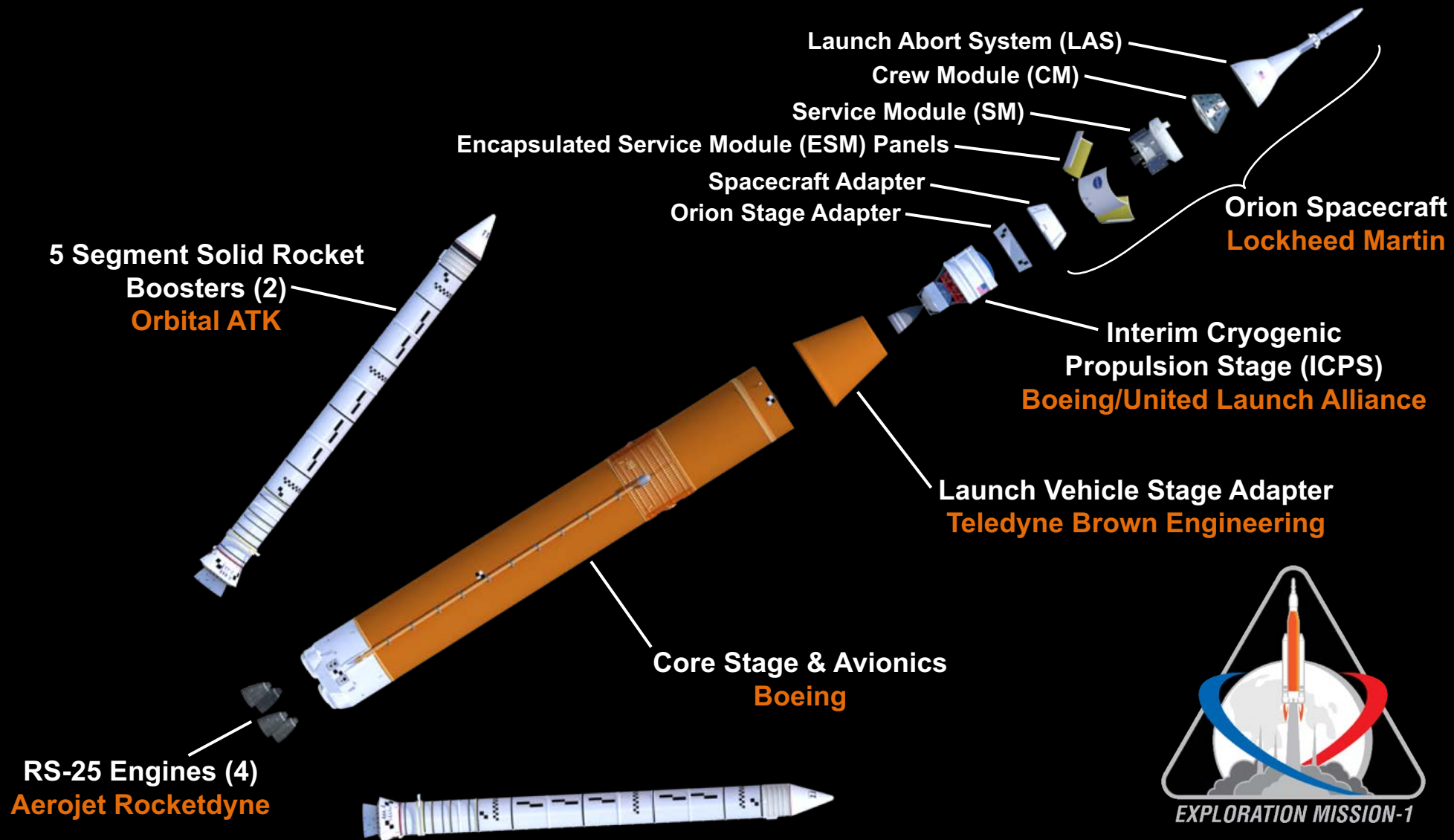
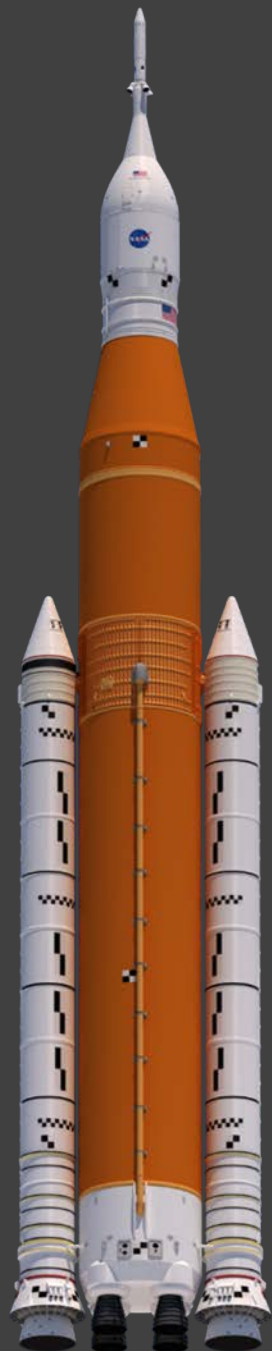
The numbers depicted here indicate the mass capability at the Trans-Lunar Injection point.

** Not including Orion/Service Module volume

Payload Volume	N/A**	10,100 ft ³ (286m ³)**	18,970 ft ³ (537 m ³)	10,100 ft ³ (286m ³)**	31,950 ft ³ (905 m ³)
Payload to TLI/Moon	> 26 t (57k lbs)	34–37 t (74k–81k lbs)	37–40 t (81k–88k lbs)	> 45 t (99k lbs)	> 45 t (99k lbs)
Maximum Thrust	8.8M lbs	8.8M lbs	8.8M lbs	11.9M lbs	11.9M lbs
Height	322 ft	364 ft	327 ft	364 ft	365 ft



SLS BLOCK 1 CONFIGURATION FOR EM-1



SLS SPACECRAFT PAYLOAD INTEGRATION & EVOLUTION OFFICE

YOUR ENTRY POINT FOR ALL SLS PAYLOAD INFORMATION – PRIMARY, CO-MANIFESTED AND SECONDARY



Manager:

Steve Creech

Deputy Manager:

Andy Schorr

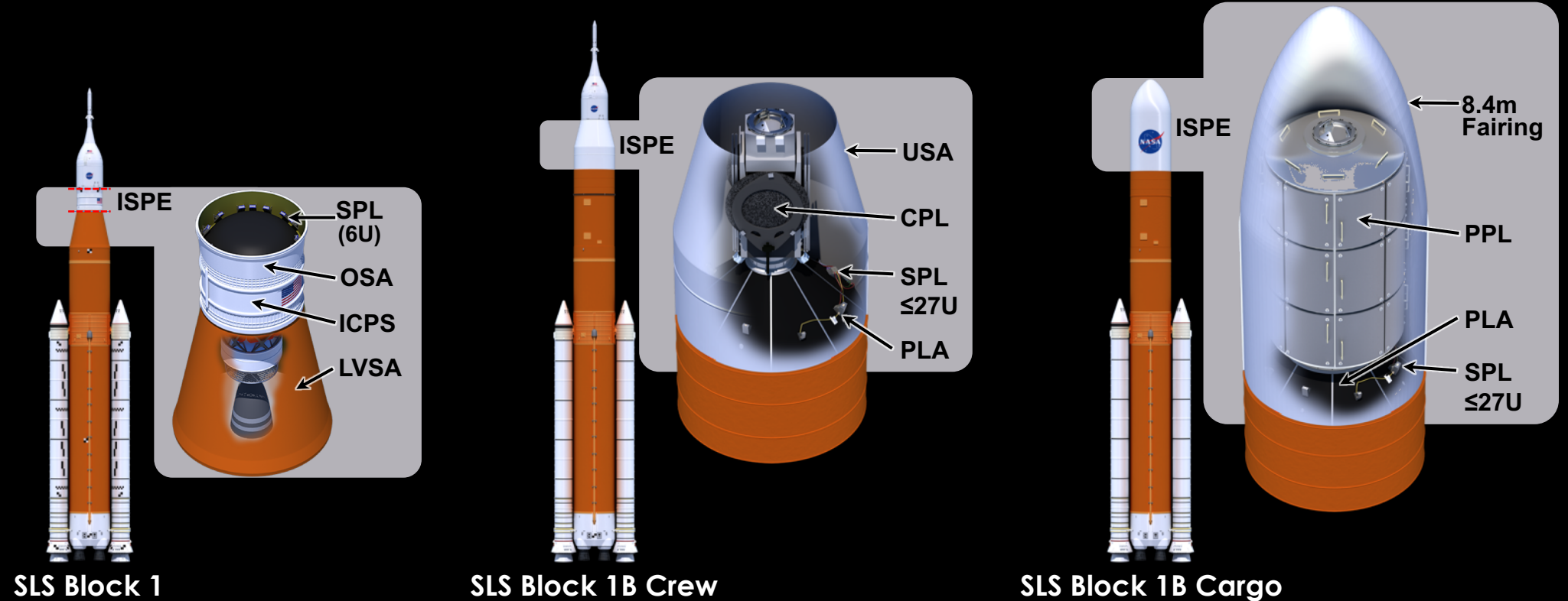
Payload Integration Manager:

Dr. Kimberly Robinson

Dr. Kimberly Robinson

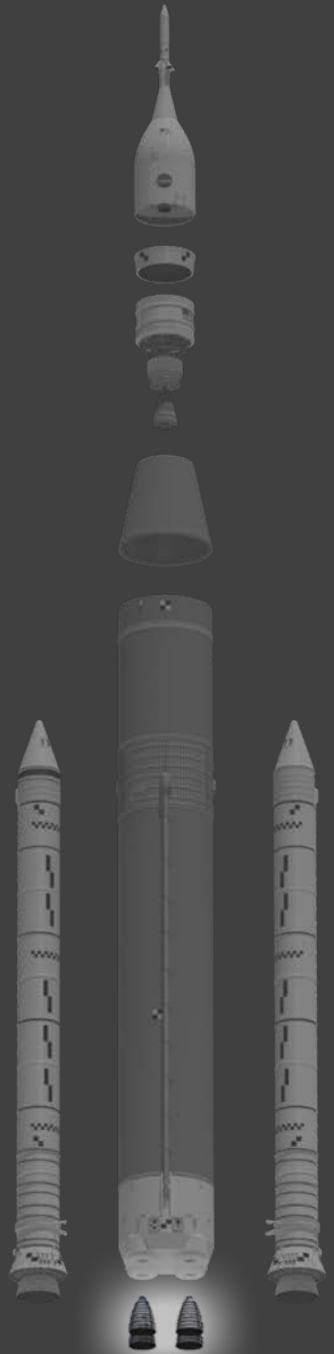
Deputy Payload Integration Manager:

Renee Cox

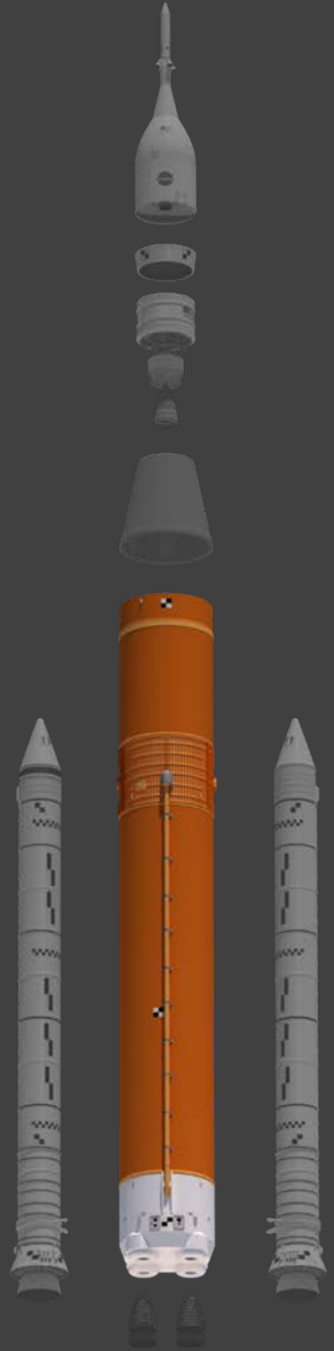




ENGINES



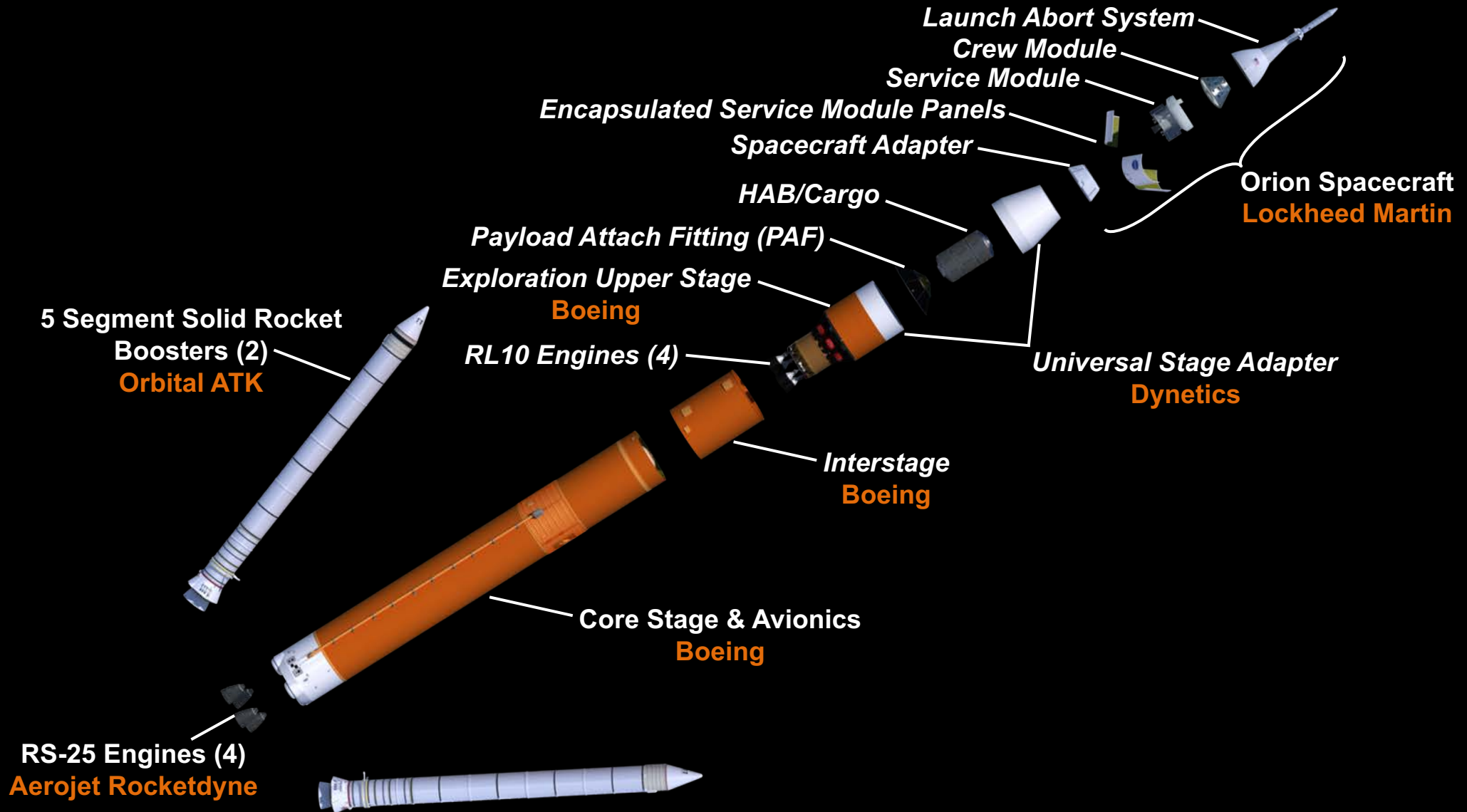
CORE STAGE



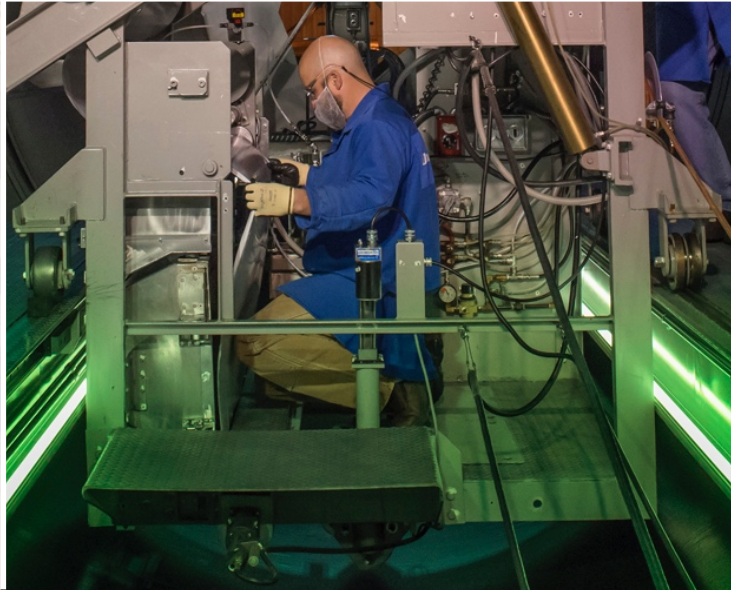
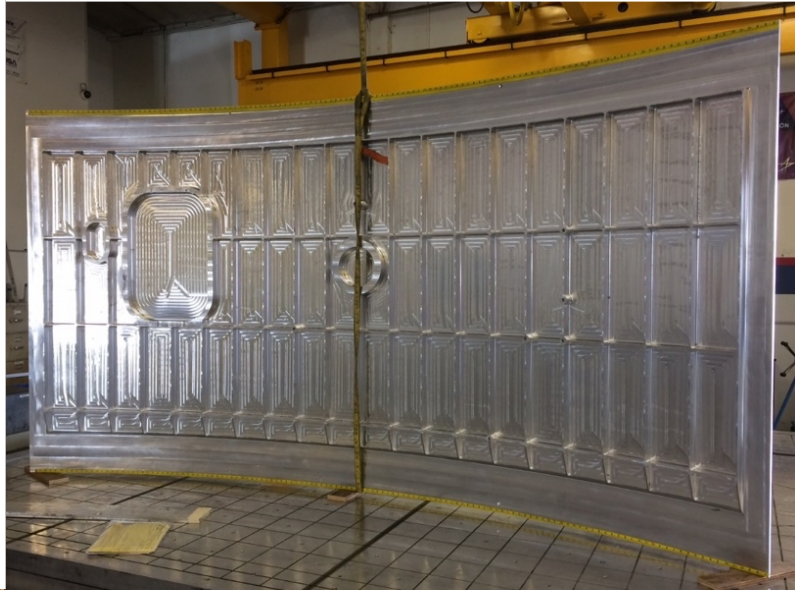
IN-SPACE STAGE



SLS BLOCK 1B CONFIGURATION



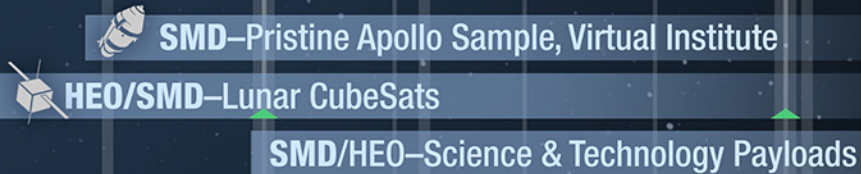
PROGRESS TOWARD FUTURE FLIGHTS



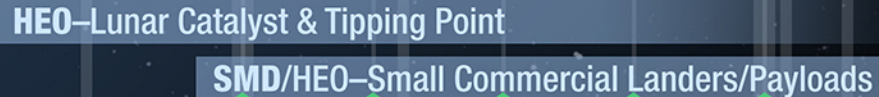
NASA Exploration Campaign

NOTIONAL LAUNCHES

EARLY SCIENCE & TECHNOLOGY INITIATIVE



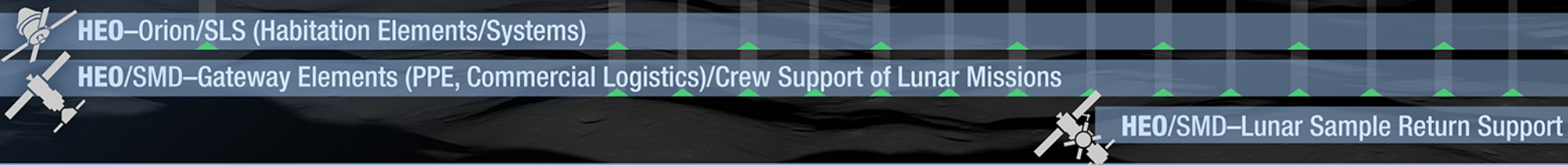
SMALL COMMERCIAL LANDER INITIATIVE



MID TO LARGE LANDER INITIATIVE TOWARD HUMAN-RATED LANDER



LUNAR ORBITAL PLATFORM—GATEWAY



2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

Timelines are tentative and will be developed further in FY 2019

MARCH 2018

IT'S HAPPENING NOW!



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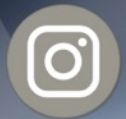
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