



# SPACE LAUNCH SYSTEM UPDATE

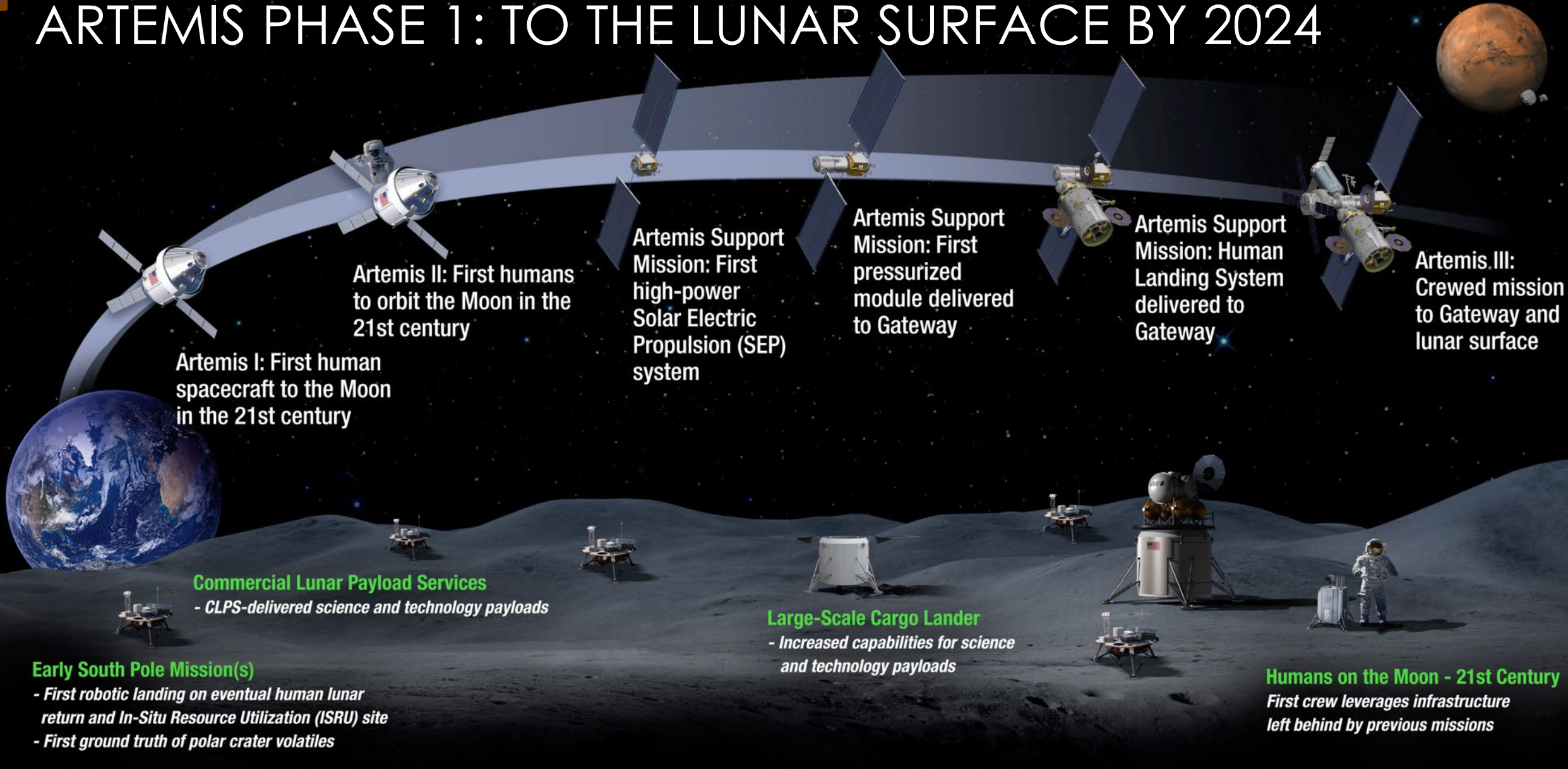
*Association of Chamber  
of Commerce Executives*

**Sharon Cobb**  
*Acting Deputy Program Manager*  
Space Launch System Program





# ARTEMIS PHASE 1: TO THE LUNAR SURFACE BY 2024



**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

**Artemis Support Mission:** First pressurized module delivered to Gateway

**Artemis Support Mission:** Human Landing System delivered to Gateway

**Artemis III:** Crewed mission to Gateway and lunar surface

**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

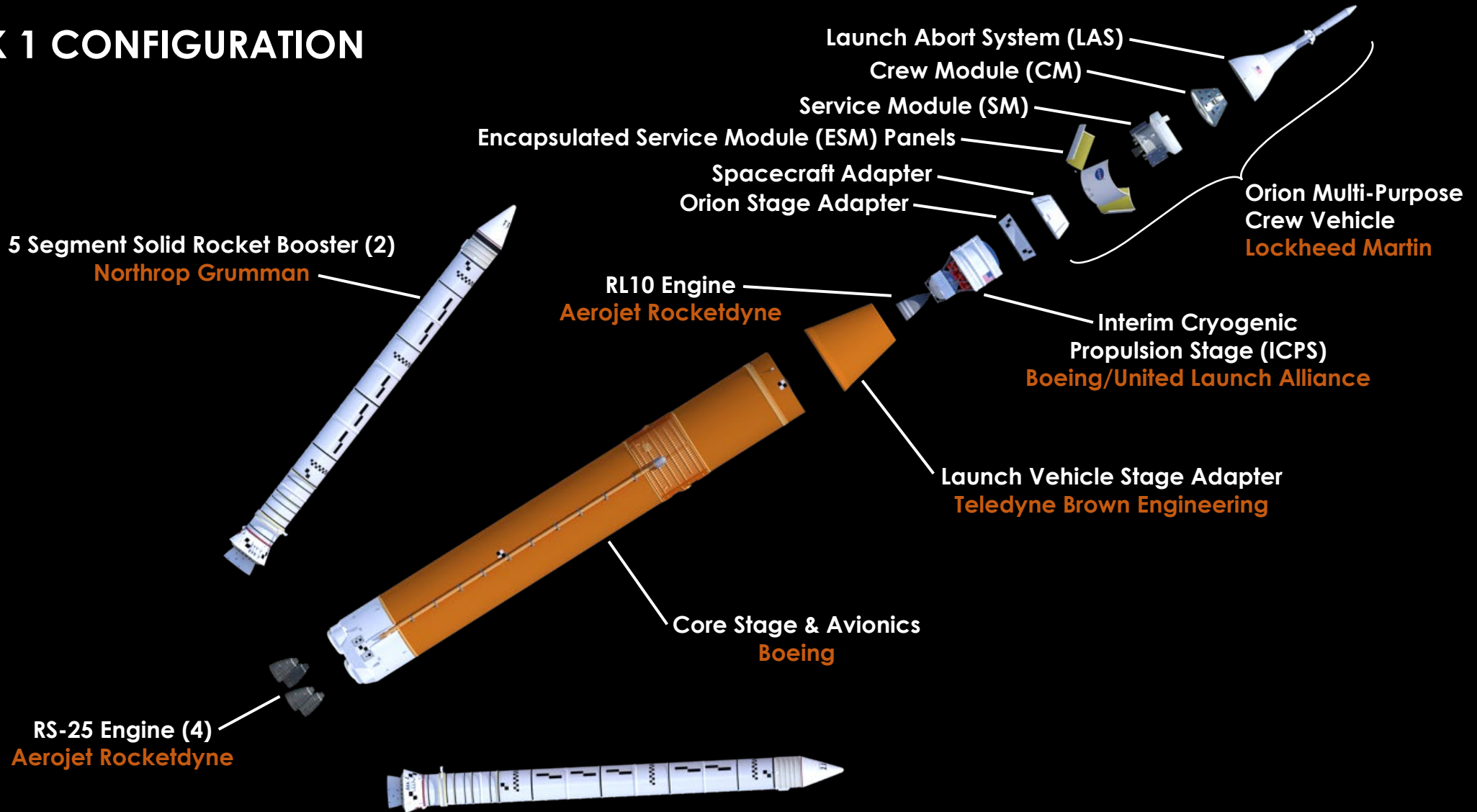
## LUNAR SOUTH POLE TARGET SITE

# NASA'S SPACE LAUNCH SYSTEM

## BACKBONE OF DEEP SPACE EXPLORATION



### BLOCK 1 CONFIGURATION



# SLS NATIONWIDE TEAM

WORKING WITH OVER 1100 CONTRACTORS IN 44 STATES

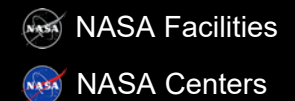


## SLS Program Economic Impact (U.S.)

**\$5.7 billion**  
**32,000 jobs**

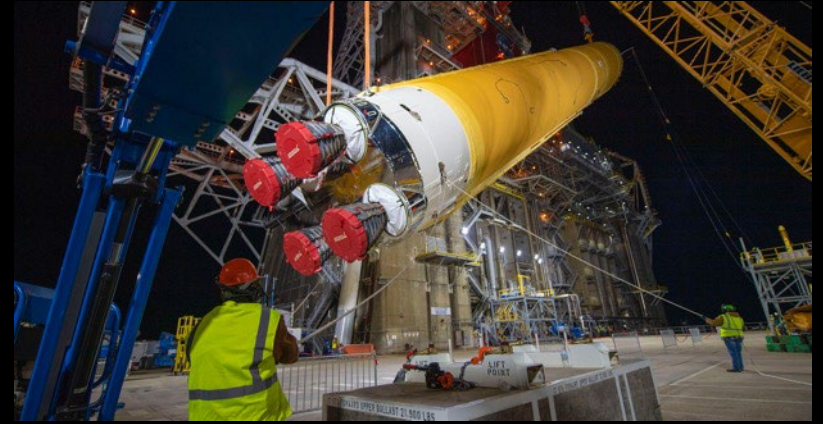
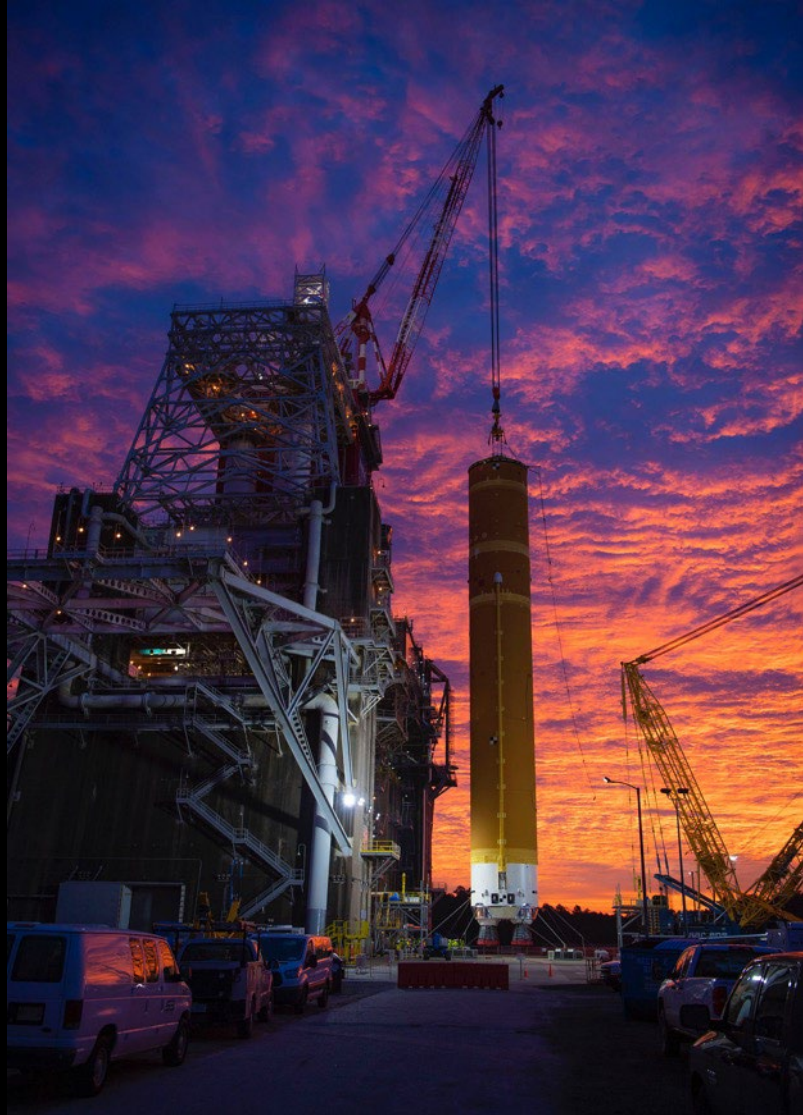


- Engaging the U.S. Aerospace Industry
- Strengthening Sectors such as Manufacturing
- Advancing Technology and Innovation for Deep Space Exploration





# ARTEMIS, I CORE STAGE AT B-2 TEST STAND



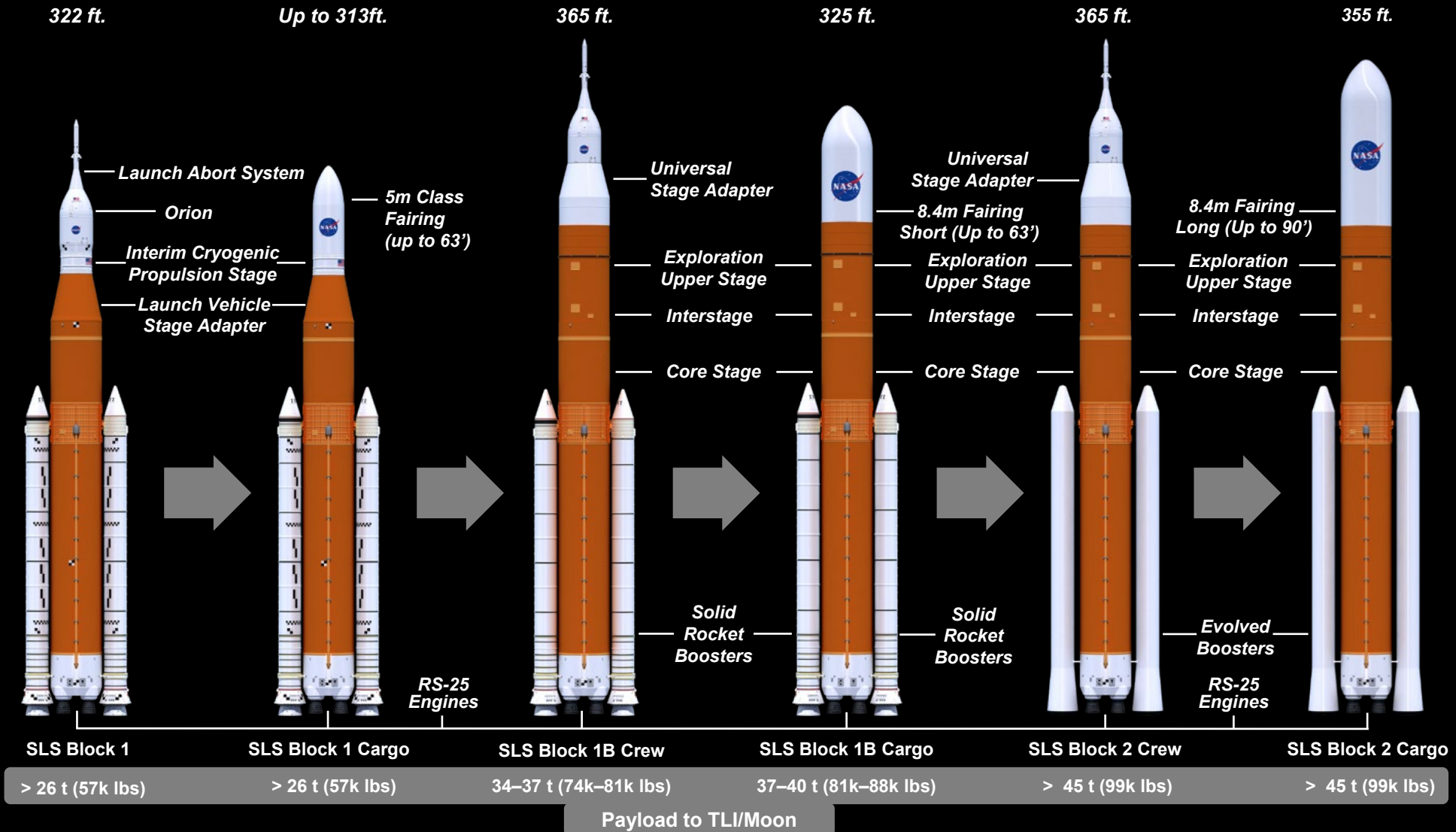






# SLS Evolvability

Foundation for a generation of deep space exploration



# SLS PROGRESS TOWARD ARTEMIS II



All booster motor segments cast



Forward skirt



Liquid oxygen tank



Liquid hydrogen tank



Two RS-25s complete, controllers green run



Engine Section

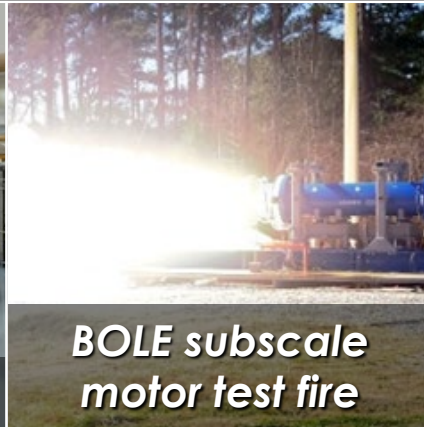


LVSA, OSA panels

# THIRD FLIGHT AND BEYOND



Completed RL10 engines



BOLE subscale motor test fire



Payload adapter manufacturing demonstration article



RS-25 HIP-bonded main combustion chamber



Tooling for USA



EUS weld confidence articles



Additively manufactured pogo accumulator



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# BACKUP

# WHAT IT TAKES TO COME HOME SAFELY



## LOW EARTH RETURN

**3 HOURS**

**3,000°F**

**17,500 MPH**

**250 MILES**

## LUNAR RETURN

**3 DAYS**

**5,200°F**

**24,700 MPH**

**240,000 MILES**

## MARS RETURN

**9 MONTHS**

**6,200°F**

**26,800 MPH**

**39,000,000 MILES**

