National Aeronautics and Space Administration

NASA Space Launch System (SLS):
State of the Rocket

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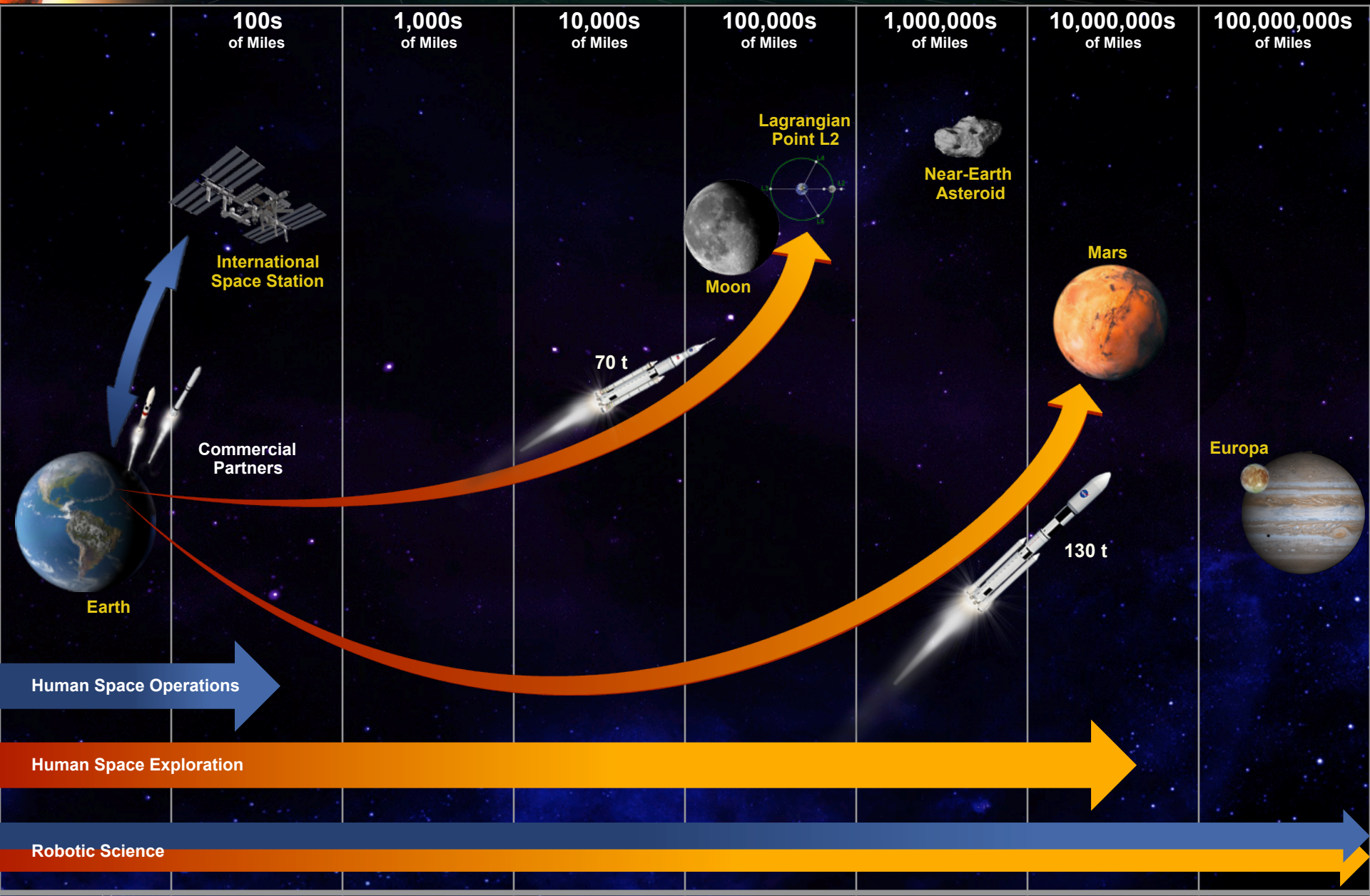
September 10, 2013



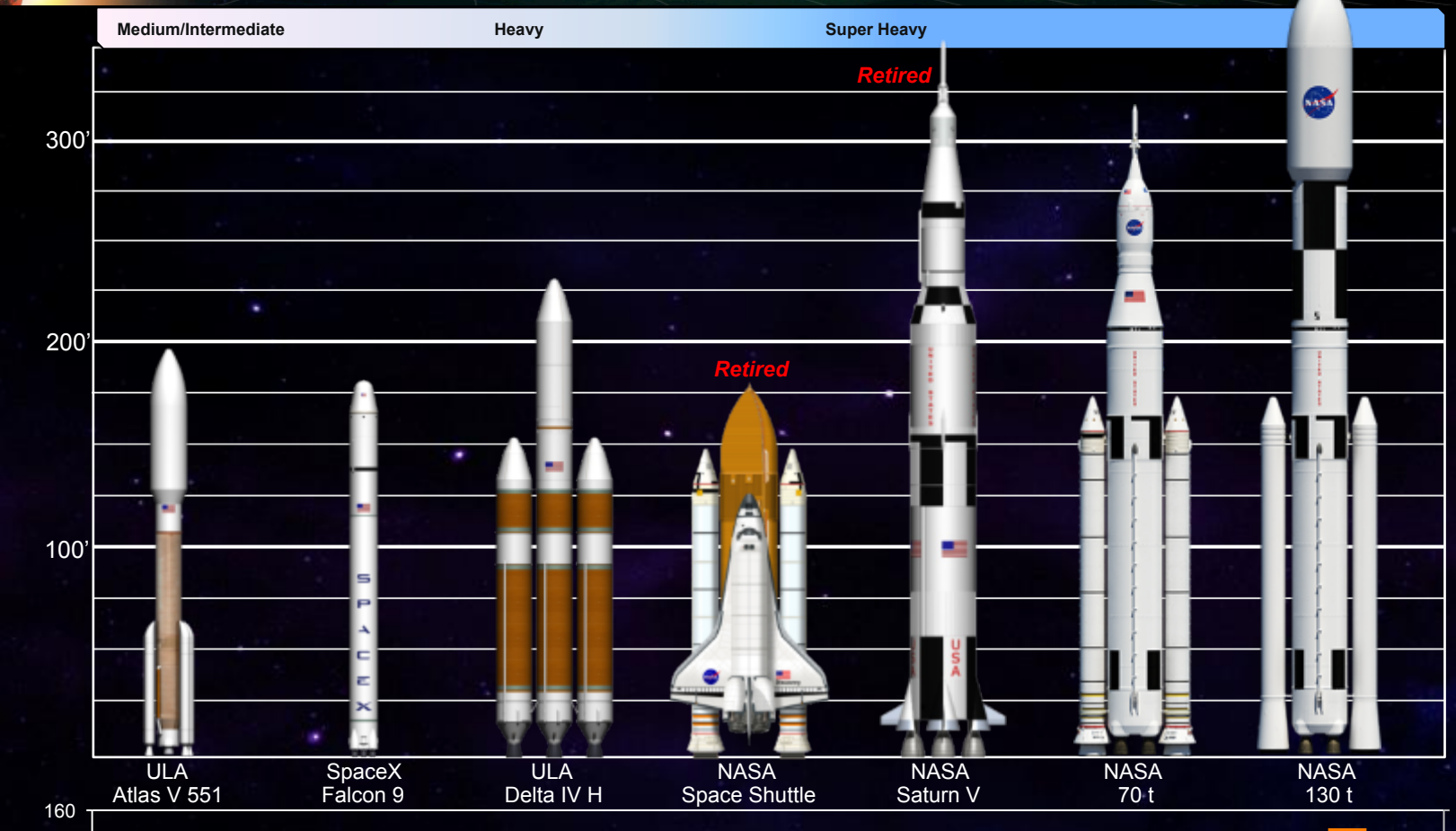


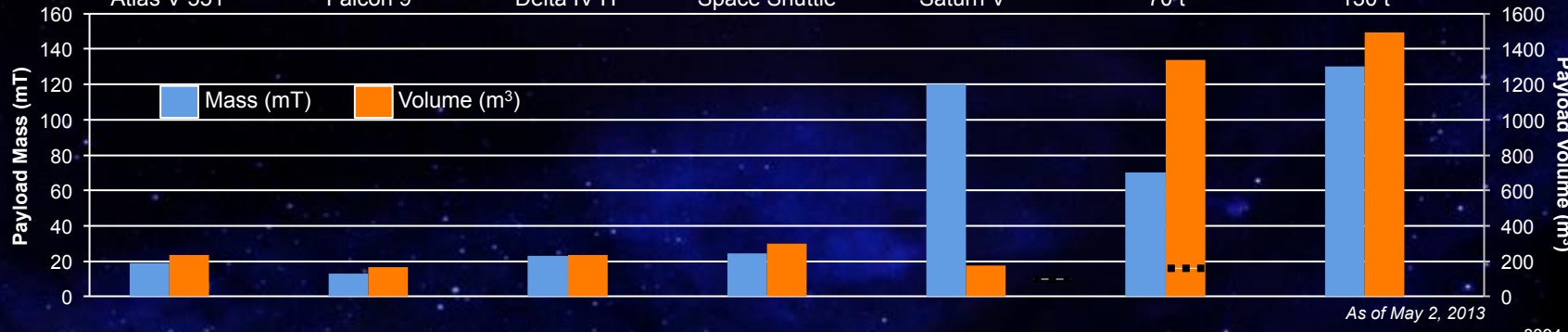

Space Launch System

The Future of Exploration



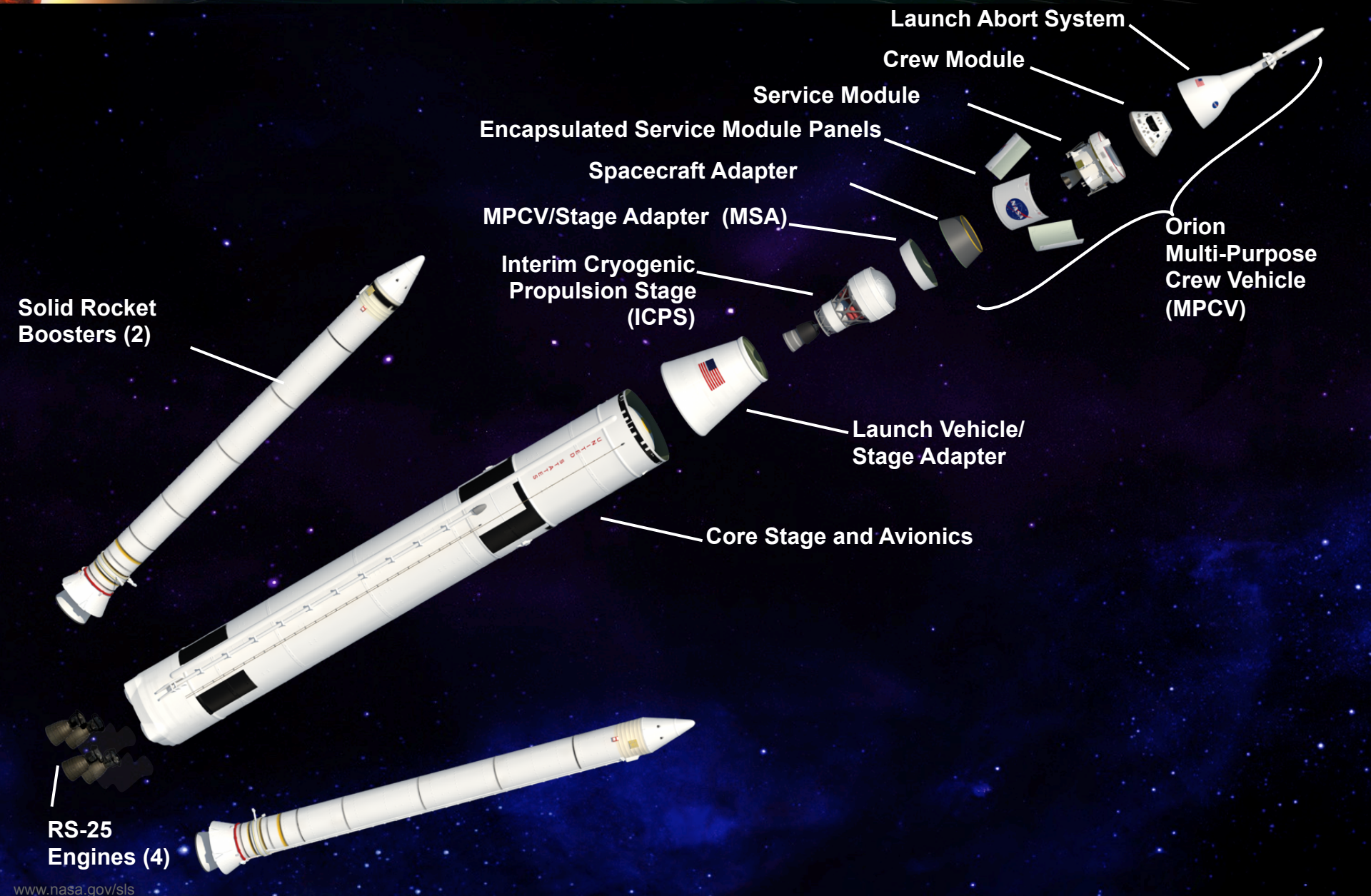
Most Capable U.S. Launch Vehicle





As of May 2, 2013

SLS 70t Expanded View



SLS Development Schedule

2011	2012	2013	2014	2015	2016	2017
MCR ✔	SRR/SDR ✔	PDR ✔		CDR	SIR	PLAR, FRR, Launch

PROGRAM PROGRESS

SLS Design Chosen

Booster Development Test

Engines Delivered to Inventory

Wind Tunnel Testing

Manufacturing Tooling Installed

Production of First New Flight Hardware

Orion Flight Test

ICPS Production Begins

Booster Test-Firings

Main Engine Test-Firing

Core Stage Assembly

Core Stage Structure Testing

Core Stage Test-Firing

Booster Assembly at KSC

Vehicle Stacking at KSC

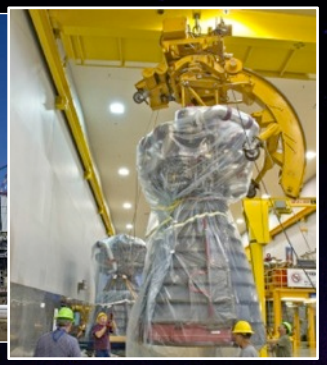
First Flight

Concept Studies	Concept & Technology Development	Preliminary Design & Technology Completion	Final Design & Fabrication	System Assembly, Integration & Test, Launch & Checkout

MCR: Mission Concept Review	CDR: Critical Design Review
SRR: System Requirements Review	SIR: System Integration Review
SDR: System Definition Review	FRR: Flight Readiness Review
PDR: Preliminary Design Review	PLAR: Post-Launch Asses. Review

Concept to Preliminary Design in 21 Months

Liquid Engines
Tested selective laser melted part on J-2X at Stennis Space Center (March 2013) , and storing RS-25 Core Stage Engines at Stennis Space Center



Spacecraft & Payload Integration
Performed fit-check of Multi-Purpose Crew Vehicle Stage Adapter for 2014 Exploration Flight Test at the Marshall Space Flight Center (June 2013)

Boosters
Conducted Thrust Vector Flight Control Test at ATK in Promontory, UT (Jan 2013)

Completed Vertical Weld Tool at the Michoud Assembly Facility in New Orleans

Advanced Development
Conducted F-1 engine gas generator hot-fire testing at Marshall (Jan 2013)

Core Stage
Completed welding on first confidence barrel section at Michoud Assembly Facility (July 2013)

Systems Engineering & Integration
Tested buffet model in Langley Research Center's Transonic Dynamics Wind Tunnel (Nov 2012)

Low Technical Risk Due to Hardware Maturity

Somewhere, something incredible is waiting to be known.

— Carl Sagan

For More Information

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