



Space Launch System

A New National Capability



Space Launch System: Safe, Affordable, Sustainable

Expanding Capabilities

The U.S. Space Launch System (SLS) will provide an entirely new capability for human exploration beyond Earth orbit. It also will back up commercial and international partner transportation services to the International Space Station. Designed to be flexible for crew or cargo missions, the SLS will be safe, affordable, and sustainable, to continue America's journey of discovery from the unique vantage point of space.

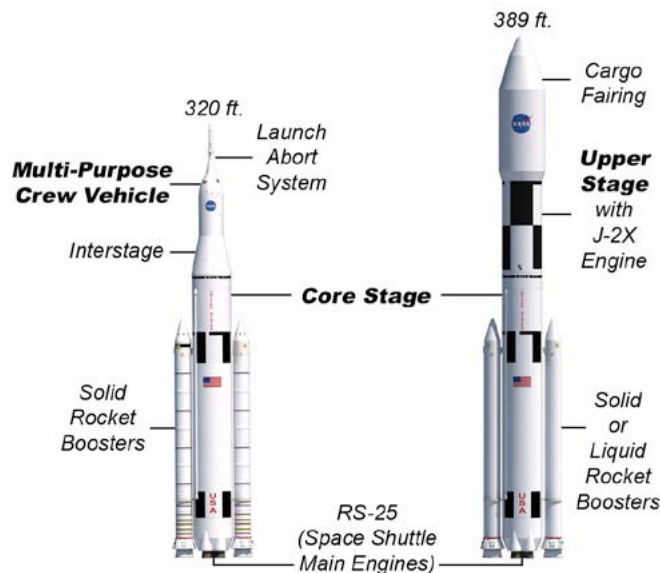
The SLS will take astronauts farther into space than ever before, while engaging the U.S. aerospace workforce here at home. Marshall Space Flight Center is leading the design and development of the rocket system that can take us to the Moon, asteroids, LaGrange points, and eventually to Mars.

This launch system will create good-paying American jobs, ensure continued leadership in space, and inspire millions around the world. President Obama challenged us to be bold and dream big, and that's exactly what we are doing at NASA.

– Charles Bolden
NASA Administrator

Initial Lift Capability
70 Tonnes (t)
More than Double Any Operational Vehicle Today

Crew Configuration
The SLS will transport the Multi-Purpose Crew Vehicle to entirely new destinations beyond Earth orbit, continuing America's human exploration of space.



Evolved Lift Capability
130t
More than Any Past, Present, or Future Vehicle

Cargo Configuration
The flexible SLS can carry cargo, equipment, and science experiments to destinations beyond Earth orbit. This heavy-lift capability will be available to support missions of national importance.

Exploration beyond Earth orbit will be an enduring legacy to future generations, confirming America's desire to explore, learn, and progress.

— **Todd May**
Space Launch System Program Manager

America's new heavy-lift rocket will be more powerful than the Saturn V rocket that carried Apollo astronauts to the Moon. It will take humans farther into space than ever before. The vehicle design will minimize cost by leveraging investments in legacy space launch systems to the greatest extent practicable, while using evolutionary advancements in launch vehicle design.

The SLS will use a liquid hydrogen and liquid oxygen propulsion system, where Space Shuttle Main Engines (RS-25) in stock will provide the core propulsion and the J-2X engine, now in testing, is planned for use in the upper stage as the vehicle is evolved. Using the same fuel system for the core and the upper stage reduces costs and leverages U.S. state-of-the-art technologies. Five-segment solid rocket boosters, now in testing, will be used for initial flights, while advanced boosters will be competed for the evolved capability.

Leading NASA in rocket propulsion technology, Marshall has been launching spacecraft and explorers into space since the beginning of the U.S. space program. From Apollo to the space shuttle, the center has played a critical role in transporting people, supplies, and science experiments into low-Earth orbit.

Engineers at Marshall designed and developed the Saturn V and Space Shuttle Main Engines, external fuel tank, and solid rocket boosters. The Marshall team is proud to lead development of America's new Space Launch System.

Learn more and see the latest news at:

www.nasa.gov/sls



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