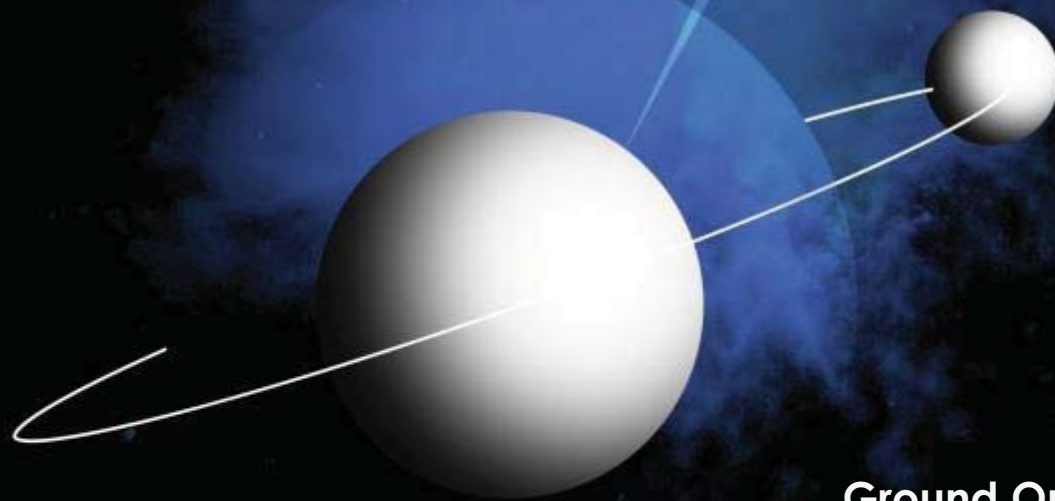


National Aeronautics and Space Administration



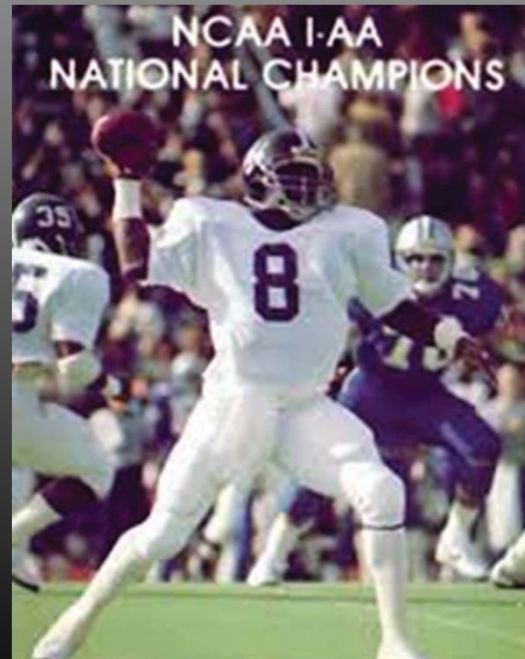
Space Launch System The Future of Exploration



Andy Warren,
Ground Operations Liaison Assistant Manager
Marshall Space Flight Center, Huntsville, AL
[Degree from Georgia Southern: Aerospace Engineering]
September 19, 2014



1987





From Georgia Southern to Today





A Deeper Purpose, A Bolder Mission

EARTH RELIANT

MISSION: 6 TO 12 MONTHS
RETURN TO EARTH: HOURS



Mastering fundamentals aboard the International Space Station

U.S. companies provide access to low-Earth orbit

PROVING GROUND

MISSION: 1 TO 12 MONTHS
RETURN TO EARTH: DAYS



Expanding capabilities by visiting an asteroid redirected to a lunar distant retrograde orbit

The next step: traveling beyond low-Earth orbit with the Space Launch System rocket and Orion spacecraft

MARS READY

MISSION: 2 TO 3 YEARS
RETURN TO EARTH: MONTHS



Developing planetary independence by exploring Mars, its moons and other deep space destinations

We reach for new heights and reveal the unknown for the benefit of humankind.

www.nasa.gov/sls

—NASA 2014 Strategic Plan

#slsinspires
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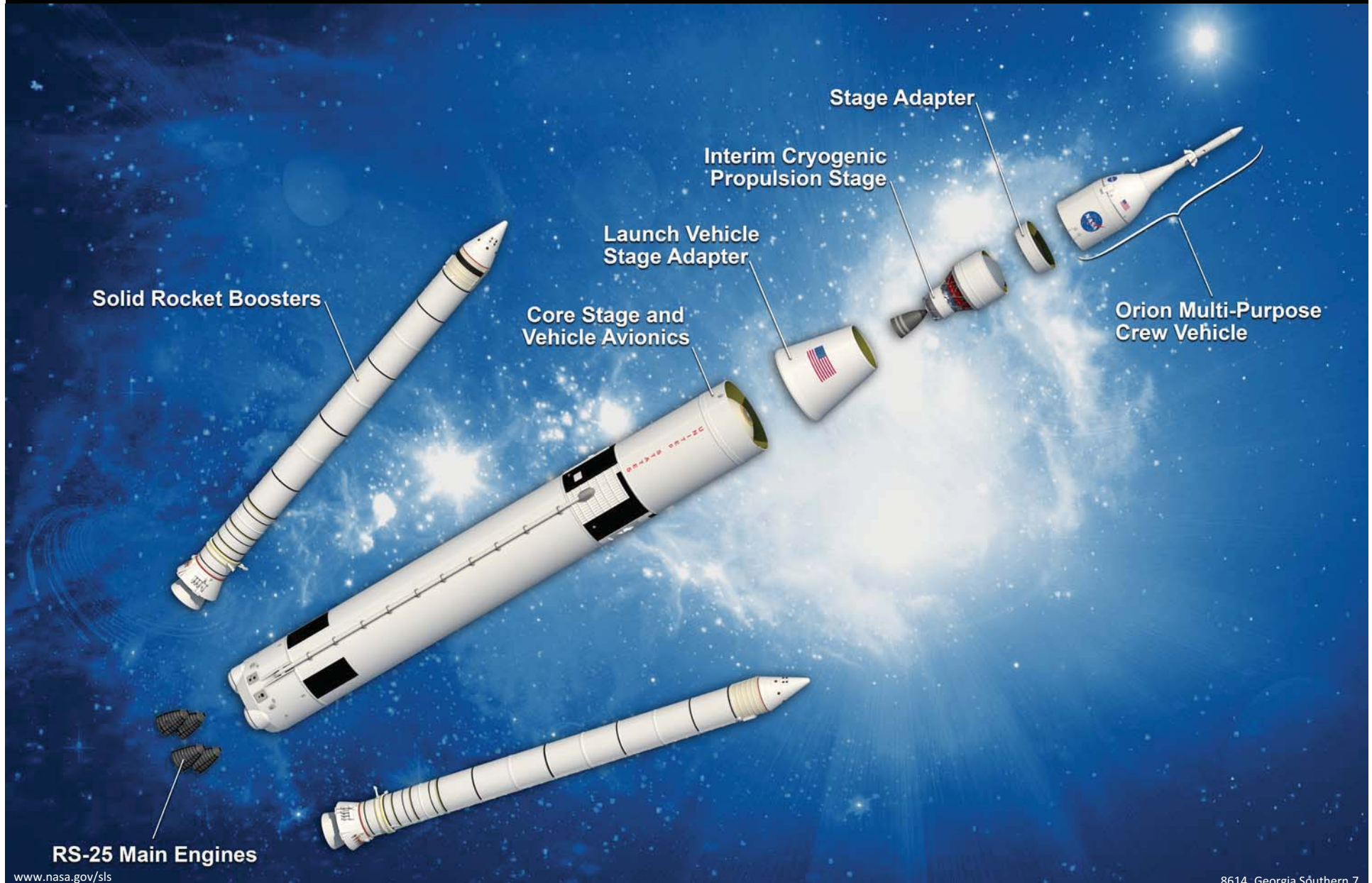
SLS is the
first step
in the
journey
to Mars



Going to Mars will be difficult.
SLS provides the power that it takes.

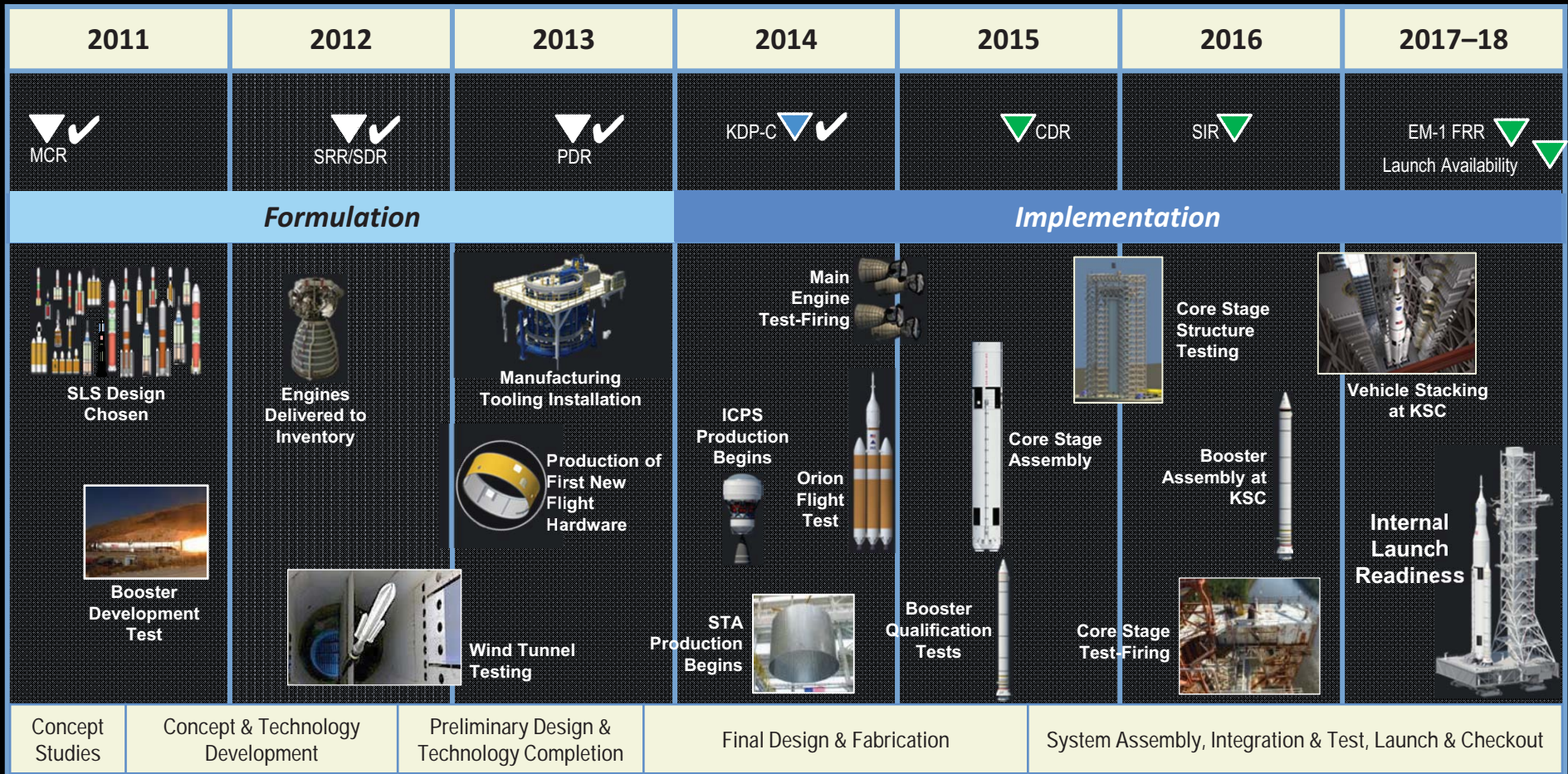


70 Metric Ton Expanded View





SLS Development Schedule



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

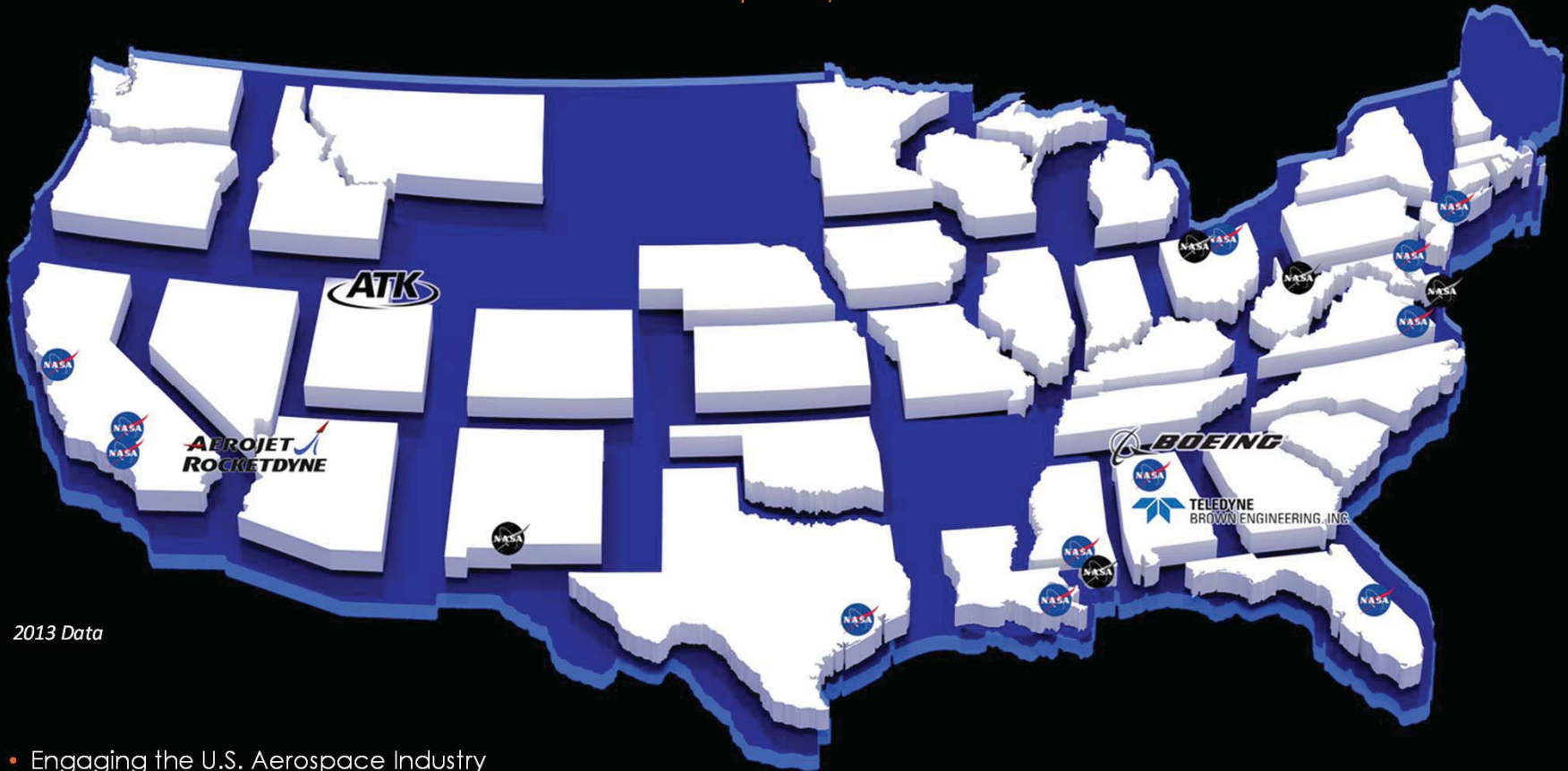
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SLS Nationwide Team

Estimated Economic Impact: \$4.29B and 25,000 Jobs



2013 Data

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

 NASA Facilities
 NASA Centers

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Working with over 500 Contractors in 42 States



**“Stack it.
I’m
ready.”**
–Tony
Antonelli





Preparing for First Flight

Launch Vehicle Stage Adapter (Teledyne Brown):

Contract awarded in February 2014.



MPCV-to-Stage Adapter:

First flight hardware currently in Florida for Exploration Flight Test-1 in Fall 2014.

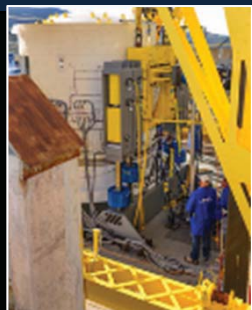
Avionics (Boeing): Avionics “first light” marked in January 2014; currently testing most powerful flight system computer processor ever.



Core Stage (Boeing): Initial confidence barrels and domes completed; Vertical Assembly Center will be completed in September 2014.



Boosters (ATK): Forward Skirt test completed May 2014; preparations underway for QM-1.

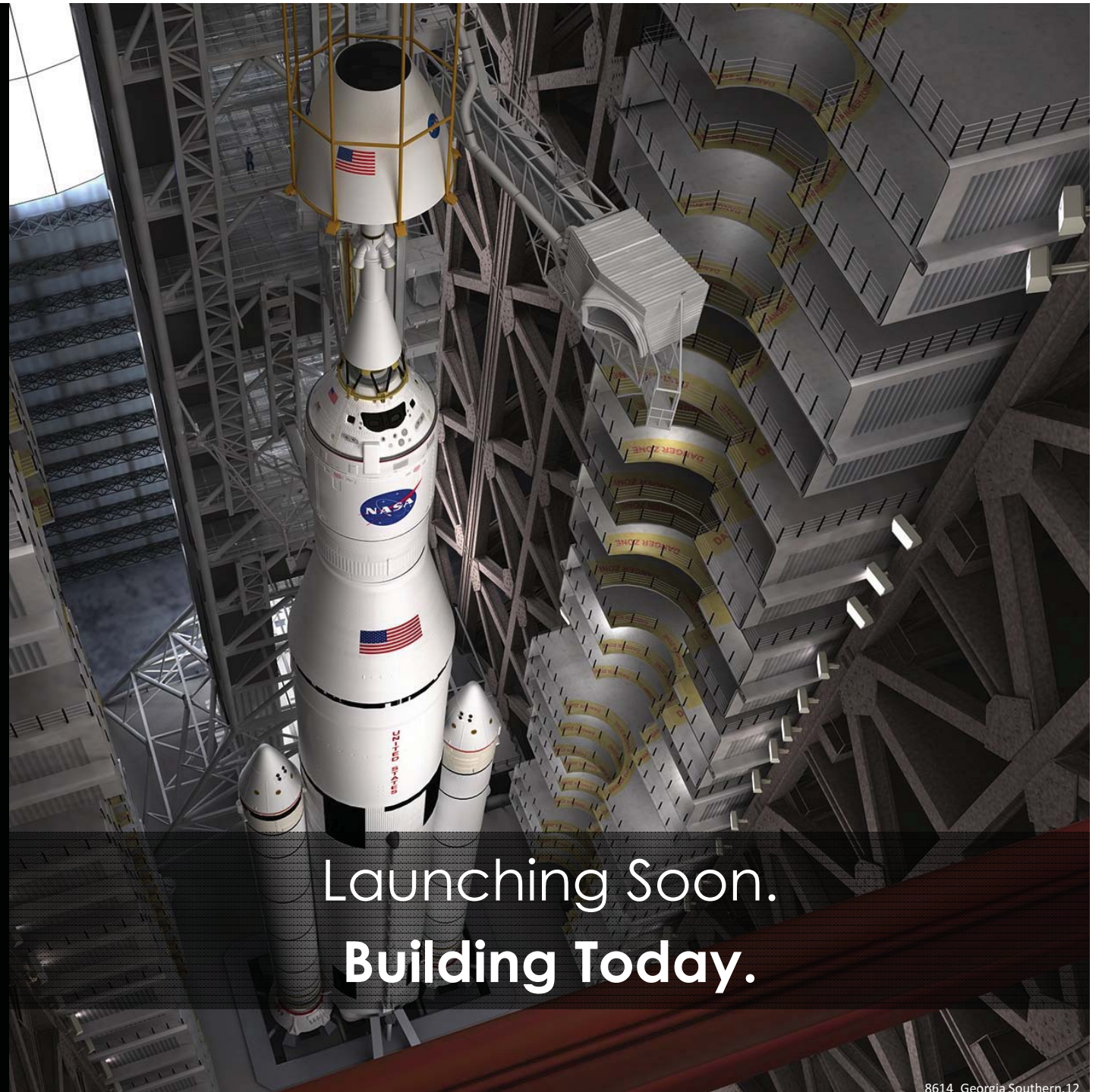


Engines (Aerojet Rocketdyne): First RS-25 engine fitted to A-1 stand at Stennis Space Center; testing begins Fall 2014.





NASA's Space Launch System



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Building Today.

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Your
future
begins
now.

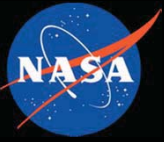
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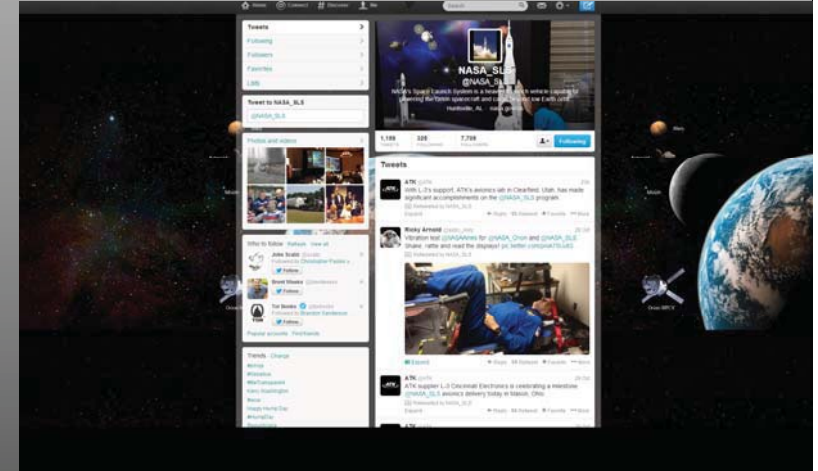
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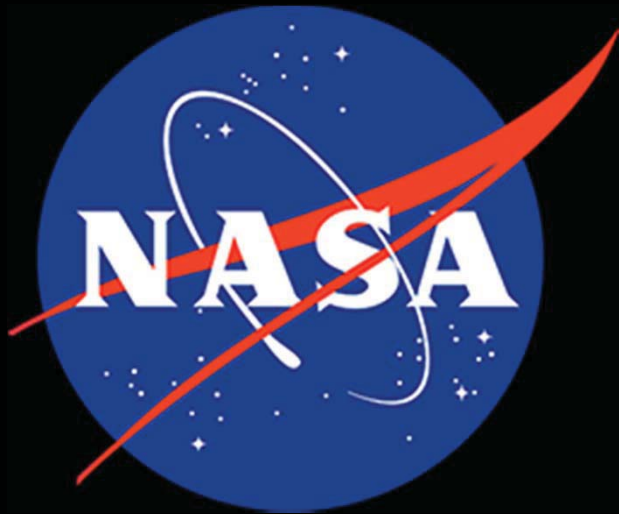


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“Man cannot discover
new oceans
unless he has the
courage to lose
sight of the shore.”

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the journey

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Questions & Answers

