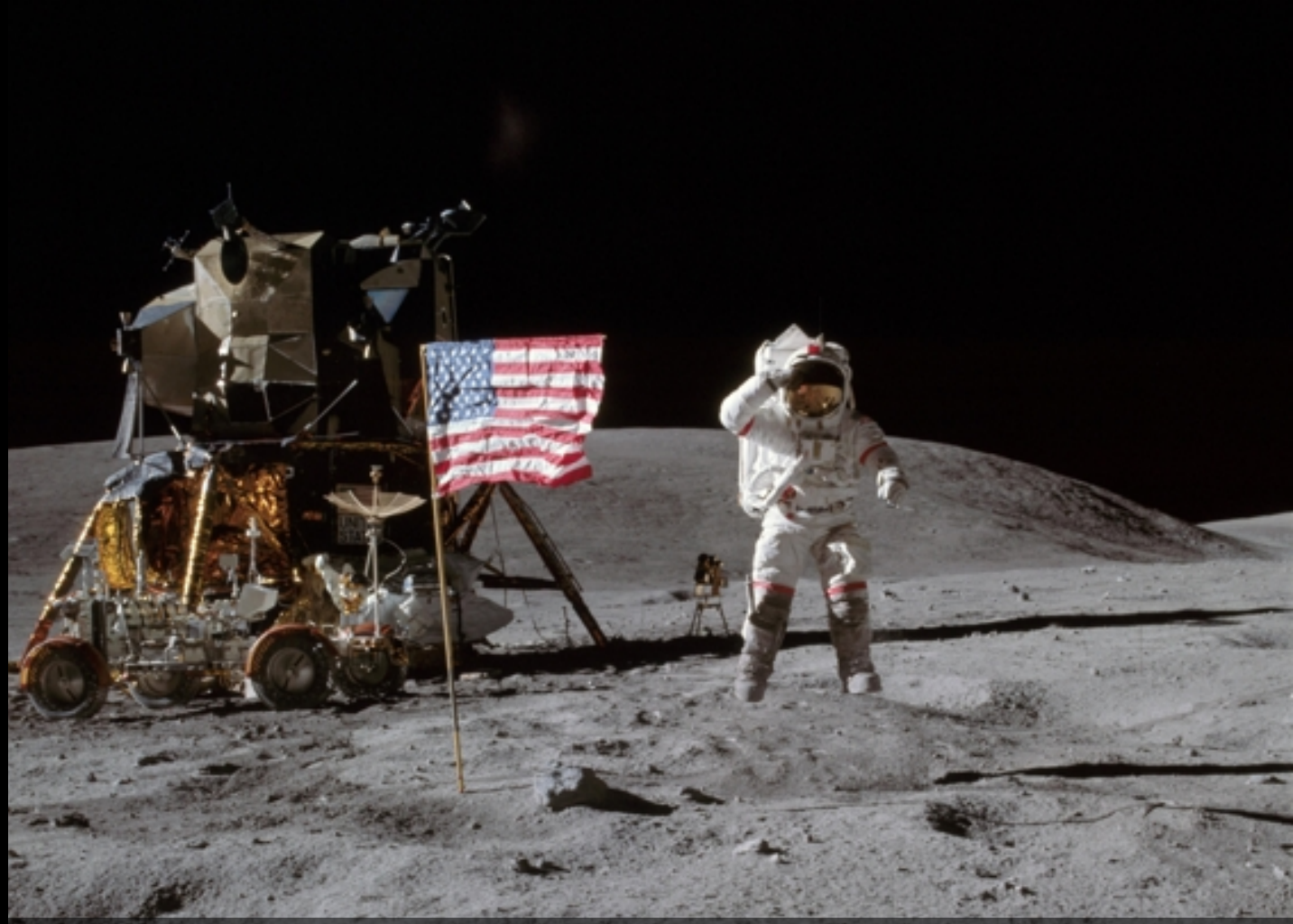
National Aeronautics and Space Administration

# Space Launch System
## America's Flagship for Exploration

**David Hitt**
Strategic Communications

May 2014

"One **Giant Leap** for Mankind"



NASA changed the world in the 1960s **when astronauts walked on the Moon.**

The
**most**
**complex**
**machine**
ever built

The Space Shuttle was an
**unrivaled workhorse for spaceflight.**

# **Living & working** on Earth's space station

Human beings have been in space **every minute since October 2000.**

# A Deeper Purpose, **A Bolder Mission**

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

# The Next **Great Ship**

Ships of exploration shouldn't limit destinations, **they should open opportunities.**

# NASA's **Space Launch System**


www.nasa.gov/sls #slsinspires

**Building on heritage.** Creating a legacy.

SLS builds on NASA's best.

**And makes it even better.**

# Proven success. **Greater power.**

**Orion:**
Carries astronauts into deep space

**Stage Adapters:**
The Orion stage adapter will be the first new SLS hardware to fly.

**Interim Cryogenic Propulsion Stage:**
Based on the Delta IV Heavy upper stage; the power to leave Earth


**Core Stage:**
Newly developed for SLS, the Core Stage towers more than 200 feet tall

**Solid Rocket Boosters:**
Built on Space Shuttle hardware; more powerful for a new era of exploration

**RS-25 Engines:**
Space Shuttle engines for the first four flights are already in inventory

# Starting Big, **Building Bigger**

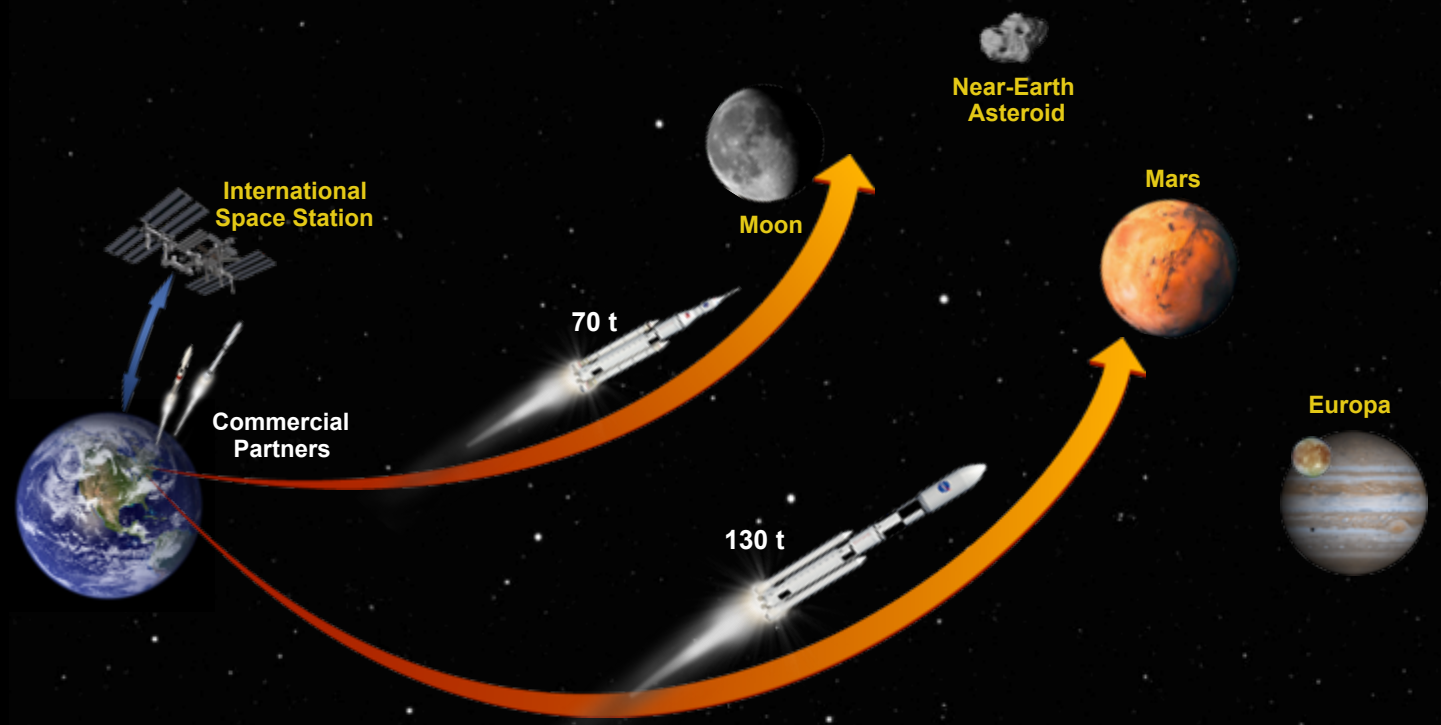
**New Technologies:**
Pushing the envelope for the launch vehicle industry

**Upper Stage:**
Providing greater in-space propulsion for leaving Earth

**Upper Stage Engine:**
Creating a new state-of-the-art for the U.S. launch industry

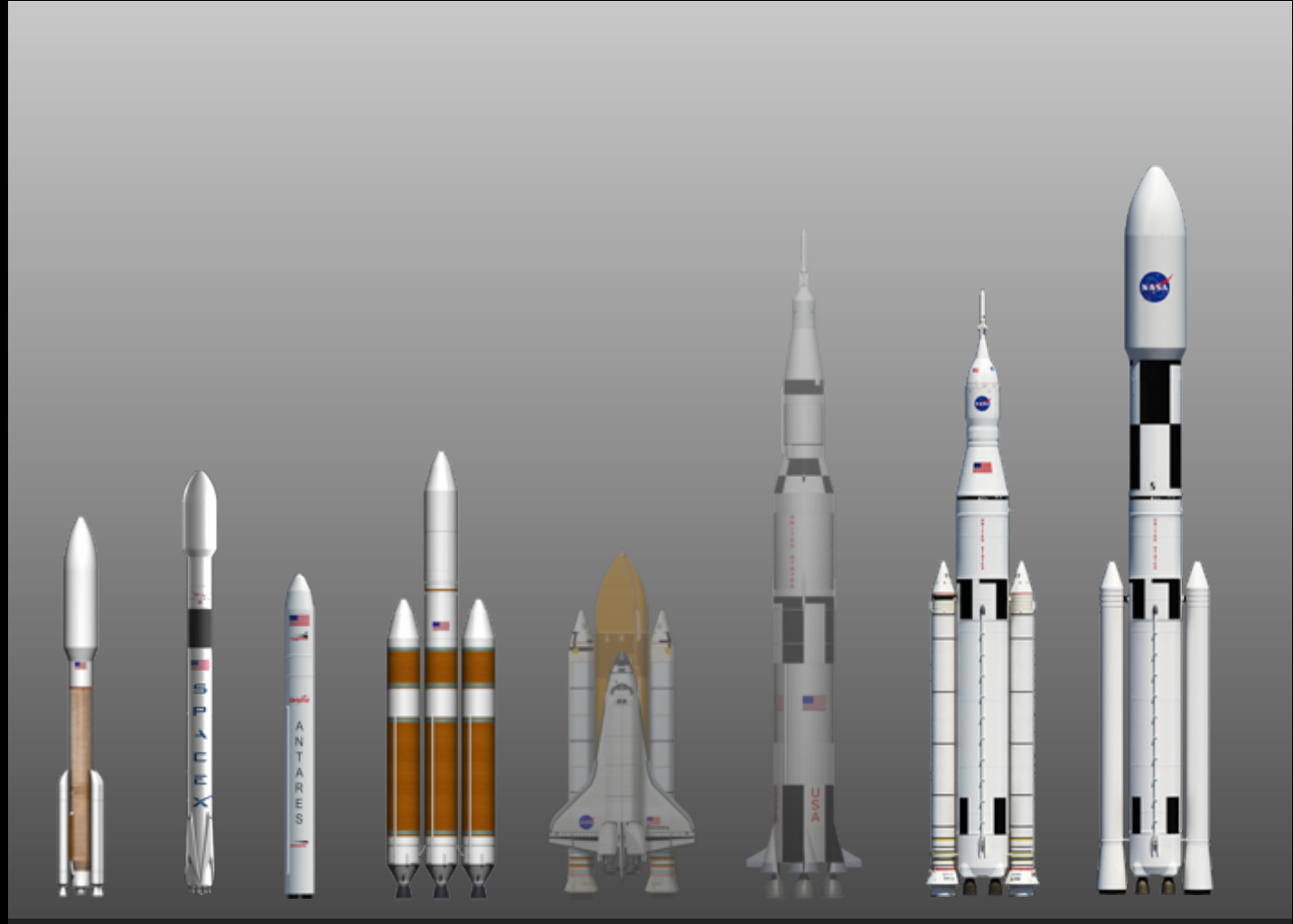
**Advanced Boosters:**
Generating the power to launch large payloads to deep space

**Working together** so we can go farther




With our partners launching to orbit,
**we can begin a new era of exploration.**

# Bigger Rocket = **Unrivaled Mass, Unrivaled Volume**

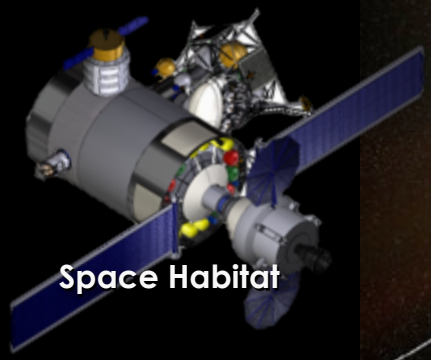


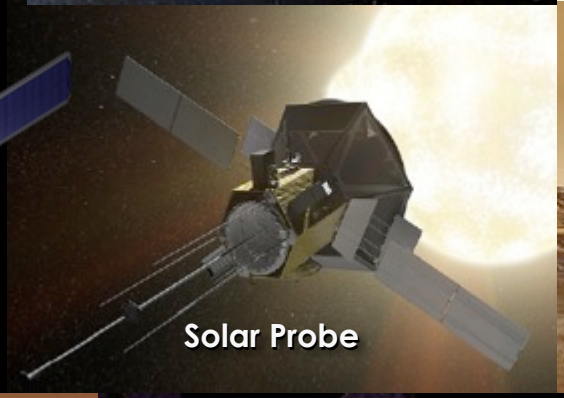

Enables missions

**no other rocket can perform.**

Versatile enough for a **universe of possibility**

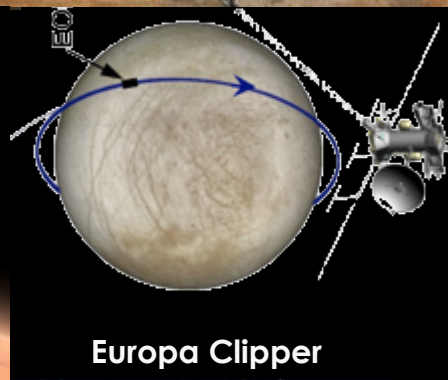











A national resource **the nation can afford**

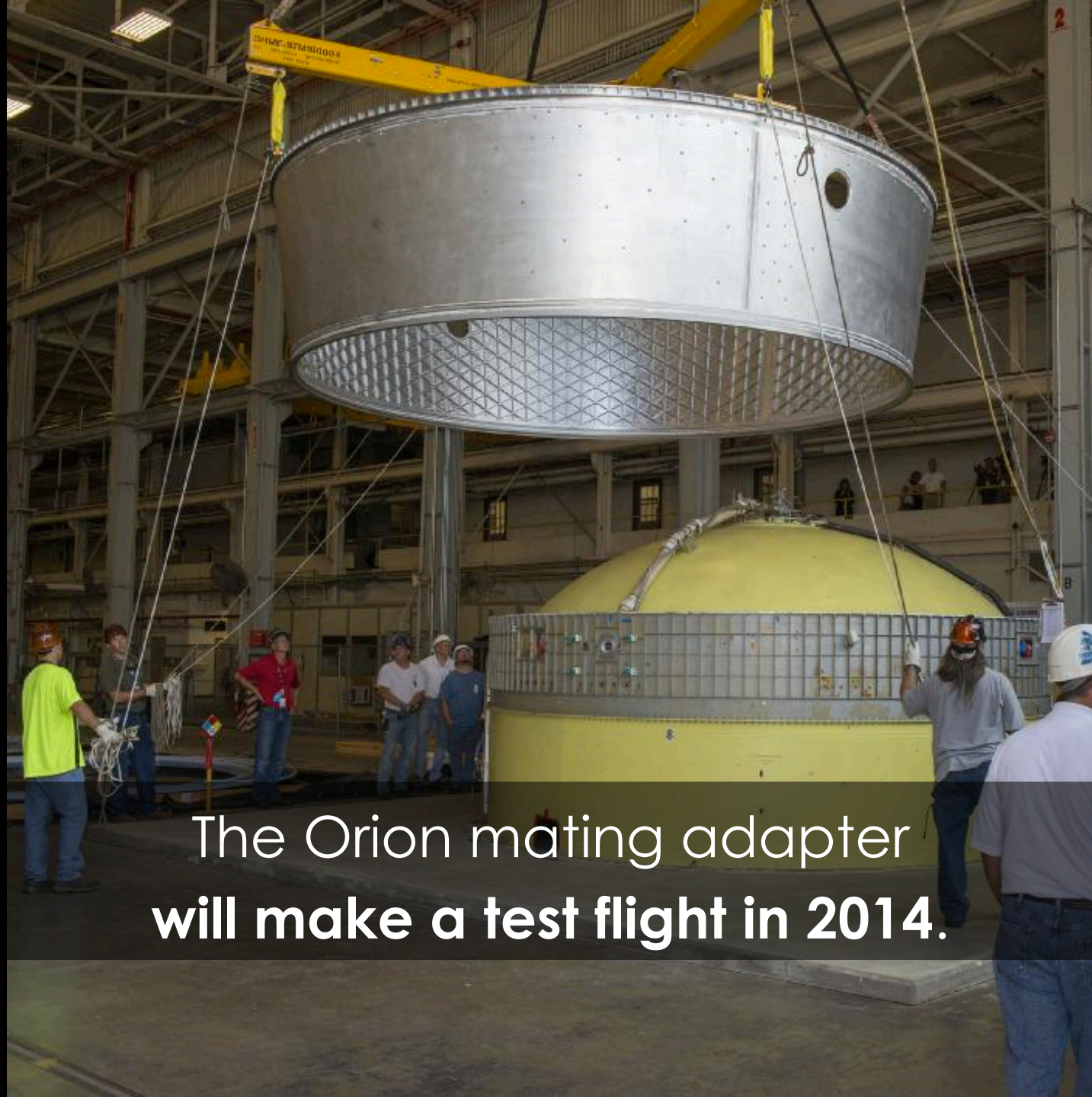
Innovatively designed to be **affordable within a limited budget.**

**‘Stack it. I’m ready.’**
–Tony Antonelli

After an in-depth technical review,
**the SLS Program is ready to build.**

# **Core Stage** is taking shape

Our first **payload adapter hardware** is ready to fly



The Orion mating adapter **will make a test flight in 2014.**

# Testing is soon for **RS-25 engines**

Test stand upgrades being made now **will support RS-25 test firings in 2014.**

New upgrades are being tested for **Solid Rocket Boosters**

**Three successful test firings** demonstrated the five-segment motor.

SLS's first launch will send Orion **farther than Apollo ever traveled.**

SLS flies for the first time in **2017!**

SLS is the first step in the **journey to Mars**

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

We explore space to promote **inspiration, security, diplomacy, knowledge, technology & prosperity.**

Going out there **to better life here**

The **biggest challenges** aren't always **technical**

The SLS team is making great progress.

**Help us share our story.**

www.nasa.gov/sls #slsinspires

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

Join us on
**the journey**

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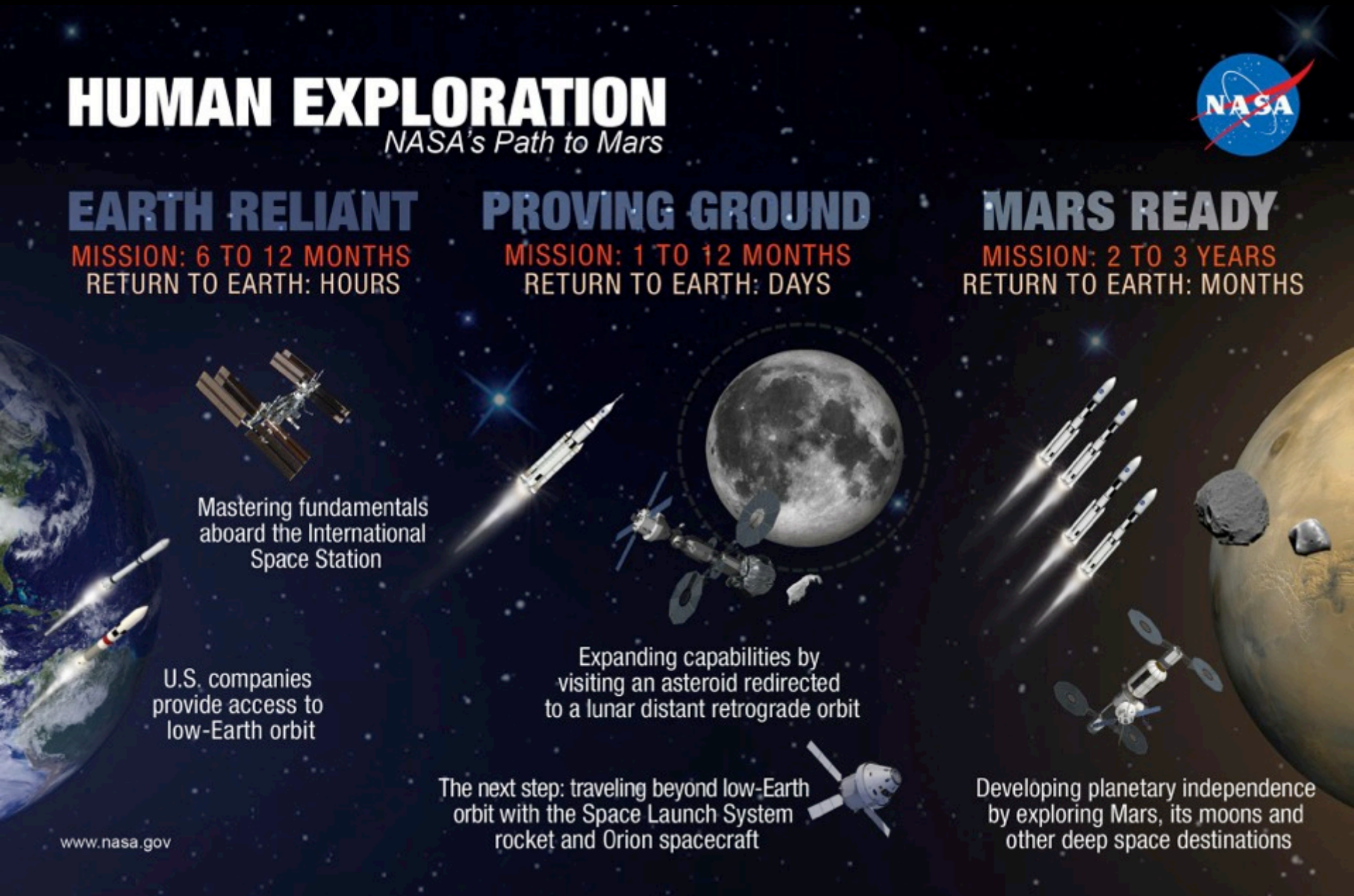
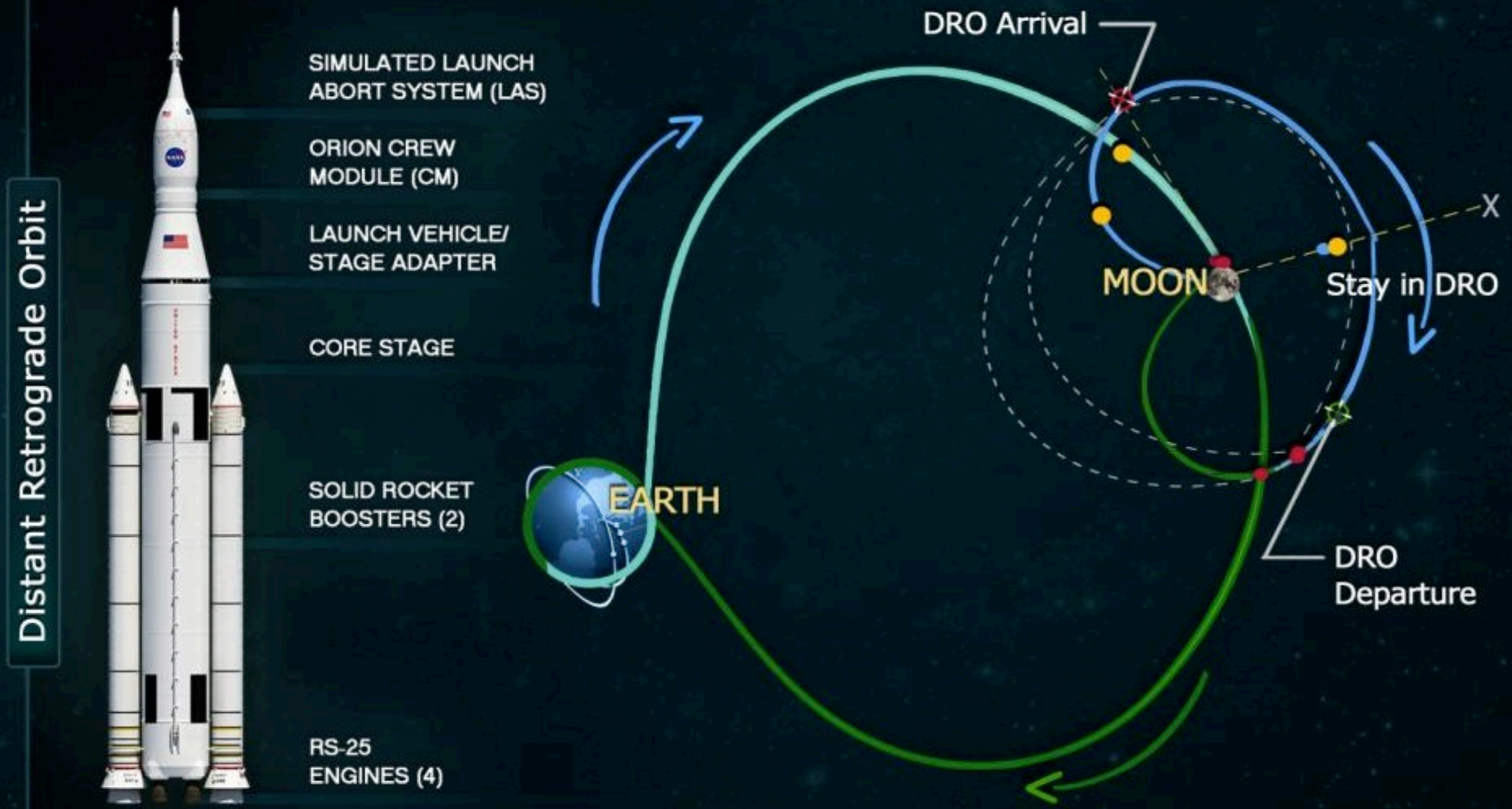
# The Path To Mars



# Exploration Mission-1



# Global Exploration Roadmap 2.0

2013 2020 2030

## International Space Station

General Research and Exploration
Preparatory Activities

Note: ISS partner agencies have agreed to use the ISS until at least 2020.

Commercial or Government Low-Earth Orbit Platforms and Missions

## Robotic Missions to Discover and Prepare

LADEE
Luna-25
Chandrayaan-2
Luna-26
Luna 27
RESOLVE
SELENE-2
Luna 28/29
SELENE-3
Rosetta
Hayabusa2
OSIRIS-REx
Apophis
MAVEN
ISRO Mars
ExoMars
InSight
ExoMars
Mars 2020
JAXA Mars Precursor

Mars Sample Return and Precursor Opportunities

## Human Missions Beyond Low-Earth Orbit

Explore Near-Earth Asteroid

Multiple Locations in the Lunar Vicinity

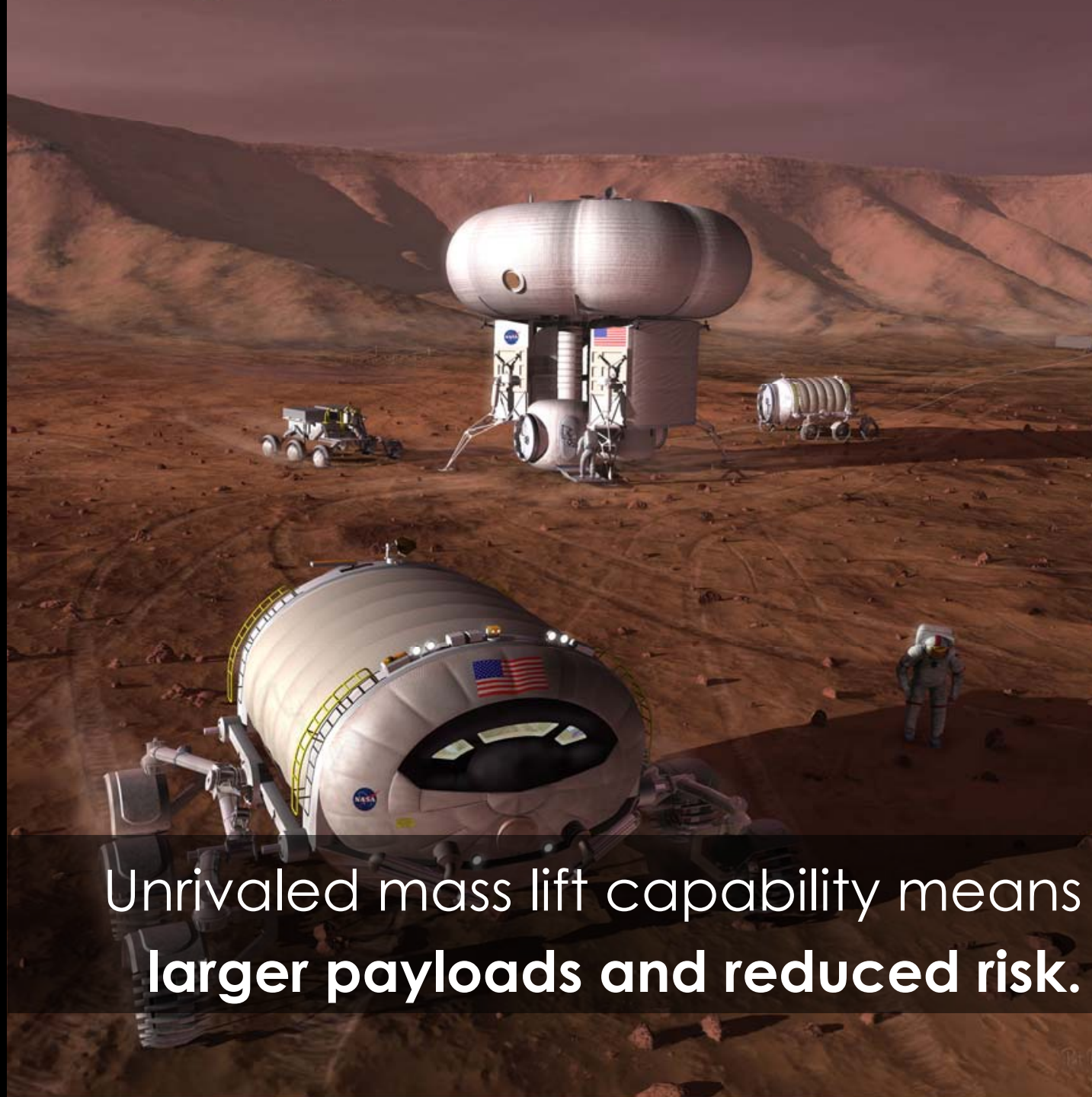
Extended Duration Crew Missions

Humans to Lunar Surface

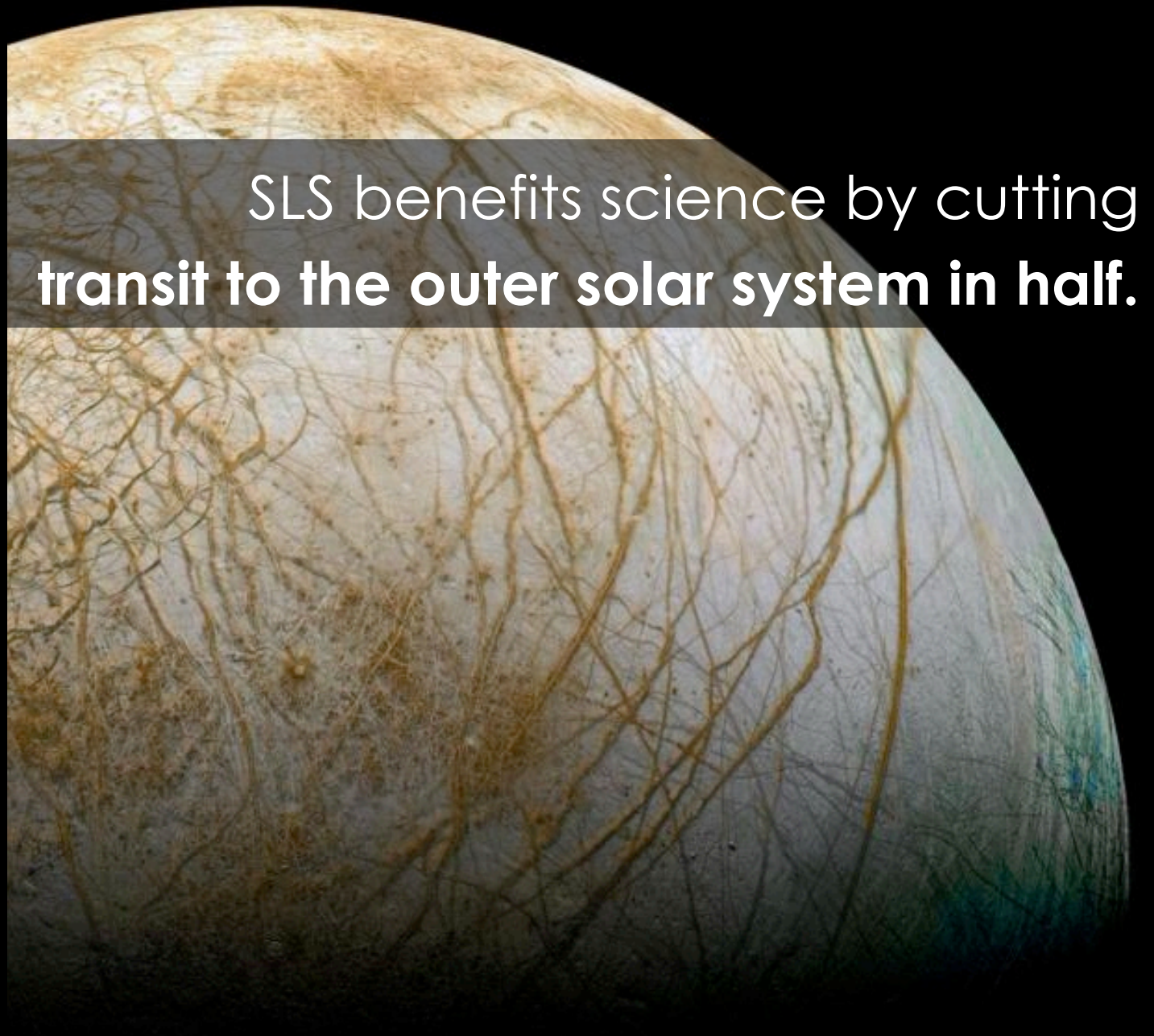
Missions to Deep Space and Mars System

Sustainable Human Missions to Mars Surface

Doing the **heavy lifting** for space exploration



Unrivaled mass lift capability means **larger payloads and reduced risk.**

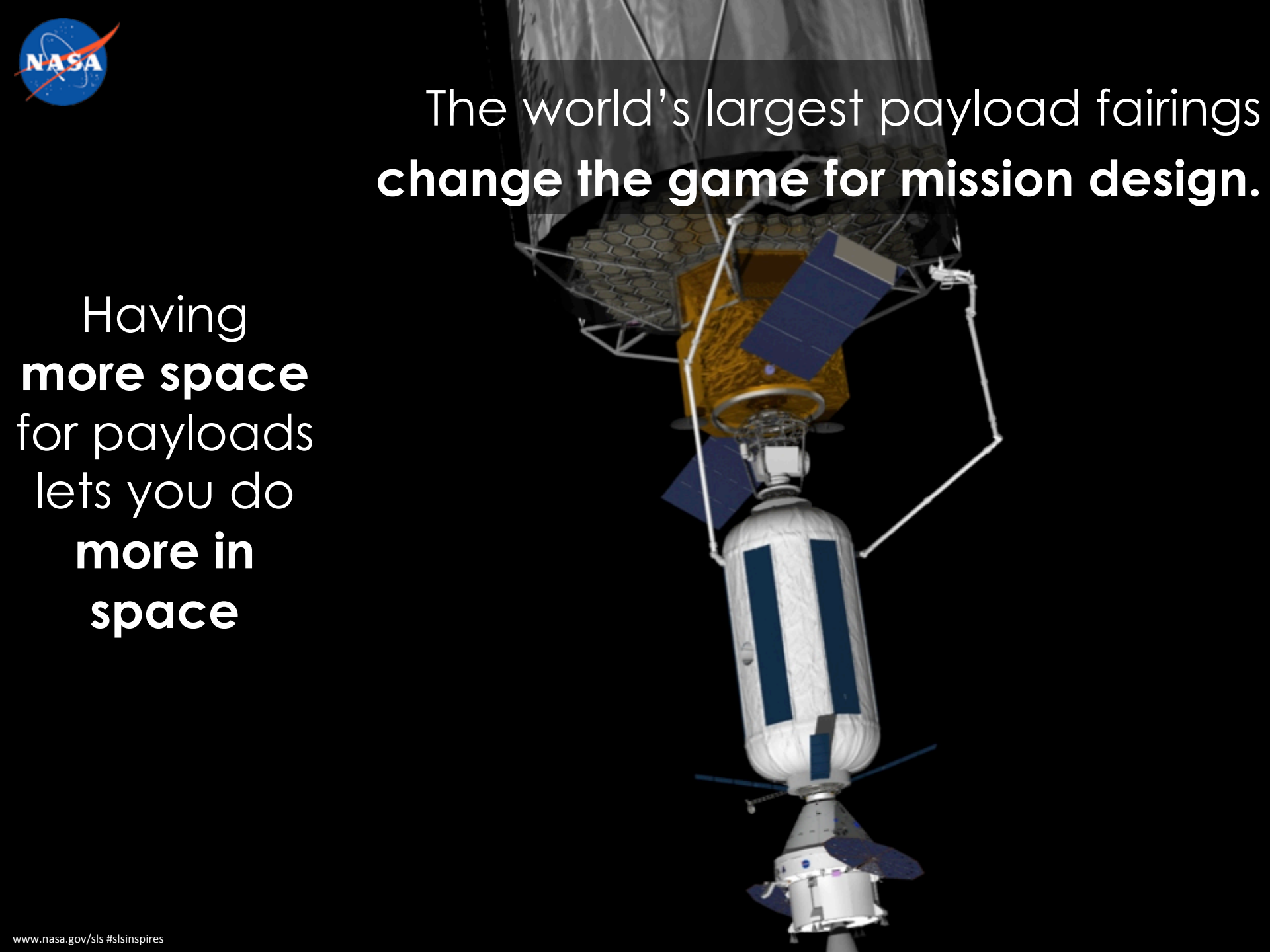


SLS benefits science by cutting **transit to the outer solar system in half.**

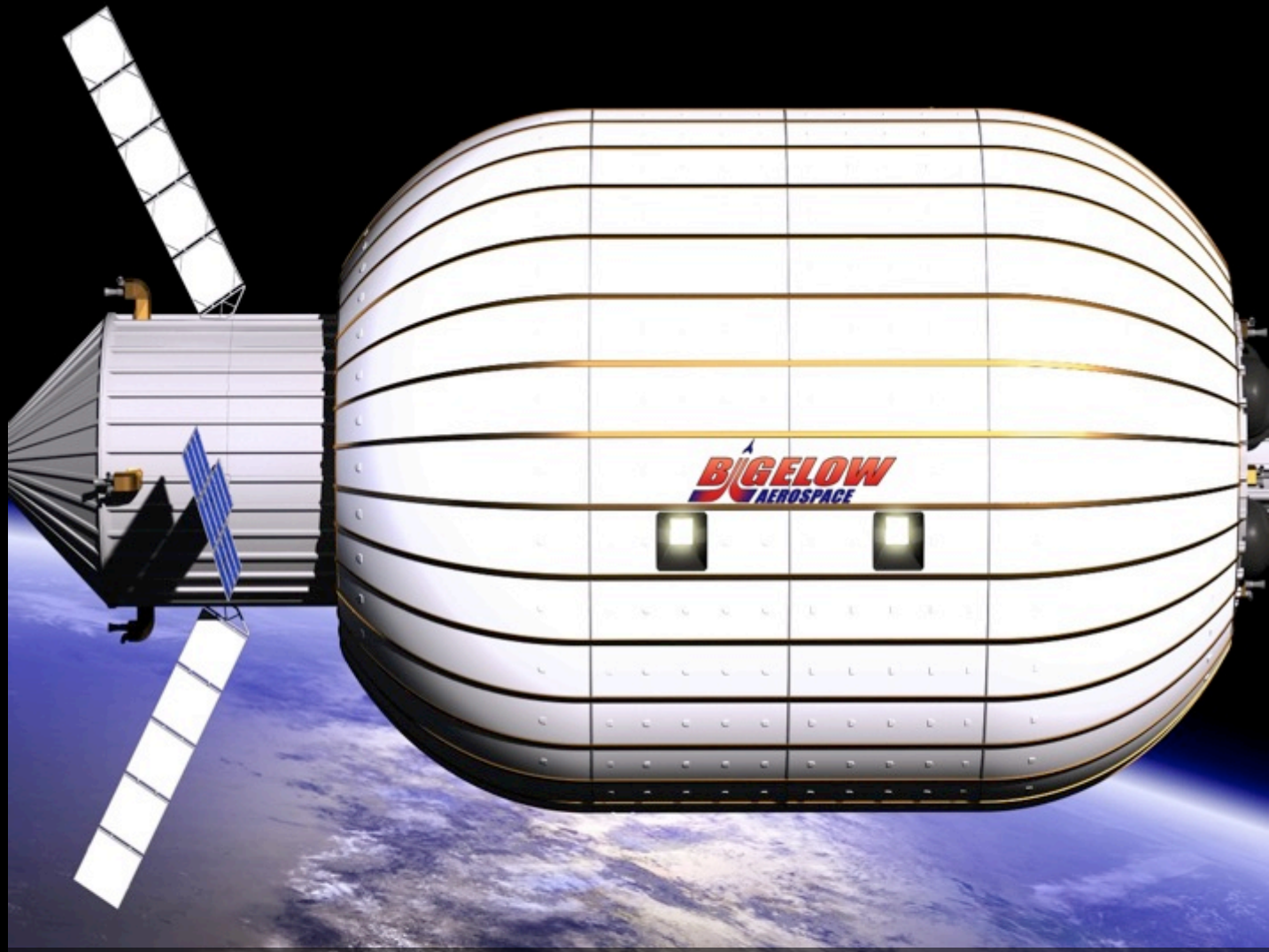
Greater power means **greater versatility**

The world's largest payload fairings **change the game for mission design.**

Having **more space** for payloads lets you do **more in space**



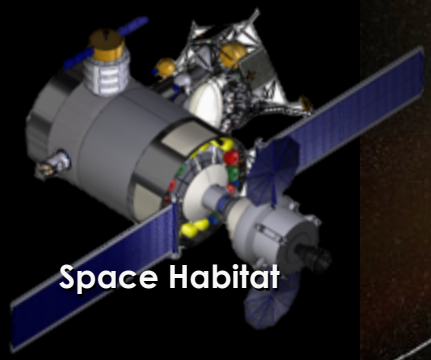
**A vital resource** for the space industry

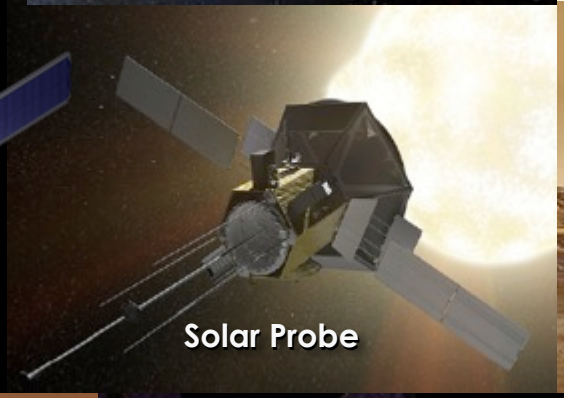



Space Launch System will open new **opportunities for investment in space.**

Versatile enough for a **universe of possibility**

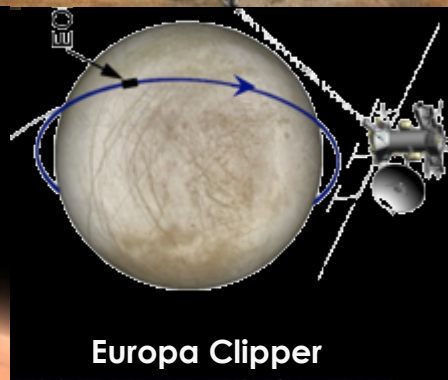











Man cannot discover
**new oceans**
unless he has the
**courage to lose**
**sight of the shore.**

Join us on
**the journey**

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