A full-body image of an astronaut in an orange Extravehicular Activity (EVA) suit, floating in space. The suit has a NASA patch on the chest and a US flag on the right arm. The astronaut's helmet is black with a white visor. The background is a deep blue space with a bright light source on the left and a satellite in the upper right.

Commercial Crew Program and Orion/SLS Updates

The Next Steps in U.S. Space Transportation

***Stephanie D. Wilson
NASA Astronaut***

HUMAN EXPLORATION

NASA's Path to Mars

National Aeronautics and
Space Administration



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



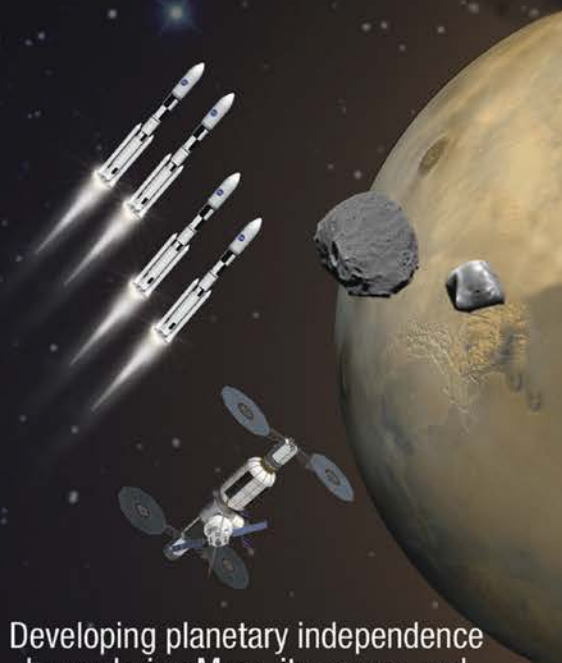
Expanding capabilities by
visiting an asteroid redirected
to a lunar distant retrograde orbit

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

Current and Future Human Spaceflight



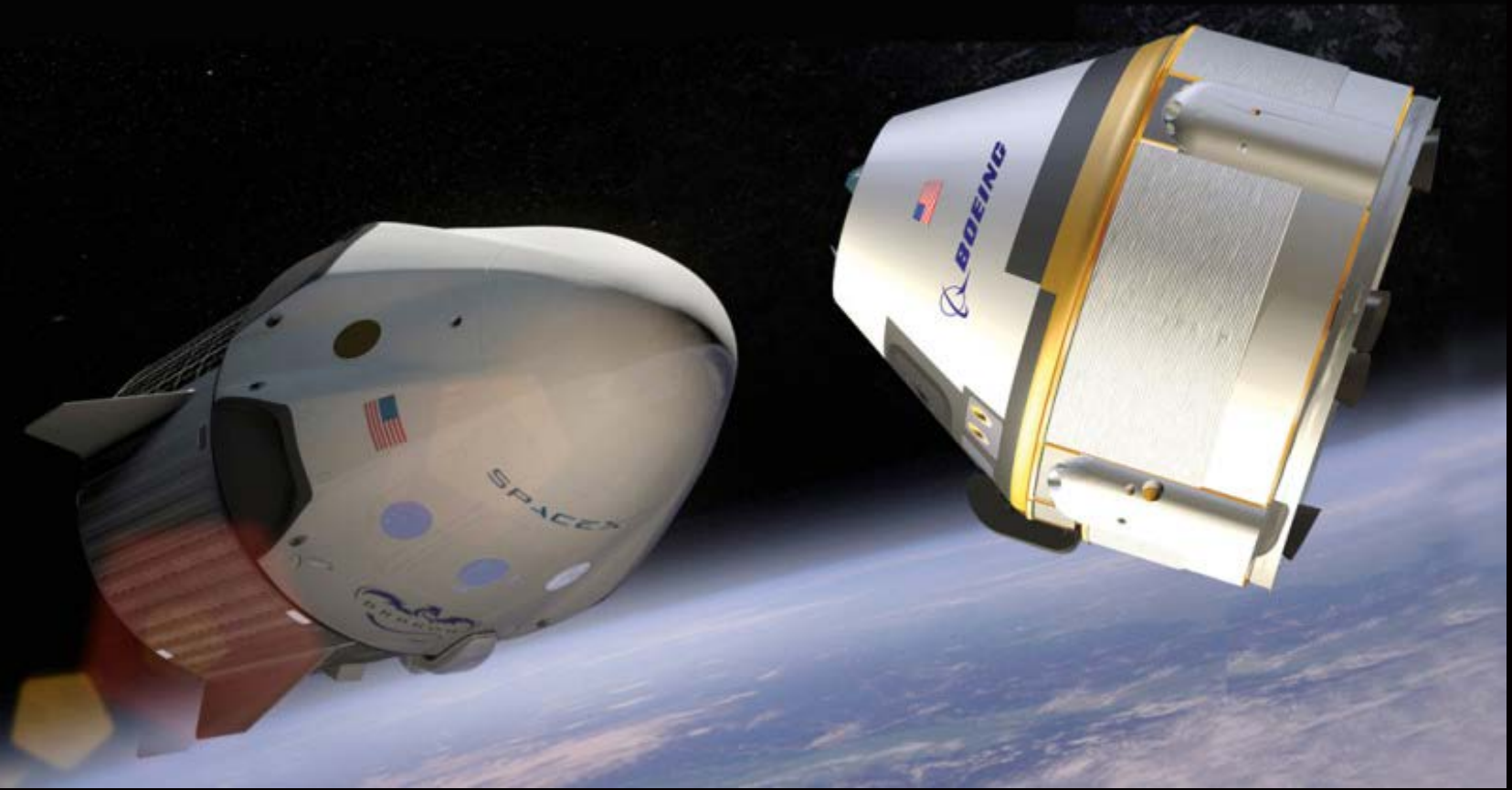
- 2015: (present day)
 - International Space Station (6 crew)
 - Soyuz 4 launches/year
 - ISS Resupply with International Partners (Progress, HTV)
 - ISS Resupply with Commercial Resupply Contract (Space-X and Orbital Sciences)
- ~2017 -2018
 - International Space Station (6+ Crew)
 - Soyuz 2 launches /year
 - Commercial Crew ~2 launches/year
 - ISS Resupply with International Partners (Progress, HTV)
 - ISS Resupply with Commercial Resupply Contract (new contract)
 - Orion Exploration Mission-1 (uncrewed, Circumlunar)
- ~2021
 - International Space Station (6+ Crew)
 - Soyuz 2 launches /year
 - Commercial Crew ~2 launches/year
 - ISS Resupply with International Partners (Progress, HTV)
 - ISS Resupply with Commercial Resupply Contract
 - Orion Exploration Mission-2 (crewed, Lunar orbit)



NASA

COMMERCIAL CREW

National Aeronautics and
Space Administration



Boeing: CST-100 “Starliner”/ Atlas V



Boeing: CST-100 / Atlas V



Space X: Dragon / Falcon 9



Space X: Dragon Pad Abort Test



"These distinguished, veteran astronauts are blazing a new trail, a trail that will one day land them in the history books and Americans on the surface of Mars."

— Charles Bolden, NASA Administrator



LAUNCH AMERICA

COMMERCIAL CREW TRANSPORTATION





ORION

Space Launch System
21st Century Launch Operations



Exploration Mission Timeline



2010
PA-1



2014
EFT-1



2017
EM-1

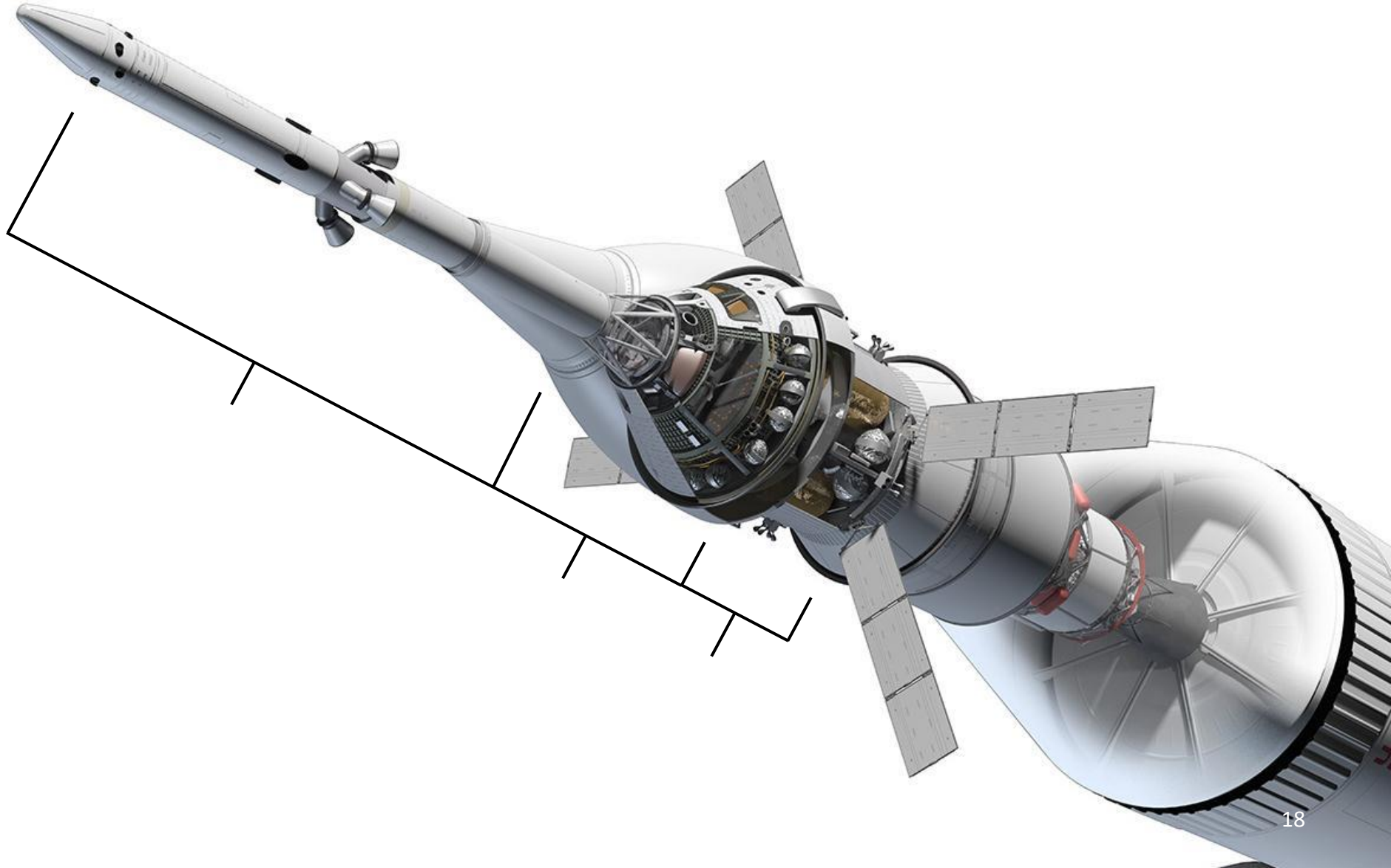


2019
AA-2

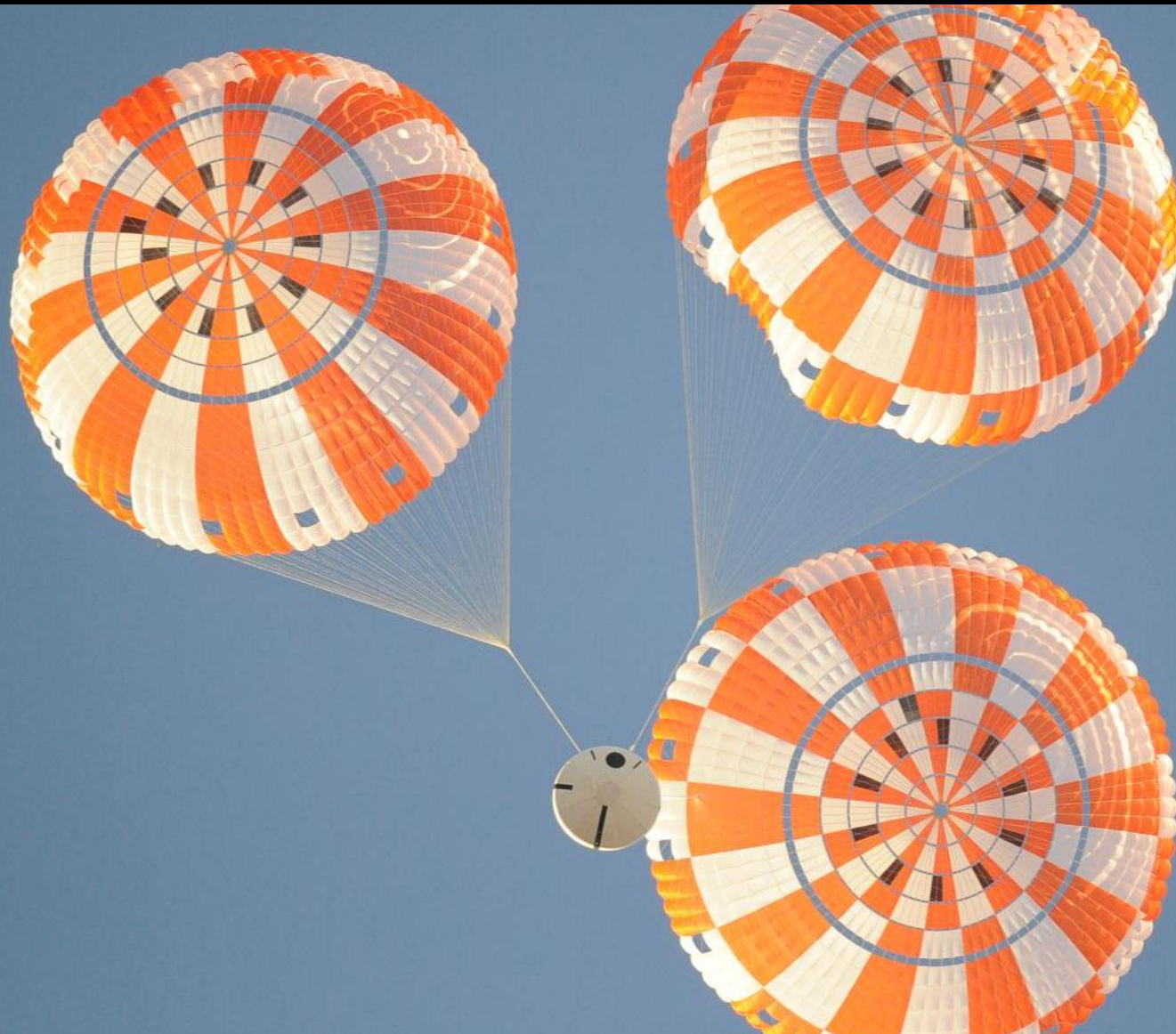


2021
EM-2

The Orion Spacecraft



Parachute Drop Tests



ARMY YUMA PROVING GROUND, AZ

Parachute Drop Test



200:14:34:51.435

Underway Recovery Test



EFT-1 Launch Vehicle



CAPE CANAVERAL AIR FORCE STATION, FL

