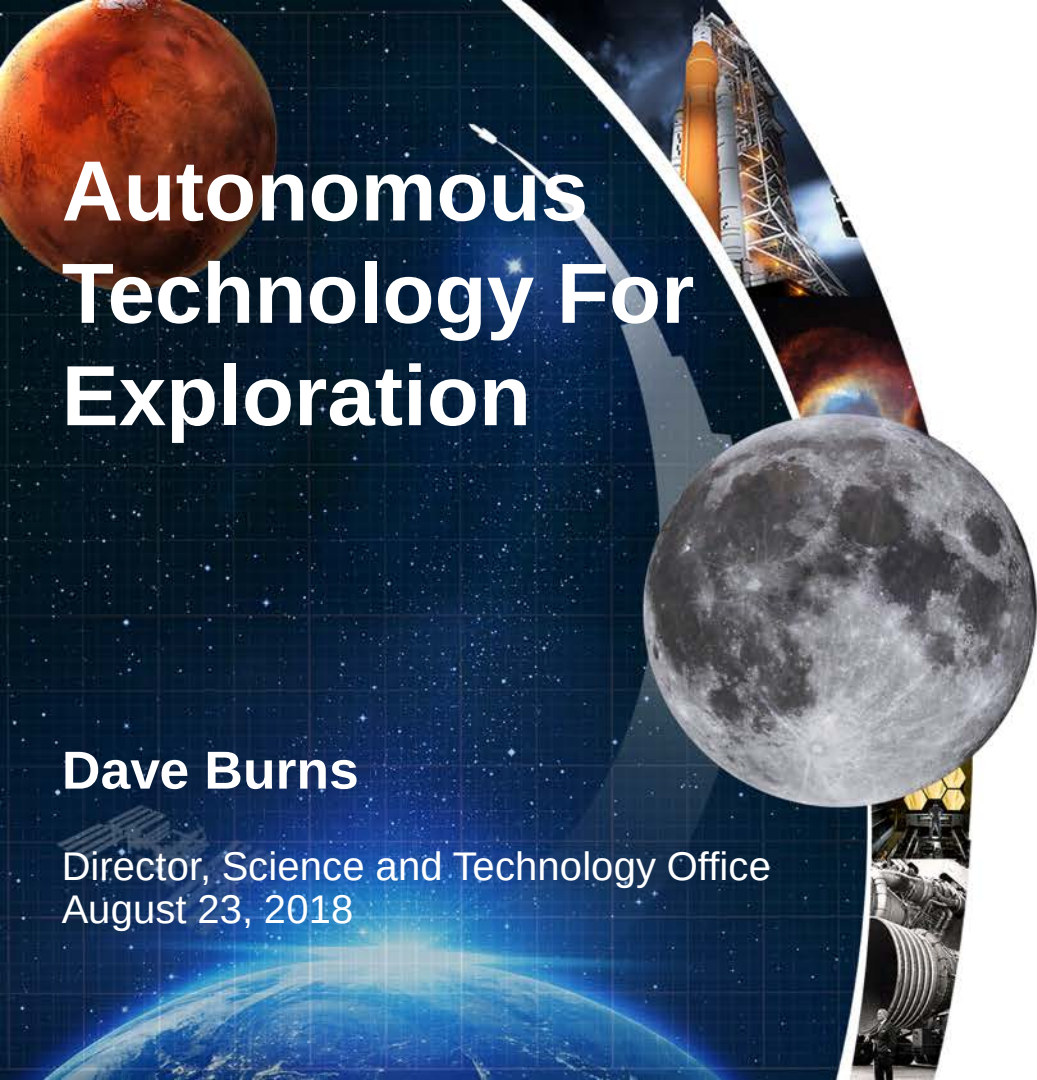




Autonomous Technology For Exploration

Dave Burns

Director, Science and Technology Office
August 23, 2018

National Aeronautics and
Space Administration

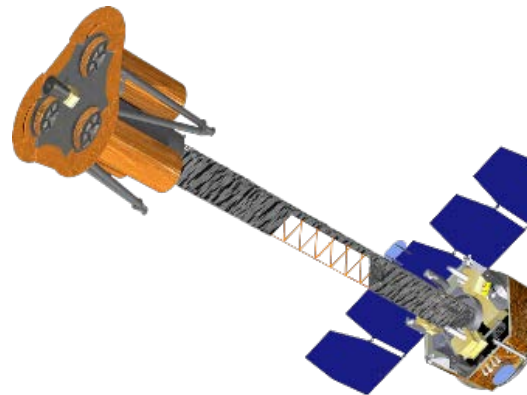


MARSHALL
SPACE FLIGHT CENTER

**Traveling To
and Through
Space**



**Living and
Working in Space**



**Supporting Agency
Mission Operations**

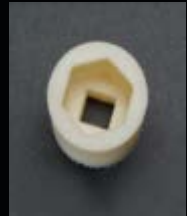
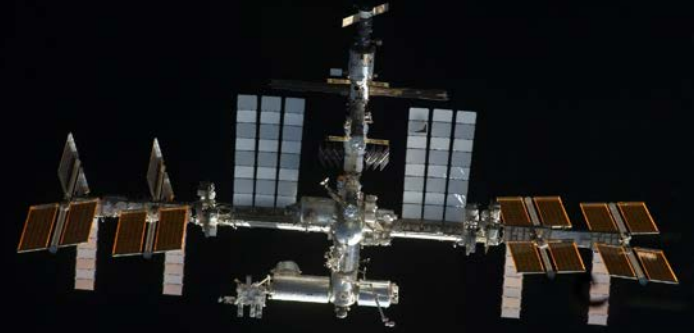
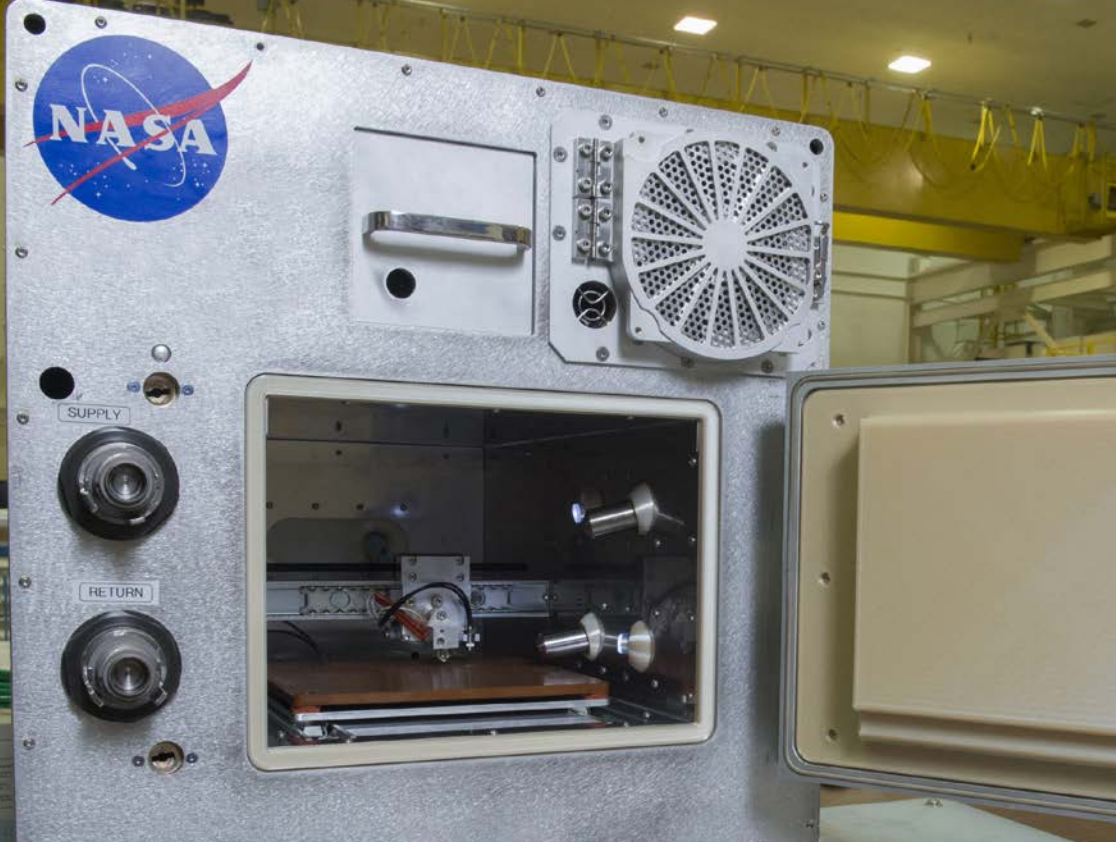


**Understanding Our
World and Beyond**

Marshall's Mission Areas



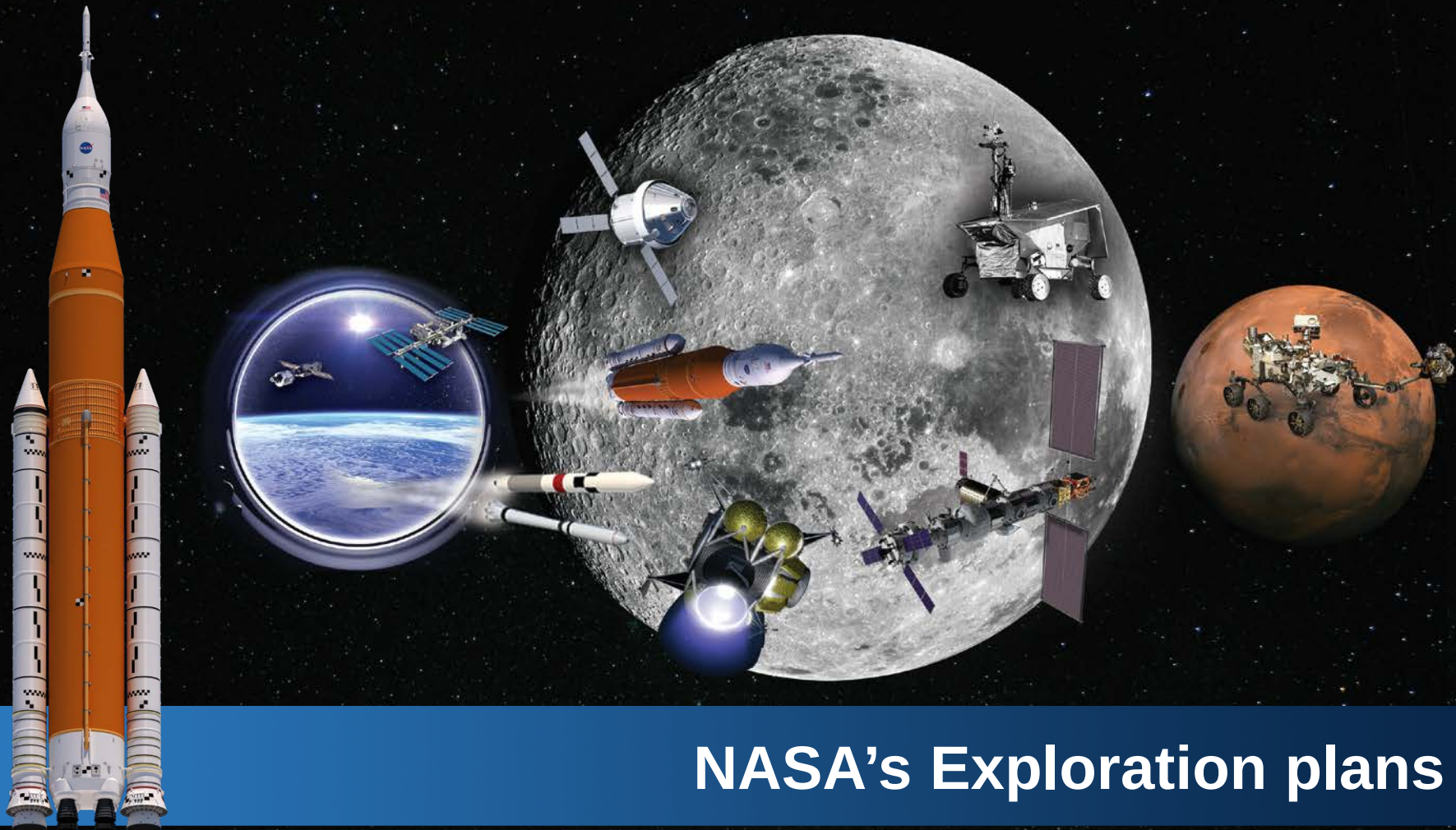
IXPE: Imaging X-ray Polarimetry Explorer



NASA's Exploration plans







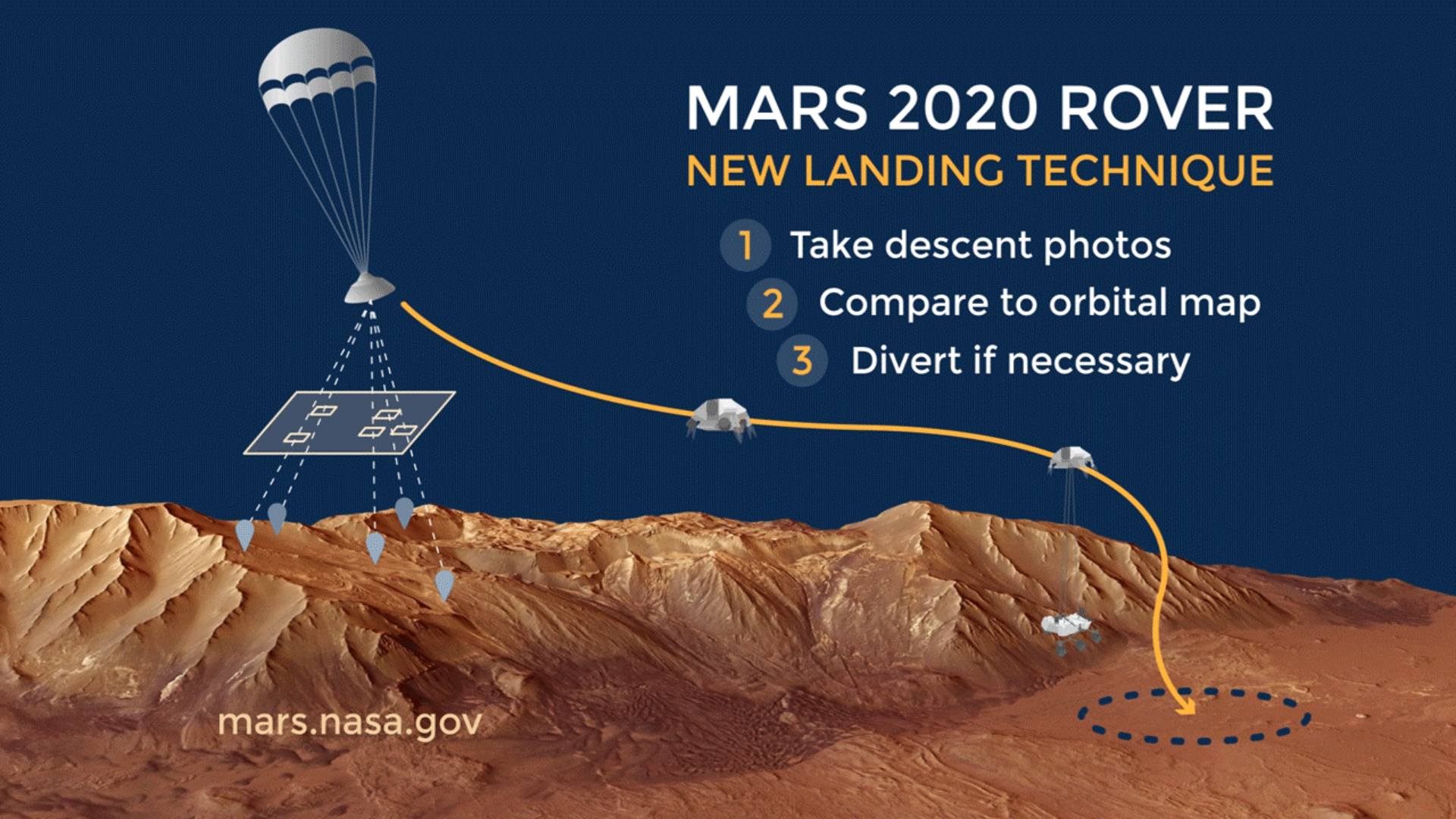
NASA's Exploration plans

MARS 2020 ROVER

NEW LANDING TECHNIQUE

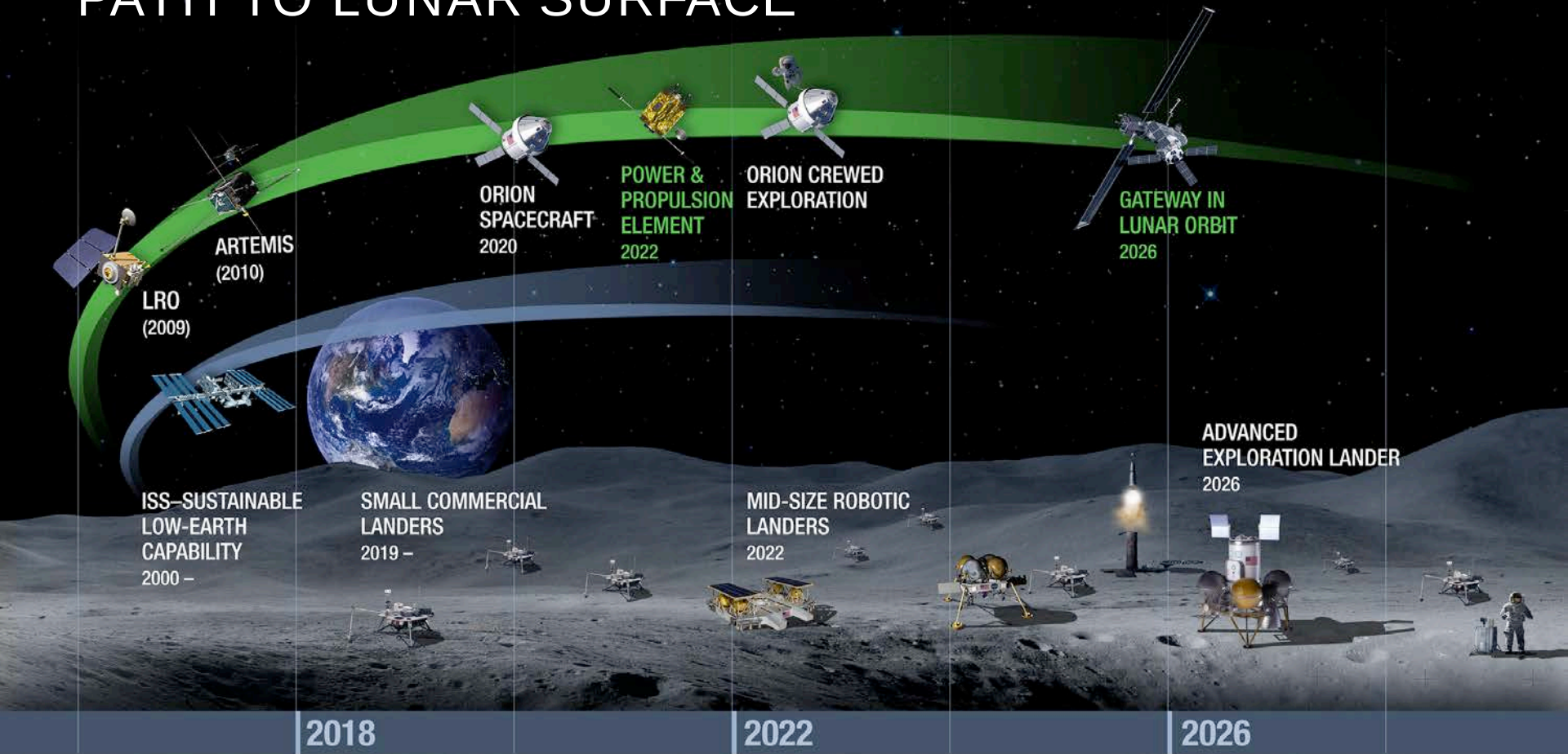
- 1 Take descent photos
- 2 Compare to orbital map
- 3 Divert if necessary

mars.nasa.gov

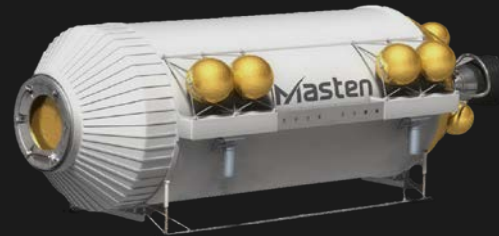
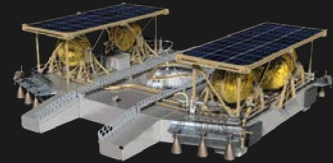


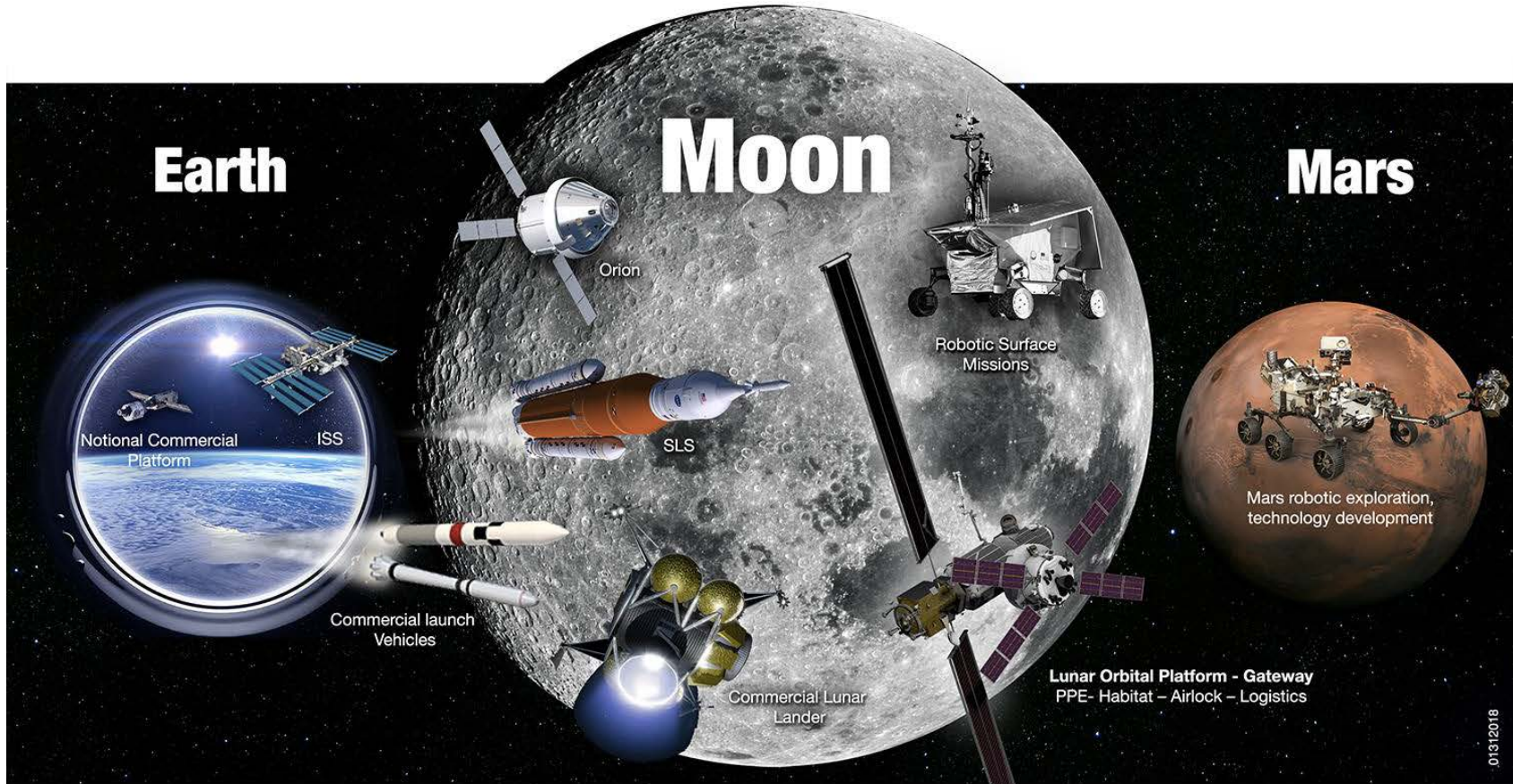


PATH TO LUNAR SURFACE



NASA CATALYST's Small Lunar Landers
establish low-cost, small payload re-supply





Earth

Moon

Mars

Notional Commercial
Platform

ISS

Orion

SLS

Robotic Surface
Missions

Commercial launch
Vehicles

Commercial Lunar
Lander

Lunar Orbital Platform - Gateway
PPE- Habitat – Airlock – Logistics

Mars robotic exploration,
technology development

In LEO

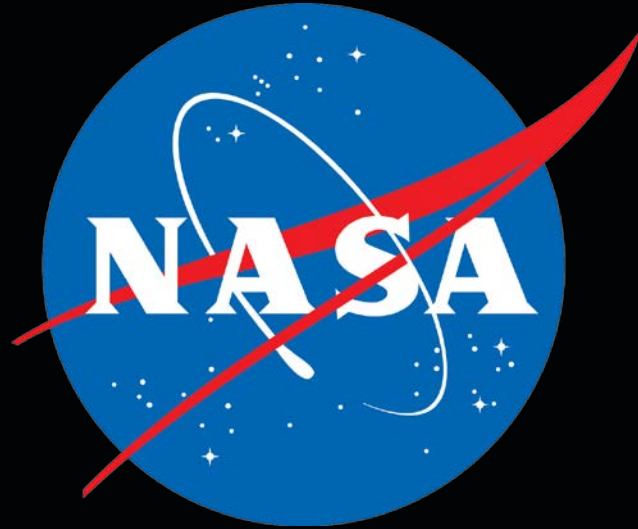
Commercial & International
partnerships

In Cislunar Space

A return to the moon for
long-term exploration

On Mars

Research to inform future
crewed missions





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