



National Aeronautics and
Space Administration

Mars 2020 Perseverance Rover

Matt Wallace

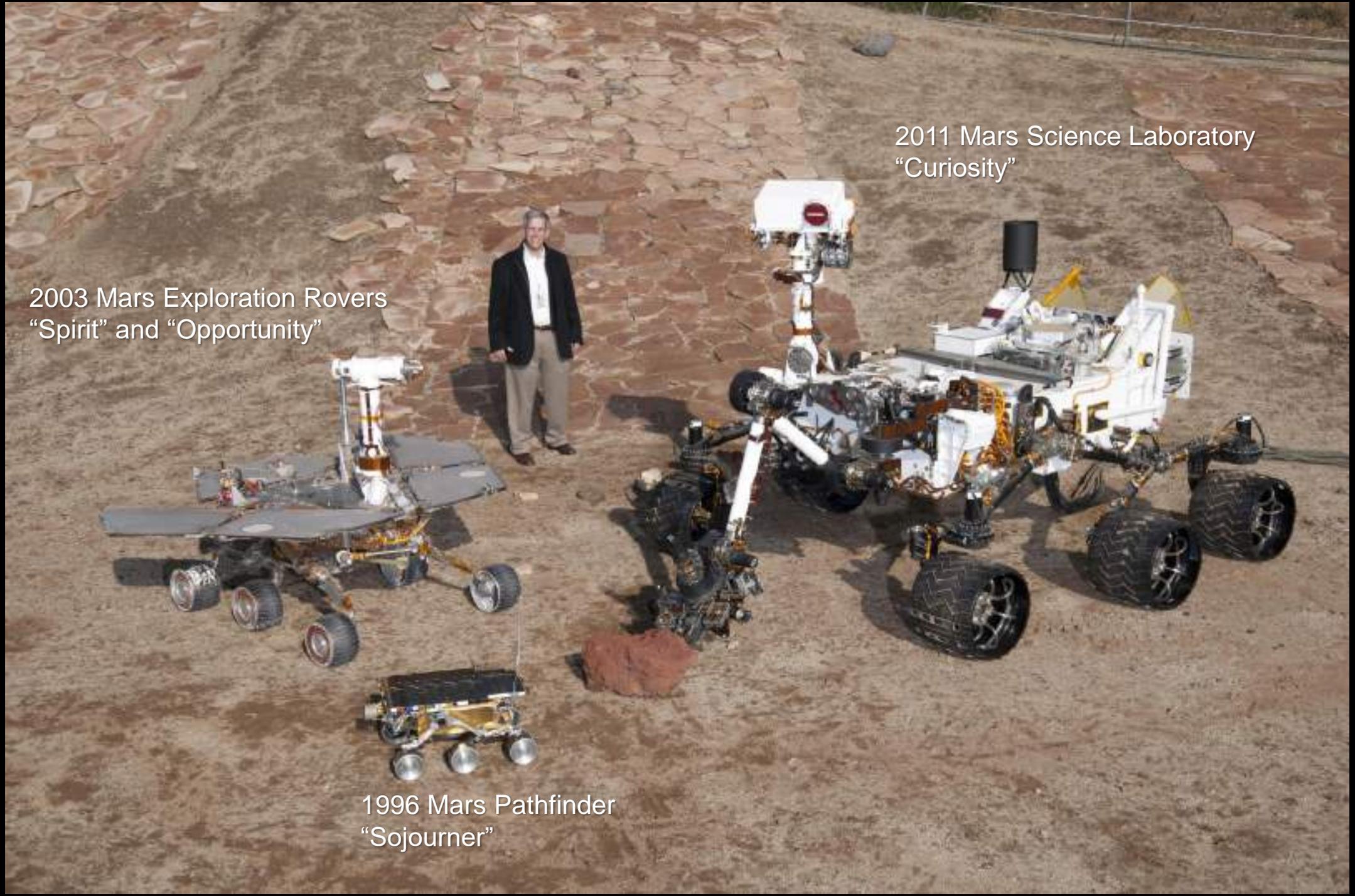
Project Manager, Mars 2020 Perseverance Mission

April 28, 2021

2011 Mars Science Laboratory
"Curiosity"

2003 Mars Exploration Rovers
"Spirit" and "Opportunity"

1996 Mars Pathfinder
"Sojourner"



Perseverance

50% more science and technology payload than Curiosity

Unprecedented instrument capabilities

Microphones

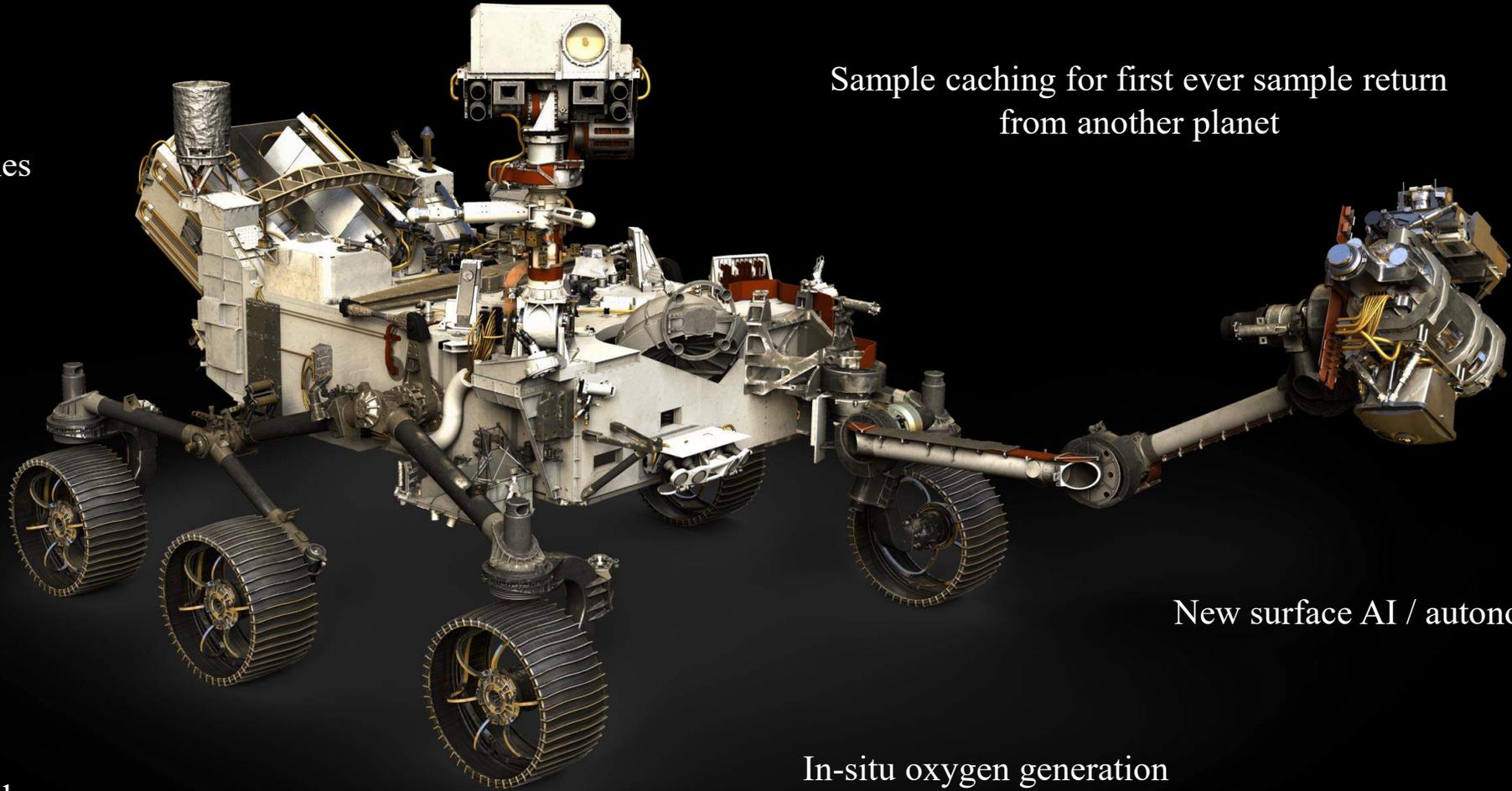
Sample caching for first ever sample return from another planet

Ingenuity Helicopter

New surface AI / autonomy

New landing hazard avoidance

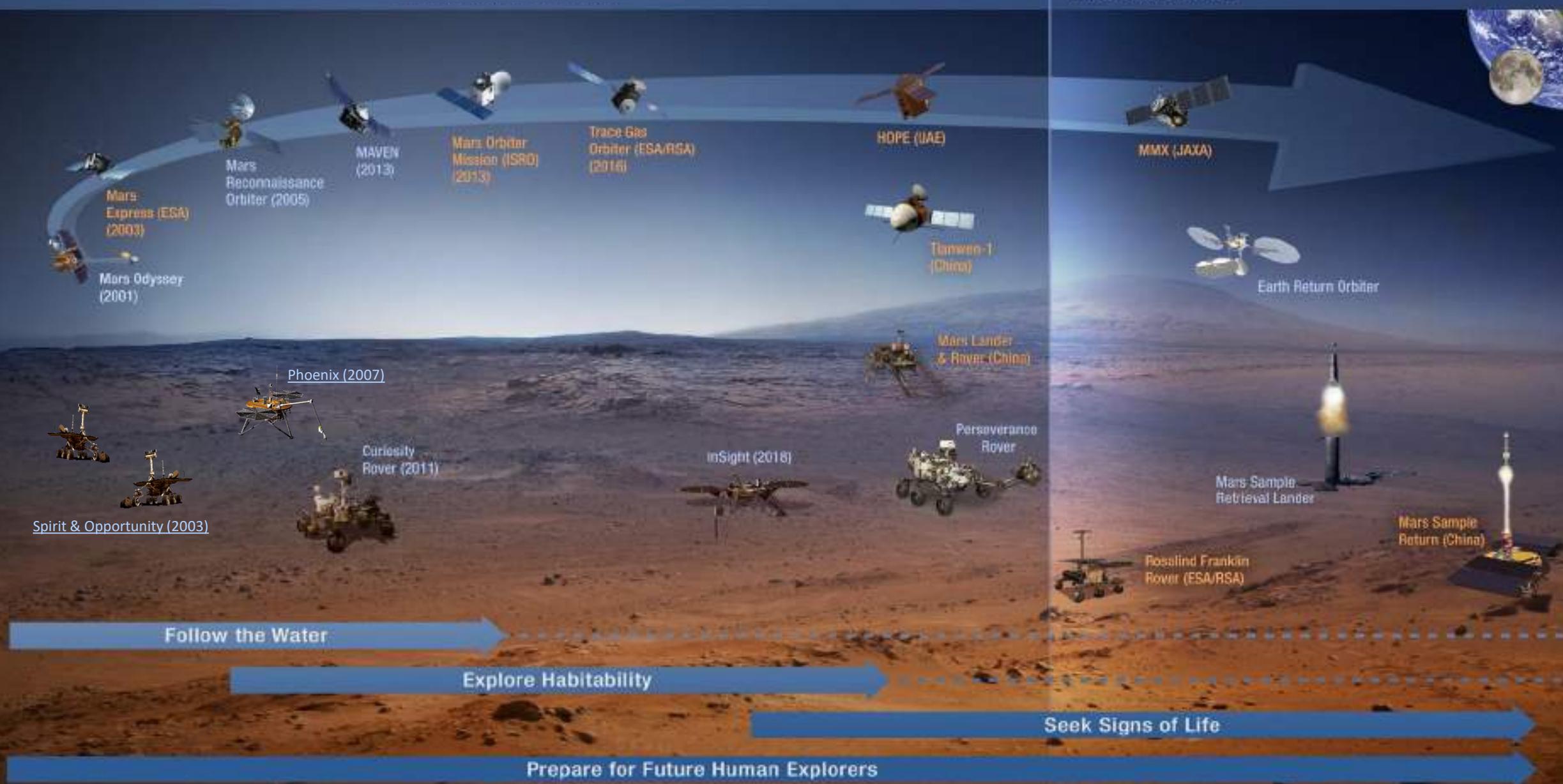
In-situ oxygen generation



MARS MISSIONS

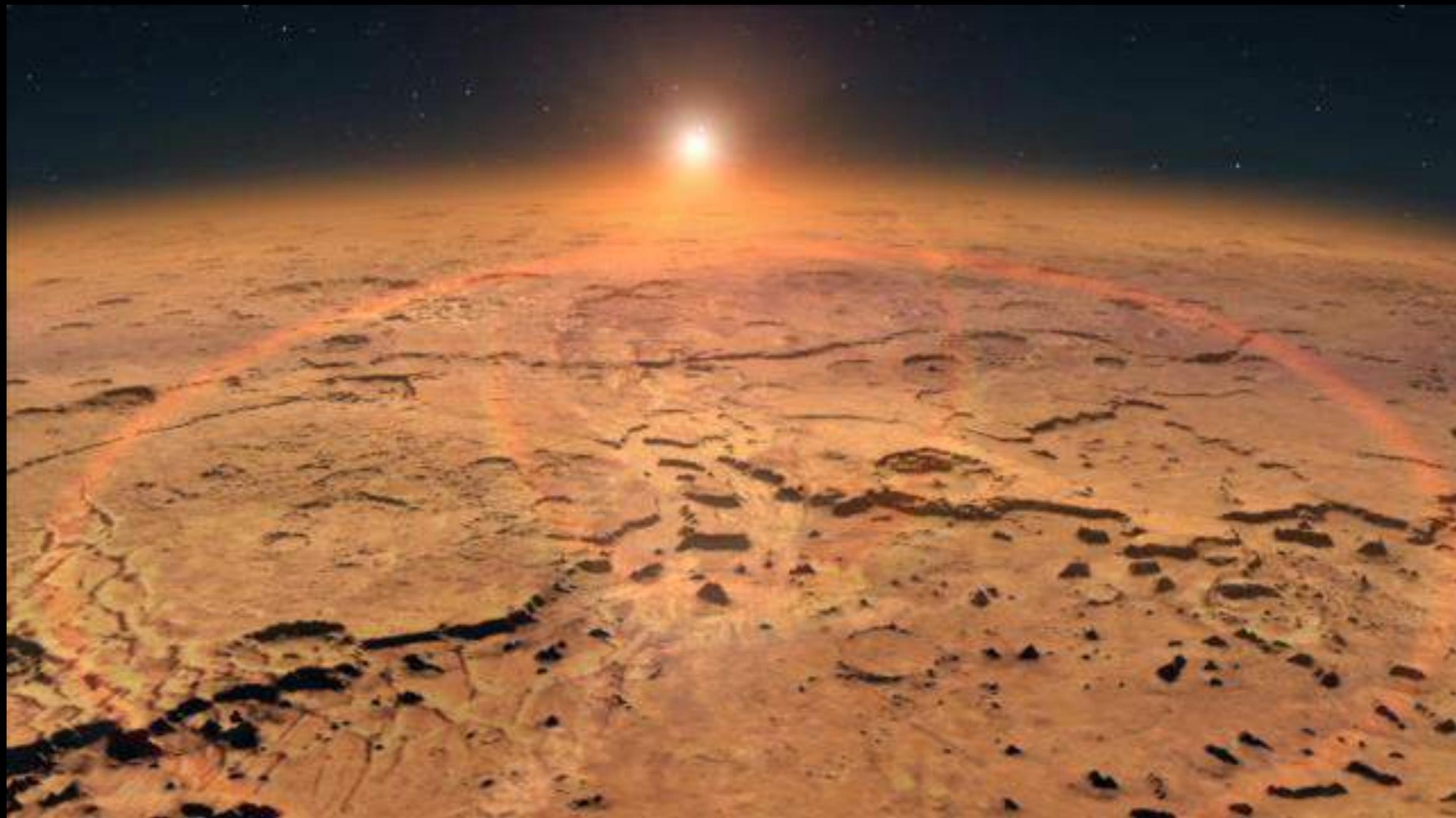
2001-2020

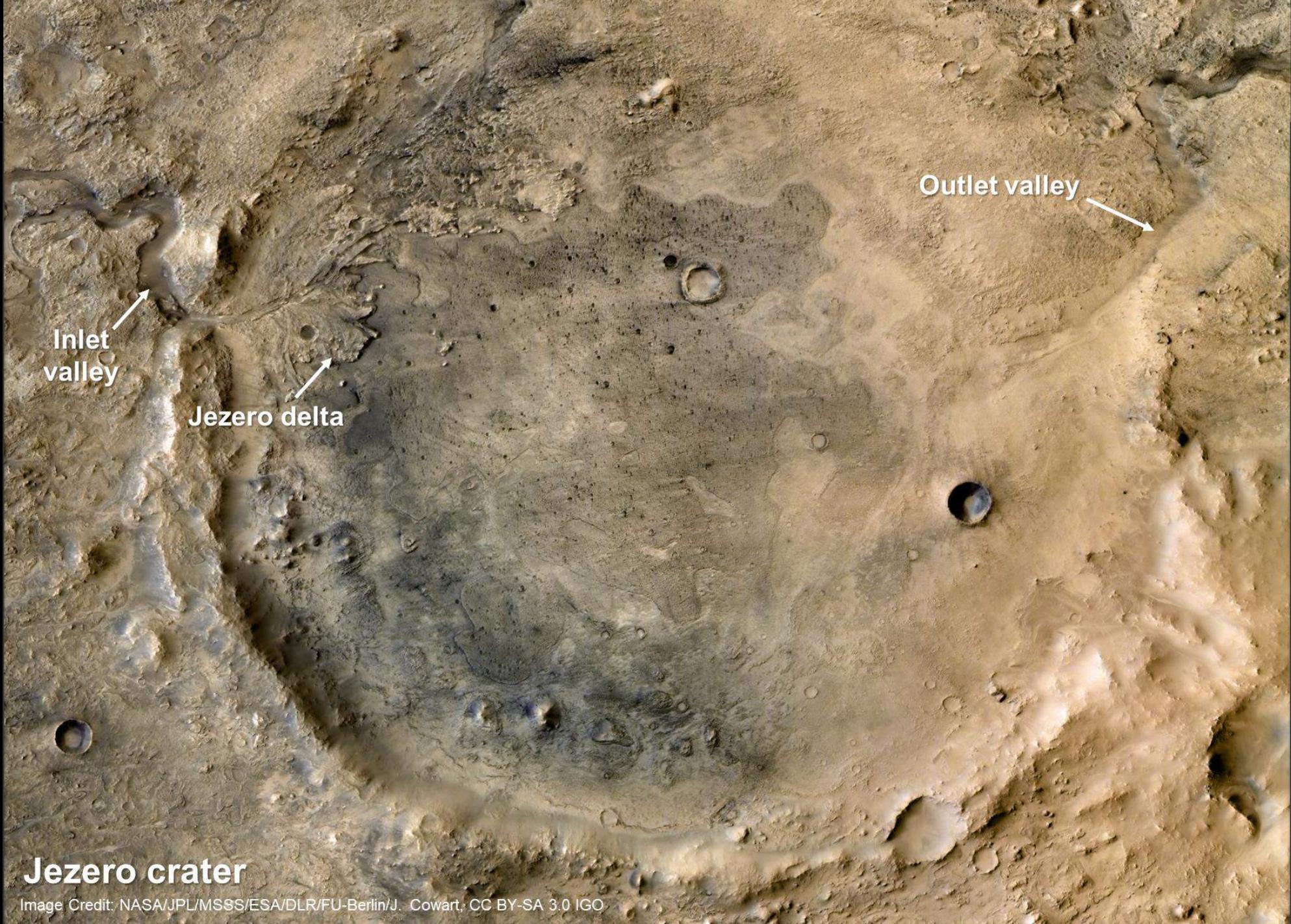
2022 AND BEYOND



■ U.S. Missions

■ non-U.S. Missions





Inlet valley

Jezero delta

Outlet valley

Jezero crater

Image Credit: NASA/JPL/MSSS/ESA/DLR/FU-Berlin/J. Cowart, CC BY-SA 3.0 IGO

Cruise Stage

Backshell

Descent Stage

Rover

Heatshield

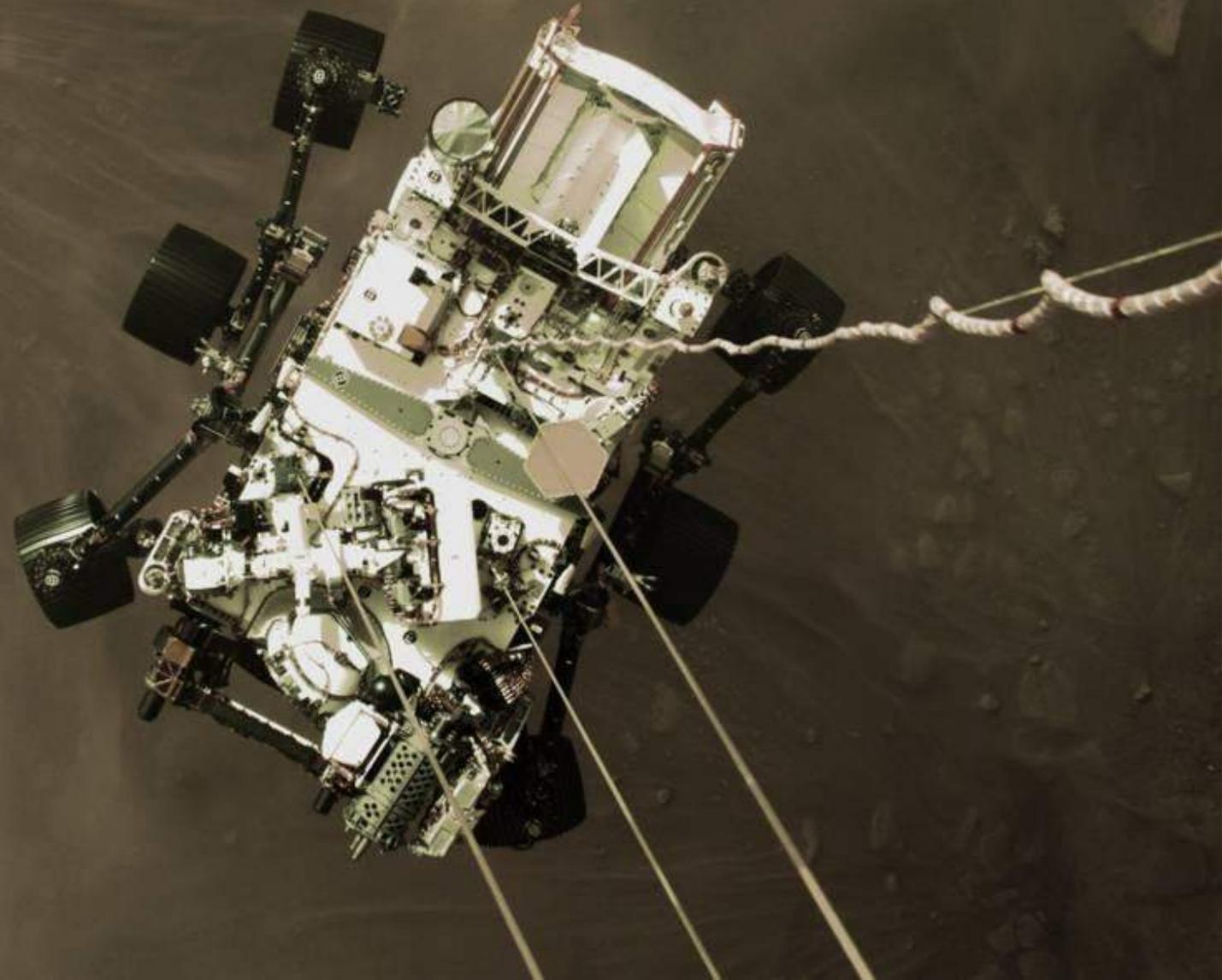


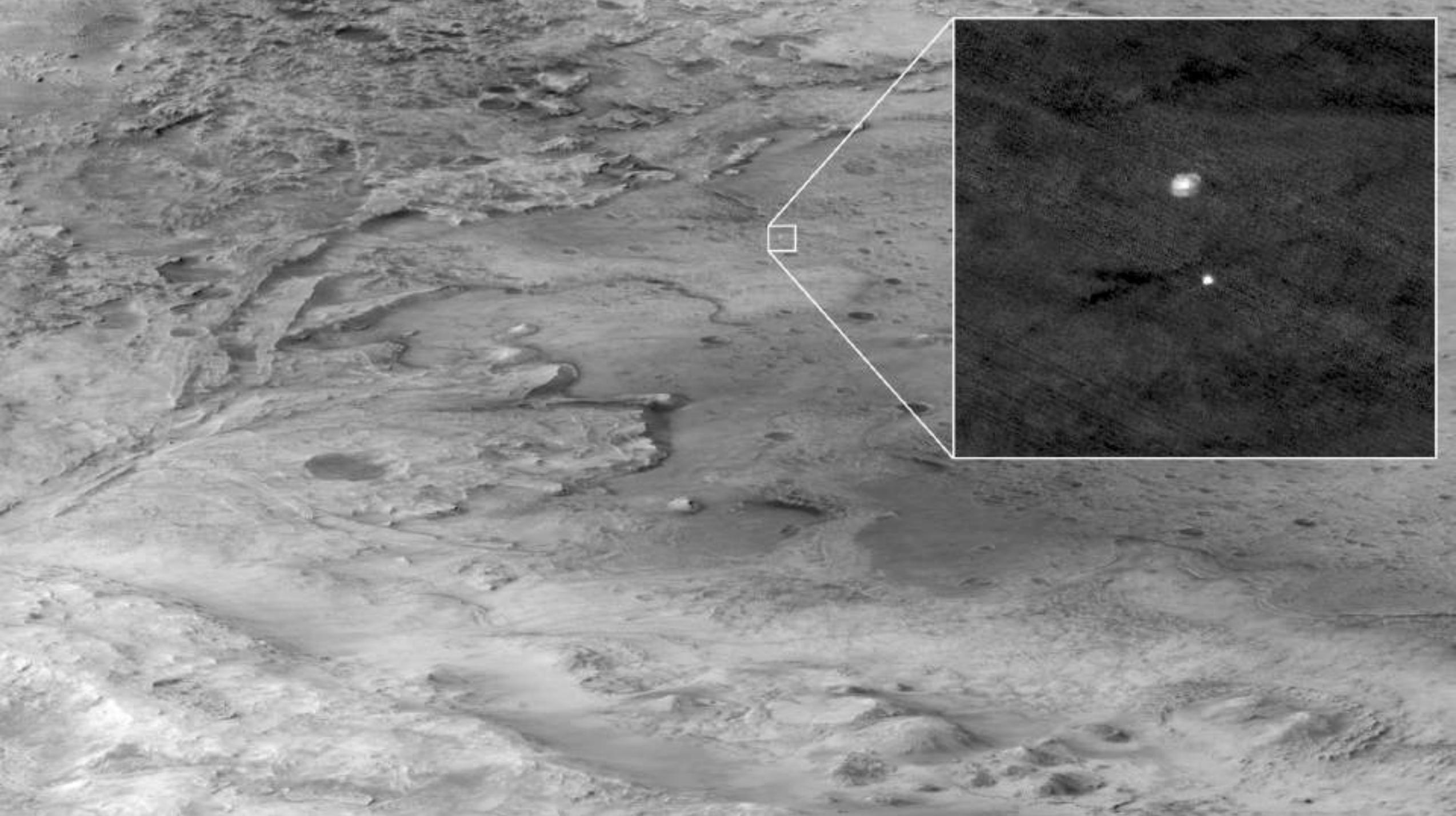
Entry, Descent, and Landing



FEBRUARY 18, 2021

First image ever of a spacecraft landing on another planet







By Feb 25th:

- Two-day landing coverage estimated reach of 12 billion
- Front pages of 157 newspapers
- 14M YouTube views of landing video
- The @NASAPersevere Twitter account at over 2M followers
- Over 730 interview requests for Perseverance and Ingenuity team members
- Over 1 million students registered for Mars student challenge



New York !
Empire State Bldg – Times Square



Paris !
Eiffel Tower



London !
Piccadilly Circus



Los Angeles



Los Angeles City Hall



LAX Pylons

Matterhorn



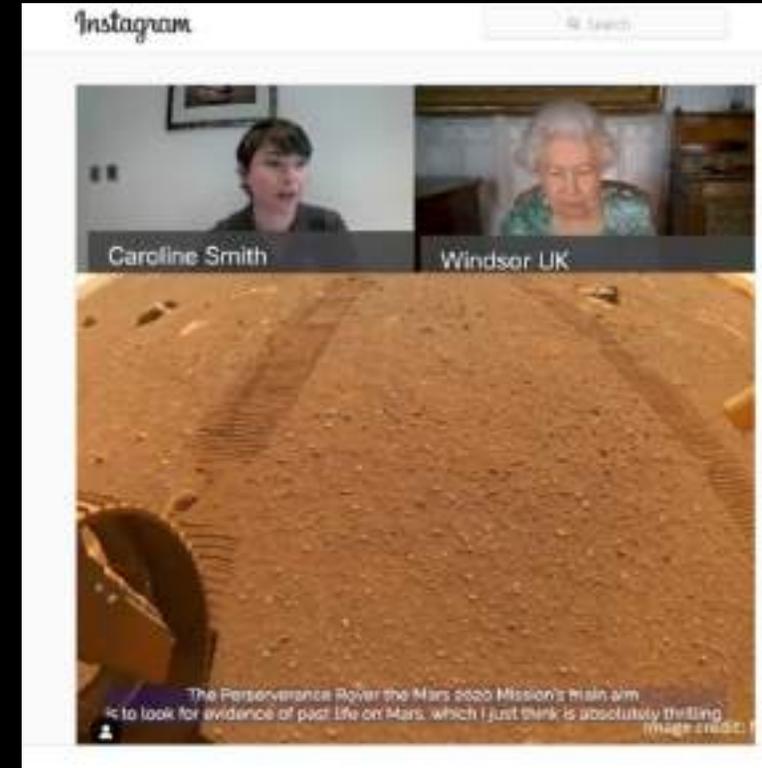
President Biden

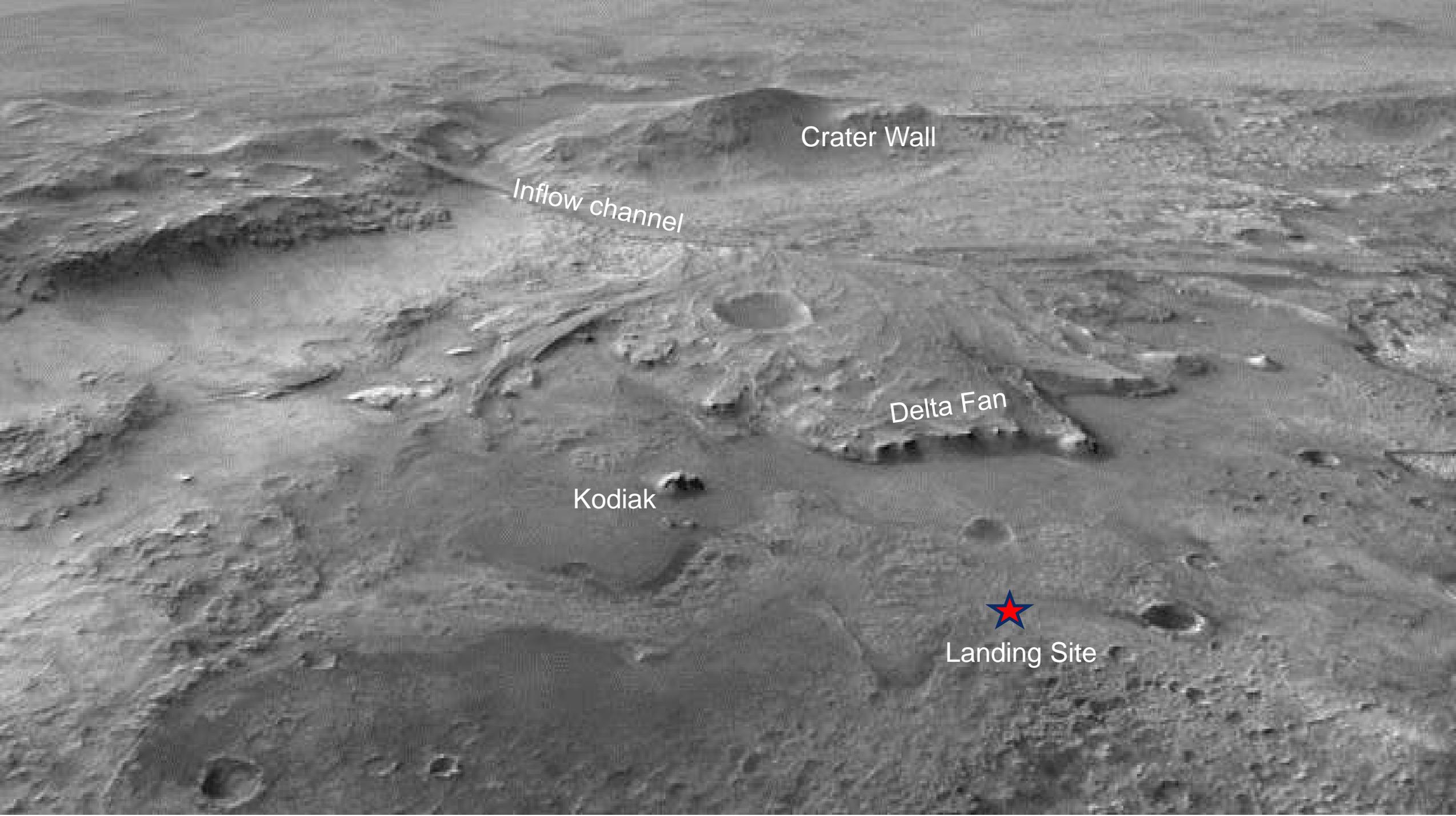


President Macron



Queen Elizabeth





Crater Wall

Inflow channel

Delta Fan

Kodiak



Landing Site

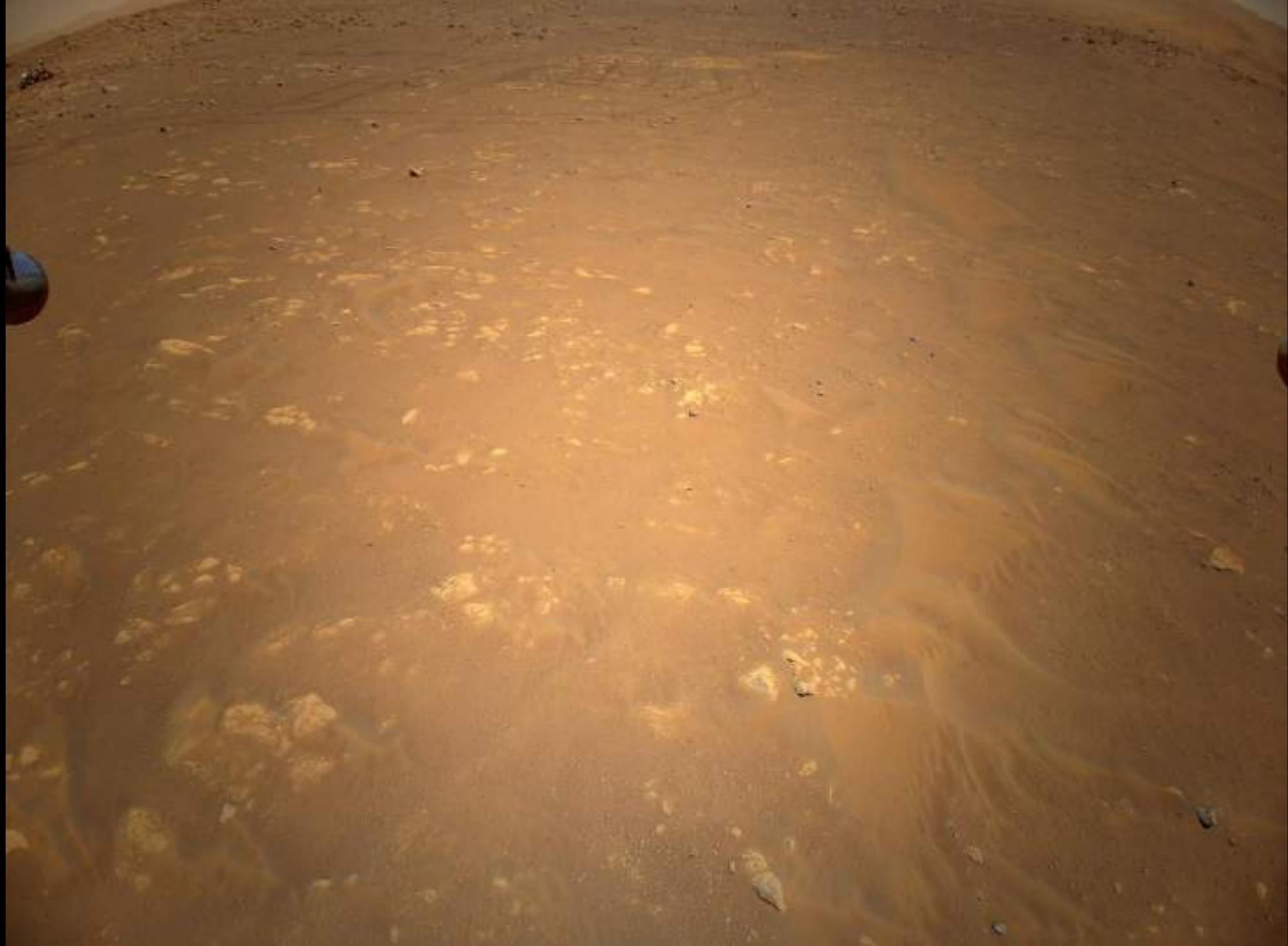
Kodiak





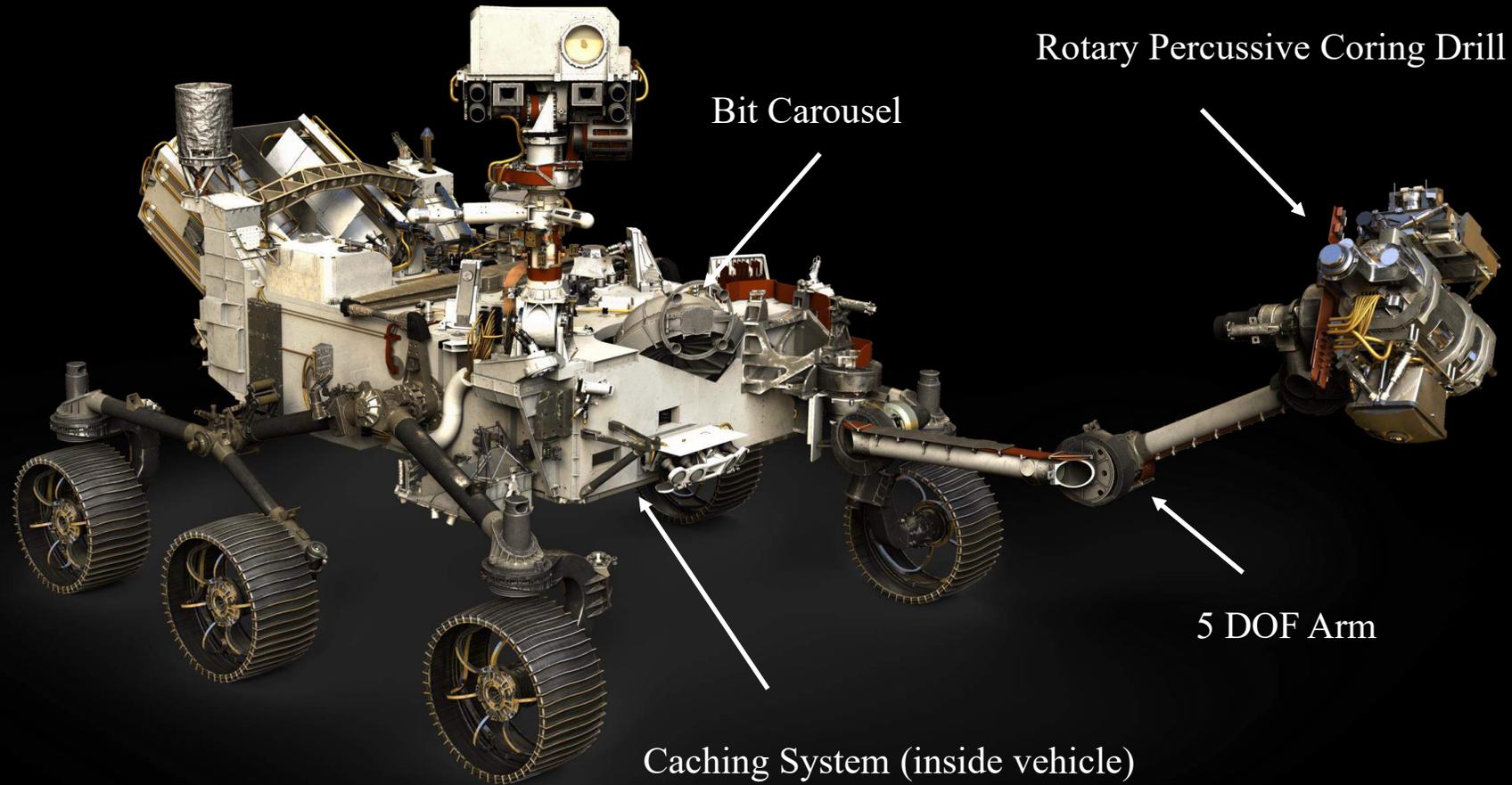








Sample Caching System Elements



> 2000 people @ JPL &
other NASA centers

> 400 scientists

> 1000 contractors

44 states

560 cities

14 countries



