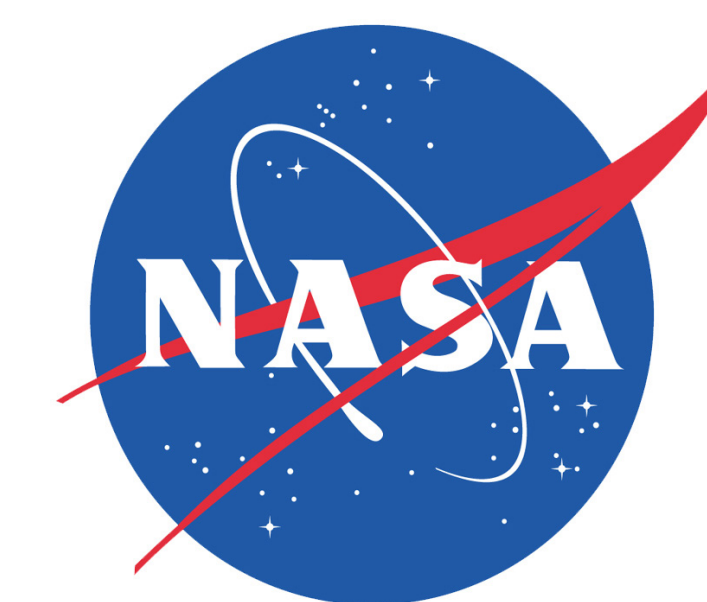


Mars 2020 Mission



Over the past two decades, missions flown by NASA's Mars Exploration Program have shown us that Mars was once very different from the cold, dry planet it is today. Evidence discovered by landed and orbital missions point to wet conditions billions of years ago. These environments lasted long enough to potentially support the development of microbial life.

The Mars 2020 rover is designed to better understand the geology of Mars and seek signs of ancient life. The mission will collect and store a set of rock and soil samples that could be returned to Earth in the future. It will also test new technology to benefit future robotic and human exploration of Mars.

Key Objectives

- Explore a geologically diverse landing site
- Assess ancient habitability
- Seek signs of ancient life, particularly in special rocks known to preserve signs of life over time
- Gather rock and soil samples that could be returned to Earth by a future NASA mission
- Demonstrate technology for future robotic and human exploration

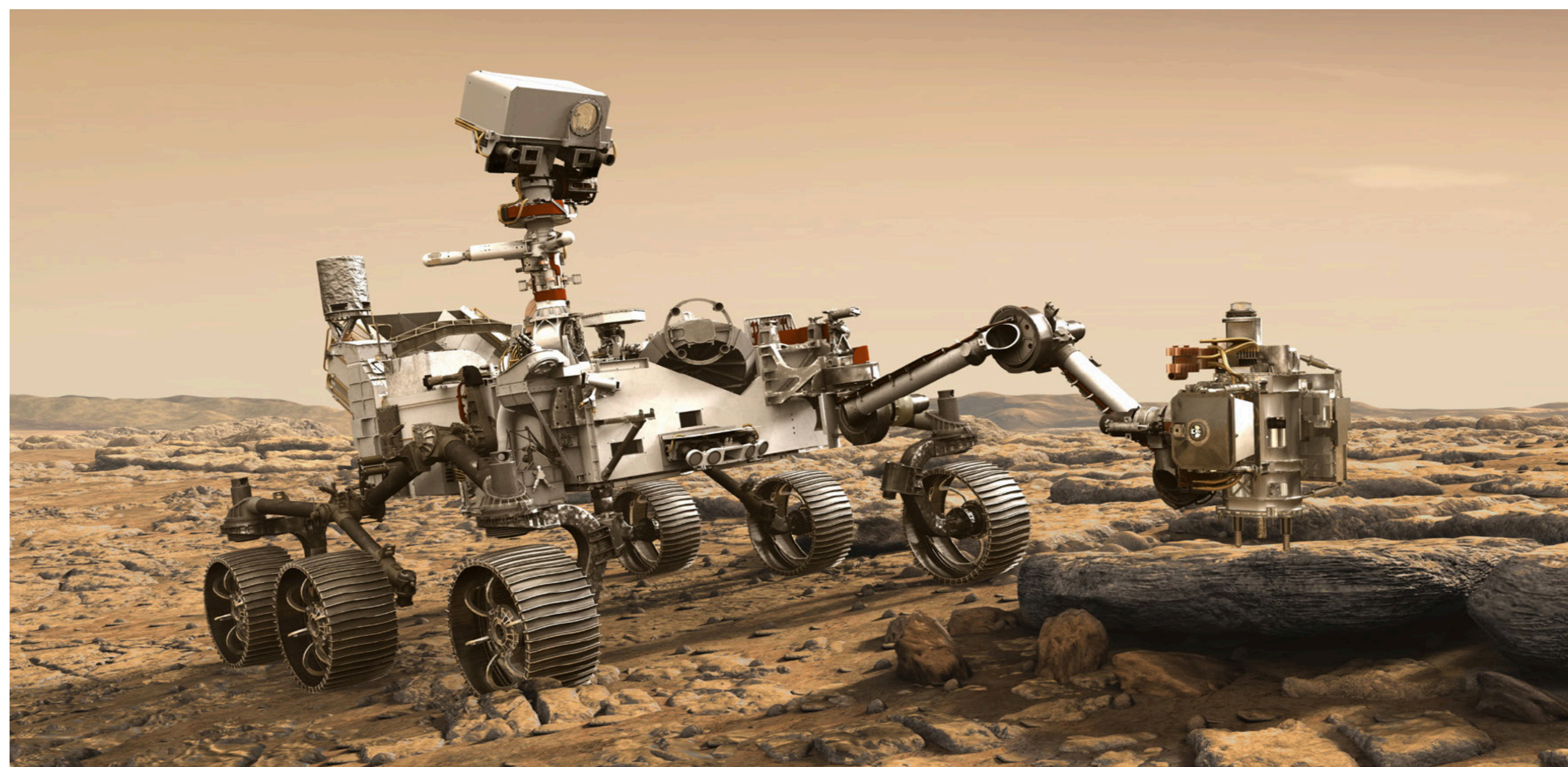
Rover Size and Dimensions

The rover body and other major hardware (such as the cruise stage, descent stage, and aeroshell/heat shield) build upon the success of NASA's Curiosity rover and include many heritage components. The car-sized Mars 2020 rover has roughly the same dimensions as Curiosity: it's about 10 feet long (not including the arm), 9 feet wide, and 7 feet tall (about 3 meters long, 2.7 meters wide, and 2.2 meters tall). But at 2,314 pounds (1,050 kilograms), the Mars 2020 rover is about 331 pounds (150 kilograms) heavier than Curiosity.

Technology

Mars 2020 will also test new technology for future robotic and human missions to the Red Planet. That includes an autopilot for avoiding hazards called Terrain Relative Navigation and a set of sensors for gathering data during the landing (Mars Entry, Descent and Landing Instrumentation 2, or MEDLI2). A new autonomous navigation system will allow the rover to drive faster in challenging terrain.

As with Curiosity, Mars 2020's baseline power system is a Multi-Mission Radioisotope Thermoelectric Generator (MMRTG) provided by the U.S. Department of Energy. It uses the heat from the natural decay of plutonium-238 to generate electricity.



Mission Timeline

- Launch in July-August 2020 from Cape Canaveral Air Force Station, Florida
- Launching on a ULA Atlas 541 procured under NASA's Launch Services Program
- Land on Mars on February 18, 2021 at the site of an ancient river delta in a lake that once filled Jezero Crater
- Spend at least one Mars year (two Earth years) exploring the landing site region

