

National Aeronautics and Space Administration



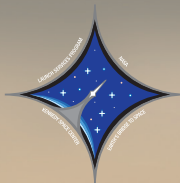
NASA's Launch Services Program Presents:



MARS 2020



The Mars 2020 rover is designed to better understand the geology of Mars and seek signs of ancient life.



Launch Vehicle: **Atlas V 541**
Launch Date: **Summer 2020**
Launch Location: **Cape Canaveral AFS, SLC-41**

Landing Date: **February 18, 2021**
Landing Site: **Jezero Crater, Mars**



PERSEVERANCE

National Aeronautics and Space Administration



Visit our websites

<https://public.ksc.nasa.gov/LspEducation>
<http://go.nasa.gov/lspockets>

Stay connected with LSP



Follow us on Facebook
<https://www.facebook.com/NASALSP>

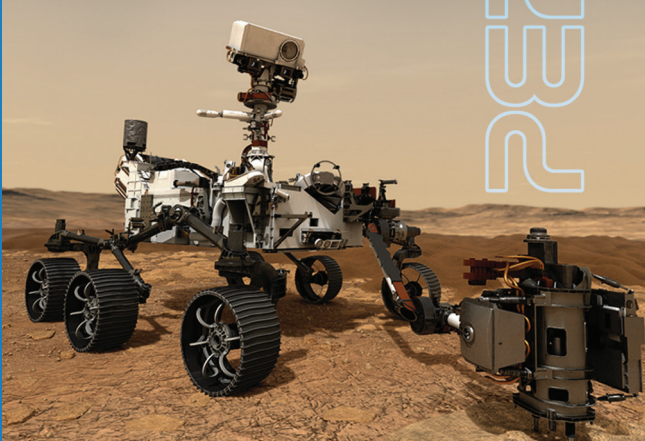


Follow us on Twitter
Twitter @NASA_LSP



MARS 2020

Mission Guide



PERSEVERANCE

National Aeronautics and Space Administration

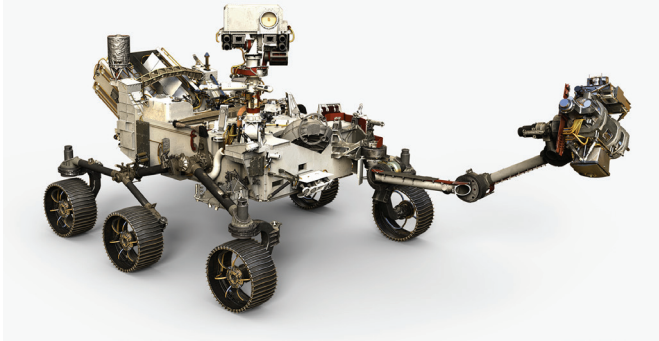
John F. Kennedy Space Center
Kennedy Space Center, FL 32899

www.nasa.gov

SP-2020-03-418-KSC

MISSION OVERVIEW

The Mars 2020 rover, Perseverance, is based on the Mars Science Laboratory's Curiosity rover configuration. It is car-sized, 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 2,260 pounds (1,025 kilograms), it weighs less than a compact car. In some sense, the rover parts are similar to what any living creature would need to keep it "alive" and able to explore.



Perseverance will land at the Jezero Crater on Feb. 18, 2021. Liftoff aboard a United Launch Alliance Atlas V 541 rocket is targeted for mid-July from Cape Canaveral Air Force Station. NASA's Launch Services Program based at Kennedy is managing the launch.

Developed under NASA's Mars Exploration Program, Perseverance's mission is to search for signs of past microbial life, characterize the planet's climate and geology, collect samples for future return to Earth and pave the way for human exploration of Mars.

The Perseverance rover has four science objectives that support the Program's science goals:



Looking for Habitability:

Identify past environments capable of supporting microbial life



Caching Samples:

Collect core rock and "soil" samples and store them on the Martian surface



Seeking Biosignatures:

Seek signs of possible past microbial life in those habitable environments, particularly in special rocks known to preserve signs of life over time

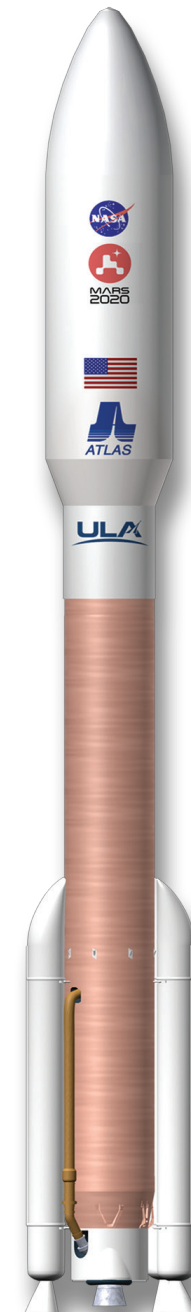


Preparing for Humans:

Test oxygen production from the Martian atmosphere

The NASA Mars Helicopter will be the first aircraft to fly on another planet. The twin-rotor, solar-powered helicopter will remain encapsulated after landing, deploying once mission managers determine an acceptable area to conduct test flights.

A series of flight tests will be performed over a 30-Martian-day experimental window that will begin sometime in the spring of 2021. For the very first flight, the helicopter will take off a few feet from the ground, hover in the air for about 20 to 30 seconds, and land. That will be a major milestone: the very first powered flight in the extremely thin atmosphere of Mars! After that, the team will attempt additional experimental flights of incrementally farther distance and greater altitude. After the helicopter completes its technology demonstration, the Mars 2020 rover will continue its scientific mission.



Flight Configuration Key

5
Payload Fairing Diameter (meter)

4
Number of Solid Rocket Boosters

1
Number of Centaur Engines