Curiosity Rover lands on Mars, August 6, 2012

Jessica MacNeil - August 06, 2019

After an eight-month, 352-million-mile journey, the Curiosity Rover touched down on Mars at 1:31AM EDT on August 6, 2012.

"Touchdown confirmed," said engineer Allen Chen, the Flight Dynamics and Operations Lead for the Mars Science Laboratory Entry, Descent, and Landing team. "We're safe on Mars." Learning from previous landings, engineers used a heat shield, a parachute, retro-rockets, and a sky crane to lower the vehicle to the surface. Because it would take 7 minutes for the rover to descend from the top of the atmosphere to the surface, but signals from the vehicle take about 14 minutes to reach Earth, the landing was dubbed "7 minutes of terror." See a NASA Jet Propulsion Laboratory video about the landing below.

The $2.5-million rover has been described as a chemistry set on wheels and includes cameras and instruments to look for signs that Mars has the chemical resources to support microbial life. The rover is outfitted with an X-band transmitter for communication and a radiation detector to gather information for human missions in the future.

Much bigger than previous rovers Spirit or Opportunity, Curiosity weighs 5293 pounds on Earth.
In April and May of 2014 Curiosity took dozens of component images with the camera at the end of its arm that were combined into this self-portrait of the rover working to drill into a sandstone target called Windjana. This image doesn't include the rover's arm, but it does show the hole it drilled and the Mastcam at the top recording it (see that image here).
Curiosity's landing site was Gale Crater, with plans to study the crater's exposed bedrock and its peak, Mount Sharp. Since the landing, Curiosity has found evidence of a lakebed with fresh water that existed billions of years ago, and investigated more than 600 Martian rock and soil targets with its ChemCam laser.

Curiosity is now traveling toward "long-term science destinations" on the slopes of Mount Sharp, where it has encountered hazardous sharp rock terrain that the team has had to navigate carefully. The rover has driven over 13 miles in the last 7 years and made some significant discoveries. Click the image to the right to view the details of Curiosity's top six discoveries, and follow this blog for regular mission updates.

NASA launched the InSight Mars lander in May of 2018. It was the first mission to another planet to leave Earth from Vandenberg Air Force Base in California. InSight (Interior Exploration using Seismic Investigations, Geodesy, and Heat Transport) is scheduled to land on Mars on November 26, 2018 to study its crust, mantle, and core.

NASA is also preparing the Mars 2020 rover, and is participating in the European Space Agency's ExoMars missions.

Also on this day in tech history:
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Editor's note: This article was originally posted on August 6, 2014 and edited on August 6, 2019.