

Mars spacecraft shipped to California for March launch

December 18 2015, by Guy Webster



Personnel supporting NASA's InSight mission to Mars load the crated InSight spacecraft into a C-17 cargo aircraft at Buckley Air Force Base, Denver, for shipment to Vandenberg Air Force Base, California. The spacecraft, built in Colorado by Lockheed Martin Space Systems, was shipped Dec. 16, 2015, in preparation for launch from Vandenberg in March 2016. InSight, for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport, is the first mission dedicated to studying the deep interior of Mars. Its findings will advance understanding of the early history of all rocky planets, including Earth.

The InSight Project is managed by JPL, a division of the California Institute of Technology in Pasadena, for the NASA Science Mission Directorate, Washington. InSight is part of NASA's Discovery Program, which is managed by NASA's Marshall Space Flight Center in Huntsville, Alabama. Credit: NASA/JPL-Caltech/Lockheed Martin

NASA's next Mars spacecraft has arrived at Vandenberg Air Force Base, California, for final preparations before a launch scheduled in March 2016 and a landing on Mars six months later.

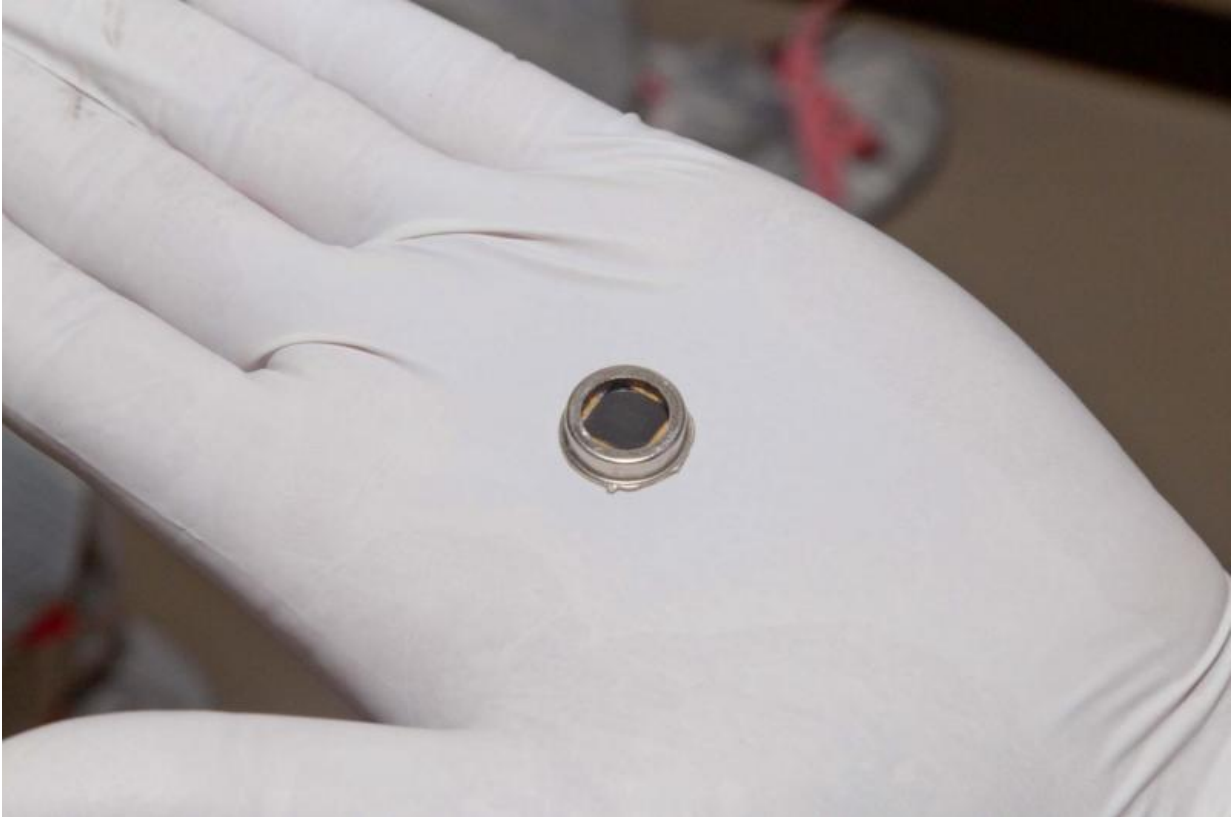
Lockheed Martin Space Systems, Denver, built and tested the spacecraft and delivered it on Dec. 16 from Buckley Air Force Base in Denver to Vandenberg, on the central California Coast.

Preparations are on a tight schedule for launch during the period March 4 through March 30. The work ahead includes installation and testing of one of the mission's key science instruments, its seismometer, which is scheduled for delivery to Vandenberg in January.

"InSight has traveled the first leg of its journey, getting from Colorado to California, and we're on track to start the next leg, to Mars, with a launch in March," said InSight Principal Investigator Bruce Banerdt, of NASA's Jet Propulsion Laboratory, Pasadena, California.

The seismometer, provided by France's national space agency (CNES), includes a vacuum container around its three main sensors. Maintaining the vacuum is necessary for the instrument's extremely high sensitivity; the seismometer is capable of measuring ground motions as small as the width of an atom. A vacuum leak detected during testing of the [seismometer](#) was repaired last week in France and is undergoing further testing.

InSight's heat-probe instrument from Germany's space agency (DLR), the lander's robotic arm and the rest of the payload are already installed on the spacecraft.



The dime-size microchip in this close-up image carries 826,923 names that will go to Mars on NASA's InSight lander. The image was taken in November 2015 inside a clean room at Lockheed Martin Space Systems, Denver, where the lander was built. The chip is affixed to the InSight lander deck and will remain on Mars forever. Engineers at NASA's Jet Propulsion Laboratory, Pasadena, California, etched the names onto a silicon wafer or microchip. They used an electron beam machine at JPL that specializes in etching very tiny features (less than 1 micron, or less than one one-thousandth the width of a human hair). They use this machine to make high-precision microdevices in JPL's Microdevices Laboratory. This technique was also used to write millions of names that were transported on Mars rovers and Orion's first test flight. Credit: NASA/JPL-Caltech/Lockheed Martin

InSight, short for Interior Exploration using Seismic Investigations Geodesy and Heat Transport, is the first Mars mission dedicated to studying the deep interior of the Red Planet. This Mars lander's findings will advance understanding about the formation and evolution of all rocky planets, including Earth.

One of the newest additions installed on the InSight lander is a microchip bearing the names of about 827,000 people worldwide who participated in an online "send your name to Mars" activity in August and September 2015.

InSight will be the first mission to Mars ever launched from California. The mission is part of NASA's Discovery Program, managed by NASA's Marshall Space Flight Center in Huntsville, Alabama.



A spacecraft specialist in a clean room at Lockheed Martin Space Systems in Denver, where the InSight lander is being built, affixes a dime-size chip onto the lander deck in November 2015. This chip carries 826,923 names, submitted by the public online from all over the world over a 22-day period during August and September 2015. Credit: NASA/JPL-Caltech/Lockheed Martin

More information: insight.jpl.nasa.gov

Provided by Jet Propulsion Laboratory

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