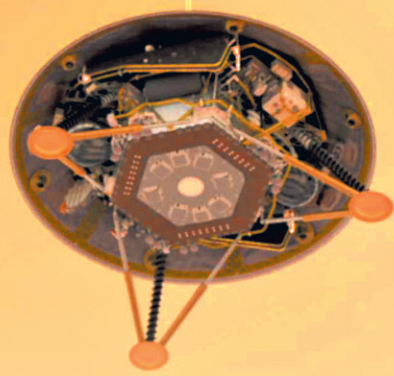
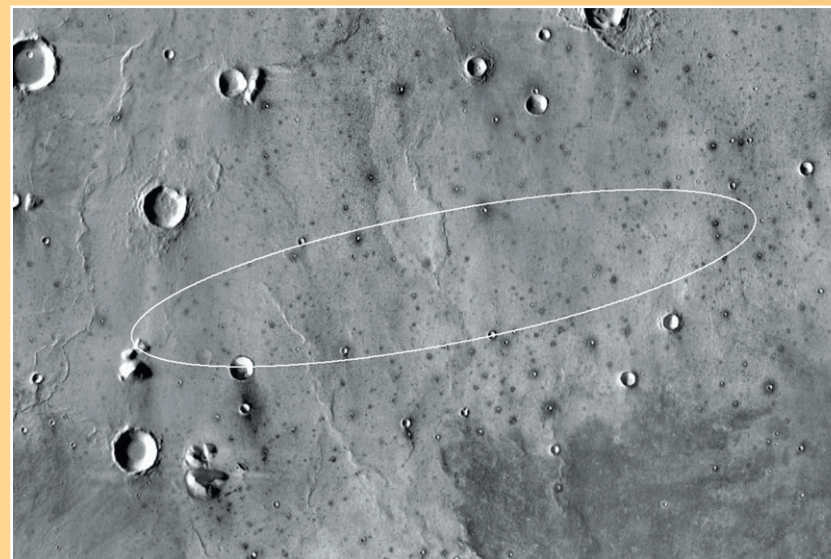


# Mars InSight lander

Nasa's Mars Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight) lander is scheduled to touch down on the Red Planet at around 4am tomorrow, Singapore time. The landing will kick off a two-year mission in which InSight will become the first spacecraft to study Mars' deep interior. Its data also will help scientists understand the formation of all rocky worlds, including our own. Launched on May 5, InSight marks Nasa's first Mars landing since the Curiosity rover in 2012.



InSight hits the top of the Martian atmosphere at 19,800kmh and slows down to 8kmh — about human jogging speed — before its three legs touch down on Martian soil. That extreme deceleration has to happen in 6min 35sec.



InSight will land on a flat surface of the planet, about 130km long and 27km wide. The Mars Odyssey orbiter took this image of the target landing site.

## Instrument deployment arm

The lander will be the first mission to permanently deploy instruments (a seismometer and a heat-flow probe) directly onto Martian ground using a robotic arm.

**Rotation and interior structure experiment (Rise)**  
Tracks the lander's location as Mars rotates.

## Camera

The InSight lander carries two complementary engineering cameras that help with navigation and hazard avoidance. One of the cameras is mounted on the arm; the other on the front of the lander.

Temperature/  
wind sensors

Antennae

Solar panels

**Seismometer** (contributed by the French space agency Centre National d'Etudes Spatiales, or CNES) will measure the microscopic ground motions from distant "marsquakes", providing information about the interior structure of Mars.

**Heat-flow probe** (contributed by the German Aerospace Centre, or DLR) is designed to hammer itself 3m to 5m deep. It will monitor heat coming from the planet's interior.

## InSight will teach us about the interior of planets like our own

- InSight's team hopes that by studying the deep interior of Mars, we can learn how other rocky worlds, including Earth and the Moon, are formed. Our home planet and Mars were moulded from the same primordial stuff more than 4.5 billion years ago but then became quite different.
- By comparing Earth's interior to that of Mars, InSight's team members hope to better understand our solar system.

What they learn might even aid the search for Earth-like exoplanets, narrowing down which ones might be able to support life.

- The mission will also track the lander's radio to measure wobbles in the planet's rotation that relate to the size of its core and a suite of environmental sensors to monitor the weather and variations in the magnetic field.

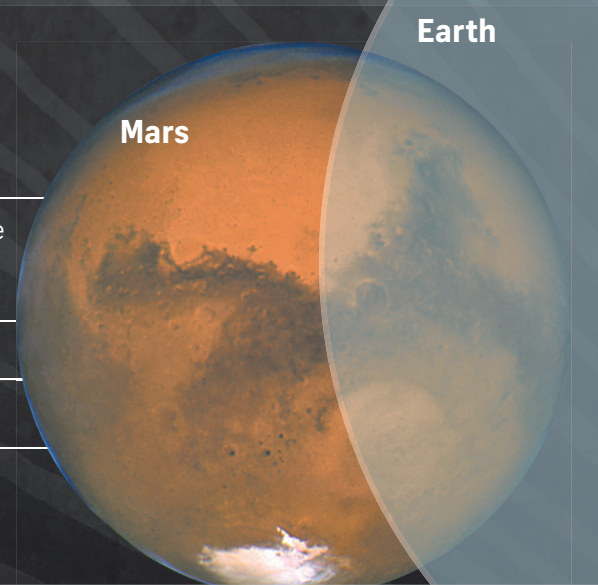
**Diameter:** 6,794km

**Atmosphere:** 95% carbon dioxide  
3% nitrogen

**Gravity:** 38% of Earth's

**Atmospheric pressure:** 1% of Earth's

**Average temperature:** -87 to -5°C



## Mars missions

Current active satellites and rovers on and around Mars

## SATELLITES

**Isro (India):**  
**Mars Orbiter Mission**  
Arrival: 2014

**ESA/Roscosmos:**  
**ExoMars**  
2016

**ESA:**  
**Mars Express**  
2003

**Maven**  
2013

**Nasa:**  
**Mars Reconnaissance Orbiter**  
2006

**Mars Odyssey**  
2002

## ROVERS

**Viking 1**  
Jul/Aug 1976

**Viking 2**  
Jul/Aug 1976

**Pathfinder**  
Sept 1997

**Opportunity**  
Jan 2004

**Spirit**  
Jan 2004

**Phoenix**  
Landed:  
May 2008

**Curiosity**  
Aug 2012

● Active rovers and landers  
● Past rovers and landers

Sizes not to scale

## Public viewing

About 80 live viewing events for the public to watch the InSight landing will take place around the world. Viewers everywhere can watch coverage of the event live on Nasa Television, the agency's website and social media platforms. For a full list of websites broadcasting InSight landing events, go to:

<https://mars.nasa.gov/insight/timeline/landing/watch-online/>

Follow the mission on social media at:

<https://twitter.com/NASAIInSight>

<https://facebook.com/NASAIInSight>