

NASA InSight Mars Lander and Terrestrial Planet Science

Posted on May 24, 2018

Humans are explorers who always dive into the unknown and seek new knowledge daily. Today's technology and the constant thirst for curiosity have led us to unbelievable and revolutionary discoveries of the world beyond Earth. We, as investigators of the undiscovered, should keep searching for potential habitats for humans and not limit our kind to this one planet in a galaxy.

When the first man went into space, the aim was to show that humans could survive in space and work some useful tasks. We gradually advanced into space suits and working outside the spacecraft and learned the basics of space flights, all leading to the Moon. The ability to reach the Moon was a stunning achievement; however, it didn't prove to be sustainable.

Since the landing on the Moon, researchers have advanced into the other planets near Earth in the solar system. Mars seemed to be the most approachable and had features similar to those of Earth. The ultimate goal is to learn enough about Mars to establish on it. The planet is reported to have had higher temperatures in history, which could have been a habitat for some life.

Scientists continue their search for new life-sustaining planets while getting a better understanding of Mars. Over the past few years, NASA has conducted many missions, successful and unsuccessful, each time bringing new aspects of the potential new habitat for mankind into the light. These missions have a closer look at the surface of the Red Planet and its history. There have been developments in information about Mars, such as the existence of volcanoes, rocks, canyons, and soil, while the search for fossils and potential life continues.

Now, NASA thinks that Mars requires a more profound understanding. They attempt to investigate the planet's earliest evolution. How the planet was built and what is hidden beneath the surface is the real question. The Red Planet needs a comprehension of its thickness, size, and density and an overall study of the core, mantle, and crust. Therefore, NASA has constructed a new mission called "InSight Mars Lander," which follows the steps of the Phoenix mission in 2007 (Sullivan 6).

The team working on the InSight mission comprises talented and hardworking scientists and engineers from around the world and various fields of study. Co-investigators from the United States, Germany, France, Austria, Belgium, Canada, Japan, Switzerland, and the United Kingdom are dedicated to this mission of diving into the ancient secrets of Mars.

The mission is not limited to Mars; it will also reveal the interiors of other terrestrial planets and their early formation. The InSight Mars Lander will explore the inner structure of Mars and explain the planetary process. It will be equipped to conduct the first insight into Mars in over 4.5 billion years

(Sauser, Richard & Aaron 12). The Lander will record the pulse of the planet like a stethoscope. The Lander can hear and record activities happening beneath the surface.

Principal Investigator, Bruce Banerdt explains in simple words that the InSight Mars Lander will capture the planet's vital signs, record its heartbeat, and get a more in-depth look into the seismic activity of Mars. Tom Hoffman, the Project Manager, adds "We will be using a very high precision seismometer using techniques that have been well developed on Earth to get the understanding of the crust, mantle, and core of the planet." (Steemit.Com n.p)

The InSight Mars Lander will take a full Martian year to record the temperatures and how much heat is coming out due to the Sun's effects. With its advanced design, the Lander will also record the planet's reflexes, i.e., the way the planet wobbles in reaction to the Sun and its Moons over the year.

The design of the InSight Mars Lander is very similar to that of the Phoenix in 2007. Mission Systems Manager Stacy Weinstein believes that using heritage design is helpful because it's been tested, qualified, and proven to be successful, which reduces the costs of new technology. Stuart Spath, who is the spacecraft manager, says that the project is in great shape with low risk costs, which has made the mission a possibility.

The mission is generating a lot of excitement among space nerds and educators of astronomy. NASA has already asked to add insights into the Red Planet in children's science curriculum to familiarize them with Mars and see it as a potential habitat for humans.

The InSight Mission is one of NASA's discovery programs that is aimed at getting a better understanding of the formation of all rocky planets in the inner solar system. This new information will help researchers further develop the planet. It will also help scientists understand Earth better and deal with its current climatic issues. The mission is to be launched in around May 2018.

Scientists and astronomers recommend venturing into the world beyond Earth to seek new destinations for humanity while also improving Earth's chances of survival. Humans have never been cornered into one specific area, and they never will. The search will continue until humanity exists and beyond.

Works Cited

Sauser, Brian J., Richard R. Reilly, and Aaron J. Shenhar. "Why projects fail? How contingency theory can provide new insights-A comparative analysis of NASA's Mars Climate Orbiter loss." *International Journal of Project Management* 27.7 (2009): 665-679.

Steemit.Com, "*Nasa : Mission To Mars In May 2018*" (2018),
<https://steemit.com/steemstem/@adi-mac/nasa-mission-to-mars-in-may-2018>.

Sullivan, R., et al. "Wind-driven particle mobility on Mars: Insights from Mars Exploration Rover

observations at “El Dorado” and surroundings at Gusev Crater.” *Journal of Geophysical Research: Planets* 113.E6 (2008).