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First Marsquake Detected

Planetary scientists quivered with delight at the first detection of seismic activity beneath Mars's surface. This marsquake was recorded by NASA's Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight) lander 128 Martian days (sols) after landing.

"We've been waiting months for our first marsquake," Philippe Lognonné, a geophysicist at Paris Diderot University in France and the principal investigator for InSight's seismometer, said in a statement about the discovery. "It's so exciting to finally have proof that Mars is still seismically active. We're looking forward to sharing detailed results once we've studied it more and modelled our data."

The news of the first recorded marsquake was revealed on 23 April at the Seismological Society of America's conference in Seattle, Wash. This is the first seismic event recorded on another planet. You can listen to a recording of the marsquake signal at bit.ly/Eos_marsquake.

Just a Little Shake

InSight landed on Mars in Elysium Planitia on 26 November 2018. One of the mission's main science goals is to measure how seismically active Mars is today. This information will provide clues about how Mars's interior is

cooling and contracting, giving a glimpse of the internal structure of the planet.

On its 128th sol (6 April on Earth) on the surface, InSight detected shaking from a small underground tremor. The signal was so small that had it occurred on Earth, it would have been lost among the background seismic noise from Earth's weather and oceans.

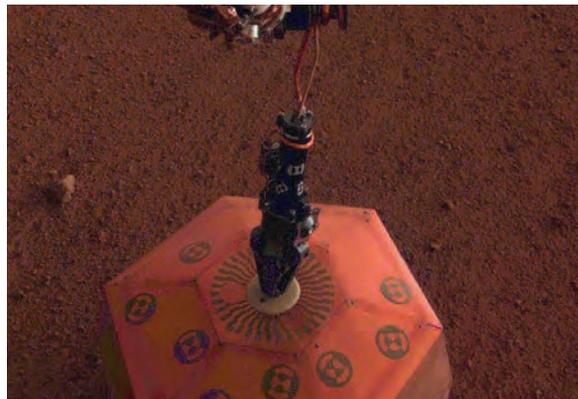
On seismically quiet Mars, however, the shaking stood out amid the faint ambient noise that the instrument has detected from Martian winds.

Unfortunately for the team, the Martian Sol 128 event was too small to be scientifically useful. Still, the discovery makes Mars the third rocky solar system body, after Earth and the Moon, shown to have seismic activity. "The Martian Sol 128 event is exciting because its size and longer duration fit the profile of moonquakes detected on the lunar surface during the Apollo missions," Lori Glaze, director of NASA's Planetary Science Division, said in a statement.

"InSight's first readings carry on the science that began with NASA's Apollo mis-

sions," said InSight principal investigator Bruce Banerdt of NASA's Jet Propulsion Laboratory in Pasadena, Calif. "We've been collecting background noise up until now," Banerdt said, "but this first event officially kicks off a new field: Martian seismology!"

By **Kimberly M. S. Cartier** (@AstroKimCartier),
Staff writer



NASA's Mars InSight deployed its seismometer, seen here, onto the Martian surface on 19 December 2018. This is the first seismometer ever placed on the surface of another planet. Credit: NASA/JPL-Caltech

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