

SEMINAR 專題演講



國立中央大學 太空科學與工程學系

Department of Space Science and Engineering, National Central University

Time

Tuesday, May 20, 2025 14:00 – 15:00

Place

健雄館(科四館)

S4-917 教室 Room S4-917, Chien-Shiung Building

The Unexpected Road to the First Surface Magnetic Field Measurement on Mars

Dr. Peter J. Chi Department of Earth, Planetary, and Space Sciences, UCLA

Understanding the magnetic field at Mars offers valuable insights into the planet's evolution and its space plasma environment, and is essential for developing protective strategies against radiation for future human exploration. However, due to the challenges of operating magnetometers on the Martian surface, most of our knowledge to date has relied on orbital spacecraft observations. In 2018, NASA's Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight) mission marked a major milestone by making the first direct magnetic field measurements from the Martian surface.

This presentation revisits the key decisions and events that led to the inclusion of the InSight FluxGate (IFG) magnetometer in the mission payload. It also highlights major scientific findings, including the unexpectedly strong magnetic field detected at the InSight landing site and the discovery of "midnight magnetic pulsations" by IFG. These results have sparked ongoing scientific discussion and offer new perspectives on Mars' magnetic environment.