

SILMAG: A FLUXGATE MAGNETOMETER ON BOARD THE SPACEIL LUNAR LANDER. C. T. Russell¹, K. Rowe¹, S. Joy¹, O. Aharonson², Shai Amrusi³, A. G. Grosz³, M. Wieczorek⁴, B. P. Weiss⁵, J. W. Head⁶, I. Garrick-Bethell⁷. ¹Earth, Planetary and Space Sciences, University of California, Los Angeles, Los Angeles, CA, USA, ²Weizmann Institute of Science, Rehovot, Israel, ³Ben Gurion University, Beer-Sheva, Israel, ⁴Observatoire de la Côte d'Azur, ⁵Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, Massachusetts, ⁶Department of Earth, Environmental and Planetary Sciences, Brown University, Providence, RI, 02912 USA, ⁷UCSC, Santa Cruz, CA, USA.

The SPACEIL organization has built, tested, and is expected by the time of the 50th LPSC to have launched a mission to land on the Moon. This mission carries two scientific investigations: a magnetic fields investigation and a small retroreflector. The SpaceIL magnetometer (SILMAG) was built by the engineers and scientists at the University of California, Los Angeles, using heritage designs from the ST-5 Mission, with low mass, high sensitivity, and low noise. Figure 1 shows the magnetometer sensor flown on this mission. Figure 2 shows the electronics unit, and Figure 3 shows the noise spectrum of the magnetometer. Further engineering assistance in calibration and testing was obtained from Ben Gurion University of the Negev. The goal of the SILMAG investigation is to measure the crustal magnetic field on the lunar surface to constrain the lifetime of the lunar dynamo. First results from the lunar surface from the lander will be presented if available at the time of the meeting.

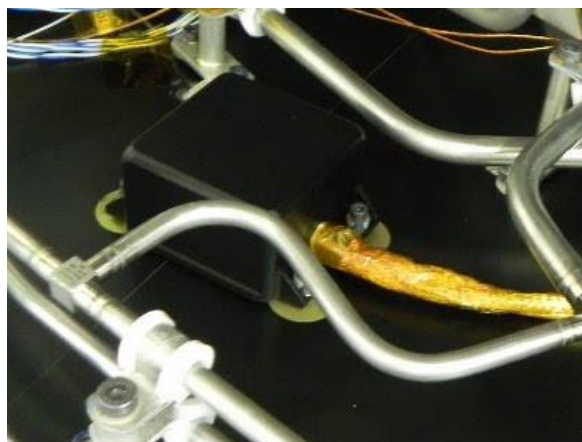


Figure 1. SILMag sensor mounted in the spacecraft.

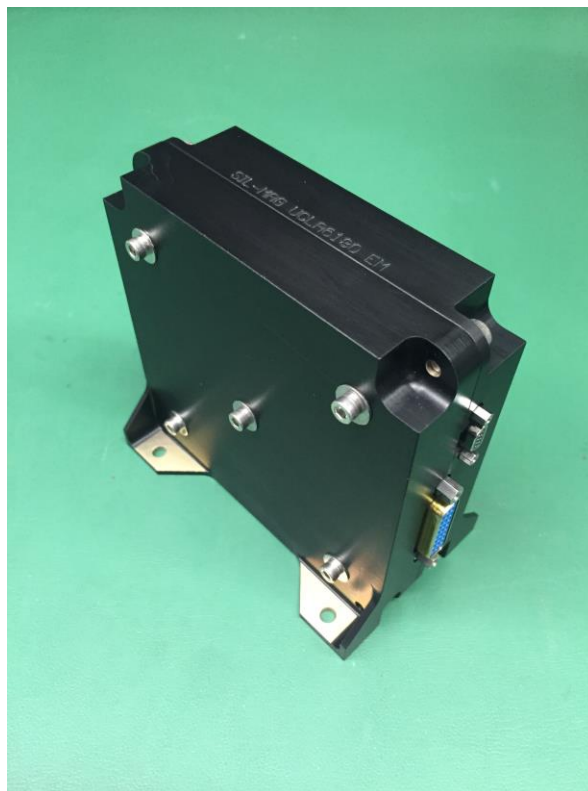


Figure 2. SILMag electronics unit.

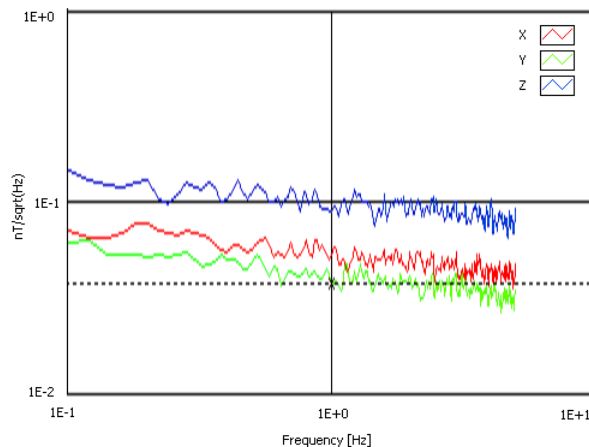


Figure 3. Noise spectra of the three axes of the SIL-Mag magnetometer.