かぐや（セレーネ）搭載高感度磁力計LMAGの地上校正

清水 久芳 [1]; # 高橋 太 [2]; 松岡 彩子 [3]; 松島 政貴 [4]; 渋谷 秀敏 [5]; 綱川 秀夫 [6]
[1] 東大・地震研; [2] Tokyo Tech; [3] 宇宙研; [4] 東工大・地惑; [5] 熊大・理; [6] 東工大・理・地惑

Ground calibration of a high-sensitivity SELENE lunar magnetometer

Hisayoshi Shimizu[1]; # Futoshi Takahashi[2]; Ayako Matsuoka[3]; Masaki Matsushima[4]; Hidetoshi Shibuya[5]; Hideo Tsunakawa[6]
[1] ERI, Univ. of Tokyo; [2] Tokyo Tech; [3] ISAS/JAXA; [4] Dept. Earth Planet. Sci., Tokyo Tech; [5] Dep't Earth Sci., Kumamoto Univ.; [6] Dept. Earth Planet. Sci., Tokyo TECH

Ground calibration experiments of the SELENE high sensitivity fluxgate Lunar Magnetometer (LMAG) have been performed in order to determine the alignment, sensitivity, and offset of the sensors (MGF-S). It is checked out that the sensors are orthogonal to each other within 0.4 degrees, and the linearity of the ambient magnetic field and the sensors are confirmed. Also, the temperature dependences of the offset and sensitivity are examined but no clear signatures of temperature dependencies can be seen. SELENE has an in-flight calibration system in order to determine the direction of the magnetometer routinely. The sensor alignment monitor coil (SAM-C) system is going to generate known magnetic fields to be observed by the magnetometer for calibrations. The magnetic field distributions generated by SAM-C are determined and accuracy of the magnetometer position and direction determination are estimated. Multiple measurements will allow us to determine the direction with about 0.1-degree accuracy. It is possible to recover magnetic field near the moon with accuracy about 0.1 nT by the measurements using MGF-S and appropriate corrections referring the results of the ground calibration and in-fiight routine calibrations.