

Assessing the shock effects to the flux gate magnetic sensor for the lunar penetrator.

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In order to assess the feasibility of the penetrator magnetometer for lunar magnetic field fluctuation measurements, we examined the influence of the shock to the fluxgate magnetic sensor. We measured the magnetic permeability of the sensor core metal and sensitivity as used in a magnetometer before and after a big shock (10000G). Several experiments using three different fluxgate sensors showed that neither permeability nor sensitivity changed significantly after the exposure to the shock. This result indicates that the penetrator magnetometer has no fundamental difficulty.