

The Magnetic Field Experiment (MERMAG-M/MGF) for BepiColombo MMO

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The MERMAG-M consortium has proposed a magnetic field experiment for the Mercury Magnetospheric Orbiter (MMO). The primary objective of the proposed Magnetic Field Investigation (MERMAG-M / MGF) on the MMO is to study the formation and dynamics of Mercury's magnetosphere and the processes that control the interaction of the magnetosphere with the solar wind and with the planet itself. In close connection with the main objective, the investigation is to provide magnetic field measurements that will lead to the detailed description of Mercury's planetary magnetic field, and thereby constrain models of the evolution and current state of the planetary interior. Measurements made onboard the MMO will be essential, in particular to distinguish from the effects of magnetospheric dynamics.

Table 1. Characteristics of MERMAG-M/MGF

Digital resolution	pT	4	20 bit digitization
Measurement range	nT	±2048	
Sample Rate	Hz	128 64	MGF-O MGF-I
Data rate to DPU	Kbps	7.7 3.8	MGF-O MGF-I