



MESSENGER observations of Mercury's bow shock and magnetopause

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MESSENGER's 14 January 2008 encounter with Mercury will provide the first new observations of the solar wind interaction with this planet since the Mariner 10 flybys that took place over 30 years ago. The closest approach distance for this first MESSENGER flyby is targeted for an altitude of 200 km as compared with the 707 km and 327 km attained by Mariner 10 on 29 March 1974 and 16 March 1975, respectively. The locations of the bow shock and magnetopause boundaries observed by MESSENGER will be examined and compared against those found in the earlier Mariner 10 measurements and the predictions of theoretical models and numerical simulations. The structure of the magnetopause will be investigated for the presence of flux transfer events or other evidence of magnetic reconnection as will the more general implications of these new MESSENGER bow shock and magnetopause observations for the global solar wind interaction with Mercury.