MARTIAN BOW SHOCK: ORIGINS OF TERMINATOR ANISOTROPY

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Some anisotropy of Martian bow shock terminator position as a function of angle between the shock normal and interplanetary magnetic field was earlier found in Phobos 2 observations while MGS data permitted to reveal north-south bow shock anisotropy. Combined data set of Martian bow shock observations by MGS and Phobos 2 orbiters are analyzed for the clarification of its anisotropy in terminator plane. Application of MHD model of the planetary bow shock position and shape as a function of magnetopause shape, solar wind sonic and Alfvenic Mach numbers permits to distinguish anisotropies of different origin. Relative contribution of the anisotropic fast MHD waves propagation, picked-up ions from hydrogen/oxygen corona, and south planetary crust magnetic field anomaly are discussed.