
Investigating the influence of the 2007 Martian global dust storm on the bow shock and induced magnetospheric boundary

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During perihelion, Mars enters a dust season which sees the onset of numerous dust storms travelling over different regions of the planet. Occasionally these storms can grow and merge into a global storm system covering the entire planet. The last of these events occurred in 2018, 2007 and 2001. Dust storms on Mars can increase hydrogen loss by up to 10 times, and cause atmospheric heating of 40 K. This study focuses on the 2007 event, and using data from Mars Express looks to see if the influence that the dust storm has on the atmosphere and ionosphere can be seen above at two plasma boundaries - the induced magnetospheric boundary and the bow shock. Using data from the ASPERA-3 and MARSIS instruments we compare crossings of each boundary to MHD models to look for signatures of the dust event in boundary location.