



## **3D, Multi-fluid, MHD Calculations of the Solar Wind Interaction with Mars and the Associated Plasma Escape.**

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We have used our new 3D, multi-fluid, MHD model to study the interaction of the solar wind with Mars. Our lower boundary is set at 100 km and we have a radial grid resolution of about 10 km in the ionosphere. We consider both photo and electron impact ionization, as well as charge exchange processes. We compare a number of calculated and measured parameters, such as bow shock and MPB locations. We also calculate the plasma escape fluxes, for a variety of solar and upstream conditions. We compare our calculated escape fluxes with the published, measured values obtained by the ASPERA instrument carried by Mars Express.