

Solar Wind Charge Exchange during Geomagnetic Storms

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On March 31st, 2001, a coronal mass ejection caused the magnetopause to be pushed in to near geosynchronous orbit at 6.6 R_E . The CCMC at Goddard Space Flight Center simulated the peak of this geomagnetic storm and Robertson and Cravens were able to model the expected X-ray emission due to solar wind charge exchange. The locations of the bow shock and magnetopause and cusps were clearly evident in their simulations. I will show the impact of space craft location on observed X-ray emissions during this peak. A similar geomagnetic storm took place on Bastille Day, 2000. Again we used the CCMC to simulate solar wind parameters, but this time shortly after the peak of the storm and for 65 10-minute intervals. I will present our modeled results of X-ray intensities during this time period.