



Studies of an X-line Passage 2 October 2002 using multipoint Cluster and Polar imaging

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On 2 October 2002 during the interval 2118-2130 UT, the Cluster satellites at $X_{GSE} = -16.6 R_E$ crossed the neutral sheet repeatedly while the observed proton flow experienced a reversal from earthward to tailward and then back to earthward. The magnetic field y-component indicated a quadrupolar Hall magnetic field, suggesting the earthward and then tailward passage of an X-line over the Cluster satellites. In addition, X-ray and UV images from Polar PIXIE and UVI cameras showed a localized area of energetic precipitation at the footpoint of the field line that Cluster was sitting on.