Magnetosphere during the period of tenuous solar wind.

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We study three events of the low density (~0.2 cm^-3) and low dynamic pressure (~0.1-0.2 nPa) solar wind when the Alfvenic velocity in the interplanetary plasma exceed its bulk speed. The location of the magnetopause and magnetic field measurements in the inner magnetosphere agree with predictions of T96 model, however there is a disagreement in the tail current region. Based on the low altitude data from DMSP, FAST and NOAA spacecraft we characterize the precipitation pattern, estimate the proton pressure in the plasma sheet (suggesting isotropic pressure which is constant along a field line) and determine the isotropic boundary locations. These observations are compared with the model predictions to conclude on the validity of the magnetospheric model in this extremal case.