

The solar wind plasma density control of night-time auroral particle precipitation

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DMSP F6 and F7 spacecrafts observations of the average electron and ion energy and energy fluxes in different night-time precipitation regions for the hole of 1986 were used to examine the precipitation features associated with solar wind density changes. It was found that during magnetic quietness ($|AL| < 100$ nT) the enhancement of average ion fluxes at least two times was observed along with the solar wind plasma density increase from 2 to 24 cm^{-3} . More pronounced this ion flux enhancement occurred in *b2i-b4s* and *b4s-b5* regions which are approximately corresponding to the statistical auroral oval and map to magnetospheric plasma sheet tailward from the isotropy boundary. The average ion energy decrease of about 2-4 keV was registered simultaneously with this ion flux enhancement. Results testify of the effective penetration of the solar wind plasma into the of magnetospheric tail plasma sheet.