

Energetic Electrons at Low Latitudes Observed by NOAA Satellites During the Geomagnetic Storm on October 29-31, 2003

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NOAA satellites detected intense energetic electrons (greater than 10^6 /cm² sec str) with energy greater than 30 keV in the low latitude ionosphere at altitude of 800 km during the large geomagnetic storm on October 29-31, 2003. NOAA-15, -16 and -17 passed 02, 07, 10, 14, 19, and 22 local times during the event. The flux of the electrons was relatively small around the midnight, but greater on the dayside as well as in dawn and dusk. The dayside electrons were observed during the main phase of the geomagnetic storm, but the nightside electrons were observed during the recovery phase of the storm. The observational results suggest that the energetic electrons were transported deep inside the magnetosphere with the aid of the convection electric field that was intensified during the main phase of the storm.