

Solar Storms in the October-November 2004 season:GEOTAIL observation

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Using GEOTAIL data, we study the interplanetary shock (IPS) events and related phenomena in the solar storm season in October-November 2003.

There were four IPSs detected by GEOTAIL. They are, (1) ~02 UT on 28 Oct., (2) ~06 UT on 29 Oct., (3) ~06UT on 4 Nov., and (4) ~20UT on 6 Nov. (Another IPS detected by ACE around 16UT on 30 Oct. was not seen by GEOTAIL since GEOTAIL was in the magnetotail.) While IPS-1 and IPS-4 were relatively weak shocks, IPS-2 which arrived after ~19 hours from a flare/CME event on the sun (average speed ~2200 km/s) was one of the strongest IPSs ever observed. IPS-3 was a moderately strong IPS which arrived after ~37 hours from a flare/CME event and had average speed of ~1100 km/s. From the viewpoint of nonthermal particle acceleration, we are most interested in IPS-2 and related phenomena.