

A study of the equatorial signatures of long period transient events (600 - 7200 s)

Show affiliations

Santos, J.; Dutra, S.; Trivedi, N.; Vieira, L.; Echer, E.; Schuch, N.

Transient variations in the H magnetic field component of magnetograms at high latitude are a common feature. They are associated with energy transference from solar wind to the magnetosphere. Abrupt changes in the solar wind generate Alfvén and fast mode waves through the magnetosphere. The Alfvén wave doesn't propagate in the direction perpendicular to the geomagnetic field, so equatorial signatures are probably caused by fast mode waves. On the other hand, complicated signatures observed at high latitudes represent a composition of Alfvén and fast mode waves. A second suggested propagation mechanism to low latitudes is the Earth-ionosphere wave-guide. In this work, geomagnetic data from the Brazilian magnetic stations at Belém (BLM), Eusébio (EUS), Ji-Paraná (JIP), São Luis (SLZ) and São Martinho da Serra (SMS), all located near the geomagnetic equator, are used to look for equatorial signatures of transient events with periods of 600 - 7200s. This period range includes two special types of transient variations named Traveling convection vortices (TCV) and DP2 fluctuations. We try to identify their morphological characteristics and compare with the high latitude phenomena's characteristics. Satellite data (WIND, ACE and GOES) are used to see magnetosphere signatures and solar wind and interplanetary magnetic field (IMF) conditions during the events. The main objective is try to find the contribution of each propagation mechanism of these transient events arriving at the equatorial latitudes.

Publication:


34th COSPAR Scientific Assembly, The Second World Space Congress, held 10-19 October, 2002 in Houston, TX, USA., meeting abstract, id.793

Pub Date:

2002

Bibcode:

2002cosp...34E.793S

 Feedback/Corrections? (</feedback/correctabstract?bibcode=2002cosp...34E.793S>)