

Characteristic of dayside / nightside DP2 disturbance observed at the equatorial at MAGDAS stations

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DP2 is a quasi-periodic fluctuation in the geomagnetic field that occurs coherently at high latitudes, dayside dip equator and in the north-south component of IMF. It is well known that DP2 shows an amplitude enhancement at the dayside dip equator. On the other hand, DP2 in the nightside dip equator has not been enough analyzed until now.

Therefore we paid my attention to the nightside dip equator in this study to discuss characteristic of dayside / nightside DP2 disturbance in detail. When DP2 magnetic fluctuations occurred in dayside dip equator, we clarify what kind of magnetic change was seen at nightside. We have analyzed DP2 by using data from MAGDAS (MAGnetic Data Acquisition System) stations located near the dip equator; ANC(Ancon MLat.= 0.77 G Lon.= - 77.15) and DAV(Davao M.Lat.=-1.02 G.Lon.= 125.40), ACE satellite in the solar wind, GOES satellites in the magnetosphere. We selected 160 events of DP2 type fluctuations, which were associated with southward of IMF, and observed in the dayside dip equator during four months from December, 2006 to March, 2007. We found the followings:

1. 36% of all the events have simultaneous DP2 fluctuations in nighttime.
2. Those fluctuations show in-phase relationship to the dayside DP2.
3. 20% of the nightside DP2 events are associated with compression of the magnetosphere and the change of the dynamic pressure in the solar wind.
4. The other 80% events are not explained how magnetic fields increase in the nightside.

In the present paper, we will discuss global characteristics of DP2 in the dayside and nightside dip equator, and relations to changes in the IMF, magnetosphere, and equatorial region.