

# **Study of ozone variability at equatorial latitude during severe geomagnetic storm**

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We have made an attempt to study the influence of geomagnetic storm on the total ozone variability at Indian equatorial latitude. TOMS (Total Ozone Mapping Spectrometer) and Meteor-3 satellite has provided the long duration ozone variability from polar to equatorial latitude region. In the present study we have considered only severe and strong geomagnetic storm conditions. Some of the recent geomagnetic storm considered in the present study is Oct 2003, Nov 2004, April 2001, April 2000, Nov 2000, Oct 1999, Sept 1998, May 1998, and Oct 1997. Lastovicka et al (1992) initiated investigations of geomagnetic storm effects on the total ozone and found that previous results obtained by various authors on effect of geomagnetic storms on the total ozone differed substantially. Further investigation shows that the geomagnetic storm effect on the total ozone have significant effect only under very limited conditions. We have studied the influence of geomagnetic storm on the total ozone at polar and Indian latitude stations. The polar latitude (Antarctic region) shows the increase in the total ozone content during the onset of magnetic storm. The total ozone at equatorial latitude shows an increase in onset day of magnetic storm, as well as, the increase in total ozone has been found after 10 days interval in most of the observations. Some of the observations also show the enhancement at the interval of 5 and 15 days, after the onset of magnetic storm. We are also studying the ozone variability at different Indian stations, during the onset of magnetic storm. It is believed that the magnetic storm influences the earth's ionosphere at polar latitude and the disturbances produced at polar latitude propagate towards the equatorial latitude and might be affecting the equatorial ozone. The solar flare may be another important event responsible for the changes in ozone variability. The detailed results will be presented during the symposium.