√ 2008-1-291

2008 Fall Meeting
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Your query was:
weddell and sc=sa

HR: 1340h
AN: **SA33A-1619**
TI: Seasonal and solar activity variations of the Weddell Sea Anomaly observed in the TOPEX TEC measurements
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AB: The Weddell Sea Anomaly (WSA) in the ionosphere is characterized by higher plasma density at night than during the day in the region near the Weddell Sea. According to previous studies on the WSA, it is known to occur mostly in southern summer and has not been reported in other seasons. We have utilized more than 13-year TOPEX TEC measurements in order to study how the WSA varies with seasons and how it changes with solar activity. The TOPEX TEC data have been extensively utilized for the climatological study of the ionosphere due to its excellent spatial and temporal coverage. We investigate the seasonal and solar activity variations of the WSA using four seasonal cases (Mar. equinox, Jun. solstice, Sep, equinox, and Dec. solstice) and two solar activity conditions (F10.7<120 for solar minimum and F10.7>120 for solar maximum conditions) for geomagnetically quiet periods. Our analysis shows that the WSA occurs only in the southern summer hemisphere for low F10.7, as in previous studies, but the WSA occurs all of seasons except for winter when F10.7 is high: it is most prominent during the December solstice (southern summer) and still strong during both equinoxes. The WSA appears to be an extreme case of global longitudinal variations at mid-and high-latitudes.
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