



The Storm Time Equatorial Belt is dominated by Oxygen ions from the ring current

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Particle measurements from the polar-orbiting NOAA spacecraft in 800 km altitude have revealed that a low-altitude belt of energetic particles develops near the Equator during geomagnetic storms. This belt has been named the Storm Time Equatorial Belt (STEB). It is created by ring current particles that experience charge exchange and move towards the Earth as Energetic Neutral Atoms (ENA) until they are stripped and become quasi-trapped at low altitudes. Up to now the composition of the STEB has remained unknown, because the NOAA detectors do not have the capability to determine particle masses. In this paper we compare particle observations of the STEB from NOAA with simultaneous observations of ring current ENA from the IMAGE spacecraft. This analysis suggests that the STEB mainly consists of energetic Oxygen ions from the ring current.