**Perusing Earth’s magnetosphere**

Earth’s magnetosphere (MS) efficient trapping device for energetic particles. Its inner portion includes:

- Radiation belts (RBs): Magnetically-trapped relativistic electrons and high-energy ions. Relatively stable inner belt (IB) at \( L < 1 \pm 2 \), and more dynamic outer belt (ORB) at \( L > 3 \). Ring-current (RC) torus inside the ORB, peaking at \( L \approx 4 \) in quiet time.
- Slot region (SR): Normally devoid of energetic electrons at \( L > 2 \pm 3 \), due to precipitation by wave-particle interactions.
- Plasmasphere (PS): Torsion of cold plasma (\( \sim 10^3 \) - \( 10^4 \) electrons/cm\(^3\)) at a few \( R_E \). Predominantly \( H^+ \) in quiet time. Highly dynamic outer boundary (plasmapause) in response to enhanced magnetic activity. PS overlapping with ORB, with generation of favored locations for wave growth.

**The Aug 2018 storm**

- Strong C3-class geomagnetic storm (DST \( < -190 \) nT). Main phase from Aug 25 (17:47 UT) to Aug 26 (07:11 UT, 2018). Minor CME, no SEPs emitted as confirmed by GOES
- Rare occurrence at the minimum of the currently ongoing 24th solar cycle.
- Compared to the solar super quiet (SSQ) period of Aug 9-11, 2018 (\( 14 \) nT < DST < \( 18 \) nT).

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