Geophysical Research Abstracts
Vol. 12, EGU2010-6896, 2010
EGU General Assembly 2010

Corotating Interaction Regions in Solar Minimum 23/24

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In the solar minimum 23/24, corotating interaction regions (CIRs) are the predominant structures in the solar wind. Using a fleet of solar wind monitors, STEREO A/B, ACE and Wind, we can observe the CIRs at multiple points. Meanwhile, the heliospheric imager onboard STEREO twin spacecraft enable us to track the CIRs all the way outward to about 1.5 AU, although there is line-of-sight projection effect. In addition, the STEREO support at Community Coordinated Modeling Center (CCMC) provides the Wang-Sheeley-Arge (WSA) and ENLIL model results for the entire lifetime of STEREO. We make use of the above observation and modeling efforts to analyze the CIRs' generation near the Sun and their propagation to 1 AU by modeling a few specific CIR events. We will also study the latitudinal and longitudinal variations of CIRs, the relation between CIR and heliospheric current sheet, and how the CIRs drive forward and reverse shocks.