

Comparison of Data from Ulysses and WIND with Source Surface, Current Sheet, and MHD Models during the Ulysses Fast Latitude Scan

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In the period February-March, 1995, the Ulysses spacecraft made a rapid transit from the solar wind emanating from the south solar coronal hole to that from the north. At the same time, the WIND spacecraft was obtaining data upstream of Earth and the configuration of the solar magnetic field was remarkably stationary. This coincidence of events provided an opportunity to map the latitudinal and longitudinal properties of the solar wind and to use those data to test several models of the solar wind and interplanetary magnetic field. **Specifically**, we compare the interplanetary data with the boundaries of coronal holes as seen in the He 10830 Å line and with the predictions computed from the WSO and NSO magnetograph data using source surface, current sheet, and 3-D MHD models. The models are used to determine the sources of the solar wind and the location of the heliospheric current sheet while the spacecraft data are used to determine the variations of solar wind properties as functions of the angular expansion from the sources and distance from the current sheet.