

# Fast Preview

*Note: This is not exactly what the published abstract will look like*

## Connecting the Sun and the Solar Wind: Source Regions of the Fast Wind Observed Beyond 0.3 AU

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Highly sensitive radio occultation and white-light measurements of path-integrated density have shown that the solar corona comprises three distinct morphological regions -- streamer, quiet Sun, and polar coronal hole -- and that polar coronal holes extend radially into interplanetary space from 1.15 Ro to at least 30 Ro. In this paper, we build on these results by comparing solar wind flow speeds observed at the same time as path-integrated density. Flow speeds are inferred from O VI lines with the ultraviolet coronagraph spectrometer (UVCS) on the Solar and Heliospheric Observatory (SOHO) while the simultaneous polarized brightness (pB) measurements of path-integrated density are by the High Altitude Observatory (HAO) Mauna Loa Mk III K-coronameter. The comparison of global flow speed and density observations in 1997 produces three new results. First, it shows that flow speed and density are anticorrelated in the solar corona. Second, it provides unambiguous evidence for the quiet Sun as an additional source of fast wind. Third, it demonstrates that the information on density structures provided by Mark III can readily serve as a proxy for velocity distribution in the outer corona. The extensive Mk III data set, therefore, provides the framework of near-Sun measurements with which connections with solar wind measurements beyond 0.3 AU can be made. In particular, we show that fast wind regions in the heliosphere -- observed directly by Ulysses and Wind plasma measurements and remotely by Nagoya IPS or interplanetary scintillation measurements -- map radially back to fast wind regions at the Sun identified by the Mk III data.

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**Membership Number:**

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**Student rate:**

Not Applicable

**Willing to chair a session:****Meeting Section:**

SH - SPA-Solar and Heliospheric Physics

**Special Session:****Index Terms:**

2100,2164,2169,7500,7509

**Theme:****Material presented:**

0%

**Contributed****Poster presentation requested:**

P - Poster Requested

**Scheduling request:**

Since related, physically place next to: "Temperature, Density and Magnetic Field Structure of the Corona During the Total Eclipse of 11 August 1999" by Habbal et al.