

Alfvénic Fluctuations in the Solar Wind Observed by Ulysses

E.J. Smith, M. Neugebauer and B.T. Tsurutani (All at Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109-8099)

A. Balogh (Space & Atmospheric Group, The Blackett Laboratory, Imperial College, London SW7 2BZ, England)

D.J. McComas (Los Alamos National Laboratory, Los Alamos, NM 87545)

One of the striking results of the Sun's south polar pass by Ulysses was the discovery of large amplitude, long period Alfvénic fluctuations that were continuously present in the solar wind flow from the polar coronal hole. The fluctuations dominate the variances and power spectra at periods ≥ 1 hour and are evident as correlated fluctuations in the magnetic field and solar wind velocity components. Various properties of the fluctuations in the magnetic field, in the velocity and in the electric field have been established. The waves appear to have important implications for galactic cosmic rays and for the solar wind, topics which have continued to be investigated. Their origin is also under study, specifically whether or not they represent motions of the ends of the field lines at the Sun. The resolution of these issues has benefited from the more recent observations as the spacecraft traveled northward toward the ecliptic and passed into the northern solar hemisphere. All these observations will be presented and their implications will be discussed.

1. Edward J. Smith, Jet Propulsion Laboratory, California Institute of Technology, M/S 169-506, 4800 Oak Grove Drive, Pasadena, CA 91109-8099; tel: 818-354-2248; fax: 818-354-8895; e-mail: esmith@jplsp
2. Contributed
3. Name of Session: II Solar Wind Composition and Internal State
4. Session Chair: M. Neugebauer
5. Oral
6. No