

The Interrelationship Between Magnetic Holes (MHs), Magnetic Decreases (MDs), Directional Discontinuities (DDs) and Alfvén Waves as a Function of the Solar Cycle and Heliographic Latitude: Ulysses

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It will be demonstrated that Magnetic Holes and Magnetic Decreases are often parts of nonlinear phase-steepened Alfvén waves. The nature of the discontinuities bounding MDs are somewhat of a mystery at the present time, however. Rankine-Hugoniot analyses will be performed across these structures to identify the nature of the discontinuous magnetic field and plasma jumps (slow shocks, Alfvénic shocks, tangential discontinuities, or rotational discontinuities?). MH and MD properties during the Ulysses 2001-2002 Northern Polar Pass will be compared with those of previous polar and ecliptic plane passes during the minimum and rising phase of the solar cycle.