

ON THE EVOLUTION OF THE SOLAR WIND BETWEEN 1 AND 5 AU AT SOLAR MAXIMUM AND ITS EFFECT UPON JOVIAN AURORAL EMISSION

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The Cassini fly-by of Jupiter occurred at a time of solar maximum, and as a consequence, the *in-situ* measurements taken in the Solar Wind upstream of the planet, reveal numerous Interplanetary Coronal Mass Ejections (ICMEs). A fortuitous alignment of the planets allowed us to trace these events back to observations taken at the Earth. In particular one event observed by Cassini is shown to be a Merged Interaction Region (MIR), created from the coalescence of multiple ICMEs between 1 and 5 AU. We examine results from a one dimensional Magneto-hydrodynamic (MHD) simulation of the Solar Wind at Earth propagated out to Cassini and compare with the *in-situ* data taken. It is found that by integrating along the nominal Parker Spiral field we can to some extent, correct for the changing angular offset between the two points of observation by obtaining a fractional increase or decrease in the propagation time of the events observed. The results of this MHD simulation are then allowed to propagate further to the planet allowing comparisons to be made between the state of the Solar Wind and remote observations of the planetary aurorae that were taken simultaneously.