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INTERACTIONS OF OBLIQUE INTERPLANETARY DISCONTINUITIES AND THEIR MANIFESTATIONS DURING STIP INTERVALS XV-XIX

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is considered

waves

~~We consider the generation of slow shock generation as the result of the interaction of Alfvén discontinuities with solar wind contact surfaces. The latter are taken to be the boundaries of proton and alpha-particle concentration inhomogeneities. It is found that the intensity of the Alfvén discontinuity may be increased as the result of its interaction with the more dense plasma. The converse (i.e., decrease of the Alfvén discontinuity's intensity following interaction with a less dense plasma) is also indicated.~~

cloud

Also discussed is the generation of a magnetic ~~cloud~~ as the result of the interaction of a quasi-parallel Alfvén discontinuity with a dense plasma contact surface. It is shown that the (solar-generated) Alfvén discontinuity may then be transformed into non-flare fast and slow shock waves as the result of this interaction. Thus, it is indicated that some fast shock waves in the solar wind may have a nonsolar origin.

~~We have also analyzed ground observations of geomagnetic and ionospheric perturbations during STIP Intervals XV-XIX. Correlations are found between quasi-shock perturbations in space and sudden geomagnetic impulses. We underline the effect of the wave obliquity on the results of the discontinuities' interactions.~~

~~In a related topic, we discuss the role of secondary compression - rarefaction waves for the dynamics of solar wind - cometary interactions.~~