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# THE PROPAGATION OF SOLAR ENERGETIC PARTICLES IN MAGNETIC CHANNELS

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The existence of interplanetary flow systems produced by the entrainment of interplanetary transients - consisting of flare-produced shocks, high-speed solar wind streams and coronal mass ejection - has been established by Burlaga and co-workers. This entrainment process produces enhanced regions of the interplanetary magnetic field that should be connected back to the solar corona. These compressed regions can provide a preferred magnetic channel for the propagation of solar cosmic rays. The characteristics of these events appear to be different from those previously reported by the NASA/University of New Hampshire team and the University of Chicago in their study of a large number of events in the region beyond 1 AU. These new events have a very flat energy spectra (with $\gamma \simeq 1.5$) that frequently extend to energies above 100 MeV and have a significant enhancement of MeV electrons. The combined data of Pioneer 11 and Voyagers 1 and 2 make it possible to separate temporal and spatial variations. The particle anisotropies are modest (<10% at 12 MeV). Because of the field compression, adiabatic energy losses appear to be significantly reduced. This effect should be of general astrophysical significance since it provides a mechanism for injecting particles accelerated near a star into the interstellar region without large energy losses.

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