

ABUNDANCES, SPECTRA, AND ANISOTROPIES IN THE 1998 SEP 30 AND 2000 APR 4 LARGE SEP EVENTS

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The 1998 Sep 30 and 2000 Apr 4 events are both large gradual events, in which ~ 2 MeV proton differential intensities exceed 1×10^3 particles $(\text{cm}^2 \text{ s sr MeV})^{-1}$. Yet they exhibit quite different time variations of elemental abundance ratios, spectra, and anisotropies.

Using a model of SEP acceleration and transport coupled to Alfvén wave excitation, we fit the simultaneous observations of proton, helium, oxygen, and iron. The observed differences in abundance ratios and anisotropies may be understood in terms of the different manners in which energetic protons excite Alfvén wave spectral distributions in interplanetary space.