

SEP FE CHARGE STATES IN HE3-RICH INTERPLANETARY SHOCK EVENTS

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Recent work by Mason et al. (1999) and Desai et al. (2000) suggests that suprathermal ion populations from impulsive solar energetic particle events may be subsequently accelerated by interplanetary shocks. They have used He3/He4 abundance ratios from the ACE/ULEIS instrument to detect ion populations originating in impulsive events. Desai (2000) identified several interplanetary shock events in which the He3/He4 ratios were enhanced above the solar wind value.

Another tracer of impulsive events is the ionic charge state of solar energetic particles (SEPs). It is expected that SEPs accelerated in impulsive events will be highly ionized. The ACE/SEPICA instrument measures ionic charge states of SEP ions, and it has detected highly ionized Fe in some of the He3-rich interplanetary shock events identified by Desai (2000). Observations for these events will be shown and discussed in the context of earlier observations of interplanetary shock events.