### A Survey of Gradual Solar Energetic Particle Events (1967 - 2006)

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Auxiliary material for Paper 2010JA016133 (Journal of Geophysical Research)

A survey of gradual solar energetic particle events

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Introduction

Provided as auxiliary material is the database of 112 SEP events identified from a homogenised proton flux time series. The homogenised proton flux time series is formed from >60 MeV proton flux data from the OMNI 2 data set and data from the GOES satellites. The event criteria is that the proton flux should be consistently above a flux threshold of 2 cm$^{-2}$ sr$^{-1}$ s$^{-1}$ for greater than 24 hours, and that over this period there must be greater than 50 percent data coverage. For sequences of overlapping events, the flux minimum between the two events is taken to separate them.

The structure of this database is as follows:

Column "ID": Integer ID number, in order of oldest to most recent event.
Column "Event_Onset": Date of event onset, in dd-mm-yyyy format.
Column "Duration": The duration of the event in hours.
Column "Event_Peak": The time of the event peak after the onset in (hh/dd).
Column "Peak Flux": The peak proton flux in cm$^{-2}$ sr$^{-1}$ s$^{-1}$.
Column "Fluence": The time integral of the proton flux over the event in 1x10$^5$ cm$^{-2}$ sr$^{-1}$.
Column "Coverage": The fraction of the event over which measurements were recorded. Data gaps in the time series are filled using a 1st order polynomial interpolation. Therefore coverage is calculated as the number of recorded measurements during an event, divided by the total number of data points (real + interpolated).