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## Inferred Ionic Charge States for Solar Energetic Particle Events from 2012-2015 with ACE and STEREO

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Mean ionic charge states for SEP events can reflect source temperatures, stripping during acceleration and transport, and the composition of source material. Multi-spacecraft measurements of mean ionic charge states for single SEP events can also demonstrate longitudinal dependence. At previous conferences, we have reported estimates of inferred high-energy ionic charge states for SEP events. The method fits the energy dependence of decay times for each element in SEP events, combined with charge-to-mass ratios relative to a calibration element, and derives mean charge state estimates for other elements from O to Fe. At the ICRC 2013 conference, we attempted to apply the method using ACE and STEREO data to SEP events through the beginning of 2012, in order to elucidate evidence on seed populations or longitudinal variations with charge state for single SEP events, with varying results.

In this paper, we will continue to apply the method to new SEP events from 2012 to 2015 in the ACE and STEREO data. With the three spacecraft widely spread apart during this time period, we are less likely to analyze single SEP events with multi-spacecraft data, but the wide spacing allows more SEP candidate events to be considered, separately, than would be available with just a single spacecraft. Candidate SEP events for new analysis are 5 Mar 2013 and 7 Nov 2013 for STEREO A; 13 May 2013, 25 February 2014, and 1 August 2014 for STEREO B; and 8 March 2012, 11 April 2013, 22 May 2013, and 8 January 2014 for ACE. These SEP events are selected as promising candidates for fitting the model to the data based on the abundance of Fe detected by STEREO/LET and ACE/SIS as well as on past experience at fitting similar decay time profiles.

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**Author:** LABRADOR, Allan (California Institute of Technology)

**Co-authors:** CUMMINGS, Alan (California Institute of Technology); COHEN, Christina (California Institute of Technology); STONE, Edward (California Institute of Technology); MASON, Glenn (JHU/APL); SOLLITT, Luke (The Citadel); WIEDENBECK, Mark (Jet Propulsion Laboratory); LESKE, Richard (California Institute of Technology); MEWALDT, Richard (California Institute of Technology); VON ROSENVINGE, Tycho (NASA/Goddard Space Flight Center)

**Presenter:** LABRADOR, Allan (California Institute of Technology)

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