2014 Workshop: 2013 NonSuperStorm Severe Events

Long title
Grand Challenge: Severe Events During Non-SuperStorm Times
Grand Challenge
Conveners
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Description

The workshop would begin with a presentation of I-T disturbances of notable severity during periods of only moderate geomagnetic activity. This would involve two presentations for a total of 40 minutes.

Two invited speakers would then address the observational context of such super-storm events, as well as the theoretical implications via modelling. This would take an additional 40 minutes.

The final 40 minutes would be devoted to "roundtable discussion" --- meaning a combination of questions and answers from the audience. One of the primary goals would be to show students how to address events said to be "unusual" in a field that has been studying them for over half a century.

Justification

Solar-Terrestrial events during the past few years have exhibited extreme morphologies during periods of only moderate geomagnetic activity. For example, on 1 June 2013, sub-auroral diffuse aurora and SAR arcs appeared at lower mid-latitudes (L ~ 2) just a few degrees poleward of equatorial spread-F (ESF) events. These intrusions of auroral and equatorial processes essentially made the mid-latitude ionosphere disappear on this night. This workshop will document this event as a case-study and explore if the recent solar quiescence has made the solar-terrestrial system "super-sensitive" to what would normally be considered typical geomagnetic storms. Has System-Science been pushed into a new regime?

I anticipate that the issues raised cannot be addressed adequately without community involvement over the next year. Illuminating the "problem" this year and asking for "proposed solutions" by next year is the goal.

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