2021 Workshop: IT storms near solar minimum

Long title
Storm time modification of ionosphere/thermosphere - drivers and interactions near solar minimum
Conveners
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Description

We seek inputs and discussion of observations made during the recent solar minima, and the current increase in solar activity, in order to broaden understanding of the physics of the upper atmosphere and ionosphere in the CEDAR community. This effort focuses on periods where the influences of terrestrial drivers are now measured more comprehensively than anytime in the past. New views of space from both orbiting and ground-based assets are invited. Discussion of the physics of low-conductivity environment, isolated storms and substorms, pre-conditioning by lower atmospheric drivers and the atmospheric waves that are dominant during low solar activity is welcome. Synthesis of modeling efforts with observations for context and physical understanding will add greatly to the discussion.

Justification

Recent years have been marked by the second of two consecutive deep solar minima, where the influences of terrestrial weather are often the dominant drivers of the changing conditions in geospace. The small geomagnetic storms and periods of isolated substorms occurring during this period offer new opportunities for research into the effects of geomagnetic activity on the ITM system. A workshop where these system-wide disturbances are discussed and compared is well-timed, with the implementation of new ground observatories and spaceflight missions, all with unprecedented capabilities for retrieving key parameters of the neutral and plasma environments in Near-Earth geospace, termed in the CEDAR Strategic Vision as the Space-Atmosphere Interaction Region. The challenge for now and the future is to separate terrestrial drivers from those originating with the sun, directly or as processed by the magnetosphere.

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