Supporting Information for "Estimating Maximum Extent of Auroral Equatorward Boundary using Historical and Simulated Surface Magnetic Field Data" by Blake. et al.

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Contents of this file Description of the attached datasets.

Introduction

Attached as supporting information for the paper "Estimating Maximum Extent of Auroral Equatorward Boundary using Historical and Simulated Surface Magnetic Field Data" by Blake et al. are '.txt' and '.csv' files which contain outputs from each of the

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15 SWMF simulations. In addition, included is a single '.txt' file which contains the auroral boundary/daily Dst values for 25 years of INTERMAGNET data. These data, along with example Python scripts used to calculate the MEAEBs can also be found at https://doi.org/10.5281/zenodo.4035207.

Scaled_A1-A3.txt, Scaled_B1-B6.txt, dd_mm_yyyy.txt

Each of these 15 files correspond to a simulation (as given in Table 1 in the main text). The data are for the magnetic longitude, magnetic latitude and maximum calculated E_H (V/km) for each simulation.

HIST_DATA.txt

This dataset is for the calculated maximum extents of the auroral equatorward boundaries, minimum Dst for 25 years of INTERMAGNET data. Also included as a fourth column is the standard deviation of the calculated auroral boundary (in degrees).

Boundary_Fits.csv

Calculated minimum Dst values, auroral boundaries using Method 1 and Method 2 (see main text), as well as the uncertainties for each. These data are for each of the 15 SWMF simulations.