Proton precipitation in Mercury's northern magnetospheric cusp

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Caption for Table S1.

Additional Supporting Information (Files uploaded separately)

Table S1: Raines2022_Mercury_cusps_proton_ppt_revision2.txt

Introduction

Supporting information Table S1 contains time, position and proton precipitation information for all 2760 MESSENGER cusp crossings identified in this study. These are stored in a Microsoft Excel spreadsheet file. Universal Time Coordinated (UTC) times were correlated and extracted, along with position information, using the NAIF SPICE Toolkit (Acton 1996; Acton et al., 2017). (Time correlation corrects for variations in spacecraft clock ticks relative to Earth time so that reported times match those on Earth at the time of observation.) Precipitation flux and rate calculation details are given in the article text.

Table S1. List of cusp crossing times (UTC), MESSENGER spacecraft position and corresponding proton precipitation information. UTC times are given in year, day-of-year (doy) and hour (hh), minute (mm) and second (ss) for both the start (0) and end (1) of

each cusp crossing. Start (0) and end (1) positions are given both in Cartesian MSO coordinates and altitude (km), local time (hours), magnetic latitude (degrees) and cartographic latitude (degrees). MESSENGER orbit number (around Mercury) is also given. Precipitation information is given as average and peak proton precipitation flux (cm^{-2} s^{-1}), as well as precipitation rate (s^{-1}) for cusps for which the magnetic field is within the FIPS field of view (pa0) and those for which it is not. A low statistics flag (low_stat) is set to 1 when statistical errors are likely to exceed 30%.