

1 Supplementary Material for “*Intense chorus*
2 *waves are the cause of flux-limiting in the*
3 *heart of the outer radiation belt*”

4 S. Chakraborty^{1,*}, I. R. Mann^{2,1}, C. E. J. Watt¹, I. J. Rae¹, L.
5 Olifer², L. G. Ozeke², J. K. Sandhu¹, B. H. Mauk³, and H. Spence⁷

6 ¹Department of Mathematics, Physics and Electrical Engineering,
7 Northumbria University, Newcastle upon Tyne, UK

8 ²Department of Physics, University of Alberta, Edmonton, AB,
9 Canada

10 ³Applied Physics Laboratory, Johns Hopkins University, Laurel,
11 MD, USA

12 ⁷Institute for the Study of Earth, Oceans, and Space, University of
13 New Hampshire, Durham, NH, USA

14 *Corresponding author: S. Chakraborty,
15 suman.chakrabarty37@gmail.com

16 **1 Supplementary Information**

17 Figure 1 provides the statistical variation in time of integrated chorus wave
18 power and the ratio of observed flux to calculated KP limited flux in three L^*
19 ranges within the MLT range 12 - 24. The plots in each panel are in the same
20 manner as Figure 2 in the main text. Figure 1 clearly shows that the variation
21 of integrated chorus wave power in noon to midnight MLT sector is less intense
22 compared to the midnight to noon MLT sector.

23 **2 Supplementary Figures**

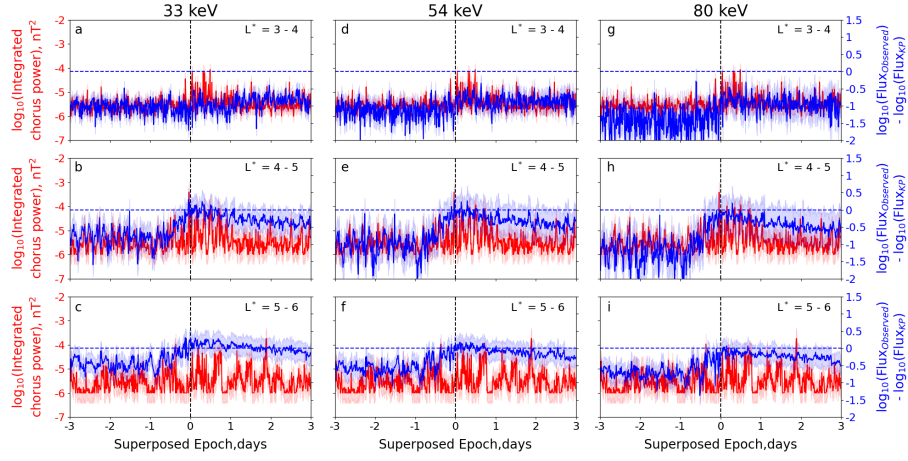


Figure 1: Superposed epoch analysis of integrated chorus wave power ($0.1 - 0.8 f_{ce}$; nT^2 ; red curves) and ratio of observed flux to calculated KP limited flux (blue curves) in logarithmic scale as a function of superposed epoch (in days) at three different electron energy channels: (a - c) 33 keV, (d - f) 54 keV and (g - i) 80 keV, and three different L^* ranges: (a, d, e) $L^* = 3 - 4$, (b, e, h) $L^* = 4 - 5$ and (c, f, i) $L^* = 5 - 6$, between 12 to 24 MLT.