



## Observation of 'Band' Structures in Spacecraft Observations of Inner Magnetosphere Plasma Electrons

Kirthika Mohan Narasimhan (1), Andrew Fazakerley (1), Branislav Milhaljcic (1), Sandrine Grimald (2), Iannis Dandouras (3), and Chris Owen (1)

(1) Mullard Space Science Laboratory, University College London, Dorking, UK, (2) ONERA, Université de Toulouse, DESP, Toulouse, France, (3) IRAP, Université de Toulouse, CNRS, Toulouse, France

In previous studies, several authors have reported inner magnetosphere observations of proton distributions confined to narrow energy bands in the range of 1-25 keV. These structures have been known as "nose structures", with reference to their appearance in energy-time spectrograms and are known as "bands" if they are observed for extended periods of time. These proton structures have been studied quite extensively with multiple mechanisms proposed for their formation, not all of which apply for electrons. We examine Double-Star TC1 PEACE electron data recorded in the inner magnetosphere ( $L < 15$ ) near the equatorial plane to see if these features are also observed in the electron energy spectra. These "bands" also appear in electron spectrograms, spanning an energy range of 0.2-30 keV, and are shown to occur predominantly towards the dayside and dusk sectors. We also see multiple bands in some instances. We investigate the properties of these multi-banded structures and carry out a statistical survey analysing them as a function of geomagnetic activity, looking at both the Kp and Auroral Indices, in an attempt to explain their presence.