



The importance of open field lines for the generation of daytime rayed aurora and plasma turbulence

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Recent studies of naturally enhanced ion-acoustic lines (NEIL's) at high magnetic latitude show that they are associated with dynamic rayed aurora. While most observations stem from the dayside, the associated aurora is very different from typical dayside aurora. In this paper we present observations from both spacecraft and ground-based instruments during intervals where NEIL's have been observed by the EISCAT Svalbard radar. All-sky camera images are used to position the observations within a large scale context. Several close in time and space DMSP and NOAA low-altitude polar-orbiting spacecraft crossings have been identified, and these will be used to study possible source regions of the particle precipitation in the magnetosphere.