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Electron pitch angle variations recorded at high magnetic latitudes by the NUADU instrument on the TC-2 spacecraft

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The NUADU (NeUtral Atom Detector Unit) instrument aboard TC-2, recorded 4π solid angle images of particles of different energies spiraling around the geomagnetic field lines at high northern latitudes at L \sim 10. The ambient magnetic field was measured by the magnetometer experiment (FGM). The pitch angle distributions and fluxes observed matched those predicted theoretically for high energy electrons (E > 0.1 MeV) trapped in a dipolar geomagnetic field at this location. Two instances are described in which the pitch angle distributions changed in temporal association with changes in the ambient magnetic field. The data suggest that changes in pitch angle diffusion may be associated with electron acceleration along the Earth's magnetic

field lines.