

Design of the Low Energy Electron Detector for KITSAT-B

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Abstract

We developed the low energy electron detector (LEED) for KITSAT-B which was launched on September 26, 1993. The sensor head is mounted on the top of the satellite so that it can measure the precipitating electron flux along the magnetic field line in the auroral zone at 820 km altitude. The detector system is composed of 4 parts : the electrostatic analyzer, the spiraltron detector, the discriminator / preamplifier, and the interface to the spacecraft. The analyzer limits the access to the spiraltron only to the electrons of certain energies which are determined by the electrostatic field across the two coaxial cylindrical analyzer plates. The energy spectrum of the detector in consideration is about 100 eV to 6.7 KeV, which is swept in 1.6 seconds and divided into 16 bins. It also is 1.6 second reset period after each sweep, We will discuss the technical features of the system as well as the future observational schedule.