



An Overview of the Electron-Proton and High Energy Telescopes for Solar Orbiter

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The Energetic Particle Detector (EPD) suite for ESA's Solar Orbiter will provide key measurements to address particle acceleration at and near the Sun. The EPD suite consists of four sensors (STEP, SIS, EPT, and HET). The University of Kiel in Germany is responsible for the design, development, and building of STEP, EPT and HET. This poster will focus on the last two. The Electron Proton Telescope (EPT) is designed to cleanly separate and measure electrons in the energy range from 20 - 400 keV and protons from 20 - 7000 keV. To separate electrons and protons EPT relies on the magnet/foil-technique. EPT is intended to close the gap between the supra-thermal particles measured by STEP and the high energy range covered by HET. The High-Energy Telescope (HET) will measure electrons from 300 keV up to about 30 MeV, protons from 10 to 100 MeV, and heavy ions from ~20 to 200 MeV/nuc. To achieve this performance HET consists of a series of silicon detectors in a telescope configuration with a scintillator calorimeter to stop high energy protons and ions. It uses the dE/dx vs. total E technique. In this way HET covers an energy range which is of interest for studies of the space radiation environment and will perform measurements needed to understand the origin of high-energy particle events at the Sun. EPT and HET share a common Electronics Box, there are two EPT-HET sensors on Solar Orbiter to allow rudimentary pitch-angle coverage. Here we present the current development status of EPT-HET units and calibration results of demonstration models as well as plans for future activities.