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The aCORN Proton Detector System¹ ALEXANDER KOMIVES, DePauw University, ACORN COLLABORATION — The method used by the aCORN collaboration to produce a precise measurement of the electron-antineutrino correlation from neutron beta decay requires a detector capable of counting the low energy, less than 750 eV, recoil protons. These protons are selected by a series of tungsten apertures and an axial magnetic field. Protons in the "fast" and "slow" groups, corresponding to antineutrinos moving parallel and anti- parallel to the electron momenta respectively, must be counted with equal efficiency. Additional provisions are needed to prevent electrons that travel to the proton detector region from being reflected to the electron detector at the opposite end of the apparatus. A system has been designed and built to satisfy these criteria and has been operationally tested. Details of the detector system and test results will be presented.

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