

Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

aCORN Beta Spectrometer and Electrostatic Mirror¹ MD HAS-SAN, Tulane University, ACORN COLLABORATION — aCORN uses a high efficiency backscatter suppressed beta spectrometer to measure the electron-antineutrino correlation in neutron beta decay. We measure the correlation by counting protons and beta electrons in coincidence with precisely determined electron energy. There are 19 photomultiplier tubes arranged in a hexagonal array coupled to a single phosphor doped polystyrene scintillator. The magnetic field is shaped so that electrons that backscatter without depositing their full energy strike a tulip-shaped array of scintillator paddles and these events are vetoed. The detailed construction, performance and calibration of this beta spectrometer will be presented. I will also present the simulation, construction, and features of our novel electrostatic mirror.

¹This work was supported by the National Science Foundation and the NIST Center for Neutron Research.

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Date submitted: 28 Jun 2013

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