

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Event Identification In SNO's NCD Phase¹ G. ADAM COX, University of Washington, SUDBURY NEUTRINO OBSERVATORY COLLABORATION — In the final phase of SNO, the rate of the total solar neutrino flux can be measured using event-by-event particle identification of events recorded by the newly installed Neutral Current Detectors (NCDs). The NCDs are an array of ^3He proportional counters constructed mostly from ultra-pure nickel tubes that capture neutrons produced by the neutral-current interaction between solar neutrinos and the deuterium in SNO's heavy water. The product of the neutron capture is a back-to-back proton and triton pair which ionize the proportional-counter gas and generate a current on the anode. In order to extract the rate of neutral-current interactions, neutron signals in the NCDs must be distinguished from events caused by ionizing alphas from the decay of U and Th embedded in the NCDs and electronic discharges. Calibration and characterization of the NCD electronics are essential to event identification. The current status of this effort and the role of the NCD electronics calibration will be discussed.

¹on behalf of the SNO Collaboration

Gary Cox
University of Washington

Date submitted: 26 May 2005

Electronic form version 1.4