Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Performance of the beta-spectrometer for a precision measurement of the neutron beta-decay asymmetry B. PLASTER, B.W. FILIPPONE, J. HSIAO, California Institute of Technology, T.M. ITO, Los Alamos National Laboratory, J.W. MARTIN, University of Winnipeg, J. YUAN, California Institute of Technology, UCNA COLLABORATION — A precise value for the neutron beta-decay asymmetry will be extracted from measurements of the angular correlation between the neutron spin and the direction of emission of the decay electron in polarized ultracold neutron decay. Ultracold neutrons polarized via transport through a 7.0 Tesla field will be directed into the center of our beta-spectrometer, consisting of a 10-cm diameter, 3-m long open-ended decay trap situated within a highly-uniform 1.0 Tesla solenoidal field. Spiraling decay electrons will be detected at both ends of the decay trap in identical detector arrays consisting of a multi- wire proportional chamber backed by plastic scintillator. Initial results of various performance tests of our beta-spectrometer and electron detector system will be presented.

Bradley Plaster
California Institute of Technology

Date submitted: 14 Jan 2006 Electronic form version 1.4