Abstract Submitted
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Commissioning of the High Efficiency Total Absorption Spectrometer (HECTOR)[1] C.S. REINGOLD, A. SIMON, University of Notre Dame, A. SPYROU, F. NAQVI, A. DOMBOS, A. PALMISANO, National Superconducting Cyclotron Laboratory, T. ANDERSON, S.L. HENDERSON, S. MOYLAN, C. SEYMOUR, M.A. SKULSKI, M.K. SMITH, S.Y. STRAUSS, B. VANDE KOLK, University of Notre Dame — P-process nucleosynthesis occurs in supernovae where the s-process seeds are present, and is responsible for the production of proton-rich nuclei. Photons from SN explosions induce characteristic (γ,n), (γ,p), and (γ, α) reactions. These reactions are typically studied via the inverse reactions. For this purpose, the High Efficiency Total Absorption Spectrometer (HECTOR), a NaI(Tl) summing detector at the University of Notre Dame, was built. The array is designed to make precision cross section measurements for (p,γ) and (α, γ) reactions. HECTOR is composed of 16 separate NaI(Tl) crystals and 32 photomultiplier tubes read by a digital data acquisition system, with gain-matching and summing done offline. The efficiency of HECTOR is about 52.7 (2.0)% for a ^{60}Co source. The commissioning run for HECTOR was performed via measurements of known resonances in the ^{27}Al(p,γ)^{28}Si reaction to determine the efficiency of the array. The first results from HECTOR will be presented, as well as future plans with the array.

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