Abstract Submitted
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Proton Emission from ^{31}S and the ^{30}P$(p,\gamma)^{31}$S Reaction Rate in Classical Novae[1] SEAN BURCHER[2], K.L. JONES, University of Tennessee, K.A. CHIPPS, J.M. ALLMOND, M. HALL, S.D. PAIN, Oak Ridge Natl Lab, J.T. HARKE, R.O. HUGHES, Lawrence Livermore Natl Lab, S. AHN, H. CLARK, J. HOOKER, H. JAYATISSA, S. OTA, A. SAASTAMIONEN, S. UPADHYAYULA, J.A. CIZEWSKI, Texas A&M University Cylcotron Inst, N. COOPER, C. REINGOLD, A. SIMON, University of Notre Dame, K. SCHMIDT, Natl Superconducting Cyclotron Lab — The ^{30}P$(p,\gamma)^{31}$S reaction rate is the largest remaining source of uncertainty in the final abundances of nuclei produced in ONe novae. To further constrain the reaction rate, uncertainties in the properties of the key resonant states in ^{31}S must be reduced. The ^{32}S$(p,d)^{31}$S reaction was used to populate proton-unbound states in ^{31}S, and their subsequent decay was observed. The measurement was carried out at the Texas A&M Cyclotron Institute utilizing the LLNL Hyperion particle-gamma coincidence spectrometer. Reaction deuterons were detected in a silicon telescope located at forward angles, and decay protons were detected by a single silicon detector positioned at backward angles. Proton decay branching ratios and spin-parity assignments for several states in ^{31}S will be presented.

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