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Spin assignments of ^{22}Mg levels through a ^{24}Mg(p,t)^{22}Mg measurement K.Y. CHAE, U of TN, D.W. BARDAYAN, J.C. BLACKMON, ORNL, K. CHIPPS, CO School of Mines, R. HATARIK, Rutgers, K.L. JONES, U of TN, R.L. KOZUB, TTU, J.F. LIANG, ORNL, C. MATEI, ORAU, B.H. MOAZEN, U of TN, C.D. NESARAJA, ORNL, P.D. O'MALLEY, S.D. PAIN, Rutgers, S.T. PITTMAN, U of TN, M.S. SMITH, ORNL — The ^{18}Ne(alpha,p)^{21}Na reaction plays a crucial role in the (alpha,p) process, which leads to the rapid proton capture process in X-ray bursts. The reaction rate depends upon properties of ^{22}Mg levels above the alpha threshold at 8.14 MeV. Despite recent studies of these levels, only the excitation energies are known for most with no constraints on the spins. We have studied the ^{24}Mg(p,t)^{22}Mg reaction at the ORNL Holifield Radioactive Ion Beam Facility, and by measuring the angular distributions of outgoing tritons, we provide some of the experimental constraints on the spins of astrophysically-important ^{18}Ne(alpha,p)^{21}Na resonances. Details of the experimental setup and results will be presented. * This work was supported in part by the US DOE and the NSF.

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