Abstract Submitted
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The Beta-Delayed Proton and Gamma Decay of 27P for Nuclear Astrophysics E. MCCLESKEY, A. BANU[1], M. MCCLESKEY, B. ROEDER, A. SAASTAMOINEN, A. SPIRIDON, L. TRACHE[2], R.E. TRIBBLE, Cyclotron Institute, Texas A&M University, T. DAVINSON, D. DOHERTY, G.J. LOTAY, J. WALLACE, P.J. WOODS, University of Edinburgh, United Kingdom — The main creation site of ^{26}Al is currently under debate. The reactions for its creation or destruction are also not completely known. When ^{26}Al is created in novae, the reaction chain is: ^{24}Mg(p,γ)^{25}Al(β+v)^{25}Mg(p,γ)^{26}Al, but this chain can be by-passed by another chain: ^{25}Al(p,γ)^{26}Si(p,γ)^{27}P and it can also be destroyed directly. Another way to by-pass it is through ^{26m}Al(p,γ)^{27}Si* which is dominated by resonant capture. Using the Momentum Achromat Recoil Spectrometer (MARS) at the Texas A&M Cyclotron Institute and inverse kinematics, this destruction reaction was studied by the beta-delayed proton and gamma decay of ^{27}P. Due to selection rules, states populated above the proton threshold in the compound system (^{27}Si*) can decay to ^{26m}Al, which are the states of interest for the capture reaction.

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