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First direct measurement of ^{23}Mg(p,γ)^{24}Al with DRAGON L. ERIKSON, Department of Physics, Colorado School of Mines, Golden, CO, USA, C. VOCKENHUBER, TRIUMF, Vancouver, BC, Canada & Laboratory for Ion Beam Physics, Zurich, Switzerland, L. BUCHMANN, A.A. CHEN, B. DAVIDS, S. FOUBISTER, U. GREIFE, U. HAGER, A. HUSSEIN, D.A. HUTCHEON, P. MACHULE, D. OTTEWELL, C. RUIZ, G. RUPRECHT, A. SHOTTER, C. WREDE, A. WALLNER — During explosive nucleosynthesis, the ^{23}Mg(p,γ)^{24}Al capture reaction may function as a breakout from the NeNa to the MgAl cycles. Depending on the resonance strength and energy, such a breakout could substantially affect the production of ^{26}Al and ^{22}Na which have been detected by orbital satellite. This important reaction was directly studied at astrophysically relevant energies ($E_{lab} \simeq 490$ keV/u) by the DRAGON collaboration during the summer and fall of 2008. However, due to limitations of the ISAC facility, the experiment was complicated by a ^{23}Na contamination ranging from 2 to 5000 times more intense than the ^{23}Mg component. To compensate, a new local time-of-flight system and a multi-segmented ion chamber were used for particle identification. This talk will present and discuss some details of the experiment as well as initial results.

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