

Abstract Submitted
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Intensities of yrast transitions in the $^{95}\text{Mo}(\text{d},\text{p}\gamma)^{96}\text{Mo}^*$ reaction¹

SEAN BURCHER, ANDREW RATKIEWICZ, JOLIE CIZEWSKI, BRETT MAN-
NING, CALLUM SHAND, SAMANTHA RICE, Rutgers University, JASON
BURKE, ROBERT CASPERSON, Lawrence Livermore National Laboratory,
MATT MCCLECKEY, Texas A&M University, BILL PETERS, Oak Ridge As-
sociated Universities, R.A.E. AUSTIN, Saint Mary's University, T.J. ROSS, R.O.
HUGHES, University of Richmond — Direct neutron transfer reactions prefer-
entially populate nuclear excitations with single-particle strength that decay by
gamma-ray emission. Using the 88-Inch Cyclotron at Texas A&M and the STArLiTe
(Silicon Telescope Array Livermore Texas) Detector Array, the $^{95}\text{Mo}(\text{d},\text{p}\gamma)^{96}\text{Mo}^*$ re-
action was measured for the first time. Gamma rays that correspond to energies of
known level transitions, particularly the yrast transitions of $6^+ \rightarrow 4^+$, $4^+ \rightarrow 2^+$, and
 $2^+ \rightarrow 0^+$ have been identified. The gamma-ray peaks were identified in coincidence
with protons to select the $^{95}\text{Mo}(\text{d},\text{p})$ channel. Results from this study will be pre-
sented in the form of a gamma-ray spectrum showing the energies of transitions
between states in ^{96}Mo , as well as the corresponding level scheme. These data will
be useful in the understanding of the nuclear structure of ^{96}Mo and could aid efforts
to validate the $(\text{d},\text{p}\gamma)$ reaction as a surrogate method of studying neutron capture.

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Sean Burcher
Rutgers University

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