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**Neutron Knockout from $^{30,32}$Mg and $^{26,28}$Ne at Intermediate Energies** J.R. TERRY, B.A. BROWN, C.M. CAMPBELL, J.A. CHURCH, J.M. COOK, A.D. DAVIES, D.C. DINCA, T. GLASMACHER, P.G. HANSEN, H. OLLIVER, B.M. SHERRILL, Michigan State Univ., Natl. Superconducting Cyclotron Lab (NSCL), D. BAZIN, J. ENDERS, A. GADE, J.L. LECOUEY, W.F. MUELLER, K. YONEDA, NSCL, J.A. TOSTEVIN, Univ. of Surrey — The nuclides $^{30,32}$Mg and $^{26,28}$Ne have been studied by single-neutron knockout at the Coupled Cyclotron Facility at Michigan State University. These nuclides span a transitional region between the suspected pronounced N=16 sub-shell closure and the island of inversion around $^{31}$Na. The aim of this study is to directly observe and quantify the extent of *pf* intruder configurations in this region. For $^{26}$Ne with 16 neutrons, present results are in good agreement with USD shell model calculations. An upper limit of 0.2 is placed on the $3/2^+_1$ spectroscopic factor in the residue $^{25}$Ne, in good agreement with the predicted enhanced sub-shell closure at N=16. However, for $^{28}$Ne with 18 neutrons, USD calculations predict a strong population of the $3/2^+$ ground state and a single $1/2^+$ excited state is the residue $^{27}$Ne while observation reveals that the $1/2^+$ strength is shared by two states at 765 and 885 keV. For the magnesium isotopes, preliminary results are available for $^{30}$Mg. Beta-decay work for $^{29}$Mg suggests a negative parity assignment for the two levels at 1094.5 and 1430.6 keV, both of which have been populated in the present work. Details of the analysis and further results will be discussed.

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