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Transition Quadrupole Collectivity of Ar and Cl Isotopes Near N = 28 R. WINKLER, A. GADE, B.A. BROWN, T. GLASMACHER, T.R. BAUGHER, D. BAZIN, G.F. GRINYER, S. MCDANIEL, R. MEHARCHAND, A. RATKIEWICZ, R. STROBERG, K. WALSH, D. WEISSHAAR, NSCL/MSU, L.A. RILEY, Ursinus College — Measurements of the reduced quadrupole transition strengths, B(E2; $0^+ \rightarrow 2^+$) of even-even nuclei guide our understanding of the onset collectivity with the addition of valence nucleons beyond the known shell structure of the atomic nucleus. The study of the quadrupole collectivity of neutron-rich ^{47,48}Ar and ^{45,46}Cl via relativistic Coulomb excitation was performed using a cocktail of exotic beams produced by the coupled cyclotron facility at NSCL. Particle tracking and identification was achieved on an event-by-event basis using the S800 high-resolution spectrograph. Gamma rays emitted at the reaction target position in coincidence with the detection of scattered particles were observed with the segmented high-purity Germanium array SeGA, a vital tool for the Doppler reconstruction of each observed event. Results from the present work provide insight into the persistence of the $N = 28$ shell closure and will be discussed in the framework of the shell model utilizing modern effective interactions in the *sdpf* valence space. This work is supported by the National Science Foundation under Grants No. PHY-0606007 and PHY-0758099.

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