Ground State Wave Function of $^{12}\text{Be}^1$ W.A. PETERS, T. BAUMANN, N. FRANK, J.-L. LECOUEY, A. SCHILLER, M. THOENNESSEN, K. YONEDA, MSU/NSCL, P. DEYOUNG, G. PEASLEE, Hope College, J. BROWN, Wabash College, K. JONES, Rutgers University, B. LUTHER, Concordia College, W. ROGERS, Westmont College — Spectroscopic factors are important quantities in establishing the shell structure in nuclei. We measured the spectroscopic factor for the neutron knockout reaction of a $^{12}\text{Be}$ beam into the neutron unbound $d_{5/2}$ state of $^{11}\text{Be}$ using neutron-fragment coincidence measurements. The secondary $^{12}\text{Be}$ beam was produced from a 120 MeV/nucleon $^{18}\text{O}$ beam from the Coupled Cyclotron Facility at the NSCL. The $^{10}\text{Be}$ fragments were detected and identified using the MSU/FSU sweeper magnet while the neutrons were detected by the Modular Neutron Array (MoNA). From the reconstructed invariant mass spectra the relative contributions from different states in $^{11}\text{Be}$ can be extracted.

$^1$This work was supported by the National Science Foundation Grant No. PHY-01-10253.