

Abstract Submitted
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Evidence for New Structures in ^{17}O ¹ A.M. CRISP, K.W. KEMPER, O. MOMOTYUK, B.T. ROEDER, Florida State University, N. KEELEY, CEA-Saclay, DSM/DAPNIA/SPhN — In an effort to confirm that certain strongly excited states in ^{17}O are selectively populated by four and five-particle reactions and are the result of direct, single-step transfer, spectra and angular distributions have been obtained for the reactions $^{16}\text{O}(\text{d,p})^{17}\text{O}$, $^{13}\text{C}(\text{}^6\text{Li,d})^{17}\text{O}$, $^{12}\text{C}(\text{}^7\text{Li,d})^{17}\text{O}$, and $^{12}\text{C}(\text{}^6\text{Li,p})^{17}\text{O}$ ². Strong states seen in the five particle transfer reactions at 11.82, 12.00, 12.22 and 12.42 MeV are very weakly populated in $^{16}\text{O}(\text{d,p})$ showing that they have very little single particle strength. Excitation functions were also measured for $^{12}\text{C}(\text{}^7\text{Li,d})$ in the energy range 32-35 MeV and for $^{12}\text{C}(\text{}^6\text{Li,p})$ in the energy range 26-32 MeV. The same strong states were observed at each energy. These data were collected using the FSU Tandem/LINAC accelerator. The angular distributions for the strong states are well described by DWBA calculations yielding further support for five-particle single-step transfer. ²M.J. Smithson, D.L. Watson, and H.T. Fortune, J.Phys.G, Nucl. Phys. 12 (1986) 985.

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