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Collective and Non-Collective States in ^{116}Cd J.C. BATCHELDER, H.K. CARTER, E.H. SPEJEWSKI, UNIRIB/ORAU, J.L. WOOD, D. KULP, Ga Tech, P.E. GARRETT, U. Guelph, K.P. RYKACZEWSKI, J.C. BILHEUX, D.W. STRACENER, ORNL, C.R. BINGHAM, R. GRZYWACZ, M.N. TANTAWY, Y. LAROCHELLE, U. Tennessee, D. FONG, J.H. HAMILTON, J.K. HWANG, A.V. RAMAYYA, Vanderbilt U., D.J. HARTLEY, U.S. Naval Academy, W. KROLAS, U. Krakow, A. PIECHACZEK, E.F. ZGANJAR, Louisiana St. U., J.A. WINGER, Miss. St. U. — We have re-investigated the beta decay of the three isomers of ^{116}Ag to levels in ^{116}Cd at the HRIBF. Using the CARDS array at UNISOR, we have measured gamma-rays and conversion electrons and their decay times. Through the use of this information, we have been able to construct individual decay schemes for each isomer. Significant deviations are observed from expected U(5) symmetry in the 0^+ and 2^+ members of the previously assigned three-phonon quintuplet. We have identified candidates in ^{116}Cd for the complete quadrupole-octupole quintuplet. The states are 5^- at 2249.2 keV, 4^- at 2340.1keV, 3^- at 2392.1 keV, 1^- at 2478.2 keV and 2^- at 2519.2 keV. All show E2 transitions to the previously known 3^- octupole state at 1921.7 keV. High-energy negative-parity states have been identified via their conversion electron data. These states are identified as possible broken pair states. This work is supported by the U. S. DOE contract DE-AC05-76OR00033 and others.

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