DEFORMATION DRIVING INTRUDER ORBITALS IN ^{77}Kr[1]

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High-spin states in ^{77}Kr were observed via analysis of prompt γ-γ coincidences in the ^{58}Ni(^{29}Si,2α2p) reaction at 128 MeV at the GAMMASPHERE facility. Evaporation channel selection was achieved using the 95 element MICROBALL charged-particle detector. 27 new states were found, as well as 42 new transitions and 4 others previously seen but not placed. The positive-parity bands were confirmed and three additional transitions placed, extending the α = - 1/2 band to 39/2$^+$. The π = - signature pair was extended to 31/2$^-$ and 37/2$^-$. An additional high-lying negative-parity band pair was found at a band head energy of 2.6 MeV at J = 15/2, rising to 17.4 MeV at J = 55/2. The new bands appear highly deformed and become yrast at high spin. A 3qp structure based on deformation-driving, low-K unique-parity and intruder orbitals is suggested for them.

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