Onset of Deformation in $^{60}$Ni.\textsuperscript{1} W.D. WEINTRAUB, H.Q. JIN, W. REVIOL, L.L. RIEDINGER, \textit{Univ. of Tennessee}, C. BAKTASH, M.J. BRINKMAN, D.J. DEAN, C.-H. YU, \textit{ORNL}, M. DEVLIN, D.R. LAFOSSE, D.G. SARANTITES, \textit{Washington Univ.}, M. LEDDY, \textit{Univ of Manchester}, I.Y. LEE, A.O. MACCHIAVELLI, \textit{LBNL}, D. RUDOLPH, \textit{Ludwig-Maximilians-Universität München} — High-spin states in $^{60}$Ni were populated using the $^{28}$Si($^{36}$Ar,4p) reaction with beam energy of 136 MeV. Gammasphere at LBNL was used in conjunction with Microball to measure gamma rays selected for the charged-particle exit channels of interest. A total of 2 billion events was recorded, with the 4p channel to $^{60}$Ni representing approximately 11\% of the data. In our analysis, the previously known level scheme\textsuperscript{2} has been extended up to energy and spin of 20 MeV and 20 $\hbar$. The multiplicity of levels up to $I = 10$ are well explained by shell-model calculations including the $g_{9/2}$ single-particle orbital into the $fp$-shell configuration space. At higher spins, evidence for rotational-like behavior increases. Two apparently rotational structures have large $M1$ values and are perhaps shears bands, likely involving one $g_{9/2}$ particle. Furthermore, an $E2$ sequence with a larger moment of inertia is observed that could correspond to other deformed structures in the region, involving two $g_{9/2}$ particles. Comparisons to calculations will be given.

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\textsuperscript{2}G. Moyat \textit{et al.}, Nuclear Physics \textbf{A318}, 236 (1979).

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