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Observation of reentrant quantum Hall states in the lowest Landau level[1] M. SHAYEGAN, YANG LIU, C.G. PAPPAS, L.N. PFEIFFER, K.W. WEST, K.W. BALDWIN, Electrical engineering, Princeton university — Measurements in very low disorder two-dimensional electrons confined to relatively wide GaAs quantum well samples with tunable density reveal reentrant $\nu = 1$ integer quantum Hall states in the lowest Landau level near filling factors $\nu = 4/5$ and $6/5$. These states are not seen at low densities and become more prominent with increasing density and in wider wells. Our data suggest that these reentrant phases are (bubble) Wigner crystal states, stabilized here in the lowest Landau level thanks to the large electron layer thickness.

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