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Fractional Quantum Hall Effect and Wigner Crystal of Interacting Composite Fermions[1] YANG LIU, DOBROMIR KAMBUROV, SUKRET HASDEMIR, MANSOUR SHAYEGAN, LOREN PFEIFFER, KEN WEST, KIRK BALDWIN, Dept. of Electrical Engineering, Princeton University — In two-dimensional electron systems confined to GaAs quantum wells, as a function of either tilting the sample in magnetic field or increasing density, we observe multiple transitions of the fractional quantum Hall states (FQHSs) near filling factors $\nu = 3/4$ and $5/4$. The data reveal that these are spin-polarization transitions of interacting two-flux composite Fermions, which form their own FQHSs at these fillings. The fact that the reentrant integer quantum Hall effect near $\nu = 4/5$ always develops following the transition to full spin polarization of the $\nu = 4/5$ FQHS strongly links the reentrant phase to a pinned ferromagnetic Wigner crystal of two-flux composite Fermions.

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