Polaron Glass in $\text{La}_{0.35}\text{Pr}_{0.275}\text{Ca}_{0.375}\text{MnO}_3$\(^1\) MARK BURKHARDT, Stanford University and SLAC National Accelerator Laboratory, M.A. HOSSAIN, S. SARKAR, J. STÖHR, SLAC National Accelerator Laboratory, Y.-D. CHUANG, A.G. CRUZ GONZALEZ, A. DORAN, A. SCHOLL, A.T. YOUNG, Advanced Light Source, Lawrence Berkeley National Laboratory, Y.J. CHOI, S.-W. CHEONG, Rutgers Center for Emergent Materials and Department of Physics & Astronomy — Manganite compounds in the $\text{La}_{1-x-y}\text{Pr}_y\text{Ca}_x\text{MnO}_3$ series are known for exhibiting phase separation over a large temperature range. We combined the x-ray photoemission electron microscopy (PEEM) and resonant elastic soft x-ray scattering (REXS) techniques to study the interplay between the ferromagnetic and charge-ordered/antiferromagnetic phases, respectively, in $\text{La}_{0.35}\text{Pr}_{0.275}\text{Ca}_{0.375}\text{MnO}_3$. We found a polaronic glassy state at intermediate temperatures, when the material is dominated by charge- and orbital-order domains. When the sample is cooled below $T_c$, the magnetization increases, accompanied by a relaxation of the lattice deformations that accompany the polaron glass.

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