

Figure S1: Observed, calculated and difference plots from the structural refinement of LaSrMnO_{3.67(3)} (sample SR1) against neutron powder diffraction data collected at room temperature. The excluded region removes the contribution from the vanadium sample holder.

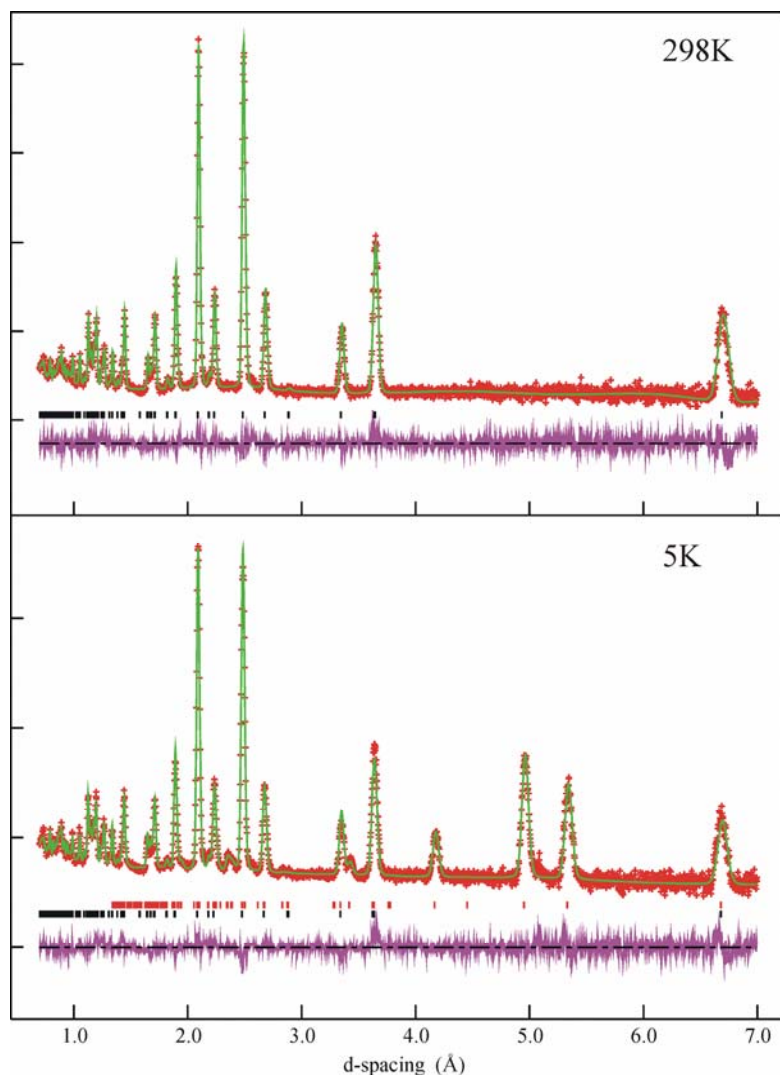


Figure S2: Observed, calculated and difference plots from the structural and magnetic refinements of LaSrMnO_{3.5} (sample SR2) against powder neutron diffraction data collected at 298K and 5K.

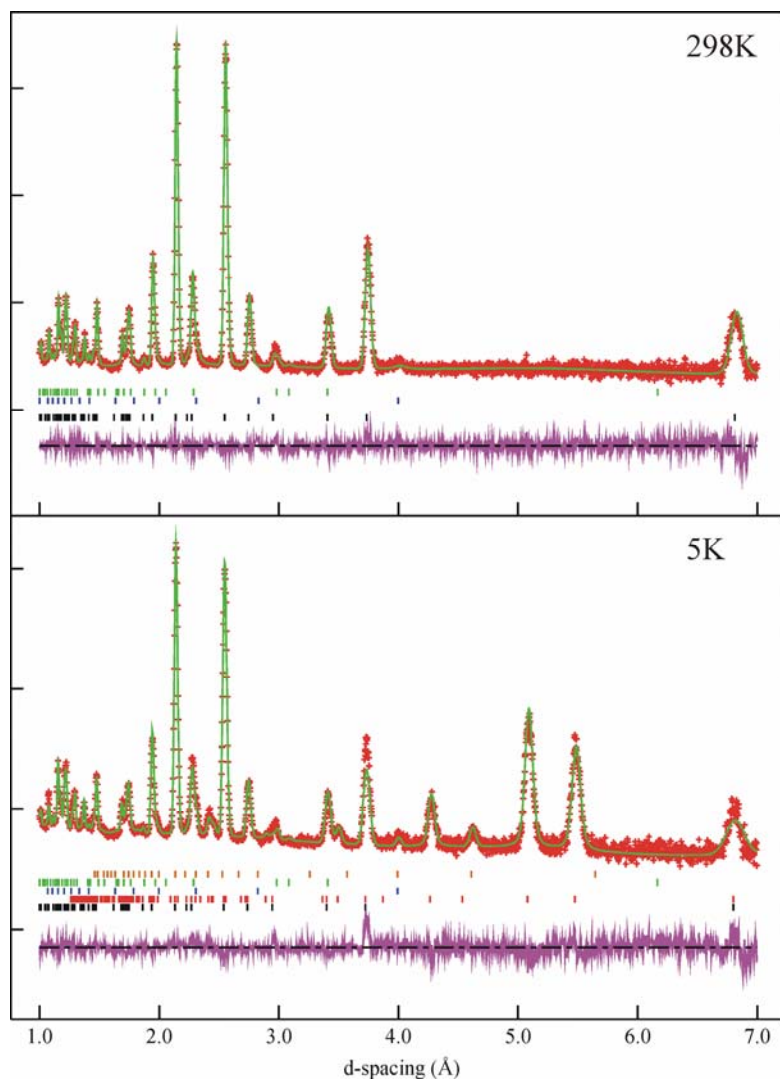


Figure S3: Observed, calculated and difference plots from the multiphase structural and magnetic refinements of $\text{LaBaMnO}_{3.5}$ (sample BA1) against powder neutron diffraction data collected at 298K and 5K.