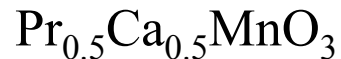
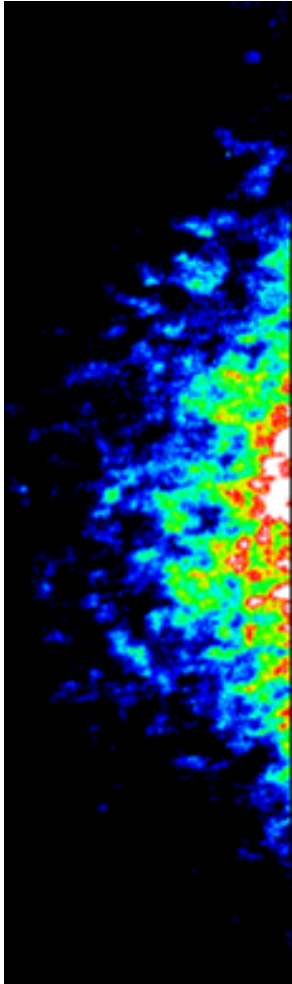
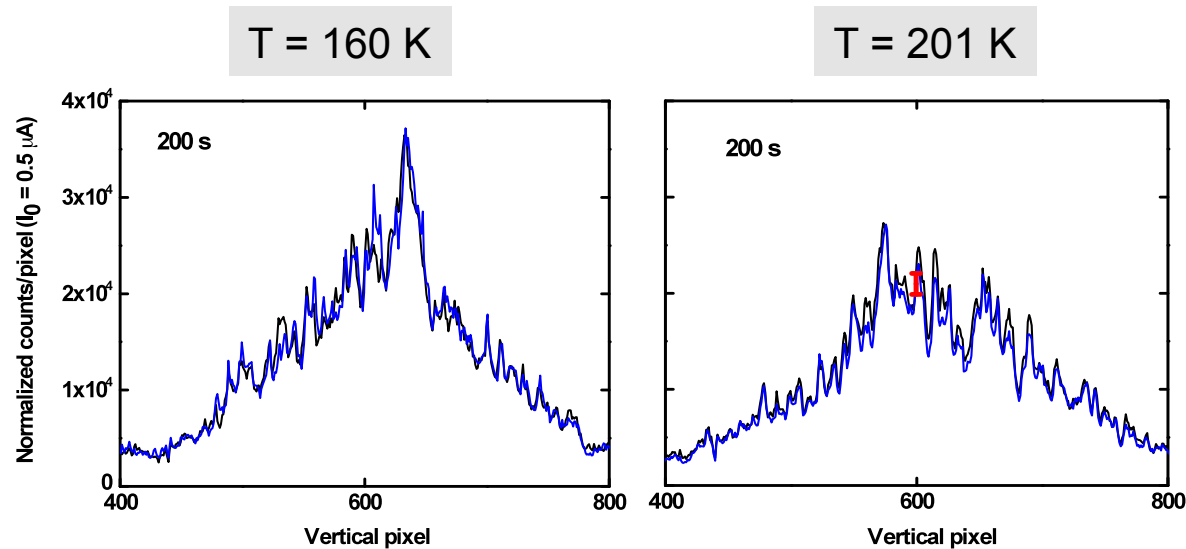


Speckle patterns from orbital domains

The half-doped manganites exhibit short range orbital order (and long range magnetic order), with orbital correlation lengths of 300 Å. Resonant coherent soft x-ray scattering probes the nature of the orbital order, with interference (speckle) patterns giving a unique fingerprint of the domain structure.



First observation of orbital speckle - suggests glass-like orbital state



Orbital speckle appears static to within 20 K of T_{OO}

K.J. Thomas, J. P. Hill (BNL), K. Chesnel, M. Pfeiffer (ALS), J. Turner and Steve Kevan (Univ. of Oregon)

Advanced Light Source Beamline 12