Abstract Submitted
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Stripes and antiphase boundaries in $CaFe_2O_4$[1] CHRIS STOCK, Univ of Edinburgh, EFRAIN RODRIGUEZ, University of Maryland, MARK GREEN, Kent University, NARA LEE, S.-W. CHEONG, Rutgers University — We report on the magnetic structure and spin dynamics in $CaFe_2O_4$ based upon an orthorhombic structure [1]. The magnetic structure consists of two competing magnetic phases based upon stripes of S=5/2 Fe^{3+} ions. The magnetic dynamics illustrate that the coupling is primarily two dimensional. On application of a magnetic field, antiphase magnetic boundaries can be introduced into the lattice and frozen in at low temperatures. We investigate the structure and dynamics of these domains using polarized and unpolarized neutron scattering and discuss how the triangular geometry allow these localized defects to be energetically favorable.

[1] L. M. Corliss et al. Phys. Rev. **160**, 408 (1967).

[1]Carnegie Trust for the Universities of Scotland, Royal Society, and EPSRC

Chris Stock
Univ of Edinburgh

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