Neutron studies of Yb₂Ti₂O₇  JASON GARDNER, BNL and NIST, GEORG EHLERS, ORNL, CEDOMIR PETROVIC, BNL — Polarised neutron scattering experiments, including neutron spin echo has been performed on ytterbium titanate. Ytterbium titanate is an insulator that crystallizes into the cubic oxide pyrochlore structure with a lattice parameter of approximately 10.03 Å. Earlier studies have shown this sample to have an effective paramagnetic moment of 3.0 μₜ. During these investigations it was found that the system undergoes a phase transition at 240 mK, however it is not as simple as that reported previously in the literature. We can conclusively rule out the presence of a static, ferromagnetic state and confirm that the majority of the spin system remains dynamic below this transition.