Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Study on the magnetic properties of $Y_{2-x}Bi_xIr_2O_7$ by μSR and DC susceptibility T. MEDINA, McMaster University, T.J. WILLIAMS, McMaster University and Oak Ridge National Laboratory, T.J. MUNSIE, R.M. D'ORTENZIO, McMaster University, L. LIU, B.J. FRANDSEN, Y.J. UEMURA, Columbia University, M.C. SHAPIRO, S.C. RIGGS, Stanford University, M.B. STONE, Oak Ridge National Laboratory, I.R. FISHER, Stanford University, C. THOMPSON, C. MARJERRISON, McMaster University, H.A. DABKOWSKA, Brockhouse Institute for Materials Research, G.M. LUKE, McMaster University — Pyrochlore iridates have received considerable attention recently as they possess strong electron correlation and spin orbit coupling, giving rise to a finite temperature metal-insulator transition (MIT). The nature of this MIT transition is related to the magnetic order of the Ir atoms which also experience frustration. By doping $Y_2Ir_2O_7$ with Bi we are trying to elucidate the magnetic configuration of the iridium ions. Here we present a study on the magnetic properties of the $Y_{2-x}Bi_xIr_2O_7$ system using μSR and DC susceptibility. Our results show that pure $Y_2Ir_2O_7$ has a magnetic transition to long-range order. Substituting the Bi by Y results in a lower temperature transition with a less homogeneous spin-glass like order with increasing x. We will show the resulting magnetic phase diagram for this system to understand how its magnetic properties behave near the metal insulator phase boundary.

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Date submitted: 15 Nov 2013 Electronic form version 1.4