

Abstract Submitted  
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**Bose-Einstein Condensation of Triplons in  $\text{Ba}_3\text{Cr}_2\text{O}_8$** <sup>1</sup> A.A. ACZEL, McMaster University, Y. KOHAMA, M. JAIME, Los Alamos National Laboratory, L. BALICAS, National High Magnetic Field Laboratory, K. NINIOS, H.B. CHAN, University of Florida, H.A. DABKOWSKA, G.M. LUKE, McMaster University — By performing heat capacity, magnetocaloric effect, torque magnetometry and force magnetometry measurements up to 33 T, we have mapped out the T-H phase diagram of the  $S = 1/2$  spin dimer compound  $\text{Ba}_3\text{Cr}_2\text{O}_8$ . We found evidence for field-induced magnetic order between  $H_{c1} = 12.52(2)$  T and  $H_{c2} \sim 23.6$  T, with the maximum transition temperature  $T_c \sim 2.7$  K at  $H \sim 18$  T. There are many qualitative features of the data suggesting that the transition at  $H_{c1}$  corresponds to a Bose-Einstein condensation of triplons universality class. These include the apparent preservation of U(1) symmetry for applied fields below  $H_{c1}$ , a highly symmetric phase diagram, and an absence of any magnetization plateaus in the magnetic torque and force measurements.

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