Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Field-induced spin-solid phases in the spin liquids $Tb_2Ti_2O_7$ and $Nd_3Ga_5SiO_{14}$ LUIS BALICAS, National High Magnetic Field Lab, Florida State University, YOUNJUNG JO, HAIDONG ZHOU, EUN SANG CHOI, CHRISTOPHER WIEBE, National High Magnetic Field Laboratory, Florida State University, Tallahassee-FL 32306, USA — Here we report thermodynamic and magnetization measurements at zero and high fields in the pyrochlore $Tb_2Ti_2O_7$ and in the Kagome lattice $Nd_3Ga_5SiO_{14}$. In both compounds, previous neutron scattering studies did not reveal any form of magnetic ordering down to the lowest temperatures and have proposed these materials to display a spin-liquid ground state [1]. Here we show that heat capacity normalized by temperature down to ~ 350 mK confirms the absence of ordering. Furthermore, magnetization as a function of field at the lowest temperatures reveal the existence of an intermediary phase protruded between the zero field spin-liquid and the high-field spin-polarized state. In the case $Nd_3Ga_5SiO_{14}$it leads to a 1/2 magnetization plateau for fields along the inter-planar direction, similar to the one recently reported in the pyrochlore compound $CdCr_2O_4$ [2]. But for fields along the planes it displays a 1/3 plateau followed by a metamagnetic transition towards a value closer to 4/5. [1] J. S. Gardner et al. Phys. Rev. Lett. 82, 1012 (1999) ; J. Robert et al., ibid 96**,** 197205 (2006) [2] H. Ueda, Phys. Rev. Lett. 94, 047202 (2005).

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Date submitted: 14 Nov 2006 Electronic form version 1.4