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Magnetic Field Effects in the Heavy Fermion $Ce_3Co_4Sn_{13}$ A.D. CHRISTIANSON, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, USA, F. RONNING, Y. TOKIWA, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, J.S. GARDNER, H.J. KANG, J.-H. CHUNG, NIST Center for Neutron Research, Gaithersburg, Maryland 20899, USA, E.A. GOREMYCHKIN, P. MANUEL, Rutherford Appleton Laboratory, Chilton, Didcot OX11 0QX, United Kingdom, J.D. THOMPSON, J.L. SARRAO, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, A.L. CORNELIUS, University of Nevada, Las Vegas, 89154, USA, J.M. LAWRENCE, University of California, Irvine, California 92697, USA — $Ce_3Co_4Sn_{13}$ is a heavy Fermion system with a low temperature specific heat as large as 4 J/mol K^2. Measurements on single crystal specimens of the elastic neutron scattering response and the heat capacity (C) show that $Ce_3Co_4Sn_{13}$ is extremely sensitive to applied magnetic fields. The heat capacity measurements show that the broad peak in C/T at 0.8 K at zero field initially moves downward in temperature before moving upward with a characteristic energy scale of 2 T. Neutron diffraction measurements at 0.15 K show that upon application of very small magnetic fields, the intensity on the (100) peak grows and does not saturate below 6 T. Although reduced in magnitude the effect persists to temperatures at least as high at 2 K.

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