

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Complex magnetic phases in non-centrosymmetric heavy fermion CeCoGe₃¹ SHAN WU, Johns Hopkins University, Institute for Quantum Matter, CHRIS STOCK, University of Edinburgh, CEDOMIR PETROVIC, Brookhaven National Laboratory, J.A. RODRIGUEZ-RIVERA, NIST center for Neutron Research, COLLIN BROHOLM, Johns Hopkins University, Institute for Quantum Matter — The non-centrosymmetric nature of the tetragonal heavy fermion system CeCoGe₃ has attracted much interest in the high pressure superconducting state of the material. We have explored the related ambient pressure magnetism using neutron scattering. There are three successive phase transitions at $T_{N1} \sim 21\text{K}$, $T_{N2} \sim 12\text{K}$ and $T_{N3} \sim 8\text{K}$. The upper transition greatly enhances the susceptibility and there are meta-magnetic transitions in the lower T phases. We confirmed the previously determined AFM spin structure for $T_{N2} < T < T_{N1}$ [1]. At lower T we find a complex commensurate structure that can be described as intertwined antiferromagnetic segments. We also report inelastic magnetic neutron scattering, which is dominated by the periodicity of the chemical cell rather than the magnetic unit cell.[1]M.Smidman, etc. *Phys. Rev. B*, **88**,134416 (2013)

¹The work at IQM was supported by the U.S. Department of Energy, Office of Basic Energy Sciences, Division of Material Sciences and Engineering, under Grant No. DEFG02-08ER46544.

Shan Wu
Johns Hopkins University

Date submitted: 06 Nov 2015

Electronic form version 1.4