

Abstract Submitted  
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**Reentrant quantum oscillations in CeIn<sub>3</sub>**<sup>1</sup> WILLIAM A. CONIGLIO, DAVID E. GRAF, National High Magnetic Field Laboratory, RYAN L. STILLWELL, Florida State University/National High Magnetic Field Laboratory, JU-HYUN PARK, National High Magnetic Field Laboratory, PEDRO SCHLOTTMANN, Florida State University, ERIC C. PALM, TIM P. MURPHY, National High Magnetic Field Laboratory, JASON C. COOLEY, Los Alamos National Laboratory, STANLEY W. TOZER, National High Magnetic Field Laboratory — Heavy fermion conductor CeIn<sub>3</sub> is a low temperature antiferromagnet with a Néel transition at 10 K, 2.6 GPa, and 62 T. We show that Néel and Lifshitz transitions both introduce Fermi surface reconstruction, and the difference in temperature dependence between them leads to surprising reentrant behavior of certain Shubnikov de Haas orbits as a function of field, temperature, and pressure. We use a diamond anvil cell in a helium-3 fridge in pulsed magnetic fields to cover almost the entire phase space of the antiferromagnetic state. Our high resolution resistivity probe is a Tunnel Diode Oscillator that is mounted adjacent to the pressure cell within the bore of the magnet. We confirm the extraordinary sensitivity of the technique by observing the 69 kT Shubnikov de Haas orbit in the resistivity of polycrystalline copper.

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