

Abstract Submitted  
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**Shubnikov-de Haas Effect measured on single crystals of CeOs<sub>4</sub>Sb<sub>12</sub> and NdOs<sub>4</sub>Sb<sub>12</sub> along the high symmetry directions** P.-C. HO, Physics/CSU-Fresno, J. SINGLETON, NHMFL/LANL, New Mexico, M.B. MAPLE, D.B. SHREKENHAMER, X. LEE, A. THALE, Physics/UCSD, T. YANAGISAWA, Hokkaido U, Japan — The filled skutterudite compounds CeOs<sub>4</sub>Sb<sub>12</sub>, PrOs<sub>4</sub>Sb<sub>12</sub>, and NdOs<sub>4</sub>Sb<sub>12</sub> are respectively a 1 K antiferromagnetic (AFM) Kondo insulator, a 1.85 K unconventional superconductor, and a 1 K mean-field type ferromagnet (FM), suggesting that superconductivity in PrOs<sub>4</sub>Sb<sub>12</sub> may result from proximity to AFM and FM quantum-critical points. Fermi-surface measurements of NdOs<sub>4</sub>Sb<sub>12</sub> and CeOs<sub>4</sub>Sb<sub>12</sub> could therefore give insights into the pairing mechanism. We have used a MHz skin-depth technique to observe Shubnikov-de Haas oscillations (SdHos) in single crystals of these materials at fields of up to 60 T. In CeOs<sub>4</sub>Sb<sub>12</sub> for  $\mathbf{H} // [001]$ , a previously-unobserved semimetal-to-metal transition was detected at  $\approx 25$  T; above this, a series of SdHos with a frequency of 1700 T and  $m_{\text{CR}} \approx 3.6m_e$  emerge. For  $\mathbf{H} // [011]$  in NdOs<sub>4</sub>Sb<sub>12</sub>, a single series of SdHos, frequency  $\approx 874$  T, was found. These may correspond to the  $\beta$  band in PrOs<sub>4</sub>Sb<sub>12</sub>, but with a much smaller  $m_{\text{CR}} \approx 1.5m_e$ . Research at CSU-Fresno is supported by RC CCSA #7669 and the start-up fund; at NHMFL by DOE, NSF, and FL.; at UCSD by NSF#0802478 and US DOE DE FG02-04ER46105; at Hokkaido U by MEXT, Japan.

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