The behavior of semi-metal Bi₄Te₃ under pressure JASON JEFFRIES, Lawrence Livermore National Laboratory, A.L. LIMA SHARMA, Sandia National Laboratory and San Jose State University, P.A. SHARMA, C.D. SPATARU, Sandia National Laboratory, S.K. MCCALL, Lawrence Livermore National Laboratory, J.D. SUGAR, Sandia National Laboratory, S.T. WEIR, Lawrence Livermore National Laboratory, Y.K. VOHRA, University of Alabama, Birmingham — As a member of the (Bi₂)ₙ(Bi₂Te₃)ₙ adaptive series, Bi₄Te₃ exhibits identical crystallographic symmetry and similar electronic properties to the archetypal thermoelectric material Bi₂Te₃. The extra Bi atoms in Bi₄Te₃ serve to increase the electronic density of states, making Bi₄Te₃ a semi-metal, as opposed to semiconducting Bi₂Te₃, at ambient pressure. We will report the results of high-pressure structural and magnetotransport characterization of Bi₄Te₃, focusing on the interplay between structural parameters and the underlying electronic properties. Lawrence Livermore National Laboratory is operated by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy, National Nuclear Security Administration under Contract DE-AC52-07NA27344.

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