

Abstract Submitted
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Ordering driven superconductivity in an alkaline iron selenide¹ XIAO-JIA CHEN, Geophysical Laboratory, Carnegie Institution of Washington, Washington, D.C. 20015, QING-ZHEN HUANG, NIST Center for Neutron Research, National Institute of Standards and Technology Gaithersburg, MD 20899, JIAN-XIN ZHU, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM 87545, MINGHU FANG, Department of Physics, Zhejiang University, Hangzhou 310027, Chin, WEI BAO, Department of Physics, Renmin University of China, Beijing 100872, China, JIAN-BO ZHANG, LING-YUN TANG, Department of Physics, South China University of Technology, Guangzhou 510641, China, JINFU SHU, VIKTOR STRUZHUKIN, RUSSELL HEMLEY, HO-KWANG MAO, Geophysical Laboratory, Carnegie Institution of Washington, Washington, D.C. 20015 — Combining the resistivity, synchrotron x-ray diffraction, and neutron diffraction measurements, we investigated the evolution of the structural, magnetic, and superconducting properties with pressure up to 37 GPa of superconducting $\text{Rb}_{0.347}\text{Tl}_{0.347}\text{Fe}_{1.752}\text{Se}_2$. Extended phase diagram of temperatures and pressure were established for this material. The results show the superconductivity is in reality driven by ordering.

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