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Structural Properties of Superconducting $CaLi_2$ At High Pressures HAHNBIDT RHEE, WARREN PICKETT, RICHARD SCALETTAR, UC Davis Physics Dept, WILLIAM EVANS, LLNL High Pressure Physics Group, DAVID YOUNG, Louisiana State Univ Dept of Physics — The hexagonal Laves phase of $CaLi_2$, a superconductor at high pressures, has been studied in the diamond anvil cell at varying pressures and temperatures. $CaLi_2$ is known to have a maximum superconducting transition temperature of 13 K at 40 GPa. X-ray diffraction measurements were done up to 40 GPa, from room temperature down to 10 K, and phase stability in relation to pressure and temperature has been examined. We present our study to provide more insight into phonon-mediated superconductors and simple-metal systems such as Li.

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