

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

High-energy x-ray diffraction studies of $A\text{EFe}_2\text{As}_2$ compounds¹

D.K. PRATT, A. KREYSSIG, M.G. KIM, S. RAN, A. THALER, S.L. BUD'KO, R.J. MCQUEENEY, P.C. CANFIELD, A.I. GOLDMAN, Ames Laboratory, USDOE and Iowa State University — The relationship between structure, magnetism and superconductivity has become a major theme in studies of the iron arsenide family of superconductors. We have used high-energy x-ray diffraction, together with two-dimensional area detectors, to image large regions of reciprocal space in order to gain further insight into the structural transitions in the $A\text{EFe}_2\text{As}_2$ ($AE = \text{Ca, Sr, Ba}$) compounds. Here we present results of our study of the impact of annealing and temperature on the structure of these materials.

¹We thank D. Robinson for his excellent support of the measurements. This work was supported by the Office of Basic Energy Sciences, U.S. Department of Energy.

D. K. Pratt
Ames Laboratory, USDOE and Iowa State University

Date submitted: 30 Dec 2010

Electronic form version 1.4