

Abstract Submitted  
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**X-ray diffraction measurements to observe the B1 to B2 phase transformation in KCl shocked along [111]** STEFAN J. TURNEAURE, Y.M. GUPTA, Washington State University — Plate impact experiments were performed on KCl shocked along [111] to peak stresses exceeding the B1 to B2 phase transformation stress. The spacing between lattice planes normal to the shock direction was monitored using x-ray diffraction measurements. VISAR measurements at the rear of the target showed that the x-rays were pulsed while the KCl was in a nearly constant stress state. In the peak stress state, two diffraction peaks were observed. One peak was consistent with the 200 peak of a cubic B2 unit cell, while the second peak, at a slightly higher Bragg angle, was not consistent with peaks from cubic unit cells of either phase. A possible origin for the higher Bragg angle peak will be discussed. Previously, it had been found that the two phases are related such that B1[100]//B2[110] when the KCl is shocked along the [100] direction [1]. The orientational relationship found in the present experiments, B1[111]//B2[100], suggests that the atomic transformation pathway depends on the loading direction. Work Supported by DOE. [1] T. d'Almeida and Y. M. Gupta, Phys. Rev. Lett. **85**, 330 (2000).

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