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High pressure phases of alkali ternary borohydrides RAVHI KUMAR, HiPSEC, Department of Physics, University of Nevada Las Vegas, ANDREW CORNELIUS, HiPSEC, Dep.Physics, University of Nevada Las Vegas — Insitu synchrotron x-ray diffraction experiments were carried out on MBH_4 (M = K and Rb) borohydrides at high pressures up to 26 GPa using diamond anvil cells. KBH_4 undergoes a structural transition at 4 GPa to a tetragonal phase from cubic and then to an orthorhombic phase around 7 GPa which are very similar to $NaBH_4$ investigated earlier [1]. However, $RbBH_4$ shows, a direct transition from the ambient cubic to an orthorhombic phase at 2.9 GPa, followed by a monoclinic phase at 8 GPa. Complementary high pressure Raman experiments, support the transitions observed in the diffraction experiments. The results will be presented in detail. [1]. Ravhi S. Kumar and Andrew L. Cornelius, Appl.Phys.Lett., 87,261916 (2005) This work is supported in part by the U.S. Department of Energy (DOE) under Award Number DE-FG36 05GO85028. HPCAT is supported by DOE-BES, DOE-NNSA,NSF, and the W.M. Keck Foundation.

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