

Abstract Submitted
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High Pressure and Temperature Behavior of Lithium and Lithium Compounds¹ AMY LAZICKI, ALEX GONCHAROV, MADDURY SOMAYAZULU, VIKTOR STRUZHKIN, HO-KWANG MAO, RUSSELL HEMLEY, Carnegie Institution of Washington — Emerging structural complexity and unexpected increase of superconducting transition temperature at high pressure in lithium are some of the recently seen phenomena which indicate that our understanding of the behavior of this element at extreme conditions is incomplete. The heavier alkali metals (as well as alkaline earths and a variety of other elements) exhibit a maximum in the melting curve at high pressure, often attributed to the s-d electronic transition but recently shown most dramatically in light-weight sodium [1] at pressures below the expected s-d transition. In the interest of further exploring the origin of this high pressure-temperature behavior, we will present results of a study of lithium and lithium compounds in a resistively heated diamond anvil cell. [1] E. Gregoryanz, O. Degtyareva, M. Somayazulu, R. J. Hemley, and H. Mao, *Phys. Rev. Lett.* **94**, 185502 (2005).

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