

Abstract Submitted
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Chemical Reactions of Li and CaH at 1 Kelvin¹ VIJAY SINGH, KYLE S. HARDMAN, NAIMA TARIQ, MEI-JU LU, AJA A. ELLIS, MUIR J. MORRISON, JONATHAN D. WEINSTEIN, University of Nevada — Using cryogenic helium buffer-gas cooling, we have prepared dense samples of atomic lithium and molecular calcium monohydride at temperatures as low as 1 Kelvin. We have measured the $\text{Li} + \text{CaH} \rightarrow \text{LiH} + \text{Ca}$ chemical reaction, observed in both the accelerated disappearance of CaH and in the appearance of the LiH molecule. For unpolarized reactants, we have measured a reaction rate coefficient of $3.6 \times 10^{-10} \text{ cm}^3 \text{ s}^{-1}$, with an uncertainty of a factor of 2. The methods of reaction rate measurement and detection of LiH molecules will be presented.

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Jonathan Weinstein
University of Nevada

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