

Abstract Submitted  
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**An Optically Excited Metastable Krypton Atomic Beam Source<sup>1</sup>**

MICHAEL MASTROIANNI, CHAD ORZEL, Union College Dept. of Physics and Astronomy — We report the construction of an optically excited metastable krypton atomic beam source. Ground-state Kr atoms are excited to the  $5s[3/2]_1$  state by a 123 nm photon from a krypton resonance line lamp, then to the  $5p[5/2]_2$  state by an 819 nm photon from a diode laser. From the  $5p[3/2]_2$  state, they spontaneously decay into the  $5s[3/2]_2$  ( $^3P_2$ ) metastable state with 77% probability. We characterize the source using both resonant fluorescence at 811 nm and a surface ionization detector. The source will be used to load a Kr\* magneto-optical trap for Kr background evaluation by Atom Trap Trace Analysis.

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