

Abstract Submitted
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Diode Laser Excitation of Rydberg Lithium Atoms for Collision Studies.¹ PAUL OXLEY, JAMES DALY, The College of the Holy Cross — We give experimental details of diode laser excitation of 7Li atoms to the 10p atomic state. The excitation uses three narrow bandwidth grating-stabilized diode lasers to reach the 10p state, via the 2p and 3s states. Simultaneous locking of all three lasers produces a continuous source of 10p atoms. Locking of the 3s-10p transition is achieved by detecting the 10p-2s fluorescence at 238 nm using a photomultiplier tube. In the future these atoms will be used as a target in very slow charge transfer collisions with singly charged ions. These experiments will test for the presence of quantum effects in these collisions which have thus far been treated classically.

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