

Abstract Submitted  
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**Progress toward measuring fast atomic recombination in ultracold plasma**<sup>1</sup> MICHAEL LIM, LUCAS WILLIS, Rowan University Department of Physics and Astronomy — We report on progress toward measuring the time-dependent distribution of atomic energy levels populated by recombination and collisions in ultracold plasma. The plasma is produced by direct photo-ionization of rubidium atoms in a magneto-optical trap. Our primary goal is to measure the changing Rydberg atom distribution in the first microsecond after plasma creation. Although predictions have been made for system behavior in this interval, this type of measurement has been elusive. Our apparatus features fast deflector plates to prevent saturation of the multi-channel plate detector, which is one of the main technical obstacles in this effort.

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