## Abstract Submitted for the DAMOP17 Meeting of The American Physical Society

Ultracold neutral plasma heating due to resonance excitation<sup>1</sup> ADAM DODSON, QUINTON MCKNIGHT, TUCKER SPRENKLE, SCOTT BERGESON, Brigham Young University — We report electron heating measurements in an expanding ultracold neutral calcium plasma. The plasma is formed by resonantly ionizing calcium atoms in a magneto-optical trap. The 397 nm resonance transition is excited at intensities ranging from 0.2 to 10 times the saturation intensity. We observe an increasing plasma expansion rate due to more rapid electron heating as the intensity of the 397 nm excitation increases. We discuss possible implications for laser-cooling the ions in this ultracold neutral plasma environment.

<sup>1</sup>Supported in part by National Science Foundation grant PHY-1404488

Scott Bergeson Brigham Young University

Date submitted: 28 Jan 2017 Electronic form version 1.4