Abstract Submitted
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Few-body Cs Rydberg Atom Interactions in a 1064nm Dipole Trap[1] DONALD BOOTH, JONATHAN TALLANT, University of Oklahoma, BRUNO MARANGONI, LUIS MARCASSA, Universidade de São Paulo, JAMES SHAFFER, University of Oklahoma — In studying few-body physics, the number density of atoms is an important parameter in achieving a good signal to noise ratio. We have recently improved our apparatus by implementing a crossed 1064nm far off-resonance trap (FORT), which enables us to trap atoms at three orders of magnitude greater density than our MOT. Future directions for the apparatus, which include the study of anisotropic interactions among Rydberg atoms in the dipole trap, three-body recombination, "trilobite-like" molecules, and the detection of ultra-long range Rydberg macrodimers in Cs, will be described. Our presentation will focus on data on three-body recombination and long-range Rydberg "trilobite-like" molecules.

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