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A Quasi-Electrostatic Trap for Rubidium-87 atoms DWIGHT WHITAKER, ZACK LASNER, ERIC DODDS, RYLAN GRADY, Pomona College — We will discuss our system used for trapping and cooling atoms with a single focused CO_2 laser beam. Atoms are transferred to this quasi-electrostatic trap (QUEST) from a compressed MOT (CMOT) where they are cooled through evaporation. We will describe how to optimize the CMOT to maximize the phase space density in the QUEST. We will also present a calculation that contrasts the dynamics of free evaporation in our single beam optical trap with evaporation in a truncated parabolic potential that describes a magnetic trap.

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