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Spectroscopy of $^1S_0 - {}^3P_1$ ^{88}Sr Atomic Transition in a 1.06 μm Optical Dipole Trap[1] Y.N. MARTINEZ DE ESCOBAR, P.G. MICKELSON, A.J. TRAVERSO, T.C. KILLIAN, Rice University and the Rice Quantum Institute — We studied the effects of laser light near-resonant with the $^1S_0 - {}^3P_1$ ^{88}Sr transition in an optical dipole trap (ODT). We observe laser cooling of our ODT atomic sample as the atoms collide in the presence of red-detuned 689 nm light. Heating of the atoms was also observed at a different range of frequency detunings while performing spectroscopy. Both processes were accompanied with atom loss, but the increase of phase space density observed during 689 nm laser cooling could aid pursuits of quantum degeneracy with Sr.

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