Cooling Strontium in a Narrow Line Magneto-Optical Trap

B.J. RESCHOVSKY, D.S. BARKER, N.C. PISENTI, G.K. CAMPBELL, JQI, University of Maryland and NIST, College Park, MD 20742 — We describe the behavior and performance of a magneto-optical trap (MOT) operating on the narrow ($\Gamma/2\pi = 7.4$ kHz) $^1S_0 - ^3P_1$ transition of strontium. We have successfully trapped multiple strontium isotopes at temperatures of less than 1 $\mu$K. These cold samples are then transferred to a pancake-shaped optical trap where they are evaporatively cooled to quantum degeneracy.

Benjamin Reschovsky
JQI, University of Maryland and NIST, College Park, MD 20742