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Toward Quantum Degeneracy in Strontium S.B. NAGEL, Y.N. MARTINEZ, P.G. MICKELSON, A.D. SAENZ, Rice University, Y.C. CHEN, Instutute of Atomic & Molecular Sciences, Academia Sinica, Taipei, Taiwan, T.C. KILLIAN, Rice University — We present recent work toward achieving quantum degeneracy in Strontium. A MOT operating on the strong ($\Gamma = (2\pi)^* 32$ MHz), $^1S_0 \rightarrow {}^1P_1$transition cools 2.5^*10^8 atoms to 2 mK in the first stage of cooling. Then, approximately 40% of these atoms are transferred to a MOT operating on the weaker ($\Gamma = (2\pi)^* 7.5$ kHz) $^1S_0 \rightarrow {}^3P_1$ intercombination transition, further cooling the sample to 5 μK. Here we discuss transferring this sample to a dipole trap and using evaporative cooling techniques to reach quantum degeneracy.

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