

Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

A compact apparatus for a two-photon optical clock S. POTNIS, S. JACKSON, A. C. VUTHA, University of Toronto — The Doppler- and recoil-free nature of two-photon transitions eliminates the need for atoms in optical clocks to be trapped at ultracold temperatures. The resulting technical simplicity makes atoms with narrow two-photon transitions attractive candidates for portable optical frequency standards. We report on progress towards the construction of a two-photon optical clock based on the 915 nm $4s^2\ ^1S_0 \rightarrow\rightarrow 4s3d\ ^1D_2$ transition in calcium atoms. We demonstrate laser cooling of calcium in a compact and portable apparatus, and report on the performance of two narrow-linewidth 915 nm lasers.

A. C. Vutha
University of Toronto

Date submitted: 29 Jan 2017

Electronic form version 1.4