Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

Slow light propagation in coated cells MICHAEL HOHENSEE, MASON KLEIN, DAVID PHILLIPS, IRINA NOVIKOVA, RONALD WALSWORTH, Harvard-Smithsonian — Rubidium vapor cells with walls coated with paraffins such as tetracontane can have very long coherence times due to the suppression of decoherence during wall collisions by the coating. Here we report on the use of such cells (with an intrinsic coherence time of ground-state hyperfine and Zeeman transitions longer than 10 ms) for slow- and stored- light. Guided by our static Ramsey-narrowing EIT model and recent dynamical simulations, we improve upon past results in terms of fractional pulse delay and storage efficiency.

Ronald Walsworth

Date submitted: 27 Jan 2006 Electronic form version 1.4