

Abstract Submitted
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A Thermal-beam Calcium Interferometer CHRISTOPHER ERICKSON, MARSHALL VAN ZJILL, MATTHEW WASHBURN, JAMES ARCHIBALD, DAN CHRISTENSEN, JEREMIAH BIRRELL, ADAM BURDETT, DALLIN DURFEE, Brigham Young University — We report on the construction of a next-generation atom interferometer. Our research includes developing passive stabilization techniques, low-noise laser current drivers, high-speed scan-balancing lock circuits, and high-speed low-noise photo-detecting units. Our efforts have led to developing an extremely stable laser locked to an ultra-high finesse optical cavity for use in a Ramsey-Bordé interferometer scheme. The interferometer itself is based on a thermal calcium beam and will be upgraded in the future to a dual species Ca/Sr interferometer sensitive enough to improve measurements of possible time variance of the fine structure constant.

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