Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

A 150 ppb Microwave Measurement of the n=2 Triplet P J=1-to-J=2 Fine-Structure Interval of Helium[1] J.S. BORBELY, M.C. GEORGE, L.D. LOMBARDI, M. WEEL, D.W. FITZAKERLEY, E.A. HESSELS, Department of Physics and Astronomy, York University — The n=2 triplet P J=1-to-J=2 interval in helium has been measured to a precision of 350 Hz using the Ramsey method of separated oscillatory field. This 350 Hz measurement is the most precise to date of the n=2 triplet structure. Comparison between precise measurements of the n=2 triplet P fine structure and theoretical predictions will allow for a precise determination of the fine-structure constant when the current large discrepancy between experiment (PRL 95 203001; PRL 87 173002; PRL 84 4321; Can J Phys 83 301) and theory (PRL 97 013002; Can J Phys 80 1195) is resolved.

[1]This work is supported by NSERC, CRC and CFI.

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Date submitted: 23 Jan 2009 Electronic form version 1.4