

Abstract Submitted
for the DAMOP08 Meeting of
The American Physical Society

Separated Oscillatory Field Microwave Measurement of the n=2 Triplet P Fine-Structure of Helium¹ J.S. BORBELY, M.C. GEORGE, M. WEEL, L.D. HESSELS, E.A. HESSELS, Department of Physics and Astronomy, York University — The Ramsey method of separated oscillatory fields is being used to make a very precise microwave measurement of the n=2 triplet P J=1-to-J=2 interval in helium. The excellent signal-to-noise obtained in these measurements allows for extensive studies of possible systematic effects. 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.

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

J.S. Borbely
Department of Physics and Astronomy, York University

Date submitted: 22 Apr 2008

Electronic form version 1.4