

Abstract Submitted  
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**Microwave Measurement of the  $n=2$  Triplet P  $J=1$ -to- $J=2$  Fine-Structure Interval of Helium**<sup>1</sup> 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.

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