

Abstract Submitted  
for the OSF07 Meeting of  
The American Physical Society

**Photodetachment Spectroscopy of As<sup>-1</sup>** R.L. FIELD III, A.P. SNEDDEN, J.Z. SHAPIRO, C.M. JANCZAK, C.W. WALTER, N.D. GIBSON, Denison University — Tunable infrared laser photodetachment spectroscopy has been performed on As<sup>-</sup> using a crossed laser-ion beam apparatus. The relative photodetachment cross section for neutral production was measured, revealing a threshold near 804.8 meV, interpreted as the opening of the As<sup>-</sup> ( $4p^4\ ^3P_2$ ) to As ( $4p^3\ ^4S_{3/2}$ ) ground state to ground state transition. The  $\Delta E$  ( $^3P_1 - ^3P_2$ ) fine structure splitting is also measured. The values of the present work are consistent with, and reduce the uncertainty of, previous measurements [1,2]. [1] Lippa, T. P., *et al*, Journal of Chemical Physics **109**, 10727 (1998). [2] Haeffler, G., *et. al.* Zeitschrift für Physik D **42**, 263 (1997).

<sup>1</sup>National Science Foundation Grant No. 0456916 and Denison University's Anderson Summer Research Fund.

Richard Field III  
Denison University

Date submitted: 01 Oct 2007

Electronic form version 1.4