

Abstract Submitted
for the DAMOP07 Meeting of
The American Physical Society

Tunable Laser Photodetachment Spectroscopy of Ce^{-1} N.D. GIBSON, C.W. WALTER, C.M. JANCZAK, K.A. STARR, A.P. SNEDDEN, R.L. FIELD, Denison University, P. ANDERSSON, Gothenburg University, Sweden — The relative cross section for photodetachment from Ce^{-} was measured over the photon energy range 0.5 – 2.6 eV. Neutral atom production was measured as a function of photon energy for both long range survey scans and high resolution scans over interesting spectral features. The spectra reveal several continuum features likely associated with thresholds for opening detachment channels near 0.7 eV, 0.9 eV, and 1.3 eV. Five sharp peaks were observed over the range 0.61 – 0.71 eV and their energies and widths were determined by fitting with Fano profiles. The results are compared to recent experimental [1] and theoretical [2] results for the electron affinity of Ce and the photodetachment spectrum of Ce^{-} . [1] V.T. Davis and J.S. Thompson, *Phys. Rev. Lett.* **88**, 073003 (2002). [2] S.M. O'Malley and D.R. Beck, *Phys. Rev. A* **74**, 042509 (2006); X. Cao and M. Dolg, *Phys. Rev. A* **69**, 042508 (2004).

¹This material is based on work supported by the National Science Foundation under Grant No. 0456916.

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Date submitted: 02 Feb 2007

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