

Abstract Submitted
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Photodetachment spectroscopy near the lowest threshold of the S^- ion¹ JOHN N. YUKICH, JAMES E. WELLS, Davidson College — Numerous experiments have investigated photodetachment spectroscopy in a magnetic field at the $^2P_{3/2} \rightarrow ^3P_2$ threshold, also known as the *electron affinity* for S^- . In this work we have investigated detachment at the $^2P_{1/2} \rightarrow ^3P_2$ threshold, which is the lowest-lying threshold for the S^- ion. Our experimental apparatus includes a Penning ion trap in which the ions are created, trapped and stored. Our observations yield a quantitative measurement for the threshold energy and an indirect measurement for the spin-orbit splitting of the ion.

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