

Abstract Submitted
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Properties of Ni⁺ from spectroscopy of high-L Rydberg levels of Ni¹ JULIE A. KEELE, SHANNON L. WOODS, MARK E. HANNI, STEPHEN R. LUNDEEN, Colorado State University, WILLIAM G. STURRUS, Youngstown State University — A single high-L Rydberg electron bound to the ²D_{5/2} ground state of Ni⁺ leads to a Rydberg fine structure consisting of six levels for each value of L, corresponding to the six possible values of the quantum number K=L+J. The resulting fine structure pattern in n=9, L > 4 levels of Ni was resolved in measurements of the Ni 9-19 and 9-20 transitions, using the Resonant Excitation Stark Ionization Spectroscopy technique [1]. The pattern was analyzed to determine the scalar and tensor polarizabilities and the permanent electric quadrupole moment of Ni⁺(²D_{5/2}). [1] E.L Snow, et. al. Phys. Rev. A 71, 022510 (2005)

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