Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Microwave spectroscopy of High-L n=9 levels of Nickel: Polarizabilities and Moments of the Ni^+ ion[1] CHRIS SMITH, SHANNON WOODS, JULIE KEELE, STEPHEN LUNDEEN, Colorado State University — The complete pattern of binding energies of n=9 Rydberg levels of Nickel with L = 6, 7, and 8 has been measured precisely using the microwave/RESIS technique. Analysis of the level pattern using the adiabatic effective potential model [1] yields measurements of several significant properties of the Ni^+ core ion. Among these are the permanent electric quadrupole and hexadecapole moments, the magnetic dipole moment, the scalar and tensor dipole polarizabilities, and the scalar quadrupole polarizability.

[1] Shannon L. Woods and S.R. Lundeen, Phys. Rev. A 85, 042505 (2012).

[1]Supported by the Chemical Sciences, Geosciences, and Biosciences Division of the Office of Basic Energy Sciences, Office of Science, U.S. Department of Energy.

Stephen Lundeen
Colorado State University

Date submitted: 25 Jan 2013 Electronic form version 1.4