

STARK AND ZEEMAN EFFECT STUDY OF THE [18.6]3.5 - X(1)4.5 BAND OF URANIUM MONOFLUORIDE, UF.

COLAN LINTON, *Department of Physics, University of New Brunswick, Fredericton, NB, Canada*; ALLAN G. ADAM, *Department of Chemistry, University of New Brunswick, Fredericton, NB, Canada*; TIMOTHY STEIMLE, *Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ, USA*.

A high resolution spectrum of the [18.6]3.5 - X(1)4.5 band of UF was obtained using the laser ablation spectrometer at Arizona State University (ASU). The rotational structure showed significant perturbations in the upper state. Examination of the Stark and Zeeman splittings of the lowest J lines in electric fields up to 3.4 kV/cm and a magnetic field of 1650 Gauss yielded permanent electric dipole moments, μ_e , of 1.99 and 1.87 Debye and magnetic g-factors, g_e of 3.28 and 3.26 for the ground and excited states respectively.

The above experimental results will be discussed in terms of the configurational composition of the ground and excited states and compared with recent theoretical calculations^a.

^aIvan O. Antonov and Michael C. Heaven, *J. Phys. Chem. A* 2013, 117, 9684-9694