

THE $A^6\Sigma^+ - X^6\Sigma^+$ TRANSITION OF CrH, EINSTEIN COEFFICIENTS AND AN IMPROVED DESCRIPTION OF THE A STATE

C. W. BAUSCHLICHER, JR. , *Space Technology Division, NASA Ames Research Center, Moffett Field, CA 94035*; R. S. RAM, *Department of Chemistry, University of Arizona, Tucson, AZ 85721*; P. F. BERNATH, *Department of Chemistry, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1*; C. G. PARSONS and D. GALEHOUSE, *Department of Physics, University of Dayton, Dayton, OH 45469*.

The spectrum of CrH has been reinvestigated in the 9000-15000 cm^{-1} region using the Fourier transform spectrometer of the National Solar Observatory. The 1-0 and 1-1 bands of the $A^6\Sigma^+ - X^6\Sigma^+$ transition have been measured and improved spectroscopic constants have been determined. A value for the 2-0 band origin has been obtained from the band head using estimated spectroscopic constants. These data provide a set of improved equilibrium vibrational and rotational constants for the $A^6\Sigma^+$ state. An accurate description of the A-X transition has been obtained using a multireference configuration interaction approach. The inclusion of both scalar relativity and Cr 3s3p correlation are required to obtain a good description of both states. The *ab initio* computed Einstein coefficients and radiative lifetimes are reported.