

JET-COOLED SPECTROSCOPY OF THE $A^6\Sigma^+ - X^6\Sigma^+$ SYSTEM OF CHROMIUM MONOHYDRIDE

PRADYOT K. CHOWDHURY, ANTHONY J. MERER and SCOTT J. RIXON, *Department of Chemistry, University of British Columbia, 2036 Main Mall, Vancouver B.C. V6T 1Z1, Canada.*

Astrophysical interest in CrH has motivated several studies of its $A^6\Sigma^+ - X^6\Sigma^+$ system^a. In this work, pulsed laser-induced fluorescence spectra of the $(v', 0)$ bands with $v' = 1, 2$ and 3 have been recorded under supersonic jet-cooled conditions following reaction of laser-ablated chromium atoms with methanol. Because of the large rotational constant and the jet-cooling, only lines with $N'' \leq 5$ are appreciably intense. Satellite branches with $\Delta N \neq \Delta J$, normally forbidden by Hund's case (b) selection rules, readily appear in all three bands as previously observed for the (0,0) band^a. Lines of the (2,0) and (3,0) bands are assigned here for the first time; strong perturbations considerably complicate the rotational structures of these bands.

^aS. Shin, D. J. Brugh and M. D. Morse, *Astrophys. J.* **619**, 407–411 (2004) and references therein.