THE $E\ ^2\Pi$ - $X\ ^2\Sigma^+$ STATE OF CaH/D

K. TERESZCHUK, I. GORDON and P.F. BERNATH, *Department of Chemistry, University of Waterloo, Waterloo, Ontario Canada N2L 3G1*.

Our group has recently investigated the $E^2\Pi$-$X^2\ \Sigma^+$ *band system of CaH/D, while searching for the elusive double minima electronic states of the* $D^2\ \Sigma^+$-$X^2\ \Sigma^+$ *system. Emission spectra of CaH and CaD, in the visible region, have been obtained by means of a new discharge-furnace source. Calcium metal was placed into an evacuated, alumina tube and heated to a temperature of 600* ^{o}*C in a tube furnace. A mixture of argon and hydrogen gas was allowed to flow through the tube and was then excited by a DC electrical discharge. The spectra were recorded using a photomultiplier tube with our Bruker IFS 120 HR spectrometer. We will report improved values for the vibrational and rotational constants of CaH/D.*