FOURIER TRANSFORM EMISSION SPECTROSCOPY OF THE $B\ ^2\Sigma^+ - X\ ^2\Sigma^+$ SYSTEM OF CN

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The emission spectra of the $B\ ^2\Sigma^+ - X\ ^2\Sigma^+$ system of CN has been observed at high resolution with a Fourier transform spectrometer using a flowing afterglow source. The rotational structure of a large number of bands involving vibrational levels $v = 0 - 15$ of both electronic states has been analyzed, and improved spectroscopic constants have been determined by combining the microwave and infrared measurements from previous studies. An improved set of spectroscopic constants for vibrational levels up to $v'' = 18$ in the $X\ ^2\Sigma^+$ state and $v' = 19$ in the $B\ ^2\Sigma^+$ state has been obtained by combining the measurements of the higher vibrational bands ($v', v'' > 15$), available from previous studies. The band constants have been used to estimate equilibrium ground state constants for CN. Some astronomical applications will be discussed.