CALCULATIONS OF CO_2 ENERGY LEVELS: THE $\tilde{A}^1B_2$ STATE

W. S. BENEDICT

Institute for Molecular Physics, University of Maryland, College Park, Md., U.S.A.

The $\tilde{A}^1B_2$ state of CO_2, identified by Dixon (1963) as the upper level of the 'carbon monoxide flame bands', must be of importance in the upper atmospheres of Venus and Mars. New calculations of the high vibrational levels of the ground ($\tilde{X}^1\Sigma_g^+$) state, which lead to improved fits of the observed vibration-rotation bands, confirm Dixon's analysis, except that the v_2'' numbering must be lowered by two, and fix the energy of the $v=0$, $K=0$ level of $^1B_2$ at 45210 ± 10 cm$^{-1} = 5.605$ eV.

Reference

Dixon, R. N.: 1963, *Proc. Roy. Soc.* **A275**, 431.

Sagan et al. (eds.), Planetary Atmospheres, 43.