

MW AND mmWAVE TRANSITIONS OF THE N₂-CO VAN DER WAALS COMPLEX

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Rotational transitions of the N₂-CO van der Waals complex, including the N₂-¹³CO and N₂-¹³C¹⁸O isotopomers, were measured using a Fourier transform microwave spectrometer and a microwave-Terahertz double resonance spectrometer. It was possible to resolve and to assign the ¹⁴N nuclear hyperfine components of the rotational transitions. The spectral analyses yielded rotational, centrifugal distortion, and ¹⁴N nuclear quadrupole coupling constants. These results, in particular the nuclear quadrupole coupling constants, shed additional light onto the complex intermolecular dynamics of this very floppy system. We were able to access a new state that was not reported in the previous infrared studies,^{a, b} and will present a refined energy level diagram for the complex.

^aY. Xu and A. R. W. McKellar, *J. Chem. Phys.* 104, 2488 (1996).

^bY. Kawashima and K. Nishizawa, *Chem. Phys. Lett.* 249, 87 (1996)