

DETECTION OF THE MAGNETIC DIPOLE-ALLOWED ORIGIN BAND OF THE $\tilde{A} \leftarrow \tilde{X}$ TRANSITION OF THE NITRATE RADICAL NO_3

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Despite its simplicity and atmospheric significance, the lowest electronic states of NO_3 remain poorly understood. The \tilde{A}^2E'' state is Jahn-Teller (JT) active and is pseudo-JT coupled to the ground \tilde{X}^2A_2' and excited \tilde{B}^2E'' states. While the band origin 0_0^0 of the $\tilde{A} \leftarrow \tilde{X}$ transition is purely electric forbidden, the cavity ringdown spectrum of the vibronically-allowed $\tilde{A} \leftarrow \tilde{X}$ bands has shown rotationally-resolvable structures. We have detected the magnetic dipole-allowed origin ($\sim 7060 \text{ cm}^{-1}$) via CRD spectroscopy. Analysis of the band contour along with its implications of the JT/Pseudo-JT couplings in the dark \tilde{A} state of NO_3 will be discussed.