

Abstract Submitted  
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**A New VISTA on the Infrared Spectrum of Ammonia in the 1.5  $\mu\text{m}$  Region: Assignment of Combination Bands of  $^{14}\text{NH}_3$  and  $^{15}\text{NH}_3$  by Isotopic Shift Fingerprinting** RONALD LEES, Centre for Laser, Atomic and Molecular Sciences (CLAMS) and Department of Physics, University of New Brunswick, Saint John, NB, Canada E2L 4L5, LI LI, LI-HONG XU, CLAMS, University of New Brunswick — The infrared spectrum of ammonia in the 1.5  $\mu\text{m}$  region contains a complex mixture of vibrational combination and overtone bands. By comparing spectra of  $^{14}\text{NH}_3$  and  $^{15}\text{NH}_3$  recorded with a tunable diode laser spectrometer, we have been able to implement a Vibrational Isotopic Shift Technique for Assignment (VISTA) in which isotopic shift fingerprinting (ISF) is used to classify spectral lines into their respective absorption bands. We have thereby been able to identify numerous lines belonging to the strong  $\nu_3+2\nu_4$  band for  $^{14}\text{NH}_3$ , extend assignments for previously known  $^{14}\text{NH}_3$  bands, and simultaneously assign the corresponding bands for  $^{15}\text{NH}_3$ .

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