INFRARED SPECTRA OF THE NE_2-N_2O, AR_2-N_2O TRIMERS

M. REZAEI, N. MOAZZEN-AHMADI, *Department of Physics and Astronomy, University of Calgary, 2500 University Dr., N.W., Calgary, Alberta T2N 1N4, Canada*; K.H. MICHAELIAN, *Natural Resources Canada, CanmetENERGY, 1 Oil Patch Drive, Suite A202 Devon, Alberta, T9G 1A8, Canada*; A.R.W. McKELLAR, *National Research Council of Canada, Ottawa, Ontario, K1A 0R6, Canada*.

Spectra of the van der Waals trimers Ar_2-N_2O and Ne_2-N_2O are studied in the region of the N_2O ν_1 fundamental ($\sim$2224 cm^{-1}) using a tunable quantum cascade laser to probe a pulsed supersonic expansion from a slit jet nozzle. Improved data are also obtained for the dimers Ar-N_2O and Ne-N_2O, with the latter representing a significant improvement on the best previous results. As well, a feature in the spectrum is tentatively assigned as the Q-branch of Ar_3-N_2O. The observed vibrational shifts for Ne_n-N_2O are almost exactly linear for n = 0-2. However, for Ar_n-N_2O the n = 2 band origin is slightly blue-shifted compared to the linear prediction, and the n = 3 origin (if correct) is more significantly blue-shifted (by 0.09 cm^{-1}).