SPECTROSCOPY OF THE $A^3\Pi - X^3\Sigma^-$ TRANSITIONS OF NH-He AND NH-H_2

GALINA KERENSKAYA, MICHAEL C.HEAVEN, *Department of Chemistry, Emory University, Atlanta, GA 30322*.

Complex features of NH-He were observed in conjunction with the A-X 1-0 and 0-0 transitions. Bands appear to be clustered around the lowest rotational line of the monomer. The energy range spanned by the sharp structure is only 6.5 cm^{-1}. The lowest energy feature is red shifted from the monomer by about 3 cm^{-1}.

A bound-free continuum spectrum was observed for NH-H_2 in the region of the A-X 0-0 transition. Excitation to the A state is speculated to result in rapid NH-H_2 -> NH_2 + H reaction. The ground state dissociation energy of $D_0'' = 32.4cm^{-1}$ was deduced from the spectrum.

Theoretical analyses of the NH-He and NH-H_2 A-X bands are in progress.