

## MICROWAVE SPECTRA AND STRUCTURES OF H<sub>2</sub>O-AgCl AND H<sub>3</sub>N-AgCl.

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A Balle-Flygare FT-MW spectrometer coupled to a laser ablation source has been used to measure the pure rotational spectra of H<sub>2</sub>O-AgCl and H<sub>3</sub>N-AgCl. Both molecules are generated via laser ablation (532 nm) of a metal rod in the presence of CCl<sub>4</sub>, argon, a low partial pressure of H<sub>2</sub>O or NH<sub>3</sub> and are stabilized by supersonic expansion. Rotational constants and centrifugal distortion constants have been measured for eight isotopologues of H<sub>2</sub>O-AgCl with substitutions at the silver, chlorine, oxygen and hydrogen atoms.  $B_0$  and  $C_0$  have been independently determined for six isotopologues and the spectra are consistent with a linear arrangement of oxygen, silver and chlorine atoms. The structure is either  $C_{2v}$  planar at equilibrium or  $C_s$  pyramidal but with a low potential-energy barrier to planarity such that the  $v=0$  and 1 states associated with the motion that inverts the configuration at the O atom are well separated. Preliminary data from a study of H<sub>3</sub>N-AgCl will also be presented. Several transitions have been observed and tentatively assigned to hyperfine components of the  $2_{02}-1_{01}$ ,  $3_{03}-2_{02}$  and  $4_{04}-3_{03}$  transitions of H<sub>3</sub>N-<sup>107</sup>Ag<sup>35</sup>Cl and H<sub>3</sub>N-<sup>109</sup>Ag<sup>35</sup>Cl. These data are consistent with a  $C_{3v}$  structure.