THE FTMW SPECTRUM OF N-ACETYL GLYCINE

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N-acetyl glycine is of interest from a biological viewpoint since it contains the HNCO peptide linkage, as well as astronomical interest since it is found in meteorites. N-acetyl glycine is a crystalline solid at room temperature and, thus, required heating to be detected in a FTMW spectrometer. The solid sample was placed in a reservoir end cap of a pulsed valve nozzle which was pressurized with first run Ne and heated to 190 $^{\circ}C$. Spectral scans were carried out over the range of 10 GHz to 21 GHz with the mini-FTMW spectrometer. The observed spectrum was dominated by transitions from the decomposition products acetamide and acetic acid. A weak set of spectral lines exhibiting hyperfine structure from ^{14}N were also observed and assigned to N-acetyl glycine. Spectral assignments were aided by Gaussian 98 *ab initio* calculations at the MP2/6-311++G** level. 33 lines have been assigned to the A-state of the lowest energy form of N-acetyl glycine. The hyperfine structure for several transitions was well resolved and allowed analysis of the ^{14}N quadrupole hyperfine structure. Details of the measurements and analysis will be presented.