

## MLS Scientific Publication

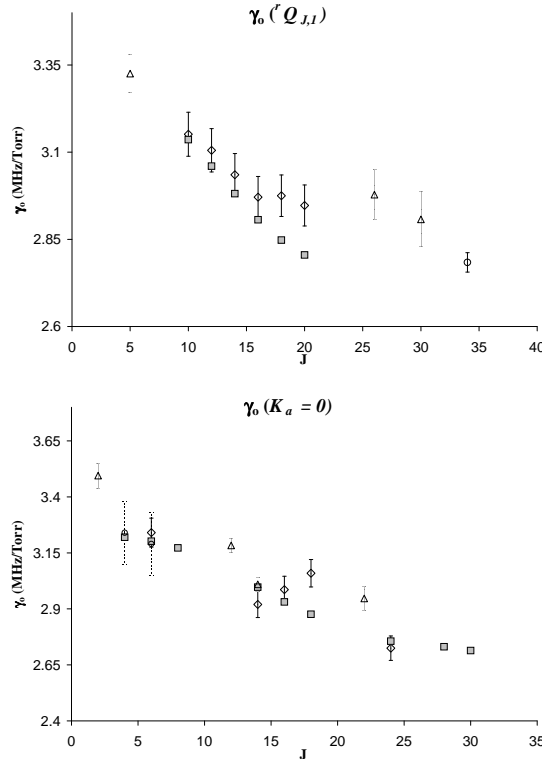
Scientific Themes: Atmospheric Chemistry, Submillimeter Spectroscopy.

**Temperature Dependent Pressure Induced Lineshape of O<sub>3</sub> Rotational Transitions in Air.** Drouin B.J., J. Fischer, R. R. Gamache, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 83, Issue 1, 1 January 2004, Pages 63-81.

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### Summary

The pressure induced broadening of a series of pure rotational transitions of ozone have been measured as a function of temperature. Results of experiments are compared with calculations employing the complex semiclassical theory of Robert and Bonamy. This set of rotational transitions is the dominant feature of the millimeter and submillimeter ozone spectra to be measured in the upcoming EOS-MLS mission.



Comparisons of measured and calculated values for pressure induced half-width values at 296 K for the  $J_{2,J-2} \leftarrow J_{1,J-1}$  transitions (top) and various  $K_a = 0$  transitions (bottom).  $\diamond$  - Measured rotational (this study),  $\circ$  - Measured rotational (CNRS) (top) Connor (bottom),  $\triangle$  - Measured vibrational  $\nu_1$  branch (Langley) and - Calculated rotational (this study).