

## THE SUBMILLIMETER SPECTRUM OF GLYCOLALDEHYDE FROM 500 GHz TO 1.2 THz

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Glycolaldehyde is the simplest  $\alpha$ -hydroxy aldehyde and the only sugar-related molecule definitively detected in the interstellar medium to date. Previous spectral studies<sup>a,b</sup> have reported its rotational spectrum up to  $\sim 350$  GHz. With the advent of several new submillimeter and THz astronomy facilities equipped with high-resolution spectrometers, it is important to begin collecting and analyzing higher frequency spectra for all known interstellar molecules. We have acquired the submillimeter/THz direct absorption spectrum of glycolaldehyde from 520 – 600 GHz and from 1.1 – 1.2 THz. The spectra were measured at JPL using a 3-meter static cell in double-pass configuration. The submillimeter radiation was generated using a standard microwave frequency synthesizer coupled with cascaded frequency multipliers. A Schottky diode detector was used during acquisition of the lower frequency spectra, and an Si hot electron bolometer detector was used for scans above 1 THz. The analysis of these spectra is underway, and new line assignments are being combined with the assignments from previous studies to determine a global spectral fit. The details of the experiment and progress on the spectral analysis will be reported.

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<sup>a</sup>Marstokk, K. M.; Møllendal, H., *J. Mol. Struct.*, 5, 205-213 (1970).

<sup>b</sup>Widicus Weaver, S. L. et al., *Astrophys. J. Suppl.*, 158, 188-192 (2005).