

## PHOTOACOUSTIC SPECTROSCOPY OF THE OXYGEN A-BAND

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The oxygen A-band (760 nm) is used in a number of remote sensing applications due to the precisely known, uniform distribution of molecular oxygen throughout the atmosphere and the spectral isolation of the band. The A-band is used to determine the pathlength of solar radiation for OCO-2, a current NASA mission which seeks to measure the global sources and sinks of carbon dioxide at unprecedented spatial and temporal resolution. The goal of measuring atmospheric carbon dioxide concentrations with a precision of 0.25% requires a precise knowledge of line shape parameters. Currently, the most significant uncertainties in A-band spectroscopy result from line mixing and collision induced absorption, which become more prominent at elevated pressures. Photoacoustic spectroscopy is ideal to observe these phenomena due to the large dynamic range and zero-background advantages of the technique. Photoacoustic spectra of the oxygen A-band over a range of pressures will be presented in addition to line shape parameters extracted from multispectrum fits of the data.