TEMPERATURE DEPENDENT ROTATIONAL TRANSITION LINESHAPE PARAMETERS FOR O_3, O_2, SO_2, CH_3CN AND CO

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Measurements of rotational transition lineshape parameters for atmospheric species are in progress at JPL. New developments in the spectrometer design, measurement methodology and quantitative analyses will be presented. Sixteen transitions of ozone in the range $5 < J < 31$ have been measured. Oxygen has been studied for both $N, J = 1, 1 \leftarrow 1, 0$ and $3, 2 \leftarrow 1, 2$ as well as $O^{18}O$ $2, 1 \leftarrow 0, 1$. New measurements of carbon monoxide $J = 2 \leftarrow 1$ are now complete. Three sulfur dioxide transitions have been measured and selected transitions from three ${}^aR$ branches of methyl cyanide have been analyzed. For many of the species inter-comparisons with other studies are made.