MEASUREMENTS OF O_3 LINE INTENSITIES IN THE ν_3 BAND

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To obtain a more comprehensive data set for determination of absolute intensities of ozone lines in the 9-11 μm region, we have recorded additional high-resolution absorption spectra of ozone at room temperature using the Fourier transform spectrometer at the McMath-Pierce facility of the National Solar Observatory at Kitt Peak. As in our previous effort, [a] the spectrometer was set up in double-pass mode [b] to cover the 800-1400 cm^{-1} region at 0.0027 cm^{-1} resolution. The ozone samples were contained in a glass cell having crossed IR-transmitting and UV-transmitting paths approximately 10 cm in each direction. A 254 nm UV-absorption monitor of the same design as Pickett et al.[c] was used to measure the ozone partial pressures, which were kept at approximately 0.3 to 0.5 Torr to prevent the appearance of saturated lines in any region of the band. Four spectra, for which the ozone partial pressure varied by < 1.0 percent during the recording time, were selected for analysis. Using our multispectrum nonlinear least-squares procedure,[d] we have fit these spectra simultaneously to determine intensities for numerous lines in both the P and R branches of the ν_3 fundamental band. These results will be compared with other recent measurements[c,e,f] and with the values on the 1992 HITRAN compilation.

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[b] D. E. Jennings, R. Hubbard, and J. W. Brault, *Appl. Opt.* **24**, 3438 (1985).

[c] H. M. Pickett, D. B. Peterson, and J. S. Margolis, *J. Geophys. Res.* **97**, 20,787-20,793 (1992).

[d] D. Chris Benner, C. P. Rinsland, V. Malathy Devi, M. A. H. Smith, and D. Atkins, *JQSRT* **53**, 705-721 (1995).

[e] M. R. DeBacker and D. Courtois, 50th International Symposium on Molecular Spectroscopy, Paper RA06 (1995).

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