INFRARED SPECTRA OF C_2H_2, C_2H_4, AND CH_3CI AT PLANETARY ATMOSPHERIC TEMPERATURES

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We have measured the absolute intensities as well as H_2-, N_2- and He- broadened half-widths of lines in the P- and R- branches of the v5- fundamental and hot bands of C_2H_2 at temperatures between 149K and 296K employing a Fourier-Transform-Spectrometer with spectral resolution as high as 0.0016 cm^{-1}. Our intensity values are about 10 percent larger than those in the HITRAN database. THE broadening coefficients are in good agreement with results of Bouanich etal (at 296K and 177K) and Dana etal (at room temperature). Intensity and self-broadening coefficients of hundreds of lines of CH_3Cl in the 670-770cm^{-1} region have been measured at temperatures 296, 243 and 203 K. Comparison with the existing data banks was made upon line intensities. Measurements of lines of C_2H_4 were performed in 850-1100 cm^{-1} spectral region. We present a preliminary set of results.