

Supplementary on-line information:

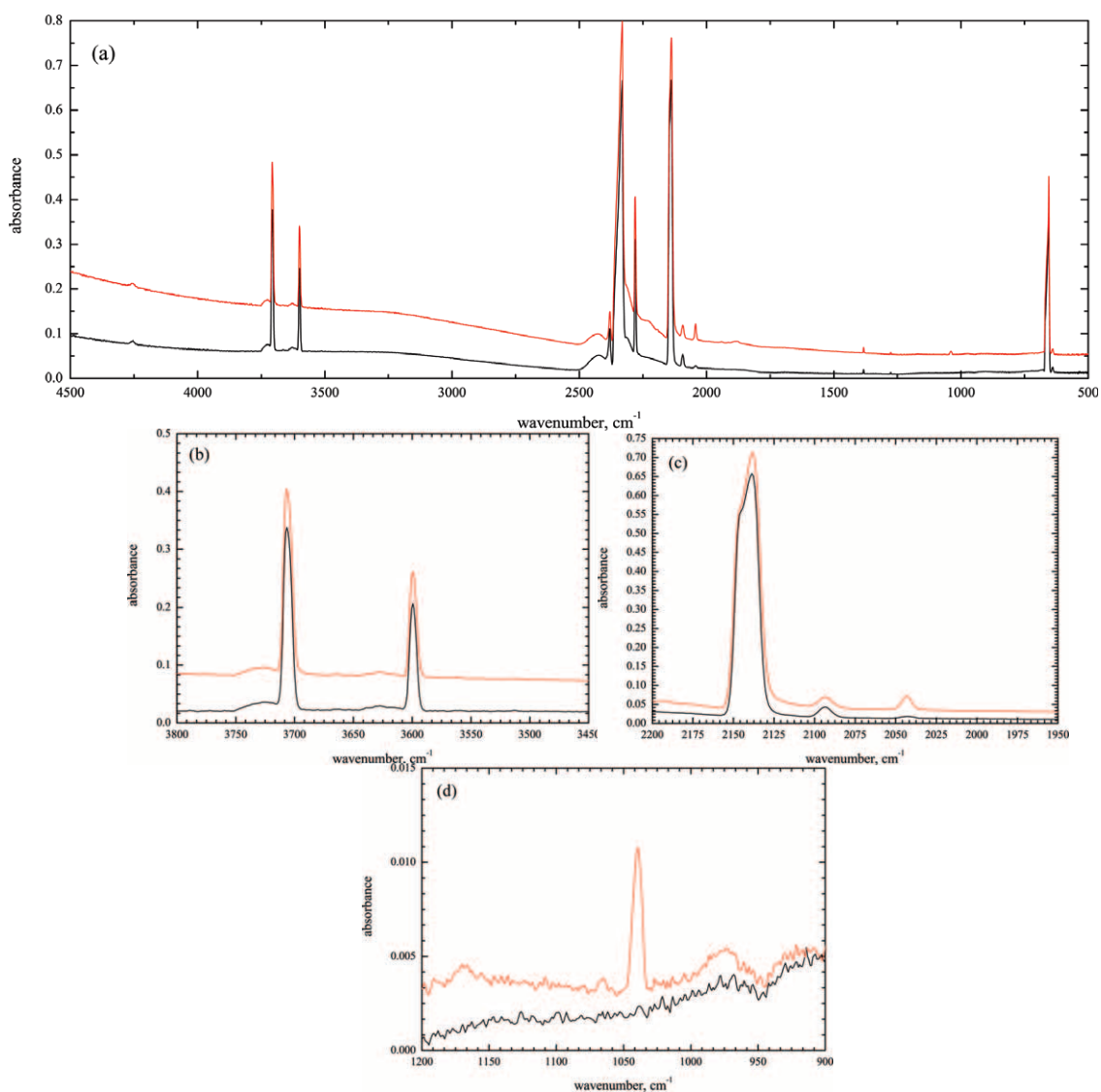


Figure 1-1: Infrared spectra of CO:CO₂ ice mixture prior to (black line) and after the irradiation (red line) shown over several different wavelength ranges: (a) 500-4500 cm⁻¹, (b) 3450-3800 cm⁻¹, (c) 1950-2200 cm⁻¹, (d) 1800-1950 cm⁻¹, and (e) 900-1200 cm⁻¹. The absorption axis has been shifted for clarity.

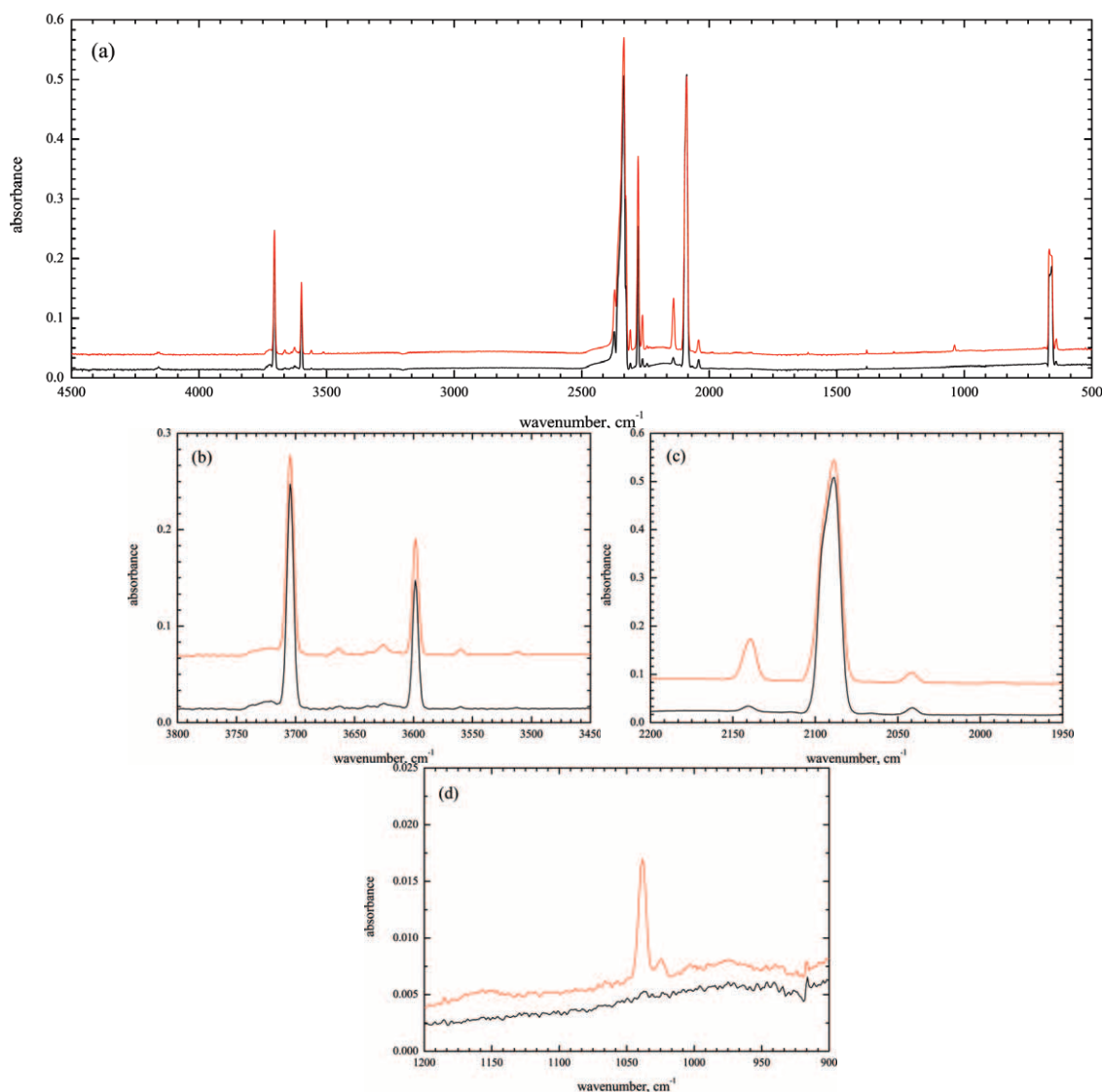


Figure 1-2: Infrared spectra of $^{13}\text{CO}:\text{C}^{18}\text{O}:\text{CO}_2$ ice mixture prior to (black line) and after the irradiation (red line) shown over several different wavelength ranges: (a) 500-4500 cm^{-1} , (b) 3450-3800 cm^{-1} , (c) 1950-2200 cm^{-1} , (d) 1800-1950 cm^{-1} , and (e) 900-1200 cm^{-1} . The absorption axis has been shifted for clarity.

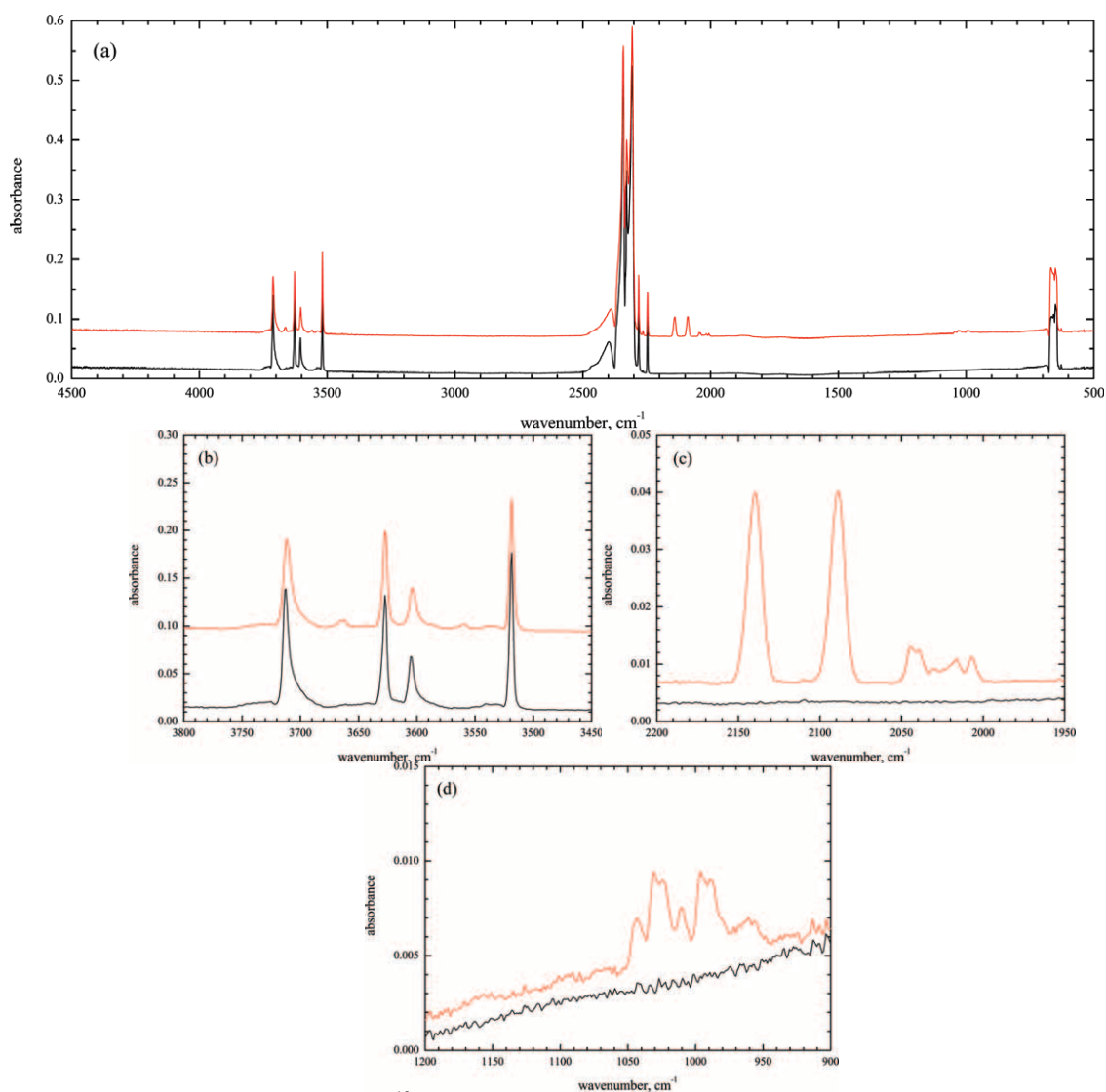


Figure 1-3: Infrared spectra of CO_2 : $^{18}\text{CO}_2$ ice mixture prior to (black line) and after the irradiation (red line) shown over several different wavelength ranges: (a) 500-4500 cm^{-1} , (b) 3450-3800 cm^{-1} , (c) 1950-2200 cm^{-1} , (d) 1800-950 cm^{-1} , and (e) 900-1200 cm^{-1} . The absorption axis has been shifted for clarity.

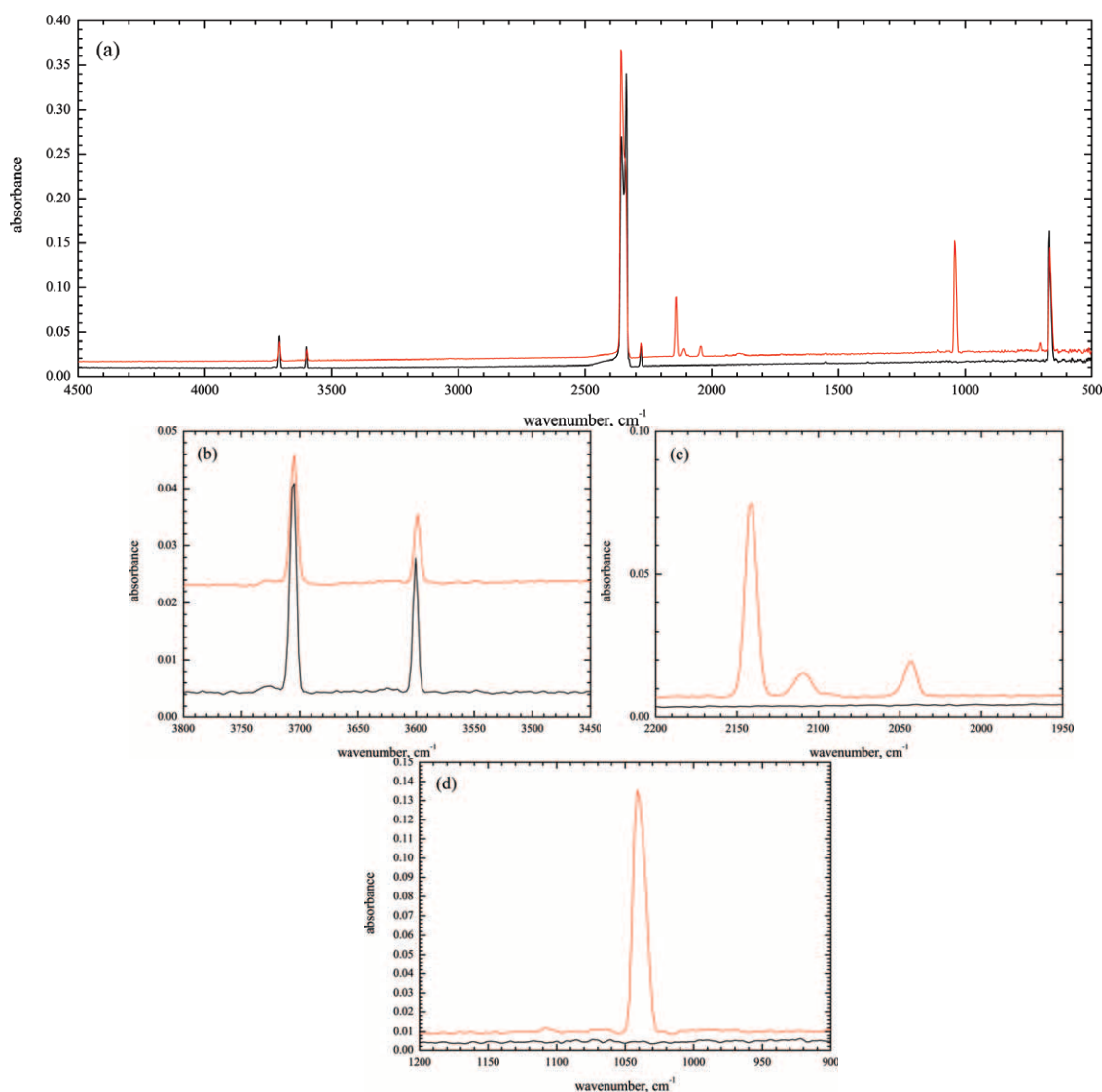


Figure 1-4: Infrared spectra of CO:O₂ ice mixture prior to (black line) and after the irradiation (red line) shown over several different wavelength ranges: (a) 500–4500 cm⁻¹, (b) 3450–3800 cm⁻¹, (c) 1950–2200 cm⁻¹, (d) 1800–1950 cm⁻¹, and (e) 900–1200 cm⁻¹. The absorption axis has been shifted for clarity.

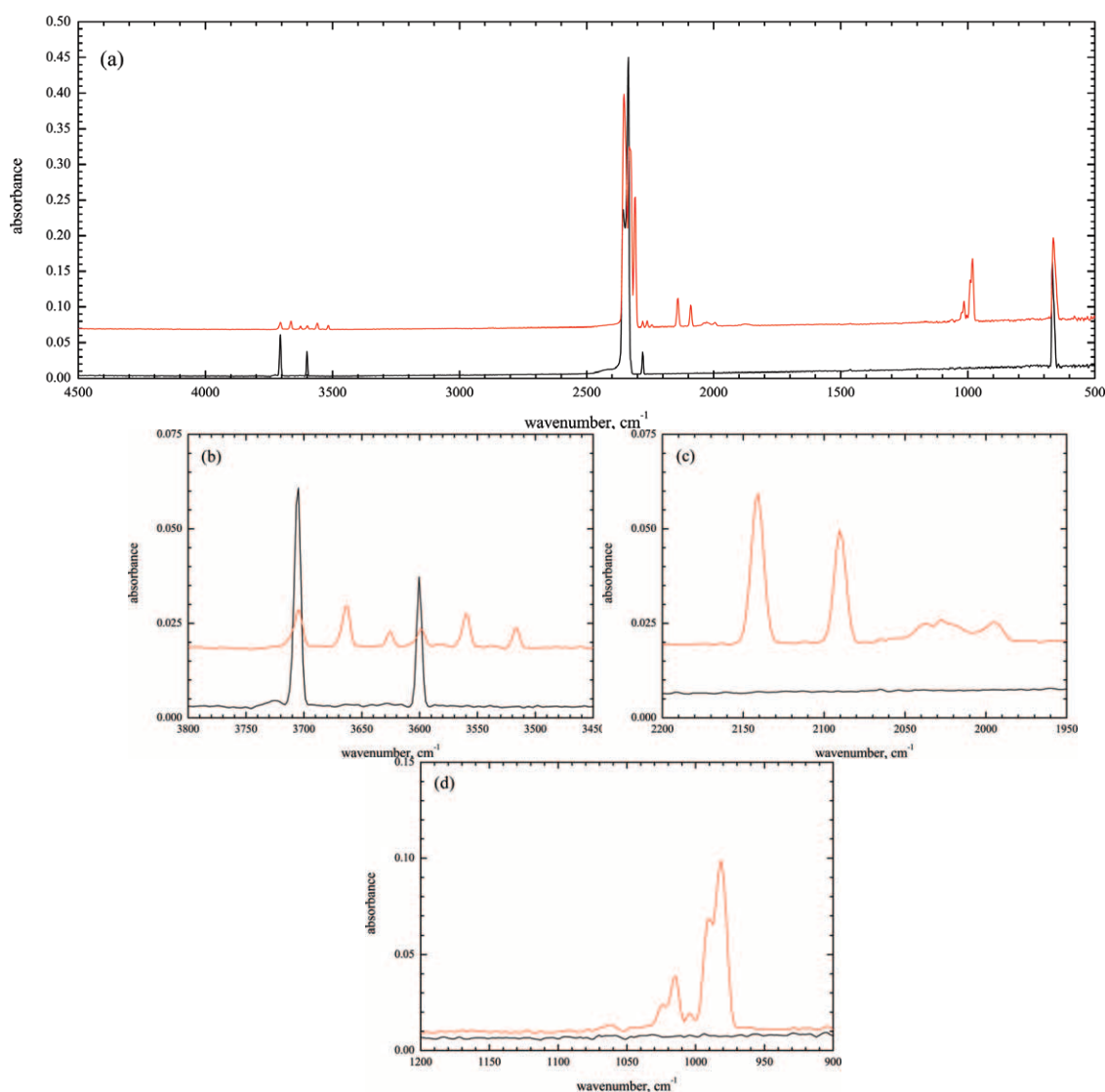


Figure 1-5: Infrared spectra of CO-¹⁸O₂ ice mixture prior to (black line) and after the irradiation (red line) shown over several different wavelength ranges: (a) 500-4500 cm⁻¹, (b) 3450-3800 cm⁻¹, (c) 1950-2200 cm⁻¹, (d) 1800-1950 cm⁻¹, and (e) 900-1200 cm⁻¹. The absorption axis has been shifted for clarity.