INFRARED HIGH RESOLUTION SPECTRA OF $^{16}O_3$: THE WEAK $3\nu_2$+$3\nu_3$ AND $4\nu_2$+$4\nu_3$ BANDS

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Recent progress in theory and improvement of sensitivity of experiments allow assigning new very weak bands of ozone, $^{16}O_3$. The $3\nu_2$+$3\nu_3$ near 5000 cm^{-1} and the $4\nu_2$+$4\nu_3$ near 6500 cm^{-1} are reported for the first time from the FTS and CRDS spectra respectively. The second band is particularly interesting, as transitions involving vibrational states with a v_2 = 4 bending excitation were never observed so far. Hamiltonian and dipole moment parameters, range of observed quantum numbers, statistics of the fits, comparison of band centres with predictions, as well as several agreements between observed and calculated spectra will be presented and discussed.