Simulated Interstellar Photolysis of N_2O Ice: Selectivity in Photoproducts

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Supporting information 1:

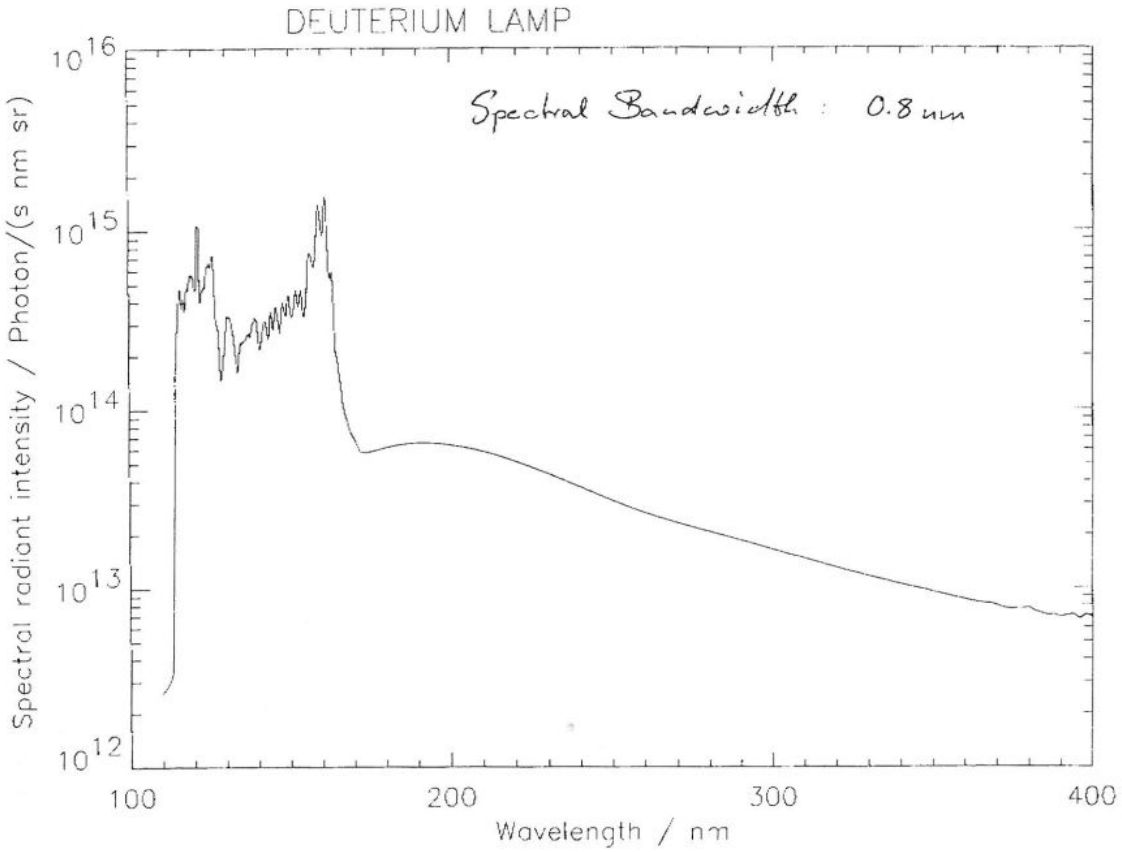

Figure S1. Emission spectrum of Model 634 Deuterium lamp, provided by the McPherson.

Supporting information 2:

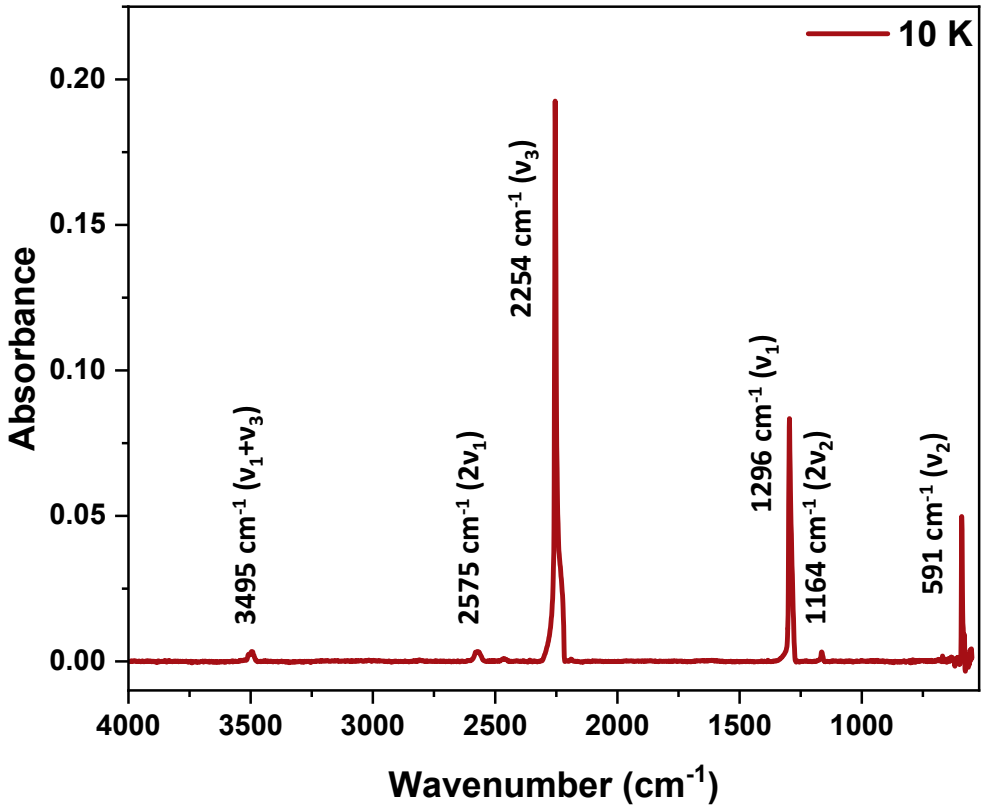

Figure S2. RAIR spectrum of 150 ML of N_2O ice at 10 K.

Supporting information 3:

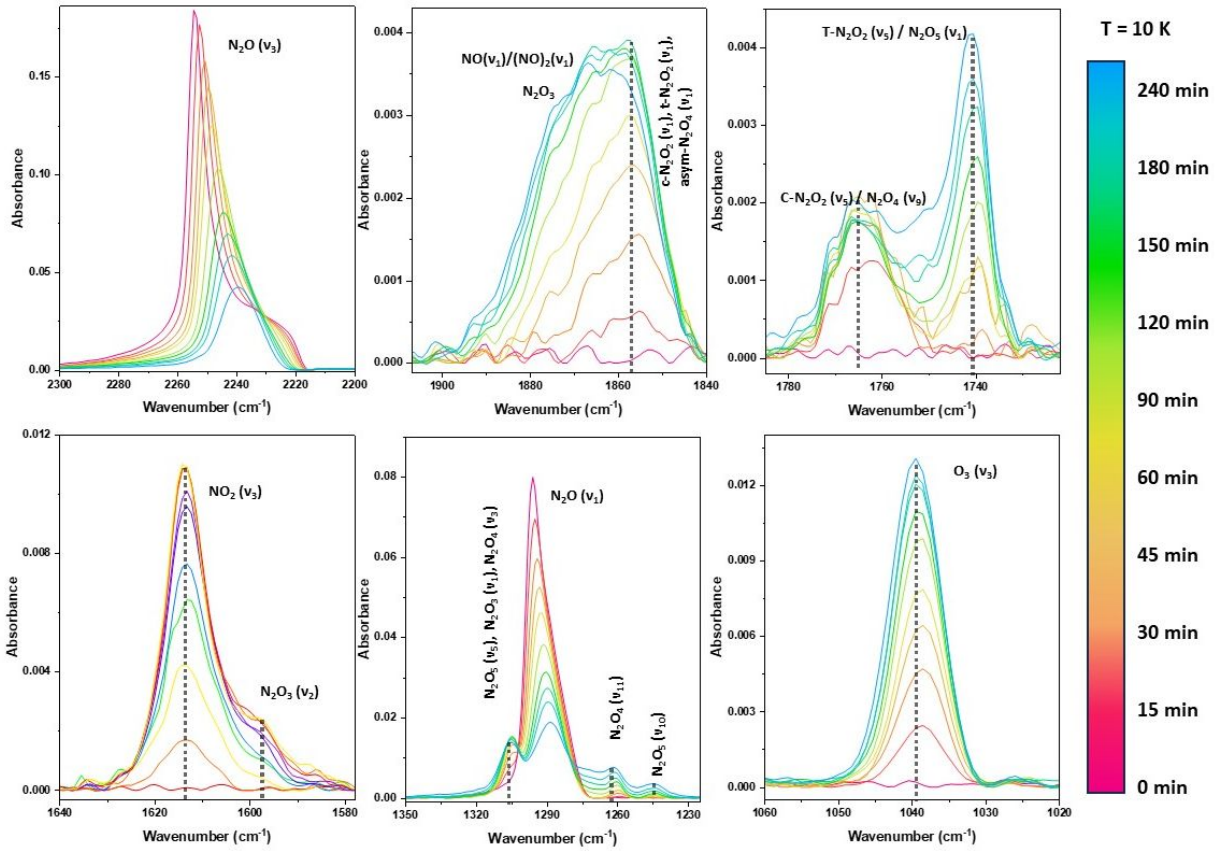

Figure S3. Time-dependent evolution of RAIR spectra of 150 ML of N_2O ice under VUV photon irradiation at 10 K. N_2O ice film was photo-irradiated for 4 h at 10 K, and the RAIR spectrum was taken at regular intervals of time.

Supporting information 4:

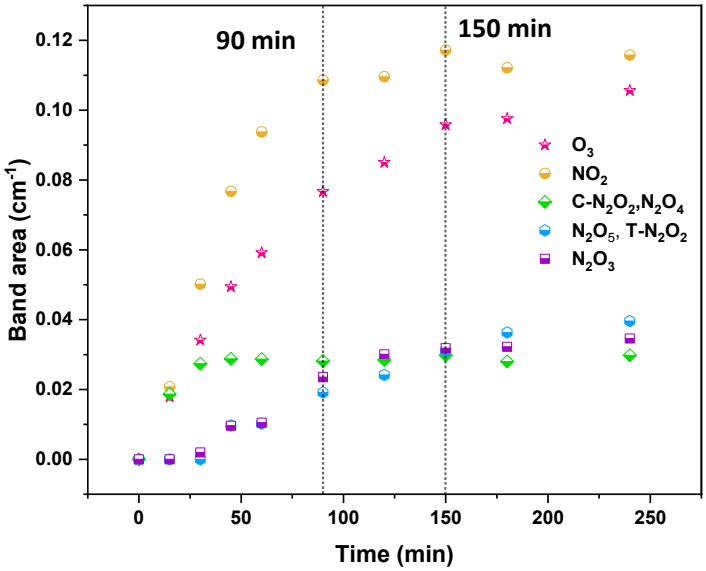

Figure S4. The evolution of the band area of photoproducts (O_3 (ν_3), NO_2 (ν_3), cis(c)-N_2O_2 (ν_5), N_2O_4 (ν_9), trans (t)-N_2O_2 (ν_5), N_2O_5 (ν_1), and N_2O_3 (ν_2)) monitored as a function of irradiation time at 10 K.

Supporting information 5:

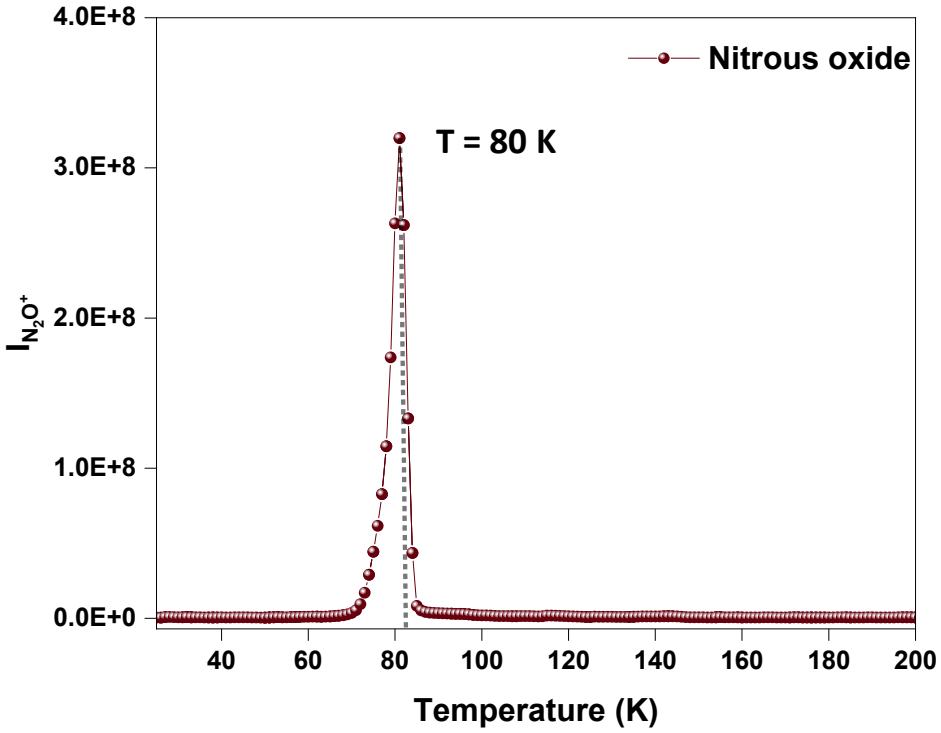

Figure S5. TPD-MS spectrum of 150 ML of N_2O ice. The sublimation profile was plotted using integrated ion counts at m/z = 44.

Supporting information 6:

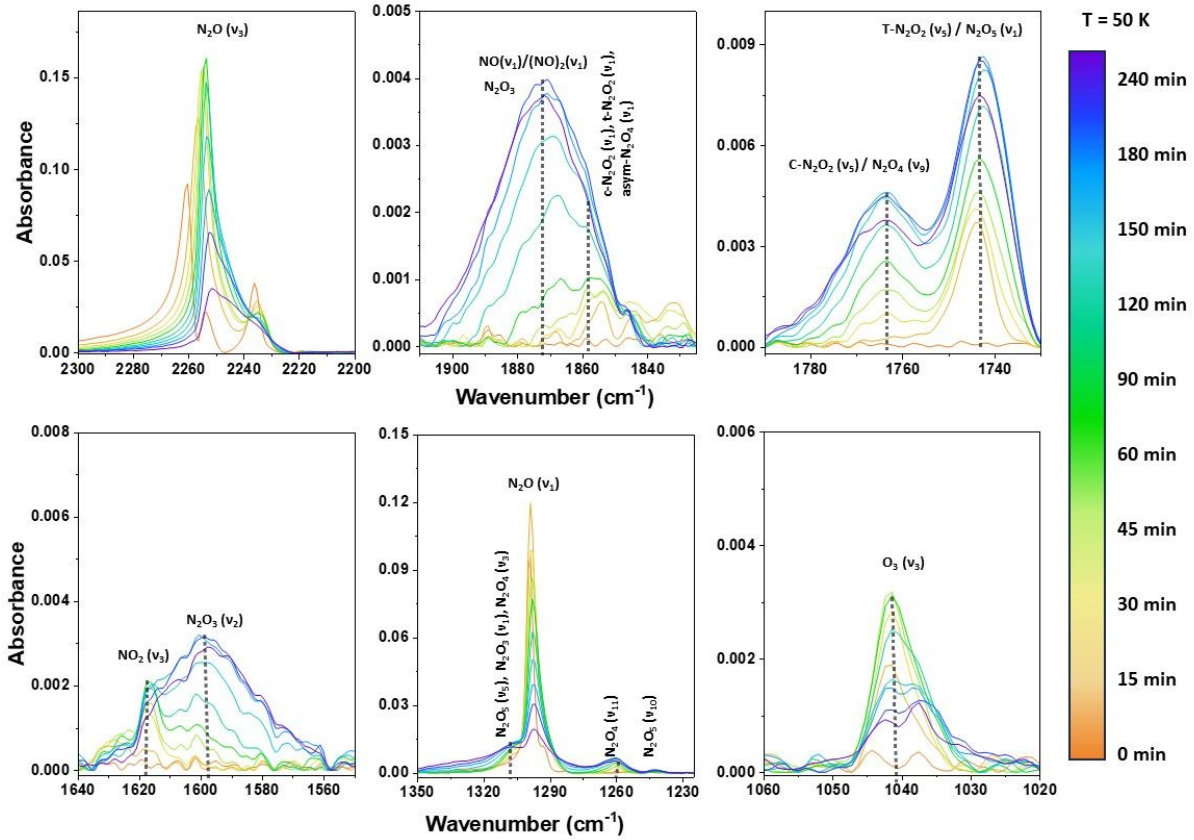

Figure S6. Time-dependent evolution of RAIR spectra of 150 ML of N_2O ice under VUV photon irradiation at 50 K. N_2O ice film was photo-irradiated for 4 h at 50 K, and the RAIR spectra were collected at a regular interval of time.

Supporting information 7:

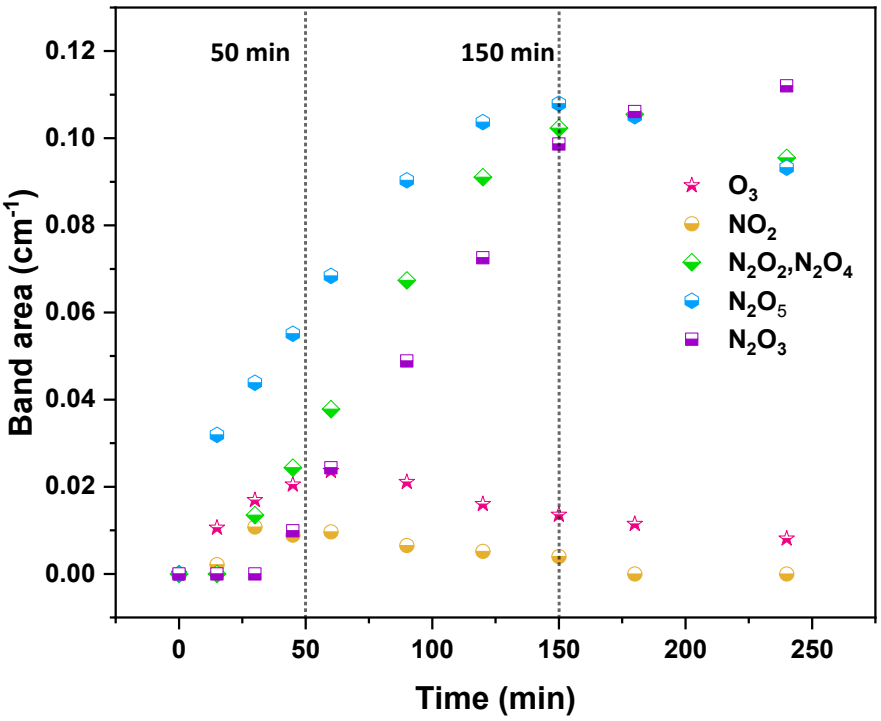

Figure S7. The evolution of the band area of photoproducts (O_3 (ν_3), NO_2 (ν_3), cis(c)-N_2O_2 (ν_5), N_2O_4 (ν_9), trans (t)-N_2O_2 (ν_5), N_2O_5 (ν_1), and N_2O_3 (ν_2)) monitored as a function of irradiation time at 50 K.

Supporting information 8:

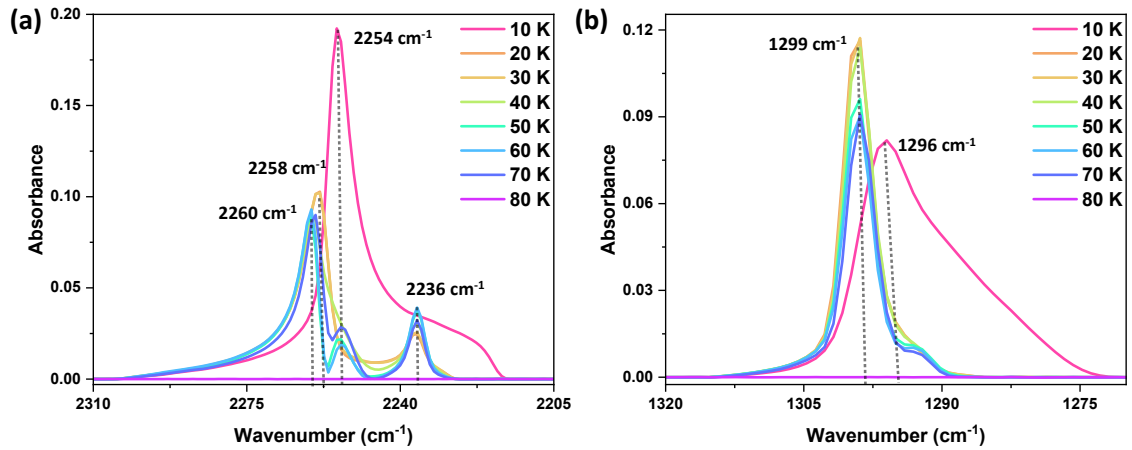

Figure S8. Temperature-dependent RAIR spectra of 150 ML of N_2O ice in N-O antisymmetric stretching region (a) and N-O symmetric stretching region (b).

Supporting information 9:

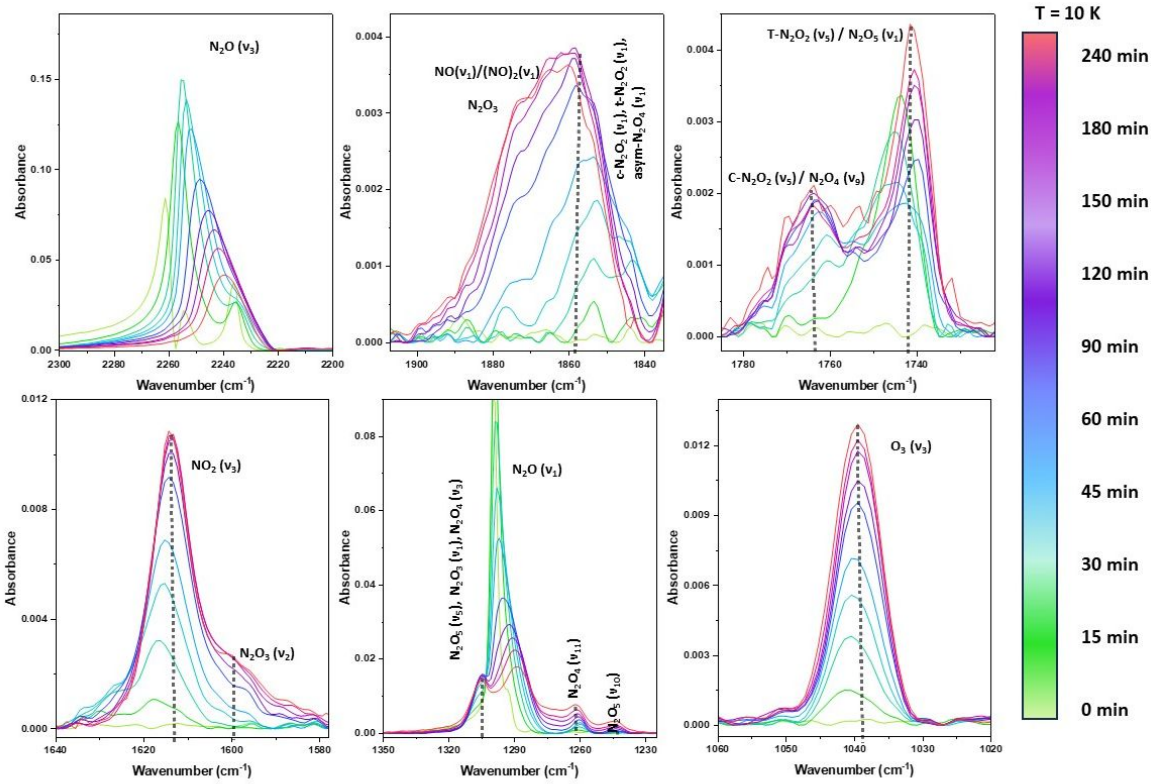

Figure S9. Time-dependent evolution of RAIR spectra of 150 ML of crystalline N_2O ice under VUV photon irradiation at 10 K. N_2O crystalline ice film was prepared by vapor deposition at 10 K, and then it was annealed to 50 K again cooled back to 10 K. N_2O ice film was photo-irradiated for 4 h at 10 K, and in a regular interval of time RAIR spectrum was taken.