

These are the Pe/Pi ratios for the new bins (NRL short wavelength +SQ bins) for three solar zenith angles. For the new NRL bins (in red), I have added the total SQ pe/pi ratios in black generated by the PE model.

For example:

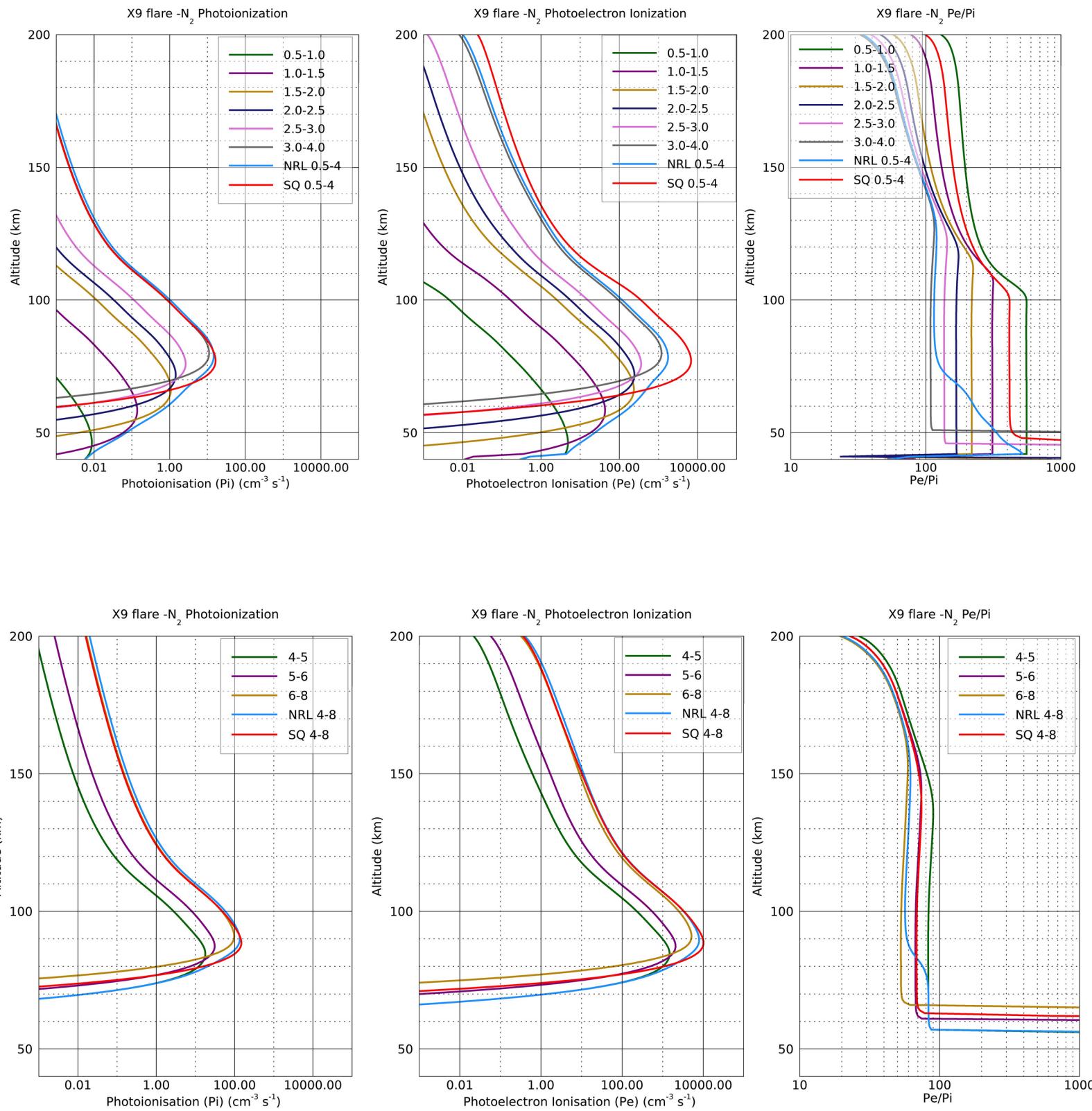
| wv_lo | wv_hi | |
|-------|-------|-------|
| 0.5 | 1.0 | NRL |
| 1.0 | 1.5 | |
| 1.5 | 2.0 | |
| 2.0 | 2.5 | |
| 2.5 | 3.0 | |
| 3.0 | 4.0 | |
| 0.5 | 4.0 | SQ'05 |

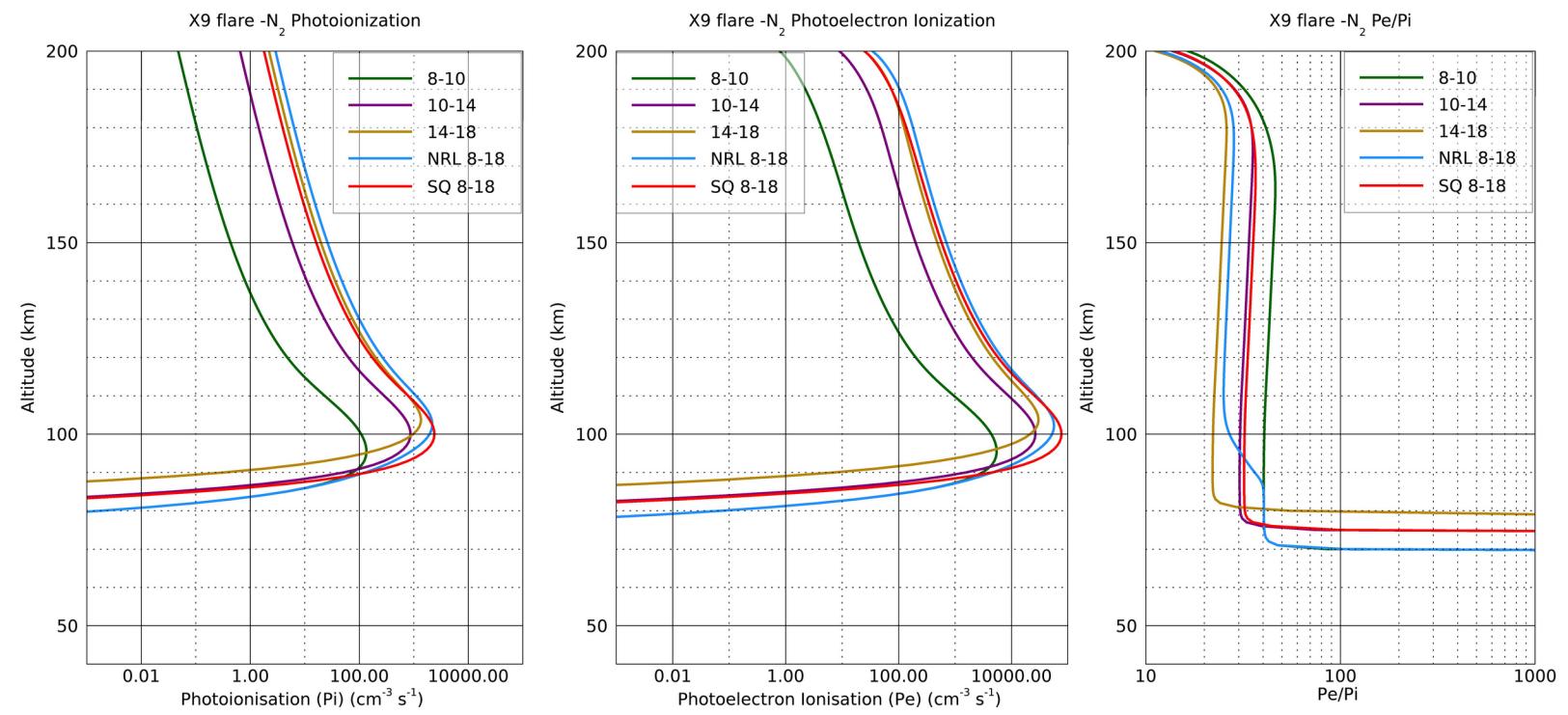
x9 flare

N2:

| wv_lo | wv_hi | sza =1.07 deg pe/pi-transp (tau=1) |
|-------|-------|---------------------------------------|
| 0.5 | 1.0 | 555.710 |
| 1.0 | 1.5 | 311.805 |
| 1.5 | 2.0 | 218.700 |
| 2.0 | 2.5 | 168.027 |
| 2.5 | 3.0 | 136.650 |
| 3.0 | 4.0 | 108.387 |
| 0.5 | 4.0 | 415.782 |
| 4.0 | 5.0 | 82.9033 |
| 5.0 | 6.0 | 67.1222 |
| 6.0 | 8.0 | 52.8816 |
| 4.0 | 8.0 | 68.3367 |
| 8.0 | 10.0 | 40.4625 |
| 10.0 | 14.0 | 30.4999 |
| 14.0 | 18.0 | 22.2551 |
| 8.0 | 18.0 | 32.2249 |

Plots

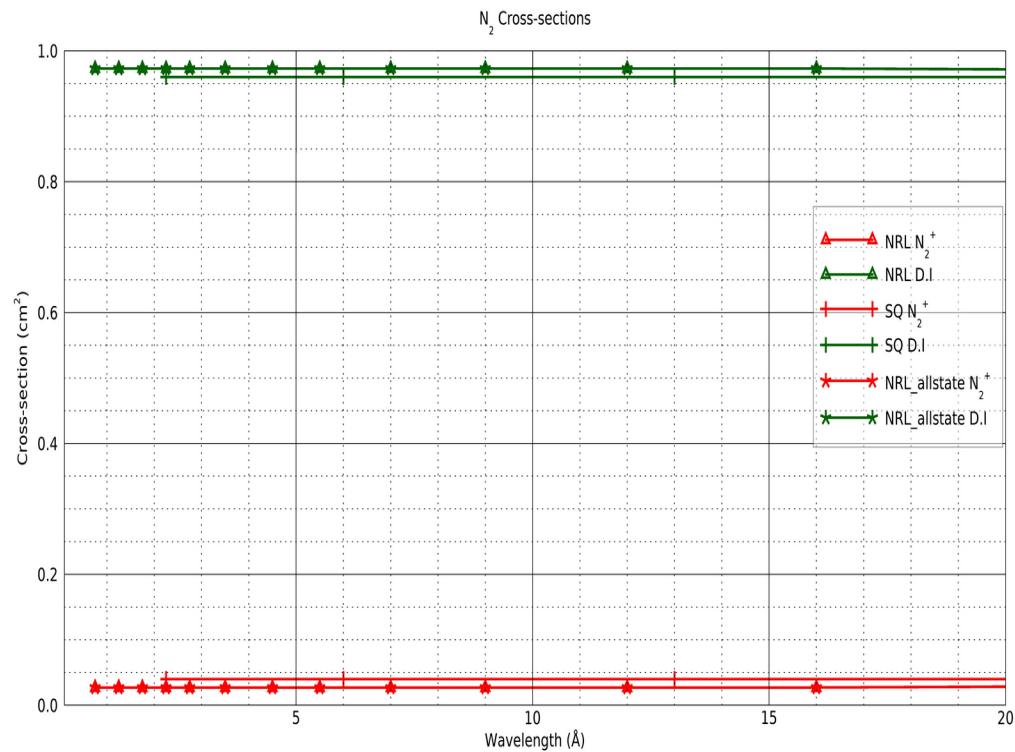


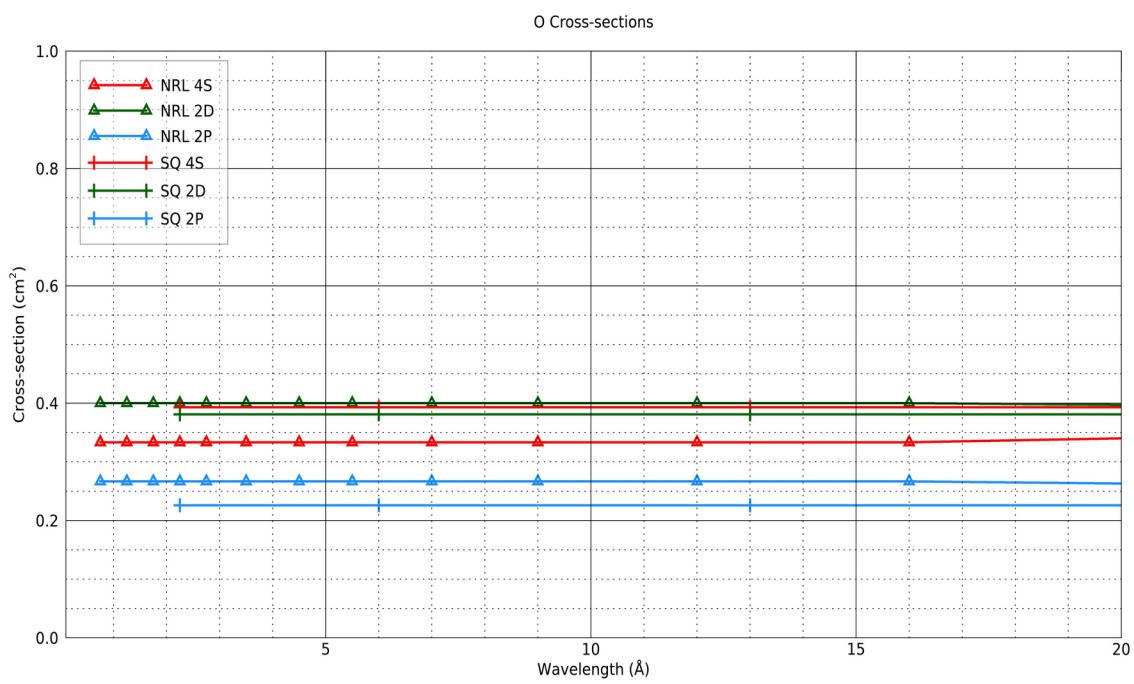
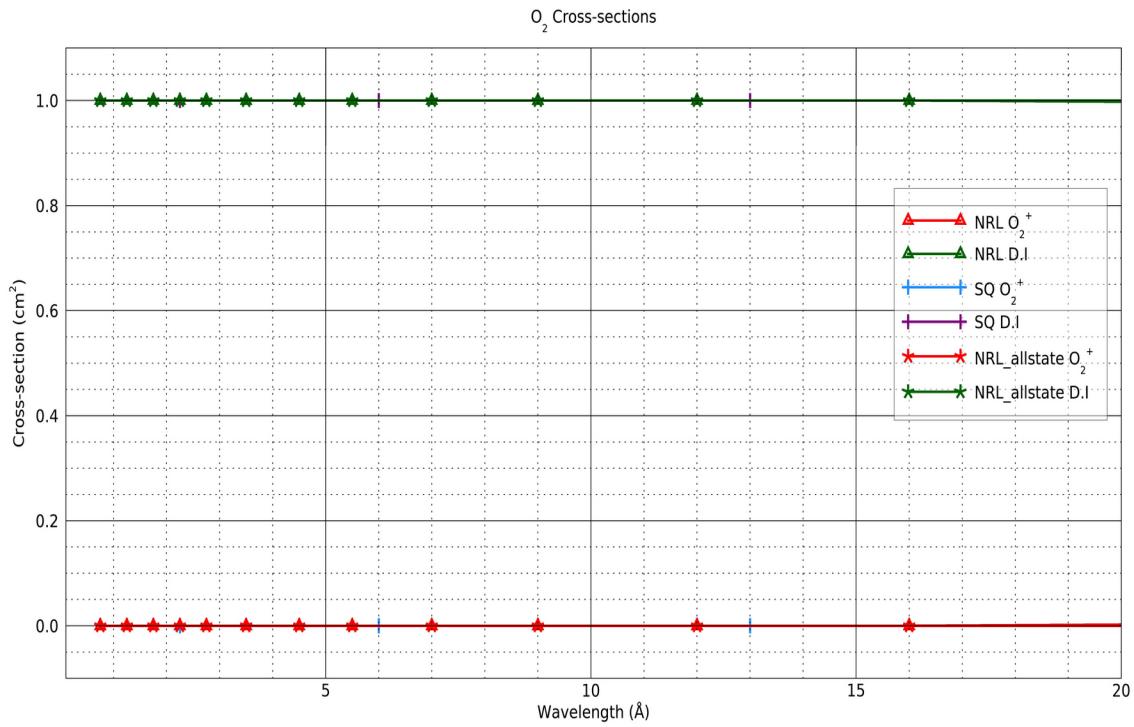


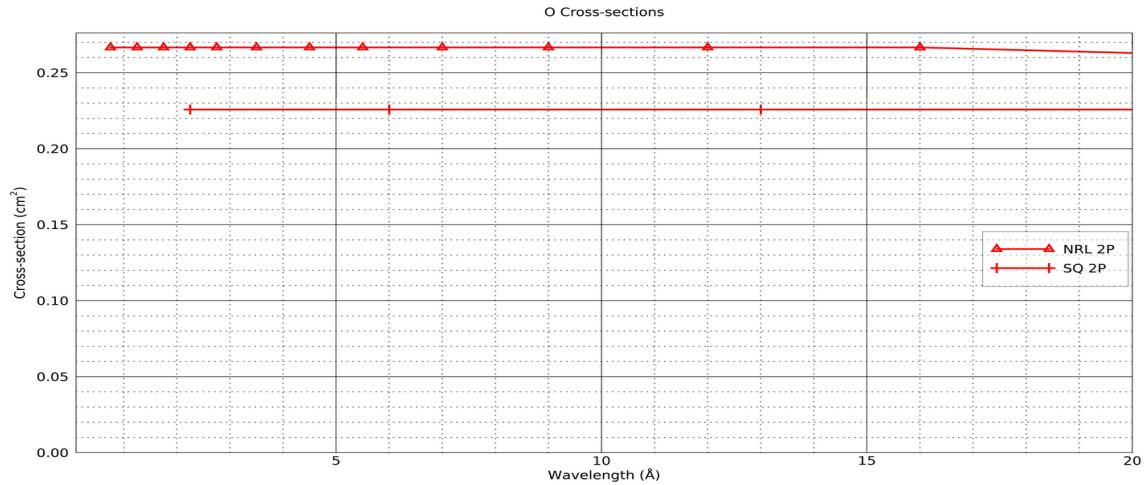
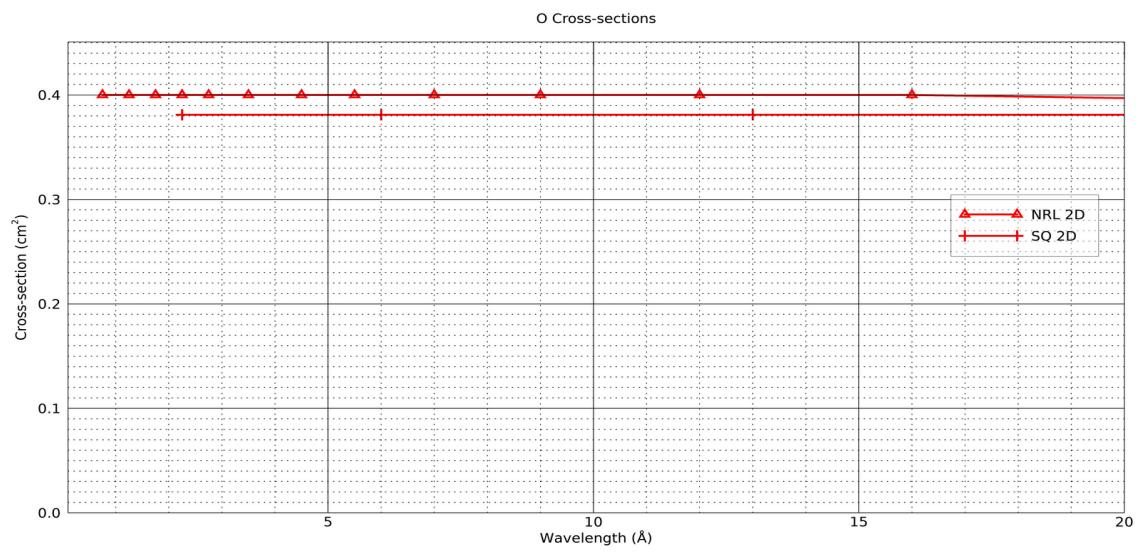
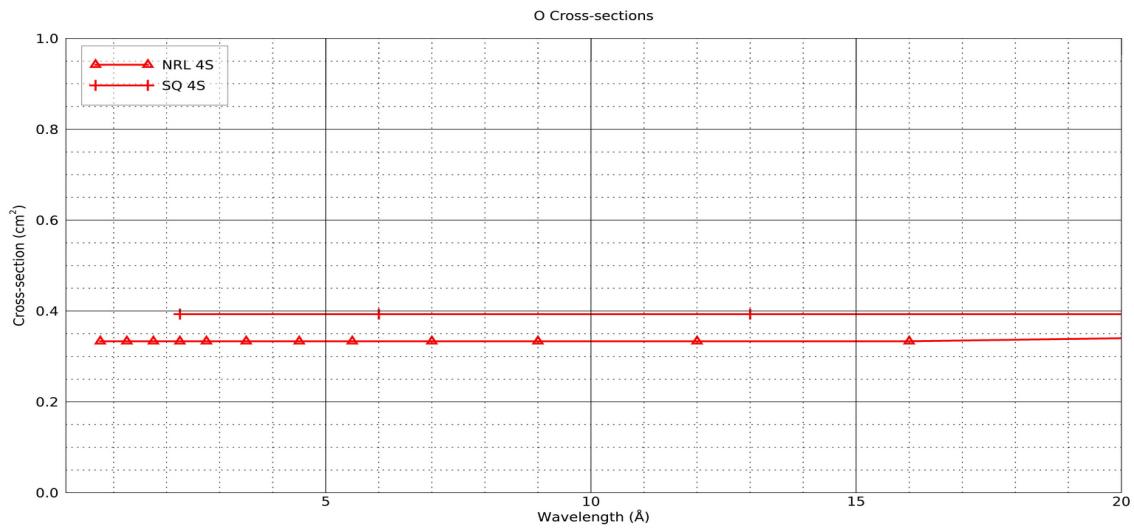
| Species | State | Binding Energy (eV) |
|---------|-----------------------------------|---------------------|
| O^+ | $4S^0$ | 13.6 |
| | $2D^0$ | 16.9 |
| | $2P^0$ | 18.6 |
| | $4P$ | 28.5 |
| | $2P$ | 40.0 |
| | $(1s)^{-1}$ | 531.7 |
| N_2^+ | X $2\Gamma_g^+$ | 15.6 |
| | A $2\Pi_u$ | 16.7 |
| | B $2\Gamma_u^+$ | 18.8 |
| | C $2\Gamma_u^+$ | 25.3 * |
| | F $2\Gamma_g^+$ | 29.0 * |
| | G $2\Gamma_g^+ + E$ $2\Gamma_u^+$ | 33.4 * |
| | H $2\Gamma_g^+$ | 36.8 * |
| | H | 37.8 * |
| | N_2^{++} | 43.6 |
| | K eject | 400.0 * |
| O_2^+ | X $2\Pi_g$ | 12.1 |
| | a $4\Pi_u + A$ $2\Pi_u$ | 16.1 |
| | b $4\Gamma_g^-$ | 18.2 |
| | B $2\Gamma_g^-$ | 20.3 * |
| | $2\Pi_u + c$ $4\Sigma_u^-$ | 23.2 * |
| | $2\Sigma_u^+$ | 27.2 * |
| | '33 eV' | 33.0 * |
| | $2,4\Gamma_g^-$ | 39.8 * |
| | K eject | 531.7 * |

* Dissociative state

N2 cross-sections







0_probabilities

| wv_lo | wv_hi | 4S | 2P | 2P |
|-------|-------|-------|-------|-------|
| 0.5 | 1.0 | 0.333 | 0.40 | 0.267 |
| 1.0 | 1.5 | 0.333 | 0.40 | 0.267 |
| 1.5 | 2.0 | 0.333 | 0.40 | 0.267 |
| 2.0 | 2.5 | 0.333 | 0.40 | 0.267 |
| 2.5 | 3.0 | 0.333 | 0.40 | 0.267 |
| 3.0 | 4.0 | 0.333 | 0.40 | 0.267 |
| 4.0 | 5.0 | 0.333 | 0.40 | 0.267 |
| 5.0 | 6.0 | 0.333 | 0.40 | 0.267 |
| 6.0 | 8.0 | 0.333 | 0.40 | 0.267 |
| 8.0 | 10.0 | 0.333 | 0.40 | 0.267 |
| 10.0 | 14.0 | 0.333 | 0.40 | 0.267 |
| 14.0 | 18.0 | 0.333 | 0.40 | 0.267 |
| 18.00 | 32 | 0.348 | 0.393 | 0.258 |
| 32 | 70 | 0.359 | 0.385 | 0.256 |

02_probabilities

| wv_lo | wv_hi | 02+ | D.I |
|-------|-------|-------|-------|
| 0.5 | 1 | 0.00 | 1.0 |
| 1 | 1.5 | 0.00 | 1.0 |
| 1.5 | 2 | 0.00 | 1.0 |
| 2 | 2.5 | 0.00 | 1.0 |
| 2.5 | 3 | 0.00 | 1.0 |
| 3 | 4 | 0.00 | 1.0 |
| 4 | 5 | 0.00 | 1.0 |
| 5 | 6 | 0.00 | 1.0 |
| 6 | 8 | 0.00 | 1.0 |
| 8 | 10 | 0.00 | 1.0 |
| 10 | 14 | 0.00 | 1.0 |
| 14 | 18 | 0.00 | 1.0 |
| 18 | 32 | 0.005 | 0.994 |
| 32 | 70 | 0.082 | 0.919 |

N2_probabilities

| wv_lo | wv_hi | N2+ | D.I |
|-------|-------|--------|-------|
| 0.5 | 1 | 0.0270 | 0.973 |
| 1 | 1.5 | 0.027 | 0.973 |
| 1.5 | 2 | 0.027 | 0.973 |
| 2 | 2.5 | 0.027 | 0.973 |
| 2.5 | 3 | 0.027 | 0.973 |
| 3 | 4 | 0.027 | 0.973 |
| 4 | 5 | 0.027 | 0.973 |
| 5 | 6 | 0.027 | 0.973 |
| 6 | 8 | 0.027 | 0.973 |
| 8 | 10 | 0.027 | 0.973 |
| 10 | 14 | 0.027 | 0.973 |
| 14 | 18 | 0.027 | 0.973 |
| 18 | 32 | 0.030 | 0.970 |
| 32 | 70 | 0.586 | 0.414 |

