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We have assembled a complete list of the most accurately measured wavelengths for all classified lines of O II. The data are based mainly on recent extensions of the observations and analysis of this spectrum carried out at the University of Lund, Sweden. We derived new optimal values for the energy levels using a computer code and the observed wavelengths for all classified lines. Relevant astrophysical wavelength measurements, appropriately weighted, were included in the level-optimization calculation. The tabulated data include about 1000 observed lines (376–11 663 Å) classified as transitions between 125 odd-parity and 133 even-parity levels. In addition to the observed wavelength values, wavelengths calculated from wavenumber differences of the levels are given for all observed lines and for more than 200 predicted lines that have not yet been observed. The calculated wavelengths are generally more accurate than the observed values, the most accurate calculated values (uncertainties 0.0005 to 0.0020 Å) being in some cases more accurate than the observed wavelengths by up to an order of magnitude. Vacuum wavelengths are given for all lines, and wavelengths in air are also included for the region above 2000 Å.

Keywords: atomic energy levels; atomic ions; atomic spectra; atomic wavelengths; atomic wavenumbers; energy-level classifications; electron configurations; forbidden lines; infrared wavelengths; infrared wavenumbers; ionization potential; oxygen; ultraviolet wavelengths.

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1. Introduction

In 1927 H. N. Russell extended the energy level analysis of the spectrum of singly-ionized oxygen and found the connection between the doublet and quartet multiplet systems [Russell, 1928]. On the basis of this connection, which had also been found by Croze and Mihul [1927], Russell was able to confirm I. S. Bowen's suggestion that two strong lines observed near 3727 Å in the spectra of gaseous nebulae were due to the forbidden $2s^2 2p^3$ $^4S^\circ - {}^2D^\circ$ transitions in O II. Forbidden lines of O II are now used for electron density determinations in such nebulae, and the O II spectrum is also important for the diagnostics of a wide variety of other astrophysical, planetary, and laboratory plasmas. Thus, for example, lines of O II are dominant in the optical spectra of early B stars; bright extreme-ultraviolet emission lines of O II have been observed in the vicinity of the Jovian satellite Io; and the O II emission spectrum dominates the day airglow spectrum in the extreme ultraviolet below 835 Å.

The earlier analyses of O II were summarized and extended by B. Edlén in 1934 and 1935. The results as presented in Moore's *Atomic Energy Levels* [1949] included values for about 150 levels. Some fifty years after Edlén's work, Eriksson and Wenåker [1984] published the first of several papers giving the results of new observations and extensions of the O II analysis carried out at the University of Lund, Sweden. Eriksson [1987] also made new wavelength measurements for the most important transitions to the ground-configuration levels (575 – 834 Å) and for the region 3945 – 4676 Å.

Pettersson and Wenåker [1990] measured about 150 lines in the region 1075 – 2133 Å and extended the analysis somewhat. Wenåker [1990] gave wavelengths for about 740 lines in the 2148 – 11 663 Å range, almost half of which had not been previously reported. His addition of some fifty new levels gave a total of more than 250 levels for this spectrum.

Eriksson [1987] used his new measurements, together with data from observations of forbidden nebular lines [Bowen, 1955; De Robertis *et al.*, 1985], to revaluate the $2s^22p^3$ ground-configuration levels and levels of the $2s2p^4$ and $2s^22p^23s$, $3p$, $3d$, and $4f$ configurations. Wenåker [1990] adopted Eriksson's values for the $2s^22p^3$ ^{2}D°, ^{2}P° and $2s2p^4$ ^{4}P, ^{2}D levels and took the values for several other levels from Pettersson and Wenåker [1990]; otherwise, he carried out an independent evaluation for most of the levels. Although Wenåker's table of levels is more complete, the Ritz-principle consistency of Eriksson's level values is superior. The level evaluations by Eriksson and Wenåker also differ in that they adopted different values for the connection between the ground-configuration levels and the system of excited-configuration levels.

The results of the new observations and analysis of O II at Lund were communicated to the late C. E. Moore, but unfortunately she was unable to complete a compilation of these data for her series of *Selected Tables of Atomic Spectra*. The present compilation was thus undertaken to provide a source of complete and optimal energy-level and wavelength data for O II. Table 1 is a list of the spectral lines given in order of increasing wavelength. A tabulation of these lines arranged into multiplets is being included in a separate volume that mainly comprises a reprinting of the *Selected Tables of Atomic Spectra* for hydrogen, carbon, nitrogen, and oxygen [Moore, 1993].

2. Sources of the Wavelength Data

We assembled a complete list of the observed wavelengths, using what appeared to be the most accurate available value for each line. These wavelengths are listed under "Observed" in Table 1. The reference for each line is indicated in the last column by symbols, the corresponding full references being given in Sec. 8. In a few cases we have given averages of suitably weighted wavelength values from different observers. The references in the table are only to the source(s) of the observed wavelengths, and may not be the appropriate citations for the original classifications of the lines.

Edlén's [1934] observations in the region below 520 Å have not been superseded, and his wavelengths for the three $2s2p^4$ ^{4}P – $2s2p^33s$ ^{4}S° lines near 740 Å are also quoted [Edlén, 1935]. Edlén used a vacuum-spark source with a 1-m grazing-incidence spectrograph. The wavelengths for two unresolved multiplets in the 400 Å region, and also for another at 910 Å, are taken from beam-foil observations by Sobatka *et al.* [1987]. The instrumental linewidth was about 1.5 Å, and the experimental uncertainties for these lines are between about 0.3 and 0.8 Å. These authors also suggested classifications of weak features near 822 and 955 Å in their spectra as transitions from the O II $2p^5$ ^{2}P° levels to the $2s2p^4$ ^{2}S and ^{2}P levels, respectively. We have omitted these features here, pending higher-resolution experiments and possible observation of the $2s2p^4$ ^{2}D – $2p^5$ ^{2}P° lines.

All of the Lund observations for the region below 2140 Å were made with a 3-m normal-incidence vacuum spectrograph. Pettersson and Wenåker used a theta-pinch discharge source with a filling pressure of 5 Pa. They estimated a wavelength error of about 0.01 Å and state that "the accuracy is limited mainly by the Doppler widths of the lines." Eriksson used a pulsed electrodeless discharge and derived most of his vacuum-ultraviolet wavelengths from observations in the second and third diffraction orders. He estimated a standard error of 0.001 or 0.002 Å for his measurements, depending on whether the values are given to four or three decimal places.

Eriksson gives these same wavelength error estimates for his observations in the 3945 – 4676 Å range, which were made with a similar pulsed source (total pressure of 26 Pa) and a 5.5-m Czerny-Turner spectrograph. Eriksson and Wenåker [1984] and Wenåker [1990] used a spark-generated electrodeless discharge (pressures of 1 – 3 Pa) and a 3-m Czerny-Turner spectrograph. They give estimated errors of about 0.01 Å, except that Wenåker estimated errors of 0.02 Å for the 5700 – 8500 Å range and 0.03 Å for wavelengths longer than 8500 Å.

Reader [1992] and Yoshino [1992] have made unpublished measurements of the three $2s^22p^3$ ^{4}S° – $2s2p^4$ ^{4}P resonance lines near 833 Å. Reader measured the two stronger lines on each of two plates obtained with a copper hollow-cathode discharge in flowing helium and the NIST 10.7-m normal-incidence vacuum spectrograph. The Cu II wavelengths used for calibration are accurate to 0.0001 Å. Yoshino measured all three O II lines on each of three plates obtained with a condensed discharge in helium (~5 kPa) and a 6.65-m normal-incidence vacuum spectrograph used in the second order. Wavelength calibration was provided by lines of the CO spectrum that had been measured against accurate atomic wavelengths in this region. Reader's values for the two stronger O II lines are 834.4657(10) and 833.3311(10) Å, in good agreement with Yoshino's values of 834.4653(15) and 833.3313(15) Å. Eriksson's value of 834.4655(10) Å also agrees very well with these measurements, and his value of 833.3294(10) Å is within the combined estimated errors. Reader measured the weaker $^4S^o_{3/2} - {}^4P_{1/2}$ line on a single plate and obtained a wavelength of 832.7608(20) Å, in agreement with Yoshino's value 832.7600(15) Å. Eriksson's value for this line was 832.7572(10) Å. We have adopted observed values of 834.4655(8), 833.3302(10), and 832.7587(15) Å for this compilation.

Bowen [1955] estimated the errors of his wavelength determinations for the $2s^22p^3$ ^{4}S° – ^{2}D° and ^{2}D° – ^{2}P° forbidden nebular lines as 0.02 and 0.10 Å, respectively, and

De Robertis *et al.* [1985] measured separations between lines of the $^2D^\circ - {}^2P^\circ$ multiplet with estimated errors of 0.015 to 0.035 Å.

3. Optimization of the Level Values

We derived the level values in Table 2 by using a level-optimization computer code [Radziemski *et al.*, 1970] and the observed wavelengths and energy-level classifications for all wavelength regions in a single calculation. The calculation also included the $2s^22p^3\ {}^2D^\circ$ and $^2P^\circ$ fine-structure determinations by De Robertis *et al.*, appropriately weighted. We first examined the results of a calculation made with relative weights appropriate for the wavelength errors estimated by the various observers. Comparisons of the Ritz-principle predicted wavelengths with observed wavelengths in the different wavelength regions revealed no systematic differences such as might result from shifts in the different sources, etc. Although the statistical behavior of the differences between the observed and Ritz-principle calculated wavelengths supported fairly well our assumption of a constant confidence level for the assigned errors in the different regions, we did in the final calculation make some adjustments in the relative weights to improve this constancy. Most of these adjustments involved smoothly varying increases in the estimated errors in parts of the 1000 – 2133 Å range.

Seven of the vacuum-ultraviolet lines measured by Eriksson are classified as possible blends of the two transitions from an upper level to the unresolved $2s^22p^3\ {}^2P^\circ_{3/2,\ 1/2}$ doublet. We assigned uncertainties of 0.002 Å to the three such lines given to four decimals to take into account the unknown effects of the possible blending. We also either doubled the nominal errors for, or omitted entirely, a number of other blended lines in Table 1. Other adjustments included our following Eriksson and Wenåker in assigning greater relative weights to the observed wavelengths for the strongest lines of the $2s^22p^24f - 2s^22p^25g$, $6g$ arrays, as compared to the weaker lines of these arrays. We entirely omitted from the calculation some, though not all, of the observed wavelengths in Table 1 having Ritz-principle wavelength discrepancies larger than the estimated experimental uncertainties by factors greater than about three. As expected, the final level values were not much affected by this procedure.

The $2s^22p^3\ {}^2D^\circ$ levels in Table 2 are probably accurate to about ± 0.10 cm^{-1}. The $2s^22p^3\ {}^2P^\circ_{3/2} - {}^2P^\circ_{1/2}$ interval is determined to about ± 0.03 cm^{-1} by the nebular observations of De Robertis *et al.*, but we estimate the uncertainty of the $^2P^\circ$ term position relative to the $2s^22p^3\ {}^4S^\circ$ and $^2D^\circ$ levels to be about 0.25 cm^{-1}. The wavelengths of important allowed (vacuum-ultraviolet) and forbidden (7320, 7330 Å) transitions involving these close $^2P^\circ$ levels are subject to uncertainties arising from definite or possible blending. A more accurate wavelength for the $2s^22p^3\ {}^2P^\circ_{3/2} - 2s2p^4\ {}^2D_{5/2}$ line at 796.68 Å would have been useful, since a transition from the upper $^2D_{5/2}$ level to the $^2P^\circ_{1/2}$ level is forbidden; this line was, however, blended with S III in Eriksson's spectra. De Robertis *et al.* evaluated the $2s^22p^3$ levels using only the nebular data [De Robertis *et al.*, 1985; Bowen, 1955] and obtained values of 40 468.1 and 40 470.1 cm^{-1} for the $^2P^\circ_{3/2}$ and $^2P^\circ_{1/2}$ levels, respectively. Eriksson apparently omitted Bowen's measurements of the $2s^22p^3\ {}^2D^\circ - {}^2P^\circ$ lines in his evaluations and derived values of 40 467.69(13) and 40 469.69(13) cm^{-1} for the $^2P^\circ$ levels. Our values for the $^2P^\circ$ levels lie between those of De Robertis *et al.* and Eriksson, because we have used all the available measurements with appropriate weighting. Our calculated wavelengths for the most important allowed and forbidden transitions involving the $2s^22p^3\ {}^2P^\circ$ levels are generally in acceptable agreement with the observed values.

Our uncertainty estimates of 0.0008 to 0.0015 Å for the $2s^22p^3\ {}^4S^\circ - 2s2p^4\ {}^4P$ wavelengths correspond to wavenumber uncertainties of 0.12 to 0.22 cm^{-1} for the ^4P levels. We estimate uncertainties of 0.25 to 0.35 cm^{-1} for the other best-determined levels of the $2s2p^4$ and $2s^22p^23s$, $3p$, $3d$, $4s$, $4p$, $4d$, $4f$, $5s$, $5g$, and $6g$ configurations relative to the ground level. The separations within the group of excited-configuration levels given to two decimals have uncertainties mainly in the range 0.025 to 0.15 cm^{-1}. Most of the level separations within the group of levels given to three decimals should be accurate within errors from less than 0.010 cm^{-1} to about 0.025 cm^{-1}.

The odd-parity levels given to one decimal place, and also the one-place levels belonging to the $(^3P)4d$, $(^3P)6s$ and $(^1D)6s$ even configurations, have estimated uncertainties from about 0.4 to 1.0 cm^{-1}. The $(^3P)5d$ and $(^1D)4d$ levels are from Edlén's measurements of transitions to $2s^22p^3$ ground-configuration levels in the region below 520 Å. Based on comparisons of his measurements with more accurate calculated values available for some other lines in this region, we assigned an uncertainty of 0.005 Å to Edlén's determinations. A more precise estimate is not important for the levels optimization, since Edlén's wavelengths have almost negligible weights except for the $(^3P)5d$ and $(^1D)4d$ levels. Most of these latter levels are probably accurate within errors of 2 to 5 cm^{-1}; we have given them to the nearest decimal to obtain calculated wavelengths agreeing with the observed values to three places.

A few high even-parity doublet levels given as tentative in Table 2 were so designated by Edlén, each being based on a single, not very strong line. We give several other high levels as tentative, mostly assigned to the $(^1D)5f$ or $(^1S)4p$ odd-parity configurations. The term designations of the $2s^22p^2nf$ and ng levels are discussed in Sec. 6.

No intercombination lines connecting the sextet levels with the other O II levels have been classified. Edlén estimated the position of the sextet system by making the difference between the quantum defects of the $2s2p^3(^5S^\circ)3s\ {}^6S^\circ$ and $(^5S^\circ)4s\ {}^6S^\circ$ terms equal to the corresponding difference for the $2s^22p^2(^3P)3s\ {}^4P$ and $(^3P)4s\ {}^4P$ terms. The change in this estimate obtained by adjustment to the more accurate ionization limits now available is small compared to the uncertainty of

the method. We have retained Edlén's estimated connection, to the nearest few cm^{-1}, by fixing the $(^5S°)3s\ ^6S°$ position at 245 400.00 + x cm^{-1}. The quantity "x" represents the unknown error of this connection.

The values for 125 odd-parity and 133 even-parity levels are listed in Table 2. The levels belonging to the doublet and quartet systems of the excited configurations have values systematically higher than those of Wenåker and of Eriksson by about 0.05 and 0.08 cm^{-1}, respectively. The value for the principal ionization energy that Wenåker derived by fitting the $2s^22p^24f$, $5f$, $5g$ and $6g$ levels to core-polarization theory, 283 270.9 ± 0.5 cm^{-1}, is not affected significantly by this difference.

4. Further Explanation of the Data in Table 1

The values of the two levels for each transition in Table 1 are given under "Levels." A question mark following the upper level indicates a tentative classification. The configurations, terms, and J values given for the two levels in successive columns of Table 1 are taken from Table 2 (see next section). A blank J value indicates that the level value represents two unresolved levels (Table 2).

The sources of the observed wavelengths were described in Sec. 2 above. The multiplet numbers in the first column are in accordance with the scheme adopted by Moore [1945, 1950, 1993].

The relative intensities in the second column are based on visual estimates related to plate blackening and are useful for comparisons within small wavelength ranges. Both Eriksson and Wenåker gave estimated relative intensities on a logarithmic scale to the base $\sqrt{2}$, and Pettersson and Wenåker used such a scale to the base 2. Edlén also adopted a rather compressed intensity scale. The relative intensities in Table 1 for wavelengths longer than 2140 Å are on the same relative scale as Wenåker's, except that we increased his values by unity to avoid zero intensities. For the 1074 – 2133 Å region, we expanded the intensity scale of Pettersson and Wenåker somewhat to avoid non-integral values, and our intensities for the 376 – 835 Å region are increased values based on those of Eriksson and/or of Edlén. We have used the following symbols to characterize the lines:

bl	blended with another line that may affect the wavelength and intensity
w	wide, diffuse, hazy, etc.
m	masked by another line
M1	magnetic-dipole transition
E2	electric-quadrupole transition

In addition to the observed wavelength values for about 1000 lines, Table 1 includes wavelengths calculated from the differences of the energy levels in Table 2 for all lines. The calculated wavelength is given for each transition contributing to a multiply classified line, multiple classifications being indicated by braces. Almost 1100 transitions are involved in the classifications of the observed lines. We also give calculated wavelengths for more than 200 selected transitions that have not been observed. These include a number of predicted multiplets in the extreme ultraviolet as well as many weaker transitions in multiplets for which stronger lines have been observed. Calculated wavelengths are also listed for all ten forbidden transitions between levels of the $2s^22p^3$ ground configuration, the dominant radiation type (M1 or E2) being indicated for each transition.

Observed and calculated wavelengths in air, and also wavelengths in vacuum, are tabulated for the region above 2000 Å. The vacuum wavelengths in this region are calculated from the levels, with a few exceptions: if the vacuum wavelength for a tentatively classified line is not followed by a question mark, the value was calculated from the observed wavelength. All conversions between vacuum wavelengths or wavenumbers and wavelengths in air were made with the five-parameter formula of Peck and Reeder [1972].

5. Accuracy of the Calculated Wavelengths

The calculated wavelengths should in general be more accurate than the observed values. Eriksson's list of calculated O II wavelengths suitable for use as standards in the region below 835 Å is extended to values below 500 Å in Table 1. The calculated wavelengths shorter than 500 Å that are given to four decimal places are probably accurate to about 0.0005 Å, and the four-place calculated wavelengths in the 500 – 835 Å region are probably accurate to about 0.0010 Å. In practice, of course, any lines observed as probable blends should to the extent possible be omitted in the selection of standards.

The four-place calculated wavelengths in the 1275 – 1565 Å range have estimated uncertainties mainly between 0.0010 and 0.0020 Å, and thus are more accurate than the observed wavelengths by up to an order of magnitude. We also give some four-place calculated wavelengths in the 1632 – 2028 Å range, with estimated uncertainties mostly between 0.0015 and 0.0025 Å. The more accurate of the three-place calculated wavelengths in the region above 1080 Å have uncertainties of 0.005 Å or less. The observed wavelengths below 1320 Å agree rather well with the calculated values, but the differences between the calculated and observed wavelengths for some of the lines above 1320 Å are several times the estimated experimental error of 0.01 Å. The calculated wavelengths correspond more accurately to the true energy separations of the levels in such cases, but it is possible (or, in some cases, known) that some of the observed lines are blends.

The most accurate calculated wavelengths in the region above 2000 Å are based on Eriksson's measurements in the 3945 – 4676 Å range, which had standard errors smaller than 0.0010 Å (observed value given to four places) or 0.002 Å (observed value given to three places). We have given four-place values for all calculated wavelengths having accuracies based on combinations of

Eriksson's measurements. This yields about eighty additional four-place wavelengths for lines observed in the 3833 – 4322 Å region, with most estimated errors in the range smaller than 0.003 Å.

In principle the least accurate of the calculated wavelengths should have uncertainties corresponding to Wenåker's estimated experimental uncertainties of 0.010, 0.02, and 0.03 Å for the ranges 2148 – 5700, 5700 – 8500, and 8500 – 11663Å, respectively. It should be noted that the differences between Wenåker's observed wavelengths for the stronger lines and more accurate calculated values available for many of them are usually well within these uncertainties. Thus, for example, Wenåker's measurements for the three lines of Multiplet 3 ($2s^22p^23s\ ^4P - 2s^22p^23p\ ^4S°$, 3712 – 3749 Å) agree with the calculated values within ±0.003 Å, which happens to be the estimated error of the calculated values.

6. Coupling Schemes and Term Designations; Theoretical Calculations for O II

The level designations in the tables are in accordance with one of three different coupling schemes: LS, $J_1\,l$, or LS_1 coupling, the configuration and term notations being standard for NIST compilations [Martin *et al.*, 1978]. Eriksson [1961] calculated the $2s^22p^24f$ and $5f$ levels and showed that these configurations are close to LS_1 pair coupling. Eriksson and Wenåker [1984] calculated the levels of the $2s^22p^24f$, $5g$, and $6g$ configurations. The $2s^22p^2ng$ levels have high $J_1\,l$-coupling purities, the lowest purity of any $5g$ level being 97.4% in this scheme.

Most of the published calculations for O II have been carried out to obtain oscillator strengths. Considering two of the more recent papers only, we note that Bell *et al.* [1991] give calculated strengths for the most important allowed multiplets involving the $2s^22p^3\ ^4S°$, $^2D°$, and $^2P°$ ground-configuration terms and compare their results with other theoretical values and with experimental values. Zeippen [1987] has refined earlier calculations of the magnetic-dipole and electric-quadrupole radiative probabilities for the transitions between levels of the ground configuration.

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Table 1. Wavelengths and Energy-Level Classifications for O I

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Vac. Wavelength (Å) Calculated	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
UV3.08			374.5722	0.00 –	266 971.23	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^4S°$–^4P	$^3/_2$–$^5/_2$	
UV3.08			374.8098	0.00 –	266 802.0	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^4S°$–^4P	$^3/_2$–$^3/_2$	
UV3.08			374.9559	0.00 –	266 698.0	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^4S°$–^4P	$^3/_2$–$^1/_2$	
UV3.07	1	376.693	376.693	0.00 –	265 468.2	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^4S°$–^4P	$^3/_2$–$^3/_2$	E1
UV3.07	1	376.745	376.745	0.00 –	265 431.5	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^4S°$–^4P	$^3/_2$–$^5/_2$	E1
UV3.06	1	377.045	377.045	0.00 –	265 220.3	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^4S°$–^4D	$^3/_2$–	E1
UV10.18			384.2658	26 810.55 –	287 047.1	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2D°$–^2D	$^5/_2$–$^5/_2$	
UV10.18			384.2680	26 810.55 –	287 045.6	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2D°$–^2D	$^5/_2$–$^3/_2$	
UV10.18			384.2953	26 830.57 –	287 047.1	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2D°$–^2D	$^3/_2$–$^5/_2$	
UV10.18			384.2976	26 830.57 –	287 045.6	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2D°$–^2D	$^3/_2$–$^3/_2$	
UV3.05	5	391.912	391.9062	0.00 –	255 163.08	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^4S°$–^4P	$^3/_2$–$^1/_2$	E1
UV3.05	10	391.943	391.9380	0.00 –	255 142.41	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^4S°$–^4P	$^3/_2$–$^3/_2$	E1
UV3.05	15	392.002	391.9954	0.00 –	255 105.01	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^4S°$–^4P	$^3/_2$–$^5/_2$	E1
UV3.04	15	392.322	392.3162	0.00 –	254 896.42	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^4S°$–^4D	$^3/_2$–$^5/_2$	E1
UV3.04			392.3394	0.00 –	254 881.37	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^4S°$–^4D	$^3/_2$–$^3/_2$	
UV10.17			397.8768	26 810.55 –	278 144.62	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2D°$–^2D	$^5/_2$–$^5/_2$	
UV10.17			397.8773?	26 810.55 –	278 144.33?	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2D°$–^2D	$^5/_2$–$^3/_2$	
UV10.17			397.9085	26 830.57 –	278 144.62	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2D°$–^2D	$^3/_2$–$^5/_2$	
UV10.17			397.9090?	26 830.57 –	278 144.33?	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2D°$–^2D	$^3/_2$–$^3/_2$	
UV10.16		401.0	401.1798	26 810.55 –	276 075.32	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2D°$–^2D	$^5/_2$–$^5/_2$	S
UV10.16			401.2121	26 830.57 –	276 075.32	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2D°$–^2D	$^3/_2$–$^5/_2$	
UV10.16			401.3269	26 810.55 –	275 983.95	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2D°$–^2D	$^5/_2$–$^3/_2$	
UV10.16			401.3592	26 830.57 –	275 983.95	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2D°$–^2D	$^3/_2$–$^3/_2$	
UV10.15			401.928?	26 810.55 –	275 611.1?	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2P	$^5/_2$–$^3/_2$	
UV10.15			401.961?	26 830.57 –	275 611.1?	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2P	$^3/_2$–$^3/_2$	
UV10.14	1	403.035	403.035	26 810.55 –	274 928.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2D	$^5/_2$–$^5/_2$	E1
UV10.14			403.054	26 810.55 –	274 916.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2D	$^5/_2$–$^3/_2$	
UV10.14			403.067	26 830.57 –	274 928.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2D	$^3/_2$–$^5/_2$	
UV10.14	1	403.087	403.087	26 830.57 –	274 916.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2D	$^3/_2$–$^3/_2$	E1
UV10.13	1	403.273	403.273	26 810.55 –	274 781.5	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2F	$^5/_2$–$^7/_2$	E1
UV10.13			403.339	26 810.55 –	274 740.7	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2F	$^5/_2$–$^5/_2$	
UV10.13	1	403.372	403.372	26 830.57 –	274 740.7	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2D°$–^2F	$^3/_2$–$^5/_2$	E1
UV17.17			405.5494	40 468.01 –	287 047.1	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2P°$–^2D	$^3/_2$–$^5/_2$	
UV17.17			405.5519	40 468.01 –	287 045.6	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2P°$–^2D	$^3/_2$–$^3/_2$	
UV17.17			405.5551	40 470.00 –	287 045.6	$2s^22p^3$–$2s^22p^2(^1D)6s$	$^2P°$–^2D	$^1/_2$–$^3/_2$	
UV17.16			413.6472	40 468.01 –	282 219.90	$2s^22p^3$–$2s^22p^2(^1S)4s$	$^2P°$–^2S	$^3/_2$–$^1/_2$	
UV17.16			413.6506	40 470.00 –	282 219.90	$2s^22p^3$–$2s^22p^2(^1S)4s$	$^2P°$–^2S	$^1/_2$–$^1/_2$	
UV10.12			415.8217	26 810.55 –	267 298.23	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2D°$–^2P	$^5/_2$–$^3/_2$	
UV10.12			415.8563	26 830.57 –	267 298.23	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2D°$–^2P	$^3/_2$–$^3/_2$	
UV10.12			416.1975?	26 830.57 –	267 101.1?	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2D°$–^2P	$^3/_2$–$^1/_2$	
UV10.11			418.332	26 810.55 –	265 855.2	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^2D°$–^2D	$^5/_2$–$^5/_2$	
UV10.11			418.367	26 830.57 –	265 855.2	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^2D°$–^2D	$^3/_2$–$^5/_2$	
UV3.03	5	418.598	418.5958	0.00 –	238 893.96	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^4S°$–^4P	$^3/_2$–$^5/_2$	E1
UV10.10	1	418.812	418.812?	26 810.55 –	265 581.2?	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^2D°$–^2F	$^5/_2$–$^7/_2$	E1
UV3.03			418.8786	0.00 –	238 732.65	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^4S°$–^4P	$^3/_2$–$^3/_2$	
UV3.03			419.0633	0.00 –	238 627.46	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^4S°$–^4P	$^3/_2$–$^1/_2$	
UV17.15		420.2	420.7398	40 468.01 –	278 144.62	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2P°$–^2D	$^3/_2$–$^5/_2$	S
UV17.15			420.7403?	40 468.01 –	278 144.33?	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2P°$–^2D	$^3/_2$–$^3/_2$	
UV17.15			420.7438?	40 470.00 –	278 144.33?	$2s^22p^3$–$2s^22p^2(^1D)5s$	$^2P°$–^2D	$^1/_2$–$^3/_2$	
UV17.13			424.4350	40 468.01 –	276 075.32	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2P°$–^2D	$^3/_2$–$^5/_2$	
UV17.14	1	424.577	424.577	40 468.01 –	275 996.5?	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P°$–^2S	$^3/_2$–$^1/_2$	E1
UV17.14			424.581	40 470.00 –	275 996.5?	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P°$–^2S	$^1/_2$–$^1/_2$	
UV17.13			424.5997	40 468.01 –	275 983.95	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2P°$–^2D	$^3/_2$–$^3/_2$	
UV17.13			424.6033	40 470.00 –	275 983.95	$2s^22p^3$–$2s^22p^2(^1S)3d$	$^2P°$–^2D	$^1/_2$–$^3/_2$	

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Calculated	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
UV17.12	1	425.273	425.273?	40 468.01 –	275 611.1?	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P^o$–^2P	$^3/_2$–$^3/_2$	E1
UV17.12			425.277?	40 470.00 –	275 611.1?	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P^o$–^2P	$^1/_2$–$^3/_2$	
UV17.11	5*w*	426.526	426.512	40 468.01 –	274 928.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P^o$–^2D	$^3/_2$–$^5/_2$	E1
UV17.11			426.534	40 468.01 –	274 916.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P^o$–^2D	$^3/_2$–$^3/_2$	
UV17.11			426.537	40 470.00 –	274 916.0	$2s^22p^3$–$2s^22p^2(^1D)4d$	$^2P^o$–^2D	$^1/_2$–$^3/_2$	
UV3.02	10	429.557	429.5601	0.00 –	232 796.298	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^2F	$^3/_2$–$^5/_2$	E1
UV3.01	30	429.647	429.6500	0.00 –	232 747.562	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^4D	$^3/_2$–$^5/_2$	E1
UV3.01			429.6530	0.00 –	232 745.981	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^4D	$^3/_2$–$^3/_2$	
UV3.01	20	429.716	429.7164	0.00 –	232 711.642	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^4D	$^3/_2$–$^1/_2$	E1
UV3	30	429.918	429.9180	0.00 –	232 602.492	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^4P	$^3/_2$–$^1/_2$	E1
UV3	40	430.041	430.0410	0.00 –	232 535.949	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^4P	$^3/_2$–$^3/_2$	E1
UV10.09			430.1491	26 810.55 –	259 288.07	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2D^o$–^2D	$^5/_2$–$^3/_2$	
UV10.09			430.1500	26 810.55 –	259 287.61	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2D^o$–^2D	$^5/_2$–$^5/_2$	
UV3	50	430.177	430.1765	0.00 –	232 462.724	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^4S^o$–^4P	$^3/_2$–$^5/_2$	E1
UV10.09			430.1862	26 830.57 –	259 288.07	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2D^o$–^2D	$^3/_2$–$^3/_2$	
UV10.09			430.1870	26 830.57 –	259 287.61	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2D^o$–^2D	$^3/_2$–$^5/_2$	
UV10.08			431.4142	26 810.55 –	258 606.35	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2D^o$–^2P	$^5/_2$–$^3/_2$	
UV10.08			431.4515	26 830.57 –	258 606.35	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2D^o$–^2P	$^3/_2$–$^3/_2$	
UV10.08			431.8149	26 830.57 –	258 411.26	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2D^o$–^2P	$^3/_2$–$^1/_2$	
UV10.07	5	436.510	436.5153	26 810.55 –	255 897.59	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2D	$^5/_2$–$^5/_2$	E1
UV10.07			436.5535	26 830.57 –	255 897.59	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2D	$^3/_2$–$^5/_2$	
UV10.07			436.6195	26 810.55 –	255 842.91	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2D	$^5/_2$–$^3/_2$	
UV10.07	1	436.649	436.6577	26 830.57 –	255 842.91	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2D	$^3/_2$–$^3/_2$	E1
UV10.06	20	437.332	437.3390	26 810.55 –	255 466.10	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2F	$^5/_2$–$^7/_2$	E1
UV10.06			437.6529	26 810.55 –	255 302.11	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2F	$^5/_2$–$^5/_2$	
UV10.06	15	437.683	437.6913	26 830.57 –	255 302.11	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2F	$^3/_2$–$^5/_2$	E1
UV10.05			437.7299	26 830.57 –	255 281.93	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2P	$^3/_2$–$^1/_2$	
UV10.05			437.8993	26 810.55 –	255 173.58	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2P	$^5/_2$–$^3/_2$	
UV10.05			437.9376	26 830.57 –	255 173.58	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2D^o$–^2P	$^3/_2$–$^3/_2$	
UV10.04	15	440.552	440.5639	26 810.55 –	253 792.40	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2P	$^5/_2$–$^3/_2$	E1
UV10.04	10	440.598	440.6027	26 830.57 –	253 792.40	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2P	$^3/_2$–$^3/_2$	E1
UV10.04			440.6074	26 830.57 –	253 789.99	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2P	$^3/_2$–$^1/_2$	
UV17.10			440.8584	40 468.01 –	267 298.23	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2P^o$–^2P	$^3/_2$–$^3/_2$	
UV17.10			440.8622	40 470.00 –	267 298.23	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2P^o$–^2P	$^1/_2$–$^3/_2$	
UV17.10			441.2418?	40 468.01 –	267 101.1?	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2P^o$–^2P	$^3/_2$–$^1/_2$	
UV17.10			441.2457?	40 470.00 –	267 101.1?	$2s^22p^3$–$2s^22p^2(^3P)6s$	$^2P^o$–^2P	$^1/_2$–$^1/_2$	
UV10.03	25	442.001	442.0119	26 810.55 –	253 048.82	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2D	$^5/_2$–$^5/_2$	E1
UV10.03			442.0159	26 810.55 –	253 046.74	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2D	$^5/_2$–$^3/_2$	
UV10.03	20	442.048	442.0510	26 830.57 –	253 048.82	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2D	$^3/_2$–$^5/_2$	E1
UV10.03			442.0550	26 830.57 –	253 046.74	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2D	$^3/_2$–$^3/_2$	
UV17.09	1	443.681	443.681	40 468.01 –	265 855.2	$2s^22p^3$–$2s^22p^2(^3P)5d$	$^2P^o$–^2D	$^3/_2$–$^5/_2$	E1
UV10.02	25	445.601	445.6045	26 810.55 –	251 224.79	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2F	$^5/_2$–$^5/_2$	E1
UV10.02			445.6097	26 810.55 –	251 222.19	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2F	$^5/_2$–$^7/_2$	
UV10.02	20	445.638	445.6443	26 830.57 –	251 224.79	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2D^o$–^2F	$^3/_2$–$^5/_2$	E1
UV17.08	5	456.997	456.9965	40 468.01 –	259 288.07	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2P^o$–^2D	$^3/_2$–$^3/_2$	E1
UV17.08			456.9975	40 468.01 –	259 287.61	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2P^o$–^2D	$^3/_2$–$^5/_2$	
UV17.08			457.0006	40 470.00 –	259 288.07	$2s^22p^3$–$2s^22p^2(^1D)4s$	$^2P^o$–^2D	$^1/_2$–$^3/_2$	
UV17.07	1	458.422	458.4247	40 468.01 –	258 606.35	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2P^o$–^2P	$^3/_2$–$^3/_2$	E1
UV17.07			458.4289	40 470.00 –	258 606.35	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2P^o$–^2P	$^1/_2$–$^3/_2$	
UV17.07			458.8350	40 468.01 –	258 411.26	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2P^o$–^2P	$^3/_2$–$^1/_2$	
UV17.07			458.8392	40 470.00 –	258 411.26	$2s^22p^3$–$2s^22p^2(^3P)5s$	$^2P^o$–^2P	$^1/_2$–$^1/_2$	
UV17.06	10	464.194	464.1888	40 468.01 –	255 897.59	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2D	$^3/_2$–$^5/_2$	E1

Table 1. Wavelengths and Energy-Level Classifications for O II – Continued

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Vac. Wavelength (Å) Calculated	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
UV17.06	5	464.310	464.3067	40 468.01 –	255 842.91	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2D	$3/2$–$3/2$	E1
UV17.06			464.3109	40 470.00 –	255 842.91	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2D	$1/2$–$3/2$	
UV17.05	15	464.785	464.7817	40 468.01 –	255 622.80	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2S	$3/2$–$1/2$	E1
UV17.05			464.7860	40 470.00 –	255 622.80	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2S	$1/2$–$1/2$	
UV17.04	5	465.529	465.5192	40 468.01 –	255 281.93	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2P	$3/2$–$1/2$	E1
UV17.04			465.5235	40 470.00 –	255 281.93	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2P	$1/2$–$1/2$	
UV17.04	10	465.760	465.7541	40 468.01 –	255 173.58	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2P	$3/2$–$3/2$	E1
UV17.04			465.7584	40 470.00 –	255 173.58	$2s^22p^3$–$2s^22p^2(^3P)4d$	$^2P^o$–^2P	$1/2$–$3/2$	
UV10.01	1	467.926	467.9308	26 810.55 –	240 517.35	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2D^o$–^2P	$5/2$–$3/2$	E1
UV10.01			467.9747	26 830.57 –	240 517.35	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2D^o$–^2P	$3/2$–$3/2$	
UV10.01			468.3853	26 830.57 –	240 330.01	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2D^o$–^2P	$3/2$–$1/2$	
UV17.03	10	468.766	468.7697	40 468.01 –	253 792.40	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2P	$3/2$–$3/2$	E1
UV17.03			468.7740	40 470.00 –	253 792.40	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2P	$1/2$–$3/2$	
UV17.03			468.7749	40 468.01 –	253 789.99	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2P	$3/2$–$1/2$	
UV17.03			468.7793	40 470.00 –	253 789.99	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2P	$1/2$–$1/2$	
UV17.02	20	470.408	470.4094	40 468.01 –	253 048.82	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2D	$3/2$–$5/2$	E1
UV17.02			470.4139	40 468.01 –	253 046.74	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2D	$3/2$–$3/2$	
UV17.02			470.4183	40 470.00 –	253 046.74	$2s^22p^3$–$2s^22p^2(^1D)3d$	$^2P^o$–^2D	$1/2$–$3/2$	
UV10	20	481.587	481.5933	26 810.55 –	234 454.634	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2D	$5/2$–$5/2$	E1
UV10	1	481.635	481.6397	26 830.57 –	234 454.634	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2D	$3/2$–$5/2$	E1
UV10	5	481.704	481.7136	26 810.55 –	234 402.797	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2D	$5/2$–$3/2$	E1
UV10	15	481.755	481.7600	26 830.57 –	234 402.797	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2D	$3/2$–$3/2$	E1
UV9	20	483.752	483.7601	26 830.57 –	233 544.59	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2P	$3/2$–$1/2$	E1
UV9	25	483.976	483.9803	26 810.55 –	233 430.53	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2P	$5/2$–$3/2$	E1
UV9	10	484.025	484.0272	26 830.57 –	233 430.53	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2P	$3/2$–$3/2$	E1
UV8	30	485.086	485.0868	26 810.55 –	232 959.210	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2F	$5/2$–$7/2$	E1
UV8	1	485.465	485.4705	26 810.55 –	232 796.298	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2F	$5/2$–$5/2$	E1
UV8	25	485.515	485.5177	26 830.57 –	232 796.298	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^2F	$3/2$–$5/2$	E1
UV7.01	5	485.572	485.5706	26 810.55 –	232 753.816	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^4D	$5/2$–$7/2$	E1
UV7.01			485.5854	26 810.55 –	232 747.562	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^4D	$5/2$–$5/2$	
UV7.01			485.5891	26 810.55 –	232 745.981	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^4D	$5/2$–$3/2$	
UV7.01	20	485.631	485.6326	26 830.57 –	232 747.562	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^4D	$3/2$–$5/2$	E1
UV7.01			485.6363	26 830.57 –	232 745.981	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2D^o$–^4D	$3/2$–$3/2$	
UV17.01	10	499.871	499.8767	40 468.01 –	240 517.35	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2P^o$–^2P	$3/2$–$3/2$	E1
UV17.01			499.8817	40 470.00 –	240 517.35	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2P^o$–^2P	$1/2$–$3/2$	
UV17.01	5	500.343	500.3452	40 468.01 –	240 330.01	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2P^o$–^2P	$3/2$–$1/2$	E1
UV17.01			500.3502	40 470.00 –	240 330.01	$2s^22p^3$–$2s^22p^2(^3P)4s$	$^2P^o$–^2P	$1/2$–$1/2$	
UV17	25	515.498	515.4995	40 468.01 –	234 454.634	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2D	$3/2$–$5/2$	E1
UV17	20	515.640	515.6372	40 468.01 –	234 402.797	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2D	$3/2$–$3/2$	E1
UV17			515.6425	40 470.00 –	234 402.797	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2D	$1/2$–$3/2$	
UV16	20	517.937	517.9292	40 468.01 –	233 544.59	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2P	$3/2$–$1/2$	E1
UV16			517.9345	40 470.00 –	233 544.59	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2P	$1/2$–$1/2$	
UV16	25	518.242	518.2354	40 468.01 –	233 430.53	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2P	$3/2$–$3/2$	E1
UV16			518.2407	40 470.00 –	233 430.53	$2s^22p^3$–$2s^22p^2(^3P)3d$	$^2P^o$–^2P	$1/2$–$3/2$	
UV15.01	15	525.9267	525.9243	40 468.01 –	230 609.45	$2s^22p^3$–$2s^22p^2(^1S)3s$	$^2P^o$–^2S	$3/2$–$1/2$	E3
UV15.01			525.9298	40 470.00 –	230 609.45	$2s^22p^3$–$2s^22p^2(^1S)3s$	$^2P^o$–^2S	$1/2$–$1/2$	
UV7	45	537.8319	537.8320	26 830.57 –	212 762.25	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2P	$3/2$–$1/2$	E3
UV7	50	538.2636	538.2616	26 810.55 –	212 593.82	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2P	$5/2$–$3/2$	E3
UV7	35*bl*	538.318	538.3196	26 830.57 –	212 593.82	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2P	$3/2$–$3/2$	E3
UV2	60	539.0855	539.0861	0.00 –	185 499.124	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^4S^o$–^4P	$3/2$–$5/2$	E3
UV2	50	539.5489	539.5473	0.00 –	185 340.577	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^4S^o$–^4P	$3/2$–$3/2$	E3
UV2	45	539.8544	539.8540	0.00 –	185 235.281	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^4S^o$–^4P	$3/2$–$1/2$	E3
UV6	25	555.059	555.0555	26 810.55 –	206 972.72	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2D^o$–^2D	$5/2$–$3/2$	E1,E3
UV6			555.0587	26 810.55 –	206 971.68	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2D^o$–^2D	$5/2$–$5/2$	

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Vac. Wavelength (Å) Calculated	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
UV6	20	555.118	555.1172	26 830.57 –	206 972.72	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2D^o$–^2D	$^3/_2$–$^3/_2$	E1,E3
UV6			555.1204	26 830.57 –	206 971.68	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2D^o$–^2D	$^3/_2$–$^5/_2$	
UV15	20	580.4058	580.4025	40 468.01 –	212 762.25	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2P	$^3/_2$–$^1/_2$	E3
UV15			580.4092	40 470.00 –	212 762.25	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2P	$^1/_2$–$^1/_2$	
UV15	25	580.9707	580.9704	40 468.01 –	212 593.82	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2P	$^3/_2$–$^3/_2$	E3
UV15			580.9771	40 470.00 –	212 593.82	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2P	$^1/_2$–$^3/_2$	
UV14	25	600.586	600.5836	40 468.01 –	206 972.72	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2P^o$–^2D	$^3/_2$–$^3/_2$	E3
UV14			600.5874	40 468.01 –	206 971.68	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2P^o$–^2D	$^3/_2$–$^5/_2$	
UV14			600.5908	40 470.00 –	206 972.72	$2s^22p^3$–$2s^22p^2(^1D)3s$	$^2P^o$–^2D	$^1/_2$–$^3/_2$	
UV5	35	616.3029	616.3026	26 810.55 –	189 068.514	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2D^o$–^2P	$^5/_2$–$^3/_2$	E3
UV5	20	616.378	616.3786	26 830.57 –	189 068.514	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2D^o$–^2P	$^3/_2$–$^3/_2$	E3
UV5	30	617.0632	617.0631	26 830.57 –	188 888.543	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2D^o$–^2P	$^3/_2$–$^1/_2$	E3
UV13	60	644.157	644.1537	40 468.01 –	195 710.47	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2S	$^3/_2$–$^1/_2$	E3
UV13			644.1619	40 470.00 –	195 710.47	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2S	$^1/_2$–$^1/_2$	
UV12	40	672.946	672.9452	40 468.01 –	189 068.514	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2P^o$–^2P	$^3/_2$–$^3/_2$	E3
UV12			672.9542	40 470.00 –	189 068.514	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2P^o$–^2P	$^1/_2$–$^3/_2$	
UV12	35	673.768	673.7612	40 468.01 –	188 888.543	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2P^o$–^2P	$^3/_2$–$^1/_2$	E3
UV12			673.7703	40 470.00 –	188 888.543	$2s^22p^3$–$2s^22p^2(^3P)3s$	$^2P^o$–^2P	$^1/_2$–$^1/_2$	
UV4			718.4633	26 810.55 –	165 996.50	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2D	$^5/_2$–$^3/_2$	
UV4	85	718.5036	718.5048	26 810.55 –	165 988.46	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2D	$^5/_2$–$^5/_2$	E3
UV4	80	718.5663	718.5667	26 830.57 –	165 996.50	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2D	$^3/_2$–$^3/_2$	E3
UV4			718.6082	26 830.57 –	165 988.46	$2s^22p^3$–$2s2p^4$	$^2D^o$–^2D	$^3/_2$–$^5/_2$	
UV17.21	15	739.949	739.9496	119 837.21 –	254 981.55	$2s2p^4$–$2s2p^3(^5S^o)3s$	^4P–$^4S^o$	$^5/_2$–$^3/_2$	E2
UV17.21	4	740.838	740.8443	120 000.43 –	254 981.55	$2s2p^4$–$2s2p^3(^5S^o)3s$	^4P–$^4S^o$	$^3/_2$–$^3/_2$	E2
UV17.21	1	741.293	741.2970	120 082.86 –	254 981.55	$2s2p^4$–$2s2p^3(^5S^o)3s$	^4P–$^4S^o$	$^1/_2$–$^3/_2$	E2
UV11			796.6319	40 468.01 –	165 996.50	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2D	$^3/_2$–$^3/_2$	
UV11	40	796.644	796.6445	40 470.00 –	165 996.50	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2D	$^1/_2$–$^3/_2$	E3
UV11	50*bl*	796.682	796.6829	40 468.01 –	165 988.46	$2s^22p^3$–$2s2p^4$	$^2P^o$–^2D	$^3/_2$–$^5/_2$	E3
UV1	100	832.7587	832.7583	0.00 –	120 082.86	$2s^22p^3$–$2s2p^4$	$^4S^o$–^4P	$^3/_2$–$^1/_2$	E3,R,Y
UV1	150	833.3302	833.3303	0.00 –	120 000.43	$2s^22p^3$–$2s2p^4$	$^4S^o$–^4P	$^3/_2$–$^3/_2$	E3,R,Y
UV1	200	834.4655	834.4654	0.00 –	119 837.21	$2s^22p^3$–$2s2p^4$	$^4S^o$–^4P	$^3/_2$–$^5/_2$	E3,R,Y
UV17.26		909.7	909.974	165 988.46 –	275 881.65	$2s2p^4$–$2s^22p^2(^1D)4f$F	^2D–$^2[3]^o$	$^5/_2$–	S
UV17.26			910.041	165 996.50 –	275 881.65	$2s2p^4$–$2s^22p^2(^1D)4f$F	^2D–$^2[3]^o$	$^3/_2$–	
UV3.09	8	1074.962	1074.961	26 810.55 –	119 837.21	$2s^22p^3$–$2s2p^4$	$^2D^o$–^4P	$^5/_2$–$^5/_2$	PW
UV17.20	25	1083.139	1083.134	119 837.21 –	212 161.881	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4S^o$	$^5/_2$–$^3/_2$	PW
UV17.20	20	1085.056	1085.052	120 000.43 –	212 161.881	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4S^o$	$^3/_2$–$^3/_2$	PW
UV17.20	18	1086.022	1086.024	120 082.86 –	212 161.881	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4S^o$	$^1/_2$–$^3/_2$	PW
UV17.19	50	1128.081	1128.070	119 837.21 –	208 484.202	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^5/_2$–$^5/_2$	PW
UV17.19	40	1129.251	1129.241	119 837.21 –	208 392.258	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^5/_2$–$^3/_2$	PW
UV17.19	40	1130.147	1130.151	120 000.43 –	208 484.202	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^3/_2$–$^5/_2$	PW
UV17.19	20	1131.325	1131.326	120 000.43 –	208 392.258	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^3/_2$–$^3/_2$	PW
UV17.19	35	1131.914	1131.917	120 000.43 –	208 346.104	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^3/_2$–$^1/_2$	PW
UV17.19	35	1132.389	1132.382	120 082.86 –	208 392.258	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^1/_2$–$^3/_2$	PW
UV17.19	18	1132.975	1132.974	120 082.86 –	208 346.104	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4P^o$	$^1/_2$–$^1/_2$	PW
UV17.37	8	1142.601	1142.602	185 499.124 –	273 018.7	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)7p$	^4P–$^4P^o$	$^5/_2$–$^5/_2$	PW
UV17.36	7	1142.947	1142.947	185 235.281 –	272 728.4	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)7p$	^4P–$^4D^o$	$^1/_2$–$^3/_2$	PW
UV17.36	10	1143.258	1143.259	185 499.124 –	272 968.4	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)7p$	^4P–$^4D^o$	$^5/_2$–$^7/_2$	PW
UV17.36	9	1143.548	1143.548	185 340.577 –	272 787.7	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)7p$	^4P–$^4D^o$	$^3/_2$–$^5/_2$	PW
UV17.18	10	1147.246	1147.246	119 837.21 –	207 002.482	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4D^o$	$^5/_2$–$^7/_2$	PW
UV17.18	10	1148.895	1148.888	119 837.21 –	206 877.865	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4D^o$	$^5/_2$–$^5/_2$	PW
UV17.18			1150.098	119 837.21 –	206 786.286	$2s2p^4$–$2s^22p^2(^3P)3p$	^4P–$^4D^o$	$^5/_2$–$^3/_2$	

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Vac. Wavelength (Å) Calculated	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
UV17.18			1151.047	120 000.43 –	206 877.865	$2s2p^4–2s^22p^2(^3P)3p$	$^4P–^4D^o$	$^3/_2–^5/_2$	
UV17.18			1152.261	120 000.43 –	206 786.286	$2s2p^4–2s^22p^2(^3P)3p$	$^4P–^4D^o$	$^3/_2–^3/_2$	
UV17.18			1152.999	120 000.43 –	206 730.762	$2s2p^4–2s^22p^2(^3P)3p$	$^4P–^4D^o$	$^3/_2–^1/_2$	
UV17.18	15	1153.368	1153.357	120 082.86 –	206 786.286	$2s2p^4–2s^22p^2(^3P)3p$	$^4P–^4D^o$	$^1/_2–^3/_2$	PW
UV17.18	15	1154.102	1154.096	120 082.86 –	206 730.762	$2s2p^4–2s^22p^2(^3P)3p$	$^4P–^4D^o$	$^1/_2–^1/_2$	PW
UV17.35	12	1200.720	1200.720?	185 499.124 –	268 782.5?	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4P^o$	$^5/_2–^5/_2$	PW
UV17.34	8	1201.485	1201.485	185 235.281 –	268 465.6	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4D^o$	$^1/_2–^3/_2$	PW
UV17.34	12	1201.822	1201.823	185 340.577 –	268 547.50	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4D^o$	$^3/_2–^5/_2$	PW
UV17.34	12	1202.025	1202.025	185 499.124 –	268 692.1	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4D^o$	$^5/_2–^7/_2$	PW
UV17.34	4*bl*?	1203.004	1203.007	185 340.577 –	268 465.6	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4D^o$	$^3/_2–^3/_2$	PW
UV17.34			1204.117	185 499.124 –	268 547.50	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4D^o$	$^5/_2–^5/_2$	
UV17.34			1205.306	185 499.124 –	268 465.6	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^4P–^4D^o$	$^5/_2–^3/_2$	
UV10.19			1256.047	40 468.01 –	120 082.86	$2s^22p^3–2s2p^4$	$^2P^o–^4P$	$^3/_2–^1/_2$	
UV10.19	6	1256.074	1256.078	40 470.00 –	120 082.86	$2s^22p^3–2s2p^4$	$^2P^o–^4P$	$^1/_2–^1/_2$	PW
UV10.19	10	1257.345	1257.349	40 468.01 –	120 000.43	$2s^22p^3–2s2p^4$	$^2P^o–^4P$	$^3/_2–^3/_2$	PW
UV10.19			1257.380	40 470.00 –	120 000.43	$2s^22p^3–2s2p^4$	$^2P^o–^4P$	$^1/_2–^3/_2$	
UV19.08	6	1258.156	1258.158	188 888.543 –	268 369.8	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^2P–^2S^o$	$^1/_2–^1/_2$	PW
UV10.19	10	1259.931	1259.935	40 468.01 –	119 837.21	$2s^22p^3–2s2p^4$	$^2P^o–^4P$	$^3/_2–^5/_2$	PW
UV19.08	10	1261.016	1261.014	189 068.514 –	268 369.8	$2s^22p^2(^3P)3s–2s^22p^2(^3P)6p$	$^2P–^2S^o$	$^3/_2–^1/_2$	PW
UV19.07			1272.2283	188 888.543 –	267 490.79	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2P^o$	$^1/_2–^3/_2$	
UV19.07			1272.7223	188 888.543 –	267 460.28	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2P^o$	$^1/_2–^1/_2$	
UV19.07	10	1275.143	1275.1479	189 068.514 –	267 490.79	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2P^o$	$^3/_2–^3/_2$	PW
UV19.07			1275.6442	189 068.514 –	267 460.28	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2P^o$	$^3/_2–^1/_2$	
UV19.06	10	1286.409	1286.4090	188 888.543 –	266 624.32	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2D^o$	$^1/_2–^3/_2$	PW
UV19.06	12	1289.127	1289.1238	189 068.514 –	266 640.58	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2D^o$	$^3/_2–^5/_2$	PW
UV19.06	6	1289.387	1289.3941	189 068.514 –	266 624.32	$2s^22p^2(^3P)3s–2s^22p^2(^1D)4p$	$^2P–^2D^o$	$^3/_2–^3/_2$	PW
UV17.33	8	1315.338	1315.3393	185 235.281 –	261 261.29	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^1/_2–^3/_2$	PW
UV17.33	8	1315.518	1315.522	185 340.577 –	261 356.02	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^3/_2–^5/_2$	PW
UV17.33	5*bl*	1316.150	1316.1499	185 235.281 –	261 214.47	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^1/_2–^1/_2$	PW
UV17.33	10	1317.162	1317.1636	185 340.577 –	261 261.29	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^3/_2–^3/_2$	PW
UV17.33			1317.9764	185 340.577 –	261 214.47	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^3/_2–^1/_2$	
UV17.33	12	1318.269	1318.272	185 499.124 –	261 356.02	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^5/_2–^5/_2$	PW
UV17.33	10	1319.918	1319.9200	185 499.124 –	261 261.29	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4P^o$	$^5/_2–^3/_2$	PW
UV17.32	10	1320.567	1320.5968	185 235.281 –	260 958.62	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^1/_2–^3/_2$	PW
UV17.32	12	1320.957	1320.9437	185 340.577 –	261 044.03	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^3/_2–^5/_2$	PW
UV17.32	15	1321.317	1321.3275	185 499.124 –	261 180.59	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^5/_2–^7/_2$	PW
UV17.32			1321.4111	185 235.281 –	260 911.96	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^1/_2–^1/_2$	
UV17.32	9	1322.402	1322.4357	185 340.577 –	260 958.62	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^3/_2–^3/_2$	PW
UV17.32			1323.2522	185 340.577 –	260 911.96	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^3/_2–^1/_2$	
UV17.32	8	1323.731	1323.7160	185 499.124 –	261 044.03	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^5/_2–^5/_2$	PW
UV17.32			1325.2143	185 499.124 –	260 958.62	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^4P–^4D^o$	$^5/_2–^3/_2$	
UV19.05	7	1373.437	1373.4338	188 888.543 –	261 698.75	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^2P–^2D^o$	$^1/_2–^3/_2$	PW
UV19.05	8	1373.595	1373.5995	189 068.514 –	261 869.94	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^2P–^2D^o$	$^3/_2–^5/_2$	PW
UV19.05	4	1376.826	1376.8371	189 068.514 –	261 698.75	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^2P–^2D^o$	$^3/_2–^3/_2$	PW
UV19.04	4	1392.806	1392.8018	188 888.543 –	260 686.27	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^2P–^2S^o$	$^1/_2–^1/_2$	PW
UV19.04	8	1396.304	1396.3018	189 068.514 –	260 686.27	$2s^22p^2(^3P)3s–2s^22p^2(^3P)5p$	$^2P–^2S^o$	$^3/_2–^1/_2$	PW
UV17.31	6	1433.772	1433.7684	185 235.281 –	254 981.55	$2s^22p^2(^3P)3s–2s2p^3(^5S^o)3s$	$^4P–^4S^o$	$^1/_2–^3/_2$	PW
UV17.31	8	1435.943	1435.9363	185 340.577 –	254 981.55	$2s^22p^2(^3P)3s–2s2p^3(^5S^o)3s$	$^4P–^4S^o$	$^3/_2–^3/_2$	PW
UV17.31	8	1439.233	1439.2128	185 499.124 –	254 981.55	$2s^22p^2(^3P)3s–2s2p^3(^5S^o)3s$	$^4P–^4S^o$	$^5/_2–^3/_2$	PW
UV17.25	15	1502.838	1502.886	165 988.46 –	232 527.09	$2s2p^4–2s^22p^2(^1D)3p$	$^2D–^2P^o$	$^5/_2–^3/_2$	PW
UV17.25	10	1503.045	1503.068	165 996.50 –	232 527.09	$2s2p^4–2s^22p^2(^1D)3p$	$^2D–^2P^o$	$^3/_2–^3/_2$	PW
UV17.25	12	1504.121	1504.123	165 996.50 –	232 480.44	$2s2p^4–2s^22p^2(^1D)3p$	$^2D–^2P^o$	$^3/_2–^1/_2$	PW
UV19.03	6	1559.946	1559.9444	188 888.543 –	252 993.39	$2s^22p^2(^3P)3s–2s^22p^2(^1S)3p$	$^2P–^2P^o$	$^1/_2–^3/_2$	PW
UV19.03	8	1560.087	1560.0944	188 888.543 –	252 987.23	$2s^22p^2(^3P)3s–2s^22p^2(^1S)3p$	$^2P–^2P^o$	$^1/_2–^1/_2$	PW
UV17.24			1562.989	165 988.46 –	229 968.44	$2s2p^4–2s^22p^2(^1D)3p$	$^2D–^2D^o$	$^5/_2–^3/_2$	

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Calculated	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
UV17.24	3	1563.150	1563.185	165 996.50 –	229 968.44	$2s2p^4$–$2s^22p^2(^1D)3p$	^2D–$^2D^\circ$	$^3/_2$–$^3/_2$	PW
UV17.24	3	1563.485	1563.511	165 988.46 –	229 947.07	$2s2p^4$–$2s^22p^2(^1D)3p$	^2D–$^2D^\circ$	$^5/_2$–$^5/_2$	PW
UV17.24			1563.708	165 996.50 –	229 947.07	$2s2p^4$–$2s^22p^2(^1D)3p$	^2D–$^2D^\circ$	$^3/_2$–$^5/_2$	
UV19.03	10	1564.329	1564.3362	189 068.514 –	252 993.39	$2s^22p^2(^3P)3s$–$2s^22p^2(^1S)3p$	^2P–$^2P^\circ$	$^3/_2$–$^3/_2$	PW
UV19.03	5	1564.463	1564.4870	189 068.514 –	252 987.23	$2s^22p^2(^3P)3s$–$2s^22p^2(^1S)3p$	^2P–$^2P^\circ$	$^3/_2$–$^1/_2$	PW
UV20.02	5	1578.384	1578.384	203 942.288 –	267 298.23	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^2S^\circ$–^2P	$^1/_2$–$^3/_2$	PW
UV20.02			1583.310?	203 942.288 –	267 101.1?	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^2S^\circ$–^2P	$^1/_2$–$^1/_2$	
UV17.23	20	1593.354	1593.397	165 988.46 –	228 747.45	$2s2p^4$–$2s^22p^2(^1D)3p$	^2D–$^2F^\circ$	$^5/_2$–$^7/_2$	PW
UV17.23	10	1593.977	1593.997	165 988.46 –	228 723.84	$2s2p^4$–$2s^22p^2(^1D)3p$	^2D–$^2F^\circ$	$^5/_2$–$^5/_2$	PW
UV17.23	18	1594.189	1594.201	165 996.50 –	228 723.84	$2s2p^4$–$2s^22p^2(^1D)3p$	^2D–$^2F^\circ$	$^3/_2$–$^5/_2$	PW
UV30	8	1616.963	1616.929	214 229.671 –	276 075.32	$2s^22p^2(^3P)3p$–$2s^22p^2(^1S)3d$	$^2P^\circ$–^2D	$^3/_2$–$^5/_2$	PW
UV30			1617.756	214 169.920 –	275 983.95	$2s^22p^2(^3P)3p$–$2s^22p^2(^1S)3d$	$^2P^\circ$–^2D	$^1/_2$–$^3/_2$	
UV30			1619.321	214 229.671 –	275 983.95	$2s^22p^2(^3P)3p$–$2s^22p^2(^1S)3d$	$^2P^\circ$–^2D	$^3/_2$–$^3/_2$	
UV17.30	5	1632.681	1632.7054	185 235.281 –	246 483.317	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^1/_2$–$^3/_2$	PW
UV17.30			1635.5172	185 340.577 –	246 483.317	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^3/_2$–$^3/_2$	
UV17.30	8	1636.249	1636.2581	185 340.577 –	246 455.629	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^3/_2$–$^5/_2$	PW
UV17.30			1637.0683	185 235.281 –	246 320.086	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^1/_2$–$^1/_2$	
UV17.29	8	1637.824	1637.8262	185 235.281 –	246 291.822	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4S^\circ$	$^1/_2$–$^3/_2$	PW
UV17.30	10	1639.767	1639.7692	185 499.124 –	246 483.317	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^5/_2$–$^3/_2$	PW
UV17.30	10	1639.891	1639.8951	185 340.577 –	246 320.086	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^3/_2$–$^1/_2$	PW
UV17.30	12	1640.517	1640.5140	185 499.124 –	246 455.629	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4P^\circ$	$^5/_2$–$^5/_2$	PW
UV17.29			1640.6556	185 340.577 –	246 291.822	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4S^\circ$	$^3/_2$–$^3/_2$	
UV17.29	6	1644.924	1644.9344	185 499.124 –	246 291.822	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4S^\circ$	$^5/_2$–$^3/_2$	PW
UV17.28	10	1650.664	1650.6711	185 235.281 –	245 816.70	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^1/_2$–$^3/_2$	PW
UV17.28	12	1651.176	1651.1828	185 340.577 –	245 903.224	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^3/_2$–$^5/_2$	PW
UV17.28			1651.9890	185 235.281 –	245 768.37	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^1/_2$–$^1/_2$	
UV17.28	15	1652.045	1652.0687	185 499.124 –	246 029.295	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^5/_2$–$^7/_2$	PW
UV17.28	10	1653.540	1653.5452	185 340.577 –	245 816.70	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^3/_2$–$^3/_2$	PW
UV17.28			1654.8677	185 340.577 –	245 768.37	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^3/_2$–$^1/_2$	
UV17.28	10	1655.505	1655.5168	185 499.124 –	245 903.224	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^5/_2$–$^5/_2$	PW
UV17.28			1657.8916	185 499.124 –	245 816.70	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^4P–$^4D^\circ$	$^5/_2$–$^3/_2$	
UV20.05			1661.545	206 786.286 –	266 971.23	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^3/_2$–$^5/_2$	
UV20.05	6	1664.060	1664.077	206 877.865 –	266 971.23	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^5/_2$–$^5/_2$	PW
UV20.05			1664.690	206 730.762 –	266 802.0	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^1/_2$–$^3/_2$	
UV20.05			1666.230	206 786.286 –	266 802.0	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^3/_2$–$^3/_2$	
UV20.05	10	1667.565	1667.535	207 002.482 –	266 971.23	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^7/_2$–$^5/_2$	PW
UV20.05			1667.577	206 730.762 –	266 698.0	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^1/_2$–$^1/_2$	
UV20.05	8	1668.794	1668.777	206 877.865 –	266 802.0	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^5/_2$–$^3/_2$	PW
UV20.05	6	1669.138	1669.123	206 786.286 –	266 698.0	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4D^\circ$–^4P	$^3/_2$–$^1/_2$	PW
UV20.11	9	1675.907	1675.915	206 971.68 –	266 640.58	$2s^22p^2(^1D)3s$–$2s^22p^2(^1D)4p$	^2D–$^2D^\circ$	$^5/_2$–$^5/_2$	PW
UV20.11			1675.944	206 972.72 –	266 640.58	$2s^22p^2(^1D)3s$–$2s^22p^2(^1D)4p$	^2D–$^2D^\circ$	$^3/_2$–$^5/_2$	
UV20.11			1676.372	206 971.68	266 624.32	$2s^22p^2(^1D)3s$ $2s^22p^2(^1D)4p$	^2D $^2D^\circ$	$^5/_2$ $^3/_2$	
UV20.11	8	1676.394	1676.401	206 972.72 –	266 624.32	$2s^22p^2(^1D)3s$–$2s^22p^2(^1D)4p$	^2D–$^2D^\circ$	$^3/_2$–$^3/_2$	PW
UV20.10	10	1677.378	1677.384	206 971.68 –	266 588.33	$2s^22p^2(^1D)3s$–$2s^22p^2(^1D)4p$	^2D–$^2F^\circ$	$^5/_2$–$^7/_2$	PW
UV20.10			1677.626	206 971.68 –	266 579.73	$2s^22p^2(^1D)3s$–$2s^22p^2(^1D)4p$	^2D–$^2F^\circ$	$^5/_2$–$^5/_2$	
UV20.10	10	1677.647	1677.655	206 972.72 –	266 579.73	$2s^22p^2(^1D)3s$–$2s^22p^2(^1D)4p$	^2D–$^2F^\circ$	$^3/_2$–$^5/_2$	PW
UV35	7	1683.762	1683.761?	230 609.45 –	290 000.3?	$2s^22p^2(^1S)3s$–$2s^22p^2(^1S)4p$	^2S–$^2P^\circ$	$^1/_2$–$^3/_2$	PW
UV35	8	1684.033	1684.033?	230 609.45 –	289 990.7?	$2s^22p^2(^1S)3s$–$2s^22p^2(^1S)4p$	^2S–$^2P^\circ$	$^1/_2$–$^1/_2$	PW
UV19.02	8	1691.477	1691.4267	188 888.543 –	248 010.23	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^2P–$^2D^\circ$	$^1/_2$–$^3/_2$	PW
UV19.02			1691.5286	189 068.514 –	248 186.64	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^2P–$^2D^\circ$	$^3/_2$–$^5/_2$	
UV19.02	4	1696.614	1696.5913	189 068.514 –	248 010.23	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)4p$	^2P–$^2D^\circ$	$^3/_2$–$^3/_2$	PW
UV20.14	8	1707.113	1707.097	208 392.258 –	266 971.23	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4P^\circ$–^4P	$^3/_2$–$^5/_2$	PW
UV20.14	9	1709.790	1709.781	208 484.202 –	266 971.23	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4P^\circ$–^4P	$^5/_2$–$^5/_2$	PW
UV20.14	6	1710.707	1710.691	208 346.104 –	266 802.0	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)6s$	$^4P^\circ$–^4P	$^1/_2$–$^3/_2$	PW

Table 1. Wavelengths and Energy-Level Classifications for O II – Continued

Mult. No.	Rel. Int.	Vac. Wavelength (Å) Observed	Calculated	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
UV20.14	6	1712.039	1712.043	208 392.258 –	266 802.0	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4P°–^4P$	$^3/_2–^3/_2$	PW
UV20.14	5	1713.730	1713.740	208 346.104 –	266 698.0	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4P°–^4P$	$^1/_2–^1/_2$	PW
UV32			1714.582	228 723.84 –	287 047.1	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2F°–^2D$	$^5/_2–^5/_2$	
UV32	8	1714.640	1714.626	228 723.84 –	287 045.6	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2F°–^2D$	$^5/_2–^3/_2$	PW
UV20.14	8	1714.719	1714.742	208 484.202 –	266 802.0	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4P°–^4P$	$^5/_2–^3/_2$	PW
UV20.14	8	1715.094	1715.097	208 392.258 –	266 698.0	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4P°–^4P$	$^3/_2–^1/_2$	PW
UV32	8	1715.300	1715.276	228 747.45 –	287 047.1	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2F°–^2D$	$^7/_2–^5/_2$	PW
UV19.11	15	1745.726	1745.721	195 710.47 –	252 993.39	$2s2p^4–2s^22p^2(^1S)3p$	$^2S–^2P°$	$^1/_2–^3/_2$	PW
UV19.11	12	1745.897	1745.909	195 710.47 –	252 987.23	$2s2p^4–2s^22p^2(^1S)3p$	$^2S–^2P°$	$^1/_2–^1/_2$	PW
UV34	7	1751.289	1751.313	229 947.07 –	287 047.1	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2D°–^2D$	$^5/_2–^5/_2$	PW
UV34			1751.359	229 947.07 –	287 045.6	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2D°–^2D$	$^5/_2–^3/_2$	
UV34			1751.968	229 968.44 –	287 047.1	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2D°–^2D$	$^3/_2–^5/_2$	
UV34	7	1751.994	1752.014	229 968.44 –	287 045.6	$2s^22p^2(^1D)3p–2s^22p^2(^1D)6s$	$^2D°–^2D$	$^3/_2–^3/_2$	PW
UV19.01	10*bl*	1780.994	1780.9836	188 888.543 –	245 037.29	$2s^22p^2(^3P)3s–2s^22p^2(^3P)4p$	$^2P–^2S°$	$^1/_2–^1/_2$	PW
UV19.01	14	1786.708	1786.7105	189 068.514 –	245 037.29	$2s^22p^2(^3P)3s–2s^22p^2(^3P)4p$	$^2P–^2S°$	$^3/_2–^1/_2$	PW
UV21.06			1792.882	211 522.117 –	267 298.23	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2D°–^2P$	$^3/_2–^3/_2$	
UV21.06	10	1799.025	1799.030	211 712.732 –	267 298.23	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2D°–^2P$	$^5/_2–^3/_2$	PW
UV21.06	10	1799.207	1799.241?	211 522.117 –	267 101.1?	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2D°–^2P$	$^3/_2–^1/_2$	PW
UV20.09	8	1805.173	1805.172	206 971.68 –	262 368.05	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2P°$	$^5/_2–^3/_2$	PW
UV20.09			1805.206	206 972.72 –	262 368.05	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2P°$	$^3/_2–^3/_2$	
UV20.09	6	1807.896	1807.857	206 972.72 –	262 286.82	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2P°$	$^3/_2–^1/_2$	PW
UV20.08	10	1821.545	1821.551	206 971.68 –	261 869.94	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^5/_2–^5/_2$	PW
UV20.08			1821.586	206 972.72 –	261 869.94	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^3/_2–^5/_2$	
UV21.10	8	1824.503	1824.506	212 161.881 –	266 971.23	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4S°–^4P$	$^3/_2–^5/_2$	PW
UV20.08	8	1827.276	1827.249	206 971.68 –	261 698.75	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^5/_2–^3/_2$	PW
UV20.08			1827.284	206 972.72 –	261 698.75	$2s^22p^2(^1D)3s–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^3/_2–^3/_2$	
UV20.01	12	1829.362	1829.3555	203 942.288 –	258 606.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2S°–^2P$	$^1/_2–^3/_2$	PW
UV21.10	5*bl*	1830.128	1830.157	212 161.881 –	266 802.0	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4S°–^4P$	$^3/_2–^3/_2$	PW
UV21.10	6	1833.649	1833.647	212 161.881 –	266 698.0	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^4S°–^4P$	$^3/_2–^1/_2$	PW
UV20.01	9	1835.906	1835.9076	203 942.288 –	258 411.26	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2S°–^2P$	$^1/_2–^1/_2$	PW
UV21.21	8	1882.159	1882.147	212 762.25 –	265 893.06	$2s2p^4–2s^22p^2(^3P)5f$ D	$^2P–^2[1]°$	$^1/_2–^1/_2$	PW
UV29			1882.236	214 169.920 –	267 298.23	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2P°–^2P$	$^1/_2–^3/_2$	
UV21.20	9	1882.400	1882.365	212 593.82 –	265 718.48	$2s2p^4–2s^22p^2(^3P)5f$ G	$^2P–^2[3]°$	$^3/_2–^5/_2$	PW
UV29	9	1884.350	1884.355	214 229.671 –	267 298.23	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2P°–^2P$	$^3/_2–^3/_2$	PW
UV21.19	8	1885.246	1885.253	212 593.82 –	265 637.10	$2s2p^4–2s^22p^2(^3P)5f$ D	$^2P–^2[3]°$	$^3/_2–^5/_2$	PW
UV21.18	6	1886.652	1886.649	212 762.25 –	265 766.28	$2s2p^4–2s^22p^2(^3P)5f$ D	$^2P–^2[2]°$	$^1/_2–^3/_2$	PW
UV29	5	1889.246	1889.246?	214 169.920 –	267 101.1?	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2P°–^2P$	$^1/_2–^1/_2$	PW
UV29			1891.381?	214 229.671 –	267 101.1?	$2s^22p^2(^3P)3p–2s^22p^2(^3P)6s$	$^2P°–^2P$	$^3/_2–^1/_2$	
UV19.10	8	1893.789	1893.766	195 710.47 –	248 515.30	$2s2p^4–2s^22p^2(^3P)4p$	$^2S–^2P°$	$^1/_2–^3/_2$	PW
UV19.10			1896.959	195 710.47 –	248 426.41	$2s2p^4–2s^22p^2(^3P)4p$	$^2S–^2P°$	$^1/_2–^1/_2$	
UV20.04			1953.9331	206 786.286 –	257 965.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^3/_2–^5/_2$	
UV20.04	10	1957.441	1957.4358	206 877.865 –	257 965.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^5/_2–^5/_2$	PW
UV20.04	8	1958.122	1958.1286	206 730.762 –	257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^1/_2–^3/_2$	PW
UV20.04	10	1960.265	1960.2599	206 786.286 –	257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^3/_2–^3/_2$	PW
UV20.04			1962.1317	206 730.762 –	257 695.74	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^1/_2–^1/_2$	
UV20.04	15	1962.210	1962.2222	207 002.482 –	257 965.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^7/_2–^5/_2$	PW
UV20.04	12	1963.793	1963.7852	206 877.865 –	257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^5/_2–^3/_2$	PW
UV20.04	10	1964.269	1964.2717	206 786.286 –	257 695.74	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^3/_2–^1/_2$	PW

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
UV20.13	10	2016.589	2016.5822	2017.2331	208 392.258	– 257 965.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^3/_2–^5/_2$	PW
UV20.13	12	2020.340	2020.3299	2020.9815	208 484.202	– 257 965.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^5/_2–^5/_2$	PW
UV20.13	10	2021.445	2021.4364	2022.0882	208 346.104	– 257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^1/_2–^3/_2$	PW
UV31			2022.788	2023.440	228 723.84	– 278 144.62	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2F°–^2D$	$^5/_2–^5/_2$	
UV31	10	2022.768	2022.800?	2023.420	228 723.84	– 278 144.33?	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2F°–^2D$	$^5/_2–^3/_2$	PW
UV20.13	10	2023.332	2023.3250	2023.9772	208 392.258	– 257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^3/_2–^3/_2$	PW
UV31	12*bl*	2023.740	2023.755	2024.407	228 747.45	– 278 144.62	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2F°–^2D$	$^7/_2–^5/_2$	PW
UV20.13	5	2025.694	2025.7048	2026.3574	208 346.104	– 257 695.74	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^1/_2–^1/_2$	PW
UV20.13	10	2027.103	2027.0978	2027.7507	208 484.202	– 257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^5/_2–^3/_2$	PW
UV20.13	10	2027.603	2027.6014	2028.2543	208 392.258	– 257 695.74	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^3/_2–^1/_2$	PW
UV17.22	12*bl*	2072.2	2072.255	2072.916	165 988.46	– 214 229.671	$2s2p^4–2s^22p^2(^3P)3p$	$^2D–^2P°$	$^5/_2–^3/_2$	PW
UV17.22	5	2072.601	2072.601	2073.262	165 996.50	– 214 229.671	$2s2p^4–2s^22p^2(^3P)3p$	$^2D–^2P°$	$^3/_2–^3/_2$	PW
UV33	8	2074.104	2074.133	2074.794	229 947.07	– 278 144.62	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2D°–^2D$	$^5/_2–^5/_2$	PW
UV33			2074.145?	2074.807?	229 947.07	– 278 144.33?	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2D°–^2D$	$^5/_2–^3/_2$	
UV33			2075.053	2075.715	229 968.44	– 278 144.62	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2D°–^2D$	$^3/_2–^5/_2$	
UV33	8	2075.058	2075.065?	2075.727	229 968.44	– 278 144.33?	$2s^22p^2(^1D)3p–2s^22p^2(^1D)5s$	$^2D°–^2D$	$^3/_2–^3/_2$	PW
UV17.22	12	2075.169	2075.172	2075.834	165 996.50	– 214 169.920	$2s2p^4–2s^22p^2(^3P)3p$	$^2D–^2P°$	$^3/_2–^1/_2$	PW
UV21.05	10	2092.876	2092.876	2093.541	211 522.117	– 259 288.07	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2D°–^2D$	$^3/_2–^3/_2$	PW
UV21.05			2092.896	2093.562	211 522.117	– 259 287.61	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2D°–^2D$	$^3/_2–^5/_2$	
UV20.03	8	2099.880	2099.872	2100.538	206 730.762	– 254 337.61	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^1/_2–^3/_2$	PW
UV20.03	7	2100.069	2100.071	2100.737	206 877.865	– 254 480.20	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^5/_2–^7/_2$	PW
UV20.03			2100.080	2100.746	206 786.286	– 254 388.42	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^3/_2–^5/_2$	
UV20.03	8	2100.664	2100.725	2101.391	207 002.482	– 254 590.00	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^7/_2–^9/_2$	PW
UV21.05			2101.263	2101.929	211 712.732	– 259 288.07	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2D°–^2D$	$^5/_2–^3/_2$	
UV21.05	12	2101.283	2101.283	2101.950	211 712.732	– 259 287.61	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2D°–^2D$	$^5/_2–^5/_2$	PW
UV20.03	6	2102.325	2102.324	2102.991	206 786.286	– 254 337.61	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^3/_2–^3/_2$	PW
UV20.03	6	2104.133	2104.128	2104.795	206 877.865	– 254 388.42	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^5/_2–^5/_2$	PW
UV20.03			2105.584	2106.251	207 002.482	– 254 480.20	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^7/_2–^7/_2$	
UV20.03			2106.381	2107.049	206 877.865	– 254 337.61	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^5/_2–^3/_2$	
UV20.03			2109.662	2110.331	207 002.482	– 254 388.42	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4D°–^4F$	$^7/_2–^5/_2$	
UV21.04	8	2123.202	2123.182	2123.853	211 522.117	– 258 606.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^3/_2–^3/_2$	PW
UV21.04	12	2131.818	2131.813	2132.486	211 712.732	– 258 606.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^5/_2–^3/_2$	PW
UV21.04	10	2131.997	2132.017	2132.690	211 522.117	– 258 411.26	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^3/_2–^1/_2$	PW
UV20.12	1	2148.222	2148.220	2148.896	208 484.202	– 255 019.73	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4P°–^4D$	$^5/_2–^7/_2$	W
UV20.12			2148.232	2148.908	208 346.104	– 254 881.37	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4P°–^4D$	$^1/_2–^3/_2$	
UV20.12			2149.669	2150.345	208 392.258	– 254 896.42	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4P°–^4D$	$^3/_2–^5/_2$	
UV21.09	4	2182.580	2182.569	2183.252	212 161.881	– 257 965.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4S°–^4P$	$^3/_2–^5/_2$	W
UV21.09	4	2190.481	2190.469	2191.154	212 161.881	– 257 799.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4S°–^4P$	$^3/_2–^3/_2$	W
UV21.09	3	2195.464	2195.482	2196.168	212 161.881	– 257 695.74	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^4S°–^4P$	$^3/_2–^1/_2$	W
UV28	1	2215.701	2215.713	2216.403	214 169.920	– 259 288.07	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2P°–^2D$	$^1/_2–^3/_2$	W
UV28			2218.651	2219.342	214 229.671	– 259 288.07	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2P°–^2D$	$^3/_2–^3/_2$	
UV28	1	2218.679	2218.674	2219.365	214 229.671	– 259 287.61	$2s^22p^2(^3P)3p–2s^22p^2(^1D)4s$	$^2P°–^2D$	$^3/_2–^5/_2$	W
UV27	1	2249.719	2249.708	2250.406	214 169.920	– 258 606.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2P°–^2P$	$^1/_2–^3/_2$	W
UV27	7	2252.746	2252.738	2253.436	214 229.671	– 258 606.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2P°–^2P$	$^3/_2–^3/_2$	W
UV27	3	2259.625	2259.630	2260.329	214 169.920	– 258 411.26	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2P°–^2P$	$^1/_2–^1/_2$	W
UV27	1	2262.685	2262.686	2263.386	214 229.671	– 258 411.26	$2s^22p^2(^3P)3p–2s^22p^2(^3P)5s$	$^2P°–^2P$	$^3/_2–^1/_2$	W
UV21.03	8	2283.447	2283.444	2284.148	211 522.117	– 255 302.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2D°–^2F$	$^3/_2–^5/_2$	W
UV21.03	9	2284.836	2284.833	2285.538	211 712.732	– 255 466.10	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2D°–^2F$	$^5/_2–^7/_2$	W
UV19	14	2290.839	2290.846	2291.552	188 888.543	– 232 527.09	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2P°$	$^1/_2–^3/_2$	W
UV19	15	2293.301	2293.297	2294.004	188 888.543	– 232 480.44	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2P°$	$^1/_2–^1/_2$	W
UV21.03			2293.430	2294.137	211 712.732	– 255 302.11	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2D°–^2F$	$^5/_2–^5/_2$	
UV19	17	2300.331	2300.333	2301.042	189 068.514	– 232 527.09	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2P°$	$^3/_2–^3/_2$	W
UV19	14	2302.808	2302.800	2303.514	189 068.514	– 232 480.44	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2P°$	$^3/_2–^1/_2$	W
UV45			2307.645	2308.355	232 745.981	– 276 066.88	$2s^22p^2(^3P)3d–2s^22p^2(^1D)4f$ D	$^4D–^2[2]°$	$^3/_2–^5/_2$	
UV45			2307.648	2308.358	232 745.981	– 276 066.81	$2s^22p^2(^3P)3d–2s^22p^2(^1D)4f$ D	$^4D–^2[2]°$	$^3/_2–^3/_2$	

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
UV45	5	2307.721	2307.729	2308.439	232 747.562	– 276 066.88	$2s^22p^2(^3P)3d–2s^22p^2(^1D)4f$ D	$^4D–^2[2]^\circ$	$^5/_2–^5/_2$	W
UV45			2307.733	2308.443	232 747.562	– 276 066.81	$2s^22p^2(^3P)3d–2s^22p^2(^1D)4f$ D	$^4D–^2[2]^\circ$	$^5/_2–^3/_2$	
UV21.14	8	2313.077	2313.051	2313.762	212 593.82	– 255 813.472	$2s2p^4–2s^22p^2(^3P)4f$ D	$^2P–^2[2]^\circ$	$^3/_2–^5/_2$	W
UV21.14			2313.091	2313.802	212 593.82	– 255 812.728	$2s2p^4–2s^22p^2(^3P)4f$ D	$^2P–^2[2]^\circ$	$^3/_2–^3/_2$	
UV21.17	9	2316.139	2316.124	2316.836	212 593.82	– 255 756.131	$2s2p^4–2s^22p^2(^3P)4f$ G	$^2P–^2[3]^\circ$	$^3/_2–^5/_2$	W
UV21.16	9	2316.765	2316.779	2317.491	212 762.25	– 255 912.37	$2s2p^4–2s^22p^2(^3P)4f$ D	$^2P–^2[1]^\circ$	$^1/_2–^1/_2$	W
UV21.16			2316.781	2317.493	212 762.25	– 255 912.32	$2s2p^4–2s^22p^2(^3P)4f$ D	$^2P–^2[1]^\circ$	$^1/_2–^3/_2$	
UV21.15	11	2319.687	2319.682	2320.395	212 593.82	– 255 689.939	$2s2p^4–2s^22p^2(^3P)4f$ D	$^2P–^2[3]^\circ$	$^3/_2–^5/_2$	W
UV21.14	9	2322.142	2322.141	2322.855	212 762.25	– 255 812.728	$2s2p^4–2s^22p^2(^3P)4f$ D	$^2P–^2[2]^\circ$	$^1/_2–^3/_2$	W
UV21.08	3	2324.797	2324.803	2325.517	212 161.881	– 255 163.08	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4S^\circ–^4P$	$^3/_2–^1/_2$	W
UV21.08	6	2325.918	2325.921	2326.635	212 161.881	– 255 142.41	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4S^\circ–^4P$	$^3/_2–^3/_2$	W
UV21.08	7	2327.038	2327.047	2328.661	212 161.881	255 105.01	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4S^\circ–^4P$	$^3/_2–^5/_2$	W
UV21.07	6	2339.302	2339.311	2340.028	212 161.881	– 254 896.42	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^4S^\circ–^4D$	$^3/_2–^5/_2$	W
UV21.02			2365.005	2365.728	211 522.117	– 253 792.40	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2P$	$^3/_2–^3/_2$	
UV21.02	9	2365.138	2365.140	2365.863	211 522.117	– 253 789.99	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2P$	$^3/_2–^1/_2$	W
UV21.02	11	2375.731	2375.719	2376.445	211 712.732	– 253 792.40	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2P$	$^5/_2–^3/_2$	W
UV26	2	2398.902	2398.905	2399.636	214 169.920	– 255 842.91	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2D$	$^1/_2–^3/_2$	W
UV26	7	2399.189	2399.197	2399.928	214 229.671	– 255 897.59	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2D$	$^3/_2–^5/_2$	W
UV26	3	2402.356	2402.350	2403.081	214 229.671	– 255 842.91	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2D$	$^3/_2–^3/_2$	W
UV20.07	14	2406.391	2406.376	2407.108	206 971.68	– 248 515.30	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2P^\circ$	$^5/_2–^3/_2$	W
UV20.07			2406.437	2407.169	206 972.72	– 248 515.30	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2P^\circ$	$^3/_2–^3/_2$	
UV21.01			2407.357	2408.089	211 522.117	– 253 048.82	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2D$	$^3/_2–^5/_2$	
UV21.01	13	2407.470	2407.477	2408.210	211 522.117	– 253 046.74	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2D$	$^3/_2–^3/_2$	W
UV20.07	7	2411.622	2411.597	2412.330	206 972.72	– 248 426.41	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2P^\circ$	$^3/_2–^1/_2$	W
UV25			2411.644	2412.378	214 169.920	– 255 622.80	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2S$	$^1/_2–^1/_2$	
UV25	6	2415.121	2415.126	2415.860	214 229.671	– 255 622.80	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2S$	$^3/_2–^1/_2$	W
UV21.01	14	2418.459	2418.459	2419.194	211 712.732	– 253 048.82	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2D$	$^5/_2–^5/_2$	W
UV21.01			2418.580	2419.315	211 712.732	– 253 046.74	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2D$	$^5/_2–^3/_2$	
UV20.06	15	2425.564	2425.567	2426.303	206 971.68	– 248 186.64	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2D^\circ$	$^5/_2–^5/_2$	W
UV20.06			2425.628	2426.365	206 972.72	– 248 186.64	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2D^\circ$	$^3/_2–^5/_2$	
UV24	5	2431.652	2431.641	2432.379	214 169.920	– 255 281.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2P$	$^1/_2–^1/_2$	W
UV18	20	2433.534	2433.542	2434.281	188 888.543	– 229 968.44	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2D^\circ$	$^1/_2–^3/_2$	W
UV24	2	2435.189	2435.181	2435.920	214 229.671	– 255 281.93	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2P$	$^3/_2–^1/_2$	W
UV20.06			2435.994	2436.733	206 971.68	– 248 010.23	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2D^\circ$	$^5/_2–^3/_2$	
UV20.06	14	2436.051	2436.056	2436.795	206 972.72	– 248 010.23	$2s^22p^2(^1D)3s–2s^22p^2(^3P)4p$	$^2D–^2D^\circ$	$^3/_2–^3/_2$	W
UV24	2	2438.066	2438.067	2438.807	214 169.920	– 255 173.58	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2P$	$^1/_2–^3/_2$	W
UV24	8	2441.626	2441.626	2442.366	214 229.671	– 255 173.58	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4d$	$^2P^\circ–^2P$	$^3/_2–^3/_2$	W
UV18	16	2444.248	2444.251	2444.992	189 068.514	– 229 968.44	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2D^\circ$	$^3/_2–^3/_2$	W
UV18	22	2445.538	2445.529	2446.270	189 068.514	– 229 947.07	$2s^22p^2(^3P)3s–2s^22p^2(^1D)3p$	$^2P–^2D^\circ$	$^3/_2–^5/_2$	W
1.01F	M1		2470.219	2470.966	0.00	– 40 470.00	$2s^22p^3–2s^22p^3$	$^4S^\circ–^2P^\circ$	$^3/_2–^1/_2$	
1.01F	M1		2470.341	2471.088	0.00	– 40 468.01	$2s^22p^3–2s^22p^3$	$^4S^\circ–^2P^\circ$	$^3/_2–^3/_2$	
UV21	12	2517.974	2517.964	2518.722	211 522.117	– 251 224.79	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2F$	$^3/_2–^5/_2$	W
UV23			2523.061	2523.820	214 169.920	– 253 792.40	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2P$	$^1/_2–^3/_2$	
UV23	7	2523.212	2523.214	2523.973	214 169.920	– 253 789.99	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2P$	$^1/_2–^1/_2$	W
UV23	11	2526.869	2526.872	2527.631	214 229.671	– 253 792.40	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2P$	$^3/_2–^3/_2$	W
UV23			2527.026	2527.785	214 229.671	– 253 789.99	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2P$	$^3/_2–^1/_2$	
UV21			2530.112	2530.873	211 712.732	– 251 224.79	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2F$	$^5/_2–^5/_2$	
UV21	13	2530.274	2530.279	2531.040	211 712.732	– 251 222.19	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2D^\circ–^2F$	$^5/_2–^7/_2$	W
UV22	11	2571.454	2571.457	2572.227	214 169.920	– 253 046.74	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2D$	$^1/_2–^3/_2$	W
UV22	13	2575.271	2575.277	2576.048	214 229.671	– 253 048.82	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2D$	$^3/_2–^5/_2$	W
UV22			2575.415	2576.186	214 229.671	– 253 046.74	$2s^22p^2(^3P)3p–2s^22p^2(^1D)3d$	$^2P^\circ–^2D$	$^3/_2–^3/_2$	
UV19.09	8	2715.365	2715.360	2716.165	195 710.47	– 232 527.09	$2s2p^4–2s^22p^2(^1D)3p$	$^2S–^2P^\circ$	$^1/_2–^3/_2$	W
UV19.09	6	2718.828	2718.805	2719.611	195 710.47	– 232 480.44	$2s2p^4–2s^22p^2(^1D)3p$	$^2S–^2P^\circ$	$^1/_2–^1/_2$	W
UV20	17	2733.289	2733.294	2734.103	203 942.288	– 240 517.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2S^\circ–^2P$	$^1/_2–^3/_2$	W
UV20	15	2747.367	2747.367	2748.180	203 942.288	– 240 330.01	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2S^\circ–^2P$	$^1/_2–^1/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
UV21.13	6	2783.026	2783.029	2783.850	212 593.82	– 248 515.30	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^2P^\circ$	3/2–3/2	W
UV21.13	2	2789.934	2789.933	2790.756	212 593.82	– 248 426.41	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^2P^\circ$	3/2–1/2	W
UV47	3	2796.644	2796.655	2797.480	240 517.35	– 276 263.81	$2s^22p^2(^3P)4s$–$2s^22p^2(^1D)4f$ P	^2P–$^2[1]^\circ$	3/2–	W
UV21.13	1	2803.101	2803.109	2803.935	212 762.25	– 248 426.41	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^2P^\circ$	1/2–1/2	W
UV21.12	8	2808.729	2808.728	2809.555	212 593.82	– 248 186.64	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^2D^\circ$	3/2–5/2	W
UV21.12			2822.719	2823.550	212 593.82	– 248 010.23	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^2D^\circ$	3/2–3/2	
UV21.12	7	2836.220	2836.208	2837.042	212 762.25	– 248 010.23	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^2D^\circ$	1/2–3/2	W
UV42	9	2884.214	2884.221	2885.067	231 296.126	– 265 957.37	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[2]^\circ$	3/2–3/2	W
UV40	4	2884.778	2884.756	2885.602	231 350.087	– 266 004.90	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[4]^\circ$	5/2–7/2	W
UV41			2885.799	2886.646	231 350.087	– 265 992.37	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[3]^\circ$	5/2–5/2	
UV49	5*w*	2887.964	2887.964?	2888.811	251 222.19	– 285 838.51?	$2s^22p^2(^1D)3d$–$2s^22p^2(^1D)5f$ G	^2F–$^2[4]^\circ$	7/2–9/2	W
UV42			2888.203	2889.050	231 350.087	– 265 963.54	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[2]^\circ$	5/2–5/2	
UV40	6	2891.289	2891.254	2892.102	231 427.970	– 266 004.90	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[4]^\circ$	7/2–7/2	W
UV40	7	2891.684	2891.685	2892.533	231 427.970	– 265 999.75	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[4]^\circ$	7/2–9/2	W
UV41	3	2892.306	2892.302	2893.150	231 427.970	– 265 992.37	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[3]^\circ$	7/2–5/2	W
UV41			2892.307	2893.155	231 427.970	– 265 992.31	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[3]^\circ$	7/2–7/2	
UV39	8	2897.510	2897.505	2898.354	231 427.970	– 265 930.31	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[5]^\circ$	7/2–9/2	W
UV40			2899.832	2900.682	231 530.246	– 266 004.90	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[4]^\circ$	9/2–7/2	
UV40	7	2900.267	2900.265	2901.115	231 530.246	– 265 999.75	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[4]^\circ$	9/2–9/2	W
UV41			2900.891	2901.741	231 530.246	– 265 992.31	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4F–$^2[3]^\circ$	9/2–7/2	
UV37	8	2904.245	2904.238	2905.089	231 296.126	– 265 718.48	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[3]^\circ$	3/2–5/2	W
UV38	8	2905.010	2905.004	2905.856	231 350.087	– 265 763.36	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[4]^\circ$	5/2–7/2	W
UV39			2906.120	2906.971	231 530.246	– 265 930.31	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[5]^\circ$	9/2–9/2	
UV39	13	2906.553	2906.553	2907.404	231 530.246	– 265 925.19	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[5]^\circ$	9/2–11/2	W
UV37	6	2908.643	2908.637	2909.489	231 350.087	– 265 720.38	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[3]^\circ$	5/2–7/2	W
UV37	3	2908.781	2908.798	2909.650	231 350.087	– 265 718.48	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[3]^\circ$	5/2–5/2	W
UV36	8	2911.130	2911.121	2911.973	231 296.126	– 265 637.10	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ D	^4F–$^2[3]^\circ$	3/2–5/2	W
UV38			2911.594	2912.447	231 427.970	– 265 763.36	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[4]^\circ$	7/2–7/2	
UV38	11	2911.769	2911.770	2912.622	231 427.970	– 265 761.29	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[4]^\circ$	7/2–9/2	W
UV37	2	2915.243	2915.244	2916.097	231 427.970	– 265 720.38	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[3]^\circ$	7/2–7/2	W
UV36	8	2915.578	2915.576	2916.429	231 350.087	– 265 638.59	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ D	^4F–$^2[3]^\circ$	5/2–7/2	W
UV36			2915.702	2916.556	231 350.087	– 265 637.10	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ D	^4F–$^2[3]^\circ$	5/2–5/2	
UV38			2920.470	2921.325	231 530.246	– 265 761.29	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4F–$^2[4]^\circ$	9/2–9/2	
UV21.11	3	2964.169	2964.182	2965.048	212 593.82	– 246 320.086	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^4P^\circ$	3/2–1/2	W
UV48	4	2966.098	2966.088	2966.954	248 515.30	– 282 219.90	$2s^22p^2(^3P)4p$–$2s^22p^2(^1S)4s$	$^2P^\circ$–^2S	3/2–1/2	W
UV46	4	2972.769	2972.745	2973.613	232 959.210	– 266 588.33	$2s^22p^2(^3P)3d$–$2s^22p^2(^1D)4p$	^2F–$^2F^\circ$	7/2–7/2	W
UV21.11	5	2979.049	2979.061	2979.930	212 762.25	– 246 320.086	$2s2p^4$–$2s^22p^2(^3P)4p$	^2P–$^4P^\circ$	1/2–1/2	W
UV44	3	2980.449	2980.451	2981.321	232 462.724	– 266 004.90	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4P–$^2[4]^\circ$	5/2–7/2	W
UV43	4	2990.673	2990.668	2991.541	232 535.949	– 265 963.54	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4P–$^2[2]^\circ$	3/2–5/2	W
UV43			2991.221	2992.093	232 535.949	– 265 957.37	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4P–$^2[2]^\circ$	3/2–3/2	
UV50	7*w*	2995.871	2995.810?	2996.745	252 608.28	– 285 978.5?	$2s^22p^2(^1D)3d$–$2s^22p^2(^1D)5f$ H	^2G–$^2[5]^\circ$	9/2–	W
UV50			2995.916?	2996.745	252 609.46	– 285 978.5?	$2s^22p^2(^1D)3d$–$2s^22p^2(^1D)5f$ H	^2G–$^2[5]^\circ$	7/2–9/2	
56.03			2996.937	2997.811	232 535.949	– 265 893.62	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ D	^4P–$^2[1]^\circ$	3/2–3/2	
UV43			2997.188	2998.062	232 602.492	– 265 957.37	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4P–$^2[2]^\circ$	1/2–3/2	
56.01	5	3001.696	3001.693	3002.568	232 462.724	– 265 767.55	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ D	^4P–$^2[2]^\circ$	5/2–5/2	W
56.03	8	3002.977	3002.978	3003.854	232 602.492	– 265 893.06	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ D	^4P–$^2[1]^\circ$	1/2–1/2	W
56.02	10	3005.958	3005.950	3006.826	232 462.724	– 265 720.38	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4P–$^2[3]^\circ$	5/2–7/2	W
74.01	10	3005.958	3005.979	3006.855	232 747.562	– 266 004.90	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4D–$^2[4]^\circ$	5/2–7/2	W
56.02			3006.122	3006.998	232 462.724	– 265 718.48	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ G	^4P–$^2[3]^\circ$	5/2–5/2	
74.01	5	3006.565	3006.544	3007.421	232 753.816	– 266 004.90	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4D–$^2[4]^\circ$	7/2–7/2	W
74.01	14*bl*	3007.035	3007.010	3007.887	232 753.816	– 265 999.75	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4D–$^2[4]^\circ$	7/2–9/2	W
73.03			3007.029	3007.905	232 711.642	– 265 957.37	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)5f$ F	^4D–$^2[2]^\circ$	1/2–3/2	

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
74			3007.112	3007.988	232 747.562	– 265 992.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]^\circ$	$^5/_2–^5/_2$	
74			3007.118	3007.994	232 747.562	– 265 992.31	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]^\circ$	$^5/_2–^7/_2$	
74	7	3007.681	3007.678	3008.554	232 753.816	– 265 992.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]^\circ$	$^7/_2–^5/_2$	W
74			3007.683	3008.560	232 753.816	– 265 992.31	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]^\circ$	$^7/_2–^7/_2$	
56.01	9	3008.318	3008.307	3009.184	232 535.949	– 265 767.55	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4P–^2[2]^\circ$	$^3/_2–^5/_2$	W
56.01			3008.422	3009.299	232 535.949	– 265 766.28	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4P–^2[2]^\circ$	$^3/_2–^3/_2$	
73.03	7	3009.570	3009.579	3010.456	232 745.981	– 265 963.54	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[2]^\circ$	$^3/_2–^5/_2$	W
73.03			3009.722	3010.599	232 747.562	– 265 963.54	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[2]^\circ$	$^5/_2–^5/_2$	
73.03			3010.138	3011.015	232 745.981	– 265 957.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^4D–^2[2]^\circ$	$^3/_2–^3/_2$	
83.01	9	3011.534	3011.527	3012.405	232 796.298	– 265 992.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[3]^\circ$	$^5/_2–^5/_2$	W
83.01			3011.533	3012.410	232 796.298	– 265 992.31	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[3]^\circ$	$^5/_2–^7/_2$	
56.02			3012.756	3013.634	232 535.949	– 265 718.48	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4P–^2[3]^\circ$	$^3/_2–^5/_2$	
73.02	8	3012.825	3012.806	3013.684	232 711.642	– 265 893.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[1]^\circ$	$^1/_2–^3/_2$	W
73.02			3012.857	3013.735	232 711.642	– 265 893.06	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[1]^\circ$	$^1/_2–^1/_2$	
56	11	3013.357	3013.361	3014.239	232 462.724	– 265 638.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4P–^2[3]^\circ$	$^5/_2–^7/_2$	W
56			3013.497	3014.375	232 462.724	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4P–^2[3]^\circ$	$^5/_2–^5/_2$	
84.01	7	3014.158	3014.145	3015.023	232 796.298	– 265 963.54	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[2]^\circ$	$^5/_2–^5/_2$	W
56.01	8	3014.469	3014.459	3015.337	232 602.492	– 265 766.28	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4P–^2[2]^\circ$	$^1/_2–^3/_2$	W
73.02			3015.928	3016.806	232 745.981	– 265 893.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[1]^\circ$	$^3/_2–^3/_2$	
73.02	7	3015.974	3015.978	3016.857	232 745.981	– 265 893.06	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[1]^\circ$	$^3/_2–^1/_2$	W
56	5	3020.173	3020.163	3021.043	232 535.949	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4P–^2[3]^\circ$	$^3/_2–^5/_2$	W
84	7	3025.218	3025.232	3026.113	232 959.210	– 266 004.90	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[4]^\circ$	$^7/_2–^7/_2$	W
84	9	3025.705	3025.704	3026.585	232 959.210	– 265 999.75	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[4]^\circ$	$^7/_2–^9/_2$	W
83.01	1*w*	3026.383	3026.380	3027.261	232 959.210	– 265 992.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[3]^\circ$	$^7/_2–^5/_2$	W
83.01			3026.385	3027.267	232 959.210	– 265 992.31	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2F–^2[3]^\circ$	$^7/_2–^7/_2$	
73.01	1	3027.577	3027.559	3028.440	232 745.981	– 265 766.28	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[2]^\circ$	$^3/_2–^3/_2$	W
73.01			3027.587	3028.469	232 747.562	– 265 767.55	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[2]^\circ$	$^5/_2–^5/_2$	
73	7	3027.976	3027.971	3028.853	232 747.562	– 265 763.36	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[4]^\circ$	$^5/_2–^7/_2$	W
73			3028.545	3029.427	232 753.816	– 265 763.36	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[4]^\circ$	$^7/_2–^7/_2$	
73	9	3028.736	3028.735	3029.617	232 753.816	– 265 761.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[4]^\circ$	$^7/_2–^9/_2$	W
72.01	3	3031.929	3031.919	3032.801	232 747.562	– 265 720.38	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[3]^\circ$	$^5/_2–^7/_2$	W
72.01			3031.948	3032.830	232 745.981	– 265 718.48	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[3]^\circ$	$^3/_2–^5/_2$	
81.02			3032.063	3032.945	232 796.298	– 265 767.55	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2F–^2[2]^\circ$	$^5/_2–^5/_2$	
83	12	3032.084	3032.077	3032.959	232 959.210	– 265 930.31	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^2F–^2[5]^\circ$	$^7/_2–^9/_2$	W
72.01			3032.093	3032.976	232 747.562	– 265 718.48	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[3]^\circ$	$^5/_2–^5/_2$	
82	9	3032.458	3032.448	3033.331	232 796.208	265 763.36	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^2F–^2[4]^\circ$	$^5/_2–^7/_2$	W
72.01			3032.494	3033.376	232 753.816	– 265 720.38	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^4D–^2[3]^\circ$	$^7/_2–^7/_2$	
81.03	7	3036.402	3036.407	3037.290	232 796.298	– 265 720.38	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^2F–^2[3]^\circ$	$^5/_2–^7/_2$	W
72	8	3039.461	3039.450	3040.334	232 745.981	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[3]^\circ$	$^3/_2–^5/_2$	W
72			3039.458	3040.343	232 747.562	– 265 638.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[3]^\circ$	$^5/_2–^7/_2$	
72			3039.596	3040.481	232 747.562	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[3]^\circ$	$^5/_2–^5/_2$	
72			3040.036	3040.921	232 753.816	– 265 638.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^4D–^2[3]^\circ$	$^7/_2–^7/_2$	
81.01	2	3043.991	3043.969	3044.854	232 796.298	– 265 638.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2F–^2[3]^\circ$	$^5/_2–^7/_2$	W
103.02	4*w*	3046.693	3046.694?	3047.580	253 048.82	– 285 861.74?	$2s^22p^2(^1D)3d–2s^22p^2(^1D)5f$ F	$^2D–^2[3]^\circ$	$^5/_2–^7/_2$	W
81.02	13*bl*	3047.115	3047.119	3048.005	232 959.210	– 265 767.55	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2F–^2[2]^\circ$	$^7/_2–^5/_2$	W
81.01	10*bl*	3059.293	3059.284	3060.173	232 959.210	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2F–^2[3]^\circ$	$^7/_2–^5/_2$	W
31.04	9	3081.391	3081.389	3082.284	212 593.82	– 245 037.29	$2s2p^4–2s^22p^2(^3P)4p$	$^2P–^2S^\circ$	$^3/_2–^1/_2$	W
88.10	10	3090.376	3090.386	3091.283	233 544.59	– 265 893.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2P–^2[1]^\circ$	$^1/_2–^3/_2$	W
88.09	8	3091.536	3091.533	3092.431	233 430.53	– 265 767.55	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2P–^2[2]^\circ$	$^3/_2–^5/_2$	W
31.04	9	3097.477	3097.471	3098.370	212 762.25	– 245 037.29	$2s2p^4–2s^22p^2(^3P)4p$	$^2P–^2S^\circ$	$^1/_2–^1/_2$	W
88.09	3	3102.588	3102.599	3103.500	233 544.59	– 265 766.28	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2P–^2[2]^\circ$	$^1/_2–^3/_2$	W
88.08	8	3104.049	3104.056	3104.957	233 430.53	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2P–^2[3]^\circ$	$^3/_2–^5/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
104.01	3*w*	3107.846	3107.846?	3108.748	253 792.40	– 285 959.69?	$2s^22p^2(^1D)3d–2s^22p^2(^1D)5f$ D	$^2P–^2[2]^\circ$	$^3/_2–^5/_2$	W
14	11	3113.611	3113.617	3114.520	206 786.286	– 238 893.96	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^3/_2–^5/_2$	W
14	17	3122.521	3122.524	3123.429	206 877.865	– 238 893.96	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^5/_2–^5/_2$	W
14	13	3123.921	3123.910	3124.816	206 730.762	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^1/_2–^3/_2$	W
14	17	3129.334	3129.340	3130.247	206 786.286	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^3/_2–^3/_2$	W
14	17	3134.218	3134.213	3135.121	206 730.762	– 238 627.46	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^1/_2–^1/_2$	W
14	22	3134.720	3134.726	3135.634	207 002.482	– 238 893.96	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^7/_2–^5/_2$	W
14	19	3138.335	3138.337	3139.246	206 877.865	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^5/_2–^3/_2$	W
14	17	3139.680	3139.678	3140.588	206 786.286	– 238 627.46	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4D^\circ–^4P$	$^3/_2–^1/_2$	W
44.03	3	3147.827	3147.842	3148.753	230 609.45	– 262 368.05	$2s^22p^2(^1S)3s–2s^22p^2(^3P)5p$	$^2S–^2P^\circ$	$^1/_2–^3/_2$	W
44.03	1*w*	3155.906	3155.914	3156.828	230 609.45	– 262 286.82	$2s^22p^2(^1S)3s–2s^22p^2(^3P)5p$	$^2S–^2P^\circ$	$^1/_2–^1/_2$	W
93.10	9	3167.571	3167.577	3168.493	234 402.797	– 265 963.54	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2D–^2[2]^\circ$	$^3/_2–^5/_2$	W
93.09	13	3168.634	3168.628	3169.545	234 454.634	– 266 004.90	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2D–^2[4]^\circ$	$^5/_2–^7/_2$	W
93.08	7	3169.865	3169.887	3170.805	234 454.634	– 265 992.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2D–^2[3]^\circ$	$^5/_2–^5/_2$	W
93.08			3169.893	3170.811	234 454.634	– 265 992.31	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ F	$^2D–^2[3]^\circ$	$^5/_2–^7/_2$	
93.07	4*w*	3187.369	3187.371	3188.292	234 402.797	– 265 767.55	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2D–^2[2]^\circ$	$^3/_2–^5/_2$	W
93.05	3	3192.358	3192.365	3193.288	234 402.797	– 265 718.48	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^2D–^2[3]^\circ$	$^3/_2–^5/_2$	W
93.06	3	3193.061	3193.075	3193.998	234 454.634	– 265 763.36	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^2D–^2[4]^\circ$	$^5/_2–^7/_2$	W
93.05	1*w*	3197.646	3197.659	3198.583	234 454.634	– 265 718.48	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ G	$^2D–^2[3]^\circ$	$^5/_2–^5/_2$	W
93.04	3	3200.688	3200.683	3201.608	234 402.797	– 265 637.10	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5f$ D	$^2D–^2[3]^\circ$	$^3/_2–^5/_2$	W
107	10	3215.877	3215.866	3216.795	267 768.20 + *x*	– 298 855.04 + *x*	$2s2p^3(^5S^\circ)3p–2s2p^3(^5S^\circ)4s$	$^6P–^6S^\circ$	$^3/_2–^5/_2$	W
107	11	3216.618	3216.620	3217.549	267 775.48 + *x*	– 298 855.04 + *x*	$2s2p^3(^5S^\circ)3p–2s2p^3(^5S^\circ)4s$	$^6P–^6S^\circ$	$^5/_2–^5/_2$	W
107	12	3217.915	3217.925	3218.855	267 788.09 + *x*	– 298 855.04 + *x*	$2s2p^3(^5S^\circ)3p–2s2p^3(^5S^\circ)4s$	$^6P–^6S^\circ$	$^7/_2–^5/_2$	W
39	16	3270.855	3270.856	3271.798	228 723.84	– 259 288.07	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2F^\circ–^2D$	$^5/_2–^3/_2$	W
39			3270.905	3271.848	228 723.84	– 259 287.61	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2F^\circ–^2D$	$^5/_2–^5/_2$	
39	17	3273.437	3273.434	3274.377	228 747.45	– 259 287.61	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2F^\circ–^2D$	$^7/_2–^5/_2$	W
52.01	1	3275.622	3275.612	3276.556	231 350.087	– 261 869.94	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^2D^\circ$	$^5/_2–^5/_2$	W
23	17	3277.566	3277.561	3278.506	208 392.258	– 238 893.96	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^3/_2–^5/_2$	W
105.01	3*w*	3285.016	3285.016?	3285.963	255 622.80	– 286 055.28?	$2s^22p^2(^1D)3d–2s^22p^2(^1D)5f$ P	$^2S–^2[1]^\circ$	$^1/_2–^3/_2$	W
23	21	3287.472	3287.471	3288.418	208 484.202	– 238 893.96	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^5/_2–^5/_2$	W
23	17	3289.981	3289.982	3290.930	208 346.104	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^1/_2–^3/_2$	W
23	14	3294.992	3294.987	3295.936	208 392.258	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^3/_2–^3/_2$	W
23	10	3301.407	3301.411	3302.362	208 346.104	– 238 627.46	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^1/_2–^1/_2$	W
23	17	3305.005	3305.003	3305.955	208 484.202	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^5/_2–^3/_2$	W
23	17	3306.449	3306.451	3307.403	208 392.258	– 238 627.46	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4P^\circ–^4P$	$^3/_2–^1/_2$	W
52			3351.310	3352.273	231 350.087	– 261 180.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^5/_2–^7/_2$	
52	3	3360.105	3360.083	3361.049	231 427.970	– 261 180.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^7/_2–^7/_2$	W
55.08	2	3360.279	3360.281	3361.246	232 535.949	– 262 286.82	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^2P^\circ$	$^3/_2–^1/_2$	W
52			3360.616	3361.581	231 296.126	– 261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^3/_2–^5/_2$	
52	1*w*	3366.706	3366.723	3367.690	231 350.087	– 261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^5/_2–^5/_2$	W
52	6	3370.279	3370.293	3371.261	231 296.126	– 260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^3/_2–^3/_2$	W
52	9	3371.683	3371.674	3372.642	231 530.246	– 261 180.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^9/_2–^7/_2$	W
96	1	3374.077	3374.066	3375.035	248 515.30	– 278 144.62	$2s^22p^2(^3P)4p–2s^22p^2(^1D)5s$	$^2P^\circ–^2D$	$^3/_2–^5/_2$	W
71.01	1	3374.899	3374.892	3375.861	232 745.981	– 262 368.05	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^2P^\circ$	$^3/_2–^3/_2$	W
52	3	3375.582	3375.577	3376.546	231 427.970	– 261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^7/_2–^5/_2$	W
52	2	3375.606	3375.603	3376.572	231 296.126	– 260 911.96	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^3/_2–^1/_2$	W
52	3	3376.436	3376.435	3377.405	231 350.087	– 260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4F–^4D^\circ$	$^5/_2–^3/_2$	W
9	21	3377.146	3377.146	3378.116	203 942.288	– 233 544.59	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2S^\circ–^2P$	$^1/_2–^1/_2$	W
9	23	3390.209	3390.209	3391.182	203 942.288	– 233 430.53	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2S^\circ–^2P$	$^1/_2–^3/_2$	W
44			3407.223	3408.200	229 947.07	– 259 288.07	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2D^\circ–^2D$	$^5/_2–^3/_2$	
44	17	3407.273	3407.276	3408.254	229 947.07	– 259 287.61	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2D^\circ–^2D$	$^5/_2–^5/_2$	W
44	16	3409.710	3409.706	3410.684	229 968.44	– 259 288.07	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2D^\circ–^2D$	$^3/_2–^3/_2$	W
44			3409.760	3410.738	229 968.44	– 259 287.61	$2s^22p^2(^1D)3p\ 2s^22p^2(^1D)4s$	$^2D^\circ\ ^2D$	$^3/_2\ ^5/_2$	
101.03	6	3419.841	3419.849	3420.830	252 987.23	– 282 219.90	$2s^22p^2(^1S)3p–2s^22p^2(^1S)4s$	$^2P^\circ–^2S$	$^1/_2–^1/_2$	W
101.03	7	3420.571	3420.570	3421.551	252 993.39	– 282 219.90	$2s^22p^2(^1S)3p–2s^22p^2(^1S)4s$	$^2P^\circ–^2S$	$^3/_2–^1/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower		Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
55.07	2	3428.509	3428.509	3429.492	232 462.724	–	261 621.56	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4S°$	$^5/_2–^3/_2$	W
55.07	8	3437.144	3437.141	3438.126	232 535.949	–	261 621.56	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4S°$	$^3/_2–^3/_2$	W
55.07			3445.023	3446.010	232 602.492	–	261 621.56	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4S°$	$^1/_2–^3/_2$	
27	15*bl*	3447.861	3447.855	3448.843	211 522.117	–	240 517.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2D°–^2P$	$^3/_2–^3/_2$	W
71	4	3453.094	3453.100	3454.090	232 747.562	–	261 698.75	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^2D°$	$^5/_2–^3/_2$	W
88.07	6	3454.736	3454.731	3455.721	233 430.53	–	262 368.05	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^2P°$	$^3/_2–^3/_2$	W
3.01	9*bl*	3455.085	3455.0754	3456.0652	185 235.281	–	214 169.920	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^2P°$	$^1/_2–^1/_2$	W
81	10	3457.920	3457.933	3458.923	232 959.210	–	261 869.94	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2F–^2D°$	$^7/_2–^5/_2$	W
81	8	3458.936	3458.923	3459.914	232 796.298	–	261 698.75	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2F–^2D°$	$^5/_2–^3/_2$	W
55.06	8	3459.988	3460.019	3461.010	232 462.724	–	261 356.02	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^5/_2–^5/_2$	W
88.07	4	3468.421	3468.403	3469.396	233 544.59	–	262 368.05	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^2P°$	$^1/_2–^3/_2$	W
55.06			3468.811	3469.804	232 535.949	–	261 356.02	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^3/_2–^5/_2$	
27	20	3470.281	3470.277	3471.271	211 522.117	–	240 330.01	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2D°–^2P$	$^3/_2–^1/_2$	W
27	21	3470.676	3470.672	3471.666	211 712.732	–	240 517.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2D°–^2P$	$^5/_2–^3/_2$	W
55.06	6	3471.402	3471.401	3472.395	232 462.724	–	261 261.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^5/_2–^3/_2$	W
8	5	3474.926	3474.926	3475.921	203 942.288	–	232 711.642	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2S°–^4D$	$^1/_2–^1/_2$	W
88.07	3	3478.219	3478.205	3479.201	233 544.59	–	262 286.82	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^2P°$	$^1/_2–^1/_2$	W
55.06			3480.250	3481.247	232 535.949	–	261 261.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^3/_2–^3/_2$	
55.05			3481.156	3482.153	232 462.724	–	261 180.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^5/_2–^7/_2$	
55.06			3485.932	3486.930	232 535.949	–	261 214.47	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^3/_2–^1/_2$	
7	4	3488.173	3488.160	3489.159	203 942.288	–	232 602.492	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2S°–^4P$	$^1/_2–^1/_2$	W
43.02	6	3488.258	3488.273	3489.271	229 947.07	–	258 606.35	$2s^22p^2(^1D)3p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^5/_2–^3/_2$	W
55.06			3488.332	3489.330	232 602.492	–	261 261.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^1/_2–^3/_2$	
43.02			3490.876	3491.875	229 968.44	–	258 606.35	$2s^22p^2(^1D)3p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^3/_2–^3/_2$	
55.06			3494.040	3495.040	232 602.492	–	261 214.47	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4P°$	$^1/_2–^1/_2$	
70			3494.277	3495.277	232 745.981	–	261 356.02	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^3/_2–^5/_2$	
70	6	3494.490	3494.470	3495.470	232 747.562	–	261 356.02	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^5/_2–^5/_2$	W
70	8	3495.235	3495.234	3496.234	232 753.816	–	261 356.02	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^7/_2–^5/_2$	W
7	8	3496.276	3496.278	3497.270	203 942.288		232 535.040	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2S°–^4P$	$^1/_2–^3/_2$	W
55.05	3	3497.771	3497.790	3498.790	232 462.724	–	261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^5/_2–^5/_2$	W
70	4	3501.669	3501.668	3502.670	232 711.642	–	261 261.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^1/_2–^3/_2$	W
70	6	3505.839	3505.885	3506.888	232 745.981	–	261 261.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^3/_2–^3/_2$	W
70			3506.080	3507.083	232 747.562	–	261 261.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^5/_2–^3/_2$	
55.05			3506.774	3507.777	232 535.949	–	261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^3/_2–^5/_2$	
70	3	3507.416	3507.421	3508.424	232 711.642	–	261 214.47	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^1/_2–^1/_2$	W
55.05			3508.274	3509.277	232 462.724	–	260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^5/_2–^3/_2$	
70	5	3511.655	3511.651	3512.656	232 745.981	–	261 214.47	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4P°$	$^3/_2–^1/_2$	W
43.02	2	3514.823	3514.821	3515.826	229 968.44	–	258 411.26	$2s^22p^2(^1D)3p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^3/_2–^1/_2$	W
69	3	3516.027	3516.031	3517.037	232 747.562	–	261 180.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^5/_2–^7/_2$	W
69	4	3516.794	3516.805	3517.810	232 753.816	–	261 180.59	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^7/_2–^7/_2$	W
55.05	1	3517.307	3517.312	3518.318	232 535.949	–	260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^3/_2–^3/_2$	W
55.05			3523.096	3524.104	232 535.949	–	260 911.96	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^3/_2–^1/_2$	
55.05			3525.567	3526.575	232 602.492	–	260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^1/_2–^3/_2$	
55.05			3531.378	3532.387	232 602.492	–	260 911.96	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4P–^4D°$	$^1/_2–^1/_2$	
69			3532.803	3533.813	232 745.981	–	261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^3/_2–^5/_2$	
69	2	3533.004	3533.000	3534.010	232 747.562	–	261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^5/_2–^5/_2$	W
69			3533.781	3534.791	232 753.816	–	261 044.03	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^7/_2–^5/_2$	
69	1	3539.200	3539.190	3540.202	232 711.642	–	260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^1/_2–^3/_2$	W
69	2	3543.499	3543.498	3544.511	232 745.981	–	260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^3/_2–^3/_2$	W
69			3543.697	3544.709	232 747.562	–	260 958.62	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^5/_2–^3/_2$	
69	1	3545.044	3545.046	3546.059	232 711.642	–	260 911.96	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^1/_2–^1/_2$	W
88.06	1*bl*	3546.212	3546.214	3547.228	233 430.53	–	261 621.56	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^4S°$	$^3/_2–^3/_2$	W
31.01	3	3549.091	3549.098	3550.112	212 161.881	–	240 330.01	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4S°–^2P$	$^3/_2–^1/_2$	W
69			3549.368	3550.383	232 745.981	–	260 911.96	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^4D–^4D°$	$^3/_2–^1/_2$	
88.05	1	3550.857	3550.859	3551.873	233 544.59	–	261 698.75	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^2D°$	$^1/_2–^3/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
93.20	2	3566.568	3566.569	3567.587	240 517.35	– 268 547.50	$2s^22p^2(^3P)4s–2s^22p^2(^3P)6p$	$^2P–^4D°$	$^3/_2–^5/_2$	W
93.03	3	3574.838	3574.845	3575.866	234 402.797	– 262 368.05	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2D–^2P°$	$^3/_2–^3/_2$	W
93.03	4	3581.487	3581.484	3582.507	234 454.634	– 262 368.05	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2D–^2P°$	$^5/_2–^3/_2$	W
93.14	3	3605.124	3605.127	3606.156	238 893.96	– 266 624.32	$2s^22p^2(^3P)4s–2s^22p^2(^1D)4p$	$^4P–^2D°$	$^5/_2–^3/_2$	W
43.01	2	3605.530	3605.525	3606.554	229 968.44	– 257 695.74	$2s^22p^2(^1D)3p–2s^22p^2(^3P)5s$	$^2D°–^4P$	$^3/_2–^1/_2$	W
93.02	3	3646.560	3646.558	3647.597	234 454.634	– 261 869.94	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^5/_2–^5/_2$	W
93.02	1	3662.502	3662.504	3663.547	234 402.797	– 261 698.75	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^3/_2–^3/_2$	W
88.04	3	3667.903	3667.907	3668.952	233 430.53	– 260 686.27	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^2S°$	$^3/_2–^1/_2$	W
93.02	3	3669.472	3669.472	3670.517	234 454.634	– 261 698.75	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2D–^2D°$	$^5/_2–^3/_2$	W
88.04	1	3683.326	3683.322	3684.370	233 544.59	– 260 686.27	$2s^22p^2(^3P)3d–2s^22p^2(^3P)5p$	$^2P–^2S°$	$^1/_2–^1/_2$	W
3	25	3712.741	3712.744	3713.800	185 235.281	– 212 161.881	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4S°$	$^1/_2–^3/_2$	W
1F	M1	3726.04	3726.032	3727.092	0.00	– 26 830.57	$2s^22p^3–2s^22p^3$	$^4S°–^2D°$	$^3/_2–^3/_2$	B2
3	27	3727.320	3727.319	3728.380	185 340.577	– 212 161.881	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4S°$	$^3/_2–^3/_2$	W
1F	E2	3728.80	3728.815	3729.875	0.00	– 26 810.55	$2s^22p^3–2s^22p^3$	$^4S°–^2D°$	$^3/_2–^5/_2$	B2
62	14	3729.225	3729.221	3730.281	232 480.44	– 259 288.07	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2P°–^2D$	$^1/_2–^3/_2$	W
62			3735.722	3736.784	232 527.09	– 259 288.07	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2P°–^2D$	$^3/_2–^3/_2$	
62	15	3735.784	3735.786	3736.848	232 527.09	– 259 287.61	$2s^22p^2(^1D)3p–2s^22p^2(^1D)4s$	$^2P°–^2D$	$^3/_2–^5/_2$	W
38			3738.337	3739.400	228 723.84	– 255 466.10	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2F°–^2F$	$^5/_2–^7/_2$	
31	20	3739.762	3739.761	3740.824	212 161.881	– 238 893.96	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4S°–^4P$	$^3/_2–^5/_2$	W
38	11	3741.639	3741.640	3742.704	228 747.45	– 255 466.10	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2F°–^2F$	$^7/_2–^7/_2$	W
6.02	6	3748.880	3748.865	3749.930	203 942.288	– 230 609.45	$2s^22p^2(^3P)3p–2s^22p^2(^1S)3s$	$^2S°–^2S$	$^1/_2–^1/_2$	W
3	30	3749.486	3749.484	3750.550	185 499.124	– 212 161.881	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4S°$	$^5/_2–^3/_2$	W
38	9	3761.400	3761.403	3762.472	228 723.84	– 255 302.11	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2F°–^2F$	$^5/_2–^5/_2$	W
31	19	3762.465	3762.465	3763.534	212 161.881	– 238 732.65	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4S°–^4P$	$^3/_2–^3/_2$	W
38			3764.748	3765.817	228 747.45	– 255 302.11	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2F°–^2F$	$^7/_2–^5/_2$	
31	16	3777.421	3777.420	3778.493	212 161.881	– 238 627.46	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^4S°–^4P$	$^3/_2–^1/_2$	W
34	14	3794.361	3794.359	3795.437	214 169.920	– 240 517.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2P°–^2P$	$^1/_2–^3/_2$	W
93.19	4	3802.032	3802.025	3803.104	240 330.01	– 266 624.32	$2s^22p^2(^3P)4s–2s^22p^2(^1D)4p$	$^2P–^2D°$	$^1/_2–^3/_2$	W
34	19	3802.985	3802.984	3804.063	214 229.671	– 240 517.35	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2P°–^2P$	$^3/_2–^3/_2$	W
2.01	6	3813.706	3813.730	3814.813	185 499.124	– 211 712.732	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^2D°$	$^5/_2–^5/_2$	W
34	15	3821.538	3821.532	3822.617	214 169.920	– 240 330.01	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2P°–^2P$	$^1/_2–^1/_2$	W
34	13	3830.290	3830.281	3831.368	214 229.671	– 240 330.01	$2s^22p^2(^3P)3p–2s^22p^2(^3P)4s$	$^2P°–^2P$	$^3/_2–^1/_2$	W
19	12	3833.074	3833.0706	3834.1581	206 877.865	– 232 959.210	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^5/_2–^7/_2$	W
22.01	4	3835.855	3835.861	3836.949	208 392.258	– 234 454.634	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4P°–^2D$	$^3/_2–^5/_2$	W
12	15	3842.815	3842.8138	3843.9038	206 730.762	– 232 745.981	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^1/_2–^3/_2$	W
13	14	3843.587	3843.5832	3844.6734	206 786.286	– 232 796.298	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^2F$	$^3/_2–^5/_2$	W
12	14	3847.892	3847.8930	3848.9843	206 730.762	– 232 711.642	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^1/_2–^1/_2$	W
12	14	3850.797	3850.7987	3851.8908	206 786.286	– 232 747.562	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^3/_2–^5/_2$	W
12	17	3851.032	3851.0332	3852.1254	206 786.286	– 232 745.981	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^3/_2–^3/_2$	W
13	15	3851.471	3851.4735	3852.5657	207 002.482	– 232 959.210	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^2F$	$^7/_2–^7/_2$	W
43	9	3852.383	3852.395	3853.487	229 947.07	– 255 897.59	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2D$	$^5/_2–^5/_2$	W
43			3855.570	3856.663	229 968.44	– 255 897.59	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2D$	$^3/_2–^5/_2$	
12	16	3856.134	3856.1342	3857.2276	206 786.286	– 232 711.642	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^5/_2–^1/_2$	W
13	17	3857.166	3857.1642	3858.2579	206 877.865	– 232 796.298	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^2F$	$^5/_2–^5/_2$	W
43			3860.530	3861.624	229 947.07	– 255 842.91	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2D$	$^5/_2–^3/_2$	
12	17	3863.502	3863.4969	3864.5923	206 877.865	– 232 753.816	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^5/_2–^7/_2$	W
43			3863.718	3864.813	229 968.44	– 255 842.91	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2D$	$^3/_2–^3/_2$	
11	11	3864.125	3864.1272	3865.2227	206 730.762	– 232 602.492	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^1/_2–^1/_2$	W
12	17	3864.426	3864.4309	3865.5265	206 877.865	– 232 747.562	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^5/_2–^5/_2$	W
12	16	3864.667	3864.6671	3865.7628	206 877.865	– 232 745.981	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^5/_2–^3/_2$	W
11	10	3872.439	3872.4382	3873.5359	206 786.286	– 232 602.492	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^3/_2–^1/_2$	W
11	12	3874.092	3874.0918	3875.1899	206 730.762	– 232 535.949	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^1/_2–^3/_2$	W
13	13	3875.796	3875.7997	3876.8982	207 002.482	– 232 796.298	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^2F$	$^7/_2–^5/_2$	W
12	20	3882.192	3882.1937	3883.2940	207 002.482	– 232 753.816	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^7/_2–^7/_2$	W
11	13	3882.446	3882.4457	3883.5460	206 786.286	– 232 535.949	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^3/_2–^3/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
12	14	3883.130	3883.1368	3884.2373	207 002.482	– 232 747.562	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4D$	$^7/_2–^5/_2$	W
11	11	3893.516	3893.5180	3894.6212	206 786.286	– 232 462.724	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^3/_2–^5/_2$	W
11	10	3896.304	3896.3032	3897.4071	206 877.865	– 232 535.949	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^5/_2–^3/_2$	W
11	15	3907.455	3907.4549	3908.5617	206 877.865	– 232 462.724	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^5/_2–^5/_2$	W
17	20	3911.957	3911.958	3913.066	206 971.68	– 232 527.09	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2P°$	$^5/_2–^3/_2$	W
17	16	3912.107	3912.117	3913.225	206 972.72	– 232 527.09	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2P°$	$^3/_2–^3/_2$	W
42.01	7	3917.537	3917.535	3918.644	229 947.07	– 255 466.10	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2F$	$^5/_2–^7/_2$	W
17	18	3919.285	3919.272	3920.382	206 972.72	– 232 480.44	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2P°$	$^3/_2–^1/_2$	W
11	5	3926.584	3926.5806	3927.6924	207 002.482	– 232 462.724	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4P$	$^7/_2–^5/_2$	W
42.01			3942.873	3943.989	229 947.07	– 255 302.11	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2F$	$^5/_2–^5/_2$	
6	19	3945.0375	3945.0376	3946.1543	188 888.543	– 214 229.671	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2P°$	$^1/_2–^3/_2$	E3
42.01			3946.199	3947.316	229 968.44	– 255 302.11	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2D°–^2F$	$^3/_2–^5/_2$	
6	20	3954.3619	3954.3617	3955.4807	188 888.543	– 214 169.920	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2P°$	$^1/_2–^1/_2$	E3
61.02	8	3972.065	3972.073	3973.197	232 527.09	– 257 695.74	$2s^22p^2(^1D)3p–2s^22p^2(^3P)5s$	$^2P°–^4P$	$^3/_2–^1/_2$	W
6	24	3973.2562	3973.2560	3974.3800	189 068.514	– 214 229.671	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2P°$	$^3/_2–^3/_2$	E3
101.02	6	3974.821	3974.824	3975.949	252 993.39	– 278 144.62	$2s^22p^2(^1S)3p–2s^22p^2(^1D)5s$	$^2P°–^2D$	$^3/_2–^5/_2$	W
6	18	3982.7140	3982.7141	3983.8406	189 068.514	– 214 169.920	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2P°$	$^3/_2–^1/_2$	E3
22	7	3985.418	3985.410	3986.537	208 346.104	– 233 430.53	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4P°–^2P$	$^1/_2–^3/_2$	W
22	5	3992.757	3992.757	3993.886	208 392.258	– 233 430.53	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4P°–^2P$	$^3/_2–^3/_2$	W
22	7	4007.462	4007.473	4008.606	208 484.202	– 233 430.53	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4P°–^2P$	$^5/_2–^3/_2$	W
99	5	4023.858	4023.868	4025.005	251 222.19	– 276 066.88	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2F–^2[2]°$	$^7/_2–^5/_2$	W
49.02	5	4026.312	4026.304	4027.442	231 296.126	– 256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[3]°$	$^3/_2–^5/_2$	W
50	7	4032.248	4032.241	4033.380	231 350.087	– 256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[4]°$	$^5/_2–^7/_2$	W
51	5	4032.483	4032.4816	4033.6210	231 296.126	– 256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[2]°$	$^3/_2–^5/_2$	W
51	8	4033.155	4033.155	4034.295	231 296.126	– 256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[2]°$	$^3/_2–^3/_2$	W
49.02	9	4035.068	4035.073	4036.213	231 350.087	– 256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[3]°$	$^5/_2–^5/_2$	W
49.02	6*bl*	4035.461	4035.4891	4036.6293	231 350.087	– 256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[3]°$	$^5/_2–^7/_2$	W
51	9	4041.289	4041.2779	4042.4197	231 350.087	– 256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[2]°$	$^5/_2–^5/_2$	W
51	7	4041.951	4041.955	4043.097	231 350.087	– 256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[2]°$	$^5/_2–^3/_2$	W
50	8	4044.942	4044.948	4046.090	231 427.970	– 256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[4]°$	$^7/_2–^7/_2$	W
50	7	4046.113	4046.1183	4047.2613	231 427.970	– 256 136.036	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[4]°$	$^7/_2–^9/_2$	W
49.02	6	4047.799	4047.798	4048.941	231 427.970	– 256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[3]°$	$^7/_2–^5/_2$	W
49.02	11	4048.214	4048.2163	4049.3599	231 427.970	– 256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[3]°$	$^7/_2–^7/_2$	W
51	9	4054.081	4054.0418	4055.1869	231 427.970	– 256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[2]°$	$^7/_2–^5/_2$	W
98			4054.094	4055.239	251 222.19	– 275 881.65	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ F	$^2F–^2[3]°$	$^7/_2–$	
98	8	4054.528	4054.521	4055.666	251 224.79	– 275 881.65	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ F	$^2F–^2[3]°$	$^5/_2–$	W
97	13	4060.599	4060.600	4061.747	251 222.19	– 275 842.14	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ G	$^2F–^2[4]°$	$^7/_2–$	W
97	12	4061.028	4061.029	4062.176	251 224.79	– 275 842.14	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ G	$^2F–^2[4]°$	$^5/_2–^7/_2$	W
50			4061.756	4062.903	231 530.246	– 256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[4]°$	$^9/_2–^7/_2$	
50	14	4062.936	4062.9367	4064.0841	231 530.246	– 256 136.036	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[4]°$	$^9/_2–^9/_2$	W
49.02	7	4065.044	4065.0522	4066.2002	231 530.246	– 256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4F–^2[3]°$	$^9/_2–^7/_2$	W
10	20	4069.623	4069.6230	4070.7722	206 730.762	– 231 296.126	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^1/_2–^3/_2$	W
10	21	4069.886	4069.8819	4071.0312	206 786.286	– 231 350.087	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^3/_2–^5/_2$	W
49	14	4071.233	4071.2389	4072.3885	231 427.970	– 255 983.584	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4F–^2[5]°$	$^7/_2–^9/_2$	W
10	23	4072.157	4072.1525	4073.3023	206 877.865	– 231 427.970	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^5/_2–^7/_2$	W
10	24	4075.862	4075.8617	4077.0125	207 002.482	– 231 530.246	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^7/_2–^9/_2$	W
49.01	6	4077.715	4077.7174	4078.8687	231 296.126	– 255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4F–^2[2]°$	$^3/_2–^3/_2$	W
10	17	4078.842	4078.8424	4079.9940	206 786.286	– 231 296.126	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^3/_2–^3/_2$	W
47	15	4083.895	4083.899	4085.052	231 350.087	– 255 829.58	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4F–^2[4]°$	$^5/_2–^7/_2$	W
21	13	4084.652	4084.6474	4085.8005	208 484.202	– 232 959.210	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4P°–^2F$	$^5/_2–^7/_2$	W
10	19	4085.1125	4085.1124	4086.2656	206 877.865	– 231 350.087	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4D°–^4F$	$^5/_2–^5/_2$	E3
49.01			4086.5881	4087.7417	231 350.087	– 255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4F–^2[2]°$	$^5/_2–^5/_2$	
48	15	4087.152	4087.1528	4088.3066	231 296.126	– 255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4F–^2[3]°$	$^3/_2–^5/_2$	E3
49	9	4088.268	4088.2672	4089.4212	231 530.246	– 255 983.584	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4F–^2[5]°$	$^9/_2–^9/_2$	W
49	19	4089.288	4089.2878	4090.4421	231 530.246	– 255 977.481	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4F–^2[5]°$	$^9/_2–^{11}/_2$	E3

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
10	17	4092.9289	4092.9287	4094.0840	207 002.482	231 427.970	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4D°-^4F$	$^7/_2-^7/_2$	E3
10	11	4094.140	4094.1401	4095.2957	206 877.865	231 296.126	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4D°-^4F$	$^5/_2-^3/_2$	W
48	15	4095.044	4095.0437	4096.7997	231 350.087	255 759.384	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[3]°$	$^5/_2-^7/_2$	E3
48	11	4096.188	4096.1896	4097.3457	231 350.087	255 756.131	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[3]°$	$^5/_2-^5/_2$	W
21	15	4096.525	4096.5260	4097.6822	208 392.258	232 796.298	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^2F$	$^3/_2-^5/_2$	E3
47	9	4096.929	4096.934	4098.090	231 427.970	255 829.58	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[4]°$	$^7/_2-^7/_2$	W
20	17	4097.258	4097.2249	4098.3813	208 346.104	232 745.981	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^1/_2-^3/_2$	E3
47			4097.2568	4098.4132	231 427.970	255 827.657	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[4]°$	$^7/_2-^9/_2$	
48.01	14	4098.243	4098.2435	4099.4001	231 296.126	255 689.939	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ D	$^4F-^2[3]°$	$^3/_2-^5/_2$	E3
20	14	4103.001	4102.9994	4104.1573	208 346.104	232 711.642	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^1/_2-^1/_2$	E3
20	16	4104.7231	4104.7235	4105.8818	208 392.258	232 747.562	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^3/_2-^5/_2$	E3
20	18	4104.993	4104.9899	4106.1484	208 392.258	232 745.981	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^3/_2-^3/_2$	E3
10	9	4106.019	4106.0215	4107.1802	207 002.482	231 350.087	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4D°-^4F$	$^7/_2-^5/_2$	W
48.01	13	4107.091	4107.0919	4108.2509	231 350.087	255 691.346	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ D	$^4F-^2[3]°$	$^5/_2-^7/_2$	E3
48.01	6	4107.333	4107.3294	4108.4884	231 350.087	255 689.939	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ D	$^4F-^2[3]°$	$^5/_2-^5/_2$	W
48	9	4108.753	4108.7538	4109.9132	231 427.970	255 759.384	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[3]°$	$^7/_2-^7/_2$	W
48	6	4109.287	4109.3032	4110.4628	231 427.970	255 756.131	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[3]°$	$^7/_2-^5/_2$	W
37	6	4109.839	4109.841	4111.000	228 723.84	253 048.82	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2F°-^2D$	$^5/_2-^5/_2$	W
37	10	4110.198	4110.192	4111.352	228 723.84	253 046.74	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2F°-^2D$	$^5/_2-^3/_2$	W
20	15	4110.7858	4110.7863	4111.9463	208 392.258	232 711.642	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^3/_2-^1/_2$	E3
21	15	4112.022	4112.0186	4113.1789	208 484.202	232 796.298	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^2F$	$^5/_2-^5/_2$	W
37	12	4113.835	4113.834	4114.994	228 747.45	253 048.82	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2F°-^2D$	$^7/_2-^5/_2$	W
47			4114.178	4115.339	231 530.246	255 829.58	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[4]°$	$^5/_2-^7/_2$	
47	8	4114.502	4114.5039	4115.6648	231 530.246	255 827.657	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[4]°$	$^9/_2-^9/_2$	W
20	22	4119.215	4119.2165	4120.3787	208 484.202	232 753.816	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^5/_2-^7/_2$	E3
48.01			4120.2756	4121.4380	231 427.970	255 691.346	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ D	$^4F-^2[3]°$	$^7/_2-^7/_2$	
20	17	4120.280	4120.2783	4121.4407	208 484.202	232 747.562	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^5/_2-^5/_2$	E3
20	14	4120.544	4120.5468	4121.7093	208 484.202	232 745.981	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4D$	$^5/_2-^3/_2$	E3
19	14	4121.4619	4121.4626	4122.6253	208 346.104	232 602.492	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^1/_2-^1/_2$	E3
48			4126.0980	4127.2620	231 530.246	255 759.384	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ G	$^4F-^2[3]°$	$^9/_2-^7/_2$	
19	11	4129.321	4129.3198	4130.4847	208 392.258	232 602.492	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^3/_2-^1/_2$	W
19	17	4132.8004	4132.8004	4133.9661	208 346.104	232 535.949	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^1/_2-^3/_2$	E3
19	8	4140.703	4140.7010	4141.8688	208 392.258	232 535.949	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^3/_2-^3/_2$	W
106	12	4141.933	4141.933	4143.101	267 768.20+x	291 904.71+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^3/_2-^1/_2$	W
106	12	4142.065	4142.070	4143.238	267 768.20+x	291 903.91+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^3/_2-^3/_2$	W
106	10	4142.268	4142.273	4143.441	267 768.20+x	291 902.73+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^3/_2-^5/_2$	W
106	9	4143.324	4143.320	4144.488	267 775.48+x	291 903.91+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^5/_2-^3/_2$	W
106	12	4143.516	4143.523	4144.691	267 775.48+x	291 902.73+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^5/_2-^5/_2$	W
106	12	4143.736	4143.739	4144.908	267 775.48+x	291 901.47+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^5/_2-^7/_2$	W
106	6	4145.699	4145.689	4146.859	267 788.09+x	291 902.73+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^7/_2-^5/_2$	W
106	10	4145.907	4145.906	4147.075	267 788.09+x	291 901.47+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^7/_2-^7/_2$	W
106	13	4146.076	4146.076	4147.245	267 788.09+x	291 900.48+x	$2s2p^3(^5S°)3p-2s2p^3(^5S°)3d$	$^6P-^6D°$	$^7/_2-^9/_2$	E3
19	18	4153.2980	4153.2977	4154.4688	208 392.258	232 462.724	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^3/_2-^5/_2$	E3
19	13	4156.530	4156.5302	4157.7021	208 484.202	232 535.949	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^5/_2-^3/_2$	W
19	15	4169.225	4169.2236	4170.3988	208 484.202	232 462.724	$2s^22p^2(^3P)3p-2s^22p^2(^3P)3d$	$^4P°-^4P$	$^5/_2-^5/_2$	W,B1
36	19	4185.449	4185.440	4186.619	228 723.84	252 609.46	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2F°-^2G$	$^5/_2-^7/_2$	W
36			4189.581	4190.762	228 747.45	252 609.46	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2F°-^2G$	$^7/_2-^7/_2$	
36	20	4189.789	4189.788	4190.969	228 747.45	252 608.28	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2F°-^2G$	$^7/_2-^9/_2$	W,B1
42	12	4192.518	4192.512	4193.693	229 947.07	253 792.40	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2D°-^2P$	$^5/_2-^3/_2$	W
42	6	4196.260	4196.273	4197.455	229 968.44	253 792.40	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2D°-^2P$	$^3/_2-^3/_2$	W
42	10	4196.701	4196.697	4197.880	229 968.44	253 789.99	$2s^22p^2(^1D)3p-2s^22p^2(^1D)3d$	$^2D°-^2P$	$^3/_2-^1/_2$	W
55.04	7	4221.703	4221.701	4222.890	232 462.724	256 143.187	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ F	$^4P-^2[4]°$	$^5/_2-^7/_2$	W
55.03	6	4224.796	4224.806	4225.996	232 462.724	256 125.785	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ F	$^4P-^2[3]°$	$^5/_2-^5/_2$	W
55.03			4225.262	4226.452	232 462.724	256 123.231	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ F	$^4P-^2[3]°$	$^5/_2-^7/_2$	
55.03	9	4237.930	4237.921	4239.114	232 535.949	256 125.785	$2s^22p^2(^3P)3d-2s^22p^2(^3P)4f$ F	$^4P-^2[3]°$	$^3/_2-^5/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower		Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
55.02			4244.765	4245.961	232 535.949	–	256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4P°–^2[2]°$	$^3/_2–^5/_2$	
55.02	6	4245.519	4245.512	4246.707	232 535.949	–	256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4P°–^2[2]°$	$^3/_2–^3/_2$	W
101	15	4253.895	4253.894	4255.091	252 608.28	–	276 109.54	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ H	$^2G–^2[5]°$	$^9/_2–^{11}/_2$	E3
101			4253.908	4255.105	252 608.28	–	276 109.46	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ H	$^2G–^2[5]°$	$^9/_2–^9/_2$	
101	15	4254.121	4254.122	4255.319	252 609.46	–	276 109.46	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ H	$^2G–^2[5]°$	$^7/_2–^9/_2$	E3
55.02	9	4257.549	4257.544	4258.742	232 602.492	–	256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4P–^2[2]°$	$^1/_2–^3/_2$	W
68	11	4273.104	4273.101	4274.303	232 747.562	–	256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[4]°$	$^5/_2–^7/_2$	W
68	10	4274.240	4274.243	4275.446	232 753.816	–	256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[4]°$	$^7/_2–^7/_2$	W
68	16	4275.551	4275.5507	4276.7539	232 753.816	–	256 136.036	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[4]°$	$^7/_2–^9/_2$	E3
67	11	4275.994	4275.993	4277.196	232 745.981	–	256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[3]°$	$^3/_2–^5/_2$	W
67	11	4276.281	4276.282	4277.485	232 747.562	–	256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[3]°$	$^5/_2–^5/_2$	W
55.01			4276.620	4277.824	232 535.949	–	255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[1]°$	$^3/_2–^3/_2$	
67	15	4276.748	4276.7489	4277.9524	232 747.562	–	256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[3]°$	$^5/_2–^7/_2$	E3
67	14	4277.427	4277.426	4278.630	232 753.816	–	256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[3]°$	$^7/_2–^5/_2$	E3
66.01			4277.427	4278.631	232 711.642	–	256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[2]°$	$^1/_2–^3/_2$	
61.01	6	4277.706	4277.695	4278.899	232 527.09	–	255 897.59	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2P°–^2D$	$^3/_2–^5/_2$	W
67	12	4277.892	4277.8935	4279.0973	232 753.816	–	256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[3]°$	$^7/_2–^7/_2$	E3
61.01	7	4279.156	4279.165	4280.369	232 480.44	–	255 842.91	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2P°–^2D$	$^1/_2–^3/_2$	W
54	11	4281.318	4281.3134	4282.5181	232 462.724	–	255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[2]°$	$^5/_2–^5/_2$	W
80			4282.021	4283.226	232 796.298	–	256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[4]°$	$^5/_2–^7/_2$	
66.01	14	4282.964	4282.9610	4284.1662	232 745.981	–	256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[2]°$	$^3/_2–^5/_2$	E3
66.01	9	4283.249	4283.2512	4284.4564	232 747.562	–	256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[2]°$	$^5/_2–^5/_2$	W
66.01	12	4283.727	4283.721	4284.927	232 745.981	–	256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[2]°$	$^3/_2–^3/_2$	W
66.01	6	4284.002	4284.011	4285.217	232 747.562	–	256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[2]°$	$^5/_2–^3/_2$	W
66.01	7	4284.393	4284.3992	4285.6047	232 753.816	–	256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^4D–^2[2]°$	$^7/_2–^5/_2$	W
79	15	4285.687	4285.684	4286.890	232 796.298	–	256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[3]°$	$^5/_2–^7/_2$	E3
61.01	5	4287.734	4287.727	4288.933	232 527.09	–	255 842.91	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4d$	$^2P°–^2D$	$^3/_2–^3/_2$	W
55.01	13	4288.820	4288.820	4290.027	232 602.492	–	255 912.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[1]°$	$^1/_2–^1/_2$	E3
55.01			4288.829	4290.036	232 602.492	–	255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[1]°$	$^1/_2–^3/_2$	
55	14	4291.254	4291.2535	4292.4608	232 462.724	–	255 759.384	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4P–^2[3]°$	$^5/_2–^7/_2$	E3
55	7	4291.857	4291.8528	4293.0603	232 462.724	–	255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4P–^2[3]°$	$^5/_2–^5/_2$	W
78	13	4292.211	4292.2138	4293.4213	232 796.298	–	256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[2]°$	$^5/_2–^5/_2$	E3
78	2	4292.954	4292.977	4294.185	232 796.298	–	256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[2]°$	$^5/_2–^3/_2$	W
54	15	4294.781	4294.7815	4295.9897	232 535.949	–	255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[2]°$	$^3/_2–^5/_2$	E3
54			4294.9188	4296.1271	232 535.949	–	255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[2]°$	$^3/_2–^3/_2$	
100	9	4302.858	4302.853	4304.063	252 608.28	–	275 842.14	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ G	$^2G–^2[4]°$	$^9/_2–$	W
100	8	4303.070	4303.071	4304.282	252 609.46	–	275 842.14	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ G	$^2G–^2[4]°$	$^7/_2–^7/_2$	W
66	11	4303.609	4303.6107	4304.8213	232 753.816	–	255 983.584	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[5]°$	$^7/_2–^9/_2$	E3
53	15	4303.825	4303.8231	4305.0337	232 462.724	–	255 691.346	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[3]°$	$^5/_2–^7/_2$	E3
53			4304.0838	4305.2945	232 462.724	–	255 689.939	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[3]°$	$^5/_2–^5/_2$	
55	10	4305.390	4305.3874	4306.5985	232 535.949	–	255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4P–^2[3]°$	$^3/_2–^5/_2$	W
103.01	4	4305.965	4305.965	4307.176	253 046.74	–	276 263.81	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ P	$^2D–^2[1]°$	$^3/_2–$	W
103.01	5	4306.354	4306.350	4307.562	253 048.82	–	276 263.81	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ P	$^2D–^2[1]°$	$^5/_2–^3/_2$	W
54	12	4307.233	4307.2324	4308.4439	232 602.492	–	255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[2]°$	$^1/_2–^3/_2$	E3
65.01	11	4308.999	4308.998	4310.210	232 711.642	–	255 912.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[1]°$	$^1/_2–^1/_2$	W
65.01			4309.007	4310.219	232 711.642	–	255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[1]°$	$^1/_2–^3/_2$	
80	11	4312.107	4312.111	4313.324	232 959.210	–	256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[4]°$	$^7/_2–^7/_2$	W
80	12	4313.442	4313.4415	4314.6547	232 959.210	–	256 136.036	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[4]°$	$^7/_2–^9/_2$	W
65.01	8	4315.303	4315.385	4316.598	232 745.981	–	255 912.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[1]°$	$^3/_2–^1/_2$	W
65.01			4315.394	4316.608	232 745.981	–	255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[1]°$	$^3/_2–^3/_2$	
79	7	4315.828	4315.8260	4317.0398	232 959.210	–	256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[3]°$	$^7/_2–^7/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II – Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower		Upper	Configurations	Terms	J Values	Ref.
2	19	4317.138	4317.139	4318.353	185 235.281	–	208 392.258	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	1/2–3/2	W,B1
53	11	4317.700	4317.6958	4318.9100	232 535.949	–	255 689.939	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4P–^2[3]°$	3/2–5/2	W
2	19	4319.629	4319.630	4320.844	185 340.577	–	208 484.202	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	3/2–5/2	W,B1
61			4319.866	4321.080	232 480.44	–	255 622.80	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2P°–^2S$	1/2–1/2	
78	5	4322.445	4322.4477	4323.6632	232 959.210	–	256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2F–^2[2]°$	7/2–5/2	W
77.01	6	4324.790	4324.788	4326.004	232 796.298	–	255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2F–^2[1]°$	5/2–3/2	W
2	15	4325.758	4325.761	4326.977	185 235.281	–	208 346.104	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	1/2–1/2	W
41	12	4327.465	4327.460	4328.676	229 947.07	–	253 048.82	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2D°–^2D$	5/2–5/2	W
41	6	4327.851	4327.849	4329.066	229 947.07	–	253 046.74	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2D°–^2D$	5/2–3/2	W
61	11	4328.586	4328.591	4329.808	232 527.09	–	255 622.80	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2P°–^2S$	3/2–1/2	W
65			4331.159	4332.377	232 747.562	–	255 829.58	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[4]°$	5/2–7/2	
101.01	12	4331.176	4331.176	4332.393	252 993.39	–	276 075.32	$2s^22p^2(^1S)3p–2s^22p^2(^1S)3d$	$^2P°–^2D$	3/2–5/2	W
41	6	4331.468	4331.466	4332.684	229 968.44	–	253 048.82	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2D°–^2D$	3/2–5/2	W
41	11	4331.862	4331.857	4333.075	229 968.44	–	253 046.74	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2D°–^2D$	3/2–3/2	W
65			4332.333	4333.551	232 753.816	–	255 829.58	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[4]°$	7/2–7/2	
65	11	4332.707	4332.694	4333.912	232 753.816	–	255 827.657	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[4]°$	7/2–9/2	W
64	6	4334.029	4334.026	4335.245	232 745.981	–	255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[2]°$	3/2–3/2	W
64	9	4334.186	4334.184	4335.402	232 747.562	–	255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[2]°$	5/2–5/2	W
64			4334.324	4335.542	232 747.562	–	255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[2]°$	5/2–3/2	
64	6	4335.362	4335.359	4336.578	232 753.816	–	255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[2]°$	7/2–5/2	W
2	17	4336.862	4336.859	4338.078	185 340.577	–	208 392.258	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	3/2–3/2	W,B1
76	12	4340.328	4340.323	4341.544	232 796.298	–	255 829.58	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[4]°$	5/2–7/2	W
77	15	4342.004	4342.003	4343.223	232 959.210	–	255 983.584	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[5]°$	7/2–9/2	W
103	6	4342.813	4342.801	4344.022	253 046.74	–	276 066.88	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2D–^2[2]°$	3/2–5/2	W
103			4342.815	4344.035	253 046.74	–	276 066.81	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2D–^2[2]°$	3/2–3/2	
103	7w	4343.202	4343.194	4344.415	253 048.82	–	276 066.88	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2D–^2[2]°$	5/2–5/2	W
103			4343.207	4344.428	253 048.82	–	276 066.81	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2D–^2[2]°$	5/2–3/2	
63.01	12	4344.375	4344.371	4345.592	232 747.562	–	255 759.384	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[3]°$	5/2–7/2	W
63.01	6	4344.958	4344.985	4346.207	232 747.562	–	255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[3]°$	5/2–5/2	W
63.01			4345.552	4346.774	232 753.816	–	255 759.384	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[3]°$	7/2–7/2	
2	19	4345.560	4345.560	4346.782	185 340.577	–	208 346.104	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	3/2–1/2	W,B1
63.01	5	4346.159	4346.167	4347.389	232 753.816	–	255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^4D–^2[3]°$	7/2–5/2	W
16	10	4347.223	4347.217	4348.439	206 971.68	–	229 968.44	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2D°$	5/2–3/2	W
101.01			4347.224	4348.446	252 987.23	–	275 983.95	$2s^22p^2(^1S)3p–2s^22p^2(^1S)3d$	$^2P°–^2D$	1/2–3/2	
16	19	4347.420	4347.413	4348.635	206 972.72	–	229 968.44	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2D°$	3/2–3/2	W,B1
2	23	4349.426	4349.426	4350.649	185 499.124	–	208 484.202	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	5/2–5/2	W,B1
16	21	4351.262	4351.260	4352.483	206 971.68	–	229 947.07	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2D°$	5/2–5/2	W,B1
16			4351.457	4352.680	206 972.72	–	229 947.07	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2D°$	3/2–5/2	
76.01	12	4353.594	4353.592	4354.815	232 796.298	–	255 759.384	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[3]°$	5/2–7/2	W
76.01	4	4354.178	4354.208	4355.432	232 796.298	–	255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[3]°$	5/2–5/2	W
63	10	4357.252	4357.221	4358.446	232 745.981	–	255 689.939	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[3]°$	3/2–5/2	W
63			4357.254	4358.479	232 747.562	–	255 691.346	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[3]°$	5/2–7/2	
18			4357.257	4358.482	208 484.202	–	231 427.970	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^4P°–^4F$	5/2–7/2	
63			4357.522	4358.746	232 747.562	–	255 689.939	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[3]°$	5/2–5/2	
63	7	4358.451	4358.442	4359.667	232 753.816	–	255 691.346	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^4D–^2[3]°$	7/2–7/2	W
26	7	4359.392	4359.395	4360.620	211 522.117	–	234 454.634	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2D$	3/2–5/2	W
74.06	9	4366.530	4366.530	4367.757	232 796.298	–	255 691.346	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2F–^2[3]°$	5/2–7/2	W
2	20	4366.892	4366.895	4368.122	185 499.124	–	208 392.258	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4P°$	5/2–3/2	W,B1
26	13	4369.275	4369.272	4370.499	211 522.117	–	234 402.797	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2D$	3/2–3/2	W
76	11	4371.618	4371.609	4372.837	232 959.210	–	255 827.657	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[4]°$	7/2–9/2	W
75	9	4374.295	4374.322	4375.551	232 959.210	–	255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2F–^2[2]°$	7/2–5/2	W
102	8	4378.027	4378.029	4379.260	253 046.74	–	275 881.65	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ F	$^2D–^2[3]°$	3/2–5/2	W
102	9	4378.427	4378.428	4379.659	253 048.82	–	275 881.65	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ F	$^2D–^2[3]°$	5/2–	W
76.01			4384.700	4385.931	232 959.210	–	255 759.384	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[3]°$	7/2–7/2	
76.01			4385.325	4386.557	232 959.210	–	255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2F–^2[3]°$	7/2–5/2	

Table 1. Wavelengths and Energy-Level Classifications for O II – Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
26	15	4395.942	4395.935	4397.170	211 712.732	– 234 454.634	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2D$	$^5/_2–^5/_2$	W
74.06	4	4397.855	4397.823	4399.059	232 959.210	– 255 691.346	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2F–^2[3]°$	$^7/_2–^7/_2$	W
88.03	7	4404.950	4404.970	4406.207	233 430.53	– 256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2P–^2[3]°$	$^3/_2–^5/_2$	W
26	8	4405.987	4405.978	4407.215	211 712.732	– 234 402.797	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2D$	$^5/_2–^3/_2$	W
5	27	4414.905	4414.899	4416.138	189 068.514	– 211 712.732	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2D°$	$^3/_2–^5/_2$	W,B1
5	25	4416.974	4416.975	4418.215	188 888.543	– 211 522.117	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2D°$	$^1/_2–^3/_2$	W,B1
88.02	7	4435.506	4435.506	4436.751	233 544.59	– 256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2P–^2[2]°$	$^1/_2–^3/_2$	W
35	15	4443.007	4443.010	4444.257	228 723.84	– 251 224.79	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2F°–^2F$	$^5/_2–^5/_2$	W
35	8	4443.516	4443.523	4444.770	228 723.84	– 251 222.19	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2F°–^2F$	$^5/_2–^7/_2$	W
88.01	6	4446.809	4446.786	4448.035	233 430.53	– 255 912.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2P–^2[1]°$	$^3/_2–^1/_2$	W
88.01			4446.796	4448.044	233 430.53	– 255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2P–^2[1]°$	$^3/_2–^3/_2$	
35	5	4447.673	4447.676	4448.925	228 747.45	– 251 224.79	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2F°–^2F$	$^7/_2–^5/_2$	W
35	16	4448.186	4448.191	4449.440	228 747.45	– 251 222.19	$2s^22p^2(^1D)3p–2s^22p^2(^1D)3d$	$^2F°–^2F$	$^7/_2–^7/_2$	W
5	18	4452.375	4452.378	4453.628	189 068.514	– 211 522.117	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2D°$	$^3/_2–^3/_2$	W,B1
94	17	4465.417	4465.407	4466.661	245 400.00+x	– 267 788.09+x	$2s2p^3(^5S°)3s–2s2p^3(^5S°)3p$	$^6S°–^6P$	$^5/_2–^7/_2$	W
44.02	15	4466.241	4466.235	4467.489	230 609.45	– 252 993.39	$2s^22p^2(^1S)3s–2s^22p^2(^1S)3p$	$^2S–^2P°$	$^1/_2–^3/_2$	W
87	7	4466.415	4466.434	4467.688	233 430.53	– 255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2P–^2[2]°$	$^3/_2–^5/_2$	W
44.02	13	4467.475	4467.465	4468.719	230 609.45	– 252 987.23	$2s^22p^2(^1S)3s–2s^22p^2(^1S)3p$	$^2S–^2P°$	$^1/_2–^1/_2$	W
94	15	4467.921	4467.924	4469.178	245 400.00+x	– 267 775.48+x	$2s2p^3(^5S°)3s–2s2p^3(^5S°)3p$	$^6S°–^6P$	$^5/_2–^5/_2$	W
94	17	4469.373	4469.378	4470.632	245 400.00+x	– 267 768.20+x	$2s2p^3(^5S°)3s–2s2p^3(^5S°)3p$	$^6S°–^6P$	$^5/_2–^3/_2$	W
88	12	4477.904	4477.906	4479.163	233 430.53	– 255 756.131	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ G	$^2P–^2[3]°$	$^3/_2–^5/_2$	W
104	7	4487.716	4487.712	4488.971	253 789.99	– 276 066.81	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2P–^2[2]°$	$^1/_2–^3/_2$	W
104	3	4488.196	4488.183	4489.443	253 792.40	– 276 066.88	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2P–^2[2]°$	$^3/_2–^5/_2$	W
104			4488.198	4489.457	253 792.40	– 276 066.81	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4f$ D	$^2P–^2[2]°$	$^3/_2–^3/_2$	
87	11	4489.462	4489.462	4490.721	233 544.59	– 255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2P–^2[2]°$	$^1/_2–^3/_2$	W
86	13	4491.227	4491.222	4492.482	233 430.53	– 255 689.939	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2P–^2[3]°$	$^3/_2–^5/_2$	W
25.01			4539.543	4540.816	211 522.117	– 233 544.59	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2P$	$^3/_2–^1/_2$	
25.01	4	4563.178	4563.178	4564.457	211 522.117	– 233 430.53	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2P$	$^3/_2–^3/_2$	W
15	22	4590.972	4590.974	4592.260	206 971.68	– 228 747.45	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2F°$	$^5/_2–^7/_2$	W
15	7	4595.960	4595.957	4597.245	206 971.68	– 228 723.84	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2F°$	$^5/_2–^5/_2$	W
15	20	4596.175	4596.177	4597.464	206 972.72	– 228 723.84	$2s^22p^2(^1D)3s–2s^22p^2(^1D)3p$	$^2D–^2F°$	$^3/_2–^5/_2$	W,B1
93	12	4602.128	4602.129	4603.418	234 402.797	– 256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[3]°$	$^3/_2–^5/_2$	W
25.01	3	4603.228	4603.229	4604.518	211 712.732	– 233 430.53	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2D°–^2P$	$^5/_2–^3/_2$	W
93.01	14	4609.442	4609.436	4610.727	234 454.634	– 256 143.187	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[4]°$	$^5/_2–^7/_2$	W
92	12	4610.203	4610.202	4611.493	234 402.797	– 256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[2]°$	$^3/_2–^5/_2$	W
92	3	4611.070	4611.083	4612.374	234 402.797	– 256 083.604	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[2]°$	$^3/_2–^3/_2$	W
93	7	4613.137	4613.137	4614.430	234 454.634	– 256 125.785	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[3]°$	$^5/_2–^5/_2$	W
93	8	4613.681	4613.681	4614.973	234 454.634	– 256 123.231	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[3]°$	$^5/_2–^7/_2$	W
92	6	4621.272	4621.249	4622.543	234 454.634	– 256 087.746	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ F	$^2D–^2[2]°$	$^5/_2–^5/_2$	W
1	20	4638.8550	4638.8558	4640.1548	185 235.281	– 206 786.286	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^1/_2–^3/_2$	E3
1	22	4641.8104	4641.8103	4643.1101	185 340.577	– 206 877.865	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^3/_2–^5/_2$	E3
94.05	3	4643.386	4643.412	4644.712	245 768.37	– 267 298.23	$2s^22p^2(^3P)4p–2s^22p^2(^3P)6s$	$^4D°–^2P$	$^1/_2–^3/_2$	W
91.01	4	4647.803	4647.791	4649.093	234 402.797	– 255 912.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2D–^2[1]°$	$^3/_2–^1/_2$	W
91.01			4647.802	4649.104	234 402.797	– 255 912.32	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2D–^2[1]°$	$^3/_2–^3/_2$	
1	24	4649.1348	4649.1347	4650.4365	185 499.124	– 207 002.482	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^5/_2–^7/_2$	E3
1	20	4650.8394	4650.8384	4652.1406	185 235.281	– 206 730.762	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^1/_2–^1/_2$	E3
1	21	4661.6332	4661.6324	4662.9375	185 340.577	– 206 786.286	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^3/_2–^3/_2$	E3
90	5	4669.266	4669.260	4670.567	234 402.797	– 255 813.472	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2D–^2[2]°$	$^3/_2–^5/_2$	W
90	5	4669.427	4669.423	4670.730	234 402.797	– 255 812.728	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4f$ D	$^2D–^2[2]°$	$^3/_2–^3/_2$	W
1	14	4673.7322	4673.7331	4675.0414	185 340.577	– 206 730.762	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^3/_2–^1/_2$	E3
1	20	4676.2350	4676.2350	4677.5439	185 499.124	– 206 877.865	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^4P–^4D°$	$^5/_2–^5/_2$	E3

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
91	8	4677.068	4677.065	4678.374	234 454.634	– 255 829.58	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)4f$ G	^2D–$^2[4]°$	$^5/_2$–$^7/_2$	W
90	2	4680.583	4680.593	4681.903	234 454.634	– 255 813.472	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)4f$ D	^2D–$^2[2]°$	$^5/_2$–$^5/_2$	W
58	6	4690.896	4690.888	4692.201	232 480.44	– 253 792.40	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2P	$^1/_2$–$^3/_2$	W
58	9	4691.416	4691.419	4692.732	232 480.44	– 253 789.99	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2P	$^1/_2$–$^1/_2$	W
89.01	4	4693.195	4693.192	4694.506	234 454.634	– 255 756.131	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)4f$ G	^2D–$^2[3]°$	$^5/_2$–$^5/_2$	W
1	12	4696.347	4696.3528	4697.6671	185 499.124	– 206 786.286	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)3p$	^4P–$^4D°$	$^5/_2$–$^3/_2$	W
89			4696.357	4697.671	234 402.797	– 255 689.939	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)4f$ D	^2D–$^2[3]°$	$^3/_2$–$^5/_2$	
40	6	4698.446	4698.437	4699.752	229 947.07	– 251 224.79	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2D°$–^2F	$^5/_2$–$^5/_2$	W
40	15	4699.003	4699.011	4700.326	229 947.07	– 251 222.19	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2D°$–^2F	$^5/_2$–$^7/_2$	W
25	17	4699.220	4699.218	4700.533	211 522.117	– 232 796.298	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^2F	$^3/_2$–$^5/_2$	W
58	11	4701.184	4701.179	4702.494	232 527.09	– 253 792.40	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2P	$^3/_2$–$^3/_2$	W
58	5	4701.708	4701.712	4703.027	232 527.09	– 253 789.99	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2P	$^3/_2$–$^1/_2$	W
40	14	4703.163	4703.161	4704.477	229 968.44	– 251 224.79	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2D°$–^2F	$^3/_2$–$^5/_2$	W
25	21	4705.352	4705.340	4706.662	211 712.732	– 232 959.210	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^2F	$^5/_2$–$^7/_2$	W,B1
89	3	4707.484	4707.510	4708.827	234 454.634	– 255 691.346	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)4f$ D	^2D–$^2[3]°$	$^5/_2$–$^7/_2$	W
89	4	4707.811	4707.822	4709.139	234 454.634	– 255 689.939	$2s^22p^2(^3P)3d$–$2s^22p^2(^3P)4f$ D	^2D–$^2[3]°$	$^5/_2$–$^5/_2$	W
24	10	4710.012	4710.009	4711.326	211 522.117	– 232 747.562	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^3D°$–^4D	$^9/_2$–$^5/_2$	W
25	10	4741.707	4741.704	4743.031	211 712.732	– 232 796.298	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^2F	$^5/_2$–$^5/_2$	W
24	14	4751.271	4751.278	4752.607	211 712.732	– 232 753.816	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^4D	$^5/_2$–$^7/_2$	W
24	9	4752.681	4752.691	4754.020	211 712.732	– 232 747.562	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^4D	$^5/_2$–$^5/_2$	W
94.04	4	4773.782	4773.773	4775.108	246 029.295	– 266 971.23	$2s^22p^2(^3P)4p$–$2s^22p^2(^3P)6s$	$^4D°$–^4P	$^7/_2$–$^5/_2$	W
23.02	3	4774.059	4774.076	4775.411	211 522.117	– 232 462.724	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^4P	$^3/_2$–$^5/_2$	W
105	8	4843.366	4843.371	4844.724	255 622.80	– 276 263.81	$2s^22p^2(^1D)3d$–$2s^22p^2(^1D)4f$ P	^2S–$^2[1]°$	$^1/_2$–$^3/_2$	W
30	8	4844.913	4844.919	4846.272	212 161.881	– 232 796.298	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^2F	$^3/_2$–$^5/_2$	W
29	11	4856.395	4856.389	4857.746	212 161.881	– 232 747.562	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^4D	$^3/_2$–$^5/_2$	W
29	13	4856.758	4856.762	4858.119	212 161.881	– 232 745.981	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^4D	$^3/_2$–$^3/_2$	W
57	12	4860.968	4860.965	4862.323	232 480.44	– 253 046.74	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2D	$^1/_2$–$^3/_2$	W
29	11	4864.879	4864.878	4866.237	212 161.881	– 232 711.642	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^4D	$^3/_2$–$^1/_2$	W
57	15	4871.520	4871.523	4872.884	232 527.09	– 253 048.82	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2D	$^3/_2$–$^5/_2$	W
57	6	4872.005	4872.017	4873.377	232 527.09	– 253 046.74	$2s^22p^2(^1D)3p$–$2s^22p^2(^1D)3d$	$^2P°$–^2D	$^3/_2$–$^3/_2$	W
28	15	4890.858	4890.856	4892.222	212 161.881	– 232 602.492	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^4P	$^3/_2$–$^1/_2$	W
28	19	4906.833	4906.830	4908.200	212 161.881	– 232 535.949	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^4P	$^3/_2$–$^3/_2$	W
28	21	4924.531	4924.529	4925.904	212 161.881	– 232 462.724	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^4S°$–^4P	$^3/_2$–$^5/_2$	W
33	18	4941.069	4941.072	4942.451	214 169.920	– 234 402.797	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2D	$^1/_2$–$^3/_2$	W
33	20	4942.999	4943.005	4944.385	214 229.671	– 234 454.634	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2D	$^3/_2$–$^5/_2$	W
33	14	4955.705	4955.707	4957.090	214 229.671	– 234 402.797	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2D	$^3/_2$–$^3/_2$	W
23.01	2	5041.976	5041.975	5043.381	211 522.117	– 231 350.087	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^4F	$^3/_2$–$^5/_2$	W
23.01	3	5070.800	5070.805	5072.219	211 712.732	– 231 427.970	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^4F	$^5/_2$–$^7/_2$	W
23.01	2	5090.920	5090.917	5092.336	211 712.732	– 231 350.087	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2D°$–^4F	$^5/_2$–$^5/_2$	W
85.01	6	5110.300	5110.303	5111.727	233 430.53	– 252 993.39	$2s^22p^2(^3P)3d$–$2s^22p^2(^1S)3p$	^2P–$^2P°$	$^3/_2$–$^3/_2$	W
32	15	5159.942	5159.941	5161.378	214 169.920	– 233 544.59	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2P	$^1/_2$–$^1/_2$	W
32	12	5175.896	5175.903	5177.345	214 229.671	– 233 544.59	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2P	$^3/_2$–$^1/_2$	W
32	14	5190.496	5190.498	5191.944	214 169.920	– 233 430.53	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2P	$^1/_2$–$^3/_2$	W
32	20	5206.650	5206.651	5208.100	214 229.671	– 233 430.53	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^2P	$^3/_2$–$^3/_2$	W
95	2	5322.525	5322.502	5323.983	248 515.30	– 267 298.23	$2s^22p^2(^3P)4p$–$2s^22p^2(^3P)6s$	$^2P°$–^2P	$^3/_2$–$^3/_2$	W
UV17.27	2	5344.104	5344.104	5345.591	185 235.281	– 203 942.288	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)3p$	^4P–$^2S°$	$^1/_2$–$^1/_2$	W
UV17.27	6	5374.351	5374.355	5375.850	185 340.577	– 203 942.288	$2s^22p^2(^3P)3s$–$2s^22p^2(^3P)3p$	^4P–$^2S°$	$^3/_2$–$^1/_2$	W
88.13	5	5377.568	5377.569	5379.065	234 402.797	– 252 993.39	$2s^22p^2(^3P)3d$–$2s^22p^2(^1S)3p$	^2D–$^2P°$	$^3/_2$–$^3/_2$	W
88.13	7	5379.352	5379.352	5380.848	234 402.797	– 252 987.23	$2s^22p^2(^3P)3d$–$2s^22p^2(^1S)3p$	^2D–$^2P°$	$^3/_2$–$^1/_2$	W
31.07	1	5381.772	5381.776	5383.273	214 169.920	– 232 745.981	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^4D	$^1/_2$–$^3/_2$	W
88.13	10	5392.611	5392.606	5394.105	234 454.634	– 252 993.39	$2s^22p^2(^3P)3d$–$2s^22p^2(^1S)3p$	^2D–$^2P°$	$^5/_2$–$^3/_2$	W
6.01			5398.300	5399.801	195 710.47	– 214 229.671	$2s2p^4$–$2s^22p^2(^3P)3p$	^2S–$^2P°$	$^1/_2$–$^3/_2$	
31.07	1	5409.203	5409.175	5410.678	214 229.671	– 232 711.642	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^4D	$^3/_2$–$^1/_2$	W
6.01	5	5415.772	5415.774	5417.279	195 710.47	– 214 169.920	$2s2p^4$–$2s^22p^2(^3P)3p$	^2S–$^2P°$	$^1/_2$–$^1/_2$	W
31.06	1	5423.639	5423.671	5425.179	214 169.920	– 232 602.492	$2s^22p^2(^3P)3p$–$2s^22p^2(^3P)3d$	$^2P°$–^4P	$^1/_2$–$^1/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower		Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
31.06	2	5461.040	5461.089	5462.607	214 229.671	–	232 535.949	$2s^22p^2(^3P)3p–2s^22p^2(^3P)3d$	$^2P°–^4P$	$^3/_2–^3/_2$	W
44.01	10	5583.232	5583.217	5584.767	230 609.45	–	248 515.30	$2s^22p^2(^1S)3s–2s^22p^2(^3P)4p$	$^2S–^2P°$	$^1/_2–^3/_2$	W
44.01	5	5611.061	5611.072	5612.630	230 609.45	–	248 426.41	$2s^22p^2(^1S)3s–2s^22p^2(^3P)4p$	$^2S–^2P°$	$^1/_2–^1/_2$	W
4.01	6	5613.472	5613.469	5615.028	189 068.514	–	206 877.865	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^4D°$	$^3/_2–^5/_2$	W
31.03	5	5753.917	5753.926	5755.522	212 593.82	–	229 968.44	$2s2p^4–2s^22p^2(^1D)3p$	$^2P–^2D°$	$^3/_2–^3/_2$	W
31.03	11	5761.008	5761.012	5762.609	212 593.82	–	229 947.07	$2s2p^4–2s^22p^2(^1D)3p$	$^2P–^2D°$	$^3/_2–^5/_2$	W
93.13	3*w*	5783.788	5783.789	5785.393	238 627.46	–	255 912.37	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ D	$^4P–^2[1]°$	$^1/_2–^1/_2$	W
93.13			5783.806	5785.410	238 627.46	–	255 912.32	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ D	$^4P–^2[1]°$	$^1/_2–^3/_2$	
31.03	9	5810.243	5810.251	5811.862	212 762.25	–	229 968.44	$2s2p^4–2s^22p^2(^1D)3p$	$^2P–^2D°$	$^1/_2–^3/_2$	W
105.41	11	5846.232	5846.230?	5847.851	261 044.03	–	278 144.33?	$2s^22p^2(^3P)5p–2s^22p^2(^1D)5s$	$^4D°–^2D$	$^5/_2–^3/_2$	W
93.12	4	5903.078	5903.079	5904.714	238 893.96	–	255 829.58	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ G	$^4P–^2[4]°$	$^5/_2–^7/_2$	W
31.05	4	6081.224	6081.215	6082.899	214 169.920	–	230 609.45	$2s^22p^2(^3P)3p–2s^22p^2(^1S)3s$	$^2P°–^2S$	$^1/_2–^1/_2$	W
31.05	7	6103.386	6103.399	6105.088	214 229.671	–	230 609.45	$2s^22p^2(^3P)3p–2s^22p^2(^1S)3s$	$^2P°–^2S$	$^3/_2–^1/_2$	W
93.11	7	6112.987	6112.986	6114.678	238 627.46	–	254 981.55	$2s^22p^2(^3P)4s–2s2p^3(^5S°)3s$	$^4P–^4S°$	$^1/_2–^3/_2$	W
93.11	8	6152.566	6152.560	6154.263	238 732.65	–	254 981.55	$2s^22p^2(^3P)4s–2s2p^3(^5S°)3s$	$^4P–^4S°$	$^3/_2–^3/_2$	W
31.02	1	6197.922	6197.905	6199.620	212 593.82	–	228 723.84	$2s2p^4–2s^22p^2(^1D)3p$	$^2P–^2F°$	$^3/_2–^5/_2$	W
93.11	9	6214.250	6214.252	6215.971	238 893.96	–	254 981.55	$2s^22p^2(^3P)4s–2s2p^3(^5S°)3s$	$^4P–^4S°$	$^5/_2–^3/_2$	W
52.05	4	6357.961	6357.981	6359.739	232 462.724	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^2D°$	$^5/_2–^5/_2$	W
93.18	2	6457.047	6457.030	6458.814	240 330.01	–	255 812.728	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ D	$^2P–^2[2]°$	$^1/_2–^3/_2$	W
109	2	6457.806	6457.805	6459.589	275 842.14	–	291 323.00	$2s^22p^2(^1D)4f$ G–$2s^22p^2(^1D_2)6g$	$^2[4]°–^2[5]$		EW
105.20	6	6471.424	6471.420	6473.208	255 912.32	–	271 360.61	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_2)6g$	$^2[1]°–^2[2]$		EW
111	1	6473.891	6473.893?	6475.682	275 881.65	–	291 324.04?	$2s^22p^2(^1D)4f$ F–$2s^22p^2(^1D_2)6g$	$^2[3]°–^2[4]$	$^7/_2–^9/_2$	EW
62.04	6	6475.274	6475.281	6477.071	232 747.562	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^2D°$	$^5/_2–^5/_2$	W
62.04	10	6477.910	6477.905	6479.695	232 753.816	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^2D°$	$^7/_2–^5/_2$	W
96.02	12	6483.979	6483.970	6485.761	251 222.19	–	266 640.58	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2F–^2D°$	$^7/_2–^5/_2$	W
96.02			6485.063	6486.855	251 224.79	–	266 640.58	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2F–^2D°$	$^5/_2–^5/_2$	
105.08	7	6485.093	6485.093	6486.885	255 756.131	–	271 171.85	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)6g$	$^2[3]°–^2[4]$	$^5/_2–^7/_2$	EW
105.08	7	6486.461	6486.462	6488.254	255 759.384	–	271 171.85	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)6g$	$^2[3]°–^2[4]$	$^7/_2–^9/_2$	EW
96.02	11	6491.924	6491.911	6493.705	251 224.79	–	266 624.32	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2F–^2D°$	$^5/_2–^3/_2$	W
74.05	11*bl*	6495.802	6495.787	6497.581	232 796.298	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^2D°$	$^5/_2–^5/_2$	EW
105.24			6495.800	6497.595	255 977.481	–	271 367.79	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)6g$	$^2[5]°–^2[6]$	$^{11}/_2–^{13}/_2$	
105.24			6495.838	6497.633	255 977.481	–	271 367.70	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)6g$	$^2[5]°–^2[6]$	$^{11}/_2–^{11}/_2$	
105.24	7	6498.416	6498.415	6500.211	255 983.584	–	271 367.70	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)6g$	$^2[5]°–^2[6]$	$^9/_2–^{11}/_2$	EW
105.04	4	6500.828	6500.826	6502.622	255 689.939	–	271 068.35	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_0)6g$	$^2[3]°–^2[4]$	$^5/_2–^7/_2$	EW
105.04	7	6501.410	6501.404	6503.200	255 691.346	–	271 068.39	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_0)6g$	$^2[3]°–^2[4]$	$^7/_2–^9/_2$	EW
105.04			6501.421	6503.217	255 691.346	–	271 068.35	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_0)6g$	$^2[3]°–^2[4]$	$^7/_2–^7/_2$	
105.11	4	6502.187	6502.187	6503.984	255 812.728	–	271 187.92	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)6g$	$^2[2]°–^2[3]$	$^3/_2–^5/_2$	EW
105.11	5	6502.450	6502.451	6504.248	255 813.472	–	271 188.04	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)6g$	$^2[2]°–^2[3]$	$^5/_2–^7/_2$	EW
96.01	7	6506.027	6506.018	6507.815	251 222.19	–	266 588.33	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2F–^2F°$	$^7/_2–^7/_2$	W
105.16	8	6509.711	6509.711	6511.509	255 827.657	–	271 185.08	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)6g$	$^2[4]°–^2[5]$	$^9/_2–^{11}/_2$	EW
105.16	8*bl*	6510.622	6510.615	6512.414	255 829.58	–	271 184.87	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)6g$	$^2[4]°–^2[5]$	$^7/_2–^9/_2$	EW
96.01	13	6510.752	6510.763	6512.562	251 224.79	–	266 579.73	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2F–^2F°$	$^5/_2–^5/_2$	W
93.18	3	6535.828	6535.799	6537.605	240 517.35	–	255 813.472	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ D	$^2P–^2[2]°$	$^3/_2–^5/_2$	W
105.28	3	6537.557	6537.558	6539.364	256 083.604	–	271 375.61	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[2]°–^2[3]$	$^3/_2–^5/_2$	EW
105.28			6539.330	6541.136	256 087.746	–	271 375.61	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[2]°–^2[3]$	$^5/_2–^5/_2$	
105.28	4	6539.369	6539.385	6541.192	256 087.746	–	271 375.48	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[2]°–^2[3]$	$^5/_2–^7/_2$	EW
62.04	16	6550.144	6550.125	6551.934	232 747.562	–	248 010.23	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^2D°$	$^5/_2–^3/_2$	W
105.34	4	6550.598	6550.597	6552.406	256 123.231	–	271 384.80	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[3]°–^2[4]$	$^7/_2–^9/_2$	EW
105.34	4	6551.757	6551.757	6553.567	256 125.785	–	271 384.65	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[3]°–^2[4]$	$^5/_2–^7/_2$	EW
105.33	3	6554.619	6554.599	6556.410	256 123.231	–	271 375.48	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[3]°–^2[3]$	$^7/_2–^7/_2$	EW
105.39	7	6555.845	6555.844	6557.655	256 136.036	–	271 385.39	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[4]°–^2[5]$	$^9/_2–^{11}/_2$	EW

Table 1. Wavelengths and Energy-Level Classifications for O II – Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower		Upper	Configurations	Terms	J Values	Ref.
113	4	6556.068	6556.048	6557.859	276 109.46	–	291 358.34	$2s^22p^2(^1D)4f$ H–$2s^22p^2(^1D_2)6g$	$^2[5]°–^2[6]$	$^9/_2–^{11}/_2$	EW
113			6556.082	6557.893	276 109.54	–	291 358.34	$2s^22p^2(^1D)4f$ H–$2s^22p^2(^1D_2)6g$	$^2[5]°–^2[6]$	$^{11}/_2–^{13}/_2$	
105.40			6556.097	6557.909	256 136.036	–	271 384.80	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[4]°–^2[4]$	$^9/_2–^9/_2$	
105.39	7*bl*	6559.060	6559.062	6560.873	256 143.187	–	271 385.06	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)6g$	$^2[4]°–^2[5]$	$^7/_2–^9/_2$	EW
105.15			6559.552	6561.364	255 827.657	–	271 068.39	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)6g$	$^2[4]°–^2[4]$	$^9/_2–^9/_2$	
105.15			6559.569	6561.381	255 827.657	–	271 068.35	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)6g$	$^2[4]°–^2[4]$	$^9/_2–^7/_2$	
105.15	7	6560.369	6560.380	6562.192	255 829.58	–	271 068.39	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)6g$	$^2[4]°–^2[4]$	$^7/_2–^9/_2$	W
93.17			6560.392	6562.205	240 517.35	–	255 756.131	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ G	$^2P–^2[3]°$	$^3/_2–^5/_2$	
105.15			6560.397	6562.209	255 829.58	–	271 068.35	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)6g$	$^2[4]°–^2[4]$	$^7/_2–^7/_2$	
74.05	20	6565.283	6565.283	6567.096	232 959.210	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^2D°$	$^7/_2–^5/_2$	W
74.05	18	6571.100	6571.108	6572.923	232 796.298	–	248 010.23	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^2D°$	$^5/_2–^3/_2$	W
93.16	6	6589.006	6589.013	6590.833	240 517.35	–	255 689.939	$2s^22p^2(^3P)4s–2s^22p^2(^3P)4f$ D	$^2P–^2[3]°$	$^3/_2–^5/_2$	W
			6627.357	6629.187	255 983.584	–	271 068.39	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)6g$	$^2[5]°–^2[4]$	$^9/_2–^9/_2$	
85	17	6627.385	6627.373	6629.203	233 430.53	–	248 515.30	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2P°$	$^3/_2–^3/_2$	W
			6627.374	6629.205	255 983.584	–	271 068.35	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)6g$	$^2[5]°–^2[4]$	$^9/_2–^7/_2$	
4	24	6641.054	6641.031	6642.865	188 888.543	–	203 942.288	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2S°$	$^1/_2–^1/_2$	W
105.38	4	6646.350	6646.357	6648.192	256 143.187	–	271 184.87	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_1)6g$	$^2[4]°–^2[5]$	$^7/_2–^9/_2$	W
46	4	6652.563	6652.559	6654.396	231 427.970	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4P°$	$^7/_2–^5/_2$	W
85	13	6666.667	6666.657	6668.498	233 430.53	–	248 426.41	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2P°$	$^3/_2–^1/_2$	W
85	12	6677.862	6677.866	6679.710	233 544.59	–	248 515.30	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2P°$	$^1/_2–^3/_2$	W
85	15	6717.751	6717.754	6719.608	233 544.59	–	248 426.41	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2P°$	$^1/_2–^1/_2$	W
4	26	6721.398	6721.388	6723.243	189 068.514	–	203 942.288	$2s^22p^2(^3P)3s–2s^22p^2(^3P)3p$	$^2P–^2S°$	$^3/_2–^1/_2$	W
84.03	9	6774.973	6774.984	6776.854	233 430.53	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2D°$	$^3/_2–^5/_2$	W
45			6810.477	6812.357	231 350.087	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^5/_2–^7/_2$	
45			6844.098	6845.987	231 296.126	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^3/_2–^5/_2$	
45	11	6846.813	6846.804	6848.694	231 427.970	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^7/_2–^7/_2$	W
45	11	6869.485	6869.475	6871.371	231 350.087	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^5/_2–^5/_2$	W
45	11	6884.911	6884.881	6886.780	231 296.126	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^3/_2–^3/_2$	W
45	22	6895.109	6895.102	6897.004	231 530.246	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^9/_2–^7/_2$	W
45	19	6906.443	6906.436	6908.342	231 427.970	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^7/_2–^5/_2$	W
45	15	6907.872	6907.873	6909.778	231 296.126	–	245 768.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^3/_2–^1/_2$	W
45	19	6910.562	6910.562	6912.468	231 350.087	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4F–^4D°$	$^5/_2–^3/_2$	W
101.06	6	6922.355	6922.353	6924.263	253 048.82	–	267 490.79	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2D–^2P°$	$^5/_2–^3/_2$	W
101.06	5	6936.019	6936.008	6937.921	253 046.74	–	267 460.28	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2D–^2P°$	$^3/_2–^1/_2$	W
88.12	11	7083.975	7083.962	7085.915	234 402.797	–	248 515.30	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2D–^2P°$	$^3/_2–^3/_2$	W
88.12	16	7110.083	7110.078	7112.039	234 454.634	–	248 515.30	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2D–^2P°$	$^5/_2–^3/_2$	W
88.12	13	7128.885	7128.865	7130.830	234 402.797	–	248 426.41	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2D–^2P°$	$^3/_2–^1/_2$	W
52.03			7130.400	7132.366	232 462.724	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^5/_2–^3/_2$	
52.03	12	7144.478	7144.509	7146.479	232 462.724	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^5/_2–^5/_2$	W
99.01	12	7151.087	7151.079	7153.050	252 608.28	–	266 588.33	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2G–^2F°$	$^9/_2–^7/_2$	W
99.01	11	7156.090	7156.085	7158.058	252 609.46	–	266 579.73	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2G–^2F°$	$^7/_2–^5/_2$	W
52.03	7	7167.833	7167.836	7169.812	232 535.949	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^3/_2–^3/_2$	W
52.03	6	7182.091	7182.094	7184.073	232 535.949	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^3/_2–^5/_2$	W
52.03	9	7202.206	7202.198	7204.183	232 602.492	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^1/_2–^3/_2$	W
52.04	16	7229.142	7229.137	7231.130	232 462.724	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4S°$	$^5/_2–^3/_2$	W
52.03	12	7252.717	7252.717	7254.716	232 535.949	–	246 320.086	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^3/_2–^1/_2$	W
62.03	10	7259.282	7259.280	7261.281	232 711.642	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^1/_2–^3/_2$	W
52.04	9	7267.630	7267.620	7269.622	232 535.949	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4S°$	$^3/_2–^3/_2$	W
62.03	12	7277.438	7277.426	7279.432	232 745.981	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^3/_2–^3/_2$	W
62.03	10	7278.258	7278.264	7280.270	232 747.562	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^5/_2–^3/_2$	W
88.11	11	7280.257	7280.251	7282.257	234 454.634	–	248 186.64	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2D–^2D°$	$^5/_2–^5/_2$	W
52.03	10	7287.894	7287.900	7289.908	232 602.492	–	246 320.086	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4P°$	$^1/_2–^1/_2$	W
62.03	9	7292.129	7292.124	7294.133	232 745.981	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^3/_2–^5/_2$	W
62.03	11	7292.962	7292.965	7294.975	232 747.562	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^5/_2–^5/_2$	W
62.03	14	7296.310	7296.294	7298.304	232 753.816	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^7/_2–^5/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower		Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
103.03	5	7298.112	7298.117	7300.128	253 792.40	–	267 490.79	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2P–^2P°$	$^3/_2–^3/_2$	W
52.04			7302.947	7304.959	232 602.492	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4S°$	$^1/_2–^3/_2$	
74.04	7	7304.170	7304.180	7306.193	232 796.298	–	246 483.317	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^4P°$	$^5/_2–^3/_2$	W
103.03	1	7313.114	7313.119	7315.134	253 789.99	–	267 460.28	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2P–^2P°$	$^1/_2–^1/_2$	W
2F	E2		7318.92	7320.94	26 810.55	–	40 470.00	$2s^22p^3–2s^22p^3$	$^2D°–^2P°$	$^5/_2–^1/_2$	
74.04	10	7318.987	7318.986	7321.003	232 796.298	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^4P°$	$^5/_2–^5/_2$	W
2F	E2	7319.92	7319.99	7322.01	26 810.55	–	40 468.01	$2s^22p^3–2s^22p^3$	$^2D°–^2P°$	$^5/_2–^3/_2$	B2
2F	E2	7330.19	7329.66	7331.68	26 830.57	–	40 470.00	$2s^22p^3–2s^22p^3$	$^2D°–^2P°$	$^3/_2–^1/_2$	B2
2F	E2		7330.73	7332.75	26 830.57	–	40 468.01	$2s^22p^3–2s^22p^3$	$^2D°–^2P°$	$^3/_2–^3/_2$	
62.03	7	7346.367	7346.355	7348.379	232 711.642	–	246 320.086	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^1/_2–^1/_2$	W
88.11	9	7346.895	7346.901	7348.925	234 402.797	–	248 010.23	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2D–^2D°$	$^3/_2–^3/_2$	W
101.05	4	7355.362	7355.373	7357.399	253 048.82	–	266 640.58	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2D–^2D°$	$^5/_2–^5/_2$	W
62.02	3	7361.647	7361.645	7363.673	232 711.642	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4S°$	$^1/_2–^3/_2$	W
101.05	2	7363.046	7363.054	7365.083	253 046.74	–	266 624.32	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2D–^2D°$	$^3/_2–^3/_2$	W
62.03	3	7364.935	7364.939	7366.968	232 745.981	–	246 320.086	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4P°$	$^3/_2–^1/_2$	W
93.22	5	7367.694	7367.678	7369.707	245 037.29	–	258 606.35	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^2S°–^2P$	$^1/_2–^3/_2$	W
52.02	1	7369.017	7369.029	7371.059	232 462.724	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^5/_2–^7/_2$	W
88.11	3	7374.986	7374.996	7377.027	234 454.634	–	248 010.23	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2D–^2D°$	$^5/_2–^3/_2$	W
62.02			7380.307	7382.340	232 745.981	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4S°$	$^3/_2–^3/_2$	
62.02	1	7381.118	7381.108	7383.201	232 747.562	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4S°$	$^5/_2–^3/_2$	W
101.04	2	7383.744	7383.758	7385.792	253 048.82	–	266 588.33	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2D–^2F°$	$^5/_2–^7/_2$	W
101.04	3	7387.324	7387.315	7389.350	253 046.74	–	266 579.73	$2s^22p^2(^1D)3d–2s^22p^2(^1D)4p$	$^2D–^2F°$	$^3/_2–^5/_2$	W
74.04	3	7407.341	7407.333	7409.373	232 959.210	–	246 455.629	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^4P°$	$^7/_2–^5/_2$	W
74.03	2	7407.821	7407.824	7409.864	232 796.298	–	246 291.822	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^4S°$	$^5/_2–^3/_2$	W
52.02	2	7438.139	7438.151	7440.199	232 462.724	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^5/_2–^5/_2$	W
52.02			7478.897	7480.956	232 535.949	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^3/_2–^5/_2$	
52.02			7486.345	7488.406	232 462.724	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^5/_2–^3/_2$	
62.01	4	7527.011	7527.065	7529.138	232 747.562	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^5/_2–^7/_2$	W
52.02			7527.622	7529.695	232 535.949	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^3/_2–^3/_2$	
62.01	10	7530.020	7530.011	7532.085	232 753.816	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^7/_2–^7/_2$	W
74.02	3	7554.772	7554.787	7556.867	232 796.298	–	246 029.295	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^4D°$	$^5/_2–^7/_2$	W
52.02			7555.116	7557.196	232 535.949	–	245 768.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^3/_2–^1/_2$	
52.02	3	7565.482	7565.529	7567.612	232 602.492	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^1/_2–^3/_2$	W
52.02			7593.301	7595.392	232 602.492	–	245 768.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4P–^4D°$	$^1/_2–^1/_2$	
62.01	4	7598.254	7598.285	7600.376	232 745.981	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^3/_2–^5/_2$	W
62.01	4	7599.215	7599.198	7601.290	232 747.562	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^5/_2–^5/_2$	W
62.01	5	7602.810	7602.812	7604.905	232 753.816	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^7/_2–^5/_2$	W
74.02	4	7627.460	7627.454	7629.554	232 796.298	–	245 903.224	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2F–^4D°$	$^5/_2–^5/_2$	W
62.01	4	7628.468	7628.542	7630.642	232 711.642	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^1/_2–^3/_2$	W
62.01	4	7648.605	7648.583	7650.689	232 745.981	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^3/_2–^3/_2$	W
62.01	4	7649.557	7649.508	7651.614	232 747.562	–	245 816.70	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^5/_2–^3/_2$	W
62.01			7656.779	7658.887	232 711.642	–	245 768.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^1/_2–^1/_2$	
62.01	4	7676.944	7676.970	7679.083	232 745.981	–	245 768.37	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^4D–^4D°$	$^3/_2–^1/_2$	W
93.15	5	7894.609	7894.614	7896.786	240 330.01	–	252 993.39	$2s^22p^2(^3P)4s–2s^22p^2(^1S)3p$	$^2P–^2P°$	$^1/_2–^3/_2$	W
93.15	6	7898.452	7898.456	7900.629	240 330.01	–	252 987.23	$2s^22p^2(^3P)4s–2s^22p^2(^1S)3p$	$^2P–^2P°$	$^1/_2–^1/_2$	W
93.15	8	8013.157	8013.160	8015.364	240 517.35	–	252 993.39	$2s^22p^2(^3P)4s–2s^22p^2(^1S)3p$	$^2P–^2P°$	$^3/_2–^3/_2$	W
94.03	8	8375.841	8375.844	8378.146	246 029.295	–	257 965.11	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^7/_2–^5/_2$	W
94.03	7	8403.370	8403.379	8405.688	245 903.224	–	257 799.93	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4D°–^4P$	$^5/_2–^3/_2$	W
84.02	7	8613.319	8613.303	8615.669	233 430.53	–	245 037.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2S°$	$^3/_2–^1/_2$	W
94.08	8	8686.088	8686.103	8688.489	246 455.629	–	257 965.11	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^5/_2–^5/_2$	W
94.06	6	8687.153	8687.140	8689.526	246 291.822	–	257 799.93	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4S°–^4P$	$^3/_2–^3/_2$	W
84.02	5	8698.786	8698.786	8701.176	233 544.59	–	245 037.29	$2s^22p^2(^3P)3d–2s^22p^2(^3P)4p$	$^2P–^2S°$	$^1/_2–^1/_2$	W
94.08	7	8707.048	8707.050	8709.441	246 483.317	–	257 965.11	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^3/_2–^5/_2$	W
94.08	5	8708.513	8708.528	8710.920	246 320.086	–	257 799.93	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4P°–^4P$	$^1/_2–^3/_2$	W
104.07	6	8762.028	8762.028	8764.434	254 590.00	–	265 999.75	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4F–^2[4]°$	$^9/_2–^9/_2$	W

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Air Wavelength (Å) Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Levels (cm^{-1}) Upper	Configurations	Terms	J Values	Ref.
94.06	5	8766.509	8766.509	8768.916	246 291.822	– 257 695.74	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^4S°–^4P$	$^3/_2–^1/_2$	W
104.06	5	8784.288	8784.262	8786.674	254 337.61	– 265 718.48	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4F–^2[3]°$	$^3/_2–^5/_2$	W
104.03	5	8788.827	8788.842	8791.255	254 388.42	– 265 763.36	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4F–^2[4]°$	$^5/_2–^7/_2$	W
104.05	*m*?		8819.66	8822.08	254 590.00	– 265 925.19	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4F–^2[5]°$	$^9/_2–^{11}/_2$	
104.02	5	8847.509	8847.528	8849.957	254 337.61	– 265 637.10	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4F–^2[3]°$	$^3/_2–^5/_2$	W
104.04	4	8857.046	8857.043	8859.475	254 480.20	– 265 767.55	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4F–^2[2]°$	$^7/_2–^5/_2$	W
104.03	5	8861.867	8861.958	8864.392	254 480.20	– 265 761.29	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4F–^2[4]°$	$^7/_2–^9/_2$	W
104.02	5	8886.313	8886.315	8888.755	254 388.42	– 265 638.59	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4F–^2[3]°$	$^5/_2–^7/_2$	W
104.11	5	8997.624	8997.620	9000.090	254 881.37	– 265 992.37	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]°$	$^3/_2–^5/_2$	W
104.14	4	8997.880	8997.871	9000.341	254 846.68	– 265 957.37	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4D–^2[2]°$	$^1/_2–^3/_2$	W
104.13	4	9050.25	9050.26	9052.74	254 846.68	– 265 893.06	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4D–^2[1]°$	$^1/_2–^1/_2$	W
104.13	5	9078.31	9078.30	9080.80	254 881.37	– 265 893.62	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4D–^2[1]°$	$^3/_2–^3/_2$	W
104.12	12	9104.95	9104.95	9107.45	255 019.73	– 265 999.75	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4D–^2[4]°$	$^7/_2–^9/_2$	W
104.11	5	9111.13	9111.08	9113.58	255 019.73	– 265 992.37	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]°$	$^7/_2–^5/_2$	W
104.11			9111.13	9113.63	255 019.73	– 265 992.31	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4D–^2[3]°$	$^7/_2–^7/_2$	
104.10	5	9199.70	9199.70	9202.22	254 896.42	– 265 763.36	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4D–^2[4]°$	$^5/_2–^7/_2$	W
104.09	8	9236.23	9236.23	9238.76	254 896.42	– 265 720.38	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4D–^2[3]°$	$^5/_2–^7/_2$	W
104.17	5	9238.64	9238.64	9241.18	255 142.41	– 265 963.54	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^4P–^2[2]°$	$^3/_2–^5/_2$	W
104.08	4	9306.55	9306.55	9309.11	254 896.42	– 265 638.59	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4D–^2[3]°$	$^5/_2–^7/_2$	W
104.16	6	9317.12	9317.13	9319.68	255 163.08	– 265 893.06	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^4P–^2[1]°$	$^1/_2–^1/_2$	W
104.15	4	9417.72	9417.72	9420.30	255 105.01	– 265 720.38	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^4P–^2[3]°$	$^5/_2–^7/_2$	W
104.18	6	9421.49	9421.48	9424.07	255 281.93	– 265 893.06	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^2P–^2[1]°$	$^1/_2–^1/_2$	W
39.01	9	9457.91	9457.89	9460.49	229 947.07	– 240 517.35	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4s$	$^2D°–^2P$	$^5/_2–^3/_2$	W
39.01			9477.05	9479.65	229 968.44	– 240 517.35	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4s$	$^2D°–^2P$	$^3/_2–^3/_2$	
104.22	5	9490.79	9490.78	9493.39	255 466.10	– 265 999.75	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^2F–^2[4]°$	$^7/_2–^9/_2$	W
104.21	9	9553.75	9553.76	9556.38	255 466.10	– 265 930.31	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^2F–^2[5]°$	$^7/_2–^9/_2$	W
104.20			9553.80	9556.42	255 302.11	– 265 766.28	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ D	$^2F–^2[2]°$	$^5/_2–^3/_2$	
104.19	7	9556.46	9556.47	9559.09	255 302.11	– 265 763.36	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ G	$^2F–^2[4]°$	$^5/_2–^7/_2$	W
94.09	10	9594.54	9594.56	9597.20	248 186.64	– 258 606.35	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^5/_2–^3/_2$	W
94.09	9	9611.80	9611.80	9614.43	248 010.23	– 258 411.26	$2s^22p^2(^3P)4p–2s^22p^2(^3P)5s$	$^2D°–^2P$	$^3/_2–^1/_2$	W
39.01	7	9648.40	9648.40	9651.05	229 968.44	– 240 330.01	$2s^22p^2(^1D)3p–2s^22p^2(^3P)4s$	$^2D°–^2P$	$^3/_2–^1/_2$	W
93.21	9	9758.53	9758.53	9761.20	245 037.29	– 255 281.93	$2s^22p^2(^3P)4p–2s^22p^2(^3P)4d$	$^2S°–^2P$	$^1/_2–^1/_2$	W
105.14	7	9804.61	9804.60	9807.28	255 827.657	– 266 024.16	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[4]°–^2[5]$	$^9/_2–^{11}/_2$	EW
105.14	6	9806.36	9806.44	9809.13	255 829.58	– 266 024.16	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[4]°–^2[5]$	$^7/_2–^9/_2$	EW
105.10	6	9806.73	9806.76	9809.45	255 813.472	– 266 007.72	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_2)5g$	$^2[2]°–^2[3]$	$^5/_2–^7/_2$	EW
105.17			9850.04	9852.74	255 842.91	– 265 992.37	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^2D–^2[3]°$	$^3/_2–^5/_2$	
105.18	7	9891.12	9891.12	9893.83	255 897.59	– 266 004.90	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^2D–^2[4]°$	$^5/_2–^7/_2$	W
105.03	4	9894.16	9894.22	9896.93	255 689.939	– 265 794.08	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)5g$	$^2[3]°–^2[4]$	$^5/_2–^7/_2$	EW
105.03	4	9895.59	9895.54	9898.25	255 691.346	– 265 794.14	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)5g$	$^2[3]°–^2[4]$	$^7/_2–^9/_2$	EW
108	8	9901.30	9901.31	9904.02	275 842.14	– 285 939.05	$2s^22p^2(^1D)4f$ G–$2s^22p^2(^1D_2)5g$	$^2[4]°–^2[5]$		EW
105.17			9903.39	9906.11	255 897.59	– 265 992.37	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^2D–^2[3]°$	$^5/_2–^5/_2$	
105.17	10	9903.46	9903.45	9906.17	255 897.59	– 265 992.31	$2s^22p^2(^3P)4d–2s^22p^2(^3P)5f$ F	$^2D–^2[3]°$	$^5/_2–^7/_2$	W
105.19	12	9929.95	9929.94	9932.67	255 912.32	– 265 980.11	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_2)5g$	$^2[1]°–^2[2]$	$^3/_2–^5/_2$	EW
105.19			9929.99	9932.72	255 912.37	– 265 980.11	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_2)5g$	$^2[1]°–^2[2]$	$^1/_2–^3/_2$	
105.07	4	9933.49	9933.55	9936.27	255 756.131	– 265 820.27	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[3]°–^2[3]$	$^5/_2–^5/_2$	EW
105.42			9936.27	9938.99	265 820.27	– 275 881.65	$2s^22p^2(^3P_1)5g–2s^22p^2(^1D)4f$ F	$^2[3]–^2[3]°$	$^5/_2–^7/_2$	
105.42	4	9936.46	9936.46	9939.18	265 820.46	– 275 881.65	$2s^22p^2(^3P_1)5g–2s^22p^2(^1D)4f$ F	$^2[3]–^2[3]°$	$^7/_2–^7/_2$	EW
110	6	9937.94	9937.94	9940.66	275 881.65	– 285 941.34	$2s^22p^2(^1D)4f$ F–$2s^22p^2(^1D_2)5g$	$^2[3]°–^2[4]$		EW
105.23	5	9950.76	9950.81	9953.54	255 977.481	– 266 024.16	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[5]°–^2[5]$	$^{11}/_2–^{11}/_2$	EW
105.23	5	9956.73	9956.86	9959.59	255 983.584	– 266 024.16	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[5]°–^2[5]$	$^9/_2–^9/_2$	EW
105.06	11	9959.47	9959.46	9962.19	255 756.131	– 265 794.08	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[3]°–^2[4]$	$^5/_2–^7/_2$	EW
105.06	12	9962.62	9962.63	9965.36	255 759.384	– 265 794.14	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[3]°–^2[4]$	$^7/_2–^9/_2$	EW
105.22	14	9982.43	9982.43	9985.16	255 977.481	– 265 992.34	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[5]°–^2[6]$	$^{11}/_2–^{13}/_2$	EW
105.22			9982.46	9985.19	255 977.481	– 265 992.31	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[5]°–^2[6]$	$^{11}/_2–^{11}/_2$	
105.22	13	9988.54	9988.54	9991.28	255 983.584	– 265 992.31	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_2)5g$	$^2[5]°–^2[6]$	$^9/_2–^{11}/_2$	EW

Table 1. Wavelengths and Energy-Level Classifications for O II — Continued

Mult. No.	Rel. Int.	Air Wavelength (Å) Observed	Calculated	Vacuum Wavelength (Å)	Levels (cm^{-1}) Lower	Upper	Configurations	Terms	J Values	Ref.
105.09	10	9989.74	9989.72	9992.46	255 812.728	– 265 820.27	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)5g$	$^2[2]°$–$^2[3]$	$^3/_2$–$^5/_2$	EW
105.02	13*bl*	9990.27	9990.08	9992.81	255 689.939	– 265 697.13	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_0)5g$	$^2[3]°$–$^2[4]$	$^5/_2$–$^7/_2$	EW
105.09			9990.28	9993.02	255 813.472	– 265 820.46	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)5g$	$^2[2]°$–$^2[3]$	$^5/_2$–$^7/_2$	
105.09			9990.47	9993.21	255 813.472	– 265 820.27	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_1)5g$	$^2[2]°$–$^2[3]$	$^5/_2$–$^5/_2$	
105.02	12	9991.44	9991.48	9994.22	255 691.346	– 265 697.13	$2s^22p^2(^3P)4f$ D–$2s^22p^2(^3P_0)5g$	$^2[3]°$–$^2[4]$	$^7/_2$–$^9/_2$	EW
105.13	14	10008.89	10008.87	10011.61	255 827.657	– 265 816.06	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[4]°$–$^2[5]$	$^9/_2$–$^{11}/_2$	EW
105.13	13	10010.87	10010.87	10013.62	255 829.58	– 265 815.98	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[4]°$–$^2[5]$	$^7/_2$–$^9/_2$	EW
105.12	4	10032.89	10032.88	10035.63	255 829.58	– 265 794.08	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[4]°$–$^2[4]$	$^7/_2$–$^7/_2$	EW
105.05	4	10056.54	10056.59	10059.35	255 756.131	– 265 697.13	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)5g$	$^2[3]°$–$^2[4]$	$^5/_2$–$^7/_2$	EW
105.05	4	10060.08	10059.89	10062.64	255 759.384	– 265 697.13	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_0)5g$	$^2[3]°$–$^2[4]$	$^7/_2$–$^9/_2$	EW
105.27	10	10073.80	10073.82	10076.59	256 083.604	– 266 007.60	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[2]°$–$^2[3]$	$^3/_2$–$^5/_2$	EW
105.27	11	10077.95	10077.91	10080.67	256 087.746	– 266 007.72	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[2]°$–$^2[3]$	$^5/_2$–$^7/_2$	EW
105.27			10078.03	10080.79	256 087.746	– 266 007.60	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[2]°$–$^2[3]$	$^5/_2$–$^5/_2$	
105.32	4	10097.48	10097.29	10100.06	256 123.231	– 266 024.16	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[3]°$–$^2[5]$	$^7/_2$–$^9/_2$	EW
105.31	11	10098.58	10098.58	10101.35	256 123.231	– 266 022.90	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[3]°$–$^2[4]$	$^7/_2$–$^9/_2$	EW
105.31	11	10101.19	10101.19	10103.95	256 125.785	– 266 022.90	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[3]°$–$^2[4]$	$^5/_2$–$^7/_2$	EW
105.26	3	10101.72	10101.81	10104.58	256 083.604	– 265 980.11	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[2]°$–$^2[2]$	$^3/_2$–$^5/_2$	EW
105.26	4	10106.10	10106.04	10108.81	256 087.746	– 265 980.11	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[2]°$–$^2[2]$	$^5/_2$–$^5/_2$	EW
112	10	10107.63	10107.58	10110.35	276 109.46	– 286 000.31	$2s^a2p^a(^1D)4f$ H–$2s^a2p^a(^1D_2)5g$	$^2[5]°$–$^2[6]$	$^9/_2$–	EW
112			10107.67	10110.44	276 109.54	– 286 000.31	$2s^22p^2(^1D)4f$ H–$2s^22p^2(^1D_2)5g$	$^2[5]°$–$^2[6]$	$^{11}/_2$–	
105.37	13	10110.37	10110.37	10113.14	256 136.036	– 266 024.16	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[4]°$–$^2[5]$	$^9/_2$–$^{11}/_2$	EW
105.30	4	10113.99	10114.09	10116.86	256 123.231	– 266 007.72	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[3]°$–$^2[3]$	$^7/_2$–$^7/_2$	EW
105.30	4	10116.90	10116.83	10119.60	256 125.785	– 266 007.60	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[3]°$–$^2[3]$	$^5/_2$–$^5/_2$	EW
105.37	11	10117.70	10117.69	10120.46	256 143.187	– 266 024.16	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[4]°$–$^2[5]$	$^7/_2$–$^9/_2$	EW
105.36	4	10118.95	10118.98	10121.75	256 143.187	– 266 022.90	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_2)5g$	$^2[4]°$–$^2[4]$	$^7/_2$–$^7/_2$	EW
105.21	4	10167.56	10167.59	10170.38	255 983.584	– 265 816.06	$2s^22p^2(^3P)4f$ G–$2s^22p^2(^3P_1)5g$	$^2[5]°$–$^2[5]$	$^9/_2$–$^{11}/_2$	EW
105.25	4	10267.60	10267.64	10270.46	256 083.604	– 265 820.27	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_1)5g$	$^2[2]°$–$^2[3]$	$^3/_2$–$^5/_2$	EW
105.25	5	10271.85	10271.81	10274.63	256 087.746	– 265 820.46	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_1)5g$	$^2[2]°$–$^2[3]$	$^5/_2$–$^7/_2$	EW
105.35	3	10327.66	10327.72	10330.55	256 136.036	– 265 816.06	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_1)5g$	$^2[4]°$–$^2[5]$	$^9/_2$–$^{11}/_2$	EW
105.29	3	10442.22	10442.20	10445.07	256 123.231	– 265 697.13	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_0)5g$	$^2[3]°$–$^2[4]$	$^7/_2$–$^9/_2$	EW
105.29	3	10445.07	10444.99	10447.85	256 125.785	– 265 697.13	$2s^22p^2(^3P)4f$ F–$2s^22p^2(^3P_0)5g$	$^2[3]°$–$^2[4]$	$^5/_2$–$^7/_2$	EW
94.02	7	11119.86	11119.89	11122.93	246 029.295	– 255 019.73	$2s^22p^2(^3P)4p$–$2s^22p^2(^3P)4d$	$^4D°$–^4D	$^7/_2$–$^7/_2$	W
94.07	10	11362.62	11362.32?	11365.73	246 483.317	– 255 281.93?	$2s^22p^2(^3P)4p$–$2s^22p^2(^3P)4d$	$^4P°$–^2P	$^3/_2$–$^1/_2$	W
94.01	*m*	11663.06	11663.08	11666.27	245 816.70	– 254 388.42	$2s^22p^2(^3P)4p$–$2s^22p^2(^3P)4d$	$^4D°$–^4F	$^3/_2$–$^5/_2$	W
1.02F	M1			499.5μm	26 810.55	– 26 830.57	$2s^22p^3$–$2s^22p^3$	$^2D°$–$^2D°$	$^5/_2$–$^3/_2$	
3F	M1			5.03mm	40 468.01	– 40 470.00	$2s^22p^3$–$2s^22p^3$	$^2P°$–$^2P°$	$^3/_2$–$^1/_2$	

Table 2. Energy Levels of O II

Configuration	Term	J	Level (cm^{-1})	Configuration	Term	J	Level (cm^{-1})
$2s^22p^3$	$^4S°$	$^3/_2$	*0.00*	$2s^22p^2(^3P)3d$	^4F	$^3/_2$	231 296.126
						$^5/_2$	231 350.087
$2s^22p^3$	$^2D°$	$^5/_2$	*26 810.55*			$^7/_2$	231 427.970
		$^3/_2$	*26 830.57*			$^9/_2$	231 530.246
$2s^22p^3$	$^2P°$	$^3/_2$	*40 468.01*	$2s^22p^2(^3P)3d$	^4P	$^5/_2$	232 462.724
		$^1/_2$	*40 470.00*			$^3/_2$	232 535.949
						$^1/_2$	232 602.492
$2s2p^4$	^4P	$^5/_2$	119 837.21				
		$^3/_2$	120 000.43	$2s^22p^2(^1D)3p$	$^2P°$	$^1/_2$	*232 480.44*
		$^1/_2$	120 082.86			$^3/_2$	*232 527.09*
$2s2p^4$	^2D	$^5/_2$	165 988.46	$2s^22p^2(^3P)3d$	^4D	$^1/_2$	232 711.642
		$^3/_2$	165 996.50			$^3/_2$	232 745.981
						$^5/_2$	232 747.562
$2s^22p^2(^3P)3s$	^4P	$^1/_2$	185 235.281			$^7/_2$	232 753.816
		$^3/_2$	185 340.577				
		$^5/_2$	185 499.124	$2s^22p^2(^3P)3d$	^2F	$^5/_2$	232 796.298
						$^7/_2$	232 959.210
$2s^22p^2(^3P)3s$	^2P	$^1/_2$	188 888.543				
		$^3/_2$	189 068.514	$2s^22p^2(^3P)3d$	^2P	$^3/_2$	233 430.53
						$^1/_2$	233 544.59
$2s2p^4$	^2S	$^1/_2$	195 710.47				
				$2s^22p^2(^3P)3d$	^2D	$^3/_2$	234 402.797
$2s^22p^2(^3P)3p$	$^2S°$	$^1/_2$	*203 942.288*			$^5/_2$	234 454.634
$2s^22p^2(^3P)3p$	$^4D°$	$^1/_2$	*206 730.762*	$2s^22p^2(^3P)4s$	^4P	$^1/_2$	238 627.46
		$^3/_2$	*206 786.286*			$^3/_2$	238 732.65
		$^5/_2$	*206 877.865*			$^5/_2$	238 893.96
		$^7/_2$	*207 002.482*				
				$2s^22p^2(^3P)4s$	^2P	$^1/_2$	240 330.01
$2s^22p^2(^1D)3s$	^2D	$^5/_2$	206 971.68			$^3/_2$	240 517.35
		$^3/_2$	206 972.72				
				$2s^22p^2(^3P)4p$	$^2S°$	$^1/_2$	*245 037.29*
$2s^22p^2(^3P)3p$	$^4P°$	$^1/_2$	*208 346.104*				
		$^3/_2$	*208 392.258*	$2s2p^3(^5S°)3s$	$^6S°$	$^5/_2$	*245 400.00 + x*
		$^5/_2$	*208 484.202*				
				$2s^22p^2(^3P)4p$	$^4D°$	$^1/_2$	*245 768.37*
$2s^22p^2(^3P)3p$	$^2D°$	$^3/_2$	*211 522.117*			$^3/_2$	*245 816.70*
		$^5/_2$	*211 712.732*			$^5/_2$	*245 903.224*
						$^7/_2$	*246 029.295*
$2s^22p^2(^3P)3p$	$^4S°$	$^3/_2$	*212 161.881*				
				$2s^22p^2(^3P)4p$	$^4S°$	$^3/_2$	*246 291.822*
$2s2p^4$	^2P	$^3/_2$	212 593.82				
		$^1/_2$	212 762.25	$2s^22p^2(^3P)4p$	$^4P°$	$^1/_2$	*246 320.086*
						$^5/_2$	*246 455.629*
$2s^22p^2(^3P)3p$	$^2P°$	$^1/_2$	*214 169.920*			$^3/_2$	*246 483.317*
		$^3/_2$	*214 229.671*				
				$2s^22p^2(^3P)4p$	$^2D°$	$^3/_2$	*248 010.23*
$2s^22p^2(^1D)3p$	$^2F°$	$^5/_2$	*228 723.84*			$^5/_2$	*248 186.64*
		$^7/_2$	*228 747.45*				
				$2s^22p^2(^3P)4p$	$^2P°$	$^1/_2$	*248 426.41*
$2s^22p^2(^1D)3p$	$^2D°$	$^5/_2$	*229 947.07*			$^3/_2$	*248 515.30*
		$^3/_2$	*229 968.44*				
				$2s^22p^2(^1D)3d$	^2F	$^7/_2$	251 222.19
$2s^22p^2(^1S)3s$	^2S	$^1/_2$	230 609.45			$^5/_2$	251 224.79

Table 2. Energy Levels of O II — Continued

Configuration	Term	J	Level (cm^{-1})	Configuration	Term	J	Level (cm^{-1})
$2s^22p^2(^1D)3d$	^2G	$^9/_2$	252 608.28	$2s^22p^2(^3P)4f$ F	$^2[3]^\circ$	$^7/_2$	*256 123.231*
		$^7/_2$	252 609.46			$^5/_2$	*256 125.785*
$2s^22p^2(^1S)3p$	$^2P^\circ$	$^1/_2$	*252 987.23*	$2s^22p^2(^3P)4f$ F	$^2[4]^\circ$	$^9/_2$	*256 136.036*
		$^3/_2$	*252 993.39*			$^7/_2$	*256 143.187*
$2s^22p^2(^1D)3d$	^2D	$^3/_2$	253 046.74	$2s^22p^2(^3P)5s$	^4P	$^1/_2$	257 695.74
		$^5/_2$	253 048.82			$^3/_2$	257 799.93
						$^5/_2$	257 965.11
$2s^22p^2(^1D)3d$	^2P	$^1/_2$	253 789.99				
		$^3/_2$	253 792.40	$2s^22p^2(^3P)5s$	^2P	$^1/_2$	258 411.26
						$^3/_2$	258 606.35
$2s^22p^2(^3P)4d$	^4F	$^3/_2$	254 337.61				
		$^5/_2$	254 388.42	$2s^22p^2(^1D)4s$	^2D	$^5/_2$	259 287.61
		$^7/_2$	254 480.20			$^3/_2$	259 288.07
		$^9/_2$	254 590.00				
				$2s^22p^2(^3P)5p$	$^2S^\circ$	$^1/_2$	*260 686.27*
$2s^22p^2(^3P)4d$	^4D	$^1/_2$	254 846.68				
		$^3/_2$	254 881.37	$2s^22p^2(^3P)5p$	$^4D^\circ$	$^1/_2$	*260 911.96*
		$^5/_2$	254 896.42			$^3/_2$	*260 958.62*
		$^7/_2$	255 019.73			$^5/_2$	*261 044.03*
						$^7/_2$	*261 180.59*
$2s2p^3(^5S^\circ)3s$	$^4S^\circ$	$^3/_2$	*254 981.55*				
				$2s^22p^2(^3P)5p$	$^4P^\circ$	$^1/_2$	*261 214.47*
$2s^22p^2(^3P)4d$	^4P	$^5/_2$	255 105.01			$^3/_2$	*261 261.29*
		$^3/_2$	255 142.41			$^5/_2$	*261 356.02*
		$^1/_2$	255 163.08				
				$2s^22p^2(^3P)5p$	$^4S^\circ$	$^3/_2$	*261 621.56*
$2s^22p^2(^3P)4d$	^2P	$^3/_2$	255 173.58				
		$^1/_2$	255 281.93	$2s^22p^2(^3P)5p$	$^2D^\circ$	$^3/_2$	*261 698.75*
						$^5/_2$	*261 869.94*
$2s^22p^2(^3P)4d$	^2F	$^5/_2$	255 302.11				
		$^7/_2$	255 466.10	$2s^22p^2(^3P)5p$	$^2P^\circ$	$^1/_2$	*262 286.82*
						$^3/_2$	*262 368.05*
$2s^22p^2(^1D)3d$	^2S	$^1/_2$	255 622.80				
				$2s^22p^2(^3P)5d$	^4D	$^5/_2,^3/_2$	265 220.3
$2s^22p^2(^3P)4f$ D	$^2[3]^\circ$	$^5/_2$	*255 689.939*				
		$^7/_2$	*255 691.346*	$2s^22p^2(^3P)5d$	^4P	$^5/_2$	265 431.5
						$^3/_2$	265 468.2
$2s^22p^2(^3P)4f$ G	$^2[3]^\circ$	$^5/_2$	*255 756.131*				
		$^7/_2$	*255 759.384*	$2s^22p^2(^3P)5d$	^2F	$^7/_2$	265 581.2?
$2s^22p^2(^3P)4f$ D	$^2[2]^\circ$	$^3/_2$	*255 812.728*	$2s^22p^2(^3P)5f$ D	$^2[3]^\circ$	$^5/_2$	*265 637.10*
		$^5/_2$	*255 813.472*			$^7/_2$	*265 638.59*
$2s^22p^2(^3P)4f$ G	$^2[4]^\circ$	$^9/_2$	*255 827.657*	$2s^22p^2(^3P_0)5g$	$^2[4]$	$^9/_2,^7/_2$	265 697.13
		$^7/_2$	*255 829.58*				
				$2s^22p^2(^3P)5f$ G	$^2[3]^\circ$	$^5/_2$	*265 718.48*
$2s^22p^2(^3P)4d$	^2D	$^3/_2$	255 842.91			$^7/_2$	*265 720.38*
		$^5/_2$	255 897.59				
				$2s^22p^2(^3P)5f$ G	$^2[4]^\circ$	$^9/_2$	*265 761.29*
$2s^22p^2(^3P)4f$ D	$^2[1]^\circ$	$^3/_2$	*255 912.32*			$^7/_2$	*265 763.36*
		$^1/_2$	*255 912.37*				
				$2s^22p^2(^3P)5f$ D	$^2[2]^\circ$	$^3/_2$	*265 766.28*
$2s^22p^2(^3P)4f$ G	$^2[5]^\circ$	$^{11}/_2$	*255 977.481*			$^5/_2$	*265 767.55*
		$^9/_2$	*255 983.584*				
				$2s^22p^2(^3P_1)5g$	$^2[4]$	$^7/_2$	265 794.08
$2s^22p^2(^3P)4f$ F	$^2[2]^\circ$	$^3/_2$	*256 083.604*			$^9/_2$	265 794.14
		$^5/_2$	*256 087.746*				

Table 2. Energy Levels of O II — Continued

Configuration	Term	J	Level (cm^{-1})
$2s^22p^2(^3P_1)5g$	$^2[5]$	$^9/_2$	265 815.98
		$^{11}/_2$	265 816.06
$2s^22p^2(^3P_1)5g$	$^2[3]$	$^5/_2$	265 820.27
		$^7/_2$	265 820.46
$2s^22p^2(^3P)5d$	^2D	$^5/_2$	265 855.2
$2s^22p^2(^3P)5f$ D	$^2[1]^\circ$	$^1/_2$	*265 893.06*
		$^3/_2$	*265 893.62*
$2s^22p^2(^3P)5f$ G	$^2[5]^\circ$	$^{11}/_2$	*265 925.19*
		$^9/_2$	*265 930.31*
$2s^22p^2(^3P)5f$ F	$^2[2]^\circ$	$^3/_2$	*265 957.37*
		$^5/_2$	*265 963.54*
$2s^22p^2(^3P_2)5g$	$^2[2]$	$^5/_2,^3/_2$	265 980.11
$2s^22p^2(^3P)5f$ F	$^2[3]^\circ$	$^7/_2$	*265 992.31*
		$^5/_2$	*265 992.37*
$2s^22p^2(^3P_2)5g$	$^2[6]$	$^{11}/_2$	265 992.31
		$^{13}/_2$	265 992.34
$2s^22p^2(^3P)5f$ F	$^2[4]^\circ$	$^9/_2$	*265 999.75*
		$^7/_2$	*266 004.90*
$2s^22p^2(^3P_2)5g$	$^2[3]$	$^5/_2$	266 007.60
		$^7/_2$	266 007.72
$2s^22p^2(^3P_2)5g$	$^2[4]$	$^9/_2,^7/_2$	266 022.90
$2s^22p^2(^3P_2)5g$	$^2[5]$	$^{11}/_2,^9/_2$	266 024.16
$2s^22p^2(^1D)4p$	$^2F^\circ$	$^5/_2$	*266 579.73*
		$^7/_2$	*266 588.33*
$2s^22p^2(^1D)4p$	$^2D^\circ$	$^3/_2$	*266 624.32*
		$^5/_2$	*266 640.58*
$2s^22p^2(^3P)6s$	^4P	$^1/_2$	266 698.0
		$^3/_2$	266 802.0
		$^5/_2$	266 971.23
$2s^22p^2(^3P)6s$	^2P	$^1/_2$	267 101.1?
		$^3/_2$	267 298.23
$2s^22p^2(^1D)4p$	$^2P^\circ$	$^1/_2$	*267 460.28*
		$^3/_2$	*267 490.79*
$2s2p^3(^5S^\circ)3p$	^6P	$^3/_2$	267 768.20+x
		$^5/_2$	267 775.48+x
		$^7/_2$	267 788.09+x
$2s^22p^2(^3P)6p$	$^2S^\circ$	$^1/_2$	*268 369.8*
$2s^22p^2(^3P)6p$	$^4D^\circ$	$^1/_2$	
		$^3/_2$	*268 465.6*
		$^5/_2$	*268 547.50*
		$^7/_2$	*268 692.1*
$2s^22p^2(^3P)6p$	$^4P^\circ$	$^1/_2$	
		$^3/_2$	
		$^5/_2$	*268 782.5*?
$2s^22p^2(^3P_0)6g$	$^2[4]$	$^7/_2$	271 068.35
		$^9/_2$	271 068.39
$2s^22p^2(^3P_1)6g$	$^2[4]$	$^9/_2,^7/_2$	271 171.85
$2s^22p^2(^3P_1)6g$	$^2[5]$	$^9/_2$	271 184.87
		$^{11}/_2$	271 185.08
$2s^22p^2(^3P_1)6g$	$^2[3]$	$^5/_2$	271 187.92
		$^7/_2$	271 188.04
$2s^22p^2(^3P_2)6g$	$^2[2]$	$^5/_2,^3/_2$	271 360.61
$2s^22p^2(^3P_2)6g$	$^2[6]$	$^{11}/_2$	271 367.70
		$^{13}/_2$	271 367.79
$2s^22p^2(^3P_2)6g$	$^2[3]$	$^7/_2$	271 375.48
		$^5/_2$	271 375.61
$2s^22p^2(^3P_2)6g$	$^2[4]$	$^7/_2$	271 384.65
		$^9/_2$	271 384.80
$2s^22p^2(^3P_2)6g$	$^2[5]$	$^9/_2$	271 385.06
		$^{11}/_2$	271 385.39
$2s^22p^2(^3P)7p$	$^4D^\circ$	$^1/_2$	
		$^3/_2$	*272 728.4*
		$^5/_2$	*272 787.7*
		$^7/_2$	*272 968.4*
$2s^22p^2(^3P)7p$	$^4P^\circ$	$^1/_2$	
		$^3/_2$	
		$^5/_2$	*273 018.7*
$2s^22p^2(^1D)4d$	^2F	$^5/_2$	274 740.7
		$^7/_2$	274 781.5
$2s^22p^2(^1D)4d$	^2D	$^3/_2$	274 916.0
		$^5/_2$	274 928.0
$2s^22p^2(^1D)4d$	^2P	$^1/_2$	
		$^3/_2$	275 611.1?
$2s^22p^2(^1D)4f$ G	$^2[4]^\circ$	$^9/_2,^7/_2$	*275 842.14*
$2s^22p^2(^1D)4f$ F	$^2[3]^\circ$	$^7/_2,^5/_2$	*275 881.65*
$2s^22p^2(^1S)3d$	^2D	$^3/_2$	275 983.95
		$^5/_2$	276 075.32

Table 2. Energy Levels of O II — Continued

Configuration	Term	J	Level (cm^{-1})	Configuration	Term	J	Level (cm^{-1})
$2s^22p^2(^1D)4d$	^2S	$1/2$	275 996.5?	$2s^22p^2(^1D)5f$ H	$^2[5]^\circ$	$11/2, 9/2$	*285 978.5*?
$2s^22p^2(^1D)4f$ D	$^2[2]^\circ$	$3/2$	*276 066.81*	$2s^22p^2(^1D_2)5g$	$^2[6]$	$13/2, 11/2$	286 000.31
		$5/2$	*276 066.88*				
				$2s^22p^2(^1D)5f$ P	$^2[1]^\circ$	$3/2$	*286 055.28*?
$2s^22p^2(^1D)4f$ H	$^2[5]^\circ$	$9/2$	*276 109.46*				
		$11/2$	*276 109.54*	$2s^22p^2(^1D)6s$	^2D	$3/2$	287 045.6
						$5/2$	287 047.1
$2s^22p^2(^1D)4f$ P	$^2[1]^\circ$	$3/2, 1/2$	*276 263.81*				
				$2s^22p^2(^1S)4p$	$^2P^\circ$	$1/2$	*289 990.7*?
$2s^22p^2(^1D)5s$	^2D	$3/2$	278 144.33?			$3/2$	*290 000.3*?
		$5/2$	278 144.62				
				$2s^22p^2(^1D_2)6g$	$^2[5]$	$11/2, 9/2$	291 323.00
$2s^22p^2(^1S)4s$	^2S	$1/2$	282 219.90				
				$2s^22p^2(^1D_2)6g$	$^2[4]$	$9/2, 7/2$	291 324.04?
O III ($^3P_0$)	***Limit***		**283 270.9**	$2s^22p^2(^1D_2)6g$	$^2[6]$	$13/2, 11/2$	291 358.34
O III ($^3P_1$)	*Limit*		283 384.1	$2s2p^3(^5S^\circ)3d$	$^6D^\circ$	$9/2$	*291 900.48 + x*
						$7/2$	*291 901.47 + x*
O III ($^3P_2$)	*Limit*		283 577.1			$5/2$	*291 902.73 + x*
						$3/2$	*291 903.91 + x*
$2s^22p^2(^1D)5f$ G	$^2[4]^\circ$	$9/2$	*285 838.51*?			$1/2$	*291 904.71 + x*
$2s^22p^2(^1D)5f$ F	$^2[3]^\circ$	$7/2$	*285 861.74*?	$2s2p^3(^5S^\circ)4s$	$^6S^\circ$	$5/2$	*298 855.04 + x*
$2s^22p^2(^1D_2)5g$	$^2[5]$	$11/2, 9/2$	285 939.05	O III ($^1D_2$)	*Limit*		303 544.2
$2s^22p^2(^1D_2)5g$	$^2[4]$	$9/2, 7/2$	285 941.34	O III ($^1S_0$)	*Limit*		326 456.6
$2s^22p^2(^1D)5f$ D	$^2[2]^\circ$	$5/2$	*285 959.69*?				