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Article

MCDHF Calculations and Beam-Foil EUV Spectra of Boron-Like Sodium Ions (Na VII)

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Abstract: Atomic data, such as wavelengths and line identifications, are necessary for many applications, especially in plasma diagnostics and for interpreting the spectra of distant astrophysical objects. The number of valence shell electrons increases the complexity of the computational problem. We have selected a five-electron ion, Na^{6+} (with the boron-like spectrum Na VII), for looking into the interplay of measurement and calculation. We summarize the available experimental work, perform our own extensive relativistic configuration interaction (RCI) computations based on multi-configuration Dirac–Hartree–Fock (MCDHF) wave functions, and compare the results to what is known of the level structure. We then discuss problems with databases that have begun to combine observations and computations.

Keywords: Na VII; atomic spectroscopy; multiconfiguration Dirac–Hartree–Fock; beam-foil

PACS Classifications: 31.15.am, 32.30.Jc, 32.70.Cs

1. Introduction

A good third of a century ago, the ground and low-lying displaced configuration levels of ions with an open $n = 2$ or $n = 3$ shell were calculated for survey and application purposes in the study of terrestrial and astrophysical plasmas. An example is the calculations by Fawcett [1,2], who used the non-relativistic Cowan code (Hartree–Fock with relativistic exchange (HXR)) to provide wavelengths and oscillator strengths on low-lying configurations of elements of astrophysics and fusion research interest. In these calculations, certain atomic structure parameters were scaled to fractions of their *ab initio* values in order to improve the agreement with experimental data. Cheng, Kim and Desclaux [3] used the multiconfiguration Dirac–Fock approach in their computations of Li- through F-like ions, and the results served very well for orientation in very many experiments. However, computational facilities at the time limited the work to rather few basis functions, and this shortcoming has limited the accuracy of the results.

The development of atomic-structure algorithms and computing facilities has made great strides since, and improved tabulations can now be assembled. Atomic structure calculations have not yet reached the stage at which a routine computation can produce a full spectrum with spectroscopic accuracy. Usually, the low-lying levels are reproduced better by computations than high-lying ones. This incidentally matches the typical experimental situation in which the level structure of low-lying levels is better understood in detail than that of the higher-lying levels, a result of a better signal from easier excitation combined with the lower complexity of lower-lying electron configurations. Moreover, the different energy intervals bridged by transitions in the ground configuration, within a shell or between shells, are linked to different spectral ranges. Transitions between low-lying levels have a strong bearing on the overall accuracy of the wavelength and energy level data. We wanted to test the quality of our computational technique on a system that has not yet been studied extensively, so that good results should enable a significant step forward in practical knowledge. We have selected the extreme ultraviolet (EUV) spectrum of Na VII (B-like) for the purpose, for reasons that we detail below.

2. Earlier Work

The overwhelming fraction of spectroscopic data on Na VII has been obtained by Jonas Söderqvist [4,5] in the early days of EUV spectroscopy with grazing incidence spectrometers, more than 80 years ago, using a vacuum spark as the light source. The results on $n = 2$ and $n = 3$ levels and transitions between them were presented in his 1934 PhD thesis on the spectra of Na, Mg, Al and Si, and information on some 4d and 5d levels of Na VII was added in a journal publication ten years later. The isoelectronic scaling exercises by Edlén [6–8] (Söderqvist's mentor at Uppsala) have contributed further information on the $n = 2$ levels. The Söderqvist data form the bulk of the compilations on Na VII by Kelly and Palumbo [9,10] and by Martin and Zalubas [11] (who changed some level designations to improve the regularity of the level sequences). The spectroscopic world knowledge on the various spectra of Na has been compiled by J. Sansonetti as recently as 2008 [12]. In this compilation, in the interval 62 Å to 790 Å, all Na VII wavelengths, but one, refer to Söderqvist's paper of 1944. Sansonetti lists further theoretical work, as well as solar observations by the SUMER instrument on the SOHO spacecraft [13]. The latter data encompassed some long sought-for intercombination transitions so that the relative positions of doublet and quartet term systems could be established experimentally. The Sansonetti wavelength listings are complemented by transition rates mostly from a compilation by Kelleher and Podobedova [14] of computed results.

Sansonetti lists 170 Na VII lines with wavelengths from 62 to 500 Å. However, the actual NIST online database [15] has since expanded to more than 700 Na VII lines on the basis of the same primary data, apparently by adding many hitherto unobserved lines using the Ritz combination principle. Such predicted transitions between excited levels carry a larger wavelength uncertainty because of the relatively small energy difference of the initial and final levels, both of which may be less well established than the positions of resonance line levels. Moreover, the associated spectral lines are likely weak, because they either result from levels not well populated in a given light source or because they represent weak decay branches. This raises questions about excitation processes and about decay rates, radiative level lifetimes and branch fractions. Such questions may be addressed experimentally by time-resolved observations, such as offered by beam-foil spectroscopy. We discuss such measurements and the data available below.

On the side of theory, atomic structure calculations have reached high accuracy for atomic systems with few electrons in total or outside closed shells. Additional electrons multiply the complexity of the computational problem, which is reflected in the progressively lesser agreement of calculated results with accurate experimental data. While semi-empirical adjustments of atomic parameters have served well in providing calculated datasets bridging gaps in the experimental data, guiding further data analysis and providing consistency checks, they are not sufficient to test the status of our understanding of atomic structure detail, in particular the need for any theory to have predictive value. The latter can only be claimed by *ab initio* calculations, which tend to be demanding in computing effort. In the following, we briefly recall experimental and computational work on B-like ions of the last 40 years before looking in more detail at a particular measurement of the spectrum Na VII.

In 1973 and 1978, the Lyon group of Buchet *et al.* worked on ion beams of sodium from a single-stage accelerator [16,17]; the latter paper reporting beam-foil lifetimes of several Na ion species, and among them, one level of Na VII. In the late 1970s, the Bochum beam-foil spectroscopy group began to measure EUV spectra and decay curves of B-like ions of Si and P [18–23]; references to various earlier calculations of oscillator strengths and transition rates are given in those papers. In the 1990s, the Bochum group returned to measurements of detailed processes in B-like ions, such as the massive changes of multiplet line intensity patterns (away from the standard expectation of LS coupling that had been tabulated 80 years ago by White and Eliason [24]), due to the changes in level mixing along the isoelectronic sequence [25]. The experiment employed photoelectric detection, the (linear) signal of which is more easily evaluated than the (nonlinear) photographic signal obtained by Söderqvist. The measurement (including data on Na VII) corroborated the deviation of the line intensities from the unperturbed case, but it also revealed that quantitatively, there remained shortcomings of the available computations. A Liège–Bochum collaboration measured the lifetimes of several $n = 2$ levels of Na VII [26]. In the course of this work, wide-range EUV spectra of Na were recorded. Those data will be used below in a discussion of the experimental situation and for a comparison with our present computational results.

In 1979, Farrag *et al.* [27,28] used relativistic wave functions and produced oscillator strengths for transitions among $n = 2$ levels of B-like ions. In 1982, McEachran and Cohen [29] employed a core polarization approach in their computation of oscillator strengths. A 1983 Bochum determination of $n = 2, \Delta n = 0$ transition probabilities in B-like ions [23] stated quite a bit of scatter of the predictions and found agreement of the measured data with only a few of the calculations, most of them scaled to match the experimental transition energies. In 1993, Lavin and Martin [30] presented calculations of oscillator strengths of B-like ions, employing their quantum defect orbital formalism. In 1995, the Lithuanian team of Merkelis *et al.* applied many-body perturbation theory (MBPT) to the $n = 2$ levels of the B isoelectronic sequence [31]. Considering the increased availability of inexpensive computing power, this can be seen as the beginning of large-scale *ab initio* calculations of the atomic structure of B-like ions. In 1996, Safronova *et al.* turned the relativistic MBPT apparatus to calculations of $n = 2$ and $n = 3$ levels and transition rates in B-like ions [32–34]. In 1998, Galavís *et al.* [35] applied the SUPERSTRUCTURE code to B-like ions with the principal aim being the transition rates within the $n = 2$ level complex. Vilkas *et al.* began to work on boron-like ions using the multireference Møller–Plesset (MR-MP) code [36]. In 2000, Tachiev and Froese Fischer [37] applied the non-relativistic multiconfiguration Hartree–Fock (MCHF) approach to B-like ions up to Si ($Z = 14$) and computed level energies, level lifetimes up to some $n = 3$ levels and line strengths. In 2003, Koc calculated $n = 2$, $n = 3$ and some $n = 4$ levels, as well as transition rates of the B-like ions of Ne, Na and Mg by multireference relativistic configuration interaction computations [38]. In the same year and by the same approach, Koc produced fine structure intervals and M1/E2 transition rates within the ground term of B-like ions with an atomic number Z from 10 to 30, and so on [39–41]. This latter topic ties in with the demand for accurate *ab initio* calculations to compare with accurate wavelength and lifetime measurements at electron beam ion traps (EBIT) [42–45]. However, in this latter suite of studies, only a single transition is of primary interest (see [46]), the electric-dipole (E1) forbidden transition in the $2s^22p$ $^2P^o$ ground term. The experiment has obtained a transition rate with an uncertainty of a small fraction of one percent, which would make for a significant test of the 0.45% QED contribution (via the electron anomalous magnetic moment (EAMM)), if many-body quantum mechanics were computed sufficiently accurately. Other EBIT work has addressed (without time resolution) high-Z B-like ions, that is ions in the realm of large relativistic effects and notable contributions from QED [47–49].

Because of the large fine structure intervals in highly charged high-Z ions, those measurements just mentioned comprise just one or a few lines of any B-like ion. The computational demands are high to reach accurate predictions on these lines, but that is similarly so at lower atomic numbers, where practical spectra might contain dozens, if not hundreds of lines of a given ionic species. The computational challenge there lies not so much in the treatment of relativity and QED, but the calculations have to cope with a less dominant central Coulomb field, which usually means that the convergence of any computation is slower.

In a single high-resolution beam-foil dataset on Si (recorded at Bochum), Kramida has identified about a hundred lines of Si XI (Be-like) [50] by a judicious analysis based on the Cowan code (with scaled parameters) and some *ab initio* calculations. In other sections of the same dataset, Vilkas (using the *ab initio* multireference Møller–Plesset code developed by Y. Ishikawa and his group) identified more than a hundred lines of Si X (B-like) [51] and determined level positions up to $n = 4$. The study recognized a number of lines that had been mistakenly subsumed into various data compilations, because the measured wavelengths had been stated with more decimals than used by other authors; however, the underlying line identifications turned out to be incorrect. This experience underlines the need for occasional cross-checks between experimental analyses of spectroscopic data and the more systematic results of accurate computations. Unfortunately, such high-resolution beam-foil spectra have not been recorded for other elements, such as Na and Mg, because the lower ion beam currents usually available for those elements would have resulted in a significantly poorer signal. However, there are the aforementioned beam-foil spectra of Na that have been recorded by Tordoir *et al.* [26] using the same grazing-incidence spectrometer at lower spectral resolution; we discuss these measurements below.

Recently Rynkun and Jönsson *et al.* have calculated (by the relativistic configuration interaction method) $n = 2$ levels of B-like ions from elements N through Zn, as well as transitions between these levels [52–55]. They have compared their calculated level energies with the results of other advanced calculations and with databases and experimental data for Si X [51], and they find good agreement. We are applying the same *ab initio* computational approach now to $n = 2, 3$ and (some) 4 levels of Na VII and compare our results with the results obtained by competing computational approaches and with data of the aforementioned Tordoir *et al.* measurement campaign in the EUV.

3. Relativistic Multiconfiguration Calculations

The calculations were performed using the fully relativistic multi-configuration Dirac-Hartree-Fock (MCDHF) method in jj-coupling [56]. For practical purposes, a transformation from jj- to LS-coupling [57] was done at the end, and in all tables, the quantum states are labeled by the leading LS-percentage composition.

3.1. Multiconfiguration Dirac–Hartree–Fock

According to quantum mechanics, a state of an N-electron system is determined by a wave function Ψ that is a solution to the wave equation:

$$\mathcal{H}\Psi = E\Psi. \tag{1}$$

Here, $\mathcal{H}$ is the Hamiltonian operator and E the total energy of the system. The starting point for fully relativistic calculations is the Dirac–Coulomb Hamiltonian:

$$\mathcal{H} = \sum_{i=1}^{N} \left(c\boldsymbol{\alpha}_i \cdot \boldsymbol{p}_i + (\beta_i - 1)c^2 + V_i^N \right) + \sum_{i>j}^{N} \frac{1}{r_{ij}}, \tag{2}$$

where V^N is the central part of the electron-nucleus Coulomb interaction, $\boldsymbol{\alpha}$ and β the 4×4 Dirac matrices and c the speed of light in atomic units. In the MCDHF method, the wave function $\Psi(\gamma PJM)$ for a state labeled γPJM, where J and M are the angular quantum numbers and P is the parity, is expanded in antisymmetrized configuration state functions (CSFs):

$$\Psi(\gamma PJM) = \sum_{j=1}^{NCSF} c_j \Phi(\gamma_j PJM). \tag{3}$$

The label γ_j denotes other appropriate information of the configuration state function j, such as orbital occupancy and coupling scheme. The CSFs are built from products of one-electron Dirac orbitals.

In this work, the wave functions were determined in the extended optimal level (EOL) scheme, and the radial parts of the Dirac orbitals and the expansion coefficients of a number of targeted states were obtained iteratively in the relativistic self-consistent field (RSCF) scheme from a set of equations that results from applying the variational principle on a weighted energy functional of the states [58]. The transverse interaction in the low-frequency limit, or the Breit interaction [59],

$$H_{\text{Breit}} = -\sum_{i<j}^{N} \frac{1}{2r_{ij}} \left[\boldsymbol{\alpha}_i \cdot \boldsymbol{\alpha}_j + \frac{(\boldsymbol{\alpha}_i \cdot \boldsymbol{r_{ij}})(\boldsymbol{\alpha}_j \cdot \boldsymbol{r_{ij}})}{r_{ij}^2} \right], \tag{4}$$

the mass shift correction [60] and leading QED (vacuum polarization and self-energy) were included in subsequent configuration interaction (RCI) calculations, where now, only the expansion coefficients were determined by diagonalizing the Hamiltonian matrix. All calculations were performed with an updated parallel version of the GRASP2K code [61,62]. To calculate the spin-angular part of the matrix elements, the second quantization method in coupled tensorial form and quasi-spin technique [63] was adopted.

3.2. Transition Parameters

Transition parameters, such as transition rates or weighted oscillator strengths between two states $\gamma' P' J' M'$ and $\gamma P J M$, were expressed in terms of the transition moment:

$$\begin{aligned} &\langle\, \Psi(\gamma PJ)\, \|\mathbf{T}\|\, \Psi(\gamma' P' J')\,\rangle = \\ &= \sum_{j,k} c_j c_k' \,\langle\, \Phi(\gamma_j PJ)\, \|\mathbf{T}\|\, \Phi(\gamma_k' P' J')\,\rangle, \end{aligned} \tag{5}$$

where $\mathbf{T}$ is the transition operator [64]. In cases where the two states $\gamma' P' J' M'$ and $\gamma P J M$ were separately determined, the radial orbitals are not orthogonal. To deal with this complication, a transformation to a biorthonormal orbital basis was applied [65] before the reduced matrix elements were evaluated using standard Racah algebra techniques.

For electric multipole transitions, there are two forms of the transition operator, the length and velocity form [66]. The length form is the preferred one, because it puts more weight on the outer parts of the wave function where electron correlation normally is better described and which is mathematically more tractable. In this work, the relative difference:

$$dT = \frac{|A_l - A_v|}{\max(A_l, A_v)} \tag{6}$$

between the transition rates computed in the length and velocity forms, respectively, is used as an indicator of the uncertainty [67,68].

3.3. Calculations

Calculations were performed for the 67 lowest odd states belonging to the configurations $2s^22p$, $2p^3$, $2s^23p$, 2s2p3s, 2s2p3d, $2s^24p$, $2s^24f$, $2p^23p$ and 2s2p4s and the 66 lowest even states belonging to $2s2p^2$, $2s^23s$, $2s^23d$, 2s2p3p, $2s^24s$, $2s^24d$, $2p^23s$ and $2p^23d$. The calculations were done by parity, meaning that the even and odd states were determined in separate calculations in the EOL scheme. As a starting point, two RSCF calculations were performed in the EOL scheme for the weighted average of the odd and even parity reference states, respectively. To include electron correlation and improve on the computed energies, these calculation were followed by RSCF calculations, separate calculations for the odd and even parity states, where the CSF expansions were obtained by allowing single and double (SD) excitations from all shells of the odd and even reference configurations to active orbital sets with principal quantum numbers up to $n = 10$ and with orbital angular momenta up to $l = 7$. (These parameter choices reflect a compromise between the wish for a complete computation and the available computer resources, but by experience, these options are adequate for the present goal of accuracy in the computation of $n = 2, 3, 4$ levels and transitions between them.) The RSCF calculations were followed by RCI calculations, including the Breit interaction, mass shift and leading QED effects. To include higher-order electron correlation effects, additional RCI calculations were performed. For these calculations, the expansions were obtained by SD excitations from extended sets of odd and even parity reference configurations. The odd parity configurations were extended with 2s2p4s, 2s3s3p, 2s3p3d, $2p3s^2$, 2p3s3d, $2p3p^2$, $2p3d^2$, $2p^24p$, $2p^24f$ and 2s2p4d, whereas the even parity configurations also included $2s3s^2$, $2s3p^2$, $2s3d^2$, 2s3s3d, 2p3s3p, 2p3p3d, $2p^24s$, $2p^24d$, 2s2p4p and 2s2p4f. The number of CSFs in the final odd and even state expansions were 3 150 000 and 3 100 000, respectively, distributed over the different J symmetries.

3.4. Labeling of States

The wave functions in the present work were obtained as expansions over jj-coupled CSFs, and it is convenient to give the states the same labels as the dominating CSFs. In this work, we used a module in the latest release of the GRASP2K code [62] to transform from jj- to LS-coupling to obtain the leading LS-percentage composition.

4. Results and Discussion

4.1. Energies

In Table 1, we compare the energies from the final RCI calculation with observed energies from the compilation by Sansonetti [12] and with calculated energies by Koc [38]. The calculations by Koc are based on a multireference RCI method with an orbital set based on analytical Gaussian functions. Except for an unexplained 900-cm^{-1} difference for the 2s2p(^{1}P)3p $^2S_{1/2}$ state, there is a good agreement between the two different sets of calculations. However, our level list is more comprehensive than that published by Koc. We also note that there are numerous levels with only a single $n = 3$ electron, which are easily calculated, but which have not yet been established by experiment. Of our own calculations, we list only a few levels with a single $n = 4$ electron, and even in these cases, most experimental level counterparts are yet unknown. A detailed comparison of the present calculated energies and the experimental energies seems to indicate that there are some misidentifications, since for ten levels, the difference between calculated and experimental energies is 800 cm^{-1} or more. (However, the comparison has to include the uncertainty of the experimental data; see the discussion below.) Disregarding these levels, the average relative difference between the calculated and experimental energy values is less than 0.018 %. This is in line with the accuracy found for other ions in the B-like sequence [52,55].

Our computations result in more than 1500 calculated transitions with a transition rate higher than $A = 10^6$ s^{-1} (an arbitrary cut-off) and wavelengths that range from just below 7 nm to beyond 900 nm. These results are listed in Table 3. They comprise $n = 2-2, 2-3$ and a few $n = 3-4$ transitions and, thus, only a sub-set of all Na VII transitions that may appear in this wavelength range (missing $n = 2-5, 3-5$, *etc*.). The $n = 2-2$ transitions of Na ions are mostly found in the range 30 to 100 nm. In a hydrogenic approximation, the $n = 2-3, 4, 5, ...$ transitions are expected in the short wavelength part of the EUV spectrum (see the 2p-nd transitions in [5]). However, because of the sizable in-shell structure of B-like and neighboring ions, $n = 2-3$ transitions extend to wavelengths longer than those of the aforementioned $n = 2-2$ interval, too. The smaller the predicted transition energy (the longer the predicted wavelength), the larger the uncertainty of the prediction that is related to the uncertainty of the energy predictions for the levels involved.

4.2. Transition Rates and Lifetimes

The lifetimes of the excited states were calculated from transition rates in both the length and velocity forms. Disregarding the lifetimes for the long living 2s2p^2 ^{4}P states that decay only through intercombination transitions, the average relative difference between the lifetimes in the length and velocity forms is less than 0.032%, which is highly satisfactory. In Table 2, we compare calculated lifetimes in the length form with lifetimes obtained from from other methods and from experiments. Included in the comparison are lifetimes obtained by Koc using multireference RCI and by [37] using the MCHF Breit–Pauli method, accounting for valence and core-valence electron correlation. There are also experimental lifetimes from beam-foil measurements by [26]. The lifetimes for the metastable 2s2p^2 ^{4}P states are consistent to within 5%, which can be regarded as quite good. For the shorter lifetimes of the low lying states, the agreement between the calculations is excellent. The calculated lifetimes are also within the experimental error bars. For some of the higher lying states, there are extremely large differences, orders of magnitude, between the present lifetimes and the ones by Koc. Two examples are the lifetimes of the 2p^2(^{3}P)3s ^{4}P$_{1/2,3/2}$ and 2s2p(^{1}P)3d ^{2}D$^o_{3/2,5/2}$ states. We have tried out other calculations when we found the deviations, but none corroborate the values listed by Koc. The calculations of Koc should be reliable, so the discrepancies may be attributable to clerical errors.

Employing the relative difference dT between the oscillator strengths calculated in the length or the velocity form as an indicator of uncertainty, we find this measure dT well below 1% for most of the stronger transitions. The weaker transitions are either intercombination transitions, where the smallness of the rates come from a cancellations in the contributions to the transition matrix elements, or so-called two-electron one-photon transitions that are zero at the Dirac–Fock level of approximation and where the rate is only due to correlation effects. Both of these transitions are very challenging to compute and are often associated with sizable uncertainties. For a recent discussion of two-electron one-photon transitions, see [69]. Intercombination transitions are necessary for establishing the relative positions of the various term systems. However, the transition rates are very low in low-Z atomic systems, and for Na VII, they have not yet been seen in the laboratory. As mentioned above, the connection between the doublet and quartet level systems has been established only recently, by solar observations from the SOHO spacecraft [13].

Figure 1 shows a synthetic Na VII spectrum obtained from calculated transition rates and matching the wavelength range of the beam-foil data obtained by Tordoir *et al.* [26]. The intensity of each transition in the spectrum depends on the upper level population and on the transition rates of the various decay channels of the upper level. With n_i and l_i, the principal quantum number and orbital angular momentum, respectively, of the last occupied subshell in the upper level configuration, $A_{ij}/\sum_k A_{ik}$ the branching fraction of the transition between level i and the lower level j and a population of upper levels in beam-foil experiments (see [70]) that may be approximated as being proportional to $n_i^{-3}(2l_i+1)$, the individual calculated line intensity is modulated to be proportional to $n_i^{-3}(2l_i+1)A_{ij}/\sum_k A_{ik}$. In order to accommodate the instrumental line width of the measurements by Tordoir *et al.*, we represent each calculated spectral line by a Gaussian distribution with a full width at half maximum (FWMH) of 0.03 nm. The same representation of a simple excitation (level population) model and of atomic branch fractions has been applied to the data of Table 3.

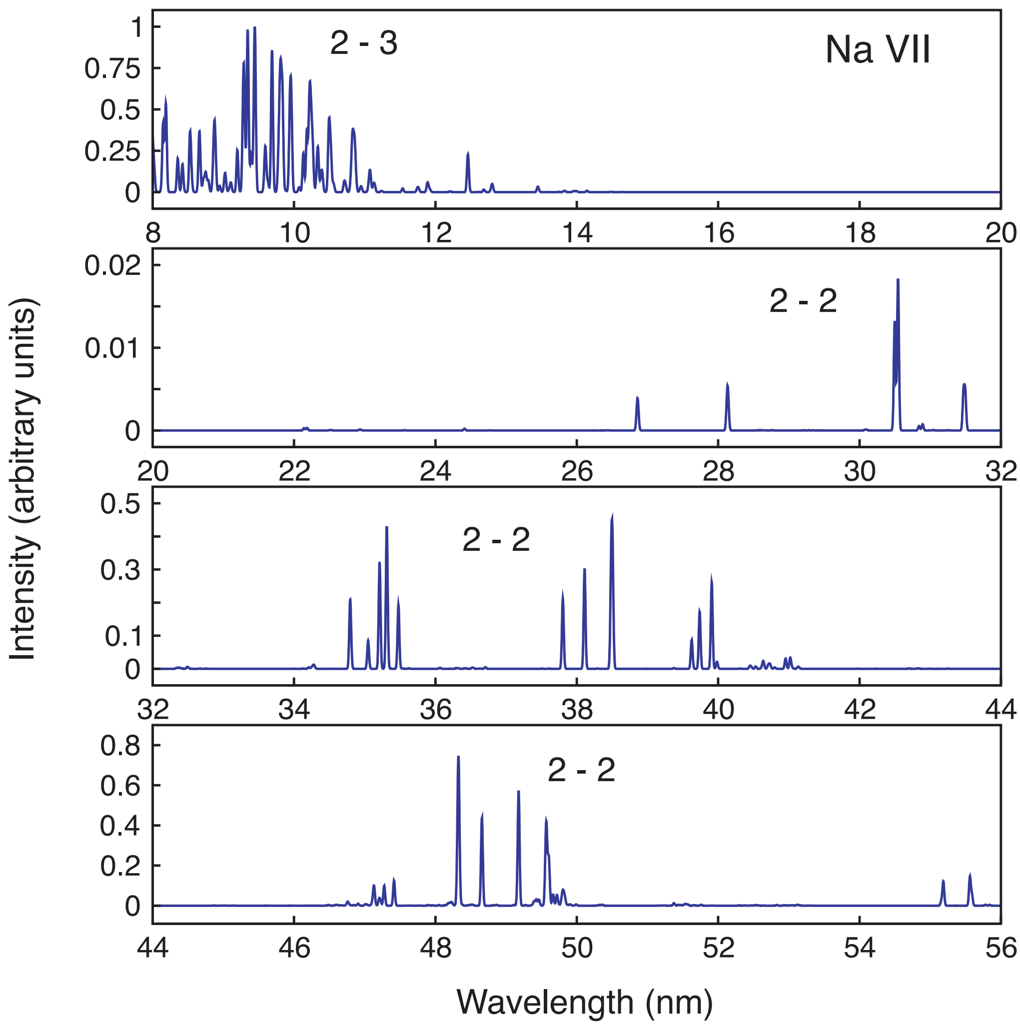

Figure 1. Synthetic Na VII spectrum containing transitions between 8 and 56 nm from the present calculation. The short wavelength range has predominantly $n = 2 - 3$ transitions, whereas the $n = 2 - 2$ transitions spread over the range 30 to 80 nm. See the text for details.

5. Beam-Foil Technique and Experiment

A variety of light sources have been developed over the century and a half since spectroscopic analysis has been recognized as an important scientific tool. Spectra of multiply-charged ions, such as Na^{6+} (spectrum of Na VII), can, for example, be produced in vacuum sparks, low-density plasma discharges, laser-produced plasmas, by the interaction of fast ion beams with solid (foil) targets or in electron beam ion traps (EBIT). The excitation depends on environmental parameters, such as the particle density and temperature or collision energy. Excitation is particularly efficient in the beam-foil light source, in which MeV-energy ion beams are being passed through a thin carbon foil (therefore, the electrons of the target are at solid-state density). The collision frequency is much higher than most radiative decay rates in the ions of the ion beam, so that multiple excitation occurs. The heavy ions of the beam collide mostly with the many (light) electrons of the target and, thus, suffer only a minor energy loss and deflection (angular straggling). The ion beam continues on its trajectory after leaving the foil target, and the observation of radiative decays then takes place (with intrinsic time resolution) in the low-density (high-vacuum) environment of the vacuum chamber of the ion beam transport system. (For the basics and the evolution of the beam-foil technique, see [71–73] and the references therein.)

There are several significant advantages to beam-foil spectroscopy: the ion beam is isotopically pure; the excitation efficiency is so high that high-lying and multiply-excited levels are reached much more likely than in other light sources; and the geometry is favorable for time-resolved observations. The field of view of any detection system corresponds to a time window at the location of the ion beam, and variation of the position of that time window on a scale of picoseconds to many nanoseconds is easily achieved by a mechanical foil displacement on the scale of micrometers to many centimeters. Moreover, the charge state distribution of the ions in the beam leaving the exciter foil depends on the ion beam energy, and thus, it can be shifted to favor specific charge states. Among the drawbacks of the technique is the high ion velocity, which causes Doppler shifts and Doppler broadening of observations with a finite solid angle of detection. Furthermore, the isotopic purity makes it difficult to use external wavelength calibrations with reference lines from other elements. Instead, often (but not always) in-beam calibration is employed that relies on well-known lines of the same element (and preferably the same ion charge state). Moreover, there is a drawback to the high excitation efficiency, in that often there are so many lines in beam-foil spectra (especially in observations close to the exciter foil, that is at very short times after excitation) that it may be difficult, if not impossible, to resolve the reference lines of interest. At the same time the observation of the decays of long-lived levels (intercombination or E1-forbidden decays) is hampered by the intrinsically high time resolution, which disfavors the signal collection from extended emission zones.

5.1. Beam-Foil EUV Spectra of Na: Seeing Trees or a Forest?

Experimental setups for beam-foil spectroscopy have become scarce, and beams of sodium ions have been difficult to produce for tandem accelerators, the most suitable machinery for much of the beam-foil work. The Bochum Dynamitron Tandem accelerator laboratory has been most successful in this vein, but even there, the ion beam currents achieved with Na remained well below those of many other elements. (The Bochum beam-foil measurement setups have been shut down for good since.)

Lacking the tools for new beam-foil measurements, we have revisited the best samples of such spectra as have been obtained previously (but not evaluated in detail) by Tordoir *et al.* at Bochum [26]. Tordoir *et al.* covered the wavelength range from 8.3 to about 54 nm at ion beam energies of 1.5 MeV, 3 MeV, 4.5 MeV and 7 MeV, respectively. The latter two choices optimize the excitation of the spectra Na VI and Na VII, respectively. The individual charge state fractions peak at about 40% of the charge state distribution [75]. With one fraction so maximized, the neighboring ones amount to about 20% each, and the next ones to about 5% each. Thus, with run conditions aiming at Na VI and Na VII, the spectra Na IV, Na V and Na VIII are expected to be excited as well, but at accordingly lower yields. The spectra of multiply-excited ions usually have excitation functions in between; for example, at an ion beam energy of 4.5 MeV, the Na III fraction may be too small to matter, but the Na III* fraction may be still notable. Other beam-foil studies, conducted at Lyon [16,17], used ion beam energies in the low part of the Bochum measurements. Both Lyon and Bochum beam-foil experiments on Na employed photoelectric detection, whereas Söderqvist had used photographic recording. There is one striking difference between the Lyon and the Bochum spectra: the prominent peaks in the Lyon spectra bear labels as if there were no doubt about line identification (although many line profiles reveal the presence of more than one component), while the Bochum spectra feature so many lines in the same intensity bracket that not many lines stand out, and identification by imperfectly calibrated line position (in the short wavelength range) remains tentative.

Tordoir *et al.* have concentrated on the measurement of lifetimes of various $n = 2$ levels (as mentioned above, the results are compared with our calculations in Table 2). The associated spectra may be expected to yield plenty of atomic structure information, including information on many levels in the $n = 3$ shell and some in the $n = 4$ shell. However, the technical conditions (such as the operational wavelength range, signal rate from an only moderately strong ion beam, durability of the exciter foil under ion beam irradiation, *etc.*) necessitated the use of a highly reflective diffraction grating, but of lower groove density than used in the aforementioned work on Si beams. Hence, the spectral resolving power was much lower than what is achievable in principle. With 40 μm wide slits a spectral line width of 0.03 nm (FWHM) was obtained, corresponding to a resolving power $\lambda/\Delta\lambda$ of about 240 at the short wavelength end ($\lambda \approx 8.3$ nm) of the data range and of about 1800 at the long wavelength end (54.3 nm). (In contrast, Söderqvist used several spectrographs observing a stationary light source, which was bright enough to employ a narrow spectrometer entrance slit, and the spectrographs worked also in various higher orders of diffraction; both factors are beneficial for spectral resolution.) Figure 2 shows the complete spectral range that was covered in sections and the individual spectra stitched together. An approximate response function of the spectrometer-detector combination has been established (a decade earlier) for the wavelength range above 20 nm [76,77], but the measured spectrum (recorded in sections at various occasions and having varying signal normalization settings) has not been corrected for this. Nevertheless, one has to be aware of the general efficiency function that in this case has a wide maximum near a wavelength of 20 nm and falls off monotonically to half of that efficiency at wavelengths shorter than 12 nm or longer than 40 nm. Hence, measurements inside this wavelength range are enhanced in signal compared to measurements outside.

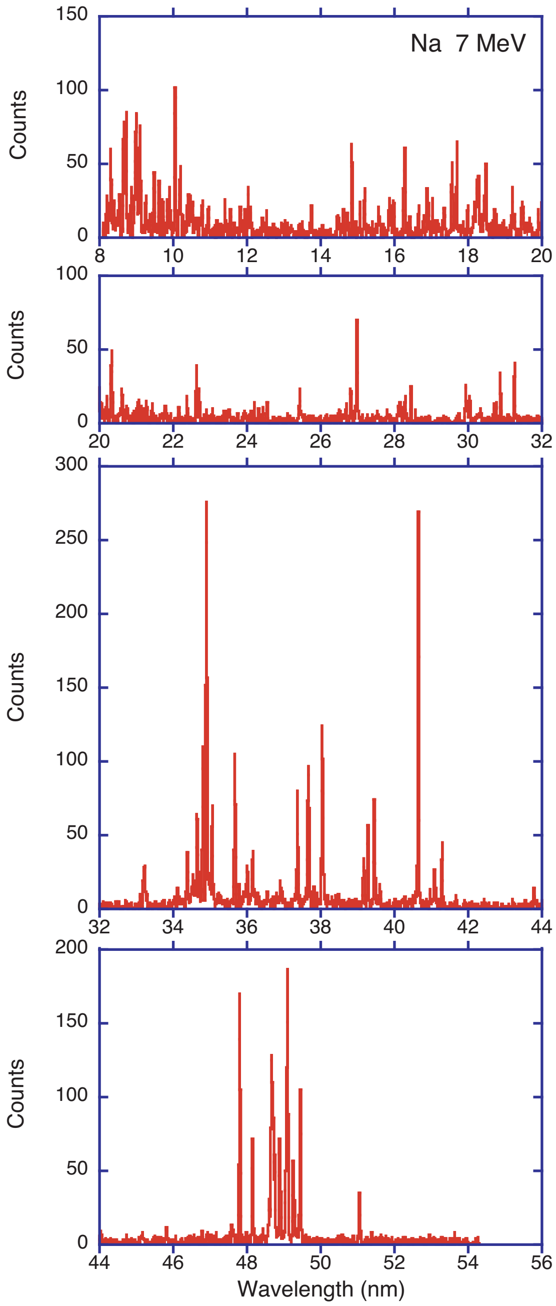

Figure 2. Beam-foil spectrum of Na at an ion beam energy of 7 MeV (unpublished data collected for [26]). Prominent $n = 2 - 2$ lines of Na VII can easily be recognized by comparison with Figure 1. Labeled details of several of the line groups in the long wavelength part of the spectrum (the lower two panels of this figure) are also shown in [26].

The spectra were calibrated from known lines of Na ("in-beam calibration"), which takes care of the Doppler shift, but suitable lines are not evenly available in the spectral range covered. There are sufficiently many appropriate lines at wavelengths longer than 30 nm. Between 14 and 26 nm, our present calculations for Na VII predict nothing but a few very weak lines, but the beam-foil spectra show a multitude of moderate to weak lines (see below). Below 14 nm, there are many lines known and many lines seen, but the two sets are not congruent. Some one hundred lines crowd and often blend in an interval of about 6 nm, in which the average line spacing is only about a factor of two to three larger than the instrumental line width. In this short wavelength range, many of the line positions (whether the lines have been identified or not) appear reproducibly in the spectra recorded at 4.5 MeV and at 7 MeV ion beam energy, matching the expectation that in both settings, the $n = 2 - 3$ transitions in the spectra Na VI and Na VII are the dominant contributors (Figure 3). At an ion beam energy of 3 MeV, the charge state distribution [75] favors Na VI and Na V similarly (each at some 37%), while at 1.5 MeV, Na V and Na IV are about equally strongly present. These lower charge states are expected to contribute many lines to the spectrum above a wavelength of some 10 nm, and thus, they are the most likely candidates for the many lines seen in the beam-foil spectra of Na. An example are the prominent 2p-3d transitions in Na ions of successively lower ionization stages that, according to the databases, appear at successively longer wavelengths. The densely packed $n = 2 - 3$ lines of low-charge state ions (a “forest of lines”) practically hide the more widely-spaced lines (“single trees”) of higher charge state ions that are expected to lie in the same wavelength ranges.

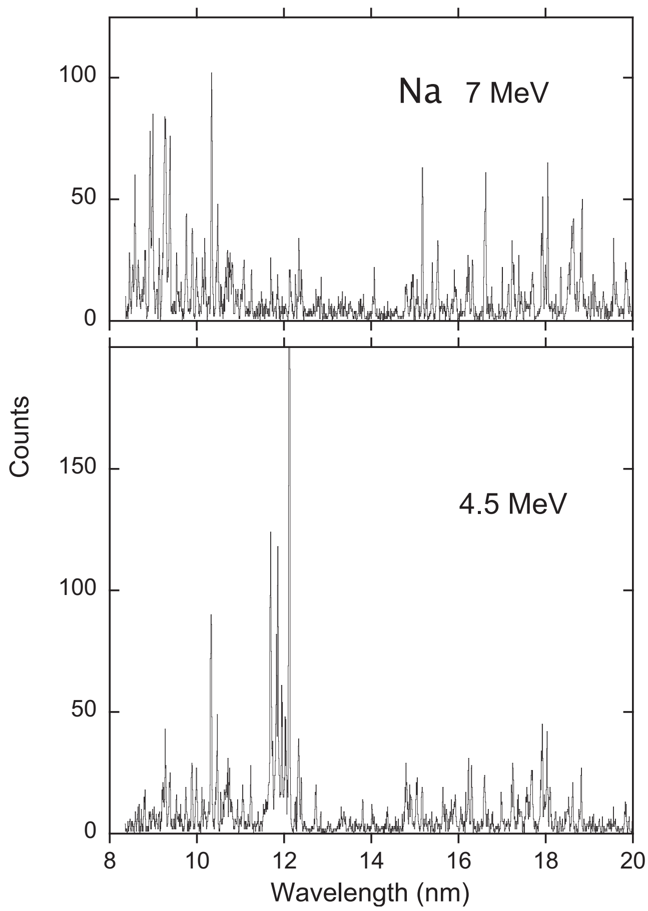

Figure 3. Beam-foil spectra of Na at ion beam energies of 7 MeV (top) and 4.5 MeV (bottom) (unpublished data collected for [26]).

6. Comparison of Laboratory Data with Results of Computation

A simple approximation of the level population is being used here to simulate a spectrum of Na VII on the basis of our calculations and in lieu of a full radiative-collisional model, which would include the redistribution of level populations by various processes, including radiative cascades. The result demonstrates the overall similarity of our calculated data (Figure 1) with the observed spectrum (Figure 2). The similarity of the line positions of prominent lines and the balance of emission intensities in the various parts of the spectral range covered attests to the overall quality of the calculations. The agreement of the calculated $n = 2$ displaced level lifetimes with the experiment [26] has already been noted. A more detailed comparison of the line intensities of the decays of levels with $n > 2$ with the experiment would have to include the specific excitation and observation geometry of the beam-foil experiment, which is of limited interest here.

A major field of comparison is the level energies (see above) and the resulting transition wavelengths, while in the experiment, the dependence is the inverse, in that wavelength determinations come first, from which levels are derived. For the technical reasons mentioned above, the wavelength information from the Bochum beam-foil spectra does not reach Söderqvist's accuracy. However, for some levels, our calculations find significant deviations from Söderqvist's, which suggests that with the same wavelength information from the experiment, the spectrum analysis might lead to some different line assignments. After all, Söderqvist's spectra feature a similarly high line density in the short wavelength range, with the same problem of neighboring charge states providing the bulk of the lines. The data recorded by Tordoir *et al.* [26], unfortunately, are not resolved well enough to help with reanalyzing this spectral section.

However, there are many more lines than those Söderqvist has assigned to the various charge states of Na, and the isotopic purity of the beam-foil light source guarantees that they also belong to Na. The most striking multitude of those unidentified lines ranges from 14 to 32 nm. In order to check for the appearance of lines in second diffraction order, the observed spectrum 8 to 12 nm has been overlaid as a scaled plot on the spectral range 16 to 24 nm. Incidentally, very few of the second diffraction order images of the short wavelength lines coincide with line profiles in the longer wavelength section. Moreover, the second diffraction order line pattern can only be accommodated, if the second-order signal amounts to no more than some 10% of the same transitions in the first diffraction order. For most lines, this would be indistinguishable from the background level. The vast majority of the lines in the wavelength range above 16 nm suffer no recognizable potential contamination by second diffraction order lines.

There are many more lines in the beam-foil spectra between 14 and 26 nm than are listed by NIST as observations (of many charge states) of Na IV through Na VIII, while there are no notably bright lines predicted by the present computations on Na VII. This is particularly interesting for the practitioner, because the recent extension of the NIST tables by inserting lines based on the Ritz combination principle has added hundreds of such lines with no explicit tool to judge a likely signal. In contrast, our present computations have been used to provide a (very simple) model spectrum that takes transition rates (A values) into account, but also the branching of the upper level decays. From this combination, one can see wavelength ranges with an expected significant line signal of Na VII and others without. (An extension of the synthetic spectrum to include more of the $n = 4, 5$ levels would add mostly lines at the short wavelength end of the range.) We note that the many lines in the wavelength range 14 to 26 nm increase in relative brightness (compared to the lines in the interval 8 to 14 nm) when the ion beam energy is decreased to 3 or 1.5 MeV. This is a clear sign of lower charge states, and many of the lines will originate from multiply-excited states of those ions.

We suggest to limit "predictive line lists" to lines that, under simple assumptions (or after proper collisional-radiative model calculations), are expected not to be weaker than, say, 0.1% of the strong ones. This is not a scientific criterion, only a practical one. Such a cutoff may prevent unnecessary clutter in tables from computations that are capable of producing thousands of results, without any measure of relevance and that often are presented without a meaningful intrinsic measure of accuracy. Table 3 demonstrates the need for such a cut-off. The transition rate of any given line is insufficient as a measure of whether the line might be notable in a spectrum. The relative intensity estimate after applying a population model and branch fractions, however, easily tells that a large fraction of the number of computed lines is of no practical importance for the understanding of observations. The plenitude of indiscriminate table entries from computations into databases may even be a disservice to the community.

However, we are aware that there are light sources with an excitation pattern that differs very much from that of the fast-ion-foil one, that is, for example, the low density environment as in the electron beam ion trap [78]. In such a trap, the population is primarily in the ground configuration. Thus, direct excitation from the ground state matters most, and ground state transitions dominate, irrespective of the multipole order. This is in stark contrast to the beam-foil excitation process [79]. Hence, there is no simple criterion that guarantees sensible data filtering for databases.

Table 1. Energy levels of the n = 2, 3 and 4 shells of Na VII. E_{RCI} energies in cm^{-1} from the present relativistic configuration interaction (RCI) calculations. E_{Koc} energies in cm^{-1} from Koc [38]. Experimental energies E_{exp} are from the compilation by Sansonetti [12]. ΔE is the deviation of calculated energies from the experiment. * These states were labeled 2p^2(^{1}D)3d in the compilation by Sansonetti. According to our calculations, they should be labeled 2p^2(^{3}P)3d instead.

Level	E_{RCI}	ΔE	E_{Koc}	ΔE	E_{exp}
2s^{2}2p ^{2}P$^o_{1/2}$	0	0	0	0	0
2s^{2}2p ^{2}P$^o_{3/2}$	2134	0	2138	4	2134
2s2p^2 ^{4}P$_{1/2}$	114856	−139	114878	−117	114995
2s2p^2 ^{4}P$_{3/2}$	115572	−156	115618	−110	115728
2s2p^2 ^{4}P$_{5/2}$	116652	−146	116668	−130	116798
2s2p^2 ^{2}D$_{5/2}$	205444	32	205617	205	205412
2s2p^2 ^{2}D$_{3/2}$	205485	37	205681	233	205448
2s2p^2 ^{2}S$_{1/2}$	264501	101	264760	360	264400
2s2p^2 ^{2}P$_{1/2}$	283975	106	284147	278	283869
2s2p^2 ^{2}P$_{3/2}$	285291	102	285465	276	285189
2p^3 ^{4}S$^o_{3/2}$	367189	−119	367240	−68	367308
2p^3 ^{2}D$^o_{5/2}$	412321	10	412533	222	412311
2p^3 ^{2}D$^o_{3/2}$	412407	12	412641	246	412395
2p^3 ^{2}P$^o_{1/2}$	465155	138	465406	389	465017
2p^3 ^{2}P$^o_{3/2}$	465247	136	465509	398	465111
2s^{2}3s ^{2}S$_{1/2}$	951183	−167	951067	−283	951350
2s^{2}3p ^{2}P$^o_{1/2}$	1007786		1007696		
2s^{2}3p ^{2}P$^o_{3/2}$	1008332	−88	1008252	−168	1008420
2s^{2}3d ^{2}D$_{3/2}$	1060482	−98	1060463	−117	1060580

Table 1. *Cont.*

Level	E_{RCI}	ΔE	E_{Koc}	ΔE	E_{exp}
$2s^23d\ ^2D_{5/2}$	1060612	−88	1060592	−108	1060700
$2s2p(^3P)3s\ ^4P^o_{1/2}$	1077041	−229	1077012	−258	1077270
$2s2p(^3P)3s\ ^4P^o_{3/2}$	1077762	−238	1077755	−245	1078000
$2s2p(^3P)3s\ ^4P^o_{5/2}$	1079074	−256	1079036	−294	1079330
$2s2p(^3P)3s\ ^2P^o_{1/2}$	1103068	−152	1103087	−133	1103220
$2s2p(^3P)3s\ ^2P^o_{3/2}$	1104508	−112	1104513	−107	1104620
$2s2p(^3P)3p\ ^2P_{1/2}$	1126639	−171	1126672	−138	1126810
$2s2p(^3P)3p\ ^2P_{3/2}$	1127284	−146	1127330	−100	1127430
$2s2p(^3P)3p\ ^4D_{1/2}$	1128784		1128823		
$2s2p(^3P)3p\ ^4D_{3/2}$	1129158		1129197		
$2s2p(^3P)3p\ ^4D_{5/2}$	1129813		1129855		
$2s2p(^3P)3p\ ^4D_{7/2}$	1130955		1130933		
$2s2p(^3P)3p\ ^4S_{3/2}$	1140057		1140089		
$2s2p(^3P)3p\ ^4P_{1/2}$	1147812		1147867		
$2s2p(^3P)3p\ ^4P_{3/2}$	1148361		1148413		
$2s2p(^3P)3p\ ^4P_{5/2}$	1149037		1149084		
$2s2p(^3P)3p\ ^2D_{3/2}$	1154694	−86	1154774	−6	1154780
$2s2p(^3P)3p\ ^2D_{5/2}$	1156079	−101	1156142	−38	1156180
$2s2p(^3P)3p\ ^2S_{1/2}$	1172268	−72	1172334	−6	1172340
$2s2p(^3P)3d\ ^4F^o_{3/2}$	1174052		1174113		
$2s2p(^3P)3d\ ^4F^o_{5/2}$	1174469		1174539		
$2s2p(^3P)3d\ ^4F^o_{7/2}$	1175087		1175146		
$2s2p(^3P)3d\ ^4F^o_{9/2}$	1175942				
$2s2p(^3P)3d\ ^4D^o_{1/2}$	1185508		1185528		
$2s2p(^3P)3d\ ^4D^o_{3/2}$	1185631	−109	1185699	−41	1185740
$2s2p(^3P)3d\ ^4D^o_{5/2}$	1185871	−129	1185924	−76	1186000
$2s2p(^3P)3d\ ^4D^o_{7/2}$	1186323	−157	1186354	−126	1186480
$2s2p(^3P)3d\ ^2D^o_{3/2}$	1187504	874	1187624	994	1186630
$2s2p(^3P)3d\ ^2D^o_{5/2}$	1187743	−147	1187851	−39	1187890
$2s2p(^3P)3d\ ^4P^o_{5/2}$	1192208	−142	1192270	−80	1192350
$2s2p(^3P)3d\ ^4P^o_{3/2}$	1192719	−151	1192778	−92	1192870
$2s2p(^3P)3d\ ^4P^o_{1/2}$	1193050	−160	1193044	−166	1193210
$2s2p(^1P)3s\ ^2P^o_{1/2}$	1198244	−46	1198340	50	1198290
$2s2p(^1P)3s\ ^2P^o_{3/2}$	1198282	−8	1198372	82	1198290
$2s2p(^3P)3d\ ^2F^o_{5/2}$	1209815	−95	1210025	115	1209910
$2s2p(^3P)3d\ ^2F^o_{7/2}$	1211141	−99	1211326	86	1211240
$2s2p(^3P)3d\ ^2P^o_{3/2}$	1217038	−152	1217255	65	1217190
$2s2p(^3P)3d\ ^2P^o_{1/2}$	1217805	−145	1217961	11	1217950
$2s2p(^1P)3p\ ^2D_{3/2}$	1251929	259	1252070	400	1251670
$2s2p(^1P)3p\ ^2D_{5/2}$	1252084	74	1252215	205	1252010
$2s2p(^1P)3p\ ^2P_{1/2}$	1253401	51	1253544	194	1253350
$2s2p(^1P)3p\ ^2P_{3/2}$	1253800	20	1253937	157	1253780
$2s2p(^1P)3p\ ^2S_{1/2}$	1258410	−470	1259323	443	1258880
$2p^2(^3P)3s\ ^4P_{1/2}$	1290926		1291009		

Table 1. *Cont.*

Level	E_{RCI}	ΔE	E_{Koc}	ΔE	E_{exp}
$2p^2(^3P)3s\ ^4P_{3/2}$	1291676	1626	1291748	1698	1290050
$2s2p(^1P)3d\ ^2F^o_{7/2}$	1292639	309	1292916	586	1292330
$2s2p(^1P)3d\ ^2F^o_{5/2}$	1292643	313	1293153	823	1292330
$2p^2(^3P)3s\ ^4P_{5/2}$	1292853	1273	1293190	1610	1291580
$2s^24s\ ^2S_{1/2}$	1300068	5158			1294910
$2s2p(^1P)3d\ ^2D^o_{3/2}$	1303526	76	1303701	251	1303450?
$2s2p(^1P)3d\ ^2D^o_{5/2}$	1303727	117	1303885	275	1303610
$2s2p(^1P)3d\ ^2P^o_{1/2}$	1306511	41			1306470
$2s2p(^1P)3d\ ^2P^o_{3/2}$	1306704	234			1306470
$2p^2(^3P)3s\ ^2P_{1/2}$	1315362				
$2p^2(^3P)3s\ ^2P_{3/2}$	1316724				
$2s^24p\ ^2P^o_{1/2}$	1323377				
$2s^24p\ ^2P^o_{3/2}$	1323564				
$2p^2(^3P)3p\ ^2S^o_{1/2}$	1327643				
$2p^2(^1D)3s\ ^2D_{3/2}$	1331968	828			1331140
$2p^2(^1D)3s\ ^2D_{5/2}$	1331987	17			1331970
$2s^24d\ ^2D_{3/2}$	1335621	−189			1335810
$2s^24d\ ^2D_{5/2}$	1335733	−97			1335830
$2p^2(^3P)3p\ ^4D^o_{1/2}$	1336100				
$2p^2(^3P)3p\ ^4D^o_{3/2}$	1336490				
$2p^2(^3P)3p\ ^4D^o_{5/2}$	1337246				
$2p^2(^3P)3p\ ^4D^o_{7/2}$	1338292	−178			1338470
$2p^2(^3P)3p\ ^4P^o_{1/2}$	1342599				
$2p^2(^3P)3p\ ^4P^o_{3/2}$	1342967				
$2p^2(^3P)3p\ ^4P^o_{5/2}$	1343655	−1195			1344850
$2s^24f\ ^2F^o_{5/2}$	1347900				
$2s^24f\ ^2F^o_{7/2}$	1347981				
$2p^2(^3P)3p\ ^2D^o_{3/2}$	1348671	−49			1348720
$2p^2(^3P)3p\ ^2D^o_{5/2}$	1350135	1415			1348720
$2p^2(^3P)3p\ ^2P^o_{3/2}$	1360693				
$2p^2(^3P)3p\ ^2P^o_{1/2}$	1360809				
$2p^2(^3P)3p\ ^4S^o_{3/2}$	1362893	−77			1362970
$2p^2(^3P)3d\ ^4F_{3/2}$	1375786				
$2p^2(^3P)3d\ ^4F_{5/2}$	1376184				
$2p^2(^3P)3d\ ^4F_{7/2}$	1376753				
$2p^2(^3P)3d\ ^4F_{9/2}$	1377501				
$2p^2(^1D)3p\ ^2F^o_{5/2}$	1377924	104			1377820
$2p^2(^1D)3p\ ^2F^o_{7/2}$	1378301	1			1378300
$2p^2(^3P)3d\ ^4D_{1/2}$	1386200				
$2p^2(^3P)3d\ ^4D_{3/2}$	1386281				
$2p^2(^3P)3d\ ^4D_{5/2}$	1386579				
$2p^2(^3P)3d\ ^4D_{7/2}$	1386815				
$2p^2(^3P)3d\ ^2P_{3/2}$	1387742				
$2p^2(^3P)3d\ ^2F_{5/2}$	1388856	356			1388500?

Table 1. *Cont.*

Level	E_{RCI}	ΔE	E_{Koc}	ΔE	E_{exp}
$2p^2(^3P)3d\ ^2P_{1/2}$	1389006				
$2p^2(^3P)3d\ ^2F_{7/2}$	1390365	1395			1388970?
$2p^2(^1D)3p\ ^2D^o_{5/2}$	1392735	−65			1392800
$2p^2(^1D)3p\ ^2D^o_{3/2}$	1392892	92			1392800
$2p^2(^3P)3d\ ^4P_{5/2}$	1398970	−100			1399070
$2p^2(^3P)3d\ ^4P_{3/2}$	1399509	−91			1399600
$2p^2(^3P)3d\ ^4P_{1/2}$	1399808	−82			1399890
$2p^2(^1D)3p\ ^2P^o_{1/2}$	1401895				
$2p^2(^1D)3p\ ^2P^o_{3/2}$	1402773				
$2p^2(^1S)3s\ ^2S_{1/2}$	1412099				
$2p^2(^3P)3d\ ^2D_{3/2}$	1415820	190			1415630*
$2p^2(^3P)3d\ ^2D_{5/2}$	1415952	322			1415630*
$2p^2(^1D)3d\ ^2G_{7/2}$	1418543				
$2p^2(^1D)3d\ ^2G_{9/2}$	1418646				
$2s2p(^3P)4s\ ^4P^o_{1/2}$	1420768				
$2s2p(^3P)4s\ ^4P^o_{3/2}$	1421495				
$2s2p(^3P)4s\ ^4P^o_{5/2}$	1422846	−44			1422890
$2p^2(^1D)3d\ ^2F_{7/2}$	1428794	−6			1428800
$2p^2(^1D)3d\ ^2F_{5/2}$	1429047	327			1428720
$2s2p(^3P)4s\ ^2P^o_{1/2}$	1431932				
$2p^2(^1D)3d\ ^2D_{3/2}$	1432157				
$2p^2(^1D)3d\ ^2D_{5/2}$	1432670				
$2s2p(^3P)4s\ ^2P^o_{3/2}$	1433406				
$2p^2(^1D)3d\ ^2P_{1/2}$	1443803	11663			1432140
$2p^2(^1D)3d\ ^2P_{3/2}$	1444324	11714			1432610
$2p^2(^1D)3d\ ^2S_{1/2}$	1452195				

Table 2. Radiative lifetimes. τ_{RCI} lifetimes from present RCI calculations; τ_{Koc} lifetimes from Koc [38]; τ_{TB} lifetimes from Tachiev and Froese Fischer [37]. Experimental lifetimes τ_{exp} from beam-foil studies by Buchet *et al.* [17] and Tordoir *et al.* [26]. A table entry 1.6382E-05 means 1.6382×10^{-5}

Level	τ_{RCI} (s^{-1})	τ_{Koc} (s^{-1})	τ_{TF} (s^{-1})	τ_{exp} (s^{-1})
$2s2p^2\ ^4P_{1/2}$	1.6382E-05	1.589E-05	1.571E-05	
$2s2p^2\ ^4P_{3/2}$	1.2575E-04	1.171E-04	1.212E-04	
$2s2p^2\ ^4P_{5/2}$	3.8216E-05	4.021E-05	3.667E-05	
$2s2p^2\ ^2D_{5/2}$	7.3837E-10	7.350E-10	7.351E-10	7.0(7)E-10
$2s2p^2\ ^2D_{3/2}$	7.1459E-10	7.111E-10	7.124E-10	6.9(5)E-10
$2s2p^2\ ^2S_{1/2}$	1.6180E-10	1.615E-10	1.613E-10	1.55(10)E-10
$2s2p^2\ ^2P_{1/2}$	8.3553E-11	8.335E-11	8.332E-11	7.3(1.0)E-11, 7.6(8)E-11
$2s2p^2\ ^2P_{3/2}$	8.3111E-11	8.283E-11	8.297E-11	
$2p^3\ ^4S^o_{3/2}$	9.2486E-11	9.242E-11	9.228E-11	9.5(1.0)E-11

Table 2. *Cont.*

Level	τ_{RCI} (s^{-1})	τ_{Koc} (s^{-1})	τ_{TF} (s^{-1})	τ_{exp} (s^{-1})
$2p^3\ ^2D^o_{5/2}$	2.8495E-10	2.852E-10	2.839E-10	2.8(4)E-10
$2p^3\ ^2D^o_{3/2}$	2.8588E-10	2.856E-10	2.849E-10	
$2p^3\ ^2P^o_{1/2}$	1.1619E-10	1.163E-10	1.156E-10	
$2p^3\ ^2P^o_{3/2}$	1.1668E-10	1.167E-10	1.161E-10	
$2s^23s\ ^2S_{1/2}$	2.0241E-11	2.027E-11	2.025E-11	
$2s^23p\ ^2P^o_{1/2}$	2.2170E-10	2.244E-10	2.226E-10	
$2s^23p\ ^2P^o_{3/2}$	2.2271E-10	2.238E-10	2.222E-10	
$2s^23d\ ^2D_{3/2}$	3.7823E-12	3.778E-12	3.774E-12	
$2s^23d\ ^2D_{5/2}$	3.7931E-12	3.793E-12	3.788E-12	
$2s2p(^3P)3s\ ^4P^o_{1/2}$	1.6844E-11	1.690E-11	1.691E-11	
$2s2p(^3P)3s\ ^4P^o_{3/2}$	1.6810E-11	1.692E-11	1.684E-11	
$2s2p(^3P)3s\ ^4P^o_{5/2}$	1.6738E-11	1.678E-11	1.670E-11	
$2s2p(^3P)3s\ ^2P^o_{1/2}$	2.2493E-11	2.258E-11		
$2s2p(^3P)3s\ ^2P^o_{3/2}$	2.2106E-11	2.218E-11		
$2s2p(^3P)3p\ ^2P_{1/2}$	1.1201E-11	1.145E-11		
$2s2p(^3P)3p\ ^2P_{3/2}$	1.0938E-11	1.089E-11		
$2s2p(^3P)3p\ ^4D_{1/2}$	1.0424E-10	8.522E-11		
$2s2p(^3P)3p\ ^4D_{3/2}$	1.5001E-10	1.543E-10		
$2s2p(^3P)3p\ ^4D_{5/2}$	4.7080E-09	4.425E-09		
$2s2p(^3P)3p\ ^4D_{7/2}$	4.6826E-09	1.426E-07		
$2s2p(^3P)3p\ ^4S_{3/2}$	1.6894E-09	1.619E-09		
$2s2p(^3P)3p\ ^4P_{1/2}$	1.3892E-09	1.382E-09		
$2s2p(^3P)3p\ ^4P_{3/2}$	1.3715E-09	1.364E-09		
$2s2p(^3P)3p\ ^4P_{5/2}$	1.0204E-09	1.091E-09		
$2s2p(^3P)3p\ ^2D_{3/2}$	9.8122E-12	9.802E-12		
$2s2p(^3P)3p\ ^2D_{5/2}$	9.8332E-12	9.809E-12		
$2s2p(^3P)3p\ ^2S_{1/2}$	9.6219E-12	9.611E-12		
$2s2p(^3P)3d\ ^4F^o_{3/2}$	1.2021E-09	1.155E-09		
$2s2p(^3P)3d\ ^4F^o_{5/2}$	7.4785E-10	7.197E-10		
$2s2p(^3P)3d\ ^4F^o_{7/2}$	6.9802E-10	7.038E-10		
$2s2p(^3P)3d\ ^4F^o_{9/2}$	7.7730E-09			
$2s2p(^3P)3d\ ^4D^o_{1/2}$	2.4930E-12	2.490E-12		
$2s2p(^3P)3d\ ^4D^o_{3/2}$	2.5152E-12	2.509E-12		
$2s2p(^3P)3d\ ^4D^o_{5/2}$	2.5398E-12	2.537E-12		
$2s2p(^3P)3d\ ^4D^o_{7/2}$	2.5021E-12	2.500E-12		
$2s2p(^3P)3d\ ^2D^o_{3/2}$	6.9533E-12	6.976E-12		
$2s2p(^3P)3d\ ^2D^o_{5/2}$	6.8162E-12	6.804E-12		
$2s2p(^3P)3d\ ^4P^o_{5/2}$	4.5699E-12	4.557E-12		

Table 2. *Cont.*

Level	τ_{RCI} (s^{-1})	τ_{Koc} (s^{-1})	τ_{TF} (s^{-1})	τ_{exp} (s^{-1})
2s2p(^{3}P)3d $^4P^o_{3/2}$	4.5551E-12	4.567E-12		
2s2p(^{3}P)3d $^4P^o_{1/2}$	4.5705E-12	5.759E-12		
2s2p(^{1}P)3s $^2P^o_{1/2}$	1.0624E-11	1.067E-11		
2s2p(^{1}P)3s $^2P^o_{3/2}$	1.0458E-11	3.980E-11		
2s2p(^{3}P)3d $^2F^o_{5/2}$	3.9460E-12	3.938E-12		
2s2p(^{3}P)3d $^2F^o_{7/2}$	3.8703E-12	3.870E-12		
2s2p(^{3}P)3d $^2P^o_{3/2}$	5.9040E-12	3.211E-10		
2s2p(^{3}P)3d $^2P^o_{1/2}$	5.8044E-12	5.791E-12		
2s2p(^{1}P)3p $^2D_{3/2}$	6.1559E-11	8.552E-11		
2s2p(^{1}P)3p $^2D_{5/2}$	6.1308E-11	5.133E-09		
2s2p(^{1}P)3p $^2P_{1/2}$	1.9570E-11	3.830E-11		
2s2p(^{1}P)3p $^2P_{3/2}$	1.9573E-11	1.212E-10		
2s2p(^{1}P)3p $^2S_{1/2}$	1.9633E-11	5.661E-11		
2p^2(^{3}P)3s $^4P_{1/2}$	2.9048E-11	5.378E-06		
2p^2(^3P)3s $^4P_{3/2}$	2.8898E-11	5.539E-10		
2s2p(^{1}P)3d $^2F^o_{7/2}$	5.7034E-12	3.487E-10		
2s2p(^{1}P)3d $^2F^o_{5/2}$	5.5432E-12	5.604E-12		
2p^2(^{3}P)3s $^4P_{5/2}$	2.8663E-11	8.246E-11		
2s^{2}4s $^2S_{1/2}$	1.0417E-10			
2s2p(^{1}P)3d $^2D^o_{3/2}$	3.1444E-12	2.649E-05		
2s2p(^{1}P)3d $^2D^o_{5/2}$	3.1536E-12	2.721E-11		
2s2p(^{1}P)3d $^2P^o_{1/2}$	6.7242E-12			
2s2p(^{1}P)3d $^2P^o_{3/2}$	6.7203E-12			
2p^2(^{3}P)3s $^2P_{1/2}$	1.4970E-11			
2p^2(^{3}P)3s $^2P_{3/2}$	1.4934E-11			
2s^{2}4p $^2P^o_{1/2}$	9.6869E-12			
2s^{2}4p $^2P^o_{3/2}$	9.7495E-12			
2p^2(^{3}P)3p $^2S^o_{1/2}$	1.2503E-11			
2p^2(^{1}D)3s $^2D_{3/2}$	1.7822E-11			
2p^2(^{1}D)3s $^2D_{5/2}$	1.7747E-11			
2s^{2}4d $^2D_{3/2}$	9.7817E-12			
2s^{2}4d $^2D_{5/2}$	9.7779E-12			
2p^2(^{3}P)3p $^4D^o_{1/2}$	2.6807E-11			
2p^2(^{3}P)3p $^4D^o_{3/2}$	2.6787E-11			
2p^2(^{3}P)3p $^4D^o_{5/2}$	2.6781E-11			
2p^2(^{3}P)3p $^4D^o_{7/2}$	2.6805E-11			
2p^2(^{3}P)3p $^4P^o_{1/2}$	1.8709E-11			
2p^2(^{3}P)3p $^4P^o_{3/2}$	1.8726E-11			

Table 2. *Cont.*

Level	τ_{RCI} (s^{-1})	τ_{Koc} (s^{-1})	τ_{TF} (s^{-1})	τ_{exp} (s^{-1})
$2p^2(^3P)3p\ ^4P^o_{5/2}$	1.8740E-11			
$2s^24f\ ^2F^o_{5/2}$	1.8146E-11			
$2s^24f\ ^2F^o_{7/2}$	1.8275E-11			
$2p^2(^3P)3p\ ^2D^o_{3/2}$	1.7957E-11			
$2p^2(^3P)3p\ ^2D^o_{5/2}$	1.7732E-11			
$2p^2(^3P)3p\ ^2P^o_{3/2}$	1.3695E-11			
$2p^2(^3P)3p\ ^2P^o_{1/2}$	1.3965E-11			
$2p^2(^3P)3p\ ^4S^o_{3/2}$	1.6245E-11			
$2p^2(^3P)3d\ ^4F_{3/2}$	5.4642E-10			
$2p^2(^3P)3d\ ^4F_{5/2}$	5.3874E-10			
$2p^2(^3P)3d\ ^4F_{7/2}$	5.4118E-10			
$2p^2(^3P)3d\ ^4F_{9/2}$	5.6349E-10			
$2p^2(^1D)3p\ ^2F^o_{5/2}$	3.5376E-11			
$2p^2(^1D)3p\ ^2F^o_{7/2}$	3.5090E-11			
$2p^2(^3P)3d\ ^4D_{1/2}$	1.0613E-10			
$2p^2(^3P)3d\ ^4D_{3/2}$	6.0989E-11			
$2p^2(^3P)3d\ ^4D_{5/2}$	1.8072E-10			
$2p^2(^3P)3d\ ^4D_{7/2}$	2.1278E-10			
$2p^2(^3P)3d\ ^2P_{3/2}$	1.0167E-11			
$2p^2(^3P)3d\ ^2F_{5/2}$	2.2051E-11			
$2p^2(^3P)3d\ ^2P_{1/2}$	9.3520E-12			
$2p^2(^3P)3d\ ^2F_{7/2}$	2.2665E-11			
$2p^2(^1D)3p\ ^2D^o_{5/2}$	1.2824E-11			
$2p^2(^1D)3p\ ^2D^o_{3/2}$	1.2882E-11			
$2p^2(^3P)3d\ ^4P_{5/2}$	2.7169E-12			
$2p^2(^3P)3d\ ^4P_{3/2}$	2.7103E-12			
$2p^2(^3P)3d\ ^4P_{1/2}$	2.7039E-12			
$2p^2(^1D)3p\ ^2P^o_{1/2}$	3.1165E-11			
$2p^2(^1D)3p\ ^2P^o_{3/2}$	3.0690E-11			
$2p^2(^1S)3s\ ^2S_{1/2}$	1.0163E-11			
$2p^2(^3P)3d\ ^2D_{3/2}$	4.3088E-12			
$2p^2(^3P)3d\ ^2D_{5/2}$	4.1993E-12			
$2p^2(^1D)3d\ ^2G_{7/2}$	1.2821E-09			
$2p^2(^1D)3d\ ^2G_{9/2}$	4.8804E-09			
$2s2p(^3P)4s\ ^4P^o_{1/2}$	4.5974E-11			
$2s2p(^3P)4s\ ^4P^o_{3/2}$	4.5807E-11			
$2s2p(^3P)4s\ ^4P^o_{5/2}$	4.5752E-11			
$2p^2(^1D)3d\ ^2F_{7/2}$	2.3854E-12			
$2p^2(^1D)3d\ ^2F_{5/2}$	2.4027E-12			

Table 2. *Cont.*

Level	τ_{RCI} (s^{-1})	τ_{Koc} (s^{-1})	τ_{TF} (s^{-1})	τ_{exp} (s^{-1})
$2s2p(^3P)4s\ ^2P^o_{1/2}$	2.5146E-11			
$2p^2(^1D)3d\ ^2D_{3/2}$	3.6983E-12			
$2p^2(^1D)3d\ ^2D_{5/2}$	3.6884E-12			
$2s2p(^3P)4s\ ^2P^o_{3/2}$	2.5217E-11			
$2p^2(^1D)3d\ ^2P_{1/2}$	4.1062E-12			
$2p^2(^1D)3d\ ^2P_{3/2}$	4.0679E-12			
$2p^2(^1D)3d\ ^2S_{1/2}$	7.9727E-12			

Table 3. Transition data from present RCI calculations. A is the transition rate in s^{-1}; gf is weighted oscillator strength; and I_{rel} is the relative intensity (maximum 1.00) taking into account the branching fraction and population of upper levels as described in Section 4. Finally, dT is the relative difference in transition rates in the length and velocity gauge that is used to estimate the uncertainty. Only transitions with rates above 10^6 s^{-1} are included in the table.

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^1D)3d\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1452261	6.885	2.442E+09	3.472E-03	9.616E-03	0.004
$2p^2(^1D)3d\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1450127	6.895	5.165E+09	7.365E-03	2.034E-02	0.004
$2p^2(^1D)3d\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1444386	6.923	1.129E+09	3.245E-03	2.268E-03	0.002
$2p^2(^1D)3d\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1443865	6.925	4.871E+09	7.005E-03	9.877E-03	0.002
$2p^2(^1D)3d\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1442251	6.933	6.234E+09	1.797E-02	1.252E-02	0.002
$2p^2(^1D)3d\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1441731	6.936	2.293E+09	3.307E-03	4.649E-03	0.001
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1432219	6.982	3.249E+09	9.499E-03	5.934E-03	0.004
$2p^2(^1D)3d\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1430596	6.990	4.710E+09	2.070E-02	8.579E-03	0.003
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1430084	6.992	6.189E+08	1.815E-03	1.130E-03	0.004
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1415882	7.062	9.157E+09	2.739E-02	1.949E-02	0.001
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1413880	7.072	9.978E+09	4.490E-02	2.069E-02	0.002
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1413748	7.073	1.829E+09	5.489E-03	3.892E-03	0.001
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1412155	7.081	3.706E+07	5.572E-05	3.720E-05	0.038
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1410021	7.092	8.687E+07	1.310E-04	8.720E-05	0.037
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1397730	7.154	3.109E+06	4.771E-06	4.151E-06	0.001
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1397431	7.155	2.355E+06	7.231E-06	3.152E-06	0.003
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1396891	7.158	5.121E+06	2.361E-05	6.871E-06	0.001
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1389079	7.199	2.873E+09	4.465E-03	1.327E-02	0.002
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1387813	7.205	7.457E+08	2.322E-03	3.744E-03	0.002
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1386944	7.210	1.361E+09	2.121E-03	6.283E-03	0.002
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1386356	7.213	1.066E+08	3.325E-04	3.210E-03	0.003
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1386275	7.213	1.559E+08	2.433E-04	8.172E-03	0.002
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1385679	7.216	3.061E+09	9.559E-03	1.537E-02	0.002
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1384222	7.224	3.788E+08	1.186E-03	1.141E-02	0.002
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1384141	7.224	7.444E+07	1.165E-04	3.902E-03	0.003

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1375862	7.268	4.125E+06	1.307E-05	1.113E-03	0.007
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1374125	7.277	1.818E+06	8.660E-06	4.836E-04	0.000
$2s^24d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1335690	7.486	7.190E+10	2.417E-01	1.465E-01	0.000
$2s^24d\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1333605	7.498	8.625E+10	4.362E-01	1.757E-01	0.001
$2s^24d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1333555	7.498	1.431E+10	4.827E-02	2.917E-02	0.001
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1332029	7.507	1.274E+09	4.305E-03	2.242E-03	0.008
$2p^2(^1D)3s\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1329914	7.519	1.631E+09	8.293E-03	2.858E-03	0.008
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1329895	7.519	3.181E+08	1.079E-03	5.600E-04	0.009
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1318558	7.584	9.011E+06	3.108E-05	9.467E-06	0.028
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1317843	7.588	3.548E+06	1.225E-05	3.728E-06	0.039
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1317084	7.592	1.195E+06	2.066E-06	1.253E-06	0.147
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1316780	7.594	2.664E+08	9.212E-04	3.929E-04	0.018
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1316763	7.594	8.667E+06	2.997E-05	9.106E-06	0.029
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{3/2}$	1316370	7.596	7.278E+06	1.259E-05	7.625E-06	0.004
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1315419	7.602	9.787E+08	1.696E-03	1.447E-03	0.018
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1314646	7.606	1.178E+09	4.087E-03	1.737E-03	0.018
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1313285	7.614	5.055E+08	8.787E-04	7.473E-04	0.018
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1307280	7.649	3.417E+09	1.799E-02	6.514E-03	0.008
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1306645	7.653	4.705E+09	1.652E-02	8.979E-03	0.007
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1306200	7.655	7.907E+09	4.169E-02	1.507E-02	0.006
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1305931	7.657	1.497E+09	5.263E-03	2.857E-03	0.009
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1305918	7.657	1.876E+09	3.298E-03	3.593E-03	0.008
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p^2\ ^4P_{3/2}$	1305203	7.661	9.336E+09	1.643E-02	1.788E-02	0.010
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1304850	7.663	5.030E+09	1.772E-02	9.600E-03	0.008
$2s^24s\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1300079	7.691	1.554E+09	2.757E-03	6.746E-03	0.001
$2s^24s\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1297945	7.704	3.110E+09	5.536E-03	1.350E-02	0.004
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1290988	7.745	6.055E+06	1.089E-05	1.737E-05	0.002
$2p^2(^3P)3s\ ^4P_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1290781	7.747	1.601E+06	8.646E-06	4.534E-06	0.008
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1289604	7.754	3.378E+06	1.218E-05	9.642E-06	0.010
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1288854	7.758	1.661E+06	2.998E-06	4.765E-06	0.012
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1287238	7.768	3.101E+06	1.122E-05	2.820E-05	0.092
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1287073	7.769	1.723E+06	3.119E-06	1.591E-05	0.457
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1286158	7.775	1.533E+07	5.557E-05	1.394E-04	0.147
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1276121	7.836	1.626E+06	8.980E-06	6.177E-06	0.276
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1262392	7.921	1.546E+06	8.727E-06	1.621E-05	0.046
$2p^2(^1D)3p\ ^2F^o_{7/2}$	$2s2p^2\ ^4P_{5/2}$	1261689	7.925	8.714E+06	6.566E-05	9.060E-05	0.045
$2s2p(^1P)3p\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1258443	7.946	1.445E+10	2.735E-02	8.404E-02	0.001
$2s2p(^1P)3p\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1256309	7.959	2.471E+10	4.694E-02	1.437E-01	0.002
$2s2p(^1P)3p\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1253840	7.975	6.860E+09	2.617E-02	3.978E-02	0.001
$2s2p(^1P)3p\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1253441	7.978	2.017E+10	3.849E-02	1.169E-01	0.001
$2s2p(^1P)3p\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1251969	7.987	7.962E+09	3.046E-02	1.452E-01	0.001
$2s2p(^1P)3p\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1251706	7.989	2.677E+10	1.025E-01	1.553E-01	0.001
$2s2p(^1P)3p\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1251307	7.991	1.331E+10	2.548E-02	7.715E-02	0.001

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{1}P)3p ^{2}D$_{5/2}$	2s^{2}2p ^{2}P$^o_{3/2}$	1249989	8.000	1.196E+10	6.888E-02	2.173E-01	0.001
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2s^{2}2p ^{2}P$^o_{3/2}$	1249835	8.001	3.822E+09	1.467E-02	6.971E-02	0.001
2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	1248074	8.012	8.503E+09	3.273E-02	4.093E-02	0.005
2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	1247360	8.016	1.802E+10	6.944E-02	8.672E-02	0.004
2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	1246279	8.023	2.983E+10	1.152E-01	1.436E-01	0.003
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2s2p^2 ^{4}P$_{1/2}$	1245990	8.025	1.221E+07	2.358E-05	5.053E-05	0.001
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	1245874	8.026	7.706E+06	2.977E-05	3.127E-05	0.003
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2s2p^2 ^{4}P$_{3/2}$	1245275	8.030	1.436E+07	2.776E-05	5.940E-05	0.022
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	1245159	8.031	6.109E+07	2.363E-04	2.479E-04	0.018
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	1244078	8.038	6.872E+06	2.663E-05	2.788E-05	0.011
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2s2p^2 ^{4}P$_{3/2}$	1234602	8.099	2.034E+08	1.200E-03	1.069E-03	0.005
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	1233853	8.104	7.232E+07	2.849E-04	3.848E-04	0.002
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2s2p^2 ^{4}P$_{5/2}$	1233522	8.106	6.152E+08	3.637E-03	3.232E-03	0.010
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	1233138	8.109	3.366E+07	1.328E-04	1.791E-04	0.012
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	1232058	8.116	8.022E+07	3.169E-04	4.268E-04	0.002
2s^{2}4f ^{2}F$^o_{7/2}$	2s2p^2 ^{4}P$_{5/2}$	1231307	8.121	3.392E+06	2.683E-05	1.808E-05	0.011
2s^{2}4f ^{2}F$^o_{5/2}$	2s2p^2 ^{4}P$_{5/2}$	1231227	8.121	6.673E+06	3.960E-05	3.532E-05	0.023
2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	1228149	8.142	1.892E+10	7.521E-02	1.050E-01	0.002
2p^2(^{3}P)3p ^{4}P$^o_{5/2}$	2s2p^2 ^{4}P$_{3/2}$	1228122	8.142	1.208E+10	7.203E-02	6.706E-02	0.002
2s2p(^{3}P)4s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	1227969	8.143	1.957E+10	7.781E-02	2.056E-02	0.013
2s2p(^{3}P)4s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	1227928	8.143	2.238E+09	8.899E-03	2.351E-03	0.007
2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	2s2p^2 ^{4}P$_{1/2}$	1227781	8.144	7.113E+09	1.415E-02	3.943E-02	0.002
2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	1227434	8.147	8.370E+09	3.332E-02	4.644E-02	0.001
2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	2s2p^2 ^{4}P$_{3/2}$	1227066	8.149	4.115E+10	8.194E-02	2.281E-01	0.001
2p^2(^{3}P)3p ^{4}P$^o_{5/2}$	2s2p^2 ^{4}P$_{5/2}$	1227041	8.149	3.548E+10	2.120E-01	1.970E-01	0.002
2s2p(^{3}P)4s ^{2}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	1226455	8.153	2.217E+10	4.419E-02	2.323E-02	0.014
2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	1226353	8.154	2.090E+10	8.332E-02	1.159E-01	0.001
2p^2(^{3}P)3p ^{4}D$^o_{5/2}$	2s2p^2 ^{4}P$_{3/2}$	1221715	8.185	2.529E+10	1.524E-01	2.007E-01	0.001
2p^2(^{3}P)3p ^{4}D$^o_{7/2}$	2s2p^2 ^{4}P$_{5/2}$	1221679	8.185	3.303E+10	2.654E-01	2.624E-01	0.000
2p^2(^{3}P)3p ^{4}D$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	1221673	8.185	1.568E+10	6.298E-02	1.244E-01	0.000
2p^2(^{3}P)3p ^{4}D$^o_{1/2}$	2s2p^2 ^{4}P$_{1/2}$	1221220	8.188	2.843E+10	5.716E-02	2.258E-01	0.000
2p^2(^{3}P)3p ^{4}D$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	1220959	8.190	1.634E+10	6.574E-02	1.297E-01	0.000
2p^2(^{3}P)3p ^{4}D$^o_{5/2}$	2s2p^2 ^{4}P$_{5/2}$	1220634	8.192	7.794E+09	4.706E-02	6.185E-02	0.001
2p^2(^{3}P)3p ^{4}D$^o_{1/2}$	2s2p^2 ^{4}P$_{3/2}$	1220505	8.193	4.611E+09	9.281E-03	3.662E-02	0.001
2p^2(^{3}P)3p ^{4}D$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	1219878	8.197	1.063E+09	4.285E-03	8.439E-03	0.001
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	1216056	8.223	6.244E+07	2.532E-04	1.192E-04	0.053
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	1216016	8.223	8.673E+06	3.517E-05	1.655E-05	0.015
2s2p(^{3}P)4s ^{4}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	1215288	8.228	2.768E+07	5.620E-05	5.303E-05	0.050
2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	2s2p^2 ^{4}P$_{1/2}$	1212824	8.245	3.276E+07	6.677E-05	1.214E-04	0.015
2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	2s2p^2 ^{4}P$_{3/2}$	1212109	8.250	1.020E+08	2.081E-04	3.778E-04	0.016
2s^{2}4p ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	1208695	8.273	1.632E+06	6.699E-06	1.989E-06	0.015
2s^{2}4p ^{2}P$^o_{1/2}$	2s2p^2 ^{4}P$_{1/2}$	1208507	8.274	2.091E+06	4.292E-06	2.531E-06	0.044
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	1197364	8.351	1.829E+10	7.650E-02	1.663E-01	0.005

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1197323	8.351	3.535E+09	1.479E-02	3.214E-02	0.012
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1196444	8.358	2.273E+10	4.761E-02	2.099E-01	0.001
$2s2p(^1P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1188154	8.416	1.379E+06	8.784E-06	2.147E-06	0.019
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1187484	8.421	6.459E+09	2.747E-02	2.465E-02	0.008
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1187443	8.421	3.656E+10	1.555E-01	1.395E-01	0.006
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1187327	8.422	4.070E+10	2.597E-01	1.547E-01	0.005
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1187287	8.422	2.672E+09	1.705E-02	1.015E-02	0.003
$2s2p(^1P)3d\ ^2F^o_{7/2}$	$2s2p^2\ ^4P_{5/2}$	1175991	8.503	2.563E+06	2.223E-05	3.558E-06	0.017
$2p^2(^1D)3p\ ^2F^o_{7/2}$	$2s2p^2\ ^2D_{5/2}$	1172895	8.525	2.665E+10	2.324E-01	2.771E-01	0.000
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1172517	8.528	1.212E+09	7.929E-03	1.270E-02	0.001
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1172477	8.528	2.517E+10	1.647E-01	2.639E-01	0.000
$2s2p(^3P)3p\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1172301	8.530	3.113E+10	6.791E-02	8.874E-02	0.001
$2s2p(^3P)3p\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1170166	8.545	6.617E+10	1.449E-01	1.887E-01	0.001
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1168914	8.554	2.804E+09	1.231E-02	2.946E-03	0.027
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1167440	8.565	3.530E+09	7.766E-03	3.699E-03	0.034
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1157485	8.639	5.901E+06	2.641E-05	2.840E-05	0.053
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1157445	8.639	1.420E+06	6.354E-06	6.833E-06	0.035
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1157001	8.643	3.631E+06	1.627E-05	6.930E-06	0.216
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1156273	8.648	1.930E+06	4.329E-06	3.698E-06	0.200
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1155360	8.655	2.325E+10	5.223E-02	9.622E-02	0.006
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1155284	8.655	2.198E+10	9.876E-02	8.920E-02	0.007
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1155244	8.656	3.111E+09	1.398E-02	1.262E-02	0.001
$2s2p(^3P)3p\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1154728	8.660	8.133E+10	3.658E-01	2.365E-01	0.001
$2s2p(^3P)3p\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1153977	8.665	9.924E+10	6.703E-01	2.891E-01	0.001
$2s2p(^3P)3p\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1152593	8.676	1.812E+10	8.177E-02	5.267E-02	0.001
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1149437	8.699	1.255E+09	5.696E-03	1.319E-03	0.015
$2s2p(^3P)3p\ ^4P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1148398	8.707	1.981E+07	9.009E-05	8.051E-03	0.005
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1148121	8.709	5.662E+09	2.576E-02	5.949E-03	0.013
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1147963	8.711	3.977E+09	9.049E-03	4.167E-03	0.017
$2s2p(^3P)3p\ ^4P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1147849	8.711	3.340E+07	7.601E-05	1.375E-02	0.005
$2s2p(^3P)3p\ ^4P_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1146941	8.718	2.958E+08	2.023E-03	8.945E-02	0.004
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1146648	8.721	2.063E+09	4.704E-03	2.161E-03	0.019
$2s2p(^3P)3p\ ^4P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1146264	8.723	3.647E+07	1.665E-04	1.482E-02	0.002
$2s2p(^3P)3p\ ^4P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1145715	8.728	1.373E+07	3.136E-05	5.651E-03	0.009
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1144728	8.735	8.292E+09	5.692E-02	4.356E-02	0.006
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1144687	8.736	5.819E+08	3.994E-03	3.057E-03	0.010
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1143264	8.746	8.639E+08	3.964E-03	4.596E-03	0.008
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1143223	8.747	8.250E+09	3.786E-02	4.390E-02	0.005
$2s^24f\ ^2F^o_{7/2}$	$2s2p^2\ ^2D_{5/2}$	1142513	8.752	1.453E+10	1.335E-01	7.743E-02	0.003
$2s^24f\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1142433	8.753	1.285E+09	8.858E-03	6.802E-03	0.004
$2s^24f\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1142393	8.753	1.371E+10	9.452E-02	7.258E-02	0.008
$2s2p(^3P)3p\ ^4S_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1140095	8.771	4.627E+07	2.135E-04	2.316E-02	0.000
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1138309	8.784	2.066E+09	9.562E-03	1.879E-02	0.015

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1138247	8.785	1.697E+08	1.178E-03	9.423E-04	0.003
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1138207	8.785	4.438E+06	3.082E-05	2.464E-05	0.012
$2s2p(^3P)3p\ ^4S_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1137961	8.787	1.852E+08	8.577E-04	9.271E-02	0.000
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1137559	8.790	1.988E+07	9.212E-05	1.103E-04	0.064
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1137524	8.791	3.311E+06	1.534E-05	6.320E-06	0.068
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1137519	8.791	2.488E+07	1.153E-04	1.381E-04	0.024
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1137429	8.791	1.603E+09	3.715E-03	1.480E-02	0.036
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1137151	8.793	4.872E+06	1.130E-05	2.701E-05	0.089
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1136797	8.796	3.371E+06	7.822E-06	6.458E-06	0.056
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1136209	8.801	1.430E+07	6.642E-05	2.729E-05	0.014
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1135481	8.806	2.296E+06	5.339E-06	4.398E-06	0.033
$2p^2(^3P)3p\ ^4D^o_{7/2}$	$2s2p^2\ ^2D_{5/2}$	1132885	8.827	5.762E+06	5.385E-05	4.577E-05	0.079
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1131840	8.835	1.098E+06	7.713E-06	8.717E-06	0.073
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1131084	8.841	9.718E+06	4.555E-05	7.713E-05	0.070
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1130590	8.844	1.917E+07	4.497E-05	1.523E-04	0.074
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1129196	8.855	1.217E+09	5.724E-03	5.410E-02	0.001
$2s2p(^3P)3p\ ^4D_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1128822	8.858	6.302E+09	1.483E-02	1.947E-01	0.001
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1128429	8.861	2.056E+08	9.681E-04	7.846E-04	0.030
$2s2p(^3P)3p\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1127318	8.870	1.656E+10	7.812E-02	5.366E-02	0.001
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1127062	8.872	5.083E+09	2.400E-02	2.259E-01	0.001
$2s2p(^3P)3p\ ^4D_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1126688	8.875	2.853E+09	6.738E-03	8.811E-02	0.001
$2s2p(^3P)3p\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	1126674	8.875	5.977E+10	1.412E-01	1.984E-01	0.001
$2s2p(^3P)3p\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1125184	8.887	7.253E+10	3.436E-01	2.351E-01	0.001
$2s2p(^3P)3p\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	1124540	8.892	2.721E+10	6.451E-02	9.030E-02	0.001
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1122194	8.911	8.718E+07	2.076E-04	3.230E-04	0.001
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1118832	8.937	1.622E+08	7.772E-04	1.475E-03	0.053
$2s^24p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1118105	8.943	1.094E+09	5.248E-03	1.333E-03	0.038
$2s^24p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1118065	8.944	7.564E+07	3.629E-04	9.219E-05	0.115
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1117952	8.944	2.672E+09	6.411E-03	2.468E-02	0.033
$2s^24p\ ^2P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1117877	8.945	1.231E+09	2.953E-03	1.490E-03	0.099
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1117516	8.948	4.369E+09	2.098E-02	3.973E-02	0.029
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1116637	8.955	9.773E+08	2.350E-03	9.025E-03	0.045
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1108952	9.017	2.717E+10	1.325E-01	1.037E-01	0.004
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1107637	9.028	5.562E+09	2.719E-02	2.123E-02	0.005
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1107480	9.029	3.292E+10	2.414E-01	1.251E-01	0.004
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1102949	9.066	6.493E+07	1.600E-04	1.861E-04	0.048
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{3/2}$	1102235	9.072	3.024E+06	7.462E-06	8.667E-06	0.135
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1102184	9.072	2.424E+07	1.197E-04	7.069E-05	0.042
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1101469	9.078	1.586E+07	7.841E-05	4.625E-05	0.001
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1101251	9.080	3.189E+09	1.577E-02	1.058E-02	0.018
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1101211	9.080	2.499E+08	1.236E-03	8.294E-04	0.050
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1101019	9.082	3.786E+09	9.366E-03	1.257E-02	0.041
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1100388	9.087	3.264E+06	1.617E-05	9.517E-06	0.258

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1098430	9.103	2.552E+06	1.268E-05	1.228E-05	0.026
$2s2p(^1P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1098279	9.105	3.197E+10	2.384E-01	4.978E-02	0.002
$2s2p(^1P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1098239	9.105	2.138E+09	1.594E-02	3.329E-03	0.001
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1098078	9.106	3.409E+09	1.695E-02	5.293E-03	0.005
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1098038	9.107	3.276E+10	1.629E-01	5.087E-02	0.002
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1096346	9.121	5.071E+07	1.265E-04	2.098E-04	0.032
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1096229	9.122	5.185E+08	2.587E-03	2.104E-03	0.003
$2s2p(^3P)3d\ ^2F^o_{7/2}$	$2s2p^2\ ^4P_{5/2}$	1094486	9.136	7.151E+06	7.160E-05	1.367E-05	0.005
$2s2p(^3P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1093162	9.147	1.199E+06	9.026E-06	2.337E-06	0.019
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1092670	9.151	2.856E+07	2.152E-04	2.994E-04	0.011
$2s2p(^1P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1087202	9.197	1.187E+10	9.035E-02	1.648E-02	0.000
$2s2p(^1P)3d\ ^2F^o_{7/2}$	$2s2p^2\ ^2D_{5/2}$	1087197	9.197	1.752E+11	1.778E+00	2.432E-01	0.000
$2s2p(^1P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1087162	9.198	1.684E+11	1.282E+00	2.338E-01	0.000
$2p^2(^1D)3d\ ^2S_{1/2}$	$2p^3\ ^4S^o_{3/2}$	1085011	9.216	3.466E+07	8.828E-05	1.365E-04	0.004
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1084209	9.223	1.529E+08	7.799E-04	8.134E-04	0.004
$2s2p(^1P)3s\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1083385	9.230	7.592E+06	1.939E-05	7.967E-06	0.050
$2s2p(^1P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1082709	9.236	8.227E+06	4.208E-05	8.498E-06	0.005
$2s2p(^1P)3s\ ^2P^o_{1/2}$	$2s2p^2\ ^4P_{3/2}$	1082671	9.236	1.119E+07	2.861E-05	1.174E-05	0.025
$2s2p(^1P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1081628	9.245	6.829E+06	3.500E-05	7.054E-06	0.052
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1078953	9.268	1.393E+07	7.174E-05	6.703E-05	0.027
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1078195	9.274	2.575E+10	6.642E-02	5.813E-02	0.000
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1078136	9.275	1.328E+06	3.425E-06	7.361E-06	0.119
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1077863	9.277	6.764E+10	3.491E-01	1.522E-01	0.000
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1077638	9.279	5.778E+07	2.984E-04	2.781E-04	0.026
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p^2\ ^4P_{3/2}$	1077480	9.280	1.928E+11	4.980E-01	4.352E-01	0.000
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1077149	9.283	4.590E+10	2.372E-01	1.032E-01	0.000
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^3\ ^4S^o_{3/2}$	1077135	9.283	5.089E+07	2.630E-04	1.022E-04	0.014
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1076869	9.286	2.693E+10	6.962E-02	1.114E-01	0.001
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1076753	9.287	7.720E+09	3.993E-02	3.133E-02	0.001
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1076638	9.288	3.560E+10	2.763E-01	8.035E-02	0.000
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^3\ ^4S^o_{3/2}$	1076615	9.288	1.970E+07	5.096E-05	3.995E-05	0.018
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1076068	9.293	1.055E+11	5.463E-01	2.373E-01	0.000
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1075558	9.297	1.807E+11	1.405E+00	4.078E-01	0.000
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1075553	9.297	1.659E+10	4.300E-02	6.865E-02	0.001
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1075437	9.298	3.498E+10	1.814E-01	1.419E-01	0.000
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1072651	9.322	5.810E+08	3.028E-03	1.995E-03	0.000
$2s2p(^3P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1072176	9.326	1.652E+09	1.293E-02	5.561E-03	0.002
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1072029	9.328	2.668E+06	1.392E-05	2.118E-05	0.108
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1071937	9.328	1.978E+09	1.032E-02	6.793E-03	0.000
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1071575	9.332	5.441E+06	1.421E-05	4.322E-05	0.112
$2s2p(^3P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1071095	9.336	7.477E+09	5.862E-02	2.517E-02	0.001
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1070856	9.338	5.072E+08	2.652E-03	1.742E-03	0.003
$2s2p(^3P)3d\ ^4D^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1070767	9.339	1.893E+11	9.903E-01	2.352E-01	0.000

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s2p(^3P)3d\ ^4D^o_{1/2}$	$2s2p^2\ ^4P_{1/2}$	1070643	9.340	3.451E+11	9.026E-01	4.248E-01	0.000
$2s2p(^3P)3d\ ^4D^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1070291	9.343	3.076E+11	2.416E+00	3.858E-01	0.000
$2s2p(^3P)3d\ ^4D^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1070053	9.345	1.951E+11	1.022E+00	2.424E-01	0.000
$2s2p(^3P)3d\ ^4D^o_{1/2}$	$2s2p^2\ ^4P_{3/2}$	1069929	9.346	5.593E+10	1.465E-01	6.885E-02	0.000
$2s2p(^3P)3d\ ^4D^o_{7/2}$	$2s2p^2\ ^4P_{5/2}$	1069664	9.348	3.996E+11	4.188E+00	4.937E-01	0.000
$2s2p(^3P)3d\ ^4D^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1069211	9.352	8.398E+10	6.608E-01	1.053E-01	0.000
$2s2p(^3P)3d\ ^4D^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1068972	9.354	1.198E+10	6.289E-02	1.489E-02	0.000
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^3\ ^4S^o_{3/2}$	1065480	9.385	8.196E+07	6.494E-04	1.493E-04	0.004
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^3\ ^4S^o_{3/2}$	1064968	9.389	1.490E+07	7.879E-05	2.721E-05	0.003
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1064881	9.390	4.347E+10	3.448E-01	2.284E-01	0.002
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1064732	9.392	3.625E+10	1.918E-01	1.929E-01	0.001
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1063417	9.403	6.933E+09	3.677E-02	3.689E-02	0.002
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1063180	9.405	2.561E+07	6.794E-05	9.489E-05	0.006
$2s^24f\ ^2F^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1062586	9.410	9.327E+07	7.431E-04	4.936E-04	0.000
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^3\ ^4S^o_{3/2}$	1061851	9.417	1.388E+06	1.107E-05	1.646E-06	0.008
$2s^23d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	1060479	9.429	2.203E+11	1.174E+00	4.114E-01	0.000
$2s2p(^3P)3d\ ^4F^o_{3/2}$	$2s2p^2\ ^4P_{1/2}$	1059207	9.441	2.090E+08	1.117E-03	1.240E-01	0.000
$2s^24p\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1059050	9.442	3.905E+10	2.088E-01	4.759E-02	0.003
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1059028	9.442	1.843E+08	9.857E-04	1.023E-03	0.008
$2s2p(^3P)3d\ ^4F^o_{5/2}$	$2s2p^2\ ^4P_{3/2}$	1058910	9.443	7.579E+08	6.080E-03	2.799E-01	0.000
$2s^24p\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1058863	9.444	4.599E+10	1.230E-01	5.569E-02	0.002
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1058660	9.445	1.114E+08	2.981E-04	6.178E-04	0.013
$2s2p(^3P)3d\ ^4F^o_{3/2}$	$2s2p^2\ ^4P_{3/2}$	1058492	9.447	2.629E+08	1.407E-03	1.560E-01	0.003
$2s^23d\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	1058476	9.447	2.634E+11	2.115E+00	4.935E-01	0.000
$2s2p(^3P)3d\ ^4F^o_{7/2}$	$2s2p^2\ ^4P_{5/2}$	1058447	9.447	1.251E+09	1.339E-02	4.312E-01	0.000
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1058400	9.448	6.692E+08	5.374E-03	3.716E-03	0.002
$2s^23d\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	1058345	9.448	4.394E+10	2.352E-01	8.206E-02	0.000
$2s2p(^3P)3d\ ^4F^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	1057829	9.453	3.159E+08	2.539E-03	1.167E-01	0.004
$2s2p(^3P)3d\ ^4F^o_{3/2}$	$2s2p^2\ ^4P_{5/2}$	1057412	9.457	2.397E+07	1.286E-04	1.423E-02	0.008
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1057344	9.457	7.305E+07	1.959E-04	4.049E-04	0.007
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1052099	9.504	1.116E+06	3.022E-06	8.863E-06	0.018
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1051993	9.505	2.188E+06	1.779E-05	1.736E-05	0.015
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1051237	9.512	4.757E+06	2.581E-05	3.776E-05	0.062
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1050783	9.516	1.242E+07	3.372E-05	9.864E-05	0.001
$2p^2(^1S)3s\ ^2S_{1/2}$	$2p^3\ ^4S^o_{3/2}$	1044905	9.570	7.244E+07	1.989E-04	7.271E-05	0.003
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1043703	9.581	2.498E+10	6.877E-02	9.255E-02	0.003
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1042388	9.593	4.931E+10	1.361E-01	1.827E-01	0.004
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1042196	9.595	4.071E+10	2.248E-01	1.351E-01	0.001
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	1042004	9.596	4.909E+10	1.356E-01	1.630E-01	0.001
$2p^2(^1D)3d\ ^2S_{1/2}$	$2p^3\ ^2D^o_{3/2}$	1039792	9.617	1.062E+08	2.945E-04	4.180E-04	0.010
$2s^24p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1039574	9.619	1.150E+10	6.379E-02	1.401E-02	0.001
$2s^24p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1039386	9.621	3.441E+10	9.550E-02	4.166E-02	0.000
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	1039023	9.624	5.786E+08	3.214E-03	8.985E-04	0.003

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s^24p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1038258	9.631	4.691E+10	2.610E-01	5.717E-02	0.001
$2s^24p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1038071	9.633	1.764E+10	4.909E-02	2.136E-02	0.000
$2p^2(^3P)3d\ ^4P_{1/2}$	$2p^3\ ^4S^o_{3/2}$	1032614	9.684	3.646E+11	1.025E+00	4.868E-01	0.000
$2p^2(^3P)3d\ ^4P_{3/2}$	$2p^3\ ^4S^o_{3/2}$	1032315	9.686	3.637E+11	2.046E+00	4.868E-01	0.000
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^3\ ^2D^o_{5/2}$	1032002	9.689	5.822E+10	3.278E-01	1.170E-01	0.001
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^3\ ^2D^o_{3/2}$	1031916	9.690	6.252E+09	3.521E-02	1.256E-02	0.002
$2p^2(^3P)3d\ ^4P_{5/2}$	$2p^3\ ^4S^o_{3/2}$	1031775	9.692	3.628E+11	3.066E+00	4.868E-01	0.000
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^3\ ^2D^o_{3/2}$	1031396	9.695	7.151E+10	2.016E-01	1.450E-01	0.001
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1022720	9.777	1.733E+10	9.937E-02	5.752E-02	0.000
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	1022527	9.779	5.575E+10	1.599E-01	1.851E-01	0.000
$2p^2(^3P)3d\ ^2P_{1/2}$	$2p^3\ ^4S^o_{3/2}$	1021828	9.786	2.171E+06	6.234E-06	1.003E-05	0.027
$2p^2(^3P)3d\ ^2F_{5/2}$	$2p^3\ ^4S^o_{3/2}$	1021676	9.787	3.673E+07	3.165E-04	4.000E-04	0.000
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1021404	9.790	7.764E+10	4.463E-01	2.577E-01	0.000
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	1021212	9.792	3.038E+10	8.733E-02	1.009E-01	0.001
$2p^2(^3P)3d\ ^2P_{3/2}$	$2p^3\ ^4S^o_{3/2}$	1020563	9.798	3.598E+06	2.072E-05	1.807E-05	0.012
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^3\ ^2D^o_{5/2}$	1020347	9.800	1.066E+11	9.209E-01	1.942E-01	0.000
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^3\ ^2D^o_{3/2}$	1020261	9.801	2.357E+10	2.037E-01	4.293E-02	0.000
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^3\ ^2D^o_{5/2}$	1019835	9.805	1.549E+10	8.933E-02	2.830E-02	0.001
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^3\ ^2D^o_{3/2}$	1019749	9.806	1.336E+11	7.705E-01	2.440E-01	0.000
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	1019546	9.808	2.309E+11	1.332E+00	3.585E-01	0.000
$2p^2(^3P)3d\ ^4D_{5/2}$	$2p^3\ ^4S^o_{3/2}$	1019404	9.809	1.211E+09	1.049E-02	1.081E-01	0.001
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^3\ ^4S^o_{3/2}$	1019106	9.812	9.046E+08	5.223E-03	2.725E-02	0.001
$2p^2(^3P)3d\ ^4D_{1/2}$	$2p^3\ ^4S^o_{3/2}$	1019025	9.813	2.709E+08	7.821E-04	1.420E-02	0.001
$2s2p(^1P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1018432	9.819	2.777E+11	2.409E+00	4.325E-01	0.000
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	1018231	9.820	4.516E+10	2.612E-01	7.013E-02	0.002
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^3\ ^2D^o_{5/2}$	1016718	9.835	5.216E+10	4.539E-01	6.189E-02	0.001
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^3\ ^2D^o_{3/2}$	1016632	9.836	3.628E+11	3.158E+00	4.305E-01	0.001
$2p^2(^1D)3d\ ^2F_{7/2}$	$2p^3\ ^2D^o_{5/2}$	1016464	9.838	4.181E+11	4.853E+00	4.925E-01	0.001
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	1012320	9.878	3.125E+09	9.144E-03	8.958E-03	0.010
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	1011594	9.885	3.025E+09	1.773E-02	8.819E-03	0.007
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	1011554	9.885	1.013E+08	5.934E-04	2.952E-04	0.012
$2p^2(^3P)3d\ ^4F_{5/2}$	$2p^3\ ^4S^o_{3/2}$	1009009	9.910	1.765E+06	1.559E-05	4.695E-04	0.006
$2s2p(^1P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	1007355	9.926	2.284E+06	2.024E-05	3.170E-06	0.003
$2p^2(^1D)3d\ ^2G_{7/2}$	$2p^3\ ^2D^o_{5/2}$	1006237	9.938	5.736E+08	6.795E-03	3.632E-01	0.001
$2s2p(^3P)3d\ ^2F^o_{7/2}$	$2s2p^2\ ^2D_{5/2}$	1005692	9.943	2.581E+11	3.061E+00	4.933E-01	0.000
$2s2p(^3P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	1004368	9.956	1.969E+10	1.756E-01	3.836E-02	0.000
$2s2p(^3P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	1004327	9.956	2.334E+11	2.082E+00	4.548E-01	0.000
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^3\ ^2D^o_{5/2}$	1003630	9.963	1.132E+11	1.011E+00	2.347E-01	0.000
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^3\ ^2D^o_{3/2}$	1003545	9.964	2.067E+10	1.846E-01	4.285E-02	0.001
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^3\ ^2D^o_{5/2}$	1003499	9.965	1.375E+10	8.190E-02	2.926E-02	0.000
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^3\ ^2D^o_{3/2}$	1003413	9.965	9.912E+10	5.903E-01	2.109E-01	0.000
$2p^2(^1S)3s\ ^2S_{1/2}$	$2p^3\ ^2D^o_{3/2}$	999686	10.003	7.901E+06	2.370E-05	7.931E-06	0.019
$2s2p(^1P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	992834	10.072	2.544E+10	1.547E-01	2.627E-02	0.000

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	992794	10.072	2.424E+09	1.475E-02	2.504E-03	0.001
2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	992756	10.072	2.773E+10	8.438E-02	2.910E-02	0.001
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	989649	10.104	6.761E+06	4.139E-05	1.476E-05	0.101
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	988934	10.111	5.634E+06	3.455E-05	1.230E-05	0.039
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	987854	10.122	4.055E+06	2.492E-05	8.853E-06	0.192
2s2p(^{3}P)3d ^{4}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	987565	10.125	3.122E+06	9.598E-06	7.046E-06	0.036
2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	2s2p^2 ^{4}P$_{3/2}$	987494	10.126	6.053E+06	1.861E-05	1.345E-05	0.065
2p^2(^{3}P)3d ^{4}P$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	987395	10.127	1.566E+07	4.816E-05	2.091E-05	0.003
2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	987274	10.128	4.924E+07	3.029E-04	1.108E-04	0.015
2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	987234	10.129	1.659E+08	1.020E-03	3.731E-04	0.002
2p^2(^{3}P)3d ^{4}P$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	987181	10.129	5.130E+07	3.157E-04	6.866E-05	0.003
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2p^3 ^{2}P$^o_{1/2}$	987046	10.131	3.566E+10	1.097E-01	1.404E-01	0.000
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2p^3 ^{2}P$^o_{3/2}$	986955	10.132	7.886E+10	2.427E-01	3.105E-01	0.001
2s2p(^{3}P)3d ^{4}P$^o_{5/2}$	2s2p^2 ^{2}D$_{5/2}$	986764	10.134	1.603E+09	1.481E-02	3.618E-03	0.003
2s2p(^{3}P)3d ^{4}P$^o_{5/2}$	2s2p^2 ^{2}D$_{3/2}$	986723	10.134	1.829E+08	1.689E-03	4.127E-04	0.003
2p^2(^{3}P)3d ^{4}P$_{5/2}$	2p^3 ^{2}D$^o_{5/2}$	986642	10.135	2.345E+07	2.167E-04	3.147E-05	0.009
2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	2s2p^2 ^{2}D$_{5/2}$	982301	10.180	9.612E+10	8.960E-01	3.235E-01	0.000
2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	2s2p^2 ^{2}D$_{3/2}$	982261	10.180	9.582E+09	8.933E-02	3.225E-02	0.001
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	982062	10.182	9.924E+09	6.171E-02	3.408E-02	0.001
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	982022	10.183	9.657E+10	6.005E-01	3.316E-01	0.000
2s2p(^{3}P)3d ^{4}D$^o_{7/2}$	2s2p^2 ^{2}D$_{5/2}$	980870	10.195	3.930E+06	4.900E-05	4.856E-06	0.046
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p^2 ^{2}D$_{5/2}$	980417	10.199	1.453E+09	1.360E-02	1.822E-03	0.001
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p^2 ^{2}D$_{3/2}$	980376	10.200	1.527E+08	1.429E-03	1.916E-04	0.002
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	980178	10.202	1.265E+08	7.897E-04	1.572E-04	0.002
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	980138	10.202	6.826E+08	4.261E-03	8.479E-04	0.001
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	980014	10.203	1.449E+07	4.524E-05	1.784E-05	0.006
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	979171	10.212	2.670E+10	1.670E-01	5.363E-02	0.000
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2p^3 ^{2}P$^o_{3/2}$	979079	10.213	1.450E+11	9.071E-01	2.913E-01	0.001
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2p^3 ^{2}P$^o_{1/2}$	978650	10.218	1.117E+11	3.498E-01	2.265E-01	0.000
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2p^3 ^{2}P$^o_{3/2}$	978559	10.219	5.092E+10	1.594E-01	1.033E-01	0.001
2p^2(^{3}P)3d ^{2}F$_{7/2}$	2p^3 ^{2}D$^o_{5/2}$	978056	10.224	4.304E+10	5.397E-01	4.818E-01	0.002
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	976609	10.239	2.521E+10	7.925E-02	1.164E-01	0.001
2p^2(^{3}P)3d ^{2}F$_{5/2}$	2p^3 ^{2}D$^o_{5/2}$	976542	10.240	3.320E+09	3.131E-02	3.615E-02	0.003
2p^2(^{3}P)3d ^{2}F$_{5/2}$	2p^3 ^{2}D$^o_{3/2}$	976457	10.241	4.096E+10	3.865E-01	4.461E-01	0.002
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	975429	10.251	2.201E+10	1.387E-01	1.105E-01	0.001
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^3 ^{2}D$^o_{3/2}$	975344	10.252	5.148E+09	3.245E-02	2.585E-02	0.000
2p^2(^{3}P)3d ^{4}D$_{7/2}$	2p^3 ^{2}D$^o_{5/2}$	974506	10.261	1.504E+09	1.899E-02	1.580E-01	0.002
2p^2(^{3}P)3d ^{4}D$_{5/2}$	2p^3 ^{2}D$^o_{5/2}$	974270	10.264	3.373E+06	3.197E-05	3.010E-04	0.022
2p^2(^{3}P)3d ^{4}D$_{5/2}$	2p^3 ^{2}D$^o_{3/2}$	974184	10.264	1.025E+09	9.714E-03	9.147E-02	0.002
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	973973	10.267	3.205E+09	2.026E-02	9.654E-02	0.001
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2p^3 ^{2}D$^o_{3/2}$	973887	10.268	4.124E+08	2.608E-03	1.242E-02	0.001
2p^2(^{3}P)3d ^{4}D$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	973806	10.268	1.598E+09	5.052E-03	8.375E-02	0.000
2s2p(^{3}P)3d ^{4}F$^o_{7/2}$	2s2p^2 ^{2}D$_{5/2}$	969653	10.312	5.197E+07	6.629E-04	1.791E-02	0.004

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{3}P)3d ^{4}F$^o_{5/2}$	2s2p^2 ^{2}D$_{5/2}$	969035	10.319	1.120E+08	1.072E-03	4.135E-02	0.004
2s2p(^{3}P)3d ^{4}F$^o_{5/2}$	2s2p^2 ^{2}D$_{3/2}$	968995	10.319	1.039E+07	9.956E-05	3.838E-03	0.007
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	968618	10.323	1.758E+07	1.124E-04	1.044E-02	0.005
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	968577	10.324	1.663E+08	1.063E-03	9.871E-02	0.003
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2p^3 ^{2}P$^o_{3/2}$	967425	10.336	1.345E+11	1.293E+00	2.450E-01	0.001
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	967004	10.341	9.885E+10	6.339E-01	1.805E-01	0.001
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{3/2}$	966913	10.342	1.694E+10	1.087E-01	3.095E-02	0.001
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2p^3 ^{4}S$^o_{3/2}$	964798	10.364	1.645E+07	1.590E-04	2.883E-05	0.003
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2p^3 ^{4}S$^o_{3/2}$	964779	10.365	2.988E+06	1.925E-05	5.260E-06	0.006
2p^2(^{3}P)3d ^{4}F$_{7/2}$	2p^3 ^{2}D$^o_{5/2}$	964445	10.368	6.860E+07	8.846E-04	1.833E-02	0.005
2p^2(^{3}P)3d ^{4}F$_{5/2}$	2p^3 ^{2}D$^o_{5/2}$	963876	10.374	3.469E+07	3.359E-04	9.230E-03	0.001
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2p^3 ^{2}P$^o_{3/2}$	963795	10.375	4.536E+07	4.393E-04	5.382E-05	0.002
2p^2(^{3}P)3d ^{4}F$_{5/2}$	2p^3 ^{2}D$^o_{3/2}$	963790	10.375	3.788E+07	3.669E-04	1.008E-02	0.006
2s2p(^{3}P)3s ^{4}P$^o_{5/2}$	2s2p^2 ^{4}P$_{3/2}$	963500	10.378	1.799E+10	1.743E-01	2.974E-02	0.001
2p^2(^{3}P)3d ^{4}F$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	963478	10.379	2.090E+06	1.350E-05	5.639E-04	0.011
2p^2(^{3}P)3d ^{4}F$_{3/2}$	2p^3 ^{2}D$^o_{3/2}$	963392	10.379	4.293E+07	2.774E-04	1.158E-02	0.002
2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	962902	10.385	2.482E+10	1.605E-01	4.120E-02	0.000
2s2p(^{3}P)3s ^{4}P$^o_{5/2}$	2s2p^2 ^{4}P$_{5/2}$	962419	10.390	4.175E+10	4.055E-01	6.902E-02	0.000
2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	962188	10.392	7.879E+09	5.103E-02	1.308E-02	0.001
2s2p(^{3}P)3s ^{4}P$^o_{1/2}$	2s2p^2 ^{4}P$_{1/2}$	962181	10.393	9.923E+09	3.214E-02	1.651E-02	0.000
2s2p(^{3}P)3s ^{4}P$^o_{1/2}$	2s2p^2 ^{4}P$_{3/2}$	961466	10.400	4.944E+10	1.604E-01	8.225E-02	0.001
2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	961107	10.404	2.678E+10	1.738E-01	4.446E-02	0.000
2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	2s2p^2 ^{2}S$_{1/2}$	953305	10.489	1.396E+11	4.606E-01	4.002E-01	0.003
2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	2s2p^2 ^{2}S$_{1/2}$	952539	10.498	1.452E+11	9.598E-01	4.234E-01	0.002
2s^{2}3s ^{2}S$_{1/2}$	2s^{2}2p ^{2}P$^o_{1/2}$	951179	10.513	1.639E+10	5.433E-02	3.277E-02	0.001
2p^2(^{3}P)3d ^{2}D$_{5/2}$	2p^3 ^{2}P$^o_{3/2}$	950708	10.518	9.149E+10	9.105E-01	1.897E-01	0.002
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	950667	10.518	8.586E+10	5.697E-01	1.827E-01	0.002
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{3/2}$	950576	10.519	1.942E+10	1.289E-01	4.132E-02	0.002
2p^2(^{3}P)3s ^{2}P$_{3/2}$	2p^3 ^{4}S$^o_{3/2}$	949530	10.531	2.129E+06	1.416E-05	3.140E-06	0.019
2s^{2}3s ^{2}S$_{1/2}$	2s^{2}2p ^{2}P$^o_{3/2}$	949045	10.536	3.301E+10	1.099E-01	6.599E-02	0.001
2p^2(^{3}P)3s ^{2}P$_{1/2}$	2p^3 ^{4}S$^o_{3/2}$	948169	10.546	1.221E+06	4.074E-06	1.806E-06	0.027
2p^2(^{1}S)3s ^{2}S$_{1/2}$	2p^3 ^{2}P$^o_{1/2}$	946941	10.560	3.008E+10	1.006E-01	3.019E-02	0.001
2p^2(^{1}S)3s ^{2}S$_{1/2}$	2p^3 ^{2}P$^o_{3/2}$	946849	10.561	5.972E+10	1.997E-01	5.995E-02	0.001
2p^2(^{3}P)3d ^{4}P$_{1/2}$	2p^3 ^{2}P$^o_{1/2}$	934649	10.699	7.020E+06	2.410E-05	9.374E-06	0.002
2p^2(^{3}P)3d ^{4}P$_{1/2}$	2p^3 ^{2}P$^o_{3/2}$	934558	10.700	6.207E+06	2.131E-05	8.288E-06	0.007
2p^2(^{3}P)3d ^{4}P$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	934350	10.702	8.269E+06	5.680E-05	1.107E-05	0.004
2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	2s2p^2 ^{2}P$_{1/2}$	933828	10.708	2.087E+10	7.177E-02	5.983E-02	0.002
2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}S$_{1/2}$	933779	10.709	2.446E+10	1.682E-01	2.526E-02	0.001
2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	2s2p^2 ^{2}S$_{1/2}$	933741	10.709	1.935E+10	6.656E-02	2.031E-02	0.002
2p^2(^{3}P)3d ^{4}P$_{5/2}$	2p^3 ^{2}P$^o_{3/2}$	933719	10.709	4.273E+07	4.408E-04	5.733E-05	0.005
2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	2s2p^2 ^{2}P$_{1/2}$	933063	10.717	1.446E+09	9.962E-03	4.217E-03	0.004
2s^{2}4s ^{2}S$_{1/2}$	2p^3 ^{4}S$^o_{3/2}$	932829	10.720	2.180E+06	7.513E-06	9.464E-06	0.019
2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	2s2p^2 ^{2}P$_{3/2}$	932513	10.723	7.565E+09	2.609E-02	2.169E-02	0.006

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	931747	10.732	1.846E+10	1.275E-01	5.381E-02	0.001
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	928550	10.769	1.880E+06	6.537E-06	4.243E-06	0.053
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	928219	10.773	1.216E+07	8.466E-05	2.736E-05	0.030
$2p^2(^3P)3s\ ^4P_{5/2}$	$2p^3\ ^4S^o_{3/2}$	925665	10.803	3.079E+10	3.232E-01	8.717E-02	0.001
$2s2p(^3P)3d\ ^2F^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	924520	10.816	5.431E+07	5.716E-04	1.058E-04	0.001
$2p^2(^3P)3s\ ^4P_{3/2}$	$2p^3\ ^4S^o_{3/2}$	924488	10.816	3.055E+10	2.143E-01	8.719E-02	0.002
$2p^2(^3P)3d\ ^2P_{1/2}$	$2p^3\ ^2P^o_{1/2}$	923864	10.824	4.952E+10	1.740E-01	2.287E-01	0.000
$2p^2(^3P)3d\ ^2P_{1/2}$	$2p^3\ ^2P^o_{3/2}$	923773	10.825	2.414E+10	8.482E-02	1.115E-01	0.000
$2p^2(^3P)3s\ ^4P_{1/2}$	$2p^3\ ^4S^o_{3/2}$	923738	10.825	3.039E+10	1.068E-01	8.719E-02	0.002
$2p^2(^3P)3d\ ^2F_{5/2}$	$2p^3\ ^2P^o_{3/2}$	923620	10.826	1.925E+06	2.030E-05	2.096E-05	0.034
$2s^24d\ ^2D_{5/2}$	$2p^3\ ^2D^o_{5/2}$	923356	10.830	9.675E+07	1.021E-03	1.971E-04	0.006
$2s^24d\ ^2D_{3/2}$	$2p^3\ ^2D^o_{5/2}$	923306	10.830	5.988E+06	4.212E-05	1.220E-05	0.001
$2s^24d\ ^2D_{5/2}$	$2p^3\ ^2D^o_{3/2}$	923270	10.831	7.477E+06	7.890E-05	1.523E-05	0.013
$2s^24d\ ^2D_{3/2}$	$2p^3\ ^2D^o_{3/2}$	923220	10.831	1.016E+08	7.150E-04	2.071E-04	0.005
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	923007	10.834	4.130E+08	2.907E-03	1.418E-03	0.004
$2p^2(^3P)3d\ ^2P_{3/2}$	$2p^3\ ^2P^o_{1/2}$	922598	10.838	1.129E+10	7.956E-02	5.670E-02	0.000
$2p^2(^3P)3d\ ^2P_{3/2}$	$2p^3\ ^2P^o_{3/2}$	922507	10.840	5.237E+10	3.690E-01	2.629E-01	0.000
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^3\ ^2P^o_{1/2}$	921141	10.856	1.427E+09	1.009E-02	4.299E-02	0.001
$2s2p(^3P)3d\ ^4D^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	921123	10.856	2.815E+06	1.989E-05	3.496E-06	0.098
$2p^2(^3P)3d\ ^4D_{1/2}$	$2p^3\ ^2P^o_{1/2}$	921060	10.857	2.615E+09	9.244E-03	1.371E-01	0.000
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^3\ ^2P^o_{3/2}$	921050	10.857	6.534E+09	4.619E-02	1.968E-01	0.000
$2s2p(^3P)3d\ ^4D^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	920999	10.857	1.657E+07	5.857E-05	2.040E-05	0.055
$2p^2(^3P)3d\ ^4D_{1/2}$	$2p^3\ ^2P^o_{3/2}$	920969	10.858	1.290E+09	4.559E-03	6.759E-02	0.001
$2p^2(^1D)3s\ ^2D_{5/2}$	$2p^3\ ^2D^o_{5/2}$	919665	10.873	3.744E+10	3.982E-01	6.563E-02	0.002
$2p^2(^1D)3s\ ^2D_{3/2}$	$2p^3\ ^2D^o_{5/2}$	919646	10.873	2.705E+09	1.918E-02	4.761E-03	0.003
$2p^2(^1D)3s\ ^2D_{5/2}$	$2p^3\ ^2D^o_{3/2}$	919579	10.874	3.070E+09	3.265E-02	5.381E-03	0.001
$2p^2(^1D)3s\ ^2D_{3/2}$	$2p^3\ ^2D^o_{3/2}$	919560	10.874	3.666E+10	2.600E-01	6.452E-02	0.002
$2s2p(^1P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	914303	10.937	4.960E+09	3.558E-02	5.124E-03	0.004
$2s2p(^1P)3s\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	914264	10.937	2.867E+10	1.028E-01	3.008E-02	0.001
$2s2p(^1P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	912987	10.953	3.341E+10	2.403E-01	3.451E-02	0.002
$2s2p(^1P)3s\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	912949	10.953	1.337E+10	4.810E-02	1.403E-02	0.000
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	908742	11.004	4.927E+07	3.578E-04	1.108E-04	0.005
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	907758	11.016	1.987E+06	7.229E-06	4.484E-06	0.051
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	907427	11.020	1.683E+07	1.226E-04	3.785E-05	0.002
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	906916	11.026	5.461E+08	5.972E-03	1.232E-03	0.002
$2p^2(^3P)3s\ ^2P_{3/2}$	$2p^3\ ^2D^o_{5/2}$	904396	11.057	3.023E+10	2.217E-01	4.459E-02	0.002
$2p^2(^3P)3s\ ^2P_{3/2}$	$2p^3\ ^2D^o_{3/2}$	904310	11.058	1.674E+09	1.228E-02	2.469E-03	0.003
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	903531	11.067	2.869E+10	2.107E-01	9.851E-02	0.000
$2p^2(^3P)3s\ ^2P_{1/2}$	$2p^3\ ^2D^o_{3/2}$	902949	11.074	3.308E+10	1.217E-01	4.892E-02	0.002
$2s2p(^3P)3d\ ^2D^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	902454	11.080	3.164E+10	3.494E-01	1.065E-01	0.000
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	902215	11.083	4.910E+09	3.617E-02	1.686E-02	0.001
$2s2p(^3P)3d\ ^4D^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	901646	11.090	1.675E+08	1.235E-03	2.080E-04	0.005
$2s2p(^3P)3d\ ^4D^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	901523	11.092	5.833E+06	2.152E-05	7.181E-06	0.012

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p^2 ^{2}P$_{3/2}$	900569	11.104	4.100E+08	4.547E-03	5.142E-04	0.001
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p^2 ^{2}P$_{3/2}$	900331	11.107	5.328E+07	3.942E-04	6.618E-05	0.007
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p^2 ^{2}P$_{3/2}$	900207	11.108	2.198E+06	8.133E-06	2.706E-06	0.003
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	899060	11.122	2.918E+10	2.165E-01	6.372E-02	0.001
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	899019	11.123	3.174E+09	2.355E-02	6.930E-03	0.004
2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	897579	11.141	3.177E+10	1.182E-01	7.058E-02	0.002
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2p^3 ^{4}S$^o_{3/2}$	891193	11.220	2.196E+06	8.292E-06	1.278E-05	0.025
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p^2 ^{2}P$_{1/2}$	890086	11.234	1.683E+07	1.274E-04	9.991E-03	0.001
2s2p(^{3}P)3d ^{4}F$^o_{5/2}$	2s2p^2 ^{2}P$_{3/2}$	889188	11.246	1.004E+07	1.143E-04	3.709E-03	0.009
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p^2 ^{2}P$_{3/2}$	888770	11.251	3.302E+06	2.507E-05	1.960E-03	0.046
2s^{2}4s ^{2}S$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	887610	11.266	1.235E+06	4.700E-06	5.361E-06	0.009
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2p^3 ^{4}S$^o_{3/2}$	886590	11.279	2.447E+06	1.867E-05	1.419E-05	0.012
2s2p(^{1}P)3p ^{2}P$_{1/2}$	2p^3 ^{4}S$^o_{3/2}$	886191	11.284	1.226E+06	4.679E-06	7.106E-06	0.007
2p^2(^{3}P)3s ^{4}P$_{5/2}$	2p^3 ^{2}D$^o_{5/2}$	880532	11.356	2.374E+07	2.754E-04	6.720E-05	0.009
2p^2(^{3}P)3s ^{4}P$_{5/2}$	2p^3 ^{2}D$^o_{3/2}$	880446	11.357	1.523E+06	1.768E-05	4.313E-06	0.001
2p^2(^3P)3s ^{4}P$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	879354	11.371	5.554E+06	4.307E-05	1.585E-05	0.007
2p^2(^3P)3s ^{4}P$_{3/2}$	2p^3 ^{2}D$^o_{3/2}$	879269	11.373	8.347E+06	6.474E-05	2.382E-05	0.010
2p^2(^{3}P)3s ^{4}P$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	878519	11.382	4.573E+06	1.776E-05	1.312E-05	0.014
2s2p(^{3}P)3s ^{4}P$^o_{5/2}$	2s2p^2 ^{2}D$_{5/2}$	873625	11.446	5.087E+06	5.996E-05	8.410E-06	0.081
2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	872313	11.463	9.987E+06	7.871E-05	1.658E-05	0.044
2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	872273	11.464	4.127E+06	3.253E-05	6.852E-06	0.021
2s2p(^{3}P)3s ^{4}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	871551	11.473	5.052E+06	1.994E-05	8.404E-06	0.030
2s^{2}4d ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	870475	11.487	5.099E+07	4.035E-04	1.039E-04	0.000
2s^{2}4d ^{2}D$_{5/2}$	2p^3 ^{2}P$^o_{3/2}$	870433	11.488	6.253E+07	7.423E-04	1.274E-04	0.007
2s^{2}4d ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{3/2}$	870384	11.489	1.967E+07	1.557E-04	4.009E-05	0.012
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	866814	11.536	9.374E+09	7.481E-02	1.650E-02	0.002
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2p^3 ^{2}P$^o_{3/2}$	866742	11.537	1.203E+10	1.441E-01	2.109E-02	0.002
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2p^3 ^{2}P$^o_{3/2}$	866723	11.537	3.600E+09	2.874E-02	6.337E-03	0.003
2p^2(^{3}P)3s ^{2}P$_{3/2}$	2p^3 ^{2}P$^o_{1/2}$	851565	11.743	5.311E+09	4.392E-02	7.833E-03	0.003
2p^2(^{3}P)3s ^{2}P$_{3/2}$	2p^3 ^{2}P$^o_{3/2}$	851474	11.744	2.166E+10	1.792E-01	3.195E-02	0.003
2p^2(^{3}P)3s ^{2}P$_{1/2}$	2p^3 ^{2}P$^o_{1/2}$	850204	11.761	1.737E+10	7.206E-02	2.569E-02	0.003
2p^2(^{3}P)3s ^{2}P$_{1/2}$	2p^3 ^{2}P$^o_{3/2}$	850113	11.763	8.241E+09	3.419E-02	1.218E-02	0.003
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	845973	11.820	3.501E+07	1.467E-04	2.037E-04	0.007
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	841456	11.884	8.410E+09	7.123E-02	4.877E-02	0.001
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2p^3 ^{2}D$^o_{3/2}$	841371	11.885	7.533E+08	6.382E-03	4.369E-03	0.003
2s2p(^{1}P)3p ^{2}P$_{1/2}$	2p^3 ^{2}D$^o_{3/2}$	840972	11.890	9.457E+09	4.009E-02	5.484E-02	0.001
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s2p^2 ^{2}S$_{1/2}$	840005	11.904	9.640E+09	8.193E-02	2.105E-02	0.007
2s2p(^{1}P)3p ^{2}D$_{5/2}$	2p^3 ^{2}D$^o_{5/2}$	839740	11.908	1.766E+08	2.253E-03	3.209E-03	0.014
2s2p(^{1}P)3p ^{2}D$_{5/2}$	2p^3 ^{2}D$^o_{3/2}$	839654	11.909	9.749E+06	1.244E-04	1.771E-04	0.028
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2p^3 ^{2}D$^o_{5/2}$	839585	11.910	2.161E+07	1.838E-04	3.941E-04	0.007
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2p^3 ^{2}D$^o_{3/2}$	839500	11.911	2.362E+08	2.010E-03	4.308E-03	0.011
2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	2s2p^2 ^{2}S$_{1/2}$	838564	11.925	1.020E+10	4.349E-02	2.266E-02	0.005
2s^{2}4s ^{2}S$_{1/2}$	2p^3 ^{2}P$^o_{1/2}$	834864	11.977	1.565E+07	6.731E-05	6.791E-05	0.020

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s^2 4s\ ^2S_{1/2}$	$2p^3\ ^2P^o_{3/2}$	834773	11.979	5.054E+07	2.175E-04	2.194E-04	0.017
$2p^2(^3P)3s\ ^4P_{1/2}$	$2p^3\ ^2P^o_{3/2}$	825682	12.111	1.210E+06	5.320E-06	3.471E-06	0.035
$2s2p(^3P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	820528	12.187	7.388E+08	6.580E-03	1.613E-03	0.005
$2s2p(^3P)3s\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	819212	12.206	2.309E+09	2.063E-02	5.041E-03	0.000
$2s2p(^3P)3s\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	819087	12.208	1.465E+09	6.548E-03	3.255E-03	0.008
$2s2p(^3P)3s\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	817772	12.228	8.547E+08	3.832E-03	1.899E-03	0.014
$2s2p(^3P)3s\ ^4P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	813258	12.296	1.938E+06	1.757E-05	3.217E-06	0.161
$2s^2 3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	802863	12.455	3.213E+09	2.989E-02	2.120E-01	0.011
$2s^2 3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	802823	12.456	3.541E+08	3.294E-03	2.336E-02	0.025
$2s^2 3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2D_{3/2}$	802277	12.464	3.609E+09	1.681E-02	2.371E-01	0.021
$2s2p(^1P)3p\ ^2S_{1/2}$	$2p^3\ ^2P^o_{1/2}$	793228	12.606	8.607E+07	4.102E-04	5.007E-04	0.016
$2s2p(^1P)3p\ ^2S_{1/2}$	$2p^3\ ^2P^o_{3/2}$	793137	12.608	3.590E+08	1.711E-03	2.088E-03	0.005
$2s2p(^3P)3p\ ^2D_{5/2}$	$2p^3\ ^4S^o_{3/2}$	788861	12.676	1.074E+06	1.552E-05	3.129E-06	0.003
$2s2p(^1P)3p\ ^2P_{3/2}$	$2p^3\ ^2P^o_{1/2}$	788625	12.680	4.618E+08	4.452E-03	2.678E-03	0.002
$2s2p(^1P)3p\ ^2P_{3/2}$	$2p^3\ ^2P^o_{3/2}$	788534	12.681	2.328E+09	2.245E-02	1.350E-02	0.000
$2s2p(^1P)3p\ ^2P_{1/2}$	$2p^3\ ^2P^o_{1/2}$	788227	12.686	1.936E+09	9.341E-03	1.122E-02	0.001
$2s2p(^1P)3p\ ^2P_{1/2}$	$2p^3\ ^2P^o_{3/2}$	788135	12.688	7.107E+08	3.431E-03	4.121E-03	0.002
$2s2p(^1P)3p\ ^2D_{5/2}$	$2p^3\ ^2P^o_{3/2}$	786817	12.709	2.326E+07	3.379E-04	4.225E-04	0.019
$2s2p(^1P)3p\ ^2D_{3/2}$	$2p^3\ ^2P^o_{1/2}$	786754	12.710	3.405E+07	3.299E-04	6.211E-04	0.008
$2s2p(^1P)3p\ ^2D_{3/2}$	$2p^3\ ^2P^o_{3/2}$	786663	12.711	8.950E+06	8.673E-05	1.633E-04	0.031
$2s2p(^3P)3p\ ^4P_{5/2}$	$2p^3\ ^4S^o_{3/2}$	781825	12.790	1.056E+08	1.554E-03	3.193E-02	0.007
$2s2p(^3P)3p\ ^4P_{3/2}$	$2p^3\ ^4S^o_{3/2}$	781148	12.801	1.025E+08	1.007E-03	4.166E-02	0.007
$2s2p(^3P)3p\ ^4P_{1/2}$	$2p^3\ ^4S^o_{3/2}$	780599	12.810	1.015E+08	4.992E-04	4.176E-02	0.004
$2s2p(^3P)3p\ ^2S_{1/2}$	$2p^3\ ^2D^o_{3/2}$	759831	13.160	1.804E+06	9.371E-06	5.144E-06	0.030
$2s^2 3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	743808	13.444	5.175E+08	5.609E-03	3.415E-02	0.009
$2s2p(^3P)3p\ ^2D_{5/2}$	$2p^3\ ^2D^o_{5/2}$	743728	13.445	1.127E+09	1.833E-02	3.284E-03	0.001
$2s2p(^3P)3p\ ^2D_{5/2}$	$2p^3\ ^2D^o_{3/2}$	743642	13.447	6.453E+07	1.050E-03	1.880E-04	0.004
$2s^2 3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	743262	13.454	4.767E+08	2.587E-03	3.132E-02	0.005
$2s2p(^3P)3p\ ^2D_{3/2}$	$2p^3\ ^2D^o_{5/2}$	742344	13.470	1.005E+08	1.093E-03	2.921E-04	0.000
$2s2p(^3P)3p\ ^2D_{3/2}$	$2p^3\ ^2D^o_{3/2}$	742258	13.472	1.124E+09	1.223E-02	3.268E-03	0.002
$2s2p(^3P)3p\ ^4P_{5/2}$	$2p^3\ ^2D^o_{5/2}$	736691	13.574	2.686E+06	4.451E-05	8.120E-04	0.019
$2s2p(^3P)3p\ ^4S_{3/2}$	$2p^3\ ^2D^o_{5/2}$	727712	13.741	6.472E+06	7.329E-05	3.240E-03	0.003
$2s^2 3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	724331	13.805	1.467E+07	1.676E-04	9.677E-04	0.010
$2s^2 3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	723786	13.816	1.267E+08	7.251E-04	8.322E-03	0.005
$2s^2 3p\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	723016	13.830	1.274E+08	1.461E-03	8.404E-03	0.003
$2s^2 3p\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{3/2}$	722470	13.841	4.193E+07	2.409E-04	2.755E-03	0.012
$2s2p(^3P)3p\ ^4D_{3/2}$	$2p^3\ ^2D^o_{5/2}$	716813	13.950	1.487E+08	1.735E-03	6.607E-03	0.002
$2s2p(^3P)3p\ ^4D_{3/2}$	$2p^3\ ^2D^o_{3/2}$	716727	13.952	1.356E+07	1.583E-04	6.029E-04	0.005
$2s2p(^3P)3p\ ^4D_{1/2}$	$2p^3\ ^2D^o_{3/2}$	716353	13.959	2.389E+08	1.396E-03	7.379E-03	0.003
$2s2p(^3P)3p\ ^2P_{3/2}$	$2p^3\ ^2D^o_{5/2}$	714935	13.987	2.012E+09	2.361E-02	6.522E-03	0.002
$2s2p(^3P)3p\ ^2P_{3/2}$	$2p^3\ ^2D^o_{3/2}$	714849	13.988	2.028E+08	2.380E-03	6.572E-04	0.000
$2s2p(^3P)3p\ ^2P_{1/2}$	$2p^3\ ^2D^o_{3/2}$	714204	14.001	2.174E+09	1.278E-02	7.214E-03	0.002
$2s2p(^3P)3p\ ^2S_{1/2}$	$2p^3\ ^2P^o_{1/2}$	707086	14.142	1.948E+09	1.168E-02	5.553E-03	0.001

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{3}P)3p $^2S_{1/2}$	2p^3 $^2P^o_{3/2}$	706994	14.144	3.921E+09	2.352E-02	1.118E-02	0.001
2s2p(^{3}P)3p $^2D_{5/2}$	2p^3 $^2P^o_{3/2}$	690805	14.475	7.547E+08	1.422E-02	2.199E-03	0.001
2s2p(^{3}P)3p $^2D_{3/2}$	2p^3 $^2P^o_{1/2}$	689513	14.502	6.198E+08	7.817E-03	1.802E-03	0.001
2s2p(^{3}P)3p $^2D_{3/2}$	2p^3 $^2P^o_{3/2}$	689422	14.504	1.074E+08	1.355E-03	3.122E-04	0.007
2s2p(^{3}P)3p $^4P_{5/2}$	2p^3 $^2P^o_{3/2}$	683769	14.624	2.422E+06	4.660E-05	7.324E-04	0.022
2s2p(^{3}P)3p $^4P_{1/2}$	2p^3 $^2P^o_{3/2}$	682543	14.651	1.137E+06	7.316E-06	4.679E-04	0.034
2s2p(^{3}P)3p $^2P_{3/2}$	2p^3 $^2P^o_{1/2}$	662104	15.103	2.016E+06	2.757E-05	6.533E-06	0.015
2s2p(^{3}P)3p $^2P_{3/2}$	2p^3 $^2P^o_{3/2}$	662012	15.105	1.641E+06	2.246E-05	5.320E-06	0.036
2s2p(^{3}P)3p $^2P_{1/2}$	2p^3 $^2P^o_{1/2}$	661459	15.118	5.478E+06	3.754E-05	1.818E-05	0.023
2s2p(^{3}P)3p $^2P_{1/2}$	2p^3 $^2P^o_{3/2}$	661368	15.120	1.596E+06	1.094E-05	5.296E-06	0.018
2s^{2}3d $^2D_{5/2}$	2p^3 $^2D^o_{5/2}$	648226	15.426	1.244E+07	2.664E-04	2.331E-05	0.005
2s^{2}3d $^2D_{3/2}$	2p^3 $^2D^o_{5/2}$	648095	15.429	1.164E+06	1.662E-05	2.174E-06	0.020
2s^{2}3d $^2D_{3/2}$	2p^3 $^2D^o_{3/2}$	648010	15.431	1.213E+07	1.733E-04	2.266E-05	0.010
2s2p(^{3}P)4s $^2P^o_{3/2}$	2s^{2}3s $^2S_{1/2}$	482265	20.735	9.529E+06	2.457E-04	1.001E-05	0.113
2s2p(^{3}P)4s $^2P^o_{1/2}$	2s^{2}3s $^2S_{1/2}$	480791	20.799	9.342E+06	1.212E-04	9.788E-06	0.107
2p^2(^{1}D)3p $^2P^o_{3/2}$	2s^{2}3s $^2S_{1/2}$	451660	22.140	6.173E+07	1.815E-03	5.613E-04	0.058
2p^2(^{1}D)3p $^2P^o_{1/2}$	2s^{2}3s $^2S_{1/2}$	450780	22.183	6.475E+07	9.554E-04	5.979E-04	0.048
2p^2(^{1}D)3d $^2S_{1/2}$	2s^{2}3p $^2P^o_{1/2}$	444467	22.498	1.460E+07	2.216E-04	5.749E-05	0.036
2p^2(^{1}D)3d $^2S_{1/2}$	2s^{2}3p $^2P^o_{3/2}$	443922	22.526	2.707E+07	4.118E-04	1.066E-04	0.044
2p^2(^{1}D)3d $^2P_{3/2}$	2s^{2}3p $^2P^o_{1/2}$	436592	22.904	1.228E+07	3.863E-04	2.466E-05	0.000
2p^2(^{1}D)3d $^2P_{1/2}$	2s^{2}3p $^2P^o_{1/2}$	436072	22.931	5.046E+07	7.956E-04	1.023E-04	0.002
2p^2(^{1}D)3d $^2P_{3/2}$	2s^{2}3p $^2P^o_{3/2}$	436046	22.933	6.439E+07	2.031E-03	1.294E-04	0.003
2p^2(^{1}D)3d $^2P_{1/2}$	2s^{2}3p $^2P^o_{3/2}$	435526	22.960	2.689E+07	4.251E-04	5.453E-05	0.005
2p^2(^{1}D)3d $^2D_{3/2}$	2s^{2}3p $^2P^o_{1/2}$	424425	23.561	1.835E+07	6.109E-04	3.351E-05	0.054
2p^2(^{1}D)3d $^2D_{5/2}$	2s^{2}3p $^2P^o_{3/2}$	424391	23.563	1.839E+07	9.184E-04	3.349E-05	0.038
2p^2(^{1}D)3d $^2D_{3/2}$	2s^{2}3p $^2P^o_{3/2}$	423879	23.591	3.128E+06	1.044E-04	5.713E-06	0.065
2p^2(^{3}P)3p $^2P^o_{1/2}$	2s^{2}3s $^2S_{1/2}$	409697	24.408	5.154E+07	9.206E-04	2.132E-04	0.019
2p^2(^{3}P)3p $^2P^o_{3/2}$	2s^{2}3s $^2S_{1/2}$	409581	24.415	5.460E+07	1.952E-03	2.215E-04	0.017
2p^2(^{3}P)3d $^2D_{3/2}$	2s^{2}3p $^2P^o_{1/2}$	408089	24.504	2.808E+06	1.011E-04	5.976E-06	0.076
2p^2(^{3}P)3d $^2D_{5/2}$	2s^{2}3p $^2P^o_{3/2}$	407675	24.529	4.070E+06	2.203E-04	8.439E-06	0.062
2p^2(^{1}S)3s $^2S_{1/2}$	2s^{2}3p $^2P^o_{1/2}$	404362	24.730	1.375E+07	2.521E-04	1.380E-05	0.029
2p^2(^{1}S)3s $^2S_{1/2}$	2s^{2}3p $^2P^o_{3/2}$	403816	24.763	2.731E+07	5.022E-04	2.742E-05	0.028
2p^2(^{3}P)3d $^2P_{1/2}$	2s^{2}3p $^2P^o_{1/2}$	381285	26.227	3.687E+06	7.603E-05	1.703E-05	0.012
2p^2(^{3}P)3d $^2P_{1/2}$	2s^{2}3p $^2P^o_{3/2}$	380739	26.264	1.729E+06	3.577E-05	7.986E-06	0.003
2p^2(^{3}P)3d $^2P_{3/2}$	2s^{2}3p $^2P^o_{3/2}$	379474	26.352	5.067E+06	2.110E-04	2.544E-05	0.011
2p^2(^{3}P)3p $^2S^o_{1/2}$	2s^{2}3s $^2S_{1/2}$	376531	26.558	1.884E+06	3.985E-05	6.980E-06	0.016
2s^{2}4p $^2P^o_{3/2}$	2s^{2}3s $^2S_{1/2}$	372402	26.852	3.600E+09	1.557E-01	4.388E-03	0.023
2s^{2}4p $^2P^o_{1/2}$	2s^{2}3s $^2S_{1/2}$	372214	26.866	3.609E+09	7.810E-02	4.370E-03	0.023
2s2p(^{3}P)4s $^2P^o_{1/2}$	2s^{2}3d $^2D_{3/2}$	371491	26.918	1.039E+06	2.257E-05	1.088E-06	0.525
2s2p(^{1}P)3d $^2P^o_{3/2}$	2s^{2}3s $^2S_{1/2}$	355548	28.125	1.870E+09	8.872E-02	6.206E-03	0.009
2s2p(^{1}P)3d $^2P^o_{1/2}$	2s^{2}3s $^2S_{1/2}$	355355	28.140	1.905E+09	4.524E-02	6.327E-03	0.010
2p^2(^{1}D)3d $^2S_{1/2}$	2s2p(^{3}P)3s $^2P^o_{1/2}$	349166	28.639	1.130E+07	2.779E-04	4.449E-05	0.033
2p^2(^{1}D)3d $^2S_{1/2}$	2s2p(^{3}P)3s $^2P^o_{3/2}$	347725	28.758	2.578E+07	6.393E-04	1.015E-04	0.024

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s^23d\ ^2D_{5/2}$	342229	29.220	5.522E+06	2.827E-04	5.021E-05	0.135
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s^23d\ ^2D_{3/2}$	341480	29.284	5.642E+06	1.451E-04	5.210E-05	0.146
$2p^2(^1D)3d\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	341290	29.300	4.543E+06	2.339E-04	9.127E-06	0.015
$2p^2(^1D)3d\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	340770	29.345	1.719E+07	4.439E-04	3.487E-05	0.010
$2p^2(^1D)3d\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	339850	29.424	2.176E+07	1.130E-03	4.371E-05	0.007
$2p^2(^1D)3d\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	339329	29.469	9.160E+06	2.385E-04	1.857E-05	0.005
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s^23d\ ^2D_{3/2}$	332480	30.076	3.932E+07	2.133E-03	1.501E-04	0.003
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s^23d\ ^2D_{5/2}$	332349	30.088	3.739E+06	2.030E-04	1.427E-05	0.035
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s^23d\ ^2D_{3/2}$	332324	30.091	4.713E+06	3.838E-04	1.791E-05	0.028
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s^23d\ ^2D_{5/2}$	332193	30.102	3.899E+07	3.178E-03	1.481E-04	0.004
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	329123	30.383	1.135E+07	6.284E-04	2.073E-05	0.025
$2p^2(^1D)3d\ ^2D_{5/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	328195	30.469	1.297E+07	1.083E-03	2.363E-05	0.022
$2s^24d\ ^2D_{3/2}$	$2s^23p\ ^2P^o_{1/2}$	327896	30.497	1.255E+10	7.003E-01	2.559E-02	0.004
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	327683	30.517	3.107E+06	1.735E-04	5.674E-06	0.020
$2s^24d\ ^2D_{5/2}$	$2s^23p\ ^2P^o_{3/2}$	327400	30.543	1.510E+10	1.267E+00	3.076E-02	0.007
$2s^24d\ ^2D_{3/2}$	$2s^23p\ ^2P^o_{3/2}$	327350	30.548	2.516E+09	1.408E-01	5.128E-03	0.007
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s^23p\ ^2P^o_{1/2}$	324236	30.841	6.078E+08	3.467E-02	1.070E-03	0.003
$2p^2(^1D)3s\ ^2D_{5/2}$	$2s^23p\ ^2P^o_{3/2}$	323709	30.891	7.188E+08	6.170E-02	1.260E-03	0.000
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s^23p\ ^2P^o_{3/2}$	323690	30.893	1.168E+08	6.688E-03	2.057E-04	0.001
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	322796	30.979	1.015E+07	2.920E-04	1.355E-05	0.001
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	322497	31.007	2.590E+07	1.494E-03	3.467E-05	0.002
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	322075	31.048	6.130E+07	1.772E-03	8.184E-05	0.003
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	321776	31.077	1.212E+07	7.019E-04	1.622E-05	0.003
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	321236	31.129	1.597E+07	1.392E-03	2.143E-05	0.005
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	320464	31.204	3.226E+07	1.884E-03	4.318E-05	0.003
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	319924	31.257	5.286E+07	4.645E-03	7.092E-05	0.000
$2p^2(^1D)3p\ ^2F^o_{7/2}$	$2s^23d\ ^2D_{5/2}$	317760	31.470	8.360E+08	9.931E-02	8.692E-03	0.015
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s^23d\ ^2D_{3/2}$	317513	31.494	7.939E+08	7.084E-02	8.322E-03	0.015
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s^23d\ ^2D_{5/2}$	317382	31.507	5.945E+07	5.309E-03	6.232E-04	0.016
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	312787	31.970	2.808E+06	1.721E-04	5.976E-06	0.006
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	312011	32.050	5.384E+06	1.658E-04	2.487E-05	0.001
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	311478	32.104	4.541E+06	4.210E-04	9.417E-06	0.028
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	311338	32.119	6.435E+06	7.962E-04	7.202E-05	0.001
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	311137	32.140	2.614E+06	2.429E-04	2.847E-05	0.003
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	310745	32.180	6.313E+06	3.920E-04	3.169E-05	0.002
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	310024	32.255	6.636E+06	4.140E-04	3.332E-05	0.007
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	309288	32.332	4.728E+07	2.964E-03	1.424E-03	0.009
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	309207	32.340	9.671E+07	3.033E-03	5.068E-03	0.011
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	309060	32.356	2.923E+07	9.176E-04	2.934E-05	0.034
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s^23p\ ^2P^o_{1/2}$	308986	32.363	4.185E+06	2.629E-04	6.173E-06	0.014
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	308864	32.376	8.479E+07	7.995E-03	7.568E-03	0.007
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	308567	32.407	5.419E+07	3.413E-03	1.632E-03	0.011
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	308486	32.416	1.720E+07	5.420E-04	9.017E-04	0.014

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s^23p\ ^2P^o_{3/2}$	308440	32.421	5.832E+07	3.676E-03	8.602E-05	0.005
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	307789	32.489	1.086E+08	1.374E-02	1.141E-02	0.008
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s^23p\ ^2P^o_{1/2}$	307625	32.507	4.097E+07	1.298E-03	6.057E-05	0.007
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	307619	32.507	7.124E+07	2.257E-03	7.151E-05	0.019
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	307552	32.514	2.911E+07	2.768E-03	2.598E-03	0.012
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	307255	32.546	3.995E+06	2.538E-04	1.203E-04	0.014
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s^23p\ ^2P^o_{3/2}$	307079	32.564	2.276E+07	7.236E-04	3.365E-05	0.002
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	306770	32.597	3.211E+08	2.046E-02	3.374E-04	0.018
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	306126	32.666	1.734E+09	1.110E-01	1.822E-03	0.017
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	305297	32.754	1.418E+09	4.561E-02	1.486E-03	0.016
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	304652	32.824	8.088E+08	2.613E-02	8.474E-04	0.015
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	304622	32.827	4.286E+07	2.770E-03	4.504E-05	0.018
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	304248	32.867	1.669E+08	1.081E-02	1.754E-04	0.016
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	303593	32.938	6.010E+06	3.910E-04	6.315E-06	0.001
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	303148	32.987	1.895E+08	6.181E-03	1.985E-04	0.015
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	302774	33.027	3.840E+07	1.256E-03	4.023E-05	0.020
$2p^3\ ^2D^o_{5/2}$	$2s2p^2\ ^4P_{5/2}$	295701	33.817	1.164E+06	1.198E-04	3.317E-04	0.067
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	295563	33.833	1.767E+06	1.820E-04	3.369E-06	0.016
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	294858	33.914	3.277E+07	2.260E-03	6.254E-05	0.010
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	294213	33.988	1.854E+08	1.285E-02	3.539E-04	0.011
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	294130	33.998	2.608E+08	9.037E-03	4.995E-04	0.011
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	293685	34.050	8.372E+07	8.731E-03	1.596E-04	0.011
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	293485	34.073	1.010E+08	3.517E-03	1.935E-04	0.009
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	293349	34.089	1.401E+07	9.762E-04	1.472E-05	0.015
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	293030	34.126	8.051E+08	8.434E-02	1.535E-03	0.010
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	292709	34.163	1.977E+08	1.384E-02	3.774E-04	0.010
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	292335	34.207	1.353E+09	9.491E-02	2.582E-03	0.010
$2s^24s\ ^2S_{1/2}$	$2s^23p\ ^2P^o_{1/2}$	292286	34.213	1.594E+09	5.594E-02	6.919E-03	0.018
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	291982	34.248	2.224E+09	7.823E-02	4.261E-03	0.010
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{7/2}$	291888	34.259	3.967E+09	4.188E-01	7.562E-03	0.009
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	291875	34.261	6.487E+06	2.283E-04	6.797E-06	0.014
$2s^24s\ ^2S_{1/2}$	$2s^23p\ ^2P^o_{3/2}$	291740	34.277	3.164E+09	1.115E-01	1.373E-02	0.024
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	291680	34.284	3.229E+09	2.276E-01	6.163E-03	0.009
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	291608	34.292	2.504E+09	8.829E-02	4.796E-03	0.009
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s^23d\ ^2D_{3/2}$	289724	34.515	1.376E+08	1.474E-02	7.227E-04	0.003
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s^23d\ ^2D_{3/2}$	288260	34.690	5.466E+06	3.944E-04	2.908E-05	0.024
$2s^24f\ ^2F^o_{5/2}$	$2s^23d\ ^2D_{3/2}$	287430	34.791	3.720E+10	4.050E+00	1.969E-01	0.004
$2s^24f\ ^2F^o_{7/2}$	$2s^23d\ ^2D_{5/2}$	287379	34.797	4.006E+10	5.817E+00	2.135E-01	0.004
$2s^24f\ ^2F^o_{5/2}$	$2s^23d\ ^2D_{5/2}$	287299	34.806	2.673E+09	2.913E-01	1.415E-02	0.004
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	285983	34.967	2.177E+06	7.980E-05	1.005E-05	0.049
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	285595	35.014	1.651E+06	1.214E-04	1.735E-06	0.039
$2s2p^2\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	285323	35.047	1.986E+09	1.463E-01	1.651E-01	0.002
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	285046	35.082	4.300E+06	3.173E-04	4.518E-06	0.032

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	284543	35.144	1.507E+06	5.581E-05	6.960E-06	0.040
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	284369	35.165	1.170E+06	8.679E-05	1.230E-06	0.074
$2s2p^2\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	284007	35.210	7.499E+09	2.787E-01	6.265E-01	0.001
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	283277	35.301	3.161E+06	2.362E-04	1.587E-05	0.050
$2s2p^2\ ^2P_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	283188	35.312	1.005E+10	7.512E-01	8.349E-01	0.000
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	282786	35.362	9.896E+08	1.113E-01	1.887E-03	0.008
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s^23p\ ^2P^o_{3/2}$	282649	35.379	1.635E+06	6.136E-05	4.691E-06	0.025
$2s2p^2\ ^2P_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	281873	35.476	4.470E+09	1.687E-01	3.735E-01	0.001
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	281436	35.531	1.307E+09	9.895E-02	2.494E-03	0.006
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	280709	35.624	1.500E+09	5.709E-02	2.874E-03	0.005
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	278716	35.878	3.626E+08	2.799E-02	3.810E-04	0.003
$2p^2(^3P)3p\ ^4D^o_{7/2}$	$2s^23d\ ^2D_{5/2}$	277750	36.003	3.670E+06	5.706E-04	2.915E-05	0.006
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	277333	36.057	2.986E+09	2.328E-01	3.137E-03	0.002
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	277243	36.069	3.199E+09	1.248E-01	3.351E-03	0.001
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	276165	36.210	8.586E+07	6.751E-03	7.808E-04	0.010
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	275521	36.294	4.665E+08	3.685E-02	4.242E-03	0.008
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	275286	36.325	3.632E+08	1.437E-02	3.354E-03	0.007
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	274641	36.411	2.165E+08	8.605E-03	1.999E-03	0.005
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	274483	36.432	1.520E+09	1.814E-01	2.897E-03	0.007
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	274017	36.494	8.312E+06	6.639E-04	7.559E-05	0.005
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	273806	36.522	3.138E+09	3.765E-01	5.981E-03	0.007
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	273683	36.538	1.833E+09	1.468E-01	3.499E-03	0.008
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	273643	36.543	2.750E+07	2.202E-03	2.501E-04	0.007
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	273137	36.611	3.511E+07	1.411E-03	3.242E-04	0.002
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	273133	36.612	4.887E+08	3.928E-02	9.327E-04	0.009
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	272988	36.631	1.335E+06	1.074E-04	1.214E-05	0.057
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	272955	36.635	7.006E+08	2.820E-02	1.342E-03	0.008
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	272763	36.661	2.287E+07	9.218E-04	2.112E-04	0.010
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	272457	36.703	1.856E+09	1.500E-01	3.543E-03	0.007
$2s2p(^3P)4s\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	272406	36.709	3.192E+09	1.290E-01	6.115E-03	0.008
$2s2p(^3P)4s\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	266804	37.480	1.092E+06	9.195E-05	2.083E-06	0.030
$2s2p(^3P)4s\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	266770	37.485	8.208E+06	1.038E-03	1.565E-05	0.024
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s^23s\ ^2S_{1/2}$	266656	37.501	4.912E+08	2.071E-02	1.408E-03	0.004
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	266285	37.553	7.880E+06	6.664E-04	3.008E-05	0.044
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s^23s\ ^2S_{1/2}$	265891	37.609	5.328E+08	4.519E-02	1.553E-03	0.002
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	265484	37.666	8.059E+06	1.028E-03	3.062E-05	0.051
$2s2p^2\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{1/2}$	264530	37.802	2.542E+09	1.089E-01	4.113E-01	0.004
$2s^24p\ ^2P^o_{3/2}$	$2s^23d\ ^2D_{3/2}$	263102	38.008	1.333E+07	1.155E-03	1.625E-05	0.124
$2s^24p\ ^2P^o_{3/2}$	$2s^23d\ ^2D_{5/2}$	262970	38.027	1.126E+08	9.767E-03	1.373E-04	0.092
$2s^24p\ ^2P^o_{1/2}$	$2s^23d\ ^2D_{3/2}$	262914	38.035	1.297E+08	5.626E-03	1.571E-04	0.123
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	262744	38.059	1.508E+06	1.310E-04	1.371E-05	0.007
$2s2p^2\ ^2S_{1/2}$	$2s^22p\ ^2P^o_{3/2}$	262396	38.110	3.638E+09	1.584E-01	5.887E-01	0.005
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2S_{1/2}$	261144	38.293	1.712E+09	1.505E-01	1.798E-03	0.005

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2p^3 ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{5/2}$	259830	38.486	4.356E+09	3.869E-01	5.083E-01	0.002
2p^3 ^{2}P$^o_{3/2}$	2s2p^2 ^{2}D$_{3/2}$	259789	38.492	5.459E+08	4.851E-02	6.370E-02	0.011
2p^3 ^{2}P$^o_{1/2}$	2s2p^2 ^{2}D$_{3/2}$	259698	38.506	5.026E+09	2.235E-01	5.840E-01	0.001
2s2p(^{3}P)4s ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	259670	38.510	1.597E+09	7.103E-02	1.674E-03	0.007
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	258493	38.685	8.462E+06	7.594E-04	1.700E-05	0.015
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	258211	38.727	4.555E+06	2.048E-04	9.236E-06	0.022
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	256847	38.933	2.625E+07	2.386E-03	5.273E-05	0.015
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	256608	38.969	2.365E+08	2.154E-02	4.750E-04	0.015
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	256327	39.012	2.439E+08	1.113E-02	4.946E-04	0.018
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	253989	39.371	4.076E+08	1.895E-02	1.605E-03	0.004
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	253950	39.377	7.916E+08	3.680E-02	3.117E-03	0.003
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{5/2}$	253764	39.406	1.725E+06	1.607E-04	1.569E-05	0.035
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	253561	39.438	1.214E+06	5.662E-05	1.121E-05	0.055
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2s2p(^{3}P)3s ^{4}P$^o_{5/2}$	252947	39.533	3.572E+06	5.022E-04	6.261E-06	0.001
2p^3 ^{4}S$^o_{3/2}$	2s2p^2 ^{4}P$_{1/2}$	252363	39.625	1.829E+09	1.722E-01	1.692E-01	0.003
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{4}P$^o_{5/2}$	252146	39.659	7.902E+06	7.454E-04	1.588E-05	0.012
2p^3 ^{4}S$^o_{3/2}$	2s2p^2 ^{4}P$_{3/2}$	251648	39.737	3.624E+09	3.432E-01	3.352E-01	0.002
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	251115	39.822	1.266E+06	6.022E-05	2.568E-06	0.013
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2s^{2}3p ^{2}P$^o_{1/2}$	250649	39.896	3.025E+09	1.444E-01	1.760E-02	0.009
2p^3 ^{4}S$^o_{3/2}$	2s2p^2 ^{4}P$_{5/2}$	250568	39.909	5.359E+09	5.119E-01	4.957E-01	0.001
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	250103	39.983	7.076E+09	3.392E-01	4.116E-02	0.007
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	249231	40.123	1.146E+06	1.107E-04	2.188E-06	0.098
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	248111	40.304	2.152E+08	2.097E-02	1.957E-03	0.004
2p^2(^{1}D)3p ^{2}F$^o_{7/2}$	2s2p(^{3}P)3p ^{4}D$_{7/2}$	247377	40.424	3.431E+06	6.724E-04	3.567E-05	0.022
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	247232	40.447	1.610E+09	7.896E-02	1.486E-02	0.001
2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	2s^{2}3s ^{2}S$_{1/2}$	247131	40.464	4.909E+09	4.820E-01	5.071E-03	0.001
2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	2s^{2}3s ^{2}S$_{1/2}$	247092	40.470	4.976E+09	2.444E-01	5.222E-03	0.002
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	246727	40.530	1.486E+09	1.464E-01	1.351E-02	0.001
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{4}D$^o_{7/2}$	246384	40.586	2.206E+06	3.269E-04	4.018E-06	0.006
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s^{2}3d ^{2}D$_{3/2}$	246248	40.609	7.688E+08	7.603E-02	2.552E-03	0.004
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s^{2}3d ^{2}D$_{5/2}$	246117	40.631	6.681E+09	6.614E-01	2.217E-02	0.000
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s^{2}3d ^{2}D$_{3/2}$	246055	40.641	7.447E+09	3.688E-01	2.473E-02	0.004
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s^{2}3p ^{2}P$^o_{1/2}$	246046	40.642	5.848E+08	5.792E-02	3.391E-03	0.001
2s2p(^{1}P)3p ^{2}P$_{1/2}$	2s^{2}3p ^{2}P$^o_{1/2}$	245648	40.708	3.852E+09	1.914E-01	2.234E-02	0.000
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	245555	40.724	1.164E+06	5.790E-05	2.361E-06	0.027
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	245501	40.733	4.665E+09	4.641E-01	2.705E-02	0.001
2s2p(^{1}P)3p ^{2}P$_{1/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	245102	40.799	1.426E+09	7.115E-02	8.266E-03	0.001
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	244953	40.824	8.711E+07	1.306E-02	1.587E-04	0.006
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	244680	40.869	8.082E+07	8.095E-03	1.476E-04	0.009
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	244561	40.889	1.114E+06	1.117E-04	4.250E-06	0.019
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	244441	40.909	2.428E+06	2.437E-04	4.435E-06	0.022
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2s^{2}3p ^{2}P$^o_{1/2}$	244175	40.954	3.306E+09	3.326E-01	6.031E-02	0.003
2s2p(^{1}P)3p ^{2}D$_{5/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	243784	41.019	3.603E+09	5.453E-01	6.544E-02	0.002

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}P$_{5/2}$	243728	41.029	4.386E+06	6.642E-04	1.667E-05	0.022
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	243629	41.045	3.165E+08	3.198E-02	5.774E-03	0.005
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	243447	41.076	1.099E+06	1.668E-04	1.304E-06	0.004
2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	2s^{2}3d ^{2}D$_{3/2}$	243275	41.105	3.328E+08	5.059E-02	5.183E-04	0.002
2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	2s^{2}3d ^{2}D$_{5/2}$	243144	41.127	4.631E+09	7.046E-01	7.212E-03	0.002
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s^{2}3d ^{2}D$_{3/2}$	243074	41.139	4.447E+09	4.514E-01	6.906E-03	0.002
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	242955	41.159	2.235E+06	4.541E-04	2.633E-06	0.003
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s^{2}3d ^{2}D$_{5/2}$	242943	41.161	5.199E+08	5.282E-02	8.073E-04	0.002
2p^2(^{1}D)3d ^{2}G$_{9/2}$	2s2p(^{3}P)3d ^{4}F$^o_{9/2}$	242739	41.196	1.676E+06	4.265E-04	4.007E-03	0.009
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	241563	41.397	2.057E+08	3.172E-02	2.441E-04	0.011
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	241324	41.438	4.826E+06	7.453E-04	5.726E-06	0.021
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	241070	41.481	2.030E+08	4.188E-02	2.391E-04	0.012
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{4}P$^o_{5/2}$	240491	41.581	1.537E+06	2.391E-04	2.800E-06	0.017
2p^2(^{3}P)3s ^{2}P$_{3/2}$	2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	238990	41.842	1.604E+06	1.684E-04	2.366E-06	0.023
2p^2(^{3}P)3s ^{2}P$_{1/2}$	2s2p(^{3}P)3s ^{4}P$^o_{1/2}$	238351	41.954	1.799E+06	9.494E-05	2.660E-06	0.022
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	238232	41.975	2.503E+08	2.645E-02	9.553E-04	0.004
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	238075	42.003	2.241E+07	3.556E-03	8.514E-05	0.008
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	236848	42.221	4.106E+07	4.390E-03	1.567E-04	0.006
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	236691	42.249	2.838E+08	4.557E-02	1.078E-03	0.006
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{4}P$^o_{5/2}$	236608	42.263	1.854E+06	3.971E-04	2.184E-06	0.001
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	235190	42.518	4.879E+07	2.644E-03	1.921E-04	0.018
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	234542	42.636	1.610E+06	1.755E-04	3.234E-06	0.002
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	234425	42.657	1.463E+07	7.981E-04	5.759E-05	0.017
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	234420	42.658	1.517E+07	2.483E-03	2.763E-05	0.002
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	234202	42.698	5.558E+08	3.038E-02	2.300E-03	0.005
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	234086	42.719	1.429E+08	1.564E-02	5.798E-04	0.004
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	233946	42.744	1.484E+07	1.626E-03	2.710E-05	0.004
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	233908	42.751	2.425E+06	2.658E-04	4.429E-06	0.009
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	233558	42.815	2.339E+08	1.286E-02	9.680E-04	0.010
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	233441	42.837	6.359E+08	6.998E-02	2.581E-03	0.006
2s^{2}4d ^{2}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	232594	42.993	5.447E+08	6.037E-02	1.110E-03	0.043
2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	2s^{2}3d ^{2}D$_{3/2}$	232198	43.066	6.460E+07	1.078E-02	8.968E-05	0.142
2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	2s^{2}3d ^{2}D$_{5/2}$	232067	43.090	3.886E+06	6.491E-04	5.395E-06	0.144
2s2p(^{1}P)3d ^{2}F$^o_{7/2}$	2s^{2}3d ^{2}D$_{5/2}$	232062	43.091	7.233E+07	1.611E-02	1.004E-04	0.156
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	232054	43.093	8.536E+07	4.753E-03	3.532E-04	0.000
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	231937	43.114	2.198E+07	2.450E-03	8.918E-05	0.001
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	231680	43.162	2.710E+07	1.514E-03	1.121E-04	0.012
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	231563	43.184	6.105E+07	6.828E-03	2.477E-04	0.005
2s^{2}4d ^{2}D$_{5/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	231203	43.251	6.566E+08	1.105E-01	1.338E-03	0.048
2s^{2}4d ^{2}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	231154	43.261	1.187E+08	1.333E-02	2.420E-04	0.046
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	230538	43.376	2.047E+07	2.309E-03	1.861E-04	0.014
2p^2(^{3}P)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	230121	43.455	1.440E+06	2.447E-04	2.987E-06	0.033
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	229659	43.542	3.108E+07	1.767E-03	2.870E-04	0.013

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	228934	43.680	5.928E+06	6.782E-04	1.043E-05	0.036
2p^2(^{3}P)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	228475	43.768	2.448E+06	4.218E-04	5.076E-06	0.027
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	228344	43.793	7.584E+07	8.722E-03	1.614E-04	0.021
2p^2(^{3}P)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	228236	43.814	7.016E+07	1.211E-02	1.455E-04	0.020
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	228105	43.839	8.122E+06	9.360E-04	1.728E-05	0.027
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	227512	43.953	1.619E+07	2.814E-03	2.838E-05	0.024
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	227493	43.957	4.465E+07	5.174E-03	7.859E-05	0.003
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	227315	43.991	1.338E+07	1.552E-03	2.687E-05	0.010
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	226795	44.092	2.765E+06	1.612E-04	5.608E-06	0.023
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	226549	44.140	2.648E+06	3.094E-04	5.320E-06	0.016
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	226029	44.242	1.078E+07	6.329E-04	2.187E-05	0.011
2p^2(^{1}D)3p ^{2}F$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	223265	44.789	1.312E+07	2.367E-03	1.375E-04	0.046
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	222887	44.865	2.177E+07	3.942E-03	3.965E-05	0.015
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	222885	44.866	2.908E+08	5.266E-02	1.528E-03	0.008
2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	2s2p(^{3}P)3p ^{4}S$_{3/2}$	222865	44.870	4.079E+06	4.924E-04	1.963E-05	0.002
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	222375	44.969	1.824E+08	2.211E-02	3.331E-04	0.020
2p^2(^{1}D)3p ^{2}F$^o_{7/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	222259	44.992	1.758E+07	4.267E-03	1.827E-04	0.051
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	222065	45.031	2.249E+08	2.735E-02	1.197E-03	0.010
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{7/2}$	221562	45.133	2.470E+08	4.526E-02	4.499E-04	0.018
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	221421	45.162	3.858E+07	4.719E-03	2.053E-04	0.009
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	221007	45.247	3.072E+07	5.657E-03	1.614E-04	0.010
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	220352	45.381	1.276E+07	2.364E-03	6.704E-05	0.012
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	219917	45.471	2.903E+07	3.600E-03	1.545E-04	0.015
2p^2(^{1}S)3s ^{2}S$_{1/2}$	2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	219405	45.577	1.437E+06	8.951E-05	1.443E-06	0.020
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	219257	45.608	1.800E+08	3.367E-02	2.135E-04	0.005
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{7/2}$	219210	45.618	3.550E+07	6.645E-03	1.865E-04	0.010
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	219004	45.661	8.763E+06	2.191E-03	1.032E-05	0.009
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	218888	45.685	5.856E+06	7.330E-04	3.116E-05	0.005
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{7/2}$	217933	45.885	1.432E+06	2.712E-04	1.699E-06	0.013
2p^2(^{3}P)3d ^{2}D$_{5/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	217703	45.933	1.244E+07	2.360E-03	2.579E-05	0.014
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{2}F$^o_{7/2}$	217679	45.939	1.911E+08	4.837E-02	2.251E-04	0.004
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	217610	45.953	7.768E+06	9.837E-04	1.653E-05	0.022
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	217572	45.961	1.819E+06	2.304E-04	3.871E-06	0.011
2p^2(^{3}P)3p ^{4}P$^o_{5/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	216404	46.209	3.963E+07	7.612E-03	2.200E-04	0.001
2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	216361	46.218	2.580E+07	3.305E-03	1.431E-04	0.005
2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	215993	46.297	8.434E+07	5.420E-03	4.675E-04	0.011
2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	215716	46.357	3.708E+07	4.779E-03	2.058E-04	0.006
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	215660	46.369	4.900E+06	9.476E-04	8.924E-06	0.031
2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	215348	46.436	4.593E+07	2.970E-03	2.546E-04	0.015
2p^2(^{3}P)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{4}F$^o_{7/2}$	215310	46.444	1.944E+07	5.029E-03	2.176E-04	0.018
2p^2(^{3}P)3s ^{4}P$_{5/2}$	2s2p(^{3}P)3s ^{4}P$^o_{3/2}$	215126	46.484	1.230E+09	2.390E-01	3.482E-03	0.002
2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{1/2}$	215112	46.487	7.954E+08	1.031E-01	3.828E-03	0.000
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	214985	46.514	1.096E+08	7.110E-03	5.062E-04	0.013

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	214670	46.582	1.698E+09	2.210E-01	4.847E-03	0.002
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	214562	46.606	1.521E+09	1.982E-01	7.323E-03	0.001
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	214526	46.614	4.571E+07	8.935E-03	2.538E-04	0.005
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{9/2}$	214455	46.629	1.326E+08	3.458E-02	1.484E-03	0.015
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	214414	46.638	1.692E+07	3.310E-03	1.842E-04	0.016
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2P^o_{1/2}$	214382	46.645	4.667E+06	6.089E-04	8.523E-06	0.019
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	214334	46.656	1.903E+09	1.242E-01	2.541E-03	0.009
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	214213	46.682	1.280E+08	1.672E-02	7.100E-04	0.004
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	214210	46.683	1.651E+09	1.079E-01	2.205E-03	0.009
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	214035	46.721	2.344E+08	3.068E-02	3.137E-04	0.009
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	213949	46.740	5.385E+08	7.054E-02	1.537E-03	0.003
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	213921	46.746	6.712E+08	4.397E-02	1.926E-03	0.003
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	213911	46.748	1.331E+09	1.744E-01	1.781E-03	0.009
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	213886	46.753	2.127E+09	2.788E-01	1.024E-02	0.000
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	213883	46.754	2.494E+09	1.635E-01	2.504E-03	0.002
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	213871	46.757	4.967E+08	9.769E-02	2.758E-03	0.003
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	213845	46.762	5.019E+09	3.291E-01	5.038E-03	0.002
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	213845	46.762	1.216E+09	7.971E-02	6.739E-03	0.003
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	213839	46.764	8.257E+08	1.083E-01	4.581E-03	0.003
$2p^2(^3P)3s\ ^4P_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	213814	46.769	2.813E+09	5.535E-01	7.964E-03	0.003
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{7/2}$	213797	46.773	6.589E+07	1.297E-02	7.176E-04	0.016
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4F^o_{3/2}$	213719	46.790	6.061E+07	7.957E-03	3.043E-04	0.012
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	213684	46.797	1.090E+09	1.431E-01	1.607E-03	0.004
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	213672	46.800	2.068E+09	2.717E-01	2.768E-03	0.010
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	213471	46.844	1.100E+09	7.235E-02	6.096E-03	0.002
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	213371	46.866	1.185E+08	2.342E-02	1.590E-04	0.009
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	213302	46.881	2.189E+08	2.886E-02	1.099E-03	0.014
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	213199	46.904	3.322E+09	2.191E-01	9.531E-03	0.003
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	213183	46.907	1.380E+09	1.821E-01	7.659E-03	0.002
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	213133	46.919	9.013E+08	1.785E-01	1.209E-03	0.009
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{7/2}$	212729	47.007	1.703E+09	3.385E-01	9.457E-03	0.001
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	212679	47.019	3.032E+09	6.029E-01	4.067E-03	0.009
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	212637	47.028	1.777E+09	2.356E-01	5.071E-03	0.004
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{3/2}$	212560	47.045	3.501E+07	6.969E-03	3.124E-03	0.012
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	212378	47.085	1.987E+07	5.282E-03	2.087E-03	0.011
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	212326	47.097	1.919E+07	1.276E-03	2.562E-05	0.002
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	212323	47.097	4.206E+09	2.798E-01	6.219E-03	0.003
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4F^o_{3/2}$	212262	47.111	5.777E+08	7.690E-02	1.740E-02	0.013
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	212244	47.115	5.187E+09	6.905E-01	7.650E-03	0.002
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3d\ ^4F^o_{3/2}$	212181	47.129	2.773E+09	1.847E-01	1.453E-01	0.013
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	212142	47.138	5.557E+08	1.111E-01	4.960E-02	0.012
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	212027	47.163	5.517E+06	7.359E-04	7.384E-06	0.004
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	211845	47.204	2.008E+09	2.683E-01	6.047E-02	0.013

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	211787	47.217	6.700E+07	8.957E-03	8.967E-05	0.003
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{7/2}$	211761	47.222	3.290E+08	8.798E-02	3.457E-02	0.012
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{7/2}$	211525	47.275	2.160E+09	4.343E-01	1.928E-01	0.014
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{9/2}$	210906	47.414	2.284E+09	6.158E-01	2.400E-01	0.015
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	210883	47.419	2.064E+09	1.391E-01	3.051E-03	0.001
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	210108	47.594	3.068E+07	6.252E-03	1.612E-04	0.001
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	209997	47.619	4.626E+07	9.436E-03	3.671E-04	0.000
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	209886	47.644	7.802E+07	1.062E-02	6.192E-04	0.001
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	209432	47.748	1.720E+08	1.176E-02	1.366E-03	0.002
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	209241	47.791	9.074E+07	1.243E-02	7.202E-04	0.002
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	208787	47.895	1.135E+08	7.805E-03	9.013E-04	0.003
$2p^2(^1D)3d\ ^2G_{7/2}$	$2s2p(^3P)3d\ ^2F^o_{5/2}$	208776	47.898	8.865E+06	2.439E-03	5.612E-03	0.006
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	208644	47.928	5.162E+06	7.111E-04	2.746E-05	0.004
$2p^2(^3P)3p\ ^4D^o_{7/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	208509	47.959	4.972E+08	1.372E-01	3.949E-03	0.000
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	208119	48.049	7.129E+08	1.481E-01	5.657E-03	0.001
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	207737	48.137	7.018E+08	9.752E-02	5.570E-03	0.001
$2p^2(^1D)3d\ ^2G_{9/2}$	$2s2p(^3P)3d\ ^2F^o_{7/2}$	207555	48.179	9.125E+06	3.176E-03	2.199E-02	0.000
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	207464	48.201	1.690E+09	3.532E-01	1.341E-02	0.001
$2p^2(^3P)3p\ ^4D^o_{7/2}$	$2s2p(^3P)3p\ ^4D_{7/2}$	207367	48.223	2.719E+09	7.583E-01	2.160E-02	0.001
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	207363	48.224	1.042E+09	1.453E-01	8.268E-03	0.002
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	207325	48.233	7.446E+08	1.039E-01	9.967E-04	0.001
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	207284	48.242	1.311E+09	9.145E-02	1.041E-02	0.002
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	207114	48.282	1.148E+09	8.023E-02	1.533E-03	0.000
$2p^3\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{5/2}$	206993	48.310	3.360E+08	4.703E-02	9.606E-02	0.007
$2p^3\ ^2D^o_{3/2}$	$2s2p^2\ ^2D_{3/2}$	206953	48.320	2.509E+09	3.512E-01	7.172E-01	0.005
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	206910	48.330	1.525E+09	1.068E-01	1.212E-02	0.001
$2p^3\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{5/2}$	206907	48.330	2.677E+09	5.624E-01	7.627E-01	0.004
$2p^3\ ^2D^o_{5/2}$	$2s2p^2\ ^2D_{3/2}$	206867	48.340	2.091E+08	4.396E-02	5.959E-02	0.001
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	206815	48.352	6.809E+07	9.547E-03	9.114E-05	0.004
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	206786	48.359	5.623E+08	1.183E-01	7.544E-04	0.001
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	206782	48.359	2.536E+08	1.778E-02	3.386E-04	0.000
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	206708	48.377	1.227E+09	1.722E-01	9.740E-03	0.001
$2p^2(^3P)3d\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	206483	48.429	4.387E+08	6.170E-02	5.872E-04	0.001
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{7/2}$	206322	48.467	7.224E+08	1.526E-01	5.732E-03	0.000
$2p^2(^3P)3d\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	206275	48.478	3.144E+08	6.646E-02	4.218E-04	0.001
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2F^o_{5/2}$	206170	48.503	1.048E+08	2.218E-02	2.173E-04	0.018
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	206148	48.508	2.475E+09	1.746E-01	1.024E-02	0.004
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2F^o_{5/2}$	206038	48.534	2.497E+09	3.527E-01	5.312E-03	0.015
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	206032	48.536	2.543E+08	3.592E-02	1.032E-03	0.005
$2s2p^2\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{1/2}$	205516	48.657	1.193E+09	1.694E-01	8.524E-01	0.005
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2F^o_{7/2}$	204846	48.817	2.282E+09	4.893E-01	4.733E-03	0.013
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	204648	48.864	2.175E+09	3.115E-01	8.828E-03	0.002
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	204093	48.997	2.868E+06	8.257E-04	3.210E-05	0.020

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	203627	49.109	1.216E+09	2.639E-01	6.753E-03	0.000
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	203548	49.128	2.444E+06	1.769E-04	1.129E-05	0.020
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	203424	49.158	2.943E+07	2.133E-03	1.359E-04	0.020
$2s2p^2\ ^2D_{3/2}$	$2s^22p\ ^2P^o_{3/2}$	203382	49.168	2.065E+08	2.994E-02	1.476E-01	0.005
$2s2p^2\ ^2D_{5/2}$	$2s^22p\ ^2P^o_{3/2}$	203341	49.178	1.354E+09	2.946E-01	1.000E+00	0.006
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	202940	49.275	1.051E+09	1.531E-01	5.833E-03	0.001
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	202662	49.343	9.407E+06	2.747E-03	1.053E-04	0.023
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	202572	49.365	9.727E+08	7.107E-02	5.392E-03	0.002
$2p^2(^3P)3d\ ^4F_{9/2}$	$2s2p(^3P)3d\ ^4F^o_{7/2}$	202448	49.395	1.449E+08	5.301E-02	4.033E-02	0.004
$2p^2(^3P)3d\ ^4F_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	202317	49.427	2.235E+08	6.548E-02	5.972E-02	0.004
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	202283	49.435	2.555E+06	3.745E-04	1.283E-05	0.022
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{3/2}$	202166	49.464	2.182E+08	4.802E-02	5.805E-02	0.004
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	201920	49.524	4.584E+07	6.742E-03	2.301E-04	0.020
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	201805	49.552	3.717E+06	8.209E-04	1.953E-05	0.005
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s2p(^3P)3d\ ^4F^o_{3/2}$	201768	49.561	1.265E+09	1.863E-01	3.414E-01	0.003
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	201748	49.566	1.062E+09	2.347E-01	2.825E-01	0.003
$2p^2(^3P)3d\ ^4F_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{7/2}$	201700	49.578	1.198E+09	3.533E-01	3.203E-01	0.003
$2p^2(^3P)3d\ ^4F_{9/2}$	$2s2p(^3P)3d\ ^4F^o_{9/2}$	201593	49.604	1.528E+09	5.637E-01	4.253E-01	0.003
$2p^2(^3P)3d\ ^4P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	201553	49.614	1.077E+06	7.951E-05	1.438E-06	0.001
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	201540	49.617	2.923E+09	2.158E-01	1.350E-02	0.011
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	201387	49.655	9.648E+06	2.140E-03	1.051E-04	0.023
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s2p(^3P)3d\ ^4F^o_{5/2}$	201350	49.664	3.956E+08	5.852E-02	1.068E-01	0.004
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^4F^o_{7/2}$	201130	49.718	3.841E+08	8.540E-02	1.022E-01	0.005
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	201128	49.719	3.677E+06	8.177E-04	1.932E-05	0.030
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	201036	49.742	1.614E+09	1.197E-01	5.978E-03	0.002
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	200999	49.751	2.036E+07	4.532E-03	1.817E-03	0.017
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	200997	49.751	2.414E+07	7.166E-03	2.536E-03	0.012
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	200890	49.778	1.958E+06	2.910E-04	1.042E-05	0.001
$2p^2(^3P)3d\ ^4F_{7/2}$	$2s2p(^3P)3d\ ^4F^o_{9/2}$	200844	49.789	2.468E+08	7.336E-02	6.594E-02	0.006
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	200826	49.794	1.178E+07	1.752E-03	3.549E-04	0.023
$2p^3\ ^2P^o_{3/2}$	$2s2p^2\ ^2S_{1/2}$	200775	49.806	9.413E+08	1.400E-01	1.098E-01	0.004
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	200761	49.810	2.104E+07	4.695E-03	1.878E-03	0.032
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	200745	49.814	1.456E+07	1.084E-03	7.633E-04	0.035
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	200702	49.825	1.156E+07	1.721E-03	3.481E-04	0.038
$2p^3\ ^2P^o_{1/2}$	$2s2p^2\ ^2S_{1/2}$	200683	49.829	6.846E+08	5.097E-02	7.954E-02	0.012
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	200621	49.845	1.148E+07	8.555E-04	6.019E-04	0.035
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	200544	49.864	7.077E+07	2.110E-02	7.436E-03	0.022
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	200463	49.884	4.450E+06	6.641E-04	1.340E-04	0.039
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	200392	49.902	3.426E+09	2.558E-01	1.269E-02	0.000
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	200307	49.923	1.640E+07	3.677E-03	1.464E-03	0.021
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	200275	49.931	2.998E+08	4.483E-02	1.505E-03	0.011
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	200035	49.991	2.384E+09	3.573E-01	1.197E-02	0.011
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	199112	50.222	3.099E+06	9.374E-04	3.256E-04	0.006

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2P^o_{3/2}$	198943	50.265	2.360E+07	5.363E-03	4.894E-05	0.030
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	198888	50.279	1.320E+08	1.001E-02	4.890E-04	0.006
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	198876	50.282	4.491E+06	1.021E-03	4.008E-04	0.008
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	198818	50.297	2.110E+07	3.201E-03	6.354E-04	0.010
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2P^o_{3/2}$	198812	50.298	3.323E+06	5.042E-04	7.072E-06	0.039
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	198737	50.317	1.297E+08	9.849E-03	6.799E-03	0.011
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	198579	50.357	2.979E+08	4.531E-02	8.973E-03	0.010
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	198514	50.374	1.841E+08	1.401E-02	6.821E-04	0.004
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	198199	50.454	1.158E+07	3.535E-03	1.296E-04	0.016
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2P^o_{1/2}$	198046	50.493	2.623E+07	4.010E-03	5.581E-05	0.029
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	197220	50.704	1.608E+07	3.719E-03	1.276E-04	0.002
$2s^24s\ ^2S_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	196984	50.765	3.392E+06	2.621E-04	1.473E-05	0.370
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	196686	50.842	2.364E+06	5.496E-04	2.574E-05	0.007
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	196464	50.899	1.301E+07	2.022E-03	1.033E-04	0.001
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	196328	50.935	1.114E+07	8.666E-04	5.145E-05	0.005
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	196175	50.974	3.296E+06	7.703E-04	3.589E-05	0.015
$2s^24p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	196075	51.000	2.265E+06	1.766E-04	2.743E-06	0.007
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	196011	51.017	4.160E+06	3.247E-04	3.305E-05	0.001
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	195997	51.021	8.603E+06	6.715E-04	3.973E-05	0.009
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	195573	51.131	4.783E+07	7.499E-03	2.401E-04	0.007
$2s^24s\ ^2S_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	195543	51.139	9.309E+06	7.300E-04	4.041E-05	0.375
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	195475	51.157	1.467E+08	3.453E-02	7.706E-04	0.003
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	195324	51.196	2.366E+08	5.578E-02	1.314E-03	0.003
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	195186	51.233	4.466E+08	7.029E-02	2.478E-03	0.002
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^3P)3d\ ^2P^o_{3/2}$	195085	51.259	4.560E+08	3.593E-02	4.578E-04	0.006
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	195063	51.265	8.041E+06	1.267E-03	4.037E-05	0.007
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	194818	51.329	1.742E+08	1.376E-02	9.655E-04	0.003
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	194731	51.352	8.195E+06	1.296E-03	4.114E-05	0.013
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	194650	51.374	1.674E+08	5.300E-02	1.759E-02	0.009
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	194648	51.374	9.681E+08	2.298E-01	5.375E-03	0.003
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	194637	51.377	2.606E+08	4.126E-02	1.446E-03	0.001
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	194414	51.436	8.903E+07	2.119E-02	7.946E-03	0.005
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^3P)3d\ ^2P^o_{1/2}$	194319	51.461	2.200E+08	1.747E-02	2.209E-04	0.007
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	194269	51.474	1.182E+09	9.388E-02	6.550E-03	0.002
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	194116	51.515	6.436E+06	1.024E-03	1.938E-04	0.011
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	194092	51.521	2.126E+09	5.077E-01	1.117E-02	0.002
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	194012	51.543	2.105E+09	3.354E-01	1.120E-02	0.002
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	193960	51.556	5.980E+08	9.532E-02	3.318E-03	0.004
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	193903	51.571	1.010E+08	2.415E-02	9.010E-03	0.010
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	193606	51.651	1.121E+08	1.794E-02	3.377E-03	0.006
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	193525	51.672	3.942E+07	3.156E-03	2.066E-03	0.006
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	193274	51.739	5.243E+07	8.417E-03	1.579E-03	0.009
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	193193	51.761	1.470E+08	1.181E-02	7.707E-03	0.007

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s^24f\ ^2F^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	193181	51.764	1.534E+07	3.698E-03	8.121E-05	0.008
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	192628	51.913	2.225E+08	3.596E-02	1.184E-03	0.001
$2s^24f\ ^2F^o_{7/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	191877	52.116	1.959E+07	6.381E-03	1.044E-04	0.002
$2s^24f\ ^2F^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	191797	52.138	1.235E+07	3.020E-03	6.537E-05	0.000
$2p^2(^3P)3d\ ^4F_{9/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	191231	52.292	1.069E+07	4.384E-03	2.976E-03	0.025
$2p^2(^3P)3d\ ^4F_{7/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	190936	52.373	9.771E+06	3.214E-03	2.611E-03	0.013
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	190806	52.409	4.285E+07	3.529E-03	1.979E-04	0.005
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	190768	52.419	2.611E+07	2.151E-03	1.206E-04	0.010
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	190605	52.464	9.643E+06	2.388E-03	2.566E-03	0.007
$2p^2(^3P)3d\ ^4F_{7/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	190482	52.498	8.231E+06	2.721E-03	2.200E-03	0.013
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	190367	52.530	9.866E+06	2.449E-03	2.625E-03	0.010
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	190331	52.539	1.124E+07	1.861E-03	3.033E-03	0.004
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	190207	52.574	8.846E+06	1.466E-03	2.387E-03	0.007
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	189969	52.640	1.571E+06	2.611E-04	4.240E-04	0.004
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	189913	52.655	1.244E+06	3.103E-04	3.310E-04	0.000
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	189541	52.759	1.030E+07	1.720E-03	5.173E-05	0.002
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	189502	52.769	4.473E+07	7.470E-03	2.246E-04	0.006
$2p^2(^3P)3p\ ^4D^o_{7/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	189286	52.830	8.834E+08	2.957E-01	7.016E-03	0.003
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	188995	52.911	1.610E+06	4.055E-04	8.940E-06	0.016
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	188917	52.933	6.557E+08	1.653E-01	5.203E-03	0.003
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	188711	52.990	4.137E+08	6.966E-02	3.283E-03	0.003
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2S_{1/2}$	188575	53.029	7.340E+08	6.189E-02	3.037E-03	0.002
$2p^2(^3P)3d\ ^4F_{5/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	188482	53.055	1.040E+06	2.634E-04	2.767E-04	0.012
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2S_{1/2}$	188459	53.061	6.986E+08	1.179E-01	2.835E-03	0.002
$2p^2(^3P)3d\ ^4F_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	188323	53.100	1.876E+06	3.172E-04	5.062E-04	0.011
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	188307	53.104	5.444E+06	9.206E-04	3.021E-05	0.016
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	188257	53.118	7.963E+08	6.737E-02	6.325E-03	0.002
$2p^2(^3P)3p\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	188241	53.123	2.424E+08	6.152E-02	1.923E-03	0.001
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	188161	53.145	4.685E+08	7.936E-02	3.719E-03	0.001
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	188084	53.167	1.108E+06	1.878E-04	3.337E-05	0.002
$2p^2(^3P)3d\ ^4D_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	188045	53.178	6.127E+06	1.039E-03	1.845E-04	0.007
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	188003	53.190	2.502E+06	2.122E-04	1.311E-04	0.006
$2p^2(^3P)3d\ ^4D_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	187964	53.201	1.535E+06	1.302E-04	8.043E-05	0.008
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	187708	53.274	1.415E+08	1.204E-02	1.124E-03	0.001
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	187615	53.300	1.638E+06	1.395E-04	6.069E-06	0.001
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	187611	53.301	2.014E+07	5.147E-03	1.118E-04	0.017
$2p^2(^3P)3p\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	187485	53.337	3.764E+07	6.422E-03	2.988E-04	0.004
$2p^2(^3P)3p\ ^4D^o_{7/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	182249	54.869	2.103E+06	7.593E-04	1.670E-05	0.008
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	181475	55.103	1.815E+07	3.306E-03	1.908E-05	0.035
$2p^2(^3P)3p\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	181378	55.133	1.425E+06	1.299E-04	1.132E-05	0.041
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	181321	55.150	2.135E+08	3.894E-02	2.243E-04	0.014
$2p^3\ ^2P^o_{3/2}$	$2s2p^2\ ^2P_{1/2}$	181298	55.157	3.602E+08	6.571E-02	4.202E-02	0.004
$2p^3\ ^2P^o_{1/2}$	$2s2p^2\ ^2P_{1/2}$	181207	55.185	2.005E+09	1.831E-01	2.330E-01	0.006

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2p^2(^{3}P)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	180595	55.372	2.414E+07	8.878E-03	2.702E-04	0.007
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	180053	55.539	9.533E+06	1.763E-03	3.164E-05	0.005
2s2p(^{3}P)4s ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}D$_{3/2}$	180001	55.554	2.446E+08	2.263E-02	2.562E-04	0.018
2p^3 ^{2}P$^o_{3/2}$	2s2p^2 ^{2}P$_{3/2}$	179983	55.560	2.366E+09	4.380E-01	2.761E-01	0.007
2p^3 ^{2}P$^o_{1/2}$	2s2p^2 ^{2}P$_{3/2}$	179891	55.588	8.901E+08	8.247E-02	1.034E-01	0.008
2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	2s2p(^{3}P)3p ^{4}P$_{1/2}$	179862	55.598	1.003E+06	9.294E-05	3.715E-06	0.025
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	179861	55.598	4.167E+07	3.863E-03	1.384E-04	0.008
2s2p(^{3}P)4s ^{2}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}P$_{3/2}$	179604	55.677	1.733E+07	3.221E-03	1.821E-05	0.029
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	179408	55.738	4.985E+07	9.288E-03	1.655E-04	0.007
2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	179312	55.768	3.365E+06	3.138E-04	1.247E-05	0.030
2p^2(^{3}P)3d ^{2}F$_{7/2}$	2s2p(^{3}P)3d ^{2}F$^o_{7/2}$	179271	55.781	7.109E+08	2.653E-01	7.957E-03	0.004
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	179216	55.798	1.986E+07	1.854E-03	6.595E-05	0.009
2p^2(^{3}P)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	179082	55.840	7.317E+08	2.052E-01	7.968E-03	0.006
2s2p(^{3}P)4s ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}P$_{1/2}$	178529	56.013	2.047E+07	1.926E-03	2.145E-05	0.038
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	177904	56.209	1.035E+06	1.960E-04	3.434E-06	0.001
2p^2(^{3}P)3d ^{2}F$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{7/2}$	177757	56.256	3.610E+07	1.028E-02	3.932E-04	0.000
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	177712	56.270	4.571E+06	4.340E-04	1.518E-05	0.007
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	177530	56.328	3.458E+06	6.580E-04	1.148E-05	0.006
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	177338	56.389	1.791E+06	1.707E-04	5.946E-06	0.003
2p^2(^{3}P)3d ^{4}D$_{7/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	177046	56.482	1.261E+06	4.827E-04	1.326E-04	0.002
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	176880	56.535	2.626E+07	5.034E-03	4.078E-05	0.016
2p^2(^{3}P)3d ^{4}D$_{5/2}$	2s2p(^{3}P)3d ^{2}F$^o_{5/2}$	176810	56.557	2.063E+07	5.937E-03	1.841E-03	0.001
2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	176436	56.677	3.446E+07	9.956E-03	5.366E-05	0.017
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	176235	56.742	5.585E+06	1.078E-03	8.672E-06	0.006
2p^2(^{3}P)3d ^{4}D$_{7/2}$	2s2p(^{3}P)3d ^{2}F$^o_{7/2}$	175722	56.908	3.498E+07	1.359E-02	3.675E-03	0.000
2s2p(^{3}P)4s ^{2}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}S$_{1/2}$	175001	57.142	4.346E+08	8.510E-02	4.566E-04	0.023
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	174731	57.230	2.518E+06	4.945E-04	3.909E-06	0.019
2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	174558	57.287	2.265E+06	6.685E-04	3.527E-06	0.020
2s2p(^{3}P)4s ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}S$_{1/2}$	173528	57.627	4.205E+08	4.187E-02	4.406E-04	0.027
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	172008	58.136	1.732E+08	1.755E-02	7.997E-04	0.002
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	171242	58.396	2.818E+08	2.881E-02	1.301E-03	0.002
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	170742	58.567	3.223E+08	6.629E-02	1.618E-03	0.002
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	169977	58.831	6.179E+07	1.283E-02	3.102E-04	0.000
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	169285	59.071	3.985E+07	8.339E-03	1.200E-03	0.002
2p^2(^{3}P)3d ^{4}D$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	169204	59.099	9.256E+06	9.693E-04	4.851E-04	0.001
2s^{2}4p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	168853	59.222	2.265E+06	4.764E-04	2.760E-06	0.098
2s^{2}4p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	168666	59.288	2.191E+07	2.309E-03	2.653E-05	0.109
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	168520	59.340	8.674E+06	1.832E-03	2.612E-04	0.002
2p^2(^{3}P)3d ^{4}D$_{1/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	168439	59.368	1.540E+07	1.628E-03	8.073E-04	0.002
2s^{2}4p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	167469	59.712	1.809E+07	3.868E-03	2.205E-05	0.079
2s2p(^{3}P)3p ^{2}S$_{1/2}$	2s^{2}3p ^{2}P$^o_{1/2}$	164507	60.787	7.306E+07	8.094E-03	2.083E-04	0.005
2s2p(^{3}P)3p ^{2}S$_{1/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	163961	60.989	1.662E+08	1.854E-02	4.738E-04	0.006
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}S$_{1/2}$	163089	61.316	1.487E+06	3.353E-04	2.839E-06	0.060

Table 3. *Cont.*

Upper	**Lower**	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	155347	64.371	3.238E+08	4.023E-02	1.884E-03	0.018
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	153907	64.974	6.144E+08	7.777E-02	3.574E-03	0.019
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s^{2}3s ^{2}S$_{1/2}$	153356	65.207	1.673E+08	4.267E-02	3.654E-04	0.016
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	151999	65.789	5.599E+06	1.453E-03	1.858E-05	0.056
2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	2s^{2}3s ^{2}S$_{1/2}$	151915	65.825	1.532E+08	1.991E-02	3.404E-04	0.020
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	151807	65.873	5.129E+07	6.673E-03	1.703E-04	0.055
2s^{2}4p ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	151280	66.102	8.208E+07	2.151E-02	1.000E-04	0.053
2s^{2}4p ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	151093	66.184	8.308E+07	1.091E-02	1.006E-04	0.050
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	150745	66.337	1.099E+07	2.900E-03	6.372E-05	0.016
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}D$_{5/2}$	150715	66.349	1.164E+06	3.073E-04	1.059E-05	0.034
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	150615	66.394	4.633E+07	1.225E-02	1.537E-04	0.040
2s2p(^{1}P)3p ^{2}P$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	150346	66.513	5.634E+06	7.473E-04	3.267E-05	0.039
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}D$_{3/2}$	149991	66.670	5.147E+06	6.860E-04	4.753E-05	0.004
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}P$_{1/2}$	149397	66.935	2.540E+07	6.825E-03	2.310E-04	0.030
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	149304	66.977	7.668E+06	2.063E-03	4.447E-05	0.022
2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	149027	67.101	5.555E+06	2.250E-03	8.651E-06	0.007
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}P$_{3/2}$	148999	67.114	1.360E+08	3.674E-02	1.237E-03	0.013
2s2p(^{1}P)3p ^{2}P$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	148905	67.156	1.110E+07	1.501E-03	6.438E-05	0.000
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	148873	67.170	2.781E+08	7.526E-02	5.073E-03	0.005
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	148826	67.192	9.289E+07	2.515E-02	1.442E-04	0.007
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}P$_{1/2}$	148518	67.331	7.765E+07	1.056E-02	7.170E-04	0.011
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}P$_{3/2}$	148119	67.512	4.618E+07	6.311E-03	4.264E-04	0.005
2p^3 ^{2}D$^o_{3/2}$	2s2p^2 ^{2}S$_{1/2}$	147938	67.595	5.280E+06	1.447E-03	1.509E-03	0.042
2s2p(^{3}P)3p ^{2}D$_{5/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	147772	67.671	3.092E+08	1.274E-01	9.009E-04	0.007
2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	147643	67.730	9.296E+07	3.836E-02	1.448E-04	0.005
2s2p(^{1}P)3p ^{2}D$_{5/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	147588	67.756	3.358E+08	1.387E-01	6.100E-03	0.005
2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	147442	67.823	1.021E+07	2.817E-03	1.586E-05	0.000
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	147433	67.827	6.006E+07	1.657E-02	1.096E-03	0.003
2s2p(^{3}P)3p ^{2}D$_{3/2}$	2s^{2}3p ^{2}P$^o_{1/2}$	146934	68.057	2.594E+08	7.205E-02	7.541E-04	0.008
2s2p(^{3}P)3p ^{2}D$_{3/2}$	2s^{2}3p ^{2}P$^o_{3/2}$	146388	68.311	5.853E+07	1.638E-02	1.702E-04	0.006
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	145726	68.621	3.671E+08	5.184E-02	1.445E-03	0.042
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	145533	68.712	7.072E+08	1.001E-01	2.784E-03	0.044
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	144510	69.199	2.355E+06	1.014E-03	4.128E-06	0.021
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	144491	69.208	1.424E+07	4.090E-03	2.506E-05	0.030
2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	2s2p(^{1}P)3p ^{2}S$_{1/2}$	144396	69.253	4.984E+08	1.433E-01	4.532E-03	0.012
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	144271	69.313	1.482E+07	6.406E-03	2.598E-05	0.029
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	144252	69.323	1.294E+06	3.728E-04	2.277E-06	0.029
2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	2s2p(^{1}P)3p ^{2}S$_{1/2}$	143517	69.678	5.251E+08	7.644E-02	4.849E-03	0.009
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{1}P)3p ^{2}D$_{3/2}$	140990	70.926	4.168E+08	1.257E-01	1.591E-03	0.001
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{1}P)3p ^{2}D$_{5/2}$	140836	71.004	5.441E+07	1.645E-02	2.077E-04	0.008
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s2p(^{1}P)3p ^{2}D$_{3/2}$	140834	71.005	6.362E+07	2.885E-02	2.417E-04	0.006
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	140831	71.006	3.099E+07	9.371E-03	6.226E-05	0.018
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s2p(^{1}P)3p ^{2}D$_{5/2}$	140679	71.083	4.544E+08	2.065E-01	1.727E-03	0.002

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	140630	71.108	3.376E+08	1.024E-01	6.783E-04	0.019
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	140311	71.270	3.706E+08	5.644E-02	7.514E-04	0.018
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{1}P)3d ^{2}F$^o_{7/2}$	140057	71.399	3.387E+07	1.553E-02	6.170E-05	0.023
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	140052	71.401	1.691E+06	7.754E-04	3.080E-06	0.016
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	139540	71.663	2.753E+07	8.477E-03	5.027E-05	0.026
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{1}P)3p ^{2}P$_{1/2}$	139518	71.675	1.899E+08	5.850E-02	7.247E-04	0.018
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{1}P)3p ^{2}P$_{3/2}$	139119	71.880	4.419E+07	1.369E-02	1.687E-04	0.002
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s2p(^{1}P)3p ^{2}P$_{3/2}$	138963	71.961	1.826E+08	8.504E-02	6.937E-04	0.018
2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	137950	72.489	1.187E+06	5.610E-04	1.647E-06	0.061
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	137850	72.542	1.114E+08	3.517E-02	2.239E-04	0.011
2p^2(^{1}D)3d ^{2}P$_{3/2}$	2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	137658	72.643	5.732E+08	1.814E-01	1.151E-03	0.012
2s^{2}4d ^{2}D$_{5/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	137429	72.764	3.796E+06	1.808E-03	7.733E-06	0.256
2s^{2}4d ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	137417	72.770	3.655E+06	1.161E-03	7.449E-06	0.227
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	137330	72.817	4.433E+08	7.048E-02	8.990E-04	0.011
2p^2(^{1}D)3d ^{2}P$_{1/2}$	2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	137138	72.919	2.309E+08	3.681E-02	4.682E-04	0.016
2s2p(^{1}P)3d ^{2}F$^o_{7/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	136561	73.227	1.879E+06	1.208E-03	2.608E-06	0.052
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{1}P)3d ^{2}F$^o_{7/2}$	136428	73.298	2.160E+07	1.044E-02	2.563E-05	0.007
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	136423	73.301	5.005E+08	2.419E-01	5.938E-04	0.001
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{1}P)3d ^{2}F$^o_{7/2}$	136174	73.435	4.981E+08	3.221E-01	5.867E-04	0.002
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2s2p(^{1}P)3d ^{2}F$^o_{5/2}$	136169	73.437	2.343E+07	1.515E-02	2.760E-05	0.015
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s2p(^{1}P)3p ^{2}S$_{1/2}$	134517	74.340	1.167E+06	3.867E-04	4.454E-06	0.052
2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	134426	74.390	4.161E+07	1.381E-02	1.381E-04	0.039
2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	134234	74.496	4.052E+07	6.743E-03	1.346E-04	0.043
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	133757	74.762	1.071E+09	3.591E-01	1.886E-03	0.009
2p^2(^{1}D)3s ^{2}D$_{5/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	133738	74.772	1.322E+09	6.646E-01	2.316E-03	0.008
2p^2(^{1}D)3s ^{2}D$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	133719	74.783	2.482E+08	8.324E-02	4.369E-04	0.008
2s2p(^{3}P)4s ^{2}P$^o_{1/2}$	2s^{2}4s ^{2}S$_{1/2}$	131891	75.819	1.209E+06	2.084E-04	1.267E-06	0.665
2s2p(^{3}P)4s ^{4}P$^o_{5/2}$	2p^2(^3P)3s ^{4}P$_{3/2}$	131143	76.252	5.703E+06	2.983E-03	1.087E-05	0.093
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2p^2(^{3}P)3s ^{4}P$_{1/2}$	130543	76.602	7.840E+06	2.759E-03	1.496E-05	0.094
2s2p(^{3}P)4s ^{4}P$^o_{5/2}$	2p^2(^{3}P)3s ^{4}P$_{5/2}$	129966	76.942	1.341E+07	7.141E-03	2.556E-05	0.097
2s2p(^{3}P)4s ^{4}P$^o_{1/2}$	2p^2(^{3}P)3s ^{4}P$_{1/2}$	129815	77.032	3.168E+06	5.637E-04	6.069E-06	0.097
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2p^2(^3P)3s ^{4}P$_{3/2}$	129793	77.045	2.517E+06	8.960E-04	4.804E-06	0.096
2p^2(^{3}P)3s ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	129241	77.374	2.026E+06	7.273E-04	2.988E-06	0.017
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	129176	77.413	3.674E+07	1.981E-02	6.692E-05	0.007
2s2p(^{3}P)4s ^{4}P$^o_{1/2}$	2p^2(^3P)3s ^{4}P$_{3/2}$	129066	77.479	1.603E+07	2.886E-03	3.071E-05	0.099
2p^2(^{3}P)3s ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	129002	77.517	3.202E+07	1.154E-02	4.722E-05	0.014
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	128975	77.533	7.752E+08	4.192E-01	1.412E-03	0.004
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s^{2}4p ^{2}P$^o_{1/2}$	128867	77.599	1.014E+08	1.831E-02	3.992E-04	0.059
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2s^{2}4p ^{2}P$^o_{3/2}$	128679	77.712	1.932E+08	3.499E-02	7.607E-04	0.061
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3d ^{2}D$^o_{3/2}$	128664	77.721	7.639E+08	2.767E-01	1.395E-03	0.004
2s2p(^{3}P)4s ^{4}P$^o_{3/2}$	2p^2(^{3}P)3s ^{4}P$_{5/2}$	128616	77.750	8.763E+06	3.177E-03	1.672E-05	0.100
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2s2p(^{1}P)3d ^{2}D$^o_{5/2}$	128463	77.842	8.134E+07	2.956E-02	1.486E-04	0.007
2p^3 ^{2}D$^o_{3/2}$	2s2p^2 ^{2}P$_{1/2}$	128461	77.844	5.543E+08	2.014E-01	1.585E-01	0.004

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	127880	78.197	3.773E+07	6.918E-03	5.579E-05	0.012
$2s2p(^3P)3d\ ^2D^o_{5/2}$	$2s^23d\ ^2D_{5/2}$	127167	78.636	3.700E+06	2.058E-03	1.246E-05	0.001
$2p^3\ ^2D^o_{3/2}$	$2s2p^2\ ^2P_{3/2}$	127146	78.649	9.337E+07	3.463E-02	2.669E-02	0.012
$2p^3\ ^2D^o_{5/2}$	$2s2p^2\ ^2P_{3/2}$	127060	78.702	6.224E+08	3.468E-01	1.774E-01	0.004
$2s2p(^3P)3d\ ^2D^o_{3/2}$	$2s^23d\ ^2D_{3/2}$	127059	78.703	3.455E+06	1.283E-03	1.186E-05	0.002
$2p^2(^1D)3p\ ^2F^o_{7/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	126247	79.209	7.875E+08	5.926E-01	8.188E-03	0.004
$2p^2(^1D)3d\ ^2G_{9/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	126050	79.333	7.849E+07	7.406E-02	1.892E-01	0.107
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	126023	79.349	7.203E+08	4.080E-01	7.550E-03	0.005
$2p^2(^1D)3d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	126003	79.362	1.274E+08	7.219E-02	2.321E-04	0.030
$2p^2(^1D)3d\ ^2G_{7/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	125947	79.398	8.408E+06	6.357E-03	5.323E-03	0.055
$2p^2(^1D)3d\ ^2G_{7/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	125942	79.401	6.999E+07	5.292E-02	4.431E-02	0.104
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	125869	79.447	6.191E+07	3.515E-02	6.489E-04	0.002
$2s^24d\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2F^o_{5/2}$	125846	79.462	1.272E+06	4.817E-04	2.593E-06	0.179
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2P^o_{1/2}$	125683	79.564	1.097E+08	4.163E-02	2.003E-04	0.034
$2p^2(^1D)3d\ ^2F_{5/2}$	$2s2p(^1P)3d\ ^2D^o_{3/2}$	125547	79.651	1.299E+08	7.410E-02	1.541E-04	0.010
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	125491	79.686	1.800E+07	6.855E-03	3.288E-05	0.041
$2p^2(^1D)3d\ ^2F_{7/2}$	$2s2p(^1P)3d\ ^2D^o_{5/2}$	125092	79.940	1.155E+08	8.853E-02	1.361E-04	0.008
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	124152	80.545	1.295E+07	7.555E-03	1.357E-04	0.002
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	123335	81.079	1.872E+06	1.107E-03	3.883E-06	0.041
$2p^2(^1D)3d\ ^2F_{5/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	122374	81.716	2.088E+06	1.254E-03	2.478E-06	0.014
$2p^2(^1D)3s\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2F^o_{5/2}$	122205	81.829	2.338E+06	1.408E-03	4.099E-06	0.023
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2F^o_{5/2}$	122185	81.842	4.290E+07	1.723E-02	7.551E-05	0.017
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s^23p\ ^2P^o_{1/2}$	121402	82.370	1.225E+06	4.984E-04	5.445E-05	0.021
$2s2p(^3P)3p\ ^4D_{1/2}$	$2s^23p\ ^2P^o_{1/2}$	121029	82.624	5.598E+06	1.146E-03	1.729E-04	0.009
$2p^2(^1D)3d\ ^2P_{3/2}$	$2s^24p\ ^2P^o_{1/2}$	120991	82.650	3.882E+07	1.590E-02	7.799E-05	0.006
$2p^2(^1D)3s\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2F^o_{7/2}$	120880	82.726	4.131E+07	2.543E-02	7.241E-05	0.019
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s^23p\ ^2P^o_{3/2}$	120857	82.742	4.536E+06	1.862E-03	2.016E-04	0.004
$2p^2(^1D)3d\ ^2P_{3/2}$	$2s^24p\ ^2P^o_{3/2}$	120804	82.778	1.857E+08	7.630E-02	3.730E-04	0.010
$2s2p(^3P)3p\ ^4D_{1/2}$	$2s^23p\ ^2P^o_{3/2}$	120483	82.999	2.382E+06	4.920E-04	7.357E-05	0.016
$2p^2(^1D)3d\ ^2P_{1/2}$	$2s^24p\ ^2P^o_{1/2}$	120471	83.007	1.396E+08	2.884E-02	2.831E-04	0.009
$2p^2(^1D)3d\ ^2P_{1/2}$	$2s^24p\ ^2P^o_{3/2}$	120284	83.136	7.592E+07	1.573E-02	1.540E-04	0.007
$2s2p(^3P)3p\ ^2P_{3/2}$	$2s^23p\ ^2P^o_{1/2}$	119525	83.664	1.785E+07	7.491E-03	5.784E-05	0.006
$2s2p(^3P)3p\ ^2P_{3/2}$	$2s^23p\ ^2P^o_{3/2}$	118979	84.048	7.050E+07	2.987E-02	2.285E-04	0.001
$2s2p(^3P)3p\ ^2P_{1/2}$	$2s^23p\ ^2P^o_{1/2}$	118880	84.117	5.830E+07	1.237E-02	1.935E-04	0.000
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	118507	84.382	6.636E+07	2.834E-02	9.788E-05	0.012
$2p^2(^3P)3s\ ^2P_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	118469	84.409	1.898E+08	8.111E-02	2.800E-04	0.010
$2s2p(^3P)3p\ ^2P_{1/2}$	$2s^23p\ ^2P^o_{3/2}$	118334	84.505	2.533E+07	5.424E-03	8.408E-05	0.005
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2p^2(^3P)3s\ ^2P_{1/2}$	118025	84.727	2.917E+06	1.256E-03	3.064E-06	0.493
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	117146	85.362	1.673E+08	3.655E-02	2.474E-04	0.013
$2p^2(^3P)3s\ ^2P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	117108	85.390	7.402E+07	1.618E-02	1.094E-04	0.011
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^2S^o_{1/2}$	116674	85.708	1.090E+08	4.802E-02	2.190E-04	0.037
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	116664	85.715	1.820E+07	8.020E-03	1.913E-05	0.428
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2p^2(^3P)3s\ ^2P_{1/2}$	116552	85.798	1.506E+07	3.323E-03	1.577E-05	0.422

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^3P)3p\ ^2S^o_{1/2}$	116154	86.092	1.271E+08	2.824E-02	2.576E-04	0.031
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	115191	86.812	9.374E+06	2.118E-03	9.822E-06	0.392
$2p^2(^1D)3s\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2P^o_{3/2}$	114978	86.972	3.060E+07	2.082E-02	5.364E-05	0.011
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2P^o_{3/2}$	114959	86.987	4.430E+06	2.010E-03	7.797E-06	0.017
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2P^o_{1/2}$	114193	87.570	2.174E+07	9.996E-03	3.826E-05	0.012
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2D^o_{3/2}$	112460	88.920	1.042E+06	7.408E-04	2.160E-06	0.041
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2D^o_{3/2}$	112328	89.024	2.322E+07	1.104E-02	4.941E-05	0.003
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2D^o_{5/2}$	112259	89.079	3.662E+07	2.614E-02	7.594E-05	0.002
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2D^o_{5/2}$	112127	89.184	2.008E+06	9.580E-04	4.274E-06	0.031
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2P^o_{1/2}$	109347	91.451	3.253E+06	1.631E-03	6.921E-06	0.038
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	109286	91.502	4.997E+06	3.764E-03	1.036E-05	0.050
$2p^2(^1D)3d\ ^2D_{5/2}$	$2s^24p\ ^2P^o_{3/2}$	109149	91.617	2.040E+07	1.540E-02	3.716E-05	0.097
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s^24p\ ^2P^o_{1/2}$	108824	91.890	1.880E+07	9.520E-03	3.434E-05	0.110
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	108791	91.919	3.079E+06	1.560E-03	1.249E-05	0.001
$2p^2(^1D)3d\ ^2D_{3/2}$	$2s^24p\ ^2P^o_{3/2}$	108637	92.049	3.161E+06	1.606E-03	5.774E-06	0.113
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	107434	93.079	2.855E+08	7.417E-02	1.182E-03	0.002
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	107318	93.180	7.992E+07	4.161E-02	3.243E-04	0.001
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	107036	93.426	1.594E+08	4.173E-02	6.597E-04	0.003
$2p^2(^3P)3s\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	107022	93.438	2.641E+06	2.074E-03	7.477E-06	0.031
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	106920	93.527	3.700E+08	1.941E-01	1.502E-03	0.001
$2p^2(^3P)3s\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4D^o_{7/2}$	106569	93.835	1.636E+07	1.296E-02	4.631E-05	0.031
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	106084	94.264	5.905E+06	3.147E-03	1.686E-05	0.026
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4D^o_{5/2}$	105845	94.477	1.370E+07	7.335E-03	3.911E-05	0.027
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^1P)3d\ ^2P^o_{1/2}$	105620	94.678	1.096E+07	2.945E-03	1.100E-05	0.007
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{1/2}$	105458	94.824	1.024E+07	2.760E-03	2.937E-05	0.026
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	105428	94.851	2.333E+07	6.294E-03	2.342E-05	0.007
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4D^o_{3/2}$	105334	94.935	1.110E+07	3.000E-03	3.185E-05	0.027
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s^24s\ ^2S_{1/2}$	102760	97.313	3.673E+07	2.086E-02	3.340E-04	0.084
$2p^2(^3P)3p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2S_{1/2}$	102433	97.624	3.625E+07	1.036E-02	1.500E-04	0.022
$2p^2(^3P)3p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2S_{1/2}$	102317	97.735	2.652E+07	1.519E-02	1.076E-04	0.017
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s^24s\ ^2S_{1/2}$	101880	98.153	3.473E+07	1.003E-02	3.207E-04	0.080
$2s^24s\ ^2S_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	101807	98.224	2.937E+07	8.498E-03	1.275E-04	0.057
$2s^24s\ ^2S_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	101769	98.261	5.839E+07	1.690E-02	2.534E-04	0.057
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2p^2(^1D)3s\ ^2D_{3/2}$	101415	98.604	4.089E+06	2.384E-03	4.296E-06	0.337
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2p^2(^1D)3s\ ^2D_{5/2}$	101396	98.623	2.110E+07	1.231E-02	2.217E-05	0.332
$2p^2(^3P)3s\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	100675	99.328	4.119E+06	3.656E-03	1.166E-05	0.027
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^4P^o_{5/2}$	100662	99.341	3.344E+06	1.979E-03	6.718E-06	0.048
$2p^2(^3P)3s\ ^4P_{5/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	100165	99.835	1.576E+06	1.413E-03	4.462E-06	0.024
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2p^2(^1D)3s\ ^2D_{3/2}$	99941	100.058	2.503E+07	7.514E-03	2.623E-05	0.318
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{5/2}$	99498	100.503	1.120E+06	6.781E-04	3.195E-06	0.020
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	98988	101.022	1.026E+06	6.277E-04	2.927E-06	0.024
$2p^2(^3P)3s\ ^4P_{3/2}$	$2s2p(^3P)3d\ ^4P^o_{1/2}$	98656	101.361	2.075E+06	1.279E-03	5.923E-06	0.021
$2p^2(^3P)3s\ ^4P_{1/2}$	$2s2p(^3P)3d\ ^4P^o_{3/2}$	98238	101.793	2.805E+06	8.716E-04	8.049E-06	0.026

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	98234	101.797	1.743E+07	1.624E-02	9.155E-05	0.009
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	98080	101.957	1.576E+07	1.474E-02	8.281E-05	0.020
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	97766	102.284	4.605E+07	5.778E-02	5.154E-04	0.010
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	97761	102.290	1.827E+06	2.293E-03	2.045E-05	0.030
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s^24d\ ^2D_{3/2}$	97754	102.296	1.572E+06	9.863E-04	1.651E-06	0.346
$2s2p(^3P)4s\ ^2P^o_{3/2}$	$2s^24d\ ^2D_{5/2}$	97705	102.348	1.507E+07	9.466E-03	1.583E-05	0.360
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	96770	103.336	1.044E+07	6.687E-03	5.556E-05	0.024
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	96616	103.502	1.401E+06	8.998E-04	7.452E-06	0.012
$2p^2(^3P)3p\ ^2D^o_{5/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	96363	103.773	3.405E+08	3.299E-01	1.789E-03	0.002
$2s2p(^3P)4s\ ^2P^o_{1/2}$	$2s^24d\ ^2D_{3/2}$	96281	103.862	1.630E+07	5.271E-03	1.708E-05	0.340
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	96252	103.892	1.923E+06	1.867E-03	2.094E-05	0.018
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	96247	103.898	4.430E+07	4.301E-02	4.824E-04	0.009
$2s^24f\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	95940	104.231	9.240E+07	9.030E-02	4.890E-04	0.001
$2s^24f\ ^2F^o_{7/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	95865	104.312	1.046E+08	1.365E-01	5.576E-04	0.003
$2s^24f\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	95785	104.399	7.900E+06	7.745E-03	4.181E-05	0.000
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	95645	104.552	2.076E+07	1.361E-02	4.171E-05	0.020
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	95298	104.933	2.912E+08	1.923E-01	1.550E-03	0.000
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	95125	105.124	2.108E+08	6.985E-02	4.275E-04	0.022
$2p^2(^3P)3p\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	94899	105.374	6.571E+07	4.376E-02	3.496E-04	0.000
$2p^2(^3P)3d\ ^4D_{7/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	94216	106.137	3.014E+06	4.073E-03	3.167E-04	0.009
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	94181	106.177	1.851E+08	1.251E-01	3.717E-04	0.023
$2s^24f\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	94069	106.304	3.563E+06	3.622E-03	1.886E-05	0.002
$2p^2(^3P)3d\ ^4D_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	93975	106.410	1.500E+06	1.528E-03	1.339E-04	0.013
$2p^2(^3P)3d\ ^2D_{3/2}$	$2s^24p\ ^2P^o_{1/2}$	92488	108.121	3.708E+06	2.599E-03	7.889E-06	0.080
$2p^2(^3P)3d\ ^2D_{5/2}$	$2s^24p\ ^2P^o_{3/2}$	92432	108.186	4.025E+06	4.238E-03	8.347E-06	0.049
$2p^2(^1D)3d\ ^2S_{1/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	91500	109.288	1.749E+08	6.262E-02	6.884E-04	0.000
$2p^2(^1D)3d\ ^2S_{1/2}$	$2p^2(^3P)3p\ ^2P^o_{1/2}$	91384	109.427	7.826E+07	2.810E-02	3.081E-04	0.009
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	91162	109.694	2.592E+08	9.352E-02	7.430E-04	0.005
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	90517	110.475	1.330E+08	4.866E-02	3.811E-04	0.003
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	90396	110.623	6.445E+07	4.730E-02	1.879E-04	0.007
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	89883	111.255	5.861E+06	6.526E-03	3.254E-05	0.002
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	89751	111.418	3.450E+08	2.568E-01	1.006E-03	0.005
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	89593	111.614	1.415E+06	1.057E-03	7.853E-06	0.003
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	89013	112.342	2.757E+07	1.043E-02	7.903E-05	0.005
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^4P^o_{5/2}$	89007	112.349	2.083E+06	2.365E-03	3.795E-06	0.063
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s^24p\ ^2P^o_{1/2}$	88761	112.661	3.551E+06	1.352E-03	3.565E-06	0.091
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	88639	112.816	9.274E+06	3.539E-03	2.658E-05	0.003
$2p^2(^1S)3s\ ^2S_{1/2}$	$2s^24p\ ^2P^o_{3/2}$	88574	112.899	7.492E+06	2.863E-03	7.520E-06	0.106
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	88248	113.316	6.864E+06	5.285E-03	2.001E-05	0.007
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	87874	113.799	2.482E+07	1.927E-02	7.236E-05	0.005
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2p^2(^3P)3s\ ^2P_{1/2}$	87420	114.389	6.020E+07	4.724E-02	5.474E-04	0.005
$2p^2(^3P)3d\ ^2F_{7/2}$	$2s2p(^1P)3d\ ^2D^o_{5/2}$	86684	115.361	1.628E+07	2.598E-02	1.822E-04	0.015
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2p^2(^3P)3s\ ^2P_{1/2}$	86541	115.551	3.197E+08	1.280E-01	2.953E-03	0.008

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	86059	116.198	4.030E+08	3.263E-01	3.665E-03	0.004
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^1P)3d\ ^2D^o_{3/2}$	85372	117.134	1.379E+07	1.702E-02	1.501E-04	0.004
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	85180	117.398	1.992E+08	8.233E-02	1.840E-03	0.007
$2p^2(^3P)3d\ ^2F_{5/2}$	$2s2p(^1P)3d\ ^2D^o_{5/2}$	85170	117.410	1.296E+06	1.607E-03	1.412E-05	0.038
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	83990	119.060	9.756E+06	1.244E-02	1.777E-05	0.005
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	83625	119.580	1.059E+08	9.084E-02	2.128E-04	0.012
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^2P^o_{1/2}$	83509	119.747	2.714E+07	2.334E-02	5.453E-05	0.016
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	83478	119.790	1.475E+08	1.270E-01	2.695E-04	0.010
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	83105	120.329	4.042E+07	1.755E-02	8.196E-05	0.002
$2s^24s\ ^2S_{1/2}$	$2s2p(^3P)3d\ ^2P^o_{3/2}$	83009	120.468	4.680E+06	2.037E-03	2.032E-05	0.053
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^3P)3p\ ^2P^o_{1/2}$	82988	120.498	8.003E+07	3.484E-02	1.623E-04	0.013
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^1P)3d\ ^2P^o_{1/2}$	82543	121.147	4.875E+06	2.145E-03	2.251E-05	0.028
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	82527	121.172	1.635E+08	2.160E-01	2.979E-04	0.011
$2p^2(^3P)3d\ ^2P_{1/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	82351	121.430	1.901E+06	8.405E-04	8.780E-06	0.008
$2s^24s\ ^2S_{1/2}$	$2s2p(^3P)3d\ ^2P^o_{1/2}$	82243	121.590	2.365E+06	1.048E-03	1.026E-05	0.066
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	82015	121.928	1.929E+07	1.720E-02	3.523E-05	0.010
$2p^2(^1D)3d\ ^2F_{5/2}$	$2s^24f\ ^2F^o_{5/2}$	81192	123.164	9.949E+06	1.358E-02	1.180E-05	0.007
$2p^2(^3P)3d\ ^2P_{3/2}$	$2s2p(^1P)3d\ ^2P^o_{3/2}$	81085	123.325	5.475E+06	4.994E-03	2.749E-05	0.042
$2p^2(^1D)3d\ ^2F_{7/2}$	$2s^24f\ ^2F^o_{7/2}$	80858	123.672	9.904E+06	1.817E-02	1.167E-05	0.016
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	80361	124.437	4.978E+06	6.934E-03	5.906E-06	0.145
$2p^2(^1D)3d\ ^2F_{7/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	78644	127.155	4.285E+06	8.308E-03	5.047E-06	0.207
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2p^2(^3P)3s\ ^2P_{1/2}$	77540	128.964	2.943E+08	2.935E-01	1.123E-03	0.010
$2s2p(^3P)3p\ ^2D_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	77010	129.852	1.393E+06	2.113E-03	4.059E-06	0.011
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	76975	129.912	1.034E+06	1.047E-03	3.015E-06	0.012
$2p^2(^1D)3p\ ^2D^o_{3/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	76179	131.268	2.635E+07	2.723E-02	1.006E-04	0.007
$2p^2(^1D)3p\ ^2D^o_{5/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	76023	131.538	3.333E+08	5.187E-01	1.266E-03	0.010
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	74269	134.645	2.884E+07	1.567E-02	1.068E-04	0.010
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	73870	135.371	4.131E+07	2.270E-02	1.530E-04	0.015
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^4P^o_{5/2}$	72290	138.329	1.120E+06	1.928E-03	2.323E-06	0.136
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2p^2(^3P)3s\ ^4P_{1/2}$	71972	138.941	1.091E+08	1.263E-01	5.252E-04	0.018
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	71970	138.945	7.817E+06	1.357E-02	1.424E-05	0.086
$2s2p(^1P)3s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	71598	139.668	1.834E+06	1.073E-03	1.925E-06	0.008
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	71458	139.941	2.516E+06	2.954E-03	4.595E-06	0.036
$2s^24p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	71457	139.943	6.853E+06	8.048E-03	8.352E-06	0.025
$2s^24p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	71424	140.007	9.974E+06	5.862E-03	1.208E-05	0.069
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2P^o_{1/2}$	71342	140.169	9.937E+06	1.171E-02	1.815E-05	0.052
$2s2p(^3P)3p\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	71330	140.192	2.158E+08	2.543E-01	8.769E-02	0.002
$2s2p(^3P)3p\ ^4P_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	71285	140.280	1.663E+08	2.943E-01	5.027E-02	0.002
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2p^2(^3P)3s\ ^4P_{3/2}$	71222	140.404	2.232E+08	2.639E-01	1.075E-03	0.016
$2s2p(^1P)3s\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	70991	140.861	3.639E+06	4.330E-03	3.758E-06	0.016
$2s2p(^1P)3s\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	70953	140.937	1.032E+06	6.144E-04	1.083E-06	0.017
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2p^2(^1D)3s\ ^2D_{3/2}$	70810	141.222	9.817E+07	1.174E-01	8.927E-04	0.007
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2p^2(^1D)3s\ ^2D_{5/2}$	70790	141.260	4.885E+08	5.846E-01	4.442E-03	0.006

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s2p(^3P)3p\ ^4P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	70781	141.280	9.271E+07	5.548E-02	3.816E-02	0.002
$2p^2(^1D)3d\ ^2G_{9/2}$	$2s^24f\ ^2F^o_{7/2}$	70733	141.374	3.306E+06	9.907E-03	7.969E-03	0.569
$2p^2(^1D)3d\ ^2G_{7/2}$	$2s^24f\ ^2F^o_{5/2}$	70711	141.420	3.475E+06	8.335E-03	2.200E-03	0.555
$2s2p(^3P)3p\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	70609	141.624	6.540E+07	7.866E-02	2.658E-02	0.002
$2s^24p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	70139	142.572	7.554E+06	9.208E-03	9.206E-06	0.043
$2s2p(^3P)3p\ ^4P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	70059	142.735	4.765E+08	2.911E-01	1.961E-01	0.002
$2p^2(^3P)3p\ ^4S^o_{3/2}$	$2p^2(^3P)3s\ ^4P_{5/2}$	70045	142.763	3.493E+08	4.269E-01	1.681E-03	0.012
$2s2p(^3P)3p\ ^4P_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	69973	142.910	4.061E+08	7.461E-01	1.228E-01	0.001
$2s^24p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	69952	142.954	2.537E+07	1.555E-02	3.072E-05	0.014
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2p^2(^1D)3s\ ^2D_{3/2}$	69930	142.998	5.321E+08	3.263E-01	4.914E-03	0.008
$2s^24p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	69741	143.387	3.493E+07	4.307E-02	4.257E-05	0.009
$2s^24p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	69553	143.773	1.223E+07	7.582E-03	1.481E-05	0.003
$2s2p(^3P)3p\ ^4P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	69297	144.305	2.878E+08	3.594E-01	1.170E-01	0.002
$2s2p(^3P)3p\ ^2S_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	69205	144.497	1.728E+08	1.082E-01	4.925E-04	0.001
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	68341	146.324	1.387E+06	2.672E-03	1.646E-06	0.011
$2s2p(^3P)3p\ ^2S_{1/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	67764	147.568	3.464E+08	2.262E-01	9.877E-04	0.000
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	67274	148.645	5.151E+06	1.024E-02	1.068E-05	0.048
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s^24d\ ^2D_{3/2}$	67149	148.920	1.752E+06	2.331E-03	1.594E-05	0.129
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	67142	148.936	7.452E+07	9.913E-02	1.586E-04	0.030
$2p^2(^1D)3p\ ^2P^o_{3/2}$	$2s^24d\ ^2D_{5/2}$	67100	149.030	1.100E+07	1.466E-02	1.001E-04	0.121
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	66407	150.585	2.119E+06	1.441E-03	4.784E-06	0.001
$2p^2(^1D)3p\ ^2P^o_{1/2}$	$2s^24d\ ^2D_{3/2}$	66270	150.896	1.229E+07	8.390E-03	1.135E-04	0.115
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	65810	151.951	6.211E+07	1.290E-01	1.288E-04	0.032
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	65678	152.256	6.142E+06	8.539E-03	1.307E-05	0.029
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	65431	152.831	1.924E+06	2.694E-03	4.327E-06	0.005
$2s^24p\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2S_{1/2}$	65138	153.519	1.238E+07	1.750E-02	1.509E-05	0.473
$2s^24p\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2S_{1/2}$	64950	153.962	1.454E+07	1.033E-02	1.760E-05	0.437
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	64920	154.033	1.685E+06	3.597E-03	3.803E-06	0.002
$2s2p(^1P)3p\ ^2D_{3/2}$	$2s2p(^3P)3d\ ^2D^o_{3/2}$	64430	155.205	5.654E+06	8.168E-03	1.031E-04	0.014
$2s2p(^1P)3p\ ^2D_{5/2}$	$2s2p(^3P)3d\ ^2D^o_{5/2}$	64346	155.408	5.094E+06	1.107E-02	9.254E-05	0.016
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{1/2}$	64259	155.619	1.593E+07	1.157E-02	3.596E-05	0.007
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	63885	156.530	2.211E+07	1.624E-02	4.991E-05	0.007
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{3/2}$	63553	157.346	8.316E+06	1.235E-02	1.871E-05	0.006
$2s2p(^3P)3d\ ^2P^o_{1/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	63108	158.457	3.121E+07	2.350E-02	8.946E-05	0.003
$2s2p(^3P)3p\ ^4S_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	63027	158.660	7.768E+07	1.173E-01	3.889E-02	0.001
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	62898	158.986	2.813E+07	4.264E-02	6.328E-05	0.007
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{5/2}$	62388	160.287	4.202E+06	9.712E-03	9.484E-06	0.006
$2s2p(^3P)3d\ ^2P^o_{3/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	62342	160.404	1.580E+06	2.438E-03	4.606E-06	0.016
$2s2p(^3P)3p\ ^4S_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	62306	160.497	1.323E+08	2.044E-01	6.624E-02	0.001
$2p^2(^3P)3d\ ^2P_{1/2}$	$2p^2(^3P)3p\ ^2S^o_{1/2}$	61367	162.951	1.643E+08	1.308E-01	7.590E-04	0.003
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{7/2}$	61246	163.275	3.378E+07	8.101E-02	7.624E-05	0.007
$2p^2(^1D)3p\ ^2F^o_{5/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	61213	163.363	1.166E+06	2.800E-03	1.222E-05	0.010
$2s2p(^3P)3p\ ^4S_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	60994	163.949	1.425E+08	2.297E-01	7.134E-02	0.002

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	60958	164.045	2.473E+07	3.990E-02	7.209E-05	0.003
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2p^2(^{1}D)3s ^{2}D$_{3/2}$	60930	164.121	2.552E+08	4.123E-01	9.742E-04	0.013
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2p^2(^{1}D)3s ^{2}D$_{5/2}$	60911	164.173	4.696E+07	7.590E-02	1.792E-04	0.008
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	60864	164.300	1.768E+08	2.863E-01	6.072E-04	0.002
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2p^2(^{1}D)3s ^{2}D$_{3/2}$	60773	164.544	9.989E+06	2.433E-02	3.795E-05	0.018
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2p^2(^{1}D)3s ^{2}D$_{5/2}$	60754	164.596	2.744E+08	6.687E-01	1.043E-03	0.012
2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	60458	165.402	2.122E+08	5.221E-01	7.141E-04	0.002
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	60219	166.058	2.857E+07	4.725E-02	9.811E-05	0.002
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	60170	166.193	9.978E+07	8.264E-02	5.805E-04	0.004
2s2p(^{1}P)3p ^{2}S$_{1/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	60132	166.299	1.585E+08	1.314E-01	9.219E-04	0.004
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	60102	166.382	1.538E+08	2.554E-01	7.723E-04	0.005
2p^2(^{1}D)3d ^{2}S$_{1/2}$	2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	59301	168.630	1.508E+06	1.286E-03	5.939E-06	0.080
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{1/2}$	58856	169.905	3.957E+06	3.425E-03	4.872E-06	0.002
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	58715	170.311	1.921E+07	3.342E-02	6.597E-05	0.001
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	58645	170.516	2.378E+07	4.146E-02	7.162E-04	0.013
2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	58581	170.703	1.418E+07	3.717E-02	4.774E-05	0.001
2p^2(^{3}P)3d ^{4}D$_{1/2}$	2p^2(^{3}P)3p ^{2}S$^o_{1/2}$	58564	170.752	1.252E+07	1.095E-02	6.563E-04	0.016
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	58341	171.403	3.881E+06	6.838E-03	1.333E-05	0.004
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	58335	171.422	4.398E+06	7.750E-03	5.462E-06	0.004
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p(^{3}P)3p ^{2}P$_{3/2}$	58211	171.787	2.376E+06	2.102E-03	2.925E-06	0.002
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2p^2(^{3}P)3s ^{4}P$_{5/2}$	57288	174.555	3.786E+06	1.038E-02	1.989E-05	0.006
2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	2s^{2}4d ^{2}D$_{3/2}$	57270	174.610	1.625E+06	2.971E-03	6.203E-06	0.041
2p^2(^{3}P)3d ^{4}P$_{1/2}$	2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	57196	174.834	2.337E+07	2.142E-02	3.121E-05	0.020
2s^{2}3p ^{2}P$^o_{3/2}$	2s^{2}3s ^{2}S$_{1/2}$	57159	174.948	2.631E+08	4.829E-01	1.736E-02	0.001
2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	2s^{2}4d ^{2}D$_{5/2}$	57063	175.242	1.736E+06	4.796E-03	6.596E-06	0.041
2p^2(^{3}P)3d ^{4}P$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	56897	175.753	5.928E+07	1.098E-01	7.935E-05	0.020
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	56831	175.958	1.346E+07	2.499E-02	1.671E-05	0.004
2p^2(^{3}P)3d ^{4}P$_{1/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	56828	175.967	1.279E+08	1.187E-01	1.708E-04	0.018
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	56707	176.342	2.523E+07	2.352E-02	3.106E-05	0.006
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	56696	176.378	1.296E+07	3.626E-02	1.625E-05	0.004
2s^{2}3p ^{2}P$^o_{1/2}$	2s^{2}3s ^{2}S$_{1/2}$	56614	176.634	2.554E+08	2.390E-01	1.678E-02	0.001
2p^2(^{3}P)3d ^{4}P$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	56529	176.897	2.256E+07	4.233E-02	3.019E-05	0.018
2s2p(^{3}P)3d ^{4}D$^o_{7/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	56494	177.008	5.397E+06	2.028E-02	6.669E-06	0.004
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	56457	177.123	2.212E+07	4.161E-02	2.747E-05	0.005
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	56333	177.513	2.231E+07	2.107E-02	2.746E-05	0.005
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	56041	178.440	3.650E+07	1.045E-01	4.578E-05	0.004
2p^2(^{3}P)3d ^{4}P$_{5/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	55990	178.602	4.090E+07	1.173E-01	5.487E-05	0.019
2p^2(^{3}P)3d ^{4}P$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{5/2}$	55842	179.076	6.992E+07	1.345E-01	9.358E-05	0.018
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	55802	179.203	1.512E+07	2.911E-02	1.878E-05	0.004
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	55568	179.959	5.604E+07	1.088E-01	3.250E-04	0.004
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s2p(^{1}P)3s ^{2}P$^o_{3/2}$	55529	180.083	1.744E+08	3.392E-01	1.011E-03	0.002
2s2p(^{3}P)3d ^{4}D$^o_{7/2}$	2s2p(^{3}P)3p ^{4}D$_{7/2}$	55352	180.659	4.942E+07	1.935E-01	6.107E-05	0.004
2p^2(^{3}P)3d ^{4}P$_{5/2}$	2p^2(^{3}P)3p ^{4}P$^o_{5/2}$	55302	180.823	1.116E+08	3.282E-01	1.497E-04	0.017

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	55253	180.982	2.009E+08	5.919E-01	4.166E-04	0.043
$2s2p(^1P)3p\ ^2P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	55169	181.259	1.406E+08	1.385E-01	8.151E-04	0.004
$2s2p(^1P)3p\ ^2P_{1/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	55131	181.385	8.578E+07	8.462E-02	4.974E-04	0.002
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	55122	181.415	3.581E+07	7.067E-02	7.619E-05	0.031
$2s2p(^3P)3d\ ^2F^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{3/2}$	55115	181.436	2.459E+08	7.280E-01	4.791E-04	0.004
$2s2p(^3P)3d\ ^2F^o_{7/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	55056	181.631	2.638E+08	1.044E+00	5.043E-04	0.004
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^2(^3P)3p\ ^2P^o_{1/2}$	55005	181.799	1.599E+08	3.168E-01	3.401E-04	0.040
$2s2p(^3P)3d\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4D_{7/2}$	54899	182.151	6.375E+06	1.903E-02	7.996E-06	0.004
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^1D)3p\ ^2F^o_{5/2}$	54737	182.689	6.158E+06	1.849E-02	1.122E-05	0.012
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	54603	183.138	2.296E+06	4.618E-03	7.621E-06	0.030
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	54566	183.264	3.766E+06	3.792E-03	1.251E-05	0.053
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^1D)3p\ ^2F^o_{7/2}$	54360	183.958	3.411E+07	1.038E-01	6.212E-05	0.032
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^1D)3p\ ^2F^o_{5/2}$	54225	184.414	3.828E+07	7.806E-02	6.990E-05	0.031
$2s2p(^1P)3p\ ^2D_{5/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	53813	185.827	1.903E+08	5.911E-01	3.457E-03	0.001
$2s2p(^3P)3d\ ^2F^o_{5/2}$	$2s2p(^3P)3p\ ^2D_{5/2}$	53731	186.109	1.782E+07	5.551E-02	3.472E-05	0.003
$2s2p(^1P)3p\ ^2D_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{1/2}$	53696	186.230	1.429E+08	2.972E-01	2.607E-03	0.001
$2s2p(^1P)3p\ ^2D_{3/2}$	$2s2p(^1P)3s\ ^2P^o_{3/2}$	53658	186.363	4.715E+07	9.821E-02	8.601E-04	0.002
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	53285	187.667	3.865E+06	8.163E-03	1.283E-05	0.023
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	53093	188.347	3.685E+07	3.919E-02	1.224E-04	0.011
$2s2p(^3P)3d\ ^4P^o_{1/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	52986	188.728	1.250E+08	1.335E-01	2.821E-04	0.003
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	52887	189.081	3.664E+07	7.855E-02	1.216E-04	0.001
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	52694	189.771	1.317E+07	1.422E-02	4.373E-05	0.008
$2s^23d\ ^2D_{3/2}$	$2s^23p\ ^2P^o_{1/2}$	52685	189.804	1.588E+08	3.430E-01	2.965E-04	0.007
$2s2p(^3P)3d\ ^4P^o_{3/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	52654	189.916	1.289E+08	2.787E-01	2.898E-04	0.003
$2p^2(^3P)3d\ ^2P_{1/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	52518	190.408	1.206E+06	1.311E-03	5.569E-06	0.008
$2s^23d\ ^2D_{5/2}$	$2s^23p\ ^2P^o_{3/2}$	52271	191.309	1.864E+08	6.136E-01	3.491E-04	0.001
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4S_{3/2}$	52144	191.775	1.365E+08	4.515E-01	3.080E-04	0.002
$2s^23d\ ^2D_{3/2}$	$2s^23p\ ^2P^o_{3/2}$	52140	191.790	3.083E+07	6.800E-02	5.758E-05	0.006
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	52128	191.832	9.042E+07	1.995E-01	4.019E-03	0.006
$2p^2(^3P)3d\ ^2F_{7/2}$	$2p^2(^3P)3p\ ^4D^o_{7/2}$	52078	192.019	2.543E+06	1.124E-02	2.846E-05	0.008
$2s2p(^3P)3p\ ^4D_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	52062	192.076	1.560E+08	5.177E-01	2.176E-01	0.006
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2p^2(^3P)3s\ ^4P_{1/2}$	52046	192.134	9.307E+07	2.060E-01	5.164E-04	0.005
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2p^2(^3P)3s\ ^4P_{3/2}$	51984	192.363	5.849E+07	1.947E-01	3.248E-04	0.006
$2s2p(^3P)3p\ ^4D_{7/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	51892	192.707	2.136E+08	9.512E-01	2.963E-01	0.005
$2s2p(^3P)3p\ ^4D_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	51754	193.218	1.608E+08	1.800E-01	4.966E-03	0.006
$2p^2(^3P)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{1/2}$	51706	193.397	1.575E+06	3.532E-03	7.907E-06	0.003
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2p^2(^3P)3s\ ^4P_{1/2}$	51678	193.503	3.387E+07	3.802E-02	1.877E-04	0.005
$2s2p(^3P)3p\ ^2D_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{1/2}$	51632	193.675	1.656E+08	3.725E-01	4.814E-04	0.004
$2s2p(^1P)3d\ ^2D^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	51631	193.680	4.378E+07	1.477E-01	6.817E-05	0.003
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	51585	193.854	4.763E+07	1.073E-01	7.396E-05	0.003
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^1D)3p\ ^2D^o_{5/2}$	51582	193.864	3.405E+07	7.674E-02	6.840E-05	0.025
$2s2p(^3P)3p\ ^2D_{5/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	51576	193.888	2.022E+08	6.837E-01	5.891E-04	0.003
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	51430	194.437	4.608E+06	1.045E-02	7.155E-06	0.009

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^1D)3p\ ^2D^o_{3/2}$	51425	194.454	1.447E+06	3.282E-03	2.908E-06	0.051
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	51407	194.525	9.731E+07	2.208E-01	4.325E-03	0.007
$2p^2(^1S)3s\ ^2S_{1/2}$	$2p^2(^3P)3p\ ^2P^o_{3/2}$	51395	194.570	9.401E+06	1.067E-02	9.436E-06	0.097
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2p^2(^3P)3s\ ^4P_{3/2}$	51297	194.942	4.153E+07	9.464E-02	2.304E-04	0.005
$2p^2(^1S)3s\ ^2S_{1/2}$	$2p^2(^3P)3p\ ^2P^o_{1/2}$	51278	195.011	5.090E+06	5.804E-03	5.109E-06	0.096
$2p^2(^3P)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	51253	195.110	1.854E+06	4.234E-03	9.311E-06	0.008
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^2(^1D)3p\ ^2F^o_{5/2}$	51108	195.662	3.173E+07	1.093E-01	3.765E-05	0.004
$2s2p(^3P)3p\ ^4D_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	51033	195.950	2.822E+07	3.249E-02	8.716E-04	0.008
$2p^2(^3P)3p\ ^4P^o_{1/2}$	$2p^2(^3P)3s\ ^4P_{3/2}$	50929	196.351	1.932E+08	2.233E-01	1.071E-03	0.005
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^1D)3p\ ^2D^o_{3/2}$	50905	196.442	4.445E+07	5.143E-02	9.012E-05	0.027
$2p^2(^3P)3p\ ^4P^o_{5/2}$	$2p^2(^3P)3s\ ^4P_{5/2}$	50807	196.820	1.671E+08	5.823E-01	9.279E-04	0.003
$2s2p(^3P)3p\ ^4D_{5/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	50750	197.042	5.526E+07	1.930E-01	7.708E-02	0.007
$2p^2(^1D)3d\ ^2F_{5/2}$	$2p^2(^1D)3p\ ^2F^o_{7/2}$	50730	197.118	4.221E+06	1.475E-02	5.008E-06	0.012
$2p^2(^3P)3d\ ^2P_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	50497	198.030	2.058E+06	4.840E-03	1.033E-05	0.008
$2p^2(^1D)3d\ ^2F_{7/2}$	$2p^2(^1D)3p\ ^2F^o_{7/2}$	50477	198.109	3.616E+07	1.702E-01	4.259E-05	0.002
$2p^2(^1D)3d\ ^2S_{1/2}$	$2p^2(^1D)3p\ ^2P^o_{1/2}$	50301	198.803	6.790E+07	8.047E-02	2.673E-04	0.048
$2s2p(^3P)3p\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	50251	199.000	3.721E+06	8.838E-03	1.206E-05	0.009
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{1/2}$	50249	199.005	1.079E+07	2.563E-02	3.251E-04	0.009
$2s2p(^3P)3p\ ^2D_{3/2}$	$2s2p(^3P)3s\ ^2P^o_{3/2}$	50192	199.234	3.408E+07	8.112E-02	9.908E-05	0.004
$2p^2(^3P)3d\ ^4D_{1/2}$	$2p^2(^3P)3p\ ^4D^o_{1/2}$	50168	199.326	2.286E+07	2.724E-02	1.198E-03	0.017
$2p^2(^3P)3p\ ^4P^o_{3/2}$	$2p^2(^3P)3s\ ^4P_{5/2}$	50120	199.520	9.335E+07	2.229E-01	5.180E-04	0.002
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{1/2}$	50112	199.551	8.963E+07	2.140E-01	1.392E-04	0.005
$2s2p(^3P)3p\ ^4D_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{5/2}$	50095	199.619	8.398E+06	2.007E-02	3.733E-04	0.009
$2p^2(^3P)3d\ ^4D_{5/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	50093	199.626	1.174E+07	4.209E-02	1.048E-03	0.002
$2s2p(^1P)3d\ ^2D^o_{5/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	49914	200.340	1.094E+08	3.951E-01	1.704E-04	0.006
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	49796	200.818	1.747E+07	4.226E-02	5.263E-04	0.018
$2p^2(^3P)3d\ ^4D_{1/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	49715	201.146	2.265E+07	2.748E-02	1.187E-03	0.016
$2s2p(^1P)3d\ ^2D^o_{3/2}$	$2s2p(^1P)3p\ ^2P_{3/2}$	49713	201.150	1.240E+07	3.009E-02	1.926E-05	0.004
$2s2p(^3P)3p\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{1/2}$	49606	201.586	1.550E+07	1.889E-02	5.144E-05	0.010
$2p^2(^3P)3d\ ^4D_{7/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	49574	201.718	7.223E+06	3.525E-02	7.589E-04	0.017
$2s2p(^3P)3p\ ^2P_{3/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	49529	201.899	9.947E+06	2.431E-02	3.224E-05	0.009
$2p^2(^1D)3d\ ^2S_{1/2}$	$2p^2(^1D)3p\ ^2P^o_{3/2}$	49421	202.340	1.295E+08	1.589E-01	5.098E-04	0.060
$2p^2(^3P)3d\ ^4D_{5/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	49337	202.684	2.867E+07	1.059E-01	2.558E-03	0.015
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	49040	203.913	1.521E+07	3.792E-02	4.580E-04	0.014
$2s2p(^3P)3p\ ^2P_{1/2}$	$2s2p(^3P)3s\ ^4P^o_{3/2}$	48884	204.562	3.411E+06	4.280E-03	1.132E-05	0.005
$2p^2(^3P)3d\ ^4P_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	48821	204.825	1.060E+06	4.000E-03	1.422E-06	0.016
$2p^2(^3P)3d\ ^4D_{7/2}$	$2p^2(^3P)3p\ ^4D^o_{7/2}$	48528	206.062	4.373E+07	2.227E-01	4.595E-03	0.008
$2p^2(^3P)3d\ ^4D_{5/2}$	$2p^2(^3P)3p\ ^4D^o_{7/2}$	48292	207.070	9.415E+06	3.631E-02	8.403E-04	0.011
$2s2p(^1P)3d\ ^2P^o_{3/2}$	$2s2p(^1P)3p\ ^2S_{1/2}$	48284	207.106	1.573E+08	4.047E-01	5.221E-04	0.073
$2s2p(^1P)3d\ ^2P^o_{1/2}$	$2s2p(^1P)3p\ ^2S_{1/2}$	48092	207.934	1.468E+08	1.903E-01	4.874E-04	0.076
$2s2p(^3P)3d\ ^4F^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{1/2}$	47419	210.882	1.249E+07	3.330E-02	7.413E-03	0.000
$2s2p(^3P)3d\ ^4F^o_{5/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	47192	211.897	8.986E+06	3.629E-02	3.318E-03	0.000
$2s2p(^3P)3d\ ^4F^o_{3/2}$	$2s2p(^3P)3p\ ^2P_{3/2}$	46775	213.788	3.033E+06	8.312E-03	1.800E-03	0.002

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	46411	215.464	7.595E+06	1.057E-02	3.508E-05	0.002
2p^2(^{1}D)3p ^{2}F$^o_{7/2}$	2p^2(^{1}D)3s ^{2}D$_{5/2}$	46322	215.879	1.922E+08	1.074E+00	1.999E-03	0.001
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	46043	217.186	1.031E+06	1.459E-03	4.763E-06	0.020
2p^2(^{1}D)3p ^{2}F$^o_{5/2}$	2p^2(^{1}D)3s ^{2}D$_{3/2}$	45963	217.563	1.773E+08	7.550E-01	1.859E-03	0.001
2p^2(^{1}D)3p ^{2}F$^o_{5/2}$	2p^2(^{1}D)3s ^{2}D$_{5/2}$	45944	217.654	9.611E+06	4.095E-02	1.007E-04	0.006
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}S$_{3/2}$	45797	218.353	3.424E+06	1.468E-02	4.294E-06	0.000
2p^2(^{3}P)3p ^{4}D$^o_{5/2}$	2p^2(^3P)3s ^{4}P$_{3/2}$	45577	219.405	1.244E+08	5.389E-01	9.875E-04	0.003
2p^2(^{3}P)3p ^{4}D$^o_{3/2}$	2p^2(^{3}P)3s ^{4}P$_{1/2}$	45571	219.435	7.653E+07	2.210E-01	6.075E-04	0.002
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}S$_{3/2}$	45558	219.497	2.117E+06	6.117E-03	2.630E-06	0.000
2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	45535	219.608	8.841E+07	1.278E-01	2.534E-04	0.000
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2p^2(^{3}P)3s ^{2}P$_{1/2}$	45457	219.984	7.204E+07	1.045E-01	2.981E-04	0.009
2p^2(^{3}P)3p ^{4}D$^o_{7/2}$	2p^2(^{3}P)3s ^{4}P$_{5/2}$	45445	220.042	1.637E+08	9.503E-01	1.300E-03	0.003
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2p^2(^{3}P)3s ^{2}P$_{1/2}$	45341	220.549	1.972E+07	5.752E-02	8.002E-05	0.011
2s2p(^{3}P)3d ^{4}F$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	45314	220.678	9.277E+07	4.064E-01	3.426E-02	0.002
2s2p(^{3}P)3d ^{4}F$^o_{7/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	45277	220.861	1.147E+08	6.710E-01	3.954E-02	0.002
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{1/2}$	45271	220.890	8.263E+07	2.418E-01	4.905E-02	0.002
2s2p(^{3}P)3d ^{4}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}P$_{1/2}$	45232	221.079	4.935E+06	7.232E-03	1.114E-05	0.001
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	45145	221.504	7.843E+06	2.308E-02	3.938E-05	0.006
2p^2(^{3}P)3p ^{4}D$^o_{1/2}$	2p^2(^{3}P)3s ^{4}P$_{1/2}$	45117	221.642	1.369E+08	2.016E-01	1.087E-03	0.002
2s2p(^{3}P)3d ^{4}F$^o_{9/2}$	2s2p(^{3}P)3p ^{4}D$_{7/2}$	44990	222.268	1.287E+08	9.528E-01	4.938E-01	0.002
2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{1/2}$	44901	222.710	1.241E+07	3.692E-02	2.792E-05	0.002
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{3/2}$	44897	222.730	3.168E+07	9.424E-02	1.881E-02	0.001
2p^2(^{3}P)3p ^{4}D$^o_{3/2}$	2p^2(^3P)3s ^{4}P$_{3/2}$	44821	223.104	7.857E+07	2.345E-01	6.236E-04	0.003
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	44777	223.325	6.489E+06	1.941E-02	3.258E-05	0.012
2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	2s2p(^{3}P)3p ^{2}S$_{1/2}$	44769	223.365	8.105E+07	2.425E-01	2.363E-04	0.003
2s2p(^{3}P)3d ^{4}P$^o_{1/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	44683	223.797	4.568E+07	6.860E-02	1.031E-04	0.000
2s2p(^{3}P)3d ^{4}F$^o_{5/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	44659	223.915	2.836E+07	1.279E-01	1.047E-02	0.002
2p^2(^{3}P)3p ^{4}D$^o_{5/2}$	2p^2(^{3}P)3s ^{4}P$_{5/2}$	44400	225.222	3.752E+07	1.712E-01	2.977E-04	0.003
2p^2(^{3}P)3p ^{4}D$^o_{1/2}$	2p^2(^3P)3s ^{4}P$_{3/2}$	44368	225.386	2.192E+07	3.338E-02	1.741E-04	0.004
2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	44351	225.469	1.292E+07	3.938E-02	2.906E-05	0.000
2s2p(^{3}P)3d ^{4}F$^o_{3/2}$	2s2p(^{3}P)3p ^{4}D$_{5/2}$	44242	226.028	2.121E+06	6.497E-03	1.259E-03	0.001
2s2p(^{3}P)3d ^{4}F$^o_{7/2}$	2s2p(^{3}P)3p ^{4}D$_{7/2}$	44135	226.574	1.512E+07	9.308E-02	5.211E-03	0.002
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2p^2(^{3}P)3s ^{2}P$_{3/2}$	44096	226.774	3.415E+07	5.265E-02	1.413E-04	0.009
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2p^2(^{3}P)3s ^{2}P$_{3/2}$	43980	227.374	8.362E+07	2.593E-01	3.393E-04	0.010
2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	2s^{2}3d ^{2}D$_{5/2}$	43925	227.658	7.436E+06	2.311E-02	1.624E-05	0.028
2s2p(^{3}P)3d ^{4}P$^o_{5/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	43841	228.095	3.038E+06	1.422E-02	6.856E-06	0.003
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	43688	228.890	3.873E+07	1.217E-01	1.167E-03	0.009
2s2p(^{3}P)3d ^{4}P$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{5/2}$	43675	228.963	1.919E+07	6.034E-02	4.318E-05	0.000
2p^2(^{3}P)3p ^{4}D$^o_{3/2}$	2p^2(^{3}P)3s ^{4}P$_{5/2}$	43644	229.122	5.060E+06	1.593E-02	4.016E-05	0.008
2p^2(^{3}P)3d ^{4}D$_{5/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	43618	229.260	7.416E+07	3.506E-01	6.619E-03	0.005
2p^2(^{3}P)3d ^{4}D$_{1/2}$	2p^2(^{3}P)3p ^{4}P$^o_{1/2}$	43607	229.316	8.428E+07	1.329E-01	4.417E-03	0.012
2s2p(^{1}P)3s ^{2}P$^o_{1/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	43544	229.651	1.190E+06	1.881E-03	1.249E-06	0.042
2p^2(^{3}P)3d ^{4}D$_{3/2}$	2p^2(^{3}P)3p ^{4}P$^o_{3/2}$	43320	230.835	4.905E+07	1.567E-01	1.477E-03	0.013

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2p^2(^3P)3d\ ^4D_{1/2}$	$2p^2(^3P)3p\ ^4P^o_{3/2}$	43239	231.268	1.622E+07	2.601E-02	8.501E-04	0.017
$2p^2(^3P)3d\ ^4D_{7/2}$	$2p^2(^3P)3p\ ^4P^o_{5/2}$	43166	231.658	9.735E+07	6.266E-01	1.023E-02	0.001
$2s2p(^3P)3d\ ^4P^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	43164	231.671	3.041E+07	1.468E-01	6.863E-05	0.002
$2s^24d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	43066	232.200	2.535E+07	1.230E-01	5.165E-05	0.545
$2s^24d\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	43061	232.227	1.249E+06	6.059E-03	2.544E-06	0.503
$2s^24d\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	43011	232.495	2.616E+07	8.479E-02	5.331E-05	0.509
$2p^2(^3P)3d\ ^4D_{5/2}$	$2p^2(^3P)3p\ ^4P^o_{5/2}$	42930	232.933	2.747E+07	1.340E-01	2.451E-03	0.015
$2p^2(^3P)3d\ ^4D_{3/2}$	$2p^2(^3P)3p\ ^4P^o_{5/2}$	42633	234.559	3.953E+06	1.304E-02	1.191E-04	0.018
$2s2p(^3P)3s\ ^2P^o_{1/2}$	$2s^23d\ ^2D_{3/2}$	42615	234.654	7.746E+06	1.279E-02	1.721E-05	0.027
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^1D)3p\ ^2P^o_{1/2}$	42425	235.706	1.323E+07	4.408E-02	2.658E-05	0.055
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^1D)3p\ ^2P^o_{1/2}$	41905	238.633	5.162E+07	8.814E-02	1.047E-04	0.066
$2p^2(^1D)3d\ ^2P_{3/2}$	$2p^2(^1D)3p\ ^2P^o_{3/2}$	41546	240.696	6.245E+07	2.170E-01	1.255E-04	0.072
$2p^2(^1D)3d\ ^2P_{1/2}$	$2p^2(^1D)3p\ ^2P^o_{3/2}$	41025	243.748	1.937E+07	3.450E-02	3.927E-05	0.087
$2s2p(^1P)3d\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{3/2}$	40709	245.645	6.640E+07	3.604E-01	9.217E-05	0.003
$2p^2(^1D)3d\ ^2G_{7/2}$	$2p^2(^1D)3p\ ^2F^o_{5/2}$	40627	246.138	1.114E+08	8.093E-01	7.052E-02	0.013
$2s2p(^1P)3d\ ^2F^o_{5/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	40554	246.582	4.790E+06	2.620E-02	6.650E-06	0.002
$2s2p(^1P)3d\ ^2F^o_{7/2}$	$2s2p(^1P)3p\ ^2D_{5/2}$	40549	246.612	7.120E+07	5.193E-01	9.884E-05	0.002
$2p^2(^1D)3d\ ^2G_{9/2}$	$2p^2(^1D)3p\ ^2F^o_{7/2}$	40352	247.816	1.122E+08	1.033E+00	2.703E-01	0.004
$2p^2(^1D)3d\ ^2G_{7/2}$	$2p^2(^1D)3p\ ^2F^o_{7/2}$	40249	248.448	2.981E+06	2.207E-02	1.888E-03	0.022
$2p^2(^3P)3d\ ^2F_{7/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	40235	248.536	8.931E+07	6.617E-01	9.996E-04	0.014
$2p^2(^3P)3d\ ^2F_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{3/2}$	40186	248.841	8.363E+07	4.658E-01	9.107E-04	0.020
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^1D)3p\ ^2D^o_{5/2}$	39927	250.454	1.928E+07	1.088E-01	3.512E-05	0.019
$2p^2(^1D)3d\ ^2D_{5/2}$	$2p^2(^1D)3p\ ^2D^o_{3/2}$	39770	251.440	2.939E+06	1.671E-02	5.353E-06	0.021
$2p^2(^3P)3d\ ^4F_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{1/2}$	39755	251.537	6.800E+07	2.580E-01	1.835E-02	0.039
$2p^2(^3P)3d\ ^4F_{5/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	39699	251.892	7.278E+07	4.154E-01	1.936E-02	0.033
$2p^2(^3P)3d\ ^4F_{7/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	39512	253.082	8.167E+07	6.274E-01	2.183E-02	0.026
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^1D)3p\ ^2D^o_{5/2}$	39415	253.707	2.925E+06	1.129E-02	5.343E-06	0.001
$2p^2(^1D)3s\ ^2D_{5/2}$	$2s2p(^1P)3d\ ^2F^o_{7/2}$	39375	253.965	1.308E+06	7.588E-03	2.293E-06	0.290
$2p^2(^1D)3s\ ^2D_{3/2}$	$2s2p(^1P)3d\ ^2F^o_{5/2}$	39351	254.120	1.469E+06	5.688E-03	2.585E-06	0.253
$2p^2(^3P)3d\ ^4F_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{3/2}$	39301	254.442	2.442E+07	9.480E-02	6.589E-03	0.042
$2p^2(^1D)3d\ ^2D_{3/2}$	$2p^2(^1D)3p\ ^2D^o_{3/2}$	39258	254.719	2.395E+07	9.320E-02	4.375E-05	0.007
$2p^2(^3P)3d\ ^4F_{9/2}$	$2p^2(^3P)3p\ ^4D^o_{7/2}$	39216	254.997	9.082E+07	8.853E-01	2.527E-02	0.019
$2p^2(^3P)3d\ ^4F_{5/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	38943	256.780	1.980E+07	1.174E-01	5.267E-03	0.040
$2p^2(^3P)3d\ ^2F_{5/2}$	$2p^2(^3P)3p\ ^2D^o_{5/2}$	38722	258.249	5.707E+06	3.424E-02	6.214E-05	0.037
$2s2p(^3P)3d\ ^2D^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	38702	258.382	1.402E+06	8.417E-03	4.718E-06	0.005
$2p^2(^3P)3d\ ^4F_{3/2}$	$2p^2(^3P)3p\ ^4D^o_{5/2}$	38545	259.431	1.443E+06	5.825E-03	3.894E-04	0.048
$2p^2(^3P)3d\ ^4F_{7/2}$	$2p^2(^3P)3p\ ^4D^o_{7/2}$	38467	259.958	1.048E+07	8.495E-02	2.801E-03	0.038
$2p^2(^3P)3d\ ^2D_{3/2}$	$2p^2(^1D)3p\ ^2F^o_{5/2}$	37889	263.926	1.739E+06	7.264E-03	3.700E-06	0.006
$2s2p(^3P)3d\ ^4D^o_{3/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	37805	264.514	2.574E+07	1.080E-01	3.197E-05	0.001
$2s2p(^3P)3d\ ^4D^o_{1/2}$	$2s2p(^3P)3p\ ^4P_{1/2}$	37681	265.383	4.779E+07	1.009E-01	5.883E-05	0.001
$2p^2(^3P)3d\ ^2D_{5/2}$	$2p^2(^1D)3p\ ^2F^o_{7/2}$	37643	265.650	2.072E+06	1.315E-02	4.297E-06	0.009
$2s2p(^3P)3d\ ^4D^o_{5/2}$	$2s2p(^3P)3p\ ^4P_{3/2}$	37494	266.706	3.965E+07	2.537E-01	4.973E-05	0.000
$2s2p(^3P)3d\ ^4D^o_{7/2}$	$2s2p(^3P)3p\ ^4P_{5/2}$	37271	268.304	5.288E+07	4.566E-01	6.534E-05	0.001

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	37255	268.415	2.598E+07	1.122E-01	3.227E-05	0.000
2s2p(^{3}P)3d ^{4}D$^o_{1/2}$	2s2p(^{3}P)3p ^{4}P$_{3/2}$	37131	269.310	7.601E+06	1.653E-02	9.357E-06	0.001
2p^2(^{3}P)3d ^{4}P$_{1/2}$	2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	36903	270.979	4.188E+07	9.220E-02	5.592E-05	0.007
2s2p(^{3}P)3d ^{4}D$^o_{5/2}$	2s2p(^{3}P)3p ^{4}P$_{5/2}$	36817	271.608	1.158E+07	7.682E-02	1.452E-05	0.000
2s2p(^{1}P)3p ^{2}P$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	36769	271.962	1.314E+06	5.826E-03	7.618E-06	0.014
2p^2(^{3}P)3d ^{4}P$_{3/2}$	2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	36604	273.193	3.948E+07	1.767E-01	5.284E-05	0.004
2s2p(^{3}P)3d ^{4}D$^o_{3/2}$	2s2p(^{3}P)3p ^{4}P$_{5/2}$	36579	273.380	1.710E+06	7.662E-03	2.124E-06	0.001
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	36298	275.495	7.341E+06	5.012E-02	8.710E-06	0.020
2p^2(^{1}D)3d ^{2}F$_{5/2}$	2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	36141	276.689	5.200E+07	3.581E-01	6.170E-05	0.024
2p^2(^{3}P)3d ^{4}P$_{5/2}$	2p^2(^{3}P)3p ^{4}S$^o_{3/2}$	36064	277.280	3.561E+07	2.462E-01	4.777E-05	0.002
2p^2(^{1}D)3d ^{2}F$_{7/2}$	2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	36044	277.434	5.838E+07	5.389E-01	6.877E-05	0.028
2s2p(^{1}P)3p ^{2}D$_{5/2}$	2s2p(^{3}P)3d ^{2}P$^o_{3/2}$	35053	285.279	1.769E+06	1.295E-02	3.213E-05	0.020
2s2p(^{1}P)3p ^{2}D$_{3/2}$	2s2p(^{3}P)3d ^{2}P$^o_{1/2}$	34132	292.972	1.085E+06	5.582E-03	1.978E-05	0.022
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2p^2(^{3}P)3s ^{2}P$_{3/2}$	33423	299.188	3.649E+07	2.938E-01	1.917E-04	0.011
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2p^2(^{3}P)3s ^{2}P$_{1/2}$	33320	300.112	3.108E+07	1.679E-01	1.654E-04	0.012
2s2p(^{3}P)3d ^{2}D$^o_{3/2}$	2s2p(^{3}P)3p ^{2}D$_{3/2}$	32810	304.781	9.805E+06	5.462E-02	3.367E-05	0.003
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2p^2(^{3}P)3s ^{2}P$_{3/2}$	31959	312.892	6.481E+06	3.805E-02	3.448E-05	0.013
2s2p(^{3}P)3d ^{2}D$^o_{5/2}$	2s2p(^{3}P)3p ^{2}D$_{5/2}$	31665	315.799	8.109E+06	7.274E-02	2.729E-05	0.004
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2p^2(^{1}D)3p ^{2}P$^o_{1/2}$	30258	330.483	1.602E+07	1.049E-01	2.925E-05	0.074
2p^2(^{1}D)3d ^{2}D$_{5/2}$	2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	29891	334.547	1.999E+07	2.013E-01	3.641E-05	0.084
2p^2(^{1}D)3d ^{2}D$_{3/2}$	2p^2(^{1}D)3p ^{2}P$^o_{3/2}$	29379	340.376	2.253E+06	1.565E-02	4.115E-06	0.086
2s^{2}4d ^{2}D$_{3/2}$	2s2p(^{1}P)3d ^{2}P$^o_{1/2}$	29154	342.997	5.189E+07	3.661E-01	1.058E-04	0.074
2s^{2}4d ^{2}D$_{5/2}$	2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	29012	344.683	6.116E+07	6.536E-01	1.246E-04	0.087
2s^{2}4d ^{2}D$_{3/2}$	2s2p(^{1}P)3d ^{2}P$^o_{3/2}$	28962	345.274	1.017E+07	7.270E-02	2.072E-05	0.079
2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	2p^2(^{1}D)3s ^{2}D$_{3/2}$	28847	346.654	7.648E+06	2.756E-02	3.165E-05	0.007
2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	2p^2(^{1}D)3s ^{2}D$_{5/2}$	28711	348.290	6.298E+06	4.581E-02	2.556E-05	0.010
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	28318	353.126	5.043E+06	1.885E-02	2.329E-05	0.021
2p^2(^{3}P)3d ^{2}P$_{1/2}$	2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	28202	354.582	1.075E+07	4.054E-02	4.966E-05	0.006
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^2(^{3}P)3p ^{2}P$^o_{3/2}$	27052	369.645	1.010E+07	8.274E-02	5.069E-05	0.015
2p^2(^{3}P)3d ^{2}P$_{3/2}$	2p^2(^{3}P)3p ^{2}P$^o_{1/2}$	26936	371.242	2.066E+06	1.708E-02	1.038E-05	0.014
2s2p(^{3}P)3p ^{4}D$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	25727	388.692	1.551E+06	7.024E-03	4.789E-05	0.008
2s2p(^{3}P)3p ^{4}D$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	24660	405.503	1.146E+06	1.130E-02	5.094E-05	0.013
2s2p(^{3}P)3p ^{2}P$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	24223	412.822	3.151E+06	3.220E-02	1.021E-05	0.010
2s2p(^{3}P)3p ^{2}P$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{1/2}$	23578	424.108	1.028E+07	5.542E-02	3.410E-05	0.012
2s^{2}4p ^{2}P$^o_{3/2}$	2s^{2}4s ^{2}S$_{1/2}$	23501	425.497	5.146E+07	5.587E-01	6.271E-05	0.003
2s^{2}4p ^{2}P$^o_{1/2}$	2s^{2}4s ^{2}S$_{1/2}$	23314	428.916	5.008E+07	2.762E-01	6.063E-05	0.008
2p^2(^{3}P)3d ^{2}D$_{5/2}$	2p^2(^{1}D)3p ^{2}D$^o_{5/2}$	23210	430.834	1.857E+06	3.101E-02	3.851E-06	0.016
2p^2(^{3}P)3d ^{2}D$_{3/2}$	2p^2(^{1}D)3p ^{2}D$^o_{3/2}$	22922	436.253	1.552E+06	1.772E-02	3.303E-06	0.002
2s2p(^{3}P)3p ^{2}P$_{3/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	22782	438.924	1.135E+07	1.311E-01	3.679E-05	0.015
2s2p(^{3}P)3p ^{2}P$_{1/2}$	2s2p(^{3}P)3s ^{2}P$^o_{3/2}$	22138	451.705	3.913E+06	2.394E-02	1.299E-05	0.016
2p^2(^{3}P)3p ^{2}D$^o_{5/2}$	2p^2(^{1}D)3s ^{2}D$_{5/2}$	18155	550.808	2.046E+06	5.584E-02	1.075E-05	0.039
2p^2(^{3}P)3p ^{2}D$^o_{3/2}$	2p^2(^{1}D)3s ^{2}D$_{3/2}$	16710	598.430	1.342E+06	2.883E-02	7.142E-06	0.045
2s^{2}4d ^{2}D$_{3/2}$	2s^{2}4p ^{2}P$^o_{1/2}$	12295	813.283	6.276E+06	2.489E-01	1.279E-05	0.091

Table 3. *Cont.*

Upper	Lower	ΔE (cm^{-1})	λ (nm)	A (s^{-1})	gf	I_{rel}	dT
$2s^24f\ ^2F^o_{7/2}$	$2s^24d\ ^2D_{5/2}$	12249	816.334	7.948E+06	6.352E-01	4.237E-05	0.186
$2s^24f\ ^2F^o_{5/2}$	$2s^24d\ ^2D_{3/2}$	12219	818.358	7.342E+06	4.423E-01	3.886E-05	0.170
$2s^24d\ ^2D_{5/2}$	$2s^24p\ ^2P^o_{3/2}$	12158	822.494	7.300E+06	4.442E-01	1.487E-05	0.082
$2s^24d\ ^2D_{3/2}$	$2s^24p\ ^2P^o_{3/2}$	12108	825.865	1.200E+06	4.908E-02	2.445E-06	0.101
$2p^2(^3P)3p\ ^2S^o_{1/2}$	$2p^2(^3P)3s\ ^2P_{3/2}$	10930	914.833	1.051E+06	2.637E-02	3.894E-06	0.100

7. Conclusion

Our *ab initio* MCDHF computations of the B-like spectrum Na VII are in the same high accuracy class as the multireference RCI computations by Koc [38]. However, we identify a few possible errors in that work. Both computations so far come closest among such studies to the unsurpassed experimental data acquired by Söderqvist more than 80 years ago. Again, for a few of the $n = 3$ and $n = 4$ levels, our calculations come out less close to Söderqvist's analysis than in the vast majority of others. A level mismatch between computation and measurement by 100 cm^{-1} corresponds to a wavelength mismatch of 0.001 nm for a line of wavelength 10 nm. This is the magnitude of Söderqvist's claimed measurement uncertainty. The deviations between measurement and computation listed in Table 1 indicate that the present computations are, indeed, close to spectroscopic quality for the $n = 2$ levels and many of the $n = 3$ levels. Any significantly larger mismatch (11 cases in Table 1) then suggests either the presence of an atomic structure peculiarity or the need for a change of line identification. The overall excellent agreement serves as a test of quality and encourages the use of computations such as ours as a guide for extending the spectral analysis of the spectrum of Na VII levels of the $n = 4$ manifold and beyond, as well as the application to other B-like ions, for which the database is much sparser than for Na, Mg, Al and Si.

The Söderqvist data have been obtained with observations of a vacuum spark, and for many decades, they have not been augmented by further measurements. We have investigated beam-foil spectra, which are known for their richness of spectral lines, especially from the multiple excitation of atomic systems, and indeed, there appear plenty of spectral lines of Na that have not been reported from other light sources. Unfortunately, the line-rich beam-foil far-EUV spectra of Na (and many other elements) have not yet been recorded with a spectral resolution high enough to separate most lines, as would benefit a future spectral analysis attempt.

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Conflicts of Interest

The authors declare no conflicts of interest.

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