U.S. Department of Commerce, Bureau of Standards

RESEARCH PAPER RP599

Part of Bureau of Standards Journal of Research, vol. 11, September 1933

THE SECOND SPECTRUM OF KRYPTON

By T. L. deBruin,[1] C. J. Humphreys, and William F. Meggers

ABSTRACT

The second spectrum of krypton (Kr II) characteristic of once ionized krypton atoms (Kr^+) has been selected from various krypton spectra excited in Geissler tubes by noting intensity changes accompanying variations of capacity and inductance in the electrical circuit. This description and analysis of the Kr II spectrum includes estimates of relative intensities and wave-length measurements for 1,050 lines extending from 2,080.53 A in the ultraviolet to 10,659.5 A in the infrared. Most of these lines (71 percent) have been classified as combinations of 128 energy levels, 112 of which have been more or less definitely identified with quantum numbers and electron configurations. Zeeman effects are quoted for 102 lines. In addition, 51 lines in the extreme ultraviolet (575.92 to 964.93 A) are classified as transitions from excited states to the normal ones.

The s^2p^5 electron configuration of the normal Kr^+ ion is represented by a doublet P term with level separation 5,371 cm^{-1}, and the excited states are described by doublet and quartet terms arising from the addition of *ns*, *np*, *nd*, *nf* electrons to the s^2p^4 group constituting the outer structure of the doubly charged ion (Kr^{++}). An absolute value of 198,182 cm^{-1} is derived for the ground level $s^2p^5.{}^2P^{\circ}_{1\frac{1}{2}}$, which fixes the ionization potential of Kr^+ atoms at approximately 24.4 volts.

CONTENTS

I. INTRODUCTION

The authors have published two papers describing and analyzing the first spectrum of krypton,[2] Kr I. In these, reference was made to the fact that the spectral terms which represent the excited states of the neutral Kr atom result from the interaction of the series electron with the electron group which characterizes the normal state of the Kr^+ ion. Various states of this ion determine the second spectrum of krypton, Kr II, and it is the purpose of the present paper to give our description and analysis of this second spectrum.

Runge [3] was the first to call attention to the fact that krypton emits two different line spectra, one without leyden jar and spark

[1] Laboratory "Physica" of the University of Amsterdam.
[2] William F. Meggers, T. L. deBruin, and C. J. Humphreys, B.S.Jour. Research, vol. 3 (RP89), p. 129, 1929; vol. 7 (RP364), p. 643, 1931.
[3] C. Runge, Astrophys. J., vol. 10, p. 73, 1899.

gap in the secondary circuit of an induction coil, the other with leyden jar and spark gap. He published the wave lengths for 16 lines (4,274.09 to 7,601.47 A) in the first spectrum and 31 lines (3,654.11 to 5,419.38 A) in the second. A more complete and accurate determination of wave lengths for both spectra of krypton was completed in 1903 by Baly.[4] He gave 74 lines (3,502.69 to 6,456.65 A) for the first spectrum and 733 lines (2,418.13 to 5,871.12 A) for the second, but the stronger lines are common to both lists and some in each are identifiable with xenon. Moreover the so-called "second spectrum of krypton" is not strictly identical with what is now known as the Kr II spectrum, because the condensed, disruptive discharge produces several stages of ionization, so that although the Kr II spectrum is the most prominent, many Kr III lines and possibly also some Kr IV lines appear in the spectrum. Methods of separating these successive spectra, and theoretical interpretations of their structures have been developed in recent years. They will be discussed below.

Krypton spectra excited in electrodeless discharges were described in 1924 by L. Bloch, E. Bloch, and G. Déjardin.[5] Nearly 800 lines are listed; they range in wave length from 2,227.96 to 6,907 A and represent the stronger lines from neutral atoms and from three successive stages of ionization. This list contains a number of lines not previously reported by other observers, but the wave lengths of these new lines are recorded only to 0.1 A in the ultraviolet and to 1 A in the visible spectrum.

The various spectra of krypton in the extreme ultraviolet were observed by Abbink and Dorgelo.[6]

Examination of the above-mentioned data enabled Kichlu[7] to make a partial analysis of the Kr II spectrum. He recognized the ground term as an inverted doublet P with level separation of 5,371 cm^{-1}, but was unable to specify the nature of most of the other levels because Zeeman-effect data were lacking. This last deficiency was removed by Bakker, Zeeman, and deBruin[8] who recently published Zeeman effect observations for 91 Kr II lines (3,150.92 to 4,857.20 A) which permitted correction and extension of Kichlu's term analysis. In the meantime we had completed an entirely new and greatly improved description of the second spectrum of Krypton which made it possible to extend the analysis still further. Now many of the theoretically predicted terms have been identified and most of the observed lines have been classified.

II. WAVE-LENGTH MEASUREMENTS

Our experience with Kr II spectra was very similar to that with Kr I spectra. In both cases a preliminary description was first made with Geissler tubes used side-on, and later revised and extended with tubes used end-on, because it was found that the latter tubes emitted a brighter spectrum, thus permitting the study of fainter lines and more precise measurement of wave lengths. Values for 91 lines from our preliminary Kr II list were quoted by Bakker and deBruin, but

[4] E. C. C. Baly, Phil. Trans., vol. 202, p. 183, 1904.
[5] L. Bloch, E. Bloch, and G. Déjardin, Ann. de Phys. (10), p. 461, 1924.
[6] J. H. Abbink and H. B. Dorgelo, Zeits. f. Phys., vol. 47, p. 221, 1928.
[7] P. K. Kichlu, Proc. Roy. Soc. London, vol. 120 A, p. 643, 1928.
[8] C. J. Bakker and P. Zeeman, Proc. Amsterdam, vol. 32, p. 565, 1931. C. J. Bakker and T. L. deBruin, Zeits. f. Phys., vol. 69, p. 36, 1931.

none of the remainder have been published. The wave lengths and intensities presented below represent mainly the new observations with the brighter source and with a higher powered spectrograph.

The tube used in making the last observations was obtained from Robert Goetze, Leipzig; it has two cylindrical electrodes connected by a capillary of 11 cm length and about 1 mm bore, the viewing end of the capillary being enclosed in a thin-walled glass bulb of 2.5 cm diameter. This glass was fairly transparent to ultraviolet; it transmitted the spectrum to about 2,500 A. For producing the spark spectra this tube was operated by ac transformers, with secondary voltages of 10,000 to 40,000, a spark gap of 5 to 10 mm being connected in series and mica condensers of 0.006 μf capacity in parallel with the tube. In addition, various amounts of self-induction (0.0002 to 0.0005 H) were inserted in the circuit for some exposures to determine which lines belonged to the higher stages of ionization.

The spectrographs employed for the study of the Kr II spectra were described in our second publication on the Kr I spectrum (RP364). Spark spectra emitted by the end-on tube were photographed with the Rowland grating (20,000 lines per inch) in the interval 2,500 to 8,900 A, and with the Anderson grating (7,500 lines per inch) beyond 8,000 A. The range from 2,000 to 3,000 A was photographed with a Hilger E_1 quartz spectrograph, a tube of fused quartz, filled in our laboratory with krypton gas purchased from the Linde Gesellschaft für Eismaschinen, München, being used side-on for these observations.

Eastman 33 photographic plates were used exclusively in our first observations which covered the range 2,080 to 9,361 A. The plates were sensitized to waves longer than 4,800 A by bathing in solutions of pinaverdol, pinacyanol, dicyanin, rubrocyanin, and neocyanin. The exposure times ranged from 1 to 4 hours when the tube was operated without self-inductance, but it was necessary to double or triple the time to obtain about the same record of Kr II lines when self-inductance was placed in the circuit.

During the past year new types of infrared sensitive plates were announced by the Eastman Kodak Co.,[9] and several of these have been employed to improve and extend our observations of krypton spectra in the region of longer waves. The interval 7,400 to 9,200 A was investigated with mesocyanine plates (P type of sensitizing) and the infrared beyond 8,500 A with xenocyanine plates (Q type of sensitizing). With the latter plate we succeeded in extending the long wave limit of observed Kr II lines from 9,361 to 10,659 A and many new lines were thus added to our list. Results for the Kr I spectrum recorded in the infrared on P and Q sensitized plates have already been published.[10]

Wave-length measurements were made relative to international secondary standards in the arc spectrum of iron which was photographed, both in place and in time, between the Kr II exposures with and without self-inductance. The stronger Kr I lines which have been compared with the primary standard by interferometer measurements also appeared with great intensity in the Kr II spectrograms, but on account of their tendency to appear diffuse and unsymmetrical in the spark discharge they were not used as wave length standards. Practically all of the lines were measured on two or more spectrograms,

[9] C. E. K. Mees, J. Opt. Soc. Am., vol. 22, p. 204, 1932.
[10] William F. Meggers and C. J. Humphreys. B.S.Jour. Research (RP540), vol. 10, p. 427, 1933.

the number of observations reaching 4 or 5 in overlapping regions. When all of the measurements were compiled, they constituted a formidable list in which earlier experience had shown that many spurious lines, impurities, ghosts, and various stages of ionization were present. All Rowland ghosts were first eliminated, and Lyman ghosts were sought but not found. Then a considerable number of lines identifiable with argon spectra and a few belonging to xenon were stricken from the list. Finally, the Kr I lines characteristic of neutral krypton atoms and those which must be ascribed to Kr III and Kr IV spectra were identified; the remainder are believed to represent the Kr II spectrum characteristic of once ionized krypton atoms. Among these Kr II lines there exists a remarkable variety of types; while the majority of lines appear to be reasonably sharp and symmetrical, a considerable number are hazy (*h*), some being very hazy and wide (H), and many of the hazy lines are unsymmetrical, some being shaded to red (*l*) and others to violet (*v*).

In the case of sharp lines the probable error of wave-length determinations is usually less than 0.01 A, but the error may be several times as great for hazy and unsymmetrical lines. An effort was made to measure the center of gravity in every case, and the spectral regularities which were found later show that this procedure was justified; it will be seen that the spectral term combinations represent even the hazy lines within 1 part in 100,000, on the average. It will be noticed also that these hazy lines usually involve high energy states in which the electrons are probably influenced by electric fields of neighboring ions so that the unusual character of the lines may be presumed to be due to Stark effect.

Now, it is necessary to discuss in more detail just how the Kr II spectrum is recognized in the presence of several other krypton spectra. Two methods of differentiating between successive spectra are availalbe—one depends entirely on the effects of varying the conditions of discharge in the ordinary Geissler tube and the other is based on the behavior of lines in the electrodeless discharge when the electrical potential is varied. The latter method was employed by L. Bloch, E. Bloch, and G. Dejardin;[11] we have chosen the former. It is well known that uncondensed discharges, either dc or ac, through Geissler tubes of krypton excite the so-called "first spectrum", which has been shown to consist only of Kr I lines characteristic of neutral krypton atoms. Condensed, disruptive discharges through the same tube excite the so-called "second spectrum" which is much more complex than the first. This increase in complexity is due, at least in part, to the presence of neutral atoms, ionized atoms, twice-ionized atoms, and possibly even higher stages of ionization so that the observed spectrum is really a mixture of several spectra. The Kr I spectrum persists under all conditions (except complete and permanent ionization), but since it has been completely described before, it is readily identified.

The insertion of self-inductance in the discharge circuit has a remarkable effect on the spectra of krypton; it decreases the brightness of the tube; but if this is compensated by a longer exposure, it is found that some of the lines are enhanced, the majority maintain more or less the same intensity, while a considerable number are greatly reduced in strength, and some entirely suppressed. In gen-

[11] L. Bloch, E. Bloch, and G. Dejardin, Ann. de Phys. (10), vol. 2, p. 241, 1924.

eral, these groups represent in succession the Kr I, Kr II, Kr III, and Kr IV spectra. The effect of self-inductance on line intensity is so marked that a difference is observed between low and high energy states in one and the same spectrum, so that the transition between spectra is not abrupt and occasionally lines are encountered which cannot be positively assigned to one spectrum or the next. The same uncertainty arises in the method of line length in the electrodeless discharge as studied by L. Bloch, E. Bloch, and G. Dejardin, but comparison of the results obtained independently from these two different methods shows very satisfactory agreement.

III. ANALYSIS OF THE Kr II SPECTRUM

1. THEORETICAL TERMS

The neutral atoms of any of the rare gases, Ne, A, Kr, Xe, Rn, have in the unexcited state, the configuration of a closed shell with 2 *s* and 6 *p* electrons, symbolized by s^2p^6, and, according to Hund's theory,[12] the term which characterizes the normal state is a single level, $^1S_0$, in the first spectrum. The simple ions of these gases are characterized by the electron group s^2p^5, giving rise to an inverted doublet term, $^2P^\circ_{1\frac{1}{2},\,0\frac{1}{2}}$, in the second spectrum. This doublet term is of great importance in the structural analysis of rare gas spectra because the terms representing the excited states of the neutral atoms arise from the interaction of the series electron with the s^2p^5 group of the ions. With the exception of $^1S_0$, all of the spectral terms involved in the production of the first spectrum of a rare gas result from the addition in turn of *ns*, *np*, *nd*, and *nf* electrons to the $^2P^\circ_{1\frac{1}{2},\,0\frac{1}{2}}$ term of the ion. These two levels are the convergence limits of all the term series thus obtained. The presence of two series limits in these spectra was first indicated by Paschen,[13] who found in his analysis of the Ne I spectrum that certain groups of terms converged to one limit while others converged to another one separated from the first by about 780 cm^{-1}. This displacement was first interpreted by Grotrian,[14] who recognized the 2 series limits as 2 different states of the neon ion. These states were later identified [15] with the $^2P^\circ_{1\frac{1}{2},\,0\frac{1}{2}}$ term above referred to, and a strictly analogous state of affairs has since been found to exist in the spectra of the succeeding rare gases, A,[16], Kr,[17] and Xe.[18] The ground doublet separations are 782, 1,431, 5,371, and 10,540 cm^{-1} for Ne II, A II, Kr II, and Xe II spectra, respectively.

Now in addition to the ground doublet associated with the s^2p^5 configuration of a rare gas ion, many other spectral terms occur to produce the rather complex second spectrum. All of these remaining terms are associated with the electron group s^2p^4 of the doubly charged ion. The configuration s^2p^4 gives rise to ^1S, ^1D, and ^3P terms in the third spectrum, and the various terms (except $^2P^\circ$ from s^2p^5 and ^2S from sp^6) of the second spectrum are derived from the addition

[12] F. Hund, Linienspectren und periodisches system der Elemente, p. 144, Julius Springer, Berlin, 1923.
[13] Paschen, Ann.d. Phys., vol. 60, p. 405, 1919; vol. 63, p. 201, 1920.
[14] W. Grotrian, Zeits.f.Physik, vol. 8, p. 116, 1921.
[15] T. L. deBruin, Zeits.f.Phys. vol. 44, p. 157, 1927. Kichlu Proc. Phys. Soc., London, vol. 39, p. 424, 1927. K. T. Compton and J. C. Boyce, J. Frank. Inst. vol. 205, p. 497, 1928.
[16] K. T. Compton, J. C. Boyce, and H. N. Russell, Phys. Rev., vol. 32, p. 179, 1928. T. L. de Bruin, Proc. Roy. Akad. Sciences, Amsterdam, vol. 33, p. 198, 1930.
[17] P. Kichlu, Proc. Roy. Soc., London, vol. A120, p. 643, 1928.
[18] C. J. Humphreys, T. L. de Bruin, and W. F. Meggers, B.S.Jour. Research, vol. 6 (RP275), p. 287, 1931.

of *ns, np, nd,* probably *nf,* and possibly *ng* electrons to the low terms characteristic of the doubly charged ion. The terms which may be theoretically expected to account for the second spectrum of a rare gas are shown for the specific case of Kr II in table 1, where the term correlation with electron configuration and convergence limits is illustrated.

Throughout the remainder of this paper we have represented the spectral terms by a complete notation which includes electron configuration and term symbol.[19] Terms resulting from the interaction of a series electron with the atom core are represented by the outer electron configuration of the core, the limiting term toward which the series converges (in parenthesis), the running electron, and the term symbol, in the order named.

Table 1.—*Electron configurations and spectral terms for Kr* II

Electron configuration	Term limit ^3P	Term limit ^1D	Term limit ^1S
s^2p^5	$^2P^o$		
$s^2p^4.5s$	^2P, ^4P	^2D	^2S
$s^2p^4.5p$	$^2S^o$, $^2P^o$, $^2D^o$, $^4S^o$, $^4P^o$, $^4D^o$	$^2P^o$, $^2D^o$, $^2F^o$	$^2P^o$
$s^2p^4.4d$	^2P, ^2D, ^2F, ^4P, ^4D, ^4F	^2S, ^2P, ^2D, ^2F, ^2G	^2D
$s^2p^4.5d$	^2P, ^2D, ^2F, ^4P, ^4D, ^4F	^2S, ^2P, ^2D, ^2F, ^2G	^2D
$s^2p^4.6s$	^2P, ^4P	^2D	^2S
$s^2p^4.6p$	$^2S^o$, $^2P^o$, $^2D^o$, $^4S^o$, $^4P^o$, $^4D^o$	$^2P^o$, $^2D^o$, $^2F^o$	$^2P^o$
$s^2p^4.4f$	$^2D^o$, $^2F^o$, $^2G^o$, $^4D^o$, $^4F^o$, $^4G^o$	$^2P^o$, $^2D^o$, $^2F^o$, $^2G^o$, $^2H^o$	$^2F^o$
$s^2p^4.5f$	$^2D^o$, $^2F^o$, $^2G^o$, $^4D^o$, $^4F^o$, $^4G^o$	$^2P^o$, $^2D^o$, $^2F^o$, $^2G^o$, $^2H^o$	$^2F^o$
$s^2p^4.5g$	^2F, ^2G, ^2H, ^4F, ^4G, ^4H	^2D, ^2F, ^2G, ^2H, ^2I	^2G
sp^6	^2S		

2. ABSOLUTE TERMS, IONIZATION POTENTIAL OF Kr^+

The absolute term values have been estimated by applying the Rydberg series formula to the first two series members of the sequence $s^2p^4.ns$. The value of the level $5s^4P_{2\frac{1}{2}}$ so obtained is 85,352 cm^{-1}. All other terms have been fixed relative to this value. The combination $s^2p^5.^2P^o_{1\frac{1}{2}}-s^2p^4.5s.^4P_{2\frac{1}{2}}$ gives a line at 112,830 cm^{-1} in the ultraviolet spectrum described by Abbink and Dorgelo.[20] Hence, the ground level $s^2p^5.^2P^o_{1\frac{1}{2}}$ is located at 198,182 cm^{-1}, corresponding with an ionization potential of 24.4 volts. Déjardin [21] in an experimental investigation of the critical potentials of the rare atmospheric gases determined the ionization potential of Kr^+ at 28.25 ± 0.05 volts.

A suggested explanation of the rather large discrepancy between Déjardin's value and ours is that the Rydberg series formula has been applied to only the first two members of the $s^2p^4.ns.^4P_{2\frac{1}{2}}$ sequence. Although this series has been extended to three members, it is not very regular, so that the value of the level, $5s.^4P_{2\frac{1}{2}}$, estimated from the first two members seems to be as reliable an approximation as could reasonably be made. It did not appear justifiable to apply any

[19] See Report on notation for atomic spectra. Phys. Rev., vol. 33, p. 900, 1929.
[20] J. H. Abbink and H. B. Dorgelo, Zeits.f.Phys., vol. 47, p. 221, 1928.
[21] Déjardin, Ann. de Phys. (10), vol. 2, p. 241, 1924.

of the 3-constant formulas. The sequence chosen is represented by a Rydberg formula more closely than any of the others of which more than one member is known, which is to be expected since the terms arise from the binding of an *s*-electron. In making a choice of level sequences among those arising from the same configuration $ns.^4P_{2\frac{1}{2}}$ was selected since it converges to the limit $s^2p^4.^3P_2$ of Kr^{++}, according to Hund's rules of correlation. Kichlu's [22] estimation of the value 214,000 cm^{-1} for $s^2p^5.^2P^\circ_{1\frac{1}{2}}$ was obtained from the two known members of the $s^2p^4.np^2P^\circ_{1\frac{1}{2}}$ sequence, viz, $s^2p^5.^2P^\circ_{1\frac{1}{2}}$ and $s^2p^4.5p.^2P^\circ_{1\frac{1}{2}}$.

3. IDENTIFICATION OF EXPERIMENTAL TERMS

A total of 128 levels has been found in Kr II of which 112 have been identified. The character of 52 of these has been established by the published Zeeman-effect observations of Bakker, Zeeman, and deBruin.[23] Unpublished Zeeman-effect observations, which Bakker, Zeeman, and deBruin have permitted us to use, give the observed patterns of combinations of 10 levels in addition to those reported, although 3 of these levels are still unidentified or uncertain.

Table 2 contains a complete list of the known terms of Kr II. These are separated into the odd and even sets, and grouped within these divisions according to electron configurations, beginning with the lowest energy states. All observed *g* values are listed and compared with the corresponding Landé values. The table also indicates the observed term combinations.

The discovery of the ground level separation 5,371 cm^{-1} by Kichlu has been mentioned. This doublet $s^2p^5.^2P^\circ_{1\frac{1}{2},\,0\frac{1}{2}}$ combines with the even terms arising from the $s^2p^4.ns$ and $s^2p^4.nd$ configurations giving lines in the Schumann region. Most of the krypton spark lines observed by Abbink and Dorgelo [24] have been identified as such combinations. All classified extreme ultraviolet lines are given in table 3.

The even terms also combine with terms arising from $s^2p^4.5p$, accounting for a great majority of the classified lines in the region covered by the description here reported. Additional combinations of the levels of the even terms establish three additional groups of odd levels near 30,000, 25,000, and 15,000 cm^{-1}. The first two groups were originally regarded as $s^2p^4.6p$ levels converging, respectively, to the ^3P and ^1D limits. Such an interpretation is possible based upon a Rydberg extrapolation of the second series members. Other considerations indicate, however, that these levels may belong to terms arising from $s^2p^4.5f$. The hazy character of many of the lines supports this interpretation. Furthermore, the ultraviolet multiplet in the vicinity of 47,000 cm^{-1} suggests a $^4D-^4F$ combination. There is no certain evidence from Zeeman effects. The interpretation of these levels as belonging to the $s^2p^4.5f$ configuration has been finally accepted with reservations. No interpretation is indicated of the group at 15,000 cm^{-1}, but the possibility that these levels may be third series members is suggested.

Practically all of the even levels have been interpreted. Combinations of the second series members lie in accessible spectral regions and in most cases have been observed. Some assistance in the identification is obtained by use of a Rydberg table for spark spectra to

---

[22] P. K. Kichlu, Proc. Roy. Soc. London, vol. 120A, p. 643, 1928.
[23] See footnote 8, p. 410.
[24] J. H. Abbink and H. B. Dorgelo, Zeits.f.Phys., vol. 47, p. 221, 1928.

extrapolate the higher series members. The $s^2p^4(^3P)$ ns term series have been extended to three members. A group of levels at about 19,300 cm^{-1} combines with the terms interpreted as $s^2p^4.5f\,^4F°$ and $^2F°$. It is sugges ed that these may belong to the term $s^2p^4.5g.^4G$, although the identification is uncertain because the lines are very hazy and the measurements, therefore, are not to be regarded as very accurate. Three unidentified even levels remain, the one at 65,209.50 cm^{-1} involving especially strong combinations. It is of the same magnitude and combines in the same way as the $s^2p^4.4d$ terms but there is no vacancy for a level with j equal to 2½.

Apart from Zeeman analysis some information as to the character of the terms is to be obtained by comparison of the similarly constituted spectra, Ne II and A II. That is, the location of spectroscopically similar terms and probable magnitudes of level separations may be predicted to a reasonably close approximation by extrapolation.

The character of the lines tells us something as to the identity of the combining levels. Thus, lines arising from the combinations of low levels are sharp. High level lines are hazy or unsymmetrically broadened, due to Stark effect or the perturbations of levels lying close together as discussed below. A group of lines due to different combinations of one level react alike to inductance in the circuit. The two features of this spectrum which add most to the uncertainty in the identifications are the irregularity of spectral series, and the very complete development of intersystem combinations. Thus, if the selection rules relating to parity and inner quantum numbers are satisfied, we may expect relatively strong combinations of terms of different multiplicity, also of terms converging to different limits.

4. CLASSIFICATION OF Kr II LINES

The present state of our knowledge concerning spectral lines characteristic of once ionized krypton atoms is displayed in tables 3 and 4. Table 3 presents data in the extreme ultraviolet from the publication by Abbink and Dorgelo,[25] but only the lines for which a classification was found are quoted, since some of the remainder may represent impurities or higher stage spectra. Our own observations of the Kr II spectrum are given in table 4, in which estimated intensities, measured wave lengths, vacuum wave numbers, term combinations, observed and computed Zeeman patterns, appear in successive columns. Many of the intensity numbers are followed by symbols representing the character of the line. These symbols have the following meaning: h=hazy, H=very hazy, w=wide, l=shaded to longer waves, v=shaded to shorter waves. The classified lines are represented in column 4 by term combinations, symbols for the energy levels as shown in the term table (table 2) being used throughout, except for levels the identification of which is unknown or uncertain.

The computed Zeeman effects are derived from the observed g values shown in table 2. Comparison with the corresponding patterns derived from Landé g values can easily be made by reference to tables of theoretical Zeeman effects published by Kiess and Meggers.[26]

Table 4 contains a total of 1,050 lines, and of these 750, or 71 percent, have been classified. Our efforts to make the analysis more

[25] J. H. Abbink and H. B. Dorgelo, Zeits.f.Phys., vol. 47, p. 221, 1928.
[26] C. C. Kiess and W. F. Meggers, B.S.Jour. Research (RP23), vol. 1, p. 641, 1928.

nearly complete have yielded many additional levels but unless they could be checked by several combinations or otherwise plausibly established they have been discarded as unreal. Only one level, 19,339.61, based on a single combination has been retained, because if its quantum numbers are assumed to be correct it can have no other combinations, but it explains one of the strongest remaining lines, 9,293.82 A, 500 HL.

Attention has been called to the fact that many of the Kr II lines are hazy and unsymmetrical, and it has been supposed that this is an evidence of Stark effect. Now we wish to point out that the unsymmetrical shading of lines in this spectrum appears to be due mainly to the mutual perturbation of levels of opposite parity which have nearly the same energy value.

A striking example of such perturbation is found in the levels $s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}=47,978.52$ and $s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}=48,002.13$. The former is odd, the latter even, and their difference is 23.61 cm^{-1}, which corresponds with a wave length of 420μ or 0.42 mm. When the former (47,978.52) combines with (even) terms of low energy content the lines are shaded to violet (v) and when it combines with high (even) terms the lines are shaded to red (l). The neighboring level (48,002.13) combines with both low and high odd terms with lines shading toward red and violet, respectively, that is, in the opposite sense from lines involving 47,978.52. Thus, the mutual effect of these perturbing levels suggests a repulsion between them.

Similarly, the (odd) levels $s^2p^4(^1D)5p\,^2P^\circ_{0\frac{1}{2}}=45,941.03$ and $s^2p^4(^1D)5p\,^2D^\circ_{1\frac{1}{2}}=45,990.14$ are perturbed by the adjacent (even) level $s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}=45,995.30$ and all lines involving these levels are shaded either to lower or to higher frequencies in the same way as those discussed in the previous example.

Practically all of the lines involving the above-mentioned perturbing levels are shaded in one direction or the other, the only exceptions being those for which dissymmetry could not be detected on account of faintness or nearness to other lines.

Lines which have been identified as originating with twice ionized krypton atoms, and among which regularities have been found and interpreted, will be described later in a note on the Kr III spectrum

TABLE 2.—*Krypton II term table*

ODD TERMS

Configuration and limit	Symbol	Term value	Differences	g-values		Term combinations
				Landé	Observed	
s^2p^5	$^2P^\circ_{1\frac{1}{2}}$ $^2P^\circ_{0\frac{1}{2}}$	198, 182. 00 192, 811. 00	−5, 371			$sp^6.^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)\,5s\,^2D$ $s^2p^4(^1S)5s\,^2S$; $s^2p^4(^3P)6s\,^4P$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$; $s^2p^4(^3P)4d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d\,^2F$, ^2D, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2D; 59,686.98; 65,209.50.
$s^2p^4(^3P)$	$5p$ $^4P^\circ_{2\frac{1}{2}}$ $^4P^\circ_{1\frac{1}{2}}$ $^4P^\circ_{0\frac{1}{2}}$	64, 256. 35 63, 893. 56 62, 398. 97	−362. 79 −1, 494. 59	1. 60 1. 73 2. 67	1. 58 1. 67 1. 98	$sp^6.^2S$; $s^2p^4(3P)5s\,^4P$, ^2P; $s^2p^4(^1S)5s\,^2S$; $s^2p^4(^3P)6s\,^4P$, ^2P; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$; $s^2p^4(^3P)4d\,^4D$; $s^2p^4(^1D)4d\,^2F$, ^2D, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; 31,180.55.

TABLE 2.—*Krypton II term table*—Continued

ODD TERMS—Continued

Configuration and limit	Symbol	Term value	Differences	g-values		Term combinations
				Landé	Observed	
$s^2p^4(^3P)$	$5p$ $^4D^\circ_{3\frac{1}{2}}$	62, 398. 82		1. 43	1. 43	$sp^6.{}^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)6s\,^4P$, ^2P; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$; $s^2p^4(^3P)4d\,^4D$; $s^2p^4(^1D)4d\,^2G$, ^2D, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)5d\,^2G\,^2P$; 31,180.55.
	$^4D^\circ_{2\frac{1}{2}}$	62, 111. 00	−287. 82	1. 37	1. 23	
	$^4D^\circ_{1\frac{1}{2}}$	59, 800. 65	−2, 310. 35	1. 20	1. 26	
	$^4D^\circ_{0\frac{1}{2}}$	58, 018. 75	−1, 781. 90	0. 00	0. 00	
	$^4S^\circ_{1\frac{1}{2}}$	56, 459. 28		2. 00	1. 54	$sp^6.{}^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)6s\,^4p$, ^2P; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$, ^2P; $s^2p^4(^3P)4d\,^4D$, ^4P; $s^2p^4(^1D)4d\,^2D$, ^2P; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)5d\,^2F$, ^2P; 31,180.55.
	$^2P^\circ_{1\frac{1}{2}}$	58, 044. 85		1. 33	1. 26	$sp^6.{}^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)6s\,^4P$, ^2P; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$, ^2P; $s^2p^4(^3P)4d\,^4F$, ^4D, ^4P; $s^2p^4(^1D)4d\,^2D$, ^2P; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)5d\,^2P$; $s^2p^4(^1S)4d\,^2D$; 31,180.55.
	$^2P^\circ_{0\frac{1}{2}}$	59, 078. 64	1, 033. 79	0. 67	1. 78	
	$^2D^\circ_{2\frac{1}{2}}$	58, 063. 01		1. 20	1. 34	$sp^6.{}^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)6s\,^4P$, ^2P; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$, ^2P; $s^2p^4(^3P)4d\,^4F$, ^4D, ^4P; $s^2p^4(^1D)4d\,^2D$, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)5d\,^2P$; 31,180.55.
	$^2D^\circ_{1\frac{1}{2}}$	56, 186. 32	−1, 876. 69	0. 80	1. 33	
	$^2S^\circ_{0\frac{1}{2}}$	55, 818. 45		2. 00	1. 50	$sp^6.{}^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)6s\,^4P$, ^2P; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^4P$, ^2P; $s^2p^4(^3P)4d\,^4D$; $s^2p^4(^1D)4d\,^2P$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)5d\,^2P$.
$s^2p^4(^1D)$	$5p$ $^2F^\circ_{3\frac{1}{2}}$	48, 477. 45		1. 14	1. 14	$s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^3P)4d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2D; $s^2p^4(^1D)5d\,^2G$, ^2F, ^2D; 59686.98.
	$^2F^\circ_{2\frac{1}{2}}$	49, 008. 58	531. 13	0. 86	0. 86	
	$^2P^\circ_{1\frac{1}{2}}$	47, 978. 52		1. 33	1. 33	$sp^6.{}^2S$; $s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)6s\,^4P^2,P$; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)7s\,^2P$; $s^2p^4(^3P)4d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)5d\,^2F$, ^2D, ^2P; 59686.98; 65209.50.
	$^2P^\circ_{0\frac{1}{2}}$	45, 941. 03	−2037. 49	0. 67	0. 70	
	$^2D^\circ_{2\frac{1}{2}}$	45, 865. 80		1. 20	1. 20	$s^2p^4(^3P)5s\,^4P$, ^2P; $s^2p^4(^1D)5s\,^2D$; $s^2p^4(^1D)6s\,^2D$; $s^2p^4(^3P)7s\,^4P$, ^2P; $s^2p^4(^1D)4d\,^2D$, ^2P; $s^2p^4(^3P)4d\,^4F$, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1S)4d\,^2D$; $s^2p^4(^3P)5d\,^2D$; $s^2p^4(^1D)$ ^2F, ^2D, ^2P; 65209.50.
	$^2D^\circ_{1\frac{1}{2}}$	45, 990. 14	124. 34	0. 80	0. 80	
$s^2p^4(^1S)$	$5p$ $^2P^\circ_{1\frac{1}{2}}$	29, 242. 65		0. 67	0. 90	$s^2p^4(^1S)5s\,^2S$; $s^2p^4(^3P)4d\,^4F$, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d\,^2D$, ^2P; 65209.50.
	$^2P^\circ_{0\frac{1}{2}}$	29, 919. 10	676. 45	1. 33	1. 24	
$s^2p^4(^3P)$	$5f$ $^4G^\circ_{5\frac{1}{2}}$					
	$^4G^\circ_{4\frac{1}{2}}$					
	$^4G^\circ_{3\frac{1}{2}}$					
	$^4G^\circ_{2\frac{1}{2}}$					
	$^4F^\circ_{4\frac{1}{2}}$	30, 096. 51				
	$^4F^\circ_{3\frac{1}{2}}$	30, 064. 00	−32. 51			$s^2p^4(^1D)$ $5s\,^2D$; $s^2p^4(^3P)4d$ ^4F, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d$ ^2F, ^2D, ^2P; 65209.50.
	$^4F^\circ_{2\frac{1}{2}}$	29, 998. 80	−62. 50			
	$^4F^\circ_{1\frac{1}{2}}$	29, 796. 88	−201. 92			
	$^4D^\circ_{3\frac{1}{2}}$					
	$^4D^\circ_{2\frac{1}{2}}$					
	$^4D^\circ_{1\frac{1}{2}}$	29, 463. 10				$s^2p^4(^1S)5s\,^2S$; $s^2p^4(^3P)4d$ ^4D, ^4P, ^2D, ^2P; $s^2p^4(^1D)^4d$ ^2P.
	$^4D^\circ_{0\frac{1}{2}}$					
	$^2G^\circ_{4\frac{1}{2}}$					
	$^2G^\circ_{3\frac{1}{2}}$					
	$^2F^\circ_{3\frac{1}{2}}$	29, 921. 57				$s^2p^4(^1D)$ $5s\,^2D$; $s^2p^4(^3P)4d$ ^4F, ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d$ ^2F, ^2D, ^2P; 65209.50.
	$^2F^\circ_{2\frac{1}{2}}$	29, 719. 47	−202. 10			
	$^2D^\circ_{2\frac{1}{2}}$					
	$^2D^\circ_{1\frac{1}{2}}$	29, 551. 64		0. 80	1. 02	$s^2p^4(^1S)$ $5s\,^2S$; $s^2p^4(^3P)4d$ ^4D, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d$ ^2D, ^2P; 65209.50.
$s^2p^4(^1D)$	$5f$ $^2H^\circ_{5\frac{1}{2}}$					
	$^2H^\circ_{4\frac{1}{2}}$					
	$^2G^\circ_{4\frac{1}{2}}$					
	$^2G^\circ_{3\frac{1}{2}}$					
	$^2F^\circ_{3\frac{1}{2}}$	25 050. 97				$s^2p^4(^3P)6s\,^2P$; $s^2p^4(^3P)4d\,^4F$, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d\,^2D$, ^2P; $s^2p^4(^3P)5d\,^4D$; 59686. 98; 65209. 50.
	$^2F^\circ_{2\frac{1}{2}}$	25, 025. 58	−25. 39			
	$^2D^\circ_{2\frac{1}{2}}$	25, 408. 63				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)4d\,^4F$?, ^4P, ^2F, ^2D, ^2P; $s^2p^4(^1D)4d\,^2F$, ^2D, ^2P; 65209.50.
	$^2D^\circ_{1\frac{1}{2}}$	25, 467. 28	58. 65			

TABLE 2.—*Krypton II term table*—Continued

ODD TERMS—Continued

Configuration and limit	Symbol	Term value	Differences	g-values Landé	g-values Observed	Term combinations
$s^2p^4(^1D)$	$5f\,^2P^\circ_{1\frac{1}{2}}$	24, 494. 12				$s^2p^4(^3P)6s\,^4P$; $s^2p^4(^3P)4d\,^4F$?, ^4P, ^2F?, ^2D, ^2P; $s^2p^4(^1D)4d\,^2D$, ^2P; 65209.50.
	$5f\,^2P^\circ_{0\frac{1}{2}}$	23, 679. 00	−815. 12			
$s^2p^4(^1S)$	$5f\,^2F^\circ_{3\frac{1}{2}}$					
	$5f\,^2F^\circ_{2\frac{1}{2}}$					
	j					
	$1\frac{1}{2}$	32, 026. 50?				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^1S)5s\,^2S$; $s^2p^4(^3P)4d\,^2F$, ^2D; $s^2p^4(^1D)4d\,^2D$, ^2P.
	$3\frac{1}{2}$	29, 691. 33				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)4d\,^4F$, ^2F.
	$1\frac{1}{2}$	27, 294. 47				$s^2p^4(^1S)5s\,^2S$; $s^2p^4(^1D)4d\,^2P$.
	$2\frac{1}{2}$	26, 886. 30				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)4d\,^4F$, ^2F, ^2D.
	$2\frac{1}{2}$	26, 795. 68				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)4d\,^2F$, ^2D; s^2p^4 (^1D) $4d\,^2G$?.
	$3\frac{1}{2}$	26, 622. 00				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)4d\,^2F$; 65,209.50.
	$2\frac{1}{2}$	25, 447. 85				$s^2p^4(^1D)5s\,^2D$; $s^2p^4(^3P)4d\,^2P$; $s^2p^4(^1D)4d$ ^2G?, ^2D.
	$1\frac{1}{2}$	15, 717. 15				$s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)5d\,^4D$?, ^4P; $s^2p^4(^1D)$ $4d\,^2P$, ^2D.
	$0\frac{1}{2}$?	15, 702. 73				$s^2p^4(^1S)6s\,^2S$; $s^2p^4(^3P)6s\,^4P$, ^2P; $s^2p^4(^3P)$ $5d\,^4D$?; ^4P; $s^2p^4(^1D)4d\,^2P$, ^2D.
	$1\frac{1}{2}$	15, 370. 10				$s^2p^4(^3P)6s\,^2P$; $s^2p^4(^3P)5d\,^4D$; $s^2p^4(^1D)$ $4d\,^2P$, ^2D.
	$2\frac{1}{2}$	15, 340. 81				$s^2p^4(^3P)5d\,^4D$, ^2F, ^2P; $s^2p^4(^1D)4d\,^2P$, ^2D.
	$1\frac{1}{2}$	15, 216. 41				$s^2p^4(^3P)5d\,^4D$?; $s^2p^4(^1D)4d\,^2P$, ^2D.
	$2\frac{1}{2}$	14, 873. 45				$s^2p^4(^1S)6s\,^2S$; $s^2p^4(^1D)4d\,^2P$, ^2D.

EVEN TERMS

Configuration and limit	Symbol	Term value	Differences	g-values Landé	g-values Observed	Term combinations
sp^6	$^2S_{0\frac{1}{2}}$	89, 179. 94				s^2p^5. $^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$; $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; s^2p^4 (^1D) $5p\,^2P^\circ$.
$s^2p^4(^3P)$	$5s\,^4P_{2\frac{1}{2}}$	85, 352. 00		1. 60	1. 60	s^2p^5. $^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$.
	$5s\,^4P_{1\frac{1}{2}}$	83, 088. 29	−2, 263. 71	1. 73	1. 54	
	$5s\,^4P_{0\frac{1}{2}}$	80, 577. 27	−2, 511. 02	2. 67	2. 64	
	$5s\,^2P_{1\frac{1}{2}}$	79, 705. 93		1. 33	1. 52	s^2p^5. $^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, 2D°, 2P°.
	$5s\,^2P_{0\frac{1}{2}}$	77, 178. 13	−2, 527. 80	0. 67	0. 70	
$s^2p^4(^1D)$	$5s\,^2D_{2\frac{1}{2}}$	70, 318. 77		1. 20	1. 20	s^2p^5. $^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$; $s^2p^4(^3P)5f$ $^4F^\circ$, $^2F^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$, $^2D^\circ$; 29691.33; 26886.30; 26795.68; 26622.00; 25447.85.
	$5s\,^2D_{1\frac{1}{2}}$	70, 582. 81	264. 04	0. 80	0. 80	
$s^2p^4(^1S)$	$5s\,^2S_{0\frac{1}{2}}$	52, 368. 39		2. 00	2. 00	s^2p^5. $^2P^\circ$; $s^2p^4(^3P)5p\,^4P^\circ$; $s^2p^4(^1S)5p\,^2P^\circ$; $s^2p^4(^3P)5f\,^4D^\circ$, $^2D^\circ$; 32026.50.
$s^2p^4(^3P)$	$4d\,^4F_{4\frac{1}{2}}$	72, 179. 43				s^2p^5.$^2P^\circ$; $s^2p^4(^3P)5p\,^2D^\circ$,$^2P^\circ$; $s^2p^4(^1D)5p$ $^2F^\circ$,$^2D^\circ$,$^2P^\circ$; $s^2p^4(^1S)5p\,^2P^\circ$; $s^2p^4(^3P)5f$ $^4F^\circ$,$^2F^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$, $^2D^\circ$?,$^2P^\circ$?; 29,-691.33; 26,886.30.
	$4d\,^4F_{3\frac{1}{2}}$	70, 250. 80	−1,928. 63			
	$4d\,^4F_{2\frac{1}{2}}$	68, 483. 02	−1,767. 78			
	$4d\,^4F_{1\frac{1}{2}}$	68, 438. 44	−44. 58			
	$4d\,^4D_{3\frac{1}{2}}$	77, 970. 41				s^2p^5.$^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$,$^4P^\circ$,$^4S^\circ$,$^2D^\circ$,$^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; $s^2p^4(^3P)$ $5f\,^4F^\circ$,$^4D^\circ$,$^2F^\circ$,$^2D^\circ$.
	$4d\,^4D_{2\frac{1}{2}}$	77, 753. 35	−217. 06			
	$4d\,^4D_{1\frac{1}{2}}$	77, 179. 90	−573. 45			
	$4d\,^4D_{0\frac{1}{2}}$	76, 400. 72	−779. 18	0. 00	0. 00	
	$4d\,^4P_{2\frac{1}{2}}$	66, 804. 76				s^2p^5.$^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$,$^4S^\circ$,$^2D^\circ$; $s^2p^4(^1D)$ $5p\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; $s^2p^4(^1S)5p\,^2P^\circ$; $s^2p^4(^3P)$ $5f\,^4F^\circ$$^4D^\circ$,$^2F^\circ$,$^2D^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$,$^2D^\circ$, $^2P^\circ$.
	$4d\,^4P_{1\frac{1}{2}}$	67, 286. 72	481. 96			
	$4d\,^4P_{0\frac{1}{2}}$	67, 667. 41	380. 69			
	$4d\,^2F_{3\frac{1}{2}}$	66, 548. 14				s^2p^5.$^2P^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; $s^2p^4(^1S)$ $5p\,^2P^\circ$; $s^2p^4(^3P)5f\,^4F^\circ$,$^2F^\circ$,$^2D^\circ$; $s^2p^4(^1D)$ $5f\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; 29,691.33,26,886.30,26,-795.68,26,622.00,32,026.50.
	$4d\,^2F_{2\frac{1}{2}}$	61, 082. 02	−5,466. 12			
	$4d\,^2D_{2\frac{1}{2}}$	63, 613. 18				s^2p^5.$^2P^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; s^2p^4 $(^1S)5p\,^2P^\circ$; $s^2p^4(^3P)5f\,^4F^\circ$,$^4D^\circ$,$^2F^\circ$,$^2D^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; 32,026.50; 26,-886. 30; 26, 795.68.
	$4d\,^2D_{1\frac{1}{2}}$	65, 214. 72	1,601. 54			
	$4d\,^2P_{1\frac{1}{2}}$	63, 558. 83				s^2p^5.$^2P^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; $s^2p^4(^1S)$ $5p\,^2P^\circ$; $s^2p^4(^3P)5f\,^4F^\circ$,$^4D^\circ$,$^2F^\circ$,$^2D^\circ$; s^2p^4 $(^1D)5f\,^2F^\circ$,$^2D^\circ$,$^2P^\circ$; 25,447.85.
	$4d\,^2P_{0\frac{1}{2}}$					

TABLE 2.—*Krypton II term table*—Continued

EVEN TERMS—Continued

Configuration and limit	Symbol	Term value	Differences	g-values		Term combinations
				Landé	Observed	
$s^2p^4(^1D)$	$4d\ ^2G_{4\frac{1}{2}}$					$s^2p^4(^3p)5p\,^4D^\circ$; $s^2p^4\ (^3P)5f\,^4F^\circ$?; 26,795.68; 25,447.85.
	$^2G_{3\frac{1}{2}}$	51, 289. 68?				
	$^2F_{3\frac{1}{2}}$	48, 321. 73?				$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4P^\circ$?; $s^2p^4(^3P)5f\,^4F^\circ$, $^2F^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$, $^2D^\circ$.
	$^2F_{2\frac{1}{2}}$	47, 367. 76?	−953. 97			
	$^2D_{2\frac{1}{2}}$	48, 666. 10				$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^2D^\circ$, $^2P^\circ$; $s^2p^4(^1S)\ 5p\,^2P^\circ$; $s^2p^4(^3P)5f\,^4F^\circ$, $^2F^\circ$, $^2D^\circ$; $s^2p^4\ (^1D)5f\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$; 32026.50; 25447.85; 15717.15; 15702.73; 15340.81; 15370.10; 15216.41; 14873.45.
	$^2D_{1\frac{1}{2}}$	48, 002. 13	−663. 97			
	$^2P_{1\frac{1}{2}}$	46, 354. 00				$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1S)5p\,^2P^\circ$; s^2p^4 $(^3P)5f\,^4F^\circ$, $^4D^\circ$, $^2F^\circ$, $^2D^\circ$; $s^2p^4(^1D)$ $5f\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$; 32026.50; 15717.15; 15702.73; 15340.81; 15370.10; 15216.41; 14873.45.
	$^2P_{0\frac{1}{2}}$	45, 995. 30	−358. 70			
	$^2S_{0\frac{1}{2}}$					
$s^2p^4(^1S)$	$4d\ ^2D_{2\frac{1}{2}}$	26, 211. 39		1. 20	1. 20	$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^2D^\circ$, $^2P^\circ$; $s^2p^4\ (^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$; 15,340.81.
	$^2D_{1\frac{1}{2}}$	26, 130. 11	−81. 28	0. 80	0. 80	
$s^2p^4(^3P)$	$6s\ ^4P_{2\frac{1}{2}}$	41, 102. 93		1. 60	1. 60	$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2P^\circ$; $s^2p^4(^1S)5p\,^2P^\circ$.
	$^4P_{1\frac{1}{2}}$	40, 296. 59	−806. 34	1. 73	1. 39	
	$^4P_{0\frac{1}{2}}$	36, 304. 63	−3, 991. 96	2. 67	2. 34	
	$^2P_{1\frac{1}{2}}$	36, 122. 97		1. 33	1. 33	$s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2P^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$?; 15,702.73; 15,370.10.
	$^2P_{0\frac{1}{2}}$	35, 615. 84	−507. 13	0. 67	0. 92	
$s^2p^4(^1D)$	$6s\ ^2D_{2\frac{1}{2}}$, $^2D_{1\frac{1}{2}}$	27, 610. 88		0. 80	1. 00	$s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$; 15,340.81.
$s^2p^4(^1S)$	$6s\ ^2S_{0\frac{1}{2}}$	33, 742. 84?		2. 00	1. 94	$s^2p^5.\ ^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2P^\circ$; 15,717.15; 15,702.73; 14, 873.45.
$s^2p^4(^3P)$	$5d\ ^4F_{4\frac{1}{2}}$	35, 973. 16		1. 33	1. 33	$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2P^\circ$.
	$^4F_{3\frac{1}{2}}$	35, 650. 09	−323. 07	1. 24	1. 17	
	$^4F_{2\frac{1}{2}}$	33, 104. 65	−2, 545. 44	1. 03	1. 12	
	$^4F_{1\frac{1}{2}}$	31, 134. 87	−1, 969. 78	0. 40	0. 52	
	$^4D_{3\frac{1}{2}}$	36, 896. 69		1. 43	1. 40	$s^2p^5.\,^2P^\circ$?; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2P^\circ$; $s^2p^4(^1D)5f\,^2F^\circ$; 15,702.73; 15,340.81; 15,370.10; 15,216.41.
	$^4D_{2\frac{1}{2}}$	36, 730. 17	−136. 52	1. 37	1. 37	
	$^4D_{1\frac{1}{2}}$	36, 380. 08	−350. 09			
	$^4D_{0\frac{1}{2}}$	35, 148. 52	−1, 231. 56	0. 00	0. 88	
	$^4P_{2\frac{1}{2}}$	37, 168. 44		1. 60	2. 47	$s^2p^5.\,^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, $^2P^\circ$; $s^2P^4(^1D)$ $5f\,^2P^\circ$; 15,717.15; 15,702.73; 15,340.81.
	$^4P_{1\frac{1}{2}}$	36, 772. 71	−395. 73			
	$^4P_{0\frac{1}{2}}$	37, 385. 32	612. 61	2. 67	2. 07	
	$^2F_{3\frac{1}{2}}$	32, 784. 28		1. 14	1. 24	$s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$; $s^2p^4(^1D)$ $5p\,^2F^\circ$, $^2P^\circ$; 15,340.81.
	$^2F_{2\frac{1}{2}}$	30, 663. 09	−2, 121. 19	0. 86	1. 04	
	$^2D_{2\frac{1}{2}}$	28, 477. 15		1. 20	1. 15	s^2p^5, $^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$.
	$^2D_{1\frac{1}{2}}$	30, 268. 89	1, 791. 74	0. 80	1. 18	
	$^2P_{1\frac{1}{2}}$	33, 040. 09		1. 33	1. 40	$s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2P^\circ$.
	$^2P_{0\frac{1}{2}}$	31, 228. 69	−1, 811. 40	0. 67	0. 51	
$s^2p^4(^1D)$	$5d\ ^2G_{4\frac{1}{2}}$	21, 589. 03		1. 11	1. 11	$s^2p^4(^3P)5p\,^4D^\circ$?; $s^2p^4(^1D)5p\,^2F^\circ$.
	$^2G_{3\frac{1}{2}}$	22, 290. 26	701. 23	0. 89	0. 89	
	$^2F_{3\frac{1}{2}}$	20, 273. 00		1. 14	1. 14	$s^2p^4(^3P)5p\,^4S^\circ$; $s^2p^4(^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$.
	$^2F_{2\frac{1}{2}}$	20, 471. 72	198. 72	0. 86	0. 89	
	$^2D_{2\frac{1}{2}}$	19, 861. 37		1. 20	1. 20	$s^2p^4(^1D)5p\,^2F^\circ$, $^2D^\circ$, $^2P^\circ$.
	$^2D_{1\frac{1}{2}}$	22, 071. 04	2, 209. 67			
	$^2P_{1\frac{1}{2}}$	20, 498. 17		1. 33	1. 18	$s^2p^4(^3P)5p\,^4D^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2D^\circ$, $^2P^\circ$.
	$^2P^0_{\frac{1}{2}}$	19, 394. 37	−1, 103. 80			
	$^2S^0_{\frac{1}{2}}$					
$s^2p^4(^1S)$	$5d\ ^2D_{2\frac{1}{2}}$					
	$^2D_{1\frac{1}{2}}$					
$s^2p^4(^3P)$	$7s\ ^4P_{2\frac{1}{2}}$	24, 872. 32				$s^2p^5.\ ^2P^\circ$; $s^2p^4(^3P)5p\,^4D^\circ$, $^4P^\circ$, $^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2D^\circ$.
	$^4P_{1\frac{1}{2}}$	24, 541. 98	−330. 34			
	$^4P_{0\frac{1}{2}}$	20, 127. 21	−4, 414. 77			
	$^2P_{1\frac{1}{2}}$	20, 225. 12				$s^2p^4(^3P)5p\,^4S^\circ$, $^2D^\circ$, $^2P^\circ$, $^2S^\circ$; $s^2p^4(^1D)5p\,^2$ D°, $^2P^\circ$.
	$^2P_{0\frac{1}{2}}$	19, 674. 55	−550. 57			

TABLE 2.—*Krypton II term table*—Continued

EVEN TERMS—Continued

Configuration and limit	Symbol	Term value	Differences	g-values: Landé	g-values: Observed	Term combinations
$s^2p^4(^1D)$	$7s\,^2D_{2\frac{1}{2}}$					
	$7s\,^2D_{1\frac{1}{2}}$					
$s^2p^4(^1S)$	$7s\,^2S_{0\frac{1}{2}}$					
$s^2p^4(^3P)$	$5g\,^4G_{5\frac{1}{2}}$	19, 339. 61				$s^2p^4(^3P)\ 5f\,^4F^\circ,\ ^2F^\circ$.
	$5g\,^4G_{4\frac{1}{2}}$	19, 370. 70	31. 09			
	$5g\,^4G_{3\frac{1}{2}}$	19, 366. 49	−4. 21			
	$5g\,^4G_{2\frac{1}{2}}$	19, 321. 12	−45. 37			
	j					
	$2\frac{1}{2}$	65, 209. 50				$s^2p^5.^2P^\circ$; $s^2p^4(^1D)5p\,^2F^{\circ 2},D^\circ,^2P^\circ$; $s^2p^4(^1S)\ 5p\,^2P^\circ$; $s^2p^4(^3P)5f\,^4F^\circ,^2F^\circ,^2D^\circ$; $s^2p^4(^1D)\ 5f\,^2F^\circ,^2D^\circ,^2P^\circ$; 26,622.00.
	$1\frac{1}{2}$	59, 686. 98				$s^2p^5.^2P^\circ$; $s^2p^4(^1D)5p\,^2F^\circ,^2D^\circ,^2P^\circ$; s^2p^4 (^1D $5f\,^2F^\circ$.
	$2\frac{1}{2}$	31, 180. 55				$s^2p^4(^3P)5p\,^4D^\circ,^4P^\circ,\ ^4S^\circ,\ ^2D^\circ,\ ^2P^\circ$.

TABLE 3.—*Classified lines of the Kr II spectrum in the extreme ultraviolet*

Intensity	λ_{vac} I.A	$\nu_{vac}\,cm^{-1}$	Term combination
0	575. 92	173, 635	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P_{1\frac{1}{2}}$
2	581. 51	171, 966	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1S)4d\,^2D_{2\frac{1}{2}}$
1	589. 25	169, 707	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$
2	595. 56	167, 909	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$
1	599. 99	166, 669	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1S)4d\,^2D_{1\frac{1}{2}}$
2	605. 74	165, 087	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4F_{2\frac{1}{2}}$
2	608. 14	164, 436	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}$
1	621. 10	161, 005	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{2\frac{1}{2}}$
3	621. 90	160, 798	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{0\frac{1}{2}}$
1	633. 36	157, 888	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$
0	634. 33	157, 647	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}$?
0	638. 94	156, 509	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{0\frac{1}{2}}$
0	639. 33	156, 414	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$?
0	640. 86	156, 040	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$
2	643. 40	155, 424	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{0\frac{1}{2}}$
1	657. 11	152, 182	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$
0	633. 06	150, 816	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2F_{2\frac{1}{2}}$
4	665. 88	150, 177	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$
4	668. 80	149, 552	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$
2	681. 16	146, 808	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$
5	682. 82	146, 452	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$
2	685. 71	145, 834	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}$
2	690. 61	144, 800	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{\frac{1}{2}}$
1	712. 02	140, 446	$s^2p^5.^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}$
0	722. 04	138, 496	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$——59,687
4	729. 41	137, 097	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$
2	743. 15	134, 562	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$
4	752. 03	132, 973	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)4d\,^2P_{0\frac{1}{2}}$; $s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$
2	761. 16	131, 378	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}$
1	763. 97	130, 895	$s^2p^5.^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)4d\,^4P_{1\frac{1}{2}}$

TABLE 3.—*Classified lines of the Kr II spectrum in the extreme ultraviolet*—Con.

Intensity	λ_{vac}I.A	$\nu_{vac}cm^{-1}$	Term combination
0	766. 19	130, 516	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)4d^4P_{0\frac{1}{2}}$
3	770. 98	129, 705	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)4d^4F_{2\frac{1}{2}}$
3	773. 66	129, 256	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)4d^2P_{1\frac{1}{2}}$
5	782. 06	127, 867	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^1D)5s^2D_{2\frac{1}{2}}$
3	783. 72	127, 597	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)4d^2P_{0\frac{1}{2}}$ $s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)4d^2D_{1\frac{1}{2}}$ $s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^1D)5s^2D_{1\frac{1}{2}}$
1	799. 10	125, 139	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)4d.{}^4P_{0\frac{1}{2}}$
5	818. 11	122, 233	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^1D)5s.{}^2D_{1\frac{1}{2}}$
2	821. 11	121, 786	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)4d^4D_{0\frac{1}{2}}$
3	826. 40	121, 007	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)5s^2P_{0\frac{1}{2}}$ $s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)4d^4D_{1\frac{1}{2}}$
4	830. 36	120, 430	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)4d^4D_{2\frac{1}{2}}$
6	844. 06	118, 475	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)5s^2P_{1\frac{1}{2}}$
2	850. 31	117, 604	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)5s^4P_{0\frac{1}{2}}$
4	859. 04	116, 409	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)4d^4D_{0\frac{1}{2}}$
5	864. 78	115, 636	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)5s^2P_{0\frac{1}{2}}$ $s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)4d^4D_{1\frac{1}{2}}$
4	868. 85	115, 095	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)5s^4P_{1\frac{1}{2}}$
2	884. 13	113, 106	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)5s^2P_{1\frac{1}{2}}$
8	886. 29	112, 830	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-s^2p^4({}^3P)5s^4P_{2\frac{1}{2}}$
6	890. 99	112, 235	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)5s^4P_{0\frac{1}{2}}$
3	911. 39	109, 722	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-s^2p^4({}^3P)5s^4P_{1\frac{1}{2}}$
7	917. 40	109, 004	$s^2p^5.{}^2P^\circ_{1\frac{1}{2}}-sp^6.{}^2S_{0\frac{1}{2}}$
12	964. 93	103, 634	$s^2p^5.{}^2P^\circ_{0\frac{1}{2}}-sp^6.{}^2S_{0\frac{1}{2}}$

TABLE 4.—*The first spark spectrum of krypton (Kr II)*

Intensity and character	λ_{air}I.A.	ν_{vac}cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
1	2, 080. 53	48, 049. 30	$s^2p^4({}^3P)4d^4D_{3\frac{1}{2}}-s^2p^4({}^3P)5f^2F^\circ_{3\frac{1}{2}}$		
2	2, 082. 60	48, 001. 55			
1−	2, 083. 87	47, 972. 30	$s^2p^4({}^3P)4d^4D_{3\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{2\frac{1}{2}}$		
1	2, 084. 54	956. 88	$s^2p^4({}^3P)4d^4D_{2\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{1\frac{1}{2}}$		
5	2, 086. 73	906. 56	$s^2p^4({}^3P)4d^4D_{3\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{3\frac{1}{2}}$		
20	2, 088. 16	873. 75	$s^2p^4({}^3P)4d^4D_{3\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{4\frac{1}{2}}$		
3	2, 093. 37	754. 62	$s^2p^4({}^3P)4d^4D_{2\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{2\frac{1}{2}}$		
1	2, 095. 02	717. 02	$s^2p^4({}^3P)4d^4D_{1\frac{1}{2}}-s^2p^4({}^3P)5f^4D^\circ_{0\frac{1}{2}}$		
15	2, 096. 24	689. 25	$s^2p^4({}^3P)4d^4D_{2\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{3\frac{1}{2}}$		
1*h*−	2, 098. 97	627. 23	$s^2p^4({}^3P)4d^4D_{1\frac{1}{2}}-s^2p^4({}^3P)5f^2D^\circ_{1\frac{1}{2}}$		
5	2, 109. 81	382. 56	$s^2p^4({}^3P)4d^4D_{1\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{1\frac{1}{2}}$		
1	2, 116. 00	243. 96			
12	2, 118. 83	180. 87	$s^2p^4({}^3P)4d^4D_{1\frac{1}{2}}-s^2p^4({}^3P)5f^4F^\circ_{2\frac{1}{2}}$		
1	2, 123. 22	083. 33			
3	2, 123. 48	077. 57			
2	2, 125. 56	47, 031. 51			
1	2, 129. 75	46, 938. 98			
1	2, 129. 80	937. 88	$s^2p^4({}^3P)4d^4D_{0\frac{1}{2}}-s^2p^4({}^3P)5f^4D_{0\frac{1}{2}}$		
1	2, 130. 26	927. 75			
{2	2, 130. 43	924. 01			
{2	2, 130. 55	921. 35			
1	2, 131. 16	907. 94			
1	2, 132. 86	870. 55			
2	2, 133. 85	848. 81	$s^2p^4({}^3P)4d^4D_{0\frac{1}{2}}-s^2p^4({}^3P)5f^2D^\circ_{1\frac{1}{2}}$		
1	2, 135. 80	806. 04			
1	2, 138. 70	742. 58			

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect Observed	Zeeman effect Computed
1*h*−	2, 140. 27	708. 30	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}$—29691.33		
1	2, 142. 49	659. 91			
1	2, 142. 97	649. 46			
10	2, 145. 08	603. 57	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{1\frac{1}{2}}$		
1	2, 148. 03	539. 58			
2	2, 148. 58	527. 67			
1	2, 149. 70	503. 43			
1−	2, 149. 86	499. 97			
1−	2, 150. 68	482. 24			
1	2, 155. 38	380. 89			
1	2, 158. 43	315. 36			
2*h*	2, 159. 02	302. 71			
3	2, 162. 50	228. 20			
1−	2, 163. 41	208. 76			
4*h*	2, 164. 38	188. 05			
1	2, 165. 63	161. 40			
1	2, 169. 02	089. 26			
2	2, 170. 83	050. 84			
1	2, 172. 25	46, 020. 73			
1*h*−	2, 173. 78	45, 988. 35			
1	2, 175. 35	955. 16			
1	2, 175. 99	941. 64			
3*h*	2, 177. 79	903. 68			
1*h*	2, 179. 56	866. 41			
1	2, 180. 91	838. 02			
1−	2, 182. 13	812. 39			
1	2, 183. 71	779. 25			
4	2, 185. 52	741. 34			
1	2, 186. 70	716. 66			
2	2, 191. 91	608. 01			
1H+	2, 192. 20	601. 97			
2	2, 197. 25	497. 18			
1H+	2, 197. 53	491. 38			
2	2, 199. 17	457. 46			
1*h*−	2, 202. 43	390. 18			
1−	2, 202. 92	380. 09			
1	2, 205. 34	330. 30			
1	2, 208. 41	267. 28	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
5	2, 211. 71	199. 75	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
6	2, 212. 29	187. 90			
5	2, 212. 96	174. 22	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2D^{\circ}_{2\frac{1}{2}}$		
2	2, 215. 60	120. 40			
1	2, 215. 88	114. 70			
1	2, 218. 40	063. 46			
1−	2, 219. 14	45, 048. 45			
1−	2, 221. 86	44, 993. 29			
1	2, 223. 50	960. 11			
1	2, 224. 06	948. 79			
1−	2, 224. 71	935. 66			
2	2, 225. 18	926. 17			
30	2, 227. 92	870. 92	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—25447. 85		
1	2, 230. 69	815. 21			
1	2, 232. 01	788. 71			
1	2, 232. 32	782. 49			
1	2, 232. 98	769. 25			
1	2, 233. 77	753. 42			
2	2, 234. 34	742. 01			
2	2, 236. 43	700. 20			
4	2, 237. 15	685. 81			
2	2, 240. 89	611. 24			
1	2, 244. 24	544. 65			
10	2, 245. 39	521. 85			
8	2, 250. 32	44, 424. 32			
1	72. 55	43, 989. 80	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
8	73. 24	976. 46			

TABLE 4.—*The first spark spectrum of krypton* (*Kr* II)—Continued

Intensity and character	λ_{air}I.A.	ν_{vac}cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
30	83.07	787.13			
30	22,87.79	696.80	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$–26622.00		
6	23,00.38	457.67	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
6	01.73	432.18	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
3	02.67	414.46	$s^2p^4(^3P)4d\,^4F_{1\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
6	12.00	239.27	$sp^6\cdot{}^2S_{0\frac{1}{2}}$–$s^2p^4(^1D)5p\,^2P^{\circ}_{0\frac{1}{2}}$		
6	14.24	197.42			
8	15.52	173.55	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
10	16.32	43,158.64			
10	44.38	42,642.12	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
2	52.86	488.44	$s^2p^4(^3P)4d\,^4F_{4\frac{1}{2}}$—29,691.33		
50	53.68	473.64			
6	62.74	310.79	$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
3	65.52	261.07	$s^2p^4(^3P)4d\,^4P_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
3	68.94	200.07	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
4	73.68	115.80	$s^2p^4(^3P)4d\,^4F_{4\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{3\frac{1}{2}}$		
20	75.52	42,083.19	$s^2p^4(^3P)4d\,^4F_{4\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{4\frac{1}{2}}$		
4	90.50	41,819.50	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
10	2,392.78	779.65	$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
5*h*	2,408.52	506.64			
5	9.06	497.33	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
10*h*	13.81	415.68			
10	14.89	397.16			
2	2,414.94	41,396.31	$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2D^{\circ}_{2\frac{1}{2}}$		
4	18.41	336.91			
10	26.36	201.48	$sp^6.{}^2S_{0\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
20	28.35	167.72			
8	32.74	41,093.44			
8	46.44	40,863.34	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
2	55.04	720.20	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
2	55.31	715.72	65,209.50—$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
6	56.07	703.13			
2	62.33	599.65	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
2	63.27	584.16	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
100*h*	64.77	559.47	$s^2p^4(^3P)4d\,^4F_{3\frac{1}{2}}$—29,691.33		
10*h*	70.45	466.22			
2*h*	74.69	396.89	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
3	78.85	329.10	$s^2p^4(^3P)4d\,^4F_{3\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
2	83.57	252.47			
1	83.62	251.66	$s^2p^4(^3P)4d\,^4F_{3\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
3	87.50	188.88	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
4	87.62	186.94	$s^2p^4(^3P)4d\,^4F_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{3\frac{1}{2}}$		
8*h*	89.39	158.37	65,209.50—$s^2p^4(^1D)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
1	2,494.66	40,040.16	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
2*hl*	2497.42	40029.25			
7H*l*	2503.87	39926.15	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—26622.00		
5H*l*	06.56	883.30			
5	10.56	819.76	$s^2p^4(^3P)5p\,^4D^{\circ}_{2\frac{1}{2}}$–$s^2p^4(^1D)5d\,^2G_{3\frac{1}{2}}$		
3	11.74	801.05	65209.50–$s^2p^4(^1D)5f\,^2D^{\circ}_{2\frac{1}{2}}$		
1H*l*	13.40	774.77			
8	17.95	702.90			
1*h*	25.28	587.67			
3*hl*	27.16	558.22			
1	31.73	486.82	$s^2p^4(^3P)5s\,^4P_{2\frac{1}{2}}$–$s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac{1}{2}}$		
5H*l*	38.34	384.00	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac{1}{2}}$–$s^2p^4(^3P)7s\,^4P_{2\frac{1}{2}}$		
2	50.13	201.93			
6	55.91	113.28			
6	56.36	106.40			
8*h*	59.10	064.53	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$–$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
3*hl*	61.94	021.23	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$–$s^2p^4(^3P)7s\,^4P_{2\frac{1}{2}}$		
1H	62.04	39,019.71	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4D^{\circ}_{1\frac{1}{2}}$		
1*h*	66.61	38,950.23	$s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P^{0}_{\frac{1}{2}}$		
10*h*	72.03	868.16			
2H	74.25	834.64			
2	78.98	763.42	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
2	80.12	746.30			
5H*l*	81.74	721.99			
3*h*	84.15	685.87	$s^2p^4(^3P)4d^4F_{2½}$—$s^2p^4(^3P)5f^4F^\circ_{1½}$		
30	89.08	612.22			
2h	90.74	587.48	$s^2p^4(^3P)4d^2D_{2½}$—$s^2p^4(^1D)5f^2F^\circ_{2½}$		
1*h*	91.25	579.88	$s^2p^4(^3P)5p^2P^\circ_{0½}$—$s^2p^4(^1D)5d^2P_{1½}$		
60	92.48	561.58	$s^2p^4(^3P)4d^4F_{2½}$—$s^2p^4(^3P)5f^2F^\circ_{3½}$		
4	94.40	533.04	$s^2p^4(^3P)4d^2P_{1½}$—$s^2p^4(^1D)5f^2F^\circ_{2½}$		
4H	95.36	518.79	$s^2p^4(^3P)4d^4F_{1½}$—$s^2p^4(^1S)5p^2P^\circ_{0½}$		
5H	96.73	498.47			
7	2,597.73	483.95	$s^2p^4(^3P)4d^4F_{2½}$—$s^2p^4(^3P)5f^2F^\circ_{2½}$		
7	02.11	418.88	$s^2p^4(^3P)4d^4F_{2½}$—$s^2p^4(^3P)5f^4F^\circ_{3½}$		
1H*l*	05.41	370.22	$s^2p^4(^3P)5p^2P^\circ_{1½}$—$s^2p^4(^3P)7s^2P^0{}_{½}$		
1*h*	2,610.76	38,291.60	$s^2p^4(^1D)5s^2D_{2½}$—32,026.50		
10*h*	2,610.98	38,288.37			
10*h*	2,616.71	38,204.54	{$s^2p^4(^3P)4d^2D_{2½}$—$s^2p^4(^1D)5f^2D^\circ_{2½}$ {$s^2p^4(^3P)4d^4P_{0½}$—$s^2p^4(^3P)5f^4D^\circ_{1½}$		
40*h*	20.44	150.16	$s^2p^4(^3P)4d^2P_{1½}$—$s^2p^4(^1D)5f^2D^\circ_{2½}$		
6*h*	20.65	147.10			
2	22.82	115.54	$s^2p^4(^3P)4d^4P_{0½}$—$s^2p^4(^3P)5f^2D^\circ_{1½}$		
1	23.11	111.33			
6H*l*	24.78	087.08			
3H	27.22	051.71			
7	27.75	38,044.04	{$s^2p^4(^3P)5p^4P^\circ_{2½}$—$s^2p^4(^1S)4d^2D_{2½}$ {$s^2p^4(^3P)4d^4P_{1½}$—$s^2p^4(^1S)5p^2P^\circ_{1½}$		
6*h*	34.41	37,947.86	$s^2p^4(^3P)4d^4P_{0½}$—$s^2p^4(^3P)5f^2F^\circ_{2½}$		
3*hl*	36.51	917.64	$s^2p^4(^3P)5p^2P^\circ_{1½}$—$s^2p^4(^3P)7s^4P_{0½}$		
2*h*	38.32	891,63	$s^2p^4(^3P)5p^4D^\circ_{0½}$—$s^2p^4(^3P)7s^4P_{0½}$		
2*hl*	40.74	856.91	$s^2p^4(^2P)5p^4P^\circ_{0½}$-$s^2p^4(^3P)7s^4P_{1½}$		
4*hl*	42.08	837.71	$s^2p^4(^3P)5p^2D^\circ_{2½}$-$s^2p^4(^3P)7s^2P_{1½}$		
20*h*	43.06	823.68	$s^2p^4(^3P)4d^4P_{1½}$-$s^2p^4(^3P)5f^4D^\circ_{1½}$		
20*h*	48.15	750.99			
20	49.27	735.02	$s^2p^4(^3P)4d^4P_{1½}$-$s^2p^4(^3P)5f^2D^\circ_{1½}$		
4H*l*	49.67	729.33	$s^2p^4(^3P)5p^2D^\circ_{1½}$-$s^2p^4(^1D)5d^2D_{1½}$		
6	53.95	668.49	$s^2p^4(^3P)4d^4P_{0½}$-$s^2p^4(^3P)5f^4F^\circ_{2½}$		
15*h*	56.38	634.03			
2H*l*	59.60	588.47	$s^2p^4(^3P)5p^2D^\circ_{2½}$-$s^2p^4(^1D)5d^2F_{2½}$		
8*hl*	60.97	569.12	$s^2p^4(^3P)5p^4D^\circ_{2½}$-$s^2p^4(^3P)7s^4P_{1½}$		
1	61.22	565.45	{$s^2p^4(^3P)4d^4P_{1½}$-$s^2p^4(^3P)5f^2F^\circ_{2½}$ {$s^2p^4(^3P)5p^2D^\circ_{2½}$-$s^2p^4(^1D)5d^2P_{1½}$		
5	61.47	562.06	$s^2p^4(^3P)4d^4P_{2½}$-$s^2p^4(^1S)5p^2P^\circ_{2½}$		
2*hl*	62.57	546.54	$s^2p^4(^3P)5p^2P^\circ_{1½}$-$s^2p^4(^1D)5d^2P_{1½}$		
8	64.00	526.39	$s^2p^4(^3P)5p^4P^\circ_{3½}$-$s^2p^4(^3P)7s^4P_{2½}$		
4	64.37	521.18	$s^2p^4(^3P)5p^4D^\circ_{0½}$-$s^2p^4(^1D)5d^2P_{1½}$		
6*h*	66.61	489.66	$s^2p^4(^3P)4d^4P_{1½}$-$s^2p^4(^3P)5f^4F^\circ_{1½}$		
3	72.79	402.99	$s^2p^4(^3P)4d^2F_{2½}$-$s^2p^4(^1D)5f^2P^\circ_{0½}$		
4*h*	75.31	367.76	$s^2p^4(^3P)4d^4P_{1½}$-$s^2p^4(^1S)5p^2P^\circ_{0½}$		
6	77.20	341.38	$s^2p^4(^3P)4d^4P_{2½}$-$s^2p^4(^3P)5f^4D^\circ_{1½}$		
15	83.55	253.02	$s^2p^4(^3P)4d^4P_{2½}$-$s^2p^4(^3P)5f^2D^\circ_{1½}$		
1	85.79	221.96			
4*h*	88.37	186.24			
2	91.20	147.14	$s^2p^4(^3P)5s^4P_{1½}$-$s^2p^4(^1D)5p^2P^\circ_{0½}$		
30*h*	2,695.70	085.13	$s^2p^4(^3P)4d^4P_{2½}$-$s^2p^4(^3P)5f^2F^\circ_{2½}$		
3*h*	2,700.60	017.84			
15*h*	2,701.34	37,007.70	{$s^2p^4(^3P)5p^2P^\circ_{0½}$-$s^2p^4(^1D)5d^2D_{1½}$ {$s^2p^4(^3P)4d^4P_{2½}$-$s^2p^4(^3P)5f^4F^\circ_{1½}$		
3	10.27	36,885.78	$s^2p^4(^3P)4d^4P_{2½}$-$s^2p^4(^1S)5p^2P^\circ_{0½}$		
2	11.11	874.35	$s^2p^4(^3P)5s^4P_{2½}$-$s^2p^4(^1D)5p^4F^\circ_{3½}$		
80*h*	12.40	856.81	$s^2p^4(^3P)4d^2F_{3½}$-29,691.33		
3*h*	14.49	828.44	$s^2p^4(^3P)4d^2F_{3½}$—$s^2p^4(^3P)5f^2F^\circ_{2½}$		
10*h*	16.16	805.79	$s^2p^4(^3P)4d^4P_{2½}$—$s^2p^4(^3P)5f^4F^\circ_{2½}$		
1H	17.18	791.98	$s^2p^4(^3P)5p^2D^\circ_{1½}$—$s^2p^4(^1D)5d^2P_{0½}$		
1*h*	17.70	784.94	$s^2p^4(^3P)5p^4S^\circ_{1½}$—$s^2p^4(^3P)7s^2P_{0½}$		
5H*l*	19.90	755.19			

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
30*h*	29.46	626.46	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
4*h*	32.33	587.99	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^{\circ}_{1\frac{1}{2}}$		
50	33.26	575.54			
1H*v*	38.13	510.49	$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^2P_{0\frac{1}{2}}$		
1	40.11	484.11	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{3\frac{1}{2}}$		
40	42.56	451.52	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{4\frac{1}{2}}$		
1H	44.64	423.90	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2P_{0\frac{1}{2}}$		
15	46.31	401.75	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
2H*l*	47.41	387.18			
5H*l*	51.59	331.90	$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P_{0\frac{1}{2}}$		
4H*l*	59.02	234.07	$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^2P_{1\frac{1}{2}}$		
1*h*	67.59	121.87			
10*h*	72.60	056.60	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
3	74.59	36,030.75	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
1—	77.96	35,987.04	$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2F_{2\frac{1}{2}}$		
2	78.99	973.70	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
20	79.11	972.15	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
4	79.51	966.97	65,209.50—$s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
1H*l*	79.97	961.02	{$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2P_{1\frac{1}{2}}$ {$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^2P_{1\frac{1}{2}}$		
3H*l*	89.83	833.93			
80*h*	95.81	757.29			
2	2,796.26	751.53	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4D^{\circ}_{1\frac{1}{2}}$		
2H*l*	2,800.98	691.31	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P_{0\frac{1}{2}}$		
2H*l*	2,801.23	688.11	$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2P_{1\frac{1}{2}}$		
20*h*	03.20	663.03	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
4*h*	03.60	657.94	65,209.50—$s^2p^4(^3P)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
1*h*	07.07	613.87			
1*h*	08.72	592.94	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)7s\,^2P_{1\frac{1}{2}}$		
60	16.46	495.14	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
30	16.87	489.97	65,209.50—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
5	22.63	417.55	{$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{1\frac{1}{2}}$ {$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$		
2*h*	23.03	412.53	65,209.50—$s^2p^4(^3P)5f\,^4F^{\circ}_{1\frac{1}{2}}$		
3*hl*	30.43	319.95	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2P_{1\frac{1}{2}}$		
2	32.39	295.51	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^1S)5p\,^2P^{\circ}_{0\frac{1}{2}}$		
100	2,833.00	35,287.91	65,209.50—$s^2p^4(^3P)5f\,^2F^{\circ}_{3\frac{1}{2}}$		
8*hl*	2,835.35	35,258.66	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P_{1\frac{1}{2}}$		
20	38.79	215.94	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
2	39.20	210.86	65,209.50—$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
20	44.46	145.75	65,209.50—$s^2p^4(^3P)5f\,^4F^{\circ}_{3\frac{1}{2}}$		
25*h*	47.36	109.96	$s^2p^4(^3P)5s\,^4P_{1\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
1H	49.38	35,085.07			
2H*l*	62.17	34,928.29	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P_{2\frac{1}{2}}$		
4H*l*	73.72	787.92	$s^2p^4(^3P)5p\,^4P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)6s\,^2D_{1\frac{1}{2}}$		
2*h*	75.71	763.84			
1H*l*	77.16	746.33			
2	84.21	661.40	59,686.98—$s^2p^4(^1D)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
2H*l*	94.63	536.63	$s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)7s\,^4P_{1\frac{1}{2}}$		
1*h*	2,895.92	521.25	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}$—32,026.50		
1*h*	2,907.15	387.90	$s^2p^4(^3P)5p\,^2S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
5	08.62	370.52	$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$—$s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
4	13.23	316.14	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
2H*l*	19.07	247.48			
4H*l*	21.92	214.08			
2H*l*	30.40	115.08	$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
1	32.06	095.76	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4D^{\circ}_{1\frac{1}{2}}$		
2	39.70	34,007.16	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
15*h*	49.54	33,893.71	$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
30h	50.21	886.02			
1H*l*	51.25	874.08			
12h	54.28	839.33	{$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$ {$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac{1}{2}}$		
3h	56.30	816.21	$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{1\frac{1}{2}}$		
20H	58.35	792.78	$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$—14,873.45		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect Observed	Zeeman effect Computed
40H	60.14	772.33			
5	60.78	765.05	$s^2p^4(^3P)5s\,^2P_{1\frac12}$–$s^2p^4(^1D)5p\,^2P^{\circ}_{0\frac12}$		
4	61.05	761.97	$s^2p^4(^3P)4d\,^2P_{1\frac12}$–$s^2p^4(^3P)5f\,^4F^{\circ}_{1\frac12}$		
2	63.11	738.50			
2	65.11	715.74	$s^2p^4(^3P)5s\,^2P_{1\frac12}$–$s^2p^4(^1D)5p\,^2D^{\circ}_{1\frac12}$		
1H	65.59	710.29			
3Hv	66.13	704.15			
80H	67.25	691.43	$s^2p^4(^3P)4d\,^2D_{2\frac12}$–$s^2p^4(^3P)5f\,^2F^{\circ}_{3\frac12}$		
2	68.11	681.67			
1H	68.74	674.52			
4h	71.80	639.85	$s^2p^4(^3P)4d\,^2P_{1\frac12}$–$s^2p^4(^1S)5p\,^2P^{\circ}_{0\frac12}$		
2h	72.34	633.73	$s^2p^4(^3P)5p\,^4D^{\circ}_{2\frac12}$–$s^2p^4(^3P)5d\,^2D_{2\frac12}$		
25h	74.04	614.51	$s^2p^4(^3P)4d\,^2D_{2\frac12}$–$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac12}$		
1h	75.24	600.95			
3h	75.92	593.28	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac12}$–$s^2p^4(^3P)5d\,^2F_{2\frac12}$		
3h	76.28	589.21	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac12}$—$s^3p^4(^1S)4d\,^2D_{2\frac12}$		
1h	76.48	586.95			
25	78.87	560.01	$s^2p^4(^3P)4d\,^2P_{1\frac12}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac12}$		
20	79.81	549.42	$s^2p^4(^3P)4d\,^2D_{2\frac12}$—$s^2p^4(^3P)5f\,^4F^{\circ}_{3\frac12}$		
1h	82.34	520.97	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac12}$—$s^2p^4(^3P)7s\,^4P_{1\frac12}$		
2Hl	83.94	502.99	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac12}$—$s^2p^4(^3P)7s\,^4P_{1\frac12}$		
4Hl	85.33	487.39			
3Hl	88.69	449.75	$s^2p^4(^1D)4d\,^2D_{2\frac12}$—15216.41		
1H	89.80	437.33			
1h	90.90	425.03			
20	96.60	361.45	$sp^6.\,^2S_{0\frac12}$—$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac12}$		
40h	2999.84	325.42	$s^2p^4(^1D)4d\,^2D_{2\frac12}$—15340.81		
2hl	3002.48	296.12	$s^2p^4(^1D)4d\,^2D_{2\frac12}$—15370.10		
8h	08.42	230.38	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac12}$—$s^2p^4(^3P)5d\,^2F_{2\frac12}$		
1h	12.00	190.89	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac12}$—$s^2p^4(^3P)7s\,^4P_{2\frac12}$		
20Hv	17.65	128.75	$s^2p^4(^1D)4d\,^2D_{1\frac12}$—14873.45		
1	18.30	121.61	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac12}$—$s^2p^4(^3P)5d\,^4F_{1\frac12}$		
5h	22.49	33,075.70	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac12}$—31180.55		
4	30.01	32,993.61	$sp^6.\,^2S_{0\frac12}$—$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac12}$		
5Hv	31.59	976.42			
5H	32.77	963.59			
2h	34.16	948.49	$s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac12}$—$s^2p^4(^1S)4d\,^2D_{1\frac12}$ $s^2p^4(^1D)4d\,^2D_{2\frac12}$—15717.15		
3Hl	38.38	902.73			
8Hv	49.23	785.66	$s^2p^4(^1D)4d\,^2D_{1\frac12}$—15216.41		
1h	51.75	758.59	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac12}$—$s^2p^4(^3P)5d\,^4F_{1\frac12}$		
3	55.31	720.42	$sp^6.\,^2S_{0\frac12}$—$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac12}$		
30H	56.01	712.92	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac12}$—31180.55		
30Hv	60.84	661.30	$s^2p^4(^1D)4d\,^2D_{1\frac12}$—15340.81		
6h	61.51	654.16			
3hl	63.57	632.20	$s^2p^4(^1D)4d\,^2D_{1\frac12}$—15370.10		
2	66.72	598.68	$s^2p^4(^3P)5s\,^4P_{0\frac12}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac12}$		
2h	80.20	456.03			
1	88.73	366.40			
30hv	95.14	299.37	$s^2p^4(^1D)4d\,^2D_{1\frac12}$—15702.73		
20hv	3,096.52	284.98	$s^2p^4(^1D)4d\,^2D_{1\frac12}$—15717.15		
1hl	3,105.68	189.76	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac12}$—$s^2p^4(^1D)6s\,^2D_{1\frac12}$		
2h	11.45	130.06	$s^2p^4(^3P)5p\,^4P^{\circ}_{0\frac12}$—$s^2p^4(^3P)5d\,^2D_{1\frac12}$		
2	13.92	104.58	$s^2p^4(^3P)4d\,^4D_{3\frac12}$—$s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac12}$		
1h	3,115.67	32,086.55			
6h	3,126.02	31,980.32			
4H	32.84	910.70			
8	35.10	887.70	$s^2p^4(^3P)4d\,^4D_{2\frac12}$—$s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac12}$ $s^2p^4(^3P)5p\,^4D^{\circ}_{0\frac12}$—$s^2p^4(^1S)4d\,^2D_{1\frac12}$		
2	38.24	855.79			
20	39.58	842.20	$s^2p^4(^3P)5p\,^4D^{\circ}_{2\frac12}$—$s^2p^4(^3P)5d\,^2D_{1\frac12}$		
4	39.86	839.36	$s^2p^4(^3P)4d\,^2F_{2\frac12}$—$s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac12}$		
3hl	40.44	833.48	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac12}$—$s^2p^4(^1S)4d\,^2D_{2\frac12}$		
1	47.39	763.19	$s^2p^4(^3P)4d\,^4D_{2\frac12}$—$s^2p^4(^1D)5p\,^2D^{\circ}_{1\frac12}$		
80h	50.93	727.50	$s^2p^4(^3P)5s\,^2P_{1\frac12}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac12}$	(0.20) 1.42	(0.09, 0.28) 1.23, 1.42, 1.61

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air}I.A.	ν_{vac}cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
2H	53. 34	703. 26			
1	56. 07	675. 84			
1	60. 40	632. 44			
3H1	64. 94	587. 06	$s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}—s^2p^4(^3P)7s\,^4P_{2\frac{1}{2}}$ $s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$—32026.50		
2	70. 63	530. 38	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}—s^2p^4(^3P)5f\,^2D^\circ_{1\frac{1}{2}}$		
40H	75. 67	480. 34	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—14,873.45		
15H*l*	76. 94	467. 76	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}—s^2p^4(^1D)6s\,^2D_{2\frac{1}{2}}$		
1	78. 92	448. 16	$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}—s^2p^4(^3P)5d\,^2F_{2\frac{1}{2}}$		
5H	81. 25	425. 13			
1*h*	83. 03	407. 55			
1	83. 63	401. 63			
1	85. 84	379. 85			
4	87. 61	362. 43	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}—s^2p^4(^3P)5f\,^2F^\circ_{2\frac{1}{2}}$		
2	92. 54	314. 00	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}—s^2p^4(^1D)5p\,^2D^\circ_{2\frac{1}{2}}$ $s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}—s^2p^4(^3P)7s\,^4P_{2\frac{1}{2}}$		
2	95. 50	284. 99	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}—s^2p^4(^3P)5f\,^4F^\circ_{1\frac{1}{2}}$		
4h*l*	3, 197. 65	263. 96	$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}—s^2p^4(^3P)5d\,^4F_{1\frac{1}{2}}$		
50*h*	3, 200. 40	237. 10	$s^2p^4(^3P)5s\,^2P^\circ_{0\frac{1}{2}}—s^2p^4(^1D)5p\,^2P^\circ_{0\frac{1}{2}}$	(0.00) 0.70	(0.00) 0.70
15*hl*	3, 202. 54	216. 23	$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}—s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$		
4	05. 26	189. 73	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}—s^2p^4(^1D)5p\,^2D^\circ_{1\frac{1}{2}}$		
2	05. 44	187. 98	$s^2p^4(^3P)5s\,^2P_{0\frac{1}{2}}—s^2p^4(^1D)5p\,^2D^\circ_{1\frac{1}{2}}$		
1	07. 29	170. 00	$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}—s^2p^4(^3P)5d\,^2P_{0\frac{1}{2}}$		
40*h*	08. 28	160. 38	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}—s^2p^4(^3P)5f\,^2F^\circ_{3\frac{1}{2}}$ $sp^6.\,^2S_{0\frac{1}{2}}—s^2p^4(^3P)5p\,^4D^\circ_{0\frac{1}{2}}$		
7*hl*	09. 17	151. 74	$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}—s^2p^4(^3P)5d\,^4F_{2\frac{1}{2}}$		
2*h*	10. 64	137. 47	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—15,216.41		
7	10. 89	135. 05	$sp^6.\,^2S_{0\frac{1}{2}}—s^2p^4(^3P)5p\,^2P^\circ_{1\frac{1}{2}}$		
1	14. 11	103. 86			
7*h*	16. 25	083. 16	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}—s^2p^4(^3P)5f\,^4F^\circ_{2\frac{1}{2}}$		
6*h*	20. 25	044. 55			
6	23. 00	018. 07	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}—s^2p^4(^3P)5f\,^4F^\circ_{3\frac{1}{2}}$		
12*h*	23. 52	31, 013. 06	$s^2p^4(^1D)^4d\,^2P_{1\frac{1}{2}}$—15,340.81		
5H*l*	26. 57	30, 983. 75	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—15,370.10		
2*h*	32. 15	930. 26	$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$—31,180.55		
2	40. 20	853. 42	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}—s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$		
2	46. 18	796. 59			
12H	47. 00	788. 81	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}—s^2p^4(^3P)5d\,^4P_{2\frac{1}{2}}$		
6H	48. 03	779. 04	$s^2p^4(^3P)4d\,^2P_{0\frac{1}{2}}$—15,216.41		
4	56. 67	697. 39	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}—s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}$		
8*h*	61. 58	651. 18	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—15,702.73		
1*h*	63. 12	636. 71	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—15,717.15		
5H	64. 33	625. 36	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$—15,370.10		
1*h*	76. 81	508. 72			
15*h*	82. 08	459. 74	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}—s^2p^4(^1D)5p\,^2P^\circ_{0\frac{1}{2}}$		
2*h*	87. 38	410. 63	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}—s^2p^4(^1D)5p\,^2D^\circ_{1\frac{1}{2}}$		
2H	87. 69	407. 76	$s^2p^4(^3P)5p\,^4D^\circ_{0\frac{1}{2}}—s^2p^4(^1D)6s\,^2D_{2\frac{1}{2}}$		
1*h*	90. 31	383. 55			
2*h*	94. 43	345. 56			
3*h*	3, 295. 29	337. 64			
4H	3, 300. 18	292. 69	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$—15,702.73		
5*h*	3, 301. 75	278. 28	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$—15,717.15		
4*hl*	02. 28	273. 42			
15*h*	15. 72	150. 72	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}—s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}$		
8	21. 16	101. 33	$sp^6\cdot\,^2S^\circ_{0\frac{1}{2}}—s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}$		
1	26. 13	30, 056. 35	$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}—s^2p^4(^1S)4d\,^2D_{1\frac{1}{2}}$		
4*hl*	35. 16	29, 974. 98	$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}—s^2p^4(^1S)4d\,^2D_{2\frac{1}{2}}$		
2	57. 58	774. 83	$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}—s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$		
1*h*	72. 13	646. 36			
3*h*	75. 78	614. 31	$s^2p^4(^3P)5p\,^4D^\circ_{3\frac{1}{2}}—s^2p^4(^3P)5d\,^2F_{3\frac{1}{2}}$		
15H	79. 03	585. 83	$s^2p^4(^3P)5p\,^2D^\circ_{2\frac{1}{2}}—s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$		
20H	81. 11	567. 63	$s^2p^4(^3P)5p\,^2P^\circ_{1\frac{1}{2}}—s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$		
15H1	85. 23	531. 64	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}—s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$		
7h	87. 11	515. 25			
5	3, 389. 67	492. 96	$s^2p^4(^3P)4d\,^4D3_{\frac{1}{2}}—s^2p^4(^1D)5p\,^2F^\circ_{3\frac{1}{2}}$		
2	3, 402. 79	379. 25	$sp^6\cdot\,^2SO_{\frac{1}{2}}—s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
80Hl	05.16	358.80	$s^2p^4(^3P)5p\,^4P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$	(0.28) 1.12, 1.69	(0.29) 1.11, 1.69
1	12.67	294.20	$s^2p^4(^3P)5p\,^4D^{\circ}_{3\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4F_{2\frac{1}{2}}$		
2h	13.78	284.67			
10	14.80	275.92	$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^{\circ}_{3\frac{1}{2}}$		
1h	21.26	220.65			
20hv	23.73	199.57	$s^2p^4(^3P)5s\,^2P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$	(0.32) 1.02, 1.66	(0.31) 1.01, 1.65
30	3,427.71	29,165.66	$s^2p^4(^3P)5s\,^4P_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$	(0.00) 1.90	(0.13, 0.40) 1.19, 1.46, 1.73, 2.00
3h	34. 29.91	29,146.96	$s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^1D)\,^5d\,^2D_{2\frac{1}{2}}$		
8hl	31.03	137.44			
2	34.28	109.87			
3h	38.88	070.93	$s^2p^4(^3P)\,^5p\,^4D^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$		
5h	43.29	033.70			
50H	46.51	29,006.58	$s^2p^4(^3P)5p\,^4D^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4F_{2\frac{1}{2}}$		
1	49.98	28,977.40			
3h	53.46	948.20			
50	60.09	892.74	$s^2p^4(^3P)5s\,^4P_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$	(0.00) 1.67	(0.03, 0.09) 1.51, 1.57, 1.63, 1.69
2	60.90	885.97			
6Hl	65.41	848.38	$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)6s\,^2D_{2\frac{1}{2}}$		
30H	70.05	809.81	$s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$	(0.29) 0.88, 1.47	(0,30) 0.88, 1.48
3hl	75.31	766.20			
5	77.89	744.87	i {$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$ {$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}$		
3h	79.00	735.70	$s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^1O)5d\,^2F_{3\frac{1}{2}}$		
7h	87.49	665.74	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4F_{1\frac{1}{2}}$		
30h	88.65	656.21	$s^2p^4(^3P)5p\,^4P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}$	(0.00) 1.95	(0.02) 1.96
8H	93.04	620.20	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$—31,180.55		
2h	93.57	615.86	$s^2p^4(^1D)5p\,^2F^{\circ}_{3\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2D_{2\frac{1}{2}}$		
3h	97.45	584.11	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2P_{0\frac{1}{2}}$		
4Hl	98.50	575.53	$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)6s\,^2D_{2\frac{1}{2}}$		
2H	3,498.92	572.10	$s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2P_{0\frac{1}{2}}$		
50Hl	3,503.25	536.79	$s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2F_{2\frac{1}{2}}$	(0.00) 0.89	(0.01, 0.04, 0.07) 0.81, 0.84, 0.87, 0.90, 0.93
5hv	17.37	422.24	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
3hl	27.42	341.26			
1h	30.95	312.93			
1h	31.82	305.95			
1h	34.43	285.05			
50hl	35.35	277.69	$s^2p(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^2P_{0\frac{1}{2}}$	(0.37) 1.31, 2.04	(0.37) 1.29, 2.04
30Hl	44.14	207.56	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)6s\,^2D_{2\frac{1}{2}}$	(0.25) 0.75, 1.00	(0.25) 0.75, 1.00
30Hl	44.54	204.38	$s^2p^4(^1D)5p\,^2F^{\circ}_{3\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2F_{3\frac{1}{2}}$	(0.00) 1.14	(0.00) 1.14
6	48.71	171.23	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$		
20hl	53.49	133.34	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)6s\,^2P_{1\frac{1}{2}}$	(0.00) 1.80	(0.13, 0.37) 1.20, 1.45, 1.70, 1.98
8Hl	55.54	117.12	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2D_{2\frac{1}{2}}$	(0.00) 1.00	(0.07, 0.20) 1.00, 1.13, 1.27, 1.40
2h	69.68	28,005.75	$s^2p^4(^1D)5p\,^2F^{\circ}_{3\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2F_{2\frac{1}{2}}$		
15H	72.68	27,982.23	$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$		
4hl	77.60	943.75	$s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4F_{1\frac{1}{2}}$		
12hl	86.25	876.35	$s^2p^4(^3P)5p\,^4P_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$		
70Hl	89.65	849.95	$s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2P_{0\frac{1}{2}}$	(0.63) 1.14	(0.63) 1.14
2hl	96.86	794.13	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$		
25h	99.21	775.98	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$	(0.11) 1.23	(0.04, 0.12) 1.14, 1.22, 1.30
40hl	3,599.90	770.66	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^2P_{1\frac{1}{2}}$	(0.45) 1.50	(0.17, 0.51) 1.16, 1.50, 1.84
2h	3,602.12	753.54	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)7s\,^2P_{1\frac{1}{2}}$		
100Hl	07.88	709.23	$s^3p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$	(0.00) 0.92	(0.09, 0.27) 0.88, 1.06, 1.24, 1.42
30hl	23.61	588.95	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{0\frac{1}{2}}$	(0.34) 1.33, 2.00	(0.34) 1.33, 2.00
200hl	31.87	526.21	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{2\frac{1}{2}}$	(0.48) 1.48	(0.10, 0.31, 0.52) 1.05, 1.26, 1.47, 1.68, 1.89
3h	33.54	513.56	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$		
3Hl	34.42	506.89	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2F_{2\frac{1}{2}}$		
20hl	37.48	483.76	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$		
4Hl	37.93	480.36	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2P_{1\frac{1}{2}}$		
40hl	48.61	399.92	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2F_{2\frac{1}{2}}$		
25hl	3,651.02	27,381.83	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2F_{2\frac{1}{2}}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
250*hl*	3, 653. 97	27, 359. 73	$s^2p^4(^3P)5p^4P^o_{2½}$—$s^2p^4(^3P)5d^4D_{3½}$	(0.00) 1.02	(0.09, 0. 27, 0.45) 0.95, 1.13, 1.31, 1.49, 1.67, 1.85.
15	61. 00	307. 19	$s^2p^4(^3P)5s^4P_{2½}$—$s^2p^4(^3P)5p^2P^o_{1½}$	(0.00) 2.07	(0.17, 0.51) 1.09, 1.43, 1.77, 2.11
20	63. 44	289. 00	$s^2p^4(^3P)5s^4P_{2½}$—$s^2p^4(^3P)5p^2D^o_{2½}$		
5	66. 01	269. 88	$s^2p^4(^3P)5s^4P_{1½}$—$s^2p^4(^3P)5p^2S^o_{0½}$	(0.00) 1.58	(0.02) 1.52, 1.59
6	68. 59	250. 70	$s^2p^4(^3P)5p^4P^o_{0½}$—$s^2p^4(3P)5d^4D_{0½}$		
150*hl*	69. 01	247. 58		1.01 (0.00) 1.06	
7*hl*	78. 66	176. 10			
100H*l*	80. 37	163. 47	$s^2p^4(^3P)5p^4P^o_{1½}$—$s^2p^4(^3P)5d^4D_{2½}$	(0.15, 0.45) 0.97	(0.15, 0.45) 0.92, 1.22, 1.52, 2.02
80H*l*	86. 15	120. 89	$s^2p^4(^3P)5p^4P^o_{1½}$—$s^2p^4(^3P)5d^4P_{1½}$	(–, 0.69) 0.96, 1.43, 1.90	(0.23, 0.69) 0.98, 1.44, 1.90
30	3, 690. 65	27, 087. 82	$s^2p^4(^3P)5p^4P^o_{2½}$—$s^2p^4(^3P)5d^4P_{2½}$		
1*h*	3, 711. 27	26, 937. 32	$s^2p^4(^1D)5p^2F^o_{2½}$—$s^2p^4(^1D)5d^2D_{1½}$		
1*h*	12. 48	928. 54	$s^2p^4(^3P)5p^2D^o_{2½}$—$s^2p^4(^3P)5d^4F_{1½}$		
12*h*	15. 04	909. 98	$s^2p^4(^3P)5p^2P^o_{1½}$—$s^2p^4(^3P)5d^4F_{1½}$	(–) 1.00	(0.37, 1.11) 0.15, 0.89, 1.63
4	16. 15	901. 94	$s^2p^4(^3P)5s^4P_{1½}$—$s^2p^4(^3P)5p^2D^o_{1½}$		
300*hl*	18. 02	888. 42	$s^2p^4(^1D)5p^2F^o_{3½}$—$s^2p^4(^1D)5d^2G_{4½}$	(0.00) 1.05	(0.02, 0.05, 0.08, 0.11) 1.00, 1.03, 1.06, 1.10, 1.13, 1.16, 1.19, 1.22
200*hl*	18. 63	884. 01	$s^2p^4(^3P)5p^4D^o_{0½}$—$s^2p^4(^3P)5d^4F_{1½}$	(0.25) 0.78	(0.26) 0.26, 0.78
150*hl*	21. 35	864. 36	$s^2p^4(^3P)5p^2P^o_{0½}$—31180.55	(0.00) 1.39	
7*hl*	28. 04	816. 15	$s^2p^4(^3P)5p^2P^o_{1½}$—s^2p^4 (^3P) $5d^2P_{0½}$	(0.39) 1.65	(0.37) 0.88, 1.63
2*h*	31. 67	790. 06	$s^2p^4(^3P)5p^4D^o_{0½}$—$s^2p^4(^3P)5d^2P_{0½}$		
15*h*	32. 61	783. 32	$s^2p^4(^3P)5p^4P^o_{0½}$—$s^2p^4(^3P)6s^2P^o_{0½}$	(0.53) 1.45	(0.53) 1.45
6	32. 92	781. 09	$sp^6.{}^2S_{0½}$—s^2p^4 $(^3P)5p^4P^o_{0½}$		
40*hl*	35. 78	760. 59	$s^2p^4(^3P)5p^4D^o_{1½}$—s^2p^4 $(^3P)5d^2P_{1½}$	(0.21) 1.34	(0.07, 0.21) 1.19, 1.33, 1.47
6	40. 73	725. 18	$s^2p^4(^3P)5p^4P^o_{1½}$—$s^2p^4(^3P)5d^4P_{2½}$		
200*hl*	41. 69	718. 32	$s^2p^4(^1D)5p^2F^o_{2½}$—$s^2p^4(^1D)5d^2G_{3½}$	(0.00) 0.93	(0.02,0.05, 0.08) 0.81, 0.84, 0.87, 0.90, 0.94, 0.97
150*hv*	44. 80	696. 13	$s^2p^4(^3P)5p^4D^o_{1½}$—$s^2p^4(^3P)5d^4F_{2½}$	(0.00) 1.01	(0.07, 0.21) 0.91, 1.05, 1.19, 1.33
2H	47. 50	676. 90			
1*h*	3, 748. 57	669. 29			
80	54. 24	629. 01	$s^2p^4(^3P)5s^4P_{1½}$—$s^2p^4(^3P)5p^4S^o_{1½}$	(0. 00) 1. 55	(0. 00) 1. 54
6H*l*	58. 93	595. 78	$s^2p^4(^1D)5p^2D^o_{1½}$—$s^2p^4(^1D)5d^2P_{0½}$		
2H	65. 88	546. 70	$s^2p^4(^1D)5p^2P_{0½}$—$s^2p^4(^1D)5d^2P_{0½}$		
30*h*	71. 34	508. 27	$s^2p^4(^3P)5p^4p^o_{1½}$—$s^2p^4(^3P)5d^4P_{0½}$	(0.20) 1.48, 1.88	(0.20) 1.47, 1.87
500*hl*	78. 09	460. 91	$s^2p^4(^3P)5p^4D^o_{2½}$—$s^2p^4(^3P)5d^4F_{3½}$	(0.00) 1.10	(0.03, 0.09, 0.15) 1.02, 1.08, 1.14, 1.20, 1.26, 1.32.
500*hl*	3, 783. 13	425. 66	$s^2p^4(^3P)5p^4D^o_{3½}$—$s^2p^4(^3P)5d^4F_{4½}$	(0.00) 1.12	(0.05, 0.14, 0.24, 0.33) 1.00, 1.10, 1.19, 1.29, 1.38, 1.48, 1.57, 1.67.
30*hl*	3, 804. 67	276. 06	$s^2p^4(^3P)5p^4P^o_{0½}$—$s^2p^4(^3P)6s^2P_{1½}$	(0.32) 1.01, 1.66	(0.32) 1.01, 1.65
8H*l*	06. 17	265. 70	$s^2p^4(^1D)5p^2P^o_{0½}$—$s^2p^4(^3P)7s^2P_{0½}$		
1*h*	06. 52	263. 29	$s^2p^4(^1D)4d^2G_{3½}$—$s^2p^4(^1D)5f^2F^o_{2½}$		
15H*l*	17. 11	190. 42	$s^2p^4(^3P)5p^4S^o_{1½}$—$s^2p^4(^3P)5d^2D_{1½}$		
2*h*	26. 15	128. 55	$s^2p^4(^1D)5p^2D^o_{1½}$—$s^2p^4(^1D)5d^2D_{2½}$		
2H*l*	31. 17	094. 31	$s^2p^4(^3P)5p^4P_{0½}$—$s^2p^4(^3P)6s^4P_{0½}$		
30H*l*	36. 54	057. 79	$s^2p^4(^3P)5p^4D^o_{1½}$—$s^2p^4(^1S)6s^2S_{0½}$		
4H*l*	39. 37	038. 58	$s^2p^4(^3P)5p^2P^o_{0½}$—$s^2p^4(^3P)5d^2P_{1½}$		
2. 0H*l*	42. 28	018. 86	$s^2p^4(^3P)5p^4P^o_{0½}$—$s^2p^4(^3P)5d^4D_{1½}$		
50H*l*	44. 45	26, 004. 18	$s^2p^4(^1D)5p^2D^o_{2½}$—$s^2p^4(^1D)5d^2D_{2½}$		
5*h*	3, 846. 83	25, 988. 09	$s^2p^4(^3P)5p^4D^o_{2½}$—$s^2p^4(^3P)6s^2P_{1½}$		
20H*l*	3, 857. 32	25, 917. 41	$s^2p^4(^3P)5p^2D^o_{1½}$—$s^2p^4(^3P)5d^2D_{1½}$		
5H*l*	58. 78	907. 61	$s^2p^4(^1D)5p^2P^o_{1½}$—$s^2p^4(^1D)5d^2D_{1½}$		
150H*l*	75. 44	796. 24	$s^2p^4(^3P)5p^4S^o_{1½}$—$s^2p^4(^3P)5d^2F_{2½}$	(–) 0.28, 0.51, 0.74.	(0.25, 0.75) 0.29, 0.79, 1.29, 1.79.
1H	79. 82	767. 12			
2H*l*	80. 07	765. 45	$s^2p^4(^1D)5p^2D^o_{1½}$—$s^2p^4(^3P)7s^2P_{1½}$		
1	85. 28	730. 91	$s^2p^4(^3P)5p^4D^o_{2½}$—$s^2p^4(^3P)5d^4D_{1½}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
5Hl	87.54	715.95	$s^2p^4(^1D)5p\,^2P^\circ_{0½}$—$s^2p^4(^3P)7s\,^2P_{1½}$		
60Hl	3,894.71	668.61	$s^2p^4(^3P)5p\,^4D^\circ_{3½}$—$s^2p^4(^3P)5d\,^4D_{2½}$	(0.00) 1.53	(0.03,0.09, 0.14) 1.28, 1.34, 1.40, 1.46, 1.51, 1.57
10hl	3,901.15	626.23	$s^2p^4\ (^3P)5p\,^4P^\circ_{0½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
150hl	06.25	592.78	$s^2p^4(^1D)5p\,^2D^\circ_{2½}$—$s^2p^4(^1D)5d\,^2F_{3½}$	(0.00) 1.08	(0.03, 0.09, 0.14) 1.00, 1.06, 1.11, 1.17, 1.23, 1.28
70	12.59	551.31	$s^2p^4(^3P)5s\,^4P_{2½}$—$s^2p^4(^3P)5p\,^4D^\circ_{1½}$	(0.17, 0.52) —, 1.43, 1.77,2.09	(0.17, 0.51) 1.09, 1.43, 1.77, 2.11
5hl	12.88	549.41	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)5d\,^2D_{1½}$		
3hl	16.90	523.19	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)5d\,^2F_{2½}$		
50Hl	17.64	518.37	$s^2p^4(^1D)5p\,^2D^\circ_{1½}$—$s^2p^4(^1D)5d\,^2F_{2½}$	(0.00) 0.96	(0.04, 0.13) 0.75, 0.84, 0.93, 1.02
200hl	20.14	502,10	$s^2p^4(^3P)5p\,^4D^\circ_{3½}$—$s^2p^4(^3P)5d\,^4D_{3½}$	(0.10) 1.41	(0.01, 0.04, 0.07, 0.10) 1.32, 1.35, 1.38, 1.41, 1.44, 1.47, 1.50
6hl	21.68	492.08	$s^2p^4(^1D)5p\,^2D^\circ_{1½}$—$s^2p^4(^1D)5d\,^2P_{1½}$	(0.57) 1.00	(0.19, 0.57) 0.61, 0.99, 1.37
20hl	29.26	442.91	$s^2p^4(^1D)5p\,^2P^\circ_{0½}$—$s^2p^4(^1D)5d\,^2P_{1½}$	(0.24) 0.94 1.42	(0.24) 0.94, 1.42
20 Hl	38.88	380.77	$s^2p^4(^3P)5p\,^4D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4D_{2½}$		
5 Hl	40.92	367.63	$s^2p^4(^1D)5p\,^2D^\circ_{2½}$—$s^2p^4(^1D)5d\,^2P_{1½}$		
20 Hl	42.93	354.70			
5 hl	45.48	338.31	$s^2p^4(^3P)5p\,^4D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
1 hl	45.83	336.06	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^1S)6s\,^2S_{0½}$		
5 hl	47.66	324.32	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$–$s^2p^4(^3P)5d\,^4F_{1½}$		
20	53.59	286.34	$sp^6\ ^2S_{0½}$–$s^2p^4(^3P)5p\,^4P^\circ_{1½}$		
90 Hl	54.78	278.73	$s^2p^4(^3P)5p\,^2D^\circ_{2½}$—$s^2p^4(^3P)5d\,^2F_{3½}$ $s^2p^4(^3P)5p\,^4S^\circ_{1½}$—31,180.55	(0.00) 1.10	(0.05, 0.15, 0.25) 0.99, 1.09, 1.19, 1.29, 1.39, 1.49
10 hl	62.34	230.50	$s^2p^4(^3P)5p\,^4D^\circ_{3½}$—$s^2p^4(^3P)5d\,^4P_{2½}$ $s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^2P^\circ_{0½}$		
30 hl	64.89	214.27	$s^2p^4(^3P)5p\,^4D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4D_{3½}$		
1	78.85	125.81			
5Hv	87.09	073.88	$s^2p^4(^1S)5s\,^2S_{0½}$—27294.47	(0.48) 1.51	(0.50) 1.50
25	87.78	069.54	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^4D^\circ_{0½}$		
15hl	90.66	051.45	$s^2p^4(^3P)5p\,^2D^\circ_{0½}$—$s^2p^4(^3P)5d\,^4F_{1½}$		
15	91.94	043.42	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^2P^\circ_{1½}$		
100	94.83	025.30	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^2D^\circ_{2½}$	(0.10, 0.30) 1.06, 1.24	(0.10, 0.30) 1.04, 1.24, 144, 164
3	96.69	013.66	$s^2p^4(^3P)5p\,^4P^\circ_{0½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
100Hl	97.95	005.78	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^3P)5d\,^2P_{1½}$ $s^2p^4(^3P)5p\,^2D^\circ_{1½}$—31180.55		
2gn	3,998.82	25,000.34			
30hl	4,005.57	24,958.20	$s^2p^4(^3P)5p\,^2D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4F_{2½}$		
1	06.81	950.48			
25	08.08	942.57	$s^2p^4(^3P)5p\,^4D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4P_{2½}$	(0.60), 1.85 (?)	(0.62, 1.86, 3.10) —0.62, 0.62, 1.86, 3.10, 4.34
10Hl	08.48	940.09	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^3P)5d\,^4F_{2½}$		
1	10.82	925.54			
30	37.83	758.81	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)5p\,^2S^\circ_{0½}$	(0.57) 2.09	(0.57) 2.07
80	44.67	716.94	$s^2p^4(^1D)5s\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2D^\circ_{2½}$	(0.20, 0.60)— 1.40, 1.80	(0.20, 0.60) 0.60, 1.00, 1.40, 1.80
50Hl	50.42	681.85	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)5d\,^2F_{1½}$		
300hv	57.01	641.76	$s^2p^4(^1D)5s\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2P^\circ_{0½}$	(0.00) 0.82	(0.05) 0.75, 0.85
300	65.11	592.66	$s^2p^4(^1D)5s\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2D^\circ_{1½}$	(0.00) 0.79	(0.00) 0.80
6Hl	66.09	586.73			
1h	81.40	494.51	$s^2p^4(^1D)4d\,^2G_{3½}$—26,795.68		
500	88.33	452.99	$s^2p^4(^1D)5s\,^2D_{2½}$—$s^2p^4(^1D)5p\,^2D^\circ_{2½}$	(0.00) 1.20	(0.00) 1.20
250	98.72	391.00	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)5p\,^2D^\circ_{1½}$	0.66, 1.97	(0.65) 0.68, 1.98
3	4,099.71	24,385.11	$s^2p^4(^3P)4d\,^4F_{3½}$—$s^2p^4(^1D)5p\,^2D^\circ_{2½}$		
100hv	4,109.23	24,328.62	$s^2p^4(^1D)\ 5s\,^2D_{2½}$—$s^2p^4(^1D)5p\,^2D^\circ_{1½}$	(0.19, 0.60)— 1.00, 1.40, 1.80	(0.20, 0.60) 0.60, 1.00, 1.40, 1.80
5Hl	10.16	323.11	$s^2p^4(^1D)4d\,^2D_{1½}$—$s^2p^4(^1D)5f\,^2P^\circ_{0½}$		
1	11.03	317.97			
8Hl	13.73	302.01	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^1S)6s\,^2S_{0½}$		
1	15.11	293.86			
30Hl	18.14	275.98	$s^2p^4(^3P)5p\,^4D^\circ_{0½}$—$s^2p^4(^1S)6d\,^2S_{0½}$		
2h	28.58	214.60			
5Hl	33.68	184.72	$s^2p^4(^3P)5p\,^4D^\circ_{1½}$—$s^2p^4(^3P)6s\,^2P_{0½}$		
3h	35.86	171.97	$s^2p^4(^1D)4d\,^2D_{2½}$—$s^2p^4(^1D)5f\,^2P^\circ_{1½}$		
50H	37.96	159.71			

TABLE 4.—*The first spark spectrum of krypton (Kr* II*)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect: Observed	Zeeman effect: Computed
100H*l*	39.11	153.00		(0.00) 1.20	
250	45.12	117.98	$s^2p^4(^3P)5s\,^4P_{0\frac{1}{2}}-s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$	(0.55) 0.99, 2.10	(0.55) 0.99, 2.09
4*hv*	59.00	037.49			
2	63.82	24,009.66	$s^2p^4(^3P)5s\,^4P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}$		
20*hl*	72.51	23,959.66	$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$		
3*hv*	77.02	933.79			
20H*l*	79.58	919.13	$s^2p^4(^1D)5p\,^2D^\circ_{1\frac{1}{2}}-s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
50	85.12	887.47	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^2S^\circ_{0\frac{1}{2}}$	(0.00) 1.51	(0.01) 1.51, 1.53
30H*l*	4,201.42	794.80	$s^2p^4(^1D)5p\,^2D^\circ_{2\frac{1}{2}}-s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
3H*l*	04.31	778.44			
25H*l*	10.67	742.52			
1*h*	12.37	732.94			
1H*l*	12.92	729.84			
2	17.88	701.94	$s^2p^4(^3P)4d\,^4F_{4\frac{1}{2}}-s^2p^4(^1D)5p\,^2F^\circ_{3\frac{1}{2}}$		
20*hl*	22.20	677.69	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)6s\,^2P_{1\frac{1}{2}}$		
20*hl*	28.79	640.79	$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}-s^2p^4(^1D)5f\,^2F^\circ_{2\frac{1}{2}}$		
8H*l*	29.21	638.44			
2*h*	33.43	614.88			
100*hl*	36.64	596.99	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$		
150	50.58	519.60	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$	(0.20) 1.40	(0.09, 0.28) 1.24, 1.43, 1.61
50*hv*	52.67	508.04	$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}-s^2p^4(^1D)5f\,^2P^\circ_{1\frac{1}{2}}$		
100*hl*	54.85	496.00	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{0\frac{1}{2}}$	(–) 0.62, 1.80	(0.54) 0.72, 1.80
80*hv*	59.44	470.68			
5*hl*	60.85	462.91	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}-s^2p^4(^3P)6s\,^2P_{0\frac{1}{2}}$		
60H*l*	68.57	420.48	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$		
100H*l*	68.81	419.16	$s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$	(0.15) 1.45	(0.07, 0.21) 1.33, 1.47, 1.61
1*h*	71.46	404.63			
4	73.48	393.57			
2	75.75	381.15			
2*h*	80.05	357.66			
5*hl*	80.61	354.61	$s^3p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4F_{2\frac{1}{2}}$		
4*h*	85.40	328.50			
4H	87.45	317.35			
600	92.92	287.64	$s^2p^4(^3P)5s\,^4P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$	(0.14, 0.43) 1.12, 1.39, 1.67	(0.14, 0.42) 1.12, 1.40, 1.68
8*hl*	4,295.21	275.22			
200	4,300.49	246.65	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$	(0.00) 1.51	(0.01, 0.03) 1.51, 1.53, 1.55
40	01.53	241.03	$s^2p^4(^3P)5s\,^4P_{2\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$		
3*h*	05.81	217.93			
2*h*A II?	09.41	198.53			
500H*l*	17.81	153.40	$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$	(0.00) 1.57	(0.01, 0.03, 0.05) 1.55, 1.57, 1.59, 1.61, 1.63
4	19.12	146.38	$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$		
150H*l*	22.98	125.71	$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}-s^2p^4(^1S)5p\,^2P^\circ_{1\frac{1}{2}}$	(0.39) 0.84, 1.61	(0.39) 0.84, 1.62
80H	31.24	081.61	$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4F_{2\frac{1}{2}}$		
50H	33.34	070.42	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4D_{2\frac{1}{2}}$		
8*hl*	41.33	23,027.96	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$		
40H	51.02	22,976.68	$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}-s^2p^4(^1D)5f\,^2F^\circ_{2\frac{1}{2}}$		
3000	55.47	953.21	$s^2p^4(^3P)5s\,^4P_{2\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^\circ_{3\frac{1}{2}}$	(0.00) 1.06	(0.09, 0.26, 0.43) 1.00, 1.17, 1.34, 1.51, 1.69, 1.86
4*hl*	64.61	905.14	$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}-s^2p^4(^3P)5f\,^4D^\circ_{1\frac{1}{2}}$		
6*hl*	66.26	896.48	$s^2p^4(^3P)5p\,^2P^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}$		
1*h*	4,367.01	22,892.55			
200	4,369.69	22,878.51	$s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}-s^2p^4(^1S)4d\,^2D_{1\frac{1}{2}}$	(0.00) 0.91	(0.03, 0.09) 0.77, 0.83 0.89, 0.94.
20*hl*	71.25	870.34	$s^2p^4(^3P)5p\,^4D^\circ_{0\frac{1}{2}}-s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}$		
40*h*	77.71	836.60			
100*h*	81.52	816.74	$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}-s^2p^4(^3P)5f\,^2D^\circ_{1\frac{1}{2}}$	(0.52)—	(0.49) 0.53.
50H*l*	85.27	797.23	$s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}-s^2p^4(^1S)4d\,^2D_{2\frac{1}{2}}$		
300*hl*	86.54	790.63	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$	(0.00) 1.51	(0.03, 0.10) 1.49, 1.56, 1.63, 1.70.
3*hl*	88.90	778.37	$s^2p^4(^3P)5p\,^2S^\circ_{0\frac{1}{2}}-s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$		
20*hl*	89.72	774.12	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{0\frac{1}{2}}$		
15*hv*	4,399.39	724.06			
100*hl*	4,400.87	716.42	$s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}-s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}$		
30*h*	04.33	698.57	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}-s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect Observed	Zeeman effect Computed
40*hv*	08.89	675.10	$s^2p^4(^1D)4d\,^2P_{1½}$—$s^2p^4(^1D)5f\,^2P^{\circ}_{0½}$		
40	17.24	632.23	$s^2p^4(^3P)5p\,^4D^{\circ}_{1½}$—$s^2p^4(^3P)5d\,^4P_{2½}$		
1	20.16	617.29	$s^2p^4(^3P)4d\,^4F_{2½}$—$s^2p^4(^1D)5p\,^2D^{\circ}_{2½}$		
100*hv*	22.70	604.30	$s^2p^4(^1D)5s\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1½}$	(0.71) 1.07, 1.58	(0.27, 0.80) 0.53, 1.07, 1.60
1	28.9	572.7	$s^2p^4(^3P)4d\,^4F_{1½}$—$s^2p^4(^1D)5p\,^2D^{\circ}_{2½}$		
500	31.67	558.55	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)5p\,^4D^{\circ}_{0½}$	(1.31) 1.31	(1.32) 1.32
600	36.81	532.41	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)5p\,^2P^{\circ}_{1½}$	(—) 0.63, 1.94	(0.57) 0.69, 1.95
3	43.72	497.37	$s^2p^4(^3P)4d\,^4F_{1½}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{0½}$		
4*hv*	50.34	463.91			
50H*v*	53.21	449.43	$s^2p^4(^1S)5s\,^2S_{0½}$—$s^2p^4(^1S)5p\,^2P^{\circ}_{0½}$	(0.53) 1.44	(0.55) 1.45
10H*l*	54.37	443.59	$s^2p^4(^3P)5p\,^2D^{\circ}_{1½}$—$s^2p^4(^1S)6s\,^2S_{0½}$		
40H*l*	57.25	429.08	$s^2p^4(^3P)5p\,^2P^{\circ}_{1½}$—$s^2p^4(^3P)6s\,^2P_{0½}$		
8*h*	59.99	415.30	$s^2p^4(^3P)5p\,^4D^{\circ}_{1½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
1	60.45	412.99	$s^2p^4(^3P)5p\,^2D^{\circ}_{2½}$—$s^2p^4(^3P)5d\,^4F_{3½}$		
2*hl*	61.61	407.17			
800*hv*	75.00	340.12	$s^2p^4(^1D)5s\,^2D_{2½}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{1½}$	(0.00) 1.09	(0.07, 0.20), 1.00, 1.13, 1.27, 1.40.
5H*l*	79.86	315.89	$s^2p^4(^1D)4d\,^2P_{0½}$—$s^2p^4(^1D)5f\,^2P^{\circ}_{0½}$		
50H*l*	81.85	305.98	$s^2p^4(^3P)5p\,^2P^{\circ}_{0½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
3H	88.22	274.32			
400*hl*	4,489.88	266.08	$s^2p^4(^1D)5p\,^2F^{\circ}_{3½}$—$s^2p^4(^1S)4d\,^2D_{2½}$	(0.00) 1.07	(0.03, 0.09, 0.14) 1.00, 1.06, 1.11, 1.17, 1.23, 1.28
400*hl*	4,523.14	102.36	$s^2p^4(^3P)5p\,^4P^{\circ}_{0½}$—$s^2p^4(^3P)6s\,^4P_{1½}$	(0.30) 1.10	(0.29) 1.09, 1.68
3*hl*	28.62	22,075.61	$s^2p^4(^3P)5p\,^2S^{\circ}_{0½}$—$s^2p^4(^1S)6s\,^2S_{0½}$		
3	52.77	21,958.51	$s^2p^4(^1D)4d\,^2F_{2½}$—$s^2p^4(^1D)5f\,^2D^{\circ}_{2½}$		
200*hl*	56.61	21,940.01	$s^2p^4(^3P)5p\,^2D^{\circ}_{2½}$—$s^2p^4(^3P)6s\,^2P_{1½}$	(0.00) 1.35	(0.00) 1.34
3*hl*	60.38	921.87	$s^2p^4(^3P)5p\,^2P^{\circ}_{1½}$—$s^2p^4(^3P)6s\,^2P_{1½}$		
1*h*	64.9	899.98	$s^2p^4(^3P)5d\,^4P_{1½}$—14873.45		
1*h*	65.82	895.75	$s^2p^4(^3P)5p\,^4D^{\circ}_{0½}$—$s^2p^4(^3P)6s\,^2P_{1½}$		
30*hl*	73.33	859.80	$s^2p^4(^1D)4d\,^2P_{1½}$—$s^2p^4(^1D)5f\,^2P^{\circ}_{1½}$		
1*h*	75.8	848.0	$s^2p^4(^1D)5p\,^2P^{\circ}_{1½}$—$s^2p^4(^1S)4d\,^2D_{1½}$		
800	77.20	841.32	$s^2p^4(^1D)5s\,^2D_{2½}$—$s^2p^4(^1D)5p\,^2F^{\circ}_{3½}$	(0.00) 1.07	(0.03, 0.09, 0.14) 1.00, 1.06, 1.11, 1.17, 1.23, 1.28
2*h*	80.11	827.44	$s^2p^4(^3P)5d\,^4P_{2½}$—15340.80		
300*hl*	82.85	814.39	$s^2p^4(^3P)5p\,^4D^{\circ}_{2½}$—$s^2p^4(^3P)6s\,^4P_{1½}$	(0.00) 1.04	(0.18, 0.54) 0.83, 1.19, 1.55, 1.92
1	91.50	773.29	$s^2p^4(^3P)4d\,^4F_{3½}$—$s^2p^4(^1D)5p\,^2F^{\circ}_{3½}$		
150H*l*	92.80	767.13	$s^2p^4(^1D)5p\,^2P^{\circ}_{1½}$—$s^2p^4(^1S)4d_2D_{2½}$	(0.00) 1.04	(0.07, 0.20) 1.00, 1.13, 1.27, 1.40
2	96.81	748.14			
50*hl*	98.49	740.20	$s^2p^4(^3P)5p\,^2P^{\circ}_{1½}$—$s^2p^4(^3P)6s\,^4P_{0½}$	(—) 0.62	(0.54) 0.72, 1.80
1*h*	4,599.44	735.71			
2	4,600.69	729.80			
1*h*	01.42	726.35	$s^2p^4(^3P)4d\,^4P_{0½}$—$s^2p^4(^1D)5p\,^2P^{\circ}_{0½}$		
60*hl*	04.02	714.09	$s^2p^4(^3P)5p\,^4D^{\circ}_{0½}$—$s^2p^4(^3P)6s\,^4P_{0½}$	(1.17) 1.17	(1.17) 1.17
1*h*	05.25	708.29			
1*h*	08.48	693.07	$s^2p^4(^3P)5p\,^2P^{\circ}_{0½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
20*hv*	09.72	687.24	$s^2p^4(^3P)5s\,^2P_{1½}$—$s^2p^4(^3P)5p\,^4D^{\circ}_{0½}$		
60*hl*	10.65	682.86	$s^2p^4(^3P)5p\,^2D^{\circ}_{2½}$—$s^2p^4(^3P)5d\,^4D_{1½}$; $s^2p^4(^3P)5d\,^4P_{0½}$—15702.73		
2*h*	13.79	668.10	$s^2p^4(^3P)5d\,^4P_{0½}$—15717.15		
15*gn*	14.50	664.77	$s^2p^4(^3P)5p\,^2P^{\circ}_{1½}$—$s^2p^4(^3P)5d\,^4D_{1½}$		
500	4,615.28	21,661.11	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^2P^{\circ}_{1½}$	(0.33) 1.15, 1.37, 1.68	(0.14, 0.42) 1.12, 1.40, 1.68
1000	4,619.15	21,642.96	$s^2p^4(^3P)5s\,^2P_{1½}$—$s^2p^4(^3P)5p\,^2P^{\circ}_{2½}$	(0.00) 1.21	(0.09, 0.27) 1.07, 1.25, 1.43, 1.61
5*h*	19.99	639.03	$s^2p^4(^3P)5p\,^4D^{\circ}_{0½}$—$s^2p^4(^3P)5d\,^4D_{1½}$		
800	33.88	574.16	$s^2p^4(^1D)5s\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2F^{\circ}_{2½}$	(0.00) 0.90	(0.03, 0.09) 0.77, 0.83, 0.89, 0.94
8	35.42	567.00	$s^2p^4(^3P)4d\,^4D_{2½}$—$s^2p^4(^3P)5p\,^2D^{\circ}_{1½}$		
1*h*	37.66	556.58	$s^2p^4(^3P)5d\,^4D_{3½}$—15,340.81		
2H	40.20	544.78			
30	50.17	498.59	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)5p\,^2P^{\circ}_{0½}$		
2000	58.87	458.44	$s^2p^4(^3P)5s\,^4P_{2½}$—$s^2p^4(^3P)5p\,^4P^{\circ}_{1½}$	(0.00) 1.51	(0.03, 0.09) 1.49, 1.55, 1.61, 1.67

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
2H*l*	72.09	397.73	$s^2p^4(^1D)5p\,^2P^\circ_{2½}$—$s^2p^4(^1D)6s\,^2D_{2½}$		
3	73.80	389.90	$s^2p^4(^3P)5d\,^4D_{2½}$—15,340.81		
500	80.41	359.69	$s^2p^4(^3P)5s\,^2P_{0½}$—$s^2p^4(^3P)5p\,^2S^\circ_{0½}$ $s^2p^4(^3P)5d\,^4D_{2½}$—15,370.10	(0.41) 1.09	(0.40) 1.10
5	83.68	344.78	$s^2p^4(^3P)4d\,^4P_{1½}$—$s^2p^4(^1D)5p\,^2P^\circ_{0½}$		
8H*l*	86.30	332.84	$s^2p^4(^3P)5p\,^2D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4D_{2½}$		
10h*l*	87.28	328.38	$s^2p^4(^1D)4d\,^2P_{1½}$—$s^2p^4(^1D)5f\,^2F^\circ_{2½}$		
3h	88.3	323.7	$s^2p^4(^1D)5p\,^2D^\circ_{2½}$—$s^2p^4(^3P)7s\,^4P_{1½}$		
100	91.28	310.20	$s^2p^4(^1D)5s\,^2D_{2½}$—$s^2p^4(^1D)5p\,^2F^\circ_{2½}$ $s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^4D_{0½}$	(0.81)	(0.17, 0.51, 0.86) 0.34, 0.69, 1.03, 1.37, 1.71.
200h*l*	94.44	295.86	$s^2p^4(^3P)5p\,^4D^\circ_{3½}$—$s^2p^4(^3P)6s\,^4P_{2½}$ $s^2p^4(^3P)4d\,^4P_{1½}$—$s^2p^4(^1D)5p\,^2P^\circ_{1½}$	(0.00) 1.07	(0.09, 0.26, 0.43) 1.00, 1.17, 1.34, 1.52, 1.68, 1.86
50h*l*	95.66	290.32	$s^2p^4(^3P)5p\,^2D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
30H*l*	4,699.69	272.07	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
2h*l*	4,705.44	246.07	$s^2p^4(^3P)5p\,^4D^\circ_{0½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
3	06.31	242.14	$s^2p^4(^3P)4d\,^4F_{3½}$—$s^2p^4(^1D)5p\,^2F^\circ_{2½}$		
1h	17.0	194.00			
3,000	39.00	095.62	$s^2p^4(^3P)5s\,^4P_{2½}$—$s^2p^4(^3P)5p\,^4P^\circ_{2½}$	(0.00) 1.58	(0.01, 0.03, 0.05) 1.55, 1.57, 1.59, 1.61, 1.63
100h*l*	52.02	037.82	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)5d\,^4D_{0½}$	(0.23) 1.53	(0.23) 1.11, 1.57
1h	58.77	21,007.98	$s^2p^4(^3P)5p\,^4D^\circ_{2½}$—$s^2p^4(^3P)6s\,^4P_{2½}$		
300	62.43	20,991.83	$s^2p^4(^3P)5s\,^2P_{0½}$—$s^2p^4(^3P)5p\,^2D^\circ_{1½}$	(0.31) 1.01, 1.65	(0.32) 1.02, 1.65
1000	65.74	977.25	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^4D^\circ_{2½}$	(0.15, 0.46) 0.76, 1.07, 1.38, 1.69	(0.15, 0.46) 0.76, 1.07, 1.38, 1.70
40h	73.01	945.30	$s^2p^4(^1D)4d\,^2P_{1½}$—$s^2p^4(^1D)5f\,^2D^\circ_{2½}$		
2	74.46	938.94	$s^2p^4(^3P)4d\,^4P_{2½}$—$s^2p^4(^1D)5p\,^2D^\circ_{2½}$		
1	84.8	893.7	$s^2p^4(^3P)5p\,^2D^\circ_{2½}$—$s^2p^4(^3P)5d\,^4P_{2½}$		
1h	86.56	886.01			
5h	88.76	876.41	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{2½}$		
60h*l*	4,796.33	843.47	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)6s\,^2P_{0½}$		
4	4,802.97	814.65	$s^2p^4(^3P)4d\,^4P_{2½}$—$s^2p^4(^1D)5p\,^2D^\circ_{1½}$		
300	11.76	776.63	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)5p\,^4D^\circ_{1½}$	(—) 0.64	(0.69) 0.59, 1.95
300	25.18	718.84	$s^2p^4(^3P)5s\,^2P_{0½}$—$s^2p^4(^3P)5p\,^4S^\circ_{1½}$	(0.41) 1.11, 1.95	(0.42) 1.12, 1.96
800	32.07	689.30	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^4P^\circ_{0½}$	(0.21) 1.31, 1.76	(0.22) 1.32, 1.76
4h	33.68	682.41	$s^2p^4(^3P)4d\,^2F_{3½}$—$s^2p^4(^1D)5p\,^2D^\circ_{2½}$		
20h*l*	36.56	670.09	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)5d\,^4D_{0½}$		
4h	39.04	659.50	$s^2p^4(^3P)5p\,^2P^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
2h	45.14	633.49	$s^2p^4(^3P)5p\,^4D^\circ_{0½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
700	46.60	627.28	$s^2p^4(^3P)5s\,^2P_{1½}$—$s^2p^4(^3P)5p\,^2P^\circ_{0½}$	(0.12)1.38, 1.65	(0.13)1.39, 1.65
2	52.61	601.73	$s^2p^4(^3P)6s\,^4P_{0½}$—15,702.73		
150	57.20	582.26	$s^2p^4(^3P)4d\,^4D_{0½}$—$s^2p^4(^3P)5p\,^2S^\circ_{0½}$	(0.75) 0.75	(0.75) 0.75
2h	62.1	561.5			
20Hv	70.14	527.57	$s^2p^4(^1D)4d\,^2P_{0½}$—$s^2p^4(^1D)5f\,^2D^\circ_{1½}$		
1—	75.63	504.46	$s^2p^4(^3P)4d\,^4F_{2½}$—$s^2p^4(^1D)5p\,^2P^\circ_{1½}$		
1h	89.67	445.59			
1	91.3	438.8			
3	4,897.2	414.1			
2h*l*	4,908.34	367.82	$s^2p^4(^1D)5p\,^2P^\circ_{1½}$—$s^2p^4(^1D)6s\,^2D_{2½}$		
2h	14.62	341.79	$s^2p^4(^1S)5s\,^2S_{0½}$—32,026.50		
100h*l*	15.94	336.33	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)6s\,^2P_{1½}$		
1H	32.17	269.41			
1H	37.97	245.60	$s^2p^4(^3P)6s\,^2P_{0½}$—15,370.10		
300	45.59	214.41	$s^2p^4(^3P)4d\,^4D_{0½}$—$s^2p^4(^3P)5p\,^2D^\circ_{1½}$		
50h*l*	4,948.50	20,202.52	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)6s\,^2P_{0½}$		
3	4,791.15	20,866.00	$s^2p^4(^1D)5p\,^2F^\circ_{3½}$—$s^2p^4(^1D)6s\,^2D_{1½}$		
100h*l*	4,960.25	20,154.67	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)6s\,^4P_{0½}$		
100h*l*	78.89	079.21	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^4D_{1½}$		
50h*l*	82.83	063.33	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)6s\,^2P_{1½}$		
1	97.22	005.56	$s^2p^4(^3P)4d\,^4F_{2½}$—$s^2p^4(^1D)5p\,^2F^\circ_{3½}$		
5H*l*	4,998.54	20,000.28	$s^2p^4(^1D)5p\,^2F^\circ_{3½}$—$s^2p^4(^3P)5d\,^2D_{2½}$		
100	5,013.29	19,941.43	$s^2p^4(^3P)4d\,^4D_{0½}$—$s^2p^4(^3p)5p\,^4S^\circ_{1½}$		
1	15.71	931.85	$s^2p^4(^3P)5d\,^4D_{0½}$—15,216.41		
4Hv	20.43	913.08	$s^2p^4(3P)6s\,^2P_{0½}$—15,702.73		
100	21.88	907.32	$s^2p^4(^3P)4d\,^4D_{3½}$—$s^2p^4(^3P)5p\,^2D^\circ_{2½}$		
200	22.40	905.26	$s^2p^4(^3P)5s\,^2P_{1½}$—$s^2p^4(^3P)5p\,^4D^\circ_{1½}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air}I.A.	ν_{vac}cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
30*hl*	28.36	881.67	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)6s\,^4P_{0½}$		
3H*v*	30.96	871.40			
100H*l*	33.85	859.99	$s^2p^4(^1D)5p\,^2D^\circ_{1½}$—$s^2p^4(^1S)4d\,^2D_{1½}$		
1*h*	37.47	845.72			
80H*l*	46.31	810.95	$s^2p^4(^1D)5p\,^2P^\circ_{0½}$—$s^2p^4(^1S)4d\,^2D_{1½}$		
4*hl*	47.52	806.20	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)5d\,^4D_{1½}$		
30H*l*	54.53	778.74	{$s^2p^4(D)5p\,^2D^\circ_{1½}$—$s^2p^4(^1S)4d\,^2D_{2½}$ {$s^2p^4(^3P)5d\,^4D_{0½}$—15, 37010		
20H*l*	65.58	735.59	$s^2p^4(^1D)5p\,^2D^\circ_{2½}$—$s^2p^4(^1S)4d\,^2D_{1½}$		
1H	67.22	729.20	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^4D_{2½}$		
3*h*	67.41	728.46			
40	72.55	708.47	$s^2p^4(^3P)4d\,^4D_{2½}$—$s^2p^4(^3P)5p\,^2P^\circ_{1½}$		
4H*l*	75.92	695.39	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)6s\,^2P_{1½}$		
40	77.23	690.31	$s^2p^4(^3P)4d\,^4D_{2½}$—$s^2p^4(^3P)5p\,^2D^\circ_{2½}$		
2H*l*	78.19	686.58	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
250*hl*	5,086.52	654.34	$s^2p^4(^1D)5p\,^2D^\circ_{2½}$—$s^2p^4(^1S)4d\,^2D_{2½}$		
15H*l*	5,123.16	513.78	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)6s\,^4P_{0½}$		
400H*l*	25.73	504.00	$s^2p^4(^3P)5p\,^4D^\circ_{1½}$—$s^2p^4(^3P)6s\,^4P_{1½}$		
1	33.52	474.40	$s^2p^4(^3P)4d\,^4F_{2½}$—$s^2p^4(^1D)5p\,^2F^\circ_{2½}$		
1H*v*	41.10	445.69	$s^2p^4(^3P)5d\,^4D_{0½}$—15,702.73		
60*hl*	43.05	438.31	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)5d\,^4D_{1½}$		
4	45.28	429.89	$s^2p^4(^3P)4d\,^4F_{1½}$—$s^2p^4(^1D)5p\,^2F^\circ_{2½}$		
3*hl*	49.61	413.55	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
3*hl*	52.01	404.51			
80	66.80	348.96	$s^2p^4(^3P)4d\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2D^\circ_{2½}$		
6H*v*	77.71	308.19	$s^2p^4(^3P)4d\,^4P_{1½}$—$s^2p^4(^1D)5p\,^2P^\circ_{1½}$		
1*h*	82.30	291.09	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{2½}$		
60H*v*	5,186.99	273.65	$s^2p^4(^3P)4d\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2P^\circ_{0½}$		
60H*v*	5,200.22	224.62	$s^2p^4(^3P)4d\,^2D_{1½}$—$s^2p^4(^1D)5p\,^2D^\circ_{1½}$		
2*h*	01.56	219.66	$s^2p^4(^3P)4d\,^2P_{0½}$—$s^2p^4(^1D)5p\,^2D^\circ_{1½}$		
500	08.32	194.72	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^4P^\circ_{1½}$		
30	17.45	161.13	$s^2p^4(^3P)4d\,^4D_{1½}$—$s^2p^4(^3P)5p\,^4D^\circ_{0½}$		
12	17.93	159.37	$s^2p^4(^3P)5s\,^2P_{0½}$—$s^2p^4(^3P)5p\,^4D^\circ_{0½}$		
7	24.56	135.05	$s^2p^4(^3P)4d\,^4D_{1½}$—$s^2p^4(^3P)5p\,^2P^\circ_{1½}$		
3	25.05	133.26	$s^2p^4(^3P)5s\,^2P_{0½}$—$s^2p^4(^3P)5p\,^2P^\circ_{1½}$		
60	29.52	116.91	$s^2p^4(^3P)4d\,^4D_{1½}$—$s^2p^4(^3P)5p\,^2D^\circ_{2½}$		
3*h*	30.15	114.60	$s^2p^4(^1D)4d\,^2D_{2½}$—$s^2p^4(^3P)5f\,^2D^\circ_{1½}$		
2*hl*	41.29	073.98	$s^2p^4(^3P)5p\,^4S^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
4H*v*	45.25	059.58			
4*hl*	49.06	045.74	$s^2p^4(^3P)5p\,^2S_{0½}$—$s^2p^4(^3P)5d\,^4P_{1½}$		
30	56.75	19,017.88	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{2½}$		
100*h*	76.50	18,946.70	$s^2p^4(^1D)4d\,^2D_{2½}$—$s^2p^4(^3P)5f\,^2F^\circ_{2½}$		
2*h*	86.86	909.57			
1H	5,297.8	18,870.5	{$s^2p^4(^1S)6s\,^2S_{0½}$—14,873.45 {$s^2p^4(^1D)4d\,^2D_{2½}$—$s^2p^4(^3P)5f\,^4F^\circ_{1½}$		
200	5,308.66	831.92	$s^2p^4(^3P)5s\,^4P_{1½}$—$s^2p^4(^3P)5p\,^4P^\circ_{2½}$		
4*h*	10.26	826.25	$s^2p^4(^3P)4d\,^4P_{2½}$—$s^2p^4(^1D)5p\,^2P^\circ_{1½}$		
30*hl*	17.41	800.93	$s^2p^4(^3P)5p\,^2D^\circ_{1½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
60*hl*	22.77	782.00	$s^2p^4(^3P)5p\,^2P^\circ_{0½}$—$s^2p^4(^3P)6s\,^4P_{1½}$		
4*h*	29.15	759.51	$s^2p^4(^1D)4d\,^2D_{1½}$—$s^2p^4(^1S)5p\,^2P^\circ_{1½}$		
500*h*	33.41	744.53	$s^2p^4(^1D)4d\,^2D_{2½}$—$s^2p^4(^3P)5f\,^2F^\circ_{3½}$		
60*hl*	46.76	697.73	$s^2p^4(^3P)5p\,^4D^\circ_{1½}$—$s^2p^4(^3P)6s\,^4P_{2½}$		
10*h*	55.45	667.39	$s^2p^4(^1D)4d\,^2D_{2½}$—$s^2p^4(^3P)5f\,^4F^\circ_{2½}$		
3*h*	5,374.19	602.30	$s^2p^4(^1D)4d\,^2F_{3½}$—$s^2p^4(^3P)5f\,^2F^\circ_{2½}$		
30H*v*	5,418.43	450.42	$s^2p^4(^1D)4d\,^2D_{1½}$—$s^2p^4(^3P)5f\,^2D^\circ_{1½}$		
1H	23.56	432.96	$s^2p^4(^3P)5p\,^2S^\circ_{0½}$—$s^2p^4(^3P)5d\,^4P_{0½}$		
2*hv*	33.24	400.12	$s^2p^4(^1D)4d\,^2F_{3½}$—$s^2p^4(^3P)5f\,^2F^\circ_{3½}$		
40	38.63	381.89	$s^2p^4(^3P)4d\,^4D_{0½}$—$s^2p^4(^3P)5p\,^4D^\circ_{0½}$		
1*h*	39.38	379.35	$s^2p^4(^1D)5p\,^2D^\circ_{1½}$—$s^2p^4(^1D)6s\,^2D_{2½}$		
1*h*	41.39	372.56			
1	44.05	363.59			
80	46.34	355.87	$s^2p^4(^3P)4d\,^4D_{0½}$—$s^2p^4(^3P)5p\,^2P^\circ_{1½}$		
2H	49.61	344.85	$s^2p^4(^1D)5p\,^4F^\circ_{2½}$—$s^2p^4(^3P)5d\,^2F_{2½}$		
200*hv*	68.17	282.59	$s^2p^4(^1D)4d\,^2D_{1½}$—$s^2p^4(^3P)5f\,^2F^\circ_{2½}$		
4H*l*	76.46	254.91	$s^2p^4(^1D)5p\,^2D^\circ_{2½}$—$s^2p^4(^1D)6s\,^2D_{2½}$		
4*h*	91.43	205.15	$s^2p^4(^1D)4d\,^2D_{1½}$—$s^2p^4(^3P)5f\,^4F^\circ_{1½}$		
50	5,499.54	178.30	$s^2p^4(^3P)5s\,^4P_{0½}$—$s^2p^4(^3P)^5p\,^4P^\circ_{0½}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect: Observed	Zeeman effect: Computed
60	5, 522. 94	101. 28	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$		
30	23. 47	099. 55	$s^2p^4(^3P)5s\,^2P_{0\frac{1}{2}}-s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$		
5	32. 29	070. 69	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}-s^2p^4(^1D)5p\,^2F^{\circ}_{3\frac{1}{2}}$		
4H*v*	41. 65	040. 17	$s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}-15{,}702.73$		
5H	46. 11	18, 025. 66	$s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}-15{,}717.15$		
1*h*	5, 475. 49	18, 258. 15	$s^2p^4(^1D)4d\,^2F_{3\frac{1}{2}}-s^2p^4(^3P)5f\,^4F^{\circ}_{3\frac{1}{2}}$		
100H*v*	5, 552. 99	18, 003. 33	$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}-s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
100	68. 65	17, 952. 70	$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$		
1*h*—	84. 4	902. 1	$s^2p^4(^3P)5p\,^4P^{\circ}_{2\frac{1}{2}}-s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
1*h*—	5, 585. 4	898. 9	$s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}-s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$		
2	5, 617. 63	796. 17	$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}-s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$		
1	27. 02	766. 48	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$		
100*h*	33. 02	747. 55	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$ $s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}-s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac{1}{2}}$		
3*hl*	41. 07	722. 23	$s^2p^4(^3P)5p\,^4D^{\circ}_{0\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$		
1H	45. 00	709. 89	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$		
1H*v*	48. 38	699. 29	$s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}-15{,}340.81$		
10H	50. 37	693. 06	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac{1}{2}}$		
1	64. 85	647. 83	$s^2p^4(^1D)4d\,^2F_{2\frac{1}{2}}-s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
1*h*	67. 59	639. 30			
40*hv*	72. 78	623. 16	$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}-s^2p^4(^1D)5p_2D^{\circ}_{1\frac{1}{2}}$		
30*hv*	74. 52	617. 76	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^1D)5p\,^2P^{\circ}_{0\frac{1}{2}}$		
400	81. 89	594. 91	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^{\circ}_{2\frac{1}{2}}$		
200H*v*	90. 35	568. 75	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^1D)5p\,^2D^{\circ}_{1\frac{1}{2}}$		
5H*l*	92. 11	563. 22			
10	5, 699. 84	539. 50	$s^2p^4(^3P)4d\,^2F_{3\frac{1}{2}}-s^2p^4(^1D)5p\,^2F^{\circ}_{2\frac{1}{2}}$ $s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}-s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
5H*l*	5, 749. 27	388. 70	$s^2p^4(^1D)5p\,^2D^{\circ}_{2\frac{1}{2}}-s^2p^4(^3P)5d\,^2D_{2\frac{1}{2}}$		
60	52. 98	377. 49	$s^2p^4(^3P)5s\,^2P_{0\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$		
2H	55. 60	369. 58	$s^2p^4(^1D)4d\,^2F_{2\frac{1}{2}}-s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$		
100	71. 41	322. 00	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}-s^2p^4(^3P)5p\,^2P^{\circ}_{0\frac{1}{2}}$		
1H*l*	5, 773. 5	315. 7	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^2F_{2\frac{1}{2}}$		
6H*v*	5, 800. 16	236. 14	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}-s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
1*h*	01. 81	231. 23	$s^2p^4(^3P)4d\,^2P_{0\frac{1}{2}}-s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
1H	42. 49	111. 26	$s^2p^4(^1D)4\mathrm{d}\,^2P_{1\frac{1}{2}}-s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
1H	45. 28	103. 09			
4H*l*	54. 04	077. 50			
10H*l*	60. 75	17, 057. 95			
2H!	82. 67	16, 994. 38			
8H*l*	94. 56	960. 11	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$		
2H*l*	5, 897. 47	951. 74			
8H*l*	5, 900. 89	941. 91	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}-s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$		
10H*l*	11. 72	910. 87			
1H	14. 79	902. 10			
2H	19. 4	888. 9			
1H	24. 24	875. 14			
8*h*	35. 03	844. 46	$s^2p^4(^1D)5p\,^2P^{\circ}_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4F_{1\frac{1}{2}}$		
4H*v*	41. 82	825. 21			
3*h*	49. 93	802. 28	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
15H*v*	67. 54	752. 69	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}-s^2p^4(^1S)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
2H*l*	69. 57	747. 00			
2	74. 82	732. 28	$s^2p^4(^3P)4d\,^2P_{0\frac{1}{2}}-s^2p^4(^1D)5p\,^2F^{\circ}_{3\frac{1}{2}}$		
200	5, 992. 22	683. 70	$s^2p^4(^3P)5s\,^4P_{0\frac{1}{2}}-s^2p^4(^3P)5p\,^4P^{\circ}_{1\frac{1}{2}}$		
3H*v*	6, 008. 10	639. 60	$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}-32{,}026.50$		
10H	09. 99	634. 37	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$		
40	22. 39	600. 12	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^{\circ}_{1\frac{1}{2}}$		
1*h*	38. 1	556. 9	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5f\,^4F^{\circ}_{1\frac{1}{2}}$		
10H*w*	40. 7	549. 8			
2H	44. 85	538. 44			
10H*w*	46. 06	535. 13			
?H	47. 13	532. 20	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}-s^2p^4(^3P)5f\,^4D^{\circ}_{1\frac{1}{2}}$		
20H*v*	79. 71	443. 61	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}-s^2p^4(^3P)5f\,^2D^{\circ}_{1\frac{1}{2}}$		
30*hl*	6, 094. 50	403. 71	$s^2p^4(^3P)5p\,^4P^{\circ}_{0\frac{1}{2}}-s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$		
5H*lw*	6, 107. 61	368. 50			
4*h*	12. 61	355. 11	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}-s^2p^4(^3P)5f\,^4F^{\circ}_{2\frac{1}{2}}$ $s^2p^4(^3P)5d\,^2P_{0\frac{1}{2}}-14{,}873.45$		
1*h*	16. 52	344. 65			
10H*lw*	19. 56	336. 53			

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect: Observed	Zeeman effect: Computed
1H*l*	25. 52	320. 64			
1*h*	50. 54	254. 25	$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
50	68. 80	206. 13	$s^2p^4(^3P)4d\,^2D_{1\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}$		
6H*v*	71. 77	198. 33	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^\circ_{1\frac{1}{2}}$		
7H*l*	85. 35	162. 77	$s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$		
3H*lw*	6, 196. 14	134. 63			
1H	6, 228. 14	051. 73	$s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^\circ_{3\frac{1}{2}}$		
10*hl*	30. 74	045. 03	$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
2*hlw*	43. 53	012. 16			
1H*l*	47. 53	16, 001. 91			
4*hvw*	57. 84	15, 975. 54	$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$—32,026.50		
2H*w*	64. 91	957. 52			
1H*w*	69. 35	946. 22			
2*h*	77. 52	925. 46			
3*hl*	6, 290. 96	891. 44	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
100	6, 303. 66	859. 42	$s^2p^4(^3P)4d\,^4D_{3\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$		
4	22. 42	812. 36	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$		
4*h*	44. 61	757. 06	$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
30	6, 391. 14	15, 642. 34	$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$		
2H	5, 777. 72	17, 303. 08	$s^2p^4(^1D)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4F^\circ_{3\frac{1}{2}}$		
2H*w*	5, 918. 81	16, 890. 62	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^3P)5f\,^4D^\circ_{1\frac{1}{2}}$		
4*hv*	6, 394. 28	15, 634. 66	$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$		
3H*w*	6, 404. 69	609. 25			
10H*hv*	9. 84	596. 71	$s^2p^4(^1D)5p\,^2D^\circ_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$		
4*h*	12. 53	590. 17	$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$		
60H*v*	16. 61	580. 26	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$		
300	20. 18	571. 59	$s^2p^4(^3P)4d\,^4D_{3\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^\circ_{3\frac{1}{2}}$		
2H	31. 92	543. 17			
5H*l*	40. 74	521. 88	$s^2p^4(^3P)5p\,^2S^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}$		
50	70. 89	449. 56	$s^2p^4(^3P)5s\,^2P_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}$		
2H	6, 493. 7	395. 3	$s^2p^4(^3P)5d\,^2D_{1\frac{1}{2}}$—14,873.45		
8*hl*	6, 510. 14	356. 42	$s^2p^2(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$		
100	10. 95	354. 51	$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^\circ_{3\frac{1}{2}}$		
6*h*	65. 32	227. 35	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$		
150	6, 570. 07	216. 34	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2D^\circ_{2\frac{1}{2}}$		
10*h*	6, 602. 90	140. 69	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^\circ_{0\frac{1}{2}}$		
15*h*	05. 00	135. 87	$s^2p^4(^3P)4d\,^2D_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^\circ_{3\frac{1}{2}}$		
2H*v*	24. 22	091. 96	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2D^\circ_{1\frac{1}{2}}$		
2H*l*	27. 96	083. 44	$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{2\frac{1}{2}}$		
15*h*	6, 634. 36	15, 068. 89	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$		
100	6, 763. 61	14, 780. 93	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}$		
80	64. 43	779. 14	$s^2p^4(^3P)5s\,^2P_{0\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}$		
50	6, 771. 22	764. 32	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2S^\circ_{0\frac{1}{2}}$		
40	6, 870. 85	550. 23	$s^2p^4(^3P)4d\,^2P_{1\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}$		
10H*l*	6, 944. 06	396. 83	{$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$ {$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
3*h*	6, 977. 95	326. 91	$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$—32,026.50		
2H	7, 022. 56	235. 89	$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1S)6s\,^2S_{0\frac{1}{2}}$		
60	7, 073. 97	132. 44	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$		
3	7, 078. 44	123. 52	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$		
2*hl*	7, 128. 14	025. 04			
60	7, 139. 99	14, 001. 77	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{0\frac{1}{2}}$		
1—	7, 156. 81	13, 968. 86	$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$—32,026.50		
250	7, 213. 13	13, 859. 79	{$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$ {$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$	}	
1*h*	33. 52	820. 73	59,686.98—$s^2p^4(^1D)5p\,^2D^\circ_{2\frac{1}{2}}$		
2H*l*	41. 56	805. 38	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$		
4	72. 97	745. 76	59,686.98—$s^2p^4(^1D)5p3P^\circ_{0\frac{1}{2}}$		
400*h*	7, 289. 78	714. 06	$s^2p^4(^3P)4d\,^4D_{3\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}$		
4*h*	7, 301. 29	692. 44			
1*h*	11. 63	673. 08			
1*h*	18. 92	659. 46			
3*h*	59. 97	583. 28			
2*h*	7, 380. 46	545. 56			
400*h*	7, 407. 02	496. 99	$s^2p^4(^3P)4d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}$		
1H	18. 27	476. 53			
15*h*	34. 74	446. 67	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
200*h*	35.78	444.79	$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$		
2H	44.64	428.79			
6H*w*	7,467.99	386.80			
1h	7,511.42	309.40			
2H	17.52	298.60			
300*h*	24.46	286.34	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$		
20*h*	7,525.48	284.54			
3*h*	7,615.69	127.18			
5*h*	29.46	103.49	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$		
5	35.13	093.76	$s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^\circ_{0\frac{1}{2}}$		
150	7,641.16	13,083.42	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$		
1	7,712.02	12,963.21			
250*h*	35.69	923.54	$s^2p^4(^3P)4d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{2\frac{1}{2}}$		
1*h*	49.16	901.08	$s^2p^4(^1D)5p\,^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^3P)5d\,^2P_{1\frac{1}{2}}$		
100*h*	81.97	846.69			
6H*l*	7,791.90	830.31	$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}$		
30H	56.52	724.79	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
1*h*	7,895.57	661.85			
40*h*	7,931.41	604.64	$s^2p^4(^3P)4d\,^2F_{2\frac{1}{2}}$—$s^2p^4(^1D)5p\,^2F^\circ_{3\frac{1}{2}}$		
3*h*	57.07	563.99	$s^2p^4(^1S)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^\circ_{0\frac{1}{2}}$		
120*hv*	73.62	537.91	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2P^\circ_{1\frac{1}{2}}$		
200*h*	7,993.22	507.17	$s^2p^4(^3P)4d\,^4D_{0\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$		
3H	8,095.96	348.45			
4	8,123.44	306.68			
10*h*	30.03	296.70	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$		
6H	32.96	292.27			
1H	42.17	278.37	$s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{2\frac{1}{2}}$ $s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^\circ_{1\frac{1}{2}}$		
100H	45.15	273.87	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2P^\circ_{1\frac{1}{2}}$		
1H	47.70	270.03	$s^2p^4(^1D)6s\,^2D_{2\frac{1}{2}}$—15,340.81		
1H	49.17	267.82			
10*hv*	57.25	255.67	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^\circ_{2\frac{1}{2}}$		
2H*v*	8,178.68	223.56			
3hKrI?	8,192.63	202.74			
200*h*	8,202.72	12,187.73	$s^2p^4(^3P)4d\,^4F_{3\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^\circ_{2\frac{1}{2}}$		
2H	8,333.14	11,996.98			
1*h*	47.24	976.72			
2*h*	8,378.87	931.57			
1H	8,411.14	885.73	$s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^\circ_{1\frac{1}{2}}$		
1H	32.37	855.81	$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^2P_{1\frac{1}{2}}$		
4*hlw*	64.92	810.22	$s^2p^4(^3P)6s\,^4P_{0\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2P^\circ_{1\frac{1}{2}}$		
100*hl*	8,473.31	798.53	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
3*h*	8,523.88	728.53			
3*h*	37.98	709.16	$s^2p^4(^3P)5p\,^2D^\circ_{2\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
2H	51.33	690.88	$s^2p^4(^3P)5p\,^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
2H	63.59	674.14	$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)6s\,^4P_{0\frac{1}{2}}$		
4H	8,595.91	630.25			
2*h*	8,613.58	606.39			
1H*w*	19.34	598.63	$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$		
5H*v*	51.50	555.52			
1	73.52	526.18			
2*h*	74.26	525.20	$s^2p^4(^3P)5p\,^4P^\circ_{1\frac{1}{2}}$—$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}$		
1*h*	80.94	516.33			
100*hv*	8,690.19	504.07	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}$		
8*h*	8,707.61	481.06	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$		
3H*lw*	8,798.65	362.26			
3H	8,804.65	354.52	$s^2p^4(^3P)5d\,^4D_{1\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2F^\circ_{2\frac{1}{2}}$		
2H	10.10	347.50			
5H*lw*	29.38	322.72	$s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$—25447.85 $s^2p^4(^3P)5d\,^4D_{2\frac{1}{2}}$—$s^2p^4(^1D)5f\,^2D^\circ_{2\frac{1}{2}}$		
3H	33.42	317.54			
4*h*	40.09	309.01	$s^2p^4(^1D)5p\,^2F^\circ_{3\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{2\frac{1}{2}}$		
1H	73.56	266.34			
1	8,892.99	241.73			
1	8,901.94	230.43			
3H	8,908.26	222.46			
15*h*	8,978.70	134.42	$s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$		

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air} I.A.	ν_{vac} cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
6	8,999.11	109.16	$s^2p^4(^3P)5p\,^4D^\circ_{3\frac{1}{2}}-s^2p^4(^1D)4d\,^2G_{3\frac{1}{2}}$		
10	9,006.15	100.48	$s^2p^4(^3P)4d\,^4P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$		
10*hl*	25.67	076.47	$s^2p^4(^3P)5p\,^2P^\circ_{0\frac{1}{2}}-s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
20HL	39.95	058.98			
10H	44.55	053.35	$s^2p^4(^3P)6s\,^4P_{1\frac{1}{2}}-s^2p^4(^1S)5p\,^2P^\circ_{1\frac{1}{2}}$		
2H	87.18	11,001.50			
3H	90.98	10,996.90			
2H	94.5	992.6			
4H	96.49	990.24			
15*h*	9,099.72	986.34			
20HL	9,115.00	967.92			
6H*l*	31.21	948.45			
8HL	33.4	945.8			
2HL	57.82	916.64			
3H*l*	64.04	909.23			
40HL	75.42	895.70			
10HL	81.23	888.80			
1H	9,196.7	870.5	$s^2p^4(^1S)4d\,^2D_{2\frac{1}{2}}-15,340.80$		
8H*d*?	9,207.27	858.00			
50	33.18	827.54	$s^2p^4(^3P)4d\,^4P_{1\frac{1}{2}}-s^2p^4(^3P)5p\,^4S^\circ_{1\frac{1}{2}}$		
1	35.30	825.05			
500	38.48	821.32	$s^2p^4(^3P)5p\,^4D^\circ_{2\frac{1}{2}}-s^2p^4(^1D)4d\,^2G_{3\frac{1}{2}}$		
20HL	45.45	813.17			
1H	50.0	807.8			
1H	55.4	801.5			
2	62.93	792.76	$s^2p^4(^1D)5p\,^2P^\circ_{0\frac{1}{2}}-s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}$		
2*h*	66.17	788.99	$s^2p^4(^1S)4d\,^2D_{1\frac{1}{2}}-15,340.80$		
2H	69.38	785.25			
50	71.99	782.22	$s^2p^4(^1D)5s\,^2D_{1\frac{1}{2}}-s^2p^4(3P)5p\,^4D^\circ_{1\frac{1}{2}}$		
1H*w*	76.2	777.3			
20HL	89.95	761.37			
500HL	93.82	756.90	$s^2p^4(^3P)5f\,^4F^\circ_{4\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{5\frac{1}{2}}$.		
60H	9,296.1	754.3			
1H	9,305.76	743.09	$s^2p^4(^3P)5f\,^4F^\circ_{3\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{2\frac{1}{2}}$		
30*h*	17.84	729.16	$s^2p^4(^3P)5f\,^4F^\circ_{4\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{3\frac{1}{2}}$		
200H	20.99	725.53	$s^2p^4(^3P)5f\,^4F^\circ_{4\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{4\frac{1}{2}}$		
4*h*	26.19	719.55			
5*h*	30.66	714.42	$s^2p^4(^3P)6s\,^2P_{1\frac{1}{2}}-s^2p^4(^1D)5f.\,^2D^\circ_{2\frac{1}{2}}$		
2H	37.73	706.31			
100H	45.11	697.85	$s^2p^4(^3P)5f\,^4F^\circ_{3\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{3\frac{1}{2}}$		
100H	49.08	693.31	$s^2p^4(^3P)5f\,^4F^\circ_{3\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{4\frac{1}{2}}$		
300	61.95	678.61	$59,686.98-s^2p^4(^1D)5p\,^2F^\circ_{2\frac{1}{2}}$		
1*h*	63.6	676.7	$s^2p^4(^3P)6s\,^2P_{1\frac{1}{2}}-25,447.85$		
50H*l*	88.08	648.89			
1H	90.3	646.4			
1H*v*	9,392.42	643.97			
200H*v*	9,402.82	632.19	$s^2p^4(^3P)5f\,^4F^\circ_{2\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{3\frac{1}{2}}$		
3	13.32	620.33			
100	9,414.94	618.50	$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}-s^2p^4(^3P)5p\,^2D^\circ_{1\frac{1}{2}}$		
2*h*	8,717.31	11,468.28	$s^2p^4(^3P)5d\,^4D_{0\frac{1}{2}}-s^2p^4(^1D)5f\,^2P^\circ_{0\frac{1}{2}}$		
5H	9,430.25	10,601.27	$s^2p^4(^3P)5f\,^2F^\circ_{3\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{2\frac{1}{2}}$		
20H	37.21	593.45	$s^2p^4(^1D)5p\,^2P^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5d\,^4P_{0\frac{1}{2}}$		
100H	40.02	590.29	$s^2p^4(^3P)6s\,^2P_{0\frac{1}{2}}-s^2p^4(^1D)5f\,^2F^\circ_{2\frac{1}{2}}$		
1*h*	41.6	588.5			
1*h*	55.29	573.19			
3*h*	61.67	566.06			
200H	70.93	555.73	$s^2p^4(^3P)5f\,^2F^\circ_{3\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{3\frac{1}{2}}$		
100H	75.06	551.13	$s^2p^4(^3P)5f\,^2F^\circ_{3\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{4\frac{1}{2}}$		
5H	76.4	549.6			
1H	9,490.08	534.43			
100H	9,500.60	522.77			
100	04.70	518.23	$s^2p^4(^1D)5s\,^2D_{2\frac{1}{2}}-s^2p^4(^3P)5p\,^4D^\circ_{1\frac{1}{2}}$		
4	20.23	501.07			
10H	43.64	475.31	$s^2p^4(^3P)5f\,^4F^\circ_{1\frac{1}{2}}-s^2p^4(^3P)5g\,^4G_{2\frac{1}{2}}$		
2*h*	49.4	469.0			

TABLE 4.—*The first spark spectrum of krypton (Kr II)*—Continued

Intensity and character	λ_{air}I.A.	ν_{vac}cm^{-1}	Term combination	Zeeman effect	
				Observed	Computed
10H	52.85	465.21			
2H	61.26	456.01			
5H	64.32	452.66			
500	77.52	438.26	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
1H	90.5	424.1			
100	9,594.24	420.06	$s^2p^4(^3P)4d\,^4F_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}$ $s^2p^4(^3P)4d\,^4F_{1\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^{\circ}_{0\frac{1}{2}}$		
500H	9,605.80	407.52			
100H	13.80	398.87	$s^2p^4(^3P)5f\,^2F^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^3P)5g\,^4G_{2\frac{1}{2}}$		
400H	19.61	392.58			
3H*l*	22.5	389.5			
200	63.34	345.55	$s^2p^4(^3P)4d\,^4P_{2\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4S^{0}_{1\frac{1}{2}}$		
6H	72.90	335.33			
2H*l*	9,693.27	313.61			
200H	9,711.60	294.14			
10H	17.16	288.25			
3H	20.6	284.6			
2H	39.4	264.8			
1	63.79	239.12			
2H*l*	70.1	232.5			
2H	77.6	224.7			
1H*w*	93.3	208.3			
2H	9,795.1	206.4	$s^2p^4(^1D)5p\,^2P^{0}_{1\frac{1}{2}}$—$s^2p^4(^3P)5d\,^4P_{1\frac{1}{2}}$		
5*h*	9,800.6	200.7			
500	9,803.14	198.02			
100H	23.39	177.00			
100H	26.58	173.68			
5H	33.8	166.2			
3*h*	51.40	148.1			
10*h*	9,892.97	105.42	$s^2p^4(^3P)5p\,^4S^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{1\frac{1}{2}}$		
20H	9,954.75	042.70	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
5*h*	9,966.67	10,030.69	$s^2p^4(^3P)5p\,^4P^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1S)5s\,^2S_{0\frac{1}{2}}$		
20H*v*	10,017.97	9,979.33			
20HL	042.27	955.18	32,026.50—$s^2p^4(^1D)5d\,^2D_{1\frac{1}{2}}$		
4	127.74	871.17	$s^2p^4(^3P)5d\,^4P_{2\frac{1}{2}}$—27,294.47?		
2H	157.07	842.66	$s^2p^4(^3P)5d\,^4D_{2\frac{1}{2}}$—26,886.30		
10H	167.61	832.46	$s^2p^4(^3P)5p\,^2D^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)\,^4d\,^2P_{1\frac{1}{2}}$		
3H	177.41	822.99	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2P_{0\frac{1}{2}}$		
1000	221.46	780.66	$s^2p^4(^3P)4d\,^4F_{4\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^{\circ}_{3\frac{1}{2}}$		
100	361.15	648.79	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$—$s^2p^4(^3P)5p\,^4D^{\circ}_{0\frac{1}{2}}$ $s^2p^4(^3P)5f\,^2F^{\circ}_{3\frac{1}{2}}$—$s^2p^4(^1D)5d\,^2F_{3\frac{1}{2}}$		
8*h*	389.28	622.68	$s^2p^4(^3P)4d\,^4P_{0\frac{1}{2}}$—$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$		
10	428.40	586.57			
2*h*	431.84	583.41			
4*h*	562.84	464.56	$s^2p^4(^3P)5p\,^2S^{\circ}_{0\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{1\frac{1}{2}}$		
6*h*	639.34	396.51	$s^2p^4(^3P)5p\,^2D^{\circ}_{2\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$		
1*h*—	10,659.5	9,378.73	$s^2p^4(^3P)5p\,^2P^{\circ}_{1\frac{1}{2}}$—$s^2p^4(^1D)4d\,^2D_{2\frac{1}{2}}$		

WASHINGTON, May 31, 1933.

○