Experimental energy levels of the water molecule

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Abstract

Experimentally derived energy levels are presented for 12 248 vibration-rotation states of the $H_2{}^{16}O$ isotopomer of water, more than doubling the number in previous, disparate, compilations. For each level an error and reference to source data is given. The levels have been checked using energy levels derived from sophisticated variational calculations. These levels span 107 vibrational states including members of all polyads up to and including 8ν. Band origins, in some cases estimates, are presented for 101 vibrational modes.

Key words: energy levels, water, vibration, rotation, band origins

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I. INTRODUCTION

Water is arguably the single most important molecule. It is considered fundamental to life, ubiquitous in the Universe, is the dominant greenhouse gas, responsible for about 70 % of the known absorption of sunlight in the Earth's atmosphere, and is the major product of nearly all combustion processes. It is therefore no surprise that the high resolution spectrum of water has been the subject of decades of intensive study. However the rotation-vibration spectrum of water is both dense and complicated. This means that although there have been a great many successes in the spectral analysis of water, there remains much to be done. For example, after nearly thirty years of trying a particularly dense absorption spectrum of water recorded in sunspots has now been successfully analysed (Polyansky *et al.* 1997a). But this work only assigned about the strongest 15 % of the observed transitions.

A compact way of representing successful spectral assignments is via energy levels. Unlike other parameterizations, this method does not rely on any underlying model or effective Hamiltonian. Tables of vibration-rotation energy levels are built by setting the (000) 0_{00} ground energy level as the zero of energy and using transition frequencies to define the relative energies of the excited states. Cleary measurements of new transitions connecting

particular states allows the precision with which the energies of these states are determined to be systematically improved. There are many partial tabulation of water rotation-vibration energy levels in the literature, see citations below, but there has been no comprehensive one for a considerable time, if ever.

Spectral analysis of water has taken on a new vigor with the use of variational calculations to perform the theoretical analysis replacing traditional perturbation based methods (Partridge and Schwenke 1997, Schwenke 1998, Polyansky *et al.* 1997a, 1997b, 1997c, 1997d, 1997e, 1998, Carleer *et al.* 1999, Zobov *et al.* 1999, 2000a, 2000b, Bykov *et al.* 2000, Haus *et al.* 2001, Schermaul *et al.* 2001). Studies using variational calculations have greatly extended the range, both in vibrational and rotational quanta, of energy levels that have been determined. The result has been an almost three-fold increase in the number of energy levels of the main isotopomer of water, $H_2{}^{16}O$, that can be determined directly from experimental data.

Tabulations of experimental rotation-vibration energy levels are important for a number of purposes. They are necessary for spectral analysis, where the use of combination differences provides the most secure way of making assignments. They can be used to compute partition functions and other thermodynamic quantities (eg Vidler and Tennyson 2000). Energy levels are important for developing theoretical models, either by fits to effective Hamiltonians (Polyansky 1985, Tyuterev *et al.* 1995, Coudert 1997) or, in conjunction with variational calculations, by fits which yield spectroscopically determined (effective) potential energy surfaces (Carter and Handy 1987, Jensen 1989, Halonen and Carrington 1988, Kauppi and Halonen 1990, Jensen *et al.* 1994, Paulse and Tennyson 1994, Polyansky *et al.* 1994, 1996a Partridge and Schwenke 1997, Kain *et al.* 2001). Furthermore the tabulated energy levels can be used to test ideas on the underlying level structure (Child *et al.* 1999) or as the starting point for further theoretical investigations, such as the search for ortho-para switching transitions (Chapovsky 1999). Probably the most important use for detailed tabulations of energy rules is that, given a knowledge of selection rules, they allow for detailed and accurate spectra to be predicted for a whole variaty of situations which have yet to be

probed. See Nela *et al.* (2000) for an example.

In this paper we present a tabulation of 12 248 experimentally determined energy levels of water belonging to 107 different vibrational states. These data are derived using published energy levels supplemented by data from analysing 24 000 newly assigned transitions. Only the main and most important isotopomer of water, $H_2{}^{16}O$, is considered since this is the only one for which sufficient data is available to justify the comprehensive treatment given here. For each energy level derived, we also present an error based on stated measurement errors, the number of transitions used to obtain the level, which gives a measure of certainty, and reference(s) to data used in obtaining the level. As a check on the levels they have been compared with independent determinations made using variational calculations and both the best available spectroscopically determined potential (Partridge and Schwenke 1997) and the best available *ab initio* procedure (Polyansky *et al.* 1999, Zobov *et al.* 2000b).

II. NOTATION

As a triatomic asymmetric top molecule, water has three vibrational modes and three rotational modes. The vibrational states can be labelled by both normal mode and local mode notation. In the more standard normal mode notation which is valid for low levels of the stretching excitation, $(v_1 v_2 v_3)$ represents vibrational quanta in normal modes ν_1 (symmetric stretch), ν_2 (bend) and ν_3 (asymmetric stretch) respectively. In local mode notation (Halonen 1998) $(mn)^{\pm}v_2$, m and n represent quanta of local stretch in symmetric, $+$, or asymmetric, $-$, symmetry combinations. Note if $m = n$ then the combination has to be symmetric and by convention the superscript is dropped. Previous spectral studies (Carleer *et al.* 1999, Zobov *et al.* 2000b) have demonstrated that local modes give a much better description of the higher states. This situation is complicated by the prediction (Rose and Kellman 1996) that it is only the predominantly stretching states for which this is true. However such highly excited bending states have yet to be observed.

In water there is a near coincidence of the frequencies of the symmetric stretch and asym-

metric stretch modes, which in turn lie close to two quanta excitations of the bending mode. This means that the infrared and optical spectrum of water has a pronounced structure due to the closeness of several interacting vibrational states. It is conventional to label groups of interacting vibrations by a polyad number n where $n = v_1 + \frac{v_2}{2} + v_3$ for even v_2. Polyads with even v_2 are labelled $n\nu$ and those with an extra quantum of v_2 bend are labelled $n\nu + \delta$. Polyads $n\nu$ and $n\nu + \delta$ each contain $(n+1)(n+2)/2$ vibrational states.

Rotational levels of water are labelled using standard asymmetric top notation as $J_{K_a K_c}$, where J is the rotational angular momentum, K_a is the projection of J along the A-axis and K_c is its projection along the C-axis. Since the A moment inertia is small K_a is a key rotational quantum number. High K_a states have in the past proved difficult to analyze as standard expansion techniques diverge for even low values of K_a (Polyansky 1985). The use of variational calculations, discussed below, has largely resolved the problems with high K_a states (Polyansky *et al.* 1997a) and similar ones with the higher bending states (Polyansky *et al.* 1997d).

Most of the labels used to characterize vibration-rotation energy levels are approximate. The only rigorous quantum numbers for water are the rotational angular momentum, J, the (rotational) parity which is given by $p = (-1)^{(J+K_a+K_c)}$ and the symmetry of interchanging the two H atoms. This latter quantum number splits a spectrum into two, essentially distinct, series based on nuclear spin statistics. Ortho states have a nuclear spin statistical weight three times that of the para states $K_a + K_c + v_3$ is odd is for ortho states and even for para states.

III. METHOD

The starting point for this study was the many published spectra of both hot (Camy-Peyret and Flaud 1975, 1976, Flaud and Camy-Peyret 1976, Flaud *et al.*1976, 1977, 1979, Camy-Peyret *et al.* 1977, 1980, Pine *et al.* 1983, Polyansky *et al.* 1996b, Esplin *et al.* 1998, Lanquetin et al. 1999) and cold (Camy-Peyret *et al.* 1985, Johns 1985, Mandin *et al.* 1986,

1988, Guelachvili and Rao 1986, Belov *et al.* 1987, Nakano *et al.* 1988, Chevillard *et al.* 1989, Toth 1991, 1993a, 1993b, 1994a, 1994b, 1998, 1999, Pearson *et al.* 1991, Matsushima *et al.* 1995, Paso and Horneman 1995, Flaud *et al.* 1997, Mikailenko *et al.* 1997, Harder and Brault 1997, Chen *et al.* 2000) $H_2{}^{16}O$ vapor. In particular we used those which gave reliable tabulations of energy levels (Camy-Peyret and Flaud 1975, 1976, Flaud and Camy-Peyret 1976, Chevillard *et al.* 1989 Flaud *et al.* 1977, 1997, Toth 1994a, 1994b, 1997, 1998, 1999, Lanquetin 1997, Lanquetin *et al.* 1999). A compilation of the earlier work is given by Flaud *et al.* (1981).

In selecting which previous tabulations of energy levels to start from, only those which also estimate statistical errors were considered. To these previous energy level studies, we added the transitions assigned by us using variational calculations (Polyansky *et al.* 1997b, 1997c, 1997d, 1997e, 1998, Carleer *et al.* 1999, Zobov *et al.* 1999, 2000a, 2000b) Energy levels (Bykov *et al.* 2000) and newly assigned transitions (Giver 2000, Haus *et al.* 2001, Schermaul *et al.* 2001) which became available during the course of the work were also included.

The most rigorous method of obtaining experimental energy levels from transition data is to use the method of over-determined linear equations as described by Flaud *et al.* (1976). This method may well not be practicable for the large dataset considered here; however since the method requires all the transition data, plus errors, as input, and since much of transition data recorded in earlier studies was not available to us, an alternative approach was in any case necessary.

Gas phase water spectra were divided into catagories depending on whether the water was 'hot' ($T \geq 1000$ K) or 'cold', approximately room temperature. The cold spectra were processed first. For the cold spectra, which covered the frequency region above 13,200 cm^{-1}, all transition data was re-processed. The transitions of Mandin *et al.* (1986), with extra assignments by Polyansky *et al.* (1998), and Camy-Peyret *et al.* (1985) were taken electronically from Hitran (Rothman *et al.* 1998) and merged with more recent data of Carleer *et al.* (1999) and Zobov *et al.* (2000) to obtain reduced errors for individual frequencies. Energy levels were then generated starting from the recent low-lying energy levels of Lanquetin *et*

al. (1999) whose data essentially reproduces those of Toth (1998). These low-lying levels have been determined to such high accuracy that the error in the upper state energy levels is almost entirely determined by the residual errors in the transition frequencies used. There were few problems with this step of the work, which covered data for the polyads $3\nu + \delta$, 4ν, $4\nu + \delta$, 5ν, $5\nu + \delta$, 6ν, 7ν, $7\nu + \delta$ and 8ν.

To this data was added the energy levels determined by Bykov *et al.* (2000) and some newly determined transitions due to Haus *et al.* (2001) and Schermaul *et al.* (2001). Finally the new assignments to the transitions of Mandin *et al.* (1986) due to Giver (2000), who interpretted Schwenke's (1998) work, were added. This last dataset has to be treated carefully as the new assignments do not all satisfy combination differences. Tables 8 to 17 presents our energy levels derived from the cold spectra using 7955 assigned transitions of which 4044 were used to obtain energy levels in the original studies (Camy-Peyret *et al.* 1985, Mandin *et al.* 1986) once allowance is made for misassignments.

For the 'hot' spectra, transition data was taken from our analysis of spectra of hot water recorded both in the laboratory (Polyansky *et al.* 1997c, 1997d, 1997e, Zobov *et al.* 1999, 2000a) and sunspots (Polyansky *et al.* 1997b, 1997c, Zobov *et al.* 2000a), note that the correctly calibrated laboratory data of Zobov *et al.* (2000a) was used. These data were merged to give an improved linelist containing over 21,000 transitions. It should be noted that the laboratory data where available is of much higher accuracy than that obtained from sunspots. Energy levels were taken from the cited compilations. These were augmented by the extensive tabulations in the thesis of Lanquetin (1997). Lanquetin's data, when confirmed by us, is of higher accuracy than ours and therefore contains important information. However the data could not be used uncritically as it contains a significant fraction of incorrect levels presumably arising from mis-assigned transitions. As the levels published by Lanquetin *et al.* (1999), all of which are correct, have larger errors than the corresponding errors in the thesis, we increased the errors stated in the thesis by 50%. Some other levels taken from previous compilations were also found to be incorrect and were removed during the course of processing the data.

Determining energy levels from the hot spectra was altogether more complicated as, in particular, some of these spectra are very rich in combination transitions (Zobov *et al.* 1999) which lead to complicated cross-linkages between the energy levels of different states. We therefore adopted a bottom up approach to the problem: vibrational states were treated from the lowest upwards in order of their band origins which are given in Table 2. Thus the high lying rotational states of (000), for which of course only pure rotational transitions are relevant, were determined first. Next the levels (010) were determined, first by considering transitions from (000) and then by treating pure rotational transitions within (010). Thirdly the levels of (020) were determined, first from vibrational transitions from (000) and (010), then by treating pure rotational transitions within (020) and finally by considering difference bands involving levels of the (100) and (001) states. As, of course, many of these had yet to be determined at this stage of the calculation, it was necessary to iterate on the difference transitions step of the calculations. This was a common feature of all states up to and including those in the 2ν polyad and final levels could only be obtained after several iterations. After these iterations were complete we were left with a number of transitions which still had not been processed. A check was performed to see which of these transitions could be coupled into the energy levels that had been determined. After this step we still had a dataset of 194 transitions for which the energy of neither the lower nor the upper level had been determined. These 'unattached' transitions contain information on further water levels which hopefully will be used when further data becomes available.

In principle the hot and cold spectra do not link distinct sets of energy levels. In practice, besides the previously well determined low-lying rotational levels of (000) and (010), the only vibrational state present in both datasets was the state (061). Even for this vibrational state, the sets of spectra were distinct and no individual rotational level was involved in both hot and cold spectra.

After this work had been substantially completed the energy levels for the lowest 5 vibrational states due to Lanquetin *et al.* (2001) became available. These were used to resolve some discrepencies in the previous data. In general our results give excellent agreement with

those of Lanquetin *et al.* (2001). The one notable exception is for high J states with $J = K_a$. For many of these states our energies are systematically slightly lower. We note that our energies agree better with previous studies by the same group (Lanquetin 1997, Lanquetin *et al.* 1999).

Once a complete, initial set of energy levels had been constructed various consistency checks were performed. The most severe of these was to test the levels against the completely independent results of variational calculations. For reasons well documented elsewhere (Polyansky *et al.* 1997b, Polyansky *et al.* 1999, Zobov *et al.* 2000) comparisons were made with energy levels calculated using both the best available spectroscopically determined potential energy surface (Partridge and Schwenke 1997) and the best available *ab initio* procedure. In practice for low-lying levels, which in any case were well constrained by Partridge and Schwenke's levels, the ZVPT *ab initio* results (Polyansky *et al.* 1999) were used while at higher energies, where Partridge and Schwenke's levels become erratic, the more recent calculations of Zobov *et al.* (2000) were employed. Nearly all our levels gave energies which agreed well with those from the variational calculations; the few which lay outside the reasonable error limits of the variational calculations were removed from the compilation. Some levels, both from this study and previous ones, for which there is only marginal agreement with the variational calculations have been flagged using ? in the tables.

Table 1 summarizes our results. It presents the number of rotational energy levels (term values) obtained for each vibrational state. Figure 1 shows the proportion of vibrational states, as a function of polyad number, for which this term value data are available.

Band origins, ω_0, for each vibrational state are given in Table 1. In cases where transitions to the 0_{00} level have not been observed an estimate of the band origin is given where possible. These estimates were obtained by estimating a systematic band error for the variationally calculated energy levels and then using this to correct the 0_{00} from the variational calculation. This procedure has proved very reliable (Polyansky *et al.* 1998, Carleer *et al.* 1999). It is difficult to give precise errors, but the estimates given in Table 1 should be accurate to approximately plus or minus one unit in the final digit.

Table 1 gives the source of the literature energy levels used to seed our compilation. In practice for most of the lower states, some levels were also taken from other sources. Information on this is given in the full tabulations. Table 1 provides a key to the papers used to provide energy levels retained in our final compilation. This compilation is given in Tables 2 to 17, with each table presenting the results for one polyad.

IV. ERRORS AND TABLES

There are two types of errors which affect the energy levels compiled here: statistical and systematic. The main source of systematic errors is incorrect data, primarily misassigned transitions. Although comparisons with the variational calculation removed the glaring systematic errors this method is not guaranteed to remove all such problems.

One indicator of the reliability of a particular assignment is the number of transitions used to determine that level, N. Levels for which $N = 1$ have not been confirmed by combination differences and therefore must be treated with more caution than those levels for which $N > 1$ which have therefore been confirmed using combination differences. However two points should be noted. First not all authors provide values for N, in this case a value of -1 is recorded in our tables, the true value of N is fairly large in nearly all of these cases. Secondly our definition of N differs from that used by some other workers. We have use N to record only transitions going to a particular level, i.e. where the level is the upper one. Literature N's often represent all transitions to and from a particular level. There are many levels, particular high lying rotational states, whose energies rely on a series of single transitions linking states. The assignment of a single transition to a particular level is not confirmed because further transitions are assigned from that level. Hence in such cases we believe that a value $N = 1$ is appropriate. Where our data is combined with previous estimates, the value N may well be a hybrid between two definitions. The values of N taken from the literature can be found in the original reference if required. Finally it should be noted that even levels confirmed by combination differences may have incorrect (vibrational)

labels. Although we believe such cases are rare, the possibility of a few such levels cannot be completely ruled out. We note that vibrational labels are actually not crucial for most applictions.

Statistical errors are altogether easier to deal with. Errors were propagated through the calculations using standard statistical procedures. In all cases when processing the data, the error of the lower level was kept fixed and used to determine the error of the upper level. The over-determined linear equation method (Flaud *et al.* 1976) is more even handed than this although, in practice, the upper levels have the dominant errors in nearly all cases we considered.

It should be noted that in the course of processing the data we found a small number of seemingly correctly assigned transitions which gave energy levels outside the range one would expect from the error analysis. These transitions were simply dropped from the analysis. The most likely explanation for this anomaly is that for studies which only give an average error, instead of a line by line error, the error for some lines, particularly blended ones, is significantly larger than the average value.

It is a well known property of asymmetric top molecules such as water that as the rotational angular momentum J increases, neighbouring levels with either $K_a \sim J$ or $K_c \sim J$ appear as quasi-degenerate pairs. This means that in many cases it is impossible to separate between these pairs at the accuracy of the experimental data analysed here. The *ab initio* variational calculations used here show this degeneracy structure to a high degree of accuracy. The calculations due to Partridge and Schwenke (1997) do not show this structure due to problems with convergence (Polyansky *et al.* 1997c). The *ab initio* calculations were therefore used as a guide to which levels should be considered degenerate. Data for levels which were assumed to be degenerate were processed together. In such cases the lower statistical weight para levels, which are given by $K_a + K_c + v_3$ even, are flagged as 'd' for degenerate in the tables.

Tables 2 to 17 present our final results tabulated by vibrational state. The tables give the rotational term values relative to the ground state are given in cm^{-1}. Note $J_{K_aK_c}$ combi-

nations for which no levels were determined have been omitted from the tables to save space. For each entry, we also give the statistical error with which the level was determined, in units of 0.001 cm^{-1}, the number of transitions to the level, N defined above, and reference(s) to the source data. Vibrational state labels are given at the head of each column in normal mode and local mode notation in that order. These tables can be downloaded in electronic form via web page www.tampa.phys.ucl.ac.uk/jonny/waterlevels.html or by anonymous ftp from ftp.tampa.phys.ucl.ac.uk and looking in directory pub/astrodata/water/levels.

The tables present all available energy level data with one exception. Bykov *et al.* (2000) give a value of 14585.1745 $\pm$ 0.0049 cm^{-1} for the 7_{07} level of the bending overtone state with $v_2 = 10$ (00 10 in local mode notation) based on 3 transitions. Although we have no particular reason to suspect this result is incorrect, we were not able to confirm it with the available variational linelists and are cautious since there is a history of incorrect results for high lying bending states obtained from the analysis of perturbations (see Polyansky *et al.* 1996a).

The highest energy levels considered here contain over 21 000 cm^{-1} in rotational energy or over 25 000 cm^{-1} in vibrational energy. These values represent approximately 47 % and 56 % of the dissociation energy of water. They are significantly above 11 100 cm^{-1}, the energy at which the water molecule can go linear (Tarczay *et al.* 1999, Kain *et al.* 2000). However, despite the high energies probed in this study, we had little difficulty assigning vibrational quantum number to all the states considered. Vibrational quantum numbers can be somewhat indeterminate in regions where rotational levels from two vibrational states interact, usually called perturbations (see Polyansky *et al.* 1997d for example), but in no case did we find any general loss of quantum numbers, behaviour which is often associated with the onset of chaos in a quantum mechanical system.

V. SUMMARY

We have taken advantage of recent advances in the spectroscopy of water to determine 12 248 rotation-vibration energy levels of $H_2{}^{16}O$. These levels belong to 107 different vibrational states of water. Accurate values or reliable estimates of the vibrational band origins for 101 vibrational states have also been determined. These energy levels give a consolidated tabulation of energy levels as well as a significant increase in their number. For the states up to and including the $3\nu + \delta$ polyad we give 9335 levels, of which 4933 are new, and above this we give 2913 levels, of which 1667 levels are new. This represents a more than doubling of the energy levels in both regions. We believe this dataset of energy levels will be useful for many applications.

The levels tabulated here have already been used to determine the partition function of water as a function of temperature, and related thermodynamic quantities, to much higher accuracy than any previous determination (Vidler and Tennyson 2000). The levels have also been used to help fix the height of the barrier to linearity in water (Kain *et al.* 2000) and are presently being used to characterize a full, spectroscopically determined potential for the water molecule. The successful determination of this potential will undoubtedly lead to the assignment of further water transitions and hence the determination of yet more rotation-vibration energy levels. It is our intention to maintain and distribute an updated list of these levels as further data becomes available.

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FIGURE CAPTIONS

Figure 1 Coverage of vibrational bands by polyad: possible (dots) and observed (triangles) vibrational bands in each polyad. The integer n on the x-axis denotes the polyad $n\nu$ and $n + 0.5$ represents the polyad $n\nu + \delta$.

TABLE I.: Summary of results. Given are vibrational band origin, ω_0, number of rotational term values determined and reference for the starting energies for each vibrational state. The key lists references used in all tables.

$v_1v_2v_3$	$mn^{\pm}v_2$	$\omega_0/\mathrm{cm}^{-1}$	levels
000	00 0	0.0	1026 b
010	00 1	1594.746	916 b,g
020	00 2	3151.630	750 c
100	$10^{+}0$	3657.053	757 c,f
001	$10^{-}0$	3755.929	829 c,f
030	00 3	4666.790	489 h
110	$10^{+}1$	5234.978	445 i
011	$10^{-}1$	5331.265	582 f
040	00 4	6134.015	250 j
120	$10^{+}2$	6775.093	166 j
021	$10^{-}1$	6871.520	346 j,g
200	$20^{+}0$	7201.540	203 j
101	$20^{-}0$	7249.818	299 j
002	11 0	7445.045	237 j,g
050	00 5	7542.437	105
130	$10^{+}3$	8273.976	55 k
031	$10^{-}3$	8373.853	229 k,g
210	$20^{+}1$	8761.582	58 k
111	$20^{-}1$	8806.999	209 k,g
060	00 6	8869.954	37

012	11 1	9000.136	148	k
041	$10^{-}4$	9833.585	144	m
220	$20^{+}2$	10284.367	33	m
121	$20^{-}2$	10328.731	86	m
022	11 2	10521.8	47	m
300	$30^{+}0$	10599.686	83	m
201	$30^{-}0$	10613.355	120	m
102	$21^{+}0$	10868.876	73	m
003	$21^{-}0$	11032.406	95	m
070	00 7		3	
051	$10^{-}5$	11242.8	64	n
230	$20^{+}3$	11767.390	37	n
131	$20^{-}3$	11813.207	85	n
032	11 3	12007.776	42	n
310	$30^{+}1$	12139.315	73	n
211	$30^{-}1$	12151.255	122	n,o
112	$21^{+}1$	12407.662	72	n,o
013	$21^{-}1$	12565.007	88	n,o
080	00 8		1	l
160	$10^{+}6$		4	
061	$10^{-}6$	12586.	26	
240	$20^{+}4$	13205.1	44	
141	$20^{-}4$	13256.2	49	
042	11 4	13453.6	39	
320	$30^{+}2$	13640.7	77	
221	$30^{-}2$	13652.656	96	
122	$21^{+}2$	13910.896	66	

023	$21^{-}2$	14066.194	83
400	$40^{+}0$	13828.277	100
301	$40^{-}0$	13830.938	121
202	$31^{+}0$	14221.161	102
103	$31^{-}0$	14318.812	114
004	22 0	14537.504	72
170	$10^{+}7$	13661.1	6
071	$10^{-}7$	13835.372	12
250	$20^{+}5$		1
151	$20^{-}5$	14648.2	23
052	11 5		1
330	$30^{+}3$	15108.239	30
231	$30^{-}3$	15119.028	72
132	$21^{+}3$	15377.7	19
033	$21^{-}3$	15534.709	64
410	$40^{+}1$	15344.503	74
311	$40^{-}1$	15347.956	93
212	$31^{+}1$	15742.795	58
113	$31^{-}1$	15832.765	85
340	$30^{+}4$	16534.3	30
241	$30^{-}4$	16546.3	35
142	$21^{+}4$	16796.0	40
043	$21^{-}4$	16967.5	18
420	$40^{+}2$	16823.	51
321	$40^{-}2$	16821.635	62
222	$31^{+}2$	17227.3	40
123	$31^{-}2$	17312.539	45

500	$50^{+}0$	16898.4	81
401	$50^{-}0$	16898.842	87
302	$41^{+}0$	17458.354	63
203	$41^{-}0$	17495.528	79
104	$32^{+}0$	17748.1	46
053	$21^{-}5$	18350.3	11
430	$40^{+}3$	18271.	4
331	$40^{-}3$	18265.820	50
133	$31^{-}3$	18758.6	23
034	22 3	18977.2	8
510	$50^{+}1$	18392.974	34
411	$50^{-}1$	18393.314	50
213	$41^{-}1$	18989.960	46
063	$21^{-}5$	19721.	3
341	$40^{-}4$	19679.1	31
520	$50^{+}2$	19864.	11
421	$50^{-}2$	19863.3	15
223	$41^{-}2$	20442.3	13
600	$60^{+}0$	19781.	35
501	$60^{-}0$	19781.105	53
402	$51^{+}0$	20533.6	25
303	$51^{-}0$	20543.137	32
431	$50^{-}3$	21312.	11
610	$60^{+}1$	21221.569	9
511	$60^{-}1$	21221.828	22
115	$42^{-}1$	22513.	5
620	$60^{+}2$	22631.390	3

521	$60^{-}2$	22629.288	10
700	$70^{+}0$	22529.296	42
601	$70^{-}0$	22529.441	37
611	$70^{-}1$	23940.	9
800	$80^{+}0$		20
701	$80^{-}0$	25120.278	24
Total			12248

Key for all tables

a This work

b Lanquetin *et al.* (1999)

c Toth (1999)

d level fixed as degenerate

e Lanquetin (1997)

f Flaud and Camy^{-}Peyret (1976)

g Camy-Peyret *et al.* (1977)

h Flaud *et al.* (1977)

i Camy-Peyret and Flaud (1975)

j Toth (1994b)

k Mandin *et al.* (1988)

l Bykov *et al.* (2001)

m Chevillard *et al.* (1989)

n Flaud *et al.* (1997)

o Toth (1994a)

p Schermaul *et al.* (2001)

q Giver (2000)

r Haus *et al.* (2001)

s Lanquetin *et al.* (2001)

? doubtful level

TABLE II.: Term values for the ground and first excited state of $H_2{}^{16}O$.

J	K_a	K_c	000 or 00 0			010 or 00 1		
0	0	0				1594.74633	0.24	−1 b
1	0	1	23.79436	0.01	−1 b	1618.55709	0.09	−1 b
1	1	1	37.13711	0.03	−1 b	1634.96710	0.12	−1 b
1	1	0	42.37174	0.02	−1 b	1640.50582	0.09	−1 b
2	0	2	70.09079	0.03	−1 b	1664.96469	0.11	−1 b
2	1	2	79.49639	0.02	−1 b	1677.06139	0.10	−1 b
2	1	1	95.17591	0.03	−1 b	1693.64982	0.12	−1 b
2	2	1	134.90163	0.02	−1 b	1742.30564	0.09	−1 b
2	2	0	136.16390	0.03	−1 b	1743.48622	0.07	−1 b
3	0	3	136.76166	0.03	−1 b	1731.89667	0.09	−1 b
3	1	3	142.27846	0.03	−1 b	1739.48358	0.07	−1 b
3	1	2	173.36580	0.03	−1 b	1772.41346	0.08	−1 b
3	2	2	206.30140	0.04	−1 b	1813.78749	0.09	−1 b
3	2	1	212.15636	0.03	−1 b	1819.33514	0.06	−1 b
3	3	1	285.21933	0.04	−1 b	1907.45143	0.06	−1 b
3	3	0	285.41858	0.03	−1 b	1907.61580	0.03	−1 b
4	0	4	222.05274	0.04	−1 b	1817.45101	0.09	−1 b
4	1	4	224.83838	0.03	−1 b	1821.59684	0.06	−1 b
4	1	3	275.49702	0.04	−1 b	1875.46972	0.04	−1 b
4	2	3	300.36228	0.03	−1 b	1908.01637	0.03	−1 b
4	2	2	315.77952	0.04	−1 b	1922.90113	0.05	−1 b,a
4	3	2	382.51690	0.03	−1 b	2004.81575	0.08	−1 b
4	3	1	383.84251	0.04	−1 b	2005.91716	0.07	−1 b

4	4	1	488.10771	0.04	−1	b	2129.59934	0.06	−1 b
4	4	0	488.13417	0.04	−1	b	2129.61867	0.07	−1 b,a
5	0	5	325.34790	0.03	−1	b	1920.76653	0.08	−1 b,a
5	1	5	326.62546	0.04	−1	b	1922.82908	0.05	−1 b
5	1	4	399.45753	0.03	−1	b	2000.86307	0.08	−1 b
5	2	4	416.20873	0.04	−1	b	2024.15276	0.07	−1 b,a
5	2	3	446.51069	0.03	−1	b	2053.96866	0.06	−1 b
5	3	3	503.96812	0.04	−1	b	2126.40773	0.07	−1 b,a
5	3	2	508.81210	0.03	−1	b	2130.49443	0.06	−1 b
5	4	2	610.11448	0.04	−1	b	2251.69528	0.05	−1 b,a
5	4	1	610.34125	0.04	−1	b	2251.86254	0.07	−1 b,a
5	5	1	742.07308	0.06	−1	b	2406.14097	0.08	−1 b,a
5	5	0	742.07635	0.05	−1	b	2406.14318	0.06	−1 b,a
6	0	6	446.69659	0.04	−1	b	2041.78048	0.10	−1 b
6	1	6	447.25237	0.03	−1	b	2042.75332	0.06	−1 b,a
6	1	5	542.90577	0.04	−1	b	2146.26375	0.10	−1 b,a
6	2	5	552.91143	0.03	−1	b	2161.28604	0.08	−1 b,a
6	2	4	602.77351	0.04	−1	b	2211.19064	0.09	−1 b,a
6	3	4	648.97876	0.04	−1	b	2271.71231	0.07	−1 b,a
6	3	3	661.54894	0.04	−1	b	2282.58958	0.09	−1 b,a
6	4	3	756.72487	0.04	−1	b	2398.38159	0.06	−1 b,a
6	4	2	757.78023	0.05	−1	b	2399.16554	0.08	−1 b,a
6	5	2	888.59890	0.04	−1	b	2552.85743	0.07	−1 b,a
6	5	1	888.63271	0.05	−1	b	2552.87979	0.08	−1 b,a
6	6	1	1045.05811	0.04	−1	b	2733.96290	0.08	−1 b,a
6	6	0	1045.05842	0.05	−1	b	2733.96305	0.09	−1 b,a
7	0	7	586.24358	0.04	−1	b	2180.64294	0.09	−1 b,a

7	1	7	586.47920	0.04	−1	b	2181.08989	0.09	−1 b,a
7	1	6	704.21410	0.04	−1	b	2309.73025	0.09	−1 b,a
7	2	6	709.60823	0.05	−1	b	2318.53989	0.09	−1 b,a
7	2	5	782.40990	0.04	−1	b	2392.59258	0.08	−1 b,a
7	3	5	816.69428	0.05	−1	b	2439.95449	0.09	−1 b,a
7	3	4	842.35669	0.04	−1	b	2462.87535	0.08	−1 b,a
7	4	4	927.74395	0.05	−1	b	2569.50804	0.08	−1 b,a
7	4	3	931.23724	0.04	−1	b	2572.13934	0.07	−1 b,a
7	5	3	1059.64676	0.06	−1	b	2724.04156	0.09	−1 b,a
7	5	2	1059.83560	0.04	−1	b	2724.16734	0.08	−1 b,a
7	6	2	1216.18988	0.06	−1	b	2905.43078	0.09	−1 b,a
7	6	1	1216.19465	0.05	−1	b,a	2905.43370	0.08	−1 b,a
7	7	1	1394.81424	0.07	−1	b	3109.91156	0.11	−1 b
7	7	0	1394.81437	0.06	−1	b	3109.91172	0.09	−1 b,a
8	0	8	744.06370	0.05	−1	b	2337.46345	0.11	−1 b,a
8	1	8	744.16273	0.04	−1	b	2337.66694	0.09	−1 b,a
8	1	7	882.89037	0.05	−1	b	2490.35413	0.10	−1 b,a
8	2	7	885.60032	0.04	−1	b	2495.16587	0.08	−1 b,a
8	2	6	982.91176	0.05	−1	b	2595.81299	0.10	−1 b,a
8	3	6	1006.11607	0.04	−1	b	2630.19268	0.08	−1 b,a
8	3	5	1050.15772	0.05	−1	b	2670.78971	0.08	−1 b,a
8	4	5	1122.70869	0.04	−1	b	2764.69760	0.09	−1 b,a
8	4	4	1131.77566	0.05	−1	b	2771.69021	0.10	−1 b,a
8	5	4	1255.16692	0.04	−1	b	2919.63318	0.08	−1 b,a
8	5	3	1255.91165	0.05	−1	b,a	2920.13216	0.09	−1 b,a
8	6	3	1411.61161	0.05	−1	b,a	3101.12390	0.09	−1 b,a
8	6	2	1411.64199	0.06	−1	b	3101.14225	0.11	−1 b,a

8	7	2	1590.69028	0.08	−1	b,a	3306.29544	0.09	−1 b,a
8	7	1	1590.69066	0.09	−1	b,a	3306.29563	0.10	−1 b,a
8	8	1	1789.04301	0.08	−1	b	3530.95767	0.24	−1 b,a
8	8	0	1789.04303	0.10	−1	b	3530.95630	0.30	−1 b
9	0	9	920.16846	0.05	−1	b	2512.28304	0.10	−1 b,a
9	1	9	920.21006	0.06	−1	b	2512.37578	0.10	−1 b,a
9	1	8	1079.07969	0.05	−1	b	2688.08005	0.10	−1 b,a
9	2	8	1080.38552	0.06	−1	b	2690.59371	0.08	−1 b,a
9	2	7	1201.92162	0.05	−1	b	2818.39819	0.09	−1 b,a
9	3	7	1216.23135	0.05	−1	b	2841.43092	0.10	−1 b,a
9	3	6	1282.91926	0.04	−1	b	2904.67057	0.09	−1 b,a
9	4	6	1340.88498	0.06	−1	b	2983.32318	0.10	−1 b,a
9	4	5	1360.23551	0.04	−1	b,a	2998.76650	0.09	−1 b,a
9	5	5	1474.98089	0.06	−1	b	3139.47596	0.11	−1 b,a
9	5	4	1477.29757	0.05	−1	b,a	3141.04619	0.10	−1 b,a
9	6	4	1631.24560	0.06	−1	b,a	3320.92990	0.10	−1 b,a
9	6	3	1631.38323	0.05	−1	b,a	3321.01355	0.09	−1 b,a
9	7	3	1810.58350	0.09	−1	b,a	3526.62520	0.14	−1 b,a
9	7	2	1810.58808	0.07	−1	b,a	3526.62762	0.13	−1 b,a
9	8	2	2009.80532	0.20	−1	b,a	3752.41625	0.22	−1 b
9	8	1	2009.80521	0.10	−1	b,a	3752.41648	0.11	−1 b,a
9	9	1	2225.46907	0.24	−1	b	3994.26043	0.36	−1 b
9	9	0	2225.46931	0.20	−1	b	3994.26039	0.23	−1 b,a
10	0	10	1114.53231	0.09	−1	b	2705.09681	0.12	−1 b,a
10	1	10	1114.55008	0.07	−1	b	2705.13972	0.11	−1 b,a
10	1	9	1293.01826	0.07	−1	b	2903.14619	0.11	−1 b,a
10	2	9	1293.63421	0.05	−1	b	2904.42853	0.10	−1 b,a

10	2	8	1437.96871	0.07	−1	b	3058.39855	0.11	−1 b,a
10	3	8	1446.12842	0.05	−1	b	3072.72654	0.09	−1 b,a
10	3	7	1538.14960	0.07	−1	b,a	3162.25900	0.11	−1 b,a
10	4	7	1581.33618	0.05	−1	b,a	3224.54680	0.10	−1 b,a
10	4	6	1616.45319	0.07	−1	b,a	3253.73816	0.12	−1 b,a
10	5	6	1718.71903	0.05	−1	b	3383.26563	0.10	−1 b,a
10	5	5	1724.70555	0.07	−1	b,a	3387.40085	0.11	−1 b,a
10	6	5	1874.97320	0.05	−1	b,a	3564.70528	0.10	−1 b,a
10	6	4	1875.46198	0.07	−1	b,a	3565.00375	0.11	−1 b,a
10	7	4	2054.34551	0.08	−1	b,a	3770.71168	0.11	−1 b,a
10	7	3	2054.36884	0.10	−1	b,a	3770.72467	0.14	−1 b,a
10	8	3	2254.28402	0.12	−1	b,a	3997.50862	0.16	−1 b,a
10	8	2	2254.28472	0.14	−1	b,a	3997.50858	0.19	−1 b
10	9	2	2471.25522	0.17	−1	b,a	4240.94229	0.21	−1 b,a
10	9	1	2471.25507	0.23	−1	b	4240.94254	0.33	−1 b
10	10	1	2701.88882	0.21	−1	b,a	4497.19311	0.40	−1 b,a
10	10	0	2701.88875	0.55	−1	b	4497.19293	0.86	−1 b
11	0	11	1327.11014	0.08	−1	b	2915.87451	0.12	−1 b,a
11	1	11	1327.11771	0.09	−1	b	2915.89443	0.13	−1 b,a
11	1	10	1524.84813	0.08	−1	b	3135.76492	0.11	−1 b,a
11	2	10	1525.13611	0.07	−1	b	3136.41263	0.12	−1 b,a
11	2	9	1690.66458	0.06	−1	b	3314.85590	0.10	−1 b,a
11	3	9	1695.06879	0.07	−1	b,a	3323.26995	0.12	−1 b,a
11	3	8	1813.22360	0.06	−1	b	3441.03980	0.11	−1 b,a
11	4	8	1843.02979	0.07	−1	b,a	3487.39941	0.11	−1 b,a
11	4	7	1899.00837	0.06	−1	b,a	3535.87070	0.11	−1 b,a
11	5	7	1985.78508	0.07	−1	b,a	3650.50930	0.11	−1 b,a

11	5	6	1998.99553	0.05	−1	b,a	3659.90424	0.11	−1	b,a
11	6	6	2142.59785	0.10	−1	b,a	3832.25202	0.15	−1	b,a
11	6	5	2144.04649	0.06	−1	b,a	3833.14469	0.11	−1	b,a
11	7	5	2321.81321	0.14	−1	b,a	4038.35173	0.12	−1	b,a
11	7	4	2321.90597	0.11	−1	b,a	4038.40363	0.13	−1	b,a
11	8	4	2522.26155	0.15	−1	b	4265.97469	0.20	−1	b,a
11	8	3	2522.26537	0.13	−1	b,a	4265.97666	0.17	−1	b,a
11	9	3	2740.42090	0.24	−1	b	4510.90187	0.44	−1	b,a
11	9	2	2740.42101	0.18	−1	b,a	4510.90191	0.32	−1	b,a
11	10	2	2972.82768	0.25	−1	b,a	4769.23250	0.68	−1	b
11	10	1	2972.82748	0.20	−1	b,a	4769.23307	0.35	−1	b,a
11	11	1	3216.19376	0.71	−1	b	5037.34025	3.09	−1	b
11	11	0	3216.19348	0.33	−1	b	5037.34055	0.52	−1	b,a
12	0	12	1557.84462	0.11	−1	b	3144.56943	0.17	−1	b,a
12	1	12	1557.84798	0.09	−1	b	3144.57901	0.14	−1	b,a
12	1	11	1774.61642	0.10	−1	b	3386.05260	0.14	−1	b,a
12	2	11	1774.75137	0.08	−1	b	3386.37978	0.12	−1	b,a
12	2	10	1960.20758	0.09	−1	b,a	3587.66682	0.12	−1	b,a
12	3	10	1962.50716	0.08	−1	b,a	3592.42416	0.12	−1	b,a
12	3	9	2105.86807	0.09	−1	b,a	3738.54349	0.13	−1	b,a
12	4	9	2124.95181	0.09	−1	b,a	3770.87921	0.11	−1	b,a
12	4	8	2205.65297	0.09	−1	b,a	3843.41068	0.12	−1	b,a
12	5	8	2275.37322	0.09	−1	b,a	3940.51979	0.10	−1	b,a
12	5	7	2300.68524	0.10	−1	b,a	3959.25356	0.13	−1	b,a
12	6	7	2433.80074	0.08	−1	b,a	4123.28562	0.11	−1	b,a
12	6	6	2437.50200	0.12	−1	b,a	4125.59933	0.13	−1	b,a
12	7	6	2612.80004	0.09	−1	b,a	4329.32473	0.12	−1	b,a

12	7	5	2613.10485	0.14	−1	b,a	4329.49594	0.15	−1	b,a
12	8	5	2813.51243	0.13	−1	b,a	4557.54664	0.15	−1	b,a
12	8	4	2813.52887	0.16	−1	b,a	4557.55513	0.22	−1	b,a
12	9	4	3032.69001	0.21	−1	b,a	4803.82054	0.31	−1	b,a
12	9	3	3032.69035	0.26	−1	b,a	4803.81998	0.43	−1	b,a
12	10	3	3266.76462	0.21	−1	b,a	5064.14145	0.44	−1	b,a
12	10	2	3266.76462	0.30	−1	b	5064.14077	1.06	−1	b
12	11	2	3512.40506	0.59	−1	b	5334.86081	0.52	−1	b,a
12	11	1	3512.40445	0.80	−1	b	5334.86081	0.52		d
12	12	1	3766.38718	1.24	−1	b	5612.49366	0.78	−1	b,a
12	12	0	3766.38720	1.11	−1	b,a	5612.49366	0.78		d
13	0	13	1806.67040	0.11	−1	b	3391.12648	0.14	−1	b,a
13	1	13	1806.67153	0.18	−1	b	3391.13096	0.17	−1	b,a
13	1	12	2042.31092	0.10	−1	b	3654.04914	0.13	−1	b,a
13	2	12	2042.37432	0.12	−1	b	3654.21533	0.14	−1	b,a
13	2	11	2246.88509	0.10	−1	b,a	3877.08898	0.12	−1	b,a
13	3	11	2248.06471	0.12	−1	b,a	3879.72104	0.13	−1	b,a
13	3	10	2414.72373	0.08	−1	b,a	4052.81123	0.13	−1	b,a
13	4	10	2426.19663	0.13	−1	b,a	4074.03883	0.15	−1	b,a
13	4	9	2533.79348	0.10	−1	b,a	4174.03902	0.11	−1	b,a
13	5	9	2586.53005	0.12	−1	b,a	4252.44845	0.14	−1	b,a
13	5	8	2629.33480	0.10	−1	b,a	4285.64792	0.14	−1	b,a
13	6	8	2748.09971	0.12	−1	b,a	4437.40004	0.18	−1	b,a
13	6	7	2756.41570	0.12	−1	b,a	4442.71346	0.13	−1	b,a
13	7	7	2927.07551	0.16	−1	b,a	4643.38059	0.30	−1	b,a
13	7	6	2927.94173	0.14	−1	b,a	4643.87099	0.16	−1	b,a
13	8	6	3127.80314	0.16	−1	b,a	4871.94834	0.35	−1	b,a

13	8	5	3127.86214	0.13	−1	b,a	4871.97947	0.17	−1	b,a
13	9	5	3347.78054	0.25	−1	b,a	5119.37295	0.56	−1	b,a
13	9	4	3347.78375	0.14	−1	b,a	5119.37527	0.39	−1	b,a
13	10	4	3583.37485	0.27	−1	b,a	5381.55271	0.38		d
13	10	3	3583.37482	0.36	−1	b,a	5381.55271	0.38	−1	b,a
13	11	3	3831.17889	1.33	−1	b	5654.78085	0.57		d
13	11	2	3831.17948	0.43	−1	b,a	5654.78085	0.57	−1	b,a
13	12	2	4087.98148	1.43		d	5935.60006	0.53		d
13	12	1	4087.98148	1.43	−1	b	5935.60006	0.53	−1	b,a
13	13	1	4350.59138	1.17		d	6220.62745	0.89		d
13	13	0	4350.59138	1.17	−1	b,a	6220.62745	0.89	−1	b,a
14	0	14	2073.51524	0.17	−1	b	3655.48373	0.26	−1	b,a
14	1	14	2073.51583	0.15	−1	b	3655.48544	0.17	−1	b,a
14	1	13	2327.88411	0.18	−1	b	3939.74669	0.18	−1	b,a
14	2	13	2327.91443	0.12	−1	b	3939.83227	0.15	−1	b,a
14	2	12	2550.88259	0.16	−1	b,a	4183.38928	0.16	−1	b,a
14	3	12	2551.48381	0.10	−1	b,a	4184.83164	0.11	−1	b,a
14	3	11	2739.42862	0.12	−1	b,a	4382.77998	0.22	−1	b,a
14	4	11	2746.02378	0.12	−1	b,a	4396.05175	0.15	−1	b,a
14	4	10	2880.83438	0.16	−1	b,a	4525.23956	0.34	−1	b,a
14	5	10	2918.24526	0.12	−1	b,a	4585.34952	0.17	−1	b,a
14	5	9	2983.39662	0.25	−1	b,a	4638.35105	0.36	−1	b,a
14	6	9	3084.83610	0.12	−1	b,a	4774.04454	0.15	−1	b,a
14	6	8	3101.44132	0.25	−1	b,a	4784.99993	0.33	−1	b,a
14	7	8	3264.33786	0.14	−1	b,a	4980.22302	0.33	−1	b,a
14	7	7	3266.51447	0.25	−1	b,a	4981.46951	0.40	−1	b,a
14	8	7	3464.88784	0.17	−1	b,a	5208.89642	0.34	−1	b,a

14	8	6	3465.07006	0.35	−1	b,a	5208.99236	0.44	−1	b,a
14	9	6	3685.40827	0.50	−1	b,a	5457.23793	0.38	−1	b,a
14	9	5	3685.41921	0.27	−1	b,a	5457.24342	0.59	−1	b,a
14	10	5	3922.33059	0.46	−1	b,a	5721.09870	0.40	−1	b,a
14	10	4	3922.33098	0.31	−1	b	5721.09870	0.40		d
14	11	4	4172.15275	0.65	−1	b,a	5996.69076	0.47	−1	b,a
14	11	3	4172.15275	0.65		d	5996.69076	0.47		d
14	12	3	4431.63846	0.56	−1	b,a	6280.56345	0.52	−1	b,a
14	12	2	4431.63783	1.43	−1	b	6280.56345	0.52		d
14	13	2	4697.66249	1.15	−1	b,a	6569.41205	0.87	−1	b,a
14	13	1	4697.66249	1.15		d	6569.41205	0.87		d
14	14	1	4967.04228	1.19	−1	b,a	6859.88558	0.95	−1	b,a
14	14	0	4967.04228	1.19		d	6859.88558	0.95		d
15	0	15	2358.30187	0.16	−1	b	3937.57223	0.29	−1	b,a
15	1	15	2358.30166	0.30	−1	b	3937.57275	0.37	−1	b,a
15	1	14	2631.26931	0.17	−1	b	4243.11011	0.18	−1	b,a
15	2	14	2631.28362	0.23	−1	b	4243.15431	0.21	−1	b,a
15	2	13	2872.27461	0.17	−1	b,a	4506.73424	0.15	−1	b,a
15	3	13	2872.58063	0.16	−1	b,a	4507.52284	0.21	−1	b,a
15	3	12	3080.17910	0.12	−1	b,a	4728.22157	0.17	−1	b,a
15	4	12	3083.86557	0.27	−1	b,a	4736.24179	0.24	−1	b,a
15	4	11	3244.60100	0.15	−1	b,a	4894.58616	0.21	−1	b,a
15	5	11	3269.53978	0.21	−1	b,a	4938.25431	0.33	−1	b,a
15	5	10	3360.60059	0.18	−1	b,a	5015.70449	0.24	−1	b,a
15	6	10	3443.19219	0.21	−1	b,a	5132.52219	0.41	−1	b,a
15	6	9	3472.88160	0.22	−1	b,a	5152.96490	0.34	−1	b,a
15	7	9	3624.18159	0.22	−1	b,a	5339.48893	0.41	−1	b,a

15	7	8	3629.09674	0.25	−1	b,a	5342.34736	0.34	−1	b,a
15	8	8	3824.49868	0.37	−1	b,a	5568.09099	0.42	−1	b,a
15	8	7	3824.99826	0.24	−1	b,a	5568.35491	0.35	−1	b,a
15	9	7	4045.28622	0.45	−1	b,a	5817.08049	0.62	−1	b,a
15	9	6	4045.32246	0.47	−1	b,a	5817.09708	0.36	−1	b,a
15	10	6	4283.30678	0.60	−1	b,a	6082.41205	0.41		d
15	10	5	4283.30827	0.66	−1	b,a	6082.41205	0.41	−1	b,a
15	11	5	4534.96553	0.89	−1	b,a	6360.19730	0.49		d
15	11	4	4534.96419	0.60	−1	b,a	6360.19730	0.49	−1	b,a
15	12	4	4796.97154	0.65		d	6646.95446	0.53		d
15	12	3	4796.97154	0.65	−1	b,a	6646.95446	0.53	−1	b,a
15	13	3	5066.22855	3.00	−1	b	6939.43017	0.74		d
15	13	2	5066.22960	0.87	−1	b,a	6939.43017	0.74	−1	b,a
15	14	2	5339.67281	1.23		d	7234.42102	1.17		d
15	14	1	5339.67281	1.23	−1	b,a	7234.42102	1.17	−1	b,a
15	15	1	5614.08846	1.31		d	7528.56244	1.01		d
15	15	0	5614.08846	1.31	−1	b,a	7528.56244	1.01	−1	b,a
16	0	16	2660.94624	0.53	−1	b	4237.32098	0.54	−1	b
16	1	16	2660.94627	0.27	−1	b	4237.32150	0.30	−1	b,a
16	1	15	2952.38678	0.33	−1	b	4564.08626	0.27	−1	b,a
16	2	15	2952.39403	0.22	−1	b	4564.11014	0.21	−1	b,a
16	2	14	3211.05589	0.30	−1	b,a	4847.18945	0.35	−1	b,a
16	3	14	3211.21305	0.19	−1	b,a	4847.62251	0.21	−1	b,a
16	3	13	3437.27756	0.21	−1	b,a	5089.33666	0.28	−1	b,a
16	4	13	3439.30718	0.21	−1	b,a	5094.08503	0.33	−1	b,a
16	4	12	3623.76505	0.29	−1	b,a	5280.09648	0.44	−1	b,a
16	5	12	3639.53827	0.24	−1	b,a	5310.24006	0.33	−1	b,a

16	5	11	3758.39730	0.34	−1	b,a	5415.48892	0.45	−1	b,a
16	6	11	3822.24632	0.18	−1	b,a	5512.01510	0.33	−1	b,a
16	6	10	3870.20160	0.36	−1	b,a	5546.73966	0.46	−1	b,a
16	7	10	4006.07360	0.20	−1	b,a	5720.71987	0.38	−1	b,a
16	7	9	4016.13481	0.33	−1	b,a	5726.70933	0.40	−1	b,a
16	8	9	4206.33190	0.25	−1	b,a	5949.21710	0.38	−1	b,a
16	8	8	4207.56202	0.40	−1	b,a	5949.86981	0.43	−1	b,a
16	9	8	4427.12168	0.41	−1	b,a	6198.57230	0.41	−1	b,a
16	9	7	4427.22722	0.42	−1	b,a	6198.62490	0.54	−1	b,a
16	10	7	4665.97469	0.48	−1	b,a	6465.12776	0.47	−1	b,a
16	10	6	4665.98229	0.71	−1	b,a	6465.13189	0.77	−1	b,a
16	11	6	4919.25343	0.57	−1	b,a	6744.90051	0.47	−1	b,a
16	11	5	4919.25343	0.57		d	6744.90051	0.47		d
16	12	5	5183.59178	0.71	−1	b,a	7034.35282	0.52	−1	b,a
16	12	4	5183.59178	0.71		d	7034.35282	0.52		d
16	13	4	5455.89009	1.04	−1	b,a	7330.24992	0.75	−1	b,a
16	13	3	5455.89009	1.04		d	7330.24992	0.75		d
16	14	3	5733.15446	1.12	−1	b,a	7629.48605	0.90	−1	b,a
16	14	2	5733.15446	1.12		d	7629.48605	0.90		d
16	15	2	6012.34646	1.35	−1	b,a	7928.90614	1.09	−1	b,a
16	15	1	6012.34646	1.35		d	7928.90614	1.09		d
16	16	1	6290.18445	1.42	−1	b,a	8225.08579	1.05	−1	b,a
16	16	0	6290.18445	1.42		d	8225.08579	1.05		d
17	0	17	2981.35975	0.41	−1	b	4554.65287	0.57	−1	b,a
17	1	17	2981.35959	0.68	−1	b	4554.65234	1.24	−1	b
17	1	16	3291.14910	0.76	−1	b	4902.61440	0.26	−1	b,a
17	2	16	3291.15252	1.61	−1	b	4902.62701	0.35	−1	b,a

17	2	15	3567.17413	0.28	−1	b,a	5204.74894	0.32	−1	b,a
17	3	15	3567.25537	0.50	−1	b,a	5204.98858	0.43	−1	b,a
17	3	14	3810.93697	0.19	−1	b,a	5466.40320	0.39	−1	b,a
17	4	14	3812.04716	0.35	−1	b,a	5469.18519	0.40	−1	b,a
17	4	13	4017.90866	0.21	−1	b,a	5680.55057	0.39	−1	b,a
17	5	13	4027.50637	0.59	−1	b,a	5700.48262	0.57	−1	b,a
17	5	12	4174.28779	0.30	−1	b,a	5835.28710	0.41	−1	b,a
17	6	12	4221.03999	0.42	−1	b,a	5911.62893	0.44	−1	b,a
17	6	11	4291.90712	0.31	−1	b,a	5965.71543	0.35	−1	b,a
17	7	11	4409.34441	0.65	−1	b,a	6123.35892	0.47	−1	b,a
17	7	10	4428.11435	0.43	−1	b,a	6134.89913	0.36	−1	b,a
17	8	10	4610.02320	0.58	−1	b,a	6351.91737	0.50	−1	b,a
17	8	9	4612.79114	0.45	−1	b,a	6353.40366	0.39	−1	b,a
17	9	9	4830.61441	0.64	−1	b,a	6601.37949	0.48	−1	b,a
17	9	8	4830.89466	0.40	−1	b,a	6601.51792	0.40	−1	b,a
17	10	8	5070.01057	0.97	−1	b,a	6868.87947	0.84	−1	b,a
17	10	7	5070.03221	0.55	−1	b,a	6868.89110	0.72	−1	b,a
17	11	7	5324.66530	0.69		d	7150.40813	5.94	−1	b
17	11	6	5324.66530	0.69	−1	b,a	7150.40865	0.52	−1	b,a
17	12	6	5591.12082	0.98		d	7442.34190	0.60		d
17	12	5	5591.12082	0.98	−1	b,a	7442.34190	0.60	−1	b,a
17	13	5	5866.24176	0.77		d	7741.43559	0.75		d
17	13	4	5866.24176	0.77	−1	b,a	7741.43559	0.75	−1	b,a
17	14	4	6147.08292	1.28		d	8044.65063	0.96		d
17	14	3	6147.08292	1.28	−1	b,a	8044.65063	0.96	−1	b,a
17	15	3	6430.72415	1.26		d	8348.98056	1.10		d
17	15	2	6430.72415	1.26	−1	b,a	8348.98056	1.10	−1	b,a

17	16	2	6714.12254	1.49		d	8651.27772	1.10		d
17	16	1	6714.12254	1.49	−1	b,a	8651.27772	1.10	−1	b,a
17	17	1	6993.88390	1.51		d	8948.00249	1.08		d
17	17	0	6993.88390	1.51	−1	b,a	8948.00249	1.08	−1	b,a
18	0	18	3319.44787	1.51	−1	b	4889.48789	0.83	−1	b
18	1	18	3319.44909	0.77	−1	b	4889.48821	0.42	−1	b,a
18	1	17	3647.46058	1.05	−1	b	5258.63110	1.06	−1	b,a
18	2	17	3647.46124	0.57	−1	b	5258.63163	0.56	−1	b,a
18	2	16	3940.54496	0.61	−1	b,a	5579.35856	0.50	−1	b,a
18	3	16	3940.58776	0.42	−1	b,a	5579.49226	0.38	−1	b,a
18	3	15	4201.25211	0.80	−1	b,a	5859.61612	0.53	−1	b,a
18	4	15	4201.85895	0.63	−1	b,a	5861.23943	0.38	−1	b,a
18	4	14	4427.16549	0.49	−1	b,a	6095.51466	0.55	−1	b,a
18	5	14	4432.86039	0.50	−1	b,a	6108.28173	0.44	−1	b,a
18	5	13	4606.16815	0.71	−1	b,a	6272.74487	3.23	−1	b
18	6	13	4638.64543	0.48	−1	b,a	6330.45102	0.38	−1	b,a
18	6	12	4735.84590	1.00	−1	b,a	6408.45890	0.80	−1	b,a
18	7	12	4833.20900	0.49	−1	b,a	6546.72205	0.39	−1	b,a
18	7	11	4865.22718	0.71	−1	b,a	6567.28038	0.54	−1	b,a
18	8	11	5035.12689	0.48	−1	b,a	6775.78710	0.43	−1	b,a
18	8	10	5040.85917	0.68	−1	b,a	6778.91798	0.53	−1	b,a
18	9	10	5255.44890	0.49	−1	b,a	7025.15626	0.44	−1	b,a
18	9	9	5256.11788	0.73	−1	b,a	7025.49358	0.62	−1	b,a
18	10	9	5495.09073	0.56	−1	b,a	7293.30834	0.45	−1	b,a
18	10	8	5495.14973	0.79	−1	b,a	7293.33841	0.79	−1	b,a
18	11	8	5750.85028	0.71	−1	b,a	7576.33340	0.55	−1	b,a
18	11	7	5750.85390	0.86	−1	b,a	7576.33677	1.26	−1	b,a

18	12	7	6019.18161	0.72	−1	b,a	7870.51087	0.56	−1	b,a
18	12	6	6019.18161	0.72		d	7870.50014	7.95	−1	b
18	13	6	6296.89734	1.19	−1	b,a	8172.56423	0.77	−1	b,a
18	13	5	6296.89734	1.19		d	8172.56423	0.77		d
18	14	5	6581.05776	1.08	−1	b,a	8479.48551	0.97	−1	b,a
18	14	4	6581.05776	1.08		d	8479.48551	0.97		d
18	15	4	6868.83367	1.43	−1	b,a	8788.37697	1.05	−1	b,a
18	15	3	6868.83367	1.43		d	8788.37697	1.05		d
18	16	3	7157.35379	2.41	−1	b,a	9096.29708	1.16	−1	b,a
18	16	2	7157.35379	2.41		d	9096.29708	1.16		d
18	17	2	7443.53817	1.60	−1	b,a	9400.06473	1.14	−1	b,a
18	17	1	7443.53817	1.60		d	9400.06473	1.14		d
18	18	1	7723.83106	1.61	−1	b,a	9695.96483	1.40	−1	b,a
18	18	0	7723.83106	1.61		d	9695.96483	1.40		d
19	0	19	3675.11377	0.84	−1	b	5241.74308	0.64	−1	b,a
19	1	19	3675.11340	1.15	−1	b	5241.74171	1.71	−1	b
19	1	18	4021.21906	1.35	−1	b	5632.04390	0.49	−1	b,a
19	2	18	4021.21571	1.39	−1	b,a	5632.04754	1.00	−1	b,a
19	2	17	4331.06769	0.57	−1	b,a	5970.93005	0.45	−1	b,a
19	3	17	4331.08851	0.83	−1	b,a	5971.01108	1.06	−1	b,a
19	3	16	4608.22397	0.65	−1	b,a	6269.06344	0.49	−1	b,a
19	4	16	4608.55753	0.82	−1	b,a	6270.01208	0.51	−1	b,a
19	4	15	4851.82112	0.43	−1	b,a	6525.05479	0.44	−1	b,a
19	5	15	4855.15286	0.69	−1	b,a	6533.06368	0.56	−1	b,a
19	5	14	5052.66915	0.58	−1	b,a	6725.86227	0.46	−1	b,a
19	6	14	5074.22241	0.79	−1	b,a	6767.59821	0.58	−1	b,a
19	6	13	5199.59680	0.72	−1	b,a	6872.99719	0.41	−1	b,a

19	7	13	5276.80340	0.76	−1	b,a	6990.05604	0.62	−1	b,a
19	7	12	5326.98378	0.61	−1	b,a	7023.97871	0.39	−1	b,a
19	8	12	5481.10222	0.78	−1	b,a	7219.88713	0.70	−1	b,a
19	8	11	5492.08259	0.60	−1	b,a	7226.49733	0.50	−1	b,a
19	9	11	5701.27886	0.87	−1	b,a	7469.54832	0.83	−1	b,a
19	9	10	5702.78184	0.65	−1	b,a	7470.30485	0.51	−1	b,a
19	10	10	5940.89024	0.84	−1	b,a	7738.05349	1.15	−1	b,a
19	10	9	5941.04185	0.61	−1	b,a	7738.12753	0.51	−1	b,a
19	11	9	6197.45583	1.19	−1	b,a	8022.29186	1.24	−1	b,a
19	11	8	6197.46763	0.72	−1	b,a	8022.29694	0.54	−1	b,a
19	12	8	6467.39492	1.27	−1	b,a	8318.46453	1.57	−1	b,a
19	12	7	6467.40592	1.03	−1	b,a	8318.45452	1.33	−1	b,a
19	13	7	6747.42814	9.55	−1	b	8623.21150	6.14	−1	b,a
19	13	6	6747.46511	1.10	−1	b,a	8623.22343	1.42	−1	b,a
19	14	6	7034.68781	1.34		d	8933.56762	0.98		d
19	14	5	7034.68781	1.34	−1	b,a	8933.56762	0.98	−1	b,a
19	15	5	7326.28927	1.27		d	9246.68983	1.04		d
19	15	4	7326.28927	1.27	−1	b,a	9246.68983	1.04	−1	b,a
19	16	4	7619.52807	1.52		d	9559.78220	1.75		d
19	16	3	7619.52807	1.52	−1	b,a	9559.78220	1.75	−1	b,a
19	17	3	7911.55421	2.02		d	9869.93576	1.19		d
19	17	2	7911.55421	2.02	−1	b,a	9869.93576	1.19	−1	b,a
19	18	2	8199.22084	1.72		d	10173.89737	1.16		d
19	18	1	8199.22084	1.72	−1	b,a	10173.89737	1.16	−1	b,a
19	19	1	8478.75428	1.69		d	10467.71828	1.27		d
19	19	0	8478.75428	1.69	−1	b,a	10467.71828	1.27	−1	b,a
20	0	20	4048.25008	1.67		d	5611.33160	7.22	−1	b

20	1	20	4048.25008	1.67	−1	b	5611.33065	0.76	−1	b,a
20	1	19	4412.31554	3.61	−1	b	6022.79657	0.53		d
20	2	19	4412.31755	1.16	−1	b,a	6022.79657	0.53	−1	b,a
20	2	18	4738.62182	0.94	−1	b,a	6379.34335	0.80	−1	b,a
20	3	18	4738.63444	0.74	−1	b,a	6379.38990	0.47	−1	b,a
20	3	17	5031.79418	0.97	−1	b,a	6694.74467	0.65	−1	b,a
20	4	17	5031.97867	0.78	−1	b,a	6695.29973	0.50	−1	b,a
20	4	16	5292.10256	0.78	−1	b,a	6969.40281	0.62	−1	b,a
20	5	16	5294.03791	0.65	−1	b,a	6974.36507	0.42	−1	b,a
20	5	15	5513.23567	0.81	−1	b,a	7193.22208	0.64	−1	b,a
20	6	15	5527.04593	0.69	−1	b,a	7222.25685	0.45	−1	b,a
20	6	14	5680.78823	1.01	−1	b,a	7357.05014	0.63	−1	b,a
20	7	14	5739.22983	0.59	−1	b,a	7452.52983	0.42	−1	b,a
20	7	13	5812.07351	1.12	−1	b,a	7504.57630	0.73	−1	b,a
20	8	13	5947.30617	0.71	−1	b,a	7685.11313	0.43	−1	b,a
20	8	12	5966.82348	1.10	−1	b,a	7696.34562	0.91	−1	b,a
20	9	12	6167.71566	1.02	−1	b,a	7934.16754	0.47	−1	b,a
20	9	11	6170.83183	0.78	−1	b,a	7935.76375	0.74	−1	b,a
20	10	11	6407.07836	0.77	−1	b,a	8202.75072	0.52	−1	b,a
20	10	10	6407.44259	0.89	−1	b,a	8202.92960	1.26	−1	b,a
20	11	10	6664.14154	0.76	−1	b,a	8487.90142	0.60	−1	b,a
20	11	9	6664.17280	1.21	−1	b,a	8487.92287	1.48	−1	b,a
20	12	9	6935.42569	1.06	−1	b,a	8785.78440	1.40	−1	b,a
20	12	8	6935.42803	1.47	−1	b,a	8785.79503	1.53	−1	b,a
20	13	8	7217.56239	1.29	−1	b,a	9092.98639	1.03	−1	b,a
20	13	7	7217.56239	1.29		d	9092.99803	8.92	−1	b
20	14	7	7507.58026	1.26	−1	b,a	9406.51529	1.13	−1	b,a

20	14	6	7507.54493	9.91	−1	b	9406.47492	5.23	−1	b,a
20	15	6	7802.70883	1.45	−1	b,a	9723.51309	1.08	−1	b,a
20	15	5	7802.70883	1.45		d	9723.51309	1.08		d
20	16	5	8100.29052	1.35	−1	b,a	10041.36500	1.38	−1	b,a
20	16	4	8100.29052	1.35		d	10041.36500	1.38		d
20	17	4	8397.64768	1.55	−1	b,a	10357.33288	1.90	−1	b,a
20	17	3	8397.64768	1.55		d	10357.33288	1.90		d
20	18	3	8691.92677	1.83	−1	b,a	10668.49959	1.49	−1	b,a
20	18	2	8691.92677	1.83		d	10668.49959	1.49		d
20	19	2	8979.88084	1.82	−1	b,a	10971.50541	1.47	−1	b,a
20	19	1	8979.88084	1.82		d	10971.50541	1.47		d
20	20	1	9257.45868	1.76	−1	b,a	11262.09231	1.55	−1	b,a
20	20	0	9257.45868	1.76		d	11262.09231	1.55		d
21	0	21	4438.74920	1.37	−1	b,a	5998.16475	0.69	−1	b,a
21	1	21	4438.74920	1.37		d	5998.16475	0.69		d
21	1	20	4820.64363	1.01	−1	b,a	6430.79589	0.52	−1	b,a
21	2	20	4820.64370	5.07	−1	b	6430.69607	1.10	−1	b,a
21	2	19	5163.08236	0.87	−1	b,a	6804.47421	0.49	−1	b,a
21	3	19	5163.08878	1.28	−1	b,a	6804.50918	5.62	−1	b
21	3	18	5471.86495	0.81	−1	b,a	7136.57957	0.52	−1	b,a
21	4	18	5471.96618	1.21	−1	b,a	7136.91704	0.75	−1	b,a
21	4	17	5748.12159	0.73	−1	b,a	7428.75773	0.52	−1	b,a
21	5	17	5749.24314	0.88	−1	b,a	7431.80099	0.64	−1	b,a
21	5	16	5987.87828	0.77	−1	b,a	7674.13310	0.47	−1	b,a
21	6	16	5996.51847	0.89	−1	b,a	7693.71982	0.93	−1	b,a
21	6	15	6177.35260	0.63	−1	b,a	7858.38076	0.47	−1	b,a
21	7	15	6219.62260	0.86	−1	b,a	7933.29681	0.69	−1	b,a

21	7	14	6318.55503	0.79	−1	b,a	8007.87960	0.56	−1	b,a
21	8	14	6433.11158	0.86	−1	b,a	8169.37060	0.87	−1	b,a
21	8	13	6465.23065	0.64	−1	b,a	8188.71345	0.54	−1	b,a
21	9	13	6654.29805	0.95	−1	b,a	8418.26209	1.33	−1	b,a
21	9	12	6660.35771	0.67	−1	b,a	8421.76229	0.50	−1	b,a
21	10	12	6893.30077	3.60	−1	b	8687.03732	1.22	−1	b,a
21	10	11	6894.11323	0.69	−1	b,a	8687.43094	0.80	−1	b,a
21	11	11	7150.56652	0.97	−1	b,a	8972.79337	1.55	−1	b,a
21	11	10	7150.65491	0.83	−1	b,a	8972.83675	1.08	−1	b,a
21	12	10	7422.88503	1.49	−1	b,a	9272.11139	1.73	−1	b,a
21	12	9	7422.87989	1.07	−1	b,a	9272.11476	1.08	−1	b,a
21	13	9	7706.83421	1.20		d	9581.47925	1.76	−1	b,a
21	13	8	7706.83421	1.20	−1	b,a	9581.48119	1.12	−1	b,a
21	14	8	7999.35610	1.34		d	9897.86534	8.98	1	a
21	14	7	7999.35610	1.34	−1	b,a	9897.57071	1.19	−1	b,a
21	15	7	8297.67293	14.50	−1	b	10218.45471	10.00	−1	b
21	15	6	8297.70726	1.40	−1	b,a	10218.44110	1.62	−1	b,a
21	16	6	8599.28031	1.61		d	10540.66970	1.38		d
21	16	5	8599.28031	1.61	−1	b,a	10540.66970	1.38	−1	b,a
21	17	5	8901.51026	1.48		d	10861.94801	1.61		d
21	17	4	8901.51026	1.48	−1	b,a	10861.94801	1.61	−1	b,a
21	18	4	9201.76096	1.67		d	11179.59730	2.01		d
21	18	3	9201.76096	1.67	−1	b,a	11179.59730	2.01	−1	b,a
21	19	3	9497.15137	1.84		d	11490.68187	1.70		d
21	19	2	9497.15137	1.84	−1	b,a	11490.68187	1.70	−1	b,a
21	20	2	9784.30368	1.90		d	11791.69537	1.69		d
21	20	1	9784.30368	1.90	−1	b,a	11791.69537	1.69	−1	b,a

21	21	1	10058.81926	1.83		d	12077.98915	1.76		d
21	21	0	10058.81926	1.83	−1	b,a	12077.98915	1.76	−1	b,a
22	0	22	4846.49605	1.32		d	6402.15464	0.67		d
22	1	22	4846.49605	1.32	−1	b,a	6402.15464	0.67	18	e,a
22	1	21	5246.07089	5.40	−1	b	6855.98985	1.29	2	a
22	2	21	5246.08010	1.01	−1	b,a	6855.95279	1.65	17	e
22	2	20	5604.30780	1.52	−1	b,a	7246.15476	1.50	−1	g,a
22	3	20	5604.31045	0.90	−1	b,a	7246.17575	0.53	16	e,a
22	3	19	5928.30745	1.37	−1	b,a	7594.48449	0.96	4	e,a
22	4	19	5928.36583	0.82	−1	b,a	7594.68529	0.49	16	e,a
22	4	18	6219.88905	0.99	−1	b,a	7902.99121	0.74	4	a
22	5	18	6220.53983	0.81	−1	b,a	7904.85729	0.49	6	a
22	5	17	6476.83169	0.97	−1	b,a	8168.43977	0.76	3	a
22	6	17	6482.15881	0.70	−1	b,a	8181.35704	0.65	9	e,a
22	6	16	6687.82797	0.89	−1	b,a	8374.96725	0.62	10	e,a
22	7	16	6717.17353	0.77	−1	b,a	8431.52047	0.49	18	e,a
22	7	15	6844.17739	0.90	−1	b,a	8532.51122	1.25	4	e,a
22	8	15	6937.40909	1.03	−1	b,a	8672.45973	0.65	13	e,a
22	8	14	6986.94763	1.20	−1	b,a	8703.73959	4.80	2	e
22	9	14	7160.51088	0.75	−1	b,a	8922.50636	0.67	10	e,a
22	9	13	7171.56700	0.94	−1	b,a	8928.27621	1.30	4	e,a
22	10	13	7399.23604	0.80	−1	b,a	9190.50865	0.89	3	a
22	10	12	7400.88246	0.91	−1	b,a	9191.36642	1.53	4	e,a
22	11	12	7656.38886	0.78	−1	b,a	9476.57392	2.43	7	e,a
22	11	11	7656.56559	2.93	−1	b,a	9476.75619	1.58	1	a
22	12	11	7929.41769	2.80	−1	b	9777.02811	1.39	10	e,a
22	12	10	7929.45284	1.34	−1	b,a	9777.06645	1.84	1	a

22	13	10	8214.89510	1.25	−1	b,a	10088.26986	1.40	5	e,a
22	13	9	8214.86073	6.97	−1	b	10088.29638	1.92	2	e,a
22	14	9	8509.65117	1.33	−1	b,a	10407.24801	1.43	6	e,a
22	14	8	8509.65117	1.33		d	10407.55682	5.30	1	a
22	15	8	8810.91478	1.46	−1	b,a	10731.09238	1.55	1	a
22	15	7	8810.91478	1.46		d	10731.09910	9.03	1	a
22	16	7	9116.12935	1.54	−1	b,a	11057.31238	1.90	1	a
22	16	6	9116.09705	14.70	−1	b	11057.31238	1.90		d
22	17	6	9422.81756	1.73	−1	b,a	11383.44112	1.58	6	e,a
22	17	5	9422.81756	1.73		d	11383.44112	1.58		d
22	18	5	9728.48425	1.52	−1	b,a	11706.96576	1.82	4	e,a
22	18	4	9728.48425	1.52		d	11706.96576	1.82		d
22	19	4	10030.51630	1.67	−1	b,a	12025.23286	2.24	1	a
22	19	3	10030.51630	1.67		d	12025.23286	2.24		d
22	20	3	10325.98291	1.78	−1	b,a	12335.26059	1.86	4	e,a
22	20	2	10325.98291	1.78		d	12335.26059	1.86		d
22	21	2	10611.34362	1.86	−1	b,a	12633.34467	1.96	1	a
22	21	1	10611.34362	1.86		d	12633.34467	1.96		d
22	22	1	10881.77457	1.90	−1	b,a	12914.37782	2.02	1	a
22	22	0	10881.77457	1.90		d	12914.37782	2.02		d
23	0	23	5271.37112	1.32	−1	b,a	6823.21496	0.69	17	e,a
23	1	23	5271.36142	9.22	−1	b	6823.21496	0.69		d
23	1	22	5688.50293	1.09	−1	b,a	7298.21091	0.66	18	e,a
23	2	22	5688.50293	1.09		d	7298.21091	0.66		d
23	2	21	6062.14783	1.14	−1	b,a	7704.20534	0.73	12	e,a
23	3	21	6062.14734	1.77	−1	b,a	7704.26605	1.82	1	a
23	3	20	6400.97976	0.86	−1	b,a	8068.29695	0.63	4	a

23	4	20	6401.01004	1.54	−1	b,a	8068.42201	1.07	2	a
23	4	19	6707.33957	0.84	−1	b,a	8393.27598	0.70	6	e,a
23	5	19	6707.72015	1.07	−1	b,a	8394.43453	0.83	3	a
23	5	18	6980.32159	0.82	−1	b,a	8676.26106	0.66	9	e,a
23	6	18	6983.57449	1.04	−1	b,a	8684.66211	0.77	6	e,a
23	6	17	7211.46005	1.11	−1	b,a	8905.22261	0.81	6	e,a
23	7	17	7231.17154	0.94	−1	b,a	8946.40805	0.88	2	a
23	7	16	7386.77781	0.85	−1	b,a	9076.10312	0.71	7	e,a
23	8	16	7459.68213	0.93	−1	b,a	9193.61254	1.59	3	e,a
23	8	15	7530.92498	0.87	−1	b,a	9241.17747	0.81	7	e,a
23	9	15	7685.71725	0.97	−1	b,a	9445.15042	1.14	2	a
23	9	14	7704.71749	0.85	−1	b,a	9455.40275	0.74	8	e,a
23	10	14	7924.44967	0.93	−1	b,a	9714.75425	5.17	1	a
23	10	13	7927.65884	0.81	−1	b,a	9714.48555	0.84	9	e,a
23	11	13	8181.26668	1.27	−1	b,a	9998.88967	1.83	1	a
23	11	12	8181.67927	0.88	−1	b,a	9999.14073	1.33	1	a
23	12	12	8454.68820	2.64	−1	b,a	10300.15371	1.87	1	a
23	12	11	8454.75477	1.11	−1	b,a	10300.21604	2.32	7	e,a
23	13	11	8741.38370	6.91	−1	b	10612.95786	2.10	1	a
23	13	10	8741.38122	2.17	−1	b,a	10613.03295	1.61	7	e,a
23	14	10	9038.08371	1.39		d	10934.28277	2.16	1	a
23	14	9	9038.08371	1.39	−1	b,a	10933.94528	1.72	1	a
23	15	9	9341.97062	1.44		d	11261.06903	9.65	2	e
23	15	8	9341.97062	1.44	−1	b,a	11261.06504	1.66	6	e,a
23	16	8	9650.48636	1.57		d	11590.93106	1.85		d
23	16	7	9650.48636	1.57	−1	b,a	11590.93106	1.85	1	a
23	17	7	9961.22807	1.67		d	11921.46753	2.15		d

23	17	6	9961.22807	1.67	−1	b,a	11921.46753	2.15	1	a
23	18	6	10271.82239	1.84		d	12250.32082	1.87		d
23	18	5	10271.82239	1.84	−1	b,a	12250.32082	1.87	1	a
23	19	5	10579.82683	1.65		d	12575.06646	2.00		d
23	19	4	10579.82683	1.65	−1	b,a	12575.06646	2.00	4	e,a
23	20	4	10882.63323	1.79		d	12892.98164	2.46		d
23	20	3	10882.63323	1.79	−1	b,a	12892.98164	2.46	1	a
23	21	3	11177.24118	1.88		d	13201.06198	2.11		d
23	21	2	11177.24118	1.88	−1	b,a	13201.06198	2.11	1	a
23	22	2	11459.91647	1.96		d	13495.39392	2.20		d
23	22	1	11459.91647	1.96	−1	b,a	13495.39392	2.20	1	a
23	23	1	11725.32088	1.98		d	13770.28395	2.25		d
23	23	0	11725.32088	1.98	−1	b,a	13770.28395	2.25	1	a
24	0	24	5713.25040	1.41		d	7261.28902	0.78		d
24	1	24	5713.25040	1.41	−1	b,a	7261.28902	0.78	12	e,a
24	1	23	6147.78505	1.12		d	7757.46841	0.66		d
24	2	23	6147.78505	1.12	−1	b,a	7757.46841	0.66	13	e,a
24	2	22	6536.43427	10.60	−1	b	8178.43170	2.08	1	a
24	3	22	6536.44409	0.92	−1	b,a	8178.38995	0.63	−1	g,a
24	3	21	6889.71792	1.14	−1	b,a	8557.85312	1.15	2	a
24	4	21	6889.73736	0.92	−1	b,a	8557.94156	0.70	6	e,a
24	4	20	7210.33075	1.17	−1	b,a	8897.85271	1.47	1	a
24	5	20	7210.55339	0.91	−1	b,a	8898.56956	0.73	3	a
24	5	19	7498.46778	1.78	−1	b,a	9197.75908	1.03	2	a
24	6	19	7500.45468	0.87	−1	b,a	9203.17602	0.87	2	a
24	6	18	7748.08136	0.99	−1	b,a	9448.10077	1.33	1	a
24	7	18	7761.00114	0.92	−1	b,a	9477.22800	0.94	2	a

24	7	17	7944.22913	0.96	−1	b,a	9636.67115	1.22	2	a
24	8	17	7999.01829	0.87	−1	b,a	9732.09030	0.83	7	e,a
24	8	16	8095.50869	1.32	−1	b,a	9801.82815	5.08	1	a
24	9	16	8229.39309	0.92	−1	b,a	9986.07829	0.87	7	e,a
24	9	15	8259.96278	1.28	−1	b,a	10003.28888	1.88	1	a
24	10	15	8468.50338	0.87	−1	b,a	10253.87885	1.20	6	e,a
24	10	14	8474.45217	1.31	−1	b,a	10256.63173	1.50	2	e,a
24	11	14	8724.84698	1.13	−1	b,a	10539.15158	1.26	5	e,a
24	11	13	8725.70252	1.30	−1	b,a	10539.82065	5.26	1	a
24	12	13	8998.36605	1.20	−1	b,a	10841.06283	1.59	2	a
24	12	12	8998.47583	1.49	−1	b,a	10841.25478	2.08	1	a
24	13	12	9285.94904	1.31	−1	b,a	11154.96481	2.32	5	e,a
24	13	11	9285.94588	2.51	−1	b,a	11155.31124	2.12	1	a
24	14	11	9584.27727	1.99	−1	b,a	11478.56019	1.79	6	e,a
24	14	10	9584.29051	5.08	−1	b,a	11478.32237	2.32	1	a
24	15	10	9890.49531	1.56	−1	b,a	11807.97470	1.99	1	a
24	15	9	9890.49531	1.56		d	11807.95025	5.47	1	a
24	16	9	10201.99770	1.60	−1	b,a	12141.13666	1.85	4	e,a
24	16	8	10201.99770	1.60		d	12141.13666	1.85		d
24	17	8	10516.41584	1.66	−1	b,a	12475.69095	2.10	1	a
24	17	7	10516.41584	1.66		d	12475.69095	2.10		d
24	18	7	10831.47174	1.80	−1	b,a	12809.35083	2.37	1	a
24	18	6	10831.47174	1.80		d	12809.35083	2.37		d
24	19	6	11144.87570	1.96	−1	b,a	13139.91769	2.12	1	a
24	19	5	11144.87570	1.96		d	13139.91769	2.12		d
24	20	5	11454.22415	1.67	−1	b,a	13464.88632	2.16	3	e,a
24	20	4	11454.22415	1.67		d	13464.88632	2.16		d

24	21	4	11756.89651	1.89	−1	b,a	13781.63575	2.65	1	a
24	21	3	11756.89651	1.89		d	13781.63575	2.65		d
24	22	3	12049.80709	1.95	−1	b,a	14087.00711	2.33	1	a
24	22	2	12049.80709	1.95		d	14087.00711	2.33		d
24	23	2	12328.99405	2.05	−1	b,a	14376.84448	2.42	1	a
24	23	1	12328.99405	2.05		d	14376.84448	2.42		d
24	24	1	12588.50657	2.06	−1	b,a	14644.78688	2.47	1	a
24	24	0	12588.50657	2.06		d	14644.78688	2.47		d
25	0	25	6172.00522	1.47	−1	b,a	7715.65856	1.87	10	e,a
25	1	25	6172.00522	1.47		d	7715.65856	1.87		d
25	1	24	6623.79390	1.20	−1	b,a	8233.63397	1.35	8	e,a
25	2	24	6623.79390	1.20		d	8233.63397	1.35		d
25	2	23	7027.02346	0.94	−1	b,a	8668.35794	0.64	6	e,a
25	3	23	7027.02346	0.94		d	8668.52859	2.25	2	a
25	3	22	7394.35225	0.95	−1	b,a	9062.97399	0.89	7	e,a
25	4	22	7394.36360	1.06	−1	b,a	9063.08238	1.07	2	a
25	4	21	7729.34050	0.80	−1	b,a	9417.47391	0.66	4	a
25	5	21	7729.47703	7.75	−1	b,a	9417.93744	1.53	1	a
25	5	20	8031.30597	1.29	−1	b,a	9732.98390	0.74	6	e,a
25	6	20	8032.51166	1.20	−1	b,a	9736.40354	2.04	1	a
25	6	19	8297.81714	0.92	−1	b,a	10003.28834	0.92	2	a
25	7	19	8306.15109	1.38	−1	b,a	10023.34382	1.41	1	a
25	7	18	8514.99185	0.91	−1	b,a	10212.11450	1.30	1	a
25	8	18	8554.64387	1.14	−1	b,a	10287.05536	1.58	1	a
25	8	17	8678.90268	0.92	−1	b,a	10380.09177	1.38	1	a
25	9	17	8790.62083	1.06	−1	b,a	10544.46786	5.17	1	a
25	9	16	8837.10333	1.20	−1	b,a	10572.08242	1.25	4	e,a

25	10	16	9030.87488	1.02	−1	b,a	10812.60669	2.13	1	a
25	10	15	9041.37259	1.28	−1	b,a	10817.71708	1.28	2	a
25	11	15	9286.77165	1.54	−1	b,a	11098.38215	1.80	1	a
25	11	14	9288.43586	0.89	−1	b,a	11098.56873	1.49	5	e,a
25	12	14	9560.07830	1.55	−1	b,a	11398.76127	5.36	1	a
25	12	13	9560.29720	1.34	−1	b,a	11399.78838	1.55	2	e,a
25	13	13	9848.23152	1.66	−1	b,a	11715.79183	2.31	1	a
25	13	12	9848.25873	1.39	−1	b,a	11714.77760	5.94	3	e
25	14	12	10147.88911	2.46	−1	b,a	12039.67801	5.43	1	a
25	14	11	10147.91371	1.48	−1	b,a	12039.46426	2.35	4	e,a
25	15	11	10456.11796	1.95		d				
25	15	10	10456.11796	1.95	−1	b,a	12371.45141	1.94	3	e,a
25	16	10	10770.29467	1.69		d	12707.55746	2.22		d
25	16	9	10770.29467	1.69	−1	b,a	12707.55746	2.22	1	a
25	17	9	11088.04083	1.72		d	13045.74011	2.10		d
25	17	8	11088.04083	1.72	−1	b,a	13045.74011	2.10	1	a
25	18	8	11407.13959	1.76		d	13384.12582	2.32	1	a
25	18	7	11407.13959	1.76	−1	b,a	13384.12582	2.32		d
25	19	7	11725.40881	1.91		d	13719.59180	2.57		d
25	19	6	11725.40881	1.91	−1	b,a	13719.59180	2.57	1	a
25	20	6	12040.64069	2.06		d	14050.85659	2.34		d
25	20	5	12040.64069	2.06	−1	b,a	14050.85659	2.34	1	a
25	21	5	12350.42445	1.81		d	14375.24819	2.38		d
25	21	4	12350.42445	1.81	−1	b,a	14375.24819	2.38	1	a
25	22	4	12652.14800	1.98		d	14690.06263	5.66		d
25	22	3	12652.14800	1.98	−1	b,a	14690.06263	5.66	1	a
25	23	3	12942.61231	2.03		d	14992.03348	2.54		d

25	23	2	12942.61231	2.03	−1	b,a	14992.03348	2.54	1	a
25	24	2	13217.59834	2.13		d	15276.74324	2.19		d
25	24	1	13217.59834	2.13	−1	b,a	15276.74324	2.19	2	a
25	25	1	13470.42766	2.13		d	15537.01552	2.66		d
25	25	0	13470.42766	2.13	−1	b,a	15537.01552	2.66	1	a
26	0	26	6647.49310	2.64		d	8187.68007	1.14		d
26	1	26	6647.49310	2.64	12	e	8187.68007	1.14	11	e,a
26	1	25	7116.38279	1.87		d	8726.65106	0.88		d
26	2	25	7116.38279	1.87	16	e,a	8726.65106	0.88	9	e,a
26	2	24	7533.69254	2.70		d	9174.27166	2.47	1	a
26	3	24	7533.69254	2.70	1	a	9174.27631	1.32	3	e,a
26	3	23	7914.69801	1.46	1	a	9583.45438	1.46	1	a
26	4	23	7914.69060	2.55	15	e	9583.34524	0.96	2	a
26	4	22	8262.76581	1.35	2	a	9951.89993	1.78	2	a
26	5	22	8262.84502	0.94	2	a	9952.21737	0.87	2	a
26	5	21	8578.76660	1.07	2	a	10281.59851	1.56	1	a
26	6	21	8579.50182	1.05	2	a	10283.80226	0.80	3	a
26	6	20	8860.90030	1.71	1	a	10570.56708	1.72	1	a
26	7	20	8866.18424	0.90	8	e,a	10584.15122	0.90	2	a
26	7	19	9098.06732	1.09	2	a				
26	8	19	9125.86354	1.04	2	a	10857.75605	0.80	3	a
26	8	18	9278.47311	1.71	1	a	10978.19153	5.19	1	a
26	9	18	9368.73378	0.96	2	a	11120.18888	1.06	2	a
26	9	17	9435.38362	1.51	1	a				
26	10	17	9611.33220	4.17	6	e	11388.86771	1.55	3	e,a
26	10	16	9628.60752	1.45	1	a	11397.69400	5.27	1	a
26	11	16	9866.64129	1.04	2	a	11673.78669	1.49	3	a

26	11	15	9869.68079	1.43	1	a	11674.84307	2.35	1 a
26	12	15	10139.48439	1.27	6	e,a	11976.46997	1.79	1 a
26	12	14	10139.93412	1.79	3	e,a	11975.47755	2.06	1 a
26	13	14	10427.88349	1.58	7	e,a	12291.41429	1.84	1 a
26	13	13	10427.95141	1.84	1	a	12290.95969	5.45	1 a
26	14	13	10728.57600	1.60	7	e,a	12617.27956	5.16	2 e,a
26	14	12	10728.58150	5.27	1	a	12617.03298	5.51	1 a
26	15	12	11038.51280	1.57	7	e,a	12951.02566	2.55	1 a
26	15	11	11038.49904	2.65	1	a	12951.14701	5.52	1 a
26	16	11	11355.01081	2.02	6	e,a	13289.82256	2.18	1 a
26	16	10	11355.01081	2.02		d	13289.82256	2.18	d
26	17	10	11675.81153	1.84	5	e,a	13631.25314	2.44	1 a
26	17	9	11675.87915	1.97	1	a	13631.25314	2.44	d
26	18	9	11998.50966	1.86	6	e,a	13973.37726	2.33	1 a
26	18	8	11998.50966	1.86		d	13973.37726	2.33	d
26	19	8	12321.17184	1.91	6	e,a	14313.81137	5.51	1 a
26	19	7	12321.17184	1.91		d	14313.81137	5.51	d
26	20	7	12641.65994	2.02	4	e,a	14650.71930	5.62	1 a
26	20	6	12641.65994	2.02		d	14650.71930	5.62	d
26	21	6	12957.80670	2.29	1	a	14981.89217	5.52	1 a
26	21	5	12957.80670	2.29		d	14981.89217	5.52	d
26	22	5	13267.23548	2.06	1	a	15304.95852	5.54	1 a
26	22	4	13267.23548	2.06		d	15304.95852	5.54	d
26	23	4	13567.28094	2.13	3	e,a	15617.17689	7.55	1 a
26	23	3	13567.28094	2.13		d	15617.17689	7.55	d
26	24	3	13854.63593	2.26	1	a	15915.15921	5.61	1 a
26	24	2	13854.63593	2.26		d	15915.15921	5.61	d

26	25	2	14124.79604	2.25	4	e,a	16194.18227	5.46	1	a
26	25	1	14124.79604	2.25		d	16194.18227	5.46		d
26	26	1	14370.22370	2.29	3	e,a	16446.13557	2.84	1	a
26	26	0	14370.22370	2.29		d	16446.13557	2.84		d
27	0	27	7139.59254	1.99	14	e,a	8676.10299	1.02	9	e,a
27	1	27	7139.59254	1.99		d	8676.10299	1.02		d
27	1	26	7625.42754	1.52	14	e,a	9236.46260	0.80	7	e,a
27	2	26	7625.42754	1.52		d	9236.46260	0.80		d
27	2	25	8056.27630	1.73	3	a	9695.33495	1.10	3	a
27	3	25	8056.27630	1.73		d	9695.35436	2.66	1	a
27	3	24	8450.54780	1.48	12	e,a	10119.12126	2.74	1	a
27	4	24	8450.56331	1.77	1	a	10119.02359	1.77	1	a
27	4	23	8811.58617	1.37	1	a	10500.88622	2.37	1	a
27	5	23	8811.63196	1.68	1	a	10501.20468	2.04	1	a
27	5	22	9140.68761	2.15	7	e,a	10837.77858	1.28	1	a
27	6	22	9141.14303	1.95	1	a	10838.51434	1.86	1	a
27	6	21	9437.36460	1.34	1	a	11149.99198	1.34	1	a
27	7	21	9440.77255	1.98	1	a	11159.07716	1.99	1	a
27	7	20	9693.05170	1.02	2	a	11401.70744	0.90	2	a
27	8	20	9712.04365	1.04	2	a				
27	8	19	9892.70425	1.30	4	e,a				
27	9	19	9962.97353	1.98	1	a	11711.88599	5.29	1	a
27	9	18	10053.46663	1.44	1	a	11774.78742	1.28	1	a
27	10	18	10208.67538	1.15	2	a				
27	10	17	10236.30720	1.38	1	a	11996.73978	1.46	1	a
27	11	17	10463.97703	1.76	1	a	12266.48459	5.36	1	a
27	11	16	10469.61327	4.29	1	a	12268.85556	1.84	1	a

27	12	16	10736.17236	1.74	1	a	12568.14068	2.55	1	a
27	12	15	10737.11681	1.44	1	a	12568.00037	1.79	1	a
27	13	15	11024.56818	1.99	2	e,a	12884.12983	5.41	1	a
27	13	14	11024.70057	1.54	5	e,a				
27	14	14	11325.96099	2.10	1	a	13211.16617	5.54	1	a
27	14	13	11325.98765	1.78	5	e,a	13210.76970	2.10	1	a
27	15	13	11637.27352	5.36	1	a				
27	15	12	11637.29475	1.78	6	e,a				
27	16	12	11955.80916	2.83	1	a	13887.56787	7.45	1	a
27	16	11	11955.83542	1.77	4	e,a	13887.49545	5.62	1	a
27	17	11	12279.23222	2.10		d	14231.90688	2.40	1	a
27	17	10	12279.23222	2.10	5	e,a	14231.90688	2.40		d
27	18	10	12605.54615	3.98		d	14577.57449	5.56		d
27	18	9	12605.54615	3.98	1	a	14577.57449	5.56	1	a
27	19	9	12931.87672	1.99		d	14922.27868	5.51		d
27	19	8	12931.87672	1.99	1	a	14922.27868	5.51	1	a
27	20	8	13257.10311	2.04		d	15264.25320	7.44		d
27	20	7	13257.10311	2.04	4	e,a	15264.25320	7.44	1	a
27	21	7	13578.90874	2.15		d	15601.47143	7.52		d
27	21	6	13578.90874	2.15	2	e,a	15601.47143	7.52	1	a
27	22	6	13895.17236	2.49		d	15931.80770	4.48		d
27	22	5	13895.17236	2.49	1	a	15931.80770	4.48	2	a
27	23	5	14203.51514	2.29		d	16252.89138	7.46		d
27	23	4	14203.51514	2.29	1	a	16252.89138	7.46	1	a
27	24	4	14501.23669	2.27		d	16561.93898	9.06		d
27	24	3	14501.23669	2.27	3	e,a	16561.93898	9.06	1	a
27	25	3	14784.89777	5.49		d	16855.41391	7.51		d

27	25	2	14784.89777	5.49	1	a	16855.41391	7.51	1	a
27	26	2	15049.69158	2.36		d	17128.28932	7.40		d
27	26	1	15049.69158	2.36	3	e,a	17128.28932	7.40	1	a
27	27	1	15287.07544	2.50		d	17371.35145	5.75		d
27	27	0	15287.07544	2.50	1	a	17371.35145	5.75	1	a
28	0	28	7648.15125	1.90		d	9181.13639	0.96		d
28	1	28	7648.15125	1.90	12	e,a	9181.13639	0.96	11	e,a
28	1	27	8150.77169	1.51		d	9763.18388	0.71		d
28	2	27	8150.77169	1.51	12	e,a	9763.18388	0.71	5	a
28	2	26	8594.55013	1.79		d	10231.28755	1.81	1	a
28	3	26	8594.55013	1.79	2	a	10231.34539	2.00	1	a
28	3	25	9001.72235	0.93		d				
28	4	25	9001.72235	0.93	11	e,a	10669.59036	1.40	2	a
28	4	24	9375.31030	1.96	1	a	11064.22348	2.28	1	a
28	5	24	9375.33989	1.70	1	a	11063.79320	1.70	1	a
28	5	23	9716.75173	1.33	2	a	11424.87078	2.11	1	a
28	6	23	9717.02087	1.43	2	a	11425.83117	1.67	1	a
28	6	22	10027.38485	2.22	1	a				
28	7	22	10029.51187	1.68	1	a	11747.31363	1.68	1	a
28	7	21	10299.90534	1.44	1	a				
28	8	21	10312.64405	1.43	1	a	12043.54558	1.35	1	a
28	8	20	10519.74111	2.22	1	a				
28	9	20	10572.59107	1.17	2	a				
28	10	19	10822.54060	1.43	1	a				
28	10	18	10864.39736	2.22	1	a	12614.68645	5.15	2	a
28	11	18	11079.21352	1.58	5	e,a	12876.17563	1.77	1	a
28	11	17	11087.99270	1.52	1	a				

28	12	17	11349.98442	4.40	1	a	13176.73117	2.10	1	a
28	12	16	11351.62162	2.03	1	a	13176.99032	5.46	1	a
28	13	16	11637.94054	1.75	1	a	13492.75861	2.05	1	a
28	13	15	11638.13385	2.01	1	a	13492.39184	5.61	1	a
28	14	15	11939.69754	1.75	4	e,a				
28	14	14	11939.75855	2.23	1	a	13820.12568	7.36	1	a
28	15	14	12252.10280	1.95	3	e,a	14157.37707	2.14	2	a
28	15	13	12252.13250	2.32	1	a	14157.18973	7.46	1	a
28	16	13	12572.33205	1.93	4	e,a				
28	16	12	12572.35872	7.33	1	a				
28	17	12	12898.11398	1.94	3	e,a	14847.12698	7.52	1	a
28	17	11	12898.10402	5.75	1	a	14847.18506	8.97	1	a
28	18	11	13227.02320	2.20	4	e,a	15196.20229	5.55	1	a
28	18	10	13227.02320	2.20		d	15196.20229	5.55		d
28	19	10	13557.51142	4.10	1	a	15544.67105	7.48	1	a
28	19	9	13557.51142	4.10		d	15544.67105	7.48		d
28	20	9	13886.70595	2.22	1	a	15891.19177	7.44	1	a
28	20	8	13886.70595	2.22		d	15891.19177	7.44		d
28	21	8	14213.58668	2.18	2	e,a	16233.80789	8.97	1	a
28	21	7	14213.58668	2.18		d	16233.80789	8.97		d
28	22	7	14535.89800	2.36	1	a	16570.58649	9.03	1	a
28	22	6	14535.89800	2.36		d	16570.58649	9.03		d
28	23	6	14851.56256	5.58	1	a	16899.43740	6.71	1	a
28	23	5	14851.56256	5.58		d	16899.43740	6.71		d
28	24	5	15158.16498	5.50	1	a	17217.96456	8.98	1	a
28	24	4	15158.16498	5.50		d	17217.96456	8.98		d
28	25	4	15452.99194	2.42	2	e,a	17523.37409	10.35		d

28	25	3	15452.99194	2.42		d	17523.37409	10.35	1	a
28	26	3	15732.45423	7.42	1	a	17811.86941	9.03	1	a
28	26	2	15732.45423	7.42		d	17811.86941	9.03		d
28	27	2	15991.42817	5.00	2	e,a	18078.22408	8.93	1	a
28	27	1	15991.42817	5.00		d	18078.22408	8.93		d
28	28	1	16220.19037	5.59	1	a	18311.89961	7.62	1	a
28	28	0	16220.19037	5.59		d	18311.89961	7.62		d
29	0	29	8173.02249	1.89	12	e,a	9702.72221	1.12	6	e,a
29	1	29	8173.02249	1.89		d	9702.72221	1.12		d
29	1	28	8692.26398	1.57	9	e,a	10312.82326	1.02	2	a
29	2	28	8692.26398	1.57		d	10312.93194	0.99	2	a
29	2	27	9148.28433	1.82	−1	f,a	10781.89282	1.51	2	a
29	3	27	9148.28433	1.82		d	10781.89282	1.51		d
29	3	26	9567.99354	1.28	10	e,a	11234.83216	1.07	2	a
29	4	26	9567.99354	1.28		d	11234.91541	1.91	1	a
29	4	25	9953.71416	1.97	1	a	11641.55919	1.97	1	a
29	5	25	9953.73017	2.20	1	a	11641.40036	2.49	1	a
29	5	24	10300.64016	1.04	2	a				
29	6	24	10300.71255	1.05	2	a	12015.49023	2.33	1	a
29	6	23	10630.78550	1.95	1	a				
29	7	23	10632.13888	2.43	1	a				
29	7	22	10918.75574	1.75	1	a				
29	8	22	10927.18818	1.76	1	a				
29	8	21	11158.44709	1.54	1	a				
29	9	21	11196.87490	2.43	1	a				
29	9	20	11342.27943	1.75	1	a				
29	10	19	11512.44959	1.53	1	a				

29	11	19					13501.53332	5.24	1	a
29	11	18	11724.97706	1.74	1	a				
29	12	18	11980.27957	1.82	1	a				
29	12	17	11983.33095	1.81	2	e,a	13802.27843	5.30	1	a
29	13	17	12267.64426	2.26	1	a	14117.44632	7.40	1	a
29	13	16	12268.17577	4.51	1	a	14116.84732	5.42	1	a
29	14	16	12569.38409	5.39	1	a	14445.54791	7.52	1	a
29	14	15	12569.57280	2.02	1	a	14444.91932	5.41	1	a
29	15	15	12882.61536	2.44	1	a	14783.39851	8.90	1	a
29	15	14	12882.67254	1.93	2	e,a				
29	16	14	13204.16644	2.52	1	a	15127.88248	8.98	1	a
29	16	13	13204.29726	2.11	2	e,a	15127.93048	5.44	1	a
29	17	13	13532.04293	8.87	1	a				
29	17	12	13532.06163	4.75	2	e,a				
29	18	12	13863.54177	5.36		d	15828.79550	9.03		d
29	18	11	13863.54177	5.36	1	a	15828.79550	9.03	1	a
29	19	11	14196.87669	2.31		d	16180.71780	7.47		d
29	19	10	14196.87669	2.31	2	e,a	16180.71780	7.47	1	a
29	20	10	14530.48920	4.22		d	16531.21737	9.00		d
29	20	9	14530.48920	4.22	1	a	16531.21737	9.00	1	a
29	21	9	14861.62532	2.43		d	16878.60565	8.97		d
29	21	8	14861.62532	2.43	1	a	16878.60565	8.97	1	a
29	22	8	15189.33698	5.45		d	17220.87118	10.27		d
29	22	7	15189.33698	5.45	1	a	17220.87118	10.27	1	a
29	23	7	15511.42266	5.53		d	17557.17554	10.33		d
29	23	6	15511.42266	5.53	1	a	17557.17554	10.33	1	a
29	24	6	15825.76850	7.50		d	17883.69814	8.37		d

29	24	5	15825.76850	7.50	1	a	17883.69814	8.37	1	a
29	25	5	16130.12885	7.43		d	18199.13906	10.28		d
29	25	4	16130.12885	7.43	1	a	18199.13906	10.28	1	a
29	26	4	16421.56158	5.55		d	18500.37007	11.49		d
29	26	3	16421.56158	5.55	1	a	18500.37007	11.49	1	a
29	27	3	16696.39277	8.95		d	18783.62186	10.32		d
29	27	2	16696.39277	8.95	1	a	18783.62186	10.32	1	a
29	28	2	16949.17494	7.07		d	19043.16970	10.24		d
29	28	1	16949.17494	7.07	1	a	19043.16970	10.24	1	a
29	29	1	17168.81788	7.50		d	19267.04640	9.11		d
29	29	0	17168.81788	7.50	1	a	19267.04640	9.11	1	a
30	0	30	8714.05583	1.96		d	10240.80422	1.20		d
30	1	30	8714.05583	1.96	11	e,a	10240.80422	1.20	3	a
30	1	29	9249.74957	1.66		d	10863.88979	0.85		d
30	2	29	9249.74957	1.66	8	e,a	10863.88979	0.85	3	a
30	2	28	9717.22916	1.94		d	11346.62153	1.36		d
30	3	28	9717.22916	1.94	2	a	11346.62153	1.36	2	a
30	3	27	10149.14283	1.54		d	11814.71698	1.09		d
30	4	27	10149.14283	1.54	6	e,a	11814.71698	1.09	2	a
30	4	26	10546.56317	2.42	1	a	12232.86510	2.21		d
30	5	26	10546.57445	2.21	1	a	12232.86510	2.21	1	a
30	6	25	10913.68294	1.02	2	a				
30	6	24	11247.41183	2.63	1	a				
30	7	24	11248.25376	2.19	1	a				
30	7	23	11549.77265	2.02	1	a				
30	8	23	11555.26215	2.01	1	a				
30	9	22	11835.28406	1.84	1	a				

30	10	21	12097.46204	2.01	1 a				
30	11	20	12357.01343	1.83	1 a				
30	12	18				14443.18584	7.24	1	a
30	13	18	12913.19893	5.32	1 a	14757.24004	7.29	1	a
30	13	17	12914.37313	5.32	1 a				
30	14	17	13214.88329	4.62	1 a				
30	14	16	13215.10960	5.49	1 a	15084.59762	8.93	1	a
30	15	16	13528.46349	2.24	1 a	15423.96796	7.36	1	a
30	15	15	13528.51843	7.35	1 a	15424.13543	9.03	1	a
30	16	15	13850.79168	5.36	1 a				
30	16	14	13851.27320	5.56	1 a				
30	17	14	14180.73135	2.32	1 a	16120.48944	7.39	1	a
30	17	13	14180.77264	5.60	1 a				
30	18	13	14514.43214	5.71	2 a				
30	18	12	14514.43214	5.71	d				
30	19	12	14850.58139	7.33	1 a	16829.89462	10.32	1	a
30	19	11	14850.58139	7.33	d	16829.89462	10.32		d
30	20	11	15187.27305	5.51	1 a	17184.02224	8.99	1	a
30	20	10	15187.27305	5.51	d	17184.02224	8.99		d
30	21	10	15523.07569	6.54	1 a	17535.16250	10.29		d
30	21	9	15523.07569	6.54	d	17535.16250	10.29	1	a
30	22	9	15855.31837	5.56	1 a	17884.23480	10.27	1	a
30	22	8	15855.31837	5.56	d	17884.23480	10.27		d
30	23	8	16183.12256	7.40	1 a				
30	23	7	16183.12256	7.40	d				
30	24	7	16504.32360	7.46	1 a	18559.35669	11.47	1	a
30	24	6	16504.32360	7.46	d	18559.35669	11.47		d

30	25	6	16816.85425	9.01	1	a	18883.43508	9.75	1	a
30	25	5	16816.85425	9.01		d	18883.43508	9.75		d
30	26	5	17118.34980	8.96	1	a				
30	26	4	17118.34980	8.96		d				
30	27	4	17405.98907	7.47	1	a	19492.32106	12.53	1	a
30	27	3	17405.98907	7.47		d	19492.32106	12.53		d
30	28	3	17675.82703	10.25	1	a	19769.73459	11.46	1	a
30	28	2	17675.82703	10.25		d	19769.73459	11.46		d
30	29	2	17922.13026	8.66	1	a	20022.33431	11.39	1	a
30	29	1	17922.13026	8.66		d	20022.33431	11.39		d
30	30	1	18132.22760	9.01	1	a				
30	30	0	18132.22760	9.01		d				
31	0	31	9271.09431	2.05	8	e,a	10795.33973	1.23	5	e,a
31	1	31	9271.09431	2.05		d	10795.33973	1.23		d
31	1	30	9823.06898	1.76	9	e,a	11439.90083	1.31		d
31	2	30	9823.06898	1.76		d	11439.90083	1.31	1	a
31	2	29	10301.11362	2.18	1	a	11925.57718	1.34		d
31	3	29	10301.11362	2.18		d	11925.57718	1.34	2	a
31	3	28	10744.94457	1.46	2	a	12408.87860	1.48	1	a
31	4	28	10744.94457	1.46		d				
31	4	27	11153.62102	2.42	1	a	12836.65642	2.42	1	a
31	5	27	11153.62763	2.61	1	a				
31	5	26	11531.72164	1.43	1	a				
31	6	25	11876.51865	2.41	1	a				
31	7	25	11877.04330	2.81	1	a				
31	7	24	12192.87434	2.25	1	a				
31	13	19					15411.99718	8.80	1	a

31	14	18	13875.63534	7.30	1	a				
31	14	17	13876.10896	7.30	1	a	15738.95122	8.84	1	a
31	15	17	14189.27323	7.42	1	a				
31	15	16	14189.55705	6.81	1	a				
31	17	15	14843.81745	7.48	1	a				
31	18	14	15179.41028	7.51	1	a				
31	18	13	15179.40060	5.51	1	a				
31	19	13	15517.98683	7.59		d				
31	19	12	15517.98683	7.59	1	a				
31	20	12	15857.68924	8.88		d				
31	20	11	15857.68924	8.88	1	a				
31	24	8	17193.74311	8.93		d				
31	24	7	17193.74311	8.93	1	a				
31	25	7	17513.48070	8.98		d				
31	25	6	17513.48070	8.98	1	a				
31	26	6	17823.71851	10.30		d				
31	26	5	17823.71851	10.30	1	a				
31	27	5	18121.89332	10.26		d				
31	27	4	18121.89332	10.26	1	a				
31	28	4	18405.34954	8.99		d	20497.90821	13.49	1	a
31	28	3	18405.34954	8.99	1	a	20497.90821	13.49		d
31	29	3	18669.89265	11.41		d				
31	29	2	18669.89265	11.41	1	a				
31	30	2	18909.51392	10.00		d	21014.93795	12.44	1	a
31	30	1	18909.51392	10.00	1	a	21014.93795	12.44		d
31	31	1	19109.72107	10.31		d				
31	31	0	19109.72107	10.31	1	a				

32	0	32	9843.97749	2.14		d	11366.29990	13.65	d
32	1	32	9843.97749	2.14	6	e,a	11366.29990	13.65	1 e
32	1	31	10412.05817	1.86		d			
32	2	31	10412.05817	1.86	7	e,a			
32	2	30	10899.64041	2.40		d			
32	3	30	10899.64041	2.40	1	a			
32	3	29	11355.16088	1.77		d			
32	4	29	11355.16088	1.77	1	a			
32	4	28	11774.63775	2.62		d			
32	5	28	11774.63775	2.62	1	a			
32	9	24	13152.15190	11.58	1	e			
32	15	18	14864.59773	8.85	1	a			
32	15	17	14865.29623	8.85	1	a			
32	31	2	19910.56202	11.18	1	a	22020.29878	13.41	1 a
32	31	1	19910.56202	11.18		d			
32	32	1	20100.77228	11.46	1	a			
32	32	0	20100.77228	11.46		d			
33	0	33	10432.54046	2.29	5	e,a			
33	1	33	10432.54046	2.29		d			
33	1	32	11016.54895	2.06	2	a			
33	2	32	11016.54895	2.06		d			
33	2	31	11512.48648	2.60	1	a			
33	3	31	11512.48648	2.60		d			
33	3	30	11979.55572	2.03	1	a			
33	4	30	11979.55572	2.03		d			
33	4	29	12409.33990	2.81	1	a			
33	5	29	12409.33990	2.81		d			

33	33	1	21105.38800	12.50		d
33	33	0	21105.38800	12.50	1	a
34	0	34	11036.61378	2.42		d
34	1	34	11036.61378	2.42	4	e,a
34	1	33	11636.36835	2.28		d
34	2	33	11636.36835	2.28	−1	f,a
35	0	35	11656.02503	2.62	1	a
35	1	35	11656.02503	2.62		d

TABLE III.: Term values for the first polyad, 1ν, of $H_2{}^{16}O$.

J	K_a	K_c	020 or 00 2			100 or 10^+0			001 or 10^-0		
0	0	0	3151.63007	0.08	−1 c,a	3657.05323	0.04	−1 c	3755.92868	0.03	−1 c,a
1	0	1	3175.44132	0.03	−1 c,a	3680.45354	0.06	−1 c,a	3779.49307	0.05	−1 c
1	1	1	3196.09333	0.02	−1 c,a	3693.29348	0.05	−1 c	3791.70090	0.02	−1 c,a
1	1	0	3201.91343	0.03	−1 c,a	3698.49117	0.06	−1 c,a	3796.98161	0.05	−1 c,a
2	0	2	3221.96117	0.02	−1 c,a	3725.94197	0.03	−1 c,a	3825.21298	0.06	−1 c,a
2	1	2	3237.91735	0.04	−1 c,a	3734.89681	0.19	−1 c,a	3833.57663	0.03	−1 c,a
2	1	1	3255.34595	0.04	−1 c,a	3750.46434	0.04	−1 c,a	3849.38533	0.04	−1 c,a
2	2	1	3316.14534	0.04	−1 c,a	3788.69434	0.07	−1 c,a	3885.73775	0.06	−1 c,a
2	2	0	3317.21064	0.05	−1 c,a	3789.96940	0.05	−1 c,a	3887.11416	0.03	−1 c,a
3	0	3	3289.24253	0.03	−1 c,a	3791.37207	0.06	−1 c,a	3890.82932	0.07	−1 c,a
3	1	3	3299.99106	0.05	−1 c,a	3796.53970	0.04	−1 c,a	3895.58800	0.02	−1 c,a
3	1	2	3334.62654	0.03	−1 c,a	3827.39264	0.02	−1 c,a	3926.86209	0.07	−1 c,a
3	2	2	3387.68065	0.05	−1 c,a	3858.87558	0.04	−1 c,a	3956.66578	0.07	−1 c,a
3	2	1	3392.74934	0.04	−1 c,a	3864.76372	0.05	−1 c,a	3962.91780	0.03	−1 c,a
3	3	1	3500.51110	0.04	−1 c,a	3935.21126	0.08	−1 c,a	4030.06989	0.06	−1 c,a
3	3	0	3500.63869	0.05	−1 c,a	3935.34470	0.04	−1 c,a	4030.30616	0.04	−1 c,a
4	0	4	3375.29782	0.07	−1 c,a	3875.01704	0.06	−1 c,a	3974.63090	0.05	−1 c,a
4	1	4	3381.70424	0.04	−1 c,a	3877.57516	0.05	−1 c,a	3977.26146	0.03	−1 c,a
4	1	3	3438.57499	0.05	−1 c,a	3927.80275	0.12	−1 c,a	4027.80399	0.03	−1 c,a
4	2	3	3482.06447	0.04	−1 c,a	3951.31505	0.04	−1 c,a	4050.05215	0.04	−1 c,a
4	2	2	3495.93919	0.05	−1 c,a	3966.55932	0.07	−1 c,a	4066.12251	0.02	−1 c,a
4	3	2	3597.86602	0.04	−1 c,a	4030.83892	0.06	−1 c,a	4125.14862	0.06	−1 c,a
4	3	1	3598.72702	0.04	−1 c,a	4031.85358	0.04	−1 c	4126.46336	0.04	−1 c,a

4	4	1	3746.76262	0.04	−1	c,a	4135.01762	0.03	−1	c,a	4224.81686	0.05	−1	c
4	4	0	3746.77595	0.04	−1	c,a	4134.79845	0.06	−1	c,a	4224.85096	0.08	−1	c,a
5	0	5	3478.98647	0.03	−1	c,a	3976.30807	0.05	−1	c,a	4076.14328	0.04	−1	c,a
5	1	5	3482.48019	0.05	−1	c,a	3977.45644	0.06	−1	c,a	4076.89581	0.03	−1	c,a
5	1	4	3565.45461	0.03	−1	c,a	4049.53611	0.07	−1	c,a	4149.89926	0.04	−1	c,a
5	2	4	3598.51596	0.05	−1	c,a	4065.13186	0.06	−1	c	4165.47381	0.06	−1	c,a
5	2	3	3626.92216	0.03	−1	c,a	4095.91994	0.06	−1	c,a	4195.97092	0.04	−1	c,a
5	3	3	3719.49286	0.04	−1	c,a	4150.28736	0.06	−1	c	4244.30465	0.03	−1	c,a
5	3	2	3722.73097	0.05	−1	c,a	4153.93806	0.04	−1	c,a	4248.15245	0.04	−1	c,a
5	4	2	3868.87286	0.04	−1	c,a	4257.78674	0.05	−1	c,a	4345.27203	0.07	−1	c,a
5	4	1	3868.98687	0.04	−1	c,a	4256.24128	0.05	−1	c,a	4345.55908	0.06	−1	c,a
5	5	1	4050.50371	0.06	−1	c,a	4381.90416	0.07	−1	c	4468.69324	0.08	−1	c,a
5	5	0	4050.51269	0.08	−1	c,a	4381.90399	0.03	−1	c,a	4468.69775	0.09	−1	c
6	0	6	3600.05235	0.04	−1	c,a	4095.31531	0.07	−1	c,a	4195.47720	0.03	−1	c,a
6	1	6	3601.85888	0.03	−1	c,a	4095.80318	0.06	−1	c,a	4195.81803	0.04	−1	c,a
6	1	5	3713.08244	0.04	−1	c,a	4190.26212	0.09	−1	c,a	4290.75699	0.05	−1	c,a
6	2	5	3736.17076	0.05	−1	c,a	4199.39098	0.05	−1	c,a	4296.56345	0.04	−1	c,a
6	2	4	3784.67912	0.05	−1	c,a	4249.52442	0.05	−1	c,a	4350.69931	0.03	−1	c,a
6	3	4	3864.96604	0.03	−1	c,a	4292.90989	0.06	−1	c,a	4387.23468	0.03	−1	c,a
6	3	3	3873.79365	0.04	−1	c,a	4308.21128	0.06	−1	c,a	4408.02880	0.04	−1	c,a
6	4	3	4015.51500	0.05	−1	c,a	4394.46433	0.03	−1	c,a	4490.06386	0.05	−1	c,a
6	4	2	4016.05274	0.05	−1	c,a	4401.94198	0.06	−1	c,a	4491.36969	0.10	−1	c,a
6	5	2	4197.33874	0.04	−1	c,a	4526.72014	0.10	−1	c,a	4613.52635	0.04	−1	c,a
6	5	1	4197.36095	0.06	−1	c,a	4526.72048	0.06	−1	c,a	4613.57321	0.09	−1	c,a
6	6	1	4407.04634	0.08	−1	c,a	4677.87637	0.15	−1	c,a	4759.85260	0.05	−1	c
6	6	0	4407.15764	0.07	−1	c,a	4677.87638	0.07	−1	c	4759.85322	0.15	−1	c,a
7	0	7	3738.60908	0.04	−1	c,a	4232.18448	0.03	−1	c,a	4332.77377	0.08	−1	c,a

7	1	7	3739.51875	0.03	−1	c,a	4232.38428	0.06	−1	c,a	4332.91224	0.04	−1	c,a
7	1	6	3879.33617	0.04	−1	c,a	4348.41466	0.03	−1	c,a	4448.97069	0.05	−1	c,a
7	2	6	3894.16768	0.04	−1	c,a	4353.23140	0.08	−1	c,a	4452.35271	0.06	−1	c,a
7	2	5	3967.48843	0.05	−1	c,a	4426.06635	0.08	−1	c,a	4527.94930	0.07	−1	c,a
7	3	5	4033.61446	0.05	−1	c,a	4457.81870	0.07	−1	c,a	4553.27350	0.04	−1	c,a
7	3	4	4052.83686	0.05	−1	c,a	4484.99212	0.06	−1	c,a	4586.68325	0.04	−1	c,a
7	4	4	4186.56939	0.08	−1	c,a	4563.98965	0.03	−1	c,a	4658.97471	0.05	−1	c,a
7	4	3	4188.39426	0.04	−1	c,a	4572.44629	0.03	−1	c,a	4663.15064	0.08	−1	c,a
7	5	3	4368.54589	0.04	−1	c,a	4695.83638	0.10	−1	c,a	4782.66211	0.06	−1	c,a
7	5	2	4368.63693	0.06	−1	c,a	4695.83625	0.04	−1	c,a	4782.92006	0.10	−1	c,a
7	6	2	4578.88226	0.07	−1	c,a	4846.77361	0.04	−1	c,a	4929.06167	0.08	−1	c,a
7	6	1	4578.97793	0.06	−1	c,a	4846.77594	0.10	−1	c,a	4929.06900	0.25	−1	c
7	7	1	4812.19277	0.05		d	5020.02609	0.10	−1	c	5096.24519	0.10	−1	c,a
7	7	0	4812.19277	0.05	−1	c,a	5020.02625	0.10	−1	c,a	5096.24564	0.30	−1	c
8	0	8	3894.79895	0.05	−1	c,a	4387.35723	0.04	−1	c,a	4488.09050	0.07	−1	c,a
8	1	8	3895.25287	0.04	−1	c,a	4387.06285	0.06	−1	c,a	4488.14566	0.15	−1	c,a
8	1	7	4062.83796	0.05	−1	c,a	4523.58890	0.05	−1	c,a	4624.30275	0.05	−1	c,a
8	2	7	4071.73333	0.03	−1	c,a	4525.96410	0.05	−1	c,a	4625.93694	0.05	−1	c,a
8	2	6	4173.22550	0.08	−1	c,a	4622.90614	0.06	−1	c,a	4725.06224	0.04	−1	c,a
8	3	6	4224.58640	0.05	−1	c,a	4643.99909	0.04	−1	c,a	4741.06700	0.05	−1	c,a
8	3	5	4259.87638	0.04	−1	c,a	4689.32852	0.12	−1	c,a	4792.34025	0.04	−1	c,a
8	4	5	4381.73528	0.07	−1	c,a	4756.39403	0.04	−1	c,a	4851.53777	0.12	−1	c,a
8	4	4	4386.31306	0.06	−1	c,a	4769.03852	0.07	−1	c,a	4861.80324	0.08	−1	c,a
8	5	4	4564.03471	0.06	−1	c,a	4889.45706	0.08	−1	c,a	4976.04330	0.06	−1	c,a
8	5	3	4564.36666	0.05	−1	c,a	4889.40405	0.04	−1	c,a	4977.04413	0.06	−1	c,a
8	6	3	4774.80475	0.05	−1	c,a	5039.62739	0.15	−1	c,a	5122.34742	0.14	−1	c,a
8	6	2	4775.08814	0.09	−1	c,a	5039.64214	0.07	−1	c,a	5122.39302	0.14	−1	c,a

8	7	2	5008.96271	0.08	−1	c,a	5213.26941	0.14	−1	c,a	5289.95805	0.20	−1	c
8	7	1	5008.96276	0.10	−1	c,a	5213.26885	0.06	−1	c	5289.95903	0.14	−1	c,a
8	8	1	5261.47121	0.22	−1	c,a	5406.54925	0.18	−1	c,a	5475.75550	0.42		d
8	8	0	5261.47121	0.22		d	5406.54914	0.20	−1	c	5475.75550	0.42	−1	c,a
9	0	9	4068.70368	0.04	−1	c,a	4559.70763	0.04	−1	c,a	4661.42650	0.10	−1	c,a
9	1	9	4068.93093	0.04	−1	c,a	4559.75209	0.08	−1	c,a	4661.44856	0.07	−1	c,a
9	1	8	4263.15032	0.04	−1	c,a	4715.96693	0.05	−1	c,a	4816.99088	0.07	−1	c,a
9	2	8	4268.24075	0.04	−1	c,a	4717.10442	0.07	−1	c,a	4817.73572	0.07	−1	c,a
9	2	7	4399.54208	0.03	−1	c,a	4837.69963	0.06	−1	c,a	4939.79427	0.04	−1	c,a
9	3	7	4436.94025	0.08	−1	c,a	4850.44135	0.05	−1	c,a	4949.00296	0.07	−1	c,a
9	3	6	4493.80421	0.05	−1	c,a	4918.23479	0.09	−1	c,a	5022.28125	0.08	−1	c,a
9	4	6	4600.49724	0.05	−1	c,a	4971.26072	0.04	−1	c,a	5067.07667	0.05	−1	c,a
9	4	5	4611.79473	0.07	−1	c,a	4992.12154	0.11	−1	c,a	5087.01712	0.04	−1	c,a
9	5	5	4783.64081	0.10	−1	c,a	5108.34934	0.05	−1	c,a	5193.45764	0.06	−1	c,a
9	5	4	4784.66206	0.08	−1	c,a	5107.72912	0.05	−1	c,a	5196.50048	0.06	−1	c,a
9	6	4	4994.70285	0.31	25	e,a	5256.38144	0.05	−1	c,a	5339.64133	0.05	−1	c,a
9	6	3	4996.33144	0.06	−1	c,a	5256.44870	0.08	−1	c,a	5339.84331	0.05	−1	c,a
9	7	3	5229.57675	0.14	−1	c,a	5430.18080	0.15	−1	c	5507.47498	0.07	−1	c,a
9	7	2	5229.57886	0.14	−1	c,a	5430.18367	0.04	−1	c,a	5507.48233	0.15	−1	c
9	8	2	5483.32302	0.14		d	5624.38717	0.20	−1	c,a	5694.04806	0.10	−1	c,a
9	8	1	5483.32302	0.14	−1	c,a	5624.38708	0.05	−1	c,a	5694.04806	0.10		d
9	9	1	5749.91854	0.46		d	5836.98570	0.10	−1	c	5896.27236	0.19	−1	c,a
9	9	0	5749.91854	0.46	5	a	5836.98572	0.10	−1	c,a	5896.27236	0.19		d
10	0	10	4260.35172	0.04	−1	c,a	4750.36213	0.03	−1	c,a	4852.74888	0.14	−1	c,a
10	1	10	4260.46683	0.04	−1	c,a	4750.38769	0.05	−1	c,a	4852.75521	0.06	−1	c,a
10	1	9	4480.39220	0.06	−1	c,a	4925.78689	0.07	−1	c,a	5027.25668	0.07	−1	c,a
10	2	9	4483.22784	0.05	−1	c,a	4926.34685	0.04	−1	c,a	5027.55961	0.10	−1	c,a

10	2	8	4644.21691	0.05	−1	c,a	5069.08831	0.03	−1	c,a	5171.05988	0.09	−1	c,a
10	3	8	4669.73579	0.06	−1	c,a	5076.26603	0.04	−1	c,a	5175.95513	0.05	−1	c,a
10	3	7	4752.73291	0.09	−1	c,a	5169.03930	0.06	−1	c,a	5273.63257	0.05	−1	c,a
10	4	7	4842.13126	0.07	−1	c,a	5207.80205	0.05	−1	c,a	5304.72759	0.06	−1	c,a
10	4	6	4864.37331	0.10	−1	c,a	5246.80023	0.07	−1	c,a	5355.26292	0.10	−1	c,a
10	5	6	5027.07397	0.07	−1	c,a	5334.98829	0.05	−1	c,a	5434.48391	0.07	−1	c,a
10	5	5	5029.81038	0.14	−1	c,a	5351.40865	0.05	−1	c,a	5442.09777	0.05	−1	c,a
10	6	5	5238.38524	0.24	−1	c,a	5496.98053	0.07	−1	c,a	5580.81831	0.06	−1	c,a
10	6	4	5237.42021	0.10	−1	c,a	5497.21532	0.05	−1	c,a	5581.52478	0.05	−1	c,a
10	7	4	5473.80312	0.30	−1	c,a	5670.61533	0.05	−1	c,a	5748.66138	0.10	−1	c,a
10	7	3	5473.81180	0.59	−1	c,a	5670.62989	0.24	−1	c,a	5748.69841	0.06	−1	c,a
10	8	3	5728.66075	0.41	7	a	5865.60408	0.18	−1	c,a	5935.83130	0.15	−1	c,a
10	8	2	5728.66075	0.41		d	5865.60490	0.30	−1	c	5935.83218	0.10	−1	c,a
10	9	2	5996.63754	0.14	−1	c,a	6079.97801	0.14	−1	c,a	6139.32365	0.21		d
10	9	1	5996.63754	0.14		d	6079.97800	0.15	−1	c	6139.32365	0.21	−1	c,a
10	10	1	6318.91793	0.54	4	a	6264.74569	0.10	−1	c,a	6355.73592	0.45		d
10	10	0	6318.91793	0.54		d	6264.74570	0.10	−1	c	6355.73592	0.45	−1	c,a
11	0	11	4469.73722	0.07	−1	c,a	4958.90119	0.05	−1	c,a	5062.01060	0.20	−1	c,a
11	1	11	4469.79640	0.06	−1	c,a	4958.93670	0.07	−1	c,a	5062.01321	0.30	−1	c,a
11	1	10	4714.81865	0.05	−1	c,a	5153.18846	0.03	−1	c,a	5255.20532	0.07	−1	c,a
11	2	10	4716.37922	0.07	−1	c,a	5153.53451	0.24	−1	c,a	5255.34669	0.24	−1	c,a
11	2	9	4905.65344	0.06	−1	c,a	5316.80421	0.07	−1	c,a	5418.80340	0.08	−1	c,a
11	3	9	4922.08978	0.14	−1	c,a	5320.88903	0.05	−1	c,a	5421.26758	0.05	−1	c,a
11	3	8	5034.38731	0.18	−1	c,a	5439.05644	0.05	−1	c,a	5543.63670	0.14	−1	c,a
11	4	8	5105.72967	0.07	−1	c,a	5465.05349	0.10	−1	c,a	5563.39973	0.10	−1	c,a
11	4	7	5144.40895	0.14	−1	c,a	5524.56923	0.14	−1	c,a	5631.83930	0.05	−1	c,a
11	5	7	5293.79058	0.18	−1	c,a	5601.53138	0.10	−1	c,a	5698.48944	0.08	−1	c,a

11	5	6	5300.17803	0.07	−1	c,a	5621.33440	0.10	−1	c,a	5714.53190	0.10	−1	c,a
11	6	6	5505.62242	0.45	5	a	5761.40246	0.10	−1	c,a	5845.65324	0.14	−1	c,a
11	6	5	5505.17353	0.10	−1	c,a	5762.06025	0.14	−1	c,a	5847.70663	0.18	−1	c,a
11	7	5	5741.39134	0.38	7	a	5934.41941	0.14	−1	c,a	6013.36593	0.07	−1	c,a
11	7	4	5741.42717	0.38	7	a	5934.47757	0.08	−1	c,a	6013.51043	0.10	−1	c,a
11	8	4	5997.17621	0.37		d	6129.98120	0.15	−1	c,a	6200.89204	0.10	−1	c,a
11	8	3	5997.17621	0.37	8	a	6129.98364	0.05	−1	c,a	6200.89858	0.24	−1	c,a
11	9	3	6266.37219	0.43		d	6346.10880	0.20	−1	c	6405.51724	0.30	−1	c,a
11	9	2	6266.37219	0.43	6	a	6346.10872	0.18	−1	c,a	6405.51724	0.30		d
11	10	2	6589.41338	2.00	−1	c	6534.17597	0.20	−1	c	6623.67071	0.37	−1	c,a
11	10	1	6589.41343	0.37	17	e,a	6534.17600	0.19	−1	c,a	6623.67071	0.37		d
11	11	1	6868.07494	0.50		d	6785.59920	1.00	−1	c	6852.16681	0.19	−1	c,a
11	11	0	6868.07494	0.50	15	e,a	6785.59881	0.46	−1	c,a	6852.16681	0.19		d
12	0	12	4696.83412	0.07	−1	c,a	5186.33728	0.09	−1	c,a	5289.15142	0.35	−1	c,a
12	1	12	4696.86531	0.04	−1	c,a	5184.73422	0.07	−1	c,a	5289.15280	0.15	−1	c,a
12	1	11	4966.63333	0.14	−1	c,a	5398.25015	0.35	−1	c,a	5500.85650	0.09	−1	c,a
12	2	11	4967.49062	0.09	−1	c,a	5399.33072	0.32	−1	c,a	5500.91570	0.23	−1	c,a
12	2	10	5182.09490	0.06	−1	c,a	5581.10939	0.14	−1	c,a	5683.33260	0.07	−1	c,a
12	3	10	5193.88198	0.07	−1	c,a	5579.48958	0.18	−1	c,a	5684.53041	0.10	−1	c,a
12	3	9	5336.32672	0.45	5	a	5726.06228	0.14	−1	c,a	5830.25928	0.07	−1	c,a
12	4	9	5389.55217	0.07	−1	c,a	5742.03687	0.22	−1	c,a	5841.86278	0.07	−1	c,a
12	4	8	5450.88920	0.38	7	a	5826.13429	0.14	−1	c,a	5933.54645	0.05	−1	c,a
12	5	8	5587.51842	0.17	−1	c,a	5887.76576	0.14	−1	c,a	5984.67531	0.08	−1	c,a
12	5	7	5596.42530	0.41	7	a	5918.17391	0.41	−1	c,a	6013.44786	0.05	−1	c,a
12	6	7	5796.13042	0.34	9	a	6049.84870	0.04	−1	c,a	6133.77449	0.21	−1	c,a
12	6	6	5796.45327	0.46	5	a	6051.27289	0.18	−1	c,a	6138.88919	0.27	−1	c,a
12	7	6	6032.08110	0.38	8	a	6221.43139	0.10	−1	c,a	6301.40727	0.05	−1	c,a

12	7	5	6032.19792	0.46	6	a	6221.62313	0.18	−1	c,a	6301.87330	0.14	−1	c,a
12	8	5	6288.55100	0.34	9	a	6417.29612	0.10	−1	c,a	6489.01097	0.19	−1	c,a
12	8	4	6288.55100	0.34		d	6417.30575	0.38	−1	c,a	6489.03897	0.32	−1	c,a
12	9	4	6558.75177	0.39	7	a	6635.10921	0.18	−1	c,a	6694.57877	0.10		d
12	9	3	6558.75177	0.39		d	6635.10920	0.20	−1	c	6694.57877	0.10	−1	c,a
12	10	3	6882.94874	0.38	16	e,a	6825.89972	0.44	−1	c,a	6914.35739	0.19		d
12	10	2	6882.94805	2.00	−1	c	6825.89900	0.80	−1	c	6914.35739	0.19	−1	c,a
12	11	2	7166.44114	0.59	14	e,a	7077.57868	0.51	5	a	7145.10804	0.19		d
12	11	1	7166.44114	0.59		d	7077.57868	0.51		d	7145.10804	0.19	−1	c,a
12	12	1	7464.58662	0.57	8	e,a	7328.06863	0.57	9	e,a	7383.68027	0.19		d
12	12	0	7464.58662	0.57		d	7328.06863	0.57		d	7383.68027	0.19	−1	c,a
13	0	13	4941.60586	0.10	−1	c,a	5429.11842	0.10	−1	c,a	5534.11115	0.28	−1	c,a
13	1	13	4941.62242	0.10	−1	c,a	5429.12800	0.10	−1	c	5534.11070	0.18	−1	c,a
13	1	12	5235.95842	0.05	−1	c,a	5662.47550	0.45	14	e,a	5764.18541	0.19	−1	c,a
13	2	12	5236.43191	0.45	5	a	5660.40395	0.19	−1	c,a	5764.20438	0.14	−1	c,a
13	2	11	5477.00574	0.07	−1	c,a	5862.33890	0.10	−1	c,a	5964.91268	0.10	−1	c,a
13	3	11	5483.12525	0.58	4	a	5862.46680	0.50	4	a	5965.47493	0.08	−1	c,a
13	3	10	5654.76092	0.14	−1	c,a	6028.85836	0.23	−1	c,a	6132.64413	0.06	−1	c,a
13	4	10	5695.88317	0.41	6	a	6037.87430	0.36	−1	c,a	6139.02954	0.10	−1	c,a
13	4	9	5781.95860	0.34	9	a	6148.68278	0.38	7	a	6256.02107	0.09	−1	c,a
13	5	9	5896.77364	0.39	7	a	6194.30410	0.50	−1	c,a	6292.11953	0.14	−1	c,a
13	5	8	5919.00864	0.32	11	a	6241.53013	0.32	−1	c,a	6336.03636	0.19	−1	c,a
13	6	8	6109.52739	0.47	5	a	6363.56794	0.22	−1	c,a	6444.63533	0.09	−1	c,a
13	6	7	6111.46780	0.34	9	a	6365.37933	0.10	−1	c,a	6455.74205	0.14	−1	c,a
13	7	7	6345.58740	0.43	6	a	6531.47838	0.18	−1	c,a	6612.54826	0.10	−1	c,a
13	7	6	6345.92557	0.42	6	a	6532.02024	0.18	−1	c,a	6613.83518	0.14	−1	c,a
13	8	6	6602.46815	0.76	2	a	6727.31854	0.38	−1	c,a	6799.95707	0.08	−1	c,a

13	8	5	6602.46148	0.40	7	a	6727.35786	0.36	−1	c,a	6800.05515	0.29	−1	c,a
13	9	5	6873.41227	0.35		d	6946.69930	0.88	−1	c,a	7006.22991	0.48	6	a
13	9	4	6873.41227	0.35	24	e,a	6946.70135	0.36	−1	c,a	7006.23508	1.00	2	a
13	10	4	7199.11545	0.39		d	7139.59194	0.46		d	7227.46694	0.44	−1	c,a
13	10	3	7199.11545	0.39	17	e,a	7139.59194	0.46	18	e,a	7227.48542	0.80	−1	c
13	11	3	7487.08429	0.42		d	7391.67623	0.44		d	7460.35668	0.58	4	a
13	11	2	7487.08429	0.42	16	e,a	7391.67623	0.44	6	a	7460.35668	0.58		d
13	12	2	7789.13708	0.75		d	7644.44342	0.62		d	7701.74421	0.64	4	a
13	12	1	7789.13708	0.75	10	e,a	7644.44342	0.62	4	a	7701.74421	0.64		d
13	13	1	8095.49183	0.91		d	7901.19557	0.79		d	7948.49768	0.74	3	a
13	13	0	8095.49183	0.91	2	a	7901.19557	0.79	8	e,a	7948.49768	0.74		d
14	0	14	5204.00841	0.29	−1	c,a	5690.87848	0.45	−1	c,a	5796.94256	0.10	−1	c,a
14	1	14	5204.01803	0.28	−1	c,a	5690.87995	0.33	−1	c,a	5796.88636	0.26	−1	c,a
14	1	13	5522.85389	0.51	4	a	5940.54202	0.72	−1	c,a	6045.17181	0.14	−1	c,a
14	2	13	5523.11748	0.41	6	a	5940.63739	0.23	−1	c,a	6045.14240	0.10	−1	c,a
14	2	12	5786.85252	0.41	6	a	6161.13296	0.69	5	e,a	6263.69895	0.14	−1	c,a
14	3	12	5790.43293	0.38	7	a	6160.37241	0.34	−1	c,a	6263.91987	0.28	−1	c,a
14	3	11	5993.19862	0.47	5	a	6347.29250	0.62	3	e,a	6451.08137	0.17	−1	c,a
14	4	11	6019.83227	0.38	8	a	6351.85497	0.10	−1	c,a	6454.13381	0.14	−1	c,a
14	4	10	6134.91802	0.43	6	a	6489.62170	0.59	−1	c,a	6596.22226	0.10	−1	c,a
14	5	10	6229.89508	0.36	8	a	6520.60691	0.22	−1	c,a	6619.78888	0.14	−1	c,a
14	5	9	6267.88245	0.42	6	a	6589.74135	0.98	2	e,a	6705.59373	0.20	−1	c,a
14	6	9	6445.08440	0.34	10	a	6676.46964	0.07	−1	c,a	6777.52832	0.18	−1	c,a
14	6	8	6450.41585	0.44	10	e,a	6705.04574	0.35	−1	c,a	6798.71897	0.23	−1	c,a
14	7	8	6681.59268	0.37	8	a	6864.39488	0.25	−1	c,a	6946.46370	0.12	−1	c,a
14	7	7	6682.45789	0.48	5	a	6865.72728	0.25	−1	c,a	6949.57994	0.17	−1	c,a
14	8	7	6938.63733	0.39	21	e,a	7059.80995	0.36	18	e,a	7133.48057	0.39	−1	c,a

14	8	6	6938.58536	0.53	13	e,a	7059.93194	0.71	5	e,a	7133.78051	0.31	−1	c,a
14	9	6	7209.99158	0.36	18	e,a	7280.59514	0.42	14	e,a	7340.17479	1.03	1	a
14	9	5	7209.99564	0.72	3	a	7280.59926	0.73	3	a	7340.20445	0.41	17	e,a
14	10	5	7537.48305	0.47	11	e,a	7474.95109	0.58	15	e,a	7562.67790	0.44		d
14	10	4	7537.48305	0.47		d	7474.94957	5.00	1	a	7562.67790	0.44	16	e,a
14	11	4	7829.53995	0.44	11	e,a	7727.54517	0.55	12	e,a	7797.54495	0.60		d
14	11	3	7829.53995	0.44		d	7727.54517	0.55		d	7797.54495	0.60	4	a
14	12	3	8135.31739	0.71	12	e,a	7982.51445	0.66	−1	s,a	8041.60931	0.53		d
14	12	2	8135.31739	0.71		d	7982.51445	0.66		d	8041.60931	0.53	13	e,a
14	13	2	8445.99308	0.92	10	e,a	8242.31596	0.83	6	e,a	8291.78909	0.59		d
14	13	1	8445.99308	0.92		d	8242.31596	0.83		d	8291.78909	0.59	12	e,a
14	14	1	8756.97469	0.98	2	a	8505.19881	0.82	−1	s,a	8544.94550	0.76		d
14	14	0	8756.97469	0.98		d	8505.19881	0.82		d	8544.94550	0.76	8	e,a
15	0	15	5483.99636	0.14	−1	c,a	5970.20254	0.68	9	e,a	6077.10437	0.31		d
15	1	15	5483.99636	0.14		d	5970.19982	3.00	−1	c	6077.10437	0.31	−1	c,a
15	1	14	5827.33862	0.42	6	a	6238.21410	0.51	−1	c,a	6343.43380	0.23	−1	c,a
15	2	14	5827.48679	0.52	4	a	6238.24178	0.99	−1	s,a	6342.52748	0.18	−1	c,a
15	2	13	6113.51123	0.39	7	a	6474.70427	0.26	−1	c,a	6578.86996	0.14	−1	c,a
15	3	13	6115.65653	0.51	5	a	6475.44705	0.69	5	e,a	6579.74014	0.10	−1	c,a
15	3	12	6345.92256	0.36	8	a	6682.00379	0.18	−1	c,a	6784.70537	0.38	12	e,a
15	4	12	6362.64104	0.60	3	a	6683.43527	0.70	5	e,a	6786.68808	0.07	−1	c,a
15	4	11	6510.23821	0.42	6	a	6847.08987	0.39	10	e,a	6952.18913	0.19	−1	c,a
15	5	11	6584.41301	0.35	9	a	6865.86781	0.78	3	e,a	6966.58380	0.18	−1	c,a
15	5	10	6641.88818	0.43	6	a	6960.38605	0.44	14	e,a	7074.48314	0.51	4	a
15	6	10	6803.40263	0.48	5	a	7032.73679	0.63	3	a	7131.62961	0.38	7	a
15	6	9	6813.40930	0.32	22	e,a	7070.63695	0.44	14	e,a	7167.33754	0.38	13	e,a
15	7	9	7039.74412	0.60	7	e,a	7220.11744	0.74	2	a	7302.71874	0.17	−1	c,a

15	7	8	7041.72789	0.40	17	e,a	7222.96100	0.35	−1	c,a	7309.47139	0.41	10	e,a
15	8	8	7296.77493	0.54	−1	s,a	7414.52296	0.59	6	e,a	7489.30523	0.33	−1	c,a
15	8	7	7296.60483	0.35	19	e,a	7414.85934	0.42	6	a	7490.10899	0.54	5	a
15	9	7	7568.14240	0.82	4	e,a	7636.48452	0.57	−1	s,a	7696.16462	0.41	8	a
15	9	6	7568.14848	0.56	16	e,a	7636.50646	0.45	11	e,a	7696.22842	0.55	4	a
15	10	6	7897.60814	1.34	−1	s,a	7831.69031	0.75		d	7919.65674	0.45	16	e,a
15	10	5	7897.60408	0.38	14	e,a	7831.69031	0.75	8	e,a	7919.65050	1.44	1	a
15	11	5	8193.35811	0.48		d	8084.84151	0.55		d	8156.30877	0.53	14	e,a
15	11	4	8193.35811	0.48	12	e,a	8084.84151	0.55	13	e,a	8156.30877	0.53		d
15	12	4	8502.64699	0.55		d	8341.89666	0.60		d	8402.87876	0.61	12	e,a
15	12	3	8502.64699	0.55	11	e,a	8341.89666	0.60	−1	s,a	8402.87876	0.61		d
15	13	3	8817.43629	0.80		d	8604.60271	0.71		d	8656.30755	0.60	12	e,a
15	13	2	8817.43629	0.80	11	e,a	8604.60271	0.71	−1	s,a	8656.30755	0.60		d
15	14	2	9133.40999	0.92		d	8871.13216	0.82		d	8913.56293	1.16	1	a
15	14	1	9133.40999	0.92	8	e,a	8871.13216	0.82	9	e,a	8913.56293	1.16		d
15	15	1	9446.84063	1.01		d	9138.96061	0.85		d	9171.47141	0.81	6	e,a
15	15	0	9446.84063	1.01	2	a	9138.96061	0.85	−1	s,a	9171.47141	0.81		d
16	0	16	5781.51988	0.54		d	6267.03144	0.24		d	6375.04870	0.46	−1	c,a
16	1	16	5781.51988	0.54	4	a	6267.03144	0.24	−1	c,a	6375.04870	0.46		d
16	1	15	6149.40792	0.57	−1	c,a	6553.20319	0.97	3	e,a	6659.44701	0.40	23	e,a
16	2	15	6149.49399	0.54	4	a	6553.21913	0.66	9	e,a	6659.44701	0.40		d
16	2	14	6456.74014	0.61	3	a	6807.43140	0.65	7	e,a	6912.56732	0.46	−1	c,a
16	3	14	6458.01253	0.39	8	a	6807.66650	0.50	9	e,a	6913.06400	1.00	−1	c
16	3	13	6711.70399	0.54	4	a	7027.33908	1.31	−1	s,a	7135.32098	0.24	−1	c,a
16	4	13	6723.01635	0.37	27	e,a	7032.23083	0.55	8	e,a	7136.38611	0.54	8	e,a
16	4	12	6900.99745	0.72	−1	s,a	7221.41735	0.83	2	a	7323.10969	0.25	−1	c,a
16	5	12	6957.11805	0.52	6	e,a	7229.29814	0.43	6	a	7331.49626	0.46	−1	s,a

16	5	11	7045.43442	0.77	−1	s,a	7350.72875	1.13	−1	c,a	7464.48723	0.39	7	a
16	6	11	7182.25097	0.41	14	e,a	7406.95201	0.47	5	a	7506.03975	0.64	−1	c,a
16	6	10	7199.29778	0.99	4	e,a	7461.62732	0.65	−1	s,a	7559.39062	0.28	−1	c,a
16	7	10	7419.60375	0.34	21	e,a	7599.09269	0.38	15	e,a	7680.81567	0.41	7	a a
16	7	9	7423.75069	0.48	−1	s,a	7604.12052	0.98	3	e,a	7694.02684	0.33	10	a
16	8	9	7676.53085	0.42	13	e,a	7791.19284	0.42	13	e,a	7867.09590	0.59	8	e,a
16	8	8	7676.16025	0.49	8	e,a	7792.01810	0.64	−1	s,a	7869.03583	0.40	8	a
16	9	8	7947.53461	0.35	13	e,a	8014.05034	0.38	12	e,a	8073.87099	0.59	6	e,a
16	9	7	7947.57398	0.85	−1	s,a	8014.11342	0.64	−1	s,a	8074.05541	0.49	6	a
16	10	7	8279.02994	0.45	−1	s,a	8209.53727	0.79	−1	s,a	8298.08199	1.10	−1	f,a
16	10	6	8279.03386	0.83	−1	s,a	8209.54219	0.87	−1	f,a	8298.09480	0.50	15	e,a
16	11	6	8578.07652	0.63	6	e,a	8463.22394	0.71	−1	s,a	8536.28603	0.49		d
16	11	5	8578.09251	1.63	−1	s,a	8463.22394	0.71		d	8536.28603	0.49	13	e,a
16	12	5	8890.66536	0.80	7	e,a	8722.21449	0.67	9	e,a	8785.15987	0.60		d
16	12	4	8890.66536	0.80		d	8722.21449	0.67		d	8785.15987	0.60	12	e,a
16	13	4	9209.33742	0.84	8	e,a	8987.65250	0.74	−1	s,a	9041.63759	0.74		d
16	13	3	9209.33742	0.84		d	8987.65250	0.74		d	9041.63759	0.74	9	e,a
16	14	3	9530.00824	0.90	8	e,a	9257.63865	0.77	8	e,a	9302.75595	0.78		d
16	14	2	9530.00824	0.90		d	9257.63865	0.77		d	9302.75595	0.78	9	e,a
16	15	2	9849.33505	0.96	6	e,a	9529.69542	0.85	9	e,a	9565.49902	1.61		d
16	15	1	9849.33505	0.96		d	9529.69542	0.85		d	9565.49902	1.61	1	a
16	16	1	10163.36257	1.02	2	a	9801.15702	1.04	−1	s,a	9826.49055	1.18		d
16	16	0	10163.36257	1.02		d	9801.15702	1.04		d	9826.49055	1.18	4	e,a
17	0	17	6096.52216	0.49	5	a	6581.27872	0.40	−1	c,a	6690.46976	0.44		d
17	1	17	6096.52216	0.49		d	6581.27872	0.40		d	6690.46976	0.44	−1	c,a
17	1	16	6489.04977	0.48	5	a	6885.48676	0.61	9	e,a	6992.76200	1.50	−1	c
17	2	16	6489.10129	0.75	2	a	6885.48029	1.24	−1	s,a	6992.76138	0.43	17	e,a

17	2	15	6816.75498	0.40	19	e,a	7156.83347	0.45	9	e,a	7262.80023	0.42	12	e,a
17	3	15	6817.51089	0.48	6	e,a	7156.93741	1.01	−1	s,a	7262.77749	0.38	15	e,a
17	3	14	7093.63709	0.54	17	e,a	7396.52193	0.45	9	e,a	7502.37085	0.52	8	e,a
17	4	14	7100.78661	0.75	−1	s,a	7397.95961	0.87	3	e,a	7503.07234	0.37	−1	c,a
17	4	13	7308.76984	0.45	13	e,a	7597.82341	0.49	−1	c,a	7708.98007	0.62	3	a
17	5	13	7349.02764	0.63	−1	s,a	7610.22218	0.59	−1	s,a	7713.75385	0.46	11	e,a
17	5	12	7463.39700	0.50	10	e,a	7758.39693	0.48	8	e,a	7871.73703	0.65	3	a
17	6	12	7581.53770	0.50	−1	s,a	7799.62089	0.93	−1	s,a	7899.80795	0.34	−1	c,a
17	6	11	7622.72785	0.47	−1	s,a	7876.43450	0.61	7	e,a	8003.22008	0.67	3	a
17	7	11	7820.67857	0.77	−1	s,a	7970.18658	0.75	−1	s,a	8076.57411	0.37	15	e,a
17	7	10	7828.55002	0.52	−1	s,a	8009.69468	0.60	6	e,a	8103.57217	0.88	5	e,a
17	8	10	8077.54589	0.63	−1	s,a	8189.54832	0.68	−1	s,a	8266.44577	0.44	11	e,a
17	8	9	8080.50568	0.40	15	e,a	8191.38409	0.59	9	e,a	8270.70246	0.49	8	e,a
17	9	9	8347.84765	0.64	−1	s,a	8412.97480	1.13	−1	s,a	8472.99999	0.42	14	e,a
17	9	8	8347.95880	0.73	8	e,a	8413.11581	0.44	10	e,a	8473.47617	0.61	5	e,a
17	10	8	8681.30924	0.86	−1	s,a	8608.20340	1.08	−1	f,a	8697.62774	0.49	14	e,a
17	10	7	8681.32555	0.41	−1	s,a	8608.22435	0.99	6	e,a	8697.66700	0.83	−1	s,a
17	11	7	8983.31362	0.99	−1	s,a	8862.35411	0.57		d	8937.11891	0.55	13	e,a
17	11	6	8983.29001	0.66	−1	s,a	8862.35411	0.57	−1	s,a	8937.12188	1.40	−1	f,a
17	12	6	9298.91671	1.87	−1	s,a	9123.09869	0.72		d	9188.06808	0.59	12	e,a
17	12	5	9298.91219	0.85	−1	s,a	9123.09869	0.72	−1	s,a	9188.06808	0.59		d
17	13	5	9621.23041	1.15		d	9391.07256	0.72		d	9447.36858	0.79	8	e,a
17	13	4	9621.23041	1.15	6	e,a	9391.07256	0.72	8	e,a	9447.36858	0.79		d
17	14	4	9946.29779	1.27		d	9664.30568	0.81		d	9712.09881	0.80	9	e,a
17	14	3	9946.29779	1.27	−1	s,a	9664.30568	0.81	−1	s,a	9712.09881	0.80		d
17	15	3	10271.11633	0.98		d	9940.35261	0.87		d	9979.39601	0.87	6	e,a
17	15	2	10271.11633	0.98	6	e,a	9940.35261	0.87	9	e,a	9979.39601	0.87		d

17	16	2	10591.80866	1.31		d	10216.62316	0.88		d	10245.91679	1.48	2 a
17	16	1	10591.80866	1.31	5	e,a	10216.62316	0.88	8	e,a	10245.91679	1.48	d
17	17	1	10905.03917	1.43		d	10490.46052	1.13		d	10508.85985	1.09	6 e,a
17	17	0	10905.03917	1.43	1	a	10490.46052	1.13	5	e,a	10508.85985	1.09	d
18	0	18	6428.96531	0.60		d	6912.85414	0.77		d	7023.28252	0.38	−1 c,a
18	1	18	6428.96531	0.60	4	a	6912.85414	0.77	6	e,a	7023.28252	0.38	d
18	1	17	6846.24114	0.78	3	a	7234.96500	1.20	−1	f,a	7343.34106	0.47	−1 c,a
18	2	17	6846.27601	0.58	4	a	7234.96938	0.88	6	e,a	7343.34106	0.47	d
18	2	16	7193.51327	0.57	6	e,a	7523.10246	1.21	−1	s,a	7630.00744	0.47	13 e,a
18	3	16	7193.96643	0.40	20	e,a	7523.15591	0.72	−1	s,a	7630.01125	0.71	4 e,a
18	3	15	7490.99190	0.57	5	e,a	7779.70828	1.19	−1	s,a	7885.92678	0.43	11 e,a
18	4	15	7495.46855	0.37	16	e,a	7780.40858	0.67	8	e,a	7885.79682	0.55	5 a
18	4	14	7730.67364	0.74	−1	s,a	8001.93603	1.21	1	a	8110.09334	0.35	15 e,a
18	5	14	7758.78588	0.43	10	e,a	8008.11452	0.56	−1	s,a	8112.86188	0.68	3 a
18	5	13	7904.22388	0.68	−1	s,a	8181.44296	1.24	−1	s,a	8294.08979	0.56	11 e,a
18	6	13	8000.35916	0.43	12	e,a	8210.29440	0.54	−1	s,a	8311.96010	0.66	3 a
18	6	12	8057.70535	1.14	−1	s,a	8312.77911	1.12	−1	s,a	8433.96572	0.54	9 e,a
18	7	12	8242.39180	0.36	−1	s,a	8394.96006	0.42	−1	s,a	8496.42227	0.72	3 a
18	7	11	8256.09117	1.09	−1	s,a	8439.89736	0.83	−1	s,a	8537.65160	0.87	6 e,a
18	8	11	8499.29572	0.42	11	e,a	8609.36456	0.57	−1	s,a	8686.85089	0.71	6 e,a
18	8	10	8502.27199	0.83	−1	s,a	8613.05745	5.04	−1	s	8695.40754	0.46	11 e,a
18	9	10	8768.73470	1.13	10	e,a	8832.84415	0.53	11	e,a	8893.21911	0.90	3 a
18	9	9	8769.06454	0.85	−1	s,a	8833.21340	0.81	−1	s,a	8894.34763	0.42	−1 s,a
18	10	9	9103.44473	0.76	−1	s,a	9027.43378	0.79	−1	s,a	9117.97285	0.77	3 a
18	10	8	9103.95773	1.29	1	a	9027.47543	0.90	4	e,a	9118.08037	0.42	16 e,a
18	11	8	9408.54490	1.02	−1	s,a	9281.89384	0.95	8	e,a	9358.45730	1.21	2 e,a
18	11	7	9408.52195	1.15	−1	s,a	9281.89269	1.41	−1	s,a	9358.46186	0.56	11 e,a

18	12	7	9726.94238	0.99	−1	s,a	9544.18189	0.72	−1	s,a	9611.22367	0.68		d
18	12	6	9726.94561	1.74	−1	s,a	9544.18189	0.72		d	9611.22367	0.68	11	e,a
18	13	6	10052.65206	0.94	−1	s,a	9814.47855	0.79	−1	s,a	9873.10470	0.67		d
18	13	5	10052.65206	0.94		d	9814.47855	0.79		d	9873.10470	0.67	9	e,a
18	14	5	10381.82375	1.04	−1	s,a	10090.73035	0.75	7	e,a	10141.18315	1.14		d
18	14	4	10381.82375	1.04		d	10090.73035	0.75		d	10141.18315	1.14	6	e,a
18	15	4	10711.74510	1.24	−1	s,a	10370.51160	1.45	6	e,a	10412.70545	0.83		d
18	15	3	10711.74510	1.24		d	10370.51160	1.45		d	10412.70545	0.83	8	e,a
18	16	3	11038.56284	1.32	5	e,a	10651.31235	1.09	5	e,a	10684.36010	1.67		d
18	16	2	11038.56284	1.32		d	10651.31235	1.09		d	10684.36010	1.67	3	e,a
18	17	2	11359.46797	1.09	5	e,a	10930.53286	1.02	5	e,a	10953.89394	1.79		d
18	17	1	11359.46797	1.09		d	10930.53286	1.02		d	10953.89394	1.79	1	a
18	18	1	11670.52189	1.74	1	a	11205.59477	1.12	6	e,a	11217.15465	1.39		d
18	18	0	11670.52189	1.74		d	11205.59477	1.12		d	11217.15465	1.39	3	e,a
19	0	19	6778.79382	0.62	15	e,a	7261.65654	0.79	6	e,a	7373.38906	0.54		d
19	1	19	6778.82250	1.17	1	a	7261.65654	0.79		d	7373.38906	0.54	−1	c,a
19	1	18	7220.96223	0.49	12	e,a	7601.54855	0.72	5	e,a	7711.08862	0.50		d
19	2	18	7221.45790	0.60	5	a	7601.54855	0.72		d	7711.08862	0.50	13	e,a
19	2	17	7586.91598	0.47	15	e,a	7906.16990	0.79	8	e,a	8014.10667	0.95	3	e,a
19	3	17	7587.19721	0.58	5	e,a	7906.19558	1.31	−1	s,a	8014.10771	0.54	9	e,a
19	3	16	7903.92362	0.56	−1	s,a	8179.04165	0.53	7	e,a	8285.95767	1.16	2	e,a
19	4	16	7906.72207	0.64	−1	s,a	8179.26603	1.40	1	a	8286.01586	0.49	11	e,a
19	4	15	8166.58364	0.46	13	e,a	8419.08577	0.58	6	e,a	8526.72297	1.42	1	a
19	5	15	8185.64603	1.12	−1	s,a	8422.55882	0.78	−1	s,a	8529.17063	0.44	11	e,a
19	5	14	8361.94728	0.71	5	e,a	8618.88404	0.66	6	e,a	8730.62598	0.64	6	e,a
19	6	14	8437.83977	1.20	−1	s,a	8638.31309	1.39	−1	s,a	8741.60333	0.78	6	e,a
19	6	13	8517.26028	0.49	6	e,a	8768.12634	0.79	4	e,a	8887.12156	0.66	4	a

19	7	13	8684.07571	1.07	−1	s,a	8834.48450	1.00	4	e,a	8934.83514	0.40	12	e,a
19	7	12	8706.32190	0.48	10	e,a	8894.25017	0.66	−1	s,a	8994.56500	0.65	4	a
19	8	12	8941.39970	1.48	1	a	9050.62548	0.87	−1	s,a	9127.71483	0.62	8	e,a
19	8	11	8946.08135	0.74	4	e,a	9057.30270	0.46	−1	s,a	9143.50821	0.69	5	e,a
19	9	11	9210.12865	1.29	−1	s,a	9273.32683	1.14	−1	s,a	9334.15335	0.47	6	a
19	9	10	9210.69630	0.65	6	e,a	9274.13587	0.61	−1	s,a	9336.61438	0.65	4	a
19	10	10	9546.78531	0.90	−1	s,a	9466.92399	0.75	−1	s,a	9558.78593	0.56	8	e,a
19	10	9	9546.77753	0.87	−1	s,a	9467.03384	0.69	−1	s,a	9559.05995	0.69	6	e,a
19	11	9	9853.31638	1.63	1	a	9721.51834	1.02	−1	f,a	9799.94838	0.80	7	e,a
19	11	8	9853.38266	1.42	−1	s,a	9721.52345	1.33	5	e,a	9799.97641	1.26	1	a
19	12	8	10174.31691	1.51	−1	s,a	9985.09801	1.24		d	10054.24710	1.43	7	e,a
19	12	7	10174.31330	1.10	−1	s,a	9985.09801	1.24	−1	s,a	10054.24710	1.43		d
19	13	7	10503.15427	1.37		d	10257.48857	0.75		d	10318.45558	0.67	−1	s,a
19	13	6	10503.15427	1.37	−1	s,a	10257.48857	0.75	−1	s,a	10318.45558	0.67		d
19	14	6	10836.13700	1.32		d	10536.50380	3.90		d	10589.61242	0.98	2	a
19	14	5	10836.13700	1.32	−1	s,a	10536.50380	3.90	4	e	10589.61242	0.98		d
19	15	5	11170.79173	1.42		d	10819.78460	0.80		d	10865.04150	0.95	6	e,a
19	15	4	11170.79173	1.42	−1	s,a	10819.78460	0.80	8	e,a	10865.04150	0.95		d
19	16	4	11503.24344	1.57		d	11104.81356	1.21		d	11141.41475	0.97	5	e,a
19	16	3	11503.24344	1.57	−1	s,a	11104.81356	1.21	5	e,a	11141.41475	0.97		d
19	17	3	11831.09390	1.56		d	11389.09936	1.54		d	11416.88159	1.94	1	a
19	17	2	11831.09390	1.56	4	e,a	11389.09936	1.54	−1	s,a	11416.88159	1.94		d
19	18	2	12150.91395	1.46		d	11670.08287	1.15		d	11687.74033	2.05	1	a
19	18	1	12150.91395	1.46	−1	s,a	11670.08287	1.15	5	e,a	11687.74033	2.05		d
19	19	1	12458.57592	2.01		d	11945.35607	1.17		d	11950.21760	1.66	3	e,a
19	19	0	12458.57592	2.01	1	a	11945.35607	1.17	4	e,a	11950.21760	1.66		d
20	0	20	7145.95796	1.30	1	a	7627.58736	0.92		d	7740.68439	0.60	12	e,a

20	1	20	7145.98045	0.95	19	e,a	7627.58736	0.92	5	e,a	7740.68439	0.60		d
20	1	19	7613.18782	0.84	−1	s,a	7985.13335	0.62		d	8095.89984	0.52	11	e,a
20	2	19	7613.18090	0.45	16	e,a	7985.13335	0.62	7	e,a	8095.89984	0.52		d
20	2	18	7996.82577	1.31	−1	s,a	8305.94234	0.58		d	8414.96972	0.62	8	e,a
20	3	18	7997.00058	0.44	14	e,a	8305.94234	0.58	9	e,a	8414.97545	1.28	2	e,a
20	3	17	8332.50886	0.65	−1	s,a	8594.60643	1.51	−1	s,a	8702.37858	0.44	12	e,a
20	4	17	8334.26287	0.53	8	e,a	8594.81064	0.64	−1	s,a	8702.41701	1.53	1	a
20	4	16	8616.11137	0.80	−1	s,a	8851.23379	1.23	−1	s,a	8958.97986	0.46	11	e,a
20	5	16	8628.59950	0.55	−1	s,a	8853.24632	0.67	7	e,a	8959.46476	0.89	3	a
20	5	15	8835.57693	1.14	−1	s,a	9070.20254	1.71	1	a	9181.21997	0.42	12	e,a
20	6	15	8893.10805	0.56	−1	s,a	9083.08379	0.68	5	e,a	9187.64810	2.84	1	e
20	6	14	9000.98458	0.91	−1	s,a	9240.06049	1.23	−1	s,a	9357.72500	0.64	−1	s,a
20	7	14	9144.96669	0.48	−1	s,a	9290.56971	0.66	−1	s,a	9391.35693	0.75	4	a
20	7	13	9178.19099	1.43	−1	s,a	9371.36334	1.72	1	a	9470.98289	0.60	4	a
20	8	13	9403.30383	0.62	6	e,a	9514.03793	0.71	3	a	9588.32684	1.32	1	a
20	8	12	9411.46955	1.40	−1	s,a	9524.44108	1.35	−1	s,a	9615.12575	0.49	9	e,a
20	9	12	9671.48751	0.80	8	e,a	9733.83368	3.57	2	a	9795.37133	0.90	3	a
20	9	11	9672.69147	2.85	−1	s,a	9735.56107	1.33	1	a	9800.33950	1.02	4	e,a
20	10	11	10009.05815	0.79	−1	s,a	9926.37898	0.85	5	e,a	10019.72480	2.42	2	e,a
20	10	10	10009.10859	1.10	−1	s,a	9926.50024	1.35	−1	s,a	10020.36835	0.69	4	e,a
20	11	10	10317.43230	3.44	2	e	10180.89506	0.92	−1	s,a	10261.26190	0.90	4	e,a
20	11	9	10317.41735	1.48	−1	s,a	10180.92461	1.25	−1	s,a	10261.32566	0.69	7	e,a
20	12	9	10640.58938	1.69	−1	s,a	10445.51722	1.11	5	e,a	10516.80654	1.61	1	a
20	12	8	10640.53952	1.91	1	a	10445.52148	1.37	−1	f,a	10516.82079	1.67	1	a
20	13	8	10972.27751	1.46	−1	s,a	10719.73068	1.11	−1	s,a	10783.03341	1.12		d
20	13	7	10972.29983	1.76	−1	s,a	10719.73068	1.11		d	10783.03341	1.12	−1	s,a
20	14	7	11308.78783	1.24	−1	s,a	11001.29685	0.82	−1	s,a	11056.98559	1.20		d

20	14	6	11308.78783	1.24		d	11001.29685	0.82		d	11056.98559	1.20	1	a
20	15	6	11647.82456	1.02	−1	s,a	11287.76866	1.21	−1	s,a	11336.01048	1.08		d
20	15	5	11647.82456	1.02		d	11287.76866	1.21		d	11336.01048	1.08	2	a
20	16	5	11985.46649	1.72	−1	s,a	11576.71883	0.85	5	e,a	11616.74397	1.78		d
20	16	4	11985.46649	1.72		d	11576.71883	0.85		d	11616.74397	1.78	2	a
20	17	4	12319.62728	1.76	3	e,a	11865.72507	1.18	4	e,a	11897.64848	1.06		d
20	17	3	12319.62728	1.76		d	11865.72507	1.18		d	11897.64848	1.06	4	e,a
20	18	3	12647.26051	1.82	−1	s,a	12152.31441	1.15	−1	s,a	12175.22961	2.19		d
20	18	2	12647.26051	1.82		d	12152.31441	1.15		d	12175.22961	2.19	1	a
20	19	2	12964.88914	1.75	−1	s,a	12433.98834	1.43	−1	s,a	12446.35856	2.28		d
20	19	1	12964.88914	1.75		d	12433.98834	1.43		d	12446.35856	2.28	1	a
20	20	1	13268.06009	2.24	1	a	12708.61104	1.24	2	a	12706.95487	1.87		d
20	20	0	13268.06009	2.24		d	12708.61104	1.24		d	12706.95487	1.87	3	e,a
21	0	21	7530.50899	0.53	15	e,a	8010.53273	0.85	6	e,a	8125.05940	0.65		d
21	1	21	7530.50899	0.53		d	8010.53273	0.85		d	8125.05940	0.65	10	e,a
21	1	20	8022.98862	0.57	11	e,a	8385.60306	0.88	6	e,a	8497.66150	0.53		d
21	2	20	8022.88760	1.13	1	a	8385.60306	0.88		d	8497.66150	0.53	10	e,a
21	2	19	8423.00580	0.55	9	e,a	8722.25096	0.73	5	e,a	8832.47619	0.61		d
21	3	19	8423.48166	1.28	1	a	8722.27195	1.21	1	a	8832.47619	0.61	10	e,a
21	3	18	8776.73869	0.45	8	e,a	9026.34296	1.14	4	e,a	9135.07484	0.85	7	e,a
21	4	18	8777.85162	1.19	1	a	9026.45222	1.70	1	a	9135.09343	0.54	8	e,a
21	4	17	9080.88675	0.51	5	a	9298.74857	0.69	7	e,a	9406.91410	2.05	2	e
21	5	17	9089.15022	0.87	2	a	9299.92464	1.33	1	a	9407.22853	0.60	8	e,a
21	5	16	9323.24911	0.57	4	a	9535.84965	0.74	3	a	9646.10544	1.35	2	a
21	6	16	9365.35834	0.93	2	a	9544.13640	1.40	1	a	9649.21776	0.61	5	a
21	6	15	9502.85181	0.81	2	a	9726.64740	0.86	3	e,a	9843.08060	1.33	1	a
21	7	15	9624.41380	6.51	1	e	9763.44664	1.50	2	a	9865.27805	0.48	7	e,a

21	7	14	9676.59623	0.79	2	a	9869.20743	0.62	5	e,a	10001.32011	1.50	1 a
21	8	14	9884.50272	1.74	1	a	9962.12047	1.33	2	a	10068.01650	1.58	4 e
21	8	13	9898.41927	1.11	3	a	10015.05119	0.85	2	a	10109.64699	1.08	2 a
21	9	13	10152.81179	1.16	2	a					10276.36230	0.69	4 e,a
21	9	12	10155.02739	1.28	1	a	10217.70127	0.86	4	a	10285.69426	1.38	1 a
21	10	12	10490.35455	5.75	1	a	10405.67950	1.09	3	a	10500.44985	1.09	3 e,a
21	10	11	10490.65731	1.28	1	a	10406.15503	0.87	3	a	10501.82891	1.34	1 a
21	11	11	10800.28493	11.90	1	a	10659.77849	1.67	1	a	10742.04050	0.99	2 a
21	11	10	10800.21871	1.46	1	a	10659.74938	0.89	4	e,a	10742.18261	3.10	1 a
21	12	10	11125.34828	1.84	1	a	10925.08165	1.60	1	a	10998.49986	0.93	3 a
21	12	9	11125.52218	3.58	1	a	10925.07376	0.97	3	e,a	10998.51963	1.35	1 a
21	13	9	11459.89206	2.16	1	a	11200.79832	1.08		d	11266.47734	1.60	1 a
21	13	8	11459.63513	1.97	1	a	11200.79832	1.08	6	e,a	11266.48185	1.89	1 a
21	14	8	11799.35932	5.30	1	a	11484.67729	0.94		d	11542.94500	1.12	2 a
21	14	7	11799.35137	1.77	1	a	11484.67729	0.94	3	a	11542.91927	1.50	1 a
21	15	7	12142.41449	1.59		d	11774.08303	1.06		d	11825.21659	1.77	1 a
21	15	6	12142.41449	1.59	1	a	11774.08303	1.06	2	a	11825.21659	1.77	d
21	16	6	12484.83482	1.87		d	12066.66012	1.77		d	12109.92590	1.84	1 a
21	16	5	12484.83482	1.87	1	a	12066.66012	1.77	4	e,a	12109.92590	1.84	d
21	17	5	12824.77241	1.99		d	12360.03443	1.03		d	12395.84562	2.14	1 a
21	17	4	12824.77241	1.99	1	a	12360.03443	1.03	5	e,a	12395.84562	2.14	d
21	18	4	13159.41063	2.02		d	12651.83771	1.18		d	12679.52582	1.39	3 e,a
21	18	3	13159.41063	2.02	1	a	12651.83771	1.18	3	a	12679.52582	1.39	d
21	19	3	13485.76028	2.08		d	12939.63600	1.47		d	12958.22874	2.40	1 a
21	19	2	13485.76028	2.08	1	a	12939.63600	1.47	2	a	12958.22874	2.40	d
21	20	2	13800.22347	2.01		d	13221.01614	1.66		d	13228.62382	2.49	1 a
21	20	1	13800.22347	2.01	1	a	13221.01614	1.66	2	a	13228.62382	2.49	d

21	21	1	14097.90967	2.46	d	13494.28863	1.53	d	13486.39363	2.12	1	a
21	21	0	14097.90967	2.46	1 a	13494.28863	1.53	2 a	13486.39363	2.12	d	
22	0	22	7932.54089	0.82	3 a	8410.38355	0.69	d	8526.39988	0.64	10	e,a
22	1	22	7932.56081	1.20	8 e,a	8410.38355	0.69	8 e,a	8526.39988	0.64	d	
22	1	21	8450.03209	1.06	2 a	8802.85124	0.99	d	8916.25320	0.70	8	e,a
22	2	21	8450.05521	0.72	3 a	8802.85124	0.99	2 a	8916.25320	0.70	d	
22	2	20	8865.21492	0.55	d	9155.00217	1.27	d	9266.47886	0.54	9	e,a
22	3	20	8865.21492	0.55	6 a	9155.00217	1.27	2 a	9266.47886	0.54	d	
22	3	19	9236.53479	1.25	1 a	9474.05835	1.34	2 a	9583.90859	0.52	9	e,a
22	4	19	9237.28426	0.56	4 a	9474.19067	0.97	4 e,a	9583.91631	1.57	1	a
22	4	18	9558.58094	0.89	2 a	9761.66129	1.10	2 a	9870.50352	0.71	3	a
22	5	18	9564.03535	0.57	4 a	9762.38491	0.86	4 e,a	9870.65533	1.02	4	e,a
22	5	17	9823.92169	1.36	1 a				10125.50796	0.70	4	e,a
22	6	17	9853.82503	0.51	5 a	10020.82362	0.96	2 a	10127.32501	0.85	3	a
22	6	16							10341.84147	0.68	5	a
22	7	16	10121.25393	1.11	2 a	10252.73911	0.63	5 a	10355.81080	0.95	2	a
22	7	15							10511.96779	1.28	1	a
22	8	15	10384.20910	1.27	1 a	10465.35895	0.86	3 a	10565.96290	1.28	3	a
22	8	14	10405.72714	6.59	1 a				10624.96654	0.59	7	e,a
22	9	14	10654.53543	0.85	5 a	10714.32524	1.28	2 a	10776.35117	1.47	1	a
22	9	13	10657.65095	2.01	1 a				10793.09025	1.13	4	e,a
22	10	13	10990.55848	5.16	1 a	10904.19309	0.67	5 a	11000.55843	1.37	1	a
22	10	12				10905.34581	1.07	2 a	11003.33822	0.75	4	a
22	11	12	11301.44665	1.62	1 a	11157.60915	0.81	3 a	11241.95544	1.16	2	a
22	11	11	11301.24079	5.84	1 a	11157.77678	1.54	1 a	11242.30442	0.97	3	a
22	12	11	11628.15525	1.77	1 a	11423.42646	1.17	2 a	11498.98739	3.25	1	a
22	12	10	11627.67023	11.36	1 a	11423.42219	1.95	1 a	11499.04166	0.94	3	a

22	13	10	11964.79669	3.72	1	a	11700.50339	1.07	4	e,a	11768.40581	5.18	1 a
22	13	9	11964.75116	2.10	1	a	11700.50339	1.07		d	11768.39996	2.16	2 a
22	14	9	12307.40392	2.21	1	a	11986.31365	1.07	6	e,a	12047.04510	2.14	1 a
22	14	8	12307.32203	2.38	1	a	11986.31365	1.07		d	12047.05187	1.34	2 a
22	15	8	12654.14039	2.03	1	a	12278.36314	1.08		d	12332.29069	1.80	1 a
22	15	7	12654.14039	2.03		d	12278.36314	1.08	−1	f,a	12332.28887	1.14	2 a
22	16	7	13000.93654	1.88	1	a	12574.25271	1.14	−1	f,a	12620.68917	1.90	d
22	16	6	13000.93654	1.88		d	12574.25271	1.14		d	12620.68917	1.90	2 a
22	17	6	13346.14927	2.12	1	a	12871.65980	1.78	3	a	12911.05831	1.97	d
22	17	5	13346.14927	2.12		d	12871.65980	1.78		d	12911.05831	1.97	2 e,a
22	18	5	13687.12832	2.23	1	a	13168.27845	1.33	3	a	13200.34624	2.36	d
22	18	4	13687.12832	2.23		d	13168.27845	1.33		d	13200.34624	2.36	1 a
22	19	4	14021.23353	2.25	1	a	13461.78323	1.43	3	a	13485.84411	1.71	d
22	19	3	14021.23353	2.25		d	13461.78323	1.43		d	13485.84411	1.71	1 a
22	20	3	14345.40105	2.30	1	a	13749.78824	1.68	2	a	13764.71679	2.60	d
22	20	2	14345.40105	2.30		d	13749.78824	1.68		d	13764.71679	2.60	1 a
22	21	2	14655.82519	2.25	1	a	14029.98016	1.82	2	a	14033.47976	2.68	d
22	21	1	14655.82519	2.25		d	14029.98016	1.82		d	14033.47976	2.68	1 a
22	22	1	14947.13282	2.65	1	a	14301.38168	2.22	1	a	14287.55238	2.34	d
22	22	0	14947.13282	2.65		d	14301.38168	2.22		d	14287.55238	2.34	1 a
23	0	23	8350.96548	0.72	8	e,a	8827.02152	1.03	4	e,a	8944.57941	1.43	d
23	1	23	8350.97116	1.30	1	a	8827.02152	1.03		d	8944.57941	1.43	5 e,a
23	1	22	8894.67083	0.66	4	a	9236.75090	0.94	5	e,a	9351.54766	1.23	d
23	2	22	8894.69307	1.19	2	a	9236.75090	0.94		d	9351.54766	1.23	6 e,a
23	2	21	9323.13976	0.54	5	a	9603.99885	1.04	2	a	9716.81820	2.89	d
23	3	21	9323.08209	0.96	2	a	9604.01756	1.61	1	a	9716.81820	2.89	1 e
23	3	20	9711.77763	0.80	2	a	9937.81260	0.95	4	e,a	10048.73078	1.70	1 a

23	4	20	9714.80344	1.60	1	a	9937.85957	1.67	1	a	10048.74048	0.94	2 a
23	4	19	10050.70697	0.69	3	a	10239.99534	1.35	1	a	10349.57591	1.25	3 e,a
23	5	19	10054.31446	0.91	2	a	10240.43039	1.53	1	a	10349.67051	0.62	4 a
23	5	18	10337.06046	0.85	2	a	10509.64887	0.96	2	a	10619.56669	1.15	2 a
23	6	18					10513.07532	2.04	1	a	10620.57806	0.72	4 a
23	6	17	10557.06889	0.81	3	a	10739.69634	0.88	3	a	10853.77922	0.97	2 a
23	7	17									10862.21872	0.84	5 a
23	7	16	10733.46529	1.12	1	a					11041.31810	1.39	1 a
23	8	16									11081.34255	0.78	4 a
23	8	15	10936.37490	13.30	1	a	11062.45550	0.93	2	a	11179.29529	1.58	2 a
23	9	15									11295.32745	0.73	6 e,a
23	9	14	11180.47911	1.62	1	a	11243.34485	2.15	1	a	11322.46568	1.54	2 a
23	10	14	11509.04141	5.39	1	a	11421.89804	3.80	2	a	11519.61751	0.84	3 a
23	10	13	11509.82645	1.60	1	a	11424.09886	0.76	4	a	11524.69917	1.65	1 a
23	11	13					11674.25604	1.80	1	a	11760.64494	0.96	2 a
23	11	12	11820.38089	5.26	1	a	11674.65153	0.99	2	a	11761.40044	1.64	1 a
23	12	12	12148.25901	1.91		d	11940.24583	3.88	2	a	12017.94595	1.04	2 a
23	12	11	12148.25901	1.91	1	a	11940.30193	0.79	3	a	12018.05810	1.53	1 a
23	13	11	12487.27440	10.20	1	a	12218.45476	7.13	1	a	12288.46530	1.33	2 a
23	13	10	12487.20966	2.03	1	a	12218.31046	1.16	3	a	12288.45580	3.40	1 a
23	14	10	12832.53189	5.42	1	a	12505.82666	1.85		d	12568.96005	2.06	2 a
23	14	9	12832.50408	3.85	1	a	12505.82666	1.85	1	a	12568.96005	2.06	d
23	15	9	13182.58628	2.42		d	12800.25144	1.36		d	12856.85719	1.85	1 a
23	15	8	13182.58628	2.42	1	a	12800.25144	1.36	−1	f,a	12856.85719	1.85	d
23	16	8	13533.32930	2.26		d	13099.14498	1.46		d	13148.52073	1.41	3 a
23	16	7	13533.32930	2.26	1	a	13099.14498	1.46	−1	f,a	13148.52073	1.41	d
23	17	7	13883.40943	2.13		d	13400.23273	1.40		d	13443.12748	2.27	1 a

23	17	6	13883.40943	2.13	1	a	13400.23273	1.40	−1	f,a	13443.12748	2.27		d
23	18	6	14230.14476	2.34		d	13701.28706	1.91		d	13737.32716	2.21	1	a
23	18	5	14230.14476	2.34	1	a	13701.28706	1.91	2	a	13737.32716	2.21		d
23	19	5	14571.18274	2.44		d	14000.05771	3.69		d	14029.01140	2.56	1	a
23	19	4	14571.18274	2.44	1	a	14000.05771	3.69	2	a	14029.01140	2.56		d
23	20	4	14903.86226	2.47		d	14294.25824	1.66		d	14315.42078	1.98	1	a
23	20	3	14903.86226	2.47	1	a	14294.25824	1.66	2	a	14315.42078	1.98		d
23	21	3	15225.03328	5.51		d	14581.54327	5.28		d	14593.59474	5.64	1	a
23	21	2	15225.03328	5.51	1	a	14581.54327	5.28	1	a	14593.59474	5.64		d
23	22	2	15530.67082	5.48		d	14859.73557	5.32		d	14859.94543	2.86	1	a
23	22	1	15530.67082	5.48	1	a	14859.73557	5.32	1	a	14859.94543	2.86		d
23	23	1	15814.78051	5.66		d	15128.97854	2.44		d	15109.56764	2.55	1	a
23	23	0	15814.78051	5.66	1	a	15128.97854	2.44	1	a	15109.56764	2.55		d
24	0	24	8787.45680	2.07		d	9260.32144	1.03		d	9379.49004	0.71	8	e,a
24	1	24	8787.45680	2.07	3	e	9260.32144	1.03	6	e,a	9379.49004	0.71		d
24	1	23	9356.78306	1.56	1	a	9687.17416	1.00		d	9803.42830	1.84	4	e
24	2	23	9356.79411	0.67	6	e,a	9687.17416	1.00	5	e,a	9803.42830	1.84		d
24	2	22	9794.77398	2.08	1	a	10069.10723	0.98		d	10183.35126	1.02	2	a
24	3	22	9796.21315	0.69	3	a	10069.10723	0.98	−1	f,a	10183.35126	1.02		d
24	3	21	10202.32195	1.47	1	a	10417.26442	1.95	1	a	10529.37974	0.95	2	a
24	4	21	10202.42395	0.87	2	a	10417.30048	1.38	1	a	10529.40483	1.97	1	a
24	4	20					10733.57651	1.83	1	a	10844.09194	0.72	4	e,a
24	5	20	10559.67728	0.84	4	a	10733.84999	1.28	1	a	10844.14154	1.44	2	a
24	5	19									11128.33047	0.78	3	a
24	6	19	10876.51066	0.92	2	a	11020.47808	1.39	1	a	11128.87073	1.09	2	a
24	6	18									11379.07040	1.00	2	a
24	7	18	11164.80356	0.88	2	a	11278.64069	1.33	1	a	11383.90165	1.71	1	a

24	7	17							11585.61731	0.91	4	a
24	8	17							11613.34565	1.52	1	a
24	8	16							11728.51795	1.36	1	a
24	9	16				11697.82740	1.61	2 a				
24	9	15							11873.52732	0.95	4	a
24	10	15	12045.43900	1.43	3 a							
24	10	14							12066.66992	0.85	3	a
24	11	14	12357.08612	1.89	1 a	12209.61398	1.29	1 a	12297.54361	1.93	1	a,?
24	11	13				12210.26065	5.46	1 a	12299.25779	0.93	2	a
24	12	13	12686.01496	5.35	1 a	12475.20317	1.40	1 a	12555.01130	1.92	1	a
24	12	12				12475.30482	5.31	1 a	12555.20111	1.04	3	a
24	13	12	13026.68360	2.15	1 a	12753.93790	1.78	1 a	12826.26847	5.23	1	a
24	13	11				12753.93790	1.78	d	12826.33117	1.10	2	a
24	14	11	13374.26161	5.40	1 a	13042.87683	1.53	1 a	13108.34499	6.05	1	a
24	14	10	13374.28426	8.89	1 a	13043.03389	8.71	1 a	13108.37238	1.21	2	a
24	15	10	13727.31049	3.98	1 a	13339.37638	1.82	−1 f,a	13398.56313	5.41		d
24	15	9	13727.31049	3.98	d	13339.37638	1.82	d	13398.56313	5.41	1	a
24	16	9				13640.98587	1.60	2 a	13693.27593	5.33		d
24	16	8				13640.98587	1.60	d	13693.27593	5.33	1	a
24	17	8	14436.15635	2.47	1 a	13945.42353	1.60	3 a				
24	17	7	14436.15635	2.47	d	13945.42353	1.60	d				
24	18	7	14788.13071	2.35	1 a	14250.52172	1.56	3 a	14290.32805	2.48		d
24	18	6	14788.13071	2.35	d	14250.52172	1.56	d	14290.32805	2.48	1	a
24	19	6	15135.42276	2.55	1 a	14554.12180	1.99	2 a	14587.43269	2.43		d
24	19	5	15135.42276	2.55	d	14554.12180	1.99	d	14587.43269	2.43	1	a
24	20	5	15475.64109	2.64	1 a	14854.03725	2.67	3 a	14880.59843	2.75		d
24	20	4	15475.64109	2.64	d	14854.03725	2.67	d	14880.59843	2.75	1	a

24	21	4	15806.11592	2.66	1	a	15148.00868	5.27	1	a	15167.06970	5.38	d
24	21	3	15806.11592	2.66		d	15148.00868	5.27		d	15167.06970	5.38	1 a
24	22	3	16123.58953	5.59	1	a	15433.71801	4.30	2	a	15443.81787	7.54	d
24	22	2	16123.58953	5.59		d	15433.71801	4.30		d	15443.81787	7.54	1 a
24	23	2	16423.78541	5.57	1	a	15709.16781	7.30	1	a	15707.09072	5.76	d
24	23	1	16423.78541	5.57		d	15709.16781	7.30		d	15707.09072	5.76	1 a
24	24	1	16699.97761	7.55	1	a	15976.19511	2.63	1	a	15951.69689	5.61	d
24	24	0	16699.97761	7.55		d	15976.19511	2.63		d	15951.69689	5.61	1 a
25	0	25	9241.16416	1.13	2	a	9710.15633	1.24	3	e,a	9830.98130	1.62	d
25	1	25	9241.16416	1.13		d	9710.15633	1.24		d	9830.98130	1.62	5 e,a
25	1	24	9836.42527	0.63	4	a	10153.99170	2.09	3	e,a	10271.76113	1.14	d
25	2	24	9836.45021	1.20	1	a	10153.99170	2.09		d	10271.76113	1.14	5 e,a
25	2	23	10284.00263	0.85	2	a	10550.09914	2.88	1	a	10665.85140	2.88	d
25	3	23	10284.12792	1.63	2	a	10550.26783	1.40	1	a	10665.85140	2.88	1 a
25	3	22	10708.03396	0.90	2	a	10912.28448	2.74	1	a	11025.67351	1.79	d
25	4	22	10708.01738	1.52	1	a	10912.32966	1.77	1	a	11025.67351	1.79	4 e,a
25	4	21	11077.47982	5.14	1	a	11242.89945	1.37	1	a	11352.22815	1.68	1 a
25	5	21					11243.10901	2.09	1	a	11352.23815	0.76	3 a
25	5	20	11399.06611	1.36	1	a					11651.73264	1.46	1 a
25	6	20									11652.02962	1.45	1 a
25	6	19					11805.14000	1.67	1	a	11917.59561	1.98	1 a
25	7	19									11920.38222	5.08	1 a
25	7	18	11866.92451	5.08	1	a					12142.93632	1.48	1 a
25	8	18									12161.14816	1.44	1 a
25	8	17	12056.30731	1.33	1	a	12190.07236	1.66	1	a	12331.81741	1.98	1 a
25	9	17									12386.17800	3.56	1 e
25	9	16									12445.09224	1.81	1 a

25	10	16							12612.66656	3.28	2	a
25	10	15							12628.82497	1.77	1	a
25	11	15							12852.88336	0.97	2	a
25	11	14	12910.90829	2.15	1	a						
25	12	14				13027.98108	7.40	1 a	13109.81538	1.32	2	a
25	12	13	13240.06962	2.14	1	a	13028.24890	1.63	1 a	13110.02422	5.36	1 a
25	13	13				13307.04343	7.30	1 a	13381.20373	1.44	1	a
25	13	12	13582.41601	5.44	1	a	13307.06427	1.72	1 a			
25	14	12				13597.11746	2.04	d	13664.82573	5.25	1	a
25	14	11	13932.30537	2.37	1	a	13597.11746	2.04	1 a	13664.76589	7.26	1 a
25	15	11	14287.93052	7.36	d		13895.47889	5.39	d	13956.97838	1.51	2 a
25	15	10	14287.93052	7.36	1	a	13895.47889	5.39	1 a	13956.97838	1.51	d
25	16	10	14645.96493	6.39	1	a	14199.42013	2.64	d	14254.37230	7.37	1 a
25	16	9	14645.94849	4.10	1	a	14199.42013	2.64	4 a	14254.37230	7.37	d
25	17	9					14506.87991	5.33	d	14556.01831	3.80	2 a
25	17	8					14506.87991	5.33	1 a	14556.01831	3.80	d
25	18	8	15360.71525	2.67	d		14815.65654	7.29	d			
25	18	7	15360.71525	2.67	1	a	14815.65654	7.29	1 a			
25	19	7	15713.64376	5.53	d		15123.66418	1.75	d	15161.01692	5.58	1 a
25	19	6	15713.64376	5.53	1	a	15123.66418	1.75	2 a	15161.01692	5.58	d
25	20	6	16060.61119	5.61	d		15428.81037	5.38	d	15460.09243	5.56	1 a
25	20	5	16060.61119	5.61	1	a	15428.81037	5.38	1 a	15460.09243	5.56	d
25	21	5	16399.26015	5.65	d		15728.94793	5.67	d	15753.91365	2.93	1 a
25	21	4	16399.26015	5.65	1	a	15728.94793	5.67	1 a	15753.91365	2.93	d
25	22	4	16726.88023	5.66	d		16021.83560	7.26	d	16039.71191	7.34	1 a
25	22	3	16726.88023	5.66	1	a	16021.83560	7.26	1 a	16039.71191	7.34	d
25	23	3	17040.06062	7.50	d		16305.17972	4.16	d	16314.38925	9.04	1 a

25	23	2	17040.06062	7.50	1	a	16305.17972	4.16	2	a	16314.38925	9.04	d
25	24	2	17334.23694	7.49		d	16577.19152	8.85		d	16574.05503	5.85	1 a
25	24	1	17334.23694	7.49	1	a	16577.19152	8.85	1	a	16574.05503	5.85	d
25	25	1	17601.87994	9.06		d	16842.20405	5.65		d	16813.24862	7.52	1 a
25	25	0	17601.87994	9.06	1	a	16842.20405	5.65	1	a	16813.24862	7.52	d
26	0	26	9712.25069	0.90		d	10176.39630	1.24		d	10298.93749	1.01	7 e,a
26	1	26	9712.25069	0.90	3	a	10176.39630	1.24	5	e,a	10298.93749	1.01	d
26	1	25	10333.95393	1.68	1	a	10637.08963	1.38		d	10756.40368	1.02	7 e,a
26	2	25	10334.01339	1.68	1	a	10637.08963	1.38	4	e,a	10756.40368	1.02	d
26	2	24	10786.19698	1.51	2	a	11046.80894	1.67		d	11164.14931	1.67	2 a
26	3	24	10786.26991	1.19	1	a	11046.80894	1.67	2	a	11164.14931	1.67	d
26	3	23									11537.44195	1.25	3 e,a
26	4	23	11228.59288	0.95	2	a	11422.78306	1.79	1	a	11537.57183	2.03	1 a
26	4	22									11878.78134	1.70	1 a
26	5	22	11612.35405	5.24	1	a	11766.30424	1.20	2	a			
26	5	21									12189.63260	2.37	1 a
26	6	21	11939.58767	1.69	1	a							
26	6	20									12469.71380	1.68	1 a
26	7	20					12365.15257	1.94	1	a	12471.31789	2.22	1 a
26	7	19									12712.54493	1.43	1 a
26	8	19									12723.98924	1.44	1 a
26	8	18									12911.85883	1.64	1 a
26	9	18									12956.18123	2.22	1 a
26	9	17									13034.76236	1.66	2 a
26	10	16									13211.73255	6.14	1 a
26	11	15									13431.05576	3.34	2 a
26	12	15	13811.84047	2.37	1	a							

26	12	14							13682.87599	5.09	1	a
26	13	14	14154.52709	2.36	1	a	13877.30722	1.91	1 a	13953.52045	7.33	1 a
26	13	13					13877.56213	7.47	1 a	13953.86676	3.68	2 a
26	14	13	14505.90028	7.39	1	a	14168.17999	5.29	1 a			
26	14	12	14506.06799	10.23	1	a				14238.06554	1.75	1 a
26	15	12	14864.01232	5.53	1	a	14467.99521	5.40	d	14531.60041	8.82	1 a
26	15	11					14467.99521	5.40	1 a	14531.67958	7.25	1 a
26	16	11	15224.94824	8.89	1	a	14774.17024	5.48	1 a	14831.51504	5.22	d
26	16	10					14774.17024	5.48	d	14831.51504	5.22	1 a
26	17	10	15586.71143	5.06	2	a	15084.27579	3.86	2 a	15136.18608	8.90	d
26	17	9	15586.71143	5.06	d		15084.27579	3.86	d	15136.18608	8.90	1 a
26	18	9					15396.38579	3.79	2 a	15442.80380	6.28	d
26	18	8					15396.38579	3.79	d	15442.80380	6.28	1 a
26	19	8	16305.39643	5.67	1	a	15708.38163	5.30	1 a			
26	19	7	16305.39643	5.67	d		15708.38163	5.30	d			
26	20	7	16657.78777	7.45	1	a	16018.28491	5.30	1 a	16053.85488	5.67	d
26	20	6	16657.78777	7.45	d		16018.28491	5.30	d	16053.85488	5.67	1 a
26	21	6	17004.97707	7.52	1	a	16324.01503	7.35	1 a	16354.06929	7.48	d
26	21	5	17004.97707	7.52	d		16324.01503	7.35	d	16354.06929	7.48	1 a
26	22	5	17341.06473	7.55	1	a	16623.53050	7.56	1 a	16647.80861	5.79	d
26	22	4	17341.06473	7.55	d		16623.53050	7.56	d	16647.80861	5.79	1 a
26	23	4	17665.11052	7.55	1	a	16914.59525	8.82	1 a	16932.28978	8.88	d
26	23	3	17665.11052	7.55	d		16914.59525	8.82	d	16932.28978	8.88	1 a
26	24	3	17973.45428	9.02	1	a	17194.83738	6.51	1 a	17204.35039	10.33	d
26	24	2	17973.45428	9.02	d		17194.83738	6.51	d	17204.35039	10.33	1 a
26	25	2	18261.16719	9.00	1	a	17462.74612	10.16	1 a	17459.97258	7.69	d
26	25	1	18261.16719	9.00	d		17462.74612	10.16	d	17459.97258	7.69	1 a

26	26	1	18519.68215	10.35	1	a							
26	26	0	18519.68215	10.35		d							
27	0	27	10200.84074	0.77	4	e,a	10658.90546	1.25	4	e,a	10783.21146	1.03	d
27	1	27	10200.84074	0.77		d	10658.90546	1.25		d	10783.21146	1.03	7 e,a
27	1	26	10855.16961	0.96	3	a	11136.31352	1.21	3	e,a	11257.21642	0.76	d
27	2	26					11136.31352	1.21		d	11257.21642	0.76	7 e,a
27	2	25	11302.07872	2.92	1	a	11559.01895	1.95	1	a	11677.99964	1.41	d
27	3	25	11302.07872	2.92		d					11677.99964	1.41	2 a
27	3	24	11761.26756	1.39	1	a	11948.37768	2.05	1	a	12064.57056	1.36	1 a
27	4	24									12064.48352	1.11	4 e,a
27	4	23					12304.68337	1.56	1	a	12418.22570	5.37	1 a
27	5	23									12418.41692	1.97	1 a
27	6	22									12742.20642	1.02	3 a
27	6	21									13035.50639	2.43	1 a
27	7	21									13036.33163	1.95	1 a
27	10	18									13774.94268	5.20	1 a
27	11	17									14015.72414	5.24	1 a
27	12	16									14271.35618	6.66	1 a
27	13	15									14542.79758	5.30	1 a
27	13	14	14742.43503	5.53	1	a							
27	14	14									14827.60784	4.03	2 a
27	14	13	15095.56430	5.53	1	a	14755.83490	5.35	1	a	14827.50248	8.87	1 a
27	15	13	15454.99878	8.92		d	15056.75589	7.28		d	15122.68532	5.30	1 a
27	15	12	15454.99878	8.92	1	a	15056.75589	7.28	1	a			
27	16	12					15364.73162	7.36	1	a	15424.31355	7.32	1 a
27	16	11	15818.70756	7.46	1	a	15364.73162	7.36		d	15424.31355	7.32	d
27	17	11	16183.55731	10.20		d	15677.25885	7.42	1	a	15731.68703	7.23	1 a

27	17	10	16183.55731	10.20	1	a	15677.29114	7.42	1	a	15731.68703	7.23		d
27	18	10	16548.16003	7.11		d	15992.37491	3.99		d	16041.63748	10.21	1	a
27	18	9	16548.16003	7.11	1	a	15992.37491	3.99	1	a	16041.63748	10.21		d
27	19	9					16307.98621	3.16		d	16352.25018	8.03	1	a
27	19	8					16307.98621	3.16	2	a	16352.25018	8.03		d
27	20	8					16622.20707	4.31		d				
27	20	7	17270.57870	7.56	1	a	16622.20707	4.31	2	a				
27	21	7					16933.08309	7.28		d	16967.56762	7.56	1	a
27	21	6					16933.08309	7.28	1	a	16967.56762	7.56		d
27	22	6	17966.19422	9.03		d	17238.58378	8.89		d	17268.16839	8.99	1	a
27	22	5	17966.19422	9.03	1	a	17238.58378	8.89	1	a	17268.16839	8.99		d
27	23	5	18299.62720	9.05		d	17536.71294	9.06		d	17561.17207	7.65	1	a
27	23	4	18299.62720	9.05	1	a	17536.71294	9.06	1	a	17561.17207	7.65		d
27	24	4	18619.73829	9.06		d	17825.19402	10.14	1	a	17843.77288	10.19	1	a
27	24	3	18619.73829	9.06	1	a	17825.19402	10.14		d	17843.77288	10.19		d
27	25	3	18922.87310	10.31		d	18101.64745	8.21		d	18112.76299	11.48	1	a
27	25	2	18922.87310	10.31	1	a	18101.64745	8.21	1	a	18112.76299	11.48		d
27	26	2	19203.68933	10.30		d	18364.81015	11.33		d	18364.05293	9.17	1	a
27	26	1	19203.68933	10.30	1	a	18364.81015	11.33	1	a	18364.05293	9.17		d
27	27	1	19452.61389	11.49		d								
27	27	0	19452.61389	11.49	1	a								
28	0	28	10707.09363	0.92		d	11157.54576	2.00		d	11283.66249	0.96	7	e,a
28	1	28	10707.09363	0.92	4	e,a	11157.54576	2.00	2	e,a	11283.66249	0.96		d
28	1	27	11376.50179	1.91	1	a	11651.54700	4.90		d	11774.05353	0.91	3	a
28	2	27	11376.61216	1.28	1	a	11651.54700	4.90	−1	f	11774.05353	0.91		d
28	2	26					12086.59837	2.19		d	12207.18357	1.44	2	a
28	3	26					12086.59837	2.19	1	a	12207.18357	1.44		d

28	3	25							12606.59721	0.89	5	e,a
28	4	25	12314.18770	1.71	1	a	12488.99955	2.28	1 a	12606.55287	1.62	1 a
28	4	24								12972.72281	1.56	2 a
28	5	24					12857.53415	1.85	1 a	12972.72281	1.56	d
28	5	23								13308.38709	1.37	2 a
28	6	22								13614.76644	2.19	1 a
28	7	21								13888.30527	2.01	1 a
28	8	20								14120.48658	1.84	1 a
28	10	18								14436.54800	5.23	1 a
28	13	16								15148.69566	8.33	d
28	13	15								15148.69566	8.33	1 a
28	14	15	15699.27438	7.46	1	a						
28	15	14					15661.32529	7.33	1 a	15729.10913	10.18	1 a
28	15	13								15729.25701	6.42	1 a
28	16	13	16426.78223	10.23	1	a						
28	17	12	16794.30445	8.98	1	a	16285.89056	5.70	2 a	16342.14767	8.86	d
28	17	11	16794.30445	8.98	d					16342.14767	8.86	1 a
28	18	11					16603.39394	8.95	1 a			
28	18	10					16603.39394	8.95	d			
28	19	10					16922.17447	6.39	1 a	16969.31746	11.37	d
28	19	9					16922.17447	6.39	d	16969.31746	11.37	1 a
28	20	9					17240.27925	5.91	1 a	17282.96240	9.46	d
28	20	8					17240.27925	5.91	d	17282.96240	9.46	1 a
28	21	8	18251.60522	9.06	1	a	17555.79404	6.60	1 a			
28	21	7	18251.60522	9.06	d		17555.79404	6.60	d			
28	22	7					17866.81055	8.84	1 a	17900.91721	9.06	d
28	22	6					17866.81055	8.84	d	17900.91721	9.06	1 a

28	23	6	18943.96720	10.32	1	a	18171.29078	10.20		d	18201.23515	10.29		d
28	23	5	18943.96720	10.32		d	18171.29078	10.20	1	a	18201.23515	10.29	1	a
28	24	5	19274.06642	10.34	1	a	18467.35299	10.35	1	a	18492.93676	9.14		d
28	24	4	19274.06642	10.34		d	18467.35299	10.35		d	18492.93676	9.14	1	a
28	25	4	19589.78179	10.35	1	a	18752.59604	11.30	1	a	18773.19396	11.36		d
28	25	3	19589.78179	10.35		d	18752.59604	11.30		d	18773.19396	11.36	1	a
28	26	3	19887.29848	11.46	1	a	19024.62479	9.61	1	a	19038.69933	12.52		d
28	26	2	19887.29848	11.46		d	19024.62479	9.61		d	19038.69933	12.52	1	a
28	27	2	20160.89677	11.45	1	a	19282.41200	12.38	1	a	19285.50433	10.45		d
28	27	1	20160.89677	11.45		d	19282.41200	12.38		d	19285.50433	10.45	1	a
28	28	1	20399.93371	12.53	1	a								
28	28	0	20399.93371	12.53		d								
29	0	29	11231.21765	0.93	5	e,a	11672.25335	2.09	−1	f,a	11800.14248	0.83		d
29	1	29	11231.21765	0.93		d	11672.25335	2.09		d	11800.14248	0.83	4	a
29	1	28	11926.21358	1.62	1	a	12182.58242	1.94	1	a	12306.76072	1.03		d
29	2	28	11926.21358	1.62		d	12182.58242	1.94		d	12306.76072	1.03	3	a
29	2	27					12629.25537	2.18	1	a	12751.53794	1.36		d
29	3	27					12629.25537	2.18		d	12751.53794	1.36	2	a
29	3	26	12878.74832	1.98	1	a					13163.56498	1.04		d
29	4	26									13163.56498	1.04	4	e,a
29	8	22									14496.89376	5.39	1	a
29	9	21									14758.31656	5.33	1	a
29	14	16									16054.39749	9.71	1	a
29	14	15									16054.39749	9.71		d
29	15	14	16680.82930	8.98	1	a								
29	16	14					16592.27979	8.87		d				
29	16	13					16592.27979	8.87	1	a				

29	17	12	17418.34127	11.38	1	a							
29	18	12								17282.77371	10.18	1	a
29	18	11								17282.77371	10.18		d
29	19	11					17550.53296	6.77	d				
29	19	10					17550.53296	6.77	2	a			
29	20	10					17872.21390	8.12	d				
29	20	9					17872.21390	8.12	1	a			
29	24	6	19937.03786	11.47		d							
29	24	5	19937.03786	11.47	1	a							
29	25	5	20263.32600	11.49		d							
29	25	4	20263.32600	11.49	1	a							
29	26	4	20574.28152	11.49		d				19719.45492	12.41	1	a
29	26	3	20574.28152	11.49	1	a				19719.45492	12.41		d
29	27	3	20865.95704	12.50		d							
29	27	2	20865.95704	12.50	1	a							
29	28	2	21132.76592	12.49		d							
29	28	1	21132.76592	12.49	1	a							
29	29	1	21360.91376	13.49		d							
29	29	0	21360.91376	13.49	1	a							
30	0	30	11773.45900	0.99		d	12202.38606	1.62	d	12332.49259	2.28	1	a
30	1	30	11773.45900	0.99	3	a	12202.38606	1.62	2	a	12332.49259	2.28	d
30	1	29								12855.18472	1.17	2	a
30	2	29								12855.18472	1.17		d
30	2	28								13310.97193	1.38	2	a
30	3	28								13310.97193	1.38		d
30	3	27								13735.17962	1.12	2	a
30	4	27	13458.65651	2.22	1	a				13735.17962	1.12		d

30	4	26						14124.41407	2.62	1	a
30	5	26						14124.41407	2.62		d
30	7	23						15113.78031	5.48	1	a
30	8	23						15113.78031	5.48		d
30	19	11						18244.63121	11.34	1	a
30	27	3	21857.93301	13.46		d					
30	28	3	21857.93301	13.46	1	a					
30	30	1	22334.88021	14.39	1	a					
30	30	0	22334.88021	14.39		d					
31	0	31	12334.08558	1.02	3	a		12880.58602	1.25		d
31	1	31						12880.58602	1.25	5	e,a
31	1	30						13419.16328	2.11		d
31	2	30						13419.16328	2.11	1	a
31	2	29						13885.33413	2.60		d
31	3	29						13885.33413	2.60	1	a
31	4	28						14321.04720	4.18	1	e
32	0	32						13444.09735	2.20	−1	f,a
32	1	32						13444.09735	2.20		d
32	1	31						13998.54517	2.14	−1	f,a
32	2	31						13998.54517	2.14		d
32	4	28						15331.91400	5.73	1	a

TABLE IV.: Term values for the $1\nu+\delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	030 or 003			110 or 10^+1			011 or 10^-1		
0	0	0	4666.78960	0.90	−1 h,a	5234.97750	9.80	−1 i	5331.26744	0.77	4 e,a
1	0	1	4690.57962	0.44	16 e,a	5258.40013	0.60	−1 i,a	5354.87043	0.43	8 e,a
1	1	1	4717.47412	0.56	8 e,a	5274.15980	1.60	−1 i	5369.76235	0.44	8 e,a
1	1	0	4723.54482	0.45	13 e,a	5279.67189	0.74	−1 i,a	5375.36167	0.73	3 e,a
2	0	2	4737.20246	0.55	9 e,a	5304.00850	7.00	−1 i	5400.73656	0.39	16 e,a
2	1	2	4759.02373	0.33	25 e,a	5315.50051	0.65	−1 i,a	5411.41106	0.39	10 e,a
2	1	1	4777.19995	0.48	12 e,a	5332.01121	0.93	−1 i,a	5428.17137	0.37	14 e,a
2	2	1	4855.29937	0.48	14 e,a	5378.74500	0.88	−1 i,a	5472.35049	0.45	7 e,a
2	2	0	4856.21554	0.65	8 e,a	5379.94031	0.88	−1 i,a	5473.65559	0.40	10 e,a
3	0	3	4804.91291	0.34	26 e,a	5369.69211	0.42	−1 i,a	5466.63681	0.69	5 e,a
3	1	3	4820.76211	0.36	17 e,a	5376.78376	0.65	−1 i,a	5473.14450	0.34	16 e,a
3	1	2	4856.91696	0.38	24 e,a	5409.55175	0.81	−1 i,a	5506.31319	0.65	8 e,a
3	2	2	4926.86303	0.55	7 e,a	5449.03040	9.80	−1 i	5544.24710	0.43	11 e,a
3	2	1	4931.27198	0.42	19 e,a	5454.59600	0.65	−1 i,a	5549.70121	0.40	9 e,a
3	3	1	5065.36184	0.54	9 e,a	5539.25370	1.70	−1 i	5629.94265	0.38	12 e,a
3	3	0	5065.45422	0.47	16 e,a	5538.80265	0.36	−1 i,a	5630.14271	0.41	8 e,a
4	0	4	4891.74327	0.47	14 e,a	5453.57080	3.20	−1 i	5550.67068	0.35	16 e,a
4	1	4	4902.13050	0.35	24 e,a	5457.36989	0.39	−1 i,a	5552.97692	0.41	8 e,a
4	1	3	4961.68639	0.38	17 e,a	5510.91575	0.98	−1 i,a	5608.28499	0.34	17 e,a
4	2	3	5021.39157	0.42	22 e,a	5541.66204	0.48	−1 i,a	5633.39050	0.99	3 e
4	2	2	5033.70987	0.48	11 e,a	5557.85420	1.60	−1 i	5653.02580	0.39	13 e,a
4	3	2	5162.64177	0.42	21 e,a	5635.01433	0.48	−1 i,a	5726.25530	0.45	7 e,a
4	3	1	5163.26295	0.47	12 e,a	5639.72848	0.50	4 a	5727.57053	0.39	13 e,a
4	4	1	5342.18730	0.54	13 e,a	5756.65823	0.45	−1 i,a	5842.00035	0.45	8 e,a

4	4	0	5342.19535	0.66	8	e,a	5756.66429	1.00	−1	i,a	5842.02843	0.39	14	e,a
5	0	5	4996.28385	0.39	20	e,a	5554.83364	0.43	−1	i,a	5652.13914	0.44	8	e,a
5	1	5	5002.56818	0.43	14	e,a	5556.68750	2.36	−1	i	5653.56347	0.36	14	e,a
5	1	4	5090.03917	0.34	24	e,a	5634.12103	0.49	−1	i,a	5731.91589	0.41	9	e,a
5	2	4	5138.18864	0.45	16	e,a	5655.80130	3.40	−1	i	5749.66277	0.32	18	e,a
5	2	3	5164.03104	0.35	23	e,a	5686.18129	0.50	−1	i,a	5783.40311	0.38	11	e,a
5	3	3	5284.19719	0.56	6	e,a	5754.74520	3.40	−1	i	5846.51139	0.29	20	e,a
5	3	2	5286.56298	0.46	19	e,a	5761.03043	0.39	−1	i,a	5851.26896	0.41	8	e,a
5	4	2	5464.26192	0.48	10	e,a	5877.32541	0.58	−1	i,a	5962.96342	0.34	15	e,a
5	4	1	5464.33212	0.38	26	e,a	5877.39295	0.49	−1	i,a	5963.18312	0.36	12	e,a
5	5	1	5678.70441	1.00	1	a	6026.58053	0.97	−1	i,a	6106.29763	0.45	14	e,a
5	5	0	5678.72872	0.48	14	e,a	6026.58178	0.50	−1	i,a	6106.29954	0.92	3	e,a
6	0	6	5117.98718	0.48	9	e,a	5673.45870	0.57	−1	i,a	5771.07377	0.33	17	e,a
6	1	6	5121.60095	0.37	23	e,a	5674.30982	0.41	−1	i,a	5771.71529	0.41	9	e,a
6	1	5	5240.06956	0.47	12	e,a	5776.78195	1.00	−1	i,a	5874.74604	0.35	16	e,a
6	2	5	5276.46416	0.36	22	e,a	5790.51066	0.41	−1	i,a	5885.73465	0.50	7	e,a
6	2	4	5321.65499	0.50	−1	h,a	5840.95390	8.00	−1	i	5939.33626	0.29	28	e,a
6	3	4	5429.69380	0.44	24	e,a	5897.80098	0.38	−1	i,a	5990.17951	0.46	9	e,a
6	3	3	5436.27793	0.53	10	e,a	5910.31755	1.00	−1	i,a	6002.29071	0.32	20	e,a
6	4	3	5610.76443	0.36	23	e,a	6022.54872	0.41	−1	i,a	6108.31486	0.37	11	e,a
6	4	2	5611.09714	0.47	10	e,a	6022.78427	0.70	−1	i,a	6109.33663	0.31	21	e,a
6	5	2	5825.63149	0.65	11	e,a	6171.33787	0.48	13	e,a	6251.68172	0.34	13	e,a
6	5	1	5825.64875	0.56	7	e,a	6171.35088	0.93	2	e,a	6251.71465	0.30	26	e,a
6	6	1	6068.49551	0.41	13	e,a	6347.25262	0.58	−1	i,a	6420.05662	0.86	2	e,a
6	6	0	6068.49551	0.41		d	6347.25262	0.58		d	6420.05689	0.41	16	e,a
7	0	7	5256.84503	0.46	20	e,a	5809.61348	0.40	−1	i,a	5907.63562	0.40	9	e,a
7	1	7	5258.86802	0.41	18	e,a	5809.97700	10.80	−1	i	5907.91586	0.36	16	e,a

7	1	6	5409.69741	0.40	24	e,a	5937.03674	0.38	−1	i,a	6034.98875	0.42	8	e,a
7	2	6	5435.40649	0.76	11	e,a	5944.92879	0.70	−1	i,a	6041.07167	0.30	20	e,a
7	2	5	5505.21083	0.34	26	e,a	6019.38562	0.45	−1	i,a	6118.63376	0.40	10	e,a
7	3	5	5598.57768	0.35	15	e,a	6063.38819	1.00	−1	i,a	6156.50259	0.26	22	e,a
7	3	4	5613.36901	0.35	26	e,a	6087.85069	0.45	−1	i,a	6179.83552	0.36	12	e,a
7	4	4	5781.58056	0.48	11	e,a	6193.36116	0.50	−1	i,a	6277.86276	0.23	29	e,a
7	4	3	5782.70838	0.42	19	e,a	6193.36493	0.58	−1	i,a	6281.23448	0.31	13	e,a
7	5	3	5996.76241	0.43	12	e,a	6340.23678	0.84	4	e,a	6421.35945	0.28	22	e,a
7	5	2	5996.84354	0.40	18	e,a	6340.33788	0.41	−1	i,a	6421.53948	0.31	15	e,a
7	6	2	6240.47851	0.98	−1	h,a	6516.40690	5.00	1	e	6589.96992	0.36	20	e,a
7	6	1	6240.48622	0.45	13	e,a	6516.40522	0.66	10	e,a	6589.97319	0.61	4	e,a
7	7	1	6505.53517	0.38		d	6716.16742	0.50		d	6780.42043	0.39	13	e,a
7	7	0	6505.53517	0.38	15	e,a	6716.16742	0.50	13	e,a	6780.42030	1.67	1	e
8	0	8	5413.00202	0.47	13	e,a	5963.26087	0.70	−1	i,a	6061.91910	0.34	16	e,a
8	1	8	5414.12663	0.37	21	e,a	5963.51900	0.48	11	e,a	6062.03954	0.50	4	a
8	1	7	5597.18261	0.53	11	e,a	6114.05454	0.99	−1	i,a	6212.03970	0.32	15	e,a
8	2	7	5614.27003	0.36	24	e,a	6118.31182	0.50	−1	i,a	6215.16360	0.35	−1	f,a
8	2	6	5712.87666	0.55	9	e,a	6219.05421	0.98	3	e,a	6318.71683	0.30	21	e,a
8	3	6	5790.11448	0.31	28	e,a	6250.55428	0.43	14	e,a	6344.53798	0.36	11	e,a
8	3	5	5818.33069	0.35	10	e,a	6292.71123	0.71	−1	i,a	6394.24398	0.35	12	e,a
8	4	5	5976.45877	0.42	21	e,a	6378.01846	0.32	19	e,a	6471.16595	0.38	10	e,a
8	4	4	5979.71917	0.42	12	e,a	6389.98141	0.68	3	e,a	6479.89186	0.27	21	e,a
8	5	4	6191.96498	0.36	24	e,a	6533.26143	0.42	12	e,a	6615.26478	0.31	15	e,a
8	5	3	6192.24396	0.51	8	e,a	6533.64433	0.68	4	e,a	6615.96867	0.28	23	e,a
8	6	3	6436.51545	0.49	13	e,a	6709.44775	0.54	12	e,a	6783.92335	0.55	5	e,a
8	6	2	6436.53812	0.56	9	e,a	6709.45996	0.70	3	e,a	6783.95173	0.29	24	e,a
8	7	2	6702.58293	0.38	16	e,a	6909.99225	0.45	14	e,a	6974.98892	0.99	2	e,a

8	7	1	6702.58293	0.38		d	6909.99225	0.45		d	6974.98919	0.33	16	e,a
8	8	1	6983.97617	0.46	12	e,a	7131.91715	0.41	12	e,a	7184.61200	6.64	1	e
8	8	0	6983.97617	0.46		d	7131.91715	0.41		d	7184.60167	0.41	14	e,a
9	0	9	5586.59070	0.57	15	e,a	6134.72012	0.48	9	e,a	6233.94964	0.55	9	e,a
9	1	9	5587.21743	0.46	18	e,a	6134.84842	0.58	−1	i,a	6234.00446	0.35	18	e,a
9	1	8	5801.55276	0.39	22	e,a	6307.85367	0.88	4	e,a	6406.02299	0.41	7	e,a
9	2	8	5812.38427	0.54	10	e,a	6310.11846	0.58	−1	i,a	6407.50392	0.27	24	e,a
9	2	7	5942.57244	0.42	19	e,a	6437.47190	0.43	11	e,a	6537.09264	0.49	8	e,a
9	3	7	6003.45077	0.45	10	e,a	6458.16630	50.00	−1	i	6553.19814	0.26	22	e,a
9	3	6	6050.75235	0.40	18	e,a	6523.05674	0.46	9	e,a	6624.55306	0.36	11	e,a
9	4	6	6194.97491	0.56	8	e,a	6594.76963	0.97	3	e,a	6687.53055	0.25	24	e,a
9	4	5	6202.42836	0.39	21	e,a	6613.59905	0.47	10	e,a	6706.09620	0.33	13	e,a
9	5	5	6410.99763	0.51	5	e,a	6750.34718	0.92	3	e,a	6833.20528	0.26	27	e,a
9	5	4	6411.87495	0.40	18	e,a	6751.51625	0.54	8	e,a	6835.38900	0.30	16	e,a
9	6	4	6656.39469	0.60	3	a	6926.25930	0.99	2	e,a	7001.81504	0.28	22	e,a
9	6	3	6656.49756	0.40	13	e,a	6926.32964	0.40	10	e,a	7001.94353	0.35	14	e,a
9	7	3	6923.34613	0.38		d	7127.43304	0.41		d	7193.32597	0.30	20	e,a
9	7	2	6923.34613	0.38	13	e,a	7127.43304	0.41	11	e,a	7193.33106	0.91	3	e,a
9	8	2	7205.98139	0.50		d	7350.86242	0.35		d	7404.03650	0.30	20	e,a
9	8	1	7205.98139	0.50	10	e,a	7350.86242	0.35	14	e,a	7404.03580	1.67	1	e
9	9	1	7495.14811	0.61		d	7596.61335	0.53		d	7629.95906	0.42	12	e,a
9	9	0	7495.14811	0.61	7	e,a	7596.61335	0.53	8	e,a	7629.95906	0.42		d
10	0	10	5777.68720	0.39	18	e,a	6323.81165	0.98	3	e,a	6423.70932	0.36	18	e,a
10	1	10	5778.04197	0.42	19	e,a	6323.90987	0.48	11	e,a	6423.72101	0.51	9	e,a
10	1	9	6022.58021	0.48	11	e,a	6518.72300	20.00	−1	i	6617.20856	0.28	22	e,a
10	2	9	6029.24176	0.38	23	e,a	6520.01478	0.44	11	e,a	6617.92688	0.38	10	e,a
10	2	8	6192.10734	0.45	5	a	6672.77359	1.00	−1	i,a	6772.10657	0.32	16	e,a

10	3	8	6237.67858	0.33	24	e,a	6686.11711	0.71	6	e,a	6781.40560	0.38	10	e,a
10	3	7	6309.33218	0.42	6	a	6776.75800	20.00	−1	i	6878.47700	0.30	20	e,a
10	4	7	6436.49776	0.33	21	e,a	6832.50029	0.48	9	e,a	6926.08748	0.35	13	e,a
10	4	6	6451.72068	0.60	3	a	6864.49386	1.01	−1	i,a	6959.42524	0.28	19	e,a
10	5	6	6653.38208	0.33	25	e,a	6991.56769	0.39	13	e,a	7074.81555	0.34	13	e,a
10	5	5	6655.64190	2.01	5	e	6994.41314	0.71	−1	i,a	7080.44359	0.27	21	e,a
10	6	5	6899.91061	0.41	15	e,a	7166.71375	0.44	11	e,a	7243.49760	0.35	12	e,a
10	6	4	6900.28548	0.48	5	a	7166.96678	0.81	2	a	7243.95202	0.26	22	e,a
10	7	4	7167.54091	0.39	15	e,a	7368.28959	0.45	8	e,a	7435.23378	0.65	5	e,a
10	7	3	7167.55036	0.72	2	a	7368.30249	1.41	1	a	7435.25638	0.32	19	e,a
10	8	3	7451.29893	0.51	13	e,a	7593.15620	0.45	12	e,a	7646.89170	0.30		d
10	8	2	7451.29893	0.51		d	7593.15620	0.45		d	7646.89170	0.30	17	e,a
10	9	2	7741.28348	0.53	4	a	7841.76962	0.39	9	e,a	7874.39217	0.37		d
10	9	1	7741.28348	0.53		d	7841.76962	0.39		d	7874.39217	0.37	14	e,a
10	10	1	8119.31186	0.53	7	e,a	8024.35221	0.65	7	e,a	8114.02427	0.41		d
10	10	0	8119.31186	0.53		d	8024.35221	0.65		d	8114.02427	0.41	12	e,a
11	0	11	5986.32981	0.42	20	e,a	6530.57808	0.66	9	e,a	6631.16515	0.75	4	e,a
11	1	11	5986.53491	0.47	10	e,a	6530.79237	0.99	−1	i,a	6631.16894	0.33	18	e,a
11	1	10	6260.43411	0.34	22	e,a	6746.85892	0.48	11	e,a	6845.77946	0.68	4	e,a
11	2	10	6264.46684	0.49	6	e,a	6747.94780	3.58	2	e	6846.10623	0.28	23	e,a
11	2	9	6459.45687	0.37	20	e,a	6924.15793	0.49	9	e,a	7023.22530	0.35	13	e,a
11	3	9	6491.79221	0.50	5	e,a	6934.46443	0.95	4	e,a	7028.29542	0.33	17	e,a
11	3	8	6592.18618	0.40	12	e,a	7050.55908	0.93	5	e,a	7152.44540	0.65	3	e,a
11	4	8	6700.10175	0.61	3	a	7091.04820	0.68	5	e,a	7185.85274	0.27	21	e,a
11	4	7	6727.93855	0.37	14	e,a	7141.48991	0.49	8	e,a	7236.88477	0.43	11	e,a
11	5	7	6917.30629	0.49	6	e,a	7258.05231	1.79	1	a	7339.51705	0.28	21	e,a
11	5	6	6923.79019	0.44	15	e,a	7263.01308	0.49	10	e,a	7351.93106	0.41	12	e,a

11	6	6	7166.83076	0.47	5	a	7430.63876	0.78	2	a	7508.75032	0.27	20	e,a
11	6	5	7168.09540	0.52	4	a	7431.38856	0.32	13	e,a	7510.08920	0.41	10	e,a
11	7	5	7434.87577	0.47	5	a	7632.36535	0.80	2	a	7700.51150	0.33	17	e,a
11	7	4	7434.90045	0.42	12	e,a	7632.40977	0.41	7	e,a	7700.59561	0.44	9	e,a
11	8	4	7719.58723	0.48		d	7858.52748	1.73	1	a	7912.91173	0.32	16	e,a
11	8	3	7719.58723	0.48	6	a	7858.52765	0.34	12	e,a	7912.91359	1.12	2	e,a
11	9	3	8010.20202	0.47		d	8110.04783	0.47		d	8141.87508	0.32	19	e,a
11	9	2	8010.20202	0.47	9	e,a	8110.04783	0.47	8	e,a	8141.87590	3.33	1	e
11	10	2	8392.15589	0.40		d	8293.37281	0.57		d	8383.60257	0.45	9	e,a
11	10	1	8392.15589	0.40	14	e,a	8293.37281	0.57	4	a	8383.60257	0.45		d
11	11	1	8698.87125	0.84		d	8567.65689	0.59		d	8634.52025	0.52	9	e,a
11	11	0	8698.87125	0.84	5	e,a	8567.65689	0.59	8	e,a	8634.52025	0.52		d
12	0	12	6212.53355	0.54	11	e,a	6756.02366	1.00	1	a	6856.27580	0.32	16	e,a
12	1	12	6212.65432	0.47	17	e,a	6753.13530	0.45	7	e,a	6856.28760	4.81	1	e
12	1	11	6515.38299	0.46	5	a	6992.47126	1.03	1	a	7091.82287	0.34	15	e,a
12	2	11	6517.81159	0.36	19	e,a	6996.57523	0.42	9	e,a	7091.95351	0.60	4	e,a
12	2	10	6742.18229	0.46	8	e,a	7191.87500	12.00	−1	i	7290.62299	0.35	14	e,a
12	3	10	6767.30270	0.40	20	e,a	7191.71109	0.52	4	a	7293.26156	0.41	9	e,a
12	3	9	6897.10192	0.71	9	e,a	7342.73810	3.71	1	a	7443.88136	0.35	16	e,a
12	4	9	6982.12382	0.34	9	a	7369.61418	0.71	2	a	7465.78716	0.47	7	e,a
12	4	8	7030.88206	0.53	4	a	7441.44752	0.99	2	e,a	7554.29907	0.32	15	e,a
12	5	8	7213.35267	0.38	14	e,a	7531.13951	0.69	−1	i,a	7626.54755	0.51	7	e,a
12	5	7	7216.60538	0.48	5	a	7558.00808	1.02	1	a	7650.34860	0.27	23	e,a
12	6	7	7456.80797	0.42	13	e,a	7717.81900	0.38	10	e,a	7797.23992	0.49	8	e,a
12	6	6	7461.03574	0.55	4	a	7719.73860	1.48	1	a	7800.64570	0.31	16	e,a
12	7	6	7725.04734	0.47	9	e,a	7919.42803	0.38	11	e,a	7988.93272	0.40	10	e,a
12	7	5	7725.12572	0.78	2	a	7919.57561	1.27	1	a	7989.21265	0.32	17	e,a

12	8	5	8010.50097	0.44	9	e,a	8146.69345	0.59	5	e,a	8201.82610	0.84	−1	f,a
12	8	4	8010.50097	0.44		d					8201.84006	0.39	13	e,a
12	9	4	8301.52566	0.53	9	e,a	8401.09266	0.39	11	e,a	8432.08300	2.70	−1	f
12	9	3	8301.52566	0.53		d	8401.09266	0.39		d	8432.08560	0.39	15	e,a
12	10	3	8687.68052	0.53	8	e,a	8584.73734	1.15	1	a	8675.80291	0.35		d
12	10	2	8687.68052	0.53		d	8584.73734	1.15		d	8675.80291	0.35	13	e,a
12	11	2	8998.73255	0.83	2	a	8860.41048	0.82	2	a	8929.37846	0.49		d
12	11	1	8998.73255	0.83		d	8860.41048	0.82		d	8929.37846	0.49	9	e,a
12	12	1	9320.01899	0.94	2	a	9135.82335	0.72	6	e,a	9189.34414	1.06		d
12	12	0	9320.01899	0.94		d	9135.82335	0.72		d	9189.34414	1.06	4	e,a
13	0	13	6456.29610	0.66	10	e,a	6995.85371	0.50	8	e,a	7099.02649	0.49	8	e,a
13	1	13	6456.37035	0.74	2	a	6995.95836	0.98	2	e,a	7098.99587	0.38	13	e,a
13	1	12	6787.65282	0.42	23	e,a	7256.26492	0.51	7	e,a	7355.38340	0.60	5	e,a
13	2	12	6789.12054	0.52	8	e,a	7253.61759	1.02	1	a	7355.38081	0.35	16	e,a
13	2	11	7043.83491	0.35	18	e,a	7475.61775	0.45	11	e,a	7574.65436	0.45	9	e,a
13	3	11	7058.42279	0.52	6	e,a	7475.29922	0.99	2	e,a	7575.90987	0.36	13	e,a
13	3	10	7221.18382	0.42	9	e,a	7651.10907	0.60	3	a	7751.33987	0.44	8	e,a
13	4	10	7293.78090	0.73	4	e,a	7667.35299	1.06	1	a	7764.87676	0.33	16	e,a
13	4	9	7359.47255	0.42	12	e,a	7780.82563	0.52	4	a	7878.20970	0.40	11	e,a
13	5	9	7523.00185	0.63	3	a	7840.67358	1.03	2	e,a	7935.02442	0.34	14	e,a
13	5	8	7534.43178	0.39	7	a	7879.55926	0.58	3	a	7975.18896	0.64	5	e,a
13	6	8	7769.34463	1.09	1	a	8028.06037	0.85	3	e,a	8108.48930	0.34	15	e,a
13	6	7	7760.13126	0.40	10	e,a	8032.32200	0.71	2	a	8116.11919	0.45	8	e,a
13	7	7	8037.81719	1.13	1	a	8229.23567	1.09	1	a	8300.23542	0.37	16	e,a
13	7	6	8037.95558	0.42	12	e,a	8229.64969	0.39	10	e,a	8301.01450	0.92	4	e,a
13	8	6	8323.69828	0.44		d	8457.35791	0.94	2	a	8513.36697	0.38	15	e,a
13	8	5	8323.69828	0.44	9	e,a	8457.37951	0.50	9	e,a	8513.40180	3.40	−1	f

13	9	5	8614.89473	0.77	d	8714.52604	0.43	d	8744.69885	0.43	−1	f,a
13	9	4	8614.89473	0.77	2 a	8714.52604	0.43	9 e,a	8744.70198	1.19	−1	f,a
13	10	4	9005.41981	0.49	d	8898.08509	0.65	d	8990.25519	0.40	13	e,a
13	10	3	9005.41981	0.49	7 e,a	8898.08509	0.65	3 a	8990.25519	0.40	d	
13	11	3	9320.60954	0.73	d	9175.16172	0.72	d	9246.36842	0.54	9	e,a
13	11	2	9320.60954	0.73	4 e,a	9175.16172	0.72	6 e,a	9246.36842	0.54	d	
13	12	2	9646.16997	0.92	d	9453.16607	0.72	d	9509.60574	0.71	−1	f,a
13	12	1	9646.16997	0.92	3 a	9453.16607	0.72	3 a	9509.60574	0.71	d	
13	13	1	9974.35427	0.98	d	9733.20701	0.91	d	9776.57113	0.82	5	e,a
13	13	0	9974.35427	0.98	2 a	9733.20701	0.91	3 e,a	9776.57113	0.82	d	
14	0	14	6717.61295	0.61	3 a	7255.21110	1.05	2 e,a	7358.52426	0.34	17	e,a
14	1	14	6717.66196	0.48	16 e,a	7255.25053	0.53	7 e,a	7356.75230	0.99	5	e
14	1	13	7077.41612	0.62	3 a	7533.21475	1.03	1 a	7636.80001	0.36	13	e,a
14	2	13	7078.30926	0.48	19 e,a	7534.33770	0.70	6 e,a	7636.35815	0.51	6	e,a
14	2	12	7356.75397	0.53	4 a				7875.85597	0.35	14	e,a
14	3	12	7369.36928	0.38	19 e,a	7775.09746	0.58	5 e,a	7875.99158	0.47	10	e,a
14	3	11	7567.31925	0.63	5 e,a	7975.00528	1.06	1 a	8074.21064	0.39	14	e,a
14	4	11	7618.57401	0.39	12 e,a	7983.48183	0.59	4 e,a	8082.24699	0.51	6	e,a
14	4	10	7711.66061	1.17	1 a	8124.78571	1.18	1 a	8222.84133	0.37	16	e,a
14	5	10	7855.03728	0.46	11 e,a	8168.87912	0.47	7 e,a	8263.97533	0.43	9	e,a
14	5	9	7877.47499	0.66	3 a	8226.81460	1.08	1 a	8324.34944	0.32	19	e,a
14	6	9	8103.84975	0.43	9 e,a	8361.49579	0.53	4 a	8441.86326	0.59	−1	f,a
14	6	8	8097.61823	1.18	1 a	8369.64947	0.86	2 a	8457.10171	0.39	15	e,a
14	7	8	8372.56946	0.44	8 e,a	8561.48912	0.98	3 e,a	8634.09289	0.72	−1	f,a
14	7	7	8373.22863	1.48	1 a	8562.54680	1.31	1 a	8636.05380	0.45	11	e,a
14	8	7	8658.80692	0.76	2 a	8790.21192	0.53	4 a	8847.24473	0.73	−1	f,a
14	8	6	8658.84049	1.30	1 a	8790.28546	1.48	1 a	8847.41243	0.31	17	e,a

14	9	6	8949.94969	0.57	4	a	9049.95858	0.54	4	a	9079.39410	3.40	−1	f
14	9	5	8949.94969	0.57		d	9049.96188	1.37	1	a	9079.40082	0.43	10	e,a
14	10	5	9344.89673	0.78	3	e,a	9233.07006	0.84	2	a	9326.58818	0.50		d
14	10	4	9344.89673	0.78		d	9233.07006	0.84		d	9326.58818	0.50	11	e,a
14	11	4	9663.99448	0.81	5	e,a	9511.51725	0.65	3	a	9585.08052	0.55		d
14	11	3	9663.99448	0.81		d	9511.51725	0.65		d	9585.08052	0.55	−1	f,a
14	12	3	9993.66008	0.90	3	a	9792.02420	0.87	6	e,a	9851.43942	0.53		d
14	12	2	9993.66008	0.90		d	9792.02420	0.87		d	9851.43942	0.53	−1	f,a
14	13	2	10326.60418	1.37	1	a	10075.38659	0.73	3	a	10122.35296	0.77		d
14	13	1	10326.60418	1.37		d	10075.38659	0.73		d	10122.35296	0.77	−1	f,a
14	14	1	10658.11705	1.00	2	a	10359.92502	0.98	2	a	10394.44156	0.79		d
14	14	0	10658.11705	1.00		d	10359.92502	0.98		d	10394.44156	0.79	−1	f,a
15	0	15	6996.48297	0.57	15	e,a	7531.83990	0.70	6	e,a	7636.61492	0.57		d
15	1	15	6996.51053	0.63	3	a	7531.83990	0.70		d	7636.61492	0.57	−1	f,a
15	1	14	7384.78413	0.45	15	e,a	7831.73284	0.51	7	e,a	7934.05180	2.90	−1	f
15	2	14	7385.33667	0.62	4	e,a	7831.97351	1.23	1	a	7935.81029	0.44	−1	f,a
15	2	13	7690.74924	0.43	8	e,a	8101.16226	0.52	6	e,a	8191.81170	0.51	−1	f,a
15	3	13	7696.86749	0.62	5	e,a					8193.35737	0.35	−1	f,a
15	3	12	7924.34243	0.42	12	e,a	8314.70962	1.05	1	a	8412.50483	1.26	5	e,a
15	4	12	7964.26198	1.06	1	a	8317.40974	1.18	1	a	8417.24464	0.36	−1	f,a
15	4	11	8079.37261	0.47	7	e,a	8488.58334	0.62	3	a	8584.58292	0.60	−1	f,a
15	5	11	8210.22808	0.69	4	a	8516.05758	1.05	2	e,a	8612.44753	0.41	−1	f,a
15	5	10	8245.29443	0.61	3	a	8597.89611	0.72	2	a	8694.21030	3.30	−1	f,?
15	6	10	8460.10089	0.66	4	a	8693.10339	0.53	5	a	8796.58053	0.68	−1	f,a
15	6	9	8455.86347	0.54	5	a	8732.18831	0.61	3	a	8823.89813	0.47	−1	f,a
15	7	9	8729.19486	0.90	2	a	8915.87845	1.32	1	a	8990.08206	0.67	−1	f,a
15	7	8	8730.57214	0.53	7	e,a	8918.31981	0.75	6	e,a	8994.48648	0.60	4	e,a

15	8	8	9015.56885	1.78	1	a	9144.92667	1.65	1	a	9203.16112	0.50	−1	f,a
15	8	7	9015.60161	0.62	3	a	9145.11852	1.05	2	e,a	9203.60988	0.55	−1	f,a
15	9	7	9306.35690	1.64	1	a	9406.99190	0.77		d	9435.83070	0.93	−1	f,a
15	9	6	9306.36224	0.69	3	a	9406.99190	0.77	2	a	9435.87359	1.24	1	a
15	10	6	9705.60991	1.65		d	9589.34213	0.57		d	9684.43098	0.54	−1	f,a
15	10	5	9705.60991	1.65	1	a	9589.34213	0.57	4	a	9684.43098	0.54		d
15	11	5	10028.26731	1.28		d	9869.09581	0.85		d	9945.11193	0.64	−1	f,a
15	11	4	10028.26731	1.28	1	a	9869.09581	0.85	2	a	9945.11193	0.64		d
15	12	4	10361.96092	0.90		d	10151.98327	0.68		d	10214.41494	1.07	−1	f,a
15	12	3	10361.96092	0.90	3	a	10151.98327	0.68	3	a	10214.41494	1.07		d
15	13	3	10699.23990	6.06		d	10438.52159	1.27		d	10489.06483	0.71	−1	f,a
15	13	2	10699.23990	6.06	2	e	10438.52159	1.27	4	e,a	10489.06483	0.71		d
15	14	2	11035.56237	1.39		d	10726.99058	0.77		d	10765.86297	0.81	−1	f,a
15	14	1	11035.56237	1.39	1	a	10726.99058	0.77	3	a	10765.86297	0.81		d
15	15	1	11368.97973	1.41		d	11014.97885	1.00		d	11042.00291	1.76	1	a
15	15	0	11368.97973	1.41	1	a	11014.97885	1.00	2	a	11042.00291	1.76		d
16	0	16	7292.90943	0.80	2	a	7825.72776	0.96		d	7931.68347	0.46	−1	f,a
16	1	16	7292.92117	0.60	16	e,a	7825.72776	0.96	4	e,a	7931.68347	0.46		d
16	1	15	7709.84676	0.58	5	e,a	8146.69409	1.40	1	a	8249.95492	0.43	−1	f,a
16	2	15	7710.19787	0.51	15	e,a	8146.78611	1.04	3	e,a	8249.85418	0.90	2	a
16	2	14	8038.11956	0.64	3	a	8423.82266	1.21	1	a	8526.98506	0.38	−1	f,a
16	3	14	8042.04720	0.47	10	e,a	8425.52082	0.73	5	e,a	8528.06770	0.53	−1	f,a
16	3	13	8300.04287	0.67	3	a					8766.54070	0.36	−1	f,a
16	4	13	8326.86896	0.41	12	e,a	8668.52650	4.10	3	e,a	8769.41252	1.03	−1	f,a
16	4	12	8485.37891	1.22	2	a	8870.39050	1.21	1	a	8961.57054	0.36	−1	f,a
16	5	12	8583.09355	0.53	10	e,a	8881.62654	0.54	8	e,a	8979.48202	2.51	−1	f,a
16	5	11	8634.85544	1.46	1	a	8990.49618	1.51	1	a	9106.53699	0.42	−1	f,a

16	6	11	8837.44125	0.49	6	a	9074.90354	0.72	2	a	9171.80935	0.59	6	e,a
16	6	10	8835.07984	1.21	1	a	9120.01101	1.11	1	a	9216.00983	0.39	−1	f,a
16	7	10	9107.17361	0.50	5	a	9292.13778	0.79	2	a	9367.70146	0.65	3	a
16	7	9	9110.04149	1.20	1	a	9296.94696	1.13	1	a	9376.65305	0.39	−1	f,a
16	8	9	9393.43370	0.49	8	e,a	9521.15375	0.65	3	a	9580.75513	1.04	−1	f,a
16	8	8	9393.68920	1.35	1	a	9521.60829	1.66	1	a	9581.86913	0.47	−1	f,a
16	9	8	9683.78280	0.73	3	a	9785.17151	1.45	1	a	9813.69131	1.09	−1	f,a
16	9	7	9683.80647	1.30	1	a	9785.18724	2.12	1	a	9813.77624	0.71	−1	f,a
16	10	7	10087.24259	5.07	1	a	9966.56353	0.66	7	e,a	10063.42901	0.92		d
16	10	6	10087.24259	5.07		d	9966.56353	0.66		d	10063.42901	0.92	−1	f,a
16	11	6	10413.27036	1.31	1	a	10247.51016	0.81	3	e,a	10326.06832	0.65		d
16	11	5	10413.27036	1.31		d	10247.51016	0.81		d	10326.06832	0.65	−1	f,a
16	12	5	10750.44044	1.62	1	a	10532.62524	0.91	2	a	10598.08739	0.67		d
16	12	4	10750.44044	1.62		d	10532.62524	0.91		d	10598.08739	0.67	−1	f,a
16	13	4	11092.33158	1.36	1	a	10822.17212	0.91	2	a	10876.24460	2.90		d
16	13	3	11092.33158	1.36		d	10822.17212	0.91		d	10876.24460	2.90	−1	f
16	14	3	11432.81680	6.14	1	a	11114.38534	1.09	4	e,a	11157.49234	1.37		d
16	14	2	11432.81680	6.14		d	11114.38534	1.09		d	11157.49234	1.37	−1	f,a
16	15	2	11773.61510	6.46	2	e	11406.89792	0.96	2	a	11439.93254	1.00		d
16	15	1	11773.61510	6.46		d	11406.89792	0.96		d	11439.93254	1.00	3	a
16	16	1	12105.12187	1.73	1	a	11697.13560	1.36	2	a	11715.47467	1.45		d
16	16	0	12105.12187	1.73		d	11697.13560	1.36		d	11715.47467	1.45	1	a
17	0	17	7606.86281	0.62	9	e,a	8136.83048	0.75	3	e,a	8244.01440	0.41		d
17	1	17	7606.89779	1.15	3	e,a					8244.01440	0.41	−1	f,a
17	1	16	8052.67029	0.63	10	e,a	8478.74444	0.56	5	e,a	8582.94147	0.72		d
17	2	16	8052.85710	0.78	3	e,a	8478.78362	1.01	2	a	8582.94147	0.72	−1	f,a
17	2	15	8401.63476	0.54	8	e,a	8775.40895	0.73	5	e,a	8878.54991	0.61	−1	f,a

17	3	15	8404.14386	0.66	3	a					8877.65235	0.88	−1	f,a
17	3	14	8688.68380	0.48	7	e,a	9027.62908	1.02	3	e,a	9136.54485	1.03	4	e,a
17	4	14	8707.20385	1.11	2	a	9036.58360	1.65	1	a	9138.56210	0.43	−1	f,a
17	4	13	8899.18054	0.64	3	a	9232.80859	0.76	4	e,a	9353.06641	0.49	−1	f,a
17	5	13									9364.28137	0.35	−1	f,a
17	5	12	9067.08069	0.62	5	e,a	9401.97392	1.04	2	a	9516.82335	0.76	4	e,a
17	6	12	9235.18868	1.01	3	a	9470.77548	1.13	1	a	9566.66013	0.42	−1	f,a
17	6	11	9271.57847	0.56	7	e,a	9532.51978	0.62	6	e,a	9631.77520	0.76	2	a
17	7	11	9506.01663	1.57	1	a	9689.92800	1.49	1	a	9766.25641	0.44	6	a
17	7	10	9511.49152	5.03	1	a	9699.07392	1.06	2	e,a	9782.86655	0.80	3	e,a
17	8	10	9792.37160	7.89	1	e					9979.71103	0.93	−1	f,a
17	8	9	9792.84160	0.79	2	a	9919.62004	0.65	4	a	9982.26970	5.05	1	a
17	9	9	10081.90325	1.68	1	a	10184.07872	1.94	1	a	10212.64314	0.73	−1	f,a
17	9	8	10081.99402	0.82	3	a	10184.15891	1.19	1	a	10212.90031	1.24	1	a
17	10	8	10489.02193	1.87	1	a	10364.39135	1.64	1	a	10463.20112	1.00	−1	f,a
17	10	7	10489.04206	1.02	3	a	10364.47369	0.84	2	a	10463.21314	1.48	1	a
17	11	7	10818.31238	3.61		d	10646.38729	0.82		d	10727.54230	0.60	−1	f,a
17	11	6	10818.31238	3.61	2	a	10646.38729	0.82	4	e,a	10727.54100	4.20	−1	f
17	12	6	11158.93682	1.65	1	a	10933.54709	0.70		d	11002.05212	1.25	−1	f,a
17	12	5	11158.92308	1.65	1	a	10933.54709	0.70	3	a	11002.05212	1.25		d
17	13	5	11504.56450	9.67		d	11225.90690	0.97		d	11283.48720	2.80	−1	f
17	13	4	11504.56450	9.67	3	e	11225.90690	0.97	2	a	11283.48720	2.80		d
17	14	4	11849.27450	7.74		d	11521.65384	0.99		d	11568.86030	3.30	−1	f
17	14	3	11849.27450	7.74	1	e	11521.65384	0.99	2	a	11568.86030	3.30		d
17	15	3					11818.45734	1.48		d	11857.23248	1.69	1	a
17	15	2					11818.45734	1.48	1	a	11857.23248	1.69		d
17	16	2	12535.84447	6.54		d	12113.79594	1.02		d	12138.29229	1.42	1	a

17	16	1	12535.84447	6.54	1	a	12113.79594	1.02	2	a	12138.29229	1.42		d
17	17	1	12865.13235	1.99		d					12415.71640	4.45	1	e
17	17	0	12865.13235	1.99	1	a					12415.71640	4.45		d
18	0	18	7938.47348	1.11	1	a	8465.07571	1.11		d	8573.55356	0.50	−1	f,a
18	1	18	7938.49589	0.63	12	e,a	8465.07571	1.11	2	e,a	8573.55356	0.50		d
18	1	17	8413.32383	1.03	2	a	8827.88869	1.59	1	a	8933.12404	0.53	−1	f,a
18	2	17	8413.43642	0.50	5	a	8827.92271	0.81	2	a	8933.12404	0.53		d
18	2	16	8781.23378	0.81	2	a	9142.99283	1.45	1	a	9246.86640	2.30	−1	f
18	3	16	8782.88510	0.55	4	a	9143.35795	0.63	3	a	9246.75880	1.27	−1	f,a
18	3	15	9091.97266	1.25	1	a	9417.65481	1.28	2	a	9522.64715	0.49	−1	f,a
18	4	15	9105.10082	0.52	5	a	9421.24854	0.68	4	a	9525.32079	0.80	3	e,a
18	4	14									9759.05346	0.60	−1	f,a
18	5	14	9385.49265	0.56	4	a	9665.31004	1.08	1	a	9766.16661	1.16	−1	f,a
18	5	13									9944.80509	0.44	−1	f,a
18	6	13	9652.58134	1.06	1	a	9883.58127	0.83	5	a	9980.30973	0.78	3	a
18	6	12									10068.14119	0.54	−1	f,a
18	7	12	9925.17445	1.09	2	a	10109.72003	1.16	3	a	10185.34735	3.56	2	a
18	7	11	9934.72325	1.42	1	a					10215.10606	0.53	−1	f,a
18	8	11	10210.04321	0.77	3	a					10399.52957	1.26	−1	f,a
18	8	10					10339.14923	1.80	1	a	10404.52154	1.04	−1	f,a
18	9	10	10500.39374	1.27	1	a	10603.27301	5.25	1	a	10632.32404	1.30	1	a
18	9	9	10500.56929	7.95	1	a					10632.92770	0.83	−1	f,a
18	10	9	10910.71328	5.07	1	a	10782.48665	0.85	2	a	10883.39582	1.40	1	a
18	10	8	10910.75746	1.54	2	a					10883.46200	0.80	2	a
18	11	8	11242.73461	1.59	1	a	11065.33877	1.66	1	a	11149.15549	1.69	2	a
18	11	7	11242.73461	1.59		d	11065.35104	1.92	1	a	11149.16524	0.89	2	a
18	12	7	11586.74736	5.25	1	a	11354.35215	0.94	2	a	11425.99529	1.16		d

18	12	6	11586.71933	5.25	1	a	11354.35215	0.94		d	11425.99529	1.16	1	a
18	13	6	11936.27177	1.80	2	a	11649.30548	0.92	2	a	11710.45220	3.10		d
18	13	5	11936.27177	1.80		d	11649.30548	0.92		d	11710.45220	3.10	−1	f
18	14	5	12284.70532	9.73	1	a	11948.34899	1.44	1	a	11999.55341	1.31		d
18	14	4	12284.70532	9.73		d	11948.34899	1.44		d	11999.55341	1.31	−1	f,a
18	15	4	12638.38831	7.80	1	a	12249.19789	1.15	2	a	12293.34623	3.45		d
18	15	3	12638.38831	7.80		d	12249.19789	1.15		d	12293.34623	3.45	1	a
18	16	3					12549.37385	1.17	2	a				
18	16	2					12549.37385	1.17		d				
18	17	2	13321.89639	6.61	1	a	12846.34528	1.43	1	a	12864.67327	1.73		d
18	17	1	13321.89639	6.61		d	12846.34528	1.43		d	12864.67327	1.73	1	a
18	18	1	13647.64870	2.22	1	a					13141.04283	4.56		d
18	18	0	13647.64870	2.22		d					13141.04283	4.56	1	a
19	0	19	8287.74127	0.80	5	e,a	8810.40739	0.63	4	a	8920.21768	0.49		d
19	1	19	8287.77095	1.17	1	a	8810.40739	0.63		d	8920.21768	0.49	−1	f,a
19	1	18	8791.87527	0.51	7	e,a	9194.10757	0.86	2	a	9300.40977	0.85		d
19	2	18	8791.91905	1.15	1	a	9194.12903	1.56	1	a	9300.40977	0.85	−1	f,a
19	2	17	9176.64456	0.79	2	a	9527.07176	1.11	1	a	9631.84807	0.86	2	a
19	3	17	9177.63989	1.15	1	a	9527.25161	1.28	1	a	9631.81269	1.10	−1	f,a
19	3	16	9509.91976	0.63	3	a	9820.40544	0.78	4	a	9924.88019	0.61	5	a
19	4	16	9518.29659	1.15	1	a					9924.26327	0.56	−1	f,a
19	4	15	9765.52909	0.79	4	a	10069.79637	0.78	3	a	10179.77689	0.79	−1	f,a
19	5	15					10082.43160	4.49	1	e	10185.01673	0.76	−1	f,a
19	5	14	9961.71901	1.09	2	a	10273.13213	0.66	3	a	10387.71245	0.84	3	a
19	6	14									10412.03251	0.62	−1	f,a
19	6	13	10145.03532	1.11	1	a	10424.50264	1.08	1	a	10553.35469	1.18	1	a
19	7	13									10623.31139	0.55	4	a

19	7	12	10380.03431	1.46	1	a				10669.17373	1.21	2	a
19	8	12								10839.61103	1.02	−1	f,a
19	8	11	10653.49233	1.48	1	a	10779.66340	1.53	1 a	10849.22760	1.43	2	a
19	9	11								11072.36255	0.64	5	a
19	9	10								11073.70156	4.51	−1	f,a
19	10	10								11323.66700	1.20	−1	f,a
19	10	9	11351.89848	5.16	1	a	11220.94010	5.83	1 e				
19	11	9	11686.24750	2.40	1	a				11590.53479	0.84	−1	f,a
19	11	8	11686.28920	5.16	1	a	11504.02864	1.31	1 a	11590.57962	1.79	1	a
19	12	8	12033.20387	1.87	1	a	11794.55864	1.94	d	11869.21090	2.71	−1	f,a
19	12	7	12033.16610	1.87	1	a	11794.55864	1.94	1 a	11869.21090	2.71		d
19	13	7	12386.44649	7.25	1	a	12091.96640	0.91	d	12156.50045	1.53	1	a
19	13	6	12386.44540	5.35	1	a	12091.96640	0.91	2 a	12156.50045	1.53		d
19	14	6	12738.70215	5.32		d	12394.08633	1.23	d	12449.32510	6.50	−1	f
19	14	5	12738.70215	5.32	1	a	12394.08633	1.23	2 a	12449.32510	6.50		d
19	15	5	13098.03429	9.78		d	12698.67695	1.76	d	12747.73618	1.65	1	a
19	15	4	13098.03429	9.78	1	a	12698.67695	1.76	1 a				
19	16	4	13449.56437	7.86		d	13003.39673	5.35	d				
19	16	3	13449.56437	7.86	1	a	13003.39673	5.35	1 a				
19	17	3					13305.73977	1.54	d				
19	17	2					13305.73977	1.54	1 a				
19	18	2	14130.40109	6.68		d	13603.23254	1.74	d	13615.84285	2.00	1	a
19	18	1	14130.40109	6.68	1	a	13603.23254	1.74	1 a	13615.84285	2.00		d
19	19	1	14451.47010	2.43		d				13890.05575	4.67	1	a
19	19	0	14451.47010	2.43	1	a				13890.05575	4.67		d
20	0	20	8655.01993	1.54	1	a				9283.92326	0.50	−1	f,a
20	1	20	8655.20974	0.57	6	e,a	9172.71941	0.88	2 a	9283.92326	0.50		d

20	1	19	9189.70484	1.17	1	a	9577.31377	1.48	1	a	9684.73538	0.49	−1 f,a
20	2	19	9188.37431	0.50	5	a	9577.32300	1.23	1	a	9684.73538	0.49	d
20	2	18	9587.63037	1.15	1	a	9927.65265	1.62	1	a	10033.37631	1.22	−1 f,a
20	3	18	9588.25260	0.57	5	e,a	9927.59591	0.89	2	a	10033.38100	5.60	−1 f
20	3	17	9942.64727	1.19	1	a					10343.19869	0.43	−1 f,a
20	4	17	9948.25360	0.66	3	a	10239.48557	1.13	1	a	10343.09448	0.98	2 a
20	4	16	10227.66650	1.50	1	a					10615.46765	0.79	−1 f,a
20	5	16	10259.31313	0.79	2	a	10515.26817	0.81	2	a			
20	5	15									10844.37693	0.58	6 a
20	6	15	10542.98437	1.08	2	a	10760.47261	1.11	4	a	10862.07476	1.32	2 a
20	6	14	10627.03488	1.19	1	a					11022.10401	1.20	2 a
20	7	14	10822.01725	0.93	2	a	10982.95206	1.06	4	a			
20	7	13	10844.05409	1.32	2	a					11146.45901	0.80	3 a
20	8	13									11299.47223	1.33	1 a
20	8	12									11316.53277	0.80	3 a
20	9	12									11532.46372	1.74	1 a
20	9	11									11535.02905	0.77	4 a
20	10	10									11783.94911	1.45	−1 f,a
20	11	10	12148.83918	5.25	1	a	11962.49342	5.92	1	a			
20	11	9					11962.49342	5.92		d	12051.32621	1.90	1 a
20	12	9	12498.05767	5.26	1	a	12254.05098	1.65	1	a	12331.63421	1.31	d
20	12	8	12497.98077	2.59	1	a					12331.63421	1.31	−1 f,a
20	13	8	12854.52494	2.11	1	a	12553.40238	1.66	1	a			
20	13	7	12854.52059	5.34	1	a							
20	14	7	13210.59688	7.32	1	a	12858.39867	1.10	2	a			
20	14	6	13210.59688	7.32		d	12858.39867	1.10		d			
20	15	6	13575.03104	7.30	1	a	13166.51190	1.58	1	a			

20	15	5	13575.03104	7.30		d	13166.51190	1.58		d	13220.37845	6.58	1	a
20	16	5	13932.23090	9.83	1	a	13475.42097	1.89	2	a	13515.32059	1.93		d
20	16	4	13932.23090	9.83		d	13475.42097	1.89		d	13515.32059	1.93	1	a
20	17	4	14284.17858	7.92	1	a	13782.86801	5.44	1	a				
20	17	3	14284.17858	7.92		d	13782.86801	5.44		d				
20	18	3					14086.20321	1.83	1	a				
20	18	2					14086.20321	1.83		d				
20	19	2	14960.13434	8.35	1	a	14383.19577	2.01	1	a	14390.74535	2.24		d
20	19	1	14960.13434	8.35		d	14383.19577	2.01		d	14390.74535	2.24	1	a
20	20	1	15275.49850	5.56	1	a					14661.68972	6.84		d
20	20	0	15275.49850	5.56		d					14661.68972	6.84	1	a
21	0	21	9038.83134	0.65	4	a	9551.92577	0.90	2	a	9664.57936	0.55		d
21	1	21	9038.89900	1.64	1	a	9551.56200	8.43	1	e	9664.57936	0.55	−1	f,a
21	1	20	9602.70779	0.61	4	a	9977.43859	1.93	1	a	10086.02379	0.51		d
21	2	20	9602.87233	1.30	1	a					10086.02379	0.51	−1	f,a
21	2	19	10013.34041	0.78	3	a	10344.12290	1.16	1	a	10451.29034	0.61		d
21	3	19	10014.07466	1.65	1	a					10451.29034	0.61	−1	f,a
21	3	18	10390.24767	0.81	2	a	10672.15173	1.11	1	a	10777.50107	1.07	2	a
21	4	18	10393.83698	1.19	1	a					10777.46108	0.50	−1	f,a
21	4	17	10697.27063	1.28	1	a	10959.25951	0.71	3	a	11066.55986	1.25	1	a
21	5	17									11066.47716	0.58	5	a
21	5	16	10929.88477	1.63	1	a					11314.53080	1.26	1	a
21	6	16									11319.80826	1.12	4	a
21	6	15	11117.75787	1.28	1	a					11511.02992	0.83	2	a
21	7	15									11554.53719	0.64	5	a
21	7	14	11337.94700	1.46	1	a					11644.76125	1.53	2	a
21	8	14									11778.33564	0.72	5	a

21	8	13									11806.54901	4.90	1	a
21	9	13									12011.83602	1.33	3	a
21	9	12									12017.08585	1.64	1	a
21	10	12									12262.89006	1.34	1	a
21	11	11									12531.02181	1.46	−1	f,a
21	12	10									12812.67713	1.62	−1	f,a
21	12	9	12980.39943	6.33	1	a					12812.67470	11.80	−1	f
21	13	9	13340.23827	5.63	1	a								
21	13	8	13340.25440	5.35	1	a	13033.45528	1.93	1	a				
21	14	8	13700.02250	2.33		d								
21	14	7	13700.02250	2.33	1	a	13340.84640	1.94	1	a				
21	15	7	14069.04037	8.86		d	13652.23423	1.43		d				
21	15	6	14069.04037	8.86	1	a	13652.23423	1.43	2	a				
21	16	6	14431.36209	8.85		d					14009.88960	8.26	1	a
21	16	5	14431.36209	8.85	1	a					14009.88960	8.26		d
21	17	5	14789.56904	11.02		d					14313.08891	2.17	1	a
21	17	4	14789.56904	11.02	1	a	14277.11401	2.13	1	a	14313.08891	2.17		d
21	18	4	15140.76413	9.37		d	14586.11549	7.39		d				
21	18	3	15140.76413	9.37	1	a	14586.11549	7.39	1	a				
21	19	3					14889.43620	5.33		d				
21	19	2					14889.43620	5.33	1	a				
21	20	2	15809.96632	9.73		d	15185.02377	5.39		d	15188.16991	2.45	1	a
21	20	1	15809.96632	9.73	1	a	15185.02377	5.39	1	a	15188.16991	2.45		d
21	21	1	16118.65998	7.47		d					15454.97113	8.47	1	a
21	21	0	16118.65998	7.47	1	a					15454.97113	8.47		d
22	0	22									10062.09289	0.52	−1	f,a
22	1	22	9441.92379	0.85	3	e,a	9947.93700	0.90	2	a	10062.09289	0.52		d

22	1	21	10035.39367	1.51	1	a				10504.15926	0.52	−1	f,a
22	2	21	10035.51853	0.58	4	a	10394.53796	0.89	2 a	10504.15926	0.52		d
22	2	20								10885.32594	0.63	−1	f,a
22	3	20	10454.47721	0.85	2	a	10776.84384	1.24	1 a	10885.32594	0.63		d
22	3	19								11227.65603	1.32	1	a
22	4	19	10855.12860	1.10	1	a	11121.89369	0.93	2 a	11227.63380	1.47	1	a
22	4	18								11532.08529	0.87	−1	f,a
22	5	18	11195.48826	1.12	1	a				11532.20643	1.30	1	a
22	5	17								11798.28487	0.69	3	a
22	6	17	11501.70566	1.28	1	a				11802.11464	1.22	2	a
22	6	16								12015.52821	0.85	4	a
22	7	15								12160.48988	0.80	4	a
22	8	15								12275.48186	1.88	1	a
22	8	14								12318.89969	1.21	3	a
22	9	13								12519.83844	2.94	3	a
22	10	12								12762.70414	5.07	1	a
22	11	11								13031.51800	6.21	1	e
22	12	10								13314.29560	4.33	1	e
22	13	10								13605.80588	5.26		d
22	13	9								13605.80588	5.26	1	a
22	14	9	14206.37839	7.32	1	a	13841.14215	5.36	1 a				
22	14	8	14206.37839	7.32		d							
22	15	8					14155.41714	2.02	2 a				
22	15	7					14155.41714	2.02	d				
22	17	6								14829.53930	9.66		d
22	17	5								14829.53930	9.66	1	a
22	18	5								15135.02799	5.45		d

22	18	4								15135.02799	5.45	1	a
22	19	4				15411.83470	8.92	1	a				
22	19	3				15411.83470	8.92		d				
22	20	3				15714.21121	7.30	1	a				
22	20	2				15714.21121	7.30		d				
22	21	2	16678.84045	10.94	1 a	16007.53275	7.35	1	a	16007.14899	5.57		d
22	21	1	16678.84045	10.94	d	16007.53275	7.35		d	16007.14899	5.57	1	a
22	22	1	16980.11113	8.99	1 a					16269.01406	9.84		d
22	22	0	16980.11113	8.99	d					16269.01406	9.84	1	a
23	0	23	9863.01871	0.75	4 e,a	10360.70111	0.90	2	a	10476.37460	0.50		d
23	1	23								10476.37460	0.50	−1	f,a
23	1	22	10486.28367	0.70	3 a	10828.19129	0.75	3	a	10939.14210	0.64		d
23	2	22	10486.40925	1.46	1 a					10939.14210	0.64	−1	f,a
23	2	21	10907.60765	1.14	1 a	11225.26852	1.59	1	a	11335.15402	0.67		d
23	3	21								11335.15402	0.67	−1	f,a
23	3	20	11330.26030	1.05	2 a	11586.33108	1.22	1	a	11693.60827	1.52	1	a
23	4	20								11693.50706	0.91	2	a
23	4	19								12013.56337	1.68	2	a
23	5	19								12013.64077	1.09	2	a
23	5	18								12295.81746	1.38	2	a
23	6	18								12298.03414	0.86	4	a
23	6	17	12167.38602	5.12	1 a					12533.21417	1.67	1	a
23	7	17								12553.29387	1.33	2	a
23	8	16								12790.17282	0.91	5	a
23	9	15								13027.25943	1.25	3	a
23	10	14								13278.06325	5.07	1	a
23	12	12								13831.43758	7.97	1	a,?

23	13	11									14126.58524	6.61	1	a,?
23	15	9	15105.63259	8.87		d									
23	15	8	15105.63259	8.87	1	a									
23	18	6									15672.99819	10.87	1	a	
23	18	5									15672.99819	10.87		d	
23	19	5									15979.91152	7.40	1	a	
23	19	4									15979.91152	7.40		d	
23	20	4					16258.75151	10.23		d					
23	20	3					16258.75151	10.23	1	a					
23	22	2	17565.76840	12.03		d	16849.61612	8.89		d	16846.64634	7.48	1	a	
23	22	1	17565.76840	12.03	1	a	16849.61612	8.89	1	a	16846.64634	7.48		d	
23	23	1	17858.89783	10.29		d					17103.01263	9.89	1	a	
23	23	0	17858.89783	10.29	1	a					17103.01263	9.89		d	
24	0	24	10302.69639	1.06		d	10790.07727	0.72		d	10907.34605	0.87	−1	f,a	
24	1	24	10302.69639	1.06	2	a	10790.07727	0.72	4	a	10907.34605	0.87		d	
24	1	23	10955.70087	1.56	1	a					11390.79706	0.91	−1	f,a	
24	2	23	10955.91507	0.85	2	a	11278.63578	1.01	2	a	11390.79706	0.91		d	
24	2	22									11800.40581	0.80	−1	f,a	
24	3	22	11376.36304	1.14	1	a					11800.40581	0.80		d	
24	3	21									12174.85823	5.09	1	a	
24	4	21					12066.94816	1.58	1	a	12174.85694	1.47	1	a	
24	4	20									12509.31329	0.87	3	a	
24	5	19									12807.20796	1.24	1	a	
24	6	19									12808.33409	2.27	1	a	
24	6	18									13063.58830	5.08	1	a	
24	7	17									13271.08473	5.08	1	a	
24	8	16									13424.43959	1.61	2	a	

24	9	15									13588.35889	1.53	2	a	
24	10	14									13818.04950	1.63	1	a	
24	13	11									14662.51706	9.41	1	a,?	
24	16	9	16022.55168	10.18	1	a									
24	16	8	16022.55168	10.18		d									
24	19	6									16538.98786	11.97		d	
24	19	5									16538.98786	11.97	1	a	
24	23	2					17710.14938	10.20	1	a	17705.91926	9.00		d	
24	23	1					17710.14938	10.20		d	17705.91926	9.00	1	a	
24	24	1	18754.17035	11.44	1	a					17956.25593	11.08		d	
24	24	0	18754.17035	11.44		d					17956.25593	11.08	1	a	
25	0	25	10761.36587	1.94	3	a	11235.43975	1.44	1	a	11356.47717	1.68	1	a	
25	1	25	10761.36587	1.94		d					11356.47991	0.72	4	a	
25	1	24	11444.60465	1.13	2	a	11745.74078	1.42	1	a	11859.04727	0.78		d	
25	2	24	11445.38695	1.31	2	a					11859.04727	0.78	5	e,a	
25	2	23	11856.47860	0.95	2	a					12281.07515	1.35		d	
25	3	23									12281.07515	1.35	−1	f,a	
25	3	22									12671.59334	1.77	1	a	
25	4	22									12671.57290	2.74	1	a	
25	4	21									13020.02298	2.04	1	a	
25	5	21									13019.93474	1.37	1	a	
25	6	20									13334.09479	1.28	1	a	
25	7	19									13613.87012	1.34	1	a	
25	10	16									14365.51951	5.24	1	a	
25	24	2									18584.04559	10.29	1	a	
25	24	1									18584.04559	10.29		d	
25	25	0	19664.94986	12.48	1	a									

26	0	26	11239.55068	1.21	d	11698.33947	0.91	d	11818.71817	0.77	−1	f,a
26	1	26	11239.55068	1.21	3 a	11698.33947	0.91	3 a	11818.71817	0.77		d
26	1	25							12343.92097	0.89	−1	f,a
26	2	25							12343.92097	0.89		d
26	2	24							12777.75516	1.43	2	a
26	3	24	12350.22210	0.95	2 a				12777.75516	1.43		d
26	3	23							13183.45127	2.92	1	a
26	4	22							13545.29549	2.30	2	a
26	5	22							13545.29549	2.30		d
26	7	19							14404.76097	1.35	1	a
26	25	2							19480.19609	11.45		d
26	25	1							19480.19609	11.45	1	a
27	0	27	11737.77926	1.00	3 a	12177.93115	0.97	2 a	12299.11215	0.75		d
27	1	27	11737.77926	1.00	d	12177.93115	0.97	d	12299.11215	0.75	−1	f,a
27	1	26							12845.22975	0.91		d
27	2	26							12845.22975	0.91	−1	f,a
27	2	25							13290.57118	2.06		d
27	3	25							13290.57118	2.06	2	a
27	4	24							13710.07970	1.36	1	a
27	5	23							14084.87620	3.73	2	a
27	26	2							20393.57577	12.49	1	a
27	26	1							20393.57577	12.49		d
28	0	28	12256.52101	0.93	d				12795.90223	0.75	−1	f,a
28	1	28	12256.52101	0.93	3 a				12795.90223	0.75		d
28	1	27							13363.07168	1.35	−1	f,a
28	2	27							13363.07168	1.35		d
28	2	26							13818.60815	5.32	1	a

28	3	26	13818.60815	5.32		d
29	0	29	13309.33058	1.41		d
29	1	29	13309.33058	1.41	−1	f,a
29	1	28	13897.13085	5.06		d
29	2	28	13897.13085	5.06	−1	f,a
30	0	30	13837.64289	2.48	−1	f,a
30	1	30	13837.64289	2.48		d
30	1	29	14445.75560	1.65	1	a
30	2	29	14445.75560	1.65		d

TABLE V.: Term values for the 2ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	040 or 00 4			120 or 10^+2			021 or 10^-2		
0	0	0	6134.01482	0.40	−1 j	6775.09297	0.10	−1 j	6871.52035	0.14	−1 j,a
1	0	1	6157.75249	0.08	−1 j,a	6798.51896	0.05	−1 j	6895.14778	0.15	−1 j,a
1	1	1	6194.79360	0.40	−1 j	6818.31085	0.40	−1 j	6913.66819	0.08	−1 j,a
1	1	0	6201.06682	0.19	−1 j,a	6824.11748	0.05	−1 j	6919.57157	0.05	−1 j,a
2	0	2	6204.44363	0.19	−1 j,a	6844.23519	0.05	−1 j	6941.16296	0.04	−1 j,a
2	1	2	6236.05916	0.22	−1 j,a	6859.37401	0.10	−1 j	6955.08587	0.05	−1 j,a
2	1	1	6254.85487	0.05	−1 j,a	6876.76046	0.05	−1 j	6972.73796	0.04	−1 j,a
2	2	1	6359.04798	0.32	−1 j,a	6935.00618	0.07	−1 j,a	7027.35021	0.10	−1 j,a
2	2	0	6359.78195	0.46	−1 j,a	6936.07676	0.06	−1 j	7028.54944	0.04	−1 j,a
3	0	3	6272.62857	0.09	−1 j,a	6910.24989	0.09	−1 j	7007.42871	0.10	−1 j,a
3	1	3	6297.47336	0.40	−1 j	6920.29347	0.09	−1 j	7016.72574	0.04	−1 j,a
3	1	2	6334.89381	0.31	−1 j,a	6954.83343	0.05	−1 j,a	7051.49003	0.06	−1 j,a
3	2	2	6430.62122	0.20	−1 j,a	7005.35052	0.06	−1 j	7098.06992	0.05	−1 j,a
3	2	1	6434.18854	0.19	−1 j,a	7010.23276	0.07	−1 j,a	7103.61322	0.10	−1 j,a
3	3	1	6604.31943	0.10	−1 j	7114.61172	0.07	−1 j	7201.79316	0.21	−1 j,a
3	3	0	6604.37842	0.39	−1 j,a	7114.63500	0.09	−1 j,a	7201.95274	0.10	−1 j,a
4	0	4	6360.50922	0.42	−1 j,a	6994.57575	0.09	−1 j,a	7091.91860	0.09	−1 j,a
4	1	4	6378.56143	0.18	−1 j,a	7000.45122	0.08	−1 j,a	7096.72208	0.08	−1 j,a
4	1	3	6440.39401	1.11	1 a	7057.11848	0.12	−1 j	7154.47825	0.11	−1 j,a
4	2	3	6525.29910	0.21	−1 j,a	7098.14619	0.09	−1 j,a	7191.37356	0.08	−1 j,a
4	2	2	6535.45725	0.15	−1 j,a	7112.63971	0.18	−1 j	7205.41955	0.07	−1 j,a
4	3	2	6701.47936	0.30	−1 j,a	7211.74696	0.20	−1 j,a	7298.39153	0.09	−1 j,a
4	3	1	6701.88407	0.23	−1 j,a	7211.44360	0.80	−1 j	7299.46107	0.07	−1 j,a
4	4	1	6919.93672	0.35	−1 j,a	7354.09523	0.15	−1 j,a	7435.15543	0.15	−1 j,a

4	4	0	6919.94144	0.50	−1	j	7354.10723	0.18	−1	j	7435.17337	0.07	−1	j,a
5	0	5	6466.51401	0.38	−1	j,a	7096.13063	0.25	−1	j,a	7193.64422	0.10	−1	j,a
5	1	5	6478.79941	0.14	−1	j,a	7099.26985	0.20	−1	j	7196.14190	0.15	−1	j,a
5	1	4	6570.06667	0.11	−1	j,a	7181.82055	0.05	−1	j,a	7279.72429	0.04	−1	j,a
5	2	4	6642.48533	0.20	−1	j,a	7212.60109	0.13	−1	j	7306.48906	0.10	−1	j,a
5	2	3	6664.35385	0.11	−1	j,a	7241.70880	0.30	−1	j	7338.98792	0.10	−1	j,a
5	3	3	6822.86883	0.23	−1	j,a	7328.62054	0.27	−1	j	7419.03131	0.04	−1	j,a
5	3	2	6824.41888	0.14	−1	j,a	7333.78865	0.12	−1	j	7423.00097	0.09	−1	j,a
5	4	2	7041.95766	0.21	−1	j,a	7474.50948	0.13	−1	j	7556.37375	0.09	−1	j,a
5	4	1	7041.99351	0.19	−1	j,a	7474.61447	0.09	−1	j,a	7556.52670	0.13	−1	j,a
5	5	1	7295.48626	0.58		d	7650.32973	0.13	−1	j	7723.60395	0.10	−1	j,a
5	5	0	7295.48626	0.58	6	e,a	7650.33383	0.21	−1	j,a	7723.62644	0.24	−1	j,a
6	0	6	6589.73539	0.06	−1	j,a	7214.73489	0.10	−1	j	7312.49249	0.08	−1	j,a
6	1	6	6597.73011	0.18	−1	j,a	7216.29753	0.16	−1	j	7313.71117	0.07	−1	j,a
6	1	5	6722.49989	0.25	−1	j	7326.70489	0.12	−1	j	7424.84076	0.08	−1	j,a
6	2	5	6781.50530	0.20	−1	j,a	7347.84152	0.06	−1	j,a	7442.48162	0.07	−1	j,a
6	2	4	6820.80448	0.77	2	a	7397.14981	0.19	−1	j	7495.31415	0.10	−1	j,a
6	3	4	6968.22262	0.21	−1	j,a	7472.52588	0.06	−1	j,a	7563.21223	0.09	−1	j,a
6	3	3	6972.60022	0.10	−1	j	7482.87545	0.15	−1	j	7573.80142	0.17	−1	j,a
6	4	3	7188.25215	0.14	−1	j,a	7619.12542	0.24	−1	j,a	7701.96693	0.05	−1	j,a
6	4	2	7188.40787	0.74	2	a	7619.60789	0.20	−1	j,a	7702.71255	0.07	−1	j,a
6	5	2	7442.33600	0.52	4	a	7795.06854	0.30	−1	j,a	7868.61994	0.14	−1	j
6	5	1	7442.38137	0.81	2	a	7795.09863	0.36	−1	j	7869.35417	0.06	−1	j,a
6	6	1	7722.60588	0.53	5	e,a	7999.17504	0.36	−1	j,a	8063.01241	0.20	−1	j
6	6	0	7722.60588	0.53		d	7999.17565	0.10	−1	j	8063.01260	0.18	−1	j,a
7	0	7	6729.89705	0.10	−1	j,a	7350.15159	0.13	−1	j,a	7448.62093	0.07	−1	j,a
7	1	7	6734.97864	0.15	−1	j,a	7351.22677	0.15	−1	j	7449.20122	0.12	−1	j,a

7	1	6	6895.86324	0.33	−1	j,a	7489.65811	0.15	−1	j	7587.74125	0.15	−1	j,a
7	2	6	6941.63552	0.07	−1	j,a	7503.01105	0.50	−1	j	7598.35038	0.10	−1	j,a
7	2	5	7003.91883	0.29	−1	j,a	7577.11839	0.38	−1	j,a	7676.29721	0.10	−1	j,a
7	3	5	7137.09907	0.64	3	a	7638.99658	0.25	−1	j	7730.18509	0.10	−1	j,a
7	3	4	7147.21578	0.46	17	e,a	7659.65633	0.16	−1	j,a	7752.54692	0.10	−1	j,a
7	4	4	7358.67650	0.64	4	e,a	7787.89031	0.15	−1	j	7871.76011	0.14	−1	j,a
7	4	3	7359.61327	0.51	10	e,a	7789.54465	0.20	−1	j	7874.25665	0.14	−1	j,a
7	5	3	7613.06409	0.97	4	e,a	7963.77454	0.18	−1	j	8039.68258	0.09	−1	j,a
7	5	2	7613.37910	0.53	7	e,a	7963.93127	0.20	−1	j,a	8039.38666	0.14	−1	j,a
7	6	2	7894.76443	0.54		d	8168.54750	0.70	−1	j	8233.40762	0.24	−1	j,a
7	6	1	7894.76443	0.54	4	a	8168.54865	0.30	−1	j,a	8233.41177	0.10	−1	j
7	7	1	8193.65364	0.53		d	8397.20975	0.08	−1	j	8448.75235	0.38	−1	j,a
7	7	0	8193.65364	0.53	9	e,a	8397.28975	0.08	−1	j,a	8448.75140	0.80	−1	j
8	0	8	6887.06029	0.19	−1	j,a	7503.35170	0.30	−1	j	7602.16348	0.14	−1	j,a
8	1	8	6890.27331	0.19	−1	j,a	7503.87138	0.15	−1	j,a	7602.44406	0.12	−1	j,a
8	1	7	7088.36156	0.75	2	a	7669.39727	0.25	−1	j	7767.34344	0.12	−1	j,a
8	2	7	7122.19022	0.39	−1	j,a	7677.36074	0.08	−1	j	7773.29044	0.22	−1	j,a
8	2	6	7212.27293	0.54	4	a	7779.41329	0.29	−1	j	7879.25124	0.10	−1	j,a
8	3	6	7328.88068	0.40	−1	j,a	7827.79608	0.21	−1	j	7919.20015	0.10	−1	j,a
8	3	5	7348.90597	1.00	1	a	7864.05607	0.19	−1	j	7958.42343	0.14	−1	j,a
8	4	5	7552.97463	0.42	10	e,a	7980.85436	0.12	−1	j,a	8065.43278	0.10	−1	j,a
8	4	4	7554.92077	0.55	4	a	7985.02308	0.15	−1	j	8072.00802	0.17	−1	j,a
8	5	4	7807.15083	0.95	5	e,a	8156.19124	0.32	−1	j	8233.73024	0.17	−1	j,a
8	5	3	7808.30710	0.67	3	a	8157.95435	0.80	−1	j,?	8233.79566	0.15	−1	j,a
8	6	3	8090.81123	0.73	5	e,a	8361.71175	0.48	2	a	8427.77119	0.10	−1	j,a
8	6	2	8090.82172	1.40	1	a					8427.79355	0.06	−1	j,a
8	7	2	8390.80382	0.54	5	e,a	8591.35884	0.54	5	e,a	8643.78675	0.20	−1	j

8	7	1	8390.80382	0.54		d	8591.35884	0.54		d	8643.78679	0.18	−1	j,a
8	8	1	8700.21985	1.11	3	e,a	8840.22244	0.59	4	e,a	8874.29368	0.59		d
8	8	0	8700.21985	1.11		d	8840.22244	0.59		d	8874.29368	0.59	3	a
9	0	9	7061.38019	0.38	−1	j,a	7673.77775	0.08	−1	j,a	7773.18417	0.10	−1	j,a
9	1	9	7063.42090	0.34	−1	j,a	7674.13782	0.65	−1	j	7772.93111	0.08	−1	j,a
9	1	8	7298.57468	0.52	4	a	7865.59837	0.26	−1	j,a	7963.50243	0.27	−1	j,a
9	2	8	7322.53470	0.62	3	a	7870.33453	0.15	−1	j	7966.67856	0.14	−1	j,a
9	2	7	7444.12525	0.46	12	e,a	8001.63078	0.19	−1	j,a	8101.59120	0.14	−1	j,a
9	3	7	7542.76335	1.17	1	a					8128.66703	0.08	−1	j,a
9	3	6	7577.86372	0.47	8	e,a	8094.84371	0.33	−1	j	8200.22526	0.59	3	a
9	4	6	7770.74959	1.20	2	a	8187.03942	1.01	1	a	8281.94092	0.17	−1	j,a
9	4	5	7775.63689	0.38	15	e,a	8206.89025	0.59	3	a	8296.87437	0.10	−1	j,a
9	5	5					8375.67360	2.23	2	e	8451.79180	0.15	−1	j
9	5	4	8027.02597	0.53	4	a	8376.21276	1.00	−1	j,?	8452.76116	0.19	−1	j,a
9	6	4	8310.52857	1.16	1	a	8578.53990	5.02	1	e	8645.95950	0.20	−1	j,a
9	6	3	8310.56088	0.53	4	a	8578.57695	0.61	3	a	8646.05346	0.24	−1	j,a
9	7	3	8611.49360	0.55		d					8862.43001	0.32	−1	j,a
9	7	2	8611.49360	0.55	4	a	8809.04053	0.55	5	e,a	8862.43796	0.95	−1	j,a
9	8	2	8921.85189	0.63		d	9059.25603	1.01		d	9093.03540	0.18	−1	j,a
9	8	1	8921.85189	0.63	3	a	9059.25603	1.01	1	a	9093.03525	0.20	−1	j
9	9	1	9306.82308	1.49		d	9227.58720	1.49		d	9375.82640	1.03	1	a
9	9	0	9306.82308	1.49	1	a	9227.58720	1.49	1	a	9375.82640	1.03		d
10	0	10	7253.00051	0.10	−1	j,a	7861.63595	0.25	−1	j	7961.69020	0.25	−1	j
10	1	10	7254.31955	0.22	−1	j,a	7862.04408	0.15	−1	j,a	7961.72543	0.24	−1	j,a
10	1	9	7525.71151	0.78	2	a	8078.45131	0.20	−1	j	8176.46631	0.09	−1	j,a
10	2	9	7542.14636	0.45	15	e,a	8080.85147	1.00	−1	j,?	8178.09916	0.20	−1	j,a
10	2	8	7697.54838	0.74	2	a	8239.87467	3.00	−1	j,?	8341.40922	0.10	−1	j,a

10	3	8	7777.99995	0.51	10	e,a	8256.88904	0.73	2	a	8358.61757	0.15	−1	j,a
10	3	7	7833.56479	0.83	2	a					8452.13788	0.14	−1	j,a
10	4	7	8011.31907	0.46	9	e,a	8428.88558	0.60	3	a	8521.99709	0.55	−1	j,a
10	4	6	8020.86484	0.92	2	a					8549.24274	0.14	−1	j,a
10	5	6	8276.81340	0.78	2	a	8613.87771	0.61	3	a	8693.52239	0.19	−1	j,a
10	5	5	8269.37398	1.10	1	a					8696.61302	0.21	−1	j,a
10	6	5	8553.59442	0.54	4	a	8818.74309	0.76	3	e,a	8887.79211	0.37	−1	j,a
10	6	4	8553.74000	1.07	1	a					8888.12154	0.30	−1	j,a
10	7	4	8855.39459	0.55	4	a	9049.97770	0.78	3	e,a	9104.45244	0.25	−1	j
10	7	3	8855.39459	0.55		d					9104.46789	0.14	−1	j,a
10	8	3	9166.56912	0.64	3	a	9301.09324	0.80	2	a	9334.66487	1.01		d
10	8	2	9166.56912	0.64		d	9301.09324	0.80		d	9334.66487	1.01	1	a
10	9	2					9470.68619	1.01	2	e,a,?	9620.27473	0.72		d
10	9	1					9470.68619	1.01		d	9620.27473	0.72	2	a
10	10	1	9920.58735	1.80	1	a	9800.94762	1.80	1	a	9876.08128	1.08		d
10	10	0	9920.58735	1.80		d	9800.94762	1.80		d	9876.08128	1.08	1	a
11	0	11	7462.03717	0.36	−1	j,a	8067.04710	0.08	−1	j,a	8167.69927	0.41	−1	j,a
11	1	11	7462.90921	0.75	2	a					8167.68928	0.18	−1	j,a
11	1	10	7769.57162	0.51	8	e,a	8308.26722	0.74	2	a	8406.50233	0.27	−1	j,a
11	2	10	7780.61578	0.75	2	a					8407.29036	0.26	−1	j,a
11	2	9	7970.45787	0.61	4	a					8597.05354	0.24	−1	j,a
11	3	9	8032.91626	1.10	1	a					8607.32000	0.25	−1	j,a
11	3	8	8114.76786	0.43	6	a					8730.16217	0.50	−1	j
11	4	8	8273.19378	0.64	3	a					8782.72250	0.22	−1	j,a
11	4	7	8292.02662	0.47	9	e,a	8731.32849	1.12	1	a	8827.49564	1.01	1	a
11	5	7	8539.05517	1.14	1	a					8958.39668	0.24	−1	j,a
11	5	6	8535.23258	0.48	5	a	8881.89530	0.55	4	a	8965.40364	1.01	1	a

11	6	6	8819.64945	0.89	2	a				9153.03475	0.38	−1	j,a
11	6	5	8820.14291	0.49	6	e,a	9083.39370	0.64	3 a	9154.00889	0.56	−1	j,a
11	7	5	9122.19448	1.46	1	a				9369.59893	0.44	−1	g,a
11	7	4	9122.17937	0.77	2	a	9313.93690	0.81	2 a				
11	8	4	9433.12308	1.48	1	a				9598.77967	0.46	6	a
11	8	3	9433.99667	0.55	4	a	9565.72469	1.27	1 a				
11	9	3	9810.82789	5.54		d	9885.17657	1.07	d	9887.89849	1.46	1	a
11	9	2	9810.82789	5.54	1	a	9885.17657	1.07	1 a	9887.89849	1.46		d
11	10	2	10193.84100	6.30		d	10068.80862	1.16	d	10147.07078	0.80	2	a
11	10	1	10193.84100	6.30	1	e	10068.80862	1.16	1 a	10147.07078	0.80		d
11	11	1	10532.70160	2.06		d	10355.10720	2.06	d	10419.10640	0.79	2	a
11	11	0	10532.70160	2.06	1	a	10355.10720	2.06	1 a	10419.10640	0.79		d
12	0	12	7688.56000	5.00	−1	j				8391.19329	0.08	−1	j,a
12	1	12	7689.16450	0.52	11	e,a	8286.27111	1.20	1 a	8391.13033	0.15	−1	j,a
12	1	11	8030.31363	0.78	2	a				8653.81241	0.25	−1	j,a
12	2	11	8037.66120	0.47	11	e,a	8546.42100	1.12	1 a	8654.09529	0.27	−1	j,a
12	2	10	8259.83930	2.56	5	e				8868.71798	0.14	−1	j,a
12	3	10	8313.00601	0.95	4	e,a	8774.16083	1.05	1 a	8874.36402	0.59	3	a
12	3	9	8419.67964	0.84	2	a				9025.95569	0.14	−1	j,a
12	4	9	8570.13032	0.75	4	e,a	8970.12380	6.43	1 e	9064.05401	1.01	1	a
12	4	8	8589.01650	1.11	1	a				9131.71985	0.19	−1	j,a
12	5	8	8825.76944	0.54	5	e,a	9164.06652	0.61	3 a	9245.74566	0.69	−1	g,a
12	5	7	8824.53672	0.83	2	a				9262.47803	0.46	9	e,a
12	6	7	9108.59850	1.07	1	a	9368.55148	0.80	2 a	9441.38360	1.02	1	a
12	6	6	9109.77145	1.52	1	a				9443.85390	0.46	7	e,a
12	7	6	9411.49539	1.08	1	a	9600.55122	0.80	2 a	9657.59940	3.20	−1	g
12	7	5								9657.81824	0.41	−1	g,a

12	8	5	9723.73565	1.06	1	a	9852.68737	1.29	1	a				
12	8	4									9885.10990	0.52	5	e,a
12	9	4	10097.22325	1.62	1	a	10026.72099	1.09	2	e,a,?	10178.07617	0.63		d
12	9	3	10097.22325	1.62		d	10026.72099	1.09		d	10178.07617	0.63	3	a
12	10	3	10489.77710	5.45	2	e					10440.57146	1.06		d
12	10	2	10489.77710	5.45		d					10440.57146	1.06	1	a
12	11	2	10833.52237	6.38	1	a					10715.87837	1.13		d
12	11	1	10833.52237	6.38		d					10715.87837	1.13	1	a
12	12	1	11179.18354	2.29	1	a					10996.92100	0.90		d
12	12	0	11179.18354	2.29		d					10996.92100	0.90	2	a
13	0	13	7932.69419	0.52	12	e,a	8526.94876	1.09	1	a	8632.49491	0.59	3	a
13	1	13	7933.10053	1.03	2	e,a					8632.09874	0.32	−1	j,a
13	1	12	8308.23443	0.76	2	a	8820.42729	1.02	2	e,a	8918.64956	0.77	2	a
13	2	12	8313.09204	0.80	2	a					8918.43706	0.08	−1	j,a
13	2	11	8571.20469	0.48	6	a	9058.82170	6.73	1	e	9157.03470	0.60	3	a
13	3	11	8605.54319	1.10	1	a					9159.19189	0.99	2	a
13	3	10	8745.85618	0.76	2	a					9339.14617	0.72	2	a
13	4	10	8870.58645	1.12	3	a					9364.93604	0.42	11	e,a
13	4	9	8911.50949	0.54	4	a					9476.50830	5.20	1	e
13	5	9	9133.86820	7.12	1	e	9456.31598	1.06	1	a	9554.75430	0.46	8	e,a
13	5	8	9137.27421	1.25	1	a					9590.35116	1.01	1	a
13	6	8									9752.48802	0.46	6	e,a
13	6	7	9422.84021	0.63	7	e,a	9682.73024	1.05	2	e,a	9757.91327	0.99	2	e,a
13	7	7									9968.18929	0.62	3	a
13	7	6	9723.03734	1.26	1	a	9909.83810	1.28	1	a	9968.79442	1.43	1	a
13	8	6									10193.38276	1.06	2	e,a
13	8	5	10035.43651	1.06	1	a					10193.39383	1.41	2	e,a

13	9	5								10490.57941	1.13	1	a	
13	9	4				10338.18324	1.46	1	a	10490.57941	1.13		d	
13	10	4				10671.59182	1.09		d	10756.13472	0.66	3	a	
13	10	3				10671.59182	1.09	1	a	10756.13472	0.66		d	
13	11	3	11157.10594	5.54	d					11034.59305	1.46	1	a	
13	11	2	11157.10594	5.54	1	a				11034.59305	1.46		d	
13	12	2	11506.38331	6.46	d					11318.29040	7.22	1	e	
13	12	1	11506.38331	6.46	1	a				11318.29040	7.22		d	
13	13	1	11857.34222	2.50	d									
13	13	0	11857.34222	2.50	1	a								
14	0	14	8194.49389	0.57	4	a				8889.17792	0.34	−1	j,a	
14	1	14	8194.77880	0.60	10	e,a	8785.15502	0.81	3	e,a	8886.68602	1.07	1	a
14	1	13	8603.62709	1.12	1	a				9204.50246	0.98	3	a	
14	2	13	8606.84956	0.49	9	e,a				9200.32081	1.00	2	e,a	
14	2	12	8896.83265	1.07	1	a				9456.00109	0.58	6	e,a	
14	3	12	8919.71946	0.60	8	e,a				9461.63674	0.72	2	a	
14	3	11								9667.69980	0.39	10	e,a	
14	4	11	9192.05652	0.53	6	a	9586.93202	1.14	2	a	9684.37859	0.72	2	a
14	4	10	9258.37187	1.21	1	a				9818.56806	0.42	11	e,a	
14	5	10	9470.53238	0.48	6	a	9790.56132	1.01	1	a	9884.47214	0.73	−1	g,a
14	5	9								9934.93616	0.52	6	e,a	
14	6	9	9752.76783	0.51	6	e,a				10086.08262	1.08	1	a	
14	6	8								10096.41951	0.60	4	a	
14	7	8	10056.24873	1.18	1	a	10241.07552	1.45	1	a	10301.00394	1.02	2	a
14	7	7								10302.56004	1.06	1	a	
14	8	7				10492.57810	6.77	3	e	10523.70790	6.28	1	e	
14	9	6				10669.95737	1.46	1	a	10825.26960	0.76		d	

14	9	5							10825.26960	0.76	2	a
14	10	5							11093.67992	1.07		d
14	10	4							11093.67992	1.07	1	a
14	11	4							11374.28092	1.10		d
14	11	3							11374.28092	1.10	2	e,a
14	13	2							11953.72809	7.29		d
14	13	1							11953.72809	7.29	1	a
15	0	15	8474.07591	0.56	7	e,a	9059.40000	7.49	1 e	9165.03960	0.80	2 a
15	1	15	8474.26080	0.82	2	a				9164.94958	0.48	5 a
15	1	14	8916.71187	0.56	5	e,a	9394.64720	7.02	1 e	9497.98098	1.03	1 a
15	2	14	8918.89860	1.18	1	a				9500.22166	0.52	9 e,a
15	2	13	9231.85227	0.63	3	a	9685.76030	1.16	1 a	9778.35609	1.06	1 a
15	3	13								9781.06161	0.52	4 a
15	3	12	9463.29057	0.62	4	a	9916.68475	0.83	2 a	10011.39857	1.04	1 a
15	4	12	9543.23885	1.15	2	a				10022.09592	0.43	9 e,a
15	4	11	9626.50565	1.07	1	a				10184.26545	0.76	2 a
15	5	11	9820.01569	1.57	1	a				10234.29441	0.73	4 a
15	5	10								10306.97007	0.76	2 a
15	6	10								10439.49651	0.97	−1 g,a
15	6	9	10119.01136	1.12	1	a				10459.62786	5.02	1 a
15	7	9								10655.63015	0.74	−1 g,a
15	7	8	10411.30494	0.78	2	a				10659.19816	1.08	1 a
15	8	8								10919.68128	0.78	2 a
15	9	7								11181.35528	1.07	1 a
15	10	6								11451.83411	1.08	1 a
15	10	5								11451.83411	1.08	d
15	11	5								11736.32069	1.46	1 a

15	11	4								11736.32069	1.46		d
15	14	2								12619.17511	7.36	1	a
15	14	1								12619.17511	7.36		d
16	0	16	8771.45993	0.83	2	a				9457.78956	0.74	5	e,a
16	1	16	8771.67201	0.57	4	a	9351.08661	1.07	1 a	9457.78956	0.74		d
16	1	15								9814.84603	0.71	6	e,a
16	2	15	9249.27272	0.63	4	e,a	9712.28778	1.11	2 e,a	9814.45240	1.06	1	a
16	2	14	9584.49673	0.84	2	a				10115.56191	0.61	4	e,a
16	3	14	9597.10743	0.63	3	a				10117.70941	0.74	2	a
16	3	13								10369.86354	0.74	5	e,a
16	4	13	9907.07240	1.11	2	a	10276.08625	1.13	2 a	10376.87965	0.74	2	a
16	4	12								10567.49565	0.53	6	e,a
16	5	12	10190.49250	1.47	1	a				10602.68520	1.01	3	a
16	5	11								10700.40264	0.61	3	a
16	6	11					10736.19263	0.64	4 a	10814.36260	5.02	1	a
16	6	10								10847.71503	0.61	4	a
16	7	9								11038.94295	1.03	3	e,a
16	9	7								11558.75624	1.04	2	a
17	0	17	9087.02301	0.59	4	a	9659.71660	7.63	1 e	9767.69044	0.54		d
17	1	17								9767.69044	0.54	9	e,a
17	1	16	9597.13360	0.57	5	e,a				10148.69113	0.96	2	a
17	2	16	9598.06523	1.16	1	a				10148.49517	0.54	8	e,a
17	2	15	9951.89147	1.08	1	a				10469.02361	1.12	1	a
17	3	15	9960.71986	1.19	1	a				10472.50198	1.05	4	e,a
17	3	14	10242.79814	1.07	1	a				10743.63836	1.02	2	a
17	4	14	10289.11045	1.20	1	a				10748.63512	0.53	5	a
17	4	13								10965.14674	5.03	1	a

17	5	13							10989.24998	1.09	1	a	
17	6	12							11209.08298	0.61	4	a	
17	7	11							11428.20142	0.76	2	a	
17	10	8							12230.81156	1.44	1	a	
18	0	18							10094.67991	0.51	7	e,a	
18	1	18	9421.57417	0.68	3	a	9985.45769	0.90	2 a	10094.67991	0.51		d
18	1	17	9964.95246	1.27	1	a				10499.72194	0.48	7	L nc
18	2	17	9965.37994	0.80	2	a				10499.22079	5.10	1	a
18	2	16	10333.40135	1.20	1	a				10838.69335	0.62	−1	g,a
18	3	16	10339.80446	1.14	1	a	10734.37956	1.24	1 a	10837.68300	1.09	1	a
18	3	15								11132.86274	0.77	3	a
18	4	15	10688.42829	0.80	2	a				11137.48933	1.12	1	a
18	4	14								11376.77216	1.07	2	a
18	5	14								11393.33677	5.03	1	a
18	5	13								11562.56056	0.58	4	a
18	6	13								11622.97056	5.03	1	a
18	6	12								11695.91245	0.62	4	a
18	7	11								11868.24286	0.76	2	a
19	0	19	9777.90532	1.33	2	a				10438.75558	0.51		d
19	1	19	9772.38433	1.50	1	a				10438.75558	0.51	−1	g,a
19	1	18	10350.41739	1.10	1	a				10867.91510	0.63		d
19	2	18	10351.35459	1.43	1	a				10867.91510	0.63	−1	g,a
19	2	17	10729.20985	0.82	2	a	11117.48611	1.18	1 a	11223.99301	5.06	1	a
19	3	17								11223.86943	0.54	−1	g,a
19	3	16	11079.50960	1.13	1	a							
19	4	16								11546.61152	3.57	2	a
19	4	15								11802.03524	1.12	2	a

19	5	15							11813.29112	0.76	3	a
19	5	14							12009.27858	3.38	1	a
19	7	13							12280.59548	1.01	4	a
19	8	12							12554.97541	1.04	3	a
20	0	20	10144.06800	1.54	1	a			10799.84938	0.69	4	e,a
20	1	20	10144.30471	0.85	2	a			10799.84938	0.69		d
20	1	19	10755.58357	1.53	1	a	11147.29731	1.86	1 a	11253.35746	0.67	−1 g,a
20	2	19	10756.14354	0.63	4	a	11147.74594	0.85	3 a	11253.35746	0.67	d
20	2	18								11623.36057	1.11	1 a
20	3	18	11141.07013	0.86	3	a						
20	3	17								11957.95435	0.77	3 a
20	4	16								12241.11163	1.09	2 a
20	5	15								12470.85010	1.08	2 a
20	6	14								12626.54400	1.08	2 a
20	7	13								12789.80263	5.03	1 a
21	0	21	10535.41594	1.12	2	a				11177.97621	0.62	d
21	1	21	10535.54730	1.83	1	a				11177.97621	0.62	5 e,a
21	1	20	11179.33073	1.12	1	a				11655.96493	1.64	1 a
21	2	20								11655.88791	0.62	−1 g,a
21	2	19	11558.32663	1.15	1	a						
21	3	19								12056.32279	5.03	1 a
21	3	18	11970.69699	1.20	1	a						
21	4	18								12392.96375	5.02	1 a
21	6	16								12956.66447	1.10	2 a
21	7	15								13206.16099	1.50	1 a
22	0	22								11573.13456	0.60	5 e,a
22	1	22	10947.08647	0.86	2	a				11573.13456	0.60	d

22	1	21								12075.40177	1.11	−1	g,a
22	2	21	11623.02038	1.17	1	a				12075.60124	1.20	1	a
22	2	20								12492.31590	5.05	1	a
22	3	19								12844.77339	1.18	1	a
22	4	18								13161.04649	5.05	1	a
22	5	17								13430.37036	1.27	2	a
22	6	16								13648.12295	5.07	1	a
22	7	15								13797.73986	3.60	2	a
23	0	23	11379.87957	1.32	1	a				11984.64013	0.88		d
23	1	23								11984.64013	0.88	−1	g,a
23	1	22	12084.66883	1.16	1	a				12512.40886	1.20		d
23	2	22								12512.40886	1.20	1	a
23	3	21								12920.49436	5.04	1	a
23	5	19								13639.66840	5.05	1	a
24	0	24								12413.77697	0.76	−1	g,a
24	1	24	11834.90676	1.19	1	a	12296.72521	1.35	1	a	12413.77697	0.76		d
24	1	23								12966.37456	1.19	1	a
24	2	23	12569.26819	1.22	1	a							
24	3	21								13791.92696	5.08	1	a
24	4	20								14133.22428	5.04	1	a
25	0	25	12312.17000	1.46	1	a				12859.73584	0.97		d
25	1	25								12859.73584	0.97	−1	g,a
25	1	24								13437.51912	1.24		d
25	2	24								13437.51912	1.24	−1	g,a
25	3	23								13871.30654	1.49	2	a
25	4	22								14287.18841	5.09	1	a
26	0	26								13322.79392	1.70	−1	g,a

26	1	26	12811.07304	1.37	2	a				13322.79392	1.70	d
26	1	25								13926.08390	1.24	2 a
26	2	24								14367.28459	5.12	1 a
27	0	27								13803.79416	1.28	d
27	1	27								13803.79416	1.28	−1 g,a
27	3	25								14875.89444	5.38	1 a
28	0	28								14298.94621	3.64	2 a
29	1	29								14814.11468	1.36	2 a

J	K_a	K_c	200 or 20^+0				101 or 20^-0				002 or 11 0			
0	0	0	7201.54020	0.20	−1	j	7249.81837	0.10	−1	j	7445.04530	0.10	−1	j
1	0	1	7224.58070	0.10	−1	j	7273.00000	0.15	−1	j	7468.34147	0.05	−1	j,a
1	1	1	7236.80764	0.04	−1	j	7284.74246	0.14	−1	j,a	7479.63551	0.10	−1	j
1	1	0	7241.99452	0.04	−1	j	7289.98113	0.10	−1	j	7484.93647	0.24	−1	j,a
2	0	2	7269.31333	0.07	−1	j	7317.91734	0.10	−1	j,a	7513.42981	0.04	−1	j,a
2	1	2	7277.68819	0.08	−1	j	7325.22803	0.06	−1	j	7520.93445	0.15	−1	j
2	1	1	7293.20514	0.06	−1	j	7341.80267	0.05	−1	j	7536.81233	0.15	−1	j
2	2	1	7329.42025	0.08	−1	j	7376.57916	0.06	−1	j	7570.46362	0.15	−1	j
2	2	0	7331.62289	0.03	−1	j	7377.97676	0.08	−1	j,a	7571.93542	0.15	−1	j,a
3	0	3	7333.55302	0.05	−1	j	7382.25822	0.06	−1	j	7577.97301	0.10	−1	j,a
3	1	3	7338.25124	0.04	−1	j	7386.24441	0.06	−1	j,a	7582.01625	0.07	−1	j,a
3	1	2	7368.97355	0.11	−1	j	7418.05827	0.05	−1	j	7613.42341	0.11	−1	j
3	2	2	7398.40734	0.08	−1	j	7445.57945	0.08	−1	j,a	7640.38676	0.10	−1	j
3	2	1	7405.23814	0.06	−1	j	7451.87300	0.10	−1	j	7647.07771	0.10	−1	j,a
3	3	1	7472.95248	0.12	−1	j	7517.49036	0.07	−1	j	7709.66650	0.21	−1	j,a
3	3	0	7473.06138	0.06	−1	j	7517.74505	0.11	−1	j,a	7709.93668	0.14	−1	j,a
4	0	4	7415.59915	0.04	−1	j	7464.43707	0.04	−1	j,a	7660.31994	0.10	−1	j,a
4	1	4	7417.84285	0.05	−1	j	7466.23546	0.05	−1	j	7662.18625	0.17	−1	j,a

4	1	3	7467.77336	0.04	−1 j	7517.21214	0.04	−1 j,a	7713.08143	0.21 −1 j
4	2	3	7489.35345	0.05	−1 j,a	7536.56616	0.10	−1 j	7732.30376	0.24 −1 j,a
4	2	2	7505.81263	0.10	−1 j	7552.36533	0.08	−1 j,a	7749.46651	0.10 −1 j,a
4	3	2	7568.20455	0.08	−1 j	7611.81050	0.11	−1 j	7805.30314	0.27 −1 j,a
4	3	1	7568.89106	0.06	−1 j	7613.43068	0.18	−1 j,a	7807.07468	0.22 −1 j
4	4	1	7665.53547	0.10	−1 j	7707.63904	0.15	−1 j,a	7897.44589	0.09 −1 j,a
4	4	0	7665.57165	0.06	−1 j	7707.71847	0.15	−1 j,a	7897.48763	0.15 −1 j
5	0	5	7514.94703	0.22	−1 j	7563.94605	0.13	−1 j,a	7760.14129	0.08 −1 j,a
5	1	5	7515.91321	0.08	−1 j	7564.67259	0.05	−1 j,a	7760.90267	0.28 −1 j,a
5	1	4	7587.38639	0.25	−1 j	7636.97312	0.07	−1 j,a	7833.39552	0.15 −1 j,a
5	2	4	7601.30928	0.05	−1 j	7648.76662	0.06	−1 j,a	7845.23463	0.12 −1 j,a
5	2	3	7632.64666	0.07	−1 j,a	7677.25956	0.08	−1 j	7878.11177	0.09 −1 j,a
5	3	3	7688.64954	0.06	−1 j	7729.55317	0.11	−1 j,a	7924.59756	0.37 −1 j,a
5	3	2	7690.43440	0.05	−1 j	7735.32680	0.13	−1 j	7930.85259	0.28 −1 j,a
5	4	2	7784.28334	0.04	−1 j	7825.81951	0.08	−1 j	8017.62015	0.30 −1 j
5	4	1	7784.49351	0.04	−1 j	7826.30458	0.09	−1 j	8017.96992	0.29 −1 j,a
5	5	1	7906.96499	0.08	−1 j	7945.96683	0.15	−1 j,a	8132.69778	0.29 −1 j
5	5	0	7906.99020	0.11	−1 j	7945.96816	0.15	−1 j	8132.70282	0.37 −1 j,a
6	0	6	7631.70601	0.10	−1 j	7680.92649	0.17	−1 j,a	7877.87210	0.37 −1 j,a
6	1	6	7632.08765	0.08	−1 j	7681.21295	0.07	−1 j,a	7877.85312	0.35 −1 j,a
6	1	5	7725.44900	0.05	−1 j	7774.99747	0.06	−1 j,a	7972.56235	0.16 −1 j,a
6	2	5	7733.30321	0.10	−1 j	7781.21931	0.11	−1 j,a	7978.19540	0.33 −1 j,a
6	2	4	7784.02997	0.08	−1 j	7836.64253	0.07	−1 j,a	8031.11063	0.23 −1 j
6	3	4	7821.68963	0.15	−1 j	7870.45834	0.10	−1 j,a	8066.81021	0.30 −1 j,a
6	3	3	7838.91123	0.05	−1 j	7884.53730	0.07	−1 j,a	8082.31748	0.37 −1 j,a
6	4	3	7926.99458	0.10	−1 j	7967.29952	0.12	−1 j	8161.88794	0.12 −1 j,a
6	4	2	7927.92019	0.07	−1 j	7969.67463	0.14	−1 j,a	8163.47664	0.20 −1 j

6	5	2	8049.32582	0.07	−1	j	8087.95786	0.15	−1	j	8277.37781	0.28	−1	j,a
6	5	1	8049.49192	0.08	−1	j	8087.97649	0.10	−1	j,a	8277.43732	0.24	−1	j,a
6	6	1	8195.79741	0.10	−1	j,a	8230.65477	0.70	−1	j	8413.77322	0.20	−1	j,a
6	6	0	8195.79962	0.20	−1	j	8230.65535	0.57	−1	j,a	8413.77323	0.20	−1	j
7	0	7	7765.97418	0.08	−1	j,a	7815.54783	0.10	−1	j	8012.21257	0.07	−1	j,a
7	1	7	7766.14441	0.08	−1	j	7815.66024	0.11	−1	j,a	8014.15008	0.06	−1	j
7	1	6	7880.50415	0.08	−1	j	7929.98612	0.15	−1	j	8125.81303	0.15	−1	j,a
7	2	6	7884.46324	0.15	−1	j	7932.92207	0.15	−1	j,a	8130.39719	0.15	−1	j,a
7	2	5	7957.66894	0.06	−1	j,a	8007.96041	0.08	−1	j	8205.80745	0.19	−1	j,a
7	3	5	7985.28545	0.09	−1	j	8032.64541	0.08	−1	j,a	8231.02487	0.35	−1	j
7	3	4	8014.57415	0.20	−1	j	8060.70538	0.06	−1	j	8261.12741	0.33	−1	j,a
7	4	4	8093.58025	0.07	−1	j	8135.40313	0.07	−1	j,a	8329.89150	0.21	−1	j,a
7	4	3	8096.59406	0.20	−1	j,a	8138.81135	0.05	−1	j	8334.95526	0.14	−1	j,a
7	5	3	8215.32474	0.23	−1	j	8253.97657	0.06	−1	j,a	8446.08937	0.07	−1	j,a
7	5	2	8215.95394	0.08	−1	j,a	8254.10772	0.18	−1	j	8446.41069	0.10	−1	j,a
7	6	2	8362.40093	0.15	−1	j,a	8395.94644	0.08	−1	j,a	8584.00390	0.80	−1	j
7	6	1	8362.43766	0.24	−1	j,a	8395.94161	0.20	−1	j	8584.01353	0.15	−1	j
7	7	1	8530.40775	0.40		d	8559.71577	0.24	−1	j,a	8738.82599	1.50		d
7	7	0	8530.40775	0.40	−1	j	8559.71585	0.25	−1	j	8738.82599	1.50	−1	j
8	0	8	7917.72269	0.15	−1	j	7967.85239	0.11	−1	j,a	8165.24895	0.15	−1	j,a
8	1	8	7917.95666	0.20	−1	j	7967.89844	0.16	−1	j	8164.70853	0.46	−1	j,a
8	1	7	8052.18858	0.15	−1	j	8101.78876	0.12	−1	j,a	8298.47723	0.24	−1	j,a
8	2	7	8054.11663	0.06	−1	j	8103.11394	0.12	−1	j,a	8301.74849	0.10	−1	j,a
8	2	6	8150.83307	0.16	−1	j	8202.56374	0.08	−1	j,a	8399.44989	0.15	−1	j
8	3	6	8169.51747	0.06	−1	j,a	8216.20810	0.08	−1	j	8416.57470	0.29	−1	j,a
8	3	5	8216.20398	0.20	−1	j	8261.53081	0.08	−1	j,a	8465.52432	0.24	−1	j,a
8	4	5	8283.72181	0.08	−1	j	8324.19162	0.08	−1	j	8520.96603	0.15	−1	j,a

8	4	4	8291.54653	0.35	−1	j	8334.85257	0.05	−1	j,a	8533.35253	0.35	−1	j
8	5	4	8404.50384	0.24	−1	j,a	8444.04992	0.08	−1	j	8638.70344	0.30	−1	j,a
8	5	3	8406.58207	0.15	−1	j,a	8444.70816	0.05	−1	j,a	8639.92941	0.20	−1	j
8	6	3	8552.70901	0.10	−1	j,a	8585.41532	0.35	−1	j	8777.54724	0.45	−1	j,a
8	6	2	8552.99273	0.08	−1	j	8585.39269	0.15	−1	j,a	8777.59955	0.40	−1	j
8	7	2	8721.13771	0.35	−1	j	8748.42950	0.40	−1	j	8926.52845	1.00	−1	j
8	7	1	8721.13876	0.40	−1	j	8748.42936	0.37	−1	j,a	8926.52845	1.00	−1	j
8	8	1	8912.73417	1.01	1	a	8943.39755	0.30	−1	j	9105.96467	0.45	−1	j,a
8	8	0	8912.73417	1.01		d	8943.39755	0.29	−1	j,a	9105.96488	0.50	−1	j
9	0	9	8087.39507	0.11	−1	j	8137.85565	0.25	−1	j	8335.48808	0.10	−1	j,a
9	1	9	8087.45205	0.10	−1	j	8138.00841	0.15	−1	j,a	8335.53984	0.37	−1	j,a
9	1	8	8240.86016	0.07	−1	j,a	8290.67268	0.13	−1	j	8488.02991	0.20	−1	j,a
9	2	8	8241.83115	0.24	−1	j,a	8291.62793	0.09	−1	j,a	8486.87365	0.45	−1	j,a
9	2	7	8361.78497	0.32	−1	j,a	8412.63183	0.10	−1	j	8610.00995	0.35	−1	j,a
9	3	7	8369.43182	0.30	−1	j	8419.79333	0.08	−1	j,a				
9	3	6	8441.58262	0.15	−1	j,a	8503.73297	1.00	1	a	8692.96920	0.28	−1	j,a
9	4	6	8482.46671	1.00	1	a	8535.72792	0.15	−1	j,a	8734.21303	0.25	−1	j
9	4	5	8513.54626	0.10	−1	j,a	8558.23387	0.11	−1	j	8757.78227	0.19	−1	j,a
9	5	5	8624.84747	1.00	1	a	8657.91049	0.08	−1	j,a	8854.92162	0.25	−1	j
9	5	4	8621.78419	0.19	−1	j,a	8660.38128	0.44	−1	j	8858.59761	0.19	−1	j,a
9	6	4	8766.62760	0.50	−1	j	8798.64155	0.31	−1	j,a	8994.46200	0.40	−1	j
9	6	3	8768.72906	0.19	−1	j,a	8798.60388	0.20	−1	j	8994.68878	0.32	−1	j,a
9	7	3					8961.05814	0.37	−1	j,a	9139.67506	3.00	−1	j
9	7	2	8935.28681	1.00	1	a	8961.01895	0.30	−1	j	9139.68412	0.37	−1	j,a
9	8	2	9128.70157	0.71		d	9161.85161	0.37	−1	j,a				
9	8	1	9128.70157	0.71	3	e,a	9161.84776	0.40	−1	j				
9	9	1									9513.41505	0.50	−1	j

9	9	0									9513.41468	0.45	−1	j,a	
10	0	10	8274.56469	0.06	−1	j	8325.28023	0.18	−1	j,a	8523.78433	0.20	−1	j	
10	1	10	8273.90423	0.07	−1	j,a	8325.35652	0.24	−1	j,a	8523.79353	0.38	−1	j,a	
10	1	9	8446.74640	0.06	−1	j	8496.90207	0.08	−1	j,a	8696.04484	0.30	−1	j,a	
10	2	9	8447.62743	0.20	−1	j,a	8496.73922	0.11	−1	j,a	8694.33306	0.19	−1	j,a	
10	2	8	8588.50472	0.15	−1	j,a	8639.11372	0.20	−1	j	8836.85154	0.37	−1	j,a	
10	3	8	8593.17871	0.24	−1	j,a	8642.34526	0.43	−1	j	8840.04549	0.24	−1	j,a	
10	3	7	8686.90064	0.10	−1	j	8744.81582	0.08	−1	j,a	8940.59265	0.37	−1	j,a	
10	4	7	8719.84405	0.12	−1	j,a	8768.83885	0.20	−1	j,a	8968.65415	0.29	−1	j,a	
10	4	6	8762.22283	0.27	−1	j,a	8807.71838	0.15	−1	j,a	9016.22840	0.80	−1	j	
10	5	6	8859.76147	0.23	−1	j,a	8894.95898	0.15	−1	j	9094.22390	0.20	−1	j,a	
10	5	5	8862.24945	0.35	−1	j	8901.99142	0.09	−1	j,a					
10	6	5	9003.96945	0.80	−1	j	9035.69754	0.20	−1	j	9234.67413	0.37	−1	j,a	
10	6	4					9035.78522	0.18	−1	j	9235.45197	0.37	−1	j,a	
10	7	4	9172.66682	1.00	1	a	9197.45514	0.40	−1	j	9377.08612	1.04	1	a	
10	7	3	9172.73456	1.01	1	a	9197.31197	0.23	−1	j,a					
10	8	3	9367.98192	0.99	2	e,a	9403.03113	0.40	−1	j	9571.37750	1.02	1	a	
10	8	2	9367.98192	0.99		d	9403.01507	0.45	−1	j,a					
10	9	2					9551.36555	1.07		d	9751.64756	1.02	1	a	
10	9	1					9551.36555	1.07	1	a	9751.64756	1.02		d	
10	10	1	9742.80239	1.10	1	a	9783.24165	0.72		d					
10	10	0	9742.80239	1.10		d	9783.24165	0.72	2	a					
11	0	11	8478.78402	0.13	−1	j,a	8530.58419	0.40	−1	j	8729.67158	0.38	−1	j,a	
11	1	11	8478.87945	0.13	−1	j,a	8530.59642	0.45	−1	j,a	8729.68222	0.50	−1	j	
11	1	10	8669.96417	0.06	−1	j,a	8719.46789	0.26	−1	j	8918.28009	1.00	1	a	
11	2	10	8669.12118	0.15	−1	j,a	8720.23627	0.16	−1	j,a	8918.51321	1.03	1	a	
11	2	9	8831.35058	0.10	−1	j,a	8882.66345	0.15	−1	j,a	9079.85432	0.35	−1	j,a	

11	3	9					8883.03745	0.24	−1	j,a	9076.57778	0.30	−1	j		
11	3	8	8954.07786	0.15	−1	j	9007.83016	0.33	−1	j,a	9205.75342	0.35	−1	j,a		
11	4	8					9022.49294	0.23	−1	j,a	9223.38417	0.70	−1	j		
11	4	7	9035.75414	0.71	2	a	9086.44760	0.60	−1	j	9292.69667	0.56	−1	j,a		
11	5	7					9154.44999	0.32	−1	j,a						
11	5	6	9128.79102	0.99	2	e,a	9170.24304	0.24	−1	j,a	9374.78190	0.24	−1	j,a		
11	6	6					9296.35661	0.24	−1	j,a						
11	6	5	9262.70831	0.99	2	e,a	9297.19338	0.24	−1	j,a	9500.21718	0.80	−1	j,a		
11	7	5					9457.53262	0.35	−1	j,a						
11	7	4	9433.41853	0.71	3	e,a	9457.15002	0.55	−1	j						
11	8	4	9630.39792	1.05		d					9836.46540	6.43		d		
11	8	3	9630.39792	1.05	1	a					9836.46540	6.43	1	e		
11	9	3					9811.33935	1.00	2	e,a	10013.04835	0.73		d		
11	9	2					9811.33935	1.00		d	10013.04835	0.73	2	a		
11	10	2	10006.58121	1.12		d	10048.42203	0.74	2	a						
11	10	1	10006.58121	1.12	1	a	10048.42203	0.74		d						
11	11	1	10244.80733	1.13		d										
11	11	0	10244.80733	1.13	2	e,a										
12	0	12	8701.04500	1.50	−1	j	8753.24941	0.33	−1	j,a	8953.16005	0.90	−1	j		
12	1	12	8701.04648	0.37	−1	j,a	8753.22920	0.45	−1	j,a	8953.15987	0.50	−1	j,a		
12	1	11	8909.05180	0.15	−1	j,a	8960.78803	0.23	−1	j,a	9159.98796	0.71	2	a		
12	2	11	8909.81648	0.25	−1	j	8961.13575	0.25	−1	j	9160.06494	1.00	2	e,a		
12	2	10	9090.59427	0.20	−1	j	9141.59622	0.27	−1	j,a	9342.21245	1.00	1	a		
12	3	10	9090.88971	0.54	−1	j,a	9141.37257	0.20	−1	j,a	9339.32370	1.00	1	a		
12	3	9					9288.39745	0.23	−1	j,a	9486.86189	0.98	2	e,a		
12	4	9	9246.27866	1.01	1	a	9295.64684	0.51	−1	j,a	9497.92946	0.99	2	e,a		
12	4	8					9404.10017	1.07	1	a	9591.49727	0.98	3	e,a		

12	5	8	9375.95592	0.59	3	a	9435.56112	0.40	−1	j	9638.95440	6.14	1	e
12	5	7					9464.60342	0.08	−1	j,a				
12	6	7	9547.81839	0.70	4	e,a	9580.07650	0.50	−1	j	9784.01486	0.70	4	e,a
12	6	6					9583.27629	0.33	−1	j,a				
12	7	6	9716.54102	0.99	2	e,a					9923.20277	0.99	2	e,a
12	7	5	9717.42638	1.07	1	a	9740.39797	0.46	−1	j,a				
12	8	5	9915.67165	1.06	1	a								
12	8	4	9915.67165	1.06		d								
12	9	4					10094.25441	5.02	1	a				
12	9	3					10094.25441	5.02		d				
12	10	3	10292.45858	1.09	1	a								
12	10	2	10292.45858	1.09		d								
12	11	1					10559.76150	0.86	2	a				
12	12	1	10772.25795	1.26	2	e,a								
12	12	0	10772.25795	1.26		d								
13	0	13	8940.55162	0.15	−1	j,a	8993.46495	0.40	−1	j	9194.17355	0.40	−1	j
13	1	13	8940.55222	0.72	−1	j,a	8993.46333	0.19	−1	j,a	9194.17379	0.37	−1	j,a
13	1	12	9167.42019	0.24	−1	j,a	9219.17744	0.45	−1	j	9418.98489	0.71	3	e,a
13	2	12	9167.50000	1.00	−1	j	9219.10238	0.33	−1	j,a				
13	2	11					9416.30742	0.30	−1	j	9615.06245	1.00	2	e,a
13	3	11					9416.95179	0.15	−1	j,a	9615.89050	5.13	1	e
13	3	10					9578.39670	0.80	−1	j	9783.75903	0.71	3	e,a
13	4	10					9587.30465	0.32	−1	j,a				
13	4	9	9649.37070	6.12	1	e	9712.55986	1.16	1	a	9909.24095	1.01	2	e,a
13	5	9					9737.39594	0.51	−1	j,a				
13	5	8	9740.14906	1.00	1	a					9995.11003	1.01	2	e,a
13	6	8					9886.09405	0.72	2	a				

13	6	7	9858.00769	0.72	3	e,a					10104.30248	0.72	4	e,a
13	7	7					10048.15472	0.72	4	e,a				
13	7	6	10025.36732	0.60	3	a								
13	8	5	10223.64359	1.07	2	e,a								
13	10	4	10600.14869	0.78		d	10645.42610	6.64	1	e				
13	10	3	10600.14869	0.78	3	e,a	10645.42610	6.64		d				
13	11	3	10840.23115	1.18		d								
13	11	2	10840.23115	1.18	2	e,a								
13	12	2	11083.10653	1.30		d	11104.86349	1.32	1	a				
13	12	1	11083.10653	1.30	1	a								
14	0	14	9197.37590	1.00	−1	j	9251.04067	0.59	−1	j,a	9452.48992	1.05	1	a
14	1	14	9197.37526	0.62	−1	j,a	9251.04100	2.00	−1	j	9452.39211	0.41	−1	j,a
14	1	13					9494.68677	0.42	−1	j,a	9695.40334	1.03	1	a
14	2	13	9442.36817	1.02	1	a	9494.68775	0.30	−1	j	9695.31784	0.99	3	e,a
14	2	12					9709.39858	0.38	−1	j,a	9909.16120	5.22	1	e
14	3	12	9658.22410	0.99	2	e,a								
14	3	11					9893.58855	0.08	−1	j	10099.01293	1.07	1	a
14	4	11	9846.21025	1.00	1	a	9896.69380	6.19	1	e	10094.85453	0.72	3	e,a
14	4	10					10042.20096	1.07	1	a				
14	5	10	10008.79225	0.74	2	a	10059.05698	3.09	−1	g,a	10266.81884	1.09	1	a
14	5	9					10133.01085	1.07	1	a	10337.35586	1.12	1	a
14	6	9	10181.87420	1.04	2	e,a					10422.00088	0.74	6	e,a
14	6	8					10230.67448	0.73	5	e,a				
14	7	8									10594.17602	0.73	3	e,a
14	7	7					10376.92305	0.61	−1	g,a				
14	8	7									10763.84200	6.77	1	e
14	8	6					10523.52714	0.76	2	a				

14	10	5	10929.11750	3.97	2	e,a								
14	10	4	10929.11750	3.97		d								
14	11	4	11170.62163	1.16	1	a								
14	11	3					11202.83848	6.71	1	a				
14	13	1					11682.82493	1.66	1	a				
15	0	15	9471.45055	0.75	3	e,a	9525.92583	0.40	−1	j	9728.41594	0.60	5	e,a
15	1	15					9525.92599	0.35	−1	j,a				
15	1	14	9734.35649	1.07	1	a	9787.38010	5.08	1	e	9988.70356	1.07	1	a
15	2	14					9787.37670	0.36	−1	j,a	9989.04179	1.06	2	e,a
15	2	13	9967.15843	0.78	3	e,a	10019.27135	0.40	−1	j	10219.60186	1.08	2	e,a
15	3	13	9967.38615	1.19	1	a	10019.25290	0.38	−1	j,a				
15	3	12	10168.04277	1.03	1	a	10221.53730	3.60	−1	g				
15	4	12	10171.76977	1.14	1	a	10223.76814	1.14	1	a				
15	4	11	10331.64614	1.03	1	a					10593.27472	0.73	3	e,a
15	5	11					10399.77543	0.61	3	a				
15	5	10	10452.68682	1.09	2	e,a					10720.82315	0.60	4	e,a
15	6	10					10561.73258	0.76	2	a	10772.93490	7.11	1	e
15	6	9	10552.81940	6.23	1	e					10811.02929	1.02	2	e,a
15	7	9					10729.71837	0.75	2	a	10951.28087	1.19	1	a
15	7	8									10951.45356	1.09	1	a
15	8	8					10875.75901	3.93	2	e,a				
15	8	7					10875.55240	6.28	1	e	11117.03796	1.06	1	a
15	9	7					11078.33527	1.12	1	a				
15	10	5	11279.80928	1.18	3	e,a					11495.26910	6.39	1	e
15	11	4	11521.79888	5.04	1	a								
16	0	16	9762.63607	1.05	2	a	9818.03407	0.64	−1	j,a	10021.54308	1.09	1	a
16	1	16	9762.69542	0.76	3	e,a	9818.03755	2.20	−1	j	10021.65922	1.08	3	e,a

16	1	15				10097.18225	0.77	−1	j,a					
16	2	15	10043.43172	0.79	3	e,a	10097.18100	3.00	−1	j	10299.49596	1.08	2	e,a
16	2	14					10345.96721	0.75	4	e,a				
16	3	14	10293.47767	1.10	1	a					10547.31916	1.07	2	e,a
16	3	13					10565.32560	5.01	1	a				
16	4	13	10514.39392	1.02	3	a					10766.65833	1.05	2	e,a
16	4	12					10751.96328	0.78	2	a				
16	5	12					10754.32460	6.34	1	e	10955.31689	5.01	1	a
16	5	11					10905.11180	2.20	−1	g				
16	6	11	10871.83084	1.08	2	a					11144.02350	0.78	3	e,a
16	6	10					10992.93352	1.16	2	e,a				
16	7	9					11106.40827	1.09	1	a				
16	8	9									11490.56960	7.38	1	e
16	10	7									11868.78230	6.37	1	e
16	12	4					12170.08753	4.11	2	e,a				
17	0	17	10071.02632	1.26	1	a	10127.28250	1.00		d	10331.80966	1.05	3	e,a
17	1	17	10071.02632	1.26		d	10127.28250	1.00	−1	j				
17	1	16					10424.44000	3.00	−1	j	10627.23923	1.09	3	e,a
17	2	16					10424.01324	0.69	3	a				
17	2	15	10636.17846	1.11	1	a	10689.44040	14.30	−1	g	10891.47459	1.09	2	e,a
17	3	15					10689.44138	0.82	2	a				
17	3	14	10872.64309	0.80	3	a	10924.82632	1.47	−1	g,a				
17	4	14					10925.48206	1.17	2	a				
17	4	13									11326.45323	1.05	3	e,a
17	5	13					11132.26705	1.11	3	e,a				
17	5	12	11235.39007	1.11	2	a					11504.31130	6.34	1	e
17	6	12					11316.46248	1.11	2	a				

17	6	11	11355.78764	1.08	1	a					11620.27105	1.14	1	a
17	8	9	11606.64608	1.14	1	a								
18	0	18	10396.34310	1.27		d	10453.57585	1.14	1	a	10659.25545	1.13		d
18	1	18	10396.34310	1.27	1	a	10453.57585	1.14		d	10659.25545	1.13	3	e,a
18	1	17					10767.78050	1.09	−1	g,a				
18	2	17	10712.39420	0.83	2	a	10767.78200	3.30	−1	g	10971.92676	1.11	3	e,a
18	2	16					11049.60609	0.81	−1	g,a				
18	3	16	10996.01232	1.14	1	a	11049.58119	1.62	−1	g,a				
18	3	15					11301.82012	1.06	−1	g,a				
18	4	15									11503.37432	1.11	1	a
18	4	14					11523.22553	1.13	2	a	11723.14699	1.74	1	a
18	5	14									11725.99604	1.09	2	a
18	5	13					11709.59939	1.20	1	a				
18	6	13	11669.79109	1.23	2	a					11916.46575	1.27	1	a
18	6	12									12047.27192	1.20	1	a
19	0	19	10738.57169	1.16	1	a	10796.81431	0.88		d	11003.71316	1.14	3	e,a
19	1	19					10796.81431	0.88	3	e,a	11003.71316	1.14		d
19	1	18					11128.39137	1.18		d				
19	2	18					11128.39137	1.18	1	a				
19	2	17					11426.30580	4.90	−1	g,?	11630.08510	1.18	1	a
19	3	17					11426.32000	1.08	−1	g,a				
19	3	16									11897.40367	1.09	2	a
19	4	16					11694.17123	1.10	−1	g,a	11896.59392	1.83	1	a
19	4	15									12133.12662	1.10	1	a
19	5	14									12328.93352	1.09	1	a
19	7	13					12339.90678	1.20	1	a				
20	0	20					11156.92409	1.31	2	e,a	11365.05919	1.19		d

20	1	20	11156.92409	1.31		d	11365.05919	1.19	1	a
20	1	19	11505.63869	1.33	1	a	11712.06830	6.66		d
20	2	19	11505.63869	1.33		d	11712.06830	6.66	1	e
20	2	18	11819.34050	5.90	−1	g,?				
20	3	18	11819.34050	5.90	−1	g	12024.25863	1.17	1	a
20	3	17	12102.66155	1.32	−1	g,a	12305.73578	1.32	1	a
20	4	17					12306.00585	1.14	1	a
20	4	16					12558.23288	2.28	1	a
20	5	16					12558.64257	1.17	1	a
20	5	15	12577.64267	1.24	1	a				
20	6	15					12782.10004	1.17	2	a
20	7	13	12872.01204	1.18	1	a				
20	8	13					13192.49329	1.87	2	a
21	0	21	11533.64536	0.85		d	11743.03943	1.19	1	a
21	1	21	11533.64536	0.85	3	e,a	11743.03943	1.19		d
21	1	20	11899.60080	1.20		d				
21	2	20	11899.60080	1.20	−1	g,a				
21	2	19	12228.72193	1.39		d	12434.75588	1.14	1	a
21	3	19	12228.72193	1.39	−1	g,a				
21	3	18	12527.68510	1.03		d	12731.38508	5.03	1	a
21	4	18	12527.68510	1.03	−1	g,a	12731.06704	1.86	1	a
21	4	17					12997.41769	1.23	1	a
22	0	22	11927.07908	1.73	2	e,a	12138.03158	1.75		d
22	1	22	11927.07908	1.73		d	12138.03158	1.75	1	a
22	1	21	12310.05549	1.03	2	a				
22	2	21	12310.05549	1.03		d				
22	2	20	12654.48183	1.72	−1	g,a				

22	3	20	12654.48183	1.72		d	12861.46442	3.06	1	a
22	3	19	12967.82402	1.31	−1	g,a				
22	5	17	13505.98627	1.39	1	a				
22	6	16	13724.79183	1.33	1	a				
23	0	23	12337.01814	1.21		d	12549.42295	1.21	2	e,a
23	1	23	12337.01814	1.21	2	e,a	12549.42295	1.21		d
23	1	22	12736.89031	1.40		d	12946.95630	2.09	1	a
23	2	22	12736.89031	1.40	2	e,a	12946.95630	2.09		d
23	2	21	13096.12898	3.05		d				
23	3	21	13096.12898	3.05	−1	g,a				
23	3	20	13423.97317	1.58		d				
23	4	20	13423.97317	1.58	−1	g,a				
23	5	19	13720.44584	5.16	1	a				
24	0	24	12763.30375	1.37	−1	g,a				
24	1	24	12763.30375	1.37		d	12977.24281	1.90	1	a
24	1	23	13179.97406	2.30	2	e,a				
24	2	23	13179.97406	2.30		d	13391.35217	1.52	1	a
24	2	22	13553.61362	3.04	1	a				
24	3	22	13553.61362	3.04		d	13762.29244	3.04	1	a
24	3	21	13895.97773	2.92	1	a				
24	4	21					14101.99261	2.05	1	a
25	0	25	13205.83760	13.72		d				
25	1	25	13205.83760	13.72	1	e				
25	1	24	13639.20965	1.68		d	13851.92932	1.41	2	e,a
25	2	24	13639.20965	1.68	2	e,a	13851.92932	1.41		d
25	2	23	14026.67952	2.94		d				
25	3	23	14026.67952	2.94	−1	g,a				

25	4	22	14383.30220	5.30	−1	g					
26	0	26	13664.50267	1.58	2	e,a					
26	1	26	13664.50267	1.58		d	13881.70520	8.19	1	e	
26	1	25	14114.46209	1.57	1	a	14328.53779	5.06		d	
26	2	25	14114.46209	1.57		d	14328.53779	5.06	1	a	
26	2	24	14515.15560	5.60	−1	g					
26	3	24	14515.15560	5.60		d	14728.38286	1.73	1	a	
27	0	27	14139.14751	2.24		d					
27	1	27	14139.14751	2.24	1	a					
27	2	25	15018.80089	5.46		d					
27	3	25	15018.80089	5.46	1	a					
28	0	28	14629.33023	5.07	1	a					
28	2	26	15537.45460	5.45	1	a					

TABLE VI.: Term values for the $2\nu + \delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	050 or 00 5			130 or 10^+3			210 or 20^+0		
0	0	0	7542.43660	4.88	3 e	8273.97570	0.90	1 k	8761.58200	0.90	1 k
1	0	1	7566.01221	1.02	1 a	8297.37480	0.60	2 k	8784.65950	0.60	2 k
1	1	1	7622.73380	10.21	2 e	8323.29340	0.50	3 k	8799.64110	0.60	3 k
1	1	0	7629.08353	0.76	2 a	8329.36750	0.90	2 k	8805.15890	0.60	2 k
2	0	2				8343.18160	0.50	3 k	8829.53010	0.60	3 k
2	1	2	7663.69870	6.28	2 e	8364.05870	0.40	4 k	8840.27590	0.50	3 k
2	1	1				8382.24290	0.50	3 k	8856.77820	0.60	3 k
2	2	1	7828.73049	1.07	1 a	8456.95150	0.40	4 k	8899.83650	0.40	4 k
2	2	0	7829.25059	1.01	1 a	8457.76620	0.60	3 k	8902.69810	0.50	4 k
3	0	3	7681.29313	0.73	6 e,a	8409.60320	0.50	3 k	8894.03430	0.50	3 k
3	1	3				8424.60730	0.50	4 k	8900.49960	0.50	4 k
3	1	2	7763.11363	1.05	4 e,a	8460.76830	0.40	4 k	8933.20540	0.60	4 k
3	2	2				8527.32140	0.40	5 k	8969.75930	0.40	5 k
3	2	1	7902.88024	1.08	1 a	8532.12310	0.40	5 k	8976.54900	0.40	4 k
3	3	1				8660.64910	0.60	4 k	9057.76730	0.60	3 k
3	3	0	8122.43917	1.04	3 e,a	8660.73730	0.40	5 k	9057.92400	0.40	5 k
4	0	4				8494.66560	0.50	3 k	8976.30240	0.60	3 k
4	1	4	7805.63201	0.53	13 l,a	8504.37140	0.40	4 k	8979.65800	0.50	4 k
4	1	3				8563.89420	1.70	3 k	9033.02700	0.60	3 k
4	2	3	7995.21227	0.73	2 a	8620.26550	0.40	5 k	9061.15320	0.40	4 k
4	2	2	8002.51464	1.03	1 a	8633.09570	0.40	5 k	9077.35730	0.50	4 k
4	3	2	8219.44360	1.01	2 e,a	8756.53090	0.40	6 k	9152.60240	0.40	6 k
4	3	1	8219.67825	1.02	1 a	8757.14080	0.40	5 k	9153.64650	0.60	5 k

4	4	1	8486.17785	0.64	3	a	8929.44620	0.50	5	k	9268.01360	0.90	1 k
4	4	0	8486.17026	1.01	1	a	8929.45380	0.80	4	k			
5	0	5	7878.54857	0.46	15	l,a	8596.89530	0.60	3	k	9075.60410	0.60	3 k
5	1	5	7905.81001	1.11	1	a	8602.79150	0.60	3	k	9077.17750	0.60	3 k
5	1	4	7999.96001	0.60	7	e,a	8690.10700	0.40	4	k	9154.15910	0.40	4 k
5	2	4					8735.08010	0.40	5	k	9173.56810	0.50	5 k
5	2	3	8129.11856	0.78	2	a	8761.66090	0.40	5	k	9204.64810	0.40	6 k
5	3	3	8340.59185	1.24	1	a	8876.34710	0.60	4	k	9271.29640	0.60	5 k
5	3	2	8341.48469	0.59	3	a	8878.58650	0.40	5	k	9275.07950	0.40	5 k
5	4	2	8608.18988	1.29	1	a							
5	4	1	8608.24408	1.19	1	a							
5	5	1	8906.92402	0.56		d	9257.21960	0.90	5	k			
5	5	0	8906.92402	0.56	4	a	9257.23790	0.90	4	k			
6	0	6	8004.48535	1.03	1	a	8715.98060	0.60	3	k	9191.65910	2.00	3 k
6	1	6	8025.11695	1.02	1	a	8719.40560	0.50	3	k	9192.64290	0.60	4 k
6	1	5					8837.42730	0.60	4	k			
6	2	5	8252.83437	0.61	5	e,a	8870.98700	0.50	4	k	9306.12160	0.50	4 k
6	2	4					8917.09310	0.90	2	k			
6	3	4	8485.61537	0.78	2	a	9021.07019	0.41	7	k,a	9414.25490	0.40	6 k
6	3	3	8488.14622	1.19	1	a					9423.64930	0.90	1 k
6	4	3	8754.17674	0.62	3	a	9193.90213	1.07	1	a	9529.08130	12.10	1 e
6	4	2	8754.37891	1.40	1	a							
6	5	2	9054.28188	0.90	2	a	9402.23440	0.40	8	k			
6	6	1	9374.32638	0.64	3	a							
6	6	0	9374.32638	0.64		d							
7	0	7	8147.58478	0.60	3	a	8851.85420	0.80	3	k	9325.43870	0.60	3 k
7	1	7	8162.72258	1.02	1	a	8853.88400	0.90	2	k	9325.11420	0.90	2 k,?

7	1	6	8331.67109	0.61	3	a	9003.74570	0.50	4	k	9451.28030	2.00	3 k
7	2	6	8414.43096	1.19	1	a					9457.95710	0.90	2 k
7	2	5	8463.41894	0.47	8	e,a	9097.93372	0.63	6	k,a			
7	3	5	8654.12309	1.19	1	a					9567.77180	0.50	7 k
7	3	4	8660.11387	1.08	1	a							
7	4	3	8924.61625	1.38	1	a	9363.46259	1.06	1	a			
7	5	3	9225.77959	1.72	1	a	9572.94970	0.40	7	k			
7	5	2	9226.17517	0.79	2	a					9842.80820	0.50	6 k
7	6	2	9546.54997	0.78		d							
7	6	1	9546.54997	0.78	2	a							
7	7	1	9879.70553	0.93		d							
7	7	0	9879.70553	0.93	2	a							
8	0	8					9004.70290	0.60	2	k	9476.36790	0.90	2 k
8	1	8	8318.67754	0.54	4	a	9006.03610	0.90	3	k	9476.50600	0.90	2 k
8	2	7	8597.21463	1.05	4	e,a	9203.11570	0.60	4	k	9628.38990	0.90	2 k
8	3	6	8845.55800	0.61	3	a					9753.92820	0.60	5 k
8	3	5	8857.82280	1.56	1	a							
8	4	5	9117.28571	1.13	1	a							
8	5	4	9421.22358	0.64	3	a					10031.37050	18.16	1 e
8	6	3	9742.48438	0.84	3	a							
8	6	2	9742.48438	0.84		d							
8	7	2	10076.79599	1.12	1	a							
8	7	1	10076.79599	1.12		d							
8	8	1	10409.94293	1.17	1	a							
8	8	0	10409.94293	1.17		d							
9	0	9	8484.75527	0.62	3	a	9174.68190	0.90	3	k	9644.46850	0.90	3 k
9	1	9	8492.84227	1.01	1	a	9175.83240	2.80	2	k	9644.81580	0.90	1 k

9	1	8	8747.35193	1.10	1	a					9814.77250	0.52	4	k,a
9	2	7	8901.07008	1.10	1	a								
9	3	6	9081.61237	0.57	4	a								
9	4	5	9336.73949	1.07	1	a								
9	5	4	9645.80988	1.08	1	a								
9	6	3	9961.84398	0.82	2	a								
9	7	3	10297.15538	1.19		d								
9	7	2	10297.15538	1.19	1	a								
10	0	10	8678.98795	1.27	1	a					9830.16540	0.90	1	k
10	1	10	8685.04799	0.62	3	a					9830.84704	0.68	3	k,a
10	2	9	9023.99364	0.76	3	a					10024.70081	0.68	2	k,a
10	3	8	9293.69001	1.07	1	a	9809.14854	1.07	1	a	10182.83895	1.05	1	a
10	4	7	9570.54765	1.11	1	a					10320.68700	0.60	4	k
10	5	6	9884.17765	0.67	8	l,a								
10	7	4	10540.65642	0.80	2	a								
11	0	11	8890.77377	0.62	3	a					10033.06062	1.03	2	a,?
11	1	11	8895.19917	5.10	1	a					10032.45410	0.90	1	k
11	1	10	9236.64523	1.14	2	a								
11	2	9	9430.47446	1.09	1	a								
11	3	8	9607.14309	1.11	1	a								
11	4	7	9844.32567	1.12	1	a								
11	6	5	10469.57189	1.47	1	a								
12	0	12	9120.33404	1.27	1	a								
12	1	12	9123.57764	1.18	2	e,a								
12	1	11	9507.40839	2.75	1	a								
12	2	11	9529.84749	0.53	6	a								
12	3	10	9832.63183	0.83	4	a								

13	0	13	9367.38264	1.23	2	e,a						
13	1	12	9795.53860	1.11	1	a						
14	1	14	9635.01375	0.81	2	a	10279.16105	1.48	1	a		
14	2	13	10112.99060	0.81	3	a						
15	0	15	9917.03222	0.82	2	a						
15	1	14	10425.26429	0.81	2	a						
16	1	16	10222.75565	1.18	1	a						
16	2	15	10773.16963	0.82	2	a						
16	4	13	11467.96993	1.18	1	a						
17	0	17	10543.83941	0.82	2	a						
17	1	16	11127.79418	1.47	1	a						
18	2	17	11511.11115	1.15	1	a						

J	K_a	K_c	031 or 10^-3			111 or 20^-1			012 or 11 1		
0	0	0	8373.85210	0.67	2 k,a	8807.00058	0.67	2 k,a	9000.13650	0.90	1 k
1	0	1	8397.48510	0.60	3 k	8830.23180	0.50	3 k	9023.49010	0.60	2 k
1	1	1	8421.18569	0.52	3 k,a	8844.53720	0.60	2 k	9037.19850	0.90	3 k
1	1	0	8427.36780	0.60	2 k	8850.10680	0.90	2 k	9042.83570	0.90	2 k
2	0	2	8443.64823	0.33	7 k,a	8875.30880	0.40	4 k	9068.75110	0.50	3 k
2	1	2	8462.46374	0.45	4 k,a	8885.20710	0.50	4 k	9078.28383	0.52	3 k,a
2	1	1	8480.83927	0.45	5 k,a	8903.49710	0.50	4 k	9095.16400	0.50	3 k
2	2	1	8549.96529	0.45	4 k,a	8944.63260	0.60	3 k	9135.84320	0.40	4 k
2	2	0	8551.02413	0.35	6 k,a	8945.96440	0.40	4 k	9137.25440	0.50	4 k
3	0	3	8510.37532	0.41	6 k,a	8939.96360	0.40	5 k	9133.58136	0.38	7 k,a
3	1	3	8523.10867	0.30	9 k,a	8945.66310	0.40	5 k	9139.06960	0.50	4 k
3	1	2	8560.14393	0.45	5 k,a	8979.67480	0.40	5 k	9172.50908	0.35	6 k,a
3	2	2	8620.95235	0.38	8 k,a	9014.02145	0.37	6 k,a	9205.96930	0.50	5 k
3	2	1	8625.99780	0.50	4 k	9020.17450	0.40	6 k	9212.46990	0.40	5 k

3	3	1	8746.52774	0.38	6 k,a	9098.39681	0.45	6 k,a	9287.20500	0.50	5 k
3	3	0	8746.64775	0.52	3 k,a	9098.60980	0.50	4 k	9287.43844	0.37	6 k,a
4	0	4	8595.58629	0.32	8 k,a	9022.33550	0.40	5 k	9216.15290	0.40	6 k
4	1	4	8603.49050	0.41	5 k,a	9025.15130	0.50	4 k	9218.85999	0.45	4 k,a
4	1	3	8664.10414	0.32	8 k,a	9079.71636	0.33	9 k,a	9273.23620	0.50	5 k
4	2	3	8714.61020	0.50	4 k	9105.43140	0.40	6 k	9298.21224	0.35	7 k,a
4	2	2	8728.47301	0.31	8 k,a	9121.51920	0.30	7 k	9315.18390	0.50	4 k
4	3	2	8843.24183	0.41	5 k,a	9193.12330	0.50	4 k	9383.11752	0.37	7 k,a
4	3	1	8844.04993	0.38	6 k,a	9194.53100	0.30	7 k	9384.65000	0.50	5 k
4	4	1	9006.59110	0.90	2 k	9305.50350	0.60	3 k	9490.95320	0.45	4 k,a
4	4	0	9006.60270	0.67	4 k,a	9305.52270	0.40	4 k	9490.98526	0.53	4 k,a
5	0	5	8697.99562	0.41	6 k,a	9121.74360	0.50	5 k	9316.19140	0.40	5 k
5	1	5	8702.48357	0.62	4 k,a	9123.03275	0.37	6 k,a	9317.08550	0.50	4 k
5	1	4	8791.00921	0.41	5 k,a	9200.98510	0.50	5 k	9394.97591	0.35	6 k,a
5	2	4	8830.17285	0.33	8 k,a	9218.04206	0.37	7 k,a	9411.68780	0.50	5 k
5	2	3	8858.60070	0.50	3 k	9249.24240	0.40	6 k	9444.69030	0.40	5 k
5	3	3	8964.05460	0.40	5 k	9310.99560	0.30	8 k	9502.70100	0.40	6 k
5	3	2	8967.10910	2.10	2 k	9316.37300	0.40	5 k	9508.22698	0.37	7 k,a
5	4	2	9127.95803	0.41	6 k,a	9424.37010	0.40	7 k	9611.53740	0.40	5 k
5	4	1	9128.09220	0.50	3 k	9424.54430	0.40	6 k	9611.80836	0.35	7 k,a
5	5	1	9324.06556	0.41	5 k,a	9563.99603	0.53	5 k,a	9745.19930	0.90	3 k
5	5	0	9324.10426	0.45	6 k,a	9563.99580	2.80	3 k	9745.19880	0.46	5 k,a
6	0	6	8817.24372	0.43	6 k,a	9238.33233	0.37	6 k,a	9432.51340	0.50	4 k
6	1	6	8819.66372	0.45	4 k,a	9238.88190	0.50	4 k	9433.50400	0.40	4 k
6	1	5	8938.68295	0.34	10 k,a	9340.97213	0.33	9 k,a	9535.42800	0.50	5 k
6	2	5	8966.79071	0.52	4 k,a	9350.94940	0.40	6 k	9545.36911	0.33	8 k,a
6	2	4	9014.07348	0.37	5 k,a	9399.99110	0.40	6 k	9599.18130	0.50	4 k

6	3	4	9108.54500	0.50	4	k	9452.73250	0.40	5	k	9645.24622	0.35 9 k,a
6	3	3	9116.88102	0.33	7	k,a	9465.10660	0.30	8	k		
6	4	3	9273.62669	0.67	4	k,a	9567.30990	0.50	4	k	9756.30720	0.40 8 k
6	4	2	9274.14685	0.35	6	k,a	9568.20890	0.30	7	k	9757.54980	0.50 5 k
6	5	2	9470.21220	0.50	4	k	9706.60130	0.50	6	k	9891.15833	0.37 5 k,a
6	5	1	9470.65531	0.35	10	k,a	9706.60649	0.37	8	k,a	9891.19680	0.60 3 k
6	6	1	9692.49828	0.67	3	k,a	9871.16430	0.90	3	k	10047.51816	0.57 4 k,a
6	6	0	9692.50019	0.42	5	k,a	9871.16457	0.52	4	k,a	10047.51920	2.70 2 k
7	0	7	8953.42554	0.46	5	k,a	9372.20590	0.60	4	k	9566.89918	0.36 7 k,a
7	1	7	8954.71519	0.38	6	k,a	9372.47429	0.35	6	k,a	9566.50140	1.70 3 k
7	1	6	9104.93016	0.67	4	k,a	9497.96040	0.40	6	k	9692.27287	0.45 5 k,a
7	2	6	9123.59432	0.32	8	k,a	9503.24634	0.46	8	k,a	9700.32760	0.50 5 k
7	2	5	9199.66906	0.52	3	k,a	9584.89900	0.40	7	k	9776.24018	0.35 6 k,a
7	3	5	9276.04899	0.33	9	k,a	9615.94790	0.40	8	k	9809.81210	0.50 6 k
7	3	4	9294.37270	6.20	2	k	9644.30910	0.50	6	k	9836.47750	0.60 2 k
7	4	4	9443.39020	0.33	9	k,a	9734.09050	0.40	6	k	9924.98380	0.90 3 k
7	4	3	9445.16412	0.86	5	k,a	9737.30960	0.40	7	k	9929.01743	0.37 9 k,a
7	5	3	9640.52090	0.35	7	k,a	9873.22566	0.38	7	k,a	10060.91150	0.70 4 k
7	5	2	9638.45770	0.40	6	k	9873.28550	0.50	5	k	10061.12070	0.40 6 k
7	6	2	9863.13656	0.57	5	k,a	10037.13184	0.60	5	k,a	10213.72280	0.70 4 k
7	6	1	9863.13572	1.00	1	a	10037.12860	5.76	3	e	10213.72506	0.52 5 k,a
7	7	1	10105.30647	0.57	3	k,a	10232.29500	2.60	4	k	10395.45640	0.90 d
7	7	0	10105.30600	0.90	1	k	10232.29500	2.60		d	10395.45640	0.90 2 k
8	0	8	9106.70786	0.47	5	k,a	9523.47787	0.45	5	k,a	9718.20360	0.90 2 k
8	1	8	9107.21780	0.52	3	k,a	9523.61080	0.46	4	k,a	9718.53918	0.69 4 k,a
8	1	7	9288.18931	0.42	6	k,a	9671.44700	0.35	8	k,a		
8	2	7	9299.77953	0.57	3	k,a	9674.22190	0.50	6	k	9868.30222	0.41 8 k,a

8	2	6	9404.66550	0.45	6	k,a	9779.20750	0.40	7	k,a	9973.12660	0.80	4 k
8	3	6	9465.65299	0.52	3	k,a	9800.40050	0.40	5	k	9995.37362	0.52	7 k,a
8	3	5	9499.64607	0.46	6	k,a	9846.52960	0.40	5	k	10045.29950	0.60	3 k
8	4	5	9637.12248	0.71	2	a	9924.18370	0.50	5	k	10117.00487	0.45	5 k,a
8	4	4	9641.68621	0.47	10	k,a	9932.89188	0.35	10	k,a			
8	5	4	9834.83567	0.71	2	a	10063.87950	0.50	5	k	10254.42081	0.52	8 k,a
8	5	3	9833.43181	0.38	9	k,a	10064.24208	0.37	7	k,a	10255.20050	0.50	6 k
8	6	3	10057.62849	1.00	1	a	10227.14790	0.70	4	k	10404.09999	0.91	4 k,a
8	6	2	10057.64592	0.52	4	k,a	10227.02780	0.40	4	k			
8	7	2	10300.53760	1.70	3	k	10426.42760	0.60	4	k	10587.95563	0.52	3 k,a
8	7	1	10300.54008	0.42	6	k,a	10426.42760	0.50	5	k	10587.95570	3.30	1 k
8	8	1	10551.81042	1.08		d	10640.05400	2.90	2	k	10786.81360	0.76	2 a
8	8	0	10551.81042	1.08	1	a	10640.05850	0.90	2	k	10786.81360	0.76	d
9	0	9	9277.20974	0.57	4	k,a	9692.21430	0.50	3	k	9887.66152	0.47	4 k,a
9	1	9	9277.47856	0.39	6	k,a	9692.60492	0.46	4	k,a	9887.75250	0.90	1 k
9	1	8	9487.84825	0.67	3	k,a	9861.63050	0.50	3	k	10056.76390	0.60	3 k
9	2	8	9494.68515	0.42	6	k,a	9864.45900	0.50	4	k	10056.48780	0.70	3 k
9	2	7	9630.12870	0.98	2	e,a	9992.97660	0.50	4	k	10187.41355	0.43	8 k,a
9	3	7	9676.38091	0.35	8	k,a	10005.08149	0.37	6	k,a	10201.02630	0.90	6 k
9	3	6	9731.67818	1.00	1	a	10074.68970	0.50	5	k	10274.56496	0.46	7 k,a
9	4	6	9852.74860	0.58	3	a	10136.83970	0.40	6	k			
9	4	5					10155.67762	0.50	5	k,a	10353.02790	0.90	3 k
9	5	5	10052.95819	1.00	1	a	10278.37430	0.40	5	k	10471.48890	0.60	3 k
9	5	4					10279.85650	0.50	4	k	10473.85790	0.60	5 k
9	6	4	10275.91160	0.72	2	a	10441.17741	0.40	5	k,a			
9	6	3	10275.85047	1.05	1	a	10440.83600	1.00	2	k	10618.53063	1.00	1 a
9	7	3	10519.22563	0.59	3	a	10643.91770	0.80	5	k	10804.13528	1.00	d

9	7	2					10643.91480	7.07	2	e	10804.13528	1.00	1	a
9	8	2	10770.06619	1.01	1	a	10859.12770	0.90	1	k	11002.10421	1.01		d
9	8	1	10770.06619	1.01		d	10859.12780	1.00	2	k	11002.10421	1.01	1	a
9	9	1									11220.89557	1.08		d
9	9	0									11220.89557	1.08	1	a
10	0	10	9465.00049	0.46	4	k,a	9878.80370	0.50	3	k	10074.34840	1.00	1	k
10	1	10	9465.08417	0.90	3	k,a	9877.81280	0.60	3	k	10074.46200	0.90	1	k
10	1	9	9703.96950	0.71	2	a	10068.88028	0.46	4	k,a				
10	2	9	9707.81682	1.00	1	a	10068.08380	0.70	3	k	10263.84307	0.72	2	a
10	2	8	9872.59967	0.52	5	k,a	10224.78957	0.40	5	k,a	10417.85520	5.15	1	e
10	3	8	9908.51970	1.01	1	a	10229.02450	0.60	4	k	10426.59044	1.00	1	a
10	3	7	9987.72168	0.70	4	e,a	10338.21443	0.50	6	k,a				
10	4	7	10095.31912	1.00	1	a	10371.19010	0.70	5	k	10567.73565	1.02	2	e,a
10	4	6	10114.14161	0.71	3	e,a	10404.67680	0.40	5	k				
10	5	6					10516.22920	0.50	4	k	10711.75415	1.00	1	a
10	5	5	10294.34849	0.70	3	e,a	10520.71738	0.60	4	k,a				
10	6	4	10517.59247	1.03	1	a	10678.43070	0.50	4	k,a				
10	7	4	10761.10088	0.54	4	a	10884.55620	9.97	1	e				
10	7	3	10761.10088	0.54		d	10884.56060	0.90	2	k				
10	8	3	11011.13737	5.01		d	11101.44520	10.06	1	e				
10	8	2	11011.13737	5.01	1	a	11101.44440	7.81	3	e				
10	9	2	11357.09297	1.01		d								
10	9	1	11357.09297	1.01	1	a								
11	0	11	9670.14691	0.70	3	e,a	10081.44740	0.90	2	k	10278.41466	0.73	2	a
11	1	11	9670.07147	0.50	5	k,a	10081.41513	0.70	3	k,a	10278.42470	5.22	2	e
11	1	10	9936.88379	0.71	3	e,a	10294.58020	0.70	3	k	10487.96651	1.00	1	a
11	2	10	9938.86190	0.52	6	e,a	10292.35080	0.90	3	k				

11	2	9	10135.07964	0.98	2	e,a	10467.61180	0.70	4	k	10664.66628	1.00	1	a
11	3	9	10159.12104	0.70	3	e,a	10471.38050	0.60	4	k				
11	3	8	10273.80949	5.02	1	a					10795.67892	0.99	2	e,a
11	4	8	10356.52446	0.73	2	a	10626.25723	0.48	8	k,a				
11	4	7	10390.49066	1.07	1	a					10883.51322	1.00	1	a
11	5	7	10559.27556	0.71	2	a	10776.73456	0.50	5	k,a				
11	5	6	10560.63926	1.08	1	a					10988.11417	1.00	1	a
11	6	6	10782.05465	1.01	1	a	10940.80730	0.60	3	k				
11	7	5	11026.08126	1.07	1	a	11148.82946	0.89	4	k,a				
11	8	4					11366.78760	2.90	1	k				
11	8	3					11366.79040	8.37	2	e				
12	0	12	9892.86904	0.69	3	k,a	10301.73989	0.53	3	k,a	10500.06775	1.04	1	a
12	1	12	9892.45547	1.01	1	a	10301.45680	0.70	2	k	10499.81409	1.02	1	a
12	1	11	10187.03428	0.59	3	a	10532.25845	0.69	5	k,a				
12	2	11	10187.61713	0.74	2	a	10533.70525	0.69	4	k,a	10729.98714	1.00	2	e,a
12	2	10	10412.54110	0.98	2	a	10731.08177	0.90	4	k,a				
12	3	10	10428.47556	1.16	1	a	10731.51600	1.00	1	k	10926.76670	0.99	2	e,a
12	3	9	10574.99360	1.14	2	e,a	10887.61690	0.71	3	k,a				
12	4	9	10638.92957	1.08	1	a								
12	4	8	10695.25882	1.05	1	a	10981.49733	0.69	3	k,a				
12	5	7					11078.88707	0.68	4	k,a				
12	6	7	11069.44092	5.02	1	a								
12	6	6	11071.47188	0.73	2	a	11224.94515	1.52	−1	g,a				
12	7	5	11313.36358	1.08	1	a								
13	0	13					10539.78960	1.00	2	k	10738.73031	1.01	1	a
13	1	13	10132.35623	0.53	6	e,a	10539.79060	0.70	2	k				
13	1	12	10455.95733	1.12	1	a	10791.41050	1.00	1	k	10988.99885	1.01	1	a

13	2	12	10453.99124	0.76	4	e,a	10789.76270	0.90	1	k		
13	2	11	10705.38493	1.08	1	a	11004.18580	2.10	−1	g	11203.62328	1.01 1 a
13	3	11	10715.58736	1.07	1	a	11009.05809	0.89	4	k,a		
13	3	10	10893.20882	1.10	1	a					11385.13565	0.71 3 e,a
13	4	10	10941.30589	0.73	3	e,a	11194.83525	0.98	−1	g,a		
13	5	9	11155.40018	1.06	1	a	11362.33463	5.00	1	a		
13	5	8									11608.15695	3.54 2 a
13	6	8	11379.54141	1.06	1	a	11532.67290	0.90	1	k		
13	7	7	11622.86080	1.06	2	a						
13	7	6									11902.17711	0.99 2 a
14	0	14	10387.09158	0.62	5	e,a	10794.89920	0.90	2	k		
14	1	14	10392.31046	1.01	1	a	10794.90070	7.11	2	e	10994.16373	0.77 2 a
14	1	13	10733.31707	1.08	1	a	11067.08360	0.90	1	k		
14	2	13	10738.00625	0.79	2	a					11265.39881	0.97 3 a
14	2	12	11014.12912	0.61	3	a	11301.69752	2.51	2	k,a		
14	3	11	11228.25193	0.54	6	e,a	11495.13635	3.48	3	e,a		
14	4	11									11701.61512	1.06 1 a
14	4	10	11373.27113	0.74	4	a						
14	5	9	11526.94744	1.06	2	a	11751.89580	8.66	1	e		
14	6	8					11865.42756	1.60	−1	g,a		
14	7	7	11955.69479	0.78	2	a						
15	0	15	10661.68959	1.13	1	a	11067.07500	3.00	1	k	11267.61997	1.08 2 e,a
15	1	15	10660.85417	0.63	6	e,a	11067.07551	0.89	2	k,a		
15	1	14	11036.72618	1.15	1	a					11558.06136	1.07 1 a
15	2	14	11039.93591	0.78	2	a	11359.68363	1.29	2	k,a		
15	2	13									11810.70204	1.05 2 a
15	3	13	11347.28628	1.07	1	a	11612.45620	1.90	−1	g		

15	3	12	11579.66620	1.14	1	a					12026.72035	1.06	1	a
15	4	12	11603.25957	1.04	2	a	11836.58953	1.70	−1	g,a				
15	5	11	11836.34218	1.08	3	a	12028.99960	1.11	2	a				
15	5	10									12324.48831	5.02	1	a
15	6	10	12063.92584	0.76	2	a								
16	0	16	10953.11617	0.62	4	e,a	11356.27444	1.01	2	k,a	11557.13161	5.02	1	a
16	1	16	10952.84407	0.75	2	a	11356.27420	10.08	1	e	11556.97480	1.06	2	a
16	1	15	11356.00155	0.64	4	e,a	11669.34973	0.76	−1	g,a				
16	2	15					11669.33520	1.42	1	a	11869.37930	5.02	1	a
16	2	14	11680.44671	1.08	1	a	11942.07110	1.20	2	a				
16	3	14	11685.90727	1.11	1	a								
16	3	13	11944.00077	0.78	2	a	12177.70880	2.30	−1	g				
16	4	13	11960.62564	5.06	1	a					12379.23069	5.01	1	a
16	4	12	12134.72476	1.29	2	a	12373.04740	1.26	1	a				
16	5	11	12284.50762	1.12	1	a								
16	6	11									12761.60972	5.02	1	a
17	0	17	11261.84962	1.17	1	a	11662.42310	10.39	1	e	11864.63197	1.07	1	a
17	1	17	11261.54534	0.81	2	a	11662.43093	2.52	2	k,a				
17	1	16	11692.45186	5.06	1	a	11995.91777	1.15		d	12195.83326	1.10	2	a
17	2	16	11690.67816	1.16	1	a	11995.91777	1.15	−1	g,a				
17	2	15	12036.69748	5.03	1	a								
17	3	15	12043.34741	1.08	1	a	12286.92585	1.01	−1	g,a				
17	3	14	12323.80580	6.71	3	e								
17	4	14	12335.15431	1.04	2	a	12541.26996	2.17	−1	g,a				
17	4	13									12951.48860	1.17	1	a
17	5	13	12592.50902	1.10	2	a								
17	6	12					12968.36988	5.07	1	a				

17	7	11	13076.70599	1.42	2	a									
17	7	10											13372.01508	1.13	1 a
18	0	18	11587.35905	0.81	2	a	11985.44143	0.80		d					
18	1	18					11985.44143	0.80	−1	g,a	12188.87291	1.09	2	a	
18	1	17	12046.29407	1.11	1	a	12339.37985	2.09	−1	g,a					
18	2	17	12045.86855	5.04	1	a	12339.38150	3.20	−1	g					
18	2	16	12409.35672	5.02	1	a	12648.37601	2.24	−1	g,a					
18	3	15	12716.71166	5.03	1	a									
18	4	15									13117.04134	1.15	1	a	
18	4	14	12961.90700	1.10	1	a	13154.08711	1.27	1	a					
18	5	13	13132.86220	3.60	2	a									
18	6	12	13304.75621	5.02	1	a									
19	0	19					12325.24264	1.16		d					
19	1	19	11930.44375	0.72	3	a	12325.24264	1.16	−1	g,a					
19	1	18	12417.64593	5.07	1	a	12699.67134	1.28		d	12900.91252	1.09	2	a	
19	2	18	12417.31152	1.13	2	a	12699.67134	1.28	−1	g,a					
19	2	17									13224.57238	1.58	1	a	
19	3	17	12788.00096	5.02	1	a									
19	4	16	13135.19598	1.13	1	a									
19	4	15									13765.05108	1.28	1	a	
19	5	15	13421.67313	3.57	2	a									
19	6	14	13672.46403	3.20	3	a									
20	0	20	12291.00190	1.13	1	a	12681.81078	1.15	−1	g,a	12887.58638	1.11		d	
20	1	20					12681.81078	1.15		d	12887.58638	1.11	2	a	
20	1	19	12807.18620	5.03	1	a	13076.27643	2.38	−1	g,a					
20	2	19	12806.32808	5.13	1	a	13076.27643	2.38		d	13278.63525	1.09	2	a	
20	2	18	13203.40576	1.23	2	a									

20	3	17	13548.38968	5.02	1	a	13726.08118	5.12	1	a					
20	4	16	13838.40449	5.03	1	a									
20	5	15	14065.17479	3.59	2	a									
20	6	14	14229.09924	5.07	1	a									
21	0	21	12668.11938	5.07	1	a	13055.13260	2.70		d	13262.24535	5.04	1	a	
21	1	21	12667.72054	1.49	2	a	13055.13260	2.70	−1	g					
21	1	20					13469.97962	2.30		d	13673.55228	5.05	1	a	
21	2	20	13212.91819	1.13	2	a	13469.97962	2.30	−1	g,a					
21	2	19									14036.22951	5.04	1	a	
21	3	19	13621.08801	5.03	1	a									
21	4	18	13980.31609	5.03	1	a									
22	0	22	13063.91020	1.20	2	a	13444.45945	1.22	−1	g,a					
22	1	22	13063.74415	5.17	1	a	13444.45945	1.22		d	13653.23962	1.75	1	a	
22	1	21	13637.17634	1.20	1	a	13880.25612	2.52	−1	g,a					
22	2	21					13880.25612	2.52		d					
22	2	20	14042.46715	5.03	1	a									
22	3	19	14439.35953	5.06	1	a									
22	5	17	15036.49232	5.07	1	a									
22	7	15	15416.89578	5.12	1	a									
23	0	23					13850.22084	1.14		d	14060.46470	5.05	1	a	
23	1	23	13477.07490	1.31	4	a	13850.22084	1.14	−1	g,a					
23	1	22					14307.33456	2.65		d					
23	2	22	14079.37900	5.04	1	a	14307.33456	2.65	−1	g,a					
23	3	21	14493.69322	5.05	1	a									
24	0	24	13908.65423	1.24	2	a	14272.65261	1.54	−1	g,a					
24	1	24					14272.65261	1.54		d					
24	1	23	14539.63950	5.04	1	a	14750.74752	2.76	−1	g,a					

24	2	23					14750.74752	2.76		d
25	0	25					14711.82630	3.60		d
25	1	25	14358.71381	3.62	2	a	14711.82630	3.60	−1	g
25	1	24					15210.86120	3.20		d
25	2	24	15022.56608	5.28	1	a	15210.86120	3.20	−1	g
25	3	23	15431.31706	5.14	1	a				
26	0	26	14830.51263	5.06	1	a				
26	1	25					15687.19180	3.50	−1	g
26	2	25					15687.19180	3.50		d
27	1	27	15308.80747	5.08	1	a				

TABLE VII.: Term values for the 3ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	060 or 006			121 or 20^-2			003 or 21^-0		
0	0	0	8869.95380	14.29	1 e	10328.73090	0.90	1 m	11032.40580	0.90	1 m
1	0	1	8893.46480	8.71	1 e	10351.99000	0.50	3 m	11055.47160	0.60	2 m
1	1	1	8998.09960	11.38	1 e	10369.71620	0.60	2 m	11065.77450	0.60	2 m
1	1	0	9004.61700	9.25	2 e	10375.59420	0.60	2 m	11071.11250	0.60	2 m
2	0	2				10397.21510	0.40	4 m	11099.97360	0.40	4 m
2	1	2	9038.46090	12.78	1 e	10410.23160	0.50	4 m	11106.58290	0.50	4 m
2	1	1				10427.68630	0.40	4 m	11122.56700	0.50	3 m
2	2	1				10480.32290	0.50	3 m	11153.27110	0.50	3 m
2	2	0				10481.55460	0.40	4 m	11154.86830	0.40	4 m
3	0	3	9008.73880	7.51	1 e	10462.21960	0.50	4 m	11163.47670	0.40	5 m
3	1	3				10470.34530	0.40	5 m	11166.86320	0.40	5 m
3	1	2	9139.07571	1.47	1 a	10504.04540	0.50	5 m	11198.42730	0.50	4 m
3	2	2				10549.94380	0.40	5 m	11222.53880	0.40	5 m
3	2	1	9344.38004	1.42	1 a	10555.72220	0.40	6 m	11229.70580	0.50	5 m
3	3	1				10650.03290	0.50	4 m	11287.11980	0.60	4 m
3	3	0	9628.77606	1.19	1 a	10650.22330	0.60	3 m	11287.43830	0.50	4 m
4	0	4				10544.99178	0.38	6 m,a	11244.47150	0.40	6 m
4	1	4				10549.40090	0.50	5 m	11245.89620	0.40	5 m
4	1	3				10607.67320	0.40	6 m	11296.74570	0.40	6 m
4	2	3				10641.68970	0.50	5 m	11313.46230	0.50	5 m
4	2	2				10657.17180	0.40	7 m	11331.55920	0.40	6 m
4	3	2	9725.73788	1.56	1 a	10745.13950	0.40	6 m	11382.13280	0.40	6 m
4	3	1				10746.14750	0.40	5 m	11384.18510	0.50	5 m
4	4	1	10049.28101	0.90	2 a	10877.34490	0.90	3 m	11467.56250	0.50	4 m

4	4	0				10877.36950	0.50	4 m	11467.61580	0.50 3 m
5	0	5	9210.16115	0.90	2 a	10644.62040	0.60	5 m	11343.62460	0.40 6 m
5	1	5				10646.78080	0.40	5 m	11343.16140	0.40 5 m
5	1	4	9377.22587	1.27	1 a	10730.20360	0.40	5 m	11414.79490	0.40 6 m
5	2	4				10754.75300	0.40	6 m	11424.99850	0.50 6 m
5	2	3	9565.52032	1.16	1 a	10785.65425	0.50	6 m,a	11459.21180	0.50 5 m
5	3	3				10863.67100	0.40	6 m	11500.44780	0.40 6 m
5	3	2	9847.22887	1.18	1 a	10867.74690	0.50	5 m	11507.57540	0.50 5 m
5	4	2				10996.30880	0.40	8 m	11587.40260	0.40 6 m
5	4	1	10171.29165	1.34	1 a	10996.54780	0.50	4 m	11587.83570	0.50 4 m
5	5	1				11158.50020	0.90	3 m	11693.64300	0.60 3 m
5	5	0				11158.49530	5.06	5 e	11693.64380	8.40 2 m
6	0	6				10761.04630	0.40	5 m	11457.55740	0.60 2 m
6	1	6	9400.64060	1.70	8 l	10762.04620	0.60	5 m	11458.61520	0.50 5 m
6	1	5	9533.58280	6.40	5 l	10872.35220	0.50	5 m	11550.31070	0.40 5 m
6	2	5				10888.31160	0.50	6 m	11556.14500	0.50 6 m
6	2	4				10939.54810	0.40	7 m	11610.45106	0.37 8 m,a
6	3	4	9991.01874	1.27	1 a	11005.25820	0.50	6 m	11641.21140	0.50 6 m
6	3	3				11016.23570	0.40	7 m	11658.49540	0.40 6 m
6	4	3	10316.38200	1.28	1 a	11140.07560	0.40	6 m	11731.15190	0.60 5 m
6	4	2				11140.14050	0.60	8 m	11733.06220	0.40 6 m
6	5	2	10666.25030	1.27	1 a	11301.20600	0.70	3 m	11840.42310	0.60 4 m
6	5	1				11301.15020	0.50	5 m	11840.48600	0.40 5 m
6	6	1				11492.88140	0.50	5 m	11963.85840	2.70 3 m
6	6	0				11493.01790	0.60	3 m	11963.85810	0.50 3 m
7	0	7	9487.94880	1.17	1 a	10894.48540	0.50	3 m	11590.59270	0.50 4 m
7	1	7				10894.82300	0.40	5 m	11590.45690	0.50 3 m

7	1	6	9714.76092	1.11	1	a	11031.86410	0.50	5	m	11702.55970	0.50 5 m
7	2	6					11041.32040	0.40	6	m	11706.22580	0.40 6 m
7	2	5					11116.49570	0.50	5	m	11782.47340	0.40 6 m
7	3	5					11170.31900	0.40	7	m	11803.36460	0.40 7 m
7	3	4					11192.12800	0.50	5	m	11836.22950	0.50 5 m
7	4	4					11306.78690	0.40	7	m	11898.35150	0.50 4 m
7	4	3					11308.69624	0.50	5	m,a	11904.20170	0.50 6 m
7	5	3					11467.97200	0.40	5	m	12009.57850	0.80 5 m
7	5	2	10837.70831	1.30	1	a	11467.63490	0.50	4	m	12009.90050	0.50 4 m
7	6	2					11662.33610	0.50	4	m	12127.13280	0.50 3 m
7	6	1					11662.44540	0.70	3	m	12127.14300	1.70 3 m
7	7	1	11564.21694	1.54		d	11914.64590	0.70	3	m	12276.49440	0.50 4 m
7	7	0	11564.21694	1.54	1	a	11914.64620	2.10	2	m	12276.49380	2.10 2 m
8	0	8					11045.39010	0.50	5	m	11741.00880	0.50 4 m
8	1	8	9697.22629	1.40	2	a	11045.14718	0.50	5	m,a	11741.00210	0.60 4 m
8	1	7					11207.74880	0.40	6	m	11871.62180	0.40 5 m
8	2	7					11213.90350	0.50	4	m	11877.54220	0.50 4 m
8	2	6					11322.45120	0.50	5	m	11972.45730	0.30 7 m
8	3	6	10348.16648	1.11	1	a	11354.57240	0.50	5	m	11985.89550	0.50 4 m
8	3	5									12038.67370	0.40 6 m
8	4	5					11497.16260	0.60	5	m	12088.28060	0.50 5 m
8	4	4					11502.97190	0.40	7	m,a	12102.73220	0.40 5 m
8	5	4									12201.79200	0.60 3 m
8	5	3					11659.29070	0.40	7	m		
8	6	3	11395.48980	0.70	4	l						
8	6	2									12314.45960	0.60 4 m
9	0	9					11212.03327	0.69	4	m,a	11908.90980	0.70 3 m

9	1	9				11213.85593	0.53	6 m,a	11908.89500	0.60	3 m
9	1	8	10143.70032	1.49	1 a	11399.99970	0.50	4 m	12057.71130	0.50	5 m
9	2	8				11397.13551	1.05	1 a	12057.47690	0.50	4 m
9	2	7				11537.97610	0.50	5 m			
9	3	7				11560.20150	0.50	3 m	12188.46840	0.90	3 m
9	3	6	10574.32035	1.04	2 a				12263.00270	0.60	4 m
9	4	6				11710.30093	0.60	4 m,a	12300.07350	0.40	5 m
9	5	5				11873.48860	0.50	5 m	12416.94510	0.50	4 m
10	0	10				11398.12530	0.60	3 m	12094.21780	0.60	3 m
10	1	10	10069.20122	1.18	1 a	11398.16410	2.80	2 m	12094.21850	2.80	3 m
10	1	9				11609.12759	1.11	1 a	12260.97780	0.90	3 m
10	2	9	10483.28901	1.41	2 a						
10	2	8				11772.07017	5.02	1 a	12400.97300	0.90	2 m
10	3	7							12506.27910	0.60	5 m
10	4	6							12579.27530	0.60	3 m
11	0	11	10259.45464	1.08	2 a				12296.93720	2.90	2 m
11	1	11				11598.29460	0.90	2 m	12296.94250	0.90	2 m
11	1	10	10656.51034	1.48	1 a						
11	2	10							12481.40650	0.90	4 m
12	0	12							12517.01320	0.90	2 m
12	1	12	10518.07060	1.18	1 a				12517.02270	3.00	1 m
13	0	13	10756.28972	1.28	1 a						
13	1	13							12754.58910	0.90	1 m

J	K_a	K_c	041 or 10^-4			022 or 11 2			201 or 30^-0		
0	0	0	9833.58450	0.90	1 m				10613.35470	2.90	1 m
1	0	1	9857.19780	0.60	2 m				10636.50070	0.50	3 m
1	1	1	9888.89285	0.53	3 m,a				10647.41650	0.60	2 m

1	1	0	9895.32980	0.60	2 m				10652.60740	0.60	2 m
2	0	2	9903.49144	0.47	5 m,a				10680.54470	0.50	4 m
2	1	2	9929.71270	0.50	3 m				10687.62930	0.50	4 m
2	1	1	9949.07617	0.45	4 m,a				10703.08300	0.50	4 m
2	2	1	10039.41980	0.60	2 m	10670.63280	0.60	3 m	10737.01320	0.50	3 m
2	2	0	10040.30240	0.60	3 m				10738.43160	0.40	4 m
3	0	3	9970.75320	0.60	4 m	10655.81360	0.50	3 m	10743.62130	0.50	4 m
3	1	3	9990.39918	0.41	5 m,a				10747.26080	0.40	5 m
3	1	2	10028.81700	0.60	3 m	10698.77310	0.60	3 m	10777.55870	0.40	5 m
3	2	2	10110.53981	0.42	5 m,a				10805.02430	0.40	5 m
3	2	1	10114.79890	0.50	5 m				10811.48330	0.50	5 m
3	3	1	10265.82060	0.60	3 m				10874.51600	0.40	4 m
3	3	0	10265.90240	0.60	2 m	10837.23720	1.07	1 a	10874.77170	0.50	5 m
4	0	4	10056.98760	0.42	6 m,a				10824.12410	0.30	7 m
4	1	4	10070.39650	0.60	3 m	10742.86140	0.60	4 m	10825.65930	0.40	6 m
4	1	3	10133.66021	0.42	5 m,a				10874.03870	0.40	6 m
4	2	3	10204.49140	0.50	4 m				10894.53590	0.40	6 m
4	2	2	10216.46164	0.45	5 m,a				10911.10120	0.40	6 m
4	3	2	10362.56920	0.50	3 m				10967.43820	0.40	6 m
4	3	1	10363.12513	0.42	7 m,a				10969.11660	0.40	7 m
4	4	1	10559.53870	0.90	2 m	11061.27350	0.50	4 m	11060.29620	0.90	1 m
4	4	0	10559.55880	0.90	2 m	11061.29920	0.60	3 m	11060.33390	0.50	4 m
5	0	5	10160.65583	0.53	3 m,a	10838.49225	1.06	1 a	10921.68260	0.50	5 m
5	1	5	10169.05845	0.47	5 m,a				10922.25660	0.40	6 m
5	1	4	10262.18920	0.60	3 m	10924.03998	1.06	1 a	10996.06460	0.50	3 m
5	2	4	10320.58955	0.35	6 m,a				11004.78310	0.40	6 m
5	2	3	10345.90780	0.60	3 m				11036.37650	0.40	7 m

5	3	3	10483.42750	0.38	6	m,a					11083.35950	0.40	7 m
5	3	2	10485.54440	0.50	3	m					11089.34680	0.40	5 m
5	4	2	10680.98984	0.45	5	m,a	11182.21660	0.50	5	m	11176.88020	0.40	5 m
5	4	1	10681.10330	0.60	3	m	11182.41634	0.52	5	m,a	11177.13150	0.40	7 m
5	5	1	10911.28990	1.70	4	m					11293.87120	0.30	7 m
5	5	0	10911.31900	4.43	1	e					11293.75670	0.50	4 m
6	0	6	10281.05578	0.43	6	m,a					11036.43730	0.40	6 m
6	1	6	10286.13399	0.53	3	m,a	10955.86203	1.06	1	a	11036.65430	0.50	6 m
6	1	5	10412.57340	0.47	5	m,a					11129.88240	0.40	6 m
6	2	5	10458.06280	0.90	3	m					11134.03070	0.60	5 m
6	2	4	10502.68673	0.52	4	m,a					11185.34000	0.30	8 m
6	3	4					11195.81059	1.03	1	a	11221.59690	0.40	7 m
6	3	3	10633.97601	0.55	8	m,a					11236.58180	0.30	8 m
6	4	3									11317.03820	0.50	6 m
6	4	2	10827.02657	0.45	5	m,a	11328.27210	0.50	5	m	11318.54540	0.40	7 m
6	5	2									11433.75210	0.50	5 m
6	5	1	11057.88191	1.19	1	a					11433.84300	0.50	6 m
6	6	1	11312.23069	1.08		d	11663.23884	1.08	1	a	11575.15040	0.90	2 m
6	6	0	11312.23069	1.08	1	a	11663.23884	1.08		d	11575.15470	0.50	5 m
7	0	7	10418.10133	0.70	3	m,a					11168.55350	0.50	5 m
7	1	7	10421.04385	0.47	5	m,a					11167.50520	0.40	5 m
7	1	6	10582.77280	0.90	2	m	11226.25978	1.05	1	a	11281.49970	0.40	6 m
7	2	6	10616.12441	0.52	5	m,a					11283.14090	0.40	6 m
7	2	5	10685.39120	0.90	2	m					11355.19940	0.40	8 m
7	3	5	10795.88208	0.74	2	a	11361.00380	0.50	5	m	11381.23220	0.40	8 m
7	3	4	10809.31827	1.06	1	a	11386.13253	0.74	2	a	11410.56670	0.40	8 m
7	4	4									11480.49870	0.40	8 m

7	4	3				11499.42300	0.60	6	m	11485.34690	0.50	6 m
7	5	3								11597.34350	0.40	7 m
7	5	2								11597.70810	0.50	5 m
7	6	2	11483.15112	1.10	1 a					11739.17330	0.40	6 m
7	6	1	11483.15112	1.10	d					11739.17400	1.70	3 m
7	7	1	11752.27925	1.07	1 a	12035.01037	1.07		d	11862.10450	0.60	3 m
7	7	0	11752.27925	1.07	d	12035.01037	1.07	1	a	11862.10710	2.90	2 m
8	0	8	10571.95558	0.48	4 m,a					11317.25620	0.50	5 m
8	1	8	10573.60060	0.90	2 m	11239.87759	1.06	1	a	11317.88020	0.50	3 m
8	1	7	10770.96395	0.69	4 m,a					11449.51340	0.40	6 m
8	2	7	10794.02320	0.90	2 m	11407.05027	1.03	1	a	11450.21260	0.60	5 m
8	2	6								11555.12220	0.60	6 e
8	3	6				11547.84270	0.40	6	m	11561.14070	0.40	8 m
8	3	5	11012.13523	1.06	1 a					11609.56270	0.40	6 m
8	4	5								11666.66060	0.50	7 m
8	4	4	11192.66532	0.76	2 a					11678.77693	0.37	8 m,a
8	5	4								11784.42520	0.50	4 m
8	5	3								11785.71010	0.45	6 m,a
8	6	3								11926.46520	0.90	3 m
8	6	2								11926.48510	0.60	4 m
8	7	2								12052.36230	5.76	3 e
8	7	1								12052.36350	0.50	4 m
9	0	9	10742.80912	0.69	3 m,a					11484.61120	0.60	5 m
9	1	9	10743.65272	0.69	3 m,a					11484.48930	0.50	3 m
9	1	8	10976.01036	1.11	1 a	11596.70581	1.04	1	a	11634.98430	0.50	6 m
9	2	8	10991.10229	0.76	2 a					11634.94967	0.37	8 m,a
9	2	7				11732.01787	1.05	1	a	11755.76710	0.70	5 m

9	3	7	11197.16287	0.74	2	a				11761.36660	0.40	7	m
9	3	6	11242.15879	1.08	1	a	11826.24859	5.01	1	a	11830.97250	0.50	5	m
9	4	6	11412.38672	1.05	1	a					11874.49311	0.50	9	m,a
9	4	5					11921.16506	3.54	2	a	11899.27864	0.60	6	m,a
9	5	5									11994.67820	0.40	5	m
9	5	4									11998.48300	0.60	5	m
9	6	4	11895.87831	1.08	1	a					12137.48510	0.40	4	m
9	6	3									12137.61330	0.50	4	m
9	7	3	12165.45277	1.07		d								
9	7	2	12165.45277	1.07	1	a								
10	0	10	10930.85571	0.59	4	m,a					11668.72150	0.80	3	m
10	1	10					11593.18328	0.75	2	a	11668.72550	0.90	4	m
10	1	9	11197.63349	0.75	2	a					11836.76909	0.37	6	m,a
10	2	9									11836.29260	0.70	4	m
10	2	8	11371.58450	0.76	2	a					11980.55930	0.37	7	m,a
10	3	8	11432.56414	1.12	1	a					11979.85430	0.60	6	m
10	3	7									12071.87100	0.40	8	m
10	4	7					12142.53842	1.04	1	a				
10	4	6	11659.10105	5.01	1	a					12145.91580	0.40	6	m
10	5	5									12236.90185	1.41	1	a
11	0	11	11136.43574	1.14	1	a	11795.68087	1.05	1	a	11870.06810	2.80	2	m
11	1	11	11135.98329	0.77	2	a					11870.07430	0.50	4	m
11	1	10					12027.60256	1.06	1	a	12056.25150	1.00	3	m
11	2	10	11440.87190	0.76	2	a					12056.20470	0.50	4	m
11	3	9	11685.06020	1.05	2	a					12216.99820	0.40	5	m
11	4	8	11910.43761	1.03	2	a					12353.46480	0.60	3	m
12	0	12	11361.30606	1.20	1	a					12088.61290	0.90	2	m

12	1	12	11358.28489	1.24	1	a	12015.45115	1.07	1	a	12088.55540	0.70	2	m
12	1	11	11696.97631	0.76	2	a					12292.81900	0.60	3	m
12	2	11	11692.95083	1.12	1	a	12270.13052	5.01	1	a	12292.79910	0.70	3	m
12	2	10	11925.58263	0.75	2	a					12467.95360	0.70	5	m
12	3	10					12488.26237	1.03	2	a				
12	3	9	12087.93664	1.05	2	a								
12	4	9	12193.31540	5.05	1	a								
12	4	8	12226.36463	1.09	1	a								
13	0	13	11591.31920	5.04	1	a	12254.83627	5.01	1	a	12324.28020	2.90	2	m
13	1	13	11598.16755	1.11	1	a					12324.28530	0.90	2	m
13	1	12	11955.52308	1.18	1	a	12534.04184	5.01	1	a				
13	2	12	11962.97525	1.11	1	a					12546.58990	0.80	4	m
13	2	11					12766.71318	5.01	1	a				
13	3	11	12244.95788	5.01	1	a					12738.40660	0.90	1	m
13	4	10	12496.24744	1.07	1	a								
13	4	9					13077.90041	5.01	1	a				
14	0	14	11850.96176	0.83	2	a					12577.00680	0.90	2	m,?
14	1	14	11856.26659	5.04	1	a	12505.50338	5.03	1	a	12577.00820	2.90	2	m
14	1	13	12245.75305	1.10	1	a								
14	2	13					12808.55990	5.02	1	a				
14	2	12	12540.28375	0.76	2	a								
14	3	11	12751.63019	1.04	3	a								
14	4	11	12823.49026	5.11	1	a								
14	4	10	12911.64216	5.02	1	a								
14	5	9	13103.88607	5.04	1	a								
15	0	15					12776.01968	5.02	1	a				
15	1	15	12135.72016	1.17	1	a								

15	1	14				13098.06184	3.56	2	a				
15	2	14	12557.10488	1.12	1	a							
15	2	13	12869.57569	5.04	1	a							
15	3	13	12882.22604	5.02	1	a							
15	4	12	13162.78976	5.02	1	a							
15	5	11	13425.77086	5.03	1	a							
16	0	16	12417.56253	1.27	2	a				13133.65007	0.98	2	m,a
16	1	16	12411.60172	5.13	1	a				13133.65000	3.00	1	m,?
16	1	15	12876.29583	5.04	1	a							
16	2	15	12882.19597	5.06	1	a							
16	2	14	13214.20367	5.03	1	a							
16	3	14	13224.81400	5.04	1	a							
16	3	13	13483.60746	5.02	1	a							
16	4	12	13668.14297	4.11	2	a							
17	0	17	12727.03692	5.12	1	a							
17	1	17	12724.91657	5.04	1	a							
17	1	16				13743.36534	5.03	1	a				
17	2	15	13573.87230	5.07	1	a							
17	3	15	13584.07843	5.03	1	a							
18	0	18	13054.29855	3.58	2	a							
18	1	18	13053.40921	5.13	1	a							
18	1	17	13577.31917	5.03	1	a							
18	2	17				14086.47213	5.07	1	a				
18	2	16	13948.58862	1.27	1	a							
18	3	16	13960.15941	5.13	1	a							
18	3	15	14270.15648	5.04	1	a							
18	5	13	14685.63133	5.12	1	a							

19	0	19				14027.92142	5.03	1	a		
19	1	19	13399.85674	1.15	1	a					
19	2	18	13953.59522	5.03	1	a					
19	4	16	14705.04494	5.04	1	a					
20	0	20	13762.96968	1.18	2	a					
20	1	19	14350.77383	5.04	1	a					
20	3	17	15111.96817	3.61	2	a					
20	4	16	15396.30516	5.16	1	a					
21	1	21	14144.86337	5.07	1	a					
21	2	20	14764.99311	5.03	1	a					
22	0	22	14548.11267	5.06	1	a					
22	1	21	15198.25152	5.05	1	a					
23	1	23	14970.49854	5.11	1	a					
24	0	24	15415.87550	5.36	1	a					
25	1	25	15881.65645	5.14	1	a					

J	K_a	K_c	220 or 20^+2				300 or 30^+0				102 or 21^+0			
0	0	0	10284.36700	2.90	1	m	10599.68630	8.80	1	m	10868.87570	0.90	1	m
1	0	1	10307.44770	0.60	2	m	10622.41720	0.60	2	m	10891.67580	0.60	2	m
1	1	1	10324.80550	0.80	3	m	10633.55480	0.50	3	m	10902.92800	0.50	3	m
1	1	0	10330.73090	0.90	2	m	10639.07350	0.60	2	m	10908.13480	0.60	2	m
2	0	2	10352.42360	0.60	2	m	10666.47790	0.50	4	m	10935.82030	0.60	2	m
2	1	2	10365.17500	0.60	4	m	10673.87740	0.50	4	m	10943.32350	0.40	4	m
2	1	1	10382.84910	0.50	3	m	10689.61750	0.50	3	m	10958.91890	0.60	3	m
2	2	1	10439.09930	0.50	3	m	10724.20810	0.40	4	m	10992.45370	0.40	4	m
2	2	0	10440.10560	0.60	2	m	10725.48310	0.50	4	m	10993.88060	0.50	4	m
3	0	3	10417.22700	0.60	2	m	10729.62230	0.50	5	m	10999.02170	0.60	3	m
3	1	3	10425.12390	0.60	4	m	10733.55630	0.50	4	m	11003.08090	0.50	4	m

3	1	2	10460.05610	0.50	4 m	10764.34790	0.50	4 m	11033.93830	0.50	4 m
3	2	2	10509.53480	0.60	4 m	10792.70220	0.90	2 m	11060.84770	0.50	5 m
3	2	1	10513.74650	0.50	4 m	10798.52720	0.40	5 m	11067.34600	0.40	5 m
3	3	1	10612.24550	0.50	4 m	10862.65440	0.50	5 m	11129.71830	0.80	6 m
3	3	0	10612.38700	0.50	4 m	10862.87290	0.50	5 m	11129.98050	0.50	4 m
4	0	4	10499.87440	0.60	3 m	10810.16590	0.50	4 m	11079.65370	0.50	3 m
4	1	4	10504.03290	0.60	4 m	10811.90360	0.50	4 m	11081.52450	0.40	5 m
4	1	3	10561.03140	0.90	3 m	10861.68800	0.60	5 m	11131.52300	0.50	4 m
4	2	3	10598.53960	0.50	4 m	10883.22590	0.40	5 m	11150.78350	0.40	5 m
4	2	2	10614.40100	0.50	4 m	10898.07710	0.50	4 m	11167.49800	0.50	5 m
4	3	2				10955.97340	0.40	7 m	11223.08670	0.40	6 m
4	3	1				10957.42210	0.50	4 m	11224.82980	0.50	5 m
4	4	1				11048.38330	0.50	6 m	11314.99390	0.40	5 m
4	4	0				11048.41280	0.90	3 m	11314.99060	0.50	5 m
5	0	5	10599.23824	2.44	4 m,a	10907.68330	0.80	6 m	11177.35800	0.50	4 m
5	1	5	10601.26660	0.60	4 m	10908.36800	0.80	4 m	11178.18740	0.40	8 m
5	1	4				10979.34040	0.50	5 m	11249.28830	0.40	6 m
5	2	4	10712.11950	2.80	2 m,?	10988.98630	0.40	6 m	11261.31540	0.40	6 m
5	2	3	10742.04990	0.40	5 m	11023.39860	0.40	5 m	11293.29660	0.40	6 m
5	3	3	10824.97460	0.60	4 m	11072.43940	0.40	6 m	11338.71470	0.40	7 m
5	3	2				11077.67010	0.60	5 m	11345.72340	0.40	5 m
5	4	2				11165.48540	0.60	7 m	11432.32240	0.50	6 m
5	4	1				11165.71980	0.50	5 m	11432.37530	0.40	6 m
5	5	1				11283.56540	0.90	4 m	11546.93690	0.60	5 m
5	5	0				11283.57680	0.50	5 m	11546.92690	0.60	5 m
6	0	6	10715.43480	0.60	3 m	11022.34850	0.50	4 m	11292.10460	0.60	3 m
6	1	6	10716.30920	0.60	4 m	11022.59320	0.60	3 m	11292.49870	0.60	5 m

6	1	5			11114.90090	2.10	4 m	11384.88280	0.50	3 m
6	2	5			11120.51550	0.40	5 m	11391.47680	0.40	5 m
6	2	4			11172.75430	0.40	5 m	11442.95390	0.40	7 m
6	3	4			11211.50715	0.37	7 m,a	11478.69340	0.40	6 m
6	3	3			11224.77930	0.60	5 m	11493.85270	0.40	6 m
6	4	3			11306.10480	0.40	7 m	11573.95920	0.40	8 m
6	4	2			11307.40560	0.50	6 m	11574.72200	0.50	7 m
6	5	2			11423.92980	0.40	5 m	11687.27720	0.40	4 m
6	5	1			11424.03170	0.60	4 m	11687.20200	0.50	6 m
6	6	1			11565.66770	0.40	7 m	11822.32080	0.60	4 m
6	6	0			11565.66390	2.90	2 m	11822.30160	8.40	2 m
7	0	7	10848.45330	0.90 3 m	11154.20663	0.52	5 m,a	11424.33600	0.90	2 m
7	1	7	10848.86620	0.90 3 m	11154.39830	0.50	4 m	11424.53180	0.60	4 m
7	1	6	10985.87060	0.50 4 m	11266.98390	0.40	5 m	11537.08940	0.40	5 m
7	2	6			11268.69430	0.50	6 m	11540.44410	0.50	4 m
7	2	5			11343.82231	0.40	7 m,a	11615.22410	0.40	8 m
7	3	5	11131.04010	0.60 4 m	11372.56720	0.40	5 m	11639.41410	0.50	4 m
7	3	4			11398.86560	0.50	7 m	11668.44730	0.40	6 m
7	4	4			11470.16130	0.50	5 m			
7	4	3			11474.05620	0.50	5 m	11742.67740	0.40	8 m
7	5	3			11587.72050	0.70	6 m	11852.31920	0.50	5 m
7	5	2			11588.15430	0.60	6 m	11852.16350	0.50	7 m
7	6	2						11986.98050	0.70	3 m,?
8	0	8			11303.52275	0.60	5 m,a	11574.16520	0.80	4 m
8	1	8			11302.92449	0.45	6 m,a	11574.36450	0.50	4 m
8	1	7			11435.46260	0.70	4 m	11705.86460	0.50	4 m
8	2	7			11436.44716	0.45	6 m,a	11707.69960	0.50	4 m

8	2	6			11533.97280	0.70	4	m	11805.16580	0.50	4 m
8	3	6	11310.07600	0.90	3 m	11542.18640	0.50	6	m	11820.41810	0.40	4 m
8	3	5				11599.22710	0.60	5	m	11865.21120	0.50	4 m
8	4	5				11655.84540	0.40	7	m			
8	4	4				11666.90370	0.50	6	m			
8	5	4				11774.82890	0.40	6	m	12038.16990	0.40	6 m
8	6	3				11915.39680	0.40	7	m			
8	7	2				12042.61460	0.50	8	m			
9	0	9				11469.83407	0.52	4	m,a	11743.61630	0.40	4 m
9	1	9				11469.91880	0.70	4	m	11743.69700	2.90	1 m
9	1	8				11620.74440	0.50	4	m	11891.75540	0.40	5 m
9	2	7				11739.05250	0.80	4	m	12012.05680	0.40	7 m
9	3	6				11815.13783	0.40	5	m,a			
9	4	5				11886.57740	0.60	4	m			
9	5	4				11988.67180	0.40	5	m			
10	0	10				11653.77033	1.09		d			
10	1	10				11653.77033	1.09	1	a			
10	2	9				11822.60990	0.50	4	m			
10	3	8				11963.35251	1.01	2	a	12241.30770	0.50	6 m

TABLE VIII.: Term values for the $3\nu + \delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	070 or 007		230 or 20^+3			032 or 11 3		
0	0	0			11767.39000	3.00	1 n	12007.77570	0.10	1 n
1	0	1			11790.43340	0.50	2 n	12031.20530	3.70	2 n
1	1	1			11814.73300	1.80	2 n	12052.65590	2.30	2 n
1	1	0	10341.05470	1.00 2 l	11820.83770	0.10	2 n	12058.93590	0.80	2 n
2	0	2			11835.48290	0.50	2 n	12076.84320	0.10	2 n
2	1	2	10374.89190	1.80 3 l	11854.76990	0.60	3 n	12093.30450	1.30	3 n
2	1	1			11873.03610	0.70	3 n	12112.03690	0.50	2 n
2	2	1			11943.11780	0.60	3 n	12174.69180	3.10	3 n
2	2	0			11944.09960	3.00	3 n	12175.86140	0.90	2 n
3	0	3			11900.65010	0.30	3 n	12142.52910	1.20	3 n
3	1	3			11914.21290	1.80	3 n	12153.55020	0.10	1 n
3	1	2			11950.49840	0.60	3 n	12190.72690	1.30	3 n
3	2	2			12012.61360	1.20	3 n	12245.13390	0.10	1 n
3	2	1			12017.27410	0.80	5 n	12250.71220	1.30	3 n
3	3	1			12138.71000	3.00	1 n	12360.82990	0.10	2 n
3	3	0			12138.84710	1.30	3 n	12360.97060	1.70	2 n
4	0	4			11983.90200	0.80	2 n	12226.15630	1.80	2 n
4	1	4			11992.47220	1.20	3 n	12231.63830	4.00	2 n
4	1	3			12052.14290	3.00	1 n	12293.67730	0.10	1 n
4	2	3			12104.80390	3.10	4 n	12337.94970	0.10	1 n
4	2	2			12117.31670	2.00	3 n	12353.13350	0.40	2 n
4	3	2			12234.29850	1.90	2 n	12457.05840	0.40	2 n
4	3	1			12233.96180	3.00	1 n	12458.03570	0.10	2 n

4	4	1					12394.06340	3.00	1 n	12607.29530	0.10	2 n
4	4	0					12394.08480	3.00	1 n	12607.30550	0.10	1 n
5	0	5					12083.94200	0.50	2 n	12326.57160	0.50	2 n
5	1	5					12088.98310	0.20	2 n	12329.92780	0.10	1 n
5	1	4					12176.28090	0.20	3 n	12418.98440	0.50	3 n
5	2	4								12452.25920	5.00	3 n
5	2	3					12244.56430	0.80	4 n	12483.00730	1.80	2 n
5	3	3								12577.12930	0.10	1 n
5	3	2								12580.70830	0.10	1 n
5	4	2								12726.45380	0.10	1 n
5	4	1								12726.61510	0.60	3 n
6	0	6					12200.38060	1.80	2 n	12443.61420	0.10	1 n
6	1	6					12203.30530	0.10	2 n	12446.28130	1.60	3 n
6	2	5					12350.47710	0.70	2 n			
6	4	3								12869.59340	0.30	3 n
6	4	2								12870.19300	2.60	3 n
7	0	7					12333.34500	0.10	2 n			
7	1	7								12577.83840	0.10	1 n
7	1	6					12483.84230	0.50	2 n			
7	2	5					12573.66350	3.00	1 n			
7	4	4					12826.39160	1.70	4 n			
7	4	3								13038.30290	0.10	2 n
8	1	8	11039.20050	0.80	3 l							
8	2	7								12911.25440	0.80	2 n
8	3	6					12844.61560	0.10	2 n			
8	4	5								13226.49100	3.60	3 n

J	K_a	K_c	131 or 10^-3	310 or 30^+1	112 or 21^+1

0	0	0	11813.20720	3.00	1 n	12139.31540	3.00	1 n	12407.66210	3.00	1 n
1	0	1	11836.45590	0.10	2 n	12162.10650	0.10	2 n	12430.52290	0.40	2 n
1	1	1	11859.11860	0.40	2 n	12176.43960	0.10	2 n	12444.09440	0.40	2 n
1	1	0	11865.28740	0.10	2 n	12181.59830	0.10	2 n	12449.64630	0.10	2 n
2	0	2	11881.79880	0.40	2 n	12206.34750	1.40	2 n	12474.85010	0.10	2 n
2	1	2	11899.40800	0.30	3 n	12215.57850	0.10	2 n	12484.26280	0.10	2 n
2	1	1	11917.84840	0.30	3 n	12232.62690	2.90	2 n	12500.88940	0.40	3 n
2	2	1	11983.97090	0.50	2 n	12274.40360	1.90	2 n	12541.68490	0.10	4 n
2	2	0	11985.06540	0.20	2 n	12275.67610	3.00	1 n	12543.05160	0.30	3 n
3	0	3	11947.21530	0.50	2 n	12269.78880	0.70	3 n	12538.38970	0.20	3 n
3	1	3	11959.19590	0.10	3 n	12275.19370	0.10	2 n	12543.70750	0.20	2 n
3	1	2	11995.73170	0.50	2 n	12308.11700	0.30	2 n	12576.65200	0.10	4 n
3	2	2	12053.75200	0.40	3 n	12342.95660	0.10	2 n	12610.27760	0.60	3 n
3	2	1	12058.95650	0.40	3 n	12348.85780	0.30	3 n	12616.58960	0.30	3 n
3	3	1	12174.51550	0.10	2 n	12425.46420	1.60	2 n	12691.42890	0.10	2 n
3	3	0	12174.63830	0.30	2 n	12425.66250	0.60	2 n	12691.71410	0.20	2 n
4	0	4	12030.62010	0.10	2 n	12350.54280	2.30	3 n	12619.75310	0.60	2 n
4	1	4	12037.87130	0.30	2 n	12353.21940	0.70	2 n	12621.74200	0.60	3 n
4	1	3	12097.32940	0.10	2 n	12406.58540	0.70	2 n	12675.36710	0.30	2 n
4	2	3	12145.81920	0.50	2 n	12433.31580	0.20	2 n	12700.52960	1.20	3 n
4	2	2	12160.06970	0.70	3 n	12448.80980	1.80	3 n	12717.05810	0.90	2 n
4	3	2	12269.60190	0.30	2 n	12519.01700	0.10	2 n	12785.45740	0.10	4 n
4	3	1	12270.43870	0.30	3 n	12520.32780	0.20	3 n	12786.60330	0.10	3 n
4	4	1	12426.90930	1.90	3 n	12629.99260	2.30	2 n	12893.32060	0.40	3 n
4	4	0	12426.95170	0.60	2 n	12630.02520	1.20	2 n	12893.32180	0.80	2 n
5	0	5	12130.78840	0.10	2 n	12448.05520	2.20	3 n	12716.31320	0.50	3 n
5	1	5	12134.82420	0.10	2 n	12449.22500	1.60	2 n	12717.80770	0.30	2 n

5	1	4	12223.91220	0.40	3	n	12525.84940	1.90	2	n	12794.76090	0.40	3 n
5	2	4	12259.46820	0.60	4	n	12544.98100	0.20	3	n	12811.53530	1.70	2 n
5	2	3	12288.57740	0.30	2	n	12575.02850	0.60	3	n	12843.76950	0.30	3 n
5	3	3	12388.32440	0.30	2	n	12635.75720	0.80	3	n	12902.44770	0.10	2 n
5	3	2	12391.51050	1.60	4	n	12640.54840	1.00	2	n	12907.32590	0.20	2 n
5	4	2	12545.69790	0.70	7	n	12747.81050	0.10	2	n	13010.78270	2.70	3 n
5	4	1	12546.13070	0.90	4	n	12748.04070	0.20	2	n	13010.83920	0.70	2 n
5	5	1	12737.29360	1.30	2	n	12883.60160	2.50	2	n	13143.64760	1.00	3 n
5	5	0	12737.18490	1.00	2	n	12883.63530	0.60	2	n	13143.56620	0.30	4 n
6	0	6	12247.43030	0.10	2	n	12562.36720	3.00	1	n	12830.84940	0.10	2 n
6	1	6	12249.62060	0.10	2	n	12562.84040	0.80	2	n	12831.52200	0.40	2 n
6	1	5	12368.20490	0.10	2	n	12663.43580	3.00	1	n	12932.36990	0.40	2 n
6	2	5	12394.09750	0.20	2	n	12671.73350	0.10	3	n	12942.33990	0.90	3 n
6	2	4	12442.42240	1.00	2	n	12725.92260	3.00	1	n	12996.75380	2.90	2 n
6	3	4	12530.15880	1.10	4	n	12775.07590	0.50	3	n	13042.34980	0.40	3 n
6	3	3	12538.92170	1.00	3	n	12787.53470	2.80	4	n	13054.54110	0.90	3 n
6	4	3	12691.03180	0.30	2	n	12889.69600	0.80	2	n	13152.05810	1.40	4 n
6	4	2	12689.44740	1.00	3	n	12890.63930	1.70	2	n	13152.61510	2.40	2 n
6	5	2	12881.38510	0.80	3	n	13024.31550	0.20	2	n	13283.88140	4.30	4 n
6	5	1	12881.17120	0.70	3	n	13024.73750	3.00	1	n	13283.46710	2.20	2 n
6	6	1	13095.68950	3.00	1	n					13450.41870	3.70	2 n
6	6	0	13095.68910	3.00	1	n					13450.41910	3.00	1 n
7	0	7	12380.69230	1.70	2	n	12692.21330	2.20	4	n	12962.37990	0.60	3 n
7	1	7	12381.98730	0.50	2	n	12693.91250	3.00	1	n	12962.80380	1.50	2 n
7	1	6	12530.97140	0.90	2	n	12817.63870	1.70	4	n	13086.60060	0.90	3 n
7	2	6	12550.26920	0.30	2	n	12819.51610	2.20	2	n	13092.16020	4.40	3 n
7	2	5	12623.07800	1.10	2	n	12899.31060	0.40	2	n	13169.28250	0.10	2 n

7	3	5	12695.37260	0.60	4	n	12936.04220	0.60	3	n	13204.48420	2.80	3 n
7	3	4	12713.42270	2.40	3	n	12961.57600	3.80	3	n	13230.45240	0.80	4 n
7	4	4	12857.26440	0.50	3	n	13055.98820	0.40	2	n	13316.81050	1.40	3 n
7	4	3	12857.16940	1.50	3	n	13058.60750	0.90	3	n	13319.32800	1.00	3 n
7	5	3	13049.26280	1.90	4	n	13188.23400	3.00	1	n	13448.72220	0.10	1 n
7	5	2	13048.02710	0.20	2	n	13189.52670	0.10	2	n	13447.52460	0.90	2 n
7	6	2	13263.90120	2.20	4	n							
7	6	1	13263.89640	3.00	1	n							
7	7	1	13492.33030	0.30	2	n							
7	7	0	13492.33030	0.30		d							
8	0	8	12530.76960	0.10	2	n	12841.75190	0.70	2	n	13112.16421	3.00	−1 o,?
8	1	8	12532.05840	0.20	2	n	12842.03321	0.60	−1	o,?	13109.65280	0.40	2 n
8	1	7	12710.47460	0.10	2	n	12987.91900	5.50	2	n	13257.36810	2.80	2 n
8	2	7	12714.69700	2.50	2	n	12989.13860	5.30	3	n	13260.78290	3.40	5 n
8	2	6	12824.10550	0.70	2	n	13092.49320	3.00	1	n	13362.47150	3.00	1 n
8	3	6	12880.88710	1.80	3	n	13119.89070	0.90	4	n	13388.70050	2.20	4 n
8	3	5					13161.54520	3.00	1	n	13435.52350	1.70	2 n
8	4	5	13047.62680	2.90	3	n	13236.93440	3.40	2	n	13504.37010	1.90	3 n
8	4	4	13049.64070	0.80	5	n	13252.60760	1.80	3	n			
8	5	4					13374.04270	1.10	2	n			
8	5	3					13378.16150	3.00	1	n			
8	6	3	13455.60890	3.00	1	n							
8	6	2	13455.61290	0.70	3	n							
9	0	9	12697.94420	0.50	2	n	13008.72910	0.80	2	n	13275.81430	1.90	3 n
9	1	9	12689.00460	1.90	2	n	13006.37360	0.20	2	n			
9	1	8									13443.24200	1.80	2 n
9	2	8	12907.78530	0.50	3	n							

9	2	7							13572.93290	0.10	1	n
9	3	7	13087.90360	3.40	3	n	13313.41870	1.50	2	n		
9	3	6					13385.15960	4.80	3	n		
9	4	6	13260.92450	3.20	3	n						
9	6	4	13670.82960	1.00	2	n						
10	0	10	12883.19970	1.50	2	n						
10	1	9	13121.56480	1.40	2	n						
10	2	9							13645.03310	1.90	3	n
10	3	7	13400.34780	2.00	2	n						
10	4	6	13516.06780	0.20	2	n						
11	1	11	13080.68620	2.00	2	n						

J	K_a	K_c	051 or 10^-5				211 or 30^-1				013 or 21^-1			
0	0	0					12151.25480	3.00	1	n	12565.00710	3.00	1	n
1	0	1					12173.76450	0.10	2	n	12588.15580	0.20	2	n
1	1	1					12187.81600	0.10	2	n	12600.57510	0.20	2	n
1	1	0					12193.34570	0.20	2	n	12606.26330	0.60	2	n
2	0	2	11312.79346	1.00	1	a	12218.98490	0.10	4	n	12632.86720	0.10	2	n
2	1	2					12227.88070	0.20	3	n	12641.20500	0.20	3	n
2	1	1	11372.63578	1.05	1	a	12244.39990	0.10	4	n	12658.23710	0.50	3	n
2	2	1					12285.36600	0.30	3	n	12695.10100	0.70	2	n
2	2	0					12286.72510	0.10	3	n	12696.65110	0.20	2	n
3	0	3					12282.16060	0.10	4	n	12696.73700	0.20	2	n
3	1	3	11414.63194	1.02	1	a	12287.24820	0.30	4	n	12701.23420	0.20	3	n
3	1	2					12319.85760	0.30	4	n	12734.91950	0.10	3	n
3	2	2	11567.22510	1.02	1	a	12353.73120	0.30	4	n	12764.66110	0.20	4	n
3	2	1					12360.00400	0.20	4	n	12771.71020	0.20	3	n
3	3	1	11763.17033	1.07	1	a	12435.33520	0.20	4	n	12839.84820	0.20	2	n

3	3	0				12435.55400	0.10	2 n	12840.12800	0.10	2 n
4	0	4	11468.06805	1.07	1 a	12362.86270	0.20	4 n	12777.50160	0.20	3 n
4	1	4				12365.28290	0.10	3 n	12779.93420	0.30	2 n
4	1	3	11558.32919	1.01	1 a	12418.08450	0.40	4 n	12834.47580	0.20	2 n
4	2	3				12443.76730	0.40	4 n	12856.00530	0.50	3 n
4	2	2	11670.88746	1.02	1 a	12460.17590	0.50	5 n	12874.10580	0.40	4 n
4	3	2				12528.75740	0.40	5 n	12935.37470	1.00	3 n
4	3	1				12530.20600	0.20	4 n	12937.18870	0.20	3 n
4	4	1				12637.86560	0.10	2 n	13034.63880	0.30	2 n
4	4	0	12098.80062	1.06	1 a	12637.89790	0.50	2 n	13034.67900	0.60	2 n
5	0	5				12460.36390	1.00	3 n	12875.52780	0.40	3 n
5	1	5				12461.39870	0.10	3 n	12876.76970	0.60	2 n
5	1	4				12536.49210	0.10	3 n	12954.30670	0.40	3 n
5	2	4	11778.20167	1.02	1 a	12554.87980	0.40	4 n	12968.11470	0.10	3 n
5	2	3				12586.59330	0.10	3 n	13002.84580	0.20	2 n
5	3	3				12645.32980	0.30	5 n	13054.37900	0.30	3 n
5	3	2				12650.59070	0.20	4 n	13060.74320	0.50	3 n
5	4	2				12755.13600	0.40	5 n	13157.07050	0.70	3 n
5	4	1				12755.39310	0.10	2 n	13157.34210	1.30	3 n
5	5	1	12490.17451	1.16	1 a	12892.32760	0.70	2 n	13277.82400	3.00	2 n
5	5	0				12892.32680	3.00	1 n	13277.82380	3.00	1 n
6	0	6	11696.38558	1.01	1 a	12574.73760	0.40	3 n	12990.50770	0.20	3 n
6	1	6				12575.20460	0.10	3 n	12989.63060	0.60	2 n
6	1	5	11841.34029	0.73	2 a	12678.17750	0.40	4 n	13091.86740	0.20	2 n
6	2	5				12683.24730	0.50	2 n	13099.99270	2.00	2 n
6	2	4	11953.58136	1.04	1 a	12737.55660	0.20	3 n	13155.86400	0.10	2 n
6	3	4				12784.40640	0.20	5 n	13196.15580	0.60	2 n

6	3	3				12797.94390	0.20	4	n	13211.91350	1.50	3 n
6	4	3				12896.05630	0.40	4	n	13302.27680	3.40	2 n
6	4	2				12897.23380	0.40	4	n	13303.47720	0.50	2 n
6	5	2				13033.43300	0.10	2	n	13419.59930	2.20	2 n
6	5	1				13033.46310	0.70	3	n	13419.66100	0.60	3 n
6	6	1				13200.58220	4.10	3	n	13567.21470	1.20	2 n
6	6	0				13200.58280	1.70	3	n	13567.21310	3.00	1 n
7	0	7				12706.17340	0.10	2	n	13122.64040	0.60	2 n
7	1	7	11842.17686	1.02	1 a	12706.85480	0.20	3	n	13122.68430	0.10	2 n
7	1	6	12015.56810	5.06	1 a	12831.97310	0.30	2	n	13245.86250	0.10	3 n
7	2	6	12076.44335	1.07	1 a	12833.57500	0.20	4	n	13251.40420	1.10	2 n
7	2	5				12910.76240	0.30	3	n	13330.48440	0.40	2 n
7	3	5				12945.03740	0.50	4	n	13358.92800	1.40	3 n
7	3	4				12972.43670	0.50	3	n	13390.41670	3.20	2 n
7	4	4	12533.13790	2.10	2 n	13060.37700	0.30	5	n	13470.74550	0.90	2 n
7	4	3				13064.23230	0.60	2	n	13474.63760	3.00	1 n
7	5	3				13198.19260	0.30	3	n	13585.22200	0.90	3 n
7	5	2				13198.34660	1.50	3	n	13585.52850	3.00	1 n
7	6	2				13366.36840	0.20	3	n	13733.83790	1.00	2 n
7	6	1				13366.36620	2.20	2	n	13733.83580	3.60	2 n
7	7	1				13576.56810	1.50	2	n			
7	7	0				13576.56650	3.00	1	n			
8	0	8	11991.75340	0.73	2 a	12855.24090	0.10	2	n	13272.01250	0.70	2 n
8	1	8				12854.16030	0.10	2	n	13272.01540	2.50	2 n
8	1	7	12209.22840	5.03	1 a	12999.12110	0.10	−1	o	13416.22540	1.70	2 n
8	2	7				13001.51650	0.20	3	n	13415.71480	1.00	2 n
8	2	6	12342.39281	1.10	1 a	13103.48730	0.20	3	n	13523.80020	3.00	1 n

8	3	6				13126.70460	0.10	3	n	13543.45460	3.00	1	n
8	3	5	12501.00734	5.02	1 a	13172.71490	0.30	4	n	13594.52000	1.90	2	n
8	4	5				13247.31280	0.20	2	n	13662.17160	3.00	1	n
8	4	4				13257.44680	0.20	4	n	13672.25430	2.70	2	n
8	5	4				13386.56720	1.60	4	n				
8	5	3	12999.12140	0.40	4 n	13387.17950	0.10	3	n	13775.71150	0.30	2	n
8	6	3				13555.69360	1.10	2	n				
8	6	2				13555.72860	1.00	4	n				
8	7	2				13683.56990	0.20		d				
8	7	1				13683.56990	0.20	2	n				
8	8	1				13965.53235	3.00	−1	o				
8	8	0				13965.53235	3.00	−1	o				
9	0	9				13019.39410	0.40	2	n	13438.55830	1.90	−1	n
9	1	9	12167.47511	0.72	2 a	13020.09800	0.10	2	n	13438.57360	1.40	2	n
9	1	8	12420.83768	5.06	1 a	13187.08660	1.90	4	n	13603.68760	1.10	2	n
9	2	8	12456.70588	1.10	1 a	13187.12300	0.10	2	n	13603.55680	2.00	3	n
9	2	7				13321.71310	1.00	3	n	13733.60580	3.00	1	n
9	3	7	12705.84410	0.60	2 n	13327.67110	1.30	3	n	13749.13350	0.80	2	n
9	3	6				13396.32980	1.30	4	n				
9	4	6	12949.89631	5.02	1 a	13457.83950	0.10	3	n	13876.07220	3.00	1	n
9	4	5				13477.70810	1.30	4	n				
9	5	5				13598.33090	0.70	3	n				
9	5	4				13599.92730	0.60	2	n				
9	6	4				13768.45560	3.00	1	n				
9	6	3				13768.57890	2.50	2	n				
9	7	3				13897.92630	0.10	2	n				
9	7	2				13897.92430	2.60	2	n				

10	0	10	12355.85833	1.06	1	a	13202.27330	0.10	2	n	13622.36760	0.30	2	n	
10	1	10	12356.29771	5.06	1	a	13202.21590	0.10	2	n	13622.37430	1.30	2	n	
10	1	9	12649.53044	1.12	1	a	13386.68600	0.20	2	n	13808.70149	0.60	−1	o	?
10	2	9					13390.04450	0.10	2	n	13808.29711	0.60	−1	o	?
10	2	8	12822.74179	1.17	1	a	13545.79900	0.40	3	n					
10	3	8					13547.73140	3.00	1	n					
10	3	7					13639.56650	1.30	3	n					
10	4	7					13688.45810	3.00	1	n					
10	4	6					13724.59670	1.20	4	n					
10	5	6					13832.97830	3.00	1	n					
10	5	5					13838.71340	1.60	4	n					
11	0	11					13401.91630	5.00	2	n	13822.89600	2.00	−1	o	
11	1	11	12562.60574	1.00	2	a	13401.92720	1.20	2	n	13822.89560	1.00	−1	o	
11	1	10	12894.94914	5.06	1	a	13609.00610	1.10	2	n					
11	2	10					13607.89880	0.90	3	n	14028.06360	0.80	−1	o	
11	3	9	13186.78039	5.09	1	a	13786.81200	1.00	2	n					
11	4	8					13939.97100	0.60	2	n					
11	5	7	13716.94817	5.03	1	a	14089.83800	3.00	1	n					
12	0	12	12776.73921	1.13	1	a	13618.49016	3.00	−1	o	14038.99916	3.00	−1	o	?
12	1	12	12786.51540	5.11	1	a	13618.49016	3.00		d	14038.99916	3.00	−1	o	?
12	2	10	13392.91421	5.02	1	a									
12	3	9	13553.94128	5.06	1	a									
13	0	13					13852.01490	3.00	−1	o					
13	1	13	13028.15903	1.14	2	a	13852.01539	3.00	−1	o					
13	2	12	13447.95326	1.11	1	a									
13	4	10	14031.83093	5.03	1	a									
14	0	14	13280.53329	5.03	1	a	14102.35655	0.60	−1	o					

14	1	14				14102.35655	0.60	−1	o
14	1	13	13733.04653	5.03	1	a			
14	2	13	13742.68221	5.14	1	a			
14	2	12	14024.21174	5.04	1	a			
14	3	11	14232.81814	1.18	1	a			
15	0	15				14369.86485	1.00	−1	o
15	1	15	13565.91241	1.15	1	a	14369.86485	1.00	−1	o
15	2	14	14056.13520	5.04	1	a			
15	3	13	14391.51603	5.04	1	a			
15	4	12	14705.93433	5.12	1	a			
16	0	16	13854.24384	4.11	2	a			
16	1	15	14380.07980	5.03	1	a			
16	2	14	14707.85218	5.11	1	a			
16	3	13	14983.59279	5.11	1	a			
17	1	17	14174.32941	5.05	1	a			
17	2	16	14744.83412	5.06	1	a			
18	1	17	15100.25988	5.12	1	a			
19	1	19	14851.32178	5.07	1	a			
19	2	18	15484.78008	5.04	1	a			
20	0	20	15234.78268	5.12	1	a			
21	1	21	15632.80972	5.07	1	a			
22	0	22	16058.89488	5.17	1	a			

TABLE IX.: Term values for the 4ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	240 or 20^+4			141 or 20^-4			042 or 11 4		
1	0	1	13227.62799	4.00	1 a						
1	1	1	13262.55592	4.00	1 a	13310.10666	4.00	1 a			
1	1	0	13269.26975	11.00	1 a				13513.00782	5.40	1 p
2	0	2				13324.81350	4.00	1 a			
2	1	2	13302.27163	3.58	1 a				13546.76151	3.19	2 a
2	1	1	13321.53467	4.00	1 a						
2	2	1	13414.18076	2.42	2 p,a	13455.48509	4.69	2 p,a	13647.52540	4.00	1 a
2	2	0				13456.40189	3.31	2 a	13648.13614	0.97	2 p,a
3	0	3	13338.41586	2.83	2 a				13589.13779	3.41	2 p
3	1	3	13361.19154	1.00	1 p	13409.40278	8.00	1 a			
3	1	2	13399.20712	4.00	1 a				13645.64387	1.52	2 p,a
3	2	2				13525.38562	1.83	3 p,a	13717.85866	2.86	2 p,a
3	2	1	13487.38463	3.11	1 p				13722.53478	8.00	1 a
3	3	1				13673.94787	2.35	2 a			
3	3	0	13640.01391	4.00	1 a				13859.74456	3.58	1 a
4	0	4	13422.67755	4.00	1 a						
4	1	4	13439.11633	2.83	2 a				13685.56792	2.39	1 p
4	1	3				13551.03590	5.20	1 p			
4	2	3				13617.35554	0.98	3 p			
4	2	2	13587.21412	4.00	1 a						
4	3	2							13954.61358	2.08	3 p,a
4	3	1	13734.90013	3.47	1 a	13769.63362	0.92	4 p,a	13954.79342	1.23	5 a
4	4	1	13932.56851	4.00	1 a	13960.35131	0.80	6 p,a			
4	4	0				13959.31048	1.18	5 p,a			

5	0	5	13524.05779	3.65	1	a				13775.72505	1.24	1	p
5	1	5	13535.31040	4.00	1	a							
5	1	4								13877.31562	4.00	1	a
5	2	4					13730.81107	1.42	1	p			
5	3	3					13887.64738	1.86	4	p,a	14073.45143	4.00	1 a
5	3	2					13890.02068	1.99	2	p	14076.12379	0.79	6 p,a
5	4	2	14050.21544	2.14	4	p,a	14080.94414	3.32	2	a			
5	4	1	14051.13433	1.23	2	p,q	14079.95481	2.95	2	p,a	14256.90613	1.44	2 p,a
5	5	1	14283.43562	5.05		d	14300.70015	1.56	4	p,a	14473.08660	1.47	5 p,a
5	5	0	14283.43562	5.05	1	p	14300.69062	0.87	3	p,a	14473.08247	4.00	d
6	0	6									13894.49408	6.04	1 p
6	1	5	13774.96873	9.00	1	a					14025.62734	1.55	1 p
6	2	5	13818.41797	2.09	1	p							
6	2	4	13865.78698	8.57	1	p							
6	3	4	13992.95624	2.82	1	p					14215.89628	1.66	5 p,a
6	3	3					14035.92605	1.30	3	p			
6	4	3	14197.51237	1.29	4	p,a	14220.48490	2.19	3	p,a	14401.14320	4.00	1 a
6	4	2					14224.05098	1.33	5	p,q			
6	5	2	14426.46601	0.75	6	p,a					14617.91627	3.00	2 p,a
6	5	1					14444.92409	0.74	7	a			
6	6	1					14687.24583	1.04		d			
6	6	0					14687.24583	1.04	3	p,a			
7	0	7									14026.30487	4.00	1 a
7	1	7									14030.12109	3.20	1 p
7	1	6	13941.72862	3.58	1	a	13991.53329	4.09	1	p			
7	2	6	13971.89433	7.55	1	p	14019.51449	2.70	1	p			
7	2	5									14288.10269	1.00	2 p,q

7	3	5	14155.73466	3.99	1	p	14191.57220	2.06	3	p,a	14381.40045	3.71 1 a
7	3	4	14166.90527	2.56	1	p	14207.64695	1.63	1	p	14403.50624	2.87 1 p
7	4	4	14361.44997	9.00	1	q	14388.48842	0.83	3	p	14568.67662	4.00 1 a
7	4	3									14570.47305	8.33 1 p
7	5	3	14593.26239	2.11	2	p,a	14612.92213	2.10	4	p,a	14746.96383	0.71 2 p
7	5	2	14593.15126	1.92	4	p,a	14612.77479	1.29	6	p,a		
7	6	2					14854.39861	0.81	4	p,a		
8	1	8	13933.69770	3.71	1	a					14180.04490	4.22 1 p
8	1	7					14175.36770	2.22	1	p		
8	2	7	14144.66608	1.53	1	p						
8	3	6	14335.49661	1.99	2	a	14382.82353	3.65	1	a		
8	3	5					14408.79533	18.16	1	p		
8	4	5	14549.69874	1.83	1	p					14757.90587	1.00 1 p
8	4	4					14580.25713	4.00	1	a	14764.25419	1.77 2 a
8	5	4									14978.70792	0.91 2 p
8	5	3	14783.25248	4.57	2	p,a	14804.24940	2.21	4	p,a		
8	6	3					15044.50020	1.70	3	p,a		
8	6	2					15044.43699	1.71	4	a		
8	7	1					15204.10022	0.93	4	p,q		
9	0	9									14346.09439	5.55 1 p
9	2	7	14471.73809	1.72	1	p	14530.87053	1.77	2	p,a		
9	3	7	14549.44480	4.00	1	a	14589.65811	3.65	1	a		
9	3	6									14835.39819	1.51 2 a
9	4	6					14793.35269	0.97	2	p,a		
9	4	5									14982.39819	2.29 2 p
9	5	4	14995.82928	0.94	4	p,a	15019.25554	1.89	2	p		
9	6	4					15257.18345	1.39	4	p,a		

9	6	3				15257.20770	1.02	2	p			
9	7	3				15416.54364	0.96	2	p			
11	3	9				15064.22765	1.00	2	p,a			
12	3	10	15283.50594	5.00	1	q						

J	K_a	K_c	320 or 30^+2				122 or 21^+2				004 or 22 0			
0	0	0					13910.89642	9.00	1	a	14537.50415	1.15	1	p
1	0	1	13663.46825	0.97	1	a	13933.78521	1.70	2	a	14560.30553	2.19	2	a
1	1	1	13681.82730	0.30	1	a	13950.93171	3.65	1	a	14569.78841	2.83	2	a
1	1	0					13956.80063	1.79	1	a	14575.14088	2.39	2	a
2	0	2	13707.90559	0.50	2	a	13978.26033	2.77	3	a	14604.18442	0.93	3	p,a
2	1	2	13722.09365	0.48	4	a	13990.84527	1.60	4	a	14610.05471	1.67	4	a
2	1	1	13738.73390	12.00	1	q	14008.45630	3.19	2	a	14626.08190	2.16	3	a
2	2	1	13789.80501	0.91	3	p,a	14058.21605	1.84	4	a	14654.33867	1.83	4	a
2	2	0	13791.01759	3.65	1	a	14059.51821	2.40	3	p,a	14656.04391	0.93	3	p,a
3	0	3	13771.84974	1.46	3	a	14042.09282	1.36	3	a	14666.60035	0.89	4	p,a
3	1	3	13780.01096	2.35	3	a	14048.22524	2.52	2	p,a?	14669.46747	2.03	4	p,a
3	1	2	13814.97269	2.33	3	a	14084.96802	1.68	4	a	14701.08793	1.95	3	a
3	2	2	13858.33555	2.58	3	a	14126.94135	0.98	4	p,a	14722.78295	1.97	4	a
3	2	1	13864.04904	1.14	4	p,a	14132.90607	1.44	5	a	14730.37646	1.17	4	p,a
3	3	1	13955.34794	1.74	4	p,a	14223.54844	2.60	3	a	14783.47936	0.93	4	p,a
3	3	0	13955.57662	1.61	2	a	14223.69446	2.10	2	a	14783.84578	1.92	3	a
4	0	4	13853.20109	3.50	2	a	14123.39816	2.52	3	a	14746.10290	2.12	3	a
4	1	4	13857.67235	1.69	3	p,a	14127.63475	1.85	4	p,a	14747.56088	0.48	5	a
4	1	3	13914.36036	3.12	3	a	14184.81524	1.88	4	a	14798.07274	2.19	3	a
4	2	3	13948.79041	1.11	4	p,a	14217.46517	1.85	4	a	14812.54513	1.75	5	a
4	2	2	13963.98293	3.50	4	p,a	14233.35437	1.88	3	p,a	14831.45103	1.72	4	p,a
4	3	2	14049.01798	1.17	7	a	14317.40043	1.51	5	p,a	14877.44953	2.25	2	a

4	3	1	14049.98493	1.40	4	p,a	14318.47559	3.30	3	p,a	14879.78920	2.44	3 p,a
4	4	1	14177.16131	0.89	3	a	14444.73560	1.96	3	p,a	14957.50499	2.19	3 a
4	4	0	14177.18391	1.11	4	a	14444.67697	1.07	2	p,a	14957.57225	0.97	2 p,a
5	0	5	13950.91491	1.15	4	p,a	14220.54505	1.25	3	p,a	14842.55613	1.72	3 a
5	1	5	13953.13055	9.00	1	a	14223.24387	3.01	2	a	14842.96482	0.97	2 p,a
5	1	4	14035.02901	2.23	2	a	14306.04962	1.79	4	a	14914.33561	2.10	4 p,a
5	2	4	14060.90756	1.42	4	p,a	14328.94596	0.91	4	p,a	14922.48318	2.30	3 p,a
5	2	3	14090.59842	1.39	5	a	14360.38474	1.33	6	p,a	14957.82222	1.98	4 p,a
5	3	3	14165.53805	0.89	4	p,a	14434.29172	0.94	4	p,a	14994.40826	2.70	2 a
5	3	2	14169.56850	0.81	7	a	14438.25077	0.84	6	p,a	15002.42539	2.04	3 a
5	4	2	14294.00392	1.13	2	p,a	14562.14850	3.80	1	a	15075.73446	4.00	1 a
5	4	1	14294.31012	1.10	6	p,a	14561.87623	0.91	4	p,a	15076.27815	2.24	3 a
5	5	1	14445.31681	2.09	3	p,a							
5	5	0	14445.46924	0.91	5	p,a	14722.50420	0.95	3	p,a	15175.59420	3.33	1 a
6	0	6	14064.77498	3.40	2	a	14334.96524	4.00	1	a	14956.21052	2.54	3 p,a
6	1	6	14066.08700	1.34	3	p,a	14336.46426	1.12	3	p,a	14956.25613	2.23	3 p,a
6	1	5	14174.59754	2.51	3	p,a	14446.56870	1.60	1	p	15047.80459	2.68	3 p,a
6	2	5	14184.23601	0.89	4	a	14460.57418	0.88	3	p,a	15051.59231	2.15	3 a
6	2	4	14241.11518	0.67	4	a	14513.54052	1.80	2	p,a	15105.97868	1.79	5 p,a
6	3	4	14304.87078	1.34	6	p,a	14573.54504	2.28	3	a	15133.41407	3.48	2 a
6	3	3	14315.24360	0.88	6	p,a	14582.22007	0.93	3	p,a	15152.46558	2.83	2 a
6	4	3	14434.53400	1.36	6	p,a	14703.56359	2.15	2	a	15217.77022	2.31	3 a
6	4	2	14435.67999	11.77	1	p					15220.15921	4.00	1 a
6	5	2	14585.97519	0.60	4	p	14865.81166	2.83	1	a	15317.91884	2.01	2 p,a
6	5	1					14865.83346	3.80	1	a	15318.01979	2.42	2 p,a
6	6	1					15048.99380	2.56	2	a	15436.41018	0.97	2 p,a
6	6	0									15436.41738	4.00	d

7	0	7	14197.05070	0.87	3	a	14465.60292	2.50	3	a	15085.13795	1.10 6 p,a
7	1	7					14469.48281	1.44	2	p	15087.09824	1.98 3 p,a
7	1	6	14331.01358	0.90	3	p,a	14600.26327	1.43	4	p,a	15199.65486	1.65 5 p,a
7	2	6					14611.76832	1.31	4	p,a	15199.02991	3.54 2 p,a
7	2	5	14417.89242	0.99	2	p,a	14690.60777	1.19	6	p,a	15277.54876	2.00 4 a
7	3	5	14463.64833	1.30	4	p,a					15293.30610	4.00 1 a
7	3	4	14492.25199	0.34	5	a	14758.04268	0.97	2	p,a	15328.81986	2.80 3 p,a
7	4	4	14598.18552	3.47	1	a					15383.09353	4.00 1 a
7	4	3	14601.69016	1.79	1	a	14868.75538	1.21	4	p,a	15390.40615	2.83 2 a
7	5	3					15033.30798	4.00	1	a		
7	5	2					15033.01331	1.25	3	p,a	15483.65447	4.00 1 a
7	6	2	14850.06828	0.98	2	p	15214.70291	3.65		d		
7	6	1	14850.28557	2.83	1	a	15214.70291	3.65	1	a	15603.33742	4.00 1 a
7	7	0	15038.60195	0.97	2	p,a						
8	0	8	14342.61237	3.58	1	a					15233.85905	3.15 2 p,a
8	1	8	14347.90679	4.00	1	a	14613.59494	1.70	4	p,a	15233.17908	1.77 4 p,a
8	1	7	14503.35565	1.30	3	p,a					15363.01269	4.00 1 a
8	2	7	14505.84201	1.54	3	p,a	14779.36148	1.67	3	p,a	15364.37448	1.15 4 p,a
8	3	6	14648.80636	2.11	4	a	14917.01026	2.83	2	a	15472.94078	8.38 1 p
8	3	5					14962.45042	0.97	2	p,a	15528.91619	3.23 1 p
8	4	5	14788.31509	1.27	6	p,a	15057.48667	0.97	2	p,a	15570.86234	4.00 1 a
8	4	4	14793.38502	1.27	1	p						
8	5	4	14996.71985	1.45	6	p,a	15226.48606	4.00	1	a	15671.18025	4.00 1 a
8	5	3	14997.53616	0.99	2	p						
8	6	3					15402.93232	1.38	1	p	15792.57723	4.00 1 a
9	0	9	14507.65428	3.80	1	a					15399.56367	4.00 1 a
9	1	9	14505.75006	1.00	1	p						

9	1	8	14691.65053	3.31	2	p,a				15542.39746	1.19 4 p,a
9	2	8	14692.11331	3.50	1	p				15548.23171	4.00 1 a
9	2	7	14829.70532	2.63	2	p,a				15669.81175	1.65 1 p
9	3	7	14850.68615	2.19	4	p,a					
9	3	6	14912.97433	3.31	2	p,a	15183.16928	1.65	3 p		
9	4	6	14996.55148	2.24	2	p,a					
9	5	5	15207.44945	2.37	1	p					
9	5	4	15209.56379	2.81	2	p,a					
10	1	10	14685.90724	3.65	1	a					
10	2	9	14896.99420	2.26	3	p,a	15163.47406	10.00	1 q		
10	3	8	15071.40698	2.62	2	p,a					
10	4	7	15228.20333	2.70	2	a					

J	K_a	K_c	221 or 30^-2			023 or 21^-2			400 or 40^+0		
0	0	0	13652.65605	7.00	1 a	14066.19395	6.00	1 a	13828.27732	6.00	1 a
1	0	1	13675.41815	0.30	2 a	14089.41055	3.58	1 a	13850.65498	0.49	2 a
1	1	1	13692.39875	0.30	2 a	14104.56304	1.61	2 a	13861.66876	1.35	2 p,a
1	1	0	13698.22309	0.35	2 a	14110.58587	2.39	2 a	13866.69938	2.62	2 a
2	0	2	13719.33225	0.21	4 a	14134.33534	1.23	4 p,a	13893.99551	1.17	3 a
2	1	2	13732.38583	0.25	4 p,a	14144.99295	2.45	3 a	13901.43572	0.21	4 a
2	1	1	13749.67931	0.17	4 a	14163.03291	1.45	3 a	13916.48179	1.29	3 a
2	2	1	13799.45413	0.28	3 a	14207.79060	2.37	2 a	13949.39621	0.65	4 a
2	2	0	13800.72174	0.30	4 a	14209.25384	1.74	3 p,a	13950.76124	1.69	4 a
3	0	3	13784.08585	0.27	5 p,a	14198.48911	2.35	2 a	13956.07497	0.69	3 a
3	1	3	13791.08979	0.21	5 p,a	14204.77736	1.97	2 a	13960.49278	0.25	4 a
3	1	2	13825.82652	0.25	5 p,a	14240.49569	1.19	2 p,a	13990.06504	0.40	3 a
3	2	2	13867.97307	0.17	4 a	14277.60165	0.86	4 p,a	14016.56624	0.78	5 a
3	2	1	13873.90391	0.40	6 p,a	14284.36037	2.26	3 a	14022.80317	1.01	4 a

3	3	1	13963.83297	0.15	5	a	14365.79561	0.87	2	p,a	14084.32898	1.47	4 a
3	3	0	13963.79178	0.69	2	a	14366.03481	2.06	2	a	14084.46768	0.77	5 a
4	0	4	13864.94053	0.34	5	a	14279.88307	1.33	3	a	14035.25467	0.94	2 p,a
4	1	4	13868.70413	0.21	5	p,a	14283.17169	1.54	3	p,a	14036.36616	0.26	5 a
4	1	3	13925.21342	0.25	5	a	14341.26615	1.42	3	a	14085.85746	0.91	4 a
4	2	3	13957.82623	0.35	5	a	14369.35331	1.47	3	p,a	14104.90103	0.21	7 p,a
4	2	2	13974.16331	0.17	6	a	14387.02777	1.75	4	p,a	14120.91133	0.85	5 p,a
4	3	2	14057.20697	0.23	4	p,a	14462.09128	2.35	2	a	14176.12256	0.32	6 a
4	3	1	14058.29034	0.17	6	p,a	14463.56260	2.06	3	a	14177.68615	1.25	5 p,a
4	4	1	14183.09284	0.44	4	p,a					14268.01116	0.63	6 p,a
4	4	0	14183.13989	0.35	3	a	14577.46986	1.00	2	p,a	14268.04624	1.72	3 a
5	0	5	13962.44351	0.25	5	p,a	14377.87779	2.83	1	a	14131.13438	0.56	5 p,a
5	1	5	13964.27879	0.21	5	p,a	14379.71954	1.48	3	p,a	14131.49046	3.47	1 a
5	1	4	14045.68065	0.42	5	p,a	14462.90780	0.93	3	p,a	14201.61902	0.28	5 a
5	2	4	14067.97123	0.25	6	p,a	14482.07284	0.89	4	p,a	14213.49849	0.42	5 a
5	2	3	14101.09984	0.79	5	a	14516.55134	2.74	3	p,a	14244.43105	0.72	7 p,a
5	3	3	14173.91187	0.21	6	p,a	14581.92529	2.50	2	a	14290.61795	0.74	6 a
5	3	2	14178.09225	0.53	5	a					14296.26782	0.47	7 p,a
5	4	2	14300.34271	0.19	5	a	14696.20218	1.15	2	p,a	14383.40979	0.79	6 p,a
5	4	1	14300.61485	0.27	4	a	14696.42399	2.83	2	p,a	14383.72038	0.64	5 a
5	5	1	14450.67148	2.27	3	a	14839.78357	0.97	2	p,a	14505.95400	0.92	3 p,a
5	5	0	14450.67315	4.00	1	a	14839.78182	4.00		d	14505.96108	1.99	2 a
6	0	6	14076.48399	0.21	4	p,a	14492.54409	2.40	1	a	14244.86833	0.48	2 a
6	1	6	14077.47720	0.26	3	a	14492.89187	3.12	1	a	14243.67204	1.47	2 p,a
6	1	5	14187.33866	0.43	4	a	14602.73752	1.95	3	a	14335.29654	0.82	5 p,a
6	2	5	14198.92802	0.90	5	p,a	14614.68660	1.07	3	p,a	14341.50801	0.26	6 a
6	2	4	14253.91835	0.40	7	p,a	14671.09051	1.10	3	p,a	14391.22787	0.76	6 p,a

6	3	4	14313.17338	0.76	5	a	14724.66563	1.27	3	p,a	14427.34450	0.41	7 p,a
6	3	3	14323.93495	0.24	6	a	14737.98871	1.97	3	a	14441.02398	1.05	5 p,a
6	4	3	14441.46256	0.92	6	a	14838.82108	3.71	1	a	14522.11640	1.03	7 p,a
6	4	2	14442.30461	0.21	7	p,a	14839.85021	1.26	2	p,a	14523.58909	1.27	6 a
6	5	2	14648.42410	0.87	2	p,a					14645.94101	1.64	4 a
6	5	1	14648.45766	0.79	4	a	14983.01353	2.35	2	p,a	14645.96430	0.69	4 p,a
6	6	1					15148.55149	4.00		d	14747.61350	1.78	3 p,a
6	6	0					15148.55149	4.00	1	a	14747.61350	1.78	d
7	0	7	14207.31309	0.47	3	a	14624.10386	4.00	1	a	14373.32847	0.48	3 a
7	1	7	14209.05874	0.35	3	a	14624.30544	2.91	3	p,a	14373.37001	0.96	3 p,a
7	1	6	14342.32143	0.83	4	a	14759.11979	1.00	1	p	14481.36816	0.42	7 a
7	2	6	14348.37498	0.43	6	p,a	14769.04329	2.26	3	p,a	14483.96091	0.43	5 p,a
7	2	5	14428.37277	0.88	4	p,a	14848.07684	4.00	1	a	14558.94875	0.64	6 p,a
7	3	5	14474.47130	0.43	6	p,a	14889.90760	4.00	1	a	14584.65834	0.81	4 a
7	3	4	14500.21452	0.95	4	a	14916.45907	4.00	1	a	14613.07935	1.17	7 p,a
7	4	4	14605.96697	0.55	4	a	15004.37901	1.48	4	p,a	14683.89274	1.77	5 a
7	4	3	14608.87436	1.15	4	a	15008.35300	4.00	1	a	14686.82531	1.21	6 a
7	5	3	14811.90147	0.63	4	a	15149.95466	2.32	2	p,a	14809.53184	1.98	4 p,a
7	5	2	14812.11241	1.25	4	a					14809.74869	1.97	5 a
7	6	2					15315.84965	10.49	1	p	14910.12442	2.72	2 a
7	6	1									14910.15709	1.64	4 p,a
7	7	1					15496.39643	4.00	1	a	15075.76534	3.08	d
7	7	0									15075.76534	3.08	2 p,a
8	0	8	14356.07667	0.28	4	a	14772.51947	2.22	2	a	14520.09996	3.65	1 a
8	1	8	14353.48966	0.88	3	a					14520.09372	2.46	2 a
8	1	7	14514.39638	0.40	5	p,a	14931.30074	4.00	1	a	14649.04706	1.44	4 p,a
8	2	7	14516.97973	0.99	3	p,a	14932.66158	0.91	2	p	14649.75273	0.87	4 a

8	2	6	14628.79710	1.04	5	p,a	15045.00699	1.76	3	p,a	14745.26263	0.96 2 a
8	3	6	14656.01791	0.98	5	p,a	15077.42106	4.00	1	a	14762.31125	0.74 5 a
8	3	5	14699.42912	0.82	5	p,a	15121.24888	1.29	3	p,a	14809.25000	1.13 3 p,a
8	4	5	14792.98392	1.71	4	a	15193.50302	4.00	1	a	14868.16255	0.29 7 p,a
8	4	4	14801.20585	1.08	4	a	15202.14081	4.00	1	a	14878.19256	0.90 4 p,a
8	5	4	14998.92894	1.71	3	p,a	15340.86321	1.63	2	p	14936.65469	1.37 5 p,a
8	5	3	14999.71105	1.42	3	a	15341.71328	2.22	2	p,a		
8	6	3									15096.02236	1.99 2 p,a
8	6	2					15506.65357	2.83	2	a	15096.23950	1.00 1 p
8	7	2					15686.05806	2.86		d	15224.03374	3.69 2 p,a
8	7	1					15686.05806	2.86	2	p,a		
8	8	1					14957.05068	1.00	1	p		
9	0	9	14515.23742	2.52	2	p,a					14683.78655	1.55 2 a
9	1	9	14518.57846	0.47	3	a	14938.06174	4.00	1	a	14683.87120	1.27 1 p
9	1	8	14703.07054	1.18	3	p,a					14831.32663	1.49 3 p,a
9	2	8	14703.04982	0.72	4	p,a	15120.89965	4.00	1	a		
9	2	7	14841.40144	2.45	2	p,a					14948.30083	1.33 4 a
9	3	7	14857.30182	1.26	5	a	15268.23427	1.03	3	p	14959.07538	1.52 3 a
9	3	6	14923.35142	2.58	3	a					15027.90710	1.24 5 p,a
9	4	6	15002.98552	1.60	4	a	15405.19728	4.00	1	a	15074.21368	1.69 3 p,a
9	4	5	15019.63040	1.60	3	p,a	15447.97999	2.67	2	a	15094.79490	2.16 3 p,a
9	5	5	15209.32724	0.87	3	p,q	15555.42422	3.19	1	p	15145.87523	0.97 2 p,a
9	5	4					15557.96662	8.75	1	p	15145.10554	0.91 4 p,a
9	6	4									15304.94409	4.00 1 a
9	6	3									15305.46189	1.12 3 p,a
9	6	3									15432.52001	0.99 2 p
9	9	1					16364.91785	0.38	2	p		

9	9	0				16364.91785	0.38	d				
10	0	10	14697.15174	1.46	3 p,a							
10	1	10	14697.97430	1.83	3 p,a							
10	1	9	14911.61032	2.25	3 p,a				15031.05850	8.11	2	a
10	2	9	14906.82909	2.47	3 p,a							
10	2	8	15075.00076	2.22	4 p,a				15167.60991	2.92	1	p
10	3	8	15076.58995	1.62	2 p,a				15169.22284	2.70	2	a
10	3	7	15170.41388	1.98	3 p,a				15266.43140	4.00	1	a
10	4	7	15228.73366	5.34	2 p,a				15301.08412	2.05	4	p,a
10	4	6	15264.16274	1.69	4 p,a				15340.93067	0.99	2	p
10	5	6							15377.12925	2.50	2	p,a
10	7	4							15664.44451	2.05	2	p
11	0	11	14896.42278	3.73	2 p,a				15063.70809	1.58	2	a
11	1	11	14896.64494	0.97	3 p,a	15317.12285	2.80	2 p,a				
11	1	10	15122.92401	3.58	1 a							
11	2	10	15131.90379	2.46	2 a	15545.67533	3.60	2 p,a	15247.77628	3.65	1	a
11	2	9	15311.19592	0.99	2 p							
12	1	12	15111.09262	12.00	1 a							
12	1	11	15361.57559	2.88	2 p,a							
12	2	10	15568.94248	10.00	1 a							

J	K_a	K_c	301 or 40^-0			202 or 31^+0			103 or 31^-0			
0	0	0	13830.93785	1.00	1 a	14221.16122	3.00	1 a	14318.81265	0.50	1	a
1	0	1	13853.27030	0.50	1 a	14243.51917	0.69	2 a	14341.42794	0.49	2	a
1	1	1	13864.28134	0.35	3 p,a	14254.56480	2.24	2 a	14351.58168	0.44	2	a
1	1	0	13869.38787	0.21	2 a	14259.70385	0.44	2 a	14356.84479	0.35	2	a
2	0	2	13896.47637	0.24	5 a	14286.80060	0.82	3 a	14385.04700	0.34	4	a
2	1	2	13903.86855	0.19	4 a	14294.13181	0.42	4 a	14391.61417	0.29	4	a

2	1	1	13919.15059	0.19	4 a	14309.53207	1.32	3 a	14407.35698	0.29	4 a
2	2	1	13951.90161	0.34	3 a	14342.43717	0.62	4 a	14437.61342	0.35	3 a
2	2	0	13953.30997	0.40	4 a	14343.82704	1.11	4 a	14439.18852	0.35	4 a
3	0	3	13958.17128	0.21	3 a	14348.73999	0.39	5 p,a	14447.21105	0.25	5 a
3	1	3	13962.25468	0.22	4 a	14352.67260	1.08	5 a	14450.77543	0.28	5 a
3	1	2	13992.67167	0.25	5 a	14383.13414	0.43	3 a	14481.79058	0.33	5 a
3	2	2	14018.93799	0.31	5 a	14409.43112	1.39	5 a	14505.96274	0.28	5 a
3	2	1	14025.35079	0.23	6 p,a	14415.74955	1.10	5 a	14512.89206	0.33	4 a
3	3	1	14086.69761	0.25	4 a	14477.04390	1.38	5 a	14569.30680	0.35	4 a
3	3	0	14086.95115	0.21	4 a	14477.10878	0.60	5 a	14569.62073	0.44	3 a
4	0	4	14038.26486	0.22	6 p,a	14427.72136	1.30	3 a	14526.38340	0.28	4 a
4	1	4	14039.38451	0.27	5 a	14429.51340	0.63	5 a	14528.69604	0.34	5 p,a
4	1	3	14088.32620	0.23	6 a	14478.86177	1.31	4 a	14578.23215	0.33	5 a
4	2	3	14107.08159	0.19	6 a	14497.57089	0.73	6 a	14595.72285	0.41	6 p,a
4	2	2	14123.54324	0.27	6 a	14513.48146	1.43	4 a	14612.93829	0.27	5 a
4	3	2	14178.40114	0.24	6 a	14568.49246	0.73	6 p,a	14667.16444	0.42	5 a
4	3	1	14180.05373	0.17	6 p,a	14569.36772	0.99	6 p,a	14668.37103	0.33	5 a
4	4	1	14270.32411	0.49	3 a	14655.50671	0.42	6 p,a	14747.02902	0.49	4 p,a
4	4	0	14270.36061	0.33	4 p,a	14654.69653	0.78	6 a	14746.81297	0.44	5 p,a
5	0	5	14133.89541	0.23	5 a	14523.37529	0.69	2 a	14622.38091	0.35	3 a
5	1	5	14134.24694	0.39	5 a	14524.12529	1.20	3 a	14622.20199	0.33	3 a
5	1	4	14203.83610	0.20	6 p,a	14594.35192	1.07	5 p,a	14694.04517	0.43	6 a
5	2	4	14215.41348	0.32	7 p,a	14605.92294	1.26	6 p,a	14706.41257	0.34	7 a
5	2	3	14246.99702	0.34	6 a	14638.77294	0.46	6 a	14738.14878	0.43	5 a
5	3	3	14292.68840	0.24	7 p,a	14682.73318	1.52	6 a	14785.26224	0.39	7 a
5	3	2	14298.67939	0.42	5 a	14686.37261	0.67	6 a	14789.62478	0.42	5 p,a
5	4	2	14385.63998	0.29	5 a	14770.00482	1.75	5 p,a	14860.97774	0.41	5 p,a

5	4	1	14385.94945	0.34	4	a	14767.46178	0.58	6	p,a	14861.43662	0.86 4 a
5	5	1	14508.53264	0.91	3	a					14970.20628	0.90 3 a
5	5	0	14508.53444	1.00	1	p	14891.28960	0.48	5	a	14970.18666	1.79 2 p,a
6	0	6	14246.11760	0.19	5	p,a	14635.84143	2.28	2	a	14735.37525	0.34 4 a
6	1	6	14246.96226	0.25	4	a	14636.13645	0.83	3	a	14735.47433	0.44 3 a
6	1	5	14337.32513	0.42	6	a	14727.27520	1.79	4	a	14826.93792	0.33 6 p,a
6	2	5	14343.02581	0.27	6	p,a	14733.50930	1.12	6	p,a	14825.21766	0.81 5 p,a
6	2	4	14393.77202	0.32	7	a	14785.29808	1.69	5	a	14886.39855	0.40 6 p,a
6	3	4	14429.07402	0.28	7	p,a	14818.98092	1.38	5	p,a	14925.54472	0.88 4 a
6	3	3	14443.88184	0.20	6	p,a	14841.03399	0.54	5	p,a	14936.72219	0.46 5 a
6	4	3	14524.28875	0.43	6	p,a	14909.05366	1.27	4	a	14998.41585	1.34 5 a
6	4	2	14525.69878	0.20	7	p,a	14904.04152	1.43	4	a	15000.27446	0.72 5 p,a
6	5	2	14590.47269	1.61	3	a	15032.13578	1.54	5	p,a	15109.26598	1.63 5 a
6	5	1	14590.49972	0.43	4	a	15031.78118	1.79	1	a	15108.11757	0.85 4 a
6	6	1	14749.59669	4.00	1	a	15166.37468	1.68	2	p,a		
6	6	0	14749.59656	0.29	2	a					15238.21113	1.50 3 a
7	0	7	14376.04709	0.65	3	p,a	14765.26947	1.21	3	a	14865.52172	0.47 4 p,a
7	1	7	14376.11009	0.34	6	p,a	14765.41965	1.35	3	a	14865.35711	0.26 3 a
7	1	6	14487.88950	0.25	4	a	14876.44298	1.47	4	a	14976.08433	0.65 4 p,a
7	2	6	14488.75226	0.24	7	a	14879.83278	1.85	4	a	14976.20601	0.43 4 p,a
7	2	5	14561.41563	0.27	7	p,a	14953.29456	1.98	3	a	15054.87382	0.71 5 p,a
7	3	5	14586.48379	0.28	8	a	14976.25269	1.06	6	p,a	15090.69368	0.55 7 p,a
7	3	4	14615.70722	0.42	5	p,a	15008.86176	1.27	5	a	15109.89576	1.45 4 a
7	4	4	14686.03030	0.42	6	p,a	15071.34775	0.96	3	p,a	15159.15722	1.04 4 a
7	4	3	14690.55494	0.73	4	a	15063.73181	0.79	5	a	15164.55430	1.69 4 a
7	5	3	14753.47131	0.33	4	p,a	15196.61458	2.14	3	p,a	15268.47379	1.27 4 a
7	5	2	14753.61905	0.80	4	a	15193.53590	1.40	4	p,a	15269.86247	1.89 4 a

7	6	2	14911.97920	0.47	4	a	15329.84931	3.12	1	a	15399.36145	1.73	4 a
7	6	1	14911.98768	4.00	1	a	15329.94922	1.92	3	p,a			
7	7	1	15058.35688	0.49	3	a					15553.55287	4.00	1 a
7	7	0					15423.23860	3.12	1	a	15553.55287	4.00	d
8	0	8	14522.82114	0.35	2	a	14911.77658	2.26	3	p,a	15012.62057	0.28	3 a
8	1	8	14522.85500	0.48	4	p,a	14911.15553	1.40	3	p,a	15012.65065	0.97	2 a
8	1	7	14652.52628	0.24	4	a	15041.80930	2.06	4	p,a	15141.78276	0.47	5 a
8	2	7	14653.00396	0.48	5	p,a	15042.44480	0.90	4	p,a	15141.64398	1.52	3 a
8	2	6	14747.43983	0.42	7	a	15139.70299	1.30	3	p,a	15243.18226	0.84	6 a
8	3	6	14763.70369	0.84	4	a	15153.49120	0.92	3	p,a	15245.89408	1.25	4 p,a
8	3	5	14811.97650	0.27	6	p,a	15204.23602	2.72	2	a	15307.28995	0.84	5 a
8	4	5	14870.32762	2.21	4	a	15255.78992	1.33	4	p,a	15342.34794	1.59	5 p,a
8	4	4	14881.58893	0.41	5	p,a	15276.94562	2.57	2	p,a	15354.70377	1.81	4 a
8	5	4	14939.56053	1.91	3	a	15385.55300	0.85	4	p,a	15452.68928	1.94	4 a
8	5	3	14940.62302	0.64	5	a	15383.88803	2.91	2	p,a	15455.98230	2.21	3 a
8	6	3	15097.71817	2.01	4	p,a	15516.29428	3.33	1	a			
8	6	2	15097.77485	0.80	5	p,a	15516.69334	3.58	1	a	15584.18595	1.95	4 a
8	7	2	15243.95350	1.96	2	p,a							
8	7	1	15244.01491	1.04	3	p,a	15684.31311	4.00	1	a			
8	8	1	15406.53147	0.90		d							
8	8	0	15406.53147	0.90	3	p,a							
9	0	9	14686.61120	0.49	3	a	15074.83965	1.90	2	a	15176.97134	1.63	2 a
9	1	9	14687.16530	0.30	3	a	15074.94752	2.39	2	a	15176.97182	0.48	3 a
9	1	8	14834.37769	0.34	3	a	15224.12878	0.92	4	p,a	15323.48879	1.12	4 p,a
9	2	8	14834.41552	0.25	5	p,a	15223.68657	1.15	3	p,a	15323.64696	1.11	4 p,a
9	2	7	14950.18667	0.77	5	p,a	15342.43184	1.96	4	p,a	15441.35955	2.39	3 p,a
9	3	7	14960.46569	0.46	6	p,a	15349.61608	3.55	3	p,a	15445.17108	0.89	5 p,a

9	3	6	15030.71657	1.10	5	p,a	15422.45530	0.95	3	p,a	15525.07857	2.14	4	p,a
9	4	6	15076.39117	0.82	5	p,a	15461.52778	4.00	1	a	15552.25000	2.22	3	a
9	4	5	15099.25207	1.90	3	a	15491.69406	1.03	4	p,a				
9	5	5	15148.45623	2.75	2	a	15600.29207	2.41	3	p,a	15658.33633	1.00	1	p
9	5	4	15151.51216	1.75	4	a	15594.15292	2.48	2	p,a	15666.88586	0.92	4	p,a
9	6	4	15306.86357	0.74	5	p,a	15725.70368	4.00	1	a	15792.88233	2.75	2	a
9	6	3	15307.08024	3.65	1	a								
9	7	3	15453.22017	0.72	5	p,a	15827.17082	1.14	1	p				
9	7	2	15453.11896	0.44	3	p,a								
9	8	2	15612.62331	10.37	1	p								
9	8	1	15612.62331	10.37		d								
10	0	10	14867.39214	0.49	3	a	15255.30959	4.00	1	a	15358.40284	0.90	3	a
10	1	10	14867.39214	0.49		d	15255.36090	3.58	1	a	15358.37995	1.00	2	p,a
10	1	9	15033.13048	0.83	4	a					15522.68541	1.40	4	a
10	2	9	15033.58030	0.92	3	p,a	15421.76210	3.65	2	a	15522.70428	2.23	2	p,a
10	2	8	15174.17937	0.87	4	a					15660.71646	2.15	3	a
10	3	8	15175.36471	2.22	3	a	15564.07812	3.47	1	a	15661.81249	0.95	3	p,q
10	3	7	15269.33032	1.44	3	a					15767.61613	2.70	2	a
10	4	7	15303.29551	1.83	3	p,a	15688.04746	0.89	4	p,a	15777.99576	1.00	1	p
10	4	6	15343.54020	1.81	3	a	15733.28131	4.00	1	a				
10	5	6	15379.67407	1.96	3	p,a								
10	5	5	15387.32022	0.97	3	p,a	15828.62506	4.00	1	a	15904.30095	1.85	2	p
10	6	5					15957.79196	3.24	1	p				
10	6	4	15540.03060	2.31	3	p,a	15959.49426	3.15	1	p				
10	7	4					16063.81392	5.78	1	p				
10	8	3					16257.58990	1.00	1	p				
11	0	11	15065.15247	1.38	3	p,a					15556.73871	0.94		d

11	1	11	15065.34678	0.47	3	p,a					15556.73857	0.90	4	p,a
11	1	10	15245.40268	4.00	1	a	15636.30100	4.00	2	p,a	15738.46902	4.00	1	a
11	2	10	15248.71253	0.84	3	p,a					15738.65677	4.00	1	a
11	2	9	15407.12280	4.00	1	a					15895.15273	4.00	1	a
11	3	9	15408.13570	1.90	4	p,a					15895.40358	4.00	1	a
11	3	8	15527.01755	4.00	1	a					16020.55168	1.72	1	p
11	4	8	15522.66275	1.08	2	p,a					16025.85291	4.00	1	a
11	5	6					16088.09053	3.43	1	p				
11	6	5					16215.79012	3.99	1	p				
12	0	12	15279.02333	0.89	3	p,a					15772.12831	1.33	2	p,q
12	1	12									15772.13341	1.33		d
12	1	11	15481.05772	1.61	2	a					15971.19281	2.08	2	p,a
12	2	11	15481.53213	1.00	1	p					15971.23345	4.00	1	a
12	2	10									16144.72788	4.00	1	a
12	3	10									16144.95387	4.00	1	a
12	3	9									16289.91561	1.00	1	p
12	4	8									16401.81517	4.00	1	a
13	0	13									16004.43287	4.00		d
13	1	13	15510.91991	1.49	3	p,a					16004.43287	4.00	1	a
13	1	12									16220.93988	4.00		d
13	2	12									16220.93988	4.00	1	a

J	K_a	K_c	061 or 10^-6				160 or 10^+6				080 or 00 8			
5	5	1	14066.85331	1.00	1	p								
6	0	6	13048.53117	1.17	1	a								
6	1	5	13220.75337	5.04	1	a								
6	2	4	13371.63534	5.02	1	a								
6	3	4									13024.54590	0.70	2	l

6	4	2	13892.93825	4.00	1	a				
7	1	7	13223.57633	1.14	1	a				
7	2	6	13508.96225	5.10	1	a				
7	5	2					14349.77808	0.81	4	a
7	6	2	14706.39522	0.84	3	p				
7	7	1					14916.50222	4.21	2	d
7	7	0					14916.50222	4.21	2	p
8	0	8	13349.08197	1.18	1	a				
8	2	6	13752.26583	5.12	1	a				
9	1	9	13546.36192	1.18	1	a				
9	2	8	13896.39137	5.06	1	a				
9	8	1					15762.99721	0.81	2	p
10	0	10	13721.45471	5.04	1	a				
10	2	8	14228.61438	5.12	1	a				
10	4	6	14700.69630	0.70	2	l				
10	5	5	15033.53647	2.31	3	a				
11	1	11	13948.63718	5.14	1	a				
11	2	10	14365.98343	5.03	1	a				
12	0	12	14163.05166	5.15	1	a				
12	1	11	14592.40893	5.12	1	a				
13	1	13	14424.20015	5.06	1	a				
13	2	12	14916.58713	5.08	1	a,?				
14	0	14	14678.92860	5.08	1	a				
15	1	15	14970.58816	5.14	1	a				
16	0	16	15278.69295	5.07	1	a				
16	1	15	15872.79380	5.21	1	a				

TABLE X.: Term values for the $4\nu + \delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	151 or 20^-5			330 or 30^+3			132 or 21^+3		
0	0	0				15108.23862	1.00	1 p			
1	1	1	14719.13198	2.01	2 p,a	15152.36471	4.00	1 a			
2	0	2	14716.57835	2.75	2 p,a						
2	1	2				15191.73685	2.83	2 a			
2	1	1	14778.91519	4.00	1 a				15480.29062	2.83	2 a
2	2	1	14895.73140	4.00	1 a						
2	2	0	14896.33058	2.83	2 a						
3	0	3	14783.28317	4.00	1 a	15239.24273	2.83	2 a			
3	1	3	14817.98633	2.83	2 a	15249.47110	2.10	2 p,a			
3	1	2	14857.87588	4.00	1 a						
3	2	2	14965.73332	4.00	1 a						
3	2	1				15347.56741	1.00	1 p			
4	0	4	14869.02104	3.57	2 p,a	15320.80404	1.00	1 p			
4	1	4	14896.41087	1.09	1 p	15326.50585	3.00	1 p			
4	1	3	14961.98601	4.00	1 a						
4	2	3				15432.32911	0.97	2 p,a			
4	2	2	15066.57724	4.00	1 a				15717.25289	2.83	2 a
4	3	2				15551.10627	0.82	4 p,a			
4	3	1	15246.99018	4.00	1 a						
4	4	0				15703.09934	0.97	2 p,a			
5	0	5							15689.17364	4.00	1 a
5	1	5	14993.41569	3.33	2 p,a						
5	1	4							15780.13470	1.00	1 p
5	2	4	15172.66620	4.00	1 a						

5	3	2				15671.78670	3.43	2	p,a	15942.01934	2.31	3 a
5	4	2				15820.80639	3.71	1	a	16095.91286	4.00	1 a
5	4	1				15820.59209	3.81	2	p,a	16095.37613	2.83	2 a
5	5	1	15856.19065	4.00	1 a					16278.77330	4.00	d
5	5	0								16278.77330	4.00	1 a
6	0	6	15093.48361	2.83	2 a							
6	1	6				15534.72887	0.71	2	p	15804.35750	4.00	1 a
6	2	5				15673.97097	4.00	1	a			
6	2	4				15729.27160	4.00	1	a			
6	3	4				15810.08174	4.00	1	a	16078.93327	0.94	3 p,a
6	3	3				15816.47694	4.00	1	a			
6	4	3				15961.40658	0.97	2	p,a	16228.19445	4.00	1 a
6	4	2	15743.98230	0.98	3 p,q	15961.74632	0.97	2	p,a	16238.69138	4.00	1 a
6	5	2	16137.05673	0.99	2 p					16420.72948	4.00	1 a
6	5	1								16420.72948	4.00	d
7	0	7	15230.99482	2.23	1 p							
7	2	6				15824.29105	4.00	1	a			
7	2	5				15907.62497	0.96	2	p,a			
7	3	5	15667.08066	1.00	1 a	15970.71247	0.71	2	p			
7	3	4				15986.99743	0.96	2	p,a	16263.85238	4.00	1 a
7	4	4				16125.40475	4.00	1	a			
7	4	3	15898.06388	0.99	2 p,q	16127.44478	0.87	5	p,a	16405.98156	4.00	1 a
7	5	3								16586.72077	1.74	2 p,a
7	5	2								16586.38767	4.00	1 a
8	1	8				15800.13549	1.00	1	p			
8	3	5				16195.84113	3.07	2	p,a			
8	4	5				16312.26484	4.00	1	a			

J	K_a	K_c	231 or 30^-3				033 or 21^-3				212 or 31^+1			
0	0	0	15119.02885	7.00	1	a	15534.70935	10.00	1	a	15742.79512	15.00	1	a
1	0	1	15141.86103	3.58	1	a	15557.98343	4.00	1	a	15765.24966	2.28	2	a
1	1	1	15162.67370	2.21	3	p,a	15576.90894	2.49	2	a	15778.80541	2.73	2	a
1	1	0	15168.82595	2.63	2	a	15583.25973	4.00	1	a	15784.29882	2.53	2	a
2	0	2	15186.27952	1.83	3	p,a	15603.14575	2.40	2	a	15808.71862	0.93	3	p,a
2	1	2	15202.22169	1.65	4	p,a	15617.16327	2.00	4	a	15818.15211	1.80	4	a
2	1	1	15220.62519	1.79	4	p,a	15636.14774	2.72	2	a	15834.62511	2.83	2	a
2	2	1	15282.54522	2.24	2	a	15691.54146	2.83	2	a	15874.73003	1.90	4	a
2	2	0	15283.85782	3.21	2	a	15692.88763	2.46	2	a	15876.03988	2.31	3	a
3	0	3	15251.11145	2.50	2	a	15667.80935	3.80	1	a	15870.96057	1.97	3	a
3	1	3	15260.87528	1.67	5	p,a	15676.69427	2.03	3	a	15876.38809	0.70	3	p,a
3	1	2	15297.39650	1.64	3	p,a	15714.37823	3.71	1	a	15909.02558	2.13	3	a
3	2	2	15351.26489	1.49	6	p,a	15761.61545	2.56	2	a	15941.97110	2.83	2	a
3	2	1	15356.78540	1.95	3	a	15767.88548	2.83	2	a	15947.92814	2.15	3	a
3	3	1	15465.53525	1.39	4	a	15866.44711	2.56	2	a	16021.44265	0.97	3	p,a
3	3	0	15465.54826	2.25	2	a	15866.63465	3.80	1	a	16020.77763	1.94	4	a
4	0	4	15332.07625	1.56	5	p,a	15749.83401	2.56	2	a	15950.15376	2.26	3	a
4	1	4	15338.02925	1.62	4	p,a	15754.84502	3.47	1	a	15952.84728	2.12	3	a
4	1	3	15397.86209	0.92	3	p,a	15816.37772	2.56	2	a	16005.94497	2.31	3	a
4	2	3	15441.56162	2.18	3	a	15853.81122	2.83	2	a	16030.48704	0.89	5	p,a
4	2	2	15456.33300	1.47	4	a	15870.51496	1.95	4	a	16049.08728	1.94	3	a
4	3	2	15560.63867	0.78	6	a	15961.22521	2.83	2	a	16113.26821	0.91	4	p,a
4	3	1	15559.94088	1.53	4	p,a	15962.40083	2.25	3	a	16111.43461	1.80	4	a
4	4	1	15707.53893	3.50	2	a	16098.73528	4.00	1	a	16223.11247	2.62	2	a
4	4	0	15707.55998	1.49	3	a	16098.77645	2.40	2	a				
5	0	5	15429.90460	2.60	2	a	15848.25934	4.00	1	a	16045.70829	0.93	3	p,a

5	1	5	15433.18584	2.03	3	a	15851.56026	2.48	2	a	16046.94424	2.24	2 p,a
5	1	4	15520.18512	2.15	3	a	15939.95333	4.00	1	a	16123.13494	2.28	3 a
5	2	4	15552.25513	1.82	4	a	15967.29624	2.67	2	a	16139.39450	2.83	2 a
5	2	3	15581.80455	2.83	2	a	16000.17862	2.83	2	a	16172.02242	2.31	3 a
5	3	3	15676.33609	1.42	5	a	16079.47769	2.31	3	a	16228.29730	4.00	1 a
5	3	2	15679.11826	2.22	3	a	16083.37974	0.97	2	p,a	16238.90829	1.78	3 a
5	4	2	15824.59570	1.57	5	a	16217.88631	1.79	5	a	16340.50605	3.58	1 a
5	4	1	15824.78453	1.89	4	a	16218.42827	4.00	1	a	16340.07710	3.65	1 a
5	5	1	16000.29808	1.45	3	a	16383.59705	2.70	2	a	16473.15255	4.00	1
5	5	0	16000.19588	4.00	1	a	16383.59705	2.70		d	16473.15255	4.00	1 a
6	0	6	15543.99147	1.87	3	p,a	15962.80983	2.56	2	a	16157.74512	4.00	1 a
6	1	6	15546.45308	0.93	3	p,a	15964.08597	4.00	1	a	16158.41336	2.70	2 a
6	1	5	15662.01956	2.56	2	a	16082.49937	2.25	3	a	16258.14942	2.83	2 a
6	2	5	15683.54514	2.72	2	a	16101.62855	4.00	1	a	16267.83339	0.94	3 p,a
6	2	4	15729.52706	1.96	4	a	16156.12034	2.56	2	a	16320.49884	0.71	2 p
6	3	4	15815.99937	2.70	2	a	16220.76328	4.00	1	a	16366.29320	2.00	4 a
6	3	3	15824.10145	1.83	4	a	16241.96911	2.31	3	a	16382.06111	4.00	1 a
6	4	3	15965.17216	2.24	3	a	16362.85769	2.83	2	a	16482.57477	2.62	2 a
6	4	2	15966.23491	1.53	6	a	16361.63593	4.00	1	a	16481.20675	4.00	1 a
6	5	2	16140.71934	2.56	2	a					16613.23281	0.97	2 p,a
6	5	1	16140.75387	1.62	4	a					16613.36635	0.97	2 p,a
6	6	1					16714.34818	4.00		d	16776.09340	4.00	1 a
6	6	0					16714.35404	0.97	2	p,a			
7	0	7	15674.75794	2.83	2	a	16093.95227	1.87	4	a	16286.44272	2.67	3 a
7	1	7	15667.10373	3.33	2	a	16094.96988	2.72	2	a	16286.76548	4.00	1 a
7	1	6	15820.96593	4.00	1	a	16241.78709	4.00	1	a	16409.51606	2.83	2 a
7	2	6	15833.72645	2.83	2	a	16249.87674	2.31	3	a			

7	2	5	15920.09181	4.00	1	a	16333.98935	4.00	1	a		
7	3	5	15977.47103	1.76	5	a	16385.32208	2.22	3	a		
7	3	4	15994.43915	0.97	2	p,a					16552.91665	0.94 3 p,a
7	4	4	16129.01446	1.91	4	a	16529.72361	2.83	2	a		
7	4	3	16133.07452	2.83	2	a					16646.14831	4.00 1 a
7	5	3	16304.38186	1.81	3	a	16695.15535	4.00	1	a		
7	5	2	16304.60291	2.25	3	a	16695.48299	4.00	1	a	16776.97901	4.00 1 a
8	0	8	15818.40259	3.80	1	a	16242.43220	4.00	1	a	16431.51001	4.00 1 a
8	1	8	15818.62909	4.00	1	a						
8	1	7	15997.27346	2.70	2	a	16416.98136	3.65	1	a		
8	2	7	16002.45300	2.83	2	a	16421.70629	0.97	2	p,a	16574.90707	4.00 1 a
8	2	6	16119.24401	2.83	2	a	16537.39580	2.83	2	a		
8	3	6									16701.90270	4.00 1 a
8	3	5	16201.71978	1.86	4	p,a	16621.17857	2.83	2	a		
8	4	5									16817.93168	4.00 1 a
8	4	4	16324.61514	2.21	3	a						
8	5	4	16584.12592	4.00	1	a					16963.13249	0.97 2 p,a
8	5	3	16584.86982	2.83	2	a						
9	0	9	15984.11835	4.00	1	a						
9	1	9	15982.61915	4.00	1	a	16407.19440	4.00	1	a		
9	2	8	16189.34011	2.83	2	a	16610.57977	4.00	1	a		
9	3	7	16361.01813	0.97	2	p,a	16776.81005	4.00	1	a		
9	4	6	16524.30483	0.97	2	p,a						

J	K_a	K_c	410 or 40^+1				311 or 40^-1				113 or 31^-1			
0	0	0	15344.50322	8.00	1	a	15347.95645	0.50	1	a	15832.76485	2.00	1	a
1	0	1	15366.98790	1.43	2	a	15370.42150	0.50	1	a	15855.47597	2.83	1	a
1	1	1	15380.62417	2.67	2	a	15383.69525	0.25	4	p,a	15867.77330	0.85	2	a

1	1	0	15386.05272	1.51	2	a	15389.15717	0.40	3	p,a	15873.40115	1.83 2 a
2	0	2	15410.60018	2.10	2	a	15413.94821	0.21	4	a	15899.31984	0.67 4 a
2	1	2	15420.18850	0.66	4	p,a	15423.19209	0.43	4	a	15907.67205	0.85 4 p,a
2	1	1	15436.44240	2.83	1	a	15439.54726	0.23	5	p,a	15924.48163	0.66 3 a
2	2	1	15476.57956	0.90	2	a	15479.13074	0.44	3	a	15961.01160	1.77 3 a
2	2	0	15477.91613	1.77	3	a	15480.50011	0.26	3	a	15962.53890	0.83 3 a
3	0	3	15473.10388	0.83	3	a	15476.22159	0.35	4	a	15961.82559	1.35 3 a
3	1	3	15478.85356	0.89	3	a	15481.69525	0.21	5	p,a	15966.76100	0.81 4 a
3	1	2	15510.97323	1.07	4	a	15514.06008	0.42	5	p,a	15999.79874	1.62 3 a
3	2	2	15544.11327	2.24	2	a	15546.63386	0.28	5	a	16030.92361	1.04 5 a
3	2	1	15550.28642	1.17	4	a	15552.91746	0.55	5	a	16037.03988	1.73 4 a
3	3	1	15624.32700	2.02	2	a	15626.52932	0.28	3	a	16103.97257	0.90 2 a
3	3	0	15624.53870	0.90	3	a	15626.74667	0.48	4	a	16104.25106	1.90 2 a
4	0	4	15552.63973	1.63	2	a	15556.89537	0.28	6	p,a	16041.22340	0.78 5 a
4	1	4	15555.30055	0.35	5	p,a	15556.92789	0.65	5	a	16041.32564	1.67 3 a
4	1	3	15608.16415	2.35	2	a	15611.17552	0.39	6	p,a	16097.53662	0.79 5 a
4	2	3	15632.91533	0.83	5	a	15635.39023	0.64	4	a	16123.00254	1.79 3 a
4	2	2	15648.99595	2.06	3	a	15651.79376	0.34	5	p,a	16137.67869	0.82 6 p,a
4	3	2	15716.74455	1.36	4	a	15719.01593	0.77	5	a	16195.87052	1.95 3 a
4	3	1	15718.15350	3.12	2	p,a	15720.38866	0.39	7	p,a	16197.60971	1.37 4 a
4	4	1	15826.08727	0.85	3	p,a	15828.14102	2.41	3	a	16296.80927	2.56 2 a
4	4	0	15826.10645	2.40	1	a	15828.16709	0.81	4	a	16296.87751	1.62 2 a
5	0	5	15648.73232	0.89	3	a	15651.84432	0.44	3	a	16137.10986	1.63 2 a
5	1	5	15649.33496	1.85	4	a	15652.54701	0.34	5	a	16137.67441	0.82 3 a
5	1	4	15725.88982	1.30	3	a	15728.72804	0.81	5	a	16215.14575	1.71 4 a
5	2	4	15742.06865	1.50	5	a	15744.48089	0.34	4	a	16224.35361	1.64 3 a
5	2	3	15773.89608	0.82	6	p,a	15776.39890	0.66	4	a	16263.91199	1.81 4 a

5	3	3	15832.06331	1.91	4	a	15834.22396	0.40	6	p,a	16310.70316	1.45	5	a
5	3	2	15837.14989	1.32	4	a	15839.47484	1.16	5	a	16316.58954	1.71	4	a
5	4	2	15942.40037	2.95	2	a	15944.63546	0.78	5	a	16412.72464	0.87	4	p,a
5	4	1	15942.61344	1.61	2	a	15944.79091	1.27	5	a	16413.18056	2.24	3	a
5	5	1	16088.89301	0.93		d	16090.30022	1.72	3	a	16538.73757	2.31	2	a
5	5	0	16088.89301	0.93	3	p,a	16090.35913	2.62	2	a	16538.73757	2.31		d
6	0	6					15764.62917	0.25	4	p,a	16249.65526	0.91	3	a
6	1	6	15761.36182	0.87	4	a	15764.48003	0.86	3	p,a	16250.00800	1.77	3	a
6	1	5	15861.90447	2.54	3	a	15864.49335	0.42	5	p,a	16350.12340	1.29	5	a
6	2	5	15870.65325	0.86	5	a	15872.97962	1.14	4	a	16354.06954	1.92	4	a
6	2	4	15922.23383	2.22	3	a	15924.82162	0.43	5	a	16413.84951	1.39	4	a
6	3	4	15969.78907	1.60	4	a	15971.89864	1.17	5	p,a	16447.90462	2.06	3	a
6	3	3	15982.68349	2.22	3	a	15985.18174	0.73	5	a	16461.49156	2.11	3	a
6	4	3	16082.11500	1.83	3	a	16084.03108	1.35	6	a	16551.91806	2.27	3	a
6	4	2	16083.35476	4.00	1	a	16085.47168	1.05	5	a	16553.91617	1.85	4	a
6	5	2	16230.20654	3.33	1	a	16231.26018	0.58	3	p				
6	5	1	16230.21274	3.58	1	a	16231.88018	1.34	4	a	16678.41156	2.22	3	a
6	6	1	16344.16375	4.00	1	a					16829.37862	3.80		d
6	6	0	16344.16375	4.00		d	16340.74971	2.06	2	a	16829.37862	3.80	1	a
7	0	7	15889.11915	1.63	2	a	15892.17041	0.90	3	a	16379.05680	1.94	3	a
7	1	7	15889.85220	3.47	1	a	15893.05950	0.44	3	a	16378.40874	1.48	3	a
7	1	6	16015.34108	1.83	3	a	16018.55096	0.90	3	a	16501.21005	2.70	2	a
7	2	6	16017.45937	2.83	2	a	16020.19736	0.80	4	a	16502.94749	0.83	4	p,a
7	2	5	16092.06550	0.87	4	p,a	16094.79460	1.75	3	a	16584.09427	2.70	2	a
7	3	5	16128.00798	3.47	1	a	16131.55136	1.24	4	a	16608.11151	3.32	2	a
7	3	4	16154.91101	1.90	4	a	16157.65961	1.86	3	a	16651.30477	4.00	1	a
7	4	4	16245.08843	3.58	1	a	16246.96172	1.41	5	a				

7	4	3	16248.58190	2.06	2	a	16250.90140	1.76	4	a	16720.07747	2.83	2 a
7	5	3	16395.03348	4.00	1	a	16395.86961	1.76	4	a	16841.85156	2.31	3 a
7	5	2	16395.02283	4.00	1	a	16398.18539	4.00	1	a			
7	6	2					16506.62219	1.77	4	a	16992.72137	4.00	1 a
7	6	1	16606.13546	0.94	3	p,a							
8	0	8	16035.76925	3.12	1	a	16038.79545	0.68	3	a	16524.55570	1.90	2 a
8	1	8	16035.87395	2.10	3	a	16039.06923	2.46	2	p,a	16525.02324	4.00	1 a
8	1	7					16182.97742	0.91	3	a	16668.48254	2.46	2 a
8	2	7	16177.54342	1.31	4	a	16184.65233	1.88	3	a	16668.82732	3.12	1 a
8	2	6					16282.99373	0.83	5	p,a	16777.37462	0.94	3 p,a
8	3	6	16307.36578	2.15	3	a	16309.23515	2.15	3	a	16787.69670	2.83	2 a
8	3	5	16352.58514	4.00	1	a	16355.57987	1.48	5	p,a	16847.24045	0.94	3 p,a
8	4	5	16430.71191	0.94	3	p,a	16433.25285	2.22	3	a	16902.02452	2.83	2 a
8	4	4	16440.06190	4.00	1	a	16442.02650	1.80	4	a			
8	5	4									17029.28077	1.00	1 p
8	5	3					16492.00565	1.90	4	a	17029.28992	4.00	1 a
9	0	9	16198.66561	3.10	2	p,a	16201.60066	10.00	1	a	16688.08884	3.65	1 a
9	1	9	16198.68243	3.65	1	a	16201.64716	0.83	3	a	16688.10336	2.06	2 a
9	1	8					16365.99659	2.62	2	a	16846.68212	1.00	1 p
9	2	8	16363.46251	2.83	2	a	16367.33344	1.61	4	a	16851.48919	2.67	2 a
9	2	7	16483.10304	4.00	1	a					16980.79234	4.00	1 a
9	3	7					16508.04966	1.71	4	a	16987.31650	4.00	1 a
9	3	6	16573.45543	0.71	2	p	16576.90634	2.40	3	p,a			
9	4	6	16638.29423	4.00	1	a	16641.06690	2.67	2	a	17109.23483	2.09	3 p,a
9	4	5	16657.07496	4.00	1	a							
9	5	5					16701.35267	4.00	1	a	17239.65825	4.00	1 a
10	0	10					16381.11320	1.43	2	a	16868.09504	3.47	1 a

10	1	10						16381.10998	12.00	1	a	16868.05203	3.80	1	a
10	1	9						16566.38991	2.06	2	a	17051.05094	4.00	1	a
10	2	9						16567.03808	2.56	2	a	17051.17104	4.00	1	a
10	2	8										17205.48321	4.00	1	a
10	3	8						16726.42532	3.71	1	a				
10	3	7						16819.08195	2.83	2	a				
10	4	7						16870.07934	4.00	1	a				
11	0	11						16577.33235	3.47	1	a				
11	1	11						16577.41018	2.03	2	a	17064.34703	4.00	1	a
11	1	10						16784.40354	4.00	1	a	17267.00801	1.00	1	p
11	2	10						16782.97619	4.00	1	a	17267.71366	1.00	1	p
11	3	8										17570.84926	1.00	1	p
12	0	12						16790.30416	2.56	2	a				
12	1	12						16790.16306	4.00	1	a				
12	1	11						17013.36855	4.00	1	a				
12	2	11						17018.46797	4.00	1	a				

J	K_a	K_c	071 or $10^{-}7$					170 or $10^{+}7$					052 or 11 5			
0	0	0	13835.37235	1.00	1	a										
2	0	2	13904.45044	2.25	2	p,a		13730.52961	1.32	2	p,a					
3	0	3						13800.80450	1.07	2	p					
4	0	4	14062.99758	5.08	1	a		13895.66607	4.00	1	a					
5	2	3											15771.38705	0.71	2	p
6	0	6	14306.54783	5.14	1	a										
6	3	4														
7	1	7	14548.80839	5.19	1	nn		14429.63369	1.41	4	p,a		250 or $20^{+}5$			
7	5	2											16301.36654	0.98	2	p
7	6	1	16435.31515	0.99	2	p										

8	0	8	14622.51921	0.85	3	p,a				
8	1	7	14945.11142	5.22	1	a				
9	0	9					14685.60501	0.28	4	p,a
9	1	9	14888.20059	20.04	1	a				
9	2	8	15323.81558	2.83	2	a				
9	3	7					15596.84847	0.71	2	p
10	1	9	15426.18339	5.22	1	a				
11	1	11	15303.07862	3.04	2	p,a				

TABLE XI.: Term values for the 5ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	340 or 30^+4			241 or 30^-4			043 or 21^-4		
1	0	1				16569.09526	0.97	2 p,a			
1	1	1				16597.11831	2.83	2 a	17015.61174	10.00	1 r
1	1	0				16603.59042	4.00	1 a			
2	0	2				16613.65053	0.94	3 p,a			
2	1	2				16636.53491	4.00	1 a			
2	1	1				16655.68503	0.93	4 p,a	17075.58937	3.71	2 a
2	2	0							17147.13460	4.00	1 a
3	0	3	16665.70385	0.94	3 p,a	16677.70615	4.00	1 a			
3	1	3				16694.64287	0.94	3 p,a	17114.69139	10.00	1 r
3	1	2	16721.11141	2.83	2 a	16732.89302	4.00	1 a			
3	2	2	16795.43846	4.00	1 a						
3	2	1	16800.56607	4.00	1 a						
3	3	1	16937.39498	4.00	1 a	16943.37489	2.31	3 a	17343.26828	4.00	1 a
3	3	0				16943.58466	4.00	1 a			
4	0	4	16747.98666	4.00	1 a	16760.07704	4.00	1 a			
4	1	4				16771.60172	4.00	1 a	17193.03469	2.83	2 a
4	1	3							17257.65673	2.31	3 a
4	2	3	16885.90557	4.00	1 a						
4	2	2				16907.96437	0.97	2 p,a			
4	3	2	17032.09526	2.31	3 a	17038.41131	2.72	3 a	17438.46233	10.00	1 r
4	3	1	17031.43432	4.00	1 a	17037.69236	2.31	3 a			
4	4	1	17210.45200	2.31	3 a	17213.06665	4.00	1 a			
4	4	0	17210.42490	4.00	1 a	17213.21648	4.00	1 a	17600.99425	4.00	1 a
5	0	5	16846.93449	4.00	1 a						

5	1	5							17288.39518	4.00	1	a
5	1	4	16947.01516	4.00	1	a	16958.92824	4.00	1 a	17383.72611	3.71	1	r
5	2	4	16997.17102	4.00	1	a							
5	2	3	17023.11045	4.00	1	a							
5	3	3	17148.69224	2.31	3	a	17154.76719	2.31	3 a	17558.32850	4.00	1	a
5	3	2	17149.30246	2.31	3	a							
5	4	2					17330.28404	2.72	3 a				
5	4	1	17327.78235	2.31	3	a	17330.53108	2.31	3 a				
5	5	1					17659.62435	10.00	1 r	17912.56035	10.00	1	r
5	5	0	17657.78373	3.71	1	r	17659.62435	10.00	d	17912.56035	10.00		d
6	0	6								17399.11533	0.92	4	p,a
6	1	6								17402.37546	10.00	1	r
6	2	4	17172.63846	10.00	1	r	17184.49328	0.97	2 p,a				
6	3	4	17288.06766	2.00	4	a	17294.26120	10.00	1 r				
6	3	3	17291.68555	4.00	1	a	17299.28973	2.19	5 a				
6	4	3	17468.33305	1.79	5	a	17470.74050	2.83	2 a				
6	4	2	17469.48095	3.71	1	r	17472.11039	2.31	3 a	17864.72533	4.00	1	a
6	5	1					17801.58394	2.83	2 a				
7	0	7	17090.64118	4.00	1	a							
7	1	7					17100.36078	4.00	1 a				
7	1	6	17255.35048	4.00	1	a							
7	2	6								17710.12576	4.00	1	a
7	2	5	17340.13528	2.75	2	a	17368.07404	4.00	1 a				
7	3	5	17450.13759	10.00	1	r							
7	3	4	17457.86718	2.31	3	a	17466.30490	4.00	1 a				
7	4	4	17633.16291	0.88	4	p,r	17634.52926	2.31	3 a				
7	4	3					17639.19130	2.83	2 a				

J	K_a	K_c	142 or 21^+4				222 or 31^+2				104 or 32^+0			
1	0	1					17249.80712	2.83	2	a	17770.35365	2.67	2	a
1	1	1	16846.48390	10.00	1	r	17265.33973	3.71	1	r	17780.07273	4.00	1	a
1	1	0	16852.64516	2.83	2	a	17271.14302	4.00	1	a	17785.30306	0.95	3	p,a
2	0	2					17293.42144	2.83	2	a	17813.22247	2.83	2	a
2	1	2	16885.69123	2.83	2	a	17304.41002	2.24	3	a	17819.33882	2.00	4	a
2	1	1	16904.11089	4.00	1	a	17321.85344	4.00	1	a	17834.99847	3.71	2	r,a
2	2	1	16996.32085	4.00	1	a	17371.50597	2.72	3	r,a	17863.99823	2.22	3	a
2	2	0					17372.65308	2.63	2	r	17865.61473	2.72	3	r,a
3	0	3	16927.65208	2.31	3	a	17355.99155	2.31	3	a	17874.25555	2.31	3	a
3	1	3	16944.23825	2.22	3	a	17362.22181	3.55	2	r,a	17877.32125	2.83	2	a
3	1	2	16979.99742	2.31	3	a	17396.87471	2.31	3	a	17908.25080	2.31	3	a
3	2	2	17064.69114	3.48	2	r	17438.81588	4.00	1	a	17930.76026	2.83	2	a
3	2	1	17069.27611	2.31	3	a	17443.34717	2.31	3	a	17937.94590	2.24	3	a
3	3	1					17535.11290	10.00	1	r	17992.43005	4.00	1	a
3	3	0					17535.04201	4.00	1	a	17992.75638	2.75	2	a
4	0	4	17009.99809	2.31	3	a	17435.56970	4.00	1	a	17952.00714	3.71	2	r,a
4	1	4	17019.28015	2.83	2	a	17438.24711	2.83	2	a	17953.31028	2.31	3	a
4	1	3	17097.76898	2.72	3	r,a	17494.83907	7.07	2	r	18003.10723	2.83	2	a
4	2	3	17153.64155	2.00	4	a	17527.58876	2.31	3	a	18018.40446	1.96	5	r,a
4	2	2	17168.86346	10.00	1	r	17544.18615	3.71	2	r,a				
4	3	2	17302.22711	4.00	1	a	17621.78321	4.00	1	a	18083.92195	2.83	2	a
4	3	1					17628.79164	4.00	1	a	18086.04676	4.00	1	a
4	4	1	17486.12336	3.71	1	r	17752.56717	2.31	3	a	18165.84447	4.00	1	a
4	4	0									18165.92824	4.00	1	a
5	0	5	17108.78447	2.31	3	a	17531.66504	2.31	3	a	18046.28280	2.25	3	r,a
5	1	5	17113.72309	4.00	1	a	17532.00959	10.00	1	r	18046.79464	3.71	2	r,a

5	1	4	17198.94000	2.25	3	a	17613.63490	2.83	2	a	18117.11093	1.96 5 r,a
5	2	4	17265.16718	2.31	3	a						
5	2	3	17295.56412	2.00	4	a	17668.93123	2.31	3	a	18159.82519	3.71 1 r
5	3	3	17419.06948	10.00	1	r	17738.93301	3.71	1	r	18197.92351	4.00 1 a
5	3	2					17747.26050	3.48	2	r	18205.30562	2.83 2 a
5	4	2					17868.88727	3.71	1	r		
5	4	1					17870.39189	2.72	3	r,a	18281.27431	4.00 1 a
5	5	1					18022.23917	10.00	1	r		
5	5	0					18022.41691	2.83	2	a	18383.94974	4.00 1 a
6	0	6	17223.09722	2.31	3	a					18157.36682	4.00 1 a
6	1	6	17225.03379	2.67	2	a	17642.75144	4.00	1	a	18157.29308	3.71 2 r,a
6	1	5	17363.87159	2.31	3	a						
6	2	5	17396.57868	2.83	2	a	17766.68565	7.07	2	r	18251.96455	2.83 2 a
6	2	4	17447.09415	2.31	2	a						
6	3	4					17877.76101	3.71	2	r,a	18333.43920	2.72 3 r,a
6	4	3					18008.55729	3.71	2	r,a	18419.06268	4.00 1 a
6	5	2					18160.31830	3.71	1	r	18522.48469	4.00 1 a
6	5	1					18161.52090	3.71	1	r		
6	6	1					18400.41935	10.00	1	r		
7	0	7	17370.89011	2.05	3	a					18284.67112	4.00 1 a
7	1	7	17373.49475	2.31	3	a					18285.05218	4.00 1 a
7	1	6	17526.74031	2.83	2	a					18393.77660	4.00 1 a
7	2	6	17547.29412	2.72	3	r,a						
7	2	5	17619.63384	2.63	2	r,?					18471.65605	4.00 1 a
7	3	4									18523.23541	4.00 1 a
7	4	3									18587.34322	4.00 1 a
8	0	8	17517.12484	2.31	3	a					18430.11664	4.00 1 a

8	1	8	17493.43296	2.83	2	a				18429.93024	4.00 1 a
8	1	7	17640.74942	2.83	2	a					
8	2	7								18557.97591	4.00 1 a
8	3	6	17897.16017	3.71	1	r					
9	0	9	17681.03104	2.83	2	a					
9	1	9	17677.36893	2.83	2	a					
9	1	8	17910.60032	10.00	1	r					

J	K_a	K_c	420 or 40^+2				321 or 40^-2				302 or 41^+0			
0	0	0					16821.63545	1.00	1	a	17458.35422	12.00	1	a
1	0	1	16846.06843	4.00	1	a	16844.00637	1.79	1	a	17480.26671	1.55	2	a
1	1	1	16865.11081	2.83	2	a	16859.33668	0.49	2	a	17490.72287	2.73	2	a
1	1	0	16870.61254	2.65	2	a	16865.01781	1.27	2	a	17495.88736	1.83	2	a
2	0	2	16889.80571	2.31	3	a	16887.40081	0.67	4	a	17522.88466	1.93	3	a
2	1	2	16903.83827	2.83	2	a	16898.38630	0.84	4	a	17529.62646	1.68	4	a
2	1	1	16921.83218	4.00	1	a	16915.37928	0.33	4	a	17545.03905	1.88	3	a
2	2	1	16956.77560	1.48	3	a	16959.64955	0.92	4	a	17575.41705	1.86	3	a
2	2	0	16957.90798	2.00	3	a	16960.65536	0.42	4	a	17578.51350	2.67	2	a
3	0	3	16952.40619	1.58	2	a	16949.57731	1.33	4	a	17583.75976	1.79	3	a
3	1	3	16961.97039	2.06	4	p,a	16956.33144	0.35	4	a	17587.19609	1.97	4	r,a
3	1	2	16997.88718	2.31	3	a	16989.86214	0.79	4	a	17617.62627	1.70	4	a
3	2	2	17023.73340	1.97	3	a	17026.53027	0.40	4	a	17641.43773	1.88	5	r,a
3	2	1	17030.41810	0.99	4	a	17033.13962	1.10	4	a	17649.62360	1.40	5	a
3	3	1	17164.05231	8.00	1	a	17165.48295	0.48	2	a	17709.00122	2.46	2	a
3	3	0	17164.15114	1.63	2	a	17165.69753	0.94	2	a	17709.08002	1.35	4	r,a
4	0	4	17030.56157	3.33	1	a	17028.54808	0.81	4	a	17661.30525	2.12	3	a
4	1	4	17038.44650	0.87	4	a	17032.48065	0.91	3	a	17662.79089	1.78	3	a
4	1	3	17079.14005	0.97	2	p,a	17086.97285	0.43	3	a	17711.93782	2.16	3	a

4	2	3	17111.71444	4.00	1	a	17114.41842	1.18	5	a	17728.36839	1.43	6	r,a
4	2	2	17127.77933	2.31	3	a	17130.82270	0.53	5	a	17746.39957	2.09	5	r,a
4	3	2	17255.89749	1.63	2	a	17257.53469	1.49	3	a	17800.91261	1.40	4	a
4	3	1	17257.24086	2.67	2	a	17259.07035	0.76	5	a	17801.49595	2.00	3	a
4	4	1	17373.42744	2.83	2	a	17374.86616	12.00	1	a	17887.29183	2.06	2	a
4	4	0	17373.43827	4.00	1	a	17374.89123	2.35	2	a	17887.30632	3.47	1	a
5	0	5	17128.64705	0.47	3	a	17123.83753	1.71	4	a	17755.22870	1.94	3	a
5	1	5	17132.49431	2.00	4	a	17124.54974	2.03	3	a	17755.86009	1.94	4	a
5	1	4	17220.23444	2.83	2	a	17204.55330	1.28	4	a	17825.55273	1.72	4	a
5	2	4	17219.74766	2.03	2	a	17222.35578	0.63	5	p,a	17835.21393	1.90	3	a
5	2	3	17250.93702	2.31	3	a	17254.10175	1.82	4	a	17866.87136	1.61	4	a
5	3	3	17369.43474	2.46	2	a	17372.47710	0.90	4	a	17916.77623	1.76	4	r,a
5	3	2	17375.54021	2.13	4	a	17377.28833	2.14	3	a	17918.76600	1.75	4	a
5	4	2	17490.19102	4.00	1	a	17491.71871	2.18	3	a	18001.81074	3.71	1	a
5	4	1	17490.35649	2.25	3	a	17491.90018	3.80	1	a	18001.97518	2.10	3	a
5	5	1					17555.60683	3.71	1	r	18113.96598	4.00	1	a
5	5	0	17556.45711	3.71	1	r					18113.82246	4.00	1	a
6	0	6	17241.48661	1.50	3	a	17235.39137	0.76	5	p,a	17865.70584	2.83	2	a
6	1	6	17244.05052	2.14	3	a	17234.96706	2.17	3	a	17865.75330	2.19	3	a
6	1	5	17336.62791	2.83	2	a	17340.34778	0.64	6	p,a	17956.12365	2.25	4	r,a
6	2	5	17346.82919	1.61	4	a	17349.28689	1.61	4	a	17960.42512	1.87	4	a
6	2	4	17397.46773	2.25	4	r,a	17401.27004	0.88	4	a	18014.83794	7.07	2	r
6	3	4	17507.79187	4.00	1	a	17508.37619	3.29	3	a	18039.89987	1.83	5	r,a
6	3	3					17522.09069	1.70	4	a	18061.99755	2.83	2	a
6	4	3	17630.91010	10.00	1	r	17631.79448	10.00	1	r	18139.42486	2.31	2	a
6	4	2	17631.02517	3.71	1	r	17632.92197	3.71	1	r	18140.17202	2.72	2	a
6	5	2	17802.71411	3.71	1	r					18251.67609	2.83	2	a

6	5	1	17801.02348	10.00	1	r					18252.37546	3.71	2	r,a
6	6	1									18336.58690	10.00	1	r
6	6	0									18336.58690	10.00		d
7	0	7	17358.89693	2.83	2	a	17354.75096	2.83	2	a				
7	1	7	17353.46089	4.00	1	a	17362.30386	1.97	2	a	17992.72185	2.83	2	a
7	1	6	17490.87446	2.00	4	a	17491.93191	2.02	2	a	18102.64722	1.94	4	a
7	2	6	17494.30561	2.31	3	a	17494.74889	1.41	3	a	18104.40878	7.07	2	r
7	2	5	17637.40498	2.00	4	a	17568.44581	1.94	4	a				
7	3	5	17666.95213	4.00	1	a	17668.46050	3.71	1	r	18204.23971	3.71	1	a
7	3	4	17691.03682	3.12	1	a					18231.00318	2.63	2	r
7	4	4					17795.69461	3.71	1	r	18300.10572	3.71	1	r
7	4	3									18303.36558	2.63	2	r
7	5	3					17860.62160	10.00	1	r	18412.29571	3.71	1	r
7	5	2									18413.14070	3.71	1	r
8	0	8					17509.28254	1.50	3	a				
8	1	8					17495.10434	3.71	1	r	18136.48454	2.63	2	r
8	1	7					17654.62756	1.61	2	a				
8	2	7					17656.29214	2.72	3	a				
8	2	6					17753.74520	1.67	4	a				
8	3	6									18380.96370	2.46	2	a
8	3	5					17885.45974	1.66	4	a				
8	4	5									18457.24243	2.63	2	r
8	5	4									18596.25524	10.00	1	r
8	5	3									18509.21295	10.00	1	r
9	1	8					17834.41508	3.71	1	r				
9	2	8					17836.36141	2.83	2	a				
10	0	10					17857.35155	2.46	2	a				

10	1	10				17857.25698	12.00	1	a		

J	K_a	K_c	500 or 50^+0			401 or 50^-0				203 or 41^-0			
0	0	0				16898.84185	0.50	1	a	17495.52845	1.00	1	a
1	0	1	16920.52715	3.71	1 r	16920.93915	2.35	2	a	17517.77224	2.06	2	a
1	1	1	16931.91222	4.00	1 a	16932.30300	0.35	2	a	17527.68489	0.69	2	a
1	1	0	16936.98994	2.02	2 a	16937.39744	0.44	2	a	17532.90048	1.95	2	a
2	0	2	16963.52392	1.62	3 a	16964.06050	0.35	2	a	17560.58935	0.44	4	a
2	1	2	16971.11004	0.80	3 a	16971.45992	0.68	3	a	17566.22267	1.30	3	a
2	1	1	16986.33879	2.70	2 a	16986.73377	0.29	4	a	17583.48471	0.66	4	a
2	2	1	17021.81090	1.41	4 a	17021.79652	0.48	2	a	17612.29440	1.49	3	a
2	2	0	17023.13184	2.72	2 a	17023.13986	0.35	2	a	17613.87557	0.83	3	a
3	0	3	17024.20378	0.47	3 a	17024.63421	0.43	4	a	17621.54498	1.34	4	r,a
3	1	3	17029.07998	0.87	3 a	17029.25846	0.34	5	a	17624.09125	0.66	3	a
3	1	2	17059.29290	1.24	4 a	17059.65620	0.42	5	a	17656.53345	1.27	4	a
3	2	2	17088.62954	2.25	3 a	17088.47278	0.33	5	a	17677.96014	0.99	5	r,a
3	2	1	17094.70227	1.51	4 a	17094.61332	0.93	3	a	17684.86714	1.37	4	a
3	3	1	17107.26259	2.06	2 a	17108.52145	0.44	4	a	17742.13480	0.86	4	a
3	3	0	17107.49795	1.39	3 a	17108.76353	0.89	3	a	17742.45012	1.48	3	a
4	0	4	17102.88293	0.89	3 a	17103.10359	0.35	5	a	17699.13900	0.44	4	a
4	1	4	17105.22826	0.48	2 a	17105.42736	0.48	4	a	17699.25786	1.66	3	a
4	1	3	17154.30239	1.55	3 a	17154.61616	0.34	5	a	17750.96018	0.78	6	a
4	2	3	17176.62822	0.87	4 a	17176.21151	0.79	4	a	17764.57719	1.47	4	a
4	2	2	17192.26298	1.90	5 a	17192.14239	0.42	4	a	17781.30826	0.98	4	a
4	3	2	17197.96565	1.45	3 a	17199.16103	0.78	4	a	17832.25170	1.48	5	a
4	3	1	17199.48386	2.01	3 a	17200.68132	0.42	4	a	17834.29554	1.20	5	r,a
4	4	1	17297.83278	1.51	3 a	17298.48120	1.98	3	a	17918.32833	2.56	2	a
4	4	0	17297.88341	1.56	3 a	17298.51075	0.47	3	a	17918.37571	1.50	3	a

5	0	5	17197.84651	0.49	3	a	17199.02161	0.47	4	a	17793.20392	1.47	3	a
5	1	5	17197.95207	1.54	4	a	17199.12409	0.43	5	a	17793.36202	0.47	4	r,a
5	1	4	17269.28007	0.89	4	a	17269.45793	0.86	4	a	17864.41321	1.27	5	a
5	2	4	17285.33052	1.61	4	a	17284.16345	0.43	5	a	17871.42741	0.82	4	a
5	2	3	17315.94979	1.36	4	a	17315.30138	1.11	6	a	17900.90657	1.67	4	a
5	3	3	17310.67856	1.39	4	a	17311.80902	0.62	5	a	17944.75009	1.33	5	a
5	3	2	17316.54207	1.23	6	a	17317.68770	1.08	4	a	17951.78157	0.88	4	p,a
5	4	2	17411.52658	2.83	2	a	17411.46907	0.75	6	a	18031.76899	1.78	4	a
5	4	1	17411.77159	2.83	2	a	17411.78064	1.46	3	a	18032.24505	1.80	4	a
5	5	1	17508.84702	3.48	2	r	17509.03405	0.91	3	a	18143.45827	2.00	3	a
5	5	0	17508.81406	2.06	2	a	17509.03405	0.91		d				
6	0	6	17309.42813	0.93	2	a	17310.19137	0.44	3	a	17903.01414	0.85	4	a
6	1	6	17309.37376	3.12	1	a	17310.22454	0.88	3	a	17903.83506	1.51	2	a
6	1	5	17402.41173	1.99	2	a	17402.34488	0.86	3	a	17994.80062	1.33	4	a
6	2	5	17412.79484	0.88	4	a	17411.45943	1.71	4	a	17997.51501	2.04	3	a
6	2	4	17447.25362	2.83	1	a	17461.38905	0.85	5	a	18057.27215	1.24	6	a
6	3	4	17445.45331	0.85	5	a	17447.08632	2.23	3	a	18078.97700	1.84	4	a
6	3	3	17459.56039	2.31	3	a	17460.58780	0.77	4	a	18095.76628	1.64	4	a
6	4	3	17546.86380	0.82	4	p,a	17547.51737	1.78	4	a	18168.43818	2.31	3	a
6	4	2	17548.31334	1.79	4	a	17549.00058	1.04	5	a	18170.41757	1.81	4	a
6	5	2	17645.02008	2.00	3	a	17645.01414	2.06	4	a	18281.98190	3.71	1	r
6	5	1	17645.07089	3.37	2	a	17645.06770	1.56	5	a	18281.73831	2.00	4	a
6	6	1	17773.70996	2.83	2	a	17778.88630	1.62		d				
6	6	0	17773.70996	2.83		d	17778.88630	1.62	2	a				
7	0	7	17436.58237	10.00	1	r	17437.83930	1.58	2	a	18030.95690	2.35	2	a
7	1	7	17437.44130	1.77	3	a	17438.09252	0.44	2	a	18031.21454	0.90	3	a
7	1	6	17552.91130	1.67	5	a	17552.24477	10.00	1	r	18137.32084	3.71	1	r

7	2	6	17560.54324	2.00	3	a	17557.38602	1.45	3	a	18141.74329	1.64	4	a
7	2	5	17564.79801	2.27	3	a	17628.02577	2.12	3	a	18220.05500	2.19	3	a
7	3	5	17600.79011	1.90	4	a	17601.84597	1.41	5	a	18234.11618	1.71	5	a
7	3	4	17628.07301	1.97	4	a	17628.31373	2.11	3	a	18265.19471	2.31	3	a
7	4	4	17705.66255	2.72	2	a	17705.97754	1.42	5	a	18327.93691	2.19	3	a
7	4	3	17710.27072	1.31	5	a	17710.04006	1.86	4	a	18333.92147	2.31	3	a
7	5	3	17803.97126	2.62	2	a	17803.74931	1.99	4	a	18440.36894	3.71	1	r
7	5	2	17804.22031	1.86	4	a	17804.04539	1.92	4	a	18439.60165	10.00	1	r
7	6	2					17936.79254	2.05	3	a	18527.15820	3.71	1	r
7	6	1	17931.42441	2.83	2	a	17938.89788	10.00	1	r				
7	7	1	18084.66811	10.00		d	18083.75779	0.91	4	p,a	18644.22013	0.97	1	p,r
7	7	0	18084.66811	10.00	1	r								
8	0	8	17582.22918	3.71	1	a	17582.98420	0.94	2	a	18175.33611	1.41	3	a
8	1	8	17582.63544	0.94	2	a	17583.15041	1.61	2	a	18175.22194	3.71	1	r
8	1	7	17711.73432	2.83	1	a	17713.38990	1.65	4	a	18302.56787	2.25	3	r,a
8	2	7	17725.72853	2.10	3	a	17720.19677	3.65	1	a	18303.36173	3.71	1	r
8	2	6					17813.85574	2.15	3	a	18401.19284	1.58	6	a
8	3	6	17776.68990	10.00	1	r,?	17776.77050	2.70	2	a	18410.71471	3.71	1	r
8	3	5	17823.55561	3.71	1	r	17824.60170	1.69	4	a				
8	4	5	17893.95173	3.48	2	a	17889.01757	2.63	2	r				
8	4	4	17896.56976	10.00	1	r	17898.54525	1.98	3	a	18523.96175	3.71	1	r
8	5	4	17983.96324	10.00	1	r					18561.02976	10.00	1	r
8	5	3	17984.88731	3.71	1	r	17986.30860	2.18	4	a	18562.01860	10.00	1	r
8	6	3					18117.96643	1.00	2	p,r				
8	6	2					18118.08775	3.71	1	r	18714.10862	3.71	1	r
8	7	2	18261.20765	10.00	1	r								
8	7	1	18261.20765	10.00		d								

9	0	9	17741.28469	2.40	1	a	17744.71626	1.60	2	a	18336.30694	2.40	1	a
9	1	9					17743.57411	0.93	2	a	18336.29252	1.92	3	a
9	1	8	17829.06029	3.71	1	r	17897.31865	3.65	1	a				
9	2	8	17832.01206	10.00	1	r								
9	2	7	17972.66107	10.00	1	r	17968.00176	10.00	1	r	18601.79476	10.00	1	r
9	3	7					17971.78625	3.76	2	a				
9	3	6	18091.86069	10.00	1	r,?	18038.82339	3.71	1	r	18690.45853	3.71	1	r
9	4	5	18111.49654	3.71	1	r								
9	5	5					18188.72971	1.00	2	p,r				
9	5	4	18188.66283	0.97	2	p,r								
10	0	10					17923.20196	2.03	2	a	18513.95641	2.74	2	a
10	1	10									18513.89273	3.76	1	a
10	1	9					18098.73979	2.63	2	a	18676.73526	3.71	1	r
10	2	9									18675.23030	3.71	1	r
10	2	8					18179.06462	10.00	1	r	18814.68127	3.71	1	r
10	3	7									18915.89779	3.71	1	r
11	1	11					18118.40709	2.27	2	a				
11	2	10					18318.45673	3.58	1	a				

J	K_a	K_c	123 or 31^-2			
0	0	0	17312.53895	5.00	1	a
1	0	1	17335.30492	3.33	1	a
1	1	1	17349.86615	2.63	2	a
1	1	0	17355.82390	3.12	1	a
2	0	2	17379.31535	2.32	2	a
2	1	2	17389.61106	3.62	2	a
2	1	1	17407.34938	2.12	3	a
2	2	1	17451.79728	2.39	2	r,a

2	2	0	17453.24374	2.49	2	a
3	0	3	17442.09983	2.48	2	r,a
3	1	3	17449.45095	1.89	4	r,a
3	1	2	17483.38159	2.54	2	r,a
3	2	2	17519.19761	2.06	3	a
3	2	1	17525.33628	2.68	2	a
3	3	1	17607.54260	2.56	2	a
3	3	0	17607.78261	3.65	1	a
4	0	4	17521.73620	1.94	3	a
4	1	4	17523.99420	3.33	1	a
4	1	3	17582.25497	3.76	1	a
4	2	3	17608.95930	3.71	1	r
4	2	2	17621.79855	2.83	2	a
4	3	2	17701.15299	2.18	3	r,a
4	3	1	17701.86949	2.02	4	r,a
4	4	0	17816.19844	2.72	2	a
5	0	5	17617.97651	3.33	1	a
5	1	5	17618.55695	2.25	2	a
5	1	4	17701.55402	3.80	1	a
5	2	4	17721.44879	2.56	2	a
5	2	3	17756.48327	4.00	1	a
5	3	3	17816.12683	1.89	4	a
5	3	2	17821.54824	3.71	1	r
5	4	2	17932.76996	2.17	4	r,a
5	4	1	17932.74076	3.71	1	r
5	5	1	18073.20450	4.00	1	a
5	5	0	18073.22578	3.71	1	r

6	0	6	17730.94397	2.39	2	r,a
6	1	5	17838.71090	2.46	2	a
6	2	5	17847.10523	10.00	1	r
6	2	4	17908.17951	1.75	4	r,a
6	3	3	17968.46006	2.31	3	a
6	4	3	18073.01734	4.00	1	a
6	4	2	18074.16205	2.31	3	a
6	5	1	18212.25796	1.97	4	a
6	6	1	18429.89571	3.71		d
6	6	0	18429.89571	3.71	1	r

TABLE XII.: Term values for the $5\nu+\delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	053 or 21^-5			133 or 31^-3			510 or 50^+1		
0	0	0							18392.97402	10.00	1 a
1	0	1							18415.04338	2.40	2 a
1	1	1	18416.93985	4.00	1 a	18800.37454	4.00	1 a			
1	1	0				18806.66356	4.00	1 a	18433.99629	2.46	2 a
2	0	2	18418.60581	2.31	3 a	18825.62981	2.83	2 a	18458.32613	2.83	2 a
2	1	2	18456.67346	4.00	1 a				18467.74707	1.79	3 a
2	1	1	18477.23110	2.83	2 a	18858.62589	2.31	3 a	18483.98386	2.83	2 a
2	2	1				18912.98460	4.00	1 a	18525.51651	2.83	2 a
2	2	0				18914.31447	2.83	2 a			
3	0	3	18484.93643	2.83	2 a	18888.91584	4.00	1 a	18520.52575	1.83	3 a
3	1	3	18515.71433	2.31	3 a	18897.41184	2.83	2 a	18525.69241	4.00	1 a
3	1	2	18555.42369	2.31	3 a	18935.38033	4.00	1 a	18557.81979	1.94	3 a
3	2	2				18981.15272	2.31	3 a	18592.98993	2.83	2 a
3	2	1				18987.34546	4.00	1 a	18598.81432	2.31	3 a
3	3	1				19085.28248	2.83	2 a	18681.45815	4.00	1 a
3	3	0				19085.48929	4.00	1 a	18681.62593	4.00	1 a
4	0	4	18570.50097	2.83	2 a	18969.11869	2.83	2 a			
4	1	4	18593.29121	4.00	1 a	18974.03584	4.00	1 a	18600.88107	3.39	2 a
4	1	3	18662.97588	2.83	2 a	19035.42322	2.83	2 a	18653.77320	2.83	2 a
4	2	3				19070.72460	4.00	1 a	18679.63226	2.31	3 a
4	2	2							18696.98171	2.83	2 a
4	3	2							18774.20386	4.00	1 a
4	3	1				19179.75496	2.83	2 a			
4	4	1							18902.23511	4.00	1 a

5	0	5							18693.43226	2.31	3 a
5	1	5	18689.00297	4.00	1 a	19068.11508	2.83	2 a	18695.32998	2.31	3 a
5	1	4							18769.59844	2.83	2 a
5	2	4				19180.90849	2.83	2 a	18789.38441	2.83	2 a
5	2	3							18821.94819	4.00	1 a
6	0	6				19177.56405	4.00	1 a	18807.90448	2.83	2 a
6	1	6							18806.08820	2.83	2 a
6	1	5				19296.49897	4.00	1 a	18903.84042	2.31	3 a
6	2	5							18917.85125	2.83	2 a
6	3	4							19027.95523	4.00	1 a
7	0	7							18937.40052	4.00	1 a
7	1	7				19306.50506	4.00	1 a			
7	1	6							19064.82546	2.31	3 a
7	2	6							19055.90225	2.31	3 a
8	2	7							19224.86989	2.83	2 a

J	K_a	K_c	331 or 40^-3			411 or 50^-1			213 or 41^-1		
0	0	0	18265.81975	7.00	1 a	18393.31415	2.00	1 a	18989.96075	3.00	1 a
1	0	1	18288.19955	3.71	1 a	18415.59019	3.12	1 a	19012.11341	4.00	1 a
1	1	1	18308.24991	2.32	2 a	18429.45558	1.27	2 a	19024.43426	1.43	2 a
1	1	0	18314.32299	2.58	2 a	18434.95261	2.01	2 a	19030.00665	2.83	2 a
2	0	2	18331.71851	1.93	3 a	18458.84310	0.68	3 a	19054.26146	1.56	3 a
2	1	2	18346.94930	2.05	3 a	18468.65387	1.74	3 a	19063.26092	1.83	3 a
2	1	1	18365.11059	1.92	3 a	18485.24388	1.12	3 a	19079.24552	1.98	3 a
2	2	1	18420.56774	4.00	1 a	18525.74768	2.37	2 a	19116.49055	2.83	2 a
2	2	0	18422.09030	2.24	2 a	18527.06371	0.88	3 a	19118.01302	1.62	3 a
3	0	3	18394.23616	2.54	2 a	18520.98775	1.86	3 a	19118.42126	2.83	2 a
3	1	3	18405.28035	1.87	3 a	18526.66380	0.83	3 a	19121.05310	1.35	3 a

3	1	2	18440.39751	2.04	3	a	18560.55589	1.86	3	a	19156.60291	2.83	2 a
3	2	2	18487.67057	1.83	4	a	18593.13452	1.51	4	a	19182.99077	1.43	4 a
3	2	1	18493.71195	2.06	3	a	18599.08719	1.69	4	a	19189.86503	2.31	3 a
3	3	1	18588.55248	1.63	4	a	18680.16600	1.38	4	a	19258.19300	1.63	2 a
3	3	0	18588.63238	2.12	3	a	18680.34729	2.50	2	a	19258.46561	2.83	2 a
4	0	4	18473.78086	2.46	2	a	18601.04716	0.82	4	a	19196.58971	1.83	2 a
4	1	4	18478.48297	2.58	2	a	18602.20398	2.70	2	a	19197.27534	2.83	2 a
4	1	3	18538.94155	2.09	3	a	18653.37587	1.33	3	a	19251.34628	2.83	2 a
4	2	3	18575.91750	2.31	3	a	18678.70894	2.83	2	a	19270.50034	2.31	3 a
4	2	2	18590.19609	1.57	5	a	18697.35355	1.22	4	a	19287.92387	2.00	4 a
4	3	2	18685.33424	2.24	3	a,?	18772.58274	2.04	3	a	19349.38452	2.83	2 a
4	3	1	18682.88158	1.78	3	a	18773.79804	1.70	4	a	19351.16940	2.31	3 a
4	4	1	18806.52922	4.00	1	a					19451.05563	4.00	1 a
4	4	0	18806.53144	1.55	2	a					19451.11615	2.83	2 a
5	0	5	18569.36184	2.60	2	a	18693.87178	2.48	2	a	19291.40499	4.00	1 a
5	1	5	18571.65153	2.22	2	a	18696.55052	1.56	3	a	19290.94492	2.21	2 a
5	1	4	18658.96238	2.83	2	a	18769.60826	2.31	3	a	19366.36365	2.83	2 a
5	2	4	18684.37660	1.85	4	a	18789.46164	1.66	3	a	19378.93788	2.31	3 a
5	2	3	18716.20576	2.31	3	a	18821.14270	2.31	3	a	19410.79313	4.00	1 a
5	3	3	18793.16429	1.71	5	a	18887.93786	2.00	4	a	19463.17817	2.31	3 a
5	3	2	18799.62771	2.31	3	a	18892.31676	2.31	3	a	19469.48198	4.00	1 a
5	4	2	18921.11385	1.74	4	a	19021.49769	2.83	2	a	19565.91265	2.83	2 a
5	4	1	18921.47744	2.31	3	a	19021.64773	2.83	2	a			
5	5	1	19034.04649	2.83	2	a					19698.29770	4.00	1 a
5	5	0	19034.13657	4.00	1	a					19698.29770	4.00	d
6	0	6	18682.14615	2.00	3	a	18806.26798	1.41	3	a	19402.96467	2.83	2 a
6	1	6	18683.28420	4.00	1	a	18805.92450	2.83	2	a	19402.65211	2.83	2 a

6	1	5	18798.43790	2.31	3 a	18903.95976	1.77	3 a	19499.00636	2.83	2 a
6	2	5	18812.17105	2.83	2 a	18917.91158	2.31	3 a			
6	2	4	18862.38996	4.00	1 a	18969.61151	2.31	3 a	19555.54847	2.83	2 a
6	3	4	18928.96939	2.31	3 a	19025.68242	2.31	3 a			
6	3	3	18943.34767	2.00	4 a	19036.89641	2.00	4 a	19614.52539	2.83	2 a
6	4	2				19163.11987	2.83	2 a	19705.54970	2.83	2 a
7	0	7	18808.76595	2.83	2 a	18936.58107	2.83	2 a	19531.33477	4.00	1 a
7	1	7	18810.85738	2.83	2 a	18936.89684	2.83	2 a	19531.09151	2.83	2 a
7	1	6	18958.24587	4.00	1 a	19064.82966	4.00	1 a			
7	2	6	18959.97437	2.31	3 a	19055.75273	2.83	2 a	19649.05435	2.83	2 a
7	2	5	19041.94055	4.00	1 a	19139.58322	2.83	2 a	19742.66339	4.00	1 a
7	3	5	19084.90244	2.00	4 a	19185.09500	2.83	2 a	19755.04246	4.00	1 a
7	4	4				19220.74521	2.31	3 a			
8	0	8	18950.68729	2.83	2 a	19078.11944	4.00	1 a			
8	1	7				19231.63070	2.83	2 a			
9	1	9				19240.13636	2.83	2 a			

J	K_a	K_c	430 or 40^+3			034 or 22 3					
2	1	2	18352.43265	2.83	2 a	19057.74882	4.00	1 a			
3	0	3	18400.28330	2.54	2 a						
3	1	3				19113.64259	2.83	2 a			
4	1	4	18485.05528	4.00	1 a	19190.28348	2.83	2 a			
4	2	2	18608.07129	2.83	2 a						
5	0	5				19282.35348	2.83	2 a			
5	1	5				19284.07992	2.83	2 a			
5	1	4				19373.89752	4.00	1 a			
6	0	6				19393.60470	2.83	2 a			
6	1	6				19395.20119	4.00	1 a			

TABLE XIII.: Term values for the 6ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	063 or 21^-6			520 or 50^+2			223 or 41^-3		
1	0	1				19886.26522	2.83	2 a	20465.23635	4.00	1 a
1	1	1							20479.87047	2.83	2 a
2	0	2				19930.68241	2.83	2 a	20508.25667	2.83	2 a
2	1	2				19942.08145	2.00	4 a			
2	1	1	19840.54583	2.83	2 a	19958.67328	2.83	2 a	20535.74416	2.31	3 a
2	2	1							20578.30171	2.83	2 a
2	2	0							20579.51478	2.83	2 a
3	0	3				19992.81723	2.31	3 a	20569.79126	4.00	1 a
3	1	3							20575.66372	4.00	1 a
3	1	2	19919.62917	2.83	2 a	20033.37732	2.31	3 a			
3	2	2							20644.76508	2.31	3 a
3	3	1							20726.88519	4.00	1 a
4	0	4				20074.06020	2.83	2 a	20647.87628	2.83	2 a
4	1	4				20076.46605	2.00	4 a			
4	1	3	20025.63061	2.83	2 a	20129.02476	4.00	1 a	20707.15443	2.83	2 a
5	0	5				20168.42103	2.83	2 a			
5	1	5							20741.42082	2.83	2 a
6	2	5				20381.50908	2.31	3 a			

J	K_a	K_c	341 or 40^-4			421 or 50^-2			402 or 51^+0		
1	0	1	19701.58121	4.00	1 a				20555.21130	2.83	2 a
1	1	1	19724.15716	2.83	2 a	19903.27840	2.83	2 a	20566.20183	4.00	1 a
1	1	0				19907.73348	4.00	1 a	20570.39135	2.83	2 a
2	0	2	19745.20618	2.83	2 a	19931.22962	2.83	2 a			
2	1	2	19762.48843	4.00	1 a	19942.53499	4.00	1 a	20603.16670	2.31	3 a

2	1	1	19781.69467	2.31	3	a	19959.26734	2.83	2	a	
2	2	1	19850.97575	4.00	1	a	20007.09384	4.00	1	a	20650.33486	2.83	2	a
2	2	0	19852.67123	1.66	4	a	20008.40987	4.00	1	a	20651.68260	4.00	1	a
3	0	3	19807.96090	4.00	1	a	19993.59498	2.83	2	a	20657.52562	4.00	1	a
3	1	3	19818.97627	2.83	2	a	20000.56838	2.83	2	a	20660.26388	4.00	1	a
3	1	2	19858.12969	2.83	2	a					20690.70671	2.31	3	a
3	2	2	19917.75812	1.85	4	a	20075.01967	2.83	2	a	20716.15604	2.83	2	a
3	2	1	19923.61703	2.00	4	a					20722.26392	2.31	3	a
3	3	1	20057.23658	1.55	2	a					20783.05024	4.00	1	a
3	3	0	20057.48490	3.47	1	a					20783.20950	4.00	1	a
4	0	4	19887.81274	2.83	2	a	20074.39800	1.79	5	a	20734.33018	4.00	1	a
4	1	4	19893.26956	2.83	2	a	20077.03601	4.00	1	a	20734.76144	2.83	2	a
4	1	3	19958.57884	2.31	3	a	20130.54514	4.00	1	a	20783.62928	4.00	1	a
4	2	3	20005.50672	2.83	2	a					20802.89500	2.83	2	a
4	2	2	20020.44919	2.31	3	a								
4	3	2	20148.77644	2.83	2	a	20266.52383	4.00	1	a	20873.29628	4.00	1	a
4	3	1	20149.93185	2.31	3	a	20267.22018	2.83	2	a				
5	0	5	19983.07335	2.83	2	a					20825.87385	4.00	1	a
5	1	5	19985.06264	2.83	2	a					20826.64163	4.00	1	a
5	1	4	20081.08836	4.00	1	a					20895.54512	4.00	1	a
5	2	4	20113.25479	2.00	4	a								
5	2	3	20142.19397	2.83	2	a								
5	3	3	20261.60482	2.83	2	a								
6	0	6	20092.85472	2.83	2	a					20935.16686	4.00	1	a
6	1	6									20935.26484	4.00	1	a
6	1	5	20225.19938	2.83	2	a								
6	2	5	20239.80770	4.00	1	a					21029.45797	2.83	2	a

6	3	4							21121.10709	4.00	1	a
7	1	7	20226.57927	2.83	2	a						

J	K_a	K_c	600 or 60^+0				501 or 60^-0				303 or 51^-0			
0	0	0					19781.10455	1.00	1	a	20543.13715	10.00	1	a
1	0	1	19803.65215	2.56	2	a	19802.58729	0.97	1	a	20566.26157	3.92	1	a
1	1	1	19814.27732	4.00	1	a	19813.66805	0.69	2	a	20574.95703	2.44	2	a
1	1	0	19818.44488	2.31	2	a	19818.65374	1.27	2	a	20580.14635	2.83	2	a
2	0	2	19843.64302	2.15	2	a	19843.95970	0.35	4	a	20607.72351	1.90	3	a
2	1	2	19851.14326	0.88	4	a	19852.03095	1.72	3	a	20615.17274	3.33	1	a
2	1	1	19866.41982	3.65	1	a	19866.66346	0.40	3	a	20628.73543	2.07	3	a
2	2	1	19900.18997	4.00	1	a	19900.38474	1.51	2	a	20659.94830	2.62	2	a
2	2	0					19901.65461	0.44	3	a	20661.48084	2.25	2	a
3	0	3	19903.12389	0.49	2	a	19903.35244	1.27	2	a	20667.72187	4.00	1	a
3	1	3	19907.62389	1.38	4	a	19907.75973	0.67	3	a	20670.08288	1.92	3	a
3	1	2	19937.26291	1.36	4	a	19937.60347	1.26	4	a				
3	2	2	19965.25350	4.00	1	a	19965.17229	0.63	4	a	20725.29362	1.97	4	a
3	2	1	19971.01671	2.31	3	a	19970.94690	1.37	4	a	20732.16243	2.31	3	a
3	3	1					20014.73287	0.83	3	a	20793.23090	2.53	2	a
3	3	0	20014.80535	4.00	1	a	20014.96380	2.38	3	a	20793.48894	4.00	1	a
4	0	4	19979.09883	0.91	3	a	19979.29554	0.83	3	a	20741.54068	2.21	3	a
4	1	4	19981.44319	0.47	4	a	19981.63760	1.59	2	a	20744.78728	2.83	2	a
4	1	3	20032.97357	2.31	2	a	20030.64292	0.83	3	a	20792.68733	2.19	3	a
4	2	3	20050.62580	1.79	5	a	20050.51278	2.03	3	a	20811.40135	4.00	1	a
4	2	2					20064.73667	0.77	5	a	20828.58883	2.00	4	a
4	3	2	20102.51719	2.83	2	a	20102.81539	1.73	3	a				
4	3	1	20104.10579	2.31	3	a	20104.39767	1.17	4	a	20885.13861	2.31	3	a
4	4	1					20201.54915	4.00	1	a	20918.94866	4.00	1	a

4	4	0				20201.75564	2.06	2	a	20919.01671	4.00 1 a
5	0	5	20072.58235	1.63	2 a	20072.40482	1.63	2	a	20835.95975	2.83 2 a
5	1	5	20072.40149	3.58	1 a	20071.17305	0.47	4	a	20836.26524	2.44 2 a
5	1	4	20140.62325	1.60	2 a	20140.38158	2.10	3	a	20911.24972	4.00 1 a
5	2	4	20155.65321	2.83	2 a	20155.91642	1.45	4	a	20917.10044	2.83 2 a
5	2	3	20186.96043	2.31	3 a	20186.56196	2.00	4	a		
5	3	3	20212.31267	2.31	3 a	20212.58874	1.35	5	a		
5	3	2	20218.07339	2.31	3 a	20218.47991	3.12	1	a		
5	4	2				20295.59429	2.00	4	a		
5	4	1				20295.88184	2.31	3	a		
5	5	1				20405.47514	2.83	2	a		
5	5	0				20405.47514	2.83		d		
6	0	6	20181.03571	2.31	3 a	20179.21663	0.83	3	a	20944.99325	2.83 2 a
6	1	6	20180.36654	12.00	1 a	20179.35302	0.91	3	a	20945.15485	4.00 1 a
6	1	5	20269.31243	2.31	3 a	20269.28336	1.90	4	a	21037.33168	2.31 3 a
6	2	5	20280.35727	1.49	3 a	20280.29521	2.83	2	a	21040.87911	4.00 1 a
6	2	4				20328.90614	1.64	4	a		
6	3	4	20343.93873	2.83	2 a	20343.51925	2.31	3	a		
6	3	3				20357.78262	1.79	4	a		
6	4	3	20429.09489	2.31	3 a	20428.87759	2.31	3	a		
6	4	2				20430.48310	2.31	3	a		
6	5	2				20537.35387	4.00	1	a		
6	5	1				20537.41491	2.31	3	a		
7	0	7	20305.33185	4.00	1 a	20304.09837	1.63	2	a		
7	1	7				20304.01322	0.83	3	a	21070.46493	2.83 2 a
7	1	6	20415.94035	2.27	3 a	20424.12709	2.83	2	a		
7	2	6				20423.00502	2.83	2	a		

8	0	8				20444.59212	2.40	2	a
8	1	8	20445.25501	4.00	1	a 20445.24989	2.83	2	a

TABLE XIV.: Term values for the $6\nu + \delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	431 or 50^-3			610 or 60^+1			511 or 60^-1		
0	0	0				21221.56882	12.00	1 a	21221.82835	4.00	1 a
1	0	1	21336.89909	4.00	1 a	21243.05554	3.80	1 a			
1	1	1	21354.63190	2.83	2 a				21258.12713	2.10	2 a
1	1	0				21261.63485	12.00	1 a	21263.73893	2.71	2 a
2	0	2	21380.81638	2.83	2 a	21285.04024	3.86	1 a	21285.38176	1.83	2 a
2	1	2	21394.04835	4.00	1 a	21295.49738	2.52	2 a	21295.74881	2.31	3 a
2	1	1	21411.21360	2.31	3 a				21312.49588	1.92	3 a
2	2	1							21355.75850	2.71	2 a
2	2	0							21356.92340	1.99	2 a
3	0	3	21444.28761	2.83	2 a	21346.07494	2.52	2 a	21346.25161	2.73	2 a
3	1	3	21452.35480	2.31	3 a	21351.24359	4.00	1 a	21351.51292	1.78	3 a
3	1	2				21384.17199	2.83	2 a	21384.43759	2.31	3 a
3	2	2	21534.10730	4.00	1 a				21420.82816	1.75	4 a
3	2	1							21426.00985	2.31	3 a
3	3	1							21462.62867	4.00	1 a
4	0	4	21526.56637	2.83	2 a				21423.62796	2.83	2 a
4	1	4				21416.02090	2.83	2 a	21416.18006	4.00	1 a
4	1	3	21583.90081	4.00	1 r				21477.87812	2.12	3 a
4	2	2	21638.66496	4.00	1 r				21518.02807	2.83	2 a
4	3	1							21553.17441	2.83	2 a
4	4	0							21659.93681	2.83	2 a
5	1	5							21510.05450	4.00	1 a
5	2	4							21610.41424	2.31	3 a

J	K_a	K_c		115	or	$42^{-}1$
2	1	1	22601.55493	4.00	1	a
2	2	1	22637.07765	2.83	2	a
2	2	0	22638.07289	2.31	3	a
3	2	2	22713.04132	4.00	1	a
4	2	2	22796.93804	4.00	1	a

TABLE XV.: Term values for the 7ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	700 or 70^+0				601 or 70^-0				521 or 60^-2			
0	0	0	22529.29589	4.00	1	a	22529.44124	4.00	1	a				
1	0	1	22550.18384	2.83	2	a	22550.31747	2.83	2	a				
1	1	1					22560.26923	2.83	2	a	22672.81494	4.00	1	a
1	1	0	22564.87955	4.00	1	a	22565.03694	2.83	2	a				
2	0	2	22589.94696	4.00	1	a	22590.69202	2.83	2	a	22693.59316	4.00	1	a
2	1	2	22597.10571	4.00	1	a	22597.25941	2.31	3	a				
2	1	1	22611.32639	2.83	2	a	22611.51336	2.31	3	a	22728.51553	4.00	1	a
2	2	1	22637.46644	2.83	2	a	22645.80999	2.83	2	a	22787.45757	4.00	1	a
2	2	0	22638.52157	2.83	2	a	22646.52208	2.31	3	a	22788.75529	2.83	2	a
3	0	3	22648.35749	2.31	3	a	22651.86153	2.31	3	a				
3	1	3	22648.43638	2.83	2	a	22651.96076	2.31	3	a	22765.08238	4.00	1	a
3	1	2	22679.90779	2.31	3	a	22680.20219	2.00	4	a	22801.93633	4.00	1	a
3	2	2	22701.78722	4.00	1	a	22700.58400	2.31	3	a	22852.32854	4.00	1	a
3	2	1	22706.70815	4.00	1	a								
3	3	1					22764.55957	2.83	2	a				
3	3	0	22763.71449	2.83	2	a	22764.86354	2.83	2	a				
4	0	4	22722.07083	2.31	3	a	22723.72059	2.31	3	a	22835.35519	4.00	1	a
4	1	4	22722.10370	2.83	2	a	22723.73573	4.00	1	a				
4	1	3	22769.07465	4.00	1	a	22769.73706	2.31	3	a				
4	2	3	22783.75838	2.00	4	a					22937.89704	4.00	1	a
4	2	2					22804.06374	2.83	2	a				
4	3	2	22848.92133	4.00	1	a	22849.06973	2.83	2	a				
4	3	1	22850.56140	4.00	1	a	22850.61230	2.00	4	a				
4	4	1	22929.71765	4.00	1	a	22929.55302	4.00	1	a				

4	4	0				22929.60068	4.00	1	a
5	0	5	22812.17160	4.00	1 a	22812.26166	4.00	1	a
5	1	5	22812.89599	4.00	1 a	22811.51035	2.31	3	a
5	1	4	22876.52993	2.31	3 a	22876.06737	2.31	3	a
5	2	4	22885.47346	2.83	2 a	22885.15322	2.83	2	a
5	2	3	22915.86289	2.83	2 a	22915.73570	2.31	3	a
5	3	3	22955.46561	2.31	3 a				
5	3	2	22961.32178	2.31	3 a				
5	4	2	23036.65041	4.00	1 a	23036.51388	2.31	3	a
5	4	1	23036.96651	2.83	2 a				
5	5	1	23138.23467	4.00	1 a	23138.18096	2.00		d
5	5	0	23138.23467	4.00	d	23138.18096	2.00	4	a
6	0	6	22916.72759	2.83	2 a	22917.40629	2.83	2	a
6	1	6	22916.76424	2.31	3 a	22915.84717	4.00	1	a
6	1	5	23004.11045	2.83	2 a	23004.47322	2.00	4	a
6	2	5	23000.26379	2.31	3 a	23000.58881	4.00	1	a
6	2	4	23051.93735	2.83	2 a	23052.08237	4.00	1	a
6	3	4	23056.85760	4.00	1 a				
6	4	3	23165.28595	4.00	1 a				
7	0	7	23038.35126	4.00	1 a				
7	1	7				23037.85738	4.00	1	a
7	1	6	23140.40654	4.00	1 a				
8	1	8	23175.12899	4.00	1 a				

J	K_a	K_c	620 or 60^+2						
2	1	2	22709.42201	2.83	2 a				
3	0	3	22754.04555	4.00	1 a				
3	1	2	22801.06480	2.83	2 a				

TABLE XVI.: Term values for the $6\nu + \delta$ polyad of $H_2{}^{16}O$.

J	K_a	K_c	611 or $70^{-}1$			
1	1	1	23981.75174	2.83	2	a
2	0	2	24009.95354	2.83	2	a
2	1	2	24018.39131	4.00	1	a
2	1	1	24034.82294	2.83	2	a
2	2	1	24071.34468	2.83	2	a
2	2	0	24073.06170	2.83	2	a
3	1	3	24075.59799	4.00	1	a
3	2	2	24138.21507	4.00	1	a
4	0	4	24142.24050	4.00	1	a

TABLE XVII.: Term values for the 8ν polyad of $H_2{}^{16}O$.

J	K_a	K_c	800 or 80^+0			701 or 80^-0		
0	0	0				25120.27845	4.00	1 a
1	0	1				25140.61741	4.00	1 a
1	1	1				25150.16277	2.83	2 a
1	1	0				25154.64695	4.00	1 a
2	0	2				25180.83699	4.00	1 a
2	1	2	25180.01252	2.83	2 a			
2	1	1				25199.78975	2.31	3 a
2	2	1				25228.30281	4.00	1 a
2	2	0				25229.54252	2.83	2 a
3	0	3	25236.45176	4.00	1 a	25236.44156	4.00	1 a
3	1	3				25239.85308	4.00	1 a
3	1	2	25266.48383	4.00	1 a	25266.50639	4.00	1 a
3	2	2	25289.24158	4.00	1 a	25289.22608	4.00	1 a
3	2	1				25294.90245	4.00	1 a
3	3	1	25348.21400	4.00	1 a	25348.19672	4.00	1 a
3	3	0				25348.38354	4.00	1 a
4	0	4	25312.05177	4.00	1 a	25310.14131	2.83	2 a
4	1	4	25308.65643	4.00	1 a			
4	1	3				25353.29672	4.00	1 a
4	2	3	25369.39978	2.83	2 a			
4	2	2	25383.92461	4.00	1 a			
4	3	2	25431.25191	4.00	1 a			
4	4	1	25510.31492	4.00	1 a			
4	4	0				25510.34592	4.00	1 a

5	0	5	25396.73679	4.00	1	a	25396.12875	2.83		d
5	1	5	25396.74729	4.00	1	a	25396.12875	2.83	2	a
5	1	4	25458.12964	4.00	1	a	25458.20181	4.00	1	a
5	2	4	25467.99302	4.00	1	a	25468.22655	4.00	1	a
6	0	6	25499.12128	4.00	1	a				
6	1	6	25499.38069	2.83	2	a				
6	1	5	25578.73910	4.00	1	a	25585.39173	4.00	1	a
7	0	7	25617.62777	4.00	1	a				
7	1	6	25714.61211	4.00	1	a				
7	2	6					25718.36378	4.00	1	a