

THE
SIXTEEN PRINCIPAL STARS
1824-1948

THEIR
POSITIONS AND ASPECTS

1150
1306

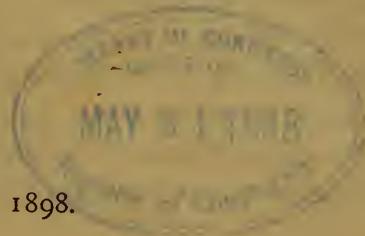
WITH
INSTRUCTIONS
FOR
USE IN NATIVITIES

ALSO
EPHEMERIS OF
URANUS AND NEPTUNE

1835-1876

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P R E F A C E.

The meagre account of the fixed stars found in astrological books is in all respects poor indeed, consisting of uncertain positions and fictitious attributes — bad enough, what there is of it, and too much of it, such as it is. This wide vacancy in theory must cause a like defect in the practice. We need to have their true spherical locations and aspects, with their relative lustre, and nothing figmentary. Accordingly we offer here what is the very first attempt toward a rational and correct use of them in natal figures. The principal stars are these, with the new notation (Amer. Eph.) of their magnitudes:

Sirius . . .	— 1.4	Procyon . + 0.5	This notation is in-
Canopus . . .	— 0.8	β Centauri 0.7	versely as to their light,
α Centauri . . .	— 0.1	Altair . . . 0.9	starting with that of
Capella . . .	+ 0.1	α Orionis . 0.9	Aldebaran as the stand-
Arcturus . . .	0.2	α Crucis . 0.9	ard unit: making the
Vega . . .	0.2	Aldebaran . 1.0	brightness of Sirius 2.4
Rigel . . .	0.3	Spica . . . 1.1	that of Procyon, and 3.4
α Eridani . . .	0.4	Antares . . . 1.2	that of Aldebaran, etc.

For any sufficient treatment of nativities it is obviously necessary that a diagram of the heavens should include a number of the brightest stars. For that purpose we have prepared these tables of the positions and aspects of those sixteen of them for a period of 124 years, giving them in the order of their magnitudes as found by late methods. At the given dates these positions are very exact — rather more so than is needed, partly for the ideal satisfaction of doing the best possible, and for other reasons. They are what are called *true* apparent places; that is, without aberration, which is merely a distortion. Up to 1900 the mean R. Asc. and declination were obtained from the latest precise places in the American Ephemeris and certain astronomical papers connected therewith; and from 1900 to 1948 they were derived by applying the second differences of the previous 48 years. Mean places were then converted into apparent by Bowditch's tables of nutation, the several factors being properly carried forward; and the longitudes and so forth

were got by usual formulas. Being apparent places, some of the differences are quite irregular, but the error by proportion within the two-year intervals is for most of the stars extremely small; in the four-year intervals it is often more, but will be insensible for the uses intended — will never equal the uncertainty in the planets' tabular places, which is often a large fraction of 1' owing to the defects of theoretical astronomy.

Old tables of mean positions can be found, but are considerably inaccurate. It would have been far easier to have made a brief table of that kind for some medium dates, with annual differences, which for each star are nearly uniform. This we have herein done for two other stars not in the tables. Mean places are but average ones, while the apparent are exact, so that our plan, though wrong in idea, will give in the intervals more closely the actual places. Our tables have the only record of the sextiles, and the trines of course are exactly opposite. The formula for these is given on page 9. If a star's latitude were just 60° there could be but one sextile and that would coincide with its longitude; if more than 60°, there is no sextile on the ecliptic. The squares are always 90° from the star's longitude, and from star itself. We know of but one astrologic writer that has given even a hint as to right places on the ecliptic of aspects other than the square — so simple a thing, so important with most of the stars, and, to some extent, with the Moon and Venus.

We have given parallels of declination on the ecliptic for eight of these stars, the rest not having any, and the other two points are just opposite to those given. The formula for them is upon page 9. When a star's declination is more than the ecliptic obliquity it has no parallel.

The names of the most southern of these stars are popularly unfamiliar in our latitudes because they do not rise here, but they are to be regarded as of more import than well-known ones of much less lustre that are on the list, or others such as Castor and Pollux. Though often these southern ones cannot be put into an ordinary figure, which represents only a part of the sphere, their squares will always have place in it, and sometimes their other aspects.

Putting the stars into a figure should be done by the R. Asc. and declination, for some that have much latitude will otherwise not be in the right houses. $\tan \text{decl.} \times \tan \text{lat. of place} = \sin \text{asc. diff.}$, and $90^\circ \pm$ that gives the semi-arc, which with the meridian distance fixes the mundane place of the star, as of any other body. The briefest way of indicating them in a figure is to use the numerals here appended to their names, as the latter cannot well be abbreviated enough. The fact that the numbers denote their order of brightness will be an advantage in doing so, and the names may be easily remembered or referred to. *It is*

not advised that all of them should be put into the figure, but to select some which come in the more important houses, and such as are far north and above the horizon or far south and below it, as thus they are more potent by position; but if the figure be for south latitude the conditions last named are to be reversed. Take notice that in certain latitudes some of them never rise, others never set. If a star's declination is more than the complement of the latitude of place (its diff. from 90°), it will not rise, or not set, as the case may be, and hence is *in no house*, but outside the limits of the figure, and can make no mundane aspects, yet it throws some of its zodiacal aspects to various parts of the figure like the rest.

It may be well to have in addition the place of η Argûs, the most variable of the great stars, which at intervals of about seventy years is among the very brightest. Its last maximum period was about 1830 to 1850, and the next should be 1900 to 1920. We give below its mean positions, with annual differences, in the middle of those periods, and results will be correct to a small fraction of 1' for either term of twenty years. When reckoning backward change the + signs to -. The sextiles are but about 14° 24' from the longitudes, and may be had more closely by formula on page 9.

The place of Regulus also may be desired, as it is a familiar star, nearly on the ecliptic, and hardly inferior to Antares. Therefore we give its mean place for the middle date of the tables, 1886, and annual differences, which will generally suffice to get its position with less than 1' of error for any time in the whole period. For dates previous to 1886 the + or - signs are to be reversed. Its sextiles are almost precisely 60° from the longitudes, and its parallels may be had by the formula on page 9.

η Argûs.

Date.	R. Asc.	A. diff.	Decl.	A. diff.	Long.	A. diff.	Lat.	A. diff.
Jan. 1. 1840	, 159° 43 27	+ " 34.5	, 58° s. 50 40.5	+ " 18.8	, 19° 57 7.4	+ " 49.7	, 58° s. 55 3.8	+ " 0.2
1910	160° 23 28.6	34.8	59° 12 40.3	18.9	20° 54 56.0	49.4	55 19.5	0.3

Regulus.

Jan. 1. 1886	, 150° 34 30.4	+ " 48.0	, 12° n. 31 26.2	- " 17.47	, Ω 28° 14 41.0	+ " 52.0	, 0° n. 27 39.3	+ " 0.13
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It should be fully understood that the precision of figures in this table, and in the main tables, is merely a means for getting correct enough positions at special dates; and these when obtained it is well to set down to the nearest second for any trigonometrical use. For calculations in "directions" the nearest tenth of a minute is the utmost nicety ever wanted, either for stars or any other factors; and the even minute only may commonly do.

As to what specific meaning any "bright particular star" may possibly have, there is nowhere so much as a plausible supposition, and perhaps it is vain to seek; yet all the guessing and lying authors have freely radiated their darkness about it in futile conjectures, — but not a word of what can be readily known for certain, the positions and aspects of stars, which are presumably very significant in a general way. One or more of the brightest in an angle probably means much, or casting aspects therein, or to the luminaries or planets. Our own experience goes to confirm this, but it is likely that beyond the first eight or ten stars their indications are not very obvious, however situated. A number of notable facts in regard to them appear along the ecliptic. The most remarkable one is that the squares of three very bright ones, Sirius, Canopus and Vega all come at about φ and $\simeq 12^\circ$ to 14° . Libra having been regarded of old as a violent sign, this perhaps arose, unwittingly, from that focus of squares in it. These, when occurring just in an angle, surely must be portentous. We have seen some instances of it in the ascendant, and the persons were of an intense or sort of demonic nature and short-lived. We have a specially authentic nativity where they occur in the midheaven, which came to these squares by arcs measuring just to the time, early in life, when the native's best prospects were blighted and whole career changed. Some other cases where aspects on the ecliptic combine are as follows: All those of Aldebaran agree almost exactly with those of Antares; the squares of α Centauri near Ω and $\approx 28^\circ$ nearly coincide with a sextile or trine of Arcturus; and the squares of Arcturus and Spica are close together in about 22° of Ξ and ϖ . Also some parallels are near together, as those of Rigel and Altair in φ and $\simeq 21^\circ$ to 22° , π 8° to 9° , all which is shown on page 23A.

Thus we have, with these original tables, presented about all we know of the stars, or can reasonably suppose and advise as to them in nativities, with formulas and rules which apply also to bodies in the solar system. Astrology without the great stars is a strange and extreme misnomer, and it is manifest that in nativities there can be no fairly adequate and rational practice without them; nor indeed, generally, without a true and complete mathematical method.

In the nature of things it is clearly impossible that the *significative*

part of it should ever be an exact science, but it can be much elevated above the base uses of its present state, which is a gross travesty of science, and no better, but rather worse, than it was half a century ago. The books are mostly a mess of confusion, contradiction and pretence, and full of mathematical errors. No one seems ever to have attempted a study of it in the systematic and cautious way that has made the recognized sciences what they are. Its truths are a part of the word of God in nature, and they cannot be fully reached excepting through a skilful knowledge of the spherical astronomy and calculations which lead up to them. Many fondly grope and dabble in it, but there are few real thinkers or competent workers. Its own devotees and advocates are really as much its enemies as the avowed ones, the conceited big-wigs or little ones of science who deride or ignore it, and the influence of both factions has been to repel and mislead any capable students. To the former class belongs the merit of keeping it, though obscurely, in vogue; and to the latter the odium of striving to extinguish a vital spark of truth; for astrology is essentially the philosophic and poetic truth about those lustrous and mirific signals in the sky which to the soulless aridity of astronomy have no meaning, but only utilitarian and intellectual uses. The mathematical hard-heads, and all sorts of bug-eyed little specialists, presume to flout at what the general instinct of mankind, many of the noblest seers and sages, and some of the greatest men of action in history, have believed in or regarded as credible. Few men of eminent ability have actually known much about it. John Flamsteed, the first Astronomer Royal of England, experimented in it. He said, "I found astrology to give generally strong conjectural hints, not perfect declarations"; and this is an apt summary of its essential possibilities. Though there is no record that he ever took more than the first step in it,—made some figures,—the remark implies that it is worth pursuing; and more so now, for many reasons, than in his time. As the darkest part of it, strange to say, is where most of the brightest lights are, the present small but mature work of survey in that region will surely be useful. It is hoped also that it will afford some aid and incentive to a right study of the whole subject by the right sort of persons.

We should add that the orbital motion of Sirius and Procyon was allowed for. In unused columns of the tables are some necessary notes; and on page 11, under the head of "Strictures," continuing on other pages, space is used for slashing comments on certain parts of "science falsely so-called"—astronomy also having its weak points, besides its utter barrenness to the eye of reason.

Sirius, 1.

Date.	R. Asc.	Decl.	Long.	Lat.	* 8 22°	* 9 1°	Par. decl. s.		
	99°	16° s.	20 11°	39° s			15°	14°	
	"	"	"	"	"	"	"	"	
Jan. 1.									
1824	21 5 28	53 39	40 34	0 5	51 13	28 26	28 33	32	
	22 25 29	8 41	19	1 7	31 15	7 27	38 32	22	
	23 38	21 42	51	3 9	4 16	37 28	36 31	24	
	24 49	31 44	19	5 10	34 18	4 29	16 30	44	
	26 0	37 45	48	6 12	4 19	32 29	32 30	28	
1834	27 16 29	40 47	23 34	6 13	40 21	7 29	34 30	26	
	36 28	38	43 49	6	7 15	23 22	49 29	33 30	27
	38 30	5	48 50	55	9 17	13 24	37 29	43 30	17
	40 31	34 29	58 52	46	10 19	5 26	27 30	20 29	40
	42 33	1 30	11 54	35	11 20	54 28	15 31	16 28	44
1844	34 23	25 56	17 34	12 22	37 29	56 32	20 27	40	
	46 35	38	39 57	50	13 24	11 31	29 33	24 26	36
	48 36	48	50 59	12° 17	15 25	40 32	55 34	10 25	50
	50 37	58 30	57 0	45	17 27	8 34	21 34	32 25	28
	52 39	11 31	1 2	16	18 28	41 35	52 34	36 25	24
1854	40 30	4 3	55 34	20 30	21 37	30 34	34 25	26	
	56 41	55	9 5	42	22 32	9 39	14 34	43 25	17
	58 43	22	18 7	31	24 34	0 41	3 35	14 24	46
	60 44	49	31 9	20	26 35	50 42	50 36	7 23	53
	62 46	13 31	47 11	4	28 37	35 44	33 37	16 22	44
1864	47 30 32	2 12	40 34	29 39	12 46	7 38	26 21	34	
	66 48	42	14 14	10	31 40	43 47	36 39	20 20	40
	68 49	52	23 15	37	33 42	12 49	2 39	50 20	10
	70 51	4	28 17	8	35 43	44 50	32 39	59 20	1
	72 52	22 32	31 18	45	36 45	23 52	8 39	58 20	2
1874	53 46	35 20	30 34	38 47	9 53	52 40	3 19	57	
	76 55	13	43 22	20	39 48	59 55	41 40	27 19	33
	78 56	41 32	55 24	10	41 50	51 57	30 41	14 18	46
	80 58	7 33	10 25	57	43 52	39 59	20 42	19 17	41
	82 59	100° 26	25 27	36	45 54	19 0	53 43	30 16	30
1884	0 40	39 29	8 34	46 55	52 2	24 44	29 15	31	
	86 1	51 33	48 30	36	48 57	22 3	51 45	6 14	54
	88 3	3	54 32	6	49 58	23° 52	20 45	20 14	40
	90 4	19	56 33	42	50 0	29 6	55 45	18 14	42
1892	5 42	33	59 35	26 34	50 2	13 8	38 45	17 14	43
	94 7	8 34	51 37	14	51 4	2 10	26 45	30 14	30
	96 8	35	16 39	3	53 5	52 12	14 46	10 13	50
	98 10	1	30 40	49	54 7	39 13	59 47	12 12	48
1900	11 22	34	46 42	30 34	56 9	21 15	38 48	23 11	37
	04 13	46 35	12 45	30 35	0 12	25 18	36 50	14 9	46
	08 16	9	23 48	30	4 15	27 21	33 50	41 9	19
	12 18	54	32 51	57	8 18	57 24	58 50	52 9	8
	16 21	50 35	56 55	36	12 22	38 28	34 52	24 7	36
1920	24 30	36	27 58	13° 56	15 26	1 31	51 54	46 5	14
	26 51	36	48 1	53 35	19 29	0 34	45 56	9 3	51
	28 29	22 36	57 5	2	22 32	12 37	52 56	17 3	43
	32 32	15 37	10 8	38	25 35	50 41	26 56	50 3	10
1936	34 52	37	29 11	54	28 39	8 44	41 58	2 1	58
	40 37	29 37	48 15	11 35	30 42	26 47	55 59	16° 14	0 46
	44 40	5 38	7 18	26	32 45	42 51	9 0	27 59	13° 33
	48 42	40 38	28 21	39	35 48	58 54	21 1	47 58	13

Canopus, 2.

Date.	R. Asc.	Decl.	Long.	Lat.	
Jan.1.	95°	52° s.	50° 12°	75° s.	
1824	0 50° 36'	6 32'	16 50'	48"	Has on
26	1 31'	16 33'	55		
28	2 8'	25 35'	27		
30	2 43'	29 36'	55		
32	3 19° 36'	29 38'	23 50'	45	
1834	3 57'	27 39'	59		
36	4 37'	25 41'	41		
38	5 20'	25 43'	29		
40	6 43° 36'	29 45'	18		no Aspect
42	6 48'	37 47'	7 50'	39	
1844	7 30'	47 48'	49		
46	8 36'	56 50'	23		
48	8 44° 37'	1 51'	52		
50	9 20'	3 53'	21		
52	9 56° 37'	1 54'	53 50'	35	and no
1854	10 36° 36'	59 56'	33		
56	11 18° 36'	58 58'	13° 20'		
58	12 2° 37'	1 0'	9		
60	12 46'	7 1'	58		
62	13 28'	17 3'	43 50'	30	
1864	14 8'	27 5'	19		
66	14 45'	34 6'	50		
68	15 20° 37'	37 8'	17		
70	15 56'	36 9'	48		Formula for Sextiles
72	16 35'	33 11'	26 50'	25	of stars with lat.
1874	17 16'	32 13'	11		less than 60°:
76	18 0° 37'	33 15'	0		
78	18 44'	39 16'	49		
80	19 27'	48 18'	35		
82	20 8° 37'	58 20'	14 50'	21	
1884	20 45° 38'	6 21'	46		sextile from star's long. The trines are exactly opposite.
86	21 21'	10 23'	14		
88	21 56'	11 24'	44		
90	22 34'	8 26'	19		
1892	23 15'	6 28'	2 50'	16	
94	23 58° 38'	7 29'	50		
96	24 42'	11 31'	40		
98	25 25'	20 33'	27		
1900	26 7'	30 35'	9		
04	27 21° 38'	45 38'	11 50'	11	Formula for Parallels
08	28 33'	45 41'	12		of stars with decl. less than the ecliptic obliquity:
12	29 55'	42 44'	40		
16	31 24° 38'	54 48'	20		
1920	32 45° 39'	14 51'	40		
24	33 57'	24 54'	37 50'	4	Par. from $\varphi - \Delta$ o; also = cos long. of Par. from $\varphi - V\varphi$ o.
28	35 11'	21 57'	46		
32	36 37'	22 1'	22		
1936	37 55° 39'	31 4'	37		
40	39 14'	39 7'	52 49'	58	
44	40 32'	49 11'	8		
48	41 51'	58 14'	24		

α Centauri, 3.

Date.	R. Asc.	Decl.	Long.	Lat.	*	*	
Jan. 1.	216°	60° s.	m 27°	42° s.	≈ 9°	V° 14°	
	,	" /	" /	" /	" /	" /	
1824	56	12 6	7 16	21 31	46 59	10° 54 32	49
	26	58 217°	21 6	35 17	52 49	1 28 34	16
	28	0 18	7 19	16	52 2	54 35	37
	30	2 4	28 20	35	56 4	17 36	54
	32	3 46	7 57 21	57 31	59 5	39 38	12
1834	5	32 8	30 23	21 32	3 7	8 39	35
	36	7 28	9 6 24	55	6 8	45 41	5
	38	9 35	9 42 26	35	9 10	28 42	43
	40	11 50	10 17 28	18	13 12	13 44	22
	42	14 40	10 49 29	58	16 13	56 46	0
1844	16	21 11	17 31	31 32	18 15	32 47	31
	46	18 22	11 43 32	57	21 17	0 48	54
	48	20 12	12 9 34	18	24 18	23 50	12
	50	21 55	12 37 35	37	27 19	45 51	29
	52	23 40	13 9 37	2	30 21	12 52	51
1854	25	32 13	44 38	33 32	34 22	46 54	19
	56	27 36	14 20 40	11	37 24	27 55	55
	58	29 50	14 56 41	53	40 26	12 57	35
	60	32 8	15 28 43	35	43 27	56 59	13
	62	34 23	15 57 45	11 32	46 29	34 0	15° 47
1864	36	29 16	23 46	39	49 31	5 2	12
	66	38 22	16 49 48	0	52 32	29 3	31
	68	40 7	17 16 49	19	56 33	51 4	47
	70	41 50	17 47 50	42 32	59 35	16 6	7
	72	43 40	18 21 52	11 33	2 36	48 7	34
1874	45	41 18	57 53	47	5 38	27 9	7
	76	47 53	19 33 55	29	9 40	11 10	46
	78	50 11	20 6 57	11	12 41	56 12	25
	80	52 29	20 36 58	28° 49	14 43	37 14	1
	82	54 38	21 2 0	19 33	17 45	10 15	29
1884	56	35 21	28 1	42	20 46	35 16	50
	86	58 218°	22 21 54	3 2	23 47	57 18	5
	88	0 6	22 24 4	23	26 49	21 19	25
	90	1 53	22 57 5	49 33	30 50	50 20	49
1892	3 51	23 32 7	24		33 52	27 22	20
	94	6 0 24	8 9	4	36 54	10 23	58
	96	8 18	24 42 10	47	39 55	55 25	38
	98	10 36	25 13 12	26 33	42 57	38 27	15
1900	12 49	25 41 13	59		46 59	11° 14 28	45
	04	16 40	26 32 16	44	51 2	3 31	25
	08	20 10	27 32 19	29 33	58 4	53 34	4
	12	24	11 28	43 22	40 34	4 8	10 37
	16	28	47 29	49 26	10 11	39 40	29
1920	33	8 30	43 29	6	16 14	46 43	26
	24	36	47 31	36 31	46 23	17 32 46	1
	28	40	23 32	41 34	39 34	29 20	48 of No. 16.
	32	44	41 33	52 37	58	35 23	54 52
1936	48	40 34	51 40	56	41 26	58 54	54
	40	52	41 35	51 43	54 48	30 1 57	16° 47
	44	56 219°	43 36	50 46	53 34	54 33 5 0	41
	48	0 46	37	49 49	52 35	0 36 10 3	35

Capella, 4.

Date.	R. Asc.	Decl.	Long.	Lat.	* P 22°	* Ω 16°	
Jan. 1.	75°	45° n.	II 19°	22° n.			
	"	"	"	"	"	"	
1824	55 58	53 58 48 7	32 25 54 27	13 51 44 27	15 16 19 20	48 50 13 45	32 33 15 37
26	o	11	38	27	44	13	18
28	2	8	44	28	44	13	41
30	4	6	48	30	45	12	10
32	6	48	55	26	22	38	40
1834	6	12 49	9 32	2 51	23	48 40	16
36	8	26	24 33	45	25	31 41	59
38	10	50	37 35	33	27	20 43	47
40	13	17 49	47 37	27	29	13 45	41
42	15	43	52 39	15	31	1 47	29
1844	18	o	55 41	o 51	32	46 49	13
46	20	7 49	58 42	35	34	21 50	49
48	22	6 50	34 44	2	35	48 52	16
50	24	3	12 45	34	37	20 53	48
52	26	6	25 47	8	38	54 55	22
1854	28	17	39 48	49 51	40	35 57	3
56	30	38 50	53 50	37	42	23 58	17° 51
58	33	6 51	4 52	29	44	15 o	42
60	35	32	10 54	19	46	6 2	33
62	37	53	14 56	5	47	51 4	19
1864	40	3	16 57	42 51	49	29 5	56
66	42	4 51	20 59	20° 14	51	o 7	27
68	44	1	27 o	42	52	29 8	56
70	46	1	39 2	14	54	1 10	28
72	48	10 51	53 3	53	55	39 12	7
1874	50	29 52	7 5	39 51	57	26 13	53
76	52	55	19 7	30	59	17 15	44
78	55	22	26 9	22	1 23° 17	17 35	
80	57	45	30 11	9	2	56 19	23
82	59	59 52	32 12	47	4	34 21	1
1884	2	77° 2	35 14	17 51	6	3 22	30
86	4	o	41 15	49	7	36 24	3
88	5	58 52	51 17	22	9	8 25	35
90	8	4 53	5 19	3	10	49 27	16
1892	10	20	19 20	46	12	33 28	59
94	12	45	31 22	35 51	14	22 30	49
96	15	13 53	40 24	24	16	11 32	37
98	17	37	44 26	13	18	o 34	26
1900	19	54	46 27	56	19	42 36	9
01	23	59 53	53 31	o	22	47 39	13
08	28	o 54	14 34	3 51	25	50 42	17
12	32	35	41 37	34	29	20 45	47
16	37	30 54	56 41	17	33	3 49	30
1920	41	59 55	o 44	38	36	25 52	51
24	45	57	11 47	38	39	25 55	51
28	50	7	36 50	49 51	42	36 59	18° 2
32	54	54 55	59 54	28	46	14 2	41
1936	59	78° 15 56	14 57 21° 45	45	49	32 5	58
40	3	36	28 1	2	52	49 9	16
44	7	58	41 4	20	56	7 12	33
48	12	20	54 7	39 51	59	25 15	52

Has no

Parallels.

on the

ecliptic.

STRICTURES.

Star positions are
got by the greatinstruments, and
are precisely sure.

Those of planets

are given by

theory, are much
less exact, and

even by the latest

tables most of

them are varying
more and morefrom the
observed places.

Vega, 5.

Date.	R. Asc.	Decl.	Long.	Lat.	
Jan. 1.	277°	38° n.	W 12°	61° n.	
1824	44	52 37	28 51	14 44	Has on
	26	45	41 52	55	
	28	46	51 54	28	
	30	47	58 55	59	
	32	48	0 57	28 44	the ecliptic
1834	49	37	0 59	5	
	36	50	1 0	48	
	38	51	3 2	38	
	40	52	10 4	30 44	no Aspect
	42	53	21 6	20	
1844	55	2	33 8	3	
	46	56	44 9	39	
	48	56	52 11	10 44	but the □,
	50	57	56 12	39	
	52	58	57 14	14	
1854	59	278° 47	57 15	55	
	56	0	59 17	43	
	58	1	4 19	35 44	and no
	60	3	14 21	26	
	62	4	26 23	11	
1864	5	10	38 24	50	
	66	6	48 26	21	
	68	7	53 27	51 44	Parallels.
	70	7	54 29	23	
	72	8	54 31	2	
1874	9	59 39	55 32	49	
	76	11	0 34	40	
	78	12	8 36	31 44	
	80	13	20 38	19	
	82	14	33 40	0	
1884	15	17	43 41	33	
	86	16	50 43	4	
	88	17	52 44	33 44	The ♀ and some
	90	18	53 46	10	
1892	19	6	53 47	55	of the planets
	94	20	57 49	45	
	96	21	4 51	37	
	98	22	15 53	26 44	may reach the *
1900	23	28	28 55	16	of this star, mostly
	04	25	47 58	14	when in W with
	08	27	52 1	19 44	
	12	29	17 41	49	
	16	31	12 8	33	2-3° lat. n.; and its Δ
1920	33	18	36 11	25 44	when in ☽
	24	35	51 14	12	with like lat. s.
	28	37	52 18	7	
	32	39	0 21	47 44	
1936	41	32 43	4	9	
	40	43	12 25		
	44	45	26 28		
	48	47	40 31		
		31	41 44	6	
		54 35	0		

Arcturus, 6.

Date.	R. Asc.	Decl.	Long.	Lat.	* Δ 27°	* Δ 16°	Par. decl. n.
	211°	20° n.	21°	30° n.	8 29°	Δ 0°	
Jan. 1.	1	"	1	"	1	"	1
1824	54 48	6 2	46 57	51 30	24 21	9 33	40 13 19 47
26	56 8	5 28	48 38	25 20	25 27	11 12	16 38 5 21 55
28	57 22	4 55	50 10	15 28	30 27	51 54	35 24 6
30	58 34	4 22	51 39	51 15	28 57	14 22	33 29 31
32	59 212° 48	3 46	53 9	10 30	24 24	15 54	30 33 29 27
1834	1 9	3 6	54 46	51 31	59 17	33 27	14 32 46
36	2 35	2 24	56 29	51 0	33 40	19 19	23 41 36 19
38	4 6	1 41	58 19	50 55	35 28	21 10	20 10 39 50
40	5 37	0 59	0 22°	11 49	37 17	23 4	17 1 42 59
42	7 5	0 20	2 0	44 40	39 42	24 56	14 19 45 41
1844	8 28	59 19°	45 3	43 40	40 45	26 40	12 4 47 56
46	9 44	59 12	5 18	50 35	42 18	28 18	9 57 50 3
48	10 56	58 39	6 48	30 43	46 29	50 7	38 52 22
50	12 9	58 4	8 17	25 45	13 31	21 4	55 55 5
52	13 27	57 25	9 50	20 46	44 32	56 1	28° 40 58 1 20
1854	14 53	56 44	11 34	50 48	26 34	42 58	28° 12 1 48
56	16 21	56 2	13 19	11 50	9 36	30 54	46 5 14
58	17 53	55 19	15 11	5 51	59 38	24 51	27 8 33
60	19 22	54 39	17 2	50 0	53 47	40 16	48 39 11 21
62	20 46	54 2	18 47	49 55	55 30	42 4	446 17 13 43
1864	22 4	53 29	20 24	50 57	543	43 44	12 15 48
66	23 17	52 56	21 56	45 45	58 34	45 17	42 1 17 59
68	24 29	52 22	23 24	40 0	28° 146	48 39	29 20 31
70	25 46	51 45	24 56	49 35	1 31	48 21	36 28 23 32
72	27 8	51 41	26 35	30 3	7 50	2 33	6 26 54
1874	28 37	50 22	28 21	25 4	51 51	29 51	36 30 24
76	30 39	8 49	30 12	19 6	40 53	44 26	18 33 42
78	31 39	48 58	32 349	14 8	29 55	37 23	24 36 36
80	33 21	5 33	50 9	10 10	14 57	27 20	57 39 3
82	34 24	47 47	35 30	4 11	52 59	17° 9 18	50 41 10
1884	35 39	47 14	37 349	0 13	22 0	43 16	44 43 16
86	36 51	46 41	38 32	48 48	55 14	47 2	16 14 22 45 38
88	38 5	46 40	5 2	50 16	17 3	47 11	32 48 28
90	39 26	45 25	41 39	45 17	52 5	25 8	17 51 43
1892	40 53	44 43	43 23	40 19	34 7	12 4	51 55 9
94	42 23	44 0	45 12	48 35	21 9	4 1	27° 28 58 2° 32
96	43 55	43 19	47 4	29 23	11 10	58 58	30 1 30
98	45 22	42 40	48 53	24 24	57 12	48 55	57 4 3
1900	46 44	42 5	50 35	19 26	37 14	33 53	48 6 12
04	49 12	41 0	53 39	48 9	29 37	17 41	49 30 10 30
08	51 43	39 47	56 56	42 47	59 32	36 20	48 43 45 16 15
12	54 38	38 22	0	12 49	36 2	24 23	36 59 23 1
16	57 57	213° 40	37 1	3 55	39 39	40 28	10 31 16 28 44
1920	0	21 35	52 7	16 29	42 57	31 35	27 2 32 58
24	2 46	34 46	10 16	19 45	52 34	39 22	27 37 33
28	5 25	33 28	13 27	47 9	48 59	37 54	16 14 43 46
32	8 26	32 3	17 5	46 59	52 33	41 37 9 42	50 18
1936	11 7	30 49	20 26	4 55	46 44	58 4	26° 28 55 3° 32
40	13 48	29 35	23 47	39 39	0 48	18 59	17 0 3° 43
44	16 29	28 22	27 8	29 2	29 13	51 40	54 9 5 51
48	19 10	27 9	30 29	19 5	27 55	3 49	3 10 57

Rigel, 7.

Date.	R. Asc.	Decl.	Long.	Lat.	* P 20°	* Q 8°	Par. decl. s.	
	76°	8° s.	II 14°	31° s.	9° 20°	Q 8°	21°	8°
Jan. 1.	'	"	/	"	/	"	/	"
1824	31	30° 24	40° 22	30° 8	45° 7	21° 37	39° 33	14° 26
	26	32	56	37° 24	10	44° 9	0° 39	21
	28	34	16	33° 25	44	43° 10	33° 40	54° 33
	30	35	32	26° 27	12	42° 12	2° 42	23° 32
	32	36	49	15° 28	42	41° 13	31° 43	53° 32
1834	38	12° 24	1° 30	19° 8	39° 15	7° 45	31° 31	39° 28
	36	39	41° 23	45° 32	3	38° 16	50° 47	15° 30
	38	41	16	32° 33	52	37° 18	39° 49	5° 30
	40	42	51	21° 35	44	36° 20	30° 50	57° 29
	42	44	26° 23	15° 37	33	35° 22	20° 52	47° 34
1844	45	55	12° 39	17° 8	35° 24	3° 54	32° 32	32° 28
	46	47	16	9° 40	52	34° 25	37° 56	6° 30
	48	48	30° 23	3° 42	19	32° 27	4° 57	34° 29
	50	49	50° 22	53° 43	51	32° 28	36° 59	6° 28
	52	51	10	40° 45	25	31° 30	9° 0	41° 28
1854	52	37	25° 47	6° 8	30° 31	50° 2	22° 27	27° 32
	56	54	10° 22	10° 48	54	29° 33	38° 4	11° 26
	58	55	46° 21	59° 50	46	28° 35	29° 6	3° 26
	60	57	21	52° 52	36	27° 37	19° 7	54° 25
	62	58	51	48° 54	22	26° 39	4° 9	39° 54
1864	o	77°	15	45° 56	0° 8	25° 40	41° 11	18° 53
	66	1	34° 21	41° 57	31	24° 42	12° 12	49° 45
	68	2	50	32° 59	15° 0	23° 43	41° 14	19° 25
	70	4	9	20° 0	32	22° 45	12° 15	51° 24
	72	5	34° 21	5° 2	11	21° 46	51° 17	30° 24
1874	7	6° 20	51° 3	57° 8	20° 48	36° 19	17° 23	20° 36
	76	8	41	38° 5	48	19° 50	27° 21	9° 22
	78	10	17	30° 7	39	18° 52	18° 23	0° 27
	80	11	49	26° 9	26	17° 54	5° 24	48° 20
	82	13	15° 20	23° 11	6	17° 55	45° 26	28° 20
1884	14	34	19° 12	39° 8	16° 57	17° 28	2° 22	15° 37
	86	15	51	13° 14	9	15° 58	21° 46	29° 38
	88	17	9° 20	2° 15	39	14° 0	16° 31	27° 38
	90	18	32° 19	47° 17	16	13° 1	52° 32	39° 20
1892	20	1	32° 19	0	12	3° 10	36° 34	24° 20
	94	21	36	19° 20	50° 8	11° 5	25° 36	14° 19
	96	23	12	10° 22	41	10° 7	16° 38	6° 19
	98	24	45	5° 24	30	9° 9	5° 39	56° 18
1900	26	13° 19	2° 26	13	8	10° 46	41° 39	49° 11
	04	28	51° 18	54° 29	17° 8	7° 13	51° 44	43° 18
	08	31	29	31° 32	20	5° 16	53° 47	47° 17
	12	34	30° 18	2° 35	51	3° 20	23° 51	19° 16
	16	37	42° 17	45° 39	34° 8	1° 24	5° 55	2° 15
1920	40	35	40° 42	55° 7	59° 27	26° 58	10° 25	15° 22
	24	43	9	28° 45	55	57° 30	25° 1	25° 14
	28	45	54° 17	1° 49	6	56° 33	35° 4	37° 13
	32	49	2° 16	35° 52	45	54° 37	13° 8	17° 12
1936	51	52	19° 56	2° 7	52° 40	29° 11	35° 11	39° 48
	40	54	41° 16	3° 59	20°	50° 43	46° 14	53° 10
	44	57	31° 15	48° 2	37	48° 47	3° 18	12° 10
	48	o	78° 22° 15	33° 5	56	46° 50	21° 21	31° 9
								44° 50
								16

α Eridani, 8.

Date.	R. Asc.	Decl.	Long.	Lat.	*	*	
Jan. 1.	22°	58° s.	12°	59° s.	1°	23°	
/	/	/	/	/	/	/	
1824	47 31	7 52	48 58	22 12	44 18	53 37	
26 48	30 7	18 50	42 12	46 12	55 7	55 17	
28 49	25 6	45 52	16 12	47 12	43 56	56 50	
30 50	24 6	13 53	48 13	49 13	21 58	14 48	Has no
32 51	27 5	39 55	18 13	50 13	48 59	48 24°	
1834	52 40	5 256	58 22	14 52	36 1	24° 19	
36 53	58 4	22 58	13° 43	14 54	25 3	1	
38 55	17 3	40 0	34 14	56 14	18 4	51	
40 56	31 2	59 2	28 14	58 12°	12 6	44	
42 57	38 2	20 4	18 15	0 15	4 8	33	
1844	58 38	1 45	6 22	1 15	50 10	15	
46 59	23° 34	1 12	7 39	15 3	29 11	49	
48 0	30 0	40 9	10 15	5 15	3 13	18	
50 1	32 0	7 10	41 16	6 16	36 14	46	
52 2	42 59	31 12	16 16	8 16	14 16	18	
1854	3 59	58 13	59 22	9 16	59 17	58	
56 5	18 58	10 15	49 17	11 17	19 53	19 45	
58 6	34 57	28 17	42 17	13 17	21 47	21 37	
60 7	43 56	49 19	34 17	15 17	23 40	23 28	
62 8	45 56	13 21	20 17	17 17	25 27	25 14	
1864	9 41	55 23	0 22	19 17	26 8	26 51	
66 10	37 55	7 24	32 18	20 44	28 28	21	
68 11	36 54	35 26	2 18	22 18	29 29	46	
70 12	44 54	0 27	36 19	23 19	31 55	31 16	
72 13	59 53	21 29	16 19	25 19	32 39	32 53	
1874	15 18	52 31	5 22	27 19	34 30	34 39	
76 16	36 52	0 32	56 19	29 22	36 36	30	
78 17	47 51	18 34	50 20	31 17	38 38	23	
80 18	51 50	41 36	38 20	33 20	40 7	40 10	
82 19	48 50	7 38	20 20	34 20	41 52	41 47	
1884	20 43	49 39	54 22	36 21	43 30	43 18	
86 21	42 49	4 41	24 21	38 13	44 4	44	
88 22	46 48	29 42	56 21	39 39	46 38	15	
90 23	59 47	51 44	34 21	41 21	47 17	52	
1892	25 17	47 11	46 21	43 21	49 44	38	
94 26	35 46	29 48	11 22	44 21	51 55	27	
96 27	49 45	49 50	6 22	46 22	53 51	20	
98 28	55 45	10 51	56 22	48 22	55 43	8	
1900	29 54	44 36	53 22	50 22	56 29	49	
04 31	45 43	32 56	46 23	53 23	59 40	51	
08 33	58 42	22 59	14° 52	22 23	56 51	25° 53	
12 36	34 41	1 3	25 24	0 28	6 28	22	
16 38	58 39	41 7	11 24	4 19	10 10	3	
1920	40 55	38 32	10 35	7 25	13 48	23	
24 42	50 37	28 13	38 25	10 55	16 55	21	
28 45	13 36	14 16	52 22	14 26	19 13	30	
32 47	49 34	51 20	33 26	17 17	23 59	7	
1936	49 59	33 40	23 54	21 27	26 24	23	
40 52	10 32	28 27	14 27	24 27	29 49	39	
44 54	19 31	17 30	35 28	28 28	32 14	55	
48 56	29 30	5 33	56 28	31 28	36 40	12	

Procyon, 9.

Date.	R. Asc.	Decl.	Long.	Lat.	* *	* *	Par. decl. n.	
	112°	5° n.	23°	15° s.	8 24°	22°	14°	15°
	/	/	/	/	/	/	/	/
Jan. 1.								
1824	31	32 40	7 21	47 59	5 42	10 1	24 21	49 38
	26	33 6 39	44 23	26	6 43	49 3	3 20	54 39
	28	34 33	23 24	57	7 45	20 4	34 20	4 39
	30	35 56 39	6 26	24	9 46	48 6	1 19	21 40
	32	37 20 38	53 27	53	10 48	16 7	29 18	46 41
1834	38	50	42 29	28 59	10 49	51 9	4 18	16 41
	36	40	28	30 31	10	11 51	33 10	46 17
	38	42 11 38	15 32	58	12 53	22 12	34 17	2 42
	40	43 56 37	56 34	49	13 55	13 14	25 16	13 43
	42	45 39	33 36	37	15 57	2 16	13 15	17 44
1844	47	16 37	9 38	19 59	17 58	25° 44 17	55 14	19 45
	46	48 46 36	37 39	54	18 0	19 19	29 13	0 47
	48	50 10	29 41	23	19 1	48 20	57 12	42
	50	51 34	14 42	51	21 3	16 22	26 12	3 47
	52	53 2 36	2 44	24	23 4	49 23	58 11	29 48
1854	54	38 35	50 46	4 59	24 6	30 25	38 10	55 49
	56	56 19	35 47	51	26 8	17 27	24 10	14 49
	58	4 35	16 49	41	28 10	7 29	14 9	26 50
	60	59 113° 48	34 51	30	30 11	57 31	3 8	31 51
	62	1 26	30 53	14	32 13	51 32	37 7	33 52
1864	2	57 34	7 54	50 59	33 15	18 34	22 6	37 53
	66	4 22 33	47 56	20	35 16	47 35	52 5	49 54
	68	5 45	32 57	47	36 18	15 37	19 5	9 54
	70	7 11	19 59	24° 17	37 19	45 38	49 4	35 55
	72	8 44 33	8 0	54	38 21	23 40	26 4	3 55
1874	10	24 32	54 2	39 59	39 23	8 42	10 3	26 56
	76	12 8	37 4	29	41 24	58 44	0 2	41 57
	78	13 53 32	16 6	19	42 26	48 45	50 1	49 58
	80	15 33 31	53 8	5	43 28	34 47	36 0	13° 52 59
	82	17 7	30 9	44	44 30	14 49	15 59	16° 4
1884	18	34 31	9 11	16 59	46 31	46 50	46 59	5 0
	86	19 58 30	52 12	44	47 33	14 52	14 58	22 1
	88	21 23	38 14	13	48 34	44 53	43 57	46 2
	90	22 54	26 15	49	50 36	19 55	18 57	12 2
1892	24	32 30	13 17	32 59	51 38	3 57	1 56	35 3
	94	26 15 29	56 19	21	53 39	52 58	50 55	51 4
	96	28 0	36 21	11	55 41	43 0	40 54	59 5
	98	29 42 29	12 22	59	56 43	31 2	27 54	1 5
1900	31	18 28	47 24	40 59	16° 58 45	12 4	8 53	2 6
	04	34 10 28	7 27	41 0	2 48	14 7	9 51	22 8
	08	37 1 27	40 30	41	5 51	15 10	8 50	10 9
	12	40 18 27	12 34	9	7 54	42 13	35 48	54 11
	16	43 47 26	31 37	49	10 58	26° 23 17	15 47	10 12
1920	46	56 25	44 41	8	13 1	42 20	34 45	17 14
	24	49 44 25	9 44	5	0 16	40 23	30 43	49 16
	28	52 44 24	44 47	15	19 7	50 26	39 42	39 17
	32	56 10 24	11 50	51	22 11	27 30	15 41	10 18
1936	59 114° 15 23	34 54	6		25 14	43 33	30 39	37 20
	40 2	20 22	56 57	21 0	28 17	58 36	44 38	2 21
	44 5	24 22	19 0	36	31 21	14 39	58 36	26 23
	48 8	30 21	41 3	52	35 24	30 43	14 34	51 25

β Centauri, 10.

Date.	R. Asc.	Decl.	Long.	Lat.	* $\cong 5^\circ$	*	
Jan. 1.	207°	59° s.	ℳ 21°	44° s.	11 29	V° 7°	
	1 11 11	1 11 11	1 11 11	1 11 11	1 11 11	1 11 11	
1824	52 42 31	11 21 9	6 56 29	6 40 12	37		
26	54 55 31	11 22 48	6 57 31	6 21 14	16		
28	56 57 32	11 24 21	6 58 32	6 54 15	47		
30	58 58 32	11 25 49	6 59 34	6 24 17	15		
32	0 35 33	11 27 19	7 0 35	6 54 18	43		Has no
1834	2 25 33	11 28 53	7 2 37	6 30 20	16		
	36 4	11 34 30	6 36 39	6 14 21	57		
38	6 33 35	11 32 25	6 44 41	6 4 23	46		
40	8 51 35	11 34 16	6 42 42	6 57 25	36		
42	11 12 36	11 36 57	6 44 44	6 46 27	24		
1844	13 29 37	11 37 48	6 46 46	6 30 29	6		
	46 15	11 37 36	6 48 48	6 5 30	40		
48	17 30 38	11 38 40	6 49 49	6 35 32	8		
50	19 18 38	11 42 20	6 51 51	6 5 33	36		
52	21 6 39	11 43 53	7 1 52	6 38 35	8		
1854	23 2 39	11 45 52	7 4 54	6 20 36	48		
	56 25	9 40 32	7 21 56	6 8 38	34		
58	27 25 41	12 49 12	7 58 40	6 0 40	24		
60	29 47 41	12 51 2	7 59 58	6 52 42	13		
62	32 6 42	12 52 47	7 1 60	6 37 43	57		on the
1864	34 16 42	11 54 24	7 3 54	6 15 45	33		
	66 36	15 43 26	7 55 54	6 18 46	47	3	
68	38 4 43	15 57 23	7 19 6	6 15 48	30		
70	39 52 44	15 58 22°	7 20 7	6 47 50	0		
72	41 45 45	9 0 32	7 21 9	6 26 51	37		ecliptic.
1874	43 49 45	9 2 17	7 22 11	6 13 53	22		
	76 46	3 46 28	6 4 6	6 23 13	3 55	9	
78	48 25 47	7 5 59	6 24 14	6 56 57	1		
80	50 46 47	7 45	6 25 16	6 44 58	8° 47	—♦♦—	
82	53 0 48	9 25 7	6 26 18	6 24 0	26		
1884	55 3 48	9 10 57	6 27 19	6 57 1	57		
	86 56	55 49 15	12 26	6 28 21	27 3	24	
88	58 43 49	13 55	6 29 22	6 57 4	53		The real
90	0 34 50	15 31	6 29 24	6 34 6	28		Astrology on
1892	2 35 51	17 14	7 30 26	6 18 8	10		the celestial
94	4 46 51	19 4	7 31 28	6 8 9	59		sphere is in
	96 7	7 52 24	20 55	6 33 30	1 11	49	
98	9 29 53	0 22 43	20 34 31	6 50 13	36		practice mere
1900	11 47 53	24 25	20 35 33	6 33 15	17		'strology, a
04	15 49 54	27 28	7 36 36	6 38 18	19		poor thing with
08	19 27 55	30	7 38 39	6 41 21	19		little head to it.
	12 23	34 56 59	33 59	6 40 43	12 24	46	
16	28 17 58	37 41	6 42 46	6 56 28	26		true Starry
1920	32 47 59	60° 41	6 44 50	6 18 31	45		Science on high
24	36 37 0	44 0 7	6 46 53	6 18 34	41		which astronomy
28	40 21 1	47 10	6 48 56	6 30 37	49		& the other thing
	32 44	44 2 52	50 47	6 50 0	9 41	25	both fail to show.
1936	48 52 4	0 54 3	52 3	6 27 44	39		
40	53 2 5	8 57 7	6 54 6	6 45 47	53		
44	57 12 6	16 0 23°	6 56 10	6 3 51	8		
48	1 25 7	24 3	6 58 13	6 22 54	23		

Altair, 11.

Date.	R. Asc.	Decl.	Long.	Lat.	* 1° 4°	* 24°	Par. decl. n.	
	295°	8° n.	W 29°	29° n.		24°	21°	8°
Jan. 1.	/	/	/	/	/	/	/	/
1824	33 10 24	38 17	52 18	34 17	8 18	36 33	8 26	52
	26 34 25	2 19	33	33 18	49 20	17 34	19 25	41
	28 36 0	23 21	7	33 20	23 21	51 35	21 24	39
	30 37 18	40 22	37	33 21	53 23	21 36	8 23	52
	32 38 25	54 24	8	33 23	23 24	52 36	44 23	16
1834	40 1 26	6 25	45 18	31 25	0 26	30 37	13 22	47
	36 41	31	19 27	29	31 26	44 28	15 37	43 22
	38 43 6	35 29	20	30 28	35 30	6 38	23 21	37
	40 44 26	55 31	13	30 30	27 31	58 39	18 20	42
	42 46 19 27	19 33	3	30 32	18 33	49 40	26 19	34
1844	47 50 27	43 34	47 18	30 34	2 35	33 41	37 18	23
	46 49 14	28	5 36	24	30 35	38 37	9 42	41 17
	48 50 32	24 37	55	30 37	9 38	40 43	35 16	25
	50 51 50	39 39	25	29 38	39 40	11 44	15 15	45
	52 53 12 28	51 41	0	29 40	14 41	46 44	43 15	17
1854	54 40 29	4 42	42 18	29 41	56 43	28 45	13 14	47
	56 56 14	19 44	31	28 43	45 45	17 45	51 14	9
	58 57 29	39 46	23	28 45	37 47	10 46	42 13	18
	60 59 28 30	2 48	15	28 47	29 49	1 47	49 12	11
	62 1 0	26 50	1	28 49	15 50	48 48	58 11	2
1864	2 26 30	49 51	40 18	28 50	54 52	26 50	7 9	53
	66 3 46	31	9 53	12	28 52	26 53	59 51	5 8
	68 5 4	25 54	42	27 53	55 55	29 51	48 8	12
	70 6 24	38 56	15	27 55	28 57	2 52	20 7	40
	72 7 50	31 51	55	26 57	8 58	42 52	49 7	11
1874	9 22 32	5 59	42 18	26 58	55 0	25 0	29 53	24 6
	76 10 59	23 1	≈ 0°	34	25 0	47 2	21 54	11 5
	78 12 36	32 45	3	26	25 2	39 4	14 55	12 4
	80 14 10	33 5	15	25 4	27 6	2 56	23 3	37
	82 15 38	34 6	56	25 6	8 7	43 57	34 2	26
1884	16 59 33	55 8	30 18	25 7	42 9	17 58	36 1	24
	86 18 18	34	12 10	0	25 9	12 10	47 59	22 24
	88 19 36	26 11	31	24 10	43 12	19 0	0 0	0
	90 21 0	39 13	9	24 12	21 13	57 0	29 59	31
1892	22 31 34	52 14	54	24 14	6 15	42 1	1 58	59
	94 24 6 35	9 16	45 18	24 15	57 17	33 1	44 58	16
	96 25 44	35 31	18	37	23 17	49 19	25 2	42 57
	98 27 19	35 20	27	23 19	39 21	15 3	51 56	9
1900	28 49 36	19 22	11	23 21	22 22	59 5	3 54	57
	0 31 31	37 0 25	17	23 24	29 26	5 7	3 52	57
	08 34 10	37 28 28	22 18	22 27	34 29	11 8	12 51	48
	12 37 13	37 57	31	55	22 31	6 32	44 9	22 50
	16 40 28	38 41	35	40	21 34	51 36	29 11	23 48
1920	43 25	39 29	39	3	21 38	14 39	53 13	45 46
	24 46 2 40	5 42	5	20 41	15 42	54 15	27 44	33
	28 48 48	40 32	45	18 18	20 44	29 46	8 16	29 43
	32 51 58	41 6	48	59	19 48	9 49	48 17	55 42
1936	54 51	41 43	52	18	19 51	28 53	8 19	38 40
	40 57 297°	43 42	21 55	37	18 54	47 56	28 21	21 38
	44 0 36	42 59	58	1° 57	18 58	7 59	26° 48	23
	48 3 29	43 38	2	18	17 1	27 3	8 24	54 35

α Orionis, 12.

Date.	R. Asc.	Decl.	Long.	Lat.	* Π 26°	* 16° s.	* φ 27°	* Ω 24°	* φ 18°	Par. decl. n. ℳ 11°
Jan. 1.	86°	7° n.	Π 26°	16° s.	φ 27°	Ω 24°	φ 18°	ℳ 11°		
	"	"	"	"	"	"	"	"	"	"
1824	24 58	22 0	18 53	3 39	9 57	0 47	8 12	52		
26	26 35	21 56	19 45	1 40	49 58	25° 41	3 12	57		
28	28 5	53 21	18 042	22 0	14	0 13	0			
30	29 32	54 22	48 3	0 43	52 1	44 47	4 12	56		
32	30 58	21 59	24 17 ²	59 45	20 3	13	16	44		
1834	32 32	22 7	25 53	56 46	56 4	50	34	26		
36	34 12	16 27	36	55 48	39 6	34 47	54 12	6		
38	35 58	22 29	26	54 50	29 8	24 48	7 11	53		
40	37 46	25 31	18	53 52	21 10	15	16	44		
42	39 32	23 33	7 ²	52 54	10 12	5	15	45		
1844	41 12	22 20	34 50	51 55	53 13	48	12	48		
46	42 44	16 36	26	51 57	28 15	24 48	7 11	53		
48	44 11	16 37	56	50 58	58 16	54	10	50		
50	45 38	19 39	25	49 0	27 18	23	17	43		
52	47 9	26 40	59 2	48 2	0 19	57	20	40		
1854	48 46	22 35	12 40	47 3	41 21	38 48	51 11	9		
56	50 31	42 44	28	46 5	29 23	27 49	7 10	53		
58	52 19	46 46	19	45 7	20 25	18	17	43		
60	54 6	45 48	10	44 9	11 27	9	18	42		
62	55 48	42 49	55 2	43 10	56 28	54	14	46		
1864	57 23	22 38	51 33	42 12	34 30	32 49	9 10	51		
66	58 51	37 53	4	40 14	5 32	4	11	49		
68	0 17	38 54	33	40 15	33 33	33	14	46		
70	1 46	44 56	5	39 17	5 35	5	28	32		
72	3 22	52 57	44 2	38 18	44 36	44 49	46 10	14		
1874	5 23	0 59	27° 30	37 20	30 38	30 50	3 9	57		
76	6 52	5 1	21	36 22	20 40	21	14	46		
78	8 40	5 3	12	35 24	12 42	13	17	43		
80	10 24	23 2	4	59	34 25	59 44	0	14		
82	12 1	22 58	6	39 2	33 27	38 45	40	8		
1884	13 31	5 8	12	33 29	11 47	13 50	5 9	55		
86	14 58	22 56	9	41	32 30	40 48	43	9	51	
88	16 25	23 1	11	12	31 32	10 50	13	20	40	
90	17 58	8 12	48	30 33	47 51	50	36	24		
1892	19 39	16 14	32 2	28 35	31 53	34 50	53 9	7		
94	21 26	22 16	22	28 37	20 55	24 51	6 8	54		
96	23 14	24 18	14	26 39	12 57	16	12	48		
98	24 59	23 21	20	25 41	1 59	5	9	51		
1900	26 39	17 21	45	25 42	43 0	48 51	3 8	57		
04	29 37	12 24	50 2	23 45	47 3	52 50	59 9	1		
08	32 35	23 27	53	21 48	50 6	56 51	22 8	38		
12	35 59	23 37	31	23	19 52	20 10	27 51	53	7	
16	39 34	38 35	6	17 56	2 14	10 52	0	0		
1920	42 50	30 38	28	16 59	23 17	32 51	47	13		
24	45 45	30 41	28 2	14 2	29° 24	20	32 51	51	8	
28	48 50	23 43	44	39	12 5	35 23	44 52	20 7	40	
32	52 22	54 48	18	10 9	13 27	23	44	16		
1936	55 33	57 51	35	8 12	30 30	40 52	53 7	7		
40	58 44	23 59 54	52 2	6 15	47 33	58 53	1 6	59		
44	1 56	24 1	58	10	4 19	4 37	16	7		
48	5 8	2 1	28°	29	2 22	22 40	35	13	47	

α Crucis, 13.

Date.	R. Asc.	Decl.	Long.	Lat.	*	*	
Jan. 1.	184°	62° s.	III 9°	52° s.	≈ 5°	13°	
	I II	I II	I II	I II	I II	I II	
1824	13 24	7 27	26 21 51	36 20	48 31	54	
26	15 14	8 6	28 0	37 22	30 33	30	
28	16 53	8 43	29 32	37 24	33 35	1	
30	18 22	9 18	31 0	38 25	33 36	28	
32	19 44	9 55	32 30	39 27	4 37	56	Has no
1834	21 7	10 33	34 35 1	40 28	40 39	27	
	36 22	36 11	15 35	45	41 30	24 41	7
38	24 16	11 59	37 38	45 32	24 42	53	
40	26 5	12 44	39 25	43 34	8 44	43	
42	27 59	13 27	41 14	44 35	58 46	31	
1844	29 51	14 8	42 57 51	44 37	41 48	12	
	46 31	35 14	45 44	30	44 39	15 49	45
48	33 7	15 21	46 0	46 40	48 51	13	
50	34 31	15 56	47 28	46 42	17 52	40	
52	35 53	16 34	49 1	47 43	51 54	11	
1854	37 20	17 15	50 50	41 51	48 45	33 55	49
	56 38	56 17	58 52	28	49 47	22 57	34
58	40 43	18 43	54 19	50 49	15 59	23	
60	42 37	19 27	56 9	51 51	6 14°	12	
62	44 31	20 8	57 54	51 52	51 2	56	
1864	46 18	20 59	10° 30 51	52 54	30 4	31	
	66 47	54 21	23 1	0	53 56	2 5	59
68	49 21	58 2	28	54 57	31 7	25	
70	50 43	22 35	3 59	54 59	6° 4	8 55	
72	52 8	23 15	5 37	55 0	43 10	31	
1874	53 41	23 57	7 22	56 2	30 12	14	
	76 55	25 24	42 9	11	57 4	21 14	1
78	57 18	25 26	11 3	58 6	15 15	51	
80	59 185°	13 26	9 12	50 51	59 8	3 17	36
82	1 326	48 14	29 52	0 9	43 19	15	
1884	2 44	27 24	16 1	0 11	16 20	45	
	86 4	13 28	0 17	29	1 12	46 22	12
88	5 36	28 36	18 58	2 14	17 23	40	
90	6 59	29 15	20 34	3 15	54 25	13	
1892	8 30	29 29	56 22	16 52	3 17	38 26	55
94	10 12	30 41	24 24	6	4 19	29 28	42
	96 12	2 31	25 25	56	5 21	22 30	31
98	13 58	32 8	27 45	6 23	12 32	17	
1900	15 51	32 49	29 27	7 24	56 33	58	
04	19 7	34 32	32 29	8 28	1 36	57	
08	21 54	35 15	35 31	10 31	5 39	56	
	12 25	1 36	39 38	59	12 34	37 43	21
16	28 46	38 8	42 40	13 38	21 46	59	
1920	32 28	39 27	46 0	15 41	44 50	16	
24	35 31	40 38	48 57 52	16 44	44 53	10	
28	38 20	41 55	52 7	18 47	57 56	17	
	32 41	42 43	22 55	43	20 51	37 59	15° 50
1936	44 58	44 41	58 11° 59	21 54	55 3	2	
40	48 15	45 59	2 14 52	23 58	14 6	14	
44	51 33	47 18	5 30	24 1	33 9	27	
48	54 53	48 36	8 47	26 4	52 12	41	

Aldebaran, 14.

Date.	R. Asc.	Decl.	Long.	Lat.	* Π 7°	* Ω 7°	Par. decl. n.		
	66°	16° n.	Π 7°	5° s.	9° 7°	Ω 7°	8 14°	Ω 15°	
Jan. 1.	' "	' "	' "	' "	' "	' "	' "	' "	
1824	27 45	8 56	20 428	47 29	11 10	57 18	37 41	23	
	29 29	9 6	21 43	46 30	50 12	36 19	28 40	32	
	31 4	16 23	16 46	46 32	23 14	9 20	15 39	45	
	32 36	28 24	46 46	46 33	53 15	39 21	0 39	0	
	34 7	9 45	26 16	45 35	23 17	9 21	53 38	7	
1834	35 45	10 427	53 28	44 37	0 18	46 22	49 37	11	
	36 37	31 26	29 36	43 38	43 20	29 23	53 36	7	
	39 23	10 46	31 26	43 40	33 22	19 24	54 35	6	
	41 17	11 43	17	42 42	24 24	10 25	57 34	3	
	43 10	17 35	7	42 44	14 26	0 26	52 33	8	
1844	44 56	27 36	50 28	41 45	57 27	43 27	41 32	19	
	46 46	34 36	38 26	41 47	33 29	19 28	26 31	34	
	48 48	7 11	47 39	41 49	3 30	49 29	11 30	49	
	50 49	38 12	24 25	41 50	32 32	18 30	0 30	0	
	52 51	13 21	42 59	40 52	5 33	51 30	55 29	5	
1854	52 52	12 42	44 40	40 53	47 35	33 31	55 28	5	
	56 54	46 13	3 46	28	39 55	35 37	21 32	57 27	3
	58 56	40 22	48 20	38 57	26 39	13 34	1 25	59	
	60 58	67° 34	36 50	10	38 59	8° 17 41	3 34	57 25	3
	62 0	23 46	51 55	38 1	2 42	49 35	46 24	14	
1864	2 3	13 56	53 33	28	37 2	40 44	27 36	36 23	24
	66 3	37 14	6 55	4	37 4	11 45	58 37	21 22	39
	68 5	8 20	56 33	36 5	40 47	27 38	9 21	51	0
	70 6	42 37	58 5	35 7	12 48	59 39	0 21	0	0
	72 8	23 14	57 59	44 8	35 8	51 50	38 39	56 20	4
1874	10 11	15 19	1 30	28	34 10	37 52	24 41	0 19	0
	76 12	4 38	3 21	34 12	28 54	15 42	2 17	58	
	78 13	59 15	53 5	13	33 14	19 56	6 43	0 17	0
	80 15	49 16	5 7	0	33 16	7 57	54 43	52 16	8
	82 17	33 14	8 40	33 17	47 59	8° 34 44	39 15	21	
1884	19 8	23 10	11 28	32 19	18 1	54 45	25 14	35	
	86 20	40 36	11 42	32 20	49 2	36 46	11 13	49	
	88 22	12 16	52 13	13	31 22	19 4	6 47	2 12	58
	90 23	50 17	12 14	50	30 23	56 5	43 47	58 12	2
1892	25 37	33 16	33	30 25	40 7	27 48	59 11	1	
	94 27	29 17	53 18	23 28	29 27	30 9	17 49	59 10	1
	96 29	23 18	9 20	15	28 29	21 11	9 50	59 9	1
	98 31	16 21	21 22	4	28 31	10 12	58 51	53 8	7
1900	33 2	31 23	47	28 32	53 14	41 52	41 7	19	
	04 36	8 18	51 26	51	25 35	57 17	45 54	10 5	50
	08 39	19 19	25 29	54 28	26 39	0 20	48 55	53 4	7
	12 42	53 20	6 33	25	25 42	31 24	19 57	52 2	8
	16 46	42 36	37 8	24 46	14 28	2 59	15° 47 0	14° 38	
1920	50 10	20 55	40 30	23 49	35 31	24 1	22 58	14° 38	
	24 53	15 21	19 43	29 28	22 52	35 34	23 2	53 57	7
	28 56	68° 30 21	56 46	41	21 55	46 37	35 4	41 55	19
	32 0	14 22	35 50	19	20 59	9° 25 41	14 6	41 53	19
1936	3 36	23 45	37	19 2	42 44	31 8	23 51	37	
	6 59	19 56	0 52	28	18 5	58 47	47 9	21 50	39
	10 22	23 59	12	17 9	18 51	7 11	46 48	14	
	13 46	24 26	3 31	16 12	36 54	25 13	27 46	33	

Spica, 15.

Date.	R. Asc.	Decl.	Long.	Lat.	* δ 21°	* φ 21°	Par. decl. s.
	198°	10° s.	≈ 21°	2° s.	13 23	13 24	≈ 26°
	"	"	"	"	34 24	29 21	22 28
Jan. 1.	198°	10° s.	≈ 21°	2° s.	13 23	13 24	≈ 26°
1824	58 0	199° 59 14	30 23	13 2	34 24	29 21	22 28
26	35	15	6 24	53	34 26	9 23	38 33
28	2	10 15	40 26	32	32 27	48 25	17 34
30	3	44 16	13 28	11	29 29	27 26	55 36
32	5	18 16	48 29	50	26 31	5 28	34 37
1834	6	51 17	26 31	29 2	25 32	45 30	14 39
36	8	25 18	7 33	10	27 34	26 31	54 41
38	9	59 18	49 34	52	31 36	7 33	36 43
40	11	39 19	32 36	40	33 37	55 35	24 45
42	13	23 20	12 38	29	34 39	45 37	13 47
1844	15	1 20	49 40	12 2	34 41	27 38	56 49
46	16	31 21	23 41	47	34 43	3 40	31 50
48	17	56 21	56 43	17	35 44	32 42	1 52
50	19	20 22	30 44	46	35 46	2 43	30 53
52	20	47 23	7 46	19	36 47	35 45	3 55
1854	22	21 23	47 48	0 2	36 49	16 46	45 57
56	24	2 24	29 49	48	37 51	4 48	32 59
58	25	46 25	12 51	40	38 52	56 50	27 13
60	27	31 25	53 53	30	38 54	46 52	1 3
62	29	11 26	30 55	15	39 56	31 53	59 5
1864	30	44 27	5 56	53 2	39 58	9 55	37 6
66	32	10 27	38 58	24	40 59	40 57	8 8
68	33	33 28	12 59	22° 53	40 1	9 58	58 9
70	34	59 28	48 1	24	41 2	40 0	22° 11
72	36	31 29	27 3	3	42 4	19 1	47 13
1874	38	10 30	9 4	49 2	42 6	5 3	33 15
76	39	54 30	51 6	40	43 7	56 5	24 17
78	41	39 31	33 8	31	44 9	47 7	15 19
80	43	21 32	12 10	18	44 11	34 9	2 20
82	44	56 32	47 11	58	45 13	14 10	42 22
1884	46	24 33	20 13	31 2	45 14	47 12	15 24
86	47	48 33	53 15	0	46 16	16 13	44 25
88	49	12 34	28 16	30	46 17	46 15	14 27
90	50	42 35	7 18	6	47 19	23 16	50 29
1892	52	19 35	48 19	50	47 21	7 18	34 31
94	54	2 36	30 21	40 2	48 22	56 20	24 32
96	55	47 37	12 23	32	49 24	48 22	16 34
98	57	30 37	52 25	21	49 26	37 24	5 36
1900	59	200° 8 38	28 27	3	50 28	19 25	47 38
04	2	3 39	35 30	7	50 31	23 28	51 41
08	4	54 40	46 33	10 2	52 34	26 31	54 45
12	8	10 42	9 36	40	53 37	56 35	24 48
16	11	40 43	32 40	23	54 41	39 39	7 52
1920	14	52 44	43 43	44 2	56 45	0 42	28 56
24	17	42 45	49 46	43	57 48	0 45	27 59
28	20	40 47	5 49	54	58 51	11 48	28° 36
32	24	5 48	29 53	33 2	59 54	49 52	16 6
1936	27	10 49	43 56	23° 50 3	0 58	6 55	33 10
40	30	17 50	57 0	7	1 1	23 58	13 44
44	33	23 52	11 3	24	3 4	41 2	8 17
48	36	31 53	24 6	43	4 7	59 5	26 20

Antares, 16.

Date.	R. Asc.	Decl.	Long.	Lat.	*	*	
Jan. 1.	244°	26° s.	4° 7°	4° s.	≈ 7°	≈ 7°	
1824	39 46 2	18 37 32	18 37 32	24 46 24	54 12 21	Has no	
26 41 37	13 20 18		26 47 26	14 34 2			
28 43 20	24 21 51		28 48 28	15 7 35			
30 44 57	38 23 20		29 49 29	17 36 3			
32 46 35	56 24 50		31 50 18	18 6 33		Parallels	
1834 48 19 3	18 26 26	32	32 52 20	20 42 9			
36 50 10 3	41 28 9		34 53 34	21 26 53			
38 52 10 4	32 59 59		36 55 36	23 15 42			
40 54 12 2	22 50 50		38 56 38	25 7 34	on the		
42 56 12 2	37 33 40	32	39 56 39	27 56 23			
1844 58 6 4	49 23 23		41 57 29	29 39 6			
46 59 245° 51 5	0 36 58		43 58 43	30 15 41	ecliptic.		
48 1 30	13 38 32		44 59 44	32 44 11			
50 3 7	29 39 33		46 0 46	33 14 40			
52 4 49 5	50 41 31		47 1 47	35 47 14			
1854 6 38 6	13 43 12		49 2 49	36 28 55			
56 8 35	35 45 0		51 3 51	38 16 43	The ♫ and		
58 10 37 6	55 46 51		53 4 53	40 8 34	some of		
60 12 39 7	11 48 42	33	54 5 54	42 59 25	the planets		
62 14 35	23 50 27		56 6 56	44 44 10			
1864 16 23	34 52 4		58 7 58	45 21 47			
66 18 4 7	46 53 36		59 8 59	47 53 19	may at times		
68 19 41 8	1 55 4		59 9 1	48 21 47	reach its		
70 21 21	20 56 36	33	59 10 2	50 53 19	Par. decl.		
72 23 7 8	43 58 15		59 11 4	51 32 58			
1874 25 2 9	5 0 1		59 12 6	53 18 44			
76 27 3	26 1 52		59 14 8	55 9 35			
78 29 6	43 3 43		59 15 10	57 1 57			
80 31 4 9	56 5 30	33	59 15 11	59 48 13	— • —		
82 32 55 10	7 7 10		59 16 13	53 28 0	53		
1884 34 38	18 8 43		59 17 15	53 1 26			
86 36 15	32 10 12		59 18 16	30 3 55	Very many		
88 37 54 10	50 11 42		59 19 18	5 0 25	large errors		
90 39 38 11	11 13 19	33	59 20 19	7 36 1	each year		
1892 41 31	34 15 3		59 21 21	8 20 45	fudged		
94 43 30 11	55 16 53		59 22 23	10 10 35			
96 45 33 12	13 18 44		59 24 25	12 2 27	into the base		
98 47 33	27 20 33		59 25 26	14 51 15	Raskael		
1900 49 27 12	38 22 16	33	59 26 28	15 34 58	ephemeris,		
04 52 50 13	1 25 20		59 27 31	19 38 2	550 in 1898!		
08 56 9 13	38 28 23		59 29 34	22 41 5			
12 59 246° 58 14	22 31 53		59 31 38	25 11 35	Badkiel's		
16 4 2 14	56 35 36		59 33 41	29 54 18	has a tenth		
1920 7 46 15	18 38 57	33	59 35 45	32 16 39	as many —		
24 11 3 15	44 41 57		59 37 48	35 15 38	there is		
28 14 31 16	25 45 8		59 39 51	38 26 49			
32 18 29 17	7 48 46		59 41 55	42 5 27	some choice		
1936 22 5 17	39 52 33		59 43 58	45 22 44	in		
40 25 42 18	10 55 20		59 45 1	49 39 2	rotten eggs.		
44 29 19 18	40 58 38		59 47 4	52 57 19			
48 32 57 19	1 9 56		59 48 8	55 15 37			

As an after-thought this page is inserted to facilitate the use of the preceding tables. Here is the approximate place of each star's aspects, etc., at the middle date of the tables, 1886, thus showing at a glance about where they are all around the circle at any time in the whole period. Thereby the houses they come in for any figure may be determined before getting their more exact places. The only points here not on the ecliptic are the σ and δ given of the three stars having but little latitude. See the gaunt poverty of the current system that omits all these! Such a table made with exactness for a figure of birth, and completed by putting in the aspects of the planets, will manifestly be of great use in several ways.

Σ	$^{\circ} 1^{\Delta} \alpha$ Crucis 6 13 * β Centaur. 6 21 * \triangle Antares 8 17 * \ast Aldebaran 8 21 * \triangle α Centaur. 10 48 * \square Sirius 12 31 \square Canopus 13 23 \square Vega 13 43 Par. Procy. 13 58 Par. a Orion \ast 20 59 Rigel \triangle 21 22 Par. Rigel 21 59 Par. Altair $\frac{8}{\odot}$ Spica 22 15 * \triangle Capella 23 8 * \square Procyon	Σ	$^{\circ} 1^{\Delta} \beta$ Centaur. 8 3 * \triangle 15 18 α Centaur. * 22 15 \square Spica 22 39 \square Arcturus 1 46 Par. Arctu. 8 3 Aldebaran \triangle 8 4 Antares * 9 30 Rigel \triangle 10 17 \square a Crucis 14 15 Par. Sirius 15 14 Par. Aldeb. 17 24 Capella \triangle 22 12 \square β Centaur. 22 16 * \triangle 25 49 α Orionis \triangle 28 3 \square α Centaur. * \square	Ω	$^{\circ} 1^{\ast}$ Arcturus 28 15 * \triangle 2 4 * \triangle Sirius 2 34 Par. Spica 2 38 \triangle a Eridani * 8 1 Par. Altair 8 10 \square Antares 8 12 \square Aldeb. 8 38 Par. Rigel 11 10 Par. a Orion 15 14 \square Rigel 16 2 Par. Procy 20 16 \square Capella 22 52 * \triangle 24 45 α Eridani * 25 11 \triangle Altair * 27 10 \square a Orion

URANUS AND NEPTUNE.

For many years of the present century there is, for very good reasons, no accurate Ephemeris of these two planets. That of Urānus in the Nautical Almanac from 1834 to 1877 is largely wrong, so that the resulting longitude is in error sometimes nearly 4'; but beginning with 1877 its places of this planet, by use of the new American or French tables, are as exact as the lame theories of astronomy will permit. Neptune was not discovered until 1846, and there are no reliable positions until the American Ephemeris in 1870, and the Nautical Almanac in 1871, began to use the new tables by Newcomb.

Because of such conditions, and that those works do not give the geocentric longitudes at all, the present writer has computed an Ephemeris in longitude of both planets covering the period mentioned. It is made to the nearest second of arc for every fifth day, and is still in MS. The places of Urānus were derived, at intervals of 15 days, from the heliocentric places in the Nautical Almanac; then "observed corrections" were applied, obtained from those given in Newcomb's work on the planet; and finally interpolated with fifth differences to 5-day intervals. This method gives results nearly as precise as would be if they could have been *taken by observation* with the great telescopes on each date.

For Neptune, up to 1871 the heliocentric longitudes, etc., were computed at intervals of 180 days by the American tables, and interpolated to each 15th day. From these the geocentric places were derived by usual methods and interpolated with fifth differences to each 5th day. For and after 1871 the heliocentric places in the Nautical Almanac were used, and the same operations performed. The aberration of each planet was omitted, so that the results are *true* apparent positions. All this made an enormous job for one person, but was done with extreme care, and a complete system of checks to insure against error.

The Ephemeris herein is an abridgment of the other by taking intervals of ten days and reducing the figures to nearest tenth of a minute. In getting intermediates the error may be always much less than 1', with proper interpolation. The dates are for Greenwich mean noon.

When the planets are stationary it is indicated by "St." with the day of the month.

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.	Long.	Lat.
1835.	ℳ	0° s.	ℳ	0° n.	1836.	ℳ	0° s.	ℳ	0° n.		
	○	/	○	/		○	/	○	/		
Jan. 4	24 14.8	42.7	0 38.2	15.8	May 28	4 28.5	45.6	5 33.6	10.9		
14	24 44.4	42.5	1 0.5	15.7	June 7	8 St.	31.4	46.0	45.8	10.8	
24	25 16.3	42.4	1 23.3	15.6		17	29.6	46.3	35.3	10.8	
Feb. 3	25 49.8	42.3	1 45.8	15.5		27	23.0	46.7	22.7	10.7	
13	26 24.2	42.3	2 7.8	15.4	July 7	4 12.0	47.1	5 8.3	10.6		
23	26 58.8	42.3	2 28.6	15.4		17	3 56.9	47.4	4 52.7	10.5	
Mar. 5	27 32.8	42.4	2 47.7	15.3		27	3 38.5	47.6	36.6	10.4	
15	28 5.6	42.6	3 4.8	15.3	Aug. 6	3 17.4	47.8	20.4	10.3		
25	28 36.4	42.8	19.5	15.2		16	2 54.5	47.9	4 4.7	10.1	
Apr. 4	29 4.7	43.0	8 St.	31.2	15.2	26	2 30.7	47.9	3 50.3	10.0	
14	29 29.8	43.3	40.1	15.2	Sept. 5	2 6.9	47.9	37.7	9.9		
24	29 51.2	43.6	45.8	15.1		15	1 44.2	47.8	27.2	9.7	
May 4	ℳ 0 8.5	44.0	3 47.8	15.1		25	1 23.6	47.6	19.5	9.6	
14	21.4	44.4	47.0	15.1	Oct. 5	1 5.8	47.4	14.8	9.4		
24	29.5	44.8	42.8	15.1		15	0 51.7	47.1	14 St. 3	13.2	9.2
June 3	5 St. 0 32.9	45.2	35.8	15.0	25	41.8	46.8	15.0	9.1		
13	31.3	45.6	25.9	15.0	Nov. 4	10 St. 36.7	46.4	20.2	8.9		
23	25.0	45.9	3 13.8	14.9		14	36.6	46.0	28.7	8.7	
July 3	ℳ 0 14.2	46.3	2 59.8	14.8	24	41.7	45.7	40.4	8.6		
13	29 59.4	46.5	44.5	14.7	Dec. 4	0 51.8	45.3	3 54.8	8.4		
23	29 41.2	46.8	28.4	14.6		14	1 6.7	44.9	4 11.9	8.3	
Aug. 2	29 20.3	47.0	2 12.1	14.5		24	1 26.2	44.6	4 31.1	8.2	
12	28 57.5	47.2	1 56.3	14.4	'37, J. 3	1 49.7	44.3	4 51.8	8.0		
22	28 33.7	47.2	41.6	14.2		13	2 16.7	44.1	5 13.8	7.9	
Sept. 1	28 9.9	47.2	28.5	14.1		23	2 46.6	43.9	5 36.5	7.8	
11	27 47.1	47.1	17.5	13.9	Feb. 2	3 18.8	43.7	5 59.2	7.7		
21	27 26.3	46.9	9.0	13.7		12	3 52.4	43.7	6 21.6	7.6	
Oct. 1	27 8.3	46.7	1 3.5	13.5		22	4 26.7	43.6	6 43.0	7.5	
11	26 53.9	46.4	12 St. 1.1	13.3	Mar. 4	5 1.1	43.7	7 2.9	7.4		
21	43.8	46.1	2.1	13.2		14	5 34.9	43.8	21.1	7.3	
31	6 St. 38.3	45.8	6.4	13.0	24	6 7.3	43.9	37.0	7.2		
Nov. 10	37.9	45.4	1 14.2	12.8	Apr. 3	6 37.6	44.1	7 50.2	7.2		
20	42.5	45.0	25.0	12.6		13	7 5.3	44.3	8 0.6	7.1	
30	26 52.3	44.7	38.7	12.5		23	7 29.8	44.6	7.8	7.0	
Dec. 10	27 6.9	44.3	1 55.2	12.3	May 3	7 50.6	45.0	11.7	6.9		
20	27 26.0	44.0	2 13.8	12.1		13	8 7.3	45.3	St. 12.4	6.9	
30	27 49.3	43.7	2 34.2	12.0		23	10.5	45.7	9.8	6.8	
'36, J. 9	28 16.1	43.5	2 55.9	11.9	June 2	26.9	46.1	8 4.2	6.7		
19	28 45.8	43.3	3 18.4	11.8		12	8 29.6	46.5	7 55.7	6.6	
29	29 17.8	43.2	3 41.2	11.7	13 St.	22	27.4	46.9	44.7	6.6	
Feb. 8	29 51.4	43.1	4 3.7	11.6	July 2	20.5	47.3	31.5	6.5		
18	ℳ 0 25.8	43.1	4 25.4	11.5		12	8 9.2	47.6	16.8	6.4	
28	1 0.3	43.1	4 45.9	11.4		22	7 53.9	47.9	7 1.1	6.3	
Mar. 9	1 34.2	43.2	5 4.5	11.3	Aug. 1	7 35.3	48.1	6 44.8	6.1		
19	2 6.7	43.3	21.0	11.3		11	7 14.0	48.3	6 28.6	6.0	
29	2 37.3	43.5	34.9	11.2		21	6 51.0	48.4	6 13.3	5.9	
Apr. 8	3 5.3	43.8	5 46.0	11.1		31	6 27.1	48.4	5 59.2	5.8	
18	3 30.1	44.1	54.0	11.1	Sept 10	6 3.4	48.4	47.0	5.6		
28	3 51.2	44.4	5 58.8	11.0		20	5 40.8	48.3	37.3	5.5	
May 8	4 8.2	44.8	10 St. 6 0.2	11.0		30	5 20.3	48.1	30.2	5.4	
18	4 20.7	45.2	5 58.5	10.9	Oct. 10	5 2.7	47.8	26.2	5.2		

Uranus.			Neptune.		Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.	
	H	0°s.	w	0°n.		H	0°s.	w	0°s.	
1837.										
	\circ	$/$	\circ	$/$		\circ	$/$	\circ	$/$	
Oct. 10	5 2.7	47.8	17 St. 5	26.2	5.2	Mar. 4	12 27.5	44.1	II 18.2	0.5
20	4 48.9	47.5		25.6	5.1	14	13 1.8	44.2	II 37.4	0.7
30	39.4	47.2		28.3	4.9	24	13 35.3	44.3	II 54.4	0.8
Nov. 9	14 St. 34.7	46.8		34.4	4.8	Apr. 3	14 7.3	44.4	II 8.9	0.9
19	35.0	46.4		43.7	4.6	13	14 37.2	44.6	20.8	1.0
29	40.4	46.0	5 56.1	4.5	23	15 4.4	44.8	29.5	1.1	
Dec. 9	4 50.9	45.7	6 11.3	4.4	May 3	15 28.3	45.1	35.1	1.2	
19	5 6.2	45.3	6 28.9	4.2	13	15 48.5	45.5	17 St. 37.4	1.3	
29	5 26.0	45.0	6 48.5	4.1	23	16 4.5	45.8	12 36.5	1.5	
'38, J. 8	5 49.8	44.7	7 9.7	4.0	June 2	16.0	46.2	32.4	1.6	
18	6 17.0	44.4	7 31.9	3.9	12	12 St. 22.9	46.6	25.3	1.7	
28	6 47.1	44.2	7 54.5	3.8	22	16 24.8	47.0	15.5	1.8	
Feb. 7	7 19.3	44.1	8 17.3	3.7	July 2	22.0	47.3	12 3.4	1.9	
17	7 52.9	44.0	8 39.6	3.6	12	14.5	47.7	II 49.4	2.1	
27	8 27.3	44.0	9 0.6	3.5	22	16 2.6	48.0	34.1	2.2	
Mar. 9	9 1.6	44.0	20.1	3.4	Aug. 1	15 46.9	48.3	18.0	2.3	
19	9 35.2	44.1	37.7	3.3	11	15 27.8	48.5	II 1.7	2.4	
29	10 7.4	44.2	9 53.0	3.2	21	15 6.2	48.7	10 45.8	2.5	
Apr. 8	10 37.5	44.4	10 5.5	3.1	31	14 43.0	48.7	31.0	2.6	
18	11 5.0	44.7	15.0	3.0	Sept 10	14 19.0	48.8	17.9	2.7	
28	II 29.2	45.0	21.5	2.9	20	13 55.4	48.7	10 6.9	2.8	
May 8	II 49.7	45.3	15 St. 24.6	2.8	30	13 33.0	48.5	9 58.4	2.9	
18	I2 6.0	45.7	10 24.5	2.7	Oct. 10	13 12.8	48.3	52.9	3.0	
28	17.9	46.0	21.1	2.6	20	12 55.8	48.1	21 St. 50.6	3.1	
June 7	25.0	46.4	14.7	2.5	30	42.5	47.7	51.6	3.2	
17 St.	27.3	46.8	10 5.6	2.4	Nov. 9	33.7	47.4	9 56.0	3.3	
27	24.7	47.2	9 54.0	2.3	19	12 29.7	47.0	10 3.7	3.4	
July 7	I2 17.5	47.6	40.4	2.2	22 St.	30.8	46.6	14.7	3.5	
17	I2 6.0	47.9	25.4	2.1	Dec. 9	37.1	46.2	28.6	3.6	
27	II 50.5	48.2	9 9.4	2.0	19	12 48.3	45.8	10 45.1	3.7	
Aug. 6	II 31.6	48.4	8 53.1	1.9	29	13 4.4	45.4	II 3.8	3.8	
16	II 10.2	48.6	37.1	1.7	40, J. 8	13 24.8	45.1	II 24.3	3.9	
26	10 47.1	48.7	22.1	1.6	18	13 49.2	44.8	II 46.0	4.0	
Sept. 5	10 23.2	48.7	8 8.4	1.5	28	14 16.9	44.5	II 8.6	4.1	
15	9 59.5	48.6	7 56.8	1.4	Feb. 7	14 47.3	44.3	II 31.4	4.2	
25	9 37.0	48.5	47.7	1.3	17	15 19.7	44.2	I2 53.8	4.3	
Oct. 5	9 16.6	48.3	41.4	1.1	27	15 53.4	44.1	I3 15.6	4.4	
15	8 59.3	48.1	19 St. 38.2	1.0	Mar. 8	16 27.8	44.1	I3 36.0	4.6	
25	45.8	47.8	7 38.4	0.9	18	17 1.9	44.1	I3 54.5	4.7	
Nov. 4	36.6	47.4	41.9	0.8	28	17 35.3	44.2	I4 11.0	4.8	
14	18 St. 8 32.2	47.0	.48.8	0.7	Apr. 7	18 7.1	44.3	25.0	5.0	
24	32.9	46.6	7 59.0	0.6	17	18 36.8	44.5	36.0	5.1	
Dec. 4	38.7	46.2	8 12.1	0.4	27	19 3.8	44.8	44.0	5.2	
14	8 49.6	45.8	8 28.0	0.3	May 7	19 27.4	45.0	48.8	5.4	
24	9 5.3	45.5	8 46.2	0.2	17	19 47.3	45.4	19 St. 14 50.3	5.5	
'39, J. 3	9 25.4	45.1	9 6.2	0.1	27	20 3.0	45.7	48.6	5.7	
13	9 49.5	44.8	9 27.8	0.0	June 6	14.2	46.1	43.7	5.8	
23	10 17.0	44.6	9 50.1	0.8	16	25 St. 20.7	46.5	35.9	6.0	
Feb. 2	10 47.2	44.4	10 12.9	0.2	26	22.3	46.8	25.5	6.1	
12	II 19.5	44.3	35.6	0.3	July 6	19.1	47.2	14 12.9	6.2	
22	II 53.2	44.2	57.5	0.4	16	20 11.3	47.6	13 58.6	6.3	

Uranus.			Neptune.			Uranus.			Neptune.			
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.			
1840.	♊ 0° s.		♊ 0° s.		1841.	♊ 0° s.		♊ 0° s.				
	c ,	/	o ,	/		o ,	/	o ,	/			
July 16	20 11.3	47.6	13 58.6	6.3	Dec. 8	20 26.7	45.8	14 47.2	11.7			
26	19 59.2	47.9	42.9	6.5		20 33.8	45.4	15 2.5	11.7			
Aug. 5	43.2	48.1	26.7	6.6		20 45.9	45.1	15 20.2	11.8			
15	24.0	48.3	13 10.5	6.7	'42, J. 7	21 2.7	44.7	15 39.9	11.8			
25	19 2.2	48.5	12 54.8	6.8		21 23.8	44.3	16 1.1	11.9			
Sept. 4	18 38.9	48.6	40.4	6.9	27	21 48.7	44.0	16 23.4	12.0			
14	18 14.9	48.6	27.7	7.0	Feb. 6	22 16.9	43.8	16 46.1	12.1			
24	17 51.3	48.5	17.3	7.1		22 47.6	43.6	17 8.8	12.2			
Oct. 4	17 29.0	48.3	12 9.5	7.2		23 20.2	43.5	17 31.0	12.4			
14	17 9.0	48.1	4.8	7.3	Mar. 8	23 54.1	43.4	17 52.1	12.5			
24	16 52.2	47.8	3.3	7.3	18	24 28.4	43.3	18 11.7	12.6			
Nov. 3	39.3	47.5	5.2	7.4		25 2.4	43.3	29.3	12.8			
13	30.8	47.1	12 10.5	7.5	Apr. 7	25 35.5	43.4	44.4	13.0			
23	26 St. 16	27.3	46.7	19.0		26 7.0	43.6	18 56.9	13.1			
Dec. 3	28.7	46.3	30.8	7.6	27	26 36.3	43.8	19 6.5	13.3			
13	35.3	45.9	12 45.4	7.7	May 7	27 2.8	44.0	12.9	13.5			
23	16 47.0	45.5	13 2.5	7.8		27 25.9	44.3	16.1	13.7			
'41, J. 2	17 3.4	45.1	13 21.7	7.8		27 45.3	44.6	16.0	13.9			
12	17 24.2	44.8	13 42.5	7.9	June 6	28 0.4	44.9	12.7	14.1			
22	17 48.9	44.5	14 4.6	8.0		11.0	45.2	19 6.4	14.3			
Feb. 1	18 16.8	44.3	14 27.3	8.1	26	16.8	45.6	18 57.3	14.4			
11	18 47.4	44.1	14 50.0	8.2	July 6	17.8	46.0	45.7	14.6			
21	19 19.9	43.9	15 12.4	8.3		14.0	46.3	32.1	14.7			
Mar. 3	19 53.7	43.8	15 33.8	8.5		28 5.6	46.6	17.1	14.9			
13	20 28.0	43.8	15 53.7	8.6	Aug. 5	27 52.9	46.9	18 1.1	15.0			
23	21 2.1	43.8	16 11.9	8.8	15	27 36.4	47.2	17 44.8	15.1			
Apr. 2	21 35.3	43.9	27.7	8.9		27 16.8	47.4	28.8	15.2			
12	22 7.0	44.1	40.9	9.1	Sept. 4	26 54.7	47.5	13.7	15.3			
22	22 36.5	44.2	51.2	9.2		26 31.2	47.5	17 0.0	15.4			
May 2	23 3.2	44.5	16 58.5	9.4	24	26 7.1	47.5	16 48.4	15.4			
12	23 26.6	44.8	21 St. 17	2.4	Oct. 4	25 43.6	47.4	39.2	15.5			
22	23 46.2	45.1	17	3.2		25 21.5	47.2	32.9	15.5			
June 1	24 1.6	45.4	17	0.6		25 1.9	47.0	29.8	15.6			
11	12.4	45.8	16 55.0	10.0	Nov. 3	24 45.6	46.7	16 30.0	15.6			
21	18.6	46.1	46.6	10.2		13	33.3	46.3	33.6	15.6		
29 St.	20.0	46.5	35.6	10.3	23	25.6	46.0	40.6	15.6			
July 1	16.5	46.9	22.5	10.5	Dec. 3	24 22.7	45.6	16 50.8	15.7			
11	24 8.4	47.2	16 7.8	10.6		13	25.1	45.2	17 4.0	15.7		
31	23 55.9	47.5	15 52.0	10.7		23	32.6	44.7	20.0	15.7		
Au. 10	23 39.7	47.8	35.7	10.8	'43, J. 2	24 45.0	44.4	38.3	15.8			
20	23 20.2	48.0	19.5	11.0	12	25 2.2	44.0	17 58.4	15.8			
30	22 58.3	48.1	15 4.1	11.1		22	25 23.7	43.6	18 19.9	15.9		
Sept. 9	22 34.9	48.2	14 50.1	11.2	Feb. 1	25 48.9	43.4	18 42.4	16.0			
19	22 10.9	48.1	37.9	11.2		11	26 17.3	43.1	19 5.2	16.1		
29	21 47.3	48.1	28.1	11.3		21	26 48.2	42.9	19 27.8	16.2		
Oct. 9	21 25.1	47.9	21.1	11.3	Mar. 3	27 20.9	42.8	19 49.7	16.3			
19	21 5.3	47.7	26 St. 14	17.1		13	27 54.7	42.7	20 10.5	16.5		
29	20 48.7	47.4	16.4	11.5		23	28 29.0	42.6	20 29.5	16.7		
Nov. 8	36.1	47.0	19.2	11.5	Apr. 2	29 3.0	42.7	20 46.6	16.8			
18	28.0	46.7	25.3	11.6	12	29 36.0	42.7	21 1.2	17.0			
28	30 St.	24.8	46.3	34.7	11.6	22	29 0	42.9	21 12.9	17.2		

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1843.	♀ 0° s.		≈ 0° s.		1844.	♀ 0° s.		≈ 0° s.	
Ap. 22	○ 7.4	42.9	21 12.9	17.2	Sept 13	4 48.6	45.5	21 33.3	23.7
May 2	○ 36.5	43.1	21.7	17.4	23	4 24.8	45.6	20.5	23.7
12	1 2.8	43.3	27.4	17.6	Oct. 3	4 0.7	45.5	10.0	23.8
22	25.7	43.5	26 St. 29.7	17.8	13	3 37.2	45.4	21 2.2	23 8
June 1	44.7	43.8	21 28.8	18.0	23	3 15.4	45.2	20 57.5	23.8
July 1	1 59.6	44.2	24 8	18.3	Nov. 2	2 56.2	44.9	St. 20 56.0	23.8
21	2 9.8	44.5	17.7	18.5	12	40.4	44.6	20 58.0	23.7
8 St.	15.4	44.8	21 8.0	18.7	22	28.7	44.3	21 3.3	23.7
11	16.1	45.2	20 55.9	18.8	Dec. 2	21.7	43.9	12.0	23.7
21	12.0	45.5	41.9	19.0	12 St.	2 19.7	43.5	23.8	23.7
Au. 10	2 3.3	45.8	26.6	19.1	22	22.9	43.1	38.4	23.7
20	1 50.3	46.1	20 10.4	19.3	'45, J. 1	31.2	42.7	21 55.6	23.7
30	1 33.5	46.3	19 54.1	19.4	11	2 44.4	42.3	22 14.9	23.7
Sept. 9	1 13.6	46.5	38.2	19.5	21	3 2.3	42.0	22 35.8	23.7
○ 51.4	46.6	23.4	19.6	31	3 24.4	41.6	22 57.9	23.8	
Oct. 9	19 ○ 27.8	46.7	19 10.2	19.6	Feb. 10	3 50.2	41.3	23 20.6	23.9
29	○ 3.7	46.6	18 59.1	19.6	20	4 19.0	41.1	23 43.3	24.0
29	40.2	46.5	50.6	19.7	Mar. 2	4 50.3	40.9	24 5.6	24.1
19	18 3	46.3	45.0	19.7	12	5 23.2	40.8	24 27.0	24.3
29	58.8	46.1	18 42.8	19.7	22	5 57.2	40.7	24 47.0	24.5
Nov. 8	42.8	45.8	31 St. 43.8	19.7	Apr. 1	6 31.5	40.6	25 5.1	24.7
18	30.8	45.4	48.3	19.7	11	7 5.3	40.7	20.9	24.9
28	23.4	45.0	18 56.1	19.7	21	7 38.1	40.7	34.1	25.1
Dec. 8	St. 28 21.0	44.6	19 7.2	19.7	May 1	8 9.2	40.9	44.4	25.4
18	23.8	44.2	21.1	19.7	11	8 38.0	41.0	51.7	25.6
'44, J. 7	28 31.7	43.8	37.7	19.7	21	9 3.9	41.2	25 55.7	25.9
17	28 44.5	43.4	19 56.5	19.8	31	26.3	41.5	St. 56.5	26.1
27	29 2.1	43.1	20 17.0	19.8	Jun. 10	44.9	41.7	54.0	26.4
Feb. 6	29 23.9	42.8	20 38.9	19.9	20	9 59.2	42.0	48.5	26.6
29	49.4	42.5	21 1.5	20.0	30	10 8.9	42.3	25 40.0	26.8
Mar. 7	16 ♀ 0 18.0	42.2	21 24.2	20.1	July 10	15 St. 13.8	42.7	29.1	27.1
26	0 49.0	42.0	21 46.7	20.2	20	13.9	43.0	16.0	27.2
17	1 21.8	41.9	22 8.4	20.3	30	10 9.2	43.3	25 1.3	27.4
27	1 55.8	41.8	22 28.7	20.5	Aug. 9	9 59.8	43.6	24 45.4	27.6
	2 30.0	41.8	22 47.4	20.7	19	46.3	43.8	24 29.1	27.7
Apr. 6	3 3.9	41.8	23 3.8	20.9	29	29.0	44.0	24 12.9	27.8
16	3 36.9	41.8	17.7	21.1	Sept. 8	9 8.7	44.1	23 57.4	27.8
26	4 8.1	42.0	28.8	21.3	18	8 46.1	44.2	43.3	27.9
May 6	4 37.0	42.1	36.8	21.5	28	8 22.3	44.2	31.0	27.9
16	5 3.1	42.4	41 6	21.8	Oct. 8	7 58.1	44.2	21.1	27.9
June 5	26 25.8	42.6	28 St. 23 43.2	22.0	18	7 34.7	44.0	23 14.1	27.9
	44.6	42.9	41.5	22.2	28	7 12.9	43.9	10.1	27.8
15	5 59.1	43.2	36.6	22.4	Nov. 7	6 53.9	43.6	4 St. 9.5	27.8
25	6 9.1	43.5	28.9	22.6	17	38.4	43.3	12.2	27.7
July 5	11 St. 14.4	43.9	18 6	22.8	27	27.0	42.9	23 18.4	27.7
15	14.8	44.2	23 6.0	23.0	Dec. 7	20.4	42.6	27.9	27.6
25	10.3	44.5	22 51.6	23.2	17	15 St. 6 18.8	42.2	40.5	27.6
Aug. 4	6 1.3	44.8	36.0	23.4	27	22.3	41.8	23 55.8	27.6
14	5 48.0	45.1	19.8	23.5	'46, J. 6	31.1	41.4	24 13.6	27.6
Sept. 3	24 5 31.1	45.3	22 3.5	23.6	16	6 44.7	41.0	33.3	27.6
	5 11.0	45.4	21 47.8	23.7	26	7 3.0	40.6	54.6	27.6

Uranus.			Neptune.			Uranus.			Neptune.			
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.			
1846.	ꝝ	o° s.	ꝝ	o° s.	1847.	ꝝ	o° s.	ꝝ	o° s.			
	o /	/	o /	/		o /	/	o /	/			
Jan. 26	7 3.0	40.6	24 54.6	27.6	Jun. 20	17 46.8	38.8	o	18.2	34.5		
Feb. 5	7 25.4	40.3	25 16.9	27.7	30	18 0.6	39.1	o	11.2	34.8		
15	7 51.5	40.0	25 39.6	27.8	July 10	9.7	39.4	ꝝ	1.4	35.1		
25	8 20.5	39.8	26 2.3	27.9	20	14.1	39.6	ꝝ	29 49.3	35.3		
Mar. 7	8 51.9	39.6	26 24.4	28.1	30	13.5	39.9		35.3	35.5		
17	9 24.9	39.5	26 45.5	28.2	Aug. 9	18 8.2	40.2		20.0	35.7		
27	9 58.9	39.4	27 5.0	28.4	19	17 58.2	40.4	29	3.8	35.8		
Apr. 6	10 33.3	39.3	22.6	28.6	29	44.1	40.6	28	47.4	35.9		
16	11 7.1	39.4	37.7	28.9	Sept. 8	26.3	40.8		31.4	36.0		
26	11 39.8	39.4	50.3	29.1	18	17 5.5	40.9		16.5	36.0		
May 6	12 10.8	39.5	27 59.9	29.4	28	16 42.6	41.0	28	3.2	36.0		
16	12 39.4	39.7	28 6.3	29.6	Oct. 8	16 18.5	40.9	27	52.0	36.0		
26	13 5.1	39.9	9.5	29.9	18	15 54.3	40.9		43.4	35.9		
June 5	27.3	40.1	1 St.	9.4	28	15 30.9	40.7		37.9	35.8		
15	45.6	40.4	28 6.2	30.5	Nov. 7	15 9.4	40.5	9 St.	27 35.6	35.7		
25	13 59.6	40.7	27 59.9	30.7	17	14 50.7	40.3		36.7	35.6		
July 5	14 9.1	41.0	50.8	31.0	27	35.7	40.0		41.2	35.5		
15	13.7	41.3	39.3	31.2	Dec. 7	25.0	39.6		27 49.1	35.4		
25	13.4	41.6	25.7	31.4	17	19.1	39.2		28 0.2	35.4		
Aug. 4	14 8.4	41.8	27 10.7	31.6	27	24 St. 14	18.3	38.9		14.2	35.3	
14	13 58.8	42.1	26 54.6	31.7	'48, J. 6	22.7	38.5			30.9	35.3	
24	44.9	42.3	38.2	31.8	16	32.2	38.1	28	49.7	35.2		
Sept. 3	27.4	42.5	22.1	31.9	26	14 46.6	37.7	29	10.3	35.2		
13	13 6.9	42.6	26 6.9	31.9	Feb. 5	15 5.6	37.4	29	32.1	35.3		
23	12 44.1	42.7	25 53.1	32.0	15	15 28.7	37.1	29	54.7	35.3		
Oct. 3	12 20.2	42.7	41.4	32.0	25	15 55.2	36.8	ꝝ o	17.5	35.4		
13	11 55.9	42.6	32.2	31.9	Mar. 6	16 24.7	36.6	o	40.0	35.6		
23	11 32.5	42.5	25.9	31.9	16	16 56.5	36.4	I	1.6	35.8		
Nov. 2	11 10.9	42.3	22.7	31.8	26	17 29.7	36.3		21.9	36.0		
12	10 52.1	42.0	25 23.0	31.7	Apr. 5	18 3.9	36.2		40.5	36.2		
22	36.8	41.7	26.7	31.6	15	18 38.2	36.2	I	56.9	36.4		
Dec. 2	25.7	41.4	33.7	31.6	25	19 11.9	36.2	2	10.8	36.7		
12	19.5	41.0	44.0	31.5	May 5	19 44.5	36.2		21.9	37.0		
22	19 St. 10	18.3	40.6	25 57.3	31.5	15	20 15.3	36.3		29.9	37.3	
'47, J. 1	22.3	40.2	26 13.3	31.4	25	20 43.6	36.4	3 St.	34.8	37.6		
11	31.4	39.8	26 31.6	31.4	June 4	21 8.9	36.6	2	36.4	37.9		
21	10 45.4	39.5	26 51.8	31.4	14	21 30.7	36.8		34.7	38.3		
31	11 4.0	39.1	27 13.4	31.5	24	21 48.5	37.0		29.9	38.6		
Feb. 10	11 26.8	38.8	27 35.8	31.5	July 4	22 2.1	37.3		22.2	38.8		
20	11 53.1	38.5	27 58.6	31.6	14	11.2	37.5		2 11.8	39.1		
Mar. 2	12 22.4	38.3	28 21.2	31.8	24	14.9	37.8	I	59.2	39.3		
					28 St.							
12	12 54.0	38.1	28 43.1	31.9	Aug. 3	14.2	38.1		44.8	39.6		
22	13 27.1	38.0	29 3.8	32.1	13	22 8.5	38.3		29.2	39.7		
Apr. 1	14 1.2	37.9	22.8	32.3	23	21 58.3	38.5	I	12.9	39.8		
11	14 35.4	37.9	39.8	32.5	Sept. 2	43.9	38.7		o 56.5	39.9		
21	15 9.3	37.9	29 54.4	32.8	12	25.8	38.9		40.7	40.0		
May 1	15 41.9	37.9	ꝝ o	6.2	33.1	22	21 4.7	39.0		26.1	40.0	
11	16 12.7	38.0	15.0	33.4	Oct. 2	20 41.7	39.0		13.3	40.0		
21	16 41.2	38.2	20.7	33.7	12	20 17.5	39.0	ꝝ	o 2.7	39.9		
31	17 6.8	38.4	23.1	33.9	22	19 53.1	38.9		29 54.9	39.8		
Jun. 10	17 28.7	38.6	2 St.	22.2	34.2	Nov. 1	19 29.8	38.7		29 50.1	39.7	

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.		
1848.	♀	0° s.	ℳ	0° s.	1850.	♀	0° s.	ℳ	0° s.		
	○	/	○	/		○	/	○	/		
Nov. 1	19 29 8	38.7	29 50.1	39.7	Mar 26	25 3.3	32.5	5	38.4	43.3	
11	19 8 4	38.5	St. 48.7	39.6	Apr. 5	25 36.9	32.4	5	57.9	43.5	
21	18 49.9	38.3	50.6	39.5	15	26 11.1	32.3	6	15.4	43.8	
Dec. 1	35.2	38.0	29 56.0	39.4	25	26 45.5	32.2	30.6	44.1		
11	24.8	37.6	ℳ 0 4.7	39.2	May 5	27 19.2	32.2	43.1	44.4		
21	27 St. 19.3	37.3	16.6	39.1	15	27 51.7	32.3	52.7	44.7		
31	18 18.9	36.9	31.3	39.1	25	28 22.2	32.3	6	59.2	45.1	
'49, J. 10	23.7	36.5	0 48.6	39.0	June 4	28 50.3	32.5	8 St. 7	2.5	45.4	
20	33.6	36.2	1 7.9	39.0	14	29 15.4	32.6	7	24	45.8	
30	18 48.4	35.8	1 28.9	39.0	24	29 36.8	32.8	6	59.2	46.1	
Feb. 9	19 7.2	35.5	1 50.9	39.0	July 4	29 54.2	33.0	53.0	46.5		
19	19 31.1	35.2	2 13.6	39.1	14	8 0 7.3	33.2	43.9	46.8		
Mar. 1	19 58.0	34.9	2 36.4	39.2	24	15.6	33.4	32.4	47.0		
11	20 27.7	34.7	2 58.6	39.4	Aug. 3	19.1	33.6	18.8	47.3		
21	20 59.6	34.6	3 20.0	39.5	5 St. 13	17.7	33.8	6	3.7	47.3	
31	21 33.0	34.4	3 39.9	39.8	23	11.5	34.0	5	47.6	47.6	
Ap. 10	22 7.1	34.3	3 58.0	40.0	Sept. 2	ℳ 0 0.6	34.2	5	31.1	47.7	
20	22 41.5	34.3	4 13.8	40.3	12	29 45.6	34.3	5	14.9	47.8	
30	23 15.0	34.3	27.0	40.6	22	29 27.0	34.4	4	59.6	47.8	
My. 10	23 47.7	34.3	37.4	40.9	Oct. 2	29 5.5	34.5	45.8	47.8		
20	24 18.4	34.4	44.6	41.2	12	28 42.1	34.5	34.1	47.7		
30	24 46.6	34.5	6 St. 48.7	41.5	22	28 17.6	34.5	24.8	47.6		
June 9	25 11.7	34.7	4 49.5	41.9	Nov. 1	27 53.2	34.4	18.5	47.5		
19	25 33.4	34.9	47.0	42.2	11	27 30.0	34.2	15.3	47.3		
29	25 51.0	35.1	41.5	42.5	21	27 8.8	34.0	15.6	47.1		
July 9	26 4.3	35.3	33.1	42.8	Dec. 1	26 50.7	33.8	19.3	47.0		
19	12.9	35.6	22.1	43.1	11	36.5	33.5	26.4	46.8		
29	16.7	35.8	4 9.0	43.3	21	26.8	33.1	36.8	46.6		
Aug. 8	1 St. 15.6	36.0	3 54.2	43.5	31	22.0	32.8	4	50.2	46.5	
18	26 9.6	36.3	38.4	43.7	5 St. '51, J. 10	26 22.4	32.5	5	6.3	46.4	
28	25 59.0	36.5	21.9	43.8	20	28 0	32.1	5	24.6	46.3	
Sept. 7	44.3	36.6	3 5.6	43.9	30	38.7	31.8	5	44.9	46.3	
17	25.9	36.8	2 50.1	43.9	Feb. 9	26 54.3	31.5	6	6.4	46.3	
27	25 4.7	36.8	35.9	43.9	19	27 14.3	31.2	6	28.9	46.3	
Oct. 7	24 41.5	36.9	23.5	43.9	Mar. 1	27 38.3	30.9	6	51.6	46.4	
17	24 17.1	36.8	13.6	43.8	11	28 5.7	30.7	7	14.2	46.6	
27	23 52.7	36.7	2 6.5	43.7	21	28 35.8	30.5	7	36.1	46.7	
Nov. 6	23 29.4	36.6	2.6	43.5	31	29 8.0	30.3	7	56.8	46.9	
16	23 8.2	36.4	2.0	43.4	Ap. 10	29 41.7	30.2	8	15.8	47.2	
26	22 49.9	36.1	4.8	43.3	20	8 0 16.0	30.1	32.8	47.5		
Dec. 6	35.4	35.8	2 11.0	43.1	30	0 50.4	30.0	47.4	47.8		
16	25.4	35.5	20.6	43.0	My. 10	1 24.1	30.0	8	59.2	48.1	
26	20.2	35.1	33.2	42.9	20	1 56.5	30.0	9	8.0	48.5	
'50, J. 5	1 St. 22	20.1	2 48.7	42.8	30	2 27.0	30.1	13.7	48.9		
15	25.4	34.4	3 6.5	42.7	June 9	2 55.0	30.2	11 St. 16.2	49.2		
25	35.7	34.1	3 26.3	42.7	19	3 19.4	30.3	15.4	49.6		
Feb. 4	22 50.9	33.7	3 47.6	42.7	29	3 41.2	30.5	11.4	50.0		
14	23 10.6	33.4	4 9.8	42.7	July 9	3 58.5	30.6	9	4.4	50.3	
24	23 34.3	33.1	4 32.6	42.8	19	4 11.3	30.8	8	54.7	50.6	
Mar. 6	24 1.4	32.9	4 55.2	42.9	29	4 19.3	31.0		42.6	50.9	
16	24 31.3	32.7	5 17.3	43.1	Aug. 8	4 22.7	31.2		28.6	51.2	

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.	Long.	Lat.
1851.	8	0° s	8	0° s.	1852.	8	0° s.	8	0° s.	8	0° s.
	o	/	o	/		o	/	o	/	o	/
Aug. 8	4 22.7	31.2	8 28.6	51.2	Dec. 30	4 33.1	28.0	9 10.3	53.7		
18	10 St. 20.9	31.4	8 13.2	51.4	'53, J. 9	29.0	27.7	25.1	53.6		
28	14.3	31.6	7 56.9	51.5	12 St.	30.1	27.4	42.5	53.5		
Sept. 7	4 3.2	31.7	40.5	51.6	29	36.5	27.0	10 1.8	53.4		
17	3 47.9	31.9	24.5	51.6	Feb 8	4 48.0	26.7	10 22.8	53.3		
27	3 29.0	32.0	7 9.4	51.6	18	5 4.3	26.5	10 44.9	53.3		
Oct. 7	3 7.3	32.0	6 56.1	51.6	28	5 25.0	26.2	11 7.6	53.4		
17	2 43.7	32.0	44.9	51.5	Mar 10	5 49.6	26.0	11 30.3	53.5		
27	2 19.2	31.9	36.3	51.3	20	6 17.5	25.7	11 52.6	53.7		
Nov. 6	1 54.7	31.8	30.8	51.1	30	6 48.1	25.5	12 13.9	53.9		
16	1 31.5	31.7	6 28.5	51.0	Apr. 9	7 20.6	25.4	12 33.8	54.1		
26	1 10.5	31.5	18 St. 29.6	50.8	19	7 54.5	25.3	12 51.9	54.4		
Dec. 6	0 52.6	31.2	34.2	50.6	29	8 29.0	25.2	13 7.7	54.7		
16	38.7	30.9	42.2	50.4	May 9	9 3.5	25.1	21.0	55.1		
26	29.3	30.6	6 53.4	50.2	19	9 37.3	25.1	31.4	55.5		
52, J. 5	9 St. 24.8	30.3	7 7.5	50.1	29	10 9.6	25.1	38.7	55.9		
15	o 25.6	30.0	7 24.2	50.0	June 8	10 40.1	25.2	15 St. 42.8	56.3		
25	31.7	29.7	7 43.1	49.9	18	11 7.9	25.2	13 43.7	56.7		
Feb. 4	42.8	29.3	8 3.7	49.8	28	11 32.5	25.3	41.3	57.1		
14	o 58.7	29.0	8 25.5	49.9	July 8	11 53.5	25.4	35.8	57.5		
24	1 19.1	28.8	8 48.1	49.9	18	12 10.4	25.5	27.4	57.8		
Mar. 5	1 43.3	28.5	9 10.9	50.0	28	22.8	25.7	16.5	58.2		
15	2 11.0	28.3	9 33.3	50.1	Aug. 7	30.5	25.8	13 3.4	58.5		
25	2 41.4	28.1	9 54.9	50.3	17 St.	33.2	26.0	12 48.6	58.7		
Apr. 4	3 13.7	27.9	10 15.3	50.6	27	12 31.0	26.1	12 32.7	58.9		
14	3 47.5	27.8	10 33.8	50.8	Sept. 6	12 23.9	26.2	12 16.3	59.0		
24	4 21.9	27.7	10 50.2	51.1	16	12 12.2	26.3	11 59.9	59.0		
May 4	4 56.3	27.7	II 4.2	51.5	26	11 56.3	26.4	44.3	59.0		
14	5 30.1	27.6	15.3	51.8	Oct. 6	11 37.0	26.5	30.0	59.0		
24	6 2.5	27.7	23.4	52.2	16	11 14.8	26.5	17.7	58.8		
June 3	6 32.9	27.7	28.3	52.6	26	10 50.9	26.5	7.8	58.7		
13	7 0.8	27.8	St. 29.9	53.0	Nov. 5	10 26.1	26.4	11 0.7	58.5		
23	7 25.6	27.9	II 28.3	53.4	15	10 1.7	26.3	10 56.7	58.3		
July 3	7 46.7	28.0	23.6	53.8	25	9 38.6	26.1	10 56.2	58.0		
13	8 3.8	28.2	15.9	54.1	Dec. 5	9 17.8	25.9	10 59.1	57.8		
23	16.4	28.3	II 5.5	54.4	15	9 0.4	25.7	11 5.4	57.6		
Aug. 2	24.2	28.5	10 52.9	54.7	25	8 47.0	25.4	15.0	57.3		
12	8 27.2	28.7	38.5	55.0	'54, J. 4	38.2	25.2	27.7	57.1		
22	13 St. 25.3	28.8	22.9	55.1	14	11 34.5	24.9	II 43.2	57.0		
Sept. 1	18.4	29.0	10 6.5	55.3	24	15 St. 36.1	24.6	12 1.1	56.9		
11	8 7.0	29.1	9 50.1	55.3	Feb. 3	42.8	24.3	12 20.9	56.8		
21	7 51.4	29.2	34.2	55.4	13	8 54.7	24.0	12 42.2	56.7		
Oct. 1	7 32.3	29.3	19.6	55.3	23	9 11.4	23.7	13 4.5	56.7		
11	7 10.4	29.3	9 6.7	55.2	Mar. 5	9 32.4	23.5	13 27.3	56.8		
21	6 46.6	29.3	8 56.1	55.1	15	9 57.3	23.3	13 49.9	56.9		
31	6 21.9	29.2	48.3	54.9	25	10 25.4	23.1	14 12.0	57.1		
Nov 10	5 57.5	29.1	19 St. 43.5	54.8	Apr. 4	10 56.2	22.9	14 33.0	57.3		
20	5 34.3	29.0	42.1	54.5	14	11 28.9	22.7	14 52.5	57.6		
30	5 13.4	28.8	8 44.1	54.3	24	12 2.9	22.6	15 10.1	57.9		
Dec. 10	4 55.8	28.5	49.6	54.1	May 4	12 37.5	22.5	25.3	58.2		
20	4 42.1	28.3	58.4	53.9	14	13 12.1	22.5	37.9	58.6		

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1854.	8	0° s.	8	0° s.	1855.	8	0° s.	8	1° s.
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My. 14	13 12.1	22.5	15 37.9	58.6	Oct. 6	20 10.9	20.4	16 5.3	6.0
24	13 45.8	22.4	47.5	59.0		19 51.0	20.4	15 51.9	5.9
June 3	14 18.2	22.4	54.1	59.5		19 28.5	20.3	40.7	5.7
13	14 48.6	22.5	57.4	59.9	Nov. 5	19 4.2	20.3	32.2	5.5
23	15 16.3	22.5	57.5	1° 0.3		18 39.3	20.2	26.6	5.3
July 3	15 40.9	22.6	15 54.3	0.7	25	18 14.8	20.1	15 24.4	5.0
13	16 1.8	22.7	48.1	1.1	Dec. 5	17 51.8	19.9	25.6	4.7
23	18.5	22.8	39.1	1.5		15 31.4	19.8	30.2	4.4
Aug. 2	30.8	22.9	27.5	1.8		25 14.3	19.6	38.2	4.2
12	38.2	23.0	15 14.0	2.1	'56, J. 4	17 1.5	19.3	15 49.5	3.9
22	St. 40.7	23.1	14 58.9	2.3	14	16 53.3	19.1	16 3.7	3.7
Sept. 1	16 38.2	23.2	42.8	2.5	24	16 50.4	18.9	16 20.4	3.5
11	30.9	23.3	26.3	2.6	Feb. 3	16 52.6	18.6	16 39.3	3.4
21	18.9	23.4	14 10.0	2.6		13 17.0	18.4	17 0.0	3.3
Oct. 1	16 2.8	23.5	13 54.7	2.6	23	12.7	18.1	17 21.9	3.3
11	15 43.2	23.5	40.8	2.5	Mar. 4	30.1	17.9	17 44.4	3.3
21	15 20.8	23.5	29.0	2.3		17 51.7	17.7	18 7.2	3.4
31	14 56.7	23.4	19.8	2.2		24 18.1	17.5	18 29.6	3.5
Nov. 10	14 31.9	23.4	13.5	1.9	Apr. 3	18 45.7	17.3	18 51.2	3.7
20	14 7.4	23.2	13 10.4	1.7		19 16.9	17.2	19 11.6	4.0
30	13 44.3	23.1	10.7	1.4	23	19 50.0	17.0	19 30.1	4.3
Dec. 10	13 23.8	22.9	14.4	1.2	May 3	20 24.2	16.9	19 46.6	4.7
20	13 6.5	22.7	21.6	0.9		20 59.1	16.8	20 0.5	5.1
30	12 53.4	22.4	32.1	0.7		21 33.8	16.8	11.7	5.5
'55, J. 9	45.0	22.2	13 45.5	0.5	June 2	22 7.6	16.7	19 8	5.9
19	20 St. 41.6	21.9	14 1.6	0.3	12	22 40.1	16.7	24.8	6.4
29	43.5	21.7	14 20.1	0.2	22	23 10.4	16.7	20 26.6	6.8
Feb. 8	12 50.7	21.4	14 40.3	0.1	July 2	23 38.0	16.7	23 St. 25.0	7.3
18	13 2.9	21.1	15 1.9	0.0		24 2.5	16.7	20.4	7.7
28	13 19.9	20.9	15 24.4	0.1		23.1	16.8	12.7	8.1
Mar. 10	13 41.2	20.6	15 47.1	0.1	Aug. 1	39.6	16.8	20 2.4	8.5
20	14 6.4	20.4	16 9.7	0.3		51.6	16.9	19 49.9	8.8
30	14 34.8	20.2	16 31.6	0.5		21 24 58.6	16.9	35.4	9.1
Apr. 9	15 5.7	20.1	16 52.3	0.7	31	25 0.7	17.0	19.7	9.3
19	15 38.7	19.9	17 11.3	1.0	Sep. 10	24 57.7	17.0	19 3.8	9.4
29	16 12.8	19.8	28.3	1.3	20	49.9	17.1	18 46.9	9.5
May 9	16 47.5	19.7	42.9	1.7		37.4	17.1	30.9	9.5
19	17 22.1	19.7	17 54.8	2.1	Oct. 10	20.8	17.1	16.2	9.4
29	17 55.9	19.6	18 3.7	2.5		24 0.7	17.1	18 3.3	9.2
June 8	18 28.3	19.6	9.5	3.0		30 23 37.9	17.1	17 52.7	9.0
18	18 58.7	19.6	21 St. 12.0	3.4	Nov. 9	23 13.6	17.0	44.9	8.8
28	19 26.4	19.7	11.3	3.8		22 48.6	16.9	40.1	8.5
July 8	19 50.9	19.7	7.4	4.3		22 24.0	16.8	30 St. 17 38.8	8.2
18	20 11.6	19.8	18 0.4	4.7	Dec. 9	22 1.1	16.7	40.8	7.9
28	28.2	19.8	17 50.8	5.0		21 40.8	16.5	46.3	7.6
Aug. 7	40.3	19.9	38.7	5.4	29	23 9	16.3	17 55.2	7.3
17	47.6	20.0	24.7	5.6	'57, J. 8	11.3	16.1	18 7.2	7.1
27	St. 49.8	20.1	17 9.3	5.9		18 3.5	15.9	22.0	6.8
Sept. 6	20 47.1	20.2	16 53.0	6.0		28 21 0.8	15.7	39.4	6.6
16	39.5	20.3	36.5	6.1	Feb. 7	29 St. 3.4	15.4	18 58.8	6.5
26	27.2	20.3	20.4	6.1		17 11.3	15.2	19 19.8	6.4

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.		Date.	Long.	Lat.	Long.	Lat.	
1857.	8	0° s.	X	1° s.		1858.	II	0° s.	X	1° s.	
	o /	/	c /	/			o /	/	o /	/	
Feb. 17	21 11.3	15.2	19 19.8	6.4		July 12	2 6.4	10.4	24 52.1	13.9	
27	21 24.2	15.0	19 41.9	6.4		22	2 30.8	10.4	46.0	14.4	
Mar. 9	21 41.9	14.8	20 4.6	6.4		Aug. 1	2 51.3	10.4	37.0	14.8	
19	22 3.8	14.6	20 27.3	6.5		11	3 7.6	10.4	25.5	15.1	
29	22 29.5	14.4	20 49.5	6.7		21	19.3	10.4	24 11.9	15.4	
Apr. 8	22 58.3	14.3	21 10.9	6.9		31	26.0	10.4	23 56.7	15.7	
18	23 29.7	14.1	21 30.8	7.2		Sep. 10	3 27.7	10.4	40.6	15.8	
28	24 2.9	14.0	21 48.9	7.5		20	24.3	10.4	24.0	15.9	
May 8	24 37.3	13.9	22 4.7	7.9		30	15.9	10.4	23 7.7	15.9	
18	25 12.3	13.8	18.0	8.3		Oct. 10	3 2.9	10.3	22 52.3	15.9	
28	25 47.0	13.7				20	2 45.8	10.3		38.3	15.7
June 7	26 21.0	13.7				30	2 25.3	10.3		26.5	15.5
17	26 53.4	13.6				Nov. 9	2 2.2	10.2		17.2	15.3
27	27 23.7	13.6	25 St. 22	40.9	10.2	19	1 37.5	10.1		22 10.8	15.0
July 7	27 51.4	13.6				29	1 12.3	10.0		7.8	14.6
17	28 15.8	13.6				Dec. 9	o 47.8	9.9	3 St.	8.1	14.3
27	28 36.4	13.6				19	o 24.9	9.8		11.9	13.9
Aug. 6	28 52.8	13.6				29	o 4.9	9.6		22 19.1	13.6
16	29 4.6	13.7				59, J. 8	8 29 48.4	9.5		29.6	13.3
26	11.4	13.7				18	36.3	9.3		43.1	13.0
Sept. 5	4 St. 13.3	13.7	21 30.2	12.6		28	29.0	9.1		22 59.2	12.8
15	10.1	13.8	21 13.7	12.7		Feb. 7	4 St. 29 26.9	9.0		23 17.7	12.6
25	29 2.0	13.8	20 57.3	12.8		17	30.2	8.8		23 37.9	12.4
Oct. 5	28 49.3	13.8				27	38.7	8.6		23 59.5	12.4
15	28 32.4	13.8				Mar. 9	29 52.2	8.5		24 22.0	12.4
25	28 12.1	13.7				19	II o 10.5	8.3		24 44.7	12.4
Nov. 4	27 49.2	13.7				29	o 32.9	8.2		25 7.2	12.6
14	27 24.6	13.6				Apr. 8	o 59.1	8.0		25 29.1	12.8
24	26 59.5	13.5				18	1 28.4	7.9		25 49.8	13.0
Dec. 4	26 35.0	13.4	1 St. 53.9	11.6		28	2 o. I	7.8		26 8.8	13.3
14	26 12.1	13.3				May 8	2 33.7	7.7		25.8	13.7
24	25 51.9	13.1				18	3 8.4	7.6		40.5	14.1
'58, J. 3	35.3	12.9				28	3 43.5	7.5		26 52.4	14.6
13	22.9	12.7				June 7	4 18.5	7.4		27 1.4	15.0
23	15.4	12.6				17	4 52.5	7.3		7.2	15.5
Feb. 2	St. 13.0	12.4	20 58.5	9.7		27	5 25.1	7.3	30 St.	9.8	16.1
12	25 16.0	12.2	21 18.4	9.5		July 7	5 55.5	7.2		9.1	16.6
22	24.2	12.0	21 39.7	9.5		17	6 23.1	7.2		27 5.2	17.0
Mar. 4	37.4	11.8	22 2.0	9.4		27	6 47.4	7.1		26 58.3	17.5
14	25 55.3	11.6	22 24.7	9.5		Aug. 6	7 7.9	7.1		48.7	17.9
24	26 17.6	11.4				16	24.1	7.0		36.6	18.3
Apr. 3	26 43.5	11.3				26	35.6	7.0		22.6	18.6
13	27 12.5	11.1				Sept. 5	42.2	7.0		26 7.1	18.8
23	27 44.1	11.0				15 18 St. 7	43.8	7.0		25 50.8	18.9
May 3	28 17.5	10.9				25	40.1	6.9		34.2	19.0
13	28 52.1	10.8				Oct. 5	31.5	6.9		18.0	19.0
23	29 27.1	10.7				15	18.3	6.8		25 2.9	18.9
June 2	II o 1.9	10.6	24 45.1	12.0		25	7 0.9	6.8		24 49.4	18.7
12	o 35.9	10.5	51.7	12.4		Nov. 4	6 40.2	6.7		38.1	18.5
22	1 8.4	10.5	27 St. 55.1	12.9		14	6 16.9	6.6		29.5	18.2
July 2	1 38.8	10.5	55.2	13.4		24	5 52.1	6.5		24.0	17.9

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1859.	II 0° s.	/	X 1° s.	/	1861.	II 0° s.	/	Y 0° s.	/
Nov 24	5 52.1	6.5	24 24.0	17.9	Apr. 17	9 35.0	1.4	0 8.0	18.4
Dec. 4	5 26.8	6.4	21.7	17.5	27	10 4.6	1.3	0 27.9	18.7
14	5 2.2	6.3	22.9	17.1	May 7	10 36.7	1.2	0 46.0	19.0
24	4 39.5	6.2	27.6	16.8	17	11 10.6	1.1	1 1.9	19.5
'60, J. 3	4 19.5	6.1	35.7	16.4	27	11 45.6	1.0	15.2	19.9
13	4 3.2	5.9	24 47.0	16.1	June 6	12 21.0	0.9	25.7	20.4
23	3 51.3	5.8	25 1.2	15.8	16	12 56.1	0.8	33.1	20.9
Feb. 2	10 St. 44.3	5.7	17.9	15.6	26	13 30.3	0.7	37.4	21.4
12	42.4	5.5	36.9	15.4	July 6	14 3.0	0.6	1 38.4	22.0
22	46.0	5.4	25 57.5	15.2	16	14 33.5	0.5	36.1	22.5
Mar. 3	3 54.8	5.2	26 19.4	15.2	26	15 1.2	0.4	30.7	23.0
13	4 8.6	5.1	26 41.9	15.2	Aug. 5	15 25.5	0.4	22.4	23.4
23	4 27.1	5.0	27 4.6	15.3	15	15 45.9	0.3	1 11.5	23.8
Apr. 2	4 49.9	4.8	27 27.1	15.4	25	16 1.9	0.2	0 58.4	24.2
12	5 16.2	4.7	27 48.6	15.6	Sept. 4	13 3.3	0.1	43.5	24.5
22	5 45.7	4.6	28 8.9	15.9	14	22 St. 19.6	0.0	27.5	24.6
May 2	6 17.7	4.5	27.5	16.2	24	20.7 n.O.I.	0	10.9	24.7
12	6 51.4	4.4	44.0	16.6	Oct. 4	16.7	0.2	29 54.4	24.8
22	7 26.2	4.3	28 58.0	17.1	14	16 7.7	0.3	38.6	24.7
June 1	8 1.5	4.2	29 9.2	17.5	24	15 54.0	0.4	24.2	24.5
11	8 36.5	4.1	17.4	18.0	Nov. 3	15 36.2	0.5	11.7	24.3
21	9 10.7	4.0	22.4	18.5	13	15 15.0	0.6	29 1.7	24.0
July 1	9 43.3	4.0	24 2	19.1	23	14 51.3	0.7	28 54.6	23.7
11	10 13.7	3.9	2 St. 29 22.8	19.6	Dec. 3	14 26.2	0.8	10 St. 50.7	23.3
21	10 41.3	3.8	18.1	20.1	13	14 0.8	0.9	50.2	22.9
31	II 5.6	3.8	10.5	20.5	23	13 36.2	1.0	53.1	22.5
Aug 10	26.1	3.7	29 0.2	20.9	'62, J. 2	13 13.5	1.1	28 59.5	22.1
20	42.2	3.6	28 47.6	21.3	12	12 53.7	1.2	29 9.2	21.7
30	II 53.6	3.6	33.1	21.6	22	37.7	1.3	22.0	21.3
Sept. 9	12 0.1	3.5	17.4	21.8	Feb. 1	26.2	1.4	37.6	21.0
17 St	12 1.4	3.4	28 0.9	21.9	11	18 St. 12 19.7	1.5	29 55.5	20.8
29	II 57.6	3.4	27 44.3	21.9	21	18 4	1.5	0 15.3	20.6
Oct. 9	48.8	3.3	28.3	21.9	Mar. 3	22.5	1.6	0 36.6	20.5
19	35.3	3.2	13.5	21.8	13	31.8	1.7	0 58.9	20.5
29	II 17.7	3.1	27 0.5	21.6	23	12 46.2	1.8	1 21.6	20.5
Nov. 8	10 56.8	3.1	26 49.9	21.3	Apr. 2	13 5.2	1.9	1 44.2	20.6
18	10 33.3	3.0	42.0	21.0	12	13 28.4	1.9	2 6.2	20.8
28	10 8.3	2.9	37.3	20.6	22	13 55.2	2.0	2 27.2	21.0
Dec. 8	9 43.0	2.8	St. 35.9	20.3	May 2	14 25.1	2.1	2 46.7	21.4
18	9 18.4	2.7	38.0	19.9	12	14 57.3	2.2	3 4.3	21.7
28	8 55.6	2.6	26 43.5	19.5	22	15 31.4	2.3	19.6	22.2
'61, J. 7	35.8	2.5	26 52.4	19.1	June 1	16 6.5	2.4	32.2	22.6
17	19.6	2.3	27 4.4	18.8	11	16 42.0	2.4	42.0	23.1
27	7.9	2.2	19.3	18.5	21	17 17.3	2.5	3 48.6	23.7
Feb. 6	8 1.2	2.1	36.7	18.2	July 1	17 51.6	2.6	7 St. 52.1	24.2
16	14 St. 59.6	2.0	27 56.1	18.1	11	18 24.3	2.7	52.3	24.8
26	8 3.5	1.9	28 17.1	17.9	21	18 54.8	2.8	49.2	25.3
Mar. 8	12.5	1.8	28 39.1	17.9	31	19 22.6	2.9	3 43.1	25.8
18	26.6	1.7	29 1.8	17.9	Aug 10	19 46.9	3.1	34.1	26.2
28	8 45.4	1.6	24.5	18.0	20	20 7.3	3.2	22.6	26.6
Apr. 7	9 8.3	1.5	46.7	18.2	30	20 23.3	3.3	9.0	27.0

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.		
	II	o° n.	φ	1° s.		II	o° n.	φ	1° s.		
1862.					1864.						
Aug 30	20 23.3	3.3	3 9.0	27.0	Jan. 22	21 34.7	8.5	3 43.6	26.4		
Sept. 9	34.5	3.4	2 53.8	27.2	Feb. 1	19.0	8.6	3 57.9	26.1		
19	40.7	3.5	37.5	27.4	11	7.9	8.6	4 14.6	25.8		
29	26 St. 20 41.7	3.7	20.9	27.4	21	1.8	8.6	4 33.6	25.6		
Oct. 9	37.5	3.8	2 4.5	27.4	Mar. 2	28 St. 21	1.0	8.7	4 54.2	25.4	
19	28.3	3.9	1 49.0	27.3	12			5.5	8.7	5 16.0	25.3
29	20 14.3	4.1	35.0	27.1	22			15.3	8.7	5 38.5	25.3
Nov. 8	19 56.3	4.2	23.1	26.9	Apr. 1			30.2	8.7	6 1.3	25.4
18	19 34.9	4.3	13.8	26.6	11			21 49.6	8.7	6 23.6	25.5
28	19 11.1	4.4	1 7.4	26.2	21			22 13.2	8.8	6 45.2	25.7
Dec. 8	18 45.8	4.5	12 St. 4.3	25.8	May 1	22 40.4	8.8	7 5.5	26.0		
18	18 20.3	4.6	4.7	25.4	11	23 10.7	8.8		24.1	26.4	
28	17 55.7	4.7	8.5	24.9	21	23 43.3	8.9		40.6	26.8	
'63, J. 7	17 33.0	4.8	1 15.8	24.5	31	24 17.6	9.0		7 54.6	27.2	
17	17 13.4	4.9	26.3	24.1	Jun. 10	24 53.0	9.0		8 5.8	27.7	
27	16 57.5	4.9	39.8	23.8	20	25 28.8	9.1		14.1	28.3	
Feb. 6	46.2	5.0	1 56.0	23.5	30	26 4.3	9.2		19.2	28.8	
16	23 St. 39.9	5.1	2 14.4	23.2	July 10	26 38.8	9.3	12 St. 8	21.1	29.4	
26	38.9	5.1	2 34.7	23.1	20	27 11.7	9.5		19.7	30.0	
Mar. 8	43.2	5.2	2 56.3	23.0	30	27 42.4	9.6		15.1	30.5	
18	16 52.4	5.2	3 18.7	22.9	Aug. 9	28 10.2	9.7	8 7.5	31.0		
28	17 7.3	5.2	3 41.4	23.0	19	28 34.6	9.9		7 57.2	31.4	
Apr. 7	17 26.6	5.3	4 3.9	23.1	29	28 55.0	10.1		44.6	31.8	
17	17 50.0	5.4	4 25.7	23.3	Sept. 8	29 10.9	10.2		30.1	32.1	
27	18 17.0	5.4	4 46.4	23.6	18	22.0	10.4		7 14.3	32.3	
May 7	18 47.0	5.5	5 5.4	23.9	28	28.0	10.6		6 57.7	32.4	
17	19 19.5	5.5	22.5	24.3	Oct. 8	6 St. 29	28.7	10.8		41.1	32.4
27	19 53.7	5.6	37.1	24.8	18	24.2	11.0			25.0	32.4
June 6	20 28.9	5.7	49.1	25.3	28	14.5	11.2		6 10.2	32.2	
16	21 4.6	5.8	5 58.1	25.8	Nov. 7	29 0.2	11.4		5 57.1	31.9	
26	21 39.9	5.9	6 4.0	26.3	17	28 41.8	11.5		46.5	31.6	
July 6	22 14.4	6.0	6.6	26.9	27	28 20.0	11.7		38.6	31.2	
16	22 47.2	6.1	9 St. 6.0	27.4	Dec. 7	27 55.9	11.8			33.9	30.8
26	23 17.8	6.2	6 2.2	28.0	17	27 30.4	11.9	St. 5	32.5	30.4	
Aug. 5	23 45.5	6.4	5 55.3	28.5	27	27 4.7	12.0			34.6	29.9
15	24 9.9	6.5	45.7	28.9	'65, J. 6	26 40.0	12.1		40.2	29.4	
25	30.3	6.6	33.6	29.3	16	26 17.4	12.1		5 49.1	29.0	
Sept. 4	46.2	6.8	19.5	29.6	26	25 58.0	12.2		6 1.2	28.6	
14	24 57.4	6.9	5 4.0	29.8	Feb. 5	42.4	12.2		16.1	28.3	
24	1 St. 25 3.5	7.1	4 47.6	30.0	15	31.4	12.2		33.5	28.0	
Oct. 4	25 4.3	7.3	4 30.9	30.0	25	25.5	12.2		6 52.9	27.7	
14	25 0.0	7.4	4 14.7	30.0	Mar. 7	25 24.9	12.2		7 13.9	27.6	
24	24 50.5	7.6	3 59.5	29.8	17	29.7	12.1		7 35.9	27.5	
Nov. 3	24 36.4	7.7	45.9	29.6	27	39.7	12.1		7 58.5	27.5	
13	24 18.2	7.9	34.6	29.3	Apr. 6	25 54.7	12.1		8 21.2	27.6	
23	23 56.6	8.0	26.0	29.0	16	26 14.3	12.1		8 43.4	27.7	
Dec. 3	23 32.6	8.1	3 20.5	28.6	26	26 38.2	12.1		9 4.7	28.0	
13	23 7.2	8.2	18.2	28.1	May 6	27 5.5	12.1		24.6	28.3	
23	22 41.6	8.3	19.5	27.7	16	27 35.9	12.2		42.7	28.7	
'64, J. 2	22 16.9	8.4	24.2	27.3	26	28 8.7	12.2		9 58.6	29.1	
12	21 54.3	8.5	32.3	26.8	June 5	28 43.2	12.3		10 12.0	29.6	

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.		
1865.	II 0° n.	/	9° s.	/	1866.	25° 0° n.	/	9° s.	/		
June 5	28 43.2	12.3	10 12.0	29.6	Oct. 28	8 18.1	18.0	10 46.4	36.7		
15	29 18.7	12.3	22.5	30.1	Nov. 7	8 8.2	18.2	32.4	36.5		
25	29 54.7	12.4	30.1	30.7	17	7 53.5	18.5	20.5	36.2		
July 5	0 30.3	12.5	34.4	31.2	27	7 34.7	18.7	11.2	35.8		
15	1 4.9	12.6	14 St. 10 35.4	31.8	Dec. 7	7 12.6	18.9	10 4.8	35.3		
25	1 38.0	12.8	33.2	32.4	17	6 48.2	19.0	21 St.	1.7	34.9	
Aug. 4	2 8.7	12.9	27.9	32.9	27	6 22.5	19.1		2.2	34.4	
14	2 36.6	13.1	19.6	33.4	'67, J. 6	5 56.7	19.2		6.0	33.9	
Sept. 3	3 1.0	13.3	10 8.7	33.8	16	5 32.0	19.2	10 13.4	33.4		
	21.4	13.5	9 55.6	34.2	26	5 9.5	19.3		23.9	33.0	
13	37.4	13.7	40.7	34.5	Feb. 5	4 50.2	19.2		37.5	32.6	
23	48.4	13.9	24.6	34.6	15	34.8	29.2	10 53.7	32.2		
Oct. 3	54.3	14.1	9 8.0	34.7	25	24.2	19.1	11 12.1	31.9		
13	10 St. 3 55.0	14.3	8 51.4	34.7	Mar. 7	18.6	19.1	11 32.3	31.7		
23	50.2	14.5	35.6	34.6	17 12 St.	4 18.4	19.0	11 53.9	31.6		
Nov. 2	40.4	14.8	21.1	34.4	27	23.5	18.9	12 16.3	31.5		
12	25.9	14.9	8 8.6	34.1	Apr. 6	33.9	18.8	12 39.0	31.6		
22	3 7.3	15.1	7 58.6	33.8	16	4 49.3	18.8	13 1.5	31.7		
Dec. 2	2 45.4	15.3	51.5	33.4	26	5 9.3	18.7	13 23.3	31.9		
12	2 21.1	15.4	19 St. 47.6	32.9	May 6	5 33.5	18.7	13 43.9	32.1		
22	I 55.5	15.6	47.1	32.4	16	6 1.1	18.6	14 3.0	32.5		
'66, J. 1	I 29.7	15.6	50.1	32.0	26	6 31.9	18.6	20.1	32.9		
11	I 5.0	15.7	7 56.6	31.5	June 5	7 5.0	18.6	34.8	33.4		
21	O 42.5	15.7	8 6.3	31.1	15	7 39.7	18.7	46.8	33.9		
31	O 23.1	15.7	19.2	30.7	25	8 15.5	18.7	14 55.9	34.4		
Feb. 10	II 0 7.6	15.7	34.7	30.3	July 5	8 51.8	18.8	15 1.9	35.0		
20	29 56.8	15.7	8 52.7	30.0	15	9 27.6	18.9	4.6	35.6		
Mar. 2	8 St. 51.1	15.7	9 12.5	29.8	25	10 2.5	19.0	19 St.	4.1	36.2	
12	50.6	15.6	9 33.8	29.6	Aug. 4	10 35.8	19.2	15 0.3	36.8		
22	29 55.6	15.6	9 56.0	29.6	14	11 6.8	19.4	14 53.5	37.3		
Apr. 1	25° 0 5.9	15.5	10 18.7	29.6	24	11 34.8	19.6	43.9	37.8		
11	O 21.1	15.5	10 41.3	29.7	Sept. 3	II 59.3	19.8	31.8	38.2		
21	O 40.9	15.4	II 3.3	29.9	13	12 19.8	20.1	17.8	38.5		
May 1	I 4.9	15.4	II 24.3	30.1	23	35.8	20.3	14 2.2	38.7		
11	I 32.4	15.4	II 43.8	30.5	Oct. 3	46.8	20.6	13 45.8	38.9		
21	2 3.0	15.4	12 1.4	30.8	13 18 St.	52.5	20.9	13 29.0	38.9		
31	2 35.9	15.4	16.7	31.3	23 12	52.9	21.1	13 12.8	38.8		
Jun. 10	3 10.5	15.5	29.4	31.8	Nov. 2	48.0	21.4	12 57.5	38.6		
20	3 46.2	15.6	39.2	32.3	12	37.9	21.7	44.0	38.4		
30	4 22.3	15.6	12 46.0	32.9	22	23.1	21.9	32.7	38.0		
July 10	4 58.0	15.7	16 St. 49.5	33.5	Dec. 2	12 4.2	22.1	24.0	37.6		
20	5 32.8	15.9	49.8	34.1	12	II 42.0	22.3	18.5	37.2		
30	6 5.9	16.0	46.8	34.6	22	II 17.4	22.5	12 16.3	36.7		
Aug. 9	6 36.8	16.2	12 40.7	35.2	'68, J. 1	10 51.6	22.6	23 St. 12	17.6	36.2	
19	7 4.8	16.4	31.8	35.6	11	10 25.8	22.7	22.3	35.7		
29	7 29.2	16.6	20.3	36.1	21	10 1.1	22.7	30.5	35.2		
Sept. 8	7 49.7	16.8	12 6.6	36.4	31	9 38.6	22.7	41.8	34.7		
18	8 5.6	17.0	11 51.4	36.7	Feb. 10	9 19.4	22.7	12 56.1	34.3		
28	16.6	17.3	35.1	36.8	20	9 4.2	22.6	13 12.9	34.0		
Oct. 8	14 St. 22.4	17.5	18.4	36.9	Mar. 1	8 53.6	22.5	31.8	33.7		
18	22.9	17.8	2.0	36.8	11	8 48.2	22.4	52.4	33.5		

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.		Date.	Long.	Lat.	Long.	Lat.	
	o° n.	/	o°	1° s.			o°	o° n.	o°	1° s.	
1868.	26 o /	o° n. /	9 o /	1° s. /		1869.	26 o /	o° n. /	9 o /	1° s. /	
Mar 11	8 48.2	22.4	13 52.4	33.5		Aug. 3	19 7.7	25.1	19 32.6	40.0	
	16 St. 48.1	22.3	14 14.2	33.4		13	19 41.2	25.3	27.3	40.6	
	31 8 53.4	22.2	14 36.7	33.3		23	20 12.5	25.5	19.1	41.1	
Apr 10	9 4.0	22.1	14 59.4	33.4		Sept. 2	20 40.7	25.7	19 8.2	41.5	
	20 9 19.5	22.0	15 21.8	33.5		12	21 5.4	26.0	18 55.1	41.9	
May 10	9 39.7	21.9	15 43.3	33.7		22	26.0	26.3	40.2	42.2	
	10 3.9	21.8	16 3.7	34.0		Oct. 2	42.0	26.6	24.1	42.4	
	20 10 31.8	21.7	22.3	34.4		12	53.0	26.9	18 7.4	42.4	
	30 11 2.7	21.7	38.8	34.8		22	58.7	27.2	17 50.8	42.4	
June 9	11 35.9	21.7	16 52.9	35.3		Nov. 1	28 St. 21 59.0	27.5	34.9	42.3	
July 9	12 10.8	21.7	17 4.2	35.8		11	53.9	27.9	20.4	42.0	
	12 46.8	21.8	12.6	36.4		21	43.6	28.2	17 7.9	41.7	
	13 23.1	21.9	17.8	37.0		Dec. 1	28.5	28.4	16 57.9	41.3	
	13 59.1	22.0	17 19.7	37.6		11	21 9.3	28.7	50.8	40.8	
	14 34.2	22.1	21 St. 18 4	38.2		21	20 46.9	28.9	28 St. 46.9	40.3	
Aug. 8	15 7.6	22.3	13 9	38.7		31	20 22.1	29.1	46.4	39.8	
	15 38.7	22.5	17 6.4	39.3		'70, J. 10	19 56.2	29.2	49.5	39.3	
	16 6.8	22.7	16 56.1	39.7		20	19 30.3	29.2	16 55.9	38.7	
	16 31.4	22.9	43.5	40.1		30	19 5.6	29.2	17 5.7	38.2	
Sept. 7	16 52.0	23.2	29.0	40.4		Feb. 9	18 43.2	29.2	18.6	37.8	
	27 17 7.9	23.5	16 13.1	40.6					34.1	37.4	
Oct. 7	18.9	23.8	15 56.5	40.7		Mar. 1	18 9.1	29.0	17 52.0	37.0	
	17 24.6	24.1	39.9	40.7		11	17 58.7	28.9	18 11.9	36.8	
	23 St. 25.0	24.4	23 8	40.6		21	53.6	28.7	18 33.1	36.6	
Nov. 6	19.9	24.7	15 8.9	40.4		26 St.	53.7	28.5	18 55.3	36.5	
Dec. 6	16 17 9.7	25.0	14 55.8	40.1		Apr. 10	17 59.3	28.3	19 17.9	36.5	
	16 54.8	25.3	45.1	39.7		20	18 10.1	28.2	19 40.5	36.6	
	16 35.7	25.5	37.3	39.3		30	18 25.9	28.0	20 2.5	36.8	
	16 13.4	25.7	32.6	38.8		May 10	18 46.3	27.9	20 23.5	37.0	
	15 48.7	25.8	25 St. 14 31.2	38.3		20	19 10.8	27.7	20 43.0	37.4	
'69, J. 5	15 22.8	25.9	33.4	37.8		30	19 38.9	27.6	21 0.7	37.8	
	14 57.0	26.0	39.0	37.3		June 9	20 10.0	27.6	16.1	38.2	
	14 32.3	26.0	14 48.0	36.8		19	20 43.5	27.5	28.8	38.7	
	14 9.9	26.0	15 0.1	36.3		29	21 18.7	27.5	38.8	39.3	
Feb. 4	13 50.6	26.0	15.0	35.9		July 9	21 54.9	27.6	21 45.6	39.9	
	24 35.5	25.9	32.4	35.6					31.7	42.7	
Mar. 6	25.3	25.7	15 51.8	35.3		19	22 31.5	27.6	26 St.	49.2	40.5
	16 19.8	25.6	16 12.7	35.1		29	23 7.8	27.8	49.5	41.1	
Apr. 5	21 St. 13 19.9	25.5	16 34.7	35.0		Aug. 8	23 43.2	27.9	46.6	41.7	
	25.3	25.3	16 57.3	35.0		18	24 16.8	28.1	21 40.6	42.2	
May 5	15 36.0	25.2	17 20.0	35.1		28	24 48.2	28.3	31.7	42.7	
	13 51.7	25.0	17 42.1	35.2		Sept. 7	25 16.6	28.6	20.2	43.2	
	14 12.0	24.9	18 3.5	35.4		17	25 41.4	28.8	21 6.6	43.5	
	14 36.4	24.8	23.4	35.8		27	26 2.0	29.1	20 51.3	43.8	
	15 4.4	24.8	41.5	36.1		Oct. 7	18.1	29.5	35.0	43.9	
June 4	15 35.4	24.7	18 57.5	36.6		17	29.1	29.8	18.2	44.0	
	16 8.7	24.7	19 10.9	37.1		27	34.8	30.2	20	1.7	43.9
	16 43.8	24.7	21.6	37.6		Nov. 6	35.0	30.5	19 46.1	43.7	
	17 19.9	24.7	29.1	38.2		16	29.8	30.9	32.1	43.5	
July 4	17 56.4	24.8	23 St. 33.6	38.8		26	19.4	31.2	20.1	43.1	
	18 32.5	24.9	34.7	39.4		Dec. 6	4.2	31.5	10.8	42.7	
	14					16	25 45.0	31.8	4.5	42.2	

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.		
1870.	25° 0'	0° n.	25° 0'	1° s.	1872.	25° 0'	0° n.	24° 0'	1° s.		
Dec. 16	25 45.0	31.8	19 4.5	42.2	May 9	27 39.7	33.4	24 43.0	39.5		
26	25 22.4	32.0	1.4	41.7	19	28 0.3	33.2	25 3.3	39.8		
'71, J. 5	24 57.6	32.1	31 St. 1.9	41.1	29	28 25.0	33.0	21.9	40.1		
15	24 31.6	32.2	5.8	40.6	June 8	28 53.3	32.9	38.5	40.6		
25	24 5.7	32.3	19 13.1	40.0	18	29 24.5	32.8	25 52.6	41.1		
Feb. 4	23 41.0	32.3	23.7	39.5	28	29 58.2	32.7	26 4.0	41.6		
14	23 18.6	32.2	37.2	39.1	July 8	25 0	33.7	12.5	42.2		
24	22 59.5	32.1	19 53.4	38.7	18	1 10.1	32.7	17.8	42.8		
Mar. 6	44 6	32.0	20 11.8	38.4	28	1 47.0	32.8	26 19.8	43.4		
16	34.4	31.8	20 32.0	38.1	Aug. 7	2 23.6	32.9	30 St. 18.5	44.0		
26	31 St. 22 29.3	31.6	20 53.5	38.0	17	2 59.2	33.0	14.1	44.6		
Apr. 5	29.5	31.4	21 15.9	37.9	27	3 33.2	33.2	26 6.6	45.1		
15	35.2	31.2	21 38.5	37.9	Sept. 6	4 4.8	33.5	25 56.3	45.6		
25	22 46.1	31.0	22 1.0	38.0	16	4 33.4	33.7	43.7	46.0		
May 5	23 2.0	30.8	22 22.8	38.2	26	4 58.4	34.0	29.1	46.3		
15	23 22.4	30.6	22 43.5	38.5	Oct. 6	5 19.3	34.4	25 13.2	46.5		
25	23 47.1	30.5	23 2.6	38.8	16	35.4	34.8	24 56.6	46.6		
June 4	24 15.3	30.4	19.7	39.2	26	46.4	35.1	39.8	46.6		
14	24 46.5	30.3	34.5	39.7	Nov. 5	5 2.1	35.5	23.7	46.4		
24	25 20.1	30.2	46.6	40.3	11 St. 15	5 52.3	35.9	24 8.7	46.2		
July 4	25 55.4	30.2	23 55.7	40.8	25	47.0	36.3	23 55.6	45.9		
14	26 31.7	30.2	24 1.8	41.4	Dec. 5	36.4	36.7	44.9	45.5		
24	27 8.5	30.3	28 St. 4.7	42.0	15	21.1	37.0	37.0	45.0		
Aug. 3	27 44.9	30.4	4.2	42.6	25	5 1.6	37.3	32.3	44.4		
13	28 20.4	30.6	24 0.5	43.2	'73, J. 4	4 38.9	37.5	St. 31.0	43.9		
23	28 54.2	30.8	23 53.7	43.8	14	4 14.0	37.7	23 33.2	43.3		
Sept. 2	29 25.7	31.0	44.1	44.2	24	3 47.9	37.8	38.8	42.7		
12	29 54.2	31.2	32.0	44.7	Feb. 3	3 21.9	37.8	47.8	42.2		
22	25 0 19.1	31.5	17.9	45.0	13	2 57.2	37.8	23 59.9	41.7		
Oct. 2	0 39.8	31.9	23 2.3	45.2	23	34.9	37.7	24 14.8	41.3		
12	0 55.9	32.2	22 45.8	45.3	Mar. 5	15.8	37.5	24 32.1	40.9		
22	1 7.0	32.6	22 29.1	45.4	15	2 1.0	37.3	24 51.5	40.6		
Nov. 1	12.6	33.0	22 12.7	45.3	25	1 50.9	37.1	25 12.4	40.4		
11	12.8	33.3	21 57.4	45.1	Apr. 4	45.9	36.8	25 34.4	40.2		
21	1 7.6	33.7	43.8	44.8	14 9 St.	46.3	36.6	25 56.9	40.2		
Dec. 1	0 57.1	34.0	32.5	44.4	24	1 52.0	36.3	26 19.5	40.2		
11	0 41.8	34.3	23.9	43.9	May 4	2 3.1	36.1	26 41.7	40.4		
21	0 22.5	34.6	18.3	43.4	14	2 19.1	35.8	27 3.0	40.6		
31	25 59.8	34.8	21 16.2	42.9	24	2 39.7	35.6	22.9	40.9		
'72, J. 10	29 34.9	35.0	17.4	42.3	June 3	3 4.4	35.4	41.1	41.3		
20	29 8.9	35.1	22.2	41.7	13	3 32.8	35.2	27 57.1	41.8		
30	28 42.9	35.2	30.4	41.2	23	4 4.1	35.1	28 10.6	42.3		
Feb. 9	28 18.2	35.1	41.7	40.7	July 3	4 37.9	35.0	21.3	42.8		
19	27 55.9	35.1	21 56.0	40.2	13	5 13.4	35.0	29.0	43.4		
29	36.8	34.9	22 12.7	39.9	23	5 50.0	35.0	33.4	44.0		
Mar. 10	21.9	34.8	22 31.6	39.5	Aug. 2	6 27.0	35.1	St. 34.7	44.6		
20	11.8	34.6	22 52.2	39.3	12	7 3.7	35.2	28 32.6	45.2		
30	27 6.7	34.3	23 14.0	39.2	22	7 39.5	35.3	27.4	45.8		
Apr. 9	4 St. 7.1	34.1	23 36.4	39.1	Sept. 1	8 13.6	35.5	19.1	46.3		
19	12.8	33.9	23 59.1	39.1	11	8 45.3	35.7	28 8.3	46.8		
29	23.8	33.6	24 21.4	39.3	21	9 14.1	36.0	27 55.1	47.1		

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.	Long.	Lat.
1873.	Ω ○ ° ,	o° n. ,	Ψ ○ ° ,	1° s. ,	1875.	Ω ○ ° ,	o° n. ,	Ψ ○ ° ,	1° s. ,	Ψ ○ ° ,	1° s. ,
Sep. 21	9 14.1	36.0	27 55.1	47.1	Feb. 13	12 44.2	42.4	28 23.1	43.7		
Oct. 1	9 39.2	36.4	40.1	47.4	23	12 19.5	42.3	28 36.7	43.2		
11	10 0.1	36.7	24.0	47.6	Mar. 5	11 57.2	42.2	28 52.8	42.8		
21	16.3	37.1	27 7.2	47.7	15	38.2	42.0	29 11.2	42.4		
31	27.4	37.5	26 50.5	47.6	25	23.3	41.8	29 31.4	42.2		
Nov 10	16 St. 33.1	37.9	34.6	47.4	Apr. 4	13.3	41.5	29 52.9	42.0		
20	10 33.2	38.3	20.1	47.2	14	11 8.3	41.2	8 0 15.1	41.9		
30	27.9	38.7	26 7.5	46.8	24	18 St. 8.8	40.9	0, 37.7	41.9		
Dec. 10	17.2	39.1	25 57.5	46.4	May 4	14.6	40.5	1 0.2	42.0		
20	10 1.8	39.4	50.4	45.9	14	25.6	40.2	1 22.0	42.		
20	9 42.3	39.7	6 St. 46.5	45.3	24	11 41.7	39.9	1 42.6	42.		
74, J. 9	9 19.5	39.9	46.0	44.7	June 3	12 2.4	39.6	2 1.7	42.8		
19	8 54.5	40.1	49.1	44.1	13	12 27.2	39.4	18.9	43.2		
29	8 28.4	40.2	25 55.6	43.6	23	12 55.6	39.2	33.7	43.7		
Feb. 8	8 2.4	40.2	26 5.4	43.0	July 3	13 27.1	39.1	45.9	44.2		
18	7 37.7	40.2	18.2	42.5	13	14 1.0	38.9	2 55.1	44.8		
28	7 15.3	40.1	33.7	42.1	23	14 36.7	38.9	3 1.3	45.4		
Mar 10	6 56.3	39.9	26 51.6	41.7	Aug. 2	15 13.5	38.9	6 St. 4.2	46.0		
20	41.5	39.7	27 11.4	41.4	12	15 50.7	38.9	3.8	46.6		
30	31.4	39.4	27 32.6	41.2	22	16 27.7	39.0	3 0.1	47.2		
Apr. 9	13 St. 26.5	39.1	27 54.8	41.1	Sept. 1	17 3.7	39.2	2 53.4	47.7		
19	6 26.9	38.8	28 17.3	41.1	11	17 38.1	39.4	43.8	48.2		
29	32.7	38.5	28 39.8	41.2	21	18 10.1	39.6	31.7	48.6		
May 9	43.7	38.3	29 1.9	41.3	Oct. 1	18 39.0	39.9	17.6	49.0		
19	6 59.8	38.0	29 22.9	41.6	11	19 4.4	40.2	2 1.9	49.2		
29	7 20.4	37.7	29 42.4	41.9	21	25.5	40.6	1 45.3	49.3		
June 8	7 45.2	37.5	8 0 0.1	42.3	31	41.8	41.0	1 28.5	49.3		
18	8 13.6	37.3	15.5	42.8	Nov 10	53.0	41.4	1 12.1	49.2		
28	8 45.0	37.2	28.3	43.3	20	58.6	41.9	0 56.7	48.9		
July 8	9 18.9	37.1	38.3	43.9	30	19 58.8	42.3	43.1	48.6		
18	9 54.5	37.1	o 45.2	44.5	Dec. 10	53.3	41.7	31.8	48.2		
28	10 31.2	37.1	4 St. 48.9	45.1	20	42.6	43.1	23.1	47.7		
Aug. 7	11 8.3	37.1	49.3	45.7	30	27.1	43.5	0 17.6	47.1		
17	11 45.2	37.2	46.5	46.3	'76, J. 9	19 7.5	43.8	15.5	46.5		
27	12 21.0	37.4	o 40.5	46.8	19	18 44.6	44.0	11 St. 16.8	45.9		
Sept. 6	12 55.3	37.6	31.5	47.3	29	18 19.5	44.2	o 21.6	45.3		
16	13 27.1	37.8	20.0	47.8	Feb. 8	17 53.3	44.3	29.7	44.8		
26	13 56.0	38.1	o 6.4	48.1	18	17 27.2	44.3	41.1	44.2		
Oct. 6	14 21.2	38.4	29 51.1	48.4	28	17 2.5	44.2	o 55.3	43.8		
16	14 42.2	38.8	34.7	48.5	Mar. 9	16 40.2	44.0	1 12.1	43.3		
26	14 58.5	39.2	17.8	48.6	19	16 21.2	43.8	1 30.9	43.0		
Nov. 5	15 9.6	39.6	29 1.3	48.5	29	16 6.4	43.6	1 51.4	42.7		
15	20 St. 15.3	40.0	28 45.7	48.3	Apr. 8	15 56.3	43.3	2 13.2	42.6		
25	15.5	40.5	31.6	48.0	18	15.4	42.9	2 35.6	42.5		
Dec. 5	15 10.0	40.9	19.5	47.6	23 St. 28	51.8	42.6	2 58.2	42.5		
15	14 59.4	41.3	10.2	47.1	May 8	15 57.6	42.2	3 20.5	42.6		
25	43.9	41.6	28 3.9	46.6	18	16 8.6	41.9	3 42.0	42.8		
'75, J. 4	24.3	41.9	0.8	46.0	28	16 24.7	41.6	4 2.4	43.1		
14	14 1.5	42.1	8 St. 1.3	45.4	June 7	16 45.3	41.3	21.0	43.5		
24	13 36.4	42.3	5.2	44.8	17	17 10.2	41.0	37.6	43.9		
Feb. 3	13 10.2	42.4	12.5	44.3	27	17 38.6	40.8	51.8	44.4		