

APPENDIX II.

TEN-YEAR CATALOGUE

OF

4059 STARS,

DEDUCED FROM

OBSERVATIONS

EXTENDING FROM 1877 TO 1886,

AT THE

ROYAL OBSERVATORY, GREENWICH,

AND REDUCED TO THE EPOCH

1880.0.

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

ERRATA.

NEW SEVEN-YEAR CATALOGUE OF 2760 STARS, 1864 (APPENDIX II. TO GREENWICH OBSERVATIONS, 1868).

- No. 7. No. in Lalande, *for* 127, *read* 125.
 No. 26. No. in Lalande, *insert* 427 (B.A.).
 No. 27. No. in Lalande, *insert* 459 (B.A.).
 No. 93. No. in Lalande, *insert* 1299 (B.A.).
 No. 281. No. in Groombridge, *dele* 295.
 No. 883. No. in Piazzi, *for* 294, *read* 297.
 No. 1187. No. in Lalande, *for* 18996, *read* 19014.
 No. 1620. No. in Lalande, *for* 25695, *read* 25692.
 No. 1737. No. in Bessel's Bradley, *insert* 1950.
 No. 1780. No. in Bessel's Bradley, *insert* 2006.
 No. 1981. No. in Groombridge, *for* 2479, *read* 2484.
 No. 2027. No. in Lalande, *for* 33838, *read* 33866.
 No. 2332. No. in Lalande, *for* 39872, *read* 39859.

NINE-YEAR CATALOGUE OF 2263 STARS, 1872 (APPENDIX I. TO GREENWICH OBSERVATIONS, 1876).

- No. 18. No in B. A. C., *insert* 65.
 No. 214. Star's Name (in some copies), *for* F. 298, *read* B. F. 298.
 No. 318. This Star should have been named W. B. VIII. 466.
 No. 321. This Star should have been named W. B. VIII. 475.
 No. 324. This Star should have been named W. B. VIII. 516.
 No. 327. This Star should have been named Lalande 16645.
 No. 328. This Star should have been named W. B. VIII. 565.

NINE-YEAR CATALOGUE OF STARS, 1876—continued.

- No. 830. This Star should have been named Lalande 16676.
 No. 1158. This Star should have been named Lalande 23506.
 No. 1222. This Star should have been named Lalande 24797.
 No. 1618. This Star should have been named Piazzi XVII. 237;
 No. in Piazzi. *insert* XVII. 237.
 No. 1621. This Star should have been named Lalande 32488.
 No. 2015. This Star should have been named Lalande 42024;
 No. in B. A. C., *insert* 7496.

TEN-YEAR CATALOGUE OF 4059 STARS, 1880 (APPENDIX II. TO GREENWICH OBSERVATIONS, 1887).

- No. 474. Mean R.A. 1880⁰, *for* 3^h 4^m 23^s.615, *read* 3^h 4^m 23^s.281.
 No. 1169. α Canis Majoris. Mean R.A. 1880⁰, *for* 6^h 39^m 51^s.546, *read* 6^h 39^m 51^s.516; Mean N.P.D. 1880⁰, *for* 106° 33' 12".33, *read* 106° 33' 12".37. These corrections are due to orbital motion of Sirius, as computed from Auwers' elements (Pub. der Astron. Gesellsch. No. VII.).
 No. 1313. α Canis Minoris. Mean R.A. 1880⁰, *for* 7^h 33^m 1^s.128, *read* 7^h 33^m 1^s.110; Mean N.P.D. 1880⁰, *for* 84° 28' 6".63, *read* 84° 28' 6".69. These corrections are due to orbital motion of Procyon as computed from Auwers' elements (Astron. Nachr. Vol. lviil., Nos. 1371–1373).
 No. 1598. Annual Precession 1880⁰, *for* minus, *read* plus.
 No. 1773. Mean R.A. 1880⁰, *for* 10^h 59^m (28"), *read* 10^h 59^m (33").
 No. 2787. Star's Name, *for* Oeltz. Arg. (N.) 17419, *read* Lalande 32488.

TEN-YEAR CATALOGUE, 1880.—continued.

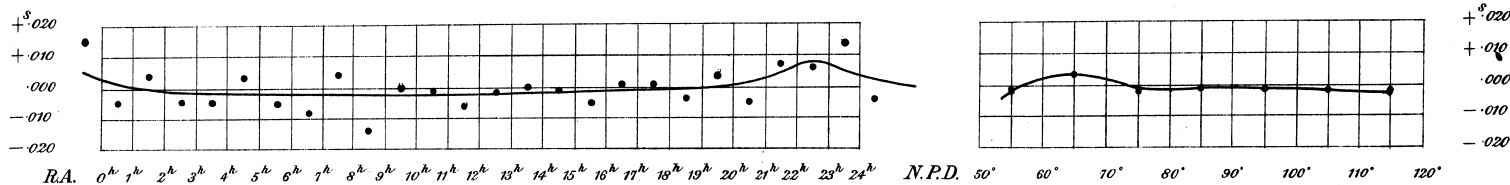
THE FOLLOWING CORRECTIONS ARE DUE TO REVISED THERMOMETER AND BAROMETER READINGS,
vide APPENDIX III. TO THE GREENWICH OBSERVATIONS, 1887.

No. in Catalogue.	Seconds of Mean N.P.D. 1880 ⁰ .		No. in Catalogue.	Seconds of Mean N.P.D. 1880 ⁰ .		No. in Catalogue.	Seconds of Mean N.P.D. 1880 ⁰ .		No. in Catalogue.	Seconds of Mean N.P.D. 1880 ⁰ .	
	<i>For</i>	<i>Read</i>		<i>For</i>	<i>Read</i>		<i>For</i>	<i>Read</i>		<i>For</i>	<i>Read</i>
78	29.80	29.83	591	52.95	52.97	1358	50.00	50.05	2061	48.14	48.18
80	34.09	34.12	661	31.49	31.53	1380	9.50	9.59	2064	36.07	36.30
180	39.63	39.66	684	24.84	24.91	1409	43.84	44.14	2102	43.23	43.30
190	20.56	20.60	775	17.01	17.05	1448	10.18	10.44	2134	46.42	46.48
193	11.82	11.85	826	42.21	42.24	1471	13.33	13.41	2184	46.34	46.39
213	49.08	49.12	899	8.93	8.96	1513	38.17	38.46	2192	24.28	24.38
297	48.32	48.40	922	13.34	13.54	1559	21.83	21.80	3118	3.60	3.54
418	9.61	10.04	967	21.78	21.75	1575	58.28	58.44	3119	19.90	19.78
448	47.74	47.78	1172	30.70	30.75	1959	10.88	10.93			

CORRECTIONS TO RIGHT ASCENSIONS OF TEN-YEAR CATALOGUE.

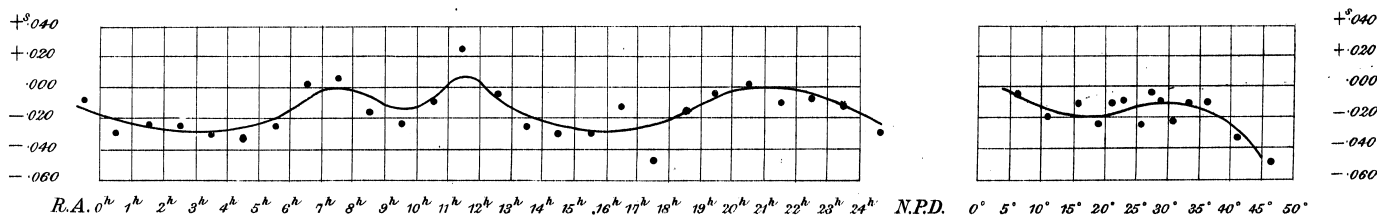
[Frontispiece.]

Curves shewing Excess of R.A.s of Clock-Stars from 12-hour Groups above those of the Ten Year Catalogue, arranged according to R.A. and N.P.D. respectively



CIRCUMPOLAR STARS.

Curves shewing Excess of R.A. above Pole over R.A. below Pole, reduced to Equatorial interval, and arranged according to R.A. and N.P.D. respectively.



The dots represent the Mean Excess from the observations in the respective groups. The means of every consecutive pair have been taken and the means of these again, so as to smooth down the irregularities, and through these smoothed means the curves have been drawn.

Judd & Co. Lith. 73 & 75, Farringdon R. & Doctors Commons. 249, 9/83.

INTRODUCTION
TO THE
GREENWICH TEN-YEAR CATALOGUE
OF
4059 STARS,
DEDUCED FROM OBSERVATIONS EXTENDING FROM 1877 TO 1886,
AND REDUCED TO THE EPOCH
1880·0.

The year 1880 has been adopted as the Epoch for this Catalogue as being near the mean year of the observations, and more convenient for reduction to other epochs than the actual mean year. The following is the process of formation of the star-places in this Catalogue.

I. Formation of Mean Right Ascensions.

The determinations of Right Ascension of each star, which are to be combined in order to form the Right Ascension in this Catalogue, are those given in the Annual Catalogues printed in the successive Volumes of Greenwich Observations from 1877 to 1886. The Right Ascensions of each Annual Catalogue depend essentially upon the Right Ascensions assumed for the stars, whose transits are employed, in each year, to ascertain the errors of the Transit-Clock; it is necessary, therefore, in the first place, to ascertain the amount of correction required for the assumed Right Ascensions of Clock Stars.

Now it appears from the revised discussion of the observations for the Position of the Ecliptic in Appendix III. to the Greenwich Observations for 1887 that the Right Ascensions of Clock Stars used in those years require the following corrections :—

1877*	...	+ ^s ·044	1882	...	— ^s ·027
1878	...	— ·049	1883	...	— ·002
1879	...	+ ·025	1884	...	+ ·084
1880	...	— ·092	1885	...	— ·009
1881	...	— ·035	1886	...	+ ·094

* In this year the Right Ascensions of the Second Seven-Year Catalogue were used.

The mean of these is $+ \cdot 003$, which is practically insensible; and accordingly no general correction for epoch has been applied.

The Mean Right Ascensions of Clock Stars used in 1877 were taken from the Second Seven-Year Catalogue (1864); those used in the years 1878-1886 from the "Standard Right Ascensions based on Twelve-Hour Groups," printed in the Introduction to the Nine-Year Catalogue (1872). From the comparison given on page 8 of the latter, it appears that the Right Ascensions of Clock Stars deduced from the second Seven-Year Catalogue are less than those of the "Standard Right Ascensions based on Twelve-Hour Groups" by $+ 0^s \cdot 013$ on the average, and a correction of $+ 0^s \cdot 013$ has therefore been applied to all observations of Right Ascension made in 1877.

The following is the process by which the Right Ascensions of this Catalogue were formed:—

The approximate R.A. and N.P.D. for 1880 having been obtained to 1^s and $0' \cdot 1$ respectively, the Annual Variation was formed by combining the Geometrical Precession (computed from Struve's Elements) with the Proper Motion adopted from the following authorities in the order of preference:—

- (1). Auwers' "Neue Reduction der Bradleyschen Beobachtungen," or his "Catalog der fundamental Sterne für die Zonen Beobachtungen der Astronomischen Gesellschaft" (Vols. XIV. and XVII. of the Astronomische Gesellschaft's publications) except in the cases of μ Andromedæ and δ Sculptoris.
- (2). The Bonn Observations, Vol. VII., pp. 109-113.
- (3). Other authorities mentioned in the notes.

Provisional Proper Motions generally differing from these had been applied for the fraction of the year in forming the various Annual Catalogues, and it was therefore necessary to correct the mean places in the various Annual Catalogues for the effect of the difference between the provisional and adopted Proper Motions for the fraction of the year; corrected mean R.A.'s were thus formed for each of the years of observation 1877 to 1886 and from them by applying the products of the Annual Variation (formed as above) by 3, 2, 1, 0, -1, -2, -3, -4, -5 or -6 mean places for 1880·0 were obtained. These were combined with weights proportional to the number of observations in each year, and the mean was taken. This mean was corrected for the effect of Secular Variation whenever this correction exceeded $0^s \cdot 0005$, by application of the quantity $-\frac{\Sigma (\frac{1}{2} n t^2)}{\Sigma (n)} \cdot \frac{s}{100}$, where n denotes the number of observations in any year $1880 + t$, and s the secular variation, the summation indicated by the sign Σ being taken for the several years of observation. A correction for difference of assumed Equinox in the year 1877 was then applied to

the Mean R.A. as explained above, and thus the Adopted Result given in the Catalogue was obtained. In the case of Sirius and Procyon corrections for orbital motion deduced from Auwers' papers (Publ. Astr. Gesellschaft, No. VII., and Astr. Nachr., No. 1373) should be applied to the separate years in forming the mean R.A. 1880·0. These corrections had been originally overlooked, but appear in the "Errata."

But as there is a possibility that systematic error may have been introduced through the Assumed Right Ascensions of the Clock Stars used, a separate determination of the Right Ascensions of Clock Stars was made, in which only those observations were included where the group of Clock Stars extended over 12 hours at least. These results would presumably be independent of the assumed places of the Clock Stars, and may be considered as the best Standard places of Fundamental Stars which can be obtained from the Greenwich Observations in the years 1877 to 1886. Although every effort is made to secure long groups of Clock Stars on each day of observation, it is not found practicable to obtain sufficient observations of individual Clock Stars if groups of less than 12 hours are excluded, though of late years it has been made a rule not to include groups of less than 6 hours. There are, however, 137 stars, of which at least 10 observations have been obtained in the 12-hour groups, and the aggregate number of observations is 3223, so that abundant material exists for the determination of the systematic corrections required to reduce the Right Ascensions of the Ten-Year Catalogue to those of the 12-hour groups, taken as Standard.

The process adopted was as follows :—

New ledgers of R.A. were formed from the observations of the 12-hour groups for each year, and the Mean R.A. for 1880·0, was obtained in the same manner as for the Ten-Year Catalogue. The excess of the R.A. from the 12-hour groups above that of the Ten-Year Catalogue was then tabulated for each star, and the mean formed for each hour of Right Ascension by combining the individual excesses with weights $= \frac{mn}{m+n}$, where m and n are the numbers of observations in the Twelve-Hour Groups, and in the Catalogue respectively. Similarly the corrections to the Right Ascensions of the Ten-Year Catalogue, as depending on the N.P.D. of the star, were formed for each 10° of N.P.D. Both sets of corrections are given in the following tables, the Resultant Corrections applicable to the Right Ascensions of the Ten-Year Catalogue being the algebraic sums of the two. The mean of all the Corrections is $-0^{\circ}0008 \pm 0^{\circ}001$, representing the difference between the Equinox of the Ten-Year Catalogue and of the 12-hour groups. As this quantity enters into both sets of corrections, the Constant $+0^{\circ}001$ has been added to each one of the corrections tabulated according to N.P.D. The corrections depending on N.P.D. are practically insensible, and have not been applied.

MEAN CORRECTIONS TO RIGHT ASCENSIONS OF TEN-YEAR CATALOGUE, DERIVED
FROM A COMPARISON WITH R.A.'s OF 211 CLOCK STARS FROM 12-HOUR GROUPS.

Limits of R.A.	Correction.	Weight.	Limits of R.A.	Correction.	Weight.	Limits of R.A.	Correction.	Weight.	Limits of N.P.D.	Correction.	Weight.
^h 0—1	— '004 ± '003	118	^h 8—9	— '014 ± '006	33	^h 16—17	+ '001 ± '004	83	50—60	'000	174
1—2	+ '004 ± '003	130	9—10	'000 ± '005	48	17—18	+ '001 ± '003	102	60—70	+ '004	434
2—3	— '004 ± '003	121	10—11	— '001 ± '004	76	18—19	— '003 ± '003	177	70—80	— '001	495
3—4	— '004 ± '003	103	11—12	— '006 ± '004	67	19—20	+ '004 ± '003	120	80—90	'000	495
4—5	+ '003 ± '004	60	12—13	— '002 ± '004	74	20—21	— '005 ± '004	74	90—100	'000	334
5—6	— '005 ± '003	116	13—14	'000 ± '003	124	21—22	+ '007 ± '004	77	100—110	— '001	224
6—7	— '008 ± '004	86	14—15	— '001 ± '003	105	22—23	+ '006 ± '004	93	110—124	— '001	103
7—8	+ '004 ± '003	124	15—16	— '005 ± '004	87	23—24	+ '014 ± '004	61			

The probable errors appended with the sign $\pm$ have been computed by taking the probable error of a single determination of R.A. as $\pm .034$. These quantities have been laid down in the first two diagrams of the Plate (Frontispiece), and curves drawn which may be taken as representing the systematic corrections to the Right Ascensions of the Ten-Year Catalogue. These corrections have not been applied in forming the Right Ascensions as printed in the Catalogue. The corrections applicable to the Right Ascensions of Clock Stars for the Ten-Year and Nine-Year Catalogues are given in the following table. The corrections to the Nine-Year Catalogue were obtained independently in two ways: first, by comparing the Assumed Mean Right Ascensions of Clock Stars for 1880.0 deduced from the Standard Right Ascensions of that Catalogue and printed in the Introduction to the Greenwich Observations 1880 [but corrected for Auwers' Proper Motions instead of those previously in use], with the Standard Right Ascensions of the Ten-Year Catalogue for the same epoch; secondly, by comparing the Assumed Mean Right Ascensions for 1888.0 (which will be printed in the Introduction to the Greenwich Observations for 1888), plus one year's annual variations, with the Assumed Mean Right Ascensions for 1889.0 (which will be printed in the Introduction for 1889), the former list being based on the Standard Right Ascensions of the Nine-Year, and the latter on those of the Ten-Year Catalogue, and Auwers' Proper Motions having been used in both cases. By each of these methods the corrections to the Standard Right Ascensions of the Nine-Year Catalogue were obtained, referred to the Standard Right Ascensions of the Ten-Year. Now the corrections to the Nine-Year Catalogue, referred to its own Standard Right Ascensions, are given in the Introduction to the Nine-Year Catalogue, and are reproduced for convenience in Column 4 of the following Table. By adding these two sets of corrections we obtain the corrections to the Nine-Year Catalogue referred to the Standard Right Ascensions of the Ten-Year, which are exhibited in Column 3 of the following Table. The comparison of the two sets of Standard Right Ascensions is added in Column 5, though it may be inferred from the difference of Columns 3 and 4.

INTRODUCTION.

7

CORRECTIONS TO RIGHT ASCENSIONS OF CLOCK STARS IN THE TEN-YEAR AND NINE-YEAR CATALOGUES TO REDUCE THEM TO THE STANDARD RIGHT ASCENSIONS FROM 12-HOUR GROUPS, 1877-1886.

Star's Name.	Correction to Ten-Year Catalogue.	Correction to Nine-Year Catalogue.	Former Correction to Nine-Year.	Correction to Standard R.A.'s of Nine-Year.	Star's Name.	Correction to Ten-Year Catalogue.	Correction to Nine-Year Catalogue.	Former Correction to Nine-Year.	Correction to Standard R.A.'s of Nine-Year.
α Andromedæ...	+ '003	+ '025	+ '009	+ '016	β Tauri	- '002	- '004	- '009	+ '005
γ Pegasi	+ '003	'000	+ '012	- '012	δ Orionis	- '002	- '014	- '003	- '011
ϵ Ceti	+ '003	+ '033	+ '015	+ '018	α Leporis	- '002	+ '056	- '003	+ '059
44 Piscium	+ '002	+ '019	+ '015	+ '004	ϵ Orionis	- '002	+ '013	- '003	+ '016
12 Ceti	+ '002	- '006	+ '015	- '021	α Columbæ	- '002	- '036	- '003	- '033
ϵ Andromedæ...	+ '002	+ '002	+ '009	- '007	κ Orionis	- '002	+ '015	- '003	+ '018
β Ceti	+ '002	+ '013	+ '015	- '002	α Orionis	- '002	+ '016	- '003	+ '019
δ Piscium	+ '002	+ '014	+ '015	- '001	1 Geminorum...	- '002	- '068	- '008	- '060
20 Ceti	+ '001	+ '033	+ '015	+ '018	ν Orionis	- '002	- '039	- '006	- '033
μ Andromedæ...	+ '001	+ '021	+ '007	+ '014	η Geminorum...	- '002	- '026	- '008	- '018
ϵ Piscium	+ '001	+ '024	+ '014	+ '010	μ Geminorum...	- '002	- '045	- '008	- '037
β Andromedæ...	+ '001	- '025	+ '007	- '032	β Canis Majoris.	- '002	- '021	- '003	- '018
ζ^1 Piscium	+ '001	+ '027	+ '013	+ '014	ν Geminorum...	- '002	- '003	- '008	+ '005
θ Ceti	'000	- '011	+ '013	- '024	γ Geminorum...	- '002	+ '002	- '007	+ '009
η Piscium	'000	- '002	+ '009	- '011	ξ Geminorum...	- '002	- '041	- '006	- '035
ν Piscium	'000	+ '022	+ '010	+ '012	θ Canis Majoris.	- '002	- '037	- '004	- '033
ϕ Piscium	'000	+ '018	+ '009	+ '009	ϵ Canis Majoris.	- '002	- '011	- '004	- '007
β Arietis	- '001	- '002	+ '004	- '006	ζ Geminorum...	- '002	- '045	- '009	- '036
α Arietis	- '001	+ '018	+ '001	+ '017	γ Canis Majoris.	- '002	- '038	- '004	- '034
ξ^1 Ceti	- '001	+ '028	+ '005	+ '023	51 Geminorum...	- '002	- '014	- '009	- '005
67 Ceti	- '001	+ '020	+ '005	+ '015	δ Geminorum...	- '002	- '007	- '009	+ '002
ξ^2 Ceti	- '001	+ '001	+ '003	- '002	β Canis Minoris	- '002	- '025	- '006	- '019
ν Ceti	- '001	+ '027	+ '002	+ '025	Castor	- '002	+ '013	- '011	+ '024
δ Ceti	- '002	+ '027	+ '002	- '029	Procyon	- '002	- '025	- '005	- '020
γ^2 Ceti	- '002	+ '020	+ '001	+ '019	Pollux	- '002	- '008	- '011	+ '003
σ Arietis	- '002	- '005	- '001	- '004	ξ Argûs	- '002	+ '018	- '005	+ '023
ϵ Arietis	- '002	- '008	- '004	- '004	6 Cancri	- '002	- '047	- '012	- '035
α Ceti	- '002	+ '030	'000	+ '030	15 Argûs	- '002	- '025	- '007	- '018
δ Arietis	- '002	- '011	- '005	- '006	β Cancri	- '002	- '035	- '008	- '027
τ^1 Arietis	- '002	+ '004	- '005	+ '009	δ^1 Cancri	- '002	+ '003	- '011	+ '014
ϕ Tauri	- '002	- '014	- '002	- '012	η Cancri	- '002	- '036	- '011	- '025
f Tauri	- '002	- '029	- '003	- '026	γ Cancri	- '002	+ '005	- '012	+ '017
ϵ Eridani	- '002	+ '003	- '001	+ '004	ϵ Hydræ	- '002	+ '009	- '007	+ '016
11 Tauri	- '002	- '003	- '007	+ '004	α Cancri	- '002	+ '044	- '009	+ '053
δ Eridani	- '002	- '037	- '001	- '036	κ Cancri	- '002	- '016	- '009	- '007
η Tauri	- '002	- '003	- '007	+ '004	83 Cancri	- '002	+ '005	- '011	+ '016
γ^1 Eridani	- '002	+ '013	- '002	+ '015	α Hydræ	- '002	- '019	- '006	- '013
A^1 Tauri	- '002	+ '019	- '006	+ '025	ξ Leonis	- '002	- '015	- '008	- '007
ω^1 Tauri	- '002	- '015	- '006	- '009	ϕ Leonis	- '002	- '030	- '008	- '022
ϕ^1 Eridani	- '002	- '037	- '001	- '036	ϵ Leonis	- '002	+ '009	- '011	+ '020
γ Tauri	- '002	+ '003	- '006	+ '009	μ Leonis	- '002	- '024	- '011	- '013
ϵ Tauri	- '002	- '033	- '007	- '026	π Leonis	- '002	- '007	- '005	- '002
Aldebaran	- '002	- '008	- '007	- '001	Regulus	- '002	+ '003	- '006	+ '009
τ Tauri	- '002	- '007	- '007	'000	γ^1 Leonis	- '002	- '007	- '006	- '001
μ Eridani	- '002	- '012	- '002	- '010	μ Hydræ	- '002	- '047	- '001	- '046
ϵ Aurigæ	- '002	- '023	- '009	- '014	ρ Leonis	- '002	- '029	- '002	- '027
ϵ Leporis	- '002	- '025	- '003	- '022	34 Sextantis	- '002	+ '025	'000	+ '025
Rigel	- '002	+ '010	- '003	+ '013	ι Leonis	- '002	- '019	- '001	- '018

CORRECTIONS TO RIGHT ASCENSIONS OF CLOCK-STARS—*continued*.

Star's Name.	Correction to Ten-Year Catalogue.	Correction to Nine-Year Catalogue.	Former Correction to Nine-Year.	Correction to Standard R.A.'s of Nine-Year.	Star's Name.	Correction to Ten-Year Catalogue.	Correction to Nine-Year Catalogue.	Former Correction to Nine-Year.	Correction to Standard R.A.'s of Nine-Year.
α Leonis	— '002	— '003	+ '001	— '004	κ Ophiuchi	— '001	— '006	+ '001	— '007
χ Leonis	— '002	+ '040	+ '001	+ '039	ϵ Herculis.....	— '001	— '001	— '005	+ '004
δ Leonis	— '002	+ '006	— '002	+ '008	η Ophiuchi	— '001	+ '024	+ '002	+ '022
δ Crateris	— '002	— '009	+ '002	— '011	α^1 Herculis	— '001	— '000	— '001	+ '001
τ Leonis	— '002	+ '006	+ '002	+ '004	θ Ophiuchi	— '001	+ '026	+ '002	+ '024
ν Leonis	— '002	+ '007	+ '003	+ '004	σ Ophiuchi	— '001	+ '013	+ '002	+ '011
β Leonis	— '002	+ '001	— '001	+ '002	α Ophiuchi	— '001	+ '012	— '000	+ '012
β Virginis	— '002	+ '017	+ '003	+ '014	β Ophiuchi	— '001	+ '019	+ '002	+ '017
π Virginis	— '002	— '000	+ '001	— '001	μ Herculis.....	— '001	— '036	— '002	— '034
σ Virginis	— '002	— '022	— '000	— '022	$\delta\gamma$ Herculis.....	— '001	+ '016	— '002	+ '018
ϵ Corvi	— '002	— '015	+ '001	— '016	$\gamma\delta$ Ophiuchi.....	— '001	+ '008	+ '002	+ '006
η Virginis.....	— '002	— '020	+ '001	— '021	μ Sagittarii	— '001	— '011	+ '004	— '015
δ^2 Corvi.....	— '002	— '036	— '000	— '036	η Serpentis	— '001	+ '017	+ '005	+ '012
β Corvi.....	— '002	+ '042	— '000	+ '042	λ Sagittarii	— '001	+ '020	+ '005	+ '015
ρ Virginis.....	— '002	— '000	— '001	+ '001	α Lyrae.....	— '001	+ '003	— '002	+ '005
$\gamma\delta$ Virginis	— '002	+ '015	+ '001	+ '014	γ Aquilæ	— '001	+ '040	+ '006	+ '034
$\gamma\delta$ Comæ	— '002	— '018	— '005	— '013	β^1 Lyrae.....	— '001	+ '003	— '001	+ '004
δ Virginis	— '002	+ '016	+ '003	+ '013	ϵ Aquilæ	— '001	+ '003	+ '004	— '001
ϵ Virginis.....	— '002	— '023	+ '001	— '024	ζ Aquilæ	— '001	+ '014	+ '004	+ '010
θ Virginis	— '002	+ '017	+ '004	+ '013	$\downarrow$ Sagittarii	— '001	+ '006	+ '008	— '002
Spica.....	— '002	+ '003	+ '006	— '003	ω Aquilæ.....	— '001	— '004	+ '007	— '011
ζ Virginis	— '002	— '004	+ '005	— '009	δ Aquilæ	— '000	+ '016	+ '009	+ '007
m Virginis	— '002	— '022	+ '006	— '028	α Vulpeculæ.....	— '000	+ '004	+ '003	+ '001
τ Boötis.....	— '002	— '004	+ '001	— '005	μ Aquilæ	— '000	+ '002	+ '008	— '006
η Boötis.....	— '002	— '022	+ '001	— '023	h^2 Sagittarii	— '000	+ '011	+ '009	+ '002
τ Virginis.....	— '002	— '011	+ '005	— '016	e^1 Sagittarii	— '000	+ '041	+ '009	+ '032
$\gamma\delta$ Virginis	— '002	+ '071	+ '006	+ '065	γ Aquilæ	— '000	+ '021	+ '008	+ '013
κ Virginis.....	— '002	— '022	+ '006	— '028	α Aquilæ	— '000	+ '011	+ '008	+ '003
Arcturus	— '002	+ '028	+ '001	+ '027	β Aquilæ.....	+ '001	— '015	+ '009	— '024
f Boötis.....	— '002	— '026	+ '001	— '027	c Sagittarii	+ '001	— '031	+ '009	— '040
ρ Boötis	— '002	+ '004	— '002	+ '006	θ Aquilæ	+ '001	+ '022	+ '009	+ '013
ϵ^2 Boötis	— '002	— '006	— '000	— '006	α^2 Capricorni ..	+ '001	+ '022	+ '010	+ '012
α Libræ.....	— '002	+ '011	+ '005	+ '006	β Capricorni ..	+ '001	+ '028	+ '010	+ '018
ξ^2 Libræ.....	— '002	+ '004	+ '005	— '001	ρ Capricorni ..	+ '001	— '005	+ '010	— '015
ψ Boötis.....	— '002	— '013	— '002	— '011	ϵ Delphini	+ '001	— '001	+ '008	— '009
ι^1 Libræ.....	— '002	— '001	+ '003	— '004	α Delphini	+ '001	+ '017	+ '006	+ '011
β Libræ.....	— '002	+ '008	+ '004	+ '004	ϵ Aquarii	+ '002	+ '038	+ '010	+ '028
σ^2 Libræ.....	— '002	+ '005	+ '003	+ '002	μ Aquarii.....	+ '002	+ '011	+ '010	+ '001
ζ^1 Libræ.....	— '002	+ '002	+ '003	— '001	$\gamma\delta$ Vulpeculæ ..	+ '002	+ '012	+ '004	+ '008
α Coronæ	— '002	— '002	— '003	+ '001	θ Capricorni ..	+ '003	+ '002	+ '010	— '008
α Serpentis	— '002	— '004	+ '002	— '006	ζ Cygni	+ '003	+ '036	+ '004	+ '032
ϵ Serpentis	— '002	+ '002	+ '002	— '000	α Equulei.....	+ '003	+ '017	+ '010	+ '007
γ Serpentis	— '002	— '009	— '002	— '007	ι Capricorni.....	+ '004	+ '024	+ '010	+ '014
β^1 Scorpii.....	— '002	— '001	+ '002	— '003	β Aquarii.....	+ '004	+ '014	+ '010	+ '004
δ Ophiuchi	— '002	— '002	+ '002	— '004	ξ Aquarii	+ '004	+ '029	+ '010	+ '019
γ Herculis	— '002	+ '012	— '002	+ '014	ϵ Pegasi	+ '004	+ '002	+ '009	— '007
Antares	— '002	— '014	+ '002	— '016	δ Capricorni ..	+ '005	+ '003	+ '010	— '007
λ Ophiuchi	— '002	+ '008	+ '002	+ '006	α Pegasi.....	+ '005	+ '009	+ '005	+ '004
ζ Ophiuchi	— '001	— '001	+ '002	— '003	α Aquarii.....	+ '005	+ '024	+ '010	+ '014
ζ Herculis	— '001	— '044	— '005	— '039	ι Pegasi	+ '006	— '000	+ '005	— '005

INTRODUCTION.

9

CORRECTIONS TO RIGHT ASCENSIONS OF CLOCK-STARS—*concluded*.

Star's Name.	Correction to Ten-Year Catalogue.	Correction to Nine-Year Catalogue.	Former Correction to Nine-Year.	Correction to Standard R.A.'s of Nine-Year.	Star's Name.	Correction to Ten-Year Catalogue.	Correction to Nine-Year Catalogue.	Former Correction to Nine-Year.	Correction to Standard R.A.'s of Nine-Year.
θ Aquarii.....	+ '006	+ '037	+ '010	+ '027	α Pegasi	+ '006	+ '017	+ '009	+ '008
γ Aquarii.....	+ '007	+ '030	+ '010	+ '020	γ Piscium	+ '006	+ '028	+ '013	+ '015
σ Aquarii.....	+ '007	+ '044	+ '011	+ '033	κ Piscium	+ '005	+ '032	+ '014	+ '018
η Aquarii.....	+ '007	+ '014	+ '011	+ '003	ι Piscium.....	+ '005	- '004	+ '013	- '017
ζ Pegasi	+ '007	+ '007	+ '010	- '003	δ Sculptoris.....	+ '004	+ '014	+ '014	'000
μ Pegasi	+ '007	+ '007	+ '006	+ '001	ω Piscium	+ '004	'000	+ '014	- '014
λ Aquarii.....	+ '006	+ '055	+ '012	+ '043	2 Ceti	+ '004	+ '010	+ '015	- '005
Fomalhaut	+ '006	+ '014	+ '011	+ '003					

Taking the means of these Columns we obtain :—

Correction to Equinox.

Ten-Year Catalogue.	Nine-Year Catalogue.	Former Correction to Nine-Year.	Standard R.A.'s of Nine-Year.
-0 ^s .0005	+0 ^s .0014	+0 ^s .0015	-0 ^s .0001

The following table exhibits the Mean Corrections in the above cases for groups of 1^h in R.A. after the application of the above corrections for Equinox :—

Viz., + 0^s.001, - 0^s.001, - 0^s.002, 0^s.000 respectively.

Group. R.A.	Mean Correction.				Group R.A.	Mean Correction.			
	Ten-Year Catalogue.	Nine-Year Catalogue.	Former Correction to Nine-Year.	Standard R.A.'s of Nine-Year.		Ten-Year Catalogue.	Nine-Year Catalogue.	Former Correction to Nine-Year.	Standard R.A.'s of Nine-Year.
$\begin{smallmatrix} h & h \\ 0-1 \end{smallmatrix}$	+ '003	+ '016	+ '011	+ '004	$\begin{smallmatrix} h & h \\ 12-13 \end{smallmatrix}$	- '001	- '004	- '002	- '003
$\begin{smallmatrix} h & h \\ 1-2 \end{smallmatrix}$	+ '001	+ '004	+ '007	- '004	$\begin{smallmatrix} h & h \\ 13-14 \end{smallmatrix}$	- '001	+ '004	+ '002	'000
$\begin{smallmatrix} h & h \\ 2-3 \end{smallmatrix}$	- '001	+ '010	- '001	+ '010	$\begin{smallmatrix} h & h \\ 14-15 \end{smallmatrix}$	- '001	- '003	'000	- '003
$\begin{smallmatrix} h & h \\ 3-4 \end{smallmatrix}$	- '001	- '006	- '006	- '001	$\begin{smallmatrix} h & h \\ 15-16 \end{smallmatrix}$	- '001	'000	'000	- '001
$\begin{smallmatrix} h & h \\ 4-5 \end{smallmatrix}$	- '001	- '017	- '008	- '010	$\begin{smallmatrix} h & h \\ 16-17 \end{smallmatrix}$	- '001	- '006	- '002	- '005
$\begin{smallmatrix} h & h \\ 5-6 \end{smallmatrix}$	- '001	- '004	- '006	+ '001	$\begin{smallmatrix} h & h \\ 17-18 \end{smallmatrix}$	'000	+ '009	- '002	+ '010
$\begin{smallmatrix} h & h \\ 6-7 \end{smallmatrix}$	- '001	- '028	- '008	- '021	$\begin{smallmatrix} h & h \\ 18-19 \end{smallmatrix}$	'000	+ '011	+ '001	+ '009
$\begin{smallmatrix} h & h \\ 7-8 \end{smallmatrix}$	- '001	- '010	- '011	- '012	$\begin{smallmatrix} h & h \\ 19-20 \end{smallmatrix}$	+ '001	+ '006	+ '006	- '001
$\begin{smallmatrix} h & h \\ 8-9 \end{smallmatrix}$	- '001	- '005	- '011	+ '005	$\begin{smallmatrix} h & h \\ 20-21 \end{smallmatrix}$	+ '003	+ '015	+ '007	+ '007
$\begin{smallmatrix} h & h \\ 9-10 \end{smallmatrix}$	- '001	- '012	- '011	- '003	$\begin{smallmatrix} h & h \\ 21-22 \end{smallmatrix}$	+ '005	+ '018	+ '007	+ '009
$\begin{smallmatrix} h & h \\ 10-11 \end{smallmatrix}$	- '001	- '005	- '004	- '002	$\begin{smallmatrix} h & h \\ 22-23 \end{smallmatrix}$	+ '008	+ '023	+ '008	+ '014
$\begin{smallmatrix} h & h \\ 11-12 \end{smallmatrix}$	- '001	+ '001	- '001	+ '001	$\begin{smallmatrix} h & h \\ 23-24 \end{smallmatrix}$	+ '006	+ '013	+ '012	+ '001

It appears that the errors of the assumed places of the Clock Stars, originally derived from Pond's Catalogue, have been greatly diminished, and are now very small.

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

b³

A table of Standard Mean Right Ascensions of Clock Stars, corrected for discordance from 12-hour groups, but retaining the Equinox of the Ten-Year Catalogue, is given at the end of this Introduction.

A comparison has also been made of the Right Ascensions of Circumpolar Stars from observations above and below the Pole respectively, the results having been kept separate in the computations for the Ten-Year Catalogue. There are 3804 observations above the Pole and 2941 below of 689 stars, ranging from N.P.D. $1^{\circ} 1'$ to N.P.D. $48^{\circ} 15'$, and the excess of R.A. above Pole $\times \sin$ N.P.D. (so as to reduce it to equatorial interval) has been formed for each star, the results being tabulated according to R.A., and also according to N.P.D. (*see* Section IV. of this Introduction).

The means of these with weights $= \frac{4mn}{m+n+\frac{1}{2}mn}$, where m and n are the numbers of observations above and below the Pole respectively, have been taken for groups of 1^h in R.A. and for every 50 stars in N.P.D., and are exhibited in the two following tables. The extreme weight for any one star thus never exceeds 20, which corresponds to an infinite number of observations above and below the Pole.

EXCESS OF R.A. ABOVE POLE, REDUCED TO EQUATORIAL INTERVAL, FROM
COMPARISON OF OBSERVATIONS OF 689 CIRCUMPOLAR STARS ABOVE AND
BELOW POLE.

Limits of R.A.	Mean Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Limits of R.A.	Mean Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D.	Mean Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.
$h \quad h$	s		$h \quad h$	s		$^{\circ} \quad '$	s	
0-1	- '030	235	12-13	- '006	118	5. 50	- '003	252
1-2	- '025	203	13-14	- '026	149	10. 47	- '020	231
2-3	- '027	102	14-15	- '030	148	15. 7	- '013	236
3-4	- '031	141	15-16	- '030	131	18. 27	- '023	243
4-5	- '033	103	16-17	- '014	82	21. 17	- '013	235
5-6	- '026	126	17-18	- '047	93	23. 22	- '012	232
6-7	+ '002	156	18-19	- '015	93	25. 13	- '025	232
7-8	+ '006	97	19-20	- '005	120	27. 9	- '005	224
8-9	- '016	97	20-21	+ '003	88	28. 49	- '010	222
9-10	- '024	106	21-22	- '012	146	30. 44	- '021	201
10-11	- '010	151	22-23	- '009	180	33. 36	- '012	228
11-12	+ '025	118	23-24	- '013	162	36. 36	- '011	193
						41. 3	- '035	232
						45. 16	- '048	172
General Mean			0-24	- '017	3145	...	- '017	3133*

* In the arrangement according to N.P.D. three stars were accidentally omitted.

These quantities have been laid down in the last two diagrams of the Plate, and the corresponding curves drawn, representing the systematic discordance between the R.A.'s above and below the Pole, as depending on the R.A. and N.P.D. of the star respectively.

II. *Formation of Mean North Polar Distances.*

In the first place the mean N.P.D.'s of the several Annual Catalogues 1877–1882 have been corrected to reduce them to the standard flexure, R—D, and thermometer corrections, used in the years 1883–1886.

(1.) Corrections have been applied to the refractions in the years 1877 and 1878 on account of an index error of $-0^{\circ}.7$ in the exterior thermometer (as determined by comparisons with the Standard on 1879 April 3). The Thermometer readings from 1879 January 1, had already been corrected for this error, although it might appear from the Introduction to the Greenwich Observations for 1879, p. lxxvi., that this correction had not been applied to the observations before 1879 April 3.

(2.) Corrections to eliminate the flexure correction applied in 1877, 1878, and in the first four months of 1879 (to April 19) have been applied to the N.P.D.'s.

(3.) Corrections have been applied to the N.P.D.'s in the years 1877–1882 to reduce them to the same system of R—D as that used in the years 1883–1886. A change in the mounting of the Collimators, made in 1882 June, considerably extended the range of stars available for observation by reflexion : and the results for R—D in subsequent years have shown a close accordance. The following are the formulæ found in the separate years 1877–1886 as given in the Annual Volumes :—

Year.	Value of R—D, including Correction for Inclination of Verticals, in the Years 1877–1886.	
	" "	
1877	...	$+ 0^{\circ}.030 + 0^{\circ}.558 \times \sin Z.D. \cos^2 Z.D.$
1878	...	$- 0^{\circ}.020 + 1^{\circ}.278 \times \sin Z.D. \cos^2 Z.D.$
1879	...	$+ 0^{\circ}.068 + 0^{\circ}.772 \times \sin Z.D. \cos^2 Z.D.$
1880	...	$+ 0^{\circ}.136 + 1^{\circ}.076 \times \sin Z.D. \cos^2 Z.D.$
1881	...	$+ 0^{\circ}.036 + 1^{\circ}.100 \times \sin Z.D.$
1882	...	$+ 0^{\circ}.104 + 0^{\circ}.872 \times \sin Z.D.$
1883	...	$- 0^{\circ}.037 + 1^{\circ}.226 \times \sin Z.D.$
1884	...	$- 0^{\circ}.053 + 1^{\circ}.156 \times \sin Z.D.$
1885	...	$- 0^{\circ}.036 + 1^{\circ}.215 \times \sin Z.D.$
1886	...	$+ 0^{\circ}.012 + 1^{\circ}.301 \times \sin Z.D.$

b 2

It has been assumed that the constant term is in each case applicable to its own year both for the four years 1883–1886, and for the earlier years 1877–1882. But as regards the variable term, it is assumed that the mean of the closely accordant results for 1883–1886, viz., $+ 1''.225 \times \sin Z.D.$, is applicable to the whole ten years 1877–1886. In support of this view it is to be remarked that no constructive change was made in the instrument itself during the ten years : and that the mean value of the co-efficient of an assumed variable term depending on Sine Zenith Distance simply is $+ 0''.69$ for the years 1877–1881, while that deduced from observations of stars in the years 1883–1886 within the limits of zenith distance available in the earlier years is $+ 0''.89$, not very different from the former, especially when it is remembered that the extension of the available range of stars in 1882 (consequent on the alteration in the mounting of the collimators) probably affected the distribution of stars observed at small zenith distances.

For the convenient application of these three sets of corrections, tables have been formed for each year, with argument N.P.D., representing the sum of the corrections applicable to the observations in that year. The mean N.P.D.'s. of the various printed Annual Catalogues were then corrected by the help of these tables.

Another set of corrections, affecting individual stars only, has been applied to the refractions, in cases where the exterior thermometer had not been read sufficiently near the time of observation of the star, and where a correction to the adopted reading could be advantageously inferred from the photographic registers of the Meteorological Department. A complete list of these alterations and of the resulting corrections to refraction, which are in general small, is given in Appendix III. to the Greenwich Observations for 1887.

The finally corrected Annual Means have been used in the formation of the "Mean N.P.D. 1880.0," to which the same statements apply generally as have been made for R.A., omitting all that relates to correction for equinox. The adopted Co-latitude is $38^\circ 31' 21''.90$ throughout. The corrections required for orbital motion in the case of Sirius and Procyon are given in the Errata.

A discussion of 6,749 observations above, and 4,649 below the Pole, of 690 stars, is printed in Section IV. of this Introduction. All such observations of stars whose N.P.D. does not exceed $41^\circ 30'$ are considered available for determining the correction to Co-latitude. In the following table the means of groups of every 50 stars, to N.P.D. $41^\circ 30'$, have been taken (that is of every 5 groups of the Table in Section IV.), except for the last group, which consists of 30 stars only. The

INTRODUCTION.

13

“Mean N.P.D. of group” is the simple mean of the N.P.D.’s of all the stars in the group; but the “Mean Excess of N.P.D.” is the weighted mean, weights being assigned according to the Table in Section IV.

Mean N.P.D. of Group.	Mean Excess of N.P.D.	Weight.	Mean N.P.D. of Group.	Mean Excess of N.P.D.	Weight.	Mean N.P.D. of Group	Mean Excess of N.P.D.	Weight.
5. 50	— 0'15	633	23. 22	+ 0'15	467	30. 44	— 0'66	334
10. 47	— 0'12	528	25. 13	+ 0'10	457	33. 36	— 0'37	276
15. 7	+ 0'22	560	27. 9	— 0'24	417	36. 36	— 0'51	189
18. 27	+ 0'12	520	28. 49	— 0'20	418	40. 12	— 0'29	123
21. 17	+ 0'25	445						

Combining these results with the above weights, the mean excess of N.P.D. above Pole from the observations 1877–1886, is $-0''.07$: whence the correction to the assumed Co-latitude ($38^{\circ} 31' 21''.90$) is $+0''.035$, and the Resulting Co-latitude is $38^{\circ} 31' 21''.935$.

The following are the groups from the table in Section IV., not used in the above investigation of Co-latitude.

Mean N.P.D. of Group.	Mean Excess of N.P.D. above Pole.	Weight.	Mean N.P.D. of Group.	Mean Excess of N.P.D. above Pole.	Weight.
41. 54	— 0'45	27	44. 16	— 0'76	27
42. 48	— 0'75	14	45. 38	— 2'28	15
43. 32	— 1'17	19	47. 38	— 4'94	7

These groups are considered available for discussion of refraction.

III. *Explanation of the Separate Columns of the Printed Catalogue.*

The formulæ by which the various numbers have been prepared will be described under these explanations.

The “No.” is the ordinal number of this Catalogue, the stars being arranged in order of R.A., 1880.0. The “Star’s Name” is taken from one of the following authorities, the order of preference being the order of mention of the authority below:—

1. Flamsteed’s Constellation No. and Constellation, with Bayer’s letter, taken from Baily’s Edition of Flamsteed, or the British Association Catalogue.

2. The No. in Bessel's *Fundamenta*, &c., deduced from Bradley's observations, referred to as "Bradley."
3. The Hour and No. in Piazzi's Catalogue, edition 1814.
4. The No. in Groombridge's Catalogue.
5. The No. in Baily's Edition of Flamsteed's Catalogue, referred to as "B. F."
6. The Hour and No. in Weisse's two Catalogues of the stars in Bessel's Zones, referred to as "W. B." or "W. B. (2)."
7. The No. in Lalande's Catalogue, published by the British Association, or in that edited by Fedorenko.
8. The No. in Lacaille's Catalogue of Southern Stars, published by the British Association.
9. The No. in Oeltzen's two Catalogues of Argelander's Zone Observations, referred to as "Oeltz. Arg. (N.)" or "(S.)."
10. The No. in the First or Second Radcliffe Catalogues.
11. The No. in Carrington's Red Hill Catalogue.
12. The No. in the Washington Catalogue (1860).
13. The Zone and No. in Argelander's Bonn "Durchmusterung" or in Schönfeld's Continuation of the "Durchmusterung" (Bonn Catalogue, Sections I., II., III. and IV., Bonn Observations, Vols. III., IV., V. and VIII.) referred to as "B. D."
14. The No. in the Greenwich Catalogues; in the British Association Catalogue, referred to as "B. A. C."; in the Cape Catalogue for 1880; or in the Harvard "General Catalogue of 4,260 Stars, with their Approximate Magnitudes, reduced to the Epoch 1880," referred to as "H. P."

The "Magnitude" is taken from the Harvard Photometry for stars contained in that work, and for other stars (marked *) from the Bonn Durchmusterung. For the few remaining stars (marked †) the authority for the magnitude is given in the Notes. The magnitude in the *Uranometria Nova Oxoniensis* is given in the Notes for all cases in which it differs by more than 0.2 magnitude from that in the Harvard Photometry. The magnitudes of the components of double stars, taken from Struve's *Mensuræ Micrometricæ* or other authority, are given in the Notes. In the case of Variable Stars, the limits of magnitude and the period given in the Notes are taken from Mr. Chandler's Catalogue in the *Astronomical Journal* Nos. 179, 180.

The formation of the "Mean R.A., 1880.0," has already been explained. The computations were made singly, and carefully examined.

The "Mean Date" is expressed in years and decimals of a year reckoned from 1800.

The "Number of Observations" gives the aggregate number of all the observations in the different years, above and below the Pole respectively, these being combined with equal weights to form the Mean Right Ascension last mentioned.

The "Annual Precession, 1880·0," and the "Secular Variation 1880·0," have been computed by the help of Folie's "Douze Tables pour le calcul des reductions stellaires," in which Struve's Constant of Precession is used. The Precession is given by the formula—

$$3^{\circ}07'23 + 1^{\circ}33'69 [\log. = 0^{\circ}12'611] \sin R.A. \cot. N.P.D.$$

and the Secular Variation by the formula—

$$A + B \cot N.P.D. + C \cot^2 N.P.D.$$

where—

$$A = 0^{\circ}00'190 + 0^{\circ}00'650 \sin 2 R.A.$$

$$B = -0^{\circ}00'057 \sin R.A. + 0^{\circ}02'987 \cos. R.A.$$

$$C = +0^{\circ}01'300 \sin 2 R.A.$$

The second term of the precession is readily computed from these tables, and the quantities A, B, C, are therein tabulated for every minute of R.A. These formulæ correspond essentially with those used in previous Catalogues, but the method of computation is simpler.

The R.A. and N.P.D. are taken for 1880·0 to 1° and 0·1 respectively, except for stars within 10° of the Pole, for which more accurate places were computed. The calculations were made in duplicate and carefully compared.

The "Annual Proper Motion, 1880·0," has been taken from Auwers' "Neue Reduction der Bradleyschen Beobachtungen" or his "Catalog der Fundamental Sterne," for stars contained in either of those works. The authority for other proper motions is given in the Notes.

The process for forming the "Mean N.P.D., 1880·0" has been explained. The numbers were computed singly and carefully examined.

The "Mean Date" is expressed in years and decimals of a year reckoned from 1800. For Circumpolar Stars the weights mentioned in the next paragraph were used in forming this mean.

The "No. of Observations" is the aggregate of all the observations in the different years, above and below the Pole respectively, these being combined to form the Mean N.P.D. just mentioned, with weights as follows: For stars whose N.P.D. does not exceed 15°, the observations above and below the Pole are considered equally good; from N.P.D. 15° to N.P.D. 36°, those below the Pole have the weight $\frac{2}{3}$ for

each observation ; from N.P.D. 36° to N.P.D. 41° , those below the Pole have the weight $\frac{1}{2}$; beyond 41° N.P.D. the observations below Pole are not used, and in the case of stars observed below Pole only, the mean result is enclosed within brackets.

The “ Annual Precession, 1880·0,” and the “ Secular Variation, 1880·0,” have been computed by the help of Folie’s Tables referred to above. The precession is given by the formula—

$$- 20''\cdot0542 \cos \text{R.A.}$$

which is taken directly from the Tables, and the Secular Variation by the formula—

$$A^1 + B^1 \cot \text{N.P.D.}$$

where—

$$A^1 = + 0''\cdot0086 \cos \text{R.A.} + 0''\cdot4480 \sin \text{R.A.}$$

$$B^1 = + 0''\cdot1950 \sin^2 \text{R.A.}$$

The quantities A^1 and B^1 are given directly in the tables for every minute of R.A. The R.A. and N.P.D. are taken for 1880·0 to 1° and $0\cdot1$ respectively, except for stars within 10° of the pole, for which more accurate places were computed. The calculations were made in duplicate and carefully compared.

The last two columns contain references to two other Catalogues of Stars, viz.: Auwers’ edition of Bradley, and the British Association Catalogue. It is to be remarked that the date given in the heading refers to the Epoch of the Catalogue, and not to the year of publication. The titles and places of publication of the Catalogues adopted for reference are as follows :—

AUWERS’ BRADLEY.—“Neue Reduction der Bradleyschen Beobachtungen, Erste Abtheilung, Catalog von 3268 Sternen für das Äquinocetium und die Epoche 1755·0. S. Petersburg, 1882.

BRITISH ASSOCIATION CATALOGUE.—The Catalogue of Stars of the British Association for the Advancement of Science, containing the Mean Right Ascensions and North Polar Distances of 8,377 Fixed Stars, reduced to January 1, 1850, together with their Annual Precessions, Secular Variations, and Proper Motions, as well as the Logarithmic Constants for Computing Precession, Aberration, and Nutation. With a Preface explanatory of their Construction and Application, by the late Francis Baily, Esq., D.C.L., &c., London, 1845.

As a security against mistakes of a large amount, the R.A. and N.P.D. of the Catalogue have been compared with the approximate R.A. and N.P.D. for 1880, computed from former Catalogues to 1° and $0\cdot1$ respectively, for use in the Calculation of the Precessions. The proof sheets have also been compared with the Radcliffe Annual Catalogue for 1880 ; the Washington Annual Catalogue, 1880 ; and with Stone’s Cape Catalogue, 1880.

IV.—*Comparison of the Places of Circumpolar Stars as observed above and below the Pole, from Observations made in the Years 1877 to 1886.*

The following tables show the mean excess of R.A. and of N.P.D. above Pole for all stars in the Ten-Year Catalogue of which observations were made both above and below the Pole. The star is designated by its No. taken from the Ten-Year Catalogue. The figures on the same line as the No. refer to the observations above Pole; those on the next line to the observations below. The excess of R.A. is multiplied by $\sin N.P.D.$ in all cases, to reduce it to equatorial interval. The weights assigned to each star are computed as follows :—

For R.A. if m and n be the number of observations above and below the Pole respectively the weight assigned is $\frac{4 mn}{m + n + \frac{1}{3} mn}$. The maximum weight for any star is thus 20, which corresponds to an infinite number of observations above and below the Pole; and the expression is equivalent to that for N.P.D. for stars at about 30° from the Pole.

For N.P.D. the weights used are determined by use of the "Probable Errors of Greenwich Observations in Zenith Distance," given by Mr. Stone in the *Monthly Notices of the Royal Astronomical Society* for 1869 June 11, page 324. Putting n for the number of observations of a star above pole, e for the probable error of one observation; n_1 and e_1 the similar quantities for the observations below pole; e_0 the probable systematic error affecting all observations of the same star, and depending on outstanding division error, uncertainty in the constant of refraction, &c.; the formula employed to determine the weight to be given to that star is $\frac{2 nn_1}{n_1 e^2 + n e_1^2 + 2 nn_1 e^2}$; or assuming $e_0^2 = \frac{1}{10} e^2$, which would make $e_0 = 0''.16$, the weight becomes $\frac{2 nn_1}{n_1 e^2 + n e_1^2 + \frac{1}{3} nn_1 e^2}$, which has been adopted for use in the investigation.

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D. ABOVE POLE, ARRANGED
IN ORDER OF RIGHT ASCENSION.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
1	0. 12 ^h 78 ^m 2	83 ^s 08	4	+ 0 ^h 11	4	26. 28. 19 ^h 40	81 ^m 80	7	— 0 ^m 23	7
	12 ^h 75 ^m 7	83 ^s 30	2			19 ^h 63	82 ^m 61	3		
9	2. 44 ^h 47 ^m 4	86 ^s 08	4	+ 0 ^h 34	5	10. 57. 8 ^h 69	86 ^m 07	4	+ 0 ^m 54	8
	44 ^h 29 ^m 6	81 ^s 20	3			8 ^h 15	81 ^m 20	3		
10	2. 46 ^h 82 ^m 2	80 ^s 06	5	— 0 ^h 86	7	31. 30. 43 ^h 75	79 ^m 96	6	— 0 ^m 62	9
	46 ^h 98 ^m 6	82 ^s 10	5			44 ^h 37	82 ^m 10	5		
15	4. 5 ^h 21 ^m 9	86 ^s 14	4	— 1 ^h 13	5	44. 35. 44 ^h 57	86 ^m 14	4	— 2 ^m 39	2
	5 ^h 38 ^m 0	85 ^s 98	3			46 ^h 96	85 ^m 98	3		
19	5. 42 ^h 80 ^m 0	85 ^s 78	4	— 1 ^h 22	5	42. 30. 56 ^h 24	85 ^m 78	4	— 1 ^m 98	3
	42 ^h 98 ^m 1	86 ^s 31	3			58 ^h 22	86 ^m 31	3		
33	9. 26 ^h 84 ^m 8	85 ^s 43	4	— 0 ^h 43	7	13. 42. 58 ^h 68	82 ^m 20	9	+ 0 ^m 47	17
	27 ^h 02 ^m 9	83 ^s 54	8			58 ^h 21	83 ^m 78	10		
34	10. 3 ^h 73 ^m 3	86 ^s 47	3	— 0 ^h 95	3	47. 4. 17 ^h 21	86 ^m 47	3	— 3 ^m 17	$\frac{1}{2}$
	3 ^h 86 ^m 3	86 ^s 27	1			20 ^h 38	86 ^m 27	1		
36	10. 30 ^h 76 ^m 7	83 ^s 83	4	— 1 ^h 17	4	29. 8. 1 ^h 98	84 ^m 17	6	+ 0 ^m 62	11
	31 ^h 00 ^m 7	86 ^s 14	2			1 ^h 36	84 ^m 66	7		
48	14. 12 ^h 22 ^m 1	85 ^s 06	3	— 0 ^h 41	5	28. 47. 11 ^h 85	84 ^m 13	5	— 0 ^m 15	11
	12 ^h 30 ^m 6	78 ^s 20	3			12 ^h 00	82 ^m 25	7		
54	18. 10 ^h 86 ^m 5	84 ^s 50	6	— 0 ^h 11	7	28. 50. 3 ^h 13	82 ^m 71	21	+ 0 ^m 20	14
	10 ^h 88 ^m 8	82 ^s 45	5			2 ^h 93	82 ^m 65	8		
56	18. 37 ^h 31 ^m 1	84 ^s 82	4	+ 0 ^h 09	5	37. 37. 5 ^h 54	84 ^m 82	4	— 1 ^m 70	5
	37 ^h 29 ^m 6	84 ^s 66	3			7 ^h 24	84 ^m 66	3		
58	19. 27 ^h 81 ^m 4	85 ^s 93	3	— 0 ^h 15	5	10. 36. 45 ^h 29	85 ^m 85	5	+ 0 ^m 02	12
	27 ^h 89 ^m 3	82 ^s 06	5			45 ^h 27	82 ^m 60	6		
65	23. 14 ^h 60 ^m 9	82 ^s 20	5	— 0 ^h 02	8	13. 38. 35 ^h 55	81 ^m 60	11	+ 1 ^m 05	20
	14 ^h 61 ^m 7	83 ^s 21	9			34 ^h 50	83 ^m 64	13		
71	25. 9 ^h 40 ^m 7	84 ^s 01	6	— 0 ^h 27	6	36. 8. 25 ^h 55	83 ^m 82	5	+ 0 ^m 20	7
	9 ^h 45 ^m 3	82 ^s 31	4			25 ^h 35	82 ^m 31	4		
72	26. 10 ^h 64 ^m 9	85 ^s 01	4	— 0 ^h 47	5	19. 40. 51 ^h 51	85 ^m 07	3	+ 0 ^m 23	7
	10 ^h 78 ^m 9	77 ^s 59	3			51 ^h 28	77 ^m 59	3		
77	27. 26 ^h 24 ^m 0	83 ^s 89	6			23. 54. 42 ^h 29	82 ^m 57	12	— 0 ^m 67	9
						42 ^h 96	84 ^m 33	4		
78	28. 48 ^h 74 ^m 2	85 ^s 34	8	— 1 ^h 31	5	36. 27. 29 ^h 75	85 ^m 38	6	— 0 ^m 36	4
	48 ^h 96 ^m 3	85 ^s 83	2			30 ^h 11	85 ^m 83	2		
80	29. 27 ^h 90 ^m 0	85 ^s 33	8	— 0 ^h 64	6	36. 29. 33 ^h 93	85 ^m 27	7	— 0 ^m 92	5
	28 ^h 00 ^m 7	85 ^s 65	3			34 ^h 85	85 ^m 65	3		
81	29. 38 ^h 61 ^m 9	85 ^s 13	5			30. 20. 5 ^h 18	85 ^m 13	5	— 1 ^m 93	6
						7 ^h 11	85 ^m 96	3		
87	30. 46 ^h 03 ^m 8	83 ^s 56	3	— 0 ^h 59	5	8. 10. 9 ^h 11	82 ^m 20	13	— 0 ^m 74	19
	46 ^h 45 ^m 1	82 ^s 05	5			9 ^h 85	83 ^m 29	10		
95	33. 42 ^h 26 ^m 6	83 ^s 32	20	— 0 ^h 19	12	34. 7. 16 ^h 08	83 ^m 08	20	— 0 ^m 69	16
	42 ^h 29 ^m 9	81 ^s 56	13			16 ^h 77	80 ^m 71	11		
96	34. 55 ^h 20 ^m 6	82 ^s 31	4	+ 0 ^h 28	6	24. 30. 39 ^h 12	81 ^m 24	10	— 0 ^m 36	16
	55 ^h 13 ^m 8	83 ^s 03	4			39 ^h 48	84 ^m 10	11		
101	37. 38 ^h 98 ^m 2	86 ^s 81	1	+ 0 ^h 31	2	28. 45. 24 ^h 22	86 ^m 81	1	— 1 ^m 29	5
	38 ^h 91 ^m 8	86 ^s 35	2			25 ^h 51	86 ^m 35	2		
104	37. 45 ^h 02 ^m 8	81 ^s 87	3	+ 0 ^h 23	5	15. 40. 5 ^h 76	83 ^m 49	11	+ 0 ^m 04	11
	44 ^h 94 ^m 3	80 ^s 52	4			5 ^h 72	80 ^m 52	4		
103	37. 44 ^h 96 ^m 0	86 ^s 81	1	+ 0 ^h 70	2	28. 47. 30 ^h 56	86 ^m 81	1	+ 0 ^m 13	3
	44 ^h 81 ^m 5	86 ^s 35	2			30 ^h 43	86 ^m 35	2		

INTRODUCTION.

19

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued.*

Star's No.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
107	0. 38. 27.324	84.36	4	— .006	4	35. 26. 8.28	84.36	4	— 0.65	4
	27.334	86.33	2			8.93	86.33	2		
115	41. 17.283	86.90	4	— .029	4	29. 4. 16.56	86.90	4	+ 0.15	4
	17.343	86.35	2			16.41	86.35	2		
116	41. 50.886	82.30	8	— .017	8	32. 49. 16.51	82.30	8	— 0.48	10
	50.917	80.11	5			16.99	80.11	5		
117	41. 51.115	82.47	3	— .074	4	32. 49. 22.16	82.47	3	+ 2.05	2
	51.251	83.39	2			20.11	83.39	2		
124	43. 27.477	86.37	2	+ .043	4	26. 24. 22.55	86.37	2	— 0.22	8
	27.380	84.61	4			22.77	84.57	8		
126	43. 44.722	86.89	3	+ .038	6	6. 56. 40.84	83.20	12	— 0.06	17
	44.405	82.52	6			40.90	83.49	8		
127	44. 6.720	86.90	4	— .026	5	28. 50. 54.06	86.90	4	— 0.11	5
	6.774	86.35	3			54.17	86.35	2		
131	45. 55.035	79.80	3	+ .002	4	29. 32. 3.46	80.84	8	— 0.83	12
	55.031	82.22	2			4.29	82.84	7		
138	49. 28.593	80.12	6	+ .061	7	29. 56. 0.85	80.41	15	— 0.22	10
	28.471	80.89	5			1.07	80.94	5		
140	49. 33.775	86.29	7	— .117	3	30. 17. 14.51	86.29	7	— 1.36	3
	34.006	86.32	1			15.87	86.32	1		
142	50. 2.496	86.80	2	— .027	3	29. 13. 39.06	86.77	3	— 1.47	4
	2.551	86.37	2			40.53	86.37	2		
143	50. 2.718	86.31	5	— .092	3	30. 18. 58.99	86.31	5	— 1.07	7
	2.901	86.34	1			60.06	86.36	3		
144	50. 3.779	86.31	5	— .157	5	30. 18. 39.60	86.31	5	— 1.30	7
	4.089	86.34	3			40.90	86.35	4		
147	50. 56.092	81.42	3	— .012	5	24. 17. 48.92	81.42	3	— 1.60	6
	56.121	82.02	3			50.52	82.02	3		
150	52. 35.894	85.38	6	— .006	8	4. 23. 15.43	85.70	16	— 0.14	20
	35.972	84.22	8			15.57	84.45	11		
158	56. 12.279	84.52	6	+ .011	6	3. 29. 40.45	84.10	13	— 0.37	13
	12.105	82.33	3			40.82	82.06	4		
159	56. 13.985	80.55	3	— .035	5	16. 16. 22.44	80.55	3	+ 0.44	10
	14.110	83.87	4			22.00	84.80	7		
163	56. 55.428	83.84	6	— .005	6	29. 3. 50.27	84.18	6	— 0.15	10
	55.439	83.32	3			50.42	83.30	5		
165	56. 59.556	82.08	4	— .035	3	38. 8. 27.25	82.08	4	— 0.56	2
	59.613	83.39	1			27.81	83.39	1		
166	57. 14.266	86.86	4	— .077	5	30. 18. 30.11	86.86	4	— 2.15	7
	14.418	86.35	3			32.26	86.35	4		
169	58. 43.865	86.84	3	— .049	5	30. 19. 55.61	86.84	3	— 2.44	8
	43.903	86.36	4			58.05	86.36	6		
171	59. 1.341	84.76	3	+ .015	5	10. 37. 45.82	81.71	9	— 0.44	11
	1.262	83.35	3			46.26	83.61	4		
172	59. 30.968	86.90	4	— .116	3	30. 47. 2.83	86.90	4	— 1.03	2
	31.195	86.37	1			3.86	86.37	1		
178	1. 0. 17.745	82.38	5	+ .018	4	35. 40. 8.04	82.38	5	— 0.93	2
	17.715	81.74	2			8.97	81.26	1		
180	1. 12.863	84.94	3	— .064	5	32. 22. 39.04	84.96	4	— 1.77	6
	12.982	86.35	3			40.81	86.35	3		

c 2

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole × sin N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
182	I. 1. 57 ^h 40 ^m 2	83 ^s 34	3	+ 0 ^s 39	4	10. 57. 56 ^s 40	83 ^s 34	3	+ 0 ^s 44	6
	57 ^m 19 ^s 6	86 ^s 35	2			55 ^s 96	86 ^s 35	2		
183	2. 1 ^h 08 ^m 6	85 ^s 01	5	— 0 ^s 90	6	29. 5. 46 ^s 59	84 ^s 82	6	— 0 ^s 38	8
	1 ^m 27 ^s 2	85 ^s 36	4			46 ^s 97	85 ^s 36	4		
186	2. 33 ^m 26 ^s 0	84 ^s 90	2	— 0 ^s 46	3	21. 51. 39 ^s 08	84 ^s 28	3	+ 0 ^s 63	5
	33 ^m 38 ^s 2	83 ^s 81	2			38 ^s 45	83 ^s 81	2		
187	2. 48 ^m 55 ^s 3	85 ^s 06	5	— 0 ^s 22	3	26. 27. 53 ^s 03	85 ^s 06	5	+ 1 ^s 13	3
	48 ^m 60 ^s 3	85 ^s 41	1			51 ^s 90	85 ^s 41	1		
189	3. 40 ^m 90 ^s 1	85 ^s 08	5	— 1 ^s 13	4	26. 26. 10 ^s 28	85 ^s 05	6	+ 0 ^s 01	5
	41 ^m 15 ^s 4	85 ^s 87	2			10 ^s 27	85 ^s 87	2		
190	3. 48 ^m 21 ^s 4	84 ^s 26	3	— 0 ^s 61	4	35. 29. 20 ^s 04	84 ^s 26	3	— 1 ^s 70	4
	48 ^m 31 ^s 9	86 ^s 36	2			21 ^s 74	86 ^s 36	2		
193	3. 53 ^m 20 ^s 2	84 ^s 87	3	— 0 ^s 29	4	25. 37. 11 ^s 98	84 ^s 86	3	+ 0 ^s 39	6
	53 ^m 26 ^s 8	84 ^s 90	2			11 ^s 59	84 ^s 73	3		
198	7. 25 ^m 90 ^s 1	86 ^s 75	3			30. 53. 1 ^s 49	86 ^s 75	3	— 1 ^s 02	4
						2 ^s 51	86 ^s 38	2		
206	12. 32 ^m 63 ^s 8	84 ^s 93	4	+ 0 ^s 68	3	32. 24. 0 ^s 40	84 ^s 93	4	+ 1 ^s 18	2
	32 ^m 51 ^s 1	86 ^s 40	1			59 ^s 22	86 ^s 40	1		
207	14. 18 ^m 33 ^s 3	81 ^s 67	5	+ 0 ^s 03	5	1. 20. 6 ^s 29	82 ^s 20	8	— 0 ^s 63	14
	17 ^m 20 ^s 6	81 ^s 94	3			6 ^s 92	80 ^s 82	6		
209	14. 45 ^m 38 ^s 8	82 ^s 27	494	+ 0 ^s 01	19	1. 19. 50 ^s 85	82 ^s 00	680	— 0 ^s 36	34
	45 ^m 34 ^s 0	82 ^s 25	519			51 ^s 21	81 ^s 96	753		
210	15. 16 ^m 78 ^s 5	84 ^s 89	4	— 0 ^s 43	5	45. 6. 2 ^s 76	84 ^s 89	4	— 1 ^s 36	2
	16 ^m 84 ^s 6	86 ^s 37	3			4 ^s 12	86 ^s 37	3		
213	17. 28 ^m 27 ^s 7	86 ^s 94	2	— 1 ^s 24	4	22. 29. 49 ^s 09	86 ^s 94	2	+ 0 ^s 02	7
	28 ^m 60 ^s 2	85 ^s 13	4			49 ^s 07	85 ^s 13	4		
214	17. 58 ^m 53 ^s 4	84 ^s 85	4	— 0 ^s 17	5	30. 23. 21 ^s 06	84 ^s 85	4	— 0 ^s 33	7
	58 ^m 56 ^s 7	80 ^s 08	3			21 ^s 39	81 ^s 66	4		
222	20. 28 ^m 79 ^s 1	82 ^s 96	4	— 0 ^s 33	4	45. 12. 48 ^s 32	82 ^s 96	4	— 1 ^s 10	1
	28 ^m 83 ^s 8	86 ^s 41	2			49 ^s 42	86 ^s 41	2		
224	22. 30 ^m 20 ^s 2	82 ^s 38	4	+ 0 ^s 49	5	24. 31. 21 ^s 53	82 ^s 38	4	+ 0 ^s 74	7
	30 ^m 08 ^s 4	82 ^s 37	3			20 ^s 79	82 ^s 37	3		
227	23. 41 ^m 07 ^s 3	86 ^s 92	3	— 1 ^s 23	3	20. 35. 58 ^s 90	86 ^s 92	3	— 0 ^s 67	3
	41 ^m 42 ^s 2	86 ^s 37	1			59 ^s 57	86 ^s 37	1		
228	23. 43 ^m 84 ^s 4	84 ^s 22	3	— 0 ^s 70	4	22. 12. 31 ^s 11	84 ^s 22	3	+ 1 ^s 07	6
	44 ^m 02 ^s 9	85 ^s 39	2			30 ^s 04	85 ^s 05	3		
230	24. 6 ^m 45 ^s 0	86 ^s 96	2	+ 0 ^s 90	2	26. 59. 54 ^s 93	86 ^s 96	2	— 2 ^s 58	2
	6 ^m 25 ^s 1	86 ^s 40	1			57 ^s 51	86 ^s 40	1		
231	24. 34 ^m 28 ^s 4	84 ^s 35	5	+ 0 ^s 71	3	27. 1. 30 ^s 20	82 ^s 34	10	— 0 ^s 50	5
	34 ^m 12 ^s 7	86 ^s 40	1			30 ^s 70	84 ^s 90	2		
235	25. 55 ^m 49 ^s 5	84 ^s 97	5			21. 40. 21 ^s 88	84 ^s 97	5	+ 0 ^s 56	5
						21 ^s 32	84 ^s 33	2		
236	26. 5 ^m 83 ^s 7	84 ^s 48	3	— 0 ^s 96	3	31. 23. 3 ^s 80	84 ^s 48	3	— 0 ^s 23	4
	6 ^m 02 ^s 2	86 ^s 41	1			4 ^s 03	86 ^s 41	2		
240	28. 57 ^m 19 ^s 9	81 ^s 24	3	— 0 ^s 57	5	17. 34. 20 ^s 32	79 ^s 73	10	— 0 ^s 96	14
	57 ^m 38 ^s 7	82 ^s 38	4			21 ^s 28	83 ^s 22	7		
245	30. 17 ^m 52 ^s 3	83 ^s 87	3	— 0 ^s 30	4	32. 38. 4 ^s 61	83 ^s 87	3	— 1 ^s 12	4
	17 ^m 57 ^s 9	85 ^s 82	2			5 ^s 73	85 ^s 82	2		
247	30. 37 ^m 87 ^s 1	83 ^s 89	4	— 0 ^s 54	5	41. 58. 49 ^s 93	83 ^s 89	4	— 1 ^s 43	1
	37 ^m 95 ^s 2	85 ^s 40	3			51 ^s 36	85 ^s 40	3		

INTRODUCTION.

21

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued.*

Star's No.	Mean R.A. 1880 ^o .	Mean Date 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
254	1. 33. 28 ^h 23 ^m 8 ^s	80 ^o 65	4	+ .076	5	22. 33. 53 ^h 94 ^m	79 ^o 75	12	+ 1 ^h 20 ^m	8
	28 ^h 04 ^m 1 ^s	81 ^o 37	3			52 ^h 74 ^m	81 ^o 37	3		
257	34. 30 ^h 92 ^m 3 ^s	86 ^o 90	6	+ .116	3	30. 3. 32 ^h 29 ^m	86 ^o 90	6	- 0 ^h 51 ^m	6
	30 ^h 69 ^m 1 ^s	83 ^o 39	1			32 ^h 80 ^m	85 ^o 40	3		
261	35. 12 ^h 92 ^m 3 ^s	85 ^o 76	7	- .034	8	30. 3. 16 ^h 71 ^m	85 ^o 64	8	- 0 ^h 50 ^m	15
	12 ^h 99 ^m 1 ^s	80 ^o 73	5			17 ^h 21 ^m	82 ^o 86	12		
269	39. 4 ^h 90 ^m 3 ^s	80 ^o 68	4	- .047	4	26. 44. 26 ^h 45 ^m	80 ^o 31	13	- 0 ^h 82 ^m	5
	5 ^h 00 ^m 8 ^s	80 ^o 86	2			27 ^h 27 ^m	80 ^o 86	2		
280	44. 6 ^h 84 ^m 9 ^s	84 ^o 89	3	- .090	4	35. 26. 51 ^h 39 ^m	84 ^o 88	4	- 0 ^h 83 ^m	4
	7 ^h 00 ^m 5 ^s	83 ^o 41	2			52 ^h 22 ^m	83 ^o 41	2		
282	44. 31 ^h 76 ^m 5 ^s	85 ^o 97	6	- .055	5	39. 48. 4 ^h 36 ^m	85 ^o 92	6	- 0 ^h 96 ^m	3
	31 ^h 85 ^m 1 ^s	86 ^o 36	2			5 ^h 32 ^m	86 ^o 36	2		
284	45. 46 ^h 55 ^m 5 ^s	79 ^o 73	5	+ .066	7	26. 55. 18 ^h 98 ^m	81 ^o 27	35	- 0 ^h 41 ^m	11
	46 ^h 40 ^m 9 ^s	81 ^o 98	5			19 ^h 39 ^m	81 ^o 98	5		
297	50. 47 ^h 76 ^m 5 ^s	84 ^o 87	3	- .117	4	25. 57. 49 ^h 19 ^m	84 ^o 87	3	+ 1 ^h 84 ^m	7
	48 ^h 03 ^m 2 ^s	85 ^o 86	2			47 ^h 35 ^m	85 ^o 86	4		
298	50. 56 ^h 42 ^m 8 ^s	84 ^o 47	5	+ .058	4	41. 22. 59 ^h 78 ^m	84 ^o 37	6	- 0 ^h 63 ^m	3
	56 ^h 34 ^m 1 ^s	85 ^o 40	2			60 ^h 41 ^m	85 ^o 40	2		
302	52. 7 ^h 22 ^m 2 ^s	81 ^o 81	3	- .024	5	19. 40. 33 ^h 28 ^m	81 ^o 81	3	- 1 ^h 17 ^m	7
	7 ^h 29 ^m 2 ^s	79 ^o 67	3			34 ^h 45 ^m	79 ^o 67	3		
304	53. 12 ^h 86 ^m 1 ^s	80 ^o 45	9	+ .018	7	18. 9. 38 ^h 35 ^m	81 ^o 34	30	+ 0 ^h 22 ^m	10
	12 ^h 80 ^m 4 ^s	81 ^o 65	4			38 ^h 13 ^m	81 ^o 65	4		
306	53. 56 ^h 94 ^m 8 ^s	80 ^o 41	3	+ .029	5	25. 40. 44 ^h 17 ^m	80 ^o 41	3	+ 0 ^h 09 ^m	6
	56 ^h 88 ^m 2 ^s	82 ^o 04	3			44 ^h 08 ^m	82 ^o 04	3		
307	54. 8 ^h 00 ^m 9 ^s	83 ^o 28	6	- .063	8	26. 11. 26 ^h 90 ^m	83 ^o 37	7	+ 0 ^h 23 ^m	11
	8 ^h 15 ^m 1 ^s	82 ^o 36	6			26 ^h 67 ^m	82 ^o 36	6		
311	54. 43 ^h 28 ^m 6 ^s	84 ^o 22	3	- .082	5	9. 16. 47 ^h 93 ^m	84 ^o 87	5	+ 0 ^h 33 ^m	13
	43 ^h 79 ^m 0 ^s	84 ^o 35	3			47 ^h 60 ^m	84 ^o 64	7		
314	55. 39 ^h 57 ^m 8 ^s	81 ^o 64	3	- .073	6	25. 28. 26 ^h 07 ^m	81 ^o 64	3	- 0 ^h 21 ^m	10
	39 ^h 74 ^m 7 ^s	82 ^o 90	6			26 ^h 28 ^m	82 ^o 97	7		
318	56. 6 ^h 80 ^m 1 ^s	83 ^o 83	2	- .042	4	26. 11. 32 ^h 30 ^m	83 ^o 83	2	+ 0 ^h 67 ^m	6
	6 ^h 89 ^m 5 ^s	82 ^o 83	4			31 ^h 63 ^m	83 ^o 57	4		
319	56. 32 ^h 21 ^m 8 ^s	80 ^o 59	31	- .092	3	48. 14. 48 ^h 69 ^m	80 ^o 66	30	- 7 ^h 75 ^m	1
	32 ^h 34 ^m 1 ^s	86 ^o 38	1			56 ^h 44 ^m	86 ^o 39	2		
327	2. 2. 5 ^h 17 ^m 7 ^s	84 ^o 58	3	+ .062	4	36. 43. 29 ^h 83 ^m	84 ^o 58	3	- 1 ^h 04 ^m	4
	5 ^h 07 ^m 4 ^s	83 ^o 91	2			30 ^h 87 ^m	83 ^o 91	2		
328	2. 19 ^h 81 ^m 1 ^s	80 ^o 20	4	- .044	5	16. 32. 17 ^h 01 ^m	82 ^o 06	15	+ 0 ^h 27 ^m	9
	19 ^h 96 ^m 5 ^s	80 ^o 37	3			16 ^h 74 ^m	80 ^o 37	3		
333	5. 4 ^h 78 ^m 9 ^s	82 ^o 59	5	- .040	5	24. 2. 21 ^h 83 ^m	82 ^o 29	9	- 0 ^h 75 ^m	7
	4 ^h 88 ^m 7 ^s	81 ^o 71	3			22 ^h 58 ^m	81 ^o 71	3		
338	5. 54 ^h 69 ^m 1 ^s	85 ^o 52	5	- .087	7	22. 52. 47 ^h 60 ^m	85 ^o 61	7	+ 0 ^h 03 ^m	13
	54 ^h 91 ^m 4 ^s	84 ^o 01	5			47 ^h 57 ^m	84 ^o 77	8		
355	13. 59 ^h 97 ^m 4 ^s	79 ^o 85	2	- .006	4	34. 42. 17 ^h 42 ^m	79 ^o 85	2	+ 0 ^h 35 ^m	5
	59 ^h 98 ^m 3 ^s	80 ^o 04	3			17 ^h 07 ^m	80 ^o 04	3		
365	19. 11 ^h 79 ^m 8 ^s	81 ^o 37	9	- .012	9	23. 8. 18 ^h 36 ^m	81 ^o 95	39	+ 0 ^h 35 ^m	23
	11 ^h 82 ^m 9 ^s	83 ^o 03	8			18 ^h 01 ^m	83 ^o 95	17		
366	19. 13 ^h 15 ^m 5 ^s	80 ^o 55	3	+ .034	5	23. 8. 20 ^h 70 ^m	80 ^o 55	3	- 0 ^h 35 ^m	6
	13 ^h 06 ^m 7 ^s	80 ^o 72	3			21 ^h 05 ^m	80 ^o 72	3		
380	26. 38 ^h 98 ^m 6 ^s	80 ^o 95	4	- .038	5	17. 42. 30 ^h 04 ^m	81 ^o 41	7	+ 0 ^h 19 ^m	8
	39 ^h 11 ^m 3 ^s	81 ^o 40	3			29 ^h 85 ^m	81 ^o 40	3		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R. A. above Pole × sin N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
392	2. 30. 35 ^h 41 ^m 7 ^s	83 ^h 63 ^m	3	— '032	5	9. 3. 44 ^h 84 ^m	84 ^h 38 ^m	14	— 0 ^h 26 ^m	20
	35 ^h 61 ^m 9 ^s	83 ^h 81 ^m	5			45 ^h 10 ^m	84 ^h 70 ^m	11		
393	30. 47 ^h 87 ^m 1 ^s	85 ^h 59 ^m	3	— '013	6	18. 53. 31 ^h 77 ^m	85 ^h 36 ^m	5	+ 0 ^h 02 ^m	15
	47 ^h 91 ^m 2 ^s	82 ^h 54 ^m	7			31 ^h 75 ^m	83 ^h 64 ^m	12		
400	34. 31 ^h 24 ^m 1 ^s	80 ^h 88 ^m	3	+ '001	5	22. 41. 12 ^h 87 ^m	79 ^h 76 ^m	5	+ 0 ^h 90 ^m	7
	31 ^h 239 ^m	82 ^h 07 ^m	3			11 ^h 97 ^m	82 ^h 07 ^m	3		
415	41. 17 ^h 327 ^m	81 ^h 33 ^m	3	+ '004	5	21. 36. 37 ^h 70 ^m	83 ^h 59 ^m	5	— 0 ^h 55 ^m	7
	17 ^h 316 ^m	82 ^h 04 ^m	3			38 ^h 25 ^m	82 ^h 04 ^m	3		
427	45. 45 ^h 373 ^m	84 ^h 89 ^m	3	— '015	4	37. 43. 47 ^h 96 ^m	84 ^h 65 ^m	4	— 0 ^h 69 ^m	2
	45 ^h 398 ^m	83 ^h 41 ^m	2			48 ^h 65 ^m	83 ^h 39 ^m	1		
429	46. 24 ^h 568 ^m	77 ^h 93 ^m	1	+ '147	2	19. 7. 54 ^h 54 ^m	77 ^h 93 ^m	1	— 0 ^h 88 ^m	2
	24 ^h 118 ^m	77 ^h 41 ^m	1			55 ^h 42 ^m	77 ^h 41 ^m	1		
430	46. 26 ^h 906 ^m	83 ^h 09 ^m	6			28. 58. 12 ^h 62 ^m	83 ^h 09 ^m	6	+ 0 ^h 21 ^m	13
						12 ^h 41 ^m	85 ^h 39 ^m	10		
435	50. 11 ^h 799 ^m	82 ^h 77 ^m	7	— '102	6	11. 3. 29 ^h 50 ^m	83 ^h 16 ^m	13	+ 0 ^h 69 ^m	10
	12 ^h 328 ^m	83 ^h 75 ^m	3			28 ^h 81 ^m	83 ^h 75 ^m	3		
448	53. 12 ^h 244 ^m	86 ^h 96 ^m	1	— '115	2	8. 59. 47 ^h 78 ^m	86 ^h 94 ^m	3	+ 0 ^h 08 ^m	8
	12 ^h 983 ^m	85 ^h 94 ^m	2			47 ^h 70 ^m	86 ^h 10 ^m	3		
452	54. 20 ^h 553 ^m	77 ^h 94 ^m	2	— '058	3	19. 28. 18 ^h 96 ^m	77 ^h 94 ^m	2	— 1 ^h 47 ^m	5
	20 ^h 728 ^m	77 ^h 41 ^m	2			20 ^h 43 ^m	77 ^h 41 ^m	2		
453	54. 20 ^h 602 ^m	85 ^h 61 ^m	3	— '051	5	28. 44. 43 ^h 65 ^m	85 ^h 47 ^m	2	— 0 ^h 46 ^m	7
	20 ^h 709 ^m	85 ^h 14 ^m	4			44 ^h 11 ^m	85 ^h 23 ^m	6		
457	56. 31 ^h 893 ^m	84 ^h 85 ^m	3	— '121	5	33. 46. 0 ^h 77 ^m	84 ^h 85 ^m	3	— 0 ^h 82 ^m	5
	32 ^h 111 ^m	84 ^h 06 ^m	3			1 ^h 59 ^m	84 ^h 06 ^m	3		
459	57. 17 ^h 389 ^m	80 ^h 88 ^m	3	— '036	5	26. 24. 36 ^h 96 ^m	80 ^h 88 ^m	3	— 0 ^h 34 ^m	10
	17 ^h 469 ^m	83 ^h 15 ^m	4			37 ^h 30 ^m	83 ^h 39 ^m	9		
462	58. 57 ^h 880 ^m	79 ^h 49 ^m	4	+ '047	5	16. 3. 52 ^h 38 ^m	82 ^h 15 ^m	15	+ 0 ^h 14 ^m	9
	57 ^h 709 ^m	81 ^h 38 ^m	3			52 ^h 24 ^m	81 ^h 38 ^m	3		
465	3. 0. 24 ^h 755 ^m	84 ^h 12 ^m	8	+ '057	7	40. 50. 47 ^h 98 ^m	83 ^h 76 ^m	8	+ 0 ^h 24 ^m	5
	24 ^h 668 ^m	82 ^h 67 ^m	4			47 ^h 74 ^m	82 ^h 67 ^m	4		
469	1. 25 ^h 282 ^m	86 ^h 22 ^m	3	— '075	3	11. 34. 40 ^h 78 ^m	86 ^h 40 ^m	4	— 0 ^h 09 ^m	4
	25 ^h 653 ^m	85 ^h 37 ^m	1			40 ^h 87 ^m	85 ^h 37 ^m	1		
470	2. 18 ^h 085 ^m	77 ^h 95 ^m	3	— '106	4	16. 35. 6 ^h 27 ^m	78 ^h 91 ^m	4	+ 0 ^h 44 ^m	13
	18 ^h 456 ^m	86 ^h 43 ^m	2			5 ^h 83 ^m	84 ^h 84 ^m	9		
473	4. 9 ^h 104 ^m	86 ^h 88 ^m	2	— '074	4	5. 31. 6 ^h 21 ^m	86 ^h 40 ^m	4	+ 0 ^h 19 ^m	8
	9 ^h 878 ^m	85 ^h 16 ^m	3			6 ^h 02 ^m	85 ^h 16 ^m	3		
478	5. 8 ^h 958 ^m	80 ^h 47 ^m	4	— '048	5	12. 42. 32 ^h 14 ^m	81 ^h 94 ^m	8	+ 0 ^h 41 ^m	12
	9 ^h 174 ^m	83 ^h 39 ^m	3			31 ^h 73 ^m	84 ^h 20 ^m	5		
479	5. 46 ^h 732 ^m	85 ^h 99 ^m	3	— '064	4	24. 4. 3 ^h 70 ^m	84 ^h 74 ^m	3	— 0 ^h 14 ^m	9
	46 ^h 889 ^m	86 ^h 46 ^m	2			3 ^h 84 ^m	84 ^h 76 ^m	6		
481	6. 20 ^h 366 ^m	86 ^h 99 ^m	3			15. 12. 23 ^h 00 ^m	86 ^h 99 ^m	3	+ 1 ^h 47 ^m	3
						21 ^h 53 ^m	85 ^h 37 ^m	1		
485	7. 2 ^h 015 ^m	84 ^h 65 ^m	3	'000	3	24. 47. 18 ^h 56 ^m	84 ^h 65 ^m	3	— 0 ^h 48 ^m	3
	2 ^h 016 ^m	86 ^h 38 ^m	1			19 ^h 04 ^m	86 ^h 38 ^m	1		
487	7. 37 ^h 790 ^m	85 ^h 12 ^m	6	+ '003	5	39. 30. 32 ^h 57 ^m	85 ^h 12 ^m	6	— 0 ^h 83 ^m	3
	37 ^h 786 ^m	83 ^h 94 ^m	2			33 ^h 40 ^m	83 ^h 94 ^m	2		
490	8. 35 ^h 982 ^m	81 ^h 95 ^m	4	— '010	6	20. 42. 38 ^h 57 ^m	81 ^h 95 ^m	4	+ 1 ^h 27 ^m	13
	36 ^h 009 ^m	83 ^h 16 ^m	4			37 ^h 30 ^m	83 ^h 68 ^m	11		
501	12. 58 ^h 943 ^m	78 ^h 65 ^m	3	+ '031	5	17. 13. 16 ^h 55 ^m	78 ^h 65 ^m	3	+ 0 ^h 67 ^m	7
	58 ^h 838 ^m	82 ^h 06 ^m	3			15 ^h 88 ^m	82 ^h 06 ^m	3		

INTRODUCTION.

23

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^c .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880 ^c .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
507	3. 14. 16.211	82.88	1	— .067	3	25. 50. 41.15	79.68	5	— 0.05	10
	16.365	84.43	4			41.20	84.59	6		
510	14. 43. 285	83.44	2	— .149	3	41. 13. 4.02	83.44	2	+ 0.54	2
	43.511	86.44	2			3.48	86.44	2		
513	15. 45. 623	82.18	15	+ .010	8	40. 34. 3.08	81.88	15	— 0.03	6
	45.607	81.16	4			3.11	80.81	5		
519	17. 30. 752	82.41	4	+ .075	4	40. 40. 47.82	82.41	4	— 0.86	3
	30.637	83.90	2			48.68	83.90	2		
522	17. 54. 373	86.96	1	— .012	2	18. 33. 25.21	86.96	1	+ 2.00	5
	54.412	83.97	2			23.21	83.71	4		
525	19. 31. 543	84.72	4	— .034	5	41. 21. 25.78	84.72	4	— 1.58	3
	31.595	85.73	3			27.36	85.73	3		
532	22. 5. 329	82.75	4			17. 3. 44.42	82.59	5	+ 1.23	6
						43.19	84.35	2		
542	24. 31. 282	83.13	1	+ .021	2	35. 26. 2.46	83.13	1	+ 0.15	3
	31.245	84.48	2			2.31	84.48	2		
550	27. 21. 379	81.93	2			3. 44. 5.30	81.93	2	+ 0.65	6
						4.65	83.44	2		
551	27. 57. 959	85.27	7	— .063	7	42. 12. 29.46	85.23	8	— 0.96	4
	58.053	83.19	4			30.42	83.19	4		
556	31. 45. 112	83.23	3	— .066	5	27. 10. 27.98	83.23	3	+ 0.25	10
	45.256	84.11	3			27.73	83.81	8		
560	32. 50. 038	86.92	2	+ .013	3	30. 25. 9.98	86.92	2	+ 0.57	5
	50.013	82.87	2			9.41	82.74	3		
563	34. 23. 151	83.87	6	+ .060	5	42. 35. 52.28	83.87	6	— 1.66	2
	23.062	81.23	2			53.94	81.23	2		
564	34. 40. 372	83.95	3	— .057	3	23. 10. 38.61	82.31	3	+ 1.01	6
	40.516	84.50	1			37.60	84.44	3		
570	36. 46. 293	82.94	4	+ .005	6	19. 30. 10.75	83.56	6	— 0.67	12
	46.278	83.94	6			11.42	83.94	6		
572	37. 2. 616	77.64	3			47. 48. 7.11	77.44	2	— 7.21	$\frac{1}{2}$
						14.32	82.40	1		
575	37. 42. 647	83.07	2	— .175	3	19. 2. 24.08	82.24	10	+ 0.45	13
	43.184	85.95	2			23.63	84.57	6		
578	38. 32. 887	86.95	2	— .037	4	24. 50. 50.68	86.95	2	+ 1.19	6
	32.976	84.75	3			49.49	84.93	4		
601	44. 44. 002	85.93	5			29. 11. 4.15	85.93	5	— 0.42	6
						4.57	83.43	3		
604	46. 50. 720	81.99	3	— .010	5	27. 16. 54.53	81.31	13	+ 0.24	10
	50.742	83.11	3			54.29	83.66	5		
611	50. 1. 532	83.66	3	— .043	5	9. 38. 7.38	83.80	8	+ 0.07	15
	1.788	81.08	3			7.31	83.13	7		
619	54. 1. 240	80.34	3	— .098	6	21. 39. 15.19	82.00	5	+ 0.63	11
	1.506	83.28	6			14.56	83.28	6		
625	55. 26. 065	82.31	3	— .074	6	16. 45. 31.65	82.67	7	+ 0.03	15
	26.321	84.90	6			31.62	84.96	9		
638	59. 22. 418	86.27	3	— .064	5	4. 45. 48.28	86.27	3	— 0.36	11
	23.186	83.81	3			48.64	84.22	9		
639	59. 53. 980	78.98	1	— .026	2	35. 29. 26.09	78.98	1	— 2.62	2
	54.025	85.45	1			28.71	85.45	1		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
640	3. 59. 57.176	84.73	5	— .020	3	42. 36. 35.13	84.73	5	+ 0.81	1
	57.206	81.47	1			34.32	81.47	1		
641	4. 0. 21.935	85.14	1	— .025	3	18. 11. 20.38	84.98	3	+ 0.03	7
	22.015	85.46	3			20.35	85.46	3		
649	3. 44. 72.5	82.98	1	— .024	3	6. 57. 13.99	80.03	6	+ 0.56	13
	44.924	84.49	4			13.43	84.12	6		
653	5. 11. 31.5	79.98	6	— .036	6	32. 50. 51.50	79.98	6	— 1.61	9
	11.382	77.92	4			53.11	77.82	5		
657	6. 5.443	85.62	3	+ .048	5	41. 53. 50.85	85.62	3	— 1.05	4
	5.371	82.15	4			51.90	82.15	4		
658	6. 14. 02.9	77.05	1	+ .011	3	9. 27. 58.90	77.05	1	— 0.66	6
	13.965	85.49	4			59.56	85.47	6		
659	6. 19. 69.0	85.16	3			28. 27. 13.74	81.99	4	— 0.42	9
		86.09	5	— .089	6	14.16	84.89	5		
671	11. 21. 82.3	85.75	4			29. 33. 7.84	83.86	13	— 0.39	13
	22.004	85.75	4			8.23	84.60	8		
678	12. 48. 36.4	78.10	1	— .104	2	35. 32. 40.98	78.10	1	+ 1.92	3
	48.543	77.45	2			39.06	77.45	2		
702	18. 26. 67.9	83.88	1	— .027	3	24. 7. 40.18	83.88	1	+ 0.34	6
	26.746	85.70	4			39.84	85.03	7		
705	19. 37. 08.2	86.01	2	— .012	4	17. 44. 1.33	85.82	3	+ 0.40	8
	37.120	86.52	5			0.93	86.51	4		
714	22. 30. 86.5	86.95	2	+ .105	3	36. 21. 1.93	86.95	2	+ 0.35	3
	30.687	84.52	2			1.58	84.52	2		
715	22. 31. 77.5	86.95	2	+ .022	3	36. 21. 8.33	86.95	2	— 0.37	3
	31.738	84.52	2			8.70	84.52	2		
735	30. 27. 65.0	86.92	2	— .074	4	36. 45. 56.04	86.92	2	— 0.12	4
	27.773	84.44	3			56.16	84.44	3		
746	32. 42. 65.6	84.99	2	+ .003	4	14. 16. 51.17	83.57	10	+ 0.57	17
	42.642	85.27	5			50.60	85.13	9		
751	34. 14. 49.2	86.96	3	— .039	4	40. 15. 27.93	86.95	3	+ 3.22	3
	14.553	83.50	2			24.71	83.50	2		
763	37. 56. 97.0	83.19	4	+ .010	6	9. 0. 36.88	83.81	6	— 0.72	13
	56.906	84.04	4			37.60	84.54	6		
764	38. 16. 77.6	80.96	3	— .166	5	34. 36. 51.03	80.96	3	+ 1.18	5
	17.069	84.75	3			49.85	84.75	3		
777	42. 7. 71.4	81.83	5	— .002	6	23. 51. 49.74	81.95	18	+ 0.07	10
	7.720	80.99	4			49.67	80.99	4		
778	42. 8. 06.3	86.95	3	— .016	5	41. 28. 7.09	86.94	3	+ 2.02	4
	8.087	84.13	3			5.07	84.13	3		
794	46. 36. 71.6	86.98	1	— .008	3	37. 19. 40.44	86.98	1	— 0.04	3
	36.729	84.38	3			40.48	84.38	3		
797	47. 7. 54.0	86.92	1	— .030	3	15. 55. 11.54	81.22	7	+ 0.68	17
	7.650	83.99	6			10.86	83.95	13		
801	49. 16. 45.7	86.94	1	— .098	3	16. 25. 4.63	84.93	3	+ 0.31	9
	16.805	83.44	3			4.32	83.04	5		
802	49. 33. 10.9	86.95	1	— .009	3	16. 6. 49.19	85.69	3	+ 0.48	9
	33.143	83.14	3			48.71	84.27	5		
806	50. 12. 81.3	86.98	1	— .082	3	37. 1. 52.85	86.98	1	— 1.22	3
	12.949	85.81	3			54.07	85.81	3		

INTRODUCTION.

25

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued.*

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
807	4. 50. 40 ^o 980	82 ^o 86	1			23. 20. 52 ^o 58	82 ^o 86	1		
	41 ^o 278	81 ^o 73	4	— .118	3	51 ^o 92	82 ^o 64	7	+ 0 ^o 66	6
813	52. 44 ^o 715	84 ^o 16	5			29. 44. 8 ^o 28	82 ^o 06	14	— 0 ^o 15	7
	44 ^o 813	83 ^o 17	3			8 ^o 43	83 ^o 17	3		
826	57. 15 ^o 115	85 ^o 06	2			16. 12. 41 ^o 80	84 ^o 07	4		
	15 ^o 279	84 ^o 69	10	— .046	5	42 ^o 44	84 ^o 85	11	— 0 ^o 64	13
843	5. 2. 21 ^o 348	86 ^o 99	1			27. 27. 33 ^o 22	86 ^o 99	1		
	21 ^o 572	81 ^o 41	3	— .103	3	33 ^o 50	83 ^o 11	6	— 0 ^o 28	5
845	2. 48 ^o 679	86 ^o 97	1			10. 54. 40 ^o 28	82 ^o 98	5		
	48 ^o 132	82 ^o 48	3	+ .103	3	40 ^o 34	82 ^o 47	7	— 0 ^o 06	13
848	3. 25 ^o 869	77 ^o 99	1							
	25 ^o 752	83 ^o 19	9	+ .034	3	16. 52. 23 ^o 64	83 ^o 26	12		
850	5. 6 ^o 528	86 ^o 96	2			36. 55. 51 ^o 37	86 ^o 96	2		
	6 ^o 707	84 ^o 80	3	— .107	4	50 ^o 62	84 ^o 80	3	+ 0 ^o 75	4
854	6. 36 ^o 782	84 ^o 76	4			43. 44. 7 ^o 88	84 ^o 76	4		
	37 ^o 019	85 ^o 45	2	— .164	4	7 ^o 75	86 ^o 38	1	+ 0 ^o 13	1
857	7. 17 ^o 377	86 ^o 98	1			11. 42. 38 ^o 69	86 ^o 99	3		
	17 ^o 222	83 ^o 07	5	+ .031	3	40 ^o 46	84 ^o 36	9	— 1 ^o 77	12
859	7. 33 ^o 958	84 ^o 02	2			43. 43. 22 ^o 31	84 ^o 02	2		
	34 ^o 162	85 ^o 45	2	— .141	3	25 ^o 17	85 ^o 45	2	— 2 ^o 86	2
863	7. 49 ^o 484	81 ^o 45	20			44. 7. 34 ^o 00	80 ^o 97	18		
	49 ^o 480	82 ^o 18	10	+ .003	11	35 ^o 08	81 ^o 75	11	— 1 ^o 08	8
866	9. 6 ^o 756	86 ^o 98	1			32. 0. 52 ^o 30	86 ^o 98	1		
	6 ^o 973	85 ^o 54	2	— .115	2	52 ^o 59	85 ^o 03	4	— 0 ^o 29	4
867	9. 10 ^o 463	86 ^o 98	1			27. 28. 38 ^o 43	85 ^o 93	2		
	10 ^o 633	83 ^o 52	2	— .078	2	38 ^o 76	84 ^o 51	4	— 0 ^o 33	6
870	9. 59 ^o 915	80 ^o 56	2			11. 48. 52 ^o 18	83 ^o 17	1		
	59 ^o 875	82 ^o 78	4	+ .008	4	52 ^o 44	84 ^o 04	11	— 0 ^o 26	6
873	10. 58 ^o 245	86 ^o 96	2			12. 8. 15 ^o 49	82 ^o 70	8		
	58 ^o 654	84 ^o 52	1	— .086	2	14 ^o 74	84 ^o 98	2	+ 0 ^o 75	7
899	18. 50 ^o 637	86 ^o 99	1			27. 2. 10 ^o 06	81 ^o 05	3		
	50 ^o 380	84 ^o 11	8	+ .117	3	8 ^o 57	84 ^o 64	14	+ 1 ^o 49	12
907	22. 17 ^o 227	86 ^o 97	1			32. 51. 57 ^o 61	86 ^o 97	1		
	17 ^o 203	84 ^o 82	6	+ .013	3	58 ^o 24	84 ^o 82	6	— 0 ^o 63	5
913	23. 41 ^o 168	85 ^o 20	1			15. 2. 22 ^o 25	79 ^o 44	4		
	41 ^o 092	83 ^o 93	3	+ .020	3	20 ^o 76	83 ^o 93	3	+ 1 ^o 49	8
917	25. 38 ^o 257	86 ^o 99	1			25. 55. 35 ^o 08	86 ^o 99	1		
	38 ^o 337	83 ^o 39	7	— .035	3	33 ^o 87	83 ^o 20	9	+ 1 ^o 21	6
923	27. 12 ^o 269	86 ^o 98	2			42. 21. 58 ^o 96	86 ^o 98	2		
	12 ^o 479	86 ^o 51	1	— .141	2	59 ^o 11	86 ^o 51	1	— 0 ^o 15	1
924	27. 18 ^o 240	86 ^o 99	1			33. 35. 32 ^o 76	86 ^o 99	1		
	18 ^o 444	86 ^o 03	2	— .113	2	33 ^o 04	86 ^o 03	2	— 0 ^o 28	3
933	28. 57 ^o 339	85 ^o 07	2			33. 42. 40 ^o 51	85 ^o 07	2		
	57 ^o 468	84 ^o 91	3	— .072	4	40 ^o 12	84 ^o 91	3	+ 0 ^o 39	5
945	30. 24 ^o 890	86 ^o 99	1			24. 22. 13 ^o 92	79 ^o 54	4		
	24 ^o 918	82 ^o 88	3	— .012	3	13 ^o 15	84 ^o 15	10	+ 0 ^o 77	12
950	31. 36 ^o 133	86 ^o 97	1			36. 34. 11 ^o 46	86 ^o 97	1		
	36 ^o 226	84 ^o 61	4	— .055	3	12 ^o 09	84 ^o 61	4	— 0 ^o 63	4
957	33. 6 ^o 458	83 ^o 22	6			28. 35. 8 ^o 91	84 ^o 91	8		
	6 ^o 444	83 ^o 42	9	+ .007	8	9 ^o 72	83 ^o 64	10	— 0 ^o 81	14

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

d

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
961	5. 34. 3'300	82°95	2	+ .007	3	35. 11. 45'53	82°95	2	+ 0'44	4
	3'288	85°53	2			45'09	85°53	2		
969	36. 23'508	84°55	4	- .041	4	33. 56. 11'46	84°55	4	- 0'52	4
	23'581	84°52	2			11'98	84°52	2		
970	36. 40'471	78°97	1	+ .014	3	33. 7. 42'53	78°97	1	+ 0'82	5
	40'445	84°60	3			41'71	84°16	5		
973	40. 1'037	79°02	3	- .042	6	21. 34. 0'02	79°02	3	+ 0'62	13
	1'151	82°90	8			33. 59'40	83°73	15		
981	41. 42'615	84°43	3	+ .018	5	31. 4. 24'06	84°43	3	- 0'09	6
	42'581	84°62	3			24'15	84°62	3		
989	44. 47'329	85°40	3	- .011	5	34. 19. 25'01	85°40	3	+ 0'59	6
	47'349	82°55	4			24'42	82°55	4		
1000	48. 21'664	83°08	1	- .025	3	23. 0. 3'05	79°06	3	- 0'18	6
	21'728	83°56	3			3'23	83°56	3		
1007	49. 45'430	85°66	2	- .092	3	34. 41. 28'86	85°66	2	- 0'36	4
	45'591	86°52	2			29'22	86°52	2		
1008	49. 51'771	81°10	2	- .053	4	23. 6. 42'02	80°29	5	0'00	7
	51'847	82°30	4			42'02	83°92	3		
1011	50. 43'603	80°70	9	+ .014	6	45. 4. 0'34	80°70	9	- 3'67	2
	43'583	80°16	3			4'01	80°16	3		
1031	59. 7'516	82°06	1	- .042	3	3. 14. 15'84	82°06	1	+ 0'26	5
	8'267	86°11	4			15'58	86°11	4		
1032	59. 23'828	84°06	2	+ .025	3	31. 3. 3'64	84°06	2	- 1'33	4
	23'780	84°57	2			4'97	84°57	2		
1035	6. 0. 22'225	83°41	3	- .027	5	29. 31. 44'84	81°51	5	- 0'39	11
	22'280	84°60	3			45'23	84°56	7		
1039	0. 46'544	78°41	3	- .068	3	24. 15. 38'44	79°80	9	- 2'88	3
	46'709	81°49	1			41'32	81°49	1		
1051	4. 53'638	82°13	1	- .028	3	29. 58. 12'64	82°13	1	- 1'51	5
	53'695	82°38	5			14'15	82°38	5		
1054	5. 37'083	77°53	2	- .058	4	20. 38. 27'45	77°99	1	- 0'74	4
	37'247	83°27	3			28'19	83°25	3		
1055	6. 17'387	82°03	2	+ .014	4	20. 23. 33'09	82°03	2	+ 2'43	7
	17'347	84°59	3			30'66	84°59	4		
1056	6. 50'799	82°10	2	+ .024	4	28. 26. 54'03	80°37	3	- 0'82	6
	50'748	83°90	3			54'85	83°90	3		
1079	14. 46'774	82°62	2	+ .056	2	27. 15. 1'67	82°26	4	- 0'15	6
	46'652	83°44	1			1'82	84°20	3		
1081	15. 39'285	84°76	3	- .003	5	40. 39. 10'34	84°76	3	- 1'25	4
	39'289	84°90	3			11'59	84°90	3		
1085	16. 7'995	83°08	3	+ .100	4	31. 31. 7'48	83°08	3	+ 0'17	4
	7'804	83°50	2			7'31	83°50	2		
1086	16. 20'164	83°30	5	- .021	6	31. 31. 11'19	83°30	5	+ 0'21	9
	20'205	83°84	4			10'98	83°59	5		
1096	20. 21'614	81°15	3	- .041	5	31. 45. 5'78	81°15	3	+ 0'19	8
	21'691	83°88	5			5'59	83°88	5		
1103	21. 49'193	83°78	3	- .035	6	11. 54. 48'68	83°38	4	- 0'06	13
	49'364	82°32	8			48'74	82°59	9		
1107	22. 45'438	80°16	3	+ .089	5	16. 12. 56'04	80°16	3	+ 0'23	14
	45'118	83°87	4			55'81	84°49	21		

INTRODUCTION.

27

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
1113	6. 25. 43.457	78.59	6	+ .018	6	10. 18. 37.36	79.36	12	— 0.81	10
	43.359	80.39	3			38.17	80.39	3		
1119	26. 20. 81.0	81.16	3	— .003	5	18. 9. 16.64	81.16	3	+ 0.39	7
	20.821	79.21	3			16.25	79.21	3		
1121	26. 43.144	81.82	4	— .015	6	28. 24. 58.14	81.70	5	— 0.95	10
	43.176	82.07	4			59.09	82.55	6		
1126	27. 34.915	81.78	3	— .034	5	28. 25. 31.70	81.78	3	— 0.23	10
	34.986	82.29	4			31.93	82.44	8		
1128	28. 12.616	83.79	3	+ .055	5	5. 12. 26.05	83.79	3	— 0.83	12
	12.014	83.01	5			26.88	84.52	12		
1131	29. 25.247	80.67	4	+ .027	6	27. 58. 35.69	81.82	14	+ 0.39	9
	25.190	81.84	4			35.30	81.84	4		
1147	34. 14.642	81.78	3	+ .034	5	30. 26. 10.48	81.64	4	— 0.48	7
	14.575	79.90	3			10.96	82.31	4		
1156	35. 36.859	81.20	1	— .109	2	30. 26. 16.03	81.67	2	— 0.76	2
	37.075	82.61	1			16.79	82.61	1		
1157	35. 37.810	81.52	3	— .008	5	30. 26. 22.28	81.52	3	— 0.55	8
	37.825	81.88	4			22.83	83.84	5		
1164	38. 11.175	86.57	2	+ .006	4	34. 10. 2.20	86.57	2	— 0.65	6
	11.165	86.10	4			2.85	86.10	4		
1165	38. 11.565	86.57	2	— .171	4	34. 10. 2.15	86.57	2	+ 0.30	6
	11.870	86.10	4			1.85	85.77	5		
1166	38. 25.909	80.17	4	+ .024	7	22. 17. 56.84	80.17	4	+ 1.47	14
	25.846	84.79	9			55.37	84.71	14		
1177	42. 30.203	86.98	1	+ .177	2	30. 24. 44.39	86.98	1	+ 1.62	3
	29.853	86.57	2			42.77	86.57	2		
1180	43. 45.809	82.29	69	+ .013	18	2. 46. 13.79	82.02	254	— 0.78	35
	45.547	82.31	123			14.57	82.42	341		
1194	52. 27.737	86.26	4	— .103	3	41. 26. 33.62	86.26	4	+ 0.64	1
	27.893	85.56	1			32.98	85.56	1		
1198	55. 25.246	82.86	3	— .022	6	30. 1. 23.39	81.04	10	— 0.75	18
	25.289	83.47	6			24.14	84.50	17		
1211	58. 52.518	84.11	5	+ .084	7	29. 1. 17.34	84.11	5	— 0.20	17
	52.344	84.99	6			17.54	85.02	25		
1212	58. 59.488	86.01	2	+ .006	4	29. 4. 11.54	86.01	2	— 0.60	7
	59.475	85.34	3			12.14	86.04	5		
1219	7. 2. 5.776	82.67	4	— .002	6	20. 59. 57.68	82.67	4	— 0.47	9
	5.782	82.00	5			58.15	82.00	5		
1220	2. 31.805	84.73	3	— .014	6	8. 31. 46.24	84.75	6	— 0.24	17
	31.901	85.36	10			46.48	85.59	14		
1228	5. 25.803	84.50	3	— .016	5	30. 9. 3.27	84.50	3	— 1.40	11
	25.835	84.50	3			4.67	85.57	10		
1231	5. 44.178	82.24	4	+ .016	6	7. 21. 46.34	80.92	16	+ 0.85	22
	44.053	82.81	5			45.49	84.24	14		
1239	8. 8.618	84.23	1	+ .125	3	37. 39. 34.17	84.23	1	— 0.66	6
	8.414	86.17	4			34.83	86.17	4		
1255	12. 43.605	81.18	5	+ .006	7	8. 51. 52.82	83.68	8	+ 0.40	19
	43.564	83.24	5			52.42	84.24	16		
1262	15. 32.286	80.81	3	+ .041	5	23. 26. 5.94	80.17	4	— 0.12	9
	32.184	80.04	3			6.06	81.12	5		

d 2

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
1270	7. 17. 39'438	85'46	4	+ '001	6	40. 33. 8'47	85'46	4	— 0'30	5
	39'437	86'19	4			8'77	86'19	4		
1273	18. 22'725	81'55	3	+ '042	5	21. 17. 31'37	80'67	10	+ 0'10	8
	22'610	79'63	3			31'27	79'63	3		
1283	20. 49'143	85'63	2	— '026	4	40. 4. 53'93	85'78	3	— 0'11	5
	49'183	85'06	4			54'04	85'06	4		
1301	27. 48'648	85'84	3	— '081	5	43. 33. 25'63	85'84	3	— 1'11	3
	48'765	84'90	3			26'74	84'90	3		
1318	35. 6'236	83'82	4	— '015	4	1. 1. 0'75	82'55	12	— 0'76	5
	5'423	82'63	2			1'51	82'64	1		
1321	35. 35'002	86'97	1	+ '033	3	26. 52. 55'44	82'46	3	— 1'89	8
	34'929	81'25	3			57'33	82'20	5		
1322	36. 21'956	83'71	3			9. 26. 15'80	83'71	3	— 0'87	6
						16'67	86'52	2		
1326	39. 9'239	77'16	1	— '001	3	17. 54. 59'95	83'37	5		
	9'243	82'59	3							
1330	41. 38'086	85'56	2	+ '002	2	35. 34. 24'48	85'56	2	— 0'76	2
	38'082	86'66	1			25'24	86'66	1		
1338	45. 47'877	85'11	1	— '061	2	15. 45. 52'74	85'11	1	+ 0'51	5
	48'100	82'69	2			52'23	83'32	5		
1340	45. 50'876	82'51	4	— '028	3	10. 11. 46'90	82'66	7	+ 0'09	4
	51'033	86'65	1			46'81	86'65	1		
1353	51. 16'563	84'78	3	— '002	4	30. 37. 44'14	85'11	4	— 0'20	6
	16'567	86'22	2			44'34	86'07	3		
1358	51. 53'833	83'57	4	— '010	4	28. 40. 49'45	83'05	3	— 0'76	11
	53'853	86'71	2			50'21	85'29	12		
1360	52. 49'015	83'25	1	+ '184	3	32. 23. 45'97	84'75	2	— 0'82	5
	48'673	85'46	3			46'79	85'47	3		
1375	57. 52'727	85'24	1	— '045	2	19. 56. 4'16	85'24	1	+ 0'61	5
	52'860	85'67	2			3'55	85'20	4		
1376	58. 18'250	81'87	3	+ '054	4	23. 59. 36'59	81'59	5	+ 0'63	15
	18'117	85'78	2			35'96	85'11	15		
1377	59. 7'275	86'99	1	— '148	2	13. 48. 47'53	86'99	1	— 1'06	4
	7'894	86'16	2			48'59	86'16	2		
1379	59. 25'576	85'73	2	+ '025	3	38. 8. 57'03	85'73	2	— 0'20	3
	25'536	86'60	2			57'23	86'60	2		
1380	8. 0. 12'458	84'25	1	— '002	3	31. 24. 9'27	84'25	1	— 0'35	6
	12'462	86'34	3			9'62	86'34	3		
1384	0. 50'971	82'63	5	+ '006	6	21. 10. 30'41	82'29	10	+ 0'65	14
	50'954	82'99	4			29'76	84'25	7		
1385	1. 40'020	80'20	1	+ '022	3	13. 53. 49'03	80'20	1	+ 1'34	6
	39'930	84'98	3			47'69	85'17	4		
1393	4. 25'458	82'19	3	+ '031	6	13. 52. 47'40	83'15	6	+ 0'89	12
	25'327	83'43	6			46'51	84'12	10		
1399	7. 25'095	84'22	3	+ '004	5	17. 13. 23'30	82'61	5	+ 0'91	11
	25'081	83'64	3			22'39	84'50	6		
1401	8. 49'862	82'57	3	+ '029	5	27. 7. 27'57	81'46	12	+ 0'80	20
	49'798	84'72	3			26'77	84'95	17		
1403	12. 38'359	81'74	4	+ '031	6	28. 59. 27'63	81'74	4	— 0'17	12
	38'296	83'93	4			27'80	84'95	11		

INTRODUCTION.

29

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880.0.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880.0.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
1421	8. 19. 48.805	82.25	1			4. 31. 34.46	82.24	2		
	47.797	86.65	2	+ .080	2	35.25	86.63	3	- 0.79	7
1423	20. 16.992	80.82	5	- .001	5	28. 52. 57.28	80.42	42	+ 0.39	15
	16.995	84.07	3			56.89	84.55	8		
1430	23. 50.376	82.96	4	- .018	7	24. 26. 51.85	82.71	6	- 0.09	16
	50.419	84.00	8			51.94	84.56	14		
1433						7. 20. 26.11	85.09	2	- 0.24	9
	24. 32.312	86.20	3			26.35	85.62	7		
1446	29. 42.530	82.80	7			25. 15. 17.80	81.91	21	+ 0.89	16
	42.526	84.24	5	+ .002	8	16.91	84.95	9		
1454	32. 43.145	83.92	3	- .213	3	43. 44. 48.18	83.69	2	- 2.23	1
	43.453	86.66	1			50.41	86.66	1		
1469	37. 47.865	82.10	2			9. 31. 30.13	86.99	1	+ 0.67	4
						29.46	82.70	2		
1471	37. 55.921	79.99	1	- .049	3	22. 51. 14.01	79.99	1	+ 0.83	6
	56.047	86.42	4			13.18	85.92	7		
1481	43. 28.401	82.40	4	+ .007	6	27. 35. 26.06	81.71	9	- 0.49	13
	28.385	83.23	4			26.55	83.58	8		
1488	46. 19.086	85.20	4	- .035	6	24. 56. 19.04	84.58	5	+ 0.05	13
	19.170	83.62	4			18.99	84.06	10		
1491	48. 42.107	83.86	3	- .009	5	43. 54. 34.95	83.86	3	+ 0.49	2
	42.120	86.67	3			34.46	86.70	2		
1496						5. 20. 28.06	84.20	2	+ 0.21	8
	50. 3.335	86.79	3			27.85	86.75	5		
1503	51. 42.118	82.20	2	- .060	4	21. 54. 16.33	82.85	3	+ 0.47	11
	42.279	84.43	4			15.86	85.00	9		
1513	57. 6.811	86.24	2	- .169	4	40. 59. 38.40	86.24	2	+ 1.15	1
	7.069	86.66	3			37.25	86.66	1		
1514	57. 50.111	83.88	3	- .049	5	22. 38. 48.11	82.87	8	+ 0.58	16
	50.237	84.51	5			47.53	84.40	12		
1518	59. 48.779	77.15	3	- .005	5	22. 22. 48.08	80.67	4	- 0.90	9
	48.793	82.63	3			48.98	83.10	5		
1519	9. 0. 23.907	84.31	1	- .020	3	37. 54. 44.61	84.31	1	- 0.14	3
	23.939	86.77	3			44.75	86.77	3		
1521	1. 0.494	83.74	3	- .036	5	25. 59. 59.43	82.85	7	- 0.32	7
	0.576	84.19	3			59.75	84.19	3		
1531	4. 50.460	81.54	3	+ .004	5	28. 5. 2.36	81.59	7	+ 0.62	13
	50.451	83.53	4			1.74	84.08	9		
1538	7. 32.723	82.59	3	+ .048	5	35. 29. 2.37	82.59	3	+ 0.04	6
	32.640	85.48	4			2.33	85.48	4		
1551	14. 20.811	81.97	9	- .108	5	39. 56. 46.45	81.97	9	+ 1.87	3
	20.980	86.74	2			44.58	86.74	2		
1552	16. 3.218	77.41	4	- .156	5	25. 32. 39.94	80.58	9	+ 0.20	10
	3.579	84.37	3			39.74	84.71	5		
1558	19. 50.963	82.77	5	- .119	7	8. 8. 43.29	82.77	5	- 0.81	13
	51.807	85.61	5			44.10	86.03	8		
1564	22. 3.286	84.28	2	+ .058	5	26. 24. 53.11	81.84	12	- 0.12	14
	3.156	83.24	6			53.23	83.64	8		
1568	23. 32.211	77.14	2	- .147	4	17. 15. 45.93	77.14	2	- 0.93	8
	32.706	86.86	3			46.86	86.37	5		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
1569	9. 23. 50 ^o 551	82 ^o 18	4	— .082	6	19. 38. 37 ^o 22	82 ^o 02	6	— 0 ^o 35	12
	50 ^o 795	84 ^o 27	4			37 ^o 57	84 ^o 28	6		
1570	24. 49 ^o 436	80 ^o 52	11	+ .098	3	37. 46. 36 ^o 26	80 ^o 52	11	— 2 ^o 04	2
	49 ^o 276	80 ^o 69	1			38 ^o 30	80 ^o 69	1		
1587	31. 52 ^o 268	85 ^o 72	4	— .032	5	17. 12. 12 ^o 59	84 ^o 73	8	— 0 ^o 13	8
	52 ^o 375	85 ^o 14	3			12 ^o 72	85 ^o 14	3		
1588	31. 56 ^o 946	81 ^o 50	6	+ .003	6	20. 13. 3 ^o 80	81 ^o 50	6	+ 1 ^o 10	8
	56 ^o 938	83 ^o 97	3			2 ^o 70	83 ^o 97	3		
1591	32. 58 ^o 733	86 ^o 50	3	— .061	5	10. 18. 52 ^o 62	85 ^o 67	7	— 0 ^o 90	12
	59 ^o 071	82 ^o 66	3			53 ^o 52	83 ^o 52	5		
1601	36. 40 ^o 535	86 ^o 15	2	+ .060	4	25. 47. 45 ^o 38	81 ^o 56	7	+ 1 ^o 28	11
	40 ^o 398	84 ^o 73	4			44 ^o 10	85 ^o 38	6		
1604	38. 22 ^o 553	78 ^o 10	1	— .007	3	26. 11. 43 ^o 15	78 ^o 10	1	— 1 ^o 63	4
	22 ^o 569	83 ^o 40	3			44 ^o 78	83 ^o 40	3		
1613	40. 50 ^o 639	85 ^o 16	3	— .093	3	43. 25. 16 ^o 00	85 ^o 16	3	— 1 ^o 65	1
	50 ^o 774	86 ^o 75	1			17 ^o 65	86 ^o 75	1		
1615	42. 26 ^o 789	80 ^o 94	3	+ .099	5	30. 23. 52 ^o 33	80 ^o 94	3	— 0 ^o 36	8
	26 ^o 594	82 ^o 46	3			52 ^o 69	83 ^o 03	5		
1618	43. 55 ^o 952	85 ^o 58	3	+ .020	5	35. 22. 33 ^o 41	85 ^o 58	3	— 0 ^o 75	6
	55 ^o 917	86 ^o 00	4			34 ^o 16	86 ^o 00	4		
1624	47. 37 ^o 205	80 ^o 07	5	+ .011	7	16. 33. 4 ^o 16	81 ^o 87	16	+ 0 ^o 22	22
	37 ^o 168	83 ^o 58	6			3 ^o 94	84 ^o 44	16		
1639	56. 37 ^o 298	85 ^o 19	4	+ .023	6	35. 31. 43 ^o 28	85 ^o 19	4	+ 0 ^o 43	6
	37 ^o 258	84 ^o 76	4			42 ^o 85	84 ^o 76	4		
1644	59. 9 ^o 676	82 ^o 42	4	— .084	4	20. 58. 25 ^o 76	82 ^o 42	4	+ 1 ^o 17	6
	9 ^o 912	86 ^o 22	2			24 ^o 59	86 ^o 22	2		
1645	10. 0. 18 ^o 510	81 ^o 55	3	+ .021	4	25. 27. 43 ^o 38	81 ^o 12	10	— 0 ^o 25	17
	18 ^o 461	83 ^o 71	2			43 ^o 63	84 ^o 37	13		
1657	4. 1 ^o 009	85 ^o 24	2	— .046	5	39. 56. 21 ^o 51	85 ^o 24	2	— 0 ^o 92	6
	1 ^o 081	85 ^o 57	6			22 ^o 43	85 ^o 57	6		
1663	9. 18 ^o 217	81 ^o 00	4	+ .007	5	24. 17. 38 ^o 11	82 ^o 00	13	+ 0 ^o 26	13
	18 ^o 199	84 ^o 19	3			37 ^o 85	84 ^o 25	7		
1664	9. 51 ^o 250	83 ^o 34	17	— .017	9	46. 29. 13 ^o 44	83 ^o 34	17	— 3 ^o 00	3
	51 ^o 274	84 ^o 54	5			16 ^o 44	84 ^o 54	5		
1669	11. 52 ^o 949	82 ^o 21	2	+ .110	4	20. 39. 0 ^o 12	82 ^o 21	2	— 0 ^o 07	8
	52 ^o 636	84 ^o 75	3			0 ^o 19	85 ^o 09	7		
1670						5. 8. 23 ^o 55	79 ^o 55	3	— 0 ^o 38	9
	11. 57 ^o 522	85 ^o 23	3			23 ^o 93	85 ^o 08	5		
1671	11. 59 ^o 075	81 ^o 75	2	+ .087	2	40. 59. 57 ^o 96	81 ^o 87	3	— 0 ^o 70	1
	58 ^o 942	84 ^o 72	1			58 ^o 66	84 ^o 72	1		
1679	15. 2 ^o 252	81 ^o 27	3	+ .102	3	48. 9. 43 ^o 20	80 ^o 06	5	— 1 ^o 76	$\frac{1}{2}$
	2 ^o 115	77 ^o 66	1			44 ^o 96	77 ^o 66	1		
1680	15. 10 ^o 496	81 ^o 52	10	— .036	8	47. 53. 51 ^o 73	81 ^o 52	10	— 6 ^o 74	2
	10 ^o 545	83 ^o 55	5			58 ^o 47	83 ^o 55	5		
1682	15. 27 ^o 758	82 ^o 23	5	+ .025	3	23. 49. 39 ^o 56	81 ^o 47	17	+ 0 ^o 06	11
	27 ^o 695	84 ^o 71	1			39 ^o 50	83 ^o 59	5		
1684	16. 18 ^o 543	84 ^o 90	5	— .029	5	6. 49. 55 ^o 77	84 ^o 89	6	+ 0 ^o 08	10
	18 ^o 790	85 ^o 38	3			55 ^o 69	85 ^o 49	4		
1694	22. 56 ^o 312	83 ^o 89	6	+ .059	6	33. 24. 16 ^o 92	83 ^o 89	6	— 0 ^o 19	7
	56 ^o 205	84 ^o 21	4			17 ^o 11	84 ^o 21	4		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
1697	10. 23. 33 ^h 999	82 ^m 22	4	— .040	5	8. 53. 17 ^s 08	82 ^m 73	4	— 0 ^s 04	10
	34 ^s 258	85 ^m 45	3			17 ^s 12	85 ^m 58	5		
1700	24. 51 ^h 205	78 ^m 25	4	+ .041	4	13. 40. 11 ^s 39	79 ^m 99	8	+ 0 ^s 94	13
	51 ^s 032	82 ^m 69	2			10 ^s 45	83 ^m 43	6		
1710	31. 33 ^h 297	83 ^m 71	4	— .063	5	8. 56. 51 ^s 61	82 ^m 73	8	+ 1 ^s 06	13
	33 ^s 704	85 ^m 38	3			50 ^s 55	84 ^m 30	5		
1716	33. 14 ^h 812	83 ^m 00	5	— .025	4	20. 55. 48 ^s 95	83 ^m 00	5	+ 0 ^s 08	10
	14 ^s 883	86 ^m 33	2			48 ^s 87	85 ^m 30	6		
1718	33. 44 ^h 554	80 ^m 32	3	+ .031	5	23. 39. 20 ^s 18	80 ^m 32	3	+ 0 ^s 35	7
	44 ^s 476	81 ^m 78	3			19 ^s 83	82 ^m 01	4		
1719	34. 27 ^h 126	80 ^m 25	7	— .069	6	20. 17. 48 ^s 78	81 ^m 67	10	+ 0 ^s 32	11
	27 ^s 324	86 ^m 72	3			48 ^s 46	85 ^m 58	5		
1737	45. 0 ^h 912	84 ^m 54	3	— .022	5	27. 13. 17 ^s 05	83 ^m 97	4	+ 0 ^s 31	6
	0 ^s 961	86 ^m 72	3			16 ^s 74	86 ^m 72	3		
1738	45. 16 ^h 394	80 ^m 74	4	— .040	5	19. 30. 25 ^s 50	80 ^m 74	4	0 ^s 00	11
	16 ^s 514	85 ^m 41	3			25 ^s 50	84 ^m 78	8		
1739	45. 17 ^h 715	83 ^m 24	3	+ .022	5	36. 47. 52 ^s 05	83 ^m 24	3	+ 0 ^s 56	5
	17 ^s 678	85 ^m 38	3			51 ^s 49	85 ^m 38	3		
1740	45. 19 ^h 672	84 ^m 40	5	+ .037	5	36. 51. 30 ^s 68	84 ^m 40	5	+ 0 ^s 44	5
	19 ^s 611	85 ^m 38	3			30 ^s 24	85 ^m 38	3		
1742	46. 17 ^h 975	83 ^m 99	4	— .028	3	34. 46. 38 ^s 38	83 ^m 99	4	— 0 ^s 39	2
	18 ^s 024	86 ^m 95	1			38 ^s 77	86 ^m 95	1		
1749	50. 18 ^h 239	80 ^m 49	5	— .049	5	11. 35. 15 ^s 12	80 ^m 35	11	— 0 ^s 47	9
	18 ^s 483	82 ^m 40	3			15 ^s 59	82 ^m 40	3		
1753	53. 20 ^h 787	84 ^m 55	6	— .137	6	43. 49. 51 ^s 09	84 ^m 70	6	— 1 ^s 77	3
	20 ^s 985	86 ^m 73	4			52 ^s 86	86 ^m 73	4		
1760	54. 33 ^h 728	82 ^m 20	3	— .062	5	13. 54. 47 ^s 30	82 ^m 20	3	— 0 ^s 13	10
	33 ^s 985	85 ^m 02	4			47 ^s 43	85 ^m 10	6		
1761	54. 35 ^h 433	80 ^m 54	5	+ .033	8	32. 58. 28 ^s 72	80 ^m 75	4	— 0 ^s 51	11
	35 ^s 372	82 ^m 95	9			29 ^s 23	82 ^m 91	11		
1763	56. 18 ^h 581	82 ^m 41	35	— .024	14	27. 36. 5 ^s 71	81 ^m 93	80	— 0 ^s 41	26
	18 ^s 633	82 ^m 67	16			6 ^s 12	83 ^m 42	21		
1770	59. 30 ^h 566	83 ^m 90	6	+ .123	3	45. 51. 26 ^s 19	83 ^m 90	6	— 7 ^s 70	1
	30 ^s 394	86 ^m 75	1			33 ^s 89	86 ^m 75	1		
1771	59. 32 ^h 614	83 ^m 86	3	+ .012	4	33. 15. 36 ^s 28	83 ^m 86	3	+ 0 ^s 02	4
	32 ^s 593	86 ^m 69	2			36 ^s 26	86 ^m 69	2		
1779	11. 2. 2 ^h 087	84 ^m 25	5	— .012	7	22. 8. 21 ^s 50	84 ^m 25	5	— 0 ^s 22	10
	2 ^s 119	80 ^m 80	5			21 ^s 72	86 ^m 62	6		
1783	4. 30 ^h 349	81 ^m 42	6	+ .060	8	21. 4. 38 ^s 36	80 ^m 32	13	+ 1 ^s 09	18
	30 ^s 182	83 ^m 23	6			37 ^s 27	84 ^m 21	11		
1805	13. 32 ^h 612	84 ^m 22	3	+ .076	5	22. 14. 27 ^s 68	84 ^m 22	3	+ 0 ^s 30	8
	32 ^s 410	85 ^m 25	4			27 ^s 38	84 ^m 99	4		
1806	13. 45 ^h 587	82 ^m 43	5	+ .570	3	23. 30. 11 ^s 46	82 ^m 43	5	+ 1 ^s 41	3
	44 ^s 160	85 ^m 88	1			10 ^s 05	85 ^m 88	1		
1808	15. 42 ^h 933	79 ^m 27	3	+ .086	6	25. 0. 47 ^s 19	80 ^m 14	19	— 0 ^s 12	19
	42 ^s 730	84 ^m 16	6			47 ^s 31	83 ^m 74	12		
1815	19. 10 ^h 427	84 ^m 25	4	— .012	6	33. 29. 30 ^s 51	84 ^m 24	5	— 0 ^s 39	8
	10 ^s 449	84 ^m 75	4			30 ^s 90	84 ^m 58	5		
1821	22. 12 ^h 476	80 ^m 96	3	— .050	5	27. 34. 7 ^s 96	79 ^m 59	9	— 0 ^s 49	7
	12 ^s 584	82 ^m 45	3			8 ^s 45	82 ^m 45	3		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole × sin N.P.D.	Weight.	Mean N.P.D. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
1822	11. 22. 59'934	84'77	4	+ '080	5	32. 36. 1'17	84'66	5	— 0'67	6
	59'785	86'57	3			1'84	86'92	3		
1823	23. 18'875	78'89	3	— '007	5	8. 12. 44'42	78'89	3	+ 0'46	11
	18'921	85'84	3			43'96	85'72	7		
1828	24. 15'812	82'04	23	+ '007	11	20. 0. 24'54	81'87	49	+ 0'04	20
	15'792	82'77	9			24'50	82'88	11		
1829	25. 32'285	84'19	3	— '013	5	28. 15. 10'94	84'19	3	— 0'56	7
	32'312	85'28	4			11'50	85'28	4		
1836	28. 27'790	84'90	5	— '009	6	34. 33. 6'54	85'05	4	— 0'34	6
	27'806	86'62	4			6'88	86'52	3		
1838	28. 59'722	78'96	3	— '079	5	20. 0. 34'03	78'32	5	— 0'44	12
	59'954	81'13	3			34'47	82'11	7		
1852	35. 45'915	82'29	6	— '004	6	22. 35. 27'87	82'85	19	+ 0'39	13
	45'926	82'42	3			27'48	83'62	6		
1860	40. 38'697	81'97	3	+ '048	5	27. 55. 49'12	81'10	10	— 0'15	11
	38'594	82'75	4			49'27	82'73	6		
1872	47. 30'788	82'27	28	+ '041	10	35. 38. 16'93	82'15	29	+ 0'11	10
	30'718	82'47	6			16'82	82'47	6		
1875	50. 36'883	81'58	3	+ '063	5	27. 46. 53'69	79'87	5	— 0'16	6
	36'747	81'04	3			53'85	81'04	3		
1880	53. 59'993	83'58	4	— '075	4	8. 28. 39'04	83'69	12	+ 0'10	15
	60'500	86'31	2			38'94	85'00	6		
1887	58. 41'455	80'53	4	+ '033	5	3. 44. 51'67	80'53	4	— 0'17	11
	40'954	86'19	3			51'84	85'88	6		
1889	59. 35'444	83'54	4	+ '004	6	26. 23. 47'45	79'98	23	+ 0'21	11
	35'435	82'12	4			47'24	82'25	5		
1899	12. 6. 8'456	82'32	2	+ '037	2	11. 53. 30'82	81'99	3	+ 0'23	4
	8'278	82'91	1			30'59	82'91	1		
1901	6. 33'326	80'64	6	— '133	5	11. 42. 60'52	81'71	10	+ 0'64	9
	33'980	84'36	2			59'88	85'19	3		
1904	9. 24'465	83'24	5	— '022	7	19. 7. 55'43	82'23	8	+ 0'28	12
	24'532	80'52	6			55'15	80'52	6		
1905	9. 28'816	81'07	5	— '013	4	32. 18. 1'66	81'07	5	— 0'69	6
	28'841	82'42	2			2'35	82'55	3		
1924	13. 26'119	84'09	2	+ '052	4	14. 10. 23'25	83'98	7	+ 0'79	10
	25'907	83'57	3			22'46	84'88	4		
1931	15. 1'661	80'02	3	+ '030	4	31. 28. 2'67	80'02	3	+ 0'35	6
	1'603	86'45	2			2'32	86'11	4		
1938	19. 29'981	80'94	3	+ '021	5	25. 31. 56'47	80'30	13	— 0'71	7
	29'933	82'85	3			57'18	82'85	3		
1951	24. 50'633	82'28	9	— '015	7	20. 8. 1'75	81'63	21	+ 0'24	17
	50'677	84'11	4			1'51	84'98	9		
1961	28. 2'526	82'38	12	— '087	5	47. 59. 24'75	81'23	16	+ 0'01	1/2
	2'643	85'82	2			24'74	85'88	1		
1963	28. 21'233	81'84	4	— '005	8	19. 33. 0'45	79'85	19	+ 0'17	24
	21'248	84'79	16			0'28	85'06	20		
1968	30. 28'250	80'05	4	— '013	5	9. 5. 16'04	81'81	6	+ 0'28	14
	28'333	86'51	3			15'76	86'15	7		
1986	36. 18'927	80'91	5	— '057	6	26. 37. 40'31	81'15	22	— 1'75	7
	19'054	80'24	4			42'06	80'43	3		

INTRODUCTION.

33

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o ' "			"	
1989	12. 38. 47.107	83.29	3	+ .076	3	45. 14. 24.25	83.29	3	— 0.88	1
	47.000	86.84	1			25.13	86.88	2		
1998	42. 11.154	80.80	6	+ .008	7	26. 33. 49.18	80.80	6	— 0.73	11
	11.136	82.40	5			49.91	82.65	6		
1999	42. 39.638	81.64	5	— .129	5	22. 33. 15.62	81.66	21	+ 0.57	8
	39.973	85.81	3			15.05	85.81	3		
2002	43. 25.805	80.27	3	— .054	3	29. 1. 31.40	80.27	3	+ 0.37	6
	25.916	86.96	1			31.03	86.27	3		
2012	48. 7.676	81.63	3	+ .006	5	5. 55. 46.72	80.32	5	— 0.06	9
	7.620	82.93	3			46.78	82.93	3		
2013	48. 15.322	81.78	2	— .042	4	5. 56. 4.72	81.63	3	— 0.19	8
	15.725	82.93	3			4.91	82.93	3		
2015	48. 44.779	79.33	7	+ .047	8	33. 23. 18.40	79.44	7	— 1.36	10
	44.694	81.62	6			19.76	81.62	6		
2016	49. 27.475	84.32	3	— .074	5	42. 9. 7.58	84.32	3	— 0.88	3
	27.585	84.81	3			8.46	84.81	3		
2021	50. 41.624	78.32	3	+ .037	5	23. 54. 36.88	79.70	10	— 0.08	9
	41.533	82.93	3			36.96	82.90	4		
2022	51. 38.847	83.29	3	— .098	3	43. 10. 19.66	83.29	3	+ 0.73	1
	38.990	83.95	1			18.93	83.95	1		
2030	55. 22.754	82.03	4	+ .038	5	22. 45. 18.95	81.68	8	+ 1.07	13
	22.655	80.89	3			17.88	81.99	7		
2033	57. 5.359	80.04	3	— .049	3	25. 44. 41.54	80.04	3	— 1.13	3
	5.473	82.02	1			42.67	82.02	1		
2038	13. 0. 28.215	84.03	4	— .070	5	44. 5. 21.72	84.14	6	— 2.53	3
	28.316	86.90	3			24.25	86.90	3		
2041	1. 38.226	83.72	8	— .042	8	27. 18. 52.80	84.00	12	+ 0.72	12
	.318	83.51	6			52.08	83.51	6		
2057	8. 53.218	86.35	2	— .008	4	22. 3. 14.67	86.35	2	— 0.60	6
	53.240	86.89	3			15.27	86.89	3		
2058	9. 21.619	86.35	2	— .050	4	22. 4. 33.30	86.35	2	— 1.32	6
	21.751	86.89	3			34.62	86.89	3		
2077	19. 5.514	82.74	4	+ .049	4	34. 26. 51.11	82.74	4	+ 0.44	4
	5.427	81.45	2			50.67	81.45	2		
2078	19. 6.352	81.26	1	— .016	2	34. 27. 3.11	81.26	1	— 0.42	3
	6.380	81.45	2			3.53	81.45	2		
2082	21. 7.556	86.41	1	— .016	3	43. 20. 48.21	86.41	1	— 2.76	2
	7.579	86.92	3			50.97	86.92	3		
2083	21. 53.664	85.69	3	— .013	5	26. 7. 20.35	85.69	3	— 0.28	8
	53.693	82.20	5			20.63	82.20	5		
2085	23. 1.921	85.37	3	— .011	5	24. 38. 33.98	85.12	4	— 0.17	8
	1.948	86.46	4			34.15	86.46	4		
2086	23. 4.333	80.54	4	— .074	5	16. 59. 6.80	81.38	5	+ 0.06	12
	4.588	85.55	3			6.74	84.06	7		
2087	23. 7.930	85.37	3	— .060	5	24. 39. 32.22	85.12	4	— 0.35	8
	8.073	86.46	4			32.57	86.46	4		
2091	23. 49.483	84.42	1	— .030	2	38. 39. 27.79	84.42	1	— 0.03	4
	49.531	86.96	2			27.82	86.96	3		
2092	24. 2.707	86.25	3	+ .009	4	29. 26. 2.11	86.25	3	— 1.50	4
	2.688	82.40	2			3.61	82.40	2		

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

6

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1880 +	No. of Obs.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1880 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
2100	13. 25. 56 ^h 36 ^m 2	80 ^h 38	5	— '028	6	10. 44. 10 ^h 35	80 ^h 03	12	+ 0 ^h 52	15
	56 ^h 51 ^m 0	83 ^h 61	4			9 ^h 83	83 ^h 86	6		
2108	29. 30 ^h 34 ^m 4	84 ^h 37	3	— '018	5	34. 2. 9 ^h 91	84 ^h 37	3	— 1 ^h 28	6
	30 ^h 37 ^m 6	85 ^h 10	4			11 ^h 19	85 ^h 10	4		
2110	30. 7 ^h 48 ^m 2	84 ^h 01	3	— '093	5	45. 11. 20 ^h 59	84 ^h 01	3	— 3 ^h 37	2
	7 ^h 61 ^m 3	86 ^h 59	3			23 ^h 96	86 ^h 59	3		
2122	34. 18 ^h 11 ^m 3	83 ^h 30	11	— '063	9	18. 8. 49 ^h 10	82 ^h 51	15	+ 0 ^h 55	18
	18 ^h 31 ^m 6	84 ^h 23	6			48 ^h 55	84 ^h 91	10		
2131	37. 45 ^h 71 ^m 4	82 ^h 92	2	— '016	5	24. 34. 17 ^h 17	81 ^h 52	8	+ 0 ^h 91	12
	45 ^h 75 ^m 3	84 ^h 11	6			16 ^h 26	84 ^h 51	7		
2136	39. 15 ^h 43 ^m 1	84 ^h 89	4	— '035	6	37. 19. 55 ^h 03	84 ^h 89	4	— 0 ^h 86	6
	15 ^h 48 ^m 8	86 ^h 39	4			55 ^h 89	86 ^h 39	4		
2147	42. 48 ^h 64 ^m 1	81 ^h 69	25	— '024	13	40. 5. 14 ^h 38	81 ^h 97	25	— 0 ^h 64	16
	48 ^h 67 ^m 8	82 ^h 80	14			15 ^h 02	82 ^h 39	17		
2154	45. 49 ^h 44 ^m 5	84 ^h 64	4	— '034	6	6. 38. 44 ^h 45	84 ^h 20	5	— 0 ^h 19	14
	49 ^h 74 ^m 1	82 ^h 61	4			44 ^h 64	85 ^h 88	10		
2155	45. 51 ^h 09 ^m 1	80 ^h 88	4	— '014	7	27. 54. 43 ^h 26	81 ^h 56	10	— 0 ^h 14	16
	51 ^h 12 ^m 0	83 ^h 79	9			43 ^h 40	84 ^h 23	12		
2161	47. 55 ^h 67 ^m 6	82 ^h 55	6	+ '019	6	24. 41. 0 ^h 89	81 ^h 25	16	— 0 ^h 89	8
	55 ^h 63 ^m 0	79 ^h 75	3			1 ^h 78	79 ^h 75	3		
2162	48. 27 ^h 30 ^m 4	85 ^h 72	3	— '012	3	35. 39. 26 ^h 82	85 ^h 72	3	— 0 ^h 57	2
	27 ^h 32 ^m 5	85 ^h 91	1			27 ^h 39	85 ^h 91	1		
2169	49. 26 ^h 08 ^m 3	84 ^h 76	5	+ '049	6	35. 40. 50 ^h 26	84 ^h 88	4	— 1 ^h 10	6
	25 ^h 99 ^m 9	85 ^h 66	4			51 ^h 36	85 ^h 66	4		
2171	50. 27 ^h 38 ^m 7	82 ^h 02	3	+ '022	5	10. 24. 42 ^h 97	79 ^h 37	4	— 0 ^h 82	8
	27 ^h 26 ^m 7	79 ^h 59	3			43 ^h 79	79 ^h 59	3		
2186	57. 26 ^h 12 ^m 8	82 ^h 99	5	— '124	5	43. 39. 55 ^h 01	83 ^h 06	6	+ 0 ^h 38	3
	26 ^h 30 ^m 8	86 ^h 92	3			54 ^h 63	86 ^h 92	3		
2188	59. 12 ^h 01 ^m 9	79 ^h 86	4	+ '011	6	20. 44. 36 ^h 07	79 ^h 95	10	— 0 ^h 27	11
	11 ^h 98 ^m 8	81 ^h 75	4			36 ^h 34	80 ^h 94	5		
2193	14. 1. 8 ^h 42 ^m 8	82 ^h 88	26	— '022	11	25. 3. 0 ^h 84	82 ^h 58	61	— 0 ^h 14	23
	8 ^h 48 ^m 0	84 ^h 52	8			0 ^h 98	84 ^h 69	16		
2197	3. 48 ^h 26 ^m 9	81 ^h 91	4	— '084	5	39. 58. 28 ^h 90	83 ^h 42	3	+ 0 ^h 01	4
	48 ^h 40 ^m 0	86 ^h 60	3			28 ^h 89	86 ^h 60	3		
2198	3. 59 ^h 08 ^m 9	83 ^h 71	3	— '015	4	14. 51. 26 ^h 23	83 ^h 71	3	+ 0 ^h 40	8
	59 ^h 14 ^m 6	84 ^h 43	2			25 ^h 83	83 ^h 76	4		
2202	6. 0 ^h 30 ^m 5	83 ^h 14	4	— '042	8	14. 50. 15 ^h 81	81 ^h 69	10	+ 0 ^h 01	19
	0 ^h 47 ^m 1	81 ^h 04	14			15 ^h 80	81 ^h 17	13		
2208	9. 9 ^h 75 ^m 6	86 ^h 39	2	— '060	4	37. 39. 0 ^h 89	86 ^h 39	2	— 0 ^h 64	4
	9 ^h 85 ^m 5	85 ^h 56	3			1 ^h 53	85 ^h 56	3		
2209	9. 10 ^h 98 ^m 3	86 ^h 04	3	— '016	5	37. 38. 53 ^h 28	86 ^h 04	3	— 1 ^h 17	5
	11 ^h 01 ^m 0	85 ^h 56	3			54 ^h 45	85 ^h 56	3		
2210	9. 20 ^h 30 ^m 9	79 ^h 64	7	— '001	7	11. 53. 19 ^h 42	79 ^h 74	10	— 0 ^h 03	11
	20 ^h 31 ^m 4	81 ^h 99	4			19 ^h 45	81 ^h 99	4		
2213	9. 50 ^h 38 ^m 5	84 ^h 64	4	— '001	6	20. 0. 14 ^h 83	84 ^h 64	4	+ 0 ^h 62	14
	50 ^h 38 ^m 7	83 ^h 37	4			14 ^h 21	84 ^h 12	13		
2217	11. 49 ^h 30 ^m 7	83 ^h 24	6	+ '027	7	43. 21. 36 ^h 55	83 ^h 11	7	+ 0 ^h 02	3
	49 ^h 26 ^m 8	82 ^h 27	5			36 ^h 53	81 ^h 92	3		
2218	11. 54 ^h 98 ^m 9	86 ^h 41	2	— '060	3	38. 4. 43 ^h 85	86 ^h 41	2	— 1 ^h 78	3
	55 ^h 08 ^m 7	86 ^h 42	2			45 ^h 63	86 ^h 42	2		

INTRODUCTION.

35

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
2220	14. 12. 7 ^h 24 ^m 8 ^s	86°03	3	— .002	3	32. 45. 2 ^h 6 ^m 5 ^s	86°03	3		
	7 ^h 25 ^m 1 ^s	86°94	1			2 ^h 28 ^m	86°94	1	+ 0°37	2
2222	12. 16 ^h 7 ^m 21 ^s	86°37	2	+ .030	2	32. 43. 50 ^h 45 ^m	86°37	2	+ 0°78	2
	16 ^h 66 ^m 6 ^s	86°94	1			49 ^h 67 ^m	86°94	1		
2232	17. 33 ^h 29 ^m 4 ^s	81°37	3	+ .008	5	21. 40. 6 ^h 61 ^m	82°27	10	+ 1°03	11
	33 ^h 27 ^m 3 ^s	80°92	3			5 ^h 58 ^m	81°69	5		
2237	18. 48 ^h 10 ^m 9 ^s	80°10	4	— .032	5	21. 38. 60 ^h 48 ^m	80°00	6	+ 0°76	7
	48 ^h 19 ^m 5 ^s	80°93	3			59 ^h 72 ^m	80°93	3		
2246	24. 27 ^h 28 ^m 6 ^s	84°08	3	— .089	5	39. 37. 4 ^h 04 ^m	84°08	3	+ 0°81	4
	27 ^h 42 ^m 6 ^s	85°90	3			3 ^h 23 ^m	85°90	3		
2251	27. 47 ^h 55 ^m 6 ^s	81°63	10	— .065	8	13. 46. 13 ^h 51 ^m	81°36	16	— 0°37	18
	47 ^h 82 ^m 1 ^s	82°01	5			13 ^h 88 ^m	82°40	9		
2254	28. 27 ^h 50 ^m 8 ^s	84°43	3	+ .041	5	29. 14. 42 ^h 74 ^m	83°97	5	+ 0°03	8
	27 ^h 42 ^m 4 ^s	85°27	3			42 ^h 71 ^m	85°20	4		
2261	31. 4 ^h 40 ^m 4 ^s	82°90	4	— .091	4	24. 4. 48 ^h 57 ^m	81°16	12	+ 0°26	8
	4 ^h 62 ^m 6 ^s	86°89	2			48 ^h 31 ^m	86°88	3		
2277	39. 3 ^h 76 ^m 7 ^s	82°93	4	— .051	7	28. 13. 34 ^h 91 ^m	81°53	15	+ 0°01	17
	3 ^h 87 ^m 4 ^s	84°14	9			34 ^h 90 ^m	84°33	12		
2285	41. 5 ^h 29 ^m 9 ^s	85°90	2	+ .017	4	28. 23. 37 ^h 28 ^m	85°90	2	+ 0°41	5
	5 ^h 26 ^m 4 ^s	85°21	3			36 ^h 87 ^m	85°21	3		
2297	45. 13 ^h 63 ^m 0 ^s	83°06	3	— .061	6	17. 31. 59 ^h 99 ^m	81°57	6	+ 0°30	15
	13 ^h 83 ^m 4 ^s	84°35	6			59 ^h 69 ^m	85°00	10		
2312	51. 4 ^h 13 ^m 5 ^s	81°07	34	— .030	14	15. 21. 14 ^h 45 ^m	81°17	67	+ 0°30	31
	4 ^h 24 ^m 7 ^s	82°38	20			14 ^h 15 ^m	83°40	31		
2317	52. 24 ^h 04 ^m 6 ^s	84°37	3	— .101	3	39. 52. 49 ^h 08 ^m	84°44	3	+ 2°46	1
	24 ^h 20 ^m 3 ^s	84°83	1			46 ^h 62 ^m	84°83	1		
2322	55. 40 ^h 71 ^m 9 ^s	82°32	2	+ .024	4	23. 35. 22 ^h 77 ^m	79°75	6	+ 0°42	9
	40 ^h 65 ^m 8 ^s	82°40	4			22 ^h 35 ^m	82°40	4		
2329	58. 31 ^h 60 ^m 0 ^s	82°78	3	— .050	5	6. 59. 49 ^h 24 ^m	83°82	5	+ 0°50	11
	32 ^h 01 ^m 0 ^s	85°59	3			48 ^h 74 ^m	85°76	5		
2330	58. 38 ^h 46 ^m 4 ^s	82°76	3	— .061	5	29. 19. 24 ^h 39 ^m	83°40	5	— 1°15	8
	38 ^h 58 ^m 8 ^s	85°44	4			25 ^h 54 ^m	85°44	4		
2334	59. 50 ^h 21 ^m 9 ^s	85°45	3	— .011	3	41. 52. 40 ^h 09 ^m	85°45	3	— 1°01	1
	50 ^h 23 ^m 6 ^s	86°92	1			41 ^h 10 ^m	86°92	1		
2336	15. 0. 17 ^h 80 ^m 8 ^s	83°81	5	— .010	5	17. 45. 57 ^h 27 ^m	82°87	11	+ 0°97	12
	17 ^h 84 ^m 2 ^s	85°86	3			56 ^h 30 ^m	85°94	5		
2338	1. 27 ^h 37 ^m 8 ^s	84°38	3	— .161	3	41. 23. 5 ^h 40 ^m	83°78	3	— 0°55	1
	27 ^h 62 ^m 1 ^s	86°92	1			5 ^h 95 ^m	86°92	1		
2343	2. 51 ^h 04 ^m 6 ^s	82°76	3	— .198	3	34. 58. 52 ^h 78 ^m	82°76	3	— 1°05	4
	51 ^h 39 ^m 1 ^s	86°92	1			53 ^h 83 ^m	86°40	2		
2346	3. 53 ^h 33 ^m 9 ^s	84°97	2	— .039	3	5. 35. 6 ^h 27 ^m	85°54	4	— 0°48	7
	53 ^h 73 ^m 8 ^s	86°36	2			6 ^h 75 ^m	86°36	2		
2359	13. 15 ^h 98 ^m 9 ^s	83°77	3	+ .008	5	22. 11. 50 ^h 34 ^m	83°10	10	— 0°10	9
	15 ^h 96 ^m 7 ^s	81°97	4			50 ^h 44 ^m	81°97	4		
2367	16. 25 ^h 15 ^m 8 ^s	86°49	1	— .007	2	2. 18. 29 ^h 38 ^m	85°74	3	+ 0°48	6
	26 ^h 34 ^m 5 ^s	86°97	2			28 ^h 90 ^m	86°97	2		
2369	16. 33 ^h 49 ^m 2 ^s	84°49	1	— .036	2	37. 36. 31 ^h 70 ^m	84°49	1	— 0°16	2
	33 ^h 55 ^m 1 ^s	86°97	2			31 ^h 86 ^m	86°97	1		
2381	20. 38 ^h 23 ^m 2 ^s	84°47	3	— .057	5	26. 13. 47 ^h 93 ^m	84°47	3	+ 0°41	5
	38 ^h 36 ^m 2 ^s	86°55	3			47 ^h 52 ^m	86°38	2		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880.0.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880.0.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
2382	15. 20. 55.767	80.31	13	+ .048	8	17. 44. 20.63	81.37	20	+ 0.92	11
	55.609	79.97	4			19.71	79.97	4		
2384	21. 56.964	83.41	5	— .032	5	29. 2. 3.80	82.67	5	+ 0.16	6
	57.029	86.57	3			3.64	86.57	3		
2385	22. 15.683	79.79	5	— .033	4	30. 36. 47.10	79.79	5	— 1.41	6
	15.748	80.97	2			48.51	81.32	3		
2393	25. 28.758	83.41	3	+ .077	4	28. 54. 55.37	83.40	5	— 1.07	3
	28.598	82.00	2			56.44	86.98	1		
2394	25. 32.874	79.73	3			27. 18. 32.37	80.79	5	— 1.60	5
						33.97	83.89	2		
2409	29. 14.648	86.50	2	+ .001	4	25. 23. 13.74	83.81	10	— 1.09	15
	14.645	83.73	4			14.83	84.09	9		
2421	32. 42.308	83.10	3	— .100	4	37. 32. 11.60	83.10	3	— 0.68	3
	42.473	86.87	2			12.28	86.87	2		
2427	34. 26.950	85.18	4	+ .013	4	35. 5. 52.63	85.18	4	+ 0.59	4
	26.928	86.94	2			52.04	86.94	2		
2430	35. 0.305	83.17	3	— .050	5	12. 15. 5.74	83.32	7	— 0.20	13
	0.540	85.76	4			5.94	85.14	6		
2433	36. 12.691	78.44	13	— .054	10	9. 9. 16.19	78.52	13	— 0.26	18
	13.028	77.91	9			16.45	77.91	9		
2434	36. 25.425	78.44	13	— .047	10	9. 9. 11.58	78.52	13	+ 0.03	17
	25.723	77.91	9			11.55	77.90	8		
2441	39. 54.380	79.32	1	— .107	2	7. 20. 24.57	84.00	3	+ 0.28	6
	55.219	86.96	2			24.29	86.95	2		
2448	43. 42.899	83.44	7	— .034	6	34. 9. 25.00	83.44	7	— 0.75	6
	42.960	86.30	3			25.75	86.30	3		
2450	44. 19.530	86.44	2	+ .004	4	34. 14. 18.93	86.44	2	+ 1.41	4
	19.522	86.60	3			17.52	86.43	2		
2452	44. 44.091	84.10	9	— .037	7	34. 15. 19.07	84.10	9	+ 0.12	8
	44.157	86.21	4			18.95	86.21	4		
2454	44. 50.402	80.03	5	+ .037	5	27. 1. 45.22	80.70	7	+ 0.62	7
	50.320	82.68	3			44.60	82.68	3		
2456	46. 16.063	82.52	1	— .120	2	9. 38. 31.07	82.52	1	+ 0.50	4
	16.782	86.96	2			30.57	86.96	2		
2465	48. 22.264	81.61	10	— .037	9	11. 50. 13.49	82.00	19	+ 0.06	19
	22.444	84.83	6			13.43	84.67	9		
2484	53. 30.042	84.08	3	— .043	3	30. 44. 30.10	84.05	3	+ 0.03	4
	30.127	85.92	1			30.07	86.42	2		
2491	55. 59.255	86.48	2	+ .010	3	6. 41. 34.47	84.98	4	+ 0.85	8
	59.170	86.97	2			33.62	85.67	3		
2496	57. 53.346	82.00	3	+ .011	4	14. 4. 56.71	82.00	3	— 0.22	6
	53.299	78.55	2			56.93	78.55	2		
2520	16. 6. 0.014	79.40	4	— .080	3	21. 52. 25.38	79.31	16	— 2.50	8
	0.229	84.94	1			27.88	84.22	3		
2537	11. 58.447	84.12	3	— .066	3	22. 33. 6.32	84.25	5	— 0.47	3
	58.620	86.97	1			6.79	86.97	1		
2539	14. 15.836	82.49	5	— .021	5	13. 49. 14.92	82.82	14	— 1.56	13
	15.922	84.31	3			16.48	84.31	3		
2540	15. 15.230	81.44	3			29. 57. 12.66	81.44	3	— 0.82	4
						13.48	83.10	2		

INTRODUCTION.

37

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
2541	16. 15. 33.972	84.75	4			14. 29. 33.21	85.05	7	+ 0.56	6
						32.65	84.08	2		
2544	16. 8.074	83.91	10	+ .017	3	43. 24. 0.68	83.91	10	- 0.32	1
	8.049	81.91	1			1.00	81.91	1		
2545	16. 30.712	82.68	4	- .154	4	22. 28. 22.44	82.68	4	- 1.55	5
	31.115	86.98	2			23.99	86.98	2		
2546	16. 32.565	85.49	3			16. 18. 43.81	85.49	3	+ 0.54	5
						43.27	84.03	2		
2553	18. 10.298	85.45	1	+ .055	2	22. 27. 9.01	85.45	1	- 0.99	4
	10.155	86.97	1			10.00	86.98	2		
2556	21. 1.604	79.24	5	+ .040	5	13. 58. 7.99	79.70	4	+ 0.60	10
	1.438	86.96	3			7.39	86.58	5		
2561	22. 21.970	82.39	25	- .028	9	28. 12. 49.97	81.60	40	- 0.42	11
	22.029	81.89	5			50.39	81.89	5		
2572	25. 39.797	85.54	2	+ .033	2	38. 19. 45.61	85.54	2		
	39.744	86.96	1							
2579	28. 13.247	82.84	5	- .021	6	20. 58. 20.50	82.50	18	+ 0.67	17
	13.305	84.96	4			19.83	85.03	9		
2588	30. 43.945	80.79	3	+ .011	3	28. 55. 29.61	80.35	14	- 0.65	3
	43.922	86.95	1			30.26	86.94	1		
2592	32. 41.154	84.10	3	- .086	3	43. 8. 34.97	84.10	3	- 1.43	1
	41.280	86.99	1			36.40	86.99	1		
2616	40. 5.400	79.77	3	- .021	3	25. 10. 59.99	80.93	26	+ 1.12	8
	5.450	80.92	1			58.87	84.97	3		
2622	44. 23.897	83.48	3	+ .288	3	34. 22. 37.75	83.48	3	+ 0.16	2
	23.388	86.98	1			37.59	86.98	1		
2633	48. 27.714	83.24	4	+ .025	6	12. 16. 48.89	81.12	14	+ 0.65	13
	27.598	83.72	4			48.24	83.57	5		
2642	52. 23.901	82.48	3	- .046	3	29. 26. 43.48	82.48	3	+ 1.10	4
	23.994	84.88	1			42.38	84.45	2		
2646	53. 34.458	83.68	5	+ .057	4	27. 42. 33.14	83.68	5	- 2.58	5
	34.336	85.06	2			35.72	85.06	2		
2650	55. 8.892	85.40	3	- .132	3	27. 26. 43.93	85.40	3	+ 0.20	3
	9.178	84.89	1			43.73	84.89	1		
2651	55. 22.264	81.49	4	- .049	4	24. 40. 54.53	81.01	19	0.00	9
	22.381	83.50	2			54.53	85.23	4		
2653						24. 46. 42.09	80.52	2	+ 0.67	3
						41.42	86.08	1		
2661	58. 18.652	82.91	11	- .059	5	7. 46. 4.19	81.72	19	+ 0.22	8
	19.090	86.49	2			3.97	86.49	2		
2662	58. 40.160	83.50	3	+ .047	3	26. 41. 29.28	83.50	3	+ 0.66	10
	39.996	84.03	1			28.62	84.89	7		
2674	17. 1.40.917	85.49	2	- .210	3	30. 15. 24.38	85.49	2	- 1.43	4
	41.334	86.98	2			25.81	86.98	2		
2675	1. 53.510	86.58	2	+ .083	2	12. 10. 19.92	84.85	7	+ 1.16	4
	53.117	86.98	1			18.76	86.98	1		
2684	5. 27.244	80.79	3	- .121	3	14. 32. 13.06	80.79	3	- 0.85	7
	27.727	86.97	1			13.91	86.97	2		
2690	7. 45.638	84.45	5	- .116	3	37. 26. 38.92	84.45	5	- 1.30	2
	45.829	86.97	1			40.22	86.97	1		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole × sin N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
2695	17. 8. 26.409	81.65	7	— .114	5	24. 8. 15.05	81.79	23	+ 0.66	13
	26.687	84.53	2			14.39	84.03	6		
2706	11. 30.656	85.06	4	+ .009	3	26. 59. 19.23	83.88	6	+ 0.66	3
	30.636	84.03	1			18.57	84.03	1		
2718	14. 37.192	80.13	3	— .004	4	29. 9. 28.76	78.85	8	— 0.17	5
	37.201	83.11	2			28.93	83.11	2		
2721	15. 2.061	80.86	3	— .044	4	29. 12. 6.40	79.52	7	— 0.33	5
	2.151	83.11	2			6.73	83.11	2		
2726	18. 5.145	83.05	9	— .082	6	18. 4. 59.66	82.43	27	+ 0.21	14
	5.411	84.78	3			59.45	84.75	6		
2732	19. 9.592	82.81	5	+ .041	3	36. 27. 53.58	82.81	5	— 2.62	2
	9.523	84.03	1			56.20	84.03	1		
2748	24. 8.264	81.84	8	— .033	6	29. 51. 2.04	80.12	23	— 1.32	9
	8.331	84.74	3			3.36	85.07	4		
2751	25. 22.342	83.20	6	+ .070	3	22. 35. 33.98	83.20	6	+ 1.19	3
	22.161	86.97	1			32.79	86.97	1		
2759	27. 43.263	82.71	25	— .019	3	37. 36. 33.12	82.29	24	— 1.43	2
	43.294	83.17	1			34.55	83.17	1		
2774	32. 26.630	80.61	7	— .030	3	21. 47. 19.13	80.34	27	+ 0.21	8
	26.710	82.86	1			18.92	83.65	3		
2787	37. 16.395	79.70	7	+ .083	3	21. 33. 9.50	80.06	6	— 0.17	3
	16.169	85.99	1			9.67	85.99	1		
2790	37. 39.329	79.45	3	+ .022	5	21. 11. 12.44	83.03	16	+ 0.47	4
	39.268	83.09	3			11.97	84.43	13		
2797	39. 25.485	84.76	5	— .058	5	17. 28. 54.47	84.57	6	+ 0.20	8
	25.677	84.14	3			54.27	84.14	3		
2815	44. 4.305	80.64	4	— .013	6	17. 47. 34.25	79.63	14	— 0.91	12
	4.346	78.82	4			35.16	79.67	5		
2816						17. 47. 4.27	80.16	3	— 0.46	7
	44. 6.007	77.39	3			4.73	77.39	3		
2833	51. 27.126	80.31	3	— .048	4	33. 6. 28.65	80.31	3	— 0.62	9
	27.214	82.65	2			29.27	82.98	7		
2840	53. 49.167	82.18	38	— .057	12	38. 29. 47.35	82.05	36	— 0.94	13
	49.258	81.26	10			48.29	81.26	10		
2848						13. 1. 21.01	77.43	2	+ 0.30	6
	54. 49.503	82.03	3			20.71	82.03	3		
2849	55. 26.503	86.64	1	— .252	3	44. 30. 59.14	86.64	1	+ 0.44	1
	26.863	86.98	2			58.70	86.97	1		
2854	56. 30.597	85.32	3	— .090	4	44. 29. 33.90	85.32	3	— 1.12	2
	30.725	86.98	2			35.02	86.98	2		
2860	57. 15.979	86.56	4			17. 59. 2.47	85.22	6	+ 0.41	12
						2.06	81.42	6		
2889	18. 6. 4.118	83.90	3	— .104	3	25. 47. 50.88	83.90	3	— 0.37	3
	4.357	86.99	1			51.25	86.99	1		
2896	8. 4.183	86.50	2	— .029	2	35. 44. 53.41	86.50	2	— 1.92	2
	4.233	86.97	1			55.33	86.97	1		
2899	9. 0.790	80.48	4	— .003	3	10. 1. 0.02	81.16	3	— 1.28	4
	0.810	80.97	1			1.30	80.97	1		
2901	9. 7.057	80.48	4	+ .003	3	10. 0. 48.22	81.16	3	— 1.62	4
	7.039	80.97	1			49.84	80.97	1		

INTRODUCTION.

39

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		o / "			"	
2904	18. 10. 13'230	80'48	4	+ .068	3	10. 3. 5'02	81'16	3	— 1'33	4
	12'840	80'97	1			6'35	80'97	1		
2908	11. 2'016	82'37	136	+ .025	18	3. 23. 26'85	81'88	388	— 0'69	35
	1'590	82'31	62			27'54	81'90	201		
2924	15. 58'909	84'30	4			21. 17. 16'11	84'30	4	— 0'79	3
						16'90	80'97	1		
2933	17. 40'922	82'87	3	— .006	5	21. 18. 21'43	82'87	3	— 0'51	6
	40'939	83'75	3			21'94	83'75	3		
2934	17. 57'597	84'60	4	— .283	3	42. 29. 46'01	84'60	4	— 1'91	1
	58'015	86'18	1			47'92	86'18	1		
2940	19. 55'529	83'10	4	— .025	5	22. 37. 24'16	82'57	11	+ 0'61	8
	55'595	81'39	3			23'55	81'39	3		
2952	22. 9'548	81'41	4	+ .060	5	31. 16. 6'62	81'41	4	— 1'18	8
	9'433	81'79	3			7'80	82'73	5		
2954	22. 28'318	80'30	4	— .082	4	18. 43. 35'77	81'47	13	+ 0'90	17
	28'572	82'63	2			34'87	84'33	9		
2972	30. 30'553	80'68	3	+ .002	5	33. 2. 46'25	80'68	3	+ 0'75	8
	30'349	83'14	4			45'50	83'13	6		
2986	35. 32'221	83'12	4	— .038	7	12. 32. 52'20	83'79	7	+ 0'23	17
	32'397	81'74	8			51'97	83'20	10		
2989	35. 50'557	84'25	6			24. 37. 7'41	84'74	8	+ 0'81	5
						6'60	86'08	2		
2990	36. 28'392	83'80	5	— .065	5	27. 34. 57'86	83'80	5	— 0'02	6
	28'533	84'77	3			57'88	84'77	3		
2991	36. 56'803	81'50	3	+ .033	5	29. 24. 0'43	81'31	5	— 0'60	6
	56'826	81'76	3			1'03	81'76	3		
3001	39. 53'168	83'84	4	— .017	4	27. 22. 9'93	82'95	3	— 0'80	4
	53'205	83'69	2			10'73	83'69	2		
3017	42. 53'146	86'97	1			29. 4. 44'42	86'70	1	— 0'88	2
						45'30	86'97	1		
3039	50. 14'635	83'60	2	+ .126	2	14. 42. 29'28	80'07	8	— 1'06	4
	14'140	80'16	1			30'34	80'16	1		
3052	51. 40'984	82'39	13	— .069	3	46. 12. 40'38	82'38	13	— 2'80	1
	41'079	80'23	1			43'18	80'23	1		
3068	55. 53'598	82'64	4	— .022	5	24. 54. 12'52	84'01	9	+ 0'37	7
	53'650	85'08	3			12'15	85'08	3		
3070	56. 4'886	81'33	4			27. 45. 55'96	82'29	17	— 0'81	9
						56'77	83'63	4		
3079	58. 2'648	83'94	3	— .033	3	43. 14. 5'51	83'94	3	— 3'68	1
	2'696	86'19	1			9'19	86'19	1		
3093	19. 2. 13'391	84'79	5	+ .034	4	36. 47. 14'10	84'38	5	— 0'92	4
	13'335	86'05	2			15'02	86'05	2		
3098	2. 58'520	80'29	5	— .015	6	13. 7. 17'04	81'72	21	— 0'24	15
	58'585	83'08	4			17'28	83'45	6		
3110	6. 46'989	79'59	3			7. 48. 16'81	79'59	3	— 0'05	6
						16'86	85'99	2		
3119	9. 18'633	81'88	8	— .098	7	24. 13. 19'71	81'15	28	— 0'36	18
	18'872	84'13	4			20'07	84'55	10		
3122	9. 59'666	82'98	6	+ .032	3	32. 32. 42'57	83'03	5	— 2'54	2
	59'607	83'13	1			45'11	83'13	1		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole × sin N.P.D.	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
3129	19. 11. 46 ^s .592	83 ^s .64	4	— .004	5	32. 30. 5 ^s .49	83 ^s .64	4	— 1 ^s .51	6
	46 ^s .600	83 ^s .14	3			7 ^s .00	83 ^s .14	3		
3134	12. 31 ^s .357	81 ^s .09	16	+ .012	9	22. 32. 58 ^s .47	81 ^s .18	66	+ 0 ^s .08	14
	31 ^s .326	81 ^s .64	6			58 ^s .39	81 ^s .64	6		
3136	13. 24 ^s .858	84 ^s .24	3	— .119	3	43. 13. 32 ^s .70	84 ^s .24	3	+ 1 ^s .29	1
	25 ^s .031	84 ^s .19	1			31 ^s .41	84 ^s .19	1		
3139	14. 19 ^s .729	82 ^s .72	11	+ .040	5	36. 51. 8 ^s .92	82 ^s .72	11	— 1 ^s .37	5
	19 ^s .663	84 ^s .13	2			10 ^s .29	83 ^s .16	3		
3151	17. 51 ^s .158	80 ^s .80	9	— .024	6	16. 52. 4 ^s .22	81 ^s .45	41	— 0 ^s .04	9
	51 ^s .240	80 ^s .16	3			4 ^s .26	80 ^s .16	3		
3154	18. 4 ^s .014	82 ^s .65	2	+ .009	4	32. 34. 53 ^s .26	82 ^s .60	3	— 1 ^s .07	7
	3 ^s .998	83 ^s .09	3			54 ^s .33	83 ^s .10	4		
3166	20. 3 ^s .016	81 ^s .79	7	— .063	8	24. 30. 59 ^s .44	81 ^s .86	21	— 0 ^s .11	19
	3 ^s .168	84 ^s .50	6			59 ^s .55	84 ^s .50	12		
3184	25. 48 ^s .038	79 ^s .28	3	— .024	5	13. 40. 44 ^s .56	79 ^s .28	3	— 1 ^s .32	8
	48 ^s .140	78 ^s .83	4			45 ^s .88	78 ^s .83	4		
3189	27. 50 ^s .753	84 ^s .63	3	— .033	3	40. 3. 27 ^s .18	84 ^s .63	3	— 2 ^s .16	1
	50 ^s .805	86 ^s .99	1			29 ^s .34	86 ^s .99	1		
3190	28. 8 ^s .637	85 ^s .24	5	+ .067	3	39. 56. 60 ^s .06	85 ^s .24	5	+ 0 ^s .10	2
	8 ^s .533	86 ^s .99	1			59 ^s .96	86 ^s .99	1		
3193	28. 55 ^s .612	81 ^s .65	4	+ .036	6	10. 38. 21 ^s .11	81 ^s .63	14	— 0 ^s .47	19
	55 ^s .415	84 ^s .18	6			21 ^s .58	84 ^s .74	10		
3203	30. 24 ^s .337	81 ^s .30	3	— .029	4	6. 46. 26 ^s .00	81 ^s .30	3	+ 0 ^s .17	8
	25 ^s .584	85 ^s .67	2			25 ^s .83	85 ^s .86	3		
3213	32. 35 ^s .323	80 ^s .35	4	— .032	4	20. 32. 34 ^s .97	79 ^s .96	11	— 0 ^s .61	6
	35 ^s .414	80 ^s .11	2			35 ^s .58	80 ^s .11	2		
3218	33. 29 ^s .599	82 ^s .46	4	— .011	3	26. 49. 56 ^s .82	82 ^s .46	4		
	29 ^s .623	77 ^s .16	1							
3225	35. 36 ^s .754	81 ^s .93	3	— .005	4	18. 39. 42 ^s .00	80 ^s .93	12	+ 0 ^s .75	14
	36 ^s .771	85 ^s .08	2			41 ^s .25	84 ^s .63	7		
3249	43. 56 ^s .455	86 ^s .59	1	— .027	2	42. 23. 21 ^s .98	86 ^s .59	1	+ 0 ^s .08	2
	56 ^s .495	86 ^s .98	2			21 ^s .90	86 ^s .98	2		
3250	44. 10 ^s .331	81 ^s .93	114	+ .027	18	1. 3. 22 ^s .92	82 ^s .39	332	— 0 ^s .74	33
	8 ^s .814	82 ^s .74	60			23 ^s .66	82 ^s .22	157		
3252	44. 28 ^s .230	81 ^s .44	5	+ .097	3	20. 57. 22 ^s .80	81 ^s .49	7	+ 1 ^s .49	3
	27 ^s .960	86 ^s .97	1			21 ^s .31	86 ^s .97	1		
3271	48. 34 ^s .464	85 ^s .92	4	— .039	5	20. 2. 15 ^s .92	85 ^s .92	4	+ 0 ^s .17	12
	34 ^s .577	86 ^s .18	3			15 ^s .75	85 ^s .64	8		
3309	56. 58 ^s .527	86 ^s .69	3			26. 47. 35 ^s .38	85 ^s .87	5	— 1 ^s .09	9
						36 ^s .47	84 ^s .31	5		
3323	20. 0. 12 ^s .173	82 ^s .59	3			25. 30. 52 ^s .74	82 ^s .58	4	— 0 ^s .85	5
						53 ^s .59	83 ^s .05	2		
3330	2. 16 ^s .394	81 ^s .25	4	+ .005	3	22. 28. 6 ^s .72	81 ^s .60	9	— 0 ^s .31	8
	16 ^s .382	77 ^s .08	1			7 ^s .03	81 ^s .14	3		
3337	5. 59 ^s .935	84 ^s .93	5	— .018	4	24. 2. 30 ^s .63	84 ^s .93	5	— 0 ^s .78	3
	59 ^s .980	86 ^s .26	2			31 ^s .41	86 ^s .25	1		
3348	9. 31 ^s .715	83 ^s .98	13	— .030	5	43. 32. 48 ^s .58	84 ^s .43	13	— 2 ^s .38	2
	31 ^s .758	80 ^s .67	2			50 ^s .96	80 ^s .67	2		
3349	9. 36 ^s .865	85 ^s .59	4	— .006	3	28. 17. 4 ^s .75	85 ^s .35	9	+ 0 ^s .41	8
	36 ^s .878	84 ^s .15	1			4 ^s .34	84 ^s .13	4		

INTRODUCTION.

41

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean N.P.D. 1880.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
3350	20. 9. 51.202	84.07	12			43. 37. 19.23	83.15	14		
	51.152	81.13	1	+ .035	3	21.47	81.13	1	- 2.24	1
3360	11. 47.144	86.73	4			24. 7. 10.16	86.73	4		
	47.264	84.18	3	- .049	5	9.68	84.18	3	+ 0.48	7
3364	12. 54.180	78.75	3			12. 39. 2.90	79.51	12		
	54.247	83.97	5	- .015	5	2.24	83.97	5	+ 0.66	13
3380	17. 36.359	84.57	3			28. 7. 24.25	84.19	5		
	36.351	83.74	2	+ .004	4	23.93	84.33	6	+ 0.32	10
3391	19. 29.131	81.27	3			26. 24. 16.35	80.62	2		
	29.094	82.02	1	+ .016	3	15.46	82.02	1	+ 0.89	2
3406	24. 41.669	84.71	3			22. 6. 39.97	84.68	2		
	41.484	83.19	2	+ .070	4	39.69	83.19	2	+ 0.28	4
3419	27. 34.000	80.02	8			27. 24. 32.64	80.87	26		
	33.926	83.26	1	+ .034	3	33.37	84.42	4	- 0.73	9
3439	33. 4.349	80.45	4			15. 27. 25.20	80.44	18		
	4.456	81.68	2	- .028	4	24.81	82.94	4	+ 0.39	11
3447	34. 20.477	85.03	3			8. 58. 29.61	84.69	6		
	20.314	78.20	1	+ .025	3	29.80	78.20	1	- 0.19	4
3449	35. 42.120	83.00	6			8. 59. 21.55	82.85	13		
	41.825	82.56	2	+ .051	5	23.02	82.56	2	- 1.47	7
3453	37. 20.414	81.96	25			45. 8. 52.90	81.85	27		
	20.369	80.33	1	+ .032	3	55.42	80.33	1	- 2.52	1
3455	37. 44.872	84.02	4			29. 55. 41.30	84.02	4		
						41.53	84.22	2	- 0.23	4
3460	39. 17.809	86.31	3			33. 2. 46.10	86.31	3		
						46.73	82.06	1	- 0.63	2
3463						6. 47. 33.53	85.73	3		
	40. 56.363	80.44	3			34.16	81.44	3	- 0.63	8
3478	42. 50.726	80.34	6			28. 37. 37.29	80.45	30		
	50.770	83.73	4	- .021	6	38.22	82.74	6	- 0.93	12
3479	43. 48.854	86.65	4			20. 41. 9.23	85.43	5		
	48.986	84.55	3	- .047	5	9.61	84.87	7	- 0.38	12
3480	43. 52.230	83.36	3			42. 36. 36.48	84.50	5		
	52.031	86.92	1	+ .135	3	33.67	86.92	1	+ 2.81	1
3500	51. 10.488	83.05	4			7. 54. 51.96	83.07	19		
	10.795	81.67	2	- .042	4	52.02	84.29	8	- 0.06	18
3507	52. 58.751	85.40	3			9. 53. 55.07	81.13	14		
	58.962	82.03	5	- .036	5	55.37	82.98	8	- 0.30	17
3511	53. 28.524	85.48	8			20. 30. 45.82	84.30	7		
	28.521	84.84	5	+ .001	8	45.55	85.08	6	+ 0.27	12
3529	21. 0. 33.974	83.88	10			46. 33. 1.64	83.88	10		
	34.161	77.74	2	- .136	5	0.66	77.74	2	+ 0.98	1
3538	5. 39.769	80.38	9			19. 2. 57.15	79.99	21		
	39.912	86.19	3	- .047	6	58.30	85.33	7	- 1.15	15
3541	7. 52.266	81.95	4			12. 21. 38.36	82.54	18		
	52.464	82.53	3	- .042	5	39.18	82.53	3	- 0.82	10
3563	15. 42.788	81.76	26			27. 55. 21.35	81.68	61		
	42.801	82.18	13	- .006	13	21.84	82.56	16	- 0.49	22
3568	16. 52.637	86.91	2			25. 38. 12.74	86.91	2		
	52.593	81.14	4	+ .019	4	12.26	82.49	6	+ 0.48	8

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

f

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	^h ^m ^s			^s		^o ['] ["]			["]	
3569	21. 16. 57 ^o 75	85 ^h 14	7	— '001	8	18. 20. 3 ^h 78	85 ^h 14	7	+ 0 ^h 07	13
	57 ^o 77	85 ^h 42	6			3 ^h 71	85 ^h 54	7		
3571	17. 19 ^h 268	86 ^h 71	2	— '025	2	29. 49. 19 ^h 01	86 ^h 76	1	+ 1 ^h 00	2
	19 ^h 318	86 ^h 97	1			18 ^h 01	86 ^h 97	1		
3579	19. 54 ^h 853	83 ^h 40	6	+ '038	7	26. 17. 17 ^h 98	80 ^h 95	11	— 0 ^h 06	10
	54 ^h 768	81 ^h 79	5			18 ^h 04	81 ^h 79	5		
3581	21. 0 ^h 586	84 ^h 69	4	— '084	6	18. 27. 18 ^h 76	84 ^h 69	4	+ 0 ^h 06	9
	0 ^h 850	85 ^h 48	4			18 ^h 70	85 ^h 48	4		
3584	22. 20 ^h 857	84 ^h 46	4	— '138	4	18. 23. 46 ^h 06	84 ^h 46	4	+ 0 ^h 41	5
	21 ^h 295	84 ^h 70	2			45 ^h 65	84 ^h 70	2		
3595	25. 26 ^h 903	83 ^h 46	3	— '044	4	23. 42. 51 ^h 23	83 ^h 55	7	— 0 ^h 62	11
	27 ^h 012	78 ^h 74	2			51 ^h 85	82 ^h 75	6		
3599	27. 6 ^h 332	82 ^h 08	32	+ '033	11	19. 57. 57 ^h 52	82 ^h 05	65	— 0 ^h 34	18
	6 ^h 235	81 ^h 41	7			57 ^h 86	82 ^h 25	9		
3603	28. 58 ^h 355	82 ^h 76	3	+ '065	5	14. 7. 27 ^h 65	82 ^h 76	3	+ 1 ^h 18	7
	58 ^h 087	82 ^h 90	3			26 ^h 47	82 ^h 90	3		
3615	34. 41 ^h 944	84 ^h 31	5	— '044	6	28. 27. 33 ^h 22	83 ^h 42	10	— 0 ^h 57	12
	42 ^h 037	83 ^h 21	4			33 ^h 79	83 ^h 80	7		
3623						19. 13. 59 ^h 23	86 ^h 68	2	— 0 ^h 40	3
	37. 29 ^h 219	78 ^h 13	1			59 ^h 63	78 ^h 13	1		
3639	40. 9 ^h 574	79 ^h 53	5	+ '034	6	19. 14. 27 ^h 80	81 ^h 01	15	— 0 ^h 48	10
	9 ^h 472	80 ^h 18	4			28 ^h 28	80 ^h 18	4		
3643	41. 59 ^h 240	82 ^h 80	3	+ '017	5	29. 25. 58 ^h 11	83 ^h 15	5	+ 0 ^h 55	11
	59 ^h 206	80 ^h 50	4			57 ^h 56	82 ^h 52	7		
3644	42. 21 ^h 596	83 ^h 96	15	+ '047	7	41. 14. 43 ^h 05	83 ^h 96	15	— 2 ^h 33	4
	21 ^h 525	84 ^h 78	3			45 ^h 38	84 ^h 78	3		
3650	44. 53 ^h 712	82 ^h 55	5	— '042	5	20. 24. 20 ^h 57	83 ^h 21	13	+ 0 ^h 94	15
	53 ^h 832	83 ^h 52	3			19 ^h 63	83 ^h 94	8		
3651	45. 13 ^h 697	84 ^h 17	4	— '035	5	25. 23. 17 ^h 72	84 ^h 17	4	— 0 ^h 63	6
	13 ^h 778	81 ^h 23	3			18 ^h 35	81 ^h 23	3		
3661	50. 51 ^h 243	84 ^h 47	4	— '040	4	33. 57. 24 ^h 45	84 ^h 47	4	— 0 ^h 12	4
	51 ^h 314	85 ^h 61	2			24 ^h 57	85 ^h 61	2		
3664	51. 22 ^h 445	79 ^h 50	4	+ '070	5	16. 51. 55 ^h 04	80 ^h 44	9	— 0 ^h 94	8
	22 ^h 202	80 ^h 89	3			55 ^h 98	80 ^h 89	3		
3666	53. 15 ^h 963	81 ^h 12	3	— '043	5	26. 56. 44 ^h 30	80 ^h 53	5	— 0 ^h 50	10
	16 ^h 058	83 ^h 83	3			44 ^h 80	83 ^h 66	6		
3669	54. 7 ^h 066	84 ^h 84	9	— '019	6	24. 24. 58 ^h 43	84 ^h 74	9	+ 0 ^h 05	15
	7 ^h 113	84 ^h 55	3			58 ^h 38	85 ^h 18	9		
3670	54. 19 ^h 799	84 ^h 58	8	+ '001	6	24. 26. 1 ^h 51	84 ^h 45	7	+ 0 ^h 56	10
	19 ^h 797	84 ^h 55	3			0 ^h 95	84 ^h 77	5		
3677	57. 31 ^h 673	82 ^h 17	4	— '013	6	17. 23. 28 ^h 26	82 ^h 29	15	+ 0 ^h 08	12
	31 ^h 715	78 ^h 03	5			28 ^h 18	78 ^h 03	5		
3685	22. 0. 17 ^h 328	85 ^h 33	4	+ '082	4	27. 27. 49 ^h 67	84 ^h 81	6	— 1 ^h 61	5
	17 ^h 151	79 ^h 67	2			51 ^h 28	79 ^h 67	2		
3686	0. 17 ^h 902	84 ^h 39	3	— '066	4	25. 57. 22 ^h 56	84 ^h 39	3	— 0 ^h 56	7
	18 ^h 052	82 ^h 74	2			23 ^h 12	83 ^h 47	4		
3687	0. 18 ^h 865	84 ^h 39	3	— '111	5	25. 57. 24 ^h 38	84 ^h 39	3	+ 0 ^h 19	7
	19 ^h 118	82 ^h 96	4			24 ^h 19	82 ^h 96	4		
3688	0. 24 ^h 621	84 ^h 48	3	+ '067	3	23. 28. 27 ^h 89	84 ^h 48	4	+ 0 ^h 31	3
	24 ^h 454	86 ^h 92	1			27 ^h 58	86 ^h 92	1		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin N.P.D.$	Weight.	Mean N.P.D. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
3692	22. 1. 26'863	85'11	3	— '137	3	28. 18. 13'26	82'28	15	— 0'58	5
	27'153	86'25	1			13'84	86'25	2		
3694	2. 26'933	84'51	4	+ '174	3	7. 42. 29'97	84'51	4	— 1'21	4
	25'635	78'13	1			31'18	78'13	1		
3695	2. 33'025	84'51	4	+ '048	3	7. 42. 26'79	84'51	4	— 0'18	4
	32'667	78'13	1			26'97	78'13	1		
3705	6. 30'243	84'79	2	— '039	3	39. 46. 8'58	84'79	2	+ 0'44	3
	30'304	85'78	2			8'14	85'78	2		
3706	6. 41'400	82'81	3	— '111	5	32. 23. 23'97	83'20	5	— 0'40	6
	41'608	80'17	3			24'37	80'17	3		
3713	7. 54'036	81'84	3			18. 28. 46'66	82'33	8	+ 0'52	8
						46'14	81'84	3		
3714	7. 54'321	81'27	7			20. 27. 37'75	84'78	2	+ 1'16	9
						36'59	82'14	9		
3717	8. 38'099	85'50	3	— '089	5	27. 18. 6'56	83'56	4	— 1'41	7
	38'293	81'72	4			7'97	81'72	4		
3721	10. 3'082	83'91	2	— '121	2	27. 25. 58'13	81'26	7	— 0'90	3
	3'344	85'24	1			59'03	85'24	1		
3724	10. 36'966	82'31	2	— '093	4	33. 33. 15'60	82'31	2	— 1'16	5
	37'135	84'93	3			16'76	84'93	3		
3729	11. 15'060	86'94	1	— '109	3	14. 8. 3'43	86'94	1	+ 0'26	11
	15'505	81'24	3			3'17	81'24	3		
3730	13. 40'419	84'68	3	— '064	4	24. 28. 17'17	82'25	9	+ 0'26	5
	40'574	81'20	2			16'91	81'20	2		
3732	14. 17'992	83'36	3			27. 47. 49'12	83'39	3	+ 0'96	3
						48'16	82'20	1		
3741	16. 53'063	86'40	3	+ '052	5	14. 6. 53'09	85'79	5	— 0'49	8
	52'848	81'57	3			53'58	81'57	3		
3746	18. 10'953	81'04	7	+ '008	7	23. 53. 58'76	80'72	18	— 0'86	11
	10'934	80'81	5			59'62	80'81	5		
3747	18. 11'688	81'47	4	+ '011	6	23. 53. 59'27	81'76	4	— 0'18	9
	11'661	83'42	4			59'45	83'78	5		
3748	18. 50'559	84'68	3	— '060	5	38. 22. 18'80	84'68	3	— 0'13	4
	50'655	84'59	3			18'93	84'59	3		
3758	22. 37'935	85'92	3	+ '026	4	4. 29. 48'00	85'92	3	— 0'83	10
	37'597	85'74	2			48'83	85'42	6		
3763	22. 54'462	79'31	3	— '019	5	19. 50. 25'44	79'31	3	+ 0'15	9
	54'517	80'80	3			25'29	82'16	5		
3774	24. 42'006	79'46	4	+ '123	5	32. 12. 35'56	79'46	4	— 0'70	6
	41'776	78'25	3			36'26	78'25	3		
3775	24. 43'031	79'46	4	+ '070	5	32. 11. 55'61	79'46	4	— 0'91	6
	42'900	78'25	3			56'52	78'25	3		
3779	25. 47'148	81'29	4	— '041	6	11. 49. 33'06	82'31	15	+ 0'05	19
	47'347	84'26	4			33'01	84'83	10		
3780	26. 20'959	82'70	12	+ '018	8	40. 20. 3'29	82'94	14	— 0'22	6
	20'931	82'02	5			3'51	82'02	5		
3785	28. 48'302	84'01	7	+ '031	8	11. 47. 29'57	83'00	16	+ 0'17	16
	48'149	79'50	5			29'40	81'44	7		
3788	30. 9'460	86'08	3	— '078	5	14. 23. 30'99	85'21	5	+ 0'41	12
	9'772	82'46	4			30'58	83'75	6		

f 2

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—*continued*.

Star's No.	Mean R.A. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole $\times \sin \text{N.P.D.}$	Weight.	Mean N.P.D. 1880 ^o .	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
3792	22. 32. 26 ^h 69 ^m 3 ^s	84 ^h 30 ^m	5	— 0 ^s 37	5	39. 4. 27 ^h 61 ^m	84 ^h 39 ^m	6	+ 0 ^s 32	4
	26 ^h 75 ^m 1 ^s	85 ^h 88 ^m	3			27 ^h 29 ^m	85 ^h 88 ^m	3		
3793	32. 48 ^h 249 ^m	81 ^h 08 ^m	3	+ 0 ^s 86	5	16. 58. 47 ^h 01 ^m	81 ^h 13 ^m	8	+ 0 ^s 47	8
	47 ^h 95 ^m	79 ^h 32 ^m	3			46 ^h 54 ^m	79 ^h 32 ^m	3		
3803	34. 23 ^h 76 ^m 5 ^s	86 ^h 20 ^m	3			27. 2. 20 ^h 94 ^m	83 ^h 45 ^m	9		13
	23 ^h 81 ^m 8 ^s	82 ^h 94 ^m	6	— 0 ^s 24	6	21 ^h 05 ^m	83 ^h 02 ^m	8	— 0 ^s 11	
3817	39. 7 ^h 35 ^m 3 ^s	81 ^h 77 ^m	4	— 0 ^s 50	5	9. 14. 6 ^h 78 ^m	81 ^h 49 ^m	5	— 1 ^s 02	9
	7 ^h 66 ^m	79 ^h 64 ^m	3			7 ^h 80 ^m	79 ^h 64 ^m	3		
3825	44. 55 ^h 454 ^m	80 ^h 10 ^m	3	— 0 ^s 16	5	22. 3. 58 ^h 85 ^m	80 ^h 10 ^m	3	— 0 ^s 81	6
	55 ^h 496 ^m	80 ^h 57 ^m	3			59 ^h 66 ^m	80 ^h 57 ^m	3		
3826	44. 56 ^h 014 ^m	80 ^h 10 ^m	3	— 1 ^s 01	4	22. 3. 57 ^h 91 ^m	80 ^h 10 ^m	3	+ 0 ^s 44	5
	56 ^h 282 ^m	79 ^h 80 ^m	2			57 ^h 47 ^m	79 ^h 80 ^m	2		
3828	45. 24 ^h 642 ^m	80 ^h 77 ^m	6	+ 0 ^s 24	6	24. 25. 49 ^h 82 ^m	81 ^h 11 ^m	23	— 0 ^s 66	8
	24 ^h 583 ^m	79 ^h 60 ^m	3			50 ^h 48 ^m	79 ^h 60 ^m	3		
3835	47. 54 ^h 546 ^m	84 ^h 11 ^m	3	+ 0 ^s 62	5	7. 28. 59 ^h 32 ^m	81 ^h 64 ^m	5	+ 0 ^s 60	10
	54 ^h 067 ^m	82 ^h 43 ^m	4			58 ^h 72 ^m	82 ^h 43 ^m	4		
3847	51. 46 ^h 482 ^m	84 ^h 56 ^m	6	— 0 ^s 86	6	41. 57. 25 ^h 02 ^m	84 ^h 56 ^m	6	— 0 ^s 87	4
	46 ^h 611 ^m	84 ^h 95 ^m	4			25 ^h 89 ^m	84 ^h 95 ^m	4		
3858	55. 1 ^h 861 ^m	83 ^h 59 ^m	5	— 0 ^s 58	4	33. 41. 53 ^h 88 ^m	83 ^h 59 ^m	5	+ 0 ^s 25	4
	1 ^h 965 ^m	86 ^h 20 ^m	2			53 ^h 63 ^m	86 ^h 20 ^m	2		
3864	56. 26 ^h 428 ^m	81 ^h 12 ^m	4	— 0 ^s 40	3	33. 32. 19 ^h 92 ^m	81 ^h 12 ^m	4	— 1 ^s 91	2
	26 ^h 501 ^m	86 ^h 27 ^m	1			21 ^h 83 ^m	86 ^h 27 ^m	1		
3871	58. 58 ^h 881 ^m	83 ^h 56 ^m	4	+ 0 ^s 39	6	23. 26. 15 ^h 18 ^m	81 ^h 44 ^m	10	+ 0 ^s 51	18
	58 ^h 782 ^m	81 ^h 70 ^m	5			14 ^h 67 ^m	83 ^h 25 ^m	12		
3885	23. 4. 4 ^h 858 ^m	82 ^h 13 ^m	6	— 0 ^s 60	6	15. 15. 40 ^h 16 ^m	81 ^h 72 ^m	19	+ 1 ^s 27	11
	5 ^h 087 ^m	81 ^h 52 ^m	3			38 ^h 89 ^m	81 ^h 46 ^m	4		
3893	7. 30 ^h 565 ^m	84 ^h 32 ^m	16	— 0 ^s 76	9	33. 29. 38 ^h 39 ^m	84 ^h 23 ^m	15	— 1 ^s 04	13
	30 ^h 703 ^m	85 ^h 56 ^m	6			39 ^h 43 ^m	84 ^h 96 ^m	8		
3907	11. 38 ^h 201 ^m	85 ^h 22 ^m	5	— 1 ^s 66	3	45. 29. 20 ^h 66 ^m	85 ^h 09 ^m	4	+ 2 ^s 43	1
	38 ^h 434 ^m	86 ^h 27 ^m	1			18 ^h 23 ^m	86 ^h 27 ^m	1		
3908	12. 11 ^h 051 ^m	85 ^h 14 ^m	5	— 0 ^s 26	5	41. 38. 25 ^h 22 ^m	85 ^h 08 ^m	6	— 1 ^s 00	4
	11 ^h 090 ^m	86 ^h 48 ^m	3			26 ^h 22 ^m	86 ^h 48 ^m	3		
3915	13. 32 ^h 812 ^m	82 ^h 49 ^m	3	— 0 ^s 40	5	16. 57. 60 ^h 49 ^m	82 ^h 49 ^m	3	+ 0 ^s 73	8
	32 ^h 948 ^m	84 ^h 27 ^m	4			59 ^h 76 ^m	85 ^h 12 ^m	15		
3917	13. 42 ^h 078 ^m	82 ^h 76 ^m	3	— 0 ^s 78	5	22. 32. 41 ^h 95 ^m	81 ^h 66 ^m	11	— 0 ^s 11	18
	42 ^h 281 ^m	83 ^h 74 ^m	4			42 ^h 06 ^m	84 ^h 93 ^m	12		
3921	15. 20 ^h 492 ^m	83 ^h 80 ^m	4	+ 0 ^s 32	5	28. 26. 37 ^h 51 ^m	83 ^h 79 ^m	5	+ 0 ^s 02	6
	20 ^h 424 ^m	83 ^h 28 ^m	3			37 ^h 49 ^m	83 ^h 28 ^m	3		
3932	19. 30 ^h 672 ^m	83 ^h 46 ^m	6	+ 0 ^s 16	7	28. 22. 33 ^h 47 ^m	82 ^h 52 ^m	11	— 0 ^s 28	11
	30 ^h 639 ^m	82 ^h 69 ^m	5			33 ^h 75 ^m	83 ^h 13 ^m	6		
3941	22. 12 ^h 612 ^m	82 ^h 98 ^m	4	+ 0 ^s 03	6	20. 18. 1 ^h 53 ^m	81 ^h 26 ^m	9	— 0 ^s 05	20
	12 ^h 602 ^m	82 ^h 86 ^m	5			1 ^h 58 ^m	84 ^h 84 ^m	18		
3956	27. 50 ^h 273 ^m	86 ^h 98 ^m	1	+ 0 ^s 54	3	3. 21. 16 ^h 82 ^m	84 ^h 58 ^m	9	+ 0 ^s 43	19
	49 ^h 353 ^m	84 ^h 82 ^m	5			16 ^h 39 ^m	85 ^h 89 ^m	9		
3971	31. 41 ^h 598 ^m	83 ^h 62 ^m	11	— 0 ^s 21	7	44. 11. 30 ^h 54 ^m	83 ^h 62 ^m	11	— 0 ^s 32	3
	41 ^h 628 ^m	84 ^h 20 ^m	4			30 ^h 86 ^m	84 ^h 20 ^m	4		
3974	32. 15 ^h 128 ^m	81 ^h 26 ^m	7	— 0 ^s 52	5	47. 23. 46 ^h 14 ^m	81 ^h 07 ^m	8	— 8 ^s 27	1
	15 ^h 198 ^m	82 ^h 28 ^m	2			54 ^h 41 ^m	82 ^h 28 ^m	2		
3979	34. 25 ^h 779 ^m	82 ^h 17 ^m	15	— 0 ^s 78	13	13. 2. 14 ^h 33 ^m	81 ^h 74 ^m	42	— 0 ^s 09	29
	26 ^h 125 ^m	83 ^h 00 ^m	22			14 ^h 42 ^m	83 ^h 49 ^m	26		

TABLE OF THE EXCESS OF MEAN R.A. AND MEAN N.P.D., &c.—concluded.

Star's No.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of R.A. above Pole × sin N.P.D.	Weight.	Mean N.P.D. 1880°.	Mean Date, 1800 +	No. of Obs.	Excess of N.P.D. above Pole.	Weight.
	h m s			s		° ' "			"	
3980	23. 34. 30°048	83°06	7	+ .022	7	46. 19. 50°30	83°06	7	— 1°55	2
	30°018	84°04	4			51°85	84°04	4		
3994	40. 53°899	84°73	4	+ .035	6	23. 53. 4°19	84°73	4	+ 0°93	11
	53°812	84°00	4			3°26	84°60	8		
3997	42. 10°779	81°27	6	— .014	6	22. 51. 36°03	81°47	16	+ 0°04	17
	10°814	82°79	4			35°99	83°65	10		
4001	42. 60°009	85°83	3	+ .075	5	28. 27. 9°17	85°30	7	+ 0°53	7
	59°852	81°29	3			8°64	81°29	3		
4012	46. 13°096	84°18	3	+ .079	5	13. 3. 54°18	84°10	5	+ 0°12	13
	12°748	83°09	5			54°06	84°50	7		
4014	46. 34°296	86°07	4	+ .041	6	15. 7. 28°43	81°91	9	+ 0°13	13
	34°138	82°07	4			28°30	81°80	6		
4018	48. 23°608	85°36	9	— .060	6	33. 10. 5°78	85°36	9	— 0°83	6
	23°717	85°28	3			6°61	85°28	3		
4020	49. 0°299	80°86	3	+ .009	5	16. 15. 26°46	80°86	3	— 1°17	8
	0°268	81°88	3			27°63	81°95	4		
4027	50. 53°256	84°89	3	+ .063	4	34. 49. 38°42	84°89	3	— 1°82	4
	53°145	85°81	2			40°24	85°81	2		
4029	51. 6°002	85°14	3	+ .076	5	34. 57. 43°77	85°31	2	— 0°60	6
	5°869	84°08	4			44°37	84°08	4		
4042	53. 53°460	86°58	3	+ .058	4	3. 57. 42°16	85°56	6	+ 0°24	11
	52°621	86°65	2			41°92	84°97	4		
4044	55. 30°049	83°72	3	— .041	5	29. 26. 43°72	81°40	15	— 0°24	11
	30°132	82°26	3			43°96	83°09	6		
4050	56. 27°660	77°78	3	— .057	5	24. 34. 9°64	77°78	3	+ 0°60	10
	27°796	82°30	3			9°04	83°96	7		
4051	56. 30°018	77°78	3	— .012	4	24. 34. 4°18	77°78	3	+ 0°24	6
	30°047	82°82	2			3°94	83°63	3		
4057	58. 28°748	86°81	3	+ .021	5	23. 30. 8°97	85°63	5	— 0°12	8
	28°696	84°23	3			9°09	84°02	4		
4058	58. 43°994	84°71	3	— .039	5	32. 8. 9°49	84°71	3	+ 0°26	5
	44°067	85°69	3			9°23	85°69	3		

In the following table the means of hourly groups have been taken, assigning to each star the weight tabulated above.

MEANS OF HOURLY GROUPS.

Limits of R.A.	Mean Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean Excess of N.P.D. above Pole.	Weight.	Limits of R.A.	Mean Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Mean Excess of N.P.D. above Pole.	Weight.
^{h} 0-1	- '030	235	- '036	409	^{h} 12-13	- '006	118	0'00	198 $\frac{1}{2}$
1-2	- '025	203	- '022	293	13-14	- '026	149	- 0'25	223
2-3	- '027	102	- 0'05	195	14-15	- '030	148	+ 0'12	252
3-4	- '031	141	+ 0'21	253 $\frac{1}{2}$	15-16	- '030	131	- 0'03	219
4-5	- '033	103	+ 0'10	207	16-17	- '014	82	- 0'14	156
5-6	- '026	126	- 0'01	204	17-18	- '047	93	- 0'24	158
6-7	+ '002	156	- 0'25	276	18-19	- '015	93	- 0'32	165
7-8	+ '006	97	- 0'19	193	19-20	- '005	120	- 0'37	223
8-9	- '016	97	+ 0'31	228	20-21	+ '003	88	- 0'19	181
9-10	- '024	106	- 0'03	183	21-22	- '012	146	- 0'17	251
10-11	- '010	151	- 0'13	244 $\frac{1}{2}$	22-23	- '009	180	- 0'15	302
11-12	+ '025	118	+ 0'05	212	23-24	- '013	162	- 0'03	282

For a curve representing the excess of R.A. above pole, *see* Frontispiece.

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS ABOVE AND BELOW THE POLE ARRANGED IN ORDER OF N.P.D.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	^{o}	^{s}		$^"$			^{o}	^{s}		$^"$	
1318	1. 1	- '015	4	- 0'76	5	473	5. 31	- '074	4	+ 0'19	8
3250	1. 3	+ '027	18	- 0'74	33	2346	5. 35	- '039	3	- 0'48	7
209	1. 20	+ '001	19	- 0'36	34	2012	5. 56	+ '006	5	- 0'06	9
207	1. 20	+ '003	5	- 0'63	14	2013	5. 56	- '042	4	- 0'19	8
2367	2. 18	- '007	2	+ 0'48	6	2154	6. 39	- '034	6	- 0'19	14
1180	2. 46	+ '013	18	- 0'78	35	2491	6. 42	+ '010	3	+ 0'85	8
1031	3. 14	- '042	3	+ 0'26	5	3203	6. 46	- '029	4	+ 0'17	8
3956	3. 21	+ '054	3	+ 0'43	19	3463	6. 48			- 0'63	8
2908	3. 23	+ '025	18	- 0'69	35	1684	6. 50	- '029	5	+ 0'08	10
158	3. 30	+ '011	6	- 0'37	13	126	6. 57	+ '038	6	- 0'06	17
550	3. 44			+ 0'65	6	649	6. 57	- '024	3	+ 0'56	13
1887	3. 45	+ '033	5	- 0'17	11	2329	7. 0	- '050	5	+ 0'50	11
4042	3. 58	+ '059	4	+ 0'24	11	2441	7. 20	- '107	2	+ 0'28	6
150	4. 23	- '006	8	- 0'14	20	1433	7. 20			- 0'24	9
3758	4. 30	+ '026	4	- 0'83	10	1231	7. 22	+ '016	6	+ 0'85	22
1421	4. 32	+ '080	2	- 0'79	7	3835	7. 29	+ '062	5	+ 0'60	10
638	4. 46	- '064	5	- 0'36	11	3695	7. 42	+ '048	3	- 0'18	4
1670	5. 8			- 0'38	9	3694	7. 42	+ '174	3	- 1'21	4
1128	5. 12	+ '055	5	- 0'83	12	2661	7. 46	- '059	5	+ 0'22	8
1496	5. 20			+ 0'21	8	3110	7. 48			- 0'05	6

INTRODUCTION.

47

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued*.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° /	s		"			° /	s		"	
3500	7. 55	- '042	4	- 0'06	18	469	11. 35	- '075	3	- 0'09	4
1558	8. 9	- '119	7	- 0'81	13	1749	11. 35	- '049	5	- 0'47	9
87	8. 10	- '059	5	- 0'74	19	857	11. 43	+ '031	3	- 1'77	12
1823	8. 13	- '007	5	+ 0'46	11	1901	11. 43	- '133	5	+ 0'64	9
1880	8. 29	- '075	4	+ 0'10	15	3785	11. 47	+ '031	8	+ 0'17	16
1220	8. 32	- '014	6	- 0'24	17	870	11. 49	+ '008	4	- 0'26	6
1255	8. 52	+ '006	7	+ 0'40	19	3779	11. 50	- '041	6	+ 0'05	19
1697	8. 53	- '040	5	- 0'04	10	2465	11. 50	- '037	9	+ 0'06	19
1710	8. 57	- '063	5	+ 1'06	13	2210	11. 53	- '001	7	- 0'03	11
3447	8. 58	+ '025	3	- 0'19	4	1899	11. 53	+ '037	2	+ 0'23	4
3449	8. 59	+ '051	5	- 1'47	7	1103	11. 55	- '035	6	- 0'06	13
448	9. 0	- '115	2	+ 0'08	8	873	12. 8	- '086	2	+ 0'75	7
763	9. 1	+ '010	6	- 0'72	13	2675	12. 10	+ '083	2	+ 1'16	4
392	9. 4	- '032	5	- 0'26	20	2430	12. 15	- '050	5	- 0'20	13
1968	9. 5	- '013	5	+ 0'28	14	2633	12. 17	+ '025	6	+ 0'65	13
2434	9. 9	- '047	10	+ 0'03	17	3541	12. 22	- '042	5	- 0'82	10
2433	9. 9	- '054	10	- 0'26	18	2986	12. 33	- '038	7	+ 0'23	17
3817	9. 14	- '050	5	- 1'02	9	3364	12. 39	- '015	5	+ 0'66	13
310	9. 17	- '082	5	+ 0'33	13	478	12. 43	- '048	5	+ 0'41	12
1322	9. 26			- 0'87	6	2848	13. 1			+ 0'30	6
658	9. 28	+ '011	3	- 0'66	6	3979	13. 2	- '078	13	- 0'09	29
1469	9. 32			+ 0'67	4	4012	13. 4	+ '079	5	+ 0'12	13
611	9. 38	- '043	5	+ 0'07	15	3098	13. 7	- '015	6	- 0'24	15
2456	9. 39	- '120	2	+ 0'50	4	65	13. 39	- '002	8	+ 1'05	20
3507	9. 54	- '036	5	- 0'30	17	1700	13. 40	+ '041	4	+ 0'94	13
2901	10. 1	+ '003	3	- 1'62	4	3184	13. 41	- '024	5	- 1'32	8
2899	10. 1	- '003	3	- 1'28	4	33	13. 43	- '043	7	+ 0'47	17
2904	10. 3	+ '068	3	- 1'33	4	1377	13. 49	- '148	2	- 1'06	4
1340	10. 12	- '028	3	+ 0'09	4	2539	13. 49	- '021	5	- 1'56	13
1113	10. 19	+ '018	6	- 0'81	10	1393	13. 53	+ '031	6	+ 0'89	12
1591	10. 19	- '061	5	- 0'90	12	1760	13. 55	- '062	5	- 0'13	10
2171	10. 25	+ '022	5	- 0'82	8	2556	13. 58	+ '040	5	+ 0'60	10
58	10. 37	- '015	5	+ 0'02	12	2496	14. 5	+ '011	4	- 0'22	6
171	10. 38	+ '015	5	- 0'44	11	3741	14. 7	+ '052	5	- 0'49	8
3193	10. 38	+ '036	6	- 0'47	19	3603	14. 7	+ '065	5	+ 1'18	7
2100	10. 44	- '028	6	+ 0'52	15	3729	14. 8	- '109	3	+ 0'26	11
845	10. 55	+ '103	3	- 0'06	13	1924	14. 10	+ '052	4	+ 0'79	10
9	10. 57	+ '034	5	+ 0'54	8	746	14. 17	+ '003	4	+ 0'57	17
182	10. 58	+ '039	4	+ 0'44	6	3788	14. 24	- '078	5	+ 0'41	12
435	11. 3	- '102	6	+ 0'69	10	2541	14. 30			+ 0'56	6

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued.*

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° ' "	s		"			° ' "	s		"	
2684	14. 32	— '121	3	— 0'85	7	240	17. 34	— '057	5	— 0'96	14
3039	14. 42	+ '126	2	— 1'06	4	380	17. 43	— '038	5	+ 0'19	8
2202	14. 50	— '042	8	+ 0'01	19	705	17. 44	— '012	4	+ 0'40	8
2198	14. 51	— '015	4	+ 0'40	8	2382	17. 44	+ '048	8	+ 0'92	11
913	15. 2	+ '020	3	+ 1'49	8	2336	17. 46	— '010	5	+ 0'97	12
4014	15. 7	+ '041	6	+ 0'13	13	2816	17. 47			— 0'46	7
481	15. 12			+ 1'47	3	2815	17. 48	— '013	6	— 0'91	12
3885	15. 16	— '060	6	+ 1'27	11	1326	17. 55	— '001	3		
2312	15. 21	— '030	14	+ 0'30	31	2860	17. 59			+ 0'41	12
3439	15. 27	— '028	4	+ 0'39	11	2726	18. 5	— '082	6	+ 0'21	14
104	15. 40	+ '023	5	+ 0'04	11	2122	18. 9	— '063	9	+ 0'55	18
1338	15. 46	— '061	2	+ 0'51	5	1119	18. 9	— '003	5	+ 0'39	7
796	15. 55	— '030	3	+ 0'68	17	304	18. 10	+ '018	7	+ 0'22	10
462	16. 4	+ '047	5	+ 0'14	9	641	18. 11	— '025	3	+ 0'03	7
802	16. 7	— '009	3	+ 0'48	9	3569	18. 20	— '001	8	+ 0'07	13
826	16. 13	— '046	5	— 0'64	13	3584	18. 24	— '138	4	+ 0'41	5
1107	16. 13	+ '089	5	+ 0'23	14	3581	18. 27	— '084	6	+ 0'06	9
4020	16. 15	+ '009	5	— 1'17	8	3714	18. 29			+ 0'52	8
159	16. 16	— '035	5	+ 0'44	10	522	18. 33	— '012	2	+ 2'00	5
2546	16. 19			+ 0'54	5	3225	18. 40	— '005	4	+ 0'75	14
801	16. 25	— '098	3	+ 0'31	9	2954	18. 44	— '082	4	+ 0'90	17
328	16. 32	— '044	5	+ 0'27	9	393	18. 54	— '013	6	+ 0'02	15
1624	16. 33	+ '011	7	+ 0'22	22	575	19. 2	— '175	3	+ 0'45	13
470	16. 35	— '106	4	+ 0'44	13	3538	19. 3	— '047	6	— 1'15	15
2662	16. 41	+ '047	3	+ 0'66	10	429	19. 8	+ '147	2	— 0'88	2
625	16. 46	— '074	6	+ 0'03	15	1904	19. 8	— '022	7	+ 0'28	12
3664	16. 52	+ '070	5	— 0'94	8	3623	19. 14			— 0'40	3
3151	16. 52	— '024	6	— 0'04	9	3639	19. 14	+ '034	6	— 0'48	10
848	16. 52	+ '034	3			452	19. 28	— '058	3	— 1'47	5
3915	16. 57	— '040	5	+ 0'73	8	569	19. 30	+ '005	6	— 0'67	12
3793	16. 59	+ '086	5	+ 0'47	8	1738	19. 30	— '040	5	0'00	11
2086	16. 59	— '074	5	+ 0'06	12	1963	19. 33	— '005	8	+ 0'17	24
532	17. 4			+ 1'23	6	1569	19. 39	— '082	6	— 0'35	12
1587	17. 12	— '032	5	— 0'13	8	302	19. 41	— '024	5	— 1'17	7
501	17. 13	+ '031	5	+ 0'67	7	72	19. 41	— '047	5	+ 0'23	7
1399	17. 13	+ '004	5	+ 0'91	11	3763	19. 50	— '019	5	+ 0'15	9
1568	17. 16	— '147	4	— 0'93	8	1375	19. 56	— '045	2	+ 0'61	5
3677	17. 23	— '013	6	+ 0'08	12	3599	19. 58	+ '033	11	— 0'34	18
2797	17. 29	— '058	5	+ 0'20	8	2213	20. 0	— '001	6	— 0'62	14
2297	17. 32	— '061	6	+ 0'30	15	1828	20. 0	+ '007	11	+ 0'04	20

INTRODUCTION.

49

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued.*

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° /	s		"			° /	s		"	
1838	20. 1	— '079	5	— 0'44	12	3825	22. 4	— '016	5	— 0'81	6
3271	20. 2	— '039	5	+ 0'17	12	2058	22. 5	— '050	4	— 1'32	6
1951	20. 8	— '015	7	+ 0'24	17	3406	22. 7	+ '070	4	+ 0'28	4
1588	20. 13	+ '003	6	+ 1'10	8	1779	22. 8	— '012	7	— 0'22	10
1719	20. 18	— '069	6	+ 0'32	11	2359	22. 12	+ '008	5	— 0'10	9
3941	20. 18	+ '003	6	— 0'05	20	228	22. 13	— '070	4	+ 1'07	6
1055	20. 24	+ '014	4	+ 2'43	7	1805	22. 14	+ '076	5	+ 0'30	8
3650	20. 24	— '042	5	+ 0'94	15	1166	22. 18	+ '024	7	+ 1'47	14
3511	20. 31	+ '001	8	+ 0'27	12	1518	22. 23	— '005	5	— 0'90	9
3213	20. 33	— '032	4	— 0'61	6	2553	22. 27	+ '055	2	— 0'99	4
227	20. 36	— '123	3	— 0'67	3	3330	22. 28	+ '005	3	— 0'31	8
1054	20. 38	— '058	4	— 0'74	4	2545	22. 28	— '154	4	— 1'55	5
1669	20. 39	+ '110	4	— 0'07	8	213	22. 30	— '124	4	+ 0'02	7
3479	20. 41	— '047	5	— 0'38	12	3917	22. 33	— '078	5	— 0'11	18
490	20. 43	— '010	6	+ 1'27	13	3134	22. 33	+ '012	9	+ 0'08	14
2188	20. 45	+ '011	6	— 0'27	11	2537	22. 33	— '066	3	— 0'47	3
1716	20. 56	— '025	4	+ 0'08	10	1999	22. 33	— '129	5	+ 0'57	8
3252	20. 57	+ '097	3	+ 1'49	3	255	22. 34	+ '076	5	+ 1'20	8
2579	20. 58	— '021	6	+ 0'67	17	1852	22. 35	— '004	6	+ 0'39	13
1644	20. 58	— '084	4	+ 1'17	6	2751	22. 36	+ '070	3	+ 1'19	3
1219	21. 0	— '052	6	— 0'47	9	2940	22. 37	— '025	5	+ 0'61	8
1783	21. 5	+ '060	8	+ 1'09	18	1514	22. 39	— '049	5	+ 0'58	16
1384	21. 11	+ '006	6	+ 0'65	14	400	22. 41	+ '001	5	+ 0'90	7
2790	21. 11	+ '022	5	+ 0'47	4	2030	22. 45	+ '038	5	+ 1'07	13
2924	21. 17	— '079	3	— 0'79	3	1471	22. 51	— '049	3	+ 0'83	6
1273	21. 18	+ '042	5	+ 0'10	8	3997	22. 52	— '014	6	+ 0'04	17
2933	21. 18	— '006	5	— 0'51	6	338	22. 53	— '087	7	+ 0'03	13
2787	21. 33	+ '083	3	— 0'17	3	1000	23. 0	— '025	3	— 0'18	6
973	21. 34	— '042	6	+ 0'62	13	1008	23. 7	— '053	4	0'00	7
415	21. 37	+ '004	5	— 0'55	7	365	23. 8	— '012	9	+ 0'35	23
2237	21. 39	— '032	5	+ 0'76	7	366	23. 8	+ '034	5	— 0'35	6
619	21. 39	— '098	6	+ 0'63	11	564	23. 11	— '057	3	+ 1'01	6
2232	21. 40	+ '008	5	+ 1'03	11	807	23. 21	— '118	3	+ 0'66	6
235	21. 40	— '030	3	+ 0'56	5	1262	23. 26	+ '041	5	— 0'12	9
2774	21. 47	— '030	3	+ 0'21	8	3871	23. 26	+ '039	6	+ 0'51	18
186	21. 52	— '046	3	+ 0'63	5	3688	23. 28	+ '067	3	+ 0'31	3
2520	21. 52	— '080	3	— 2'50	8	4057	23. 30	+ '021	5	— 0'12	8
1503	21. 54	— '060	4	+ 0'47	11	1806	23. 30	+ '570	3	+ 1'41	3
2057	22. 3	— '008	4	— 0'60	6	2322	23. 35	+ '024	4	+ 0'42	9
3826	22. 4	— '101	4	+ 0'44	5	1718	23. 39	+ '031	5	+ 0'35	7

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

g

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued*.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° ' "	"		"			° ' "	"		"	
3595	23. 43	— '044	4	— 0.62	11	3068	24. 54	— '022	5	+ 0.37	7
1682	23. 50	+ '025	3	+ 0.06	11	1488	24. 56	— '035	6	+ 0.05	13
777	23. 52	— '002	6	+ 0.07	10	1808	25. 1	+ '086	6	— 0.12	19
3994	23. 53	+ '035	6	+ 0.93	11	2193	25. 3	— '022	11	— 0.14	23
3746	23. 54	+ '008	7	— 0.86	11	2616	25. 11	— '021	3	+ 1.12	8
3747	23. 54	+ '011	6	— 0.18	9	1446	25. 15	+ '002	8	+ 0.89	16
77	23. 55			— 0.67	9	2409	25. 23	+ '001	4	— 1.09	15
2021	23. 55	+ '037	5	— 0.08	9	3651	25. 23	— '035	5	— 0.63	6
1376	24. 0	+ '054	4	+ 0.63	15	1645	25. 28	+ '021	4	— 0.25	17
333	24. 2	— '040	5	— 0.75	7	314	25. 28	— '073	6	— 0.21	10
3337	24. 3	— '018	4	— 0.78	3	3323	25. 31			— 0.85	5
479	24. 4	— '064	4	— 0.14	9	1938	25. 32	+ '021	5	— 0.71	7
2261	24. 5	— '091	4	+ 0.26	8	1552	25. 33	— '156	5	+ 0.20	10
3360	24. 7	— '049	5	+ 0.48	7	193	25. 37	— '029	4	+ 0.39	6
702	24. 8	— '027	3	+ 0.34	6	3568	25. 38	+ '019	4	+ 0.48	8
2695	24. 8	— '114	5	+ 0.66	13	306	25. 41	+ '029	5	+ 0.09	6
3119	24. 13	— '098	7	— 0.36	18	2033	25. 45	— '049	3	— 1.13	3
1039	24. 16	— '068	3	— 2.88	3	1601	25. 48	+ '060	4	+ 1.28	11
1663	24. 18	+ '007	5	+ 0.26	13	2889	25. 48	— '104	3	— 0.37	3
147	24. 18	— '012	5	— 1.60	6	507	25. 51	— '067	3	— 0.05	10
945	24. 22	— '012	3	+ 0.77	12	917	25. 56	— '035	3	+ 1.21	6
3669	24. 25	— '019	6	+ 0.05	15	3686	25. 57	— '066	4	— 0.56	7
3828	24. 26	+ '024	6	— 0.66	8	3687	25. 57	— '111	5	+ 0.19	7
3670	24. 26	+ '001	6	+ 0.56	10	297	25. 58	— '117	4	+ 1.84	7
1430	24. 27	— '018	7	— 0.09	16	1521	26. 0	— '036	5	— 0.32	7
3730	24. 28	— '064	4	+ 0.26	5	2083	26. 7	— '013	5	— 0.28	8
96	24. 31	+ '028	6	— 0.36	16	307	26. 11	— '063	8	+ 0.23	11
3166	24. 31	— '063	8	— 0.11	19	318	26. 12	— '042	4	+ 0.67	6
224	24. 31	+ '049	5	+ 0.74	7	1604	26. 12	— '007	3	— 1.63	4
4051	24. 34	— '012	4	+ 0.24	6	2381	26. 14	— '057	5	+ 0.41	5
4050	24. 34	— '057	5	+ 0.60	10	3579	26. 17	+ '038	7	— 0.06	10
2131	24. 34	— '016	5	+ 0.91	12	1889	26. 24	+ '004	6	+ 0.21	11
2989	24. 37	+ 0.81			5	3391	26. 24	+ '016	3	+ 0.89	2
2085	24. 39	— '011	5	— 0.17	8	124	26. 24	+ '043	4	— 0.22	8
2087	24. 40	— '060	5	— 0.35	8	459	26. 25	— '036	5	— 0.34	10
2651	24. 41	— '049	4	0.00	9	1564	26. 25	+ '058	5	— 0.12	14
2161	24. 41	+ '019	6	— 0.89	8	189	26. 26	— '113	4	+ 0.01	5
2653	24. 47			+ 0.67	3	187	26. 28	— '022	3	+ 1.13	3
485	24. 47	'000	3	— 0.48	3	1	26. 28	+ '011	4	— 0.23	7
578	24. 51	— '037	4	+ 1.19	6	1998	26. 34	+ '008	7	— 0.73	11

INTRODUCTION.

51

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued*.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° ' "	s		"			° ' "	s		"	
1986	26. 38	- '057	6	- 1'75	7	1531	28. 5	+ '004	5	+ 0'62	13
269	26. 44	- '047	4	- 0'82	5	3380	28. 7	+ '004	4	+ 0'32	10
3309	26. 48	- '047	4	- 1'09	9	2561	28. 13	- '028	9	- 0'42	11
3218	26. 50	- '011	3			2277	28. 14	- '051	7	+ 0'01	17
1321	26. 53	+ '033	3	- 1'89	8	1829	28. 15	- '013	5	- 0'56	7
284	26. 55	+ '066	7	- 0'41	11	3349	28. 17	- '006	3	+ 0'41	8
3666	26. 57	- '043	5	- 0'50	10	3692	28. 18	- '137	3	- 0'58	5
2706	26. 59	+ '009	3	+ 0'66	3	3932	28. 23	+ '016	7	- 0'28	11
230	27. 0	+ '090	2	- 2'58	2	2285	28. 24	+ '017	4	+ 0'41	5
231	27. 2	+ '071	3	- 0'50	5	1121	28. 25	- '015	6	- 0'95	10
2454	27. 2	+ '037	5	+ 0'62	7	1126	28. 26	- '034	5	- 0'23	10
899	27. 2	+ '117	3	+ 1'49	12	3921	28. 27	+ '032	5	+ 0'02	6
3803	27. 2	- '024	6	- 0'11	13	1056	28. 27	+ '024	4	- 0'82	6
1401	27. 7	+ '029	5	+ 0'80	20	4001	28. 27	+ '075	5	+ 0'53	7
556	27. 10	- '066	5	+ 0'25	10	659	28. 27	- '044	6	- 0'42	9
1737	27. 13	- '022	5	+ 0'31	6	3615	28. 28	- '044	6	- 0'57	12
1079	27. 15	+ '056	2	- 0'15	6	957	28. 35	+ '007	8	- 0'81	14
604	27. 17	- '010	5	+ 0'24	10	3478	28. 38	- '021	6	- 0'93	12
3717	27. 18	- '089	5	- 1'41	7	1358	28. 41	- '010	4	- 0'76	11
2394	27. 19			- 1'60	5	453	28. 45	- '051	5	- 0'46	7
2041	27. 19	- '042	8	+ 0'72	12	101	28. 45	+ '031	2	- 1'29	5
3001	27. 22	- '017	4	- 0'80	4	48	28. 47	- '041	5	- 0'15	11
3419	27. 25	+ '034	3	- 0'73	9	103	28. 48	+ '070	2	+ 0'13	3
3721	27. 26	- '121	2	- 0'90	3	54	28. 50	- '011	7	+ 0'20	14
2650	27. 27	- '132	3	+ 0'20	3	127	28. 51	- '026	5	- 0'11	5
843	27. 28	- '103	3	- 0'28	5	1423	28. 53	- '001	5	+ 0'39	15
3685	27. 28	+ '082	4	- 1'61	5	2393	28. 55	+ '077	4	- 1'07	3
867	27. 29	- '078	2	- 0'33	6	2587	28. 55	+ '011	3	- 0'65	3
1821	27. 34	- '050	5	- 0'49	7	430	28. 58			+ 0'21	13
2990	27. 35	- '065	5	- 0'02	6	1403	28. 59	+ '031	6	- 0'17	12
1481	27. 35	+ '007	6	- 0'49	13	1211	29. 1	+ '084	7	- 0'20	17
1763	27. 36	- '024	14	- 0'41	26	2002	29. 2	- '054	3	+ 0'37	6
2646	27. 43	+ '057	4	- 2'58	5	2384	29. 2	- '032	5	+ 0'16	6
3070	27. 46	- '081	9	- 0'81	9	163	29. 4	- '005	6	- 0'15	10
1875	27. 47	+ '063	5	- 0'16	6	1212	29. 4	+ '006	4	- 0'60	7
3732	27. 48			+ 0'96	3	115	29. 4	- '029	4	+ 0'15	4
2155	27. 55	- '014	7	- 0'14	16	3017	29. 5			- 0'88	2
3563	27. 55	- '006	13	- 0'49	22	183	29. 6	- '090	6	- 0'38	8
1860	27. 56	+ '048	5	- 0'15	11	36	29. 8	- '117	4	+ 0'62	11
1131	27. 59	+ '027	6	+ 0'39	9	2718	29. 9	- '004	4	- 0'17	5

g 2

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued*.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° ' "	"		"			° ' "	"		"	
601	29. 11			— 0'42	6	2484	30. 45	— '043	3	+ 0'03	4
2720	29. 12	— '044	4	— 0'33	5	172	30. 47	— '116	3	— 1'03	2
142	29. 14	— '027	3	— 1'47	4	198	30. 53			— 1'02	4
2254	29. 15	+ '041	5	+ 0'03	8	1032	31. 3	+ '025	3	— 1'33	4
2330	29. 19	— '061	5	— 1'15	8	981	31. 4	+ '018	5	— 0'09	6
2991	29. 24	+ '033	5	— 0'60	6	2952	31. 16	+ '060	5	— 1'18	8
3643	29. 26	+ '017	5	+ 0'55	11	236	31. 23	— '096	3	— 0'23	4
2092	29. 26	+ '009	4	— 1'50	4	1380	31. 24	— '002	3	— 0'35	6
2642	29. 27	— '046	3	+ 1'10	4	1931	31. 28	+ '030	4	+ 0'35	6
4044	29. 27	— '041	5	— 0'24	11	10	31. 31	— '086	7	— 0'62	9
1035	29. 32	— '027	5	— 0'39	11	1085	31. 31	+ '100	4	+ 0'17	4
131	29. 32	+ '002	4	— 0'83	12	1086	31. 31	— '021	6	+ 0'21	9
671	29. 33	— '089	6	— 0'39	13	1096	31. 45	— '041	5	+ 0'19	8
813	29. 44	— '049	5	— 0'15	7	866	32. 1	— '115	2	— 0'29	4
3571	29. 49	— '025	2	+ 1'00	2	4058	32. 8	— '039	5	+ 0'26	5
2748	29. 51	— '033	6	— 1'32	9	3775	32. 12	+ '070	5	— 0'91	6
3455	29. 56			— 0'23	4	3774	32. 13	+ '123	5	— 0'70	6
138	29. 56	+ '061	7	— 0'22	10	1905	32. 18	— '013	4	— 0'69	6
2540	29. 57			— 0'82	4	180	32. 23	— '064	5	— 1'77	6
1051	29. 58	— '028	3	— 1'51	5	3706	32. 23	— '111	5	— 0'40	6
1198	30. 1	— '022	6	— 0'75	18	1360	32. 24	+ '184	3	— 0'82	5
261	30. 3	— '034	8	— 0'50	15	206	32. 24	+ '068	3	+ 1'18	2
257	30. 4	+ '116	3	— 0'51	6	3129	32. 30	— '004	5	— 1'51	6
1228	30. 9	— '016	5	— 1'40	11	3122	32. 33	+ '032	3	— 2'54	2
2674	30. 15	— '210	3	— 1'43	4	3154	32. 35	+ '009	4	— 1'07	7
140	30. 17	— '117	3	— 1'36	3	1822	32. 36	+ '080	5	— 0'67	6
166	30. 19	— '077	5	— 2'15	7	245	32. 38	— '030	4	— 1'12	4
144	30. 19	— '157	5	— 1'30	7	2222	32. 44	+ '030	2	+ 0'78	2
143	30. 19	— '092	3	— 1'07	7	2220	32. 45	— '002	3	+ 0'37	2
169	30. 20	— '049	5	— 2'44	8	116	32. 49	— '017	8	— 0'48	10
81	30. 20			— 1'93	6	117	32. 49	— '074	4	+ 2'05	2
214	30. 23	— '017	5	— 0'33	7	653	32. 51	— '009	6	— 1'61	9
1615	30. 24	+ '099	5	— 0'36	8	907	32. 52	+ '013	3	— 0'63	5
1177	30. 25	+ '177	2	+ 1'62	3	1761	32. 58	+ '033	8	— 0'51	11
560	30. 25	+ '013	3	+ 0'57	5	2972	33. 3	+ '002	5	+ 0'75	8
1147	30. 26	+ '034	5	— 0'48	7	3460	33. 3			— 0'63	2
1156	30. 26	— '109	2	— 0'76	2	2833	33. 6	— '048	4	— 0'62	9
1157	30. 26	— '008	5	— 0'55	8	970	33. 8	+ '014	3	— 0'82	5
2385	30. 37	— '033	4	— 1'41	6	4018	33. 10	— '060	6	— 0'83	6
1353	30. 38	— '002	4	— 0'20	6	1771	33. 16	+ '012	4	+ 0'02	4

INTRODUCTION.

53

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—*continued*.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
	° /	s		"			° /	s		"	
2015	33. 23	+ '047	8	- 1'36	10	1639	35. 32	+ '023	6	+ 0'43	6
1694	33. 24	+ '059	6	- 0'19	7	678	35. 33	- '104	2	+ 1'92	3
3893	33. 30	- '076	9	+ 1'04	13	1330	35. 34	+ '002	2	- 0'76	2
1815	33. 30	- '012	6	- 0'39	8	1872	35. 38	+ '041	10	+ 0'11	10
3864	33. 32	- '040	3	- 1'91	2	2162	35. 39	- '012	3	- 0'57	2
3724	33. 33	- '093	4	- 1'16	5	178	35. 40	+ '018	4	- 0'93	2
924	33. 36	- '113	2	- 0'28	3	2169	35. 41	+ '049	6	- 1'10	6
3858	33. 42	- '058	4	+ 0'25	4	2896	35. 45	- '029	2	- 1'92	2
933	33. 43	- '072	4	+ 0'39	5	71	36. 8	- '027	6	+ 0'20	7
457	33. 46	- '121	5	- 0'82	5	714	36. 21	+ '105	3	+ 0'35	3
969	33. 56	- '041	4	- 0'52	4	715	36. 21	+ '022	3	- 0'37	3
3661	33. 57	- '040	4	- 0'12	4	78	36. 27	- '131	5	- 0'36	4
2108	34. 2	- '018	5	- 1'28	6	2732	36. 28	+ '041	3	- 2'62	2
95	34. 7	- '019	12	- 0'69	16	80	36. 30	- '064	6	- 0'92	5
2448	34. 9	- '034	6	- 0'75	6	950	36. 34	- '055	3	- 0'63	4
1164	34. 10	+ '006	4	- 0'65	6	327	36. 43	+ '062	4	- 1'04	4
1165	34. 10	- '171	4	+ 0'30	6	735	36. 46	- '074	4	- 0'12	4
2450	34. 14	+ '004	4	+ 1'41	4	3093	36. 47	+ '034	4	- 0'92	4
2452	34. 15	- '037	7	+ 0'12	8	1739	36. 48	+ '022	5	+ 0'56	5
989	34. 19	- '011	5	+ 0'59	6	3139	36. 51	+ '040	5	- 1'37	5
2622	34. 23	+ '288	3	+ 0'16	2	1740	36. 52	+ '037	5	+ 0'44	5
2077	34. 27	+ '049	4	+ 0'44	4	850	36. 56	- '107	4	+ 0'75	4
2078	34. 27	- '016	2	- 0'42	3	806	37. 2	- '082	3	- 1'22	3
1836	34. 33	- '009	6	- 0'34	6	794	37. 20	- '008	3	- 0'06	3
764	34. 37	- '166	5	+ 1'18	5	2136	37. 20	- '035	6	- 0'86	6
1007	34. 41	- '092	3	- 0'36	4	2690	37. 27	- '116	3	- 1'30	2
355	34. 42	- '006	4	+ 0'35	5	2421	37. 32	- '100	4	- 0'68	3
1742	34. 47	- '028	3	- 0'39	2	2369	37. 37	- '036	2	- 0'16	2
4027	34. 50	+ '063	4	- 1'82	4	2759	37. 37	- '019	3	- 1'43	2
4029	34. 58	+ '076	5	- 0'60	6	56	37. 37	+ '009	5	- 1'70	5
2343	34. 59	- '198	3	- 1'05	4	2209	37. 39	- '016	5	- 1'17	5
2427	35. 6	+ '013	4	+ 0'59	4	2208	37. 39	- '060	4	- 0'64	4
961	35. 12	+ '007	3	+ 0'44	4	1239	37. 40	+ '125	3	- 0'66	6
1618	35. 23	+ '020	5	- 0'75	6	427	37. 44	- '015	4	- 0'69	2
542	35. 26	+ '021	2	+ 0'15	3	1570	37. 47	+ '098	3	- 2'04	2
107	35. 26	- '006	4	- 0'65	4	1519	37. 55	- '020	3	- 0'14	3
280	35. 27	- '090	4	- 0'83	4	2218	38. 5	- '060	3	- 1'78	3
190	35. 29	- '061	4	- 1'70	4	165	38. 8	- '035	3	- 0'56	2
1538	35. 29	+ '048	5	+ 0'04	6	1379	38. 9	+ '025	3	- 0'20	3
639	35. 29	- '026	2	- 2'62	2	2572	38. 20	+ '033	2		

COMPARISON OF OBSERVATIONS OF CIRCUMPOLAR STARS, &c.—concluded.

Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.	Star's No.	Approx. N.P.D.	Excess of R.A. above Pole $\times \sin$ N.P.D.	Weight.	Excess of N.P.D. above Pole.	Weight.
3748	38. 22	+ '060	5	— 0'13	4	640	42. 37	+ '020	3	+ 0'81	1
2840	38. 30	— '057	12	— 0'94	13	3480	42. 37	+ '135	3	+ 2'81	1
2091	38. 39	— '030	2	— 0'03	4	2592	43. 9	— '086	3	— 1'43	1
3792	39. 4	— '037	5	+ 0'32	4	2022	43. 10	— '098	3	+ 0'73	1
487	39. 31	+ '003	5	— 0'83	3	3136	43. 14	— '119	3	+ 1'29	1
2246	39. 37	— '089	5	+ 0'81	4	3079	43. 14	— '033	3	— 3'68	1
3705	39. 46	— '039	3	+ 0'44	3						
282	39. 48	— '055	5	— 0'96	3	2082	43. 21	— '016	3	— 2'76	2
2317	39. 53	— '101	3	+ 2'46	1	2217	43. 22	+ '027	7	+ 0'02	3
1657	39. 56	— '046	5	— 0'92	6	2544	43. 24	+ '017	3	— 0'32	1
						1613	43. 25	— '093	3	— 1'65	1
1551	39. 57	+ '108	5	+ 1'87	3	3348	43. 33	— '030	5	— 2'38	2
3190	39. 57	+ '067	3	+ 0'10	2	1301	43. 33	— '081	5	— 1'11	3
2197	39. 58	— '084	5	+ 0'01	4	3350	43. 37	— '035	3	— 2'24	1
3189	40. 3	— '033	3	— 2'16	1	2186	43. 40	— '124	5	+ 0'38	3
1283	40. 5	— '026	4	— 0'11	5	859	43. 43	— '141	3	— 2'86	2
2147	40. 5	— '024	13	— 0'64	16	854	43. 44	— '164	4	+ 0'13	1
751	40. 15	— '039	4	+ 3'22	3						
3780	40. 20	+ '018	8	— 0'22	6	1454	43. 45	— '213	3	— 2'23	1
1270	40. 33	+ '001	6	— 0'30	5	1753	43. 50	— '137	6	— 1'77	3
513	40. 34	+ '010	8	— 0'03	6	1491	43. 55	— '009	5	+ 0'49	2
						2038	44. 5	— '070	5	— 2'53	3
1081	40. 39	— '003	5	— 1'25	4	863	44. 8	+ '003	11	+ 1'08	8
519	40. 41	+ '075	4	— 0'86	3	3971	44. 12	— '021	7	— 0'32	3
465	40. 51	+ '057	7	+ 0'24	5	2854	44. 30	— '090	4	— 1'12	2
1513	41. 0	— '169	4	+ 1'15	1	2849	44. 31	— '252	2	+ 0'44	1
1671	41. 0	+ '087	2	— 0'70	1	15	44. 36	— '113	5	— 2'39	2
510	41. 13	— '149	3	+ 0'54	2	1011	45. 4	+ '014	6	— 3'67	2
3644	41. 15	+ '047	7	— 2'33	4						
525	41. 21	— '034	5	— 1'58	3	210	45. 6	— '043	5	— 1'36	2
298	41. 23	+ '058	4	— 0'63	3	3453	45. 9	+ '032	3	— 2'52	1
2338	41. 23	— '161	3	— 0'55	1	2110	45. 11	— '093	5	— 3'37	2
						222	45. 13	— '033	4	— 1'10	1
1194	41. 27	— '103	3	+ 0'64	1	1989	45. 14	+ '076	3	— 0'88	1
778	41. 28	— '016	5	+ 2'02	4	3907	45. 29	— '166	3	+ 2'43	1
3908	41. 38	— '026	5	— 1'00	4	1770	45. 51	+ '123	3	— 7'70	1
2334	41. 53	— '011	3	— 1'01	1	3052	46. 13	— '069	3	— 2'80	1
657	41. 54	+ '048	5	— 1'05	4	3980	46. 20	+ '022	7	— 1'55	2
3847	41. 57	— '086	6	— 0'87	4	1664	46. 29	— '017	9	— 3'00	3
247	41. 59	— '054	5	— 1'43	1						
2016	42. 9	— '074	5	— 0'88	3	3529	46. 33	— '136	5	+ 0'98	1
551	42. 12	— '063	7	— 0'96	4	34	47. 4	— '095	3	— 3'17	$\frac{1}{2}$
923	42. 22	— '141	2	— 0'15	1	3974	47. 24	— '052	5	— 8'27	1
						572	47. 48			— 7'21	$\frac{1}{2}$
3249	42. 23	— '027	2	+ 0'08	2	1680	47. 54	— '036	8	— 6'74	2
2934	42. 30	— '283	3	— 1'91	1	1961	47. 59	— '087	5	+ 0'01	$\frac{1}{2}$
19	42. 31	— '122	5	— 1'98	3	1679	48. 10	+ '102	3	— 1'76	$\frac{1}{2}$
563	42. 36	+ '060	5	— 1'66	2	319	48. 15	— '092	3	— 7'75	1

V. STANDARD MEAN RIGHT ASCENSIONS OF CLOCK STARS FOR 1880^o,
BASED ON 12-HOUR GROUPS

Star's Name.	Assumed Mean R.A. 1880 ^o .	Star's Name.	Assumed Mean R.A. 1880 ^o .	Star's Name.	Assumed Mean R.A. 1880 ^o .
α Andromedæ ...	^h 0. ^m 2. ^s 11.186	α Leporis	^h 5. ^m 27. ^s 26.260	τ Leonis.....	^h 11. ^m 21. ^s 45.949
γ Pegasi.....	0. 7. 3.408	ϵ Orionis	5. 30. 7.444	ν Leonis.....	11. 30. 48.259
ι Ceti	0. 13. 18.801	α Columbæ	5. 35. 18.225	β Leonis	11. 42. 56.273
44 Piscium	0. 19. 15.070	κ Orionis	5. 42. 3.905	β Virginis	11. 44. 26.668
12 Ceti	0. 23. 54.846	α Orionis	5. 48. 40.505	π Virginis	11. 54. 43.388
ϵ Andromedæ ...	0. 32. 12.961	1 Geminorum ...	5. 56. 49.502	σ Virginis	11. 59. 5.747
β Ceti.....	0. 37. 33.904	ν Orionis	6. 0. 43.184	ϵ Corvi	12. 3. 57.245
δ Piscium	0. 42. 27.397	η Geminorum ...	6. 7. 38.018	η Virginis	12. 13. 45.967
20 Ceti	0. 46. 52.483	μ Geminorum ...	6. 15. 41.995	δ^2 Corvi	12. 23. 39.354
μ Andromedæ ...	0. 50. 5.711	β Canis Majoris..	6. 17. 24.883	β Corvi	12. 28. 5.131
ϵ Piscium	0. 56. 42.932	ν Geminorum ...	6. 21. 50.238	ρ Virginis	12. 35. 48.629
β Andromedæ ...	1. 3. 0.932	γ Geminorum ...	6. 30. 46.733	35 Virginis	12. 41. 44.799
ζ^1 Piscium.....	1. 7. 27.711	ξ Geminorum ...	6. 38. 33.222	31 Comæ	12. 45. 51.153
θ Ceti	1. 18. 1.479	θ Canis Majoris..	6. 48. 36.824	δ Virginis	12. 49. 33.524
η Piscium	1. 25. 3.758	ϵ Canis Majoris...	6. 53. 54.563	ϵ Virginis	12. 56. 12.174
ν Piscium	1. 35. 11.195	ζ Geminorum ...	6. 56. 59.424	θ Virginis	13. 3. 44.247
σ Piscium	1. 39. 3.432	γ Canis Majoris..	6. 58. 19.738	Spica	13. 18. 52.296
β Arietis	1. 48. 0.727	51 Geminorum...	7. 6. 28.770	ζ Virginis	13. 28. 34.719
α Arietis	2. 0. 24.611	δ Geminorum ...	7. 12. 57.306	m Virginis.....	13. 35. 18.844
ξ^1 Ceti.....	2. 6. 38.408	β Canis Minoris..	7. 20. 38.533	τ Boötis	13. 41. 33.563
67 Ceti	2. 10. 59.876	Castor	7. 26. 56.497	η Boötis	13. 48. 58.230
ξ^2 Ceti.....	2. 21. 46.754	Procyon	7. 33. 1.109	τ Virginis	13. 55. 32.364
ν Ceti	2. 29. 34.633	Pollux	7. 37. 58.265	94 Virginis	13. 59. 56.570
δ Ceti	2. 33. 19.903	ξ Argûs	7. 44. 14.861	κ Virginis	14. 6. 29.706
γ^2 Ceti	2. 37. 4.961	6 Cancri.....	7. 56. 8.739	Arcturus	14. 10. 11.285
σ Arietis.....	2. 44. 52.081	15 Argûs	8. 2. 26.981	f Boötis	14. 20. 52.459
ϵ Arietis.....	2. 52. 21.081	β Cancri	8. 10. 0.367	ρ Boötis	14. 26. 39.478
α Ceti.....	2. 56. 0.412	d^1 Cancri	8. 16. 29.477	ϵ^2 Boötis.....	14. 39. 44.758
δ Arietis.....	3. 4. 46.086	η Cancri.....	8. 25. 46.042	α Libræ	14. 44. 14.470
τ^1 Arietis	3. 14. 18.005	γ Cancri.....	8. 36. 20.411	ξ^2 Libræ	14. 50. 15.460
σ Tauri	3. 18. 21.349	ϵ Hydræ.....	8. 40. 25.214	ψ Boötis	14. 59. 18.194
f Tauri	3. 24. 14.890	α Cancri.....	8. 51. 55.415	ι^1 Libræ	15. 5. 22.945
ϵ Eridani	3. 27. 16.603	κ Cancri.....	9. 1. 14.774	β Libræ	15. 10. 33.010
11 Tauri.....	3. 33. 36.336	83 Cancri	9. 12. 16.940	σ^2 Libræ	15. 16. 20.262
δ Eridani	3. 37. 30.996	α Hydræ	9. 21. 41.398	ζ^1 Libræ.....	15. 21. 29.407
η Tauri	3. 40. 21.148	ξ Leonis.....	9. 25. 28.588	α Coronæ	15. 29. 36.415
γ^1 Eridani	3. 52. 25.847	σ Leonis	9. 34. 44.690	α Serpentis	15. 38. 21.424
A^1 Tauri.....	3. 57. 36.109	ϵ Leonis	9. 39. 2.269	ϵ Serpentis	15. 44. 50.053
ω^1 Tauri	4. 2. 10.550	μ Leonis.....	9. 45. 56.170	γ Serpentis	15. 50. 54.622
σ^1 Eridani	4. 6. 0.437	π Leonis.....	9. 53. 52.267	β^1 Scorpii	15. 58. 27.629
γ Tauri	4. 12. 57.876	Regulus.....	10. 1. 58.798	δ Ophiuchi.....	16. 8. 3.422
ϵ Tauri	4. 21. 36.570	γ^1 Leonis	10. 13. 21.284	γ Hercules.....	16. 16. 37.590
Aldebaran	4. 29. 2.111	μ Hydræ	10. 20. 17.196	Antares	16. 22. 3.021
τ Tauri	4. 35. 2.592	ρ Leonis.....	10. 26. 29.475	λ Ophiuchi	16. 24. 51.671
μ Eridani	4. 39. 30.125	34 Sextantis	10. 36. 25.649	ζ Ophiuchi	16. 30. 33.074
ϵ Aurigæ	4. 49. 10.753	ι Leonis	10. 42. 56.905	ζ Herculis	16. 36. 45.735
ϵ Leporis	5. 0. 22.861	d Leonis.....	10. 54. 21.760	κ Ophiuchi	16. 51. 59.282
Rigel	5. 8. 46.253	χ Leonis.....	10. 58. 49.610	ϵ Herculis	16. 55. 41.902
β Tauri	5. 18. 42.382	δ Leonis.....	11. 7. 43.496	η Ophiuchi	17. 3. 29.781
δ Orionis	5. 25. 52.519	δ Crateris	11. 13. 20.488	α^1 Herculis.....	17. 9. 10.533

INTRODUCTION.

57

V. STANDARD MEAN RIGHT ASCENSIONS OF CLOCK STARS, &c.—concluded.

Star's Name.	Assumed Mean R.A. 1880 ^o .	Star's Name.	Assumed Mean R.A. 1880 ^o .	Star's Name.	Assumed Mean R.A. 1880 ^o .
θ Ophiuchi	^h 17. ^m 14. ^s 38 ^o 432	ϵ^1 Sagittarii	^h 19. ^m 33. ^s 50 ^o 880	ϵ Pegasi	^h 21. ^m 38. ^s 17 ^o 512
σ Ophiuchi	17. 20. 33 ^o 631	γ Aquilæ	19. 40. 33 ^o 255	δ Capricorni	21. 40. 24 ^o 968
α Ophiuchi	17. 29. 21 ^o 844	α Aquilæ	19. 44. 55 ^o 671	ι Pegasi	21. 47. 36 ^o 136
β Ophiuchi	17. 37. 32 ^o 661	β Aquilæ	19. 49. 25 ^o 072	α Aquarii	21. 59. 37 ^o 199
μ Herculis	17. 41. 45 ^o 700	c Sagittarii	19. 55. 16 ^o 657	ϵ Pegasi	22. 1. 25 ^o 506
δ Herculis	17. 50. 34 ^o 739	θ Aquilæ	20. 5. 6 ^o 752	θ Aquarii	22. 10. 30 ^o 035
ζ Ophiuchi	18. 1. 39 ^o 623	α^2 Capricorni	20. 11. 23 ^o 744	γ Aquarii	22. 15. 27 ^o 462
μ Sagittarii	18. 6. 35 ^o 189	β Capricorni	20. 14. 16 ^o 093	σ Aquarii	22. 24. 17 ^o 755
η Serpentis	18. 15. 6 ^o 023	ρ Capricorni	20. 22. 0 ^o 859	η Aquarii	22. 29. 11 ^o 366
λ Sagittarii	18. 20. 33 ^o 875	ϵ Delphini	20. 27. 28 ^o 774	ζ Pegasi	22. 35. 28 ^o 632
α Lyræ	18. 32. 52 ^o 501	α Delphini	20. 34. 3 ^o 844	μ Pegasi	22. 44. 12 ^o 730
z Aquilæ	18. 35. 42 ^o 171	ϵ Aquarii	20. 41. 10 ^o 755	λ Aquarii	22. 46. 21 ^o 205
β^1 Lyræ	18. 45. 38 ^o 958	μ Aquarii	20. 46. 10 ^o 808	Fomalhaut	22. 51. 1 ^o 005
ϵ Aquilæ	18. 54. 10 ^o 542	$3z$ Vulpeculæ	20. 49. 26 ^o 747	α Pegasi	22. 58. 47 ^o 025
ζ Aquilæ	18. 59. 53 ^o 667	θ Capricorni	20. 59. 11 ^o 986	γ Piscium	23. 10. 56 ^o 660
ψ Sagittarii	19. 8. 10 ^o 883	ζ Cygni	21. 7. 49 ^o 762	κ Piscium	23. 20. 46 ^o 842
ω Aquilæ	19. 12. 11 ^o 008	α Equulei	21. 9. 49 ^o 486	ι Piscium	23. 33. 46 ^o 670
δ Aquilæ	19. 19. 26 ^o 837	ι Capricorni	21. 15. 33 ^o 817	δ Sculptoris	23. 42. 40 ^o 401
α Vulpeculæ	19. 23. 42 ^o 712	β Aquarii	21. 25. 14 ^o 435	ω Piscium	23. 53. 8 ^o 938
μ Aquilæ	19. 28. 13 ^o 599	ξ Aquarii	21. 31. 21 ^o 774	z Ceti	23. 57. 35 ^o 469
h^2 Sagittarii	19. 29. 24 ^o 222				

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

h

GREENWICH
TEN-YEAR CATALOGUE OF STARS
FOR
1880,
FROM OBSERVATIONS
MADE AT THE
ROYAL OBSERVATORY, GREENWICH,
1877 to 1886.

GREENWICH TEN-YEAR CATALOGUE FOR 1880.

NOTE.

STAR'S NAME.

The "Star's Name" adopted in this Catalogue is taken from one of the following authorities, the order of preference being the order of mention of the authority below :—

1. Flamsteed's constellation No. and constellation, with Bayer's letter, taken from Baily's edition of Flamsteed, or from the British Association Catalogue. When the description in Baily's Flamsteed (B. F.) differs from that in the British Association Catalogue (B. A. C.) the difference is mentioned in the Notes.
2. The No. in Bessel's *Fundamenta Astronomiae* deduced from Bradley's observations, referred to as "Bradley."
3. The Hour and No. in Piazzi's Catalogue, edition 1814.
4. The No. in Groombridge's Catalogue.
5. The No. in Baily's edition of Flamsteed's Catalogue, referred to as "B. F."
6. The Hour and No. in Weisse's two Catalogues of the stars in Bessel's Zones, referred to as "W. B." and "W. B. (2)" respectively.
7. The No. in Lalande's Catalogue, published by the British Association, or in that edited by Fedorenko, referred to as "Lalande" and "Lalande (F.)" respectively.
8. The No. in Lacaille's Catalogue of Southern Stars, published by the British Association.
9. The No. in Oeltzen's two Catalogues of Argelander's Zone Observations, referred to as "Oeltz. Arg. (N.)" or "Oeltz. Arg. (S.)."
10. The No. in the First or Second Radcliffe Catalogues, referred to as "Radcliffe" and "Radcliffe (1860)" respectively.
11. The No. in Carrington's Red Hill Catalogue.
12. The Zone and No. in Argelander's Bonn "Durchmusterung" or Schönfeld's continuation of the "Durchmusterung" (Bonn Catalogue, Sections I., II., III. and IV., Bonn Observations, Vols. III., IV., V. and VIII.) referred to as "B. D."
13. The No. in the British Association Catalogue, referred to as "B. A. C."; in the Cape Catalogue (1880); in the Harvard Photometry, referred to as "H. P."; or in the Greenwich Catalogues.

MAGNITUDE.

The magnitude is taken from the Harvard Photometry for stars contained in that work, and for other stars (marked *) from the Bonn "Durchmusterung." For the few remaining stars (marked †) the authority for the magnitude is given in the Notes. The magnitude in the *Uranometria Nova Oxoniensis* is given in the Notes for all cases in which it differs by more than 0.2 magnitude from that in the Harvard Photometry.

The magnitudes of the components of double stars, taken from Struve's *Mensure Micrometricae* or other authority, are given in the Notes.

In the case of variable stars the limits of magnitude and the period given in the Notes are taken from Mr. Chandler's Catalogue in the *Astronomical Journal*, Nos. 179, 180.

PROPER MOTIONS.

The proper motions are taken from Professor Auwers' "Neue Reduction der Bradleyschen Beobachtungen," or his "Catalog der Fundamental Sterne," for stars contained in either of those works. The authority for other proper motions is given in the notes.

TEN-YEAR CATALOGUE OF STARS FOR 1880^o,
FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

No.	Star's Name.	Magnitude.	Mean R.A., 1880 ^o .	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880 ^o .	Secular Vari- ation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	Mean N.P.D., 1880 ^o .	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880 ^o .	Secular Vari- ation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1	10 Cassiopeiae	5.5	h m s o. 0. 12 ^h 774	83 ^m 15	4	2	+ 3 ^s 0746	+0 ^s 0775	+0 ^s 0020	26. 28. 19 ^h 45	81 ^m 98	7	3	-20 ^s 054	+0 ^s 009	+0 ^s 013	3211	8373
2	Bradley 3212	7.5*	o. 0. 23 ^h 168	82 ^m 56	13	...	+ 3 ^s 0735	+0 ^s 0180	+0 ^s 0278	61. 38. 26 ^h 11	83 ^m 59	14	...	-20 ^s 054	+0 ^s 009	+0 ^s 013	3212	8374
3	4 Ceti	6.4	o. 1. 35 ^h 273	86 ^m 82	3	...	+ 3 ^s 0718	+0 ^s 0003	+0 ^s 0006	93. 13. 2 ^h 00	86 ^m 82	3	...	-20 ^s 054	+0 ^s 012	-0 ^s 026	3213	1
4	Lalande 47304	7.3	o. 1. 39 ^h 065	86 ^m 38	3	...	+ 3 ^s 0683	-0 ^s 0108	...	113. 10. 33 ^h 56	86 ^m 38	3	...	-20 ^s 054	+0 ^s 012	...	...	...
5	21 Andromedæ	2.1	o. 2. 11 ^h 182	82 ^m 06	69	...	+ 3 ^s 0792	+0 ^s 0183	+0 ^s 0095	61. 34. 19 ^h 32	81 ^m 65	42	...	-20 ^s 053	+0 ^s 013	+0 ^s 0156	3215	4
6	Lalande 47332	6.4	o. 2. 25 ^h 782	85 ^m 17	3	...	+ 3 ^s 0676	-0 ^s 0078	...	108. 14. 41 ^h 72	85 ^m 17	3	...	-20 ^s 053	+0 ^s 013	...	...	...
7	Piazzi XXIII. 282 ...	7.4	o. 2. 34 ^h 157	86 ^m 10	4	...	+ 3 ^s 0715	+0 ^s 0005	...	92. 53. 26 ^h 21	86 ^m 10	4	...	-20 ^s 053	+0 ^s 014	...	...	5
8	W.B.(2) XXIII. 1389	6.2	o. 2. 40 ^h 598	84 ^m 82	3	...	+ 3 ^s 0795	+0 ^s 0159	...	65. 12. 24 ^h 07	84 ^m 82	3	...	-20 ^s 053	+0 ^s 014	...	...	...
9	Bradley 3217	6.5*	o. 2. 44 ^h 398	83 ^m 99	4	3	+ 3 ^s 1547	+0 ^s 1645	+0 ^s 0351	10. 57. 8 ^h 46	83 ^m 98	4	3	-20 ^s 053	+0 ^s 014	+0 ^s 044	3217	6
10	11 Cassiopeiae	2.4	o. 2. 46 ^h 904	81 ^m 08	5	5	+ 3 ^s 0988	+0 ^s 0516	+0 ^s 0658	31. 30. 43 ^h 84	80 ^m 72	6	5	-20 ^s 053	+0 ^s 014	+0 ^s 0190	3216	7
11	87 Pegasi	5.7	o. 2. 51 ^h 112	79 ^m 72	4	...	+ 3 ^s 0776	+0 ^s 0115	+0 ^s 0084	72. 27. 19 ^h 26	79 ^m 68	4	...	-20 ^s 053	+0 ^s 014	+0 ^s 022	3218	8
12	Piazzi XXIII. 285 ...	5.3	o. 3. 14 ^h 040	86 ^m 39	3	...	+ 3 ^s 0621	-0 ^s 0141	...	118. 39. 21 ^h 21	86 ^m 99	2	...	-20 ^s 052	+0 ^s 001	...	...	10
13	Piazzi XXIII. 286 ...	7.4*	o. 3. 46 ^h 411	81 ^m 26	4	...	+ 3 ^s 0711	+0 ^s 0004	...	93. 13. 43 ^h 71	81 ^m 26	4	...	-20 ^s 052	+0 ^s 016	...	...	12
14	34 Piscium	5.4	o. 3. 52 ^h 180	84 ^m 80	4	...	+ 3 ^s 0765	+0 ^s 0077	+0 ^s 0008	79. 31. 20 ^h 97	84 ^m 80	4	...	-20 ^s 051	+0 ^s 016	+0 ^s 003	3219	14
15	22 Andromedæ	4.9	o. 4. 5 ^h 288	86 ^m 07	4	3	+ 3 ^s 0965	+0 ^s 0329	+0 ^s 0015	44. 35. 44 ^h 57	86 ^m 14	4	(3)	-20 ^s 051	+0 ^s 017	+0 ^s 016	3220	16
16	W. B. 0. 46	5.9	o. 4. 34 ^h 059	83 ^m 84	3	...	+ 3 ^s 0660	-0 ^s 0049	...	103. 14. 48 ^h 14	83 ^m 84	3	...	-20 ^s 050	+0 ^s 018	...	...	...
17	6 Ceti	4.9	o. 5. 9 ^h 331	86 ^m 33	4	...	+ 3 ^s 0636	-0 ^s 0064	-0 ^s 0077	106. 7. 38 ^h 22	86 ^m 33	4	...	-20 ^s 049	+0 ^s 019	+0 ^s 261	3222	21
18	Piazzi 0. 6	5.5	o. 5. 28 ^h 722	83 ^m 59	5	...	+ 3 ^s 0550	-0 ^s 0138	...	118. 28. 6 ^h 16	83 ^m 59	5	...	-20 ^s 049	+0 ^s 019	...	...	23
19	Groombridge 9	6.3	o. 5. 42 ^h 878	86 ^m 01	4	3	+ 3 ^s 1087	+0 ^s 0355	...	42. 30. 56 ^h 24	85 ^m 78	4	(3)	-20 ^s 048	+0 ^s 020	...	...	...
20	W. B. (2) 0. 100-I ...	6.7	o. 5. 49 ^h 133	78 ^m 79	3	...	+ 3 ^s 0865	+0 ^s 0149	...	67. 11. 47 ^h 23	78 ^m 79	3	...	-20 ^s 048	+0 ^s 020	...	...	...
21	Groombridge 11 ...	7.0*	o. 5. 52 ^h 907	85 ^m 79	3	...	+ 3 ^s 1098	+0 ^s 0356	...	42. 29. 7 ^h 27	85 ^m 79	3	...	-20 ^s 048	+0 ^s 020	...	...	...
22	Lalande 72	5.2	o. 6. 2 ^h 822	84 ^m 82	3	...	+ 3 ^s 0604	-0 ^s 0077	...	108. 36. 19 ^h 21	84 ^m 82	3	...	-20 ^s 047	+0 ^s 020	...	...	...
23	Lalande 89	6.6	o. 6. 36 ^h 235	86 ^m 46	5	...	+ 3 ^s 1013	+0 ^s 0252	...	52. 58. 26 ^h 35	86 ^m 46	5	...	-20 ^s 046	+0 ^s 022	...	...	...
24	88 Pegasi	3.0	o. 7. 3 ^h 404	82 ^m 68	38	...	+ 3 ^s 0829	+0 ^s 0101	-0 ^s 0007	75. 29. 1 ^h 66	82 ^m 72	32	...	-20 ^s 045	+0 ^s 022	+0 ^s 013	1	26
25	W. B. (2) 0. 181 ...	6.0	o. 7. 48 ^h 685	85 ^m 08	3	...	+ 3 ^s 1014	+0 ^s 0217	...	57. 27. 39 ^h 28	85 ^m 08	3	...	-20 ^s 043	+0 ^s 024	...	...	...
26	Lalande 158	5.5	o. 8. 19 ^h 433	84 ^m 17	3	...	+ 3 ^s 0651	-0 ^s 0020	...	98. 26. 54 ^h 46	84 ^m 81	5	...	-20 ^s 041	+0 ^s 025	...	...	...
27	89 Pegasi	4.9	o. 8. 23 ^h 670	83 ^m 14	7	...	+ 3 ^s 0897	+0 ^s 0131	+0 ^s 0052	70. 27. 39 ^h 80	83 ^m 14	7	...	-20 ^s 041	+0 ^s 025	-0 ^s 007	3	32
28	W. B. (2) 0. 199 ...	6.0	o. 8. 43 ^h 322	80 ^m 09	3	...	+ 3 ^s 0924	+0 ^s 0144	...	68. 22. 58 ^h 35	80 ^m 09	3	...	-20 ^s 040	+0 ^s 026	...	...	...
29	B. F. 3310	5.4	o. 8. 46 ^h 932	85 ^m 12	4	...	+ 3 ^s 0630	-0 ^s 0030	...	100. 14. 12 ^h 12	85 ^m 12	4	...	-20 ^s 040	+0 ^s 026	...	...	35
30	35 Piscium (1st Star)	6.1	o. 8. 47 ^h 965	80 ^m 45	5	...	+ 3 ^s 0797	+0 ^s 0067	+0 ^s 0054	81. 50. 44 ^h 14	80 ^m 45	5	...	-20 ^s 040	+0 ^s 026	+0 ^s 021	5	36
31	35 Piscium (2nd Star)	...	o. 8. 48 ^h 414	80 ^m 45	5	...	+ 3 ^s 0797	+0 ^s 0067	+0 ^s 0054	81. 50. 54 ^h 42	80 ^m 45	5	...	-20 ^s 040	+0 ^s 026	+0 ^s 021	...	...
32	Piazzi 0. 19	5.9	o. 8. 57 ^h 345	86 ^m 28	5	...	+ 3 ^s 0985	+0 ^s 0176	...	63. 23. 0 ^h 61	86 ^m 28	5	...	-20 ^s 039	+0 ^s 026	...	...	...
33	Bradley 6	6.2	o. 9. 26 ^h 969	84 ^m 17	4	8	+ 3 ^s 2980	+0 ^s 1426	-0 ^s 019	13. 42. 58 ^h 42	82 ^m 20	9	10	-20 ^s 037	+0 ^s 029	+0 ^s 021	6	39
34	Groombridge 30 ...	6.0	o. 10. 3 ^h 766	86 ^m 42	3	1	+ 3 ^s 1269	+0 ^s 0312	...	47. 4. 17 ^h 21	86 ^m 47	3	(1)	-20 ^s 035	+0 ^s 029	...	...	...
35	36 Piscium	6.1	o. 10. 24 ^h 103	80 ^m 72	2	...	+ 3 ^s 0804	+0 ^s 0065	-0 ^s 0036	82. 25. 35 ^h 09	80 ^m 72	2	...	-20 ^s 034	+0 ^s 029	+0 ^s 009	7	44
36	Piazzi 0. 25	5.8	o. 10. 30 ^h 847	84 ^m 60	4	2	+ 3 ^s 1824	+0 ^s 0598	...	29. 8. 1 ^h 71	84 ^m 38	6	7	-20 ^s 033	+0 ^s 030	...	...	46
37	Groombridge 33 ...	5.8	o. 10. 49 ^h 497	86 ^m 76	3	...	+ 3 ^s 1407	+0 ^s 0362	...	42. 43. 9 ^h 89	86 ^m 76	3	...	-20 ^s 032	+0 ^s 030	...	...	51
38	24 Andromedæ	4.3	o. 10. 49 ^h 556	78 ^m 86	3	...	+ 3 ^s 1216	+0 ^s 0265	-0 ^s 0068	51. 59. 5 ^h 92	78 ^m 87	5	...	-20 ^s 032	+0 ^s 030	+0 ^s 007	9	52
39	Groombridge 34 ...	8.1*	o. 11. 32 ^h 218	84 ^m 66	6	...	+ 3 ^s 1359	+0 ^s 0318	+0 ^s 2551	46. 39. 27 ^h 34	84 ^m 66	6	...	-20 ^s 029	+0 ^s 032	-0 ^s 366	...	...
40	Piazzi 0. 33	7.0*	o. 11. 37 ^h 900	85 ^m 02	8	...	+ 3 ^s 0735	+0 ^s 0031	+0 ^s 0070	88. 58. 43 ^h 79	85 ^m 02	8	...	-20 ^s 028	+0 ^s 031	-0 ^s 025	...	57

17. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.6.
 30, 31. The magnitudes given in Struve's *Mensura Micrometrica* are 6.2 and 7.8.
 40. Authority for Proper Motion: Bonn Observations, Vol. VII.

24. The magnitude given in the *Uranometria Nova Oxoniensis* is 2.5.
 39. Authority for Proper Motion: Bonn Observations, Vol. VII.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
41	W.B. 0. 178	6.6	h m s 0. 11. 49.418	84.77	5	...	+ 3.0550	-0.0049	...	104. 7. 21.64	84.77	5	...	-20.028	+0.032	...	...	...
42	25 Andromedæ.....	4.7	0. 12. 3.705	80.31	3	...	+ 3.1236	+0.0251	-0.0051	53. 52. 48.63	81.93	10	...	-20.027	+0.033	+0.047	12	58
43	Piazzi 0. 38	5.8	0. 12. 22.395	85.91	4	...	+ 3.1154	+0.0209	...	59. 8. 57.90	85.91	4	...	-20.025	+0.033	...	...	...
44	26 Andromedæ	5.9	0. 12. 22.812	86.84	3	...	+ 3.1399	+0.0317	+0.0022	46. 52. 31.69	86.61	4	...	-20.025	+0.033	-0.016	13	60
45	8 Ceti	3.6	0. 13. 18.797	82.21	22	...	+ 3.0593	-0.0023	-0.0032	99. 29. 22.06	83.20	20	...	-20.020	+0.035	+0.032	14	62
46	40 Piscium	7.0*	0. 13. 44.191	81.10	3	...	+ 3.0946	+0.0111	-0.0025	74. 24. 55.16	80.67	9	...	-20.018	+0.036	+0.003	15	63
47	W.B. (2) 0. 331.....	5.6	0. 14. 8.341	84.77	4	...	+ 3.1204	+0.0206	...	59. 43. 50.60	84.77	4	...	-20.016	+0.037	...	...	...
48	Groombridge 48 ...	7.3*	0. 14. 12.264	81.63	3	3	+ 3.2230	+0.0622	...	28. 47. 11.92	83.22	5	7	-20.016	+0.038	...	...	65
49	W.B. (2) 0. 339.....	7.9*	0. 14. 14.844	84.77	3	...	+ 3.1209	+0.0207	...	59. 41. 36.39	84.77	3	...	-20.016	+0.037	...	...	...
50	41 Piscium	5.6	0. 14. 25.384	80.69	17	...	+ 3.0834	+0.0067	-0.0013	82. 28. 35.47	80.69	17	...	-20.015	+0.037	-0.019	16	66
51	Lalande 367	6.0	0. 14. 29.115	80.37	3	...	+ 3.1256	+0.0222	...	57. 45. 16.12	80.37	3	...	-20.014	+0.037	...	...	...
52	27 Andromedæ.....	5.3	0. 14. 48.238	83.19	3	...	+ 3.1380	+0.0264	+0.0038	52. 41. 46.56	82.47	7	...	-20.012	+0.038	+0.024	17	67
53	Sculptoris	5.5	0. 15. 29.237	86.53	3	...	+ 3.0209	-0.0136	...	119. 38. 44.75	86.53	3	...	-20.009	+0.038	...	...	72
54	12 Cassiopeiæ	5.4	0. 18. 10.875	83.57	6	5	+ 3.2646	+0.0637	+0.0008	28. 50. 3.09	82.70	21	8	-19.991	+0.046	+0.006	21	80
55	43 Piscium	7.0*	0. 18. 25.487	79.75	3	...	+ 3.0984	+0.0103	-0.0002	76. 20. 59.66	79.75	3	...	-19.989	+0.045	+0.005	22	82
56	Bradley 23.....	5.8	0. 18. 37.305	84.75	4	3	+ 3.2131	+0.0451	-0.002	37. 37. 6.00	84.78	4	3	-19.988	+0.047	+0.020	23	83
57	44 Piscium	5.8	0. 19. 15.067	83.32	30	...	+ 3.0748	+0.0037	-0.0028	88. 43. 30.37	84.19	30	...	-19.984	+0.046	+0.011	25	87
58	Bradley 24.....	7.0*	0. 19. 27.863	83.51	3	5	+ 3.6776	+0.2242	+0.0099	10. 36. 45.28	84.08	5	6	-19.982	+0.054	+0.010	24	86
59	45 Piscium	7.3*	0. 19. 30.740	79.31	12	...	+ 3.0863	+0.0067	+0.0002	82. 58. 21.65	79.31	12	...	-19.982	+0.047	+0.049	26	89
60	B. D. + 20° No. 39.	9.2*	0. 19. 46.006	86.59	4	...	+ 3.1160	+0.0146	...	69. 12. 45.49	86.59	4	...	-19.980	+0.048	...	...	...
61	10 Ceti	6.2*	0. 20. 28.144	84.56	6	...	+ 3.0708	+0.0027	+0.0038	90. 42. 51.78	84.66	8	...	-19.974	+0.049	-0.012	29	95
62	Piazzi 0. 74	5.2	0. 21. 47.027	86.05	5	...	+ 3.1936	+0.0338	...	46. 16. 9.82	86.05	5	...	-19.964	+0.053	...	...	100
63	Piazzi 0. 79	4.8	0. 21. 58.504	85.57	4	...	+ 2.9871	-0.0155	...	123. 40. 15.18	85.57	4	...	-19.962	+0.050	...	...	103
64	Lalande 628	6.4	0. 22. 20.023	83.53	3	...	+ 3.0224	-0.0079	...	110. 59. 45.27	83.53	3	...	-19.959	+0.052	...	...	...
65	Bradley 34.....	6.5*	0. 23. 14.614	82.85	5	9	+ 3.6301	+0.1699	+0.10	13. 38. 34.98	82.71	11	13	-19.951	+0.062	+0.038	34	105
66	Lalande 655	6.0	0. 23. 38.690	78.73	3	...	+ 3.3041	+0.0608	...	30. 40. 8.79	78.73	3	...	-19.948	+0.058	...	...	...
67	Piazzi 0. 88	6.1	0. 23. 46.962	83.71	3	...	+ 3.0338	-0.0048	...	105. 31. 37.34	83.71	3	...	-19.946	+0.054	...	...	111
68	28 Andromedæ	5.3	0. 23. 47.582	80.26	4	...	+ 3.1494	+0.0206	+0.0016	60. 54. 36.07	82.21	10	...	-19.946	+0.056	+0.057	35	109
69	12 Ceti	6.2	0. 23. 54.843	83.17	28	...	+ 3.0610	+0.0009	-0.0003	94. 37. 14.40	83.91	26	...	-19.945	+0.055	+0.009	38	112
70	Piazzi 0. 91.....	5.2	0. 24. 22.612	83.63	5	...	+ 3.0078	-0.0096	...	114. 27. 6.45	83.32	6	...	-19.941	+0.055	...	...	115
71	14 Cassiopeiæ	4.8	0. 25. 9.425	83.33	6	4	+ 3.2729	+0.0492	+0.0025	36. 8. 25.49	83.39	5	4	-19.934	+0.061	+0.025	40	121
72	Bradley 42.....	6.2*	0. 26. 10.709	81.83	4	3	+ 3.4981	+0.1092	+0.002	19. 40. 51.42	82.08	3	3	-19.924	+0.067	+0.004	42	125
73	15 Cassiopeiæ	4.2	0. 26. 11.220	79.59	5	...	+ 3.3622	+0.0703	+0.0004	27. 43. 50.59	79.20	19	...	-19.924	+0.065	+0.019	43	126
74	51 Piscium	5.7	0. 26. 12.298	78.97	7	...	+ 3.0891	+0.0067	+0.0008	83. 42. 27.30	79.35	8	...	-19.923	+0.060	-0.022	44	129
75	52 Piscium	5.5	0. 26. 18.072	80.50	6	...	+ 3.1269	+0.0143	+0.0081	70. 22. 1.01	80.76	11	...	-19.922	+0.061	+0.040	45	130
76	Piazzi 0. 103	7.0*	0. 26. 29.373	80.54	3	...	+ 3.1529	+0.0197	...	62. 22. 57.54	81.08	6	...	-19.920	+0.062	...	...	...
77	16 Cassiopeiæ	6.5*	0. 27. 26.240	83.89	6	...	+ 3.4326	+0.0859	-0.0015	23. 54. 42.41	82.89	12	4	-19.910	+0.069	+0.007	46	131
78	Groombridge 96	7.1*	0. 28. 48.786	85.44	8	2	+ 3.2992	+0.0495	...	36. 27. 29.80	85.44	6	2	-19.896	+0.069	...	...	...
79	Groombridge 95	8.3*	0. 28. 50.466	84.98	4	...	+ 3.3589	+0.0634	...	30. 21. 56.03	84.98	4	...	-19.896	+0.070	...	...	...
80	Bradley 49.....	5.0	0. 29. 27.929	85.42	8	3	+ 3.3040	+0.0495	+0.0010	36. 29. 34.09	85.34	7	3	-19.888	+0.070	+0.020	49	146

42. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.4.
80. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.

1899GOAMM 1886	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion. 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
81	Groombridge 99.....	5.6	h m s 0.29.38.619	85.13	5	...	+ 3.3671	+0.0638	...	30.20.5.73	85.37	5	3	-19.886	+0.072	...	...	148
82	B. F. 40.....	6.5*	0.29.41.915	79.64	6	...	+ 3.1108	+0.0103	...	77.26.54.93	79.59	5	...	-19.886	+0.067	...	...	149
83	Piazzi 0. 124	5.4	0.30.15.305	84.41	3	...	+ 3.2413	+0.0351	...	46.10.25.21	84.41	3	...	-19.879	+0.071	...	...	152
84	17 Cassiopeiae	3.7	0.30.17.436	84.86	4	...	+ 3.3080	+0.0492	+0.0017	36.45.49.95	84.86	4	...	-19.879	+0.072	+0.012	52	153
85	29 Andromedae	4.4	0.30.28.391	81.35	4	...	+ 3.1876	+0.0243	-0.0004	56.56.29.46	83.35	10	...	-19.877	+0.070	0.000	53	155
86	53 Piscium	5.8	0.30.32.275	80.07	4	...	+ 3.1185	+0.0115	-0.0025	75.25.44.70	80.12	3	...	-19.876	+0.069	+0.017	54	156
87	Bradley 48.....	6.3	0.30.46.296	82.62	3	5	+ 4.3187	+0.3768	-0.0505	8.10.9.43	82.67	13	10	-19.874	+0.093	-0.084	48	154
88	Piazzi 0. 127	6.5	0.30.48.186	79.39	3	...	+ 3.1497	+0.0170	...	66.38.43.90	79.39	3	...	-19.873	+0.070	...	...	...
89	Piazzi 0. 130	5.6	0.31.10.747	82.03	5	...	+ 2.9861	-0.0096	+0.1061	115.25.41.51	82.03	5	...	-19.869	+0.068	+0.008	...	160
90	Piazzi 0. 131	6.8*	0.31.19.826	86.00	5	...	+ 3.0802	+0.0049	...	87.31.24.75	86.10	7	...	-19.867	+0.070	...	...	161
91	15 Ceti	6.9	0.31.56.387	78.27	5	...	+ 3.0685	+0.0031	-0.0056	91.9.49.20	78.27	5	...	-19.860	+0.071	+0.025	55	163
92	30 Andromedae	4.6	0.32.12.958	82.77	51	...	+ 3.1747	+0.0209	-0.0184	61.20.24.55	81.45	25	...	-19.856	+0.073	+0.251	56	164
93	31 Andromedae	3.4	0.32.54.715	78.88	3	...	+ 3.1837	+0.0222	+0.0100	59.47.45.38	80.84	5	...	-19.848	+0.075	+0.080	57	166
94	Piazzi 0. 137	7.5*	0.32.56.926	83.00	8	...	+ 3.0805	+0.0050	+0.0510	87.32.10.67	83.00	8	...	-19.847	+0.073	-0.287	...	167
95	18 Cassiopeiae	Var.	0.33.42.279	82.63	20	13	+ 3.3614	+0.0555	+0.0035	34.7.16.26	82.44	20	11	-19.838	+0.080	+0.038	59	169
96	Groombridge 120 ...	5.9	0.34.55.172	82.67	4	4	+ 3.5173	+0.0872	...	24.30.39.27	82.45	10	11	-19.822	+0.086	...	...	175
97	Piazzi 0. 148	6.0	0.35.14.237	81.58	4	...	+ 3.1633	+0.0177	...	66.1.44.66	82.63	5	...	-19.818	+0.079	...	...	178
98	Andromedae Nova...	Var.	0.36.9.393	85.76	7	...	+ 3.2525	+0.0321	...	49.23.25.19	85.74	6	...	-19.805	+0.083	...	...	...
99	B. D. + 60°. No. 94...	9.0*	0.37.29.634	86.84	4	...	+ 3.4672	+0.0710	...	28.52.37.82	86.84	4	...	-19.786	+0.091	...	...	...
100	16 Ceti	2.1	0.37.33.901	82.38	42	...	+ 2.9987	-0.0054	+0.0147	108.38.44.32	83.22	25	...	-19.785	+0.080	-0.034	70	196
101	B. D. + 61°. No. 162	9.1*	0.37.38.939	86.50	1	2	+ 3.4707	+0.0715	...	28.45.24.96	86.55	1	2	-19.784	+0.091	...	...	...
102	Oeltz. Arg. (N.) 670	9.0*	0.37.39.257	86.83	4	...	+ 3.4695	+0.0712	...	28.50.43.60	86.84	4	...	-19.783	+0.091	...	...	...
103	B. D. + 61°. No. 164	9.2*	0.37.44.863	86.50	1	2	+ 3.4712	+0.0714	...	28.47.30.49	86.55	1	2	-19.783	+0.092	...	...	...
104	21 Cassiopeiae	5.6	0.37.44.979	81.10	3	4	+ 3.8538	+0.1622	-0.0087	15.40.5.31	82.91	11	4	-19.783	+0.101	+0.036	66	194
105	17 Ceti	4.9	0.38.8.173	83.72	3	...	+ 3.0282	-0.0017	-0.0027	101.15.48.56	83.72	3	...	-19.777	+0.082	+0.113	71	200
106	W. B. (2) 0. 969 ...	9.0*	0.38.13.498	85.85	3	...	+ 3.2629	+0.0324	...	49.20.36.76	85.85	3	...	-19.776	+0.088	...	...	...
107	Piazzi 0. 162	5.4	0.38.27.327	85.02	4	2	+ 3.3862	+0.0538	...	35.26.8.44	84.85	4	2	-19.772	+0.091	...	...	201
108	Piazzi 0. 166	5.2	0.38.48.056	86.22	3	...	+ 2.9783	-0.0075	...	112.39.57.75	86.22	3	...	-19.768	+0.082	...	...	203
109	B. D. + 40°. No. 159	9.5*	0.39.32.299	85.88	1	...	+ 3.2694	+0.0325	...	49.20.51.27	85.88	1	...	-19.756	+0.090	...	...	...
110	Groombridge 140 ...	5.9	0.39.32.492	86.46	3	...	+ 3.2956	+0.0368	...	45.47.41.57	86.46	3	...	-19.756	+0.091	...	...	...
111	Lalande 1245.....	5.6	0.40.13.903	83.83	3	...	+ 2.9723	-0.0076	...	113.10.42.44	83.83	3	...	-19.746	+0.084	...	...	...
112	58 Piscium	5.7	0.40.45.945	80.78	7	...	+ 3.1196	+0.0102	+0.0017	78.40.52.13	80.78	7	...	-19.738	+0.089	+0.013	76	213
113	59 Piscium	6.1	0.40.53.223	80.72	4	...	+ 3.1536	+0.0147	+0.0061	71.4.39.05	81.20	7	...	-19.736	+0.090	-0.010	77	214
114	34 Andromedae	4.4	0.40.58.807	82.39	4	...	+ 3.1763	+0.0178	-0.0091	66.23.9.98	80.23	11	...	-19.734	+0.091	+0.072	78	215
115	Oeltz. Arg. (N.) 746-7	8.1*	0.41.17.303	86.72	4	2	+ 3.5032	+0.0717	...	29.4.16.52	86.76	4	2	-19.729	+0.100	...	...	...
116	24 Cassiop. (1st Star) η	3.6	0.41.50.898	81.46	8	5	+ 3.4487	+0.0608	+0.1346	32.49.16.65	81.66	8	5	-19.721	+0.100	+0.481	79	218
117	24 Cassiop. (2nd Star) η	3.6	0.41.51.169	82.84	3	2	+ 3.4486	+0.0607	+0.1346	32.49.21.53	82.75	3	2	-19.721	+0.100	+0.481	...	218
118	25 Cassiopeiae	5.0	0.42.2.353	82.86	2	...	+ 3.3662	+0.0463	+0.0022	39.41.12.58	82.86	2	...	-19.718	+0.098	+0.015	83	219
119	Lalande 1304.....	5.5	0.42.4.727	86.53	3	...	+ 2.9718	-0.0070	...	112.22.39.67	86.53	3	...	-19.718	+0.088	...	...	...
120	63 Piscium	4.6	0.42.27.394	82.46	48	...	+ 3.1022	+0.0079	+0.0035	83.4.6.44	82.35	39	...	-19.711	+0.092	+0.037	85	222

89. Authority for Proper Motion : Bonn Observations, Vol. VII.

94. Authority for Proper Motion : Bonn Observations, Vol. VII.

98. The maximum magnitude is 7.0.

107. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.7.116, 117. The magnitudes given in Struve's *Mensurae Micrometricae* are 4.0 and 7.6.92. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.3.

95. The limits of magnitude are 2.2 and 2.8; the period irregular.

100. The magnitude given in the *Uranometria Nova Oxoniensis* is 2.4.112. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.120. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.3.

{vi}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
121	35 Andromedæ.....	4.4	0.43.11.957	81.46	4	...	+ 3.2857	+0.0327	-0.0009	49.34.30.02	81.07	12	...	-19.699	+0.098	+0.010	87	227
122	W. B. 0. 726	8.7*	0.43.22.055	84.85	2	...	+ 3.0911	+0.0065	...	85.43.37.44	84.85	2	...	-19.696	+0.093	...	...	...
123	Piazzi 0. 198	5.8	0.43.23.941	83.80	3	...	+ 3.0086	-0.0028	...	104.12.46.30	83.80	3	...	-19.696	+0.091	...	...	230
124	Bradley 82	5.4	0.43.27.412	85.20	2	4	+ 3.5797	+0.0826	-0.002	26.24.22.71	85.06	2	8	-19.695	+0.107	+0.018	82	228
125	B. D. + 3° No. 110.	9.0*	0.43.33.038	86.14	3	...	+ 3.0883	+0.0062	...	86.22.11.09	86.14	3	...	-19.693	+0.094	...	...	...
126	Bradley 74	5.5	0.43.44.511	83.98	3	6	+ 5.1548	+0.5705	+0.0282	6.56.40.86	83.32	12	8	-19.690	+0.151	+0.020	74	225
127	Lalande 1351.....	6.2*	0.44.6.743	86.66	4	3	+ 3.5366	+0.0734	...	28.50.54.09	86.76	4	2	-19.683	+0.107	...	...	...
128	W. B. 0. 751	8.8*	0.44.48.259	85.48	3	...	+ 3.0950	+0.0070	...	85.0.41.29	85.48	3	...	-19.672	+0.096	...	...	...
129	W. B. 0. 770	9.0*	0.45.26.593	79.15	3	...	+ 3.0878	+0.0062	...	86.37.50.74	79.15	3	...	-19.661	+0.097	...	...	...
130	W. B. 0. 775	8.0*	0.45.44.811	78.90	14	...	+ 3.0881	+0.0062	...	86.35.34.13	78.90	16	...	-19.656	+0.098	...	...	...
131	Bradley 90	4.9	0.45.55.033	80.77	3	2	+ 3.5421	+0.0717	-0.0104	29.32.3.77	81.58	8	7	-19.653	+0.111	-0.13	90	239
132	Lalande 1477.....	5.7	0.46.47.086	86.20	3	...	+ 2.9478	-0.0078	...	114.39.35.82	86.20	3	...	-19.638	+0.096	...	...	...
133	20 Ceti	5.0	0.46.52.481	83.26	30	...	+ 3.0638	+0.0036	-0.0022	91.47.46.61	83.63	29	...	-19.636	+0.099	+0.009	93	242
134	W. B. 0. 800	8.8*	0.47.7.591	84.86	3	...	+ 3.0931	+0.0068	...	85.38.49.12	84.86	3	...	-19.632	+0.101	...	...	...
135	Piazzi 0. 216	7.3*	0.47.8.803	79.37	9	...	+ 3.0887	+0.0063	...	86.33.53.64	79.42	10	...	-19.632	+0.101	...	...	243
136	66 Piscium	5.8	0.48.14.117	79.56	3	...	+ 3.1659	+0.0149	-0.0011	71.27.46.56	79.71	7	...	-19.612	+0.105	+0.007	96	247
137	36 Andromedæ	5.4	0.48.32.646	80.58	3	...	+ 3.1915	+0.0179	+0.0090	67.1.19.20	80.22	7	...	-19.605	+0.106	+0.030	97	250
138	27 Cassiopeiæ	2.3	0.49.28.538	80.47	6	5	+ 3.5697	+0.0715	+0.0013	29.56.0.89	80.51	15	5	-19.588	+0.120	+0.015	99	253
139	67 Piscium	6.0	0.49.31.346	79.10	3	...	+ 3.2155	+0.0205	+0.0022	63.26.30.32	79.10	3	...	-19.588	+0.109	-0.015	100	256
140	Groombridge 184 ...	5.5	0.49.33.804	86.29	7	1	+ 3.5635	+0.0703	...	30.17.14.63	86.29	7	1	-19.586	+0.120	...	..	255
141	Piazzi 0. 230	6.0	0.49.38.509	83.73	5	...	+ 3.0319	+0.0007	...	97.59.47.06	83.73	4	...	-19.585	+0.103	...	...	257
142	Lalande 1562.....	7.0*	0.50.2.524	86.59	2	2	+ 3.5901	+0.0741	...	29.13.39.51	86.65	3	2	-19.578	+0.122	...	...	...
143	Groombr. 187 (1st Star)	9.4*	0.50.2.749	86.32	5	1	+ 3.5677	+0.0704	...	30.18.59.30	86.32	5	3	-19.577	+0.121	...	...	...
144	Groombr. 187 (2nd Star)	8.0*	0.50.3.895	86.32	5	3	+ 3.5680	+0.0704	...	30.18.40.05	86.32	5	4	-19.577	+0.121	...	...	...
145	37 Andromedæ.....	3.9	0.50.5.709	82.86	28	...	+ 3.2976	+0.0305	+0.0005	52.9.6.98	82.72	28	...	-19.577	+0.113	-0.049	101	259
146	38 Andromedæ	4.7	0.50.48.024	80.23	3	...	+ 3.1957	+0.0179	-0.0029	67.13.50.40	80.15	11	...	-19.563	+0.111	+0.042	104	264
147	Groombridge 192 ...	6.0	0.50.56.107	81.72	3	3	+ 3.7250	+0.0964	...	24.17.49.56	81.66	3	3	-19.561	+0.128	...	...	261
148	68 Piscium	5.6	0.51.20.626	80.98	3	...	+ 3.2325	+0.0220	-0.0026	61.39.24.85	80.98	3	...	-19.553	+0.113	+0.027	105	267
149	Piazzi 0. 243	6.4	0.51.36.779	80.54	6	...	+ 3.1413	+0.0118	...	76.57.12.12	80.39	8	...	-19.548	+0.111	...	...	269
150	2 Ursæ Minoris	4.5	0.52.35.939	84.72	6	8	+ 7.0353	+1.3595	+0.0679	4.23.15.49	85.19	16	11	-19.529	+0.242	+0.010	92	262
151	Lalande 1691.....	7.2	0.52.48.723	81.75	3	...	+ 2.9595	-0.0051	...	110.16.52.62	81.75	3	...	-19.524	+0.107	...	...	...
152	Sculptoris	4.1	0.52.49.320	83.76	3	...	+ 2.8959	-0.0100	...	120.0.22.95	83.76	3	...	-19.524	+0.105	...	...	272
153	W. B. (2) 0. 1327 ...	5.7	0.53.16.029	85.96	5	...	+ 3.3704	+0.0383	...	45.56.9.65	85.96	5	...	-19.515	+0.122	...	...	...
154	Groombridge 205 ...	5.7	0.53.16.205	85.97	4	...	+ 3.3705	+0.0383	...	45.56.1.91	85.96	5	...	-19.515	+0.122	...	...	...
155	Bradley 107	7.0*	0.53.36.449	85.92	3	...	+ 3.1040	+0.0079	-0.0012	84.9.52.55	86.22	7	...	-19.508	+0.113	0.00	107	274
156	70 Piscium	8.0*	0.55.52.510	81.04	10	...	+ 3.1136	+0.0087	-0.0020	82.42.25.20	79.80	7	...	-19.461	+0.118	-0.07	110	281
157	39 Andromedæ	5.9	0.56.9.849	86.06	4	...	+ 3.3513	+0.0343	-0.0039	49.18.1.56	86.06	4	...	-19.455	+0.127	+0.008	108	283
158	Bradley 95	7.5*	0.56.12.221	83.79	6	3	+ 8.3874	+2.1178	+0.0540	3.29.40.54	83.62	13	4	-19.454	+0.305	+0.021	95	273
159	Groombridge 215 ...	6.8*	0.56.14.056	82.45	3	4	+ 4.1848	+0.1756	...	16.16.22.17	83.14	3	7	-19.454	+0.157	...	...	280
160	69 Piscium	5.6	0.56.14.893	79.50	3	...	+ 3.2687	+0.0246	+0.0003	58.50.26.24	80.30	11	...	-19.453	+0.124	+0.020	111	285

145. Authority for Proper Motion in R.A. : Mem. R. A. S., Vol. XIX.

148. The designation in B. F. is h^1 , but there is no h^2 . In the B. A. C. the star is h Psoium as above.153, 154. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 7.0 and 6.0

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anvers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
161	B. D. + 7° No. 152...	9.2*	h m s 0. 56. 19.861	81.48	3	...	+ 3.1133	+0.0087	...	82. 49. 10.15	81.48	3	...	-19.452	+0.119	...	...	...
162	71 Piscium	4.5	0. 56. 42.930	82.57	58	...	+ 3.1139	+0.0087	-0.0070	82. 45. 23.30	82.89	47	...	-19.443	+0.120	-0.039	113	288
163	Groombridge 225 ...	5.9	0. 56. 55.432	83.67	6	3	+ 3.6636	+0.0769	...	29. 3. 50.32	83.87	6	5	-19.438	+0.140	...	...	...
164	25 Ceti	5.9	0. 56. 58.375	80.29	4	...	+ 3.0408	+0.0023	-0.0091	95. 28. 43.55	81.13	6	...	-19.438	+0.117	+0.090	115	291
165	Oeltz.Arg. (N.) 1035	6.4	0. 56. 59.567	82.34	4	1	+ 3.4916	+0.0518	...	38. 8. 27.31	82.23	4	1	-19.437	+0.134	...	...	...
166	B. D. + 59° No. 176	9.1*	0. 57. 14.331	86.64	4	3	+ 3.6382	+0.0726	...	30. 18. 30.97	86.66	4	4	-19.431	+0.140	...	...	...
167	26 Ceti	6.0	0. 57. 38.549	83.85	4	...	+ 3.0765	+0.0054	+0.0064	89. 16. 36.59	83.85	5	...	-19.424	+0.120	+0.033	116	295
168	73 Piscium	6.4	0. 58. 39.536	86.39	4	...	+ 3.1020	+0.0077	+0.0008	84. 59. 14.95	86.39	4	...	-19.401	+0.123	+0.004	120	303
169	B. D. + 59° No. 180	9.0*	0. 58. 43.921	86.57	3	4	+ 3.6515	+0.0728	...	30. 19. 57.00	86.57	3	6	-19.399	+0.143	...	...	...
170	72 Piscium	5.7	0. 58. 45.299	80.20	3	...	+ 3.1587	+0.0128	+0.0013	75. 41. 59.17	80.20	3	...	-19.399	+0.125	-0.046	119	305
171	Bradley 109	6.4*	0. 59. 1.302	84.06	3	3	+ 4.8864	+0.3399	-0.035	10. 37. 45.96	82.29	9	4	-19.393	+0.190	+0.056	109	300
172	B. D. + 59° No. 181	7.2*	0. 59. 31.013	86.79	4	1	+ 3.6486	+0.0715	...	30. 47. 2.83	86.82	4	1	-19.382	+0.145	...	...	...
173	76 Piscium	7.2*	0. 59. 35.327	80.50	3	...	+ 3.2833	+0.0252	-0.0002	58. 27. 39.95	79.42	5	...	-19.380	+0.131	+0.006	123	310
174	77 Piscium	6.1	0. 59. 36.714	86.38	6	...	+ 3.0980	+0.0073	-0.0008	85. 43. 52.14	86.49	8	...	-19.380	+0.125	+0.119	124	311
175	Bradley 125	6.1	0. 59. 38.886	86.38	6	...	+ 3.0980	+0.0073	-0.0007	85. 43. 47.96	86.44	7	...	-19.379	+0.125	+0.10	125	312
176	28 Ceti	5.4	I. 0. 3.940	84.05	3	...	+ 3.0082	+0.0001	-0.0005	100. 28. 58.33	84.05	3	...	-19.370	+0.122	-0.020	128	315
177	75 Piscium	6.1	I. 0. 14.874	79.91	12	...	+ 3.1481	+0.0117	+0.0003	77. 41. 16.44	79.91	12	...	-19.365	+0.128	-0.036	127	316
178	30 Cassiopeiæ	5.2	I. 0. 17.736	82.20	5	2	+ 3.5568	+0.0578	+0.3860	35. 40. 8.15	82.25	5	1	-19.364	+0.143	+1.580	118	314
179	41 Andromedæ	5.3	I. 1. 7.701	80.80	3	...	+ 3.4044	+0.0381	+0.0137	46. 41. 51.58	80.80	3	...	-19.345	+0.139	+0.065	129	318
180	Groombridge 244 ...	5.7	I. 1. 12.923	85.65	3	3	+ 3.6288	+0.0669	...	32. 22. 39.63	85.42	4	3	-19.343	+0.148	...	...	...
181	78 Piscium	6.2	I. 1. 23.087	83.91	3	...	+ 3.2881	+0.0252	+0.0122	58. 37. 42.69	83.91	3	...	-19.339	+0.135	+0.033	131	321
182	Bradley 117	5.6	I. 1. 57.320	84.54	3	2	+ 4.9149	+0.3312	+0.0299	10. 57. 56.22	84.54	3	2	-19.326	+0.200	+0.015	117	320
183	Lalande 1966.....	7.8*	I. 2. 1.169	85.17	5	4	+ 3.7145	+0.0783	+0.0842	29. 5. 46.71	84.99	6	4	-19.325	+0.153	-0.085	...	...
184	80 Piscium	5.7	I. 2. 11.303	85.33	12	...	+ 3.1037	+0.0078	-0.0195	84. 59. 8.11	85.56	14	...	-19.321	+0.130	+0.174	136	328
185	42 Andromedæ.....	4.3	I. 2. 32.450	79.88	2	...	+ 3.4533	+0.0431	-0.0034	43. 23. 54.85	80.87	3	...	-19.312	+0.144	+0.012	134	330
186	31 Cassiopeiæ	5.3	I. 2. 33.321	84.36	2	2	+ 3.9704	+0.1185	+0.0043	21. 51. 38.89	84.14	3	2	-19.312	+0.164	+0.023	130	327
187	Lalande 1996.....	7.8*	I. 2. 48.561	85.12	5	1	+ 3.7992	+0.0901	...	26. 27. 52.89	85.10	5	1	-19.306	+0.158	...	...	...
188	43 Andromedæ.....	5.2	I. 3. 0.930	82.63	91	...	+ 3.3263	+0.0286	+0.0144	55. 0. 57.99	82.21	52	...	-19.301	+0.140	+0.084	140	334
189	Bradley 138	5.4	I. 3. 40.973	85.31	5	2	+ 3.8099	+0.0905	-0.0034	26. 26. 10.28	85.20	6	2	-19.285	+0.161	0.00	138	335
190	33 Cassiopeiæ	4.4	I. 3. 48.256	85.10	3	2	+ 3.5876	+0.0589	+0.0233	35. 29. 20.56	84.91	3	2	-19.282	+0.152	+0.024	142	339
191	Piazzi 0. 310	6.1	I. 3. 48.917	78.71	3	...	+ 3.2422	+0.0200	...	65. 10. 41.14	78.71	3	...	-19.282	+0.138	...	...	...
192	Piazzi 0. 311	6.4*	I. 3. 49.740	81.23	6	...	+ 3.1710	+0.0135	...	74. 57. 54.56	81.23	6	...	-19.281	+0.136	...	...	341
193	32 Cassiopeiæ.....	5.5	I. 3. 53.228	84.88	3	2	+ 3.8394	+0.0948	-0.0001	25. 37. 11.82	84.81	3	3	-19.280	+0.162	+0.019	139	338
194	33 Ceti	6.3	I. 4. 23.072	85.08	7	...	+ 3.0840	+0.0063	-0.0017	88. 11. 36.36	85.19	8	...	-19.268	+0.133	+0.004	148	344
195	84 Piscium	4.9	I. 5. 0.275	83.87	3	...	+ 3.2114	+0.0170	-0.0006	69. 36. 14.20	83.87	3	...	-19.253	+0.139	-0.012	150	348
196	83 Piscium	4.7	I. 5. 3.189	82.54	3	...	+ 3.2837	+0.0237	+0.0045	60. 32. 52.56	82.54	3	...	-19.252	+0.142	+0.012	149	349
197	B. D. + 58° No. 199	8.8*	I. 7. 4.975	86.75	3	...	+ 3.7175	+0.0731	...	30. 52. 33.91	86.75	3	...	-19.201	+0.165	...	...	...
198	B. D. + 58° No. 201	8.0*	I. 7. 25.901	86.75	3	...	+ 3.7205	+0.0732	...	30. 53. 1.80	86.64	3	2	-19.193	+0.166	...	...	...
199	86 Piscium	5.0	I. 7. 27.709	84.31	40	...	+ 3.1195	+0.0091	+0.0075	83. 3. 35.12	84.23	30	...	-19.192	+0.140	+0.051	158	368
200	86 Piscium	5.0	I. 7. 29.102	83.60	23	...	+ 3.1195	+0.0091	+0.0072	83. 3. 24.57	84.40	19	...	-19.191	+0.140	+0.043	159	369

162. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.2.

183. Authority for Proper Motion: Bonn Observations, Vol. VII.

199, 200. The designation of No. 199 in B. F. is ζ Piscium, and no letter is attached to No. 200.

Micrometriae 4.2 and 5.3.

174, 175. The magnitudes given in B. D. are 6.7 and 8.2.

196. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.2.The magnitudes given in B. D. are 5.2 and 7.7; in Struve's *Mensura*

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
201	87 Piscium	5.9	h m s 1. 7.45.279	79.75	1	...	+ 3.1803	+0.0140	-0.0047	74. 30. 8.30	79.75	1	...	-19.184	+0.143	+0.018	161	370
202	37 Ceti	5.0	1. 8.21.310	84.86	4	...	+ 3.0130	+0.0014	+0.0055	98. 34. 7.40	84.86	4	...	-19.169	+0.137	-0.279	164	372
203	W. B. I. 135	7.8*	1. 10.55.671	82.64	3	...	+ 3.1438	+0.0109	...	80. 2. 10.71	84.89	1	...	-19.101	+0.148	...	...	...
204	89 Piscium	f 5.1	1. 11.36.576	86.81	3	...	+ 3.0937	+0.0072	-0.0049	87. 1. 5.71	86.81	3	...	-19.083	+0.147	+0.019	171	388
205	Piscium	S Var.	1. 11.57.138	86.91	2	...	+ 3.1325	+0.0100	...	81. 42. 10.27	86.91	2	...	-19.074	+0.149	...	...	...
206	34 Cassiopeiae	φ 5.2	1. 12.32.613	85.22	4	1	+ 3.7281	+0.0693	-0.0005	32. 24. 0.23	85.14	4	1	-19.058	+0.178	+0.009	169	391
207	Ursæ Minoris ... a	9.5*	1. 14.17.910	81.77	5	3	+21.3394	+15.6572	...	1. 20. 6.56	81.61	8	6	-19.011	+0.999	...	...	...
208	B. D. + 8°. No. 212.	9.0*	1. 14.40.469	86.95	3	...	+ 3.1343	+0.0101	...	81. 45. 47.58	86.95	3	...	-18.999	+0.155	...	...	...
209	1 Ursæ Minoris ... a	2.2	1. 14.45.363	82.26	494	519	+21.5114	+15.8292	+0.1109	1. 19.51.04	81.98	680	753	-18.997	+1.013	+0.002	102	360
210	46 Andromedæ	ξ 4.9	1. 15.16.811	85.52	4	3	+ 3.5020	+0.0417	+0.0023	45. 6. 2.76	84.89	4	(3)	-18.983	+0.173	+0.005	177	404
211	Piazzi I. 60	7.4	1. 16.40.408	86.40	4	...	+ 3.1245	+0.0094	...	83. 12. 59.11	86.40	4	...	-18.943	+0.158	...	...	410
212	W. B. (2) I. 320	6.3	1. 16.56.029	86.92	4	...	+ 3.2313	+0.0171	...	70. 9. 30.99	86.76	6	...	-18.935	+0.163	...	...	...
213	36 Cassiopeiae	ψ 4.8	1. 17.28.494	85.73	2	4	+ 4.1431	+0.1210	+0.0111	22. 29. 49.08	85.91	2	4	-18.919	+0.209	-0.009	178	412
214	37 Cassiopeiae	δ 2.8	1. 17.58.548	82.81	4	3	+ 3.8332	+0.0775	+0.0384	30. 23. 21.19	83.57	4	4	-18.904	+0.195	+0.036	180	416
215	45 Ceti	θ 3.8	1. 18. 1.478	80.90	24	...	+ 3.0032	+0.0019	-0.0068	98. 48. 11.41	81.08	11	...	-18.904	+0.154	+0.196	184	420
216	W. B. I. 271	6.0	1. 18.18.509	86.92	3	...	+ 3.0130	+0.0024	...	97. 32. 29.21	86.92	3	...	-18.894	+0.155	...	...	...
217	Lalande 2581	6.5	1. 18.46.921	86.70	4	...	+ 2.9407	-0.0014	...	106. 17. 10.91	86.70	4	...	-18.881	+0.153	...	...	...
218	Piazzi I. 69	6.1	1. 19.15.687	86.60	3	...	+ 3.4925	+0.0390	...	47. 9. 56.47	86.60	3	...	-18.867	+0.181	...	...	425
219	93 Piscium	ρ 5.2	1. 19.47.244	80.07	4	...	+ 3.2252	+0.0164	-0.0056	71. 26. 10.14	80.27	5	...	-18.851	+0.169	-0.029	185	427
220	94 Piscium	5.6	1. 20.12.849	80.03	4	...	+ 3.2267	+0.0164	+0.0012	71. 22. 54.75	80.23	5	...	-18.838	+0.170	+0.038	189	431
221	W. B. (2) I. 406-7...	6.4	1. 20.28.226	81.58	4	...	+ 3.4647	+0.0360	...	49. 31. 24.47	81.58	4	...	-18.831	+0.182	..	...	...
222	48 Andromedæ	ω 4.8	1. 20.28.807	84.11	4	2	+ 3.5298	+0.0421	+0.0312	45. 12. 48.32	82.96	4	(2)	-18.830	+0.185	+0.104	186	432
223	38 Cassiopeiae	A 5.9	1. 22.19.236	82.40	5	...	+ 4.3391	+0.1432	+0.0258	20. 21. 13.09	82.40	5	...	-18.775	+0.231	+0.071	188	438
224	Lalande 2651-2	5.9	1. 22.30.151	82.38	4	3	+ 4.1046	+0.1082	...	24. 31. 21.28	82.38	4	3	-18.769	+0.219	...	...	...
225	W. B. (2) I. 458	8.8*	1. 22.41.044	81.74	1	...	+ 3.2864	+0.0206	...	65. 35. 50.24	81.74	1	...	-18.763	+0.177	...	...	...
226	Piazzi I. 90	6.5*	1. 22.46.746	81.87	2	...	+ 3.2892	+0.0207	...	65. 20. 47.75	81.90	4	...	-18.760	+0.178	...	...	...
227	Bradley 193	7.0*	1. 23.41.160	86.78	3	1	+ 4.3424	+0.1413	+0.0003	20. 35. 59.02	86.82	3	1	-18.732	+0.234	+0.016	193	443
228	Piazzi I. 88	7.4*	1. 23.43.918	85.69	3	2	+ 4.2423	+0.1261	...	22. 12. 30.68	84.55	3	3	-18.731	+0.229	...	...	444
229	98 Piscium	μ 5.2	1. 23.53.905	86.89	3	...	+ 3.1186	+0.0090	+0.0177	84. 28. 31.45	86.67	4	...	-18.725	+0.171	+0.031	199	448
230	Groombridge 326	8.2*	1. 24. 6.384	86.77	2	1	+ 4.0138	+0.0941	...	26. 59. 55.58	86.82	2	1	-18.719	+0.218	...	...	...
231	Groombridge 329	7.2*	1. 24.34.258	84.69	5	1	+ 4.0177	+0.0941	...	27. 1. 30.26	82.64	10	2	-18.704	+0.219	...	...	450
232	99 Piscium	η 3.7	1. 25. 3.757	81.85	78	...	+ 3.1998	+0.0142	-0.0002	75. 16. 24.29	81.03	34	...	-18.689	+0.177	+0.003	203	453
233	Oeltz. Arg. (N.) 1622	8.2*	1. 25.30.920	82.37	...	1	+ 4.6529	+0.1887	...	17. 8. 10.46	82.37	...	1	-18.674	+0.255	...	...	...
234	Bradley 204	7.0*	1. 25.35.139	79.24	3	...	+ 3.2153	+0.0152	+0.0065	73. 39. 53.93	79.18	4	...	-18.672	+0.179	+0.023	204	455
235	Lalande 2751	6.8*	1. 25.55.495	84.97	5	...	+ 4.3044	+0.1318	-0.0767	21. 40. 21.76	84.84	5	2	-18.661	+0.238	-0.100	...	...
236	39 Cassiopeiae	χ 4.9	1. 26. 5.883	84.96	3	1	+ 3.8764	+0.0754	-0.0057	31. 23. 3.87	85.07	3	2	-18.656	+0.216	+0.025	202	456
237	Piazzi I. 104	5.9	1. 27.21.161	82.16	4	...	+ 3.4419	+0.0317	...	53. 22. 43.61	82.16	4	...	-18.615	+0.195	...	...	465
238	W. B. I. 453	6.0	1. 27.40.507	85.86	5	...	+ 3.0053	+0.0029	+0.0140	97. 38. 21.53	85.87	5	...	-18.604	+0.172	+0.089	...	...
239	Piazzi I. 110	6.3*	1. 28.19.553	79.09	4	...	+ 3.2341	+0.0162	+0.0100	72. 9. 10.59	79.09	4	...	-18.584	+0.185	+0.099	...	469
240	40 Cassiopeiae	5.5	1. 28.57.306	81.89	3	4	+ 4.6700	+0.1839	-0.0050	17. 34. 20.63	80.84	10	7	-18.563	+0.266	+0.016	206	468

205. The limits of magnitude are 8.2 — 9.3 and 13.5 ?; the period 406^d.
 207. The designation *a*¹ is in accordance with recent usage in Greenwich Catalogues.
 235. Authority for Proper Motion: Bonn Observations, Vol. VII.
 238. Authority for Proper Motion: Bonn Observations, Vol. VII.
 239. Authority for Proper Motion: Bonn Observations, Vol. VII.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{ix}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley, 1755.	No in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
241	Bradley 207	6.4*	h m s 1. 29. 7.416	81.86	2	...	+ 3'6374	+0°0484	-0°0047	41. 53. 26.67	81.86	2	...	-18°558	+0°209	+0°02	207	474
242	101 Piscium	6.6*	1. 29. 21.483	77.80	6	...	+ 3'1995	+0°0139	-0°0016	75. 57. 10.09	77.80	6	...	-18°549	+0°185	+0°001	211	476
243	Piazzi I. 120	5.9	1. 29. 25.268	83.82	4	...	+ 3'2260	+0°0156	...	73. 10. 52.31	83.82	4	...	-18°547	+0°187	...	...	477
244	50 Andromedæ	4.2	1. 29. 45.452	83.99	8	...	+ 3'5129	+0°0370	-0°0165	49. 11. 43.28	83.86	11	...	-18°537	+0°204	+0°374	209	480
245	Radcliffe 481	5.8	1. 30. 17.545	84.65	3	2	+ 3'8738	+0°0717	...	32. 38. 4.96	84.47	3	2	-18°518	+0°225	...	...	482
246	Oeltz. Arg.(N.)1743	8.7*	1. 30. 25.184	86.89	5	...	+ 3'9607	+0°0814	...	30. 2. 57.29	86.89	5	...	-18°513	+0°230	...	...	...
247	51 Andromedæ	3.7	1. 30. 37.906	84.54	4	3	+ 3'6447	+0°0483	+0°0045	41. 58. 49.93	83.89	4	(3)	-18°506	+0°213	+0°111	212	487
248	102 Piscium	5.6	1. 30. 44.273	82.44	2	...	+ 3'1775	+0°0125	-0°0064	78. 28. 22.30	82.44	2	...	-18°503	+0°187	-0°054	214	488
249	Piazzi I. 131	6.2	1. 31. 37.861	84.07	4	...	+ 2'9804	+0°0020	...	100. 1. 8.45	84.09	9	...	-18°473	+0°177	...	...	491
250	Lalande 2966	7.4*	1. 32. 42.447	82.09	5	...	+ 4'2714	+0°1175	+0°1128	23. 41. 25.48	82.69	5	...	-18°435	+0°253	+0°257	...	...
251	104 Piscium	7.5*	1. 32. 49.641	78.17	12	...	+ 3'2005	+0°0138	+0°0057	76. 19. 26.99	78.14	13	...	-18°431	+0°192	+0°030	220	496
252	Lalande 3047	5.7	1. 33. 7.728	85.18	4	...	+ 2'8600	-0°0028	...	111. 53. 14.60	85.18	4	...	-18°421	+0°173	...	...	...
253	105 Piscium	6.1	1. 33. 12.366	79.57	6	...	+ 3'2219	+0°0151	+0°0032	74. 12. 13.50	80.96	13	...	-18°419	+0°194	+0°008	223	500
254	43 Cassiopeiæ	5.5	1. 33. 28.154	80.96	4	3	+ 4'3483	+0°1269	+0°0068	22. 33. 53.77	79.98	12	3	-18°410	+0°260	+0°005	216	498
255	Groombridge 360 ...	5.6	1. 33. 28.201	83.88	3	...	+ 3'5615	+0°0398	...	47. 18. 36.93	83.88	3	...	-18°410	+0°214	...	...	501
256	53 Andromedæ	4.9	1. 33. 30.007	80.63	3	...	+ 3'5169	+0°0361	+0°0010	50. 1. 52.84	80.61	6	...	-18°408	+0°211	+0°015	221	502
257	Piazzi I. 139	7.0*	1. 34. 30.890	86.40	6	1	+ 3'9983	+0°0821	...	30. 3. 32.42	86.53	6	3	-18°373	+0°242	...	...	509
258	Piazzi I. 145	6.1	1. 34. 36.930	80.85	3	...	+ 3'3240	+0°0215	...	64. 51. 39.59	80.85	3	...	-18°369	+0°202	...	...	...
259	W. B. (2) I. 774 ...	5.4	1. 35. 7.473	81.07	6	...	+ 3'4448	+0°0300	...	55. 21. 38.83	80.83	19	...	-18°352	+0°210	...	...	516
260	106 Piscium	4.7	1. 35. 11.194	82.43	71	...	+ 3'1184	+0°0091	-0°0034	85. 7. 12.86	84.08	42	...	-18°349	+0°191	-0°005	228	518
261	44 Cassiopeiæ	5.5	1. 35. 12.951	83.66	7	5	+ 4'0049	+0°0822	+0°008	30. 3. 16.96	84.25	8	12	-18°348	+0°244	+0°014	224	515
262	W. B. (2) I. 784 ...	8.6*	1. 35. 24.288	85.31	3	...	+ 3'3912	+0°0260	...	59. 28. 4.25	85.51	5	...	-18°342	+0°208	...	...	...
263	W. B. I. 625	5.9	1. 35. 49.433	85.99	3	...	+ 2'9577	+0°0014	...	101. 55. 7.64	85.96	4	...	-18°327	+0°183	...	...	...
264	107 Piscium	5.4	1. 35. 58.993	84.23	3	...	+ 3'2668	+0°0177	-0°0214	70. 18. 56.31	84.23	3	...	-18°321	+0°202	+0°058	229	523
265	W. B. (2) I. 803	7.8*	1. 36. 6.879	85.25	3	...	+ 3'3920	+0°0260	...	59. 34. 42.72	85.25	3	...	-18°317	+0°209	...	...	...
266	W. B. I. 664	5.4	1. 36. 39.439	83.86	3	...	+ 3'0312	+0°0048	...	94. 17. 42.74	83.86	3	...	-18°297	+0°189	...	...	...
267	52 Ceti	3.6	1. 38. 29.609	78.74	9	...	+ 2'9065	-0°0003	-0°1223	106. 34. 12.69	79.66	11	...	-18°230	+0°184	-0°057	233	536
268	110 Piscium	4.4	1. 39. 3.431	81.70	45	...	+ 3'1565	+0°0111	+0°0029	81. 26. 49.10	83.42	28	...	-18°210	+0°200	-0°058	232	537
269	Piazzi I. 159	6.1*	1. 39. 4.938	80.74	4	2	+ 4'1841	+0°0991	+0°0884	26. 44. 26.53	80.36	13	2	-18°209	+0°264	+0°258	...	535
270	W. B. (2) I. 863 ...	7.5*	1. 39. 10.112	86.84	4	...	+ 3'5491	+0°0369	...	49. 37. 4.34	86.84	4	...	-18°206	+0°225	...	...	...
271	Piazzi I. 167	5.7	1. 39. 57.885	83.05	6	...	+ 3'0096	+0°0040	...	96. 20. 3.84	83.05	6	...	-18°176	+0°193	...	...	539
272	Sculptoris	5.3	1. 40. 1.535	82.64	5	...	+ 2'8009	-0°0037	+0°0079	115. 39. 11.08	82.64	5	...	-18°175	+0°181	+0°066	...	541
273	3 Arietis	6.5	1. 40. 4.556	84.22	3	...	+ 3'2431	+0°0159	+0°0019	73. 11. 20.08	84.10	5	...	-18°172	+0°208	-0°002	234	538
274	Piazzi I. 170	6.1	1. 41. 34.186	80.87	4	...	+ 3'5099	+0°0332	...	52. 38. 43.31	80.88	12	...	-18°118	+0°227	...	...	544
275	4 Arietis	5.6	1. 41. 40.476	79.70	16	...	+ 3'2407	+0°0157	+0°0015	73. 38. 34.00	79.70	15	...	-18°113	+0°211	+0°016	235	546
276	Piazzi I. 171	6.0	1. 41. 49.207	85.97	4	...	+ 3'4325	+0°0277	...	57. 55. 5.37	85.97	4	...	-18°108	+0°223	...	...	...
277	Radcliffe 528	6.0	1. 41. 48.960	86.29	3	...	+ 3'6950	+0°0478	...	42. 42. 5.60	86.29	3	...	-18°108	+0°239	...	...	547
278	Bradley 236	8.2*	1. 41. 50.925	80.02	7	...	+ 3'2417	+0°0157	-0°0030	73. 34. 40.86	80.02	6	...	-18°106	+0°211	-0°05	236	549
279	Lalande 3282	8.4*	1. 42. 39.697	84.92	3	...	+ 3'8877	+0°0647	...	35. 22. 46.59	84.92	3	...	-18°076	+0°253	...	...	...
280	1 Persei	5.5	1. 44. 6.911	84.30	3	2	+ 3'8963	+0°0646	+0°0024	35. 26. 51.60	84.51	4	2	-18°020	+0°257	+0°008	237	558

250. Authority for Proper Motion : Bonn Observations, Vol. VII.

264. This star is designated 2 Arietis in B.F.

267. The magnitude given in the *Uranometria Nova Orionensis* is 3.1.

269. Authority for Proper Motion : Bonn Observations, Vol. VII.

{x}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R. A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Auwers' Bradley 1755	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
281	54 Ceti	5.8	h m s 1. 44. 29.952	82.67	14	...	s + 3.1808	s +0.0123	s -0.0062	o ' " 79. 33. 6.13	83.05	18	...	" -18.005	" +0.212	" +0.031	243	561
282	2 Persei	5.4	1. 44. 31.787	86.07	6	2	+ 3.7792	+0.0537	+0.0012	39. 48. 4.50	85.98	6	2	-18.004	+0.251	+0.034	238	560
283	55 Ceti	3.9	1. 45. 32.250	79.91	6	...	+ 2.9576	+0.0023	+0.0003	100. 55. 43.21	80.69	8	...	-17.965	+0.200	+0.028	247	565
284	45 Cassiopeiae	3.6	1. 45. 46.482	80.86	5	5	+ 4.2447	+0.0994	+0.0036	26. 55. 19.02	81.33	35	5	-17.957	+0.283	+0.022	239	564
285	2 Trianguli	3.6	1. 46. 14.562	80.09	4	...	+ 3.4036	+0.0250	+0.0004	61. 0. 23.53	81.49	12	...	-17.938	+0.230	+0.231	245	569
286	5 Arietis (S. Star)...	...	1. 46. 56.799	79.29	5	...	+ 3.2759	+0.0173	+0.0035	71. 17. 43.57	78.84	6	...	-17.910	+0.223	+0.095	248	572
287	5 Arietis (mean) ...	4.3	1. 46. 56.774	78.33	2	...	+ 3.2760	+0.0173	+0.0035	...	...	...	...	-17.910	+0.223	+0.10	...	...
288	5 Arietis (N. Star)...	...	1. 46. 56.828	79.29	5	...	+ 3.2760	+0.0173	+0.0035	71. 17. 34.71	78.84	6	...	-17.910	+0.223	+0.102	249	573
289	Lalande 3479.....	5.7	1. 47. 5.863	85.93	5	...	+ 2.8822	-0.0002	...	107. 31. 14.21	85.18	11	...	-17.905	+0.197	...	...	...
290	6 Arietis	2.8	1. 48. 0.727	81.80	69	...	+ 3.2959	+0.0183	+0.0050	69. 46. 45.66	82.57	66	...	-17.868	+0.226	+0.102	252	577
291	Bradley 253	5.8	1. 48. 48.712	79.50	5	...	+ 3.5277	+0.0327	-0.0047	53. 18. 41.56	79.50	5	...	-17.836	+0.243	-0.005	253	579
292	W. B. (2) I. 1095 ...	9.0*	1. 48. 50.354	86.92	3	...	+ 3.4518	+0.0276	...	58. 9. 50.22	86.92	3	...	-17.835	+0.238	...	...	...
293	Lalande 3525.....	8.2*	1. 48. 53.195	86.85	3	...	+ 3.4405	+0.0269	...	58. 57. 1.90	86.87	4	...	-17.833	+0.237	...	...	...
294	56 Andromedae	5.7	1. 49. 1.825	78.81	8	...	+ 3.5281	+0.0326	+0.0133	53. 20. 15.85	78.81	8	...	-17.827	+0.243	-0.019	255	580
295	7 Arietis	5.9	1. 49. 9.692	79.91	1	...	+ 3.3323	+0.0203	-0.0016	67. 0. 43.30	79.91	1	...	-17.822	+0.231	0.000	257	581
296	8 Arietis	5.2	1. 50. 47.748	79.53	5	...	+ 3.2651	+0.0164	+0.0011	72. 46. 8.97	80.51	7	...	-17.756	+0.229	+0.019	262	592
297	B. F. 222.....	5.2	1. 50. 47.872	85.27	3	2	+ 4.3483	+0.1061	...	25. 57. 48.32	85.34	3	4	-17.757	+0.303	...	...	588
298	3 Persei	5.7	1. 50. 56.403	84.74	5	2	+ 3.7784	+0.0508	0.0000	41. 22. 59.78	84.37	6	(2)	-17.751	+0.264	-0.026	261	590
299	W. B. (2) I. 1168 ...	7.7*	1. 51. 10.793	86.80	3	...	+ 3.4029	+0.0241	...	62. 3. 57.78	86.80	3	...	-17.740	+0.239	...	...	...
300	9 Arietis	4.9	1. 51. 14.645	78.55	6	...	+ 3.3372	+0.0203	-0.0088	66. 59. 24.00	80.02	11	...	-17.738	+0.235	+0.017	263	593
301	W. B. (2) I. 1172 ...	...	1. 51. 16.632	78.70	4	...	+ 3.3374	+0.0203	-0.0088	66. 58. 58.37	78.70	4	...	-17.736	+0.235	+0.017	...	...
302	48 Cassiopeiae	4.6	1. 52. 7.257	80.74	3	3	+ 4.8292	+0.1646	-0.0137	19. 40. 33.75	80.95	3	3	-17.702	+0.339	+0.007	258	595
303	Piazzi I. 223	6.2	1. 53. 0.496	83.99	4	...	+ 3.2035	+0.0132	...	78. 17. 17.48	83.99	4	...	-17.666	+0.229	...	...	609
304	50 Cassiopeiae	4.1	1. 53. 12.843	80.82	9	4	+ 5.0047	+0.1875	-0.0110	18. 9. 38.33	81.37	30	4	-17.657	+0.354	-0.017	260	600
305	B. D. + 23° No. 267	9.1*	1. 53. 26.019	86.86	5	...	+ 3.3452	+0.0205	...	66. 44. 42.17	86.86	5	...	-17.648	+0.239	...	...	...
306	52 Cassiopeiae	5.7	1. 53. 56.915	81.23	3	3	+ 4.3986	+0.1086	-0.0013	25. 40. 44.13	81.06	3	3	-17.626	+0.314	+0.007	265	610
307	53 Cassiopeiae	5.5	1. 54. 8.080	82.82	6	6	+ 4.3707	+0.1052	-0.0001	26. 11. 26.82	83.00	7	6	-17.618	+0.312	-0.006	266	611
308	4 Persei	4.9	1. 54. 19.183	79.91	3	...	+ 3.9496	+0.0635	+0.0033	36. 5. 36.37	79.91	3	...	-17.611	+0.283	+0.008	269	614
309	59 Ceti	3.8	1. 54. 21.025	79.63	3	...	+ 2.8182	-0.0012	+0.0065	111. 39. 36.43	79.63	3	...	-17.609	+0.204	+0.018	273	618
310	W. B. I. 947	5.8	1. 54. 29.499	83.86	4	...	+ 2.9697	+0.0035	...	99. 6. 21.25	83.86	5	...	-17.604	+0.215	...	...	...
311	Groombridge 424 ...	6.0	1. 54. 43.538	84.29	3	3	+ 6.9988	+0.5760	...	9. 16. 47.74	84.74	5	7	-17.594	+0.497	...	...	605
312	B. D. + 22° No. 296	7.0*	1. 54. 51.559	86.89	3	...	+ 3.3425	+0.0202	...	67. 11. 8.59	86.88	3	...	-17.588	+0.242	...	...	...
313	Lalande 3731.....	7.2	1. 54. 52.095	84.46	4	...	+ 2.9700	+0.0035	...	99. 3. 6.72	84.81	9	...	-17.588	+0.216	...	...	...
314	Bradley 270	6.5*	1. 55. 39.691	82.48	3	6	+ 4.4292	+0.1102	+0.0007	25. 28. 26.20	82.45	3	7	-17.554	+0.320	+0.029	270	620
315	113 Piscium (1st Star)	3.7†	1. 55. 50.229	77.05	1	...	+ 3.0970	+0.0084	+0.0016	87. 48. 58.76	77.05	1	...	-17.547	+0.226	+0.009	277	625
316	Piazzi I. 241	5.2	1. 55. 53.119	86.60	3	...	+ 2.6897	-0.0040	...	120. 34. 45.98	86.69	4	...	-17.545	+0.198	...	...	627
317	3 Trianguli	5.4	1. 55. 57.423	81.20	3	...	+ 3.4883	+0.0286	-0.0006	57. 17. 42.28	80.91	12	...	-17.542	+0.254	+0.005	275	624
318	Piazzi I. 230	8.0*	1. 56. 6.864	83.16	2	4	+ 4.3912	+0.1055	...	26. 11. 31.92	83.68	2	4	-17.535	+0.318	...	...	...
319	57 Andromedae	2.1	1. 56. 32.222	80.77	31	1	+ 3.6533	+0.0393	+0.0021	48. 14. 48.69	80.66	30	2	-17.517	+0.267	+0.051	276	628
320	57 Andromedae	2.1	1. 56. 33.095	80.64	21	...	+ 3.6534	+0.0393	+0.0021	48. 14. 44.25	80.59	22	...	-17.517	+0.267	+0.051	...	...

283. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.5.286, 288. The designations in the B. A. C. are γ^1 and γ^2 respectively. The magnitudes given in Struve's *Mensurae Micrometricae* are 4.2 and 4.4.

300, 301. The magnitudes given in B. D. are 5.0 and 8.5

309. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.6.319, 320. The magnitudes given in Struve's *Mensurae Micrometricae* are 3.0 and 5.0.304. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.4.315. The magnitude is taken from the *Uranometria Nova Oxoniensis*.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xi}

No.	Star's Name.	Magnitude.	Mean R.A. 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Varia- tion, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Varia- tion, 1880°.	Annual Proper Motion, 1880°.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
321	Piazzi I. 243	7.0*	h m s 1. 57. 78.01	79.27	3	...	+ 3.2806	+0.0168	...	72. 19. 27.77	80.32	5	...	-17.492	+0.242	...	...	632
322	B. A. C. 636	5.7	1. 57. 11.910	84.20	3	...	+ 2.8861	+0.0010	...	105. 53. 6.49	83.85	4	...	-17.488	+0.214	...	...	636
323	Lalande 3811	5.9	1. 57. 37.819	85.97	4	...	+ 3.0186	+0.0054	...	94. 40. 45.81	85.94	5	...	-17.470	+0.224	...	...	...
324	Piazzi I. 251	4.6	1. 59. 6.699	83.36	7	...	+ 2.6909	-0.0035	...	119. 52. 23.30	83.36	7	...	-17.406	+0.202	...	...	643
325	12 Arietis	5.2	1. 59. 51.146	80.95	3	...	+ 3.3431	+0.0198	-0.0002	67. 55. 28.64	80.95	3	...	-17.374	+0.251	+0.031	285	644
326	13 Arietis	2.0	2. 0. 24.611	81.28	80	...	+ 3.3554	+0.0203	+0.0127	67. 6. 21.32	82.46	72	...	-17.349	+0.253	+0.134	287	648
327	Piazzi I. 256	6.4	2. 2. 5.136	84.31	3	2	+ 3.9824	+0.0621	+0.0004	36. 43. 30.09	84.41	3	2	-17.276	+0.302	+0.053	3226	653
328	Bradley 282	6.5*	2. 2. 19.877	80.27	4	3	+ 5.3630	+0.2224	+0.020	16. 32. 16.98	81.86	15	3	-17.265	+0.405	+0.024	282	651
329	4 Trianguli	3.1	2. 2. 24.446	79.56	2	...	+ 3.5386	+0.0304	+0.0118	55. 34. 52.24	79.76	7	...	-17.262	+0.270	+0.033	290	656
330	Lalande 3979	6.2	2. 3. 4.247	81.87	3	...	+ 2.8455	+0.0005	...	108. 20. 54.96	81.87	3	...	-17.232	+0.220	...	...	...
331	15 Arietis	5.9	2. 3. 58.827	79.12	6	...	+ 3.3084	+0.0177	+0.0051	71. 3. 59.89	79.40	7	...	-17.191	+0.256	+0.031	296	665
332	64 Ceti	5.7	2. 5. 0.994	86.88	4	...	+ 3.1699	+0.0114	-0.0105	81. 59. 34.80	86.88	6	...	-17.144	+0.247	+0.100	302	672
333	55 Cassiopeie	6.1	2. 5. 4.826	82.26	5	3	+ 4.6281	+0.1222	-0.0021	24. 2. 21.97	82.18	9	3	-17.141	+0.358	+0.004	292	668
334	6 Trianguli (1st Star)	5.3	2. 5. 24.659	80.02	3	...	+ 3.4697	+0.0258	-0.0065	60. 15. 36.81	80.49	6	...	-17.126	+0.271	+0.055	301	675
335	6 Trianguli (2nd Star)	5.3	2. 5. 25.020	80.08	1	...	+ 3.4697	+0.0258	-0.0065	60. 15. 36.64	80.08	1	...	-17.126	+0.271	+0.055	...	...
336	Oeltz. Arg. (N.) 2464	8.7*	2. 5. 28.624	86.94	1	...	+ 4.6306	+0.1220	...	24. 3. 51.76	86.94	1	...	-17.123	+0.359	...	...	...
337	W. B. II. 48	6.0	2. 5. 29.226	85.95	3	...	+ 2.9419	+0.0034	...	100. 36. 45.96	85.95	3	...	-17.123	+0.231	...	...	...
338	Lalande 3987	7.8*	2. 5. 54.803	84.77	5	5	+ 4.7266	+0.1323	+0.0805	22. 52. 47.59	85.25	7	8	-17.103	+0.368	+0.300	3227	...
339	17 Arietis	5.4	2. 6. 5.045	83.85	5	...	+ 3.3356	+0.0188	+0.0092	69. 21. 14.02	83.85	6	...	-17.095	+0.262	-0.016	303	682
340	19 Arietis	6.2	2. 6. 30.639	82.78	2	...	+ 3.2565	+0.0151	+0.0049	75. 17. 0.32	82.78	2	...	-17.075	+0.256	+0.016	305	683
341	W. B. II. 66	7.9*	2. 6. 36.462	86.19	3	...	+ 3.0381	+0.0065	...	92. 47. 29.93	86.11	4	...	-17.071	+0.240	...	...	...
342	65 Ceti	4.5	2. 6. 38.408	81.51	28	...	+ 3.1745	+0.0116	-0.0032	81. 43. 1.21	83.60	23	...	-17.070	+0.250	+0.001	306	684
343	66 Ceti (1st Star)	5.6	2. 6. 38.931	86.09	1	...	+ 3.0360	+0.0064	+0.0237	92. 57. 30.39	86.09	1	...	-17.069	+0.240	+0.051	...	...
344	66 Ceti (2nd Star)	5.6	2. 6. 39.739	86.05	2	...	+ 3.0361	+0.0064	+0.0237	92. 57. 20.05	85.99	5	...	-17.068	+0.240	+0.051	308	685
345	Fornacis	5.2	2. 7. 37.455	82.55	6	...	+ 2.6429	-0.0032	-0.0011	121. 17. 13.69	82.60	7	...	-17.025	+0.211	+0.010	...	688
346	7-Yr. Cat. (1860) No. 143	10.5†	2. 8. 29.544	85.18	3	...	+ 3.2396	+0.0143	...	76. 45. 16.90	84.36	4	...	-16.984	+0.259	...	...	...
347	7 Trianguli	5.2	2. 8. 50.605	79.28	3	...	+ 3.5316	+0.0287	-0.0026	57. 11. 58.93	80.39	11	...	-16.967	+0.282	+0.021	312	691
348	8 Trianguli	5.0	2. 9. 44.010	80.63	4	...	+ 3.5500	+0.0296	+0.0898	56. 19. 33.24	81.55	8	...	-16.926	+0.285	+0.224	317	697
349	67 Ceti	5.5	2. 10. 59.876	82.29	34	...	+ 2.9838	+0.0050	+0.0036	96. 58. 33.49	82.54	15	...	-16.866	+0.243	+0.109	321	704
350	22 Arietis	5.6	2. 11. 27.138	79.39	8	...	+ 3.3270	+0.0180	-0.0023	70. 39. 17.38	79.71	7	...	-16.845	+0.271	-0.010	320	707
351	62 Andromedæ	5.2	2. 11. 32.425	84.16	3	...	+ 3.8459	+0.0477	-0.0052	43. 10. 29.30	84.16	3	...	-16.841	+0.312	-0.014	319	706
352	Piazzi II. 52	5.9	2. 11. 47.394	83.92	3	...	+ 3.0872	+0.0083	+0.0233	88. 48. 38.10	83.92	3	...	-16.829	+0.252	-0.365	...	708
353	10 Trianguli	5.3	2. 11. 59.894	81.28	3	...	+ 3.4609	+0.0244	-0.0003	61. 54. 44.11	83.53	5	...	-16.819	+0.282	-0.014	322	710
354	Lalande 4271	6.6	2. 12. 11.458	82.16	4	...	+ 3.3760	+0.0202	...	67. 23. 12.27	83.13	8	...	-16.810	+0.276	...	...	...
355	9 Persei	5.2	2. 13. 59.979	79.96	2	3	+ 4.1378	+0.0683	-0.0024	34. 42. 17.25	79.95	2	3	-16.723	+0.340	+0.011	326	721
356	Piazzi II. 61	6.0	2. 15. 22.456	79.65	4	...	+ 3.7161	+0.0381	...	49. 8. 57.70	81.81	6	...	-16.657	+0.309	...	...	727
357	W. B. II. 231	5.5	2. 16. 9.416	86.38	7	...	+ 2.9224	+0.0035	...	101. 19. 26.67	86.38	7	...	-16.618	+0.246	...	...	...
358	Lalande 4410	6.0*	2. 16. 25.709	85.96	3	...	+ 2.8257	+0.0012	...	108. 12. 32.93	85.96	3	...	-16.605	+0.238	...	...	...
359	B. F. 298	7.9*	2. 16. 48.177	84.40	4	...	+ 3.2087	+0.0126	...	79. 42. 40.11	84.40	4	...	-16.586	+0.270	...	...	728
360	Fornacis	5.4	2. 17. 3.032	81.73	6	...	+ 2.7315	-0.0006	+0.0203	114. 21. 45.45	81.73	6	...	-16.574	+0.231	+0.033	...	737

334, 335. The magnitudes given in Struve's *Mensura Micrometrica* are 5.0 and 6.4.

346. The magnitude is taken from the Greenwich Observations, 1865.

352. Authority for Proper Motion: Bonn Observations, Vol. VII.

360. Authority for Proper Motion: Bonn Observations, Vol. VII.

343, 344. The magnitudes given in B. D. are 8.9 and 5.9.

349. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.8.359. The R. A. in the B. A. C. is 1^m. too small.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
361	65 Andromedæ	4-9	2. 17. 37-530	85-94	3	...	+ 3-9642	+0-0536	+0-0011	40. 15. 56-44	85-94	3	...	-16-545	+0-334	+0-021	334	735
362	Lalande 4395	7-0*	2. 17. 46-460	84-94	4	...	+ 4-2229	+0-0730	...	33. 18. 55-86	84-94	4	...	-16-538	+0-355	...	...	...
363	24 Arietis	5-4	2. 18. 23-118	86-41	7	...	+ 3-2071	+0-0127	-0-0007	79. 56. 2-07	86-34	10	...	-16-508	+0-273	+0-013	338	745
364	7-Yr.Cat.(1860) No.154	4-6	2. 19. 11-400	80-12	1	...	+ 4-8577	+0-1313	-0-0046	23. 8. 17-62	80-12	1	...	-16-468	+0-411	0-000	...	...
365	Bradley 332		2. 19. 11-813	82-15	9	8	+ 4-8578	+0-1313	-0-0046	23. 8. 18-28	82-40	39	17	-16-468	+0-411	0-000	332	744
366	7-Yr.Cat.(1860) No.156	6-0*	2. 19. 13-111	80-64	3	3	+ 4-8579	+0-1313	-0-0046	23. 8. 20-84	80-62	3	3	-16-467	+0-411	0-000	...	...
367	Lalande 4552		2. 21. 0-564	86-21	4	...	+ 2-7825	+0-0007	...	110. 35. 13-47	86-21	4	...	-16-376	+0-241	...	...	...
368	12 Trianguli	5-5	2. 21. 8-019	79-97	3	...	+ 3-5027	+0-0252	-0-0038	60. 52. 2-21	82-12	11	...	-16-370	+0-302	+0-085	342	757
369	73 Ceti	4-4	2. 21. 46-754	82-07	40	...	+ 3-1802	+0-0116	+0-0011	82. 4. 43-39	83-03	25	...	-16-337	+0-276	+0-001	347	760
370	W. B. II. 337	8-2*	2. 22. 3-011	78-97	2	...	+ 3-2404	+0-0138	...	77. 47. 7-07	78-97	2	...	-16-324	+0-282	...	...	...
371	Lalande 4572	6-1	2. 22. 23-316	81-20	3	...	+ 3-4016	+0-0204	...	67. 4. 3-26	81-20	3	...	-16-307	+0-296	...	...	...
372	Piazzi II. 96	5-8	2. 23. 38-338	84-36	4	...	+ 3-4330	+0-0217	...	65. 17. 51-98	84-36	4	...	-16-243	+0-301	...	...	766
373	26 Arietis	6-1	2. 23. 54-756	79-65	5	...	+ 3-3477	+0-0180	+0-0043	70. 40. 42-45	79-06	5	...	-16-229	+0-294	+0-025	349	769
374	27 Arietis	6-5*	2. 24. 15-091	80-90	9	...	+ 3-3155	+0-0166	+0-0014	72. 49. 40-42	80-47	13	...	-16-211	+0-292	+0-086	351	771
375	W. B. II. 379	8-3*	2. 24. 15-610	86-49	4	...	+ 3-2525	+0-0142	...	77. 6. 10-08	86-49	4	...	-16-211	+0-286	...	...	...
376	14 Trianguli	5-3	2. 24. 46-951	81-90	4	...	+ 3-6378	+0-0315	+0-0016	54. 23. 9-94	81-90	4	...	-16-184	+0-320	-0-014	350	772
377	W. B. II. 399	5-5	2. 25. 17-661	83-82	3	...	+ 3-0963	+0-0088	...	88. 15. 56-72	83-82	3	...	-16-157	+0-275	...	...	776
378	W. B. (2) II. 581 ..	5-9	2. 25. 37-994	84-90	3	...	+ 3-6078	+0-0298	...	55. 59. 18-23	84-92	5	...	-16-140	+0-319	...	...	...
379	75 Ceti	5-6	2. 26. 3-024	86-25	4	...	+ 3-0506	+0-0075	-0-0020	91. 33. 56-30	86-49	6	...	-16-118	+0-272	+0-032	354	778
380	Bradley 348	5-3	2. 26. 39-040	81-14	4	3	+ 5-5724	+0-2042	-0-0045	17. 42. 30-00	81-41	7	3	-16-087	+0-492	-0-011	348	777
381	W. B. (2) II. 642 ..	6-0	2. 28. 15-421	83-88	3	...	+ 3-6749	+0-0327	...	53. 12. 50-68	83-88	3	...	-16-002	+0-330	...	...	...
382	15 Trianguli	5-6	2. 28. 29-966	80-86	5	...	+ 3-6199	+0-0298	+0-0013	55. 50. 13-02	81-82	11	...	-15-990	+0-326	+0-036	357	786
383	Piazzi II. 117	7-3*	2. 28. 33-447	80-86	5	...	+ 3-6209	+0-0299	...	55. 48. 1-12	80-86	5	...	-15-986	+0-326	...	...	...
384	Piazzi II. 122	4-8	2. 28. 35-322	84-50	3	...	+ 2-6292	-0-0010	...	118. 45. 38-45	84-50	3	...	-15-985	+0-238	...	...	790
385	W. B. II. 453	8-5*	2. 28. 49-764	77-87	6	...	+ 3-1616	+0-0109	...	83. 42. 1-79	77-87	6	...	-15-972	+0-286	...	...	...
386	Piazzi II. 123	5-9	2. 29. 30-084	78-20	13	...	+ 3-1621	+0-0109	+0-1245	83. 41. 13-12	78-23	12	...	-15-937	+0-287	-1-456	...	793
387	78 Ceti	4-9	2. 29. 34-633	82-24	33	...	+ 3-1443	+0-0103	-0-0051	84. 55. 52-98	82-44	17	...	-15-932	+0-285	+0-028	362	794
388	30 Arietis	7-5*	2. 30. 2-575	84-32	8	...	+ 3-4369	+0-0212	+0-0084	65. 52. 32-51	84-03	12	...	-15-907	+0-312	-0-01	360	796
389	31 Arietis	5-6	2. 30. 5-323	83-32	7	...	+ 3-2443	+0-0137	+0-0177	78. 4. 26-00	83-14	8	...	-15-906	+0-295	+0-075	364	798
390	Bradley 361	7-0*	2. 30. 5-416	84-53	7	...	+ 3-4370	+0-0212	+0-0087	65. 52. 34-60	84-32	8	...	-15-906	+0-312	+0-007	361	797
391	Piazzi II. 130	6-1	2. 30. 13-646	85-68	4	...	+ 3-1753	+0-0113	...	82. 47. 36-82	85-33	5	...	-15-898	+0-289	...	...	800
392	Bradley 344	5-9	2. 30. 35-543	83-74	3	5	+ 8-1919	+0-6484	+0-0021	9. 3. 44-95	84-52	14	11	-15-879	+0-736	+0-10	344	784
393	Bradley 353	7-0*	2. 30. 47-900	83-46	3	7	+ 5-4614	+0-1836	-0-0040	18. 53. 31-76	84-30	5	12	-15-867	+0-495	+0-002	353	795
394	32 Arietis	5-4	2. 32. 0-213	78-61	6	...	+ 3-3955	+0-0193	-0-0019	68. 33. 30-82	79-95	9	...	-15-803	+0-312	+0-011	367	808
395	82 Ceti	4-1	2. 33. 19-904	81-87	36	...	+ 3-0696	+0-0081	+0-0004	90. 11. 24-42	82-67	19	...	-15-731	+0-285	+0-007	372	811
396	33 Arietis	5-4	2. 33. 40-366	86-93	3	...	+ 3-4874	+0-0229	+0-0044	63. 27. 20-25	86-93	3	...	-15-713	+0-323	+0-030	370	813
397	83 Ceti	5-0	2. 33. 45-573	83-86	3	...	+ 2-8898	+0-0038	+0-0081	102. 22. 57-14	83-86	3	...	-15-707	+0-269	+0-245	375	815
398	Piazzi II. 148	6-3	2. 33. 56-076	83-86	3	...	+ 3-1538	+0-0106	...	84. 24. 18-91	83-86	3	...	-15-698	+0-293	...	...	817
399	W. B. II. 570	5-9	2. 34. 21-995	86-95	3	...	+ 2-9257	+0-0046	...	99. 58. 3-84	86-95	4	...	-15-675	+0-273	...	...	...
400	Bradley 366	5-9	2. 34. 31-240	81-48	3	3	+ 5-0688	+0-1358	+0-0003	22. 41. 12-62	80-42	5	3	-15-666	+0-470	+0-039	366	814

364, 365, 366. The magnitudes given in Struve's *Mensura Micrometrica* are 7-1, 4-2, and 8-1.
 388, 390. The combined magnitude given in H. P. is 6-1.

386. Authority for Proper Motion : Bonn Observations, Vol. VII.
 397. The magnitude given in the *Uranometria Nova Oxoniensis* is 4-5.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.				1755.	1850.
401	12 Persei	4.9	2. 34. 40.604	84.60	3	...	+ 3.7656	+0.0360	-0.0018	50. 18. 53.19	84.73	5	...	-15.657	+0.350	+0.179	371	821
402	W. B. (2) II. 797 ...	7.2*	2. 34. 53.286	86.93	3	...	+ 3.8273	+0.0393	...	47. 55. 21.38	86.93	3	...	-15.646	+0.356	...	...	822
403	34 Arietis	5.8	2. 35. 36.044	78.40	5	...	+ 3.3696	+0.0179	+0.0009	70. 30. 3.43	79.11	7	...	-15.607	+0.315	+0.040	377	825
404	13 Persei	4.2	2. 36. 0.514	78.37	6	...	+ 4.0306	+0.0508	+0.0330	41. 16. 49.15	78.37	6	...	-15.585	+0.377	+0.093	374	827
405	85 Ceti	6.3	2. 36. 1.279	85.66	1	...	+ 3.2242	+0.0128	-0.0041	79. 46. 14.02	85.66	1	...	-15.584	+0.303	+0.028	381	830
406	35 Arietis	4.7	2. 36. 24.701	80.31	3	...	+ 3.5056	+0.0233	-0.0019	62. 48. 16.96	79.97	4	...	-15.562	+0.329	+0.009	380	831
407	86 Ceti	3.6	2. 37. 4.737	82.83	1	...	+ 3.1126	+0.0094	-0.0114	87. 16. 14.35	83.36	2	...	-15.525	+0.294	+0.156	383	837
408	86 Ceti	3.6	2. 37. 4.962	81.64	3	...	+ 3.1126	+0.0094	-0.0114	87. 16. 15.38	82.57	14	...	-15.525	+0.294	+0.156	383	837
409	37 Arietis	5.8	2. 37. 56.340	83.72	2	...	+ 3.2969	+0.0152	-0.0013	75. 11. 50.78	83.72	2	...	-15.478	+0.312	+0.022	385	842
410	89 Ceti	4.3	2. 38. 24.689	81.06	4	...	+ 2.8540	+0.0033	-0.0028	104. 22. 5.45	81.06	4	...	-15.451	+0.272	+0.009	388	847
411	38 Arietis	5.2	2. 38. 25.298	85.31	7	...	+ 3.2525	+0.0136	+0.0073	78. 3. 37.33	85.40	8	...	-15.450	+0.309	+0.069	386	844
412	87 Ceti	4.4	2. 38. 27.365	86.87	4	...	+ 3.2166	+0.0125	+0.0164	80. 23. 37.64	86.82	5	...	-15.449	+0.306	+0.020	387	845
413	1 Eridani	4.7	2. 39. 30.114	80.59	4	...	+ 2.7758	+0.0020	+0.0218	109. 4. 53.92	80.59	4	...	-15.391	+0.266	-0.054	390	856
414	39 Arietis	4.6	2. 40. 45.946	80.03	7	...	+ 3.5456	+0.0245	+0.0103	61. 15. 8.76	81.08	19	...	-15.319	+0.340	+0.110	389	861
415	Bradley 382	6.5*	2. 41. 17.322	81.69	3	3	+ 5.2559	+0.1466	-0.0017	21. 36. 37.86	83.15	5	3	-15.290	+0.503	+0.011	382	859
416	W. B. (2) II. 961 ...	8.0*	2. 41. 23.465	86.88	2	...	+ 3.9306	+0.0431	...	45. 14. 26.17	86.88	2	...	-15.283	+0.378	...	...	...
417	40 Arietis	6.1	2. 41. 48.478	81.92	3	...	+ 3.3505	+0.0168	+0.0018	72. 13. 2.58	81.92	3	...	-15.260	+0.324	+0.021	393	867
418	42 Arietis	5.6	2. 42. 35.816	81.63	4	...	+ 3.3380	+0.0163	-0.0011	73. 2. 9.61	81.63	4	...	-15.215	+0.324	-0.001	397	870
419	41 Arietis	3.8	2. 42. 55.342	80.01	3	...	+ 3.5123	+0.0228	+0.0032	63. 14. 6.85	80.53	8	...	-15.197	+0.341	+0.119	395	872
420	Lalande 5203.....	8.6*	2. 43. 6.109	86.89	3	...	+ 3.9355	+0.0429	...	45. 19. 39.57	86.89	3	...	-15.187	+0.381	...	...	...
421	Lalande 5221.....	5.8	2. 43. 39.992	79.27	3	...	+ 3.9900	+0.0457	...	43. 39. 15.96	79.27	3	...	-15.154	+0.388	...	...	...
422	W. B. (2) II. 1016...	7.8*	2. 43. 47.813	86.93	3	...	+ 3.9353	+0.0427	...	45. 26. 15.16	86.93	4	...	-15.147	+0.383	...	...	...
423	Fornacis	4.7	2. 44. 4.088	83.86	3	...	+ 2.5044	-0.0006	...	122. 54. 40.77	83.86	4	...	-15.131	+0.246	...	...	879
424	Piazzi II. 200	5.3	2. 44. 42.305	82.90	13	...	+ 2.5956	+0.0001	...	118. 26. 27.19	82.90	13	...	-15.095	+0.256	...	...	883
425	43 Arietis	5.5	2. 44. 52.082	82.86	39	...	+ 3.3016	+0.0150	-0.0002	75. 24. 48.38	83.08	28	...	-15.085	+0.324	+0.039	400	881
426	2 Eridani	4.8	2. 45. 35.706	86.94	3	...	+ 2.7241	+0.0017	-0.0062	111. 29. 58.81	86.94	3	...	-15.043	+0.269	+0.023	404	887
427	18 Persei	4.0	2. 45. 45.383	84.30	3	2	+ 4.2160	+0.0583	-0.0018	37. 43. 48.04	84.51	4	1	-15.033	+0.413	+0.009	399	885
428	20 Persei	5.4	2. 46. 8.366	78.89	4	...	+ 3.7611	+0.0332	+0.0043	52. 9. 9.72	78.89	4	...	-15.012	+0.370	+0.063	401	888
429	B. D. + 70° No. 215	9.0	2. 46. 24.343	77.67	1	1	+ 5.6310	+0.1789	...	19. 7. 54.49	77.72	1	1	-14.997	+0.552	...	...	...
430	Lalande 5273-4.....	5.6	2. 46. 26.906	83.09	6	...	+ 4.6760	+0.0901	...	28. 58. 12.51	84.30	6	10	-14.994	+0.459	...	...	...
431	45 Arietis	5.8	2. 49. 3.980	82.16	7	...	+ 3.3618	+0.0167	-0.0022	72. 9. 20.67	82.41	10	...	-14.841	+0.336	+0.005	406	901
432	46 Arietis	5.5	2. 49. 39.701	79.93	4	...	+ 3.3574	+0.0165	+0.0186	72. 27. 23.78	79.93	4	...	-14.805	+0.337	+0.189	408	903
433	Bradley 410	6.0	2. 49. 48.688	84.01	4	...	+ 3.1975	+0.0116	+0.0048	82. 6. 8.40	84.01	4	...	-14.796	+0.321	+0.060	410	905
434	21 Persei	5.2	2. 50. 0.475	81.94	3	...	+ 3.6247	+0.0264	+0.0006	58. 33. 0.52	81.47	4	...	-14.786	+0.363	+0.028	407	904
435	Cephei 47 (Hev.) ...	5.6	2. 50. 11.958	83.06	7	3	+ 7.6984	+0.4580	-0.0111	11. 3. 29.37	83.27	13	3	-14.774	+0.766	-0.015	392	896
436	3 Eridani	4.0	2. 50. 33.873	80.73	5	...	+ 2.9228	+0.0052	+0.0038	99. 22. 36.04	80.73	5	...	-14.752	+0.295	+0.215	413	910
437	W. B. II. 861	5.2	2. 50. 36.437	86.49	4	...	+ 3.0058	+0.0069	...	94. 11. 47.83	86.49	4	...	-14.750	+0.303	...	...	...
438	22 Persei	4.7	2. 51. 5.461	80.89	3	...	+ 3.8123	+0.0346	+0.0014	50. 49. 7.62	80.38	4	...	-14.721	+0.384	+0.034	411	912
439	24 Persei	5.0	2. 51. 37.677	83.85	3	...	+ 3.7026	+0.0295	...	55. 17. 56.57	83.85	3	...	-14.689	+0.374	...	...	915
440	Groombridge 590 ...	5.6	2. 51. 41.668	85.32	3	...	+ 4.0399	+0.0458	...	43. 15. 40.01	85.32	3	...	-14.685	+0.408	...	...	914

402. In H.P. the magnitude appears as "Cum," indicating that the proximity of other stars prevented estimation.

405, 412. B. A. C. assigns these stars to Aries.

407, 408. The magnitudes given in Struve's *Mensura Micrometrica* are 6.8 and 3.0.410. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.0.

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley, 1755.	No. in B.A.C., 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
441	4 Eridani	5.4	h m s 2. 52. 3.595	81.21	3	...	+ 2.6597	+0.0013	+0.0049	114. 20. 39.36	81.21	3	...	-14.664	+0.271	+0.033	418	922
442	Piazzi II. 220 (1st Star)		2. 52. 19.488	86.92	3	...	+ 4.2358	+0.0567	...	38. 7. 37.53	86.92	3	...	-14.647	+0.428	...	...	918
443	Piazzi II. 220 (2nd Star)	5.1	2. 52. 20.915	86.93	2	...	+ 4.2358	+0.0567	...	38. 7. 35.81	86.93	2	...	-14.646	+0.428	...	...	...
444	48 Arietis	4.6	2. 52. 21.082	81.43	34	...	+ 3.4203	+0.0184	-0.0025	69. 8. 26.83	82.09	31	...	-14.646	+0.347	+0.006	415	921
445	W. B. (2) II. 1223...	5.9	2. 52. 36.094	85.99	3	...	+ 3.7778	+0.0326	...	52. 20. 50.04	85.99	3	...	-14.631	+0.383	...	...	...
446	Lalande 5514	5.0	2. 52. 39.359	84.44	2	...	+ 3.0202	+0.0072	...	93. 15. 44.28	84.27	3	...	-14.628	+0.308	...	...	...
447	B. D. + 60° No. 616	9.0*	2. 52. 50.644	82.88	1	...	+ 4.7271	+0.0894	...	28. 56. 58.54	82.88	1	...	-14.616	+0.478	...	...	...
448	Bradley 396	6.0	2. 53. 12.737	86.28	1	2	+ 8.8640	+0.6608	-0.0225	8. 59. 47.74	86.52	3	3	-14.594	+0.893	-0.004	396	908
449	5 Eridani	5.4	2. 53. 37.637	83.86	3	...	+ 3.0251	+0.0073	-0.0009	92. 56. 36.69	83.86	3	...	-14.569	+0.310	+0.003	423	934
450	Groombridge 598 ...	6.8*	2. 54. 14.644	79.41	4	...	+ 3.8026	+0.0334	...	51. 35. 53.75	79.41	4	...	-14.532	+0.389	...	...	...
451	Piazzi II. 241	5.5	2. 54. 19.277	86.95	3	...	+ 2.6276	+0.0012	...	115. 45. 21.15	86.95	3	...	-14.528	+0.270	...	...	940
452	Lalande (F.) 487 ...	8.2*	2. 54. 20.641	77.68	2	2	+ 5.6792	+0.1723	...	19. 28. 19.55	77.73	2	2	-14.527	+0.577	...	...	...
453	Lalande 5490	6.7*	2. 54. 20.663	85.34	3	4	+ 4.7527	+0.0903	+0.0998	28. 44. 43.96	85.31	2	6	-14.526	+0.484	+0.688	...	...
454	49 Arietis	5.9	2. 54. 50.031	78.68	4	...	+ 3.5226	+0.0218	-0.0029	64. 0. 49.64	79.11	6	...	-14.497	+0.361	+0.005	424	941
455	92 Ceti	2.7	2. 56. 0.413	82.23	34	...	+ 3.1310	+0.0098	-0.0029	86. 22. 55.52	82.67	21	...	-14.426	+0.323	+0.073	428	949
456	Piazzi II. 248	6.0	2. 56. 26.882	86.94	3	...	+ 2.6569	+0.0008	...	118. 33. 9.35	86.94	3	...	-14.398	+0.267	...	...	951
457	Persei	5.0	2. 56. 32.002	84.46	3	3	+ 4.4646	+0.0689	...	33. 46. 1.10	84.53	3	3	-14.393	+0.460	...	...	948
458	11 Eridani	4.1	2. 57. 6.025	80.21	3	...	+ 2.6549	+0.0016	-0.0124	114. 5. 45.46	80.21	3	...	-14.359	+0.276	+0.037	434	954
459	Lalande 5579	5.8	2. 57. 17.435	82.18	3	4	+ 4.9531	+0.1033	...	26. 24. 37.19	82.55	3	9	-14.348	+0.511	...	...	...
460	25 Persei	Var.	2. 57. 29.415	82.54	3	...	+ 3.8126	+0.0331	+0.0103	51. 37. 33.16	81.64	4	...	-14.335	+0.395	+0.088	429	953
461	10 Eridani	5.4	2. 58. 22.794	84.28	5	...	+ 2.9392	+0.0057	+0.0029	98. 4. 17.01	84.23	7	...	-14.280	+0.307	-0.009	435	959
462	Bradley 417	4.7	2. 58. 57.807	80.30	4	3	+ 6.3403	+0.2375	-0.003	16. 3. 52.36	82.06	15	3	-14.244	+0.657	+0.078	417	955
463	W. B. II. 1033	5.9	2. 59. 48.435	82.48	12	...	+ 3.2856	+0.0137	...	77. 16. 36.63	83.31	15	...	-14.193	+0.345	...	...	...
464	26 Persei	Var.	3. 0. 21.846	80.59	6	...	+ 3.8808	+0.0355	-0.0017	49. 30. 28.18	79.45	13	...	-14.158	+0.407	-0.010	436	963
465	Persei	4.1	3. 0. 24.726	83.64	8	4	+ 4.1677	+0.0497	+0.1271	40. 50. 47.93	83.54	8	4	-14.155	+0.437	+0.033	...	962
466	W. B. II. 1054	5.6	3. 0. 37.368	85.91	3	...	+ 2.9634	+0.0062	...	96. 33. 13.09	85.91	3	...	-14.142	+0.313	...	...	...
467	53 Arietis	6.7*	3. 0. 40.333	79.88	11	...	+ 3.3697	+0.0162	-0.0032	72. 35. 3.85	79.88	12	...	-14.139	+0.355	-0.009	439	966
468	27 Persei	4.0	3. 1. 24.373	83.99	3	...	+ 4.0038	+0.0410	+0.0151	45. 35. 55.30	83.98	4	...	-14.094	+0.421	+0.160	438	967
469	Groombridge 606 ...	6.6	3. 1. 25.375	86.01	3	1	+ 7.7151	+0.4185	...	11. 34. 40.80	86.19	4	1	-14.093	+0.807	...	...	...
470	Groombridge 612 ...	6.8*	3. 2. 18.233	81.34	3	2	+ 6.2782	+0.2237	...	16. 35. 6.01	82.47	4	9	-14.038	+0.660	...	...	...
471	55 Arietis	5.5	3. 2. 23.788	81.44	5	...	+ 3.5935	+0.0235	+0.0001	61. 22. 57.05	80.87	6	...	-14.031	+0.380	+0.026	441	974
472	28 Persei	4.7	3. 3. 32.764	81.24	3	...	+ 3.8539	+0.0336	-0.0029	50. 50. 44.46	81.24	3	...	-13.959	+0.410	-0.020	443	981
473	Bradley 402	5.9	3. 4. 9.568	85.85	2	3	+ 13.0326	+1.6103	+0.0444	5. 31. 6.13	85.87	4	3	-13.921	+1.374	+0.119	402	960
474	Bradley 409	7.5*	3. 4. 23.615	85.00	3	...	+ 11.0205	+1.0602	-0.003	6. 54. 36.79	85.00	3	...	-13.907	+1.164	+0.009	409	965
475	57 Arietis	4.5	3. 4. 46.087	82.28	41	...	+ 3.4097	+0.0171	+0.0095	70. 43. 41.89	82.26	24	...	-13.883	+0.365	-0.005	446	986
476	Piazzi III. 4	6.3*	3. 4. 46.488	84.45	5	...	+ 3.2879	+0.0136	...	77. 24. 30.40	84.45	5	...	-13.882	+0.352	...	...	987
477	56 Arietis	5.5	3. 5. 5.330	85.27	3	...	+ 3.5604	+0.0219	-0.0012	63. 11. 48.68	85.27	3	...	-13.863	+0.381	+0.022	447	989
478	Bradley 431	5.5	3. 5. 9.051	81.72	4	3	+ 7.3575	+0.3535	+0.003	12. 42. 31.98	82.81	8	5	-13.858	+0.782	+0.045	431	979
479	Bradley 442	7.0*	3. 5. 46.795	86.18	3	2	+ 5.2416	+0.1186	+0.004	24. 4. 3.78	84.75	3	6	-13.818	+0.560	+0.033	442	988
480	Piazzi III. 6	5.9	3. 6. 4.277	86.28	4	...	+ 3.1778	+0.0107	...	83. 47. 31.83	86.28	4	...	-13.800	+0.342	...	...	991

442, 443. The magnitudes given in Struve's *Mensura Micrometrica* are 5.3 and 6.7.446. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.4.457. The letter *h* is omitted in the B. A. C.461. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.7.

444. A close double observed as one mass. The magnitude given in the

453. Authority for Prop r Motion: Bonn Observations, Vol. VII.

464. The limits of magnitude are 2.3 and 3.5; the period about three days.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xv}

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.				1755.	1850.
481	Bradley 437	7.4*	3. 6. 20.366	86.99	3	...	+ 6.6451	+0.2380	+0.002	15. 12. 22.73	86.70	3	I	-13.783	+0.710	+0.004	437	985
482	Groombridge 627 ...	5.9	3. 6. 36.792	80.89	3	...	+ 4.5520	+0.0690	...	33. 18. 29.51	80.89	3	...	-13.765	+0.489	...	...	...
483	94 Ceti	5.0	3. 6. 38.987	83.54	6	...	+ 3.0444	+0.0078	+0.0123	91. 38. 45.31	83.54	6	...	-13.763	+0.329	+0.073	450	994
484	12 Eridani	3.8	3. 6. 58.460	82.19	8	...	+ 2.5223	+0.0012	+0.0245	119. 27. 40.58	82.19	8	...	-13.743	+0.274	-0.656	454	997
485	Bradley 445	6.5*	3. 7. 2.015	85.08	3	I	+ 5.1810	+0.1126	-0.005	24. 47. 18.65	84.97	3	I	-13.739	+0.556	-0.004	445	990
486	Groombridge 629 ...	6.7*	3. 7. 14.100	85.60	4	...	+ 4.2551	+0.0518	...	39. 29. 29.17	85.24	3	...	-13.726	+0.458	...	...	...
487	Groombridge 631 ...	5.2	3. 7. 37.789	84.83	6	2	+ 4.2563	+0.0517	...	39. 30. 32.69	84.95	6	2	-13.700	+0.459	...	...	995
488	58 Arietis	4.9	3. 8. 0.358	80.35	5	...	+ 3.4398	+0.0177	-0.0032	69. 24. 5.28	79.98	9	...	-13.677	+0.373	+0.070	451	999
489	Piazzi III. 9	5.5	3. 8. 2.050	86.13	4	...	+ 3.6394	+0.0243	...	59. 53. 29.03	86.13	4	...	-13.675	+0.394	...	...	...
490	Groombridge 628 ...	6.5*	3. 8. 35.996	82.56	4	4	+ 5.6649	+0.1517	...	20. 42. 37.75	83.07	4	II	-13.639	+0.611	...	...	998
491	Oeltz Arg. (N.) 3620	8.5*	3. 9. 4.584	86.88	3	...	+ 4.3971	+0.0587	...	36. 32. 58.60	86.88	3	...	-13.608	+0.477	...	...	...
492	W. B. (2) III. 157...	6.8*	3. 9. 21.024	80.91	3	...	+ 3.8984	+0.0342	...	49. 57. 37.39	80.91	3	...	-13.590	+0.424	...	...	...
493	W. B. (2) III. 158...	...	3. 9. (21.)	...	...	...	+ 3.8984	+0.0342	...	49. 57. 33.36	82.81	1	...	-13.589	+0.424	...	...	...
494	Bradley 448	4.8	3. 9. 26.688	78.71	4	...	+ 5.2020	+0.1120	-0.004	24. 47. 18.59	80.57	7	...	-13.584	+0.564	+0.012	448	1001
495	30 Persei	5.4	3. 9. 43.115	85.76	4	...	+ 4.0093	+0.0389	+0.0018	46. 25. 2.68	85.76	4	...	-13.566	+0.436	+0.044	453	1006
496	Piazzi III. 24.....	6.0	3. 9. 50.619	86.24	4	...	+ 2.5802	+0.0017	...	116. 32. 46.67	86.24	4	...	-13.588	+0.283	...	...	1012
497	13 Eridani	4.8	3. 10. 0.252	79.63	3	...	+ 2.9115	+0.0055	-0.0021	99. 15. 59.52	79.63	3	...	-13.549	+0.319	-0.042	457	1013
498	14 Eridani	6.1	3. 10. 46.823	83.98	3	...	+ 2.9051	+0.0054	...	99. 35. 59.66	83.93	2	...	-13.498	+0.319	...	...	1016
499	Piazzi III. 23.....	4.8	3. 11. 13.671	81.62	3	...	+ 3.7350	+0.0273	...	56. 13. 3.67	81.19	9	...	-13.469	+0.409	...	...	1017
500	95 Ceti.....	5.7	3. 12. 13.945	86.26	6	...	+ 3.0486	+0.0079	+0.0156	91. 22. 5.97	86.23	7	...	-13.404	+0.337	+0.066	461	1022
501	Bradley 449	7.1*	3. 12. 58.891	80.36	3	3	+ 6.2900	+0.2056	+0.012	17. 13. 16.28	80.01	3	3	-13.355	+0.690	+0.057	449	1018
502	Lacaille 1052.....	5.8	3. 12. 59.486	86.93	3	...	+ 2.5140	+0.0015	...	119. 14. 10.06	86.93	3	...	-13.355	+0.279	...	...	...
503	15 Eridani	5.0	3. 13. 3.772	86.88	3	...	+ 2.6498	+0.0023	-0.0004	112. 57. 3.00	86.88	3	...	-13.349	+0.294	-0.008	466	1031
504	Piazzi III. 32.....	4.7	3. 13. 4.783	81.56	3	...	+ 3.6166	+0.0228	...	61. 23. 16.77	81.56	3	...	-13.348	+0.399	...	...	1025
505	Lalande 6161.....	5.7	3. 13. 12.480	85.29	3	...	+ 2.7286	+0.0032	...	108. 58. 47.52	85.29	3	...	-13.340	+0.303	...	...	...
506	16 Eridani	3.8	3. 14. 10.794	84.71	4	...	+ 2.6634	+0.0026	+0.0013	112. 11. 44.99	84.71	4	...	-13.276	+0.297	-0.037	469	1037
507	Piazzi III. 27.....	5.7	3. 14. 16.334	84.12	1	4	+ 5.1416	+0.1032	...	25. 50. 41.17	81.86	5	6	-13.271	+0.568	...	...	1030
508	61 Arietis	5.2	3. 14. 18.006	83.74	34	...	+ 3.4513	+0.0175	+0.0008	69. 17. 12.61	82.33	26	...	-13.269	+0.383	+0.030	465	1034
509	Lacaille 1055.....	5.9	3. 14. 21.092	86.95	3	...	+ 2.6142	+0.0022	...	114. 33. 31.49	86.95	3	...	-13.265	+0.292	...	...	1039
510	Piazzi III. 37.....	5.2	3. 14. 43.398	84.94	2	2	+ 4.2185	+0.0472	...	41. 13. 4.02	83.44	2	(2)	-13.241	+0.468	...	...	1035
511	97 Ceti	5.5	3. 14. 50.171	85.15	4	...	+ 3.1292	+0.0095	+0.0027	86. 45. 27.93	85.10	5	...	-13.234	+0.349	+0.037	468	1041
512	Lacaille 1064.....	6.3	3. 15. 37.842	86.51	2	...	+ 2.5580	+0.0019	...	117. 2. 27.72	86.51	2	...	-13.181	+0.287	...	...	1047
513	33 Persei	4.9	3. 15. 45.620	81.97	15	4	+ 4.2497	+0.0483	+0.0015	40. 34. 3.08	81.73	15	5	-13.173	+0.473	+0.033	464	1043
514	63 Arietis	5.2	3. 15. 50.942	81.77	1	...	+ 3.4456	+0.0172	-0.0043	69. 41. 17.98	81.77	1	...	-13.167	+0.385	+0.007	470	1045
515	Lalande 6248.....	5.8	3. 16. 9.485	86.66	3	...	+ 2.6214	+0.0023	...	114. 4. 0.43	86.66	3	...	-13.147	+0.294	...	...	1049
516	W. B. (2) III. 320...	5.7	3. 16. 59.584	79.53	3	...	+ 3.7328	+0.0263	...	56. 53. 27.51	79.53	3	...	-13.091	+0.418	...	...	...
517	64 Arietis	5.6	3. 17. 13.340	82.76	7	...	+ 3.5299	+0.0195	-0.0004	65. 42. 8.41	82.18	11	...	-13.076	+0.396	+0.046	472	1052
518	Groombridge 659 ...	5.9	3. 17. 26.627	86.91	5	...	+ 4.2269	+0.0466	...	41. 18. 15.03	86.91	5	...	-13.061	+0.473	...	...	...
519	Groombridge 660 ...	7.3*	3. 17. 30.714	82.91	4	2	+ 4.2530	+0.0478	...	40. 40. 47.99	82.71	4	2	-13.056	+0.476	...	...	...
520	65 Arietis	5.6	3. 17. 31.023	81.24	6	...	+ 3.4492	+0.0171	-0.0003	69. 37. 25.45	81.24	6	...	-13.056	+0.387	-0.001	474	1053

483. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.3.484. Designated *a* Eridani in B. A. C.492, 493. The magnitudes given in Struve's *Mensurae Micrometricae* are 6.5 and 7.8.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
521	W. B. III. 275	6.2	3. 17. 33'951	81'65	3	...	+ 3'2918	+0'0130	...	77. 47. 50'90	80'96	4	...	-13'053	+0'370	...	...	...
522	Bradley 459	6.5*	3. 17. 54'399	84'97	1	2	+ 6'0996	+0'1788	+0'001	18. 33. 23'76	84'60	1	4	-13'031	+0'682	-0'006	459	1050
523	1 Tauri.....	3.8	3. 18. 21'350	83'28	35	...	+ 3'2264	+0'0115	-0'0052	81. 23. 40'90	83'14	22	...	-13'001	+0'364	+0'008	477	1057
524	Carrington 484.....	8.8*	3. 18.(42.)	...	...	...	+ 9'5762	+0'6511	...	8. 54. 24'64	81'34	...	1	-12'978	+1'070	...	...	...
525	Bradley 476	5.0	3. 19. 31'565	85'15	4	3	+ 4'2336	+0'0462	0'000	41. 21. 25'78	84'72	4	(3)	-12'923	+0'478	+0'041	476	1059
526	2 Tauri.....	3.8	3. 20. 39'974	86'94	1	...	+ 3'2407	+0'0117	+0'0032	80. 41. 13'42	86'94	1	...	-12'846	+0'369	+0'049	481	1068
527	W. B. (2) III. 398...	7.5*	3. 20. 41'572	83'33	6	...	+ 3'7237	+0'0253	...	57. 36. 28'33	83'33	6	...	-12'844	+0'423	...	...	...
528	34 Persei	4.8	3. 20. 47'556	83'89	3	...	+ 4'2577	+0'0469	+0'0003	40. 54. 30'23	83'89	3	...	-12'837	+0'483	+0'034	478	1066
529	Piazzi III. 62.....	5.5	3. 20. 48'599	79'44	2	...	+ 3'7494	+0'0262	...	56. 36. 34'02	79'44	2	...	-12'836	+0'426	...	...	...
530	W. B. III. 344	8.0*	3. 21. 12'095	86'26	5	...	+ 3'2046	+0'0109	...	82. 40. 8'95	86'23	6	...	-12'810	+0'365	...	...	...
531	66 Arietis	6.1	3. 21. 25'757	80'46	4	...	+ 3'4964	+0'0181	-0'0008	67. 36. 38'80	80'75	5	...	-12'794	+0'398	+0'120	482	1069
532	Bradley 471	6.7*	3. 22. 5'329	82'75	4	...	+ 6'4346	+0'2041	+0'003	17. 3. 44'16	82'96	5	2	-12'750	+0'730	+0'043	471	1067
533	Lalande 6420.....	5.8	3. 22. 17'598	84'92	4	...	+ 2'8583	+0'0050	...	101. 42. 11'75	84'93	4	...	-12'735	+0'328	...	...	...
534	B. D. + 12° No. 485	8.5*	3. 23. 38'492	81'09	2	...	+ 3'3021	+0'0130	...	77. 30. 38'95	81'09	1	...	-12'646	+0'379	...	...	...
535	Lalande 6462.....	6.2	3. 23. 46'522	86'57	3	...	+ 2'9412	+0'0061	...	97. 11. 57'05	86'57	3	...	-12'635	+0'338	...	...	...
536	Lalande 6476.....	5.7	3. 23. 55'998	84'69	4	...	+ 2'8308	+0'0047	...	103. 5. 22'24	83'94	3	...	-12'625	+0'326	...	...	...
537	W. B. (2) III. 466...	5.8	3. 24. 5'350	79'52	3	...	+ 3'6055	+0'0210	...	62. 50. 20'87	79'52	3	...	-12'615	+0'414	...	...	...
538	W. B. (2) III. 467...	...	3. 24. 6'171	79'52	3	...	+ 3'6056	+0'0210	...	62. 50. 20'68	79'52	3	...	-12'614	+0'414	...	...	...
539	5 Tauri.....	4.3	3. 24. 14'891	82'77	41	...	+ 3'3033	+0'0130	-0'0002	77. 28. 33'12	83'32	21	...	-12'604	+0'380	-0'011	486	1087
540	Groombridge 699 ...	6.0	3. 24. 25'113	86'92	3	...	+ 4'0929	+0'0384	...	45. 33. 16'08	86'92	3	...	-12'592	+0'470	...	...	...
541	Lalande 6492.....	6.9	3. 24. 30'222	86'91	3	...	+ 2'8500	+0'0049	...	102. 3. 24'70	86'91	4	...	-12'587	+0'329	...	...	...
542	Lalande 6422.....	5.7	3. 24. 31'257	84'03	1	2	+ 4'5352	+0'0590	...	35. 26. 2'37	83'90	1	2	-12'585	+0'520	...	...	...
543	17 Eridani	4.8	3. 24. 39'797	84'89	3	...	+ 2'9723	+0'0066	-0'0006	95. 29. 15'91	84'89	4	...	-12'575	+0'343	-0'002	487	1090
544	W. B. (2) III. 484...	5.7	3. 25. 1'699	82'98	3	...	+ 3'8038	+0'0273	...	54. 56. 52'56	82'98	3	...	-12'550	+0'438	...	...	...
545	Groombridge 703 ...	5.8	3. 25. 40'585	83'86	3	...	+ 3'9337	+0'0318	...	50. 30. 24'53	83'86	3	...	-12'506	+0'454	...	...	...
546	6 Tauri.....	5.5	3. 26. 6'437	78'50	6	...	+ 3'2375	+0'0114	+0'0008	81. 2. 0'78	78'50	6	...	-12'476	+0'375	+0'035	489	1092
547	18 Eridani	3.7	3. 27. 16'604	82'50	35	...	+ 2'8895	+0'0055	-0'0675	99. 51. 56'23	83'35	20	...	-12'396	+0'337	-0'011	493	1100
548	Piazzi III. 87.....	7.0*	3. 27. 18'237	81'21	14	...	+ 3'4025	+0'0151	...	72. 33. 43'75	81'12	15	...	-12'395	+0'395	...	...	1096
549	7 Tauri	5.9	3. 27. 20'331	81'96	3	...	+ 3'5416	+0'0188	0'0000	65. 56. 22'41	81'35	8	...	-12'393	+0'411	+0'035	491	1095
550	Groombridge 642 ...	5.8	3. 27. 21'379	81'93	2	...	+ 19'1848	+3'2518	+0'1356	3. 44. 4'98	82'69	2	2	-12'391	+2'205	+0'064	...	1061
551	37 Persei	4.2	3. 27. 57'993	84'51	7	4	+ 4'2337	+0'0433	+0'0023	42. 12. 29'46	85'23	8	(4)	-12'349	+0'492	+0'038	488	1099
552	19 Eridani	4.2	3. 28. 29'233	83'96	3	...	+ 2'6451	+0'0030	+0'0014	112. 2. 10'30	83'96	3	...	-12'313	+0'310	+0'040	495	1104
553	9 Tauri	7.0*	3. 29. 54'775	81'33	3	...	+ 3'5184	+0'0178	-0'0023	67. 11. 13'35	82'04	9	...	-12'214	+0'412	+0'040	494	1107
554	Lalande 6661.....	5.8	3. 30. 14'577	85'41	4	...	+ 2'8544	+0'0051	...	101. 35. 46'06	84'97	6	...	-12'191	+0'336	...	...	...
555	20 Eridani	5.3	3. 30. 49'408	84'20	3	...	+ 2'7295	+0'0038	-0'0001	107. 51. 55'71	84'20	3	...	-12'152	+0'322	+0'001	498	1115
556	Piazzi III. 94.....	5.3	3. 31. 45'184	83'67	3	3	+ 5'1505	+0'0899	-0'0038	27. 10. 27'82	83'60	3	8	-12'086	+0'605	-0'058	...	1111
557	Lalande 6686.....	6.2	3. 32. 2'255	81'64	4	...	+ 3'4720	+0'0165	...	69. 28. 37'83	81'64	4	...	-12'067	+0'410	...	...	...
558	Lalande 6726.....	5.9	3. 32. 37'708	86'09	6	...	+ 2'9261	+0'0060	...	97. 47. 1'74	86'09	6	...	-12'025	+0'347	...	...	...
559	Piazzi III. 103	6.4	3. 32. 38'613	85'69	4	...	+ 3'3820	+0'0142	...	73. 51. 18'71	85'94	5	...	-12'024	+0'400	...	...	1119
560	Piazzi III. 97.....	5.9	3. 32. 50'026	84'90	2	2	+ 4'8958	+0'0740	...	30. 25. 9'70	84'83	2	3	-12'011	+0'577	...	...	1117

537, 538. The magnitudes given in Struve's *Mensura Micrometrica* are 7.0 and 6.5.
550. Authority for Proper Motion: Bonn Observations, Vol. VII.
558. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.2.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xvii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"		
561	12 Tauri	5.9	3. 33. 36.161	84.98	4	...	+ 3.1223	+0.0090	-0.0060	87. 20. 4.66	84.68	6	...	-11.957	+0.371	-0.019	503	1128
562	11 Tauri	6.7*	3. 33. 36.337	83.33	25	...	+ 3.5714	+0.0189	-0.0002	65. 3. 35.90	83.83	15	...	-11.957	+0.423	+0.011	500	1126
563	39 Persei	3.2	3. 34. 23.129	83.21	6	2	+ 4.2426	+0.0416	+0.0012	42. 35. 52.28	83.87	6	(2)	-11.902	+0.503	+0.037	499	1129
564	Piazzi III. 102	5.8	3. 34. 40.408	84.09	3	1	+ 5.5881	+0.1161	...	23. 10. 38.21	83.16	3	3	-11.882	+0.662	...	...	1127
565	13 Tauri	5.4	3. 35. 23.743	81.95	8	...	+ 3.4506	+0.0156	-0.0013	70. 41. 7.31	81.79	7	...	-11.830	+0.412	+0.007	504	1135
566	Piazzi III. 105	5.0	3. 35. 33.401	85.73	3	...	+ 5.1892	+0.0892	...	27. 2. 9.39	85.73	3	...	-11.818	+0.617	...	...	1133
567	W. B. (2) III. 732 ..	7.5*	3. 35. 35.031	80.70	4	...	+ 4.0527	+0.0338	...	47. 46. 21.04	83.88	2	...	-11.817	+0.482	...	...	...
568	Oeltz. Arg. (N.) 4033	8.5*	3. 35. 45.480	81.42	...	1	+ 6.1189	+0.1547	...	19. 31. 50.88	81.42	...	1	-11.805	+0.727	...	...	...
569	W. B. (2) III. 766...	5.6	3. 36. 45.715	85.91	2	...	+ 3.8624	+0.0270	...	53. 55. 13.52	85.91	2	...	-11.733	+0.462	...	...	...
570	Lalande (F.) 590 ...	5.3	3. 36. 46.284	83.34	4	6	+ 6.1335	+0.1544	...	19. 30. 11.02	83.56	6	6	-11.733	+0.730	...	...	...
571	38 Persei	4.0	3. 36. 47.750	84.91	3	...	+ 3.7474	+0.0234	-0.002	58. 5. 36.34	84.91	3	...	-11.731	+0.448	+0.01	...	1138
572	41 Persei	4.0	3. 37. 2.616	77.64	3	...	+ 4.0562	+0.0336	-0.0015	47. 48. 7.11	77.44	2	(1)	-11.713	+0.485	+0.012	506	1139
573	Piazzi III. 128	5.9	3. 37. 29.258	82.94	3	...	+ 3.4797	+0.0161	...	69. 27. 6.85	82.94	3	...	-11.682	+0.418	...	...	1143
574	23 Eridani.....	3.7	3. 37. 29.997	81.84	25	...	+ 2.8773	+0.0054	-0.0081	100. 10. 15.17	81.18	15	...	-11.681	+0.346	-0.743	515	1148
575	Camelopardi	4.7	3. 37. 42.916	84.51	2	2	+ 6.2235	+0.1603	-0.0016	19. 2. 23.95	82.91	10	6	-11.666	+0.743	+0.051	...	1137
576	17 Tauri	3.8	3. 37. 45.020	79.33	13	...	+ 3.5505	+0.0179	-0.0001	66. 15. 55.71	80.16	17	...	-11.663	+0.426	+0.036	509	1147
577	19 Tauri	4.4	3. 38. 3.942	85.61	3	...	+ 3.5590	+0.0180	-0.0008	65. 54. 38.08	85.61	3	...	-11.641	+0.428	+0.031	511	1151
578	Piazzi III. 121	4.6	3. 38. 32.940	85.63	2	3	+ 5.4268	+0.1016	...	24. 50. 50.00	85.80	2	4	-11.606	+0.650	...	...	1144
579	20 Tauri	4.0	3. 38. 41.215	85.28	6	...	+ 3.5577	+0.0179	+0.0003	66. 0. 31.44	85.28	6	...	-11.597	+0.428	+0.036	512	1154
580	25 Eridani	5.7	3. 38. 48.328	86.26	3	...	+ 3.0594	+0.0078	+0.0020	90. 40. 31.86	85.94	3	...	-11.587	+0.369	-0.012	518	1158
581	23 Tauri	4.2	3. 39. 12.297	80.17	4	...	+ 3.5490	+0.0177	-0.0005	66. 25. 37.71	80.17	4	...	-11.560	+0.428	+0.042	516	1161
582	B. D. + 23° No. 534.	8.0*	3. 40. 11.299	80.97	1	...	+ 3.5548	+0.0177	...	66. 14. 3.76	80.97	1	...	-11.490	+0.430	...	...	...
583	24 Tauri	8.0*	3. 40. 13.139	79.70	6	...	+ 3.5543	+0.0177	-0.0023	66. 15. 24.14	80.78	9	...	-11.487	+0.430	+0.058	520	1164
584	25 Tauri.....	3.0	3. 40. 21.149	81.88	32	...	+ 3.5542	+0.0177	-0.0004	66. 16. 2.62	81.29	33	...	-11.478	+0.430	+0.040	521	1166
585	26 Eridani	4.4	3. 40. 28.240	84.26	3	...	+ 2.8295	+0.0049	+0.0002	102. 28. 45.62	84.21	5	...	-11.469	+0.344	-0.071	526	1168
586	Groombridge 740 ...	6.0	3. 40. 51.628	86.31	3	...	+ 4.1176	+0.0348	...	46. 24. 32.75	86.31	3	...	-11.440	+0.498	...	...	...
587	Piazzi III. 169	5.8	3. 41. 33.832	85.94	3	...	+ 2.4443	+0.0025	...	119. 42. 44.18	85.94	3	...	-11.390	+0.298	...	...	1179
588	27 Eridani	4.3	3. 41. 41.093	83.85	3	...	+ 2.5913	+0.0031	-0.0127	113. 36. 18.26	83.85	3	...	-11.382	+0.316	+0.530	530	1181
589	30 Tauri.....	5.1	3. 41. 41.381	86.82	4	...	+ 3.2817	+0.0115	-0.0005	79. 13. 39.03	86.85	3	...	-11.382	+0.399	+0.021	529	1174
590	27 Tauri	3.8	3. 42. 1.673	79.80	9	...	+ 3.5557	+0.0175	-0.0003	66. 18. 54.40	80.61	12	...	-11.358	+0.432	+0.047	527	1176
591	28 Tauri	6.2*	3. 42. 2.913	79.20	5	...	+ 3.5576	+0.0175	-0.0013	66. 13. 52.95	79.49	6	...	-11.355	+0.433	+0.057	528	1177
592	W. B. III. 787	9.0*	3. 42. 20.082	81.99	3	...	+ 3.0356	+0.0074	...	91. 54. 22.26	81.22	2	...	-11.335	+0.370	...	...	...
593	28 Eridani	4.8	3. 42. 29.973	84.74	4	...	+ 2.5753	+0.0030	+0.0014	114. 14. 51.19	84.74	4	...	-11.323	+0.315	-0.049	532	1191
594	Piazzi III. 166	6.0	3. 42. 51.898	83.91	3	...	+ 3.5158	+0.0165	...	68. 7. 20.83	83.91	3	...	-11.296	+0.429	...	...	1189
595	Piazzi III. 176	5.7	3. 43. 5.279	82.97	1	...	+ 2.4204	+0.0025	+0.0048	120. 31. 51.36	83.52	2	...	-11.281	+0.276	+0.261	...	1194
596	Piazzi III. 170	5.5	3. 43. 6.199	83.51	4	...	+ 3.5928	+0.0183	...	64. 47. 3.39	83.51	4	...	-11.279	+0.438	...	...	1192
597	Bradley 531	7.5*	3. 43. 13.372	80.17	4	...	+ 3.0372	+0.0074	0.000	91. 49. 12.35	80.16	4	...	-11.271	+0.371	+0.045	531	1193
598	W. B. (2) III. 942 ..	5.7	3. 44. 13.636	86.30	3	...	+ 3.8203	+0.0243	...	56. 0. 16.12	85.96	3	...	-11.197	+0.467	...	...	...
599	W. B. (2) III. 952 ..	5.7	3. 44. 33.762	86.48	4	...	+ 3.5134	+0.0162	...	68. 19. 53.15	86.48	4	...	-11.173	+0.430	...	...	...
600	Lalande 7110.....	6.0	3. 44. 36.190	83.93	3	...	+ 3.3221	+0.0122	...	77. 19. 3.17	83.93	3	...	-11.171	+0.407	...	...	...

571. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.4.
595. Authority for Proper Motion: Bonn Observations, Vol. VII.
599. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.

{xviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
601	Lalande 7036.....	7.8*	3. 44. 44.002	85.93	5	...	+ 5.0610	+0.0753	+0.0531	29. 11. 4.27	85.22	5	3	-11.161	+0.618	+0.256	...	...
602	Piazzi III. 187	6.0	3. 46. 18.332	80.73	4	...	+ 3.4128	+0.0139	+0.0129	73. 1. 54.11	80.73	4	...	-11.047	+0.420	+0.041	...	1206
603	44 Persei	3.1	3. 46. 35.424	79.08	5	...	+ 3.7573	+0.0221	-0.0003	58. 28. 26.40	80.75	6	...	-11.026	+0.463	+0.002	534	1207
604	Piazzi III. 177	4.8	3. 46. 50.731	82.55	3	3	+ 5.2393	+0.0836	...	27. 16. 54.48	81.79	13	5	-11.007	+0.643	...	...	1203
605	Piazzi III. 186	5.4	3. 47. 19.934	82.35	5	...	+ 4.2943	+0.0394	...	42. 28. 58.28	82.35	5	...	-10.971	+0.529	...	...	1210
606	W. B. III. 909	4.8	3. 48. 15.815	79.33	3	...	+ 3.0074	+0.0070	+0.0019	93. 18. 32.39	79.33	3	...	-10.903	+0.373	+0.003	...	...
607	32 Eridani	4.8	3. 48. 15.979	79.33	3	...	+ 3.0074	+0.0070	+0.0019	93. 18. 38.41	79.33	3	...	-10.903	+0.373	+0.003	540	1216
608	Piazzi III. 194	5.5	3. 48. 44.738	83.86	3	...	+ 3.8512	+0.0244	...	55. 16. 18.12	83.86	3	...	-10.867	+0.477	...	...	...
609	Eridani	5.3†	3. 49. 4.597	86.88	1	...	+ 2.2822	+0.0026	...	125. 5. 22.85	86.88	1	...	-10.844	+0.285	...	...	1220
610	45 Persei	3.0	3. 49. 48.155	80.56	4	...	+ 4.0066	+0.0288	+0.0004	50. 20. 18.46	79.88	12	...	-10.790	+0.497	+0.016	539	1219
611	Piazzi III. 160	5.2	3. 50. 1.660	82.37	3	3	+ 9.7145	+0.5080	...	9. 38. 7.35	83.49	8	7	-10.773	+1.200	...	...	1211
612	Piazzi III. 203	5.9	3. 50. 38.616	84.49	4	...	+ 3.1849	+0.0094	...	84. 18. 27.35	84.35	6	...	-10.727	+0.397	...	...	1226
613	46 Persei	4.1	3. 51. 10.812	82.25	3	...	+ 3.8776	+0.0247	-0.0006	54. 33. 19.86	82.25	3	...	-10.688	+0.483	+0.013	542	1228
614	B. D. + 5° No. 566...	9.5*	3. 51. 25.687	86.24	4	...	+ 3.1878	+0.0094	...	84. 10. 15.77	86.18	6	...	-10.669	+0.398	...	...	...
615	B. D. + 5° No. 572...	9.3*	3. 52. 10.236	86.23	4	...	+ 3.1874	+0.0094	...	84. 12. 16.09	86.23	4	...	-10.615	+0.399	...	...	...
616	34 Eridani	3.1	3. 52. 25.848	82.53	24	...	+ 2.7924	+0.0047	+0.0029	103. 51. 4.22	82.64	13	...	-10.595	+0.350	+0.106	546	1234
617	W. B. III. 1018	5.8	3. 52. 57.450	83.86	3	...	+ 2.9567	+0.0063	...	95. 48. 31.88	83.86	3	...	-10.555	+0.371	...	...	...
618	Piazzi III. 215	5.7	3. 53. 53.888	79.80	3	...	+ 3.4394	+0.0138	...	72. 8. 44.87	79.79	4	...	-10.486	+0.432	...	...	1240
619	Lalande 7284.....	6.1	3. 54. 1.417	81.21	3	6	+ 5.9435	+0.1192	...	21. 39. 14.91	82.56	5	6	-10.477	+0.744	...	...	...
620	35 Tauri.....	Var.	3. 54. 1.947	83.38	3	...	+ 3.3177	+0.0115	-0.0014	77. 51. 0.40	83.38	3	...	-10.476	+0.417	+0.009	548	1241
621	Piazzi III. 208	4.9	3. 54. 27.653	86.60	3	...	+ 4.9584	+0.0641	...	31. 10. 48.10	86.60	3	...	-10.444	+0.622	...	...	1237
622	36 Eridani	4.6	3. 54. 48.490	84.32	3	...	+ 2.5551	+0.0032	-0.0001	114. 21. 27.12	84.32	3	...	-10.417	+0.323	-0.020	551	1243
623	W. B. (2) III. 1151...	8.5*	3. 55. 11.715	85.93	5	...	+ 3.8725	+0.0238	+0.1471	55. 1. 4.53	85.93	5	...	-10.389	+0.488	+1.315	...	...
624	Piazzi III. 220	5.9	3. 55. 13.319	81.24	3	...	+ 3.2669	+0.0105	...	80. 20. 23.71	81.24	3	...	-10.387	+0.412	...	...	1244
625	Groombridge 771 ...	6.5*	3. 55. 26.236	84.04	3	6	+ 6.8723	+0.1844	...	16. 45. 31.64	83.73	7	9	-10.371	+0.862	...	...	...
626	35 Eridani	5.2	3. 55. 27.166	86.61	3	...	+ 3.0346	+0.0072	-0.0009	91. 53. 13.01	86.75	5	...	-10.370	+0.383	+0.025	550	1245
627	Piazzi III. 226	5.5	3. 56. 27.799	83.86	3	...	+ 3.0604	+0.0075	...	90. 35. 46.53	83.86	3	...	-10.294	+0.387	...	...	...
628	38 Tauri	4.0	3. 56. 46.373	82.43	4	...	+ 3.1860	+0.0092	+0.0001	84. 20. 41.86	82.42	4	...	-10.271	+0.403	+0.009	553	1251
629	Piazzi III. 234	5.6	3. 57. 26.908	86.63	3	...	+ 3.2312	+0.0099	...	82. 8. 9.91	86.63	3	...	-10.220	+0.410	...	...	...
630	37 Tauri	A 1	3. 57. 36.110	81.94	23	...	+ 3.5315	+0.0153	+0.0053	68. 14. 50.51	81.95	24	...	-10.208	+0.448	+0.058	554	1257
631	Piazzi III. 238	5.5	3. 57. 53.441	82.95	3	...	+ 3.1226	+0.0082	...	87. 30. 2.32	84.57	5	...	-10.187	+0.397	...	...	...
632	Lalande 7579.....	6.3*	3. 58. 7.431	86.93	3	...	+ 2.6420	+0.0037	...	110. 28. 34.29	86.93	3	...	-10.170	+0.336	...	...	...
633	39 Tauri	A 2	3. 58. 14.062	79.95	6	...	+ 3.5306	+0.0152	+0.0122	68. 18. 59.34	80.09	7	...	-10.161	+0.448	+0.115	556	1260
634	Piazzi III. 237	8.7*	3. 58. 14.965	79.73	5	...	+ 3.5317	+0.0152	...	68. 16. 11.49	80.33	5	...	-10.159	+0.448	...	...	...
635	Lalande 7590.....	7.0*	3. 58. 19.414	86.93	3	...	+ 2.6415	+0.0037	...	110. 29. 22.75	86.92	2	...	-10.154	+0.337	...	...	...
636	W. B. III. 1120.....	5.6	3. 58. 45.853	86.40	2	...	+ 2.8032	+0.0048	...	103. 7. 23.29	86.97	3	...	-10.120	+0.357	...	...	...
637	41 Tauri	5.4	3. 59. 14.816	84.01	3	...	+ 3.6682	+0.0180	+0.0009	62. 43. 31.24	84.01	3	...	-10.084	+0.467	+0.061	558	1262
638	Groombridge 750 ...	6.7	3. 59. 22.802	85.04	3	3	+16.9456	+1.8077	+0.0022	4. 45. 48.55	84.73	3	9	-10.074	+2.141	-0.015	...	1235
639	Lalande 7539.....	6.5	3. 59. 54.093	82.22	1	1	+ 4.6957	+0.0500	...	35. 29. 27.14	81.57	1	1	-10.035	+0.597	...	...	...
640	48 Persei	4.3	3. 59. 57.181	84.19	5	1	+ 4.3308	+0.0365	+0.0020	42. 36. 35.13	84.73	5	(1)	-10.031	+0.551	+0.033	557	1266

601. Authority for Proper Motion: Bonn Observations, Vol. VII.

604. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.609. The magnitude is taken from the *Uranometria Argentina*.617. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.

620. The limits of magnitude are 3.4 and 4.2; the period (3d. 22h. 52m. 12s.0) is subject to marked inequalities.

623. Authority for Proper Motion: Bonn Observations, Vol. VII.

632, 635. The combined magnitude given in H. P. is 5.8.

602. Authority for Proper Motion: Bonn Observations, Vol. VII.

606, 607. The magnitudes given in Struve's *Mensurae Micrometricae* are 6.0 and 4.0.616. The designation in B. F. and the B. A. C. is γ Eridani.618. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.630. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.8.

1880 No.	Star's Name,	Magnitude.	Mean R.A., 1880°.	Mean Date 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
641	Oeltz. Arg. (N.) 4458	6.2	4. 0. 21'995	85.38	1	3	+ 6.5993	+0.01554	...	18. 11. 20.37	85.17	3	3	-9.999	+0.839	...	...	...
642	Groombridge 766....	5.4	4. 0. 31'607	86.05	...	5	+13.2643	+1.0017	...	6. 29. 23.68	86.12	...	6	-9.988	+1.681	...	...	1247
643	50 Persei	5.7	4. 0. 36'916	83.68	3	...	+ 3.9693	+0.0254	+0.0142	52. 16. 34.38	83.02	5	...	-9.980	+0.506	+0.179	561	1269
644	Piazzi III. 249.....	6.3	4. 1. 7'133	85.90	3	...	+ 3.4276	+0.0129	...	72. 58. 56.71	85.90	3	...	-9.942	+0.438	...	...	1272
645	Lalande 7685-6.....	6.7	4. 1. 14'188	83.85	3	...	+ 2.6865	+0.0040	...	108. 22. 29.86	83.85	3	...	-9.934	+0.345	...	...	...
646	43 Tauri..... ^ω	5.8	4. 2. 10'551	83.65	22	...	+ 3.4797	+0.0138	+0.0061	70. 42. 34.41	82.17	21	...	-9.863	+0.446	+0.033	562	1274
647	Piazzi III. 255	6.0	4. 3. 16'872	84.65	3	...	+ 3.8383	+0.0214	...	56. 43. 42.89	84.71	4	...	-9.777	+0.493	...	...	...
648	44 Tauri	5.6	4. 3. 31'375	78.27	3	...	+ 3.6462	+0.0170	-0.0034	63. 50. 1.86	81.36	5	...	-9.760	+0.469	+0.037	563	1279
649	Groombridge 774....	5.8	4. 3. 44'884	84.19	1	4	+12.6540	+0.8643	...	6. 57. 13.71	82.08	6	6	-9.742	+1.617	...	...	1263
650	Lalande 7776.....	5.4	4. 3. 50'849	86.71	4	...	+ 2.7215	+0.0042	...	106. 42. 12.91	86.71	4	...	-9.734	+0.351	...	...	...
651	37 Eridani.....	5.8	4. 4. 31'282	79.74	4	...	+ 2.9236	+0.0058	-0.0017	97. 14. 19.50	80.30	3	...	-9.683	+0.378	+0.018	567	1284
652	Lalande 7819.....	5.9	4. 5. 0'973	86.92	3	...	+ 2.8838	+0.0054	...	99. 8. 2.49	86.50	4	...	-9.645	+0.373	...	...	...
653	Lalande 7721-2.....	6.5*	4. 5. 11'342	79.16	6	4	+ 4.8885	+0.0551	...	32. 50. 52.07	79.21	6	5	-9.632	+0.630	...	...	...
654	W. B. (2) IV. 59.....	6.4	4. 5. 38'290	80.93	3	...	+ 3.4305	+0.0126	...	73. 1. 58.37	80.93	3	...	-9.597	+0.443	...	...	...
655	38 Eridani..... ^δ	4.1	4. 6. 0'438	82.00	12	...	+ 2.9249	+0.0058	-0.0006	97. 9. 6.83	83.02	13	...	-9.569	+0.379	-0.085	568	1290
656	W. B. (2) IV. 54.....	6.4	4. 6. 1'055	85.58	3	...	+ 3.9791	+0.0245	...	52. 20. 29.74	85.42	4	...	-9.568	+0.514	...	...	...
657	51 Persei..... ^μ	4.2	4. 6. 5'402	83.64	3	4	+ 4.3822	+0.0362	-0.0009	41. 53. 50.85	85.62	3	(4)	-9.563	+0.566	+0.027	564	1287
658	Groombridge 779....	5.7	4. 6. 13'978	83.80	1	4	+10.1227	+0.4812	...	9. 27. 59.47	84.27	1	6	-9.551	+1.302	...	...	1276
659	Piazzi III. 260.....	5.6	4. 6. 19'690	85.16	...	3	+ 5.2422	+0.0697	...	28. 27. 13.93	83.31	4	5	-9.543	+0.677	...	...	1286
660	52 Persei..... ^f	4.9	4. 6. 43'419	84.95	3	...	+ 4.0661	+0.0266	+0.0002	49. 49. 18.78	82.23	8	...	-9.514	+0.526	+0.025	565	1291
661	46 Tauri.....	5.3	4. 7. 5'401	86.33	3	...	+ 3.2255	+0.0093	-0.0020	82. 35. 31.49	86.25	4	...	-9.486	+0.419	-0.023	570	1296
662	Piazzi IV. 19.....	5.1	4. 8. 2'678	86.32	3	...	+ 3.2742	+0.0099	...	80. 17. 36.77	86.32	3	...	-9.411	+0.426	...	...	...
663	39 Eridani..... ^A	4.9	4. 8. 41'133	79.28	3	...	+ 2.8520	+0.0051	-0.0025	100. 33. 19.77	79.28	3	...	-9.362	+0.372	+0.160	574	1303
664	48 Tauri.....	6.4	4. 8. 57'530	83.13	6	...	+ 3.3915	+0.0117	+0.0074	74. 54. 3.89	82.09	8	...	-9.340	+0.442	+0.010	572	1302
665	Persei..... ^b	4.6	4. 9. 13'447	85.15	5	...	+ 4.4830	+0.0384	...	40. 0. 6.08	85.15	5	...	-9.321	+0.583	...	...	1301
666	40 Eridani..... ^δ	4.5	4. 9. 44'893	79.97	4	...	+ 2.9092	+0.0056	-0.1442	97. 50. 27.04	79.97	4	...	-9.279	+0.380	+3.442	578	1309
667	Groombridge 804....	6.4*	4. 9. 49'912	85.05	4	...	+ 4.1338	+0.0277	...	48. 9. 21.35	84.67	6	...	-9.273	+0.539	...	...	1305
668	Groombridge 803....	5.6	4. 10. 13'026	86.92	3	...	+ 4.4740	+0.0377	...	40. 14. 45.47	86.92	3	...	-9.243	+0.583	...	...	1307
669	Groombridge 806....	8.7*	4. 11. 6'119	86.91	3	...	+ 5.1737	+0.0635	...	29. 29. 56.15	86.91	3	...	-9.175	+0.675	...	...	...
670	Persei..... ^δ	5.4	4. 11. 6'269	81.44	...	2	+ 4.5210	+0.0389	...	39. 22. 23.47	81.44	...	2	-9.175	+0.590	...	...	1314
671	Piazzi IV. 22.....	5.7	4. 11. 21'903	85.94	5	4	+ 5.1704	+0.0632	...	29. 33. 7.95	83.08	13	8	-9.154	+0.675	...	...	1313
672	W. B. IV. 194.....	6.1	4. 11. 27'180	83.86	3	...	+ 2.9310	+0.0058	...	96. 46. 9.99	83.86	3	...	-9.147	+0.384	...	...	...
673	B. D. + 49° No. 1161	7.2	4. 11. 52'063	85.65	3	...	+ 4.4905	+0.0377	...	40. 1. 9.86	85.65	3	...	-9.115	+0.587	...	...	...
674	Radcliffe 1196.....	...	4. 11. 56'179	86.17	5	...	+ 4.4899	+0.0376	...	40. 2. 12.28	86.17	5	...	-9.110	+0.587	...	...	...
675	Piazzi IV. 31.....	6.5*	4. 11. 57'207	83.23	4	...	+ 4.1267	+0.0270	...	48. 29. 1.38	83.23	4	...	-9.108	+0.540	...	...	1320
676	B. F. 522.....	5.9	4. 12. 6'185	86.95	3	...	+ 4.8531	+0.0501	...	33. 47. 3.90	86.95	3	...	-9.097	+0.635	...	...	1318
677	56 Tauri.....	5.4	4. 12. 30'464	79.17	5	...	+ 3.5416	+0.0139	+0.0007	68. 31. 4.90	79.17	5	...	-9.065	+0.465	+0.033	581	1324
678	B. D. + 54° No. 765	9.5*	4. 12. 48'483	77.67	1	2	+ 4.7425	+0.0458	...	35. 32. 39.88	77.73	1	2	-9.042	+0.621	...	...	...
679	53 Persei..... ^d	4.9	4. 12. 52'618	86.96	3	...	+ 4.3174	+0.0320	+0.0003	43. 47. 22.83	86.96	3	...	-9.036	+0.566	+0.040	577	1323
680	54 Tauri..... ^γ	3.9	4. 12. 57'877	82.11	20	...	+ 3.3997	+0.0115	+0.0073	74. 39. 48.81	82.87	23	...	-9.029	+0.447	+0.030	583	1328

666. In B. F. this star is designated δ Eridani, but it is one of the two stars designated σ by Bayer; the B. A. C. designation is used here.

673, 674 The magnitudes given in B. D. are 8.5 and 7.8.

680. The magnitude given in the *Uranometria Nova Ozonicensis* is 3.6.

{xx}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
681	52 Tauri..... ϕ	5.1	4. 12. 58.450	78.60	5	...	+ 3.6822	+0.0165	-0.0019	62. 56. 16.28	78.60	5	...	-9.029	+0.483	+0.0066	582	1326
682	57 Tauri h	5.7	4. 13. 12.307	83.99	4	...	+ 3.3645	+0.0109	+0.0064	76. 15. 20.57	83.67	3	...	-9.011	+0.442	+0.018	585	1330
683	W. B. (2) IV. 248 ...	5.9	4. 13. 26.769	81.02	3	...	+ 3.4710	+0.0126	...	71. 32. 48.22	81.02	3	...	-8.991	+0.456	...	...	...
684	Piazzi IV. 49.....	6.0	4. 14. 17.369	86.04	2	...	+ 3.1949	+0.0085	...	84. 9. 24.84	86.03	3	...	-8.926	+0.421	...	...	...
685	Lalande 8154.....	6.3	4. 14. 45.339	85.97	3	...	+ 2.9350	+0.0057	...	96. 31. 58.19	85.75	7	...	-8.888	+0.388	...	...	...
686	59 Tauri (1st Star)... χ	5.5	4. 15. 16.844	82.60	10	...	+ 3.6407	+0.0154	+0.0017	64. 39. 19.84	83.17	12	...	-8.848	+0.480	+0.028	588	1341
687	59 Tauri (2nd Star)... χ	5.5	4. 15. 17.453	82.45	5	...	+ 3.6408	+0.0154	+0.0017	64. 39. 2.09	82.45	5	...	-8.848	+0.480	+0.028	...	...
688	Piazzi IV. 55.....	6.3*	4. 15. 19.023	86.94	3	...	+ 3.0643	+0.0070	...	90. 22. 52.27	86.94	3	...	-8.845	+0.405	...	...	...
689	Piazzi IV. 53.....	6.5*	4. 15. 19.254	86.96	3	...	+ 3.5218	+0.0132	...	69. 27. 50.68	86.95	2	...	-8.845	+0.465	...	...	1342
690	Lalande 8205.....	5.3	4. 15. 24.958	83.31	3	...	+ 2.6134	+0.0037	...	110. 55. 36.95	83.31	3	...	-8.837	+0.346	...	...	...
691	Lalande 8199.....	7.2*	4. 15. 45.034	84.63	3	...	+ 2.9340	+0.0057	...	96. 34. 11.12	84.63	3	...	-8.811	+0.388	...	...	...
692	61 Tauri δ	4.0	4. 16. 0.902	83.05	1	...	+ 3.4457	+0.0119	+0.0066	72. 44. 25.60	83.05	1	...	-8.790	+0.455	+0.025	594	1346
693	55 Persei ϵ	5.6	4. 16. 41.976	83.54	4	...	+ 3.8794	+0.0200	+0.0003	56. 8. 56.19	82.02	8	...	-8.736	+0.513	+0.036	591	1349
694	62 Tauri ϵ	6.2	4. 16. 45.658	79.01	1	...	+ 3.6087	+0.0146	-0.0002	65. 58. 50.01	79.01	1	...	-8.731	+0.478	+0.020	595	1353
695	56 Persei ϵ	5.7	4. 16. 50.755	83.02	5	...	+ 3.8745	+0.0198	+0.0023	56. 19. 6.02	83.02	5	...	-8.724	+0.513	+0.072	593	1352
696	66 Tauri..... γ	5.1	4. 17. 19.284	84.36	3	...	+ 3.2670	+0.0093	-0.0027	80. 49. 11.27	84.37	3	...	-8.688	+0.433	+0.004	598	1357
697	W. B. IV. 326.....	8.5*	4. 17. 26.014	77.95	2	...	+ 3.1304	+0.0076	...	87. 14. 30.12	77.95	2	...	-8.678	+0.415	...	...	...
698	B. F. 548.....	6.5*	4. 17. 57.490	81.69	3	...	+ 3.4822	+0.0123	+0.0097	71. 14. 8.02	81.69	3	...	-8.636	+0.462	0.00	3231	1361
699	W. B. IV. 340.....	8.0*	4. 18. 11.340	77.95	1	...	+ 3.1190	+0.0074	...	87. 47. 11.19	77.95	1	...	-8.619	+0.414	...	...	...
700	65 Tauri κ	4.6	4. 18. 13.065	79.17	5	...	+ 3.5605	+0.0136	+0.0040	67. 58. 56.81	79.13	7	...	-8.617	+0.473	+0.054	599	1362
701	67 Tauri κ	5.5	4. 18. 16.138	78.98	5	...	+ 3.5583	+0.0135	+0.0086	68. 4. 33.55	78.98	5	...	-8.613	+0.472	+0.051	600	1363
702	Groombridge 829 ...	8.1*	4. 18. 26.733	85.34	1	4	+ 5.7689	+0.0846	...	24. 7. 39.90	84.83	1	7	-8.598	+0.764	...	...	...
703	68 Tauri δ	4.2	4. 18. 32.814	84.98	6	...	+ 3.4567	+0.0119	+0.0065	72. 20. 53.27	84.46	8	...	-8.590	+0.459	+0.025	601	1365
704	69 Tauri ν	4.6	4. 19. 7.693	81.06	3	...	+ 3.5743	+0.0137	+0.0068	67. 27. 36.91	81.06	3	...	-8.544	+0.475	+0.034	604	1367
705	Groombridge 828 ...	6.0	4. 19. 37.109	86.37	2	5	+ 6.8585	+0.1425	...	17. 44. 1.19	86.06	3	4	-8.506	+0.910	...	...	...
706	W. B. IV. 381.....	8.2*	4. 19. 45.108	78.01	2	...	+ 3.0883	+0.0071	...	89. 14. 35.20	78.01	2	...	-8.495	+0.412	...	...	...
707	72 Tauri ν	5.5	4. 20. 6.909	81.93	3	...	+ 3.5799	+0.0137	-0.0010	67. 16. 32.39	78.95	5	...	-8.466	+0.477	+0.003	606	1371
708	W. B. IV. 397.....	5.8	4. 20. 51.279	86.64	3	...	+ 3.3070	+0.0095	...	79. 3. 32.15	86.64	3	...	-8.408	+0.442	...	...	...
709	Piazzi IV. 82.....	5.7	4. 20. 53.453	82.22	5	...	+ 3.5467	+0.0130	...	68. 38. 57.88	82.52	4	...	-8.405	+0.473	...	...	1373
710	W. B. (2) IV. 421...	6.2	4. 21. 17.414	82.22	3	...	+ 3.7763	+0.0171	...	59. 54. 23.90	82.22	3	...	-8.373	+0.504	...	...	...
711	W. B. (2) IV. 422...	6.2	4. 21. 18.166	82.69	4	...	+ 3.7764	+0.0171	...	59. 54. 12.30	82.69	4	...	-8.372	+0.504	...	...	...
712	74 Tauri ϵ	3.7	4. 21. 36.571	83.20	27	...	+ 3.4888	+0.0120	+0.0070	71. 5. 14.72	80.66	13	...	-8.347	+0.466	+0.028	609	1376
713	77 Tauri θ	3.9	4. 21. 43.122	86.80	3	...	+ 3.4139	+0.0109	+0.0048	74. 18. 21.05	86.80	3	...	-8.339	+0.456	+0.015	612	1380
714	1 Camelop. (1st Star).	5.5	4. 22. 30.776	85.74	2	2	+ 4.7271	+0.0409	+0.0016	36. 21. 1.81	86.14	2	2	-8.275	+0.632	+0.009	607	1382
715	1 Camelop. (2nd Star)	5.5	4. 22. 31.757	85.74	2	2	+ 4.7270	+0.0408	+0.0016	36. 21. 8.45	86.14	2	2	-8.274	+0.632	+0.009	...	...
716	W. B. IV. 440.....	8.3*	4. 22. 35.187	77.94	3	...	+ 3.1171	+0.0072	...	87. 53. 38.08	77.94	3	...	-8.270	+0.418	...	...	...
717	80 Tauri ϵ	5.6	4. 23. 18.051	86.35	5	...	+ 3.4077	+0.0107	+0.0050	74. 37. 33.23	86.35	5	...	-8.213	+0.457	+0.004	617	1390
718	W. B. IV. 467.....	5.3	4. 23. 32.530	83.86	2	...	+ 2.7835	+0.0045	...	103. 18. 50.94	84.31	7	...	-8.193	+0.374	...	...	...
719	81 Tauri ϵ	5.5	4. 23. 48.150	86.56	5	...	+ 3.4093	+0.0107	+0.0069	74. 34. 14.88	86.71	4	...	-8.173	+0.458	+0.018	620	1392
720	Bradley 616 γ	7.0*	4. 24. 55.066	85.76	4	...	+ 4.2043	+0.0256	+0.0026	47. 13. 27.20	85.76	4	...	-8.084	+0.565	+0.07	616	1397

686, 687. The magnitudes given in Struve's *Mensura Micrometrica* are 5.7 and 7.8.
708. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.
709. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.
710, 711. The magnitudes given in Struve's *Mensura Micrometrica* are 6.0 and 8.0.
714, 715. The magnitudes given in Struve's *Mensura Micrometrica* are 6.2 and 5.1.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
721	57 Persei	6.5*	h m s 4. 24. 58.437	84°00	6	...	+ 4.2056	+0.0256	-0.0004	47. 11. 39.40	83°72	8	...	-8.080	+0.565	+0.005	618	1398
722	Lalande 8416.....	6.0	4. 25. 9.636	86°93	3	...	+ 5.5830	+0.0705	...	25. 59. 31.36	86°56	5	...	-8.063	+0.749	...	...	...
723	45 Eridani	4.9	4. 25. 44.359	84°10	3	...	+ 3.0658	+0.0066	-0.0013	90. 18. 10.99	84°10	3	...	-8.018	+0.413	+0.017	624	1403
724	W. B. (2) IV. 523...	9.0*	4. 25. (58.)	...	...	...	+ 3.7428	+0.0157	...	61. 19. 31.24	83°09	1	...	-7.999	+0.504	...	...	...
725	W. B. IV. 520	8.0*	4. 26. 13.376	78°02	3	...	+ 3.0878	+0.0068	...	89. 16. 37.09	78°02	3	...	-7.979	+0.417	...	...	...
726	W. B. IV. 526	6.1	4. 26. 37.274	85°96	4	...	+ 2.9979	+0.0060	...	93. 27. 57.05	85°96	4	...	-7.947	+0.405	...	...	...
727	86 Tauri.....	4.9	4. 27. 2.315	83°93	3	...	+ 3.3920	+0.0102	+0.0060	75. 24. 33.80	83°93	3	...	-7.914	+0.458	+0.024	627	1409
728	Piazzi IV. 111	5.6	4. 27. 7.509	84°55	4	...	+ 3.7453	+0.0156	...	61. 17. 29.56	84°55	4	...	-7.906	+0.505	...	...	1408
729	W. B. IV. 544	8.5*	4. 27. 20.569	77°98	2	...	+ 3.0888	+0.0068	...	89. 13. 55.42	77°98	2	...	-7.890	+0.418	...	...	...
730	W. B. IV. 554	5.8	4. 27. 45.430	83°62	6	...	+ 3.1867	+0.0077	...	84. 41. 4.65	83°62	6	...	-7.856	+0.431	...	...	...
731	58 Persei	4.4	4. 28. 22.736	84°10	2	...	+ 4.1435	+0.0233	-0.0005	48. 59. 0.86	82°54	4	...	-7.805	+0.560	+0.024	626	1414
732	Bradley 633	6.5*	4. 28. 23.726	82°69	3	...	+ 2.9192	+0.0053	-0.0026	97. 5. 20.02	83°52	2	...	-7.804	+0.396	+0.052	633	1418
733	W. B. IV. 580.....	5.8	4. 28. 26.961	86°92	3	...	+ 2.8724	+0.0050	...	99. 13. 8.87	86°92	3	...	-7.800	+0.389	...	...	...
734	87 Tauri	1.0	4. 29. 2.112	81°99	68	...	+ 3.4322	+0.0105	+0.0035	73. 44. 0.53	81°93	53	...	-7.753	+0.465	+0.184	630	1420
735	2 Camelopardi	5.5	4. 30. 27.724	85°43	2	3	+ 4.7268	+0.0374	+0.0047	36. 45. 56.09	85°86	2	3	-7.637	+0.641	+0.091	628	1424
736	W. B. IV. 632	8.8*	4. 30. 48.031	77°95	3	...	+ 3.1227	+0.0069	...	87. 39. 55.81	77°95	3	...	-7.610	+0.425	...	...	...
737	49 Eridani	5.4	4. 31. 2.643	80°56	5	...	+ 3.0886	+0.0066	-0.0020	89. 14. 46.03	80°97	6	...	-7.590	+0.420	+0.010	640	1431
738	W. B. (2) IV. 650...	5.8	4. 31. 11.150	82°32	3	...	+ 3.5336	+0.0117	...	69. 33. 28.91	82°32	3	...	-7.579	+0.480	...	...	...
739	89 Tauri	6.5*	4. 31. 17.270	82°20	5	...	+ 3.4224	+0.0102	+0.0054	74. 12. 31.64	82°20	5	...	-7.571	+0.466	+0.011	638	1432
740	90 Tauri	4.3	4. 31. 27.015	81°73	3	...	+ 3.3416	+0.0092	+0.0056	77. 43. 54.06	82°09	2	...	-7.557	+0.455	+0.006	639	1434
741	51 Eridani	5.3	4. 31. 33.781	85°34	3	...	+ 3.0136	+0.0059	+0.0026	92. 42. 53.40	85°03	2	...	-7.548	+0.411	+0.071	642	1435
742	92 Tauri	4.8	4. 32. 24.684	84°30	4	...	+ 3.4205	+0.0101	+0.0050	74. 19. 17.18	84°56	7	...	-7.479	+0.466	+0.022	643	1437
743	Groombridge 860...	5.7	4. 32. 27.152	86°69	4	...	+ 4.4532	+0.0293	...	41. 56. 5.07	86°69	4	...	-7.476	+0.606	...	...	...
744	Piazzi IV. 146	5.5	4. 32. 36.254	86°36	3	...	+ 3.2386	+0.0080	...	82. 22. 8.62	86°36	3	...	-7.464	+0.442	...	...	...
745	53 Eridani	3.9	4. 32. 41.041	83°41	2	...	+ 2.7504	+0.0042	-0.0077	104. 32. 23.59	83°40	5	...	-7.457	+0.376	+0.162	647	1441
746	Piazzi IV. 112	6.0	4. 32. 42.646	85°19	2	5	+ 7.9478	+0.1863	+0.0097	14. 16. 50.89	84°31	10	9	-7.456	+1.079	+0.132	...	1428
747	W. B. IV. 685	8.5*	4. 32. 55.513	77°93	1	...	+ 3.1133	+0.0067	...	88. 6. 33.83	77°93	1	...	-7.438	+0.425	...	...	...
748	Piazzi IV. 154	4.9	4. 33. 17.699	86°94	3	...	+ 2.8000	+0.0045	...	102. 21. 43.43	86°94	3	...	-7.407	+0.383	...	...	1443
749	93 Tauri	5.3	4. 33. 22.528	86°33	3	...	+ 3.3355	+0.0090	-0.0008	78. 2. 23.11	86°33	3	...	-7.400	+0.455	+0.022	646	1442
750	Piazzi IV. 148	5.9	4. 33. 49.182	77°74	6	...	+ 3.7442	+0.0146	...	61. 37. 9.16	77°74	6	...	-7.365	+0.511	...	...	1444
751	Groombridge 866...	5.7	4. 34. 14.516	85°58	3	2	+ 4.5420	+0.0309	...	40. 15. 27.13	86°09	3	2	-7.330	+0.620	...	...	...
752	W. B. IV. 727	8.0*	4. 34. 42.705	77°95	3	...	+ 3.1217	+0.0067	...	87. 43. 42.79	77°95	3	...	-7.292	+0.427	...	...	...
753	Piazzi IV. 158	8.5*	4. 35. 0.172	82°37	8	...	+ 3.5938	+0.0121	-0.0010	67. 17. 22.92	82°36	11	...	-7.268	+0.492	+0.009	...	...
754	94 Tauri	4.4	4. 35. 2.593	82°48	29	...	+ 3.5942	+0.0121	-0.0010	67. 16. 29.71	81°32	28	...	-7.264	+0.492	+0.009	648	1449
755	Piazzi IV. 167	5.8	4. 35. 7.344	84°00	2	...	+ 2.4987	+0.0034	...	114. 43. 4.85	84°00	2	...	-7.250	+0.343	...	...	1450
756	54 Eridani	4.5	4. 35. 11.627	80°68	3	...	+ 2.6210	+0.0037	0.0000	109. 54. 11.49	81°63	5	...	-7.252	+0.359	+0.086	653	1451
757	Oeltz. Arg.(N.) 5082	9.0*	4. 35. 37.677	86°98	3	...	+ 4.7424	+0.0356	...	36. 45. 18.83	86°98	3	...	-7.217	+0.649	...	...	...
758	W. B. (2) IV. 766...	9.0*	4. 36. 42.099	86°28	3	...	+ 3.8930	+0.0166	...	56. 42. 15.00	86°28	3	...	-7.130	+0.534	...	...	...
759	W. B. IV. 777	7.6*	4. 36. 49.061	78°00	2	...	+ 3.0915	+0.0064	...	89. 7. 15.19	78°00	2	...	-7.120	+0.425	...	...	...
760	B. D. + 46° No. 907	8.8*	4. 37. 10.268	80°86	6	...	+ 4.4024	+0.0266	...	43. 14. 7.79	80°86	6	...	-7.091	+0.604	...	...	...

720, 721. The combined magnitude given in H.P. is 6.0.

741. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
761	Piazzi IV. 169	5.3	4. 37. 46.780	83.87	4	...	+ 3.3138	+0.0084	...	79. 4. 44.70	83.87	4	...	-7.041	+0.456	...	...	1460
762	B. D. + 46° No. 910	8.5*	4. 37. 49.343	80.31	4	...	+ 4.4075	+0.0265	...	43. 9. 16.32	80.31	4	...	-7.038	+0.605	...	...	...
763	Groombridge 856 ...	5.3	4. 37. 56.938	83.62	4	4	+10.9693	+0.4080	...	9. 0. 37.24	84.18	6	6	-7.026	+1.501	...	...	1448
764	Bradley 651	6.2	4. 38. 16.923	82.86	3	3	+ 4.8875	+0.0383	+0.008	34. 36. 50.56	82.48	3	3	-7.000	+0.671	+0.101	651	1459
765	Groombridge 870 ...	7.0*	4. 38. 47.653	83.07	...	5	+ 6.1686	+0.0820	...	22. 2. 45.33	84.37	...	11	-6.958	+0.847	...	...	1457
766	Lalande 8951	5.6	4. 38. 50.079	86.95	3	...	+ 2.6433	+0.0038	...	108. 53. 26.95	86.95	3	...	-6.955	+0.365	...	...	...
767	W. B. IV. 817	8.5*	4. 39. 4.429	77.94	3	...	+ 3.1252	+0.0066	...	87. 35. 7.13	77.94	3	...	-6.936	+0.431	...	...	...
768	W. B. (2) IV. 818...	7.0*	4. 39. 10.953	85.66	3	...	+ 4.3389	+0.0246	...	44. 43. 42.91	85.66	3	...	-6.926	+0.597	...	...	...
769	Piazzi IV. 179	6.5*	4. 39. 16.392	80.97	4	...	+ 3.4926	+0.0103	...	71. 29. 2.56	81.58	3	...	-6.919	+0.481	...	...	1468
770	W. B. IV. 818	5.7	4. 39. 21.341	82.44	6	...	+ 3.3273	+0.0084	...	78. 30. 55.69	82.44	6	...	-6.912	+0.458	...	...	...
771	57 Eridani	4.3	4. 39. 30.126	82.40	16	...	+ 2.9960	+0.0055	-0.0002	93. 28. 33.90	81.84	11	...	-6.900	+0.413	+0.002	657	1469
772	W. B. (2) IV. 889...	5.7	4. 41. 31.422	80.08	3	...	+ 3.8558	+0.0148	...	58. 46. 22.58	80.08	3	...	-6.734	+0.530	...	...	...
773	Piazzi IV. 185	6.0*	4. 41. 33.314	85.36	3	...	+ 3.8708	+0.0153	...	57. 37. 27.40	85.36	3	...	-6.731	+0.535	...	...	1475
774	Piazzi IV. 197	5.9	4. 41. 38.306	86.96	3	...	+ 2.3939	+0.0033	...	118. 18. 20.97	86.96	3	...	-6.725	+0.332	...	...	1482
775	W. B. IV. 863	8.6*	4. 41. 40.784	86.02	3	...	+ 3.2661	+0.0077	...	81. 15. 17.01	86.02	3	...	-6.720	+0.452	...	...	...
776	1 Aurigæ	5.2	4. 41. 50.074	78.77	4	...	+ 4.0313	+0.0179	-0.0050	52. 43. 31.50	79.88	5	...	-6.708	+0.557	-0.060	658	1476
777	9 Camelopardi	4.4	4. 42. 7.717	81.46	5	4	+ 5.9217	+0.0690	-0.0027	23. 51. 49.73	81.83	18	4	-6.683	+0.817	+0.001	...	1474
778	Piazzi IV. 184	5.8	4. 42. 8.075	85.54	3	3	+ 4.4986	+0.0271	...	41. 28. 7.09	86.94	3	3	-6.683	+0.621	...	...	1477
779	W.B. IV. 878	6.3	4. 42. 21.082	85.30	3	...	+ 3.1480	+0.0066	...	86. 33. 51.78	85.55	5	...	-6.665	+0.436	...	...	...
780	W.B. IV. 881	6.3	4. 42. 26.574	84.94	6	...	+ 3.1467	+0.0066	...	86. 37. 27.45	84.94	6	...	-6.657	+0.436	...	...	...
781	W. B. IV. 902	7.8*	4. 43. 18.827	77.94	2	...	+ 3.1162	+0.0063	...	88. 0. 32.47	77.93	1	...	-6.586	+0.432	...	...	...
782	1 Orionis	3.3	4. 43. 19.522	79.73	3	...	+ 3.2218	+0.0071	+0.0298	83. 15. 0.07	79.08	2	...	-6.584	+0.447	-0.016	663	1486
783	2 Orionis	4.4	4. 44. 4.298	86.35	3	...	+ 3.2656	+0.0075	-0.0009	81. 18. 26.50	85.81	5	...	-6.522	+0.453	+0.031	667	1491
784	Groombridge 889 ...	5.5	4. 44. 19.275	85.01	3	...	+ 4.2264	+0.0209	...	47. 37. 6.04	85.01	3	...	-6.503	+0.586	...	...	...
785	97 Tauri	5.1	4. 44. 21.243	83.33	7	...	+ 3.4988	+0.0099	+0.0047	71. 21. 57.89	83.92	9	...	-6.500	+0.486	+0.034	666	1493
786	W. B. IV. 936	7.3*	4. 44. 33.785	78.01	4	...	+ 3.0931	+0.0060	...	89. 3. 33.45	78.01	4	...	-6.482	+0.430	...	...	...
787	2 Aurigæ	5.0	4. 44. (36.)	...	...	...	+ 4.0085	+0.0170	-0.0030	53. 30. 5.83	81.13	2	...	-6.479	+0.556	-0.001	662	1492
788	60 Eridani	5.2	4. 44. 47.054	84.30	3	...	+ 2.6991	+0.0039	+0.0022	106. 25. 37.78	84.30	3	...	-6.464	+0.376	-0.060	673	1498
789	3 Orionis	4.0	4. 44. 48.859	81.99	7	...	+ 3.1919	+0.0068	-0.0011	84. 36. 5.02	82.28	6	...	-6.461	+0.444	+0.002	670	1495
790	Lalande 9115	6.0	4. 45. 7.997	86.95	3	...	+ 3.2904	+0.0076	...	80. 13. 48.39	85.57	7	...	-6.435	+0.457	...	...	...
791	Piazzi IV. 211	5.9	4. 45. 17.452	86.96	3	...	+ 3.7371	+0.0127	...	62. 18. 18.74	86.96	3	...	-6.423	+0.519	...	...	1497
792	4 Orionis	5.4	4. 45. 44.654	83.95	3	...	+ 3.3894	+0.0083	-0.0007	75. 57. 2.95	83.95	3	...	-6.384	+0.471	+0.059	672	1500
793	Groombridge 894 ...	6.1	4. 46. 14.521	86.30	3	...	+ 4.2912	+0.0216	...	46. 8. 12.82	86.30	3	...	-6.344	+0.596	...	...	...
794	Groombridge 892 ...	5.9	4. 46. 36.726	85.03	1	3	+ 4.7364	+0.0307	...	37. 19. 40.46	85.42	1	3	-6.312	+0.658	...	...	...
795	61 Eridani	4.3	4. 46. 59.951	83.04	4	...	+ 2.9466	+0.0050	-0.0044	95. 39. 17.04	83.06	8	...	-6.280	+0.411	-0.044	676	1507
796	5 Orionis	5.7	4. 47. 7.272	82.72	3	...	+ 3.1235	+0.0061	0.0000	87. 41. 30.01	82.72	3	...	-6.271	+0.435	+0.014	675	1508
797	Piazzi IV. 191	6.1*	4. 47. 7.634	84.41	1	6	+ 7.5243	+0.1315	...	15. 55. 11.21	82.73	7	13	-6.271	+1.045	...	...	1496
798	8 Orionis	3.9	4. 48. 0.066	79.76	3	...	+ 3.1221	+0.0061	-0.0004	87. 45. 25.82	79.76	3	...	-6.197	+0.436	+0.007	680	1514
799	Piazzi IV. 239	5.8	4. 48. 40.816	86.64	3	...	+ 3.0783	+0.0057	...	89. 43. 43.59	86.64	3	...	-6.140	+0.430	...	...	1519
800	3 Aurigæ	2.7	4. 49. 10.754	81.86	16	...	+ 3.8985	+0.0144	+0.0006	57. 1. 32.20	81.24	16	...	-6.099	+0.544	+0.003	677	1520

777. The letter *a* was added in the B. A. C.782. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.6.784. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.9.

779, 780. The magnitudes given in B. D. are 8.4 and 7.0.

783. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.9.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xxiii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
801	Piazzi IV. 204	6.3*	h m s 4. 49. 16.718	84.32	1	3	+ 7.3951	+0.01212	...	16. 25. 4.47	83.94	3	5	-6.090	+1.030	...	...	1509
802	Piazzi IV. 207	6.0	4. 49. 33.135	84.09	1	3	+ 7.4832	+0.01249	...	16. 6. 48.94	84.94	3	5	-6.068	+1.043	...	...	1510
803	9 Orionis	4.3	4. 49. 37.482	78.50	4	...	+ 3.3741	+0.0081	-0.0059	76. 40. 35.67	78.99	3	...	-6.061	+0.472	+0.046	682	1525
804	Lalande 9270.....	8.0*	4. 49. 56.820	77.91	3	...	+ 3.1135	+0.0059	...	88. 8. 57.19	77.91	3	...	-6.035	+0.436	...	...	...
805	W. B. IV. 1067	8.2*	4. 49. 57.162	77.94	3	...	+ 3.1388	+0.0061	...	87. 0. 58.95	77.93	3	...	-6.035	+0.439	...	...	...
806	8 Camelopardi	6.4*	4. 50. 12.915	86.10	1	3	+ 4.7629	+0.0298	-0.005	37. 1. 53.58	86.28	1	3	-6.012	+0.665	+0.011	674	1524
807	Bradley 671	7.0*	4. 50. 41.218	81.96	1	4	+ 6.0289	+0.0646	+0.0124	23. 20. 52.04	82.68	1	7	-5.973	+0.842	+0.39	671	1522
808	98 Tauri	5.7	4. 50. 48.813	79.44	6	...	+ 3.6638	+0.0110	+0.0011	65. 8. 11.79	79.44	6	...	-5.962	+0.513	+0.049	685	1528
809	4 Aurigæ	5.1	4. 51. 6.762	81.10	4	...	+ 4.0596	+0.0164	+0.0002	52. 17. 35.63	82.50	5	...	-5.937	+0.568	+0.099	683	1530
810	6 Aurigæ	6.8*	4. 52. 7.050	81.74	4	...	+ 4.1254	+0.0172	-0.0017	50. 31. 43.41	81.74	4	...	-5.854	+0.578	+0.006	688	1535
811	10 Orionis	4.7	4. 52. 19.693	85.79	5	...	+ 3.1064	+0.0057	-0.0014	88. 28. 18.15	86.00	7	...	-5.835	+0.436	-0.001	695	1538
812	Piazzi IV. 242	8.7*	4. 52. 39.600	86.95	3	...	+ 5.3108	+0.0417	...	29. 45. 19.31	86.95	3	...	-5.808	+0.744	...	...	...
813	10 Camelopardi	4.2	4. 52. 44.752	83.79	5	3	+ 5.3128	+0.0417	0.0000	29. 44. 8.30	82.20	14	3	-5.802	+0.744	+0.014	681	1536
814	Lalande 9420.....	5.4	4. 53. 39.237	85.35	3	...	+ 2.6912	+0.0037	...	106. 33. 50.16	84.76	4	...	-5.725	+0.379	...	...	...
815	W. B. IV. 1149	8.5*	4. 53. 50.881	77.92	3	...	+ 3.1418	+0.0059	...	86. 53. 39.56	77.93	2	...	-5.708	+0.442	...	...	...
816	8 Aurigæ	4.0	4. 54. 5.485	79.66	4	...	+ 4.1828	+0.0176	-0.0005	49. 6. 4.46	81.34	4	...	-5.689	+0.587	+0.008	693	1541
817	Leporis	R Var.	4. 54. 8.597	86.64	3	...	+ 2.7291	+0.0038	...	104. 59. 16.19	86.64	3	...	-5.683	+0.384	...	...	...
818	63 Eridani	5.7	4. 54. 9.657	83.96	3	...	+ 2.8360	+0.0042	+0.0009	100. 26. 25.74	83.96	3	...	-5.682	+0.399	+0.121	697	1544
819	W. B. IV. 1162	6.0	4. 54. 14.060	86.00	3	...	+ 3.1493	+0.0059	...	86. 33. 54.53	86.01	4	...	-5.676	+0.443	...	...	...
820	W. B. IV. 1164	6.0	4. 54. 15.513	85.97	2	...	+ 3.1493	+0.0059	...	86. 33. 50.55	85.95	3	...	-5.673	+0.443	...	...	...
821	64 Eridani	4.9	4. 54. 21.199	80.51	4	...	+ 2.7829	+0.0040	+0.0003	102. 42. 56.30	80.80	4	...	-5.666	+0.392	+0.095	699	1545
822	65 Eridani	4.7	4. 55. 37.270	84.99	3	...	+ 2.9066	+0.0045	-0.0022	97. 21. 5.31	84.99	3	...	-5.560	+0.410	-0.021	701	1552
823	102 Tauri	4.7	4. 55. 55.428	80.07	6	...	+ 3.5764	+0.0094	+0.0040	68. 34. 59.28	79.25	10	...	-5.555	+0.504	+0.040	698	1551
824	W. B. IV. 1223	8.3*	4. 56. 12.146	77.93	3	...	+ 3.1143	+0.0056	...	88. 7. 37.14	77.93	3	...	-5.511	+0.439	...	...	...
825	Piazzi IV. 285	5.1	4. 56. 13.200	86.95	3	...	+ 2.5986	+0.0034	...	110. 13. 40.03	86.95	3	...	-5.510	+0.367	...	...	1553
826	Piazzi IV. 254	5.5	4. 57. 15.252	84.75	2	10	+ 7.4993	+0.1112	...	16. 12. 42.21	84.57	4	11	-5.423	+1.055	...	...	1549
827	Piazzi IV. 289	5.1	4. 57. 17.006	82.05	3	...	+ 2.4322	+0.0032	...	116. 26. 47.80	82.05	3	...	-5.420	+0.344	...	...	1559
828	10 Aurigæ	3.3	4. 58. 6.057	83.52	10	...	+ 4.1951	+0.0168	+0.0022	48. 55. 46.94	83.75	11	...	-5.251	+0.592	+0.061	700	1558
829	Piazzi IV. 288	6.5*	4. 58. 27.665	85.47	4	...	+ 3.5324	+0.0087	...	70. 21. 37.00	85.39	5	...	-5.320	+0.499	...	...	1563
830	Lalande 9561.....	8.3*	4. 58. 45.360	77.94	3	...	+ 3.1281	+0.0055	...	87. 31. 19.65	77.94	3	...	-5.296	+0.442	...	...	...
831	Lalande 9579.....	6.0	4. 58. 54.223	84.68	3	...	+ 3.0000	+0.0048	...	93. 12. 26.29	84.68	3	...	-5.283	+0.424	...	...	...
832	Oeltz. Arg. (S.) 3620	5.5	4. 58. 54.931	86.66	3	...	+ 2.4830	+0.0032	...	114. 33. 21.87	86.66	3	...	-5.282	+0.352	...	...	...
833	104 Tauri	5.1	5. 0. 21.491	83.89	5	...	+ 3.5041	+0.0082	+0.0375	71. 31. 3.61	84.25	6	...	-5.161	+0.496	-0.022	705	1568
834	2 Leporis	3.3	5. 0. 22.862	81.61	20	...	+ 2.5363	+0.0033	+0.0004	112. 32. 1.00	80.76	25	...	-5.158	+0.360	+0.068	713	1575
835	106 Tauri	5.5	5. 0. 42.359	82.49	2	...	+ 3.5493	+0.0086	-0.0034	69. 44. 31.15	82.49	2	...	-5.131	+0.503	+0.029	708	1570
836	103 Tauri	5.5	5. 0. 47.895	82.15	3	...	+ 3.6506	+0.0096	-0.0009	65. 53. 42.41	81.26	5	...	-5.123	+0.517	0.00	706	1572
837	66 Eridani	5.2	5. 0. 49.763	85.68	3	...	+ 2.9634	+0.0046	-0.0011	94. 49. 2.08	85.82	5	...	-5.120	+0.420	+0.015	712	1579
838	Piazzi IV. 294	5.6	5. 1. 46.898	86.03	2	...	+ 4.4509	+0.0196	...	43. 11. 19.20	86.01	3	...	-5.038	+0.630	...	...	1582
839	W. B. IV. 1379	6.3	5. 1. 49.786	86.28	3	...	+ 2.7819	+0.0038	...	102. 38. 52.64	86.95	2	...	-5.035	+0.395	...	...	...
840	67 Eridani	2.9	5. 1. 56.985	80.04	3	...	+ 2.9535	+0.0045	-0.0066	95. 14. 34.85	79.96	2	...	-5.025	+0.419	+0.065	715	1588

813. The letter β was added in the B.A.C.817. The limits of magnitude are 6.7 and 8.5: the period about 436^d. with evidence of irregularity.

819, 820. The magnitude of each star given in B. D. is 7.8.

{xxiv}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
841	W. B. (2) IV. 1421 (1st*)	6.0	5. 2. 13.031	80.29	3	...	+ 3.7571	+0.0104	...	62. 7. 24.03	80.29	3	...	-5.003	+0.533	...	...	...
842	W. B. (2) IV. 1421 (2nd*)	6.0	5. 2. 13.530	80.94	1	...	+ 3.7573	+0.0104	...	62. 7. 14.40	80.94	1	...	-5.001	+0.533	...	...	...
843	14 Camelopardi	6.7*	5. 2. 21.516	82.81	1	3	+ 5.5642	+0.0415	-0.0063	27. 27. 33.44	83.89	1	6	-4.992	+0.788	-0.009	703	1583
844	Piazzi IV. 301	8.0*	5. 2. 46.720	83.51	...	1	+ 4.4514	+0.0193	...	43.12. (36.92)	...	...	(1)	-4.953	+0.631	...	...	...
845	Piazzi IV. 269	5.1	5. 2. 48.269	83.60	1	3	+ 9.7930	+0.2080	-0.0373	10. 54. 40.32	82.68	5	7	-4.953	+1.386	-0.144	...	1565
846	15 Orionis	4.8	5. 2. 49.829	78.99	3	...	+ 3.4302	+0.0074	-0.0013	74. 33. 26.85	78.99	3	...	-4.951	+0.487	-0.008	714	1591
847	69 Eridani.....	λ	5. 3. 24.207	82.64	3	...	+ 2.8691	+0.0041	-0.0002	98. 54. 33.63	82.69	4	...	-4.903	+0.408	-0.001	720	1597
848	Groombridge 928 ...	4.4	5. 3. 25.764	82.67	1	9	+ 7.3465	+0.0942	...	16. 52. 23.64	83.26	...	12	-4.900	+1.041	...	...	1585
849	Piazzi V. 1	5.3	5. 4. 47.976	85.59	6	...	+ 3.4420	+0.0073	...	74. 6. 15.27	85.76	6	...	-4.784	+0.490	...	...	1601
850	Piazzi IV. 315	6.2	5. 5. 6.635	85.66	2	3	+ 4.8002	+0.0242	...	36. 55. 51.05	86.03	2	3	-4.758	+0.682	...	...	...
851	11 Aurigæ.....	μ	5. 5. 13.041	86.36	3	...	+ 4.0996	+0.0138	-0.0047	51. 39. 35.07	82.62	5	...	-4.750	+0.583	+0.071	719	1602
852	W. B. V. 57	6.0	5. 5. 16.826	84.71	3	...	+ 3.0124	+0.0046	...	92. 38. 25.89	84.71	3	...	-4.743	+0.429	...	...	...
853	Bradley 724	5.9	5. 5. 46.918	79.37	3	...	+ 2.7960	+0.0038	+0.0003	101. 59. 59.91	79.37	3	...	-4.700	+0.398	-0.084	724	1604
854	Oeltz. Arg. (N.) 5648	7.7*	5. 6. 36.861	84.99	4	2	+ 4.4319	+0.0178	...	43. 44. 7.88	84.76	4	(1)	-4.629	+0.631	...	...	...
855	3 Leporis	4.7	15. 6. 42.041	79.37	3	...	+ 2.7954	+0.0038	+0.0002	102. 0. 53.38	79.37	3	...	-4.622	+0.399	+0.002	727	1608
856	17 Orionis	ρ	5. 7. 0.984	80.29	3	...	+ 3.1341	+0.0051	-0.0013	87. 16. 59.68	78.96	2	...	-4.595	+0.447	+0.001	725	1611
857	Groombridge 931 ...	6.8*	5. 7. 17.248	83.72	1	5	+ 9.3522	+0.1691	...	11. 42. 40.02	85.02	3	9	-4.572	+1.330	...	...	1598
858	5 Leporis.....	μ	5. 7. 32.494	83.36	3	...	+ 2.6904	+0.0034	+0.0001	106. 20. 55.80	84.02	4	...	-4.550	+0.384	+0.016	732	1616
859	12 Aurigæ	7.1*	5. 7. 34.060	84.74	2	2	+ 4.4337	+0.0175	-0.0017	43. 43. 22.31	84.02	2	(2)	-4.548	+0.632	+0.02	721	1609
860	14 Aurigæ (1st Star)...	5.2	5. 7. 34.708	79.63	3	...	+ 3.9033	+0.0111	-0.0005	57. 27. 22.50	79.22	4	...	-4.547	+0.556	-0.013	723	1614
861	14 Aurigæ (2nd Star)	7.0*	5. 7. 35.502	79.63	3	...	+ 3.9034	+0.0111	-0.0005	57. 27. 11.76	79.22	4	...	-4.545	+0.556	-0.013	729	1618
862	Bradley 729	7.0*	5. 7. 47.129	81.16	1	...	+ 2.8825	+0.0040	-0.0018	98. 17. 28.43	81.16	1	...	-4.530	+0.411	-0.01	729	1618
863	13 Aurigæ.....	α	5. 7. 49.483	81.69	20	10	+ 4.4151	+0.0172	+0.0079	44. 7. 34.00	80.97	18	(11)	-4.527	+0.629	+0.424	722	1613
864	7-Yr. Cat. (1864) No.663	0.3	5. 8. 46.026	84.63	2	...	+ 2.8811	+0.0039	-0.0012	98. 20. 39.59	84.63	2	...	-4.446	+0.412	-0.005	...	...
865	19 Orionis.....	β	5. 8. 46.254	82.35	65	...	+ 2.8811	+0.0039	-0.0012	98. 20. 29.98	82.48	36	...	-4.446	+0.412	-0.005	736	1623
866	15 Camelopardi	6.3	5. 9. 6.901	86.02	1	2	+ 5.1581	+0.0286	...	32. 0. 52.51	85.56	1	4	-4.416	+0.736	...	...	1622
867	Oeltz. Arg. (N.) 5680	5.8	5. 9. 10.576	84.67	1	2	+ 5.5800	+0.0368	...	27. 28. 38.64	86.12	2	4	-4.410	+0.796	...	...	...
868	W. B. V. 169	6.0	5. 9. 14.037	86.04	2	...	+ 3.0370	+0.0045	...	91. 32. 55.07	86.04	2	...	-4.406	+0.434	...	...	...
869	18 Orionis	5.6	5. 9. 24.076	79.63	3	...	+ 3.3307	+0.0061	-0.001	78. 47. 43.41	79.63	3	...	-4.392	+0.476	-0.003	734	1624
870	Piazzi IV. 311	7.0*	5. 9. 59.888	82.04	2	4	+ 9.3124	+0.1585	...	11. 48. 52.42	83.97	1	11	-4.341	+1.328	...	...	1610
871	Bradley 728	6.7*	5. 10. 17.768	86.32	3	...	+ 4.1809	+0.0136	-0.0034	49. 39. 59.16	86.32	3	...	-4.315	+0.597	-0.06	728	1626
872	15 Aurigæ.....	λ	5. 10. 42.035	79.31	3	...	+ 4.1679	+0.0133	+0.0447	50. 0. 33.98	80.27	9	...	-4.281	+0.596	+0.656	731	1631
873	Piazzi IV. 317 ...	6.3	5. 10. 58.381	86.15	2	1	+ 9.1471	+0.1481	...	12. 8. 15.36	83.16	8	2	-4.258	+1.306	...	...	1619
874	Bradley 737	5.3	5. 11. 6.298	78.28	4	...	+ 3.9411	+0.0108	+0.001	56. 22. 51.62	78.28	4	...	-4.247	+0.564	+0.030	737	1632
875	20 Orionis	7.3	5. 11. 46.711	81.06	3	...	+ 2.9123	+0.0039	-0.0024	96. 58. 32.20	81.49	2	...	-4.188	+0.417	+0.003	742	1638
876	W. B. (2) V. 266 ...	5.3	5. 11. 49.054	86.92	2	...	+ 4.2073	+0.0135	...	49. 2. 22.70	86.92	2	...	-4.185	+0.602	...	...	...
877	109 Tauri	5.2	5. 12. 4.065	81.97	3	...	+ 3.5999	+0.0077	+0.0011	68. 1. 46.61	82.01	4	...	-4.164	+0.515	+0.082	741	1637
878	Bradley 743	5.7	5. 12. 9.563	82.94	4	...	+ 2.7547	+0.0035	-0.001	103. 38. 55.25	82.02	3	...	-4.157	+0.395	+0.032	743	1643
879	Piazzi V. 41	6.5*	5. 13. 27.219	78.74	4	...	+ 3.7636	+0.0088	...	62. 9. 58.41	79.30	3	...	-4.045	+0.539	...	...	1648
880	Lalande 9986.....	5.9	5. 13. 30.365	86.77	4	...	+ 2.6403	+0.0032	...	108. 15. 32.95	86.97	3	...	-4.041	+0.379	...	...	...

841, 842. The magnitudes given in Struve's *Mensurae Micrometricae* are 6.2 and 8.2.

844. There are no observations of this star above the Pole.

860, 861. The magnitudes given in Struve's *Mensurae Micrometricae* are 7.2 and 5.0.864, 865. The combined magnitude given in the *Uranometria Nova Ozoniensis* is 1.0: the magnitudes given in Struve's *Mensurae Micrometricae* are 8.0 and 1.0.875. The magnitude given in the *Uranometria Nova Ozoniensis* is 4.0.877. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.4.

1886 1885 1884 1883 1882 1881	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
881	Lalande 9973.....	6.4	h m s 5. 13. 30.527	85.33	3	...	+ 3.0371	+0.0043	...	91. 32. 16.84	85.33	3	...	-4.040	+0.436	...	...	...
882	Piazzi V. 48	6.5*	5. 13. 51.276	82.38	3	...	+ 3.5411	+0.0070	...	70. 18. 31.64	82.38	3	...	-4.011	+0.508	...	...	1651
883	6 Leporis.....λ	4.3	5. 14. 2.873	86.96	3	...	+ 2.7626	+0.0035	-0.0014	103. 18. 7.25	86.96	3	...	-3.994	+0.397	+0.004	748	1653
884	B. D. + 8° No. 933...	5.8	5. 15. 11.590	85.41	3	...	+ 3.2638	+0.0052	...	81. 41. 31.02	85.41	3	...	-3.895	+0.469	...	...	1656
885	Lalande 10063	4.6	5. 15. 19.496	86.97	3	...	+ 2.5593	+0.0031	...	111. 21. 42.44	86.97	3	...	-3.884	+0.368	...	...	...
886	Bradley 750	6.4*	5. 15. 24.370	78.77	4	...	+ 3.0600	+0.0043	-0.0004	90. 32. 13.80	78.77	4	...	-3.878	+0.440	-0.0016	750	1657
887	22 Orionis.....0	4.7	5. 15. 38.152	79.64	3	...	+ 3.0608	+0.0043	-0.0009	90. 30. 8.63	79.27	4	...	-3.858	+0.440	-0.0009	751	1660
888	21 Aurigæ.....σ	5.2	5. 16. 29.864	78.47	4	...	+ 4.0714	+0.0110	-0.0023	52. 43. 43.28	78.93	3	...	-3.784	+0.585	-0.0001	747	1663
889	Piazzi V. 62	6.4	5. 16. 54.409	86.93	2	...	+ 3.8649	+0.0091	...	58. 53. 23.55	86.93	2	...	-3.748	+0.555	...	...	1668
890	Piazzi V. 63	5.9	5. 16. 54.494	85.96	4	...	+ 3.8624	+0.0090	...	58. 58. 13.31	85.96	4	...	-3.748	+0.555	...	...	1669
891	W. B. (2) V. 445 ...	9.0*	5. 17. 19.975	86.97	2	...	+ 3.4808	+0.0063	+0.0157	72. 43. 45.85	86.97	2	...	-3.712	+0.500	-0.0006	...	...
892	111 Tauri	5.2	5. 17. 25.297	82.63	7	...	+ 3.4808	+0.0063	+0.0157	72. 43. 47.28	83.41	6	...	-3.705	+0.500	-0.0006	754	1671
893	W. B. V. 367	5.8	5. 17. 33.142	85.99	2	...	+ 2.8752	+0.0036	...	98. 31. 50.44	85.99	2	...	-3.693	+0.414	...	...	...
894	8 Leporis	5.1	5. 18. 0.694	78.30	3	...	+ 2.7435	+0.0033	-0.0030	104. 2. 29.12	78.30	3	...	-3.653	+0.395	-0.0006	766	1679
895	29 Orionis.....0	4.3	5. 18. 9.943	83.67	3	...	+ 2.8894	+0.0036	-0.0011	97. 55. 10.81	83.67	3	...	-3.640	+0.416	+0.0025	764	1680
896	28 Orionis.....η	3.5	5. 18. 26.562	80.05	3	...	+ 3.0147	+0.0040	-0.0015	92. 30. 31.60	80.05	3	...	-3.616	+0.434	-0.0010	765	1684
897	25 Orionis.....ψ	4.6	5. 18. 31.099	83.02	2	...	+ 3.1121	+0.0044	-0.0026	88. 15. 54.93	83.02	2	...	-3.610	+0.448	+0.0009	763	1685
898	112 Tauri	1.9	5. 18. 42.383	82.36	63	...	+ 3.7866	+0.0082	+0.0013	61. 29. 44.38	80.74	46	...	-3.594	+0.545	+0.0180	756	1681
899	17 Camelopardi	5.8	5. 18. 50.409	84.43	1	8	+ 5.6499	+0.0311	-0.0012	27. 2. 8.93	83.77	3	14	-3.583	+0.812	+0.0008	745	1676
900	Lalande 10182	5.7	5. 19. 7.999	86.64	3	...	+ 2.6679	+0.0031	...	107. 5. 10.92	86.64	3	...	-3.557	+0.384	...	...	...
901	W. B. V. 413	6.0	5. 19. (21.)	...	...	...	+ 2.8298	+0.0034	...	100. 26. 17.77	83.95	2	...	-3.538	+0.408	...	...	...
902	114 Tauri.....0	4.8	5. 20. 25.662	80.43	6	...	+ 3.5999	+0.0066	-0.0011	68. 10. 2.53	80.93	5	...	-3.445	+0.519	-0.0006	768	1695
903	Lalande 10253	5.9	5. 20. 46.593	86.28	3	...	+ 2.5982	+0.0030	...	109. 47. 43.05	86.28	3	...	-3.415	+0.375	...	...	...
904	Lalande 10254	5.9	5. 20. 47.851	86.28	3	...	+ 2.5980	+0.0030	...	109. 48. 4.35	86.28	3	...	-3.413	+0.375	...	...	...
905	118 Tauri	5.4	5. 21. 53.379	79.17	2	...	+ 3.6886	+0.0070	+0.0004	64. 56. 55.20	79.17	2	...	-3.320	+0.532	+0.0018	775	1707
906	Piazzi V. 99	7.0*	5. 22. 3.215	78.69	4	...	+ 3.8059	+0.0077	...	60. 54. 40.08	78.74	4	...	-3.306	+0.549	...	...	1709
907	18 Camelopardi	6.6*	5. 22. 17.206	85.13	1	6	+ 5.1136	+0.0208	+0.0169	32. 51. 58.11	85.25	1	6	-3.285	+0.737	+0.0207	759	1705
908	W. B. (2) V. 606 ...	7.0*	5. 22. 18.018	85.21	4	...	+ 3.5076	+0.0059	...	71. 44. 0.96	85.21	4	...	-3.284	+0.506	...	...	...
909	Lalande 10321	8.2*	5. 22. 42.712	81.33	3	...	+ 2.5683	+0.0030	...	110. 54. 25.11	81.29	4	...	-3.248	+0.371	...	...	...
910	9 Leporis.....β	3.0	5. 23. 6.225	81.54	6	...	+ 2.5695	+0.0030	-0.0015	110. 51. 23.98	81.25	6	...	-3.215	+0.371	+0.0079	781	1715
911	W. B. V. 535	6.0	5. 23. 24.832	86.45	2	...	+ 2.9906	+0.0037	...	93. 32. 37.60	85.99	2	...	-3.188	+0.432	...	...	...
912	Lalande 10328	5.6	5. 23. 41.118	84.69	3	...	+ 3.1113	+0.0041	...	88. 18. 26.09	84.86	5	...	-3.165	+0.449	...	...	...
913	Groombridge 966 ...	6.4	5. 23. 41.111	84.25	1	3	+ 7.9856	+0.0755	+0.0004	15. 2. 21.75	80.94	4	3	-3.165	+1.151	+0.0024	...	1706
914	Groombridge 944 ...	6.4	5. 23. 41.477	85.56	...	4	+ 18.5716	+0.6115	...	4. 52. 8.15	85.28	...	8	-3.165	+2.676	...	...	1662
915	25 Aurigæ.....χ	5.0	5. 24. 55.043	79.59	7	...	+ 3.9012	+0.0079	-0.0008	57. 53. 54.85	79.82	8	...	-3.058	+0.564	0.0000	776	1723
916	119 Tauri	4.6	5. 25. 10.643	82.18	4	...	+ 3.5146	+0.0056	-0.0003	71. 29. 48.33	82.18	4	...	-3.035	+0.508	+0.0002	783	1726
917	19 Camelopardi	6.7*	5. 25. 38.327	83.84	1	7	+ 5.7916	+0.0281	-0.0006	25. 55. 34.02	83.74	1	9	-2.996	+0.836	+0.0057	770	1721
918	34 Orionis.....δ	Var.	5. 25. 52.520	82.09	33	...	+ 3.0633	+0.0038	-0.0014	90. 23. 21.87	83.37	24	...	-2.974	+0.443	+0.0005	787	1730
919	10 Leporis	5.4	5. 25. 59.473	84.96	3	...	+ 2.5660	+0.0029	-0.0011	110. 57. 14.50	84.96	3	...	-2.966	+0.371	+0.0040	791	1732
920	Piazzi V. 125	6.3*	5. 26. 30.786	86.71	3	...	+ 3.5638	+0.0057	...	69. 36. 45.98	86.71	3	...	-2.920	+0.516	...	...	1733

903, 904. The magnitudes given in B. D. are 8.5 and 6.0.

918. The magnitude given in H. P. is 2.4; in the *Uranometria Nova Ozoniensis*, 2.0. The limits of magnitude are 2.2 and 2.7: Auwers found a 16d. period, Schönfeld found a slight variation but no period, Chandler and Sawyer find no fluctuation of light.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley, 1755.	No. in B.A.C., 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
921	W. B. V. 619	5.2	h m s 5. 26. 37.049	83.13	1	...	s + 3.0335	+0.0037	...	91. 40. 48.17	83.13	1	...	" -2.911	" +0.439	...	...	...
922	Piazzi V. 117	6.0	5. 26. 44.366	85.58	...	4	+ 4.9165	+0.0162	...	35. 39. 13.34	85.58	...	4	-2.901	+0.711	...	...	...
923	Groombridge 987 ...	6.1	5. 27. 12.339	86.82	2	1	+ 4.5232	+0.0122	...	42. 21. 58.96	86.98	2	1	-2.860	+0.654	...	...	1736
924	20 Camelopardi	7.3*	5. 27. 18.376	86.35	1	2	+ 5.0646	+0.0176	-0.003	33. 35. 32.92	86.44	1	2	-2.852	+0.732	+0.014	777	1735
925	11 Leporis	2.7	5. 27. 26.261	80.64	25	...	+ 2.6446	+0.0029	-0.0011	107. 54. 34.78	79.92	25	...	-2.840	+0.383	-0.010	796	1741
926	W. B. (2) V. 763-4...	8.1*	5. 28. 2.966	77.95	2	...	+ 4.1426	+0.0089	...	51. 2. 52.38	77.95	2	...	-2.787	+0.599	...	...	...
927	121 Tauri	5.4	5. 28. 7.388	78.43	5	...	+ 3.6606	+0.0060	-0.0003	66. 2. 31.74	78.07	6	...	-2.781	+0.530	+0.019	790	1742
928	37 Orionis	4.4	5. 28. 13.920	82.78	4	...	+ 3.2917	+0.0044	-0.0018	80. 35. 36.29	82.78	4	...	-2.771	+0.477	+0.002	792	1748
929	39 Orionis (1st Star)λ	3.5	5. 28. 31.771	82.57	4	...	+ 3.3023	+0.0044	-0.0015	80. 8. 52.00	82.57	4	...	-2.745	+0.478	+0.018	794	1749
930	39 Orionis (2nd Star)λ	3.5	5. 28. 32.075	83.36	3	...	+ 3.3023	+0.0044	-0.0015	80. 8. 48.34	83.36	3	...	-2.745	+0.478	+0.018	...	...
931	Lalande 10492	5.5	5. 28. 35.805	86.96	3	...	+ 3.3096	+0.0044	...	79. 50. 29.41	86.96	3	...	-2.739	+0.479	...	...	...
932	Groombridge 990 ...	7.9*	5. 28. 50.664	86.50	...	2	+ 4.7295	+0.0135	-0.00571	38. 38. 4.84	86.50	...	2	-2.717	+0.685	-0.086	...	...
933	22 Camelopardi	6.9*	5. 28. 57.416	84.97	2	3	+ 5.0577	+0.0167	-0.002	33. 42. 40.32	84.99	2	3	-2.709	+0.732	+0.128	785	1744
934	Lalande 10527	5.29	5. 29. 9.025	77.99	1	...	+ 2.9309	+0.0033	-0.0052	96. 5. 24.97	77.99	1	...	-2.691	+0.425	-0.02	...	...
935	Bradley 801	4.5	5. 29. 10.645	77.99	1	...	+ 2.9311	+0.0033	-0.0052	96. 4. 59.05	77.99	1	...	-2.688	+0.425	-0.02	801	1752
936	41 Orionis.....	4.4	5. 29. 22.805	83.04	3	...	+ 2.9454	+0.0033	-0.0020	95. 28. 12.59	83.05	2	...	-2.671	+0.427	-0.021	802	1758
937	42 Orionis	4.6	5. 29. 27.939	86.17	1	...	+ 2.9582	+0.0033	-0.0013	94. 55. 7.81	85.65	4	...	-2.663	+0.429	-0.018	803	1759
938	43 Orionis (1st Star)θ ²	4.9	5. 29. 29.299	83.07	3	...	+ 2.9448	+0.0033	-0.0013	95. 29. 47.38	83.11	2	...	-2.661	+0.427	-0.021	804	1760
939	43 Orionis (2nd Star)θ ²	4.9	5. 29. 32.779	83.09	1	...	+ 2.9448	+0.0033	-0.0013	95. 29. 49.79	83.03	2	...	-2.657	+0.427	-0.021	...	...
940	44 Orionis	3.0	5. 29. 33.794	78.84	4	...	+ 2.9333	+0.0033	-0.0007	95. 59. 25.54	78.84	4	...	-2.655	+0.425	-0.007	806	1762
941	Lalande 10547	8.7*	5. 29. (38.)	...	...	...	+ 2.9583	+0.0032	...	94. 55. 2.95	86.17	1	...	-2.648	+0.429	...	...	...
942	45 Orionis	5.0	5. 29. (44.)	...	...	...	+ 2.9578	+0.0033	-0.0003	94. 56. 9.28	86.17	1	...	-2.641	+0.428	-0.011	807	1763
943	122 Tauri	5.4	5. 30. 5.928	86.00	4	...	+ 3.4767	+0.0049	+0.0024	73. 2. 8.23	86.00	4	...	-2.609	+0.504	+0.039	798	1764
944	46 Orionis	1.8	5. 30. 7.445	83.34	25	...	+ 3.0427	+0.0035	-0.0018	91. 16. 47.66	82.75	17	...	-2.608	+0.441	-0.006	809	1765
945	Radcliffe 1516	5.8	5. 30. 24.911	83.91	1	3	+ 5.9992	+0.0270	...	24. 22. 13.44	82.42	4	10	-2.582	+0.869	...	...	1751
946	123 Tauri.....	3.0	5. 30. 28.363	83.13	6	...	+ 3.5831	+0.0053	-0.0007	68. 55. 56.62	83.13	6	...	-2.577	+0.519	+0.024	800	1767
947	W. B. (2) V. 889 ...	5.6	5. 30. 54.783	86.98	1	...	+ 3.8509	+0.0065	-0.0034	59. 34. 50.93	86.98	1	...	-2.538	+0.558	-0.005	799	1768
948	26 Aurigæ ...	5.6	5. 30. 55.801	83.40	3	...	+ 3.8509	+0.0065	-0.0034	59. 34. 49.28	83.40	3	...	-2.537	+0.558	-0.005	...	...
949	Lalande 10600	5.6	5. 31. 31.282	86.94	3	...	+ 3.2462	+0.0040	...	82. 31. 53.70	86.22	5	...	-2.486	+0.471	...	...	...
950	Piazzi V. 146.....	6.3*	5. 31. 36.207	85.08	1	4	+ 4.8606	+0.0135	+0.0002	36. 34. 11.88	85.40	1	4	-2.479	+0.705	+0.571	...	1769
951	B. F. 747	6.2*	5. 31. 40.473	78.94	3	...	+ 3.8121	+0.0062	...	60. 51. 21.43	78.94	3	...	-2.473	+0.553	...	...	1772
952	Piazzi V. 164.....	7.8*	5. 31. 57.409	82.83	5	...	+ 3.6425	+0.0054	...	66. 44. 52.02	82.83	5	...	-2.448	+0.528	...	...	1774
953	125 Tauri	4.9	5. 32. 18.033	80.92	5	...	+ 3.7147	+0.0057	0.0000	64. 10. 19.48	80.92	5	...	-2.418	+0.539	+0.014	810	1778
954	48 Orionis	3.7	5. 32. 43.272	81.58	4	...	+ 3.0104	+0.0033	-0.0018	92. 40. 14.49	81.89	5	...	-2.382	+0.437	-0.009	814	1780
955	47 Orionis	4.5	5. 32. 50.919	80.05	3	...	+ 3.1663	+0.0037	-0.0003	85. 56. 54.15	80.05	3	...	-2.370	+0.460	-0.019	813	1782
956	49 Orionis	5.0	5. 33. 4.712	83.78	3	...	+ 2.9027	+0.0031	-0.0033	97. 16. 52.96	83.78	3	...	-2.350	+0.421	+0.042	816	1785
957	23 Camelopardi	6.5*	5. 33. 6.450	83.34	6	9	+ 5.5089	+0.0190	-0.0031	28. 35. 9.28	84.33	8	10	-2.348	+0.799	-0.004	795	1777
958	B. D. + 16°. No. 835	7.8*	5. 33. 21.636	83.06	4	...	+ 3.4613	+0.0045	...	73. 40. 10.91	83.28	5	...	-2.325	+0.502	...	...	...
959	Piazzi V. 178	6.0	5. 33. 32.487	84.93	3	...	+ 2.9880	+0.0033	...	93. 37. 59.67	84.93	3	...	-2.309	+0.434	...	...	1789
960	Lalande 10705	8.5*	5. 33. 53.231	80.02	3	...	+ 3.0260	+0.0033	...	91. 59. 38.96	80.83	5	...	-2.280	+0.439	...	...	...

927. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.8.929, 930. The magnitudes given in Struve's *Mensurae Micrometricae* are 4.0 and 6.0.

934, 935. The magnitudes given in B. D. are 6.8 and 5.4.

938, 939. The magnitudes given in B. D. are 5.0 and 7.8.

947, 948. The magnitudes given in Struve's *Mensurae Micrometricae* are 8.0 and 5.8.

932. Authority for Proper Motion : Bonn Observations, Vol. VII.

937. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.942. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.8, and in B. D., 6.0.

950. Authority for Proper Motion : Bonn Observations, Vol. VII.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xxvii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
961	25 Camelopardi	7.0*	5.34. 3'294	84.24	2	2	+ 4'956	+0.0132	0.000	35. 11. 45'35	83.98	2	2	-2'266	+0.719	+0.022	808	1784
962	126 Tauri	4.9	5.34. 21'546	80.64	3	...	+ 3'4650	+0.0044	+0.0001	73. 31. 48'15	82.43	7	...	-2'240	+0.503	+0.013	817	1792
963	50 Orionis (1st Star) ζ	1.9	5.34. 42'266	80.72	7	...	+ 3'0257	+0.0032	-0.0008	92. 0. 27'03	80.72	7	...	-2'209	+0.440	-0.010	819	1794
964	50 Orionis (2nd Star) ζ	1.9	5.34. 42'343	80.97	1	...	+ 3'0257	+0.0032	-0.0008	92. 0. 30'33	80.97	1	...	-2'209	+0.440	-0.010	...	...
965	Lalande 10734.....	5.1	5.34. 45'207	84.08	3	...	+ 3'0446	+0.0033	...	91. 11. 36'53	84.10	5	...	-2'205	+0.442	...	...	...
966	Piazzi V. 184.....	6.8*	5.34. 48'702	84.01	3	...	+ 3'6255	+0.0049	...	67. 24. 6'51	82.03	5	...	-2'199	+0.527	...	...	1793
967	Columbæ.....	2.7	5.35. 18'226	82.47	15	...	+ 2'1710	+0.0028	+0.0050	124. 8. 21'78	82.87	15	...	-2'157	+0.316	+0.030	...	1802
968	Piazzi V. 192.....	6.0	5.36. 2'349	82.57	6	...	+ 3'6407	+0.0048	...	66. 51. 15'84	83.17	8	...	-2'093	+0.529	...	...	1801
969	26 Camelopardi	6.0	5.36. 23'532	84.54	4	2	+ 3'0486	+0.0128	+0.002	33. 56. 11'59	84.54	4	2	-2'061	+0.733	+0.054	811	1797
970	28 Camelopardi	6.6*	5.36. 40'452	83.19	1	3	+ 5'1103	+0.0132	+0.003	33. 7. 41'90	82.96	1	5	-2'038	+0.742	+0.036	812	1800
971	W. B. V. 921	6.0	5.37. 4'263	86.62	3	...	+ 2'9123	+0.0029	...	96. 51. 22'81	86.51	4	...	-2'003	+0.423	...	...	...
972	Lalande 10874.....	6.0	5.38. 6'454	84.08	3	...	+ 2'6241	+0.0026	...	108. 36. 48'36	84.08	3	...	-1'912	+0.382	...	...	...
973	Lalande 10769.....	6.3	5.40. 1'120	81.84	3	8	+ 6'4419	+0.0226	...	21. 33. 59'54	82.64	3	15	-1'746	+0.937	...	...	1813
974	B. D. + 9° No. 854...	5.8	5.40. 16'885	81.15	6	...	+ 3'2946	+0.0034	...	80. 31. 25'07	81.15	6	...	-1'723	+0.479	...	...	1826
975	131 Tauri	5.7	5.40. 23'018	81.06	3	...	+ 3'4153	+0.0037	-0.0004	75. 33. 28'38	80.38	11	...	-1'714	+0.497	+0.055	833	1827
976	Piazzi V. 220.....	6.3	5.40. 23'535	85.47	5	...	+ 3'0985	+0.0031	...	88. 52. 31'63	85.47	5	...	-1'713	+0.451	...	...	1831
977	130 Tauri	5.5	5.40. 26'378	84.32	3	...	+ 3'4969	+0.0039	-0.0013	72. 19. 3'48	84.64	5	...	-1'709	+0.509	-0.001	832	1828
978	29 Aurigæ	4.6	5.40. 51'631	79.93	4	...	+ 4'1565	+0.0060	-0.0032	50. 51. 41'84	79.13	8	...	-1'672	+0.605	+0.022	829	1830
979	Piazzi V. 222.....	7.3*	5.41. 12'574	83.57	4	...	+ 3'5791	+0.0040	...	69. 10. 27'77	83.57	4	...	-1'642	+0.521	...	...	1835
980	14 Leporis	3.7	5.41. 31'050	81.38	3	...	+ 2'7186	+0.0026	-0.0018	104. 52. 5'29	82.07	5	...	-1'616	+0.396	-0.009	843	1840
981	30 Camelopardi.....	6.5*	5.41. 42'598	84.53	3	3	+ 5'2839	+0.0116	+0.0004	31. 4. 24'10	84.51	3	3	-1'598	+0.769	-0.021	825	1833
982	53 Orionis	2.2	5.42. 3'906	81.94	24	...	+ 2'8442	+0.0027	-0.0017	99. 42. 49'43	82.34	16	...	-1'568	+0.414	-0.004	844	1843
983	W. B. V. 1048.....	5.7	5.42. 37'155	86.08	3	...	+ 2'9761	+0.0028	...	94. 7. 45'92	86.06	4	...	-1'520	+0.433	...	...	...
984	32 Aurigæ	4.2	5.43. 10'383	82.06	3	...	+ 4'1563	+0.0054	-0.0028	50. 53. 19'87	82.29	7	...	-1'472	+0.605	-0.032	840	1845
985	Piazzi V. 239.....	5.7	5.43. 26'006	84.38	3	...	+ 3'3034	+0.0032	...	80. 10. 2'00	84.62	5	...	-1'448	+0.481	...	...	1851
986	W. B. V. 1083.....	6.0	5.43. 51'922	83.59	7	...	+ 3'1746	+0.0029	...	85. 36. 47'73	83.79	8	...	-1'411	+0.462	...	...	...
987	W. B. V. 1100.....	5.6	5.44. 9'339	86.41	3	...	+ 2'7268	+0.0025	...	104. 31. 14'27	86.41	3	...	-1'386	+0.397	...	...	...
988	31 Camelopardi	5.2	5.44. 12'993	82.29	4	...	+ 5'3693	+0.0106	-0.0013	30. 8. 29'75	81.88	16	...	-1'380	+0.782	+0.022	831	1849
989	30 Aurigæ.....	5.0	5.44. 47'340	83.77	3	4	+ 5'0262	+0.0085	-0.005	34. 19. 24'73	84.06	3	4	-1'331	+0.732	-0.020	838	1854
990	Lalande 11088.....	6.1	5.45. 16'827	79.88	4	...	+ 3'5536	+0.0034	...	70. 9. 52'07	80.57	2	...	-1'287	+0.518	...	...	...
991	Lalande 11089.....	7.5*	5.45. 24'934	81.87	4	...	+ 3'5506	+0.0034	...	70. 16. 36'99	81.87	4	...	-1'275	+0.517	...	...	...
992	137 Tauri	5.6	5.45. 33'243	83.08	4	...	+ 3'4085	+0.0032	-0.0015	75. 51. 37'83	83.08	4	...	-1'264	+0.497	+0.002	849	1862
993	55 Orionis	5.3	5.45. 34'420	84.29	7	...	+ 2'8954	+0.0026	-0.0014	97. 33. 6'39	84.52	8	...	-1'261	+0.422	-0.003	853	1864
994	136 Tauri	4.5	5.45. 47'089	80.24	9	...	+ 3'7694	+0.0038	+0.0002	62. 25. 4'31	79.68	11	...	-1'243	+0.549	+0.021	848	1863
995	Bradley 850	7.2*	5.46. 11'156	84.85	1	...	+ 3'5651	+0.0033	+0.0014	69. 43. 50'09	84.85	1	...	-1'208	+0.52	+0.02	850	1867
996	Columbæ	2.9	5.46. 43'927	82.45	6	...	+ 2'1090	+0.0026	...	125. 48. 57'74	82.37	5	...	-1'160	+0.308	...	...	1878
997	Piazzi V. 256.....	6.2*	5.47. 11'744	79.36	3	...	+ 3'8961	+0.0039	...	58. 19. 6'05	79.36	3	...	-1'121	+0.568	...	...	1875
998	54 Orionis.....	4.7	5.47. 16'611	83.37	12	...	+ 3'5648	+0.0032	-0.0154	69. 44. 52'04	83.37	12	...	-1'112	+0.520	+0.096	856	1876
999	57 Orionis.....	5.9	5.47. 50'380	85.30	3	...	+ 3'5510	+0.0031	-0.0016	70. 16. 32'14	85.30	3	...	-1'064	+0.518	-0.009	857	1880
1000	Piazzi V. 246.....	7.0*	5.48. 21'712	83.44	1	3	+ 6'2179	+0.0121	...	23. 0. 3'12	80.86	3	3	-1'018	+0.906	...	...	1874

963, 964. The magnitudes given in B. D. are 2.0 and 9.4.

983. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.998. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.1.

967. Authority for Proper Motion : Cape Catalogue, 1880.

988. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.

{xxviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1001	58 Orionis	α Var.	5. 48. 40°506	82°28	65	...	+ 3°2453	+0°0027	+0°0008	82. 37. 1°04	82°61	43	...	-0°991	+0°473	-0°024	860	1883
1002	Orionis	U Var.	5. 48. 41°676	85°98	4	...	+ 3°5624	+0°0030	...	69. 50. 49°18	85°98	4	...	-0°988	+0°519	...	...	...
1003	Piazzi V. 266	6°5*	5. 48. 56°415	82°56	10	...	+ 3°8101	+0°0034	...	61. 4. 43°83	82°57	10	...	-0°968	+0°556	...	...	1882
1004	W. B. V. 1227	5°9	5. 49. 34°122	85°04	3	...	+ 2°9639	+0°0024	...	94. 38. 15°93	85°04	3	...	-0°913	+0°432	...	...	...
1005	W. B. (2) V. 1577 ...	6°0	5. 49. 35°181	86°10	3	...	+ 3°6733	+0°0031	...	65. 46. 12°11	85°86	4	...	-0°911	+0°536	...	...	...
1006	33 Aurigæ	δ 3°8	5. 49. 38°779	84°55	4	...	+ 4°9290	+0°0058	+0°0074	35. 43. 37°44	83°88	5	...	-0°905	+0°719	+0°117	852	1885
1007	Bradley 851	6°5*	5. 49. 45°511	86°09	2	2	+ 5°0018	+0°0060	-0°002	34. 41. 29°00	86°00	2	2	-0°897	+0°729	+0°088	851	1887
1008	Piazzi V. 253	7°7*	5. 49. 51°822	81°90	2	4	+ 6°2019	+0°0105	...	23. 6. 42°02	81°33	5	3	-0°886	+0°904	...	...	1881
1009	Lalande 11224	6°1	5. 50. 7°189	83°84	3	...	+ 3°3441	+0°0026	...	78. 29. 46°50	83°84	3	...	-0°865	+0°488	...	...	...
1010	139 Tauri	5°1	5. 50. 32°877	80°16	7	...	+ 3°7221	+0°0030	0°0000	64. 3. 46°11	80°48	9	...	-0°827	+0°543	+0°009	862	1896
1011	34 Aurigæ	β 2°1	5. 50. 43°598	80°57	9	3	+ 4°4051	+0°0041	-0°0065	45. 4. 0°34	80°70	9	(3)	-0°811	+0°642	+0°011	859	1895
1012	16 Leporis	η 3°7	5. 50. 56°441	80°41	3	...	+ 2°7344	+0°0022	-0°0044	104. 11. 27°48	81°50	5	...	-0°793	+0°399	-0°146	866	1901
1013	35 Aurigæ	π 4°5	5. 51. 1°785	82°54	4	...	+ 4°4520	+0°0041	...	44. 4. 33°86	82°46	5	...	-0°784	+0°649	...	...	1897
1014	37 Aurigæ	θ 2°7	5. 51. 32°290	79°92	4	...	+ 4°0865	+0°0033	+0°0037	52. 47. 51°72	79°74	13	...	-0°741	+0°596	+0°078	863	1900
1015	Piazzi V. 282	8°2*	5. 51. 59°543	86°50	2	...	+ 3°1153	+0°0024	...	88. 9. 25°64	86°50	2	...	-0°700	+0°454	...	...	...
1016	59 Orionis	6°1	5. 52. 10°467	86°23	6	...	+ 3°1148	+0°0024	+0°0007	88. 10. 35°65	86°19	8	...	-0°685	+0°454	+0°011	869	1908
1017	Piazzi V. 280	6°0	5. 53. 29°144	86°03	3	...	+ 4°6595	+0°0036	...	40. 5. 53°69	86°03	3	...	-0°570	+0°680	...	...	1914
1018	Lalande 11364	6°2	5. 53. 33°031	84°31	4	...	+ 3°0384	+0°0023	...	91. 27. 14°19	84°31	4	...	-0°564	+0°443	...	...	...
1019	W. B. V. 1350	4°7	5. 54. 3°084	83°22	6	...	+ 3°0004	+0°0022	...	93. 4. 50°02	83°22	6	...	-0°521	+0°438	...	...	...
1020	Bradley 865	7°3*	5. 54. 13°093	77°83	4	...	+ 4°3351	+0°0030	+0°0022	46. 37. 29°79	77°83	4	...	-0°506	+0°632	+0°02	865	1921
1021	141 Tauri	6°7*	5. 54. 26°848	79°88	5	...	+ 3°6231	+0°0024	-0°0021	67. 36. 14°74	79°88	5	...	-0°486	+0°528	+0°012	871	1925
1022	64 Orionis	χ 5°1	5. 56. 21°152	81°87	7	...	+ 3°5507	+0°0021	+0°0016	70. 18. 33°37	81°78	8	...	-0°319	+0°518	+0°012	878	1934
1023	39 Aurigæ	6°8*	5. 56. 25°633	81°09	4	...	+ 4°3184	+0°0024	-0°0026	47. 0. 40°84	81°09	4	...	-0°312	+0°630	+0°166	873	1931
1024	Lalande 11455	5°9	5. 56. 42°981	85°79	5	...	+ 3°3487	+0°0021	...	78. 19. 7°97	85°97	4	...	-0°287	+0°488	...	...	...
1025	62 Orionis	χ 4°8	5. 56. 47°556	83°62	11	...	+ 3°5625	+0°0021	0°0000	69. 51. 38°17	83°62	11	...	-0°282	+0°520	-0°006	881	1939
1026	1 Geminorum	4°3	5. 56. 49°503	82°87	27	...	+ 3°6471	+0°0021	-0°0010	66. 43. 55°16	83°38	27	...	-0°277	+0°532	+0°093	880	1938
1027	W. B. V. 1462	5°0	5. 58. 23°561	85°65	3	...	+ 2°9151	+0°0020	...	96. 42. 18°17	85°74	3	...	-0°140	+0°425	...	...	...
1028	63 Orionis	5°7	5. 58. 34°197	86°35	3	...	+ 3°1993	+0°0019	...	84. 34. 29°72	86°51	2	...	-0°125	+0°467	...	...	1944
1029	66 Orionis	5°7	5. 58. 37°875	83°42	7	...	+ 3°1696	+0°0020	-0°0026	85. 50. 9°69	83°42	7	...	-0°120	+0°462	+0°013	885	1945
1030	Lalande 11501	6°2	5. 58. 42°769	79°66	3	...	+ 3°8293	+0°0018	...	60. 28. 47°46	79°66	3	...	-0°112	+0°559	...	...	...
1031	Groombridge 1004 ...	7°0*	5. 59. 8°117	85°30	1	4	+ 26°7054	...	...	3. 14. 15°63	85°30	1	4	-0°077	+3°895	...	...	1879
1032	37 Camelopardi	5°3	5. 59. 23°804	84°32	2	2	+ 5°2928	+0°0011	+0°004	31. 3. 4°17	84°26	2	2	-0°053	+0°772	-0°030	876	1943
1033	2 Geminorum	7°2*	5. 59. 29°755	81°05	3	...	+ 3°6577	+0°0017	-0°0005	66. 21. 8°53	81°05	3	...	-0°044	+0°533	+0°003	884	1951
1034	17 Leporis	4°9	5. 59. 37°854	79°29	4	...	+ 2°6768	+0°0021	+0°0003	106. 28. 40°13	79°29	4	...	-0°032	+0°390	-0°010	890	1955
1035	39 Camelopardi	6°9*	6. 0. 22°253	84°01	3	3	+ 5°4325	+0°0008	-0°013	29. 31. 45°03	83°09	5	7	+0°032	+0°792	+0°018	879	1950
1036	W. B. V. 1530	5°2	6. 0. 41°709	84°76	3	...	+ 2°9745	+0°0019	...	94. 10. 59°55	84°76	3	...	+0°061	+0°434	...	...	...
1037	67 Orionis	ν 4°4	6. 0. 43°185	82°80	31	...	+ 3°4251	+0°0017	-0°0003	75. 13. 7°66	82°82	21	...	+0°063	+0°500	+0°013	887	1958
1038	18 Leporis	θ 4°6	6. 0. 43°429	80°74	3	...	+ 2°7159	+0°0020	-0°0015	104. 55. 32°93	80°74	3	...	+0°063	+0°396	-0°014	892	1959
1039	36 Camelopardi	5°3	6. 0. 46°585	79°18	3	1	+ 6°0386	+0°0004	-0°009	24. 15. 38°64	79°92	9	1	+0°069	+0°881	+0°048	875	1952
1040	Bradley 894	7°0*	6. 1. 14°839	79°40	3	...	+ 2°8085	+0°0020	-0°0009	101. 9. 43°10	80°89	5	...	+0°109	+0°410	-0°010	894	1961

1001. The magnitude given in H. P. is 0°9. The limits of magnitude are 1 and 14: Argelander found period 196^d, Schönfeld thinks periodicity questionable.1002. The limits of magnitude are 6°4-7°5 and <12: the period 359^d 5.1019. The magnitude given in the *Uranometria Nova Oxoniensis* is 5°0.1014. The magnitude given in the *Uranometria Nova Oxoniensis* is 3°0.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xxix}

1896GOAMM .49J...1C	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"	1755.	1850.
1041	Piazzi V. 342	5.4	6. 1. 31.856	85.96	3	...	+ 2.5021	+0.0021	...	113. 5. 53.51	85.96	3	...	+0.134	+0.365	...	...	1965
1042	Piazzi V. 338	6.5*	6. 2. 18.303	82.92	5	...	+ 3.6181	+0.0014	...	67. 47. 33.07	82.86	4	...	+0.201	+0.528	...	...	1970
1043	3 Geminorum	6.5*	6. 2. 26.724	82.93	4	...	+ 3.6434	+0.0013	+0.0001	66. 52. 8.02	81.42	10	...	+0.214	+0.531	+0.002	891	1971
1044	W. B. V. 1586	5.5	6. 2. 42.045	85.08	7	...	+ 3.1311	+0.0017	...	87. 28. 58.26	85.09	7	...	+0.236	+0.457	...	...	...
1045	W. B. V. 1589	5.5	6. 2. 43.890	85.34	4	...	+ 3.1310	+0.0017	...	87. 29. 10.16	85.31	5	...	+0.239	+0.457	...	...	...
1046	4 Monocerotis	7.2*	6. 2. 48.104	79.83	3	...	+ 2.8093	+0.0019	+0.002	101. 7. 47.30	79.83	3	...	+0.245	+0.410	-0.003	897	1974
1047	Lalande 11761	5.5	6. 3. 55.183	86.99	2	...	+ 2.5211	+0.0021	...	112. 24. 24.84	86.99	2	...	+0.343	+0.367	...	...	...
1048	5 Geminorum	6.7*	6. 4. 10.824	79.17	2	...	+ 3.6799	+0.0011	-0.0007	65. 33. 19.50	79.17	2	...	+0.366	+0.536	+0.046	896	1981
1049	W. B. (2) VI. 26 ...	6.1	6. 4. 28.544	79.40	3	...	+ 3.9311	+0.0007	...	57. 16. 55.52	79.40	3	...	+0.392	+0.573	...	...	...
1050	Lalande 11784	5.7	6. 4. 45.772	86.95	2	...	+ 2.5121	+0.0020	...	112. 44. 20.73	86.95	2	...	+0.417	+0.366	...	...	...
1051	40 Camelopardi	5.5	6. 4. 53.686	82.34	1	5	+ 5.3902	-0.0021	+0.001	29. 58. 13.80	82.32	1	5	+0.427	+0.786	+0.014	888	1979
1052	6 Geminorum	6.7*	6. 5. 2.605	82.26	4	...	+ 3.6378	+0.0010	-0.0009	67. 3. 58.49	81.56	6	...	+0.442	+0.530	-0.008	899	1987
1053	70 Orionis	4.2	6. 5. 7.029	86.97	3	...	+ 3.4114	+0.0013	-0.0006	75. 45. 57.23	86.97	3	...	+0.448	+0.497	+0.022	903	1990
1054	Piazzi V. 335	4.7	6. 5. 37.181	80.97	2	3	+ 6.6203	-0.0063	-0.0009	20. 38. 27.94	81.50	1	3	+0.491	+0.965	+0.111	...	1980
1055	Piazzi V. 337	6.8*	6. 6. 17.363	83.57	2	3	+ 6.6675	-0.0073	...	20. 23. 31.70	83.49	2	4	+0.550	+0.972	...	...	1985
1056	1 Lynceis	5.4	6. 6. 50.768	83.18	2	3	+ 5.5389	-0.0038	-0.0002	28. 26. 54.36	81.78	3	3	+0.598	+0.807	+0.005	893	1992
1057	7 Geminorum	Var.	6. 7. 38.019	81.08	24	...	+ 3.6269	+0.0007	-0.0050	67. 27. 36.89	81.22	17	...	+0.668	+0.528	+0.003	909	2002
1058	44 Aurigæ	4.5	6. 7. 43.877	77.74	3	...	+ 3.8295	+0.0003	-0.0052	60. 27. 34.70	77.74	3	...	+0.677	+0.558	+0.263	907	2001
1059	71 Orionis	5.1	6. 7. 47.190	84.82	4	...	+ 3.5375	+0.0008	-0.0079	70. 48. 16.40	84.82	4	...	+0.681	+0.515	+0.17	911	2004
1060	42 Aurigæ	6.4	6. 8. 37.953	86.98	3	...	+ 4.4783	-0.0015	-0.0081	43. 32. 18.39	86.98	3	...	+0.755	+0.652	+0.030	905	2008
1061	43 Aurigæ	6.5	6. 9. 19.866	86.96	4	...	+ 4.4753	-0.0017	-0.0006	43. 35. 42.13	86.95	3	...	+0.817	+0.652	+0.140	908	2010
1062	74 Orionis	5.1	6. 9. 42.285	86.98	3	...	+ 3.3636	+0.0009	+0.0044	77. 41. 45.87	86.98	3	...	+0.849	+0.490	-0.199	919	2017
1063	W. B. VI. 254	4.8	6. 10. 14.980	86.99	2	...	+ 2.7472	+0.0017	...	103. 40. 47.99	86.99	2	...	+0.897	+0.400	...	...	...
1064	Piazzi VI. 43	7.1*	6. 10. 49.532	82.07	4	...	+ 3.7603	-0.0001	...	62. 44. 42.35	82.07	4	...	+0.948	+0.547	...	...	2023
1065	Bradley 918	7.0*	6. 10. 52.049	83.01	1	...	+ 4.0162	-0.0007	-0.0026	54. 44. 49.91	83.01	1	...	+0.951	+0.585	+0.040	918	2021
1066	3 Lynceis	6.9*	6. 11. 1.297	84.54	...	3	+ 5.5640	-0.0068	-0.005	28. 11. 15.85	84.55	...	4	+0.964	+0.810	+0.119	906	2019
1067	W. B. VI. 272	6.0	6. 11. 15.826	81.14	4	...	+ 3.4158	+0.0007	...	75. 34. 28.89	81.14	4	...	+0.986	+0.497	...	...	...
1068	4 Lynceis	7.0*	6. 11. 24.430	84.62	...	4	+ 5.3320	-0.0059	-0.003	30. 34. 45.32	84.62	...	4	+0.997	+0.776	-0.010	910	2020
1069	W. B. VI. 276	8.7*	6. 11. 34.555	81.43	3	...	+ 3.4149	+0.0006	...	75. 36. 27.51	80.20	2	...	+1.013	+0.497	...	...	...
1070	12 Geminorum	7.5*	6. 12. 4.959	78.10	1	...	+ 3.6479	0.0000	+0.001	66. 40. 44.90	78.10	1	...	+1.057	+0.531	-0.004	924	2029
1071	Lalande 12060	5.1	6. 12. 21.287	85.70	3	...	+ 2.6699	+0.0017	...	106. 46. 20.97	85.59	2	...	+1.082	+0.388	...	...	...
1072	Lalande 12085	5.1	6. 13. 3.064	86.71	3	...	+ 2.5888	+0.0018	...	109. 54. 43.43	86.98	2	...	+1.141	+0.377	...	...	...
1073	W. B. VI. 343	5.7	6. 13. 8.171	86.36	3	...	+ 2.8527	+0.0015	...	99. 20. 33.65	86.36	3	...	+1.149	+0.415	...	...	...
1074	Lalande 12057	6.1	6. 13. 13.642	86.01	2	...	+ 3.4224	+0.0005	...	75. 18. 0.21	86.01	2	...	+1.157	+0.498	...	...	...
1075	W. B. (2) VI. 316...	6.0	6. 13. 32.274	86.07	2	...	+ 3.8302	-0.0007	...	60. 24. 25.90	86.07	2	...	+1.184	+0.557	...	...	...
1076	7 Monocerotis	5.1	6. 13. 55.957	86.06	3	...	+ 2.8901	+0.0014	-0.0001	97. 46. 26.61	86.06	3	...	+1.219	+0.420	-0.009	928	2040
1077	W. B. VI. 364	5.1	6. 13. 58.896	86.32	3	...	+ 3.0048	+0.0012	...	92. 53. 41.61	86.32	3	...	+1.223	+0.437	...	...	...
1078	Radcliffe 1707	5.9	6. 14. 33.120	85.08	...	4	+ 6.8605	-0.0192	...	19. 24. 10.01	85.08	...	4	+1.272	+0.998	...	...	...
1079	Piazzi VI. 54	7.3*	6. 14. 46.733	82.89	2	1	+ 5.6625	-0.0101	...	27. 15. 1.72	82.91	4	3	+1.294	+0.823	...	...	...
1080	Piazzi VI. 55	7.6*	6. 15. 9.225	80.56	2	...	+ 5.2483	-0.0077	...	31. 30. 43.38	80.56	2	...	+1.325	+0.763	...	...	2041

1044, 1045. The magnitudes given in B. D. are 6.5 and 8.0.
 1057. The limits of magnitude are 3.2 and 3.7-4.2 : the period, 229d.1.
 1058. The magnitude given in the *Uranometria Nova Orionensis* is 4.8.

{xxx}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"		
1081	46 Aurigæ	5.1	6. 15. 39.287	84.83	3	3	+ 4.6256	-0.0044	-0.0001	40. 39. 10.76	84.81	3	3	+1.368	+0.672	+0.012	926	2044
1082	13 Geminorum.....	3.2	6. 15. 41.996	81.98	36	...	+ 3.6268	-0.0004	+0.0037	67. 25. 35.61	82.15	24	...	+1.373	+0.527	+0.101	929	2047
1083	1 Canis Majoris	3.0	6. 15. 42.406	82.22	5	...	+ 2.3019	+0.0019	-0.0001	120. 0. 40.48	82.22	5	...	+1.373	+0.334	-0.012	933	2051
1084	W. B. VI. 427	5.3	6. 15. 49.199	86.64	3	...	+ 2.7956	+0.0015	...	101. 43. 9.16	86.95	2	...	+1.383	+0.406	...	...	...
1085	Piazzi VI. 61.....	8.0*	6. 16. 7.919	83.25	3	2	+ 5.2471	-0.0082	...	31. 31. 7.43	83.21	3	2	+1.411	+0.763	...	...	...
1086	5 Lynceis	5.5	6. 16. 20.182	83.54	5	4	+ 5.2468	-0.0083	-0.005	31. 31. 11.11	83.42	5	5	+1.428	+0.763	+0.006	925	2045
1087	Oeltz. Arg. (N.) 6815	7.8*	6. 17. 3.578	83.51	...	1	+ 5.6641	-0.0118	...	27. 13. 16.14	83.51	...	2	+1.492	+0.823	...	...	...
1088	2 Canis Majoris	2.0	6. 17. 24.884	82.11	20	...	+ 2.6418	+0.0016	-0.0015	107. 53. 51.63	82.76	11	...	+1.523	+0.384	-0.003	936	2061
1089	W. B. VI. 466.....	6.0	6. 17. 28.498	85.68	3	...	+ 3.2822	+0.0004	...	81. 3. 15.03	85.68	3	...	+1.527	+0.477	...	...	...
1090	3 Canis Majoris	4.1	6. 17. 43.794	84.72	3	...	+ 2.1941	+0.0019	-0.0045	123. 22. 38.65	84.72	3	...	+1.550	+0.318	+0.076	939	2066
1091	Lalande 12230	7.5*	6. 17. 53.107	84.48	3	...	+ 3.3391	+0.0002	...	78. 40. 54.22	84.20	2	...	+1.563	+0.485	...	...	...
1092	14 Geminorum	7.2*	6. 18. 30.589	82.06	1	...	+ 3.6029	-0.0007	-0.0026	68. 17. 24.77	82.06	1	...	+1.619	+0.523	+0.014	934	2067
1093	W. B. VI. 512	5.5	6. 18. 34.308	86.51	4	...	+ 2.8020	+0.0014	...	101. 28. 0.35	86.51	4	...	+1.623	+0.407	...	...	...
1094	W. B. VI. 527.....	5.8	6. 19. 8.480	85.12	3	...	+ 3.0519	+0.0009	...	90. 52. 26.95	85.12	9	...	+1.672	+0.443	...	...	...
1095	W. B. (2) VI. 491 ...	8.7*	6. 19. 21.236	82.57	2	...	+ 3.6020	-0.0008	...	68. 19. 2.48	80.39	4	...	+1.691	+0.523	...	...	...
1096	6 Lynceis	6.3*	6. 20. 21.662	82.86	3	5	+ 5.2241	-0.0105	-0.0034	31. 45. 5.68	82.59	3	5	+1.778	+0.758	+0.334	930	2074
1097	Piazzi VI. 99	8.0*	6. 20. 36.565	80.27	5	...	+ 3.5795	-0.0009	-0.0035	69. 8. 47.02	80.27	5	...	+1.800	+0.519	+0.031	...	...
1098	15 Geminorum	7.0*	6. 20. 37.464	80.55	6	...	+ 3.5798	-0.0009	-0.0035	69. 8. 19.56	80.55	6	...	+1.802	+0.519	+0.031	940	2080
1099	48 Aurigæ	5.2	6. 20. 51.232	78.76	6	...	+ 3.8586	-0.0020	-0.003	59. 26. 4.65	80.47	10	...	+1.822	+0.560	+0.010	938	2082
1100	Lalande 12316	5.8	6. 21. 3.797	84.18	3	...	+ 3.1416	+0.0005	...	87. 1. 18.55	84.18	3	...	+1.841	+0.456	...	...	...
1101	47 Aurigæ	6.0	6. 21. 4.990	78.51	4	...	+ 4.4880	-0.0055	-0.002	43. 14. 24.55	78.51	4	...	+1.842	+0.651	+0.002	935	2081
1102	Lalande 12358	8.5*	6. 21. 46.191	83.32	5	...	+ 3.5650	-0.0009	...	69. 41. 12.06	83.32	5	...	+1.902	+0.517	...	...	...
1103	Groombridge 1151 ..	5.7	6. 21. 49.317	82.72	3	8	+ 9.3804	-0.0706	...	11. 54. 48.72	82.83	4	9	+1.906	+1.361	...	...	2069
1104	18 Geminorum.....	4.0	6. 21. 50.239	82.08	40	...	+ 3.5643	-0.0009	-0.0022	69. 42. 48.89	82.50	31	...	+1.908	+0.517	+0.006	942	2090
1105	10 Monocerotis	5.0	6. 22. 2.026	80.48	3	...	+ 2.9631	+0.0009	-0.0011	94. 41. 22.18	81.99	7	...	+1.925	+0.429	-0.014	948	2094
1106	Lacaille 2279.....	6.0	6. 22. 21.228	86.05	3	...	+ 2.4297	+0.0017	...	115. 46. 39.26	86.05	3	...	+1.953	+0.352	...	...	2100
1107	Radcliffe 1742	6.2	6. 22. 45.255	82.28	3	4	+ 7.6470	-0.0419	...	16. 12. 55.85	83.73	3	21	+1.987	+1.109	...	...	2083
1108	Piazzi VI. 114	6.8*	6. 22. 47.663	82.01	2	...	+ 3.7883	-0.0021	...	61. 42. 37.35	82.01	2	...	+1.992	+0.549	...	...	2097
1109	Piazzi VI. 136	4.1	6. 23. 43.256	82.22	8	...	+ 2.2250	+0.0018	...	122. 30. 19.09	82.09	7	...	+2.072	+0.322	...	...	2109
1110	Piazzi VI. 126	6.0	6. 24. 37.294	79.52	3	...	+ 3.9204	-0.0030	...	57. 27. 41.43	81.79	5	...	+2.150	+0.567	...	...	2110
1111	W. B. VI. 709	8.2*	6. 24. 39.245	85.86	3	...	+ 2.7831	+0.0012	...	102. 16. 25.16	86.20	2	...	+2.153	+0.403	...	...	...
1112	W. B. VI. 705	4.9	6. 25. 6.733	78.47	3	...	+ 3.3457	-0.0004	...	78. 22. 26.50	78.47	3	...	+2.193	+0.484	...	...	...
1113	Piazzi VI. 75	5.5	6. 25. 43.424	79.19	6	3	+10.3751	-0.1084	-0.0247	10. 18. 37.52	79.57	12	3	+2.246	+1.503	+0.658	...	2095
1114	W. B. VI. 748.....	5.3	6. 25. 48.807	85.42	4	...	+ 2.7824	+0.0012	...	102. 18. 29.90	85.42	4	...	+2.253	+0.402	...	...	...
1115	Groombridge 1178...	6.8*	6. 25. 48.533	80.40	3	...	+ 5.2152	-0.0134	...	31. 47. 46.58	80.40	3	...	+2.254	+0.755	...	...	2113
1116	12 Monocerotis	5.7	6. 25. 57.092	83.48	3	...	+ 3.1871	+0.0001	-0.0038	85. 3. 33.51	84.12	5	...	+2.267	+0.461	-0.009	957	2123
1117	Piazzi VI. 148	5.7	6. 26. 1.255	85.09	3	...	+ 2.3753	+0.0017	...	117. 41. 13.81	85.09	3	...	+2.273	+0.343	...	...	2127
1118	W. B. VI. 753.....	5.6	6. 26. 4.037	84.14	3	...	+ 2.8839	+0.0009	...	98. 4. 25.30	84.15	5	...	+2.276	+0.417	...	...	...
1119	Oeltz. Arg. (N.) 6978	6.1	6. 26. 20.816	80.19	3	3	+ 7.1225	-0.0394	...	18. 9. 16.48	80.38	3	3	+2.301	+1.031	...	...	...
1120	W. B. VI. 763.....	5.7	6. 26. 30.613	86.04	4	...	+ 2.9378	+0.0008	...	95. 46. 54.68	86.08	6	...	+2.315	+0.425	...	...	...

1104. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.3.1116. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1121	8 Lynceis	6.1	h m s 6. 26. 43.160	81.95	4	4	+ 5.5264	-0.0173	-0.0034	28. 24. 58.56	82.08	5	6	+2.333	+0.799	+0.278	946	2120
1122	Piazzi VI. 144	5.6	6. 26. 47.258	79.71	3	...	+ 3.4094	-0.0008	...	75. 45. 15.72	79.51	2	...	+2.338	+0.493	...	...	2129
1123	Oeltz. Arg.(N.)7008. 9.0*	9.0*	6. 27. 4.229	82.52	...	1	+ 5.5267	-0.0176	...	28. 24. 37.70	82.52	...	1	+2.363	+0.799	...	...	...
1124	Piazzi VI. 154	6.3	6. 27. 9.440	84.63	4	...	+ 2.8123	+0.0011	...	101. 4. 46.14	84.48	6	...	+2.370	+0.406	...	...	...
1125	W. B. VI. 775	5.0	6. 27. 32.457	79.56	3	...	+ 3.0461	+0.0004	...	91. 7. 50.47	79.56	3	...	+2.404	+0.440	...	...	...
1126	10 Lynceis	7.3*	6. 27. 34.956	82.07	3	4	+ 5.5243	-0.0179	-0.0005	28. 25. 31.85	82.20	3	8	+2.408	+0.799	+0.012	949	2125
1127	49 Aurigæ	4.9	6. 27. 38.589	78.93	8	...	+ 3.7814	-0.0028	-0.0007	61. 53. 8.94	78.93	8	...	+2.414	+0.547	+0.014	959	2133
1128	Carrington 929.....	8.2*	6. 28. 12.240	83.30	3	5	+17.6307	-0.4277	...	5. 12. 26.71	84.37	3	12	+2.461	+2.551	...	...	...
1129	Piazzi VI. 157	7.7*	6. 28. 56.081	80.54	4	...	+ 3.4662	-0.0013	...	73. 27. 33.49	78.62	4	...	+2.525	+0.500	...	...	...
1130	23 Geminorum	7.1*	6. 29. 5.242	84.18	1	...	+ 3.4750	-0.0014	-0.0003	73. 6. 28.14	84.18	1	...	+2.538	+0.502	-0.01	966	2149
1131	41 Camelopardi	7.2*	6. 29. 25.219	81.26	4	4	+ 5.5685	-0.0197	-0.0009	27. 58. 35.62	81.82	14	4	+2.567	+0.804	-0.022	954	2143
1132	W. B. (2) VI. 835 ...	8.5*	6. 29. 49.291	79.75	3	...	+ 3.4630	-0.0014	...	73. 34. 50.30	79.75	3	...	+2.602	+0.500	...	...	...
1133	5 Canis Majoris ... 2	4.4	6. 30. 1.640	79.72	3	...	+ 2.5131	+0.0015	+0.0018	112. 52. 14.75	79.72	3	...	+2.621	+0.362	-0.031	972	2160
1134	Piazzi VI. 175	5.3	6. 30. 8.346	86.66	3	...	+ 2.2240	+0.0017	...	122. 37. 21.81	86.28	4	...	+2.629	+0.320	...	...	2162
1135	51 Aurigæ	5.7	6. 30. 20.599	81.20	3	...	+ 4.1645	-0.0058	-0.0040	50. 30. 19.51	82.22	9	...	+2.648	+0.601	+0.096	963	2155
1136	52 Aurigæ	5.1	6. 30. 27.661	83.18	2	...	+ 4.1844	-0.0060	-0.0030	49. 59. 47.58	83.18	2	...	+2.658	+0.604	+0.011	964	2156
1137	Piazzi VI. 171	5.2	6. 30. 40.911	83.74	3	...	+ 2.9537	+0.0006	...	95. 6. 46.30	83.60	4	...	+2.677	+0.426	...	...	...
1138	53 Aurigæ	5.5	6. 30. 46.368	82.00	3	...	+ 3.8093	-0.0034	-0.0031	60. 54. 52.43	82.00	3	...	+2.686	+0.549	+0.004	967	2161
1139	24 Geminorum.....	7.0	6. 30. 46.734	82.11	69	...	+ 3.4648	-0.0015	+0.0023	73. 29. 59.91	82.64	54	...	+2.686	+0.500	+0.035	969	2163
1140	Lalande 12699	6.0	6. 30. 58.054	84.77	3	...	+ 3.2170	-0.0004	...	83. 45. 55.24	84.77	3	...	+2.701	+0.464	...	...	...
1141	Piazzi VI. 178	8.0*	6. 31. 6.456	81.87	5	...	+ 2.6274	+0.0013	-0.0026	108. 33. 47.48	82.25	6	...	+2.713	+0.379	-0.023	...	...
1142	6 Canis Majoris ... 2	6.5*	6. 31. 7.659	82.94	7	...	+ 2.6274	+0.0013	-0.0026	108. 33. 45.10	82.94	7	...	+2.716	+0.378	-0.023	975	2168
1143	7 Canis Majoris ... 2	4.3	6. 31. 27.003	78.93	5	...	+ 2.6123	+0.0013	+0.0028	109. 9. 17.11	80.13	7	...	+2.743	+0.376	+0.041	978	2171
1144	54 Aurigæ	5.7	6. 31. 59.044	78.63	4	...	+ 3.7872	-0.0035	-0.0025	61. 37. 57.04	78.93	5	...	+2.790	+0.546	+0.025	970	2170
1145	25 Geminorum	6.5*	6. 33. 47.096	79.52	3	...	+ 3.7845	-0.0038	-0.0014	61. 41. 39.30	79.52	3	...	+2.946	+0.545	-0.004	977	2178
1146	W. B. VI. 990	5.0	6. 33. 47.561	85.46	3	...	+ 2.7416	+0.0010	...	104. 2. 22.82	85.61	4	...	+2.948	+0.394	...	...	...
1147	Bradley 968	8.1*	6. 34. 14.609	80.84	3	3	+ 5.3224	-0.0197	-0.006	30. 26. 10.67	81.91	4	4	+2.984	+0.766	-0.046	968	2175
1148	Oeltz. Arg.(N.)7126	...	6. 34. 14.815	80.98	1	...	+ 5.3224	-0.0197	-0.006	30. 26. 13.69	80.98	1	...	+2.986	+0.766	-0.046	...	...
1149	55 Aurigæ	5.2	6. 34. 20.884	85.79	3	...	+ 4.3776	-0.0087	-0.0053	45. 21. 44.93	85.79	3	...	+2.995	+0.630	+0.040	973	2182
1150	15 Monocerotis S	Var.	6. 34. 22.127	79.70	3	...	+ 3.3055	-0.0010	-0.0003	79. 59. 41.44	79.70	3	...	+2.996	+0.475	0.000	981	2185
1151	Lalande 12866	5.8	6. 34. 36.608	84.37	4	...	+ 2.4952	+0.0014	...	113. 35. 15.81	84.37	4	...	+3.018	+0.358	...	...	...
1152	W. B. VI. 999	6.9*	6. 34. 37.459	86.21	1	...	+ 3.3319	-0.0012	...	78. 53. 12.81	86.21	1	...	+3.019	+0.479	...	...	...
1153	Piazzi VI. 203	5.7	6. 34. 55.152	86.11	4	...	+ 3.0863	-0.0001	...	89. 23. 39.23	86.12	3	...	+3.044	+0.444	...	...	2189
1154	Lacaille 2388.....	5.8	6. 35. 6.846	85.68	4	...	+ 2.2985	+0.0016	...	120. 21. 21.90	85.68	4	...	+3.061	+0.330	...	...	...
1155	26 Geminorum	5.1	6. 35. 25.054	84.77	8	...	+ 3.4955	-0.0021	-0.0009	72. 14. 20.53	84.77	8	...	+3.087	+0.502	+0.080	982	2191
1156	12 Lynceis (1st Star)...	4.7	6. 35. 36.967	81.91	1	1	+ 5.3202	-0.0205	-0.011	30. 26. 16.22	81.90	2	1	+3.104	+0.765	-0.008	971	2187
1157	12 Lynceis (2nd Star) ..	4.7	6. 35. 37.819	81.73	3	4	+ 5.3200	-0.0205	-0.011	30. 26. 22.57	82.74	3	5	+3.106	+0.765	-0.008	...	...
1158	W. B. VI. 1064	5.4	6. 36. 12.654	83.18	3	...	+ 2.8619	+0.0006	...	99. 3. 9.66	83.48	7	...	+3.156	+0.411	...	...	...
1159	27 Geminorum	3.2	6. 36. 32.883	79.66	9	...	+ 3.6948	-0.0036	-0.0018	64. 45. 6.64	80.75	15	...	+3.185	+0.531	+0.005	983	2194
1160	13 Lynceis.....	5.4	6. 36. 35.449	82.14	3	...	+ 5.1276	-0.0183	+0.006	32. 42. 30.72	82.14	3	...	+3.189	+0.737	+0.037	976	2192

1137. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.6.1147, 1148. The magnitudes given in Struve's *Mensura Micrometrica* are 7.2 and 9.0.

1150. The limits of magnitude are 4.9 and 5.4: the period doubtful.

1156, 1157. The magnitudes given in Struve's *Mensura Micrometrica* are 5.2 and 6.1.1158. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.9.

{xxxii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1161	28 Geminorum	5.4	h m s 6. 37. 9.198	77.36	3	...	+ 3.8064	-0.0045	-0.0015	60. 54. 33.46	77.36	3	...	+3.237	+0.546	+0.014	986	2197
1162	30 Geminorum	4.6	6. 37. 13.301	80.19	3	...	+ 3.3853	-0.0017	-0.0012	76. 39. 9.26	80.19	6	...	+3.242	+0.486	+0.060	987	2199
1163	56 Aurigæ	5.4	6. 38. 5.287	82.77	3	...	+ 4.3321	-0.0094	-0.0034	46. 18. 18.42	82.77	3	...	+3.317	+0.622	-0.147	985	2200
1164	Lalande (F.) 967 ...	5.5	6. 38. 11.168	86.26	2	4	+ 5.0146	-0.0176	...	34. 10. 2.57	86.28	2	4	+3.326	+0.720	...	...	...
1165	Lalande (F.) 968 ...	5.5	6. 38. 11.768	86.26	2	4	+ 5.0146	-0.0176	...	34. 10. 1.96	86.07	2	5	+3.326	+0.720	...	...	...
1166	42 Camelopardi	4.9	6. 38. 25.865	83.37	4	9	+ 6.2864	-0.0392	+0.003	22. 17. 55.81	83.35	4	14	+3.347	+0.903	-0.016	974	2198
1167	57 Aurigæ	5.3	6. 38. 30.586	85.78	3	...	+ 4.5841	-0.0123	-0.0047	41. 5. 9.02	85.78	3	...	+3.355	+0.658	+0.004	984	2201
1168	31 Geminorum	5.3	6. 38. 33.223	81.12	40	...	+ 3.3772	-0.0018	-0.0087	76. 58. 35.98	80.46	21	...	+3.357	+0.484	+0.195	989	2206
1169	9 Canis Majoris	4.1	6. 39. 51.546	81.75	34	...	+ 2.6809	+0.0010	-0.0372	106. 33. 12.33	81.91	43	...	+3.471	+0.384	+1.199	994	2213
1170	Lalande 12971	5.3	6. 39. 54.396	86.68	3	...	+ 4.2344	-0.0088	...	48. 34. 10.01	86.68	3	...	+3.475	+0.607	...	...	...
1171	Oeltz, Arg.(N.) 7239	8.8*	6. 40. 14.415	85.66	...	2	+ 4.6313	-0.0135	...	40. 10. 38.88	85.66	...	2	+3.503	+0.664	...	...	...
1172	43 Camelopardi	5.1	6. 40. 45.507	86.40	...	5	+ 6.5047	-0.0464	+0.0008	20. 58. 30.70	86.48	...	7	+3.548	+0.932	-0.018	980	2209
1173	17 Monocerotis	5.0	6. 40. 48.836	82.64	2	...	+ 3.2611	-0.0013	+0.001	81. 50. 6.15	82.64	2	...	+3.553	+0.467	-0.012	993	2216
1174	11 Canis Majoris	4.9	6. 41. 22.688	86.68	3	...	+ 2.7371	+0.0008	-0.0021	104. 17. 55.74	86.68	3	...	+3.602	+0.391	-0.020	996	2221
1175	18 Monocerotis	4.8	6. 41. 36.227	85.72	3	...	+ 3.1309	-0.0007	-0.002	87. 27. 28.65	85.72	3	...	+3.622	+0.448	+0.012	995	2222
1176	12 Canis Majoris	6.0*	6. 41. 53.130	86.99	2	...	+ 2.5706	+0.0012	-0.0019	110. 53. 13.66	86.99	2	...	+3.645	+0.367	-0.010	1001	2224
1177	14 Lynx	5.4	6. 42. 29.970	86.71	1	2	+ 5.3110	-0.0245	-0.0041	30. 24. 43.46	86.75	1	2	+3.698	+0.760	+0.036	988	2220
1178	Piazzi VI. 201	4.6	6. 42. 32.438	84.85	...	4	+ 8.8217	-0.1172	+0.0230	12. 52. 25.10	84.85	...	4	+3.701	+1.263	+0.014	...	2210
1179	33 Geminorum	5.4	6. 42. 55.364	81.71	3	...	+ 3.4574	-0.0027	-0.0025	73. 39. 45.55	81.71	3	...	+3.733	+0.494	-0.025	997	2228
1180	Cephei 51 (Hev.) ...	5.3	6. 43. 45.639	82.30	69	123	+30.1973	-2.1956	-0.0400	2. 46. 14.24	82.25	254	341	+3.805	+4.3224	+0.051	...	2157
1181	36 Geminorum	5.2	6. 44. 21.489	84.77	5	...	+ 3.5998	-0.0039	-0.0015	68. 5. 56.03	84.77	5	...	+3.857	+0.514	+0.038	1004	2233
1182	B. F. 963	6.5*	6. 44. 42.836	85.29	4	...	+ 3.6492	-0.0043	...	66. 15. 29.41	85.29	4	...	+3.888	+0.520	...	...	2238
1183	Groombridge 1228 ..	5.8	6. 47. 42.503	83.26	...	3	+ 6.8638	-0.0643	...	19. 2. 1.68	83.26	...	3	+4.144	+0.978	...	...	2247
1184	38 Geminor.(1st Star)	4.8	6. 47. 52.406	82.51	3	...	+ 3.3822	-0.0026	+0.0035	76. 40. 16.89	82.40	4	...	+4.160	+0.481	+0.071	...	...
1185	38 Geminor.(2nd Star)	4.8	6. 47. 52.583	83.06	1	...	+ 3.3821	-0.0026	+0.0035	76. 40. 22.21	83.06	1	...	+4.160	+0.481	+0.071	1009	2255
1186	37 Geminorum	6.2*	6. 47. 55.785	82.04	3	...	+ 3.6968	-0.0052	-0.0037	64. 28. 33.07	82.04	3	...	+4.164	+0.526	-0.011	1007	2254
1187	14 Canis Majoris	4.2	6. 48. 36.825	81.56	14	...	+ 2.7971	+0.0004	-0.0105	101. 53. 22.48	81.70	10	...	+4.222	+0.397	+0.003	1011	2264
1188	16 Canis Majoris	4.0	6. 49. 9.151	85.05	2	...	+ 2.4897	+0.0012	-0.0031	114. 2. 7.30	85.05	2	...	+4.268	+0.353	-0.011	1014	2267
1189	B. D. + 10° No. 1335	5.7	6. 49. 49.606	86.67	3	...	+ 3.3051	-0.0023	...	79. 53. 23.28	86.67	3	...	+4.326	+0.469	...	...	...
1190	18 Canis Majoris	5.2	6. 50. 36.698	83.58	4	...	+ 2.7497	+0.0005	-0.0018	103. 53. 23.46	82.45	1	...	+4.393	+0.389	-0.006	1017	2273
1191	20 Canis Majoris	4.5	6. 50. 47.086	85.31	4	...	+ 2.6760	+0.0008	-0.0023	106. 54. 0.08	85.31	4	...	+4.407	+0.379	-0.024	1019	2274
1192	62 Aurigæ	6.5*	6. 50. 52.215	82.41	4	...	+ 4.0991	-0.0100	-0.0040	51. 47. 5.64	82.41	4	...	+4.415	+0.581	+0.120	1010	2270
1193	39 Geminorum	6.5*	6. 51. 23.552	78.57	7	...	+ 3.7147	-0.0058	-0.0134	63. 45. 46.57	78.65	10	...	+4.460	+0.526	-0.083	1013	2275
1194	Lalande 13427	8.2*	6. 52. 27.768	86.12	4	1	+ 4.5470	-0.0166	+0.0587	41. 26. 33.62	86.26	4	(1)	+4.551	+0.644	+0.353	...	...
1195	Piazzi VI. 303	5.4	6. 53. 40.918	84.76	3	...	+ 2.4589	+0.0012	...	115. 15. 9.25	84.76	3	...	+4.655	+0.347	...	...	2291
1196	21 Canis Majoris	1.5	6. 53. 54.565	81.97	20	...	+ 2.3573	+0.0013	-0.0011	118. 48. 35.80	82.17	17	...	+4.675	+0.332	-0.017	1023	2293
1197	42 Geminorum	5.3	6. 55. 6.044	80.28	5	...	+ 3.6609	-0.0058	-0.0016	65. 36. 54.76	80.53	12	...	+4.775	+0.517	-0.004	1021	2299
1198	Piazzi VI. 293	7.0*	6. 55. 25.275	83.27	3	6	+ 5.3185	-0.0326	...	30. 1. 23.79	82.88	10	17	+4.802	+0.751	...	...	2294
1199	W. B. (2) VI. 1633 ..	5.9	6. 55. 25.880	81.45	3	...	+ 3.4325	-0.0037	...	74. 29. 36.08	81.45	3	...	+4.803	+0.484	...	...	...
1200	W. B. (2) VI. 1630 ..	6.2	6. 55. 26.710	80.20	4	...	+ 3.4922	-0.0042	...	72. 4. 32.10	80.24	3	...	+4.805	+0.492	...	...	...

1162. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.2.1169. The magnitude given in the *Uranometria Nova Oxoniensis* is + 2.0 in the notation of that work, which corresponds to - 1.0, i.e., 2 magnitudes brighter than a standard first magnitude star.

1180. B. A. C. assigns this star to Ursæ Minor.

1194. Authority for Proper Motion: Bonn Observations, Vol. VII.

1164, 1165. The magnitude of each star given in Struve's *Mensura Micrometrica* is 6.0.1179. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.8.1184, 1185. The magnitudes given in Struve's *Mensura Micrometrica* are 5.4 and 7.7.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1201	Lalande 13627	5.4	h m s 6. 56. 3.048	84.20	3	...	+ 2.9462	-0.0005	...	95. 33. 8.27	84.18	5	...	+4.856	+0.415	...	...	...
1202	Piazzi VI. 313	6.0	6. 56. 44.141	83.77	3	...	+ 3.2848	-0.0027	...	80. 41. 20.86	83.77	3	...	+4.914	+0.462	...	...	2304
1203	22 Canis Majoris	3.5	6. 56. 56.284	84.78	3	...	+ 2.3901	+0.0013	-0.0023	117. 45. 50.18	84.78	3	...	+4.931	+0.336	+0.012	1027	2309
1204	Piazzi VI. 311	8.5*	6. 56. 58.428	86.77	4	...	+ 3.5638	-0.0051	...	69. 13. 46.22	86.77	4	...	+4.934	+0.502	...	...	...
1205	B. F. 987	5.2	6. 56. 59.095	85.51	3	...	+ 3.3272	-0.0030	...	78. 52. 26.42	85.51	3	...	+4.935	+0.468	...	...	2306
1206	43 Geminorum	Var.	6. 56. 59.425	82.43	29	...	+ 3.5631	-0.0051	-0.0011	69. 15. 19.03	81.68	39	...	+4.935	+0.502	-0.001	1024	2305
1207	24 Canis Majoris	3.1	6. 58. 0.828	80.18	4	...	+ 2.5052	+0.0011	-0.0016	113. 39. 33.25	80.22	3	...	+5.023	+0.352	-0.018	1029	2318
1208	44 Geminorum	5.9	6. 58. 4.884	83.19	1	...	+ 3.6168	-0.0058	-0.0010	67. 11. 3.97	83.19	1	...	+5.028	+0.508	+0.005	1025	2313
1209	Piazzi VI. 316	5.7	6. 58. 16.950	80.82	3	...	+ 3.9668	-0.0099	...	55. 20. 42.94	79.87	8	...	+5.045	+0.558	...	...	2314
1210	23 Canis Majoris	4.1	6. 58. 19.739	81.62	10	...	+ 2.7145	+0.0005	-0.0018	105. 27. 26.05	82.43	13	...	+5.049	+0.381	+0.003	1028	2319
1211	17 Lynceis	7.0*	6. 58. 52.423	84.59	5	6	+ 5.4030	-0.0365	-0.0021	29. 1. 17.50	84.81	5	25	+5.095	+0.760	+0.052	1022	2312
1212	Piazzi VI. 310	8.6*	6. 58. 59.480	85.61	2	3	+ 5.3981	-0.0367	...	29. 4. 11.92	86.03	2	5	+5.104	+0.759	...	...	...
1213	Lalande 13704-5	6.1	6. 59. 29.407	79.44	3	...	+ 3.9502	-0.0099	...	55. 48. 25.34	79.64	2	...	+5.147	+0.555	...	...	...
1214	Lalande 13773	6.1	6. 59. 40.307	84.79	3	...	+ 2.5542	+0.0009	...	111. 51. 3.78	84.79	3	...	+5.162	+0.358	...	...	...
1215	Lalande 13781	5.7	7. 0. 44.356	83.74	3	...	+ 3.1873	-0.0022	...	84. 54. 19.53	83.74	3	...	+5.252	+0.446	...	...	...
1216	W. B. VI. 1883	5.1	7. 1. 2.600	83.83	3	...	+ 2.8190	0.0000	...	101. 6. 38.43	83.68	4	...	+5.279	+0.394	...	...	...
1217	W. B. VI. 1877	6.0	7. 1. 20.208	82.46	7	...	+ 3.2457	-0.0026	...	82. 20. 31.48	82.46	7	...	+5.303	+0.454	...	...	...
1218	45 Geminorum	5.6	7. 1. 29.047	80.15	3	...	+ 3.4449	-0.0044	-0.0016	73. 52. 45.49	80.17	4	...	+5.316	+0.482	+0.104	1030	2330
1219	B. D. + 69° No. 413..	7.6*	7. 2. 5.779	82.30	4	5	+ 6.4281	-0.0692	...	20. 59. 57.89	82.37	4	5	+5.368	+0.901	...	...	...
1220	Piazzi VI. 285	6.3*	7. 2. 31.879	85.21	3	10	+ 11.6563	-0.3586	...	8. 31. 46.41	85.34	6	14	+5.404	+1.635	...	...	2317
1221	46 Geminorum	4.6	7. 3. 30.051	80.69	6	...	+ 3.8280	-0.0090	-0.0034	59. 33. 34.89	80.83	12	...	+5.486	+0.535	+0.047	1033	2340
1222	25 Canis Majoris	1.9	7. 3. 30.727	78.61	4	...	+ 2.4395	+0.0011	-0.0015	116. 12. 13.74	78.61	4	...	+5.487	+0.340	-0.007	1042	2345
1223	47 Geminorum	5.5	7. 3. 56.445	79.96	4	...	+ 3.7286	-0.0078	-0.0018	62. 56. 53.08	80.19	5	...	+5.522	+0.520	+0.045	1034	2343
1224	Groombridge 1272...	5.6	7. 4. 1.739	85.53	3	...	+ 4.6952	-0.0236	...	38. 22. 27.47	85.52	3	...	+5.531	+0.656	...	...	2341
1225	Lalande 13928	6.0	7. 4. 9.083	84.13	9	...	+ 2.7027	+0.0004	...	106. 2. 32.95	84.40	12	...	+5.540	+0.376	...	...	...
1226	Lalande 13938	7.0*	7. 4. 28.237	84.61	2	...	+ 2.7030	+0.0004	...	106. 2. 30.74	85.13	3	...	+5.567	+0.376	...	...	...
1227	48 Geminorum	5.8	7. 5. 8.843	81.95	4	...	+ 3.6524	-0.0072	-0.0025	65. 40. 20.77	82.08	7	...	+5.624	+0.509	+0.037	1038	2350
1228	18 Lynceis	5.3	7. 5. 25.819	84.50	3	3	+ 5.2806	-0.0379	-0.0158	30. 9. 4.24	85.24	3	10	+5.648	+0.736	+0.258	1031	2349
1229	Piazzi VII. 8	6.0	7. 5. 27.322	83.19	3	...	+ 3.2038	-0.0026	...	84. 8. 52.67	83.19	5	...	+5.650	+0.446	...	...	2356
1230	Lacaille 2647	5.4	7. 5. 30.183	86.98	2	...	+ 2.4103	+0.0012	...	117. 17. 47.92	86.98	2	...	+5.654	+0.335	...	...	...
1231	Piazzi VI. 292	5.3	7. 5. 44.109	82.56	4	5	+ 12.9955	-0.4938	...	7. 21. 45.94	82.47	16	14	+5.673	+1.815	...	...	2326
1232	22 Monocerotis	4.0	7. 5. 44.109	80.55	4	...	+ 3.0657	-0.0016	-0.0014	90. 17. 43.87	81.07	5	...	+5.673	+0.426	-0.027	1047	2358
1233	51 Geminorum	5.4	7. 6. 28.771	81.83	31	...	+ 3.4483	-0.0049	+0.0003	73. 38. 20.40	81.47	24	...	+5.736	+0.479	+0.033	1046	2362
1234	Lalande 14024	5.6	7. 6. 31.051	86.69	3	...	+ 2.5886	+0.0008	...	110. 41. 7.40	86.69	3	...	+5.739	+0.359	...	...	...
1235	Bradley 1048	7.3*	7. 7. 7.123	81.19	3	...	+ 3.6669	-0.0075	-0.0056	65. 5. 8.26	81.19	3	...	+5.789	+0.509	-0.07	1048	2363
1236	26 Canis Majoris	6.5†	7. 7. 17.678	80.21	3	...	+ 2.4552	+0.0010	-0.0013	115. 44. 34.56	80.21	3	...	+5.805	+0.340	-0.010	1053	2368
1237	52 Geminorum	6.3*	7. 7. 21.519	81.93	1	...	+ 3.6714	-0.0076	+0.0027	64. 54. 34.25	81.93	1	...	+5.810	+0.510	+0.105	1049	2364
1238	Piazzi VII. 29	5.5	7. 8. 2.701	85.80	3	...	+ 3.1464	-0.0023	...	86. 41. 3.95	85.80	3	...	+5.868	+0.436	...	...	2373
1239	Groombridge 1284...	6.0	7. 8. 8.455	85.78	1	4	+ 4.7286	-0.0260	...	37. 39. 34.61	85.52	1	4	+5.876	+0.657	...	...	2367
1240	53 Geminorum	6.5*	7. 8. 27.461	78.03	8	...	+ 3.7547	-0.0088	-0.0020	61. 53. 43.85	79.25	9	...	+5.901	+0.521	+0.006	1050	2374

1206. The limits of magnitude are 3.7 and 4.5: the period 10^d 3^h 41^m 5.
 1232. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.5.
 1236. The magnitude is taken from the *Uranometria Argentina*.

{xxxiv}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1241	Lalande 14091	5.9	7. 8. 47.017	83.84	3	...	+ 2.8445	-0.0003	...	100. 6. 39.37	84.16	10	...	+5.929	+0.394	...	...	...
1242	27 Canis Majoris	4.5	7. 9. 21.746	86.66	3	...	+ 2.4458	+0.0010	-0.0022	116. 8. 50.25	86.66	3	...	+5.978	+0.338	-0.050	1059	2388
1243	B. F. 1010	4.8	7. 9. 24.686	86.73	3	...	+ 4.5758	-0.0232	...	40. 19. 24.26	86.73	3	...	+5.982	+0.634	...	...	2379
1244	46 Camelopardi	7.0*	7. 9. 27.770	81.75	5	...	+ 5.2356	-0.0392	-0.004	30. 31. 56.52	81.88	4	...	+5.986	+0.726	+0.027	1043	2376
1245	64 Aurigæ	5.8	7. 9. 41.359	86.66	3	...	+ 4.1849	-0.0158	+0.0005	48. 54. 20.52	86.66	3	...	+6.005	+0.580	-0.023	1052	2381
1246	Piazzi VII. 39	7.5*	7. 9. (51.)	...	...	...	+ 3.4466	-0.0053	...	73. 38. 36.96	85.06	2	...	+6.019	+0.477	...	...	2387
1247	Bradley 1061	6.5†	7. 10. 0.260	79.81	3	...	+ 2.4274	+0.0011	-0.0026	116. 49. 46.24	79.81	3	...	+6.030	+0.335	+0.16	1061	2393
1248	Lalande 14100	5.9	7. 10. 23.834	83.48	3	...	+ 3.8431	-0.0104	...	58. 49. 51.34	83.48	3	...	+6.065	+0.532	...	...	...
1249	Lalande 14170	5.3	7. 10. 48.336	85.17	3	...	+ 2.7221	+0.0002	...	105. 22. 29.45	85.16	4	...	+6.097	+0.376	...	...	...
1250	54 Geminorum	3.6	7. 11. 11.744	83.11	17	...	+ 3.4555	-0.0055	-0.0039	73. 14. 41.13	82.51	27	...	+6.131	+0.477	+0.026	1058	2398
1251	Lalande 14200	...	7. 11. 33.355	83.48	6	...	+ 2.5295	+0.0009	...	113. 6. 12.89	83.45	7	...	+6.160	+0.349	...	...	...
1252	Lalande 14202	4.7	7. 11. 35.137	83.86	4	...	+ 2.5296	+0.0009	...	113. 6. 0.40	83.73	5	...	+6.162	+0.349	...	...	...
1253	Piazzi VII. 59	4.9	7. 11. 46.358	85.55	2	...	+ 2.4054	+0.0011	...	117. 40. 11.56	86.01	3	...	+6.178	+0.331	...	...	2405
1254	Groombridge 1295 ...	5.6	7. 12. 36.061	86.06	3	...	+ 4.3627	-0.0199	...	44. 33. 6.78	86.06	4	...	+6.247	+0.602	...	...	...
1255	Piazzi VI. 334	7.0*	7. 12. 43.585	82.21	5	5	+11.2162	-0.3821	...	8. 51. 52.55	84.05	8	16	+6.258	+1.551	...	...	2377
1256	55 Geminorum	3.7	7. 12. 57.304	82.57	30	...	+ 3.5905	-0.0073	-0.0025	67. 47. 54.03	81.53	45	...	+6.276	+0.495	-0.003	1062	2410
1257	20 Lynceis (1st Star) ...	6.6	7. 13. 3.246	79.89	4	...	+ 4.6055	-0.0252	-0.003	39. 37. 44.26	79.89	4	...	+6.284	+0.635	+0.045	...	...
1258	20 Lynceis (2nd Star) ...	...	7. 13. 4.761	79.89	4	...	+ 4.6055	-0.0252	-0.003	39. 37. 39.98	79.89	4	...	+6.287	+0.635	+0.045	1057	2409
1259	29 Canis Majoris	4.8	7. 13. 40.532	82.84	3	...	+ 2.4985	+0.0009	-0.0024	114. 20. 29.67	82.84	3	...	+6.337	+0.343	-0.012	1067	2417
1260	Lacaille 2729	8.5†	7. 13. 54.775	81.57	2	...	+ 2.3230	+0.0012	...	120. 34. 51.91	81.57	2	...	+6.356	+0.319	...	...	2420
1261	65 Aurigæ	5.3	7. 14. 1.426	81.77	3	...	+ 4.0271	-0.0140	-0.0081	53. 0. 56.08	81.97	5	...	+6.365	+0.554	+0.009	1063	2416
1262	Groombridge 1299 ...	6.2	7. 15. 32.235	80.43	3	3	+ 5.9907	-0.0680	...	23. 26. 5.99	80.60	4	5	+6.490	+0.824	...	...	2419
1263	Lalande 14323	6.5*	7. 15. 31.117	86.03	3	...	+ 2.8799	-0.0007	...	98. 38. 58.13	86.10	5	...	+6.490	+0.395	...	...	...
1264	Piazzi VII. 77	7.0*	7. 16. 6.081	82.95	7	...	+ 3.4952	-0.0065	...	71. 29. 52.85	82.97	8	...	+6.537	+0.479	...	...	2432
1265	57 Geminorum	5.0	7. 16. 9.485	81.36	8	...	+ 3.6692	-0.0088	-0.0063	64. 43. 14.03	81.36	8	...	+6.541	+0.503	+0.017	1068	2431
1266	58 Geminorum	6.1	7. 16. 15.390	82.94	5	...	+ 3.6132	-0.0080	-0.0037	66. 49. 31.67	82.94	5	...	+6.550	+0.495	+0.034	1070	2434
1267	Piazzi VII. 85	6.2	7. 16. 16.799	83.43	5	...	+ 2.8777	-0.0007	...	98. 45. 13.24	83.64	7	...	+6.553	+0.394	...	...	...
1268	Piazzi VII. 86	5.8	7. 16. 32.234	85.49	3	...	+ 2.9450	-0.0012	...	95. 45. 20.44	85.35	5	...	+6.573	+0.403	...	...	2437
1269	Lalande 14382	4.9	7. 16. 56.320	86.40	3	...	+ 2.6428	+0.0004	...	108. 47. 21.29	86.32	4	...	+6.608	+0.361	...	...	...
1270	21 Lynceis	4.6	7. 17. 39.438	85.83	4	4	+ 4.5458	-0.0255	-0.0013	40. 33. 8.57	85.70	4	4	+6.667	+0.622	+0.047	1066	2441
1271	60 Geminorum	4.0	7. 18. 16.343	80.71	4	...	+ 3.7431	-0.0101	-0.0097	61. 57. 54.44	81.09	7	...	+6.716	+0.513	+0.075	1072	2442
1272	1 Canis Minoris	5.4	7. 18. 18.154	80.14	3	...	+ 3.3378	-0.0048	-0.0025	78. 5. 49.43	80.93	6	...	+6.719	+0.456	-0.004	1074	2444
1273	Piazzi VII. 67	5.8	7. 18. 22.668	80.59	3	3	+ 6.3043	-0.0833	+0.0027	21. 17. 31.35	80.50	10	3	+6.725	+0.863	+0.074	...	2439
1274	Puppis	5.4	7. 18. 25.429	86.66	3	...	+ 2.2947	+0.0012	...	121. 41. 35.70	86.66	3	...	+6.729	+0.312	...	...	2449
1275	Piazzi VII. 103	7.8†	7. 19. 7.763	82.97	1	...	+ 2.3733	+0.0011	...	119. 3. 27.82	82.97	1	...	+6.788	+0.323	...	...	...
1276	Piazzi VII. 100	4.9	7. 19. 14.758	84.21	3	...	+ 2.7124	+0.0001	...	105. 58. 2.04	84.48	7	...	+6.797	+0.369	...	...	2454
1277	31 Canis Majoris	2.4	7. 19. 20.943	82.23	11	...	+ 2.3732	+0.0011	-0.0020	119. 4. 12.56	82.23	11	...	+6.806	+0.323	-0.014	1081	2458
1278	Piazzi VJ 97	6.8*	7. 19. 44.604	82.31	4	...	+ 3.5743	-0.0079	...	68. 13. 33.98	82.34	3	...	+6.838	+0.487	...	...	2455
1279	61 Geminorum	5.7	7. 19. 51.891	80.22	1	...	+ 3.5420	-0.0075	-0.0019	69. 30. 15.44	80.22	1	...	+6.848	+0.483	+0.011	1076	2457
1280	Groombridge 1318 ...	5.5	7. 19. 54.800	86.37	3	...	+ 4.4887	-0.0250	...	41. 34. 27.03	86.37	3	...	+6.854	+0.612	...	...	...

1247. The magnitude is taken from the *Uranometria Argentina*.1257, 1258. The magnitudes given in Struve's *Mensura Micrometrica* are 6.6 and 6.8.1262. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.9.1270. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.9.1251, 1252. The magnitudes given in the *Uranometria Argentina* are 5.3 and 7.1260. The magnitude is taken from the *Argentine General Catalogue*.1268. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.2.1275. The magnitude is taken from the *Argentine General Catalogue*.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xxxv}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley. 1755.	No in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1281	63 Geminorum	5.3	h m s 7. 20. 36.891	81.76	3	...	+ 3.5716	-0.0079	-0.0049	68. 18. 39.31	80.01	7	...	+6.910	+0.486	+0.101	1077	2460
1282	3 Canis Minoris ... β	3.1	7. 20. 38.534	82.04	35	...	+ 3.2605	-0.0041	-0.0042	81. 28. 13.26	83.33	25	...	+6.912	+0.444	+0.030	1079	2462
1283	22 Lynceis	5.4	7. 20. 49.170	85.25	2	4	+ 4.5632	-0.0271	+0.004	40. 4. 53.97	85.49	3	4	+6.926	+0.622	+0.080	1073	2459
1284	62 Geminorum ρ	4.2	7. 21. 23.477	81.89	3	...	+ 3.8562	-0.0125	+0.0093	57. 58. 42.77	81.89	3	...	+6.974	+0.524	-0.194	1078	2464
1285	4 Canis Minoris ... γ	4.6	7. 21. 37.686	78.32	5	...	+ 3.2745	-0.0043	-0.006	80. 49. 59.21	78.63	4	...	+6.993	+0.445	-0.027	1083	2468
1286	Lalande 14545	5.6	7. 21. 47.125	84.47	3	...	+ 2.6743	+0.0003	...	107. 37. 28.53	84.16	4	...	+7.005	+0.362	...	...	...
1287	64 Geminorum b ¹	5.1	7. 21. 51.814	86.11	3	...	+ 3.7485	-0.0108	-0.0039	61. 38. 9.92	86.11	3	...	+7.012	+0.509	+0.053	1080	2467
1288	Piazzi VII. 116	5.8	7. 22. 13.205	83.12	7	...	+ 2.8218	-0.0005	...	101. 18. 53.66	83.12	7	...	+7.041	+0.382	...	...	2470
1289	65 Geminorum b ²	5.1	7. 22. 20.804	79.50	3	...	+ 3.7423	-0.0107	-0.0022	61. 50. 17.10	79.50	3	...	+7.052	+0.508	+0.018	1082	2469
1290	W. B. VII. 669	5.7	7. 23. 14.564	85.61	4	...	+ 3.0361	-0.0021	...	91. 39. 33.90	85.61	4	...	+7.126	+0.411	...	...	...
1291	Oeltz. Arg. (S.) 6913	4.8	7. 24. 45.526	85.80	3	...	+ 2.5489	+0.0007	...	112. 46. 33.40	85.87	4	...	+7.249	+0.344	...	...	...
1292	W. B. (2) VII. 685...	5.6	7. 24. 53.215	83.53	3	...	+ 3.4614	-0.0059	...	72. 39. 37.30	83.53	3	...	+7.259	+0.468	...	...	...
1293	W. B. (2) VII. 703...	6.5	7. 25. 38.970	80.23	1	...	+ 3.6042	-0.0090	...	66. 51. 41.66	80.23	1	...	+7.321	+0.486	...	...	...
1294	W. B. (2) VII. 704...	6.5	7. 25. 39.065	79.79	3	...	+ 3.6043	-0.0090	...	66. 51. 30.75	79.79	3	...	+7.321	+0.486	...	...	...
1295	Piazzi VII. 137	4.8	7. 26. 2.700	81.36	10	...	+ 2.3334	+0.0012	...	120. 42. 40.76	81.64	10	...	+7.354	+0.314	...	...	2484
1296	67 Geminorum	7.5*	7. 26. 34.149	77.61	4	...	+ 3.4262	-0.0066	+0.001	74. 6. 17.75	77.78	3	...	+7.396	+0.461	-0.001	1089	2483
1297	68 Geminorum	5.0	7. 26. 45.547	84.01	15	...	+ 3.4305	-0.0066	-0.0023	73. 55. 1.08	83.80	17	...	+7.412	+0.462	+0.005	1091	2486
1298	66 Geminorum a ¹	1.6	7. 26. 56.118	80.82	22	...	+ 3.8528	-0.0134	-0.0151	57. 51. 3.19	80.66	27	...	+7.426	+0.519	+0.079	1087	2485
1299	66 Geminorum a ²	1.6	7. 26. 56.498	81.64	74	...	+ 3.8529	-0.0134	-0.0151	57. 51. 0.02	80.97	67	...	+7.426	+0.519	+0.079	...	...
1300	Bradley 1090	5.4	7. 27. 31.197	81.15	3	...	+ 3.8243	-0.0130	-0.0033	58. 46. 48.52	81.15	3	...	+7.473	+0.514	-0.019	1090	2489
1301	Radcliffe 1986	5.8	7. 27. 48.707	85.37	3	3	+ 4.3763	-0.0249	...	43. 33. 25.63	85.84	3	(3)	+7.498	+0.589	...	...	2488
1302	W. B. VII. 835	5.0	7. 28. 17.270	86.71	3	...	+ 2.7572	-0.0002	...	104. 15. 56.99	86.71	3	...	+7.535	+0.369	...	...	...
1303	69 Geminorum v	4.2	7. 28. 31.586	78.85	5	...	+ 3.7077	-0.0111	-0.0023	62. 50. 21.15	79.44	9	...	+7.556	+0.498	+0.101	1094	2493
1304	Lalande 14810	4.5	7. 28. 55.004	82.11	3	...	+ 2.5713	+0.0006	...	112. 2. 18.11	82.11	3	...	+7.587	+0.344	...	...	...
1305	Puppis	5.2	7. 29. 14.242	82.79	3	...	+ 2.5418	+0.0007	...	113. 12. 47.53	82.79	3	...	+7.612	+0.340	...	...	2497
1306	Puppis	5.2	7. 29. 14.904	83.12	2	...	+ 2.5418	+0.0007	...	113. 12. 50.78	83.12	2	...	+7.614	+0.340	...	...	2498
1307	Lalande 14868	6.9*	7. 30. 32.881	86.46	3	...	+ 2.7594	-0.0003	...	104. 13. 42.32	86.46	3	...	+7.719	+0.368	...	...	2511
1308	Piazzi VII. 153	7.0*	7. 30. 58.580	85.70	3	...	+ 3.6375	-0.0102	...	65. 22. 20.32	85.70	3	...	+7.754	+0.486	...	...	2506
1309	71 Geminorum o	4.7	7. 31. 19.900	82.10	3	...	+ 3.9305	-0.0157	-0.0036	55. 8. 31.74	81.46	6	...	+7.782	+0.525	+0.11	1099	2509
1310	Piazzi VII. 161	7.0*	7. 31. 56.887	81.25	7	...	+ 3.6332	-0.0103	...	65. 30. 25.79	81.25	7	...	+7.832	+0.484	...	...	2514
1311	74 Geminorum f	5.2	7. 32. 32.757	82.35	8	...	+ 3.4705	-0.0078	-0.0019	72. 3. 12.87	81.29	10	...	+7.880	+0.462	-0.018	1103	2519
1312	24 Lynceis.....	4.9	7. 32. 50.758	86.67	...	3	+ 5.1163	-0.0493	-0.0061	31. 0. 39.00	85.62	...	6	+7.904	+0.682	+0.061	1096	2516
1313	10 Canis Minoris ... α	0.5	7. 33. 1.128	81.58	88	...	+ 3.1913	-0.0041	-0.0474	84. 28. 6.63	81.29	71	...	+7.918	+0.424	+1.027	1106	2522
1314	Puppis	4.3	7. 33. 18.405	83.04	3	...	+ 2.4974	+0.0009	...	115. 5. 34.86	83.04	3	...	+7.940	+0.331	...	...	2525
1315	W. B. (2) VII. 955...	6.1	7. 33. 47.364	82.86	4	...	+ 3.6004	-0.0100	...	66. 42. 20.53	82.86	4	...	+7.979	+0.478	...	...	...
1316	B. F. 1075	5.2	7. 34. 53.925	85.15	3	...	+ 2.7446	-0.0002	...	104. 59. 13.52	85.15	3	...	+8.069	+0.363	...	...	2538
1317	50 Camelopardi	5.2	7. 34. 58.525	84.67	3	...	+ 4.5683	-0.0326	-0.0025	39. 17. 3.66	84.67	3	...	+8.074	+0.606	+0.036	1104	2532
1318	Groombridge 1119..	7.1	7. 35. 5.965	83.42	4	2	+71.9978	-31.1479	...	1. 1. 0.81	82.56	12	1	+8.085	+9.605	...	...	2320
1319	W. B. VII. 1041 ...	5.9	7. 35. 17.226	79.86	3	...	+ 3.3883	-0.0068	...	75. 30. 45.31	79.86	3	...	+8.100	+0.449	...	...	...
1320	26 Monocerotis γ	4.2	7. 35. 30.760	84.17	3	...	+ 2.8727	-0.0011	-0.0077	99. 16. 20.99	84.17	3	...	+8.118	+0.380	+0.024	1110	2542

1284. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.5.

1298, 1299. The magnitudes given in B. D. are 8.6 and 1.7.

1309. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.1317. B. A. C. assigns this star to Lynx. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.

1293, 1294. The magnitudes given in B. D. are 9.4 and 6.0.

1305, 1306. The magnitudes given in the *Uranometria Argentina* are 6.8 and 7.

1320. The letter γ was added in the B. A. C.

{xxxvi}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Varia- tion, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Varia- tion, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1321	49 Camelopardi	7.0*	h m s 7.35.34.947	82.68	1	3	+ 5.4836	-0.0653	-0.0069	26.52.56.43	82.32	3	5	+8.124	+0.728	+0.066	1100	2533
1322	Piazzi VII. 132	6.4	7.36.21.956	83.71	3	...	+10.4145	-0.4301	-0.2027	9.26.16.15	84.83	3	2	+8.187	+1.383	-0.035	...	2521
1323	77 Geminorum	3.6	7.37.12.079	78.19	6	...	+ 3.6323	-0.0109	-0.0034	65.18.56.81	78.26	5	...	+8.253	+0.479	+0.055	1111	2551
1324	78 Geminorum	β 1.1	7.37.58.266	81.68	84	...	+ 3.7278	-0.0128	-0.0481	61.41.7.66	80.88	78	...	+8.314	+0.491	+0.051	1112	2555
1325	W. B. (2) VII. 1083	5.5	7.38.38.679	83.86	3	...	+ 4.0149	-0.0190	...	52.11.36.77	83.86	3	...	+8.368	+0.529	...	...	...
1326	Groombridge 1363...	7.2*	7.39.9.242	81.23	1	3	+ 6.8266	-0.1380	...	17.54.59.95	83.37	5	...	+8.408	+0.900	...	...	...
1327	81 Geminorum	γ 5.1	7.39.10.565	81.15	9	...	+ 3.4855	-0.0086	-0.0062	71.11.55.66	81.15	9	...	+8.411	+0.458	+0.044	1115	2558
1328	80 Geminorum	π 5.4	7.39.46.067	83.60	4	...	+ 3.8810	-0.0162	-0.0011	56.17.29.88	83.60	4	...	+8.457	+0.510	+0.006	1114	2563
1329	W. B. VII. 1184 ...	5.9	7.40.9.802	86.05	3	...	+ 2.9347	-0.0017	...	96.28.44.82	85.59	4	...	+8.489	+0.384	...	...	...
1330	Piazzi VII. 199	6.3*	7.41.38.085	85.93	2	1	+ 4.7608	-0.0415	...	35.34.24.67	85.84	2	1	+8.605	+0.623	...	...	2576
1331	5 Puppis	5.4	7.42.19.513	84.07	3	...	+ 2.8182	-0.0008	-0.0086	101.53.57.13	84.07	3	...	+8.660	+0.367	-0.008	1124	2589
1332	B. F. 1083	7.3*	7.42.30.920	80.21	3	...	+ 3.7267	-0.0135	...	61.30.7.48	80.21	3	...	+8.674	+0.486	...	...	2586
1333	Puppis	0 4.7	7.43.5.899	82.85	3	...	+ 2.4944	+0.0010	...	115.38.25.65	82.85	3	...	+8.720	+0.324	...	...	2594
1334	Bradley 1130	6.3†	7.43.59.228	81.03	1	...	+ 2.5218	+0.0009	-0.010	114.36.47.47	81.03	1	...	+8.790	+0.327	-0.046	1130	2599
1335	Argus	ξ 3.4	7.44.14.862	81.26	13	...	+ 2.5235	+0.0009	-0.0011	114.33.35.35	80.52	13	...	+8.811	+0.327	-0.024	1132	2602
1336	6 Puppis	5.7	7.44.15.931	84.26	2	...	+ 2.7068	0.0000	+0.0045	106.55.26.70	84.26	2	...	+8.812	+0.351	+0.108	1129	2601
1337	W. B. VII. 1289 ...	6.7*	7.44.29.565	84.22	8	...	+ 3.1474	-0.0041	...	86.25.9.73	84.22	8	...	+8.831	+0.408	...	...	...
1338	Groombridge 1374 ...	5.6	7.45.48.026	83.50	1	2	+ 7.3123	-0.1823	-0.0109	15.45.52.35	83.73	1	5	+8.933	+0.951	+0.034	...	2596
1339	W. B. VII. 1324	7.5*	7.45.49.468	84.50	10	...	+ 3.1473	-0.0042	...	86.24.51.82	84.50	10	...	+8.935	+0.407	...	...	...
1340	Piazzi VII. 187	5.3	7.45.50.907	83.34	4	1	+ 9.7265	-0.4007	...	10.11.46.89	83.16	7	1	+8.936	+1.266	...	...	2590
1341	W. B. (2) VII. 1263	8.2*	7.45.52.904	80.22	2	...	+ 3.7907	-0.0153	+0.0609	59.1.34.64	80.22	2	...	+8.939	+0.491	+1.806	...	...
1342	84 Geminorum	6.8*	7.45.53.307	82.52	5	...	+ 3.5715	-0.0106	-0.0016	67.21.30.67	82.52	5	...	+8.939	+0.462	-0.005	1127	2613
1343	83 Geminorum	φ 4.9	7.46.9.048	86.58	2	...	+ 3.6837	-0.0131	-0.0023	62.55.30.74	83.91	5	...	+8.960	+0.477	+0.028	1128	2617
1344	9 Puppis	5.5	7.46.12.833	86.53	2	...	+ 2.7834	-0.0006	-0.0064	103.34.51.28	86.53	2	...	+8.965	+0.359	+0.339	1134	2622
1345	W. B. VII. 1337	8.8*	7.46.19.123	84.05	5	...	+ 3.1464	-0.0042	...	86.27.2.55	84.05	5	...	+8.974	+0.407	...	...	...
1346	W. B. VII. 1339 ...	8.0*	7.46.24.487	86.20	3	...	+ 3.1494	-0.0043	...	86.18.28.57	86.20	3	...	+8.981	+0.407	...	...	...
1347	Piazzi VII. 242	5.7	7.46.52.265	85.46	3	...	+ 2.9653	-0.0022	...	95.7.9.13	85.46	3	...	+9.019	+0.382	...	...	...
1348	Piazzi VII. 250	5.7†	7.47.47.007	83.58	2	...	+ 2.2561	+0.0014	...	124.24.19.08	83.58	2	...	+9.088	+0.289	...	...	2629
1349	85 Geminorum	5.3	7.48.39.671	80.22	1	...	+ 3.5099	-0.0100	-0.0028	69.48.3.72	80.22	1	...	+9.156	+0.452	+0.035	1137	2632
1350	1 Cancri	5.9	7.50.10.557	82.32	4	...	+ 3.4146	-0.0085	-0.0030	73.53.27.08	82.32	4	...	+9.274	+0.438	+0.026	1138	2639
1351	B. D. + 16° No. 1592	8.9*	7.50.13.729	82.83	1	...	+ 3.4155	-0.0085	...	73.51.10.82	82.83	1	...	+9.278	+0.438	...	...	...
1352	Lalande 15522	6.5*	7.51.5.536	85.23	3	...	+ 3.1022	-0.0038	...	88.33.13.25	85.25	2	...	+9.345	+0.396	...	...	...
1353	Groombridge 1385 ...	5.7	7.51.16.565	85.36	3	2	+ 5.0695	-0.0585	...	30.37.44.21	85.43	4	3	+9.360	+0.650	...	...	...
1354	Piazzi VII. 261	6.3	7.51.40.592	85.63	4	...	+ 3.4299	-0.0089	...	73.9.34.54	85.63	4	...	+9.390	+0.438	...	...	2649
1355	11 Puppis	4.3	7.51.41.912	82.48	3	...	+ 2.5815	+0.0007	-0.0044	112.33.39.83	82.48	3	...	+9.392	+0.329	-0.028	1141	2652
1356	Groombridge 1386 ...	6.0	7.51.44.634	86.17	3	...	+ 5.4328	-0.0754	...	26.34.57.07	86.19	4	...	+9.396	+0.696	...	...	...
1357	Groombridge 1388 ...	8.3*	7.51.51.793	86.17	3	...	+ 5.4324	-0.0755	...	26.34.50.07	86.19	4	...	+9.405	+0.696	...	...	...
1358	Piazzi VII. 251	6.5*	7.51.53.840	84.62	4	2	+ 5.2307	-0.0660	...	28.40.50.00	84.68	3	12	+9.407	+0.670	...	...	2648
1359	14 Canis Minoris ...	5.3	7.52.7.246	85.16	3	...	+ 3.1247	-0.0042	-0.0123	87.27.23.12	84.83	6	...	+9.424	+0.398	-0.085	1139	2653
1360	54 Camelopardi	6.5	7.52.48.759	84.91	1	3	+ 4.9291	-0.0535	...	32.23.46.38	85.11	2	3	+9.478	+0.629	...	...	2650

1322. Authority for Proper Motion: Bonn Observations, Vol. VII.

1331. This star is designated 5 Navis in B. F.

1332. This star is designated 6 Navis in B. F.

1335. This star is designated 8 Navis in B. F.

1336. This star is designated 6 Navis in B. F.

1341. Authority for Proper Motion: Bonn Observations, Vol. VII.

1348. The magnitude is taken from the *Uranometria Argentina*.

1355. This star is designated e Navis in B. F.

1327. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.3.1334. The magnitude is taken from the *Uranometria Argentina*.1338. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.

1344. This star is designated 9 Navis in B. F.

1353. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.3.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Varia- tion, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Varia- tion, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"		
1361	Piazzi VII. 277	4.8	7. 52. 53.054	84.72	3	...	+ 2.3918	+0.0013	...	120. 0. 44.38	84.72	3	...	+ 9.483	+0.303	...	...	2655
1362	W. B. (2) VII. 1434	7.5*	7. 53. 5.984	85.64	4	...	+ 3.7405	-0.0153	-0.0118	60. 25. 22.06	85.64	4	...	+ 9.500	+0.476	+1.161	...	...
1363	2 Cancri	5.9	7. 53. 40.131	82.82	3	...	+ 3.6387	-0.0132	-0.0011	64. 16. 49.45	82.82	3	...	+ 9.543	+0.463	-0.013	1140	2657
1364	27 Monocerotis	5.1	7. 53. 44.438	82.79	3	...	+ 3.0034	-0.0027	-0.0065	93. 21. 13.47	82.89	4	...	+ 9.550	+0.381	-0.011	1145	2660
1365	3 Cancri	6.0	7. 53. 54.614	83.17	3	...	+ 3.4459	-0.0093	-0.0022	72. 21. 50.24	84.55	7	...	+ 9.563	+0.438	-0.01	1143	2659
1366	B. F. 1129	4.6	7. 54. 29.273	85.14	2	...	+ 2.6894	+0.0001	...	108. 4. 16.41	85.14	2	...	+ 9.608	+0.340	...	...	2666
1367	4 Cancri	7.0*	7. 54. 29.457	82.23	1	...	+ 3.6300	-0.0131	-0.0024	64. 34. 54.86	82.23	1	...	+ 9.608	+0.461	-0.014	1144	2663
1368	5 Cancri	6.4*	7. 54. 39.882	82.42	6	...	+ 3.4261	-0.0090	-0.0018	73. 12. 55.15	82.96	7	...	+ 9.620	+0.434	-0.003	1146	2664
1369	W. B. VII. 1581	5.7	7. 54. 52.985	85.51	3	...	+ 3.1792	-0.0050	...	84. 47. 29.43	85.51	3	...	+ 9.637	+0.403	...	...	...
1370	Bradley 1153	4.6	7. 56. 1.244	85.16	3	...	+ 3.1267	-0.0043	-0.0024	87. 20. 13.57	85.16	3	...	+ 9.725	+0.395	-0.123	1153	2673
1371	6 Cancri	5.0	7. 56. 8.740	82.21	36	...	+ 3.6972	-0.0148	-0.0025	61. 52. 14.43	83.78	24	...	+ 9.734	+0.467	+0.039	1149	2672
1372	W. B. VII. 1628	6.3	7. 56. 32.123	86.25	1	...	+ 2.9495	-0.0022	...	96. 0. 15.14	86.25	1	...	+ 9.763	+0.372	...	...	...
1373	7 Cancri	6.3*	7. 56. 45.331	85.14	3	...	+ 3.5535	-0.0117	-0.0051	67. 35. 39.65	84.90	4	...	+ 9.780	+0.448	-0.009	1152	2676
1374	B. F. 1128	7.0*	7. 57. 49.053	80.51	5	...	+ 3.4772	-0.0103	...	70. 49. 12.73	80.51	5	...	+ 9.861	+0.437	...	...	2683
1375	Groombridge 1400	6.5*	7. 57. 52.816	85.53	1	2	+ 6.2817	-0.1303	...	19. 56. 3.71	85.21	1	4	+ 9.865	+0.794	...	...	2674
1376	Piazzi VII. 282	7.0*	7. 58. 18.197	83.43	3	2	+ 5.6848	-0.0943	...	23. 59. 36.17	83.94	5	15	+ 9.898	+0.717	...	...	2681
1377	Groombridge 1398	7.8*	7. 59. 7.688	86.44	1	2	+ 7.7916	-0.2514	...	13. 48. 48.22	86.44	1	2	+ 9.961	+0.982	...	...	...
1378	9 Cancri	6.2	7. 59. 11.673	80.30	7	...	+ 3.5642	-0.0122	-0.0028	67. 1. 24.39	80.29	7	...	+ 9.966	+0.447	-0.005	1157	2700
1379	27 Lynceis	4.8	7. 59. 25.556	86.17	2	2	+ 4.5484	-0.0415	-0.0075	38. 8. 57.10	86.02	2	2	+ 9.984	+0.571	-0.006	1154	2697
1380	Groombridge 1407	6.0	8. 0. 12.461	85.82	1	3	+ 4.9679	-0.0593	...	31. 24. 9.50	85.64	1	3	+ 10.042	+0.623	...	...	2704
1381	B. D. — 8° No. 2221	5.8	8. 0. 39.542	86.14	2	...	+ 2.8914	-0.0016	...	98. 53. 39.91	86.14	2	...	+ 10.078	+0.360	...	...	...
1382	B. D. — 8° No. 2222	5.8	8. 0. 40.606	85.84	3	...	+ 2.8913	-0.0016	...	98. 54. 5.85	85.56	5	...	+ 10.078	+0.360	...	...	...
1383	10 Cancri	5.3	8. 0. 42.048	81.85	3	...	+ 3.5376	-0.0118	+0.0012	68. 4. 16.89	81.33	6	...	+ 10.080	+0.442	+0.059	1161	2714
1384	55 Camelopardi	5.5	8. 0. 50.963	82.79	5	4	+ 6.0548	-0.1192	-0.0002	21. 10. 30.21	82.91	10	7	+ 10.092	+0.759	-0.01	1148	2707
1385	Groombridge 1403	6.0*	8. 1. 39.953	83.79	1	3	+ 7.7323	-0.2523	...	13. 53. 47.96	84.18	1	4	+ 10.153	+0.968	...	...	...
1386	B. F. 1143	5.1	8. 2. 0.269	85.86	3	...	+ 2.6483	+0.0004	...	110. 12. 31.22	85.86	3	...	+ 10.178	+0.328	...	...	2723
1387	15 Argus	2.9	8. 2. 25.982	82.12	20	...	+ 2.5610	+0.0009	-0.0075	113. 57. 34.06	82.16	15	...	+ 10.211	+0.317	-0.061	1170	2728
1388	29 Monocerotis	4.5	8. 2. 33.734	84.08	4	...	+ 3.0193	-0.0031	-0.0027	92. 38. 8.32	84.14	8	...	+ 10.221	+0.374	-0.018	1168	2725
1389	Piazzi VII. 317	7.5*	8. 3. 9.958	81.57	5	...	+ 3.4315	-0.0099	...	72. 37. 57.59	81.57	5	...	+ 10.266	+0.425	...	...	2731
1390	14 Cancri	5.8	8. 3. 13.383	84.22	2	...	+ 3.6291	-0.0142	-0.0072	64. 7. 48.14	84.71	4	...	+ 10.270	+0.450	+0.351	1167	2730
1391	16 Puppis	4.2	8. 3. 40.127	86.61	2	...	+ 2.6797	+0.0003	-0.0016	108. 53. 42.16	85.41	4	...	+ 10.304	+0.331	-0.013	1174	2736
1392	B. F. 1154	5.6*	8. 3. 59.090	86.98	2	...	+ 2.7459	-0.0003	...	105. 53. 52.10	86.58	4	...	+ 10.327	+0.339	...	...	2739
1393	Bradley 1147	5.7	8. 4. 25.371	83.02	3	6	+ 7.7050	-0.2566	+0.0033	13. 52. 46.84	83.76	6	10	+ 10.360	+0.958	0.00	1147	2722
1394	18 Puppis	6.2*	8. 5. 6.105	80.86	3	...	+ 2.7991	-0.0007	-0.0160	103. 26. 50.99	82.21	5	...	+ 10.411	+0.344	-0.064	1176	2746
1395	16 Cancri	4.7	8. 5. 19.658	82.41	9	...	+ 3.4435	-0.0103	+0.0033	71. 59. 30.64	82.86	8	...	+ 10.429	+0.424	+0.104	...	2744
1396	Piazzi VIII. 6	5.6	8. 5. 20.034	82.95	3	...	+ 3.4435	-0.0103	+0.0033	71. 59. 33.63	82.95	3	...	+ 10.429	+0.424	+0.104	...	2745
1397	15 Cancri	5.3	8. 5. 42.491	80.99	5	...	+ 3.7314	-0.0170	-0.0010	59. 59. 6.46	80.91	8	...	+ 10.456	+0.460	+0.012	1173	2747
1398	W. B. VIII. 84	5.3	8. 5. 42.628	85.25	3	...	+ 2.9238	-0.0020	...	97. 24. 58.54	85.25	3	...	+ 10.457	+0.359	...	...	...
1399	Bradley 1160	6.2*	8. 7. 25.088	83.93	3	3	+ 6.7355	-0.1776	-0.0048	17. 13. 22.90	83.45	5	6	+ 10.584	+0.830	+0.05	1160	2749
1400	20 Puppis	5.1	8. 7. 48.998	84.16	4	...	+ 2.7593	-0.0003	-0.0020	105. 25. 40.35	83.93	8	...	+ 10.614	+0.337	+0.009	1179	2769

1362. Authority for Proper Motion: Bonn Observations, Vol. VII.
 1372. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.
 1383. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.6.
 1388. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.3.
 1394. This star is designated 18 Navis in B. F. 1395, 1396. In the B. A. C. the Bradley No. is inserted to 2.
 1398. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.6.

1370. This star is designated 13 Navis in B. F.
 1381, 1382. The magnitudes given in B. D. are 8.5 and 1.60.
 1387. This star is designated 4 Navis in B. F. and 15 Argus in the Nautical Almanac.
 1391. This star is designated 16 Navis in B. F.
 1392. The magnitudes given in Struve's *Mensurae Micrometricae* are 5.0 and 5.5.
 1400. This star is designated 20 Navis in B. F.

{xxxviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1401	57 Camelopardi	5.7	8. 8. 49.830	83.65	3	3	+ 5.2806	-0.0807	-0.0024	27. 7. 27.18	83.16	12	17	+10.688	+0.647	-0.014	1172	2765
1402	17 Cancri	3.8	8. 10. 0.368	82.77	31	...	+ 3.2621	-0.0071	-0.0044	80. 26. 45.48	83.56	18	...	+10.775	+0.397	+0.041	1180	2778
1403	Piazz VIII. 30	6.7*	8. 12. 38.328	82.84	4	4	+ 5.0922	-0.0732	...	28. 59. 27.74	83.82	4	11	+10.969	+0.617	...	...	2784
1404	W. B. VIII. 294	6.0	8. 12. 42.203	84.32	7	...	+ 2.8298	-0.0010	+0.0187	102. 13. 36.78	84.73	9	...	+10.974	+0.341	+0.975	...	...
1405	18 Cancri	5.1	8. 12. 46.429	80.86	3	...	+ 3.6573	-0.0161	-0.0018	62. 23. 42.47	81.38	10	...	+10.979	+0.442	+0.374	1181	2786
1406	Piazz VIII. 42	5.9	8. 13. 20.957	79.83	3	...	+ 3.5039	-0.0124	...	68. 52. 29.82	79.83	3	...	+11.021	+0.422	...	...	2788
1407	19 Cancri	5.7	8. 13. 23.928	84.19	9	...	+ 3.5789	-0.0141	-0.0024	65. 36. 4.11	84.19	10	...	+11.025	+0.433	+0.028	1182	2789
1408	31 Lynceis	4.4	8. 14. 36.951	80.97	3	...	+ 4.1310	-0.0312	+0.0005	46. 25. 42.30	80.97	3	...	+11.114	+0.497	+0.107	1183	2793
1409	Piazz VIII. 40	5.8	8. 14. 42.889	86.59	...	1	+ 4.5816	-0.0493	...	36. 23. 43.84	86.59	...	1	+11.121	+0.551	...	...	2792
1410	B. D. — 22° No. 2233	5.8	8. 15. 14.091	85.92	3	...	+ 2.6111	+0.0009	...	112. 32. 49.22	85.92	3	...	+11.159	+0.312	...	...	...
1411	20 Cancri	5.9	8. 16. 29.478	82.48	22	...	+ 3.4473	-0.0114	-0.0053	71. 17. 2.21	81.64	13	...	+11.249	+0.411	+0.022	1185	2799
1412	W. B. VIII. 394	7.8*	8. 16. 40.481	84.19	3	...	+ 3.0629	-0.0040	...	90. 29. 5.16	84.21	5	...	+11.264	+0.367	...	...	...
1413	25 Cancri	6.2	8. 19. 2.240	83.98	5	...	+ 3.4174	-0.0109	-0.0144	72. 33. 36.05	83.98	5	...	+11.433	+0.405	+0.143	1192	2816
1414	22 Cancri	5.9	8. 19. 9.749	81.23	3	...	+ 3.6632	-0.0172	-0.0048	61. 42. 45.16	81.23	3	...	+11.442	+0.434	+0.117	1190	2815
1415	Piazz VIII. 67	5.1	8. 19. 28.461	85.84	3	...	+ 3.2255	-0.0069	...	82. 2. 44.69	85.84	3	...	+11.466	+0.381	...	...	2822
1416	23 Cancri (1st Star). ^φ	5.5	8. 19. 31.527	79.96	4	...	+ 3.6390	-0.0165	-0.0009	62. 40. 29.29	79.79	5	...	+11.469	+0.431	+0.008	1191	2817
1417	23 Cancri (2nd Star). ^φ	5.5	8. 19. 31.770	79.96	4	...	+ 3.6390	-0.0165	-0.0009	62. 40. 25.24	79.79	5	...	+11.469	+0.431	+0.008	1191	2817
1418	24 Cancri (1st Star). ^ν	6.3	8. 19. 31.506	83.88	6	...	+ 3.5820	-0.0150	-0.0053	65. 4. 21.94	83.70	4	...	+11.469	+0.424	+0.080	1193	2818
1419	24 Cancri (2nd Star). ^ν	6.3	8. 19. 31.824	83.71	2	...	+ 3.5820	-0.0150	-0.0053	65. 4. 17.59	83.56	3	...	+11.469	+0.424	+0.080	1193	2818
1420	30 Monocerotis	3.9	8. 19. 39.796	84.28	5	...	+ 3.0049	-0.0032	-0.0058	93. 30. 57.62	84.24	7	...	+11.479	+0.354	-0.007	1197	2825
1421	Groombridge 1418...	7.5*	8. 19. 48.133	85.18	1	2	+16.9140	-2.1743	...	4. 31. 34.93	84.87	2	3	+11.490	+2.017	...	...	2787
1422	27 Groombridge	5.6	8. 20. (5.)	...	...	...	+ 3.3260	-0.0090	-0.0026	76. 57. 3.41	84.93	1	...	+11.510	+0.392	+0.093	1196	2826
1423	1 Ursæ Majoris	3.4	8. 20. 16.993	82.04	5	3	+ 5.0558	-0.0764	-0.0190	28. 52. 57.24	80.89	42	8	+11.523	+0.598	+0.111	1186	2819
1424	Lalande 16615	5.8	8. 21. 2.201	86.54	2	...	+ 2.8374	-0.0010	...	102. 8. 29.39	84.87	4	...	+11.577	+0.333	...	...	...
1425	28 Cancri	5.9	8. 21. 29.788	82.70	4	...	+ 3.5701	-0.0149	-0.0042	65. 27. 29.68	82.78	5	...	+11.610	+0.420	+0.057	1198	2833
1426	W. B. VIII. 538	7.0*	8. 21. 52.345	84.20	4	...	+ 2.7899	-0.0005	...	104. 32. 27.85	84.40	5	...	+11.636	+0.326	...	...	...
1427	Radcliffe 2129	8.2*	8. 21. 52.321	86.58	...	1	+17.2697	-2.3252	...	4. 23. 8.10	86.58	...	1	+11.637	+2.046	...	...	...
1428	29 Cancri	5.9	8. 21. 55.466	82.23	7	...	+ 3.3560	-0.0097	-0.0028	75. 23. 35.72	82.23	7	...	+11.640	+0.394	+0.005	1200	2836
1429	Lalande 16702	6.2	8. 23. 21.893	86.13	2	...	+ 2.6195	+0.0011	...	112. 40. 25.00	86.13	2	...	+11.743	+0.305	...	...	...
1430	2 Ursæ Majoris	5.3	8. 23. 50.405	83.65	4	8	+ 5.4526	-0.1037	-0.0095	24. 26. 51.91	83.84	6	14	+11.776	+0.639	+0.063	1195	2842
1431	W. B. (2) VIII. 523	8.0*	8. 24. 7.424	84.52	3	...	+ 3.4524	-0.0122	...	70. 37. 49.81	84.75	5	...	+11.796	+0.402	...	...	...
1432	30 Cancri	5.8	8. 24. 24.633	82.73	5	...	+ 3.5642	-0.0151	-0.0072	65. 30. 55.68	81.15	9	...	+11.817	+0.415	+0.059	1201	2850
1433	Groombridge 1431	7.0*	8. 24. 32.312	86.20	...	3	+11.4545	-0.8905	...	7. 20. 26.30	85.50	2	7	+11.825	+1.344	...	...	2830
1434	31 Cancri	5.8	8. 24. 45.090	80.07	1	...	+ 3.4333	-0.0117	-0.0051	71. 30. 5.76	80.07	1	...	+11.841	+0.399	+0.050	1203	2853
1435	Piazz VIII. 86	7.2*	8. 24. 48.201	83.81	5	...	+ 3.4521	-0.0122	...	70. 36. 32.36	83.81	5	...	+11.844	+0.401	...	...	2854
1436	33 Cancri	5.5	8. 25. 46.043	81.77	15	...	+ 3.4819	-0.0131	-0.0039	69. 9. 8.89	82.02	11	...	+11.912	+0.403	+0.047	1207	2862
1437	Piazz VIII. 95	5.4	8. 26. 7.237	86.99	1	...	+ 2.6988	-0.0005	...	109. 10. 24.01	84.74	5	...	+11.937	+0.311	...	...	2868
1438	Groombridge 1446	6.3	8. 26. 19.782	83.35	...	3	+ 6.8277	-0.2205	-0.0030	15. 57. 11.54	83.40	...	8	+11.952	+0.795	+0.103	...	2852
1439	Piazz VIII. 98	6.8*	8. 27. 6.094	82.81	9	...	+ 3.3327	-0.0095	...	76. 20. 0.79	83.01	10	...	+12.006	+0.384	...	...	2872
1440	W. B. VIII. 671	5.8	8. 27. 45.274	84.23	3	...	+ 3.2389	-0.0075	...	81. 8. 17.03	84.23	3	...	+12.052	+0.372	...	..	...

1404. Authority for Proper Motion : Bonn Observations, Vol. VII.

1416, 1417. The magnitudes given in Struve's *Mensura Micrometrica* are 6.5 and 6.0.1418, 1419. The magnitudes given in Struve's *Mensura Micrometrica* are 6.0 and 7.1.1415. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.4.

1420. B. A. C. assigns this star to Hydra.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xxxix}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1441	Lalande 16837	5.6	8. 27. 57.379	85.90	3	...	+ 3.0398	-0.0038	...	91. 44. 36.28	85.90	3	...	+12.067	+0.349	...	...	...
1442	35 Cancri.....	7.7*	8. 28. 25.427	79.18	3	...	+ 3.4604	-0.0127	-0.0049	69. 59. 55.17	79.18	3	...	+12.098	+0.397	-0.0007	1210	2880
1443	Groombridge 1458..	5.6	8. 29. 24.068	86.73	...	3	+ 4.5253	-0.0532	...	36. 10. 56.72	86.73	...	3	+12.167	+0.519	...	...	2887
1444	Piazzi VIII. 108 ...	5.7	8. 29. 28.000	86.99	1	...	+ 3.2035	-0.0069	...	82. 57. 45.73	86.39	3	...	+12.171	+0.366	...	...	2889
1445	W. B. VIII. 726.....		8. 29. 28.460	86.99	1	...	+ 3.2035	-0.0069	...	82. 57. 35.97	86.99	1	...	+12.172	+0.366	...	...	...
1446	4 Ursæ Majoris	4.8	8. 29. 42.528	83.40	7	5	+ 5.3229	-0.1002	-0.0107	25. 15. 17.60	82.59	21	9	+12.189	+0.611	-0.0023	1206	2884
1447	W. B. VIII. 738.....	8.5*	8. 29. 56.117	85.79	3	...	+ 3.3001	-0.0090	...	77. 52. 55.78	85.88	4	...	+12.204	+0.377	...	...	...
1448	Piazzi VIII. 105 ...	6.0	8. 30. 23.790	86.66	...	3	+ 4.4846	-0.0516	-0.0108	36. 52. 10.18	86.66	...	3	+12.236	+0.513	+0.0031	...	2892
1449	36 Cancri	5.9	8. 30. 35.429	84.23	4	...	+ 3.2603	-0.0081	-0.0042	79. 55. 44.02	84.23	4	...	+12.249	+0.371	+0.0011	1213	2897
1450	Bradley 1211.....	6.5*	8. 30. 49.109	81.24	4	...	+ 3.7650	-0.0221	-0.0032	56. 46. 50.46	81.24	4	...	+12.265	+0.430	+0.0008	1211	2896
1451	4 Hydræ	4.1	8. 31. 18.139	79.55	3	...	+ 3.1856	-0.0066	-0.0065	83. 52. 44.23	79.55	3	...	+12.298	+0.362	+0.0001	1217	2901
1452	Bradley 1216.....	7.0*	8. 32. 27.115	81.72	2	...	+ 3.7593	-0.0221	-0.0019	56. 51. 1.33	81.23	3	...	+12.378	+0.426	+0.0036	1216	2908
1453	5 Hydræ	4.4	8. 32. 29.025	79.25	3	...	+ 3.1415	-0.0057	-0.0038	86. 14. 18.87	79.25	3	...	+12.380	+0.355	+0.0003	1221	2911
1454	34 Lynceis.....	5.6	8. 32. 43.222	84.61	3	1	+ 4.1703	-0.0380	+0.0018	43. 44. 48.18	83.69	2	(1)	+12.396	+0.473	-0.0088	1214	2909
1455	Mali	5.1	8. 32. 44.544	86.62	2	...	+ 2.5635	+0.0018	...	115. 50. 7.34	86.62	2	...	+12.398	+0.289	...	...	2916
1456	Piazzi VIII. 124 ...	7.2*	8. 32. 57.544	78.95	4	...	+ 3.4537	-0.0130	...	70. 2. 15.04	78.95	4	...	+12.413	+0.390	...	...	2914
1457	W. B. (2) VIII. 790	8.2*	8. 33. 3.337	79.22	3	...	+ 3.4539	-0.0130	...	70. 1. 30.74	79.22	3	...	+12.419	+0.390	...	...	...
1458	W. B. (2) VIII. 793	8.2*	8. 33. 4.577	79.22	3	...	+ 3.4536	-0.0130	...	70. 2. 11.88	79.22	3	...	+12.421	+0.390	...	...	...
1459	39 Cancri.....	7.0*	8. 33. 12.192	81.58	3	...	+ 3.4631	-0.0132	-0.0075	69. 34. 12.57	81.58	3	...	+12.429	+0.391	-0.0018	1222	2917
1460	Piazzi VIII. 128 ...	8.2*	8. 33. 25.213	79.18	1	...	+ 3.4529	-0.0130	...	70. 2. 45.23	79.18	1	...	+12.444	+0.390	...	...	...
1461	41 Cancri	Cum	8. 33. 33.959	80.21	5	...	+ 3.4530	-0.0130	-0.0006	70. 1. 55.73	80.21	5	...	+12.454	+0.389	-0.0001	1225	2922
1462	Lalande 17103	5.1	8. 33. 52.632	84.94	3	...	+ 2.6439	+0.0012	...	112. 15. 15.48	85.28	4	...	+12.475	+0.297	...	...	...
1463	Bradley 1227.....	7.7*	8. 34. 3.269	80.53	3	...	+ 3.4532	-0.0131	-0.0007	69. 59. 44.00	80.53	3	...	+12.488	+0.389	+0.0004	1227	2925
1464	Mali	4.4†	8. 35. 24.327	83.07	2	...	+ 2.3464	+0.0028	...	124. 53. 9.90	83.06	1	...	+12.580	+0.261	...	...	2935
1465	43 Cancri	4.8	8. 36. 20.412	83.05	28	...	+ 3.4894	-0.0143	-0.0087	68. 6. 4.33	82.36	40	...	+12.643	+0.390	+0.0033	1230	2937
1466	45 Cancri.....	5.6	8. 36. 35.502	82.52	6	...	+ 3.3138	-0.0097	-0.0012	76. 53. 23.60	82.52	6	...	+12.660	+0.369	-0.0010	1232	2942
1467	7 Hydræ	4.2	8. 36. 57.088	85.74	2	...	+ 3.1416	-0.0058	-0.0029	86. 10. 17.90	85.46	4	...	+12.685	+0.349	-0.0005	1235	2945
1468	31 Monocerotis	4.8	8. 37. 46.776	79.87	3	...	+ 2.9491	-0.0023	-0.0017	96. 48. 10.46	79.87	3	...	+12.741	+0.327	-0.0030	1238	2954
1469	Groombridge 1463..	7.3*	8. 37. 47.865	82.10	2	...	+ 9.2248	-0.5732	...	9. 31. 29.68	84.13	1	2	+12.743	+1.034	...	...	2930
1470	47 Cancri	4.3	8. 37. 51.849	79.04	4	...	+ 3.4195	-0.0125	-0.0026	71. 24. 21.60	79.04	4	...	+12.747	+0.380	+0.0226	1236	2953
1471	Piazzi VIII. 137 ...	6.0	8. 37. 56.022	85.13	1	4	+ 5.5205	-0.1224	...	22. 51. 13.33	84.87	1	7	+12.752	+0.616	...	...	2943
1472	Mali	3.6	8. 38. 46.212	81.81	3	...	+ 2.4105	+0.0028	...	122. 45. 19.95	81.81	3	...	+12.808	+0.265	...	...	2964
1473	W. B. (2) VIII. 958	4.2	8. 39. 24.180	80.22	2	...	+ 3.6460	-0.0194	-0.0016	60. 47. 49.82	80.21	4	...	+12.850	+0.403	+0.0033	...	...
1474	48 Cancri		8. 39. 26.023	80.74	4	...	+ 3.6458	-0.0194	-0.0016	60. 48. 8.74	80.63	14	...	+12.853	+0.403	+0.0033	1239	2965
1475	W. B. VIII. 997.....	6.0	8. 39. 57.295	85.88	3	...	+ 3.0434	-0.0041	...	91. 36. 49.72	85.71	4	...	+12.887	+0.335	...	...	...
1476	50 Cancri.....	5.8	8. 40. 21.290	82.46	7	...	+ 3.3000	-0.0095	-0.0063	77. 27. 3.76	82.46	7	...	+12.914	+0.363	+0.0034	1242	2970
1477	11 Hydræ	3.6	8. 40. 25.215	82.73	15	...	+ 3.1953	-0.0071	-0.0135	83. 8. 31.56	82.93	16	...	+12.919	+0.351	+0.0023	1243	2971
1478	Piazzi VIII. 167 ...	5.1	8. 41. 10.053	82.54	3	...	+ 3.0463	-0.0039	...	91. 27. 30.93	82.54	3	...	+12.969	+0.333	...	...	2976
1479	Lalande 17333	6.5	8. 41. 17.366	83.16	1	...	+ 2.7348	+0.0006	...	108. 19. 9.38	83.16	2	...	+12.976	+0.299	...	...	...
1480	13 Hydræ	4.3	8. 42. 4.559	78.93	3	...	+ 3.1841	-0.0069	-0.0026	83. 43. 12.82	78.93	3	...	+13.030	+0.347	+0.0021	1248	2978

1444, 1445. The magnitudes given in Struve's *Mensura Micrometrica* are 5.7 and 7.0.
 1452. This star is designated 3 Leonis Minoris in B. F.
 1461. In H.P. the magnitude appears as "cum.": indicating that the proximity of other stars prevented estimation.
 1464. The magnitude is taken from the *Uranometria Argentina*.
 1473, 1474. The magnitudes given in B. D. are 7.5 and 4.2.
 1450. This star is designated 1 Leonis Minoris in B. F.
 1456. This star is designated f Cancri in B. F.
 1468. B. A. C. assigns this star to Hydra.
 1480. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.7.

{xl}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1481	5 Ursæ Majoris <i>b</i>	5.6	8.43.28.393	82.82	4	4	+ 5.0071	-0.0899	-0.0022	27.35.26.24	82.41	9	8	+13.122	+0.547	-0.026	1241	2982
1482	54 Cancri.....	6.7*	8.44.20.412	80.49	3	...	+ 3.3573	-0.0113	-0.0100	74.12.20.02	80.49	3	...	+13.180	+0.363	-0.077	1250	2995
1483	51 Cancri.....	5.7	8.45.9.707	79.00	5	...	+ 3.7227	-0.0230	+0.0002	57.4.38.81	79.10	9	...	+13.233	+0.402	-0.029	1252	2999
1484	53 Cancri..... <i>p</i>	6.5*	8.45.15.447	84.18	1	...	+ 3.6222	-0.0195	-0.0014	61.17.30.36	84.18	1	...	+13.240	+0.391	-0.015	1253	3000
1485	Mali..... <i>c</i>	4.3	8.45.26.297	82.54	5	...	+ 2.5551	+0.0024	...	117.15.56.79	82.54	5	...	+13.251	+0.274	...	...	3010
1486	55 Cancri..... <i>p</i>	6.2	8.45.26.835	83.70	2	...	+ 3.6236	-0.0195	-0.0390	61.12.43.34	83.70	2	...	+13.252	+0.391	+0.230	1254	3002
1487	15 Hydræ.....	5.5	8.45.40.489	82.49	3	...	+ 2.9540	-0.0024	-0.0047	96.43.43.27	82.49	3	...	+13.267	+0.317	0.000	1256	3011
1488	6 Ursæ Majoris.....	5.6	8.46.19.128	84.41	4	4	+ 5.2231	-0.1078	-0.0049	24.56.19.01	84.28	5	10	+13.309	+0.564	+0.090	1246	3003
1489	57 Cancri (1st Star) <i>σ</i>	6.4†	8.46.55.171	82.20	1	...	+ 3.6726	-0.0215	+0.0020	58.58.2.31	82.20	1	...	+13.348	+0.394	+0.021	...	...
1490	57 Cancri (as one mass) <i>σ</i>	5.5	8.46.55.139	81.57	3	...	+ 3.6726	-0.0215	+0.0020	58.58.2.99	81.83	5	...	+13.348	+0.394	+0.021	1255	3016
1491	Piazzi VIII. 202 ...	5.9	8.48.42.114	85.27	3	3	+ 4.1015	-0.0398	...	43.54.34.95	83.86	3	(2)	+13.464	+0.438	...	...	3025
1492	Groombridge 1487...	5.8	8.48.42.863	86.50	3	...	+ 3.9233	-0.0317	...	49.20.25.32	86.50	3	...	+13.465	+0.418	...	...	3027
1493	16 Hydræ..... <i>z</i>	3.3	8.49.2.970	78.22	3	...	+ 3.1833	-0.0070	-0.0075	83.35.55.44	78.22	3	...	+13.487	+0.338	-0.016	1261	3032
1494	60 Cancri.....	5.7	8.49.22.359	81.61	5	...	+ 3.2838	-0.0096	-0.0019	77.55.0.05	82.21	8	...	+13.508	+0.348	+0.005	1262	3035
1495	59 Cancri.....	5.5	8.49.32.060	80.88	3	...	+ 3.7227	-0.0237	-0.0062	56.37.44.16	80.88	3	...	+13.518	+0.395	+0.064	1259	3033
1496	Radcliffe 2218.....	6.2	8.50.3.335	86.79	...	3	+13.6135	-1.7064	...	5.20.27.91	86.02	2	5	+13.552	+1.457	...	...	...
1497	Mali..... <i>d</i>	4.8	8.50.22.812	83.85	3	...	+ 2.5661	+0.0026	...	117.13.16.62	83.85	3	...	+13.573	+0.270	...	...	3051
1498	62 Cancri..... <i>l</i>	5.2	8.50.33.290	82.05	7	...	+ 3.3503	-0.0115	+0.0029	74.13.6.11	82.05	7	...	+13.584	+0.354	-0.033	1265	3047
1499	61 Cancri..... <i>a</i>	6.5*	8.50.41.180	82.66	2	...	+ 3.6558	-0.0214	+0.0048	59.18.23.36	82.45	4	...	+13.593	+0.386	-0.020	1263	3046
1500	63 Cancri..... <i>e</i>	5.6	8.50.53.003	83.53	5	...	+ 3.3547	-0.0116	+0.0031	73.57.32.62	83.53	5	...	+13.605	+0.354	-0.036	1266	3052
1501	9 Ursæ Majoris..... <i>t</i>	3.2	8.50.59.077	79.64	6	...	+ 4.1825	-0.0446	-0.0441	41.29.18.26	79.64	6	...	+13.612	+0.442	+0.247	1260	3048
1502	B. F. 1267.....	6.3	8.51.13.617	78.90	3	...	+ 3.2426	-0.0086	...	80.9.4.29	78.90	3	...	+13.628	+0.341	...	...	3053
1503	8 Ursæ Majoris..... <i>p</i>	5.0	8.51.42.225	83.69	2	4	+ 5.5069	-0.1364	-0.0036	21.54.16.02	84.28	3	9	+13.658	+0.582	-0.016	1257	3049
1504	65 Cancri..... <i>a</i>	4.3	8.51.55.416	82.24	18	...	+ 3.2859	-0.0098	+0.0010	77.40.43.98	81.36	28	...	+13.672	+0.345	+0.022	1269	3055
1505	64 Cancri.....	5.7	8.52.10.375	81.14	3	...	+ 3.7040	-0.0235	-0.0041	57.6.59.91	79.16	2	...	+13.688	+0.389	+0.022	1267	3056
1506	Piazzi VIII. 227 ...	5.9	8.53.6.047	84.59	4	...	+ 2.7991	+0.0002	...	105.40.32.51	84.37	5	...	+13.747	+0.291	...	...	3065
1507	66 Cancri.....	6.3*	8.54.2.474	83.84	3	...	+ 3.6953	-0.0234	-0.0018	57.16.48.24	82.90	7	...	+13.807	+0.385	-0.032	1270	3068
1508	67 Cancri.....	5.8	8.54.39.508	83.82	3	...	+ 3.5946	-0.0198	-0.0056	61.37.33.37	83.82	3	...	+13.847	+0.373	+0.094	1273	3069
1509	Lalande 17817.....	7.9*	8.54.57.486	84.21	2	...	+ 2.8010	+0.0003	...	105.41.10.30	84.21	2	...	+13.866	+0.289	...	...	...
1510	12 Ursæ Majoris..... <i>κ</i>	3.7	8.55.25.627	82.23	7	...	+ 4.1292	-0.0434	-0.0036	42.22.12.37	82.23	7	...	+13.895	+0.428	+0.068	1272	3075
1511	69 Cancri..... <i>v</i>	5.6	8.55.43.178	80.25	4	...	+ 3.5197	-0.0172	-0.0007	65.4.33.36	82.25	7	...	+13.913	+0.364	+0.010	1275	3079
1512	W. B. VIII. 1406 ...	5.6	8.55.50.078	85.14	3	...	+ 3.0720	-0.0046	...	90.0.52.96	85.14	3	...	+13.920	+0.317	...	...	...
1513	Groombridge 1508...	5.7	8.57.6.966	86.49	2	3	+ 4.1737	-0.0463	...	40.59.38.17	86.32	2	1	+14.001	+0.430	...	...	3085
1514	11 Ursæ Majoris..... <i>σ</i>	5.3	8.57.50.190	84.27	3	5	+ 5.3595	-0.1304	+0.0008	22.38.47.82	83.64	8	12	+14.046	+0.552	+0.047	1271	3087
1515	Lacaille 3652.....	6.6	8.57.53.515	85.45	3	...	+ 2.6269	+0.0025	...	115.1.51.42	85.45	3	...	+14.050	+0.267	...	...	3096
1516	Piazzi VIII. 245 ...	4.7	8.58.53.535	84.11	2	...	+ 3.8397	-0.0304	...	51.4.10.09	82.66	4	...	+14.112	+0.392	...	...	3097
1517	18 Hydræ..... <i>ω</i>	5.6	8.59.39.254	84.17	3	...	+ 3.1646	-0.0068	-0.0021	84.25.44.94	84.17	3	...	+14.160	+0.321	-0.013	1284	3105
1518	13 Ursæ Majoris..... <i>σ</i>	4.8	8.59.48.786	79.89	3	3	+ 5.3700	-0.1333	+0.0002	22.22.48.49	81.77	4	5	+14.169	+0.548	+0.064	1276	3099
1519	15 Ursæ Majoris..... <i>f</i>	4.4	9.0.23.931	86.16	1	3	+ 4.2840	-0.0537	-0.0148	37.54.44.69	85.79	1	3	+14.205	+0.435	+0.035	1280	3106
1520	72 Cancri..... <i>r</i>	5.4	9.0.47.609	78.90	3	...	+ 3.6192	-0.0215	-0.0036	59.51.51.77	78.74	4	...	+14.230	+0.366	-0.003	1285	3109

1489. The magnitude is taken from Struve's *Mensuræ Micrometricæ*.
 1498. The magnitude given in the *Uranometria Nova Osoniensis* is 5.5.
 1512. The magnitude given in the *Uranometria Nova Osoniensis* is 6.0.

1886 GOAMM.	Star's Name.	Magnitude.	Mean R.A., 1880 ^o .	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880 ^o .	Secular Variation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	Mean N.P.D., 1880 ^o .	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880 ^o .	Secular Variation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1521	14 Ursæ Majoris	4.8	9. 1. 0°535	83°97	3	3	+ 5°0021	-0°1036	+0°0140	25. 59. 59°50	83°15	7	3	+14°242	+0°507	+0°067	1279	3108
1522	76 Cancri	5°0	9. 1. 14°775	81°68	20	...	+ 3°2576	-0°0094	-0°0028	78. 51. 0°01	83°04	37	...	+14°257	+0°328	-0°009	1287	3111
1523	75 Cancri	6°0	9. 1. 43°617	86°27	1	...	+ 3°5529	-0°0191	-0°0103	62. 52. 31°05	86°27	1	...	+14°287	+0°357	+0°378	1286	3113
1524	77 Cancri	5°2	9. 2. 27°475	82°31	7	...	+ 3°4602	-0°0159	-0°0011	67. 28. 13°13	82°29	9	...	+14°331	+0°344	-0°025	1289	3117
1525	19 Hydræ	5°5	9. 2. 49°817	82°17	3	...	+ 2°9394	-0°0018	-0°0023	98. 6. 19°15	82°17	3	...	+14°355	+0°293	-0°002	1292	3120
1526	Piazzi VIII. 263 ...	7°0*	9. 3. 14°963	79°97	5	...	+ 3°2712	-0°0099	...	77. 56. 52°96	79°97	5	...	+14°380	+0°326	...	...	3122
1527	W. B. (2) IX. 3.....	6°5	9. 3. 23°565	83°25	2	...	+ 3°6419	-0°0228	...	58. 32. 56°99	83°25	2	...	+14°389	+0°364	...	...	...
1528	W. B. IX. 28	5°8	9. 3. 26°244	84°27	3	...	+ 2°8765	-0°0006	...	101. 52. 20°98	84°39	8	...	+14°391	+0°286	...	...	...
1529	79 Cancri	6°5*	9. 3. 27°056	85°03	2	...	+ 3°4576	-0°0159	-0°0004	67. 31. 3°10	82°76	3	...	+14°392	+0°345	-0°018	1291	3123
1530	Groombridge 1517 ..	5°8	9. 3. 47°123	82°66	...	6	+ 6°1985	-0°2251	...	16. 33. 34°03	84°17	...	12	+14°414	+0°623	...	...	3116
1531	16 Ursæ Majoris	5°2	9. 4. 50°455	82°68	3	4	+ 4°8062	-0°0914	-0°0019	28. 5. 2°07	82°74	7	9	+14°477	+0°479	+0°030	1288	3125
1532	80 Cancri	6°8*	9. 5. 12°455	84°03	2	...	+ 3°3819	-0°0134	-0°0053	71. 27. 55°06	84°03	2	...	+14°500	+0°335	+0°008	1296	3129
1533	81 Cancri	7°0*	9. 5. 43°511	82°82	5	...	+ 3°3275	-0°0117	-0°0382	74. 31. 16°89	82°85	5	...	+14°530	+0°328	-0°249	1298	3132
1534	36 Lynceis	5°2	9. 5. 57°036	86°62	2	...	+ 3°9523	-0°0375	-0°0019	46. 17. 18°64	86°62	2	...	+14°544	+0°391	+0°037	1295	3131
1535	Piazzi IX. 13	5°7	9. 6. 28°924	82°16	3	...	+ 2°7515	+0°0016	...	109. 15. 29°35	82°16	3	...	+14°576	+0°269	...	...	...
1536	Bradley 1299	6°5*	9. 6. 45°946	82°16	4	...	+ 3°4387	-0°0155	-0°0019	68. 13. 25°17	82°16	4	...	+14°593	+0°338	+0°016	1299	3138
1537	17 Ursæ Majoris	5°6	9. 6. 55°762	86°27	1	...	+ 4°4962	-0°0703	-0°0010	32. 45. 43°31	86°27	1	...	+14°603	+0°443	+0°023	1293	3135
1538	18 Ursæ Majoris	4°9	9. 7. 32°676	84°24	3	4	+ 4°3541	-0°0613	+0°0056	35. 29. 2°35	83°95	3	4	+14°640	+0°428	-0°068	1297	3140
1539	19 Ursæ Majoris	6°3*	9. 7. 52°034	83°60	8	...	+ 3°7142	-0°0267	-0°0124	54. 52. 20°98	83°60	8	...	+14°659	+0°363	-0°056	1300	3144
1540	22 Hydræ	3°9	9. 8. 7°173	78°25	3	...	+ 3°1172	-0°0057	+0°0078	87. 10. 49°44	78°25	3	...	+14°674	+0°304	+0°309	1303	3146
1541	82 Cancri	5°6	9. 8. 36°239	84°25	4	...	+ 3°3234	-0°0117	-0°0029	74. 33. 42°83	84°24	6	...	+14°703	+0°323	-0°020	1304	3147
1542	Piazzi IX. 19	5°5	9. 9. 27°656	86°39	3	...	+ 4°0542	-0°0441	...	42. 41. 2°28	86°08	2	...	+14°754	+0°394	...	...	3150
1543	23 Hydræ	5°4	9. 10. 44°141	83°61	3	...	+ 2°9800	-0°0044	-0°0022	95. 51. 12°69	83°57	6	...	+14°829	+0°286	-0°021	1307	3160
1544	20 Ursæ Majoris	7°3*	9. 11. 17°612	77°97	5	...	+ 4°6450	-0°0838	+0°0116	29. 42. 51°60	78°54	3	...	+14°862	+0°448	+0°007	1302	3157
1545	38 Lynceis (1st Star)...	3°8	9. 11. 22°076	78°31	1	...	+ 3°7560	-0°0292	-0°0031	52. 41. 27°51	78°31	1	...	+14°866	+0°361	+0°114	1305	3162
1546	38 Lynceis (2nd Star)...	...	9. 11. 22°321	78°60	3	...	+ 3°7560	-0°0292	-0°0031	52. 41. 26°61	80°63	10	...	+14°866	+0°361	+0°114	...	...
1547	83 Cancri	6°6	9. 12. 16°941	82°29	27	...	+ 3°3662	-0°0134	-0°0090	71. 47. 12°54	82°16	31	...	+14°920	+0°322	+0°139	1309	3171
1548	Groombridge 1534 ..	6°0	9. 12. 54°043	86°22	...	4	+ 4°4547	-0°0708	...	32. 47. 38°01	86°07	...	3	+14°956	+0°426	...	...	3172
1549	Oeltz. Arg. (S.) 9575-6.	8°5†	9. 13. 27°402	85°62	2	...	+ 2°6777	+0°0030	...	113. 57. 11°54	85°62	2	...	+14°988	+0°253	...	...	3180
1550	40 Lynceis	3°4	9. 13. 44°499	80°32	3	...	+ 3°6911	-0°0267	-0°0202	55. 6. 3°97	79°52	4	...	+15°004	+0°351	-0°027	1312	3178
1551	Bradley 1310	6°8*	9. 14. 20°842	82°84	9	2	+ 4°1282	-0°0501	-0°0022	39. 56. 46°26	82°45	9	2	+15°040	+0°392	-0°008	1310	3182
1552	Piazzi IX. 51	6°5*	9. 16. 3°373	80°39	4	3	+ 4°9070	-0°1089	...	25. 32. 39°89	81°70	9	5	+15°138	+0°463	...	...	...
1553	Mali	4°9	9. 16. 10°807	86°12	3	...	+ 2°6552	+0°0035	...	115. 27. 20°72	86°12	3	...	+15°146	+0°247	...	...	3195
1554	6 Leonis Minoris	6°4	9. 16. 35°056	83°25	3	...	+ 3°4932	-0°0186	-0°0106	64. 18. 19°31	83°25	5	...	+15°169	+0°327	-0°010	1318	3194
1555	1 Leonis	4°6	9. 17. 39°839	78°89	3	...	+ 3°5097	-0°0194	-0°0034	63. 18. 7°85	81°99	9	...	+15°230	+0°327	+0°036	1320	3204
1556	Piazzi IX. 75	4°9	9. 18. 0°416	86°10	2	...	+ 2°6044	+0°0042	...	118. 19. 17°50	86°10	2	...	+15°250	+0°240	...	...	3207
1557	Piazzi IX. 74	6°3*	9. 18. 53°645	78°93	3	...	+ 3°3382	-0°0129	...	72. 53. 52°53	78°93	3	...	+15°300	+0°308	...	...	3209
1558	Piazzi IX. 37	4°6	9. 19. 51°385	84°19	5	5	+ 9°0809	-0°7918	-0°0173	8. 8. 43°79	84°78	5	8	+15°354	+0°845	+0°020	...	3199
1559	30 Hydræ	2°0	9. 21. 41°399	82°66	29	...	+ 2°9505	-0°0014	-0°0019	98. 8. 21°83	82°23	30	...	+15°457	+0°268	-0°052	1330	3223
1560	Lalande 18639	5°0	9. 21. 48°819	85°59	2	...	+ 2°7315	+0°0028	+0°0173	111. 49. 5°86	85°59	2	...	+15°464	+0°247	+0°146	...	...

1539. B. A. C. assigns this star to Lynx.

1549. The magnitude is taken from the *Argentine General Catalogue*.1550. The letter α was added in the B. A. C. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.2.

1551. This star is designated 39 Lynceis in B. F.

1560. Authority for Proper Motion: Bonn Observations, Vol. VII.

1545, 1546. The magnitudes given in Struve's *Mensurae Micrometricae* are 6.7 and 4.0.

1554. B. A. C. assigns this star to Leo.

{xlii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1561	W. B. IX. 439	5.3	9. 21. 49.992	85.19	3	...	+ 2.9896	-0.0023	...	95. 32. 52.15	85.19	3	...	+15.466	+0.271	...	...	3226
1562	Ursæ Majoris	9.0†	9. 21. 59.852	85.75	...	1	+ 4.7844	-0.1034	+0.0138	26. 24. 54.15	85.75	...	1	+15.474	+0.437	-0.026	...	...
1563	2 Leonis	5.6	9. 22. 1.759	84.19	1	...	+ 3.2157	-0.0088	+0.0024	80. 25. 18.42	84.19	1	...	+15.476	+0.292	-0.018	1328	3227
1564	23 Ursæ Majoris	3.8†	9. 22. 3.189	83.50	2	6	+ 4.7839	-0.1034	+0.0138	26. 24. 53.15	82.39	12	8	+15.477	+0.437	-0.026	1323	3221
1565	31 Hydræ	4.9	9. 23. 3.477	78.23	3	...	+ 3.0391	-0.0036	+0.0079	92. 14. 42.79	78.23	3	...	+15.533	+0.274	+0.004	1334	3237
1566	Piazzi IX. 95.....	4.9	9. 23. 3.764	78.22	3	...	+ 3.0394	-0.0036	...	92. 13. 37.10	78.22	3	...	+15.534	+0.274	...	...	...
1567	7 Leonis Minoris	6.7*	9. 23. 27.931	83.63	4	...	+ 3.6453	-0.0263	-0.002	55. 49. 3.43	83.63	4	...	+15.556	+0.328	+0.051	1331	3238
1568	22 Ursæ Majoris	5.8	9. 23. 32.508	82.97	2	3	+ 5.7866	-0.2120	+0.011	17. 15. 46.51	82.91	2	5	+15.559	+0.526	+0.067	1322	3231
1569	24 Ursæ Majoris	4.6	9. 23. 50.673	83.23	4	4	+ 5.4314	-0.1703	-0.0118	19. 38. 37.36	82.92	6	6	+15.577	+0.492	-0.076	1324	3232
1570	25 Ursæ Majoris	3.2	9. 24. 49.423	80.53	11	1	+ 4.1531	-0.0561	-0.1041	37. 46. 36.35	80.53	11	1	+15.630	+0.373	+0.564	1332	3242
1571	4 Leonis	4.4	9. 24. 52.338	78.28	3	...	+ 3.4363	-0.0171	-0.0023	66. 30. 13.53	79.98	8	...	+15.633	+0.307	+0.034	1335	3246
1572	5 Leonis	5.2	9. 25. 28.589	81.57	18	...	+ 3.2471	-0.0100	-0.0076	78. 10. 10.87	82.86	15	...	+15.666	+0.289	+0.060	1338	3250
1573	6 Leonis	5.4	9. 25. 31.538	84.18	9	...	+ 3.2231	-0.0091	-0.0005	79. 45. 21.71	84.39	10	...	+15.669	+0.287	-0.009	1339	3251
1574	W. B. IX. 530	6.0	9. 25. 47.885	85.53	2	...	+ 2.9250	-0.0006	...	100. 1. 26.14	85.08	3	...	+15.684	+0.259	...	...	...
1575	26 Ursæ Majoris	4.6	9. 26. 35.779	85.99	...	3	+ 4.1566	-0.0571	-0.0070	37. 24. 58.28	85.66	...	2	+15.727	+0.369	+0.037	1336	3256
1576	Lalande 18792	5.7	9. 26. 45.880	83.94	3	...	+ 2.7890	+0.0022	...	108. 52. 17.35	83.94	3	...	+15.736	+0.245	...	...	...
1577	10 Leonis Minoris	4.7	9. 26. 52.091	82.55	3	...	+ 3.6948	-0.0295	+0.0008	53. 4. 14.41	83.36	7	...	+15.742	+0.327	+0.010	1340	3261
1578	Piazzi IX. 115	5.0	9. 27. 34.416	86.50	2	...	+ 3.7683	-0.0335	...	49. 50. 47.95	86.62	2	...	+15.781	+0.332	...	...	3265
1579	Lalande 18817	5.2	9. 27. 40.891	83.92	5	...	+ 2.7626	+0.0028	...	110. 35. 6.81	83.92	5	...	+15.786	+0.242	...	...	...
1580	11 Leonis Minoris	5.5	9. 28. 27.501	78.51	7	...	+ 3.6766	-0.0288	-0.0595	53. 38. 52.83	78.51	7	...	+15.827	+0.323	+0.242	1343	3268
1581	33 Hydræ	5.7	9. 28. 33.329	84.16	3	...	+ 2.9950	-0.0023	-0.0015	95. 22. 48.82	84.16	3	...	+15.833	+0.261	+0.027	1344	3271
1582	7 Leonis.....	6.8*	9. 29. 19.328	79.56	11	...	+ 3.2899	-0.0117	-0.0031	75. 5. 8.96	80.36	11	...	+15.874	+0.286	+0.004	1345	3272
1583	8 Leonis.....	5.9	9. 30. 25.255	79.67	4	...	+ 3.3201	-0.0129	-0.0025	73. 1. 31.23	79.67	4	...	+15.932	+0.287	+0.002	1347	3278
1584	10 Leonis.....	5.0	9. 30. 52.436	83.56	3	...	+ 3.1771	-0.0077	-0.0058	82. 37. 38.24	83.56	3	...	+15.957	+0.274	-0.019	1349	3286
1585	9 Leonis.....	6.5*	9. 30. 57.748	81.18	3	...	+ 3.4534	-0.0185	-0.0079	64. 47. 29.19	79.90	9	...	+15.961	+0.298	+0.024	1348	3285
1586	Lacaille 3928.....	6.0	9. 31. 36.437	85.88	3	...	+ 2.7003	+0.0041	...	114. 45. 37.21	85.88	3	...	+15.995	+0.231	...	...	...
1587	27 Ursæ Majoris	5.5	9. 31. 52.314	85.47	4	3	+ 5.6730	-0.2129	-0.0072	17. 12. 12.62	84.81	8	3	+16.009	+0.492	+0.034	1342	3283
1588	Groombridge 1564...	5.8	9. 31. 56.943	82.32	6	3	+ 5.2578	-0.1622	-0.0177	20. 13. 3.53	82.12	6	3	+16.013	+0.455	+0.077	...	3287
1589	Piazzi IX. 135	6.5*	9. 32. 10.538	84.06	1	...	+ 3.3782	-0.0154	...	69. 9. 44.40	84.06	1	...	+16.026	+0.289	...	...	3292
1590	2 Sextantis	4.8	9. 32. 11.668	78.94	3	...	+ 3.1453	-0.0066	-0.0120	84. 48. 34.80	78.94	3	...	+16.027	+0.269	+0.033	1352	3295
1591	Groombridge 1562...	6.1	9. 32. 58.902	84.58	3	3	+ 7.4679	-0.5140	...	10. 18. 53.00	84.77	7	5	+16.068	+0.645	...	...	3284
1592	35 Hydræ	4.2	9. 33. 43.641	78.28	3	...	+ 3.0640	-0.0041	+0.0015	90. 35. 55.24	78.28	3	...	+16.107	+0.259	+0.063	1356	3303
1593	Bradley 1361	6.0	9. 34. 28.662	85.16	3	...	+ 2.9292	-0.0003	+0.0007	100. 13. 35.44	85.17	4	...	+16.146	+0.246	-0.030	1361	3310
1594	38 Hydræ	4.9	9. 34. 33.216	80.87	3	...	+ 2.8778	+0.0009	-0.0017	103. 47. 19.46	80.87	3	...	+16.149	+0.242	-0.013	1362	3311
1595	13 Leonis.....	6.5*	9. 34. 44.131	82.95	3	...	+ 3.4664	-0.0195	-0.0034	63. 32. 31.31	81.51	8	...	+16.159	+0.292	+0.041	1357	3309
1596	14 Leonis	3.8	9. 34. 44.691	82.16	28	...	+ 3.2181	-0.0092	-0.0104	79. 33. 45.71	82.72	28	...	+16.160	+0.271	+0.018	1360	3312
1597	Oeltz.Arg.(S.) 10011	8.5†	9. 35. 29.607	84.87	3	...	+ 2.7278	+0.0040	...	113. 36. 27.17	84.87	3	...	+16.199	+0.228	...	...	...
1598	Lalande 19034	4.6	9. 35. 48.503	78.21	5	...	+ 2.7377	+0.0039	...	113. 2. 48.26	78.21	5	...	+16.214	+0.228	...	...	...
1599	15 Leonis	5.9	9. 36. 31.000	81.59	3	...	+ 3.5342	-0.0230	-0.0028	59. 28. 29.19	81.59	3	...	+16.251	+0.297	+0.095	1365	3317
1600	Piazzi IX. 158	6.5*	9. 36. 39.223	84.26	3	...	+ 3.3687	-0.0153	...	69. 15. 33.61	84.26	3	...	+16.258	+0.281	...	...	3318

1562, 1564. The magnitudes are taken from Struve's *Mensura Micrometrica*: the combined magnitude in H. P. is 3.7.

1565, 1566. The magnitudes given in B. D. are 5.0 and 8.3

1569. The magnitude given in the *Uranometria Nova Osoniensis* is 4.9.1597. The magnitude is taken from the *Argentine General Catalogue*.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY GREENWICH, 1877 TO 1886.

{xliii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Varia- tion, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Varia- tion, 1880°0.	Annual Proper Motion, 1880°0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1601	28 Ursæ Majoris	6.8*	9.36.40.444	85.20	2	4	+ 4.6915	-0.01079	-0.0019	25.47.44.91	82.95	7	6	+16.259	+0.394	+0.034	1355	3315
1602	Lalande 19093	4.9	9.36.49.432	85.09	4	...	+ 2.7343	-0.0040	...	113.22.38.26	85.42	3	...	+16.267	+0.226	...	...	...
1603	16 Leonis	5.7	9.37.11.735	82.26	5	...	+ 3.2751	-0.0115	-0.0009	75.25.49.27	82.26	5	...	+16.286	+0.272	+0.002	1366	3321
1604	Bradley 1363	7.0*	9.38.22.565	82.08	1	3	+ 4.6467	-0.01051	-0.0164	26.11.44.24	81.63	1	3	+16.345	+0.386	+0.06	1363	3325
1605	Antliæ	4.9	9.38.51.156	85.11	3	...	+ 2.6750	+0.0052	...	117.13.15.37	85.11	3	...	+16.370	+0.218	...	...	3332
1606	17 Leonis	3.1	9.39.2.270	81.66	31	...	+ 3.4210	-0.0179	-0.0043	65.40.26.70	81.51	27	...	+16.379	+0.281	+0.008	1368	3331
1607	Oeltz Arg. (S.) 10075	6.8*	9.39.5.723	86.28	1	...	+ 2.7576	+0.0038	...	112.12.7.71	86.28	1	...	+16.383	+0.225	...	...	...
1608	Lalande 19153	7.7*	9.39.7.066	83.10	1	...	+ 2.7480	+0.0040	...	112.48.40.32	83.10	1	...	+16.383	+0.224	...	...	...
1609	Lalande 19154	7.8*	9.39.10.226	84.22	2	...	+ 2.6447	+0.0041	...	113.1.21.00	84.22	2	...	+16.386	+0.224	...	...	...
1610	B. F. 1383	6.0	9.39.50.147	81.56	3	...	+ 3.1701	-0.0076	...	82.44.19.29	81.56	3	...	+16.419	+0.258	...	...	3336
1611	18 Leonis	6.1	9.39.55.363	86.15	2	...	+ 3.2405	-0.0102	-0.0016	77.38.17.03	86.15	2	...	+16.423	+0.264	-0.029	1370	3337
1612	Piazzi IX. 171	5.7	9.40.12.009	84.17	3	...	+ 3.1036	-0.0052	...	87.39.37.37	83.91	7	...	+16.438	+0.252	...	...	3339
1613	15 Leonis Minoris	5.3	9.40.50.673	85.56	3	1	+ 3.8783	-0.0440	+0.0198	43.25.16.00	85.16	3	(1)	+16.470	+0.316	+0.077	1369	3341
1614	Leonis	R. Var.	9.41.6.198	84.21	2	...	+ 3.2340	-0.0100	-0.0021	78.0.55.29	84.21	2	...	+16.483	+0.262	+0.02	1373	3345
1615	29 Ursæ Majoris	4.0	9.42.26.692	81.70	3	3	+ 4.3594	-0.0819	-0.0391	30.23.52.52	82.04	3	5	+16.550	+0.352	+0.149	1371	3346
1616	16 Leonis Minoris	6.6	9.42.51.299	77.96	4	...	+ 3.7085	-0.0339	+0.0005	49.48.37.77	77.96	4	...	+16.569	+0.298	-0.025	1374	3352
1617	20 Leonis	6.1	9.43.7.008	84.54	3	...	+ 3.3721	-0.0161	-0.0048	68.15.44.07	84.54	3	...	+16.582	+0.269	+0.016	1377	3355
1618	30 Ursæ Majoris	4.4	9.43.55.932	85.82	3	4	+ 4.1258	-0.0634	-0.0001	35.22.33.76	85.78	3	4	+16.623	+0.330	-0.025	1375	3358
1619	W. B. (2) IX. 883	7.5*	9.44.24.842	78.21	3	...	+ 3.7020	-0.0339	...	49.49.1.17	78.21	3	...	+16.646	+0.294	...	...	...
1620	39 Hydræ	4.3	9.45.42.334	85.43	4	...	+ 2.8840	+0.0016	-0.0009	104.17.4.58	85.22	8	...	+16.709	+0.225	+0.015	1388	3372
1621	24 Leonis	4.1	9.45.56.171	82.44	24	...	+ 3.4415	-0.0197	-0.0185	63.25.43.46	82.29	39	...	+16.720	+0.270	+0.045	1384	3371
1622	7 Sextantis	6.0	9.46.0.783	85.54	3	...	+ 3.1112	-0.0054	-0.0140	86.59.13.31	85.54	3	...	+16.724	+0.243	-0.129	1386	3374
1623	B. F. 1402	6.5*	9.47.24.793	82.49	3	...	+ 3.1559	-0.0071	...	83.28.37.25	82.49	3	...	+16.791	+0.244	...	...	3380
1624	Piazzi IX. 187	6.0	9.47.37.185	81.98	5	6	+ 5.5286	-0.2240	-0.0230	16.33.4.07	82.90	16	16	+16.801	+0.434	+0.041	...	3376
1625	Lacaille 4059	5.1	9.48.45.990	85.53	3	...	+ 2.7288	+0.0054	...	115.22.6.62	85.53	3	...	+16.855	+0.208	...	...	3391
1626	Piazzi IX. 201	5.8	9.48.50.908	85.82	5	...	+ 4.2304	-0.0750	...	32.0.42.04	85.82	5	...	+16.859	+0.327	...	...	3390
1627	Lalande 19433	5.3	9.49.11.586	83.04	6	...	+ 2.8314	+0.0032	...	108.26.29.54	83.04	6	...	+16.875	+0.216	...	...	...
1628	Bradley 1393	6.0	9.50.4.226	83.82	7	...	+ 3.1925	-0.0086	-0.0077	80.29.56.62	83.82	7	...	+16.917	+0.243	-0.028	1393	3398
1629	19 Leonis Minoris	5.2	9.50.19.805	79.28	4	...	+ 3.7092	-0.0360	-0.0117	48.22.25.93	79.60	3	...	+16.929	+0.283	+0.006	1392	3399
1630	Lacaille 4072	6.9†	9.50.56.998	82.89	3	...	+ 2.6516	+0.0070	...	120.31.21.78	82.89	3	...	+16.958	+0.199	...	...	3403
1631	Groombridge 1594	5.7	9.51.35.506	85.82	3	...	+ 4.1825	-0.0726	...	32.36.53.94	85.82	3	...	+16.988	+0.317	...	...	3402
1632	27 Leonis	5.3	9.51.45.974	81.05	6	...	+ 3.2363	-0.0105	-0.0034	76.59.0.97	81.05	6	...	+16.996	+0.243	+0.004	1395	3406
1633	W. B. (2) IX. 1095	6.5	9.52.47.088	83.90	3	...	+ 3.3554	-0.0161	...	68.6.23.50	83.90	3	...	+17.043	+0.251	...	...	...
1634	12 Sextantis	6.7	9.53.29.548	82.19	3	...	+ 3.1208	-0.0057	...	86.2.32.36	82.19	3	...	+17.076	+0.231	...	...	3412
1635	Lalande 19559	6.4*	9.53.40.265	83.53	3	...	+ 2.8204	+0.0039	...	109.46.59.35	83.53	3	...	+17.084	+0.208	...	...	...
1636	29 Leonis	5.0	9.53.52.268	82.72	28	...	+ 3.1783	-0.0081	-0.0040	81.22.51.33	82.46	21	...	+17.093	+0.235	+0.011	1398	3415
1637	20 Leonis Minoris	6.0	9.54.5.372	80.45	5	...	+ 3.5173	-0.0250	-0.0431	57.29.12.84	81.67	12	...	+17.103	+0.261	+0.427	1397	3416
1638	Piazzi IX. 230	5.7	9.56.7.376	78.58	3	...	+ 3.3577	-0.0166	...	67.28.22.08	79.49	8	...	+17.195	+0.245	...	...	3423
1639	Piazzi IX. 229	5.7	9.56.37.278	84.98	4	4	+ 4.0323	-0.0626	...	35.31.43.11	85.02	4	4	+17.218	+0.294	...	...	3425
1640	Lalande 19641	7.0*	9.56.57.656	83.18	3	...	+ 2.8255	+0.0041	...	109.50.41.94	83.18	3	...	+17.233	+0.203	...	...	...

1614. The limits of magnitude are 5.2-6.7 and 9.4-10.0: the period 312^d87.1618. The magnitude given in the *Uranometria Nova Osoniensis* is 4.7.

1628. This star is designated 10 Sextantis in B. F.

1630. The magnitude is taken from the *Uranometria Argentina*.

{xliv}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.				1755.	1850.
1641	B. F. 1425	8.1*	9. 58. 31.538	82.24	2	...	+ 3.1384	-0.0064	...	84. 24. 54.56	82.24	2	...	+17.303	+0.224	...	...	3438
1642	Lalande 19696	9.0*	9. 58. 37.417	85.18	2	...	+ 2.8416	+0.0038	...	108. 51. 39.27	84.50	3	...	+17.307	+0.202	...	...	...
1643	Lalande 19699	8.5*	9. 58. 44.827	84.50	6	...	+ 2.8422	+0.0038	...	108. 49. 52.44	84.79	6	...	+17.313	+0.202	...	...	...
1644	Lalande 19627	8.8*	9. 59. 9.755	83.69	4	2	+ 4.8271	-0.1488	-0.0677	20. 58. 25.47	83.37	4	2	+17.331	+0.347	+0.333	...	...
1645	Groombridge 1609	6.8*	10. 0. 18.490	82.41	3	2	+ 4.4729	-0.1083	...	25. 27. 43.49	82.63	10	13	+17.381	+0.318	...	...	...
1646	21 Leonis Minoris	4.6	10. 0. 20.901	80.26	3	...	+ 3.5536	-0.0285	+0.0038	54. 10. 16.30	80.72	4	...	+17.383	+0.251	-0.016	1401	3446
1647	14 Sextantis	6.9*	10. 0. 30.854	85.24	5	...	+ 3.1446	-0.0067	-0.0047	83. 48. 14.98	85.52	7	...	+17.390	+0.221	-0.018	1404	3449
1648	30 Leonis	3.6	10. 0. 47.287	80.21	4	...	+ 3.2799	-0.0129	+0.0013	72. 39. 10.61	80.97	5	...	+17.402	+0.230	-0.002	1403	3453
1649	Lalande 19750	6.1	10. 1. (23.)	...	...	...	+ 2.8757	+0.0031	...	106. 33. 18.77	84.31	2	...	+17.428	+0.200	...	...	...
1650	31 Leonis	4.6	10. 1. 32.087	80.71	4	...	+ 3.1958	-0.0090	-0.0082	79. 24. 54.46	80.71	4	...	+17.434	+0.223	+0.038	1405	3457
1651	Lalande 19765	7.2*	10. 1. 41.179	86.61	2	...	+ 2.8434	+0.0041	...	109. 7. 27.39	86.61	2	...	+17.441	+0.197	...	...	...
1652	32 Leonis	1.4	10. 1. 58.799	81.16	66	...	+ 3.2189	-0.0101	-0.0182	77. 26. 49.62	80.88	81	...	+17.454	+0.224	-0.018	1406	3459
1653	Lalande 19770	8.0*	10. 2. 25.650	83.21	2	...	+ 2.8466	+0.0041	...	108. 58. 42.06	83.21	2	...	+17.473	+0.196	...	...	...
1654	16 Sextantis	7.1*	10. 2. 57.527	81.28	11	...	+ 3.1497	-0.0069	-0.0018	83. 14. 30.32	81.28	11	...	+17.496	+0.217	-0.011	1409	3463
1655	Lalande 19797	7.2*	10. 3. 31.437	85.60	3	...	+ 2.8666	+0.0036	...	107. 33. 2.26	85.60	3	...	+17.520	+0.196	...	...	...
1656	Piazzi IX. 254	6.5*	10. 3. 44.566	80.56	3	...	+ 3.6419	-0.0353	...	48. 44. 57.02	80.43	5	...	+17.529	+0.251	...	...	3466
1657	Groombridge 1618	6.8*	10. 4. 1.063	85.49	2	6	+ 3.8463	-0.0509	-0.1390	39. 56. 22.06	85.44	2	6	+17.541	+0.264	+0.501	...	...
1658	B. F. 1439	5.3	10. 4. 14.873	85.98	4	...	+ 2.9322	+0.0016	...	102. 13. 25.80	85.98	4	...	+17.550	+0.199	...	...	3471
1659	41 Hydrae	3.9	10. 4. 44.186	78.58	3	...	+ 2.9381	+0.0014	-0.0148	101. 45. 42.82	78.58	3	...	+17.571	+0.199	+0.065	1412	3473
1660	Oeltz.Arg.(S.) 10428	8.8*	10. 5. 27.715	83.15	1	...	+ 2.8715	+0.0037	...	107. 24. 6.31	83.15	1	...	+17.602	+0.193	...	...	...
1661	W. B. (2) X. 130 ...	9.2*	10. 7. 37.127	85.53	3	...	+ 3.3868	-0.0195	...	63. 27. 38.49	85.53	3	...	+17.691	+0.225	...	...	...
1662	22 Leonis Minoris	6.6	10. 8. 12.671	78.23	4	...	+ 3.4648	-0.0244	-0.0047	57. 56. 12.93	79.52	6	...	+17.716	+0.229	-0.012	1418	3490
1663	32 Ursæ Majoris	5.7	10. 9. 18.209	82.37	4	3	+ 4.4480	-0.1154	-0.0156	24. 17. 38.04	82.59	13	7	+17.760	+0.294	+0.008	1415	3496
1664	33 Ursæ Majoris	3.6	10. 9. 51.255	83.61	17	5	+ 3.6591	-0.0384	-0.0165	46. 29. 13.44	83.34	17	(5)	+17.782	+0.239	+0.058	1421	3505
1665	35 Leonis	3.6	10. 9. 53.523	78.28	3	...	+ 3.3487	-0.0175	-0.0180	65. 54. 3.92	78.28	3	...	+17.784	+0.218	-0.023	1424	3507
1666	36 Leonis	5.9	10. 10. 0.811	78.79	4	...	+ 3.3473	-0.0175	0.0000	65. 59. 7.48	80.26	21	...	+17.789	+0.218	-0.017	1425	3508
1667	37 Leonis	5.9	10. 10. 14.189	79.87	3	...	+ 3.2296	-0.0110	-0.0033	75. 40. 26.42	80.84	5	...	+17.798	+0.209	+0.025	1426	3510
1668	39 Leonis	6.5*	10. 10. 38.321	80.59	3	...	+ 3.3419	-0.0172	-0.0328	66. 17. 33.66	80.44	5	...	+17.814	+0.216	+0.083	1427	3511
1669	Piazzi X. 26	5.9	10. 11. 2.761	83.73	2	3	+ 4.6845	-0.1487	...	20. 39. 0.17	84.23	2	7	+17.864	+0.303	...	...	3514
1670	Bradley 1399	5.6	10. 11. 57.522	85.23	...	3	+ 9.8228	-1.6020	-0.0950	5. 8. 23.79	83.01	3	5	+17.867	+0.643	+0.043	1399	3495
1671	Oeltz.Arg.(N.) 10722	6.2	10. 11. 59.031	82.74	2	1	+ 3.7706	-0.0482	...	40. 59. 58.06	82.28	3	1	+17.868	+0.242	...	...	...
1672	40 Leonis	5.0	10. 13. 12.223	85.30	2	...	+ 3.2919	-0.0146	-0.0182	69. 55. 15.18	84.60	3	...	+17.915	+0.208	+0.201	1431	3522
1673	41 Leonis	2.2	10. 13. 21.285	82.35	55	...	+ 3.2960	-0.0148	+0.0208	69. 33. 8.12	83.01	50	...	+17.922	+0.208	+0.136	1432	3523
1674	41 Leonis	2.2	10. 13. 21.533	80.71	8	...	+ 3.2960	-0.0148	+0.0208	69. 33. 9.56	81.63	11	...	+17.922	+0.208	+0.136	...	...
1675	W. B. X. 204	6.2	10. 13. 23.349	83.88	3	...	+ 2.9456	+0.0019	...	101. 55. 36.47	84.42	5	...	+17.923	+0.185	...	...	...
1676	W. B. (2) X. 243 ...	8.5*	10. 13. 56.837	82.08	2	...	+ 3.6062	-0.0358	...	48. 11. 4.81	82.08	2	...	+17.945	+0.227	...	...	...
1677	B. F. 1464	8.0*	10. 14. 15.418	83.33	6	...	+ 3.1457	-0.0068	...	82. 57. 59.57	84.08	8	...	+17.957	+0.197	...	...	3529
1678	23 Sextantis	6.6	10. 14. 50.112	85.53	3	...	+ 3.1022	-0.0047	-0.0017	87. 6. 26.43	85.53	3	...	+17.980	+0.193	-0.018	1435	3532
1679	Bradley 1433	6.5*	10. 15. 2.218	80.37	3	1	+ 3.6016	-0.0357	-0.0116	48. 9. 43.20	80.06	5	(1)	+17.987	+0.225	+0.13	1433	3530
1680	34 Ursæ Majoris	3.1	10. 15. 10.512	82.20	10	5	+ 3.6058	-0.0361	-0.0083	47. 53. 51.73	81.52	10	(5)	+17.993	+0.225	-0.034	1434	3533

1644. Authority for Proper Motion : Bonn Observations, Vol. VII.
 1657. Authority for Proper Motion : Bonn Observations, Vol. VII.
 1673, 1674. The magnitudes given in Struve's *Mensura Micrometrica* are 2.0 and 3.5.

1650. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.9.
 1665, 1666. The magnitudes given in B. D. are 7.0 and 3.5.

No.	Star's Name.	Magnitude.	Mean R.A., 1880 ^o .	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880 ^o .	Secular Varia- tion, 1880 ^o .	Annual Proper Motion, 1880 ^o .	Mean N.P.D., 1880 ^o .	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880 ^o .	Secular Varia- tion, 1880 ^o .	Annual Proper Motion, 1880 ^o .	No. in Auwers' Bradley.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1681	42 Leonis.....	6.2	h m s 10. 15. 23.051	82.54	6	...	+ 3.2366	-0.0116	-0.0051	74. 25. 12.76	82.54	6	...	+18.001	+0.200	+0.022	1436	3534
1682	Bradley 1429.....	5.0	10. 15. 27.748	82.64	5	1	+ 4.4057	-0.1172	-0.007	23. 49. 39.55	81.82	17	5	+18.004	+0.275	+0.014	1429	3531
1683	Piazzi X. 51.....	7.0*	10. 15. 54.439	80.18	3	...	+ 3.1712	-0.0081	...	80. 25. 52.19	80.18	3	...	+18.021	+0.195	...	...	3538
1684	Piazzi X. 22.....	5.3	10. 16. 18.636	85.08	5	3	+ 7.9502	-0.9416	-0.0529	6. 49. 55.74	85.13	6	4	+18.037	+0.499	-0.032	...	3528
1685	43 Leonis.....	6.5*	10. 16. 43.638	80.57	5	...	+ 3.1453	-0.0068	-0.0028	82. 50. 56.54	80.31	6	...	+18.053	+0.192	+0.091	1441	3544
1686	29 Leonis Minoris.....	6.5*	10. 18. 49.399	80.00	3	...	+ 3.4879	-0.0283	-0.0099	53. 57. 51.25	80.00	3	...	+18.131	+0.210	+0.061	1444	3559
1687	44 Leonis.....	6.2	10. 18. 55.726	77.81	7	...	+ 3.1667	-0.0079	...	80. 36. 20.85	77.81	7	...	+18.136	+0.189	...	...	3561
1688	Piazzi X. 67.....	7.8*	10. 19. 15.914	77.99	4	...	+ 3.1663	-0.0079	...	80. 36. 54.01	77.99	4	...	+18.148	+0.189	...	...	3562
1689	42 Hydræ.....	μ 4.1	10. 20. 17.197	83.02	22	...	+ 2.9084	+0.0040	-0.0098	106. 13. 27.73	83.02	21	...	+18.186	+0.171	+0.061	1451	3568
1690	31 Leonis Minoris... β	4.4	10. 20. 56.427	79.78	4	...	+ 3.4993	-0.0297	-0.0112	52. 40. 42.46	79.09	8	...	+18.210	+0.206	+0.077	1448	3572
1691	45 Leonis.....	5.9	10. 21. 18.622	82.79	15	...	+ 3.1744	-0.0084	-0.0011	79. 37. 35.49	82.79	15	...	+18.224	+0.185	-0.015	1453	3575
1692	Antliæ.....	α 4.5	10. 21. 39.743	81.32	11	...	+ 2.7452	+0.0097	-0.0087	120. 27. 27.82	81.32	11	...	+18.237	+0.159	+0.001	...	3578
1693	Oeltz. Arg. (N.) 10861..	5.9	10. 22. 4.649	85.23	3	...	+ 4.2534	-0.1060	...	25. 7. 39.39	85.23	3	...	+18.252	+0.249	...	...	...
1694	36 Ursæ Majoris.....	4.9	10. 22. 56.269	84.02	6	4	+ 3.9055	-0.0668	-0.0237	33. 24. 16.98	83.99	6	4	+18.282	+0.226	+0.035	1454	3580
1695	29 Sextantis.....	5.2	10. 23. 22.997	79.30	3	...	+ 3.0520	-0.0020	-0.0046	92. 7. 31.14	79.30	3	...	+18.299	+0.174	+0.018	1457	3590
1696	B. F. 1492.....	7.5*	10. 23. 32.663	81.86	3	...	+ 3.0924	-0.0040	...	87. 53. 29.18	81.86	3	...	+18.304	+0.176	...	...	3592
1697	Bradley 1439.....	6.5	10. 23. 34.110	83.60	4	3	+ 6.5644	-0.5751	-0.0061	8. 53. 17.10	84.31	4	5	+18.305	+0.384	+0.003	1439	3577
1698	Piazzi X. 90.....	5.9	10. 23. 56.485	85.70	2	...	+ 2.7700	+0.0094	...	119. 3. 0.64	85.70	2	...	+18.318	+0.157	...	...	3596
1699	Antliæ.....	δ 5.6	10. 24. 3.831	86.26	2	...	+ 2.7586	+0.0097	...	119. 59. 36.60	86.26	2	...	+18.323	+0.156	...	...	3598
1700	Bradley 1446.....	5.1	10. 24. 51.147	79.73	4	2	+ 5.2894	-0.2784	-0.0118	13. 40. 10.99	81.46	8	6	+18.351	+0.303	+0.005	1446	3593
1701	33 Leonis Minoris.....	5.7	10. 25. 2.337	79.68	2	...	+ 3.4218	-0.0248	-0.0005	57. 0. 18.47	79.20	5	...	+18.357	+0.193	-0.022	1461	3602
1702	W. B. X. 418.....	5.7	10. 25. 6.109	83.88	3	...	+ 2.9484	+0.0030	...	102. 58. 24.54	83.88	3	...	+18.359	+0.165	...	...	...
1703	46 Leonis.....	5.7	10. 25. 47.340	79.52	4	...	+ 3.2130	-0.0108	-0.0040	75. 14. 50.95	80.02	8	...	+18.383	+0.179	-0.024	1463	3606
1704	Groombridge 1658..	5.1	10. 26. 13.567	79.64	3	...	+ 3.5353	-0.0341	...	48. 57. 27.00	79.64	3	...	+18.399	+0.197	...	...	3607
1705	47 Leonis.....	ρ 4.0	10. 26. 29.476	82.20	33	...	+ 3.1651	-0.0080	-0.0012	80. 4. 35.35	81.99	29	...	+18.408	+0.175	-0.011	1467	3609
1706	34 Leonis Minoris.....	5.5	10. 26. 39.059	81.75	4	...	+ 3.4516	-0.0275	-0.0057	54. 23. 38.09	79.81	7	...	+18.414	+0.192	-0.016	1465	3610
1707	44 Hydræ.....	5.4	10. 28. 18.499	78.47	4	...	+ 2.8499	+0.0074	-0.0026	113. 7. 38.99	78.47	4	...	+18.470	+0.154	-0.030	1471	3620
1708	48 Leonis.....	5.2	10. 28. 32.379	84.95	8	...	+ 3.1413	-0.0066	-0.0086	82. 25. 44.82	84.95	8	...	+18.478	+0.170	-0.067	1468	3621
1709	35 Leonis Minoris.....	6.3	10. 29. 27.971	80.27	2	...	+ 3.4593	-0.0288	+0.0007	53. 3. 5.36	80.23	3	...	+18.510	+0.186	+0.021	1470	3625
1710	Bradley 1458.....	6.2*	10. 31. 33.471	84.43	4	3	+ 6.2687	-0.5454	+0.0109	8. 56. 51.20	83.33	8	5	+18.579	+0.336	-0.008	1458	3629
1711	Piazzi X. 123.....	5.2	10. 31. 35.865	83.59	3	...	+ 2.8183	+0.0091	...	116. 47. 29.21	83.59	3	...	+18.581	+0.147	...	...	3638
1712	Hydræ.....	U. Var.	10. 31. 37.702	85.72	6	...	+ 2.9584	+0.0032	...	102. 45. 40.07	85.61	8	...	+18.582	+0.154	...	...	3637
1713	37 Leonis Minoris.....	4.8	10. 31. 57.837	79.26	4	...	+ 3.3927	-0.0242	-0.0006	57. 24. 3.51	79.66	7	...	+18.593	+0.177	-0.033	1475	3640
1714	50 Leonis.....	6.5	10. 32. 28.236	78.26	3	...	+ 3.2223	-0.0118	+0.0019	73. 14. 54.38	78.26	3	...	+18.609	+0.167	+0.008	1478	3643
1715	Hydræ.....	φ* 5.2	10. 32. (44.)	...	...	...	+ 2.9274	+0.0048	-0.0099	106. 15. 15.89	83.29	2	...	+18.617	+0.151	-0.051	1479	3646
1716	Groombridge 1669..	5.9	10. 33. 14.832	83.95	5	2	+ 4.3641	-0.1367	...	20. 55. 48.91	84.02	5	6	+18.635	+0.227	...	...	3645
1717	39 Leonis Minoris.....	6.5*	10. 33. 42.359	78.64	3	...	+ 3.3354	-0.0201	-0.0016	61. 50. 59.50	78.16	7	...	+18.649	+0.171	-0.011	1480	3650
1718	38 Ursæ Majoris.....	5.0	10. 33. 44.515	81.05	3	3	+ 4.1943	-0.1128	-0.0285	23. 39. 20.01	81.12	3	4	+18.650	+0.217	+0.077	1476	3647
1719	Piazzi X. 126.....	5.3	10. 34. 27.185	82.19	7	3	+ 4.3905	-0.1428	+0.0028	20. 17. 48.70	82.65	10	5	+18.673	+0.225	+0.032	...	3652
1720	Piazzi X. 131.....	6.5*	10. 35. 27.731	79.61	3	...	+ 3.3773	-0.0237	...	57. 40. 32.54	79.61	3	...	+18.706	+0.170	...	...	3661

1690. The letter β was added in the B. A. C.

1699. In the *Argentine General Catalogue* there is a star (magnitude 9.5) 0^h 6' preceding and 6' south.1712. The limits of magnitude are 4.5 and 6.1-6.3: the period 194^d 65 (very uncertain).1715. This star is designated φ³ Crateris in B. F.1719. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.

{xlvi}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1721	Ursæ Majoris.....R. Var.		h m s 10. 36. 7.773	86.22	3	...	+ 4.3454	-0.1387	...	20. 35. 42.94	86.22	3	...	+18.726	+0.219	...	...	...
1722	39 Ursæ Majoris.....	5.7	10. 36. 7.946	80.76	3	...	+ 3.8328	-0.0691	+0.0006	32. 10. 16.75	80.76	3	...	+18.726	+0.192	+0.037	1481	3664
1723	34 Sextantis	7.7*	10. 36. 25.650	82.21	22	...	+ 3.1074	-0.0046	-0.0090	85. 47. 25.38	83.21	29	...	+18.736	+0.154	-0.033	1484	3667
1724	41 Leonis Minoris	5.1	10. 36. 53.391	79.55	4	...	+ 3.2817	-0.0165	-0.0105	66. 11. 2.58	79.67	7	...	+18.750	+0.162	-0.026	1485	3671
1725	35 Sextantis (1st Star)		10. 37. 6.766	82.45	5	...	+ 3.1168	-0.0051	0.0000	84. 37. 26.57	82.45	5	...	+18.757	+0.153	0.000	1487	3672
1726	35 Sextantis (2nd Star)	6.0	10. 37. 7.181	82.59	9	...	+ 3.1168	-0.0051	0.0000	84. 37. 23.67	82.71	11	...	+18.757	+0.153	0.000	...	...
1727	36 Sextantis	6.5*	10. 38. 58.469	80.62	9	...	+ 3.0975	-0.0039	-0.0053	86. 52. 53.44	80.62	9	...	+18.814	+0.148	-0.006	1491	3684
1728	42 Leonis Minoris	5.4	10. 39. 11.403	79.64	3	...	+ 3.3532	-0.0226	-0.0036	58. 41. 10.11	79.68	7	...	+18.820	+0.161	+0.017	1490	3685
1729	37 Sextantis	6.2	10. 39. 50.757	79.79	8	...	+ 3.1286	-0.0059	-0.0029	82. 59. 41.60	79.79	8	...	+18.840	+0.148	+0.028	1493	3690
1730	51 Leonis	5.7	10. 39. 56.495	79.75	4	...	+ 3.2345	-0.0134	+0.0055	70. 28. 34.87	79.75	4	...	+18.843	+0.153	+0.036	1492	3691
1731	52 Leonis	5.7	10. 40. 3.956	79.31	3	...	+ 3.1933	-0.0104	-0.0109	75. 10. 20.08	80.40	6	...	+18.847	+0.151	+0.064	1494	3693
1732	53 Leonis	5.3	10. 42. 56.906	81.77	29	...	+ 3.1597	-0.0081	-0.0015	78. 49. 12.99	83.83	41	...	+18.932	+0.144	+0.020	1500	3708
1733	44 Leonis Minoris	6.3*	10. 43. 17.880	80.26	3	...	+ 3.3118	-0.0200	-0.0022	61. 23. 34.84	80.26	3	...	+18.942	+0.151	-0.047	1501	3710
1734	Hydræ	3.3	10. 43. 42.304	78.30	3	...	+ 2.9506	+0.0052	+0.0049	105. 33. 58.68	78.30	3	...	+18.953	+0.133	-0.215	1504	3715
1735	W. B. X. 760	6.2	10. 43. 43.253	83.21	3	...	+ 3.0014	+0.0023	...	99. 13. 2.65	83.21	3	...	+18.954	+0.135	...	...	...
1736	42 Ursæ Majoris	5.7	10. 43. 50.432	79.05	5	...	+ 3.8265	-0.0752	-0.0079	30. 2. 35.72	79.69	18	...	+18.957	+0.174	+0.045	1498	3714
1737	Oeltz. Arg. (N.) 111176	8.7*	10. 45. 0.937	85.63	3	3	+ 3.9075	-0.0873	...	27. 13. 16.95	84.89	4	3	+18.990	+0.175	...	...	...
1738	Groombridge 1697...	6.1	10. 45. 16.445	82.74	4	3	+ 4.2813	-0.1453	-0.0866	19. 30. 25.50	83.05	4	8	+18.997	+0.192	+0.117	...	...
1739	Piazzi X. 170.....	6.6	10. 45. 17.697	84.31	3	3	+ 3.6446	-0.0542	...	36. 47. 51.86	83.95	3	3	+18.998	+0.162	...	...	...
1740	Piazzi X. 171.....	6.5	10. 45. 19.649	84.77	5	3	+ 3.6431	-0.0541	...	36. 51. 30.58	84.63	5	3	+18.999	+0.162	...	...	...
1741	B. F. 1549	6.9*	10. 46. 3.735	80.09	9	...	+ 3.0846	-0.0029	...	88. 20. 18.87	80.09	9	...	+19.020	+0.135	...	...	3726
1742	44 Ursæ Majoris	5.4	10. 46. 17.985	84.58	4	1	+ 3.6808	-0.0592	-0.0108	34. 46. 38.44	84.41	4	1	+19.026	+0.162	+0.007	1506	3725
1743	46 Leonis Minoris	3.9	10. 46. 35.869	80.32	4	...	+ 3.3655	-0.0256	+0.0053	55. 8. 19.18	80.33	22	...	+19.035	+0.146	+0.246	1509	3728
1744	W. B. X. 844	5.9	10. 47. 37.102	83.28	3	...	+ 3.0615	-0.0012	...	91. 29. 30.83	83.50	8	...	+19.062	+0.131	...	...	3732
1745	Bradley 1514	5.2	10. 49. 5.433	83.18	1	...	+ 3.3484	-0.0248	-0.012	55. 51. 10.18	83.18	1	...	+19.102	+0.141	+0.026	1514	3741
1746	54 Leonis.....		10. 49. 6.826	78.29	3	...	+ 3.2655	-0.0172	-0.0065	64. 36. 38.29	79.81	13	...	+19.102	+0.137	-0.011	1515	3742
1747	W. B. (2) X. 966 ...	4.3	10. 49. 7.331	78.29	3	...	+ 3.2654	-0.0172	...	64. 36. 39.96	78.29	3	...	+19.103	+0.137	...	...	...
1748	55 Leonis.....	6.0	10. 49. 31.963	79.96	6	...	+ 3.0820	-0.0025	+0.0057	88. 37. 25.38	79.96	6	...	+19.114	+0.128	-0.008	1517	3749
1749	Bradley 1508	6.3	10. 50. 18.331	81.21	5	3	+ 5.0248	-0.3183	-0.0261	11. 35. 15.22	80.79	11	3	+19.134	+0.211	+0.029	1508	3747
1750	Lalande 21055	6.4	10. 52. 12.087	79.96	3	...	+ 3.5807	-0.0516	...	37. 28. 31.80	79.96	3	...	+19.183	+0.144	...	...	...
1751	47 Ursæ Majoris.....	5.2	10. 52. 44.551	79.85	3	...	+ 3.4093	-0.0322	-0.0298	48. 55. 45.99	79.85	3	...	+19.197	+0.136	-0.060	1522	3757
1752	Piazzi X. 203.....	6.3	10. 52. 50.842	78.62	3	...	+ 3.3605	-0.0272	...	53. 15. 46.03	78.62	3	...	+19.200	+0.133	...	...	...
1753	Groombridge 1722...	5.7	10. 53. 20.866	85.42	6	4	+ 3.4716	-0.0394	...	43. 49. 51.09	84.70	6	(4)	+19.213	+0.137	...	...	3758
1754	Groombridge 1723...	6.1	10. 53. 32.075	84.57	3	...	+ 3.4358	-0.0355	...	46. 26. 28.06	84.57	3	...	+19.217	+0.135	...	...	3760
1755	Lalande 21110	6.3	10. 53. 35.084	85.44	5	...	+ 2.9648	+0.0059	...	105. 42. 38.99	85.34	13	..	+19.218	+0.115	...	...	...
1756	7 Crateris	4.1	10. 53. 55.668	79.66	3	...	+ 2.9513	+0.0068	-0.0343	107. 39. 36.49	79.66	3	...	+19.227	+0.114	-0.157	1525	3766
1757	W. B. X. 951	6.2	10. 54. 13.587	83.25	3	...	+ 2.9819	+0.0049	...	103. 26. 22.47	83.25	3	...	+19.234	+0.115	...	...	...
1758	58 Leonis	5.0	10. 54. 21.761	83.22	25	...	+ 3.1004	-0.0038	-0.0018	85. 44. 19.01	82.83	36	...	+19.238	+0.119	+0.012	1526	3768
1759	59 Leonis	5.1	10. 54. 31.556	78.51	4	...	+ 3.1169	-0.0051	-0.0057	83. 15. 15.26	77.51	4	...	+19.242	+0.120	0.000	1527	3769
1760	Bradley 1521	8.0*	10. 54. 33.875	83.81	3	4	+ 4.5924	-0.2324	-0.0099	13. 54. 47.39	84.13	3	6	+19.242	+0.180	+0.023	1521	3764

1721. The limits of magnitude are 6.0 — 8.2 and 13.2; the period about 305^d.4.
 1725, 1726. The magnitudes given in Struve's *Mensura Micrometrica* are 7.2 and 6.1.
 1738. Authority for Proper Motion: Bonn Observations, Vol. VII.
 1746, 1747. The magnitudes given in Struve's *Mensura Micrometrica* are 5.0 and 7.0.

1724. B. A. O assigns this star to Leo.
 1734. This star is designated 4 Crateris in B. F.
 1745. This star is designated 46 Ursæ Majoris in B. F.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1761	48 Ursæ Majoris	2.6	10. 54. 35.394	82.09	5	9	+ 3.6525	-0.0627	+0.0085	32. 58. 29.05	82.15	4	11	+19.243	+0.142	-0.047	1523	3767
1762	60 Leonis	4.5	10. 55. 55.290	79.83	5	...	+ 3.2126	-0.0135	-0.0029	69. 10. 36.54	79.39	7	...	+19.275	+0.121	-0.047	1529	3776
1763	50 Ursæ Majoris	2.0	10. 56. 18.597	82.49	35	16	+ 3.7737	-0.0819	-0.0180	27. 36. 5.77	82.15	80	21	+19.285	+0.143	+0.071	1528	3777
1764	W. B. (2) X. 1112 ...	7.3*	10. 56. 46.493	80.89	5	...	+ 3.3444	-0.0269	-0.0453	53. 13. 34.61	80.89	5	...	+19.296	+0.125	+4.716	...	...
1765	Lalande 21203	5.6	10. 57. 14.742	85.55	3	...	+ 3.0043	+0.0037	...	100. 39. 16.94	85.55	3	...	+19.307	+0.110	...	...	...
1766	62 Leonis	6.2	10. 57. 28.045	80.93	6	...	+ 3.0764	-0.0018	-0.0071	89. 21. 17.87	80.93	6	...	+19.312	+0.113	-0.017	1533	3782
1767	51 Ursæ Majoris	5.8	10. 57. 50.748	82.04	4	...	+ 3.3611	-0.0292	-0.0080	51. 6. 45.18	82.04	4	...	+19.321	+0.123	+0.013	1532	3784
1768	Radcliffe 2617	7.4*	10. 58. 3.471	82.69	2	...	+ 3.3602	-0.0292	...	51. 6. 26.26	82.69	2	...	+19.326	+0.123	...	...	...
1769	63 Leonis	4.7	10. 58. 49.611	82.98	26	...	+ 3.1218	-0.0056	-0.0255	82. 0. 56.60	83.79	23	...	+19.344	+0.112	+0.022	1535	3788
1770	W. B. (2) X. 1174 ...	8.5*	10. 59. 30.541	84.31	6	1	+ 3.4107	-0.0357	-0.4004	45. 51. 26.19	83.90	6	(1)	+19.360	+0.121	-0.943	...	...
1771	Piazzi X. 235	7.5*	10. 59. 32.606	84.99	3	2	+ 3.6038	-0.0608	...	33. 15. 36.27	84.73	3	2	+19.361	+0.129	...	...	...
1772	Hydræ	5.2	10. 59. 33.113	78.49	4	...	+ 2.8974	+0.0115	-0.0173	116. 38. 46.05	78.49	4	...	+19.361	+0.102	+0.008	1536	3793
1773	Lalande (F.) 1729 ...	7.5*	10. 59. (28.)	...	...	...	+14.7573	-8.3250	...	1.42. 30.29	84.15	3	...	+19.361	+0.552	...	...	...
1774	Hydræ	5.6	11. 0. 8.579	78.24	2	...	+ 2.8991	+0.0116	+0.0006	116. 38. 23.09	78.23	1	...	+19.374	+0.101	+0.008	1538	3794
1775	W. B. (2) X. 1188 ...	6.5*	11. 0. 22.291	79.63	3	...	+ 3.1866	-0.0117	...	71. 36. 49.58	78.69	8	...	+19.379	+0.111	...	...	...
1776	Piazzi X. 241	8.2*	11. 0. 25.258	80.55	4	...	+ 3.0875	-0.0026	...	87. 28. 15.95	80.55	4	...	+19.380	+0.107	...	...	3795
1777	65 Leonis	5.7	11. 0. 46.942	80.90	10	...	+ 3.0879	-0.0026	-0.0287	87. 23. 37.09	80.90	10	...	+19.389	+0.107	+0.060	1539	3798
1778	Oeltz Arg. (N.) 11438	8.9*	11. 1. 9.078	86.83	...	2	+ 3.9061	-0.1111	...	22. 9. 7.06	86.83	...	2	+19.397	+0.136	...	...	...
1779	Oeltz Arg. (N.) 11453	6.0	11. 2. 2.103	82.53	5	5	+ 3.8946	-0.1107	...	22. 8. 21.60	85.30	5	6	+19.416	+0.134	...	...	...
1780	67 Leonis	5.6	11. 2. 22.636	79.83	5	...	+ 3.2296	-0.0164	-0.0014	64. 41. 32.03	79.82	9	...	+19.424	+0.109	-0.012	1541	3809
1781	Bradley 1544	5.4	11. 2. 55.608	79.92	3	...	+ 2.9013	+0.0122	-0.0065	117. 25. 50.92	79.92	3	...	+19.436	+0.096	-0.033	1544	3815
1782	Piazzi XI. 2	5.6	11. 4. 7.534	84.25	9	...	+ 2.8729	+0.0145	...	121. 42. 58.77	84.25	9	...	+19.461	+0.093	...	...	3822
1783	Oeltz Arg. (N.) 11509	6.6	11. 4. 30.266	82.33	6	6	+ 3.9039	-0.1174	...	21. 4. 37.97	81.72	13	11	+19.469	+0.128	...	...	3821
1784	11 Crateris	4.4	11. 5. 45.437	79.30	3	...	+ 2.9446	+0.0099	-0.0018	112. 10. 15.71	79.30	3	...	+19.495	+0.092	+0.088	1545	3826
1785	W. B. XI. 57	8.4*	11. 6. 1.010	80.23	1	...	+ 3.1493	-0.0086	...	76. 7. 38.62	80.23	1	...	+19.501	+0.099	...	...	...
1786	Lalande 21445	6.2	11. 6. 33.318	83.26	3	...	+ 2.9729	+0.0078	...	107. 50. 49.95	83.26	3	...	+19.512	+0.092	...	...	...
1787	Lalande (F.) 1831 ...	6.5*	11. 7. 18.270	79.95	3	...	+ 4.1438	-0.1750	-0.1029	15. 52. 31.33	79.95	3	...	+19.526	+0.129	-0.117	...	...
1788	Lalande (F.) 1830 ...	...	11. 7. 20.878	79.95	3	...	+ 4.1428	-0.1750	...	15. 52. 31.62	80.27	2	...	+19.527	+0.129	...	...	...
1789	69 Leonis	5.5	11. 7. 36.986	80.31	9	...	+ 3.0754	-0.0013	-0.0028	89. 25. 0.85	80.57	11	...	+19.533	+0.093	-0.011	1547	3832
1790	B. F. 1589	7.2*	11. 7. 43.451	81.78	9	...	+ 3.0877	-0.0025	...	87. 4. 39.01	81.78	9	...	+19.535	+0.093	...	...	3836
1791	68 Leonis	2.8	11. 7. 43.497	81.73	43	...	+ 3.1895	-0.0132	+0.0102	68. 49. 8.89	81.74	64	...	+19.535	+0.097	+0.115	1546	3834
1792	Piazzi XI. 12	5.9	11. 7. 47.632	86.20	4	...	+ 3.1186	-0.0056	...	81. 16. 59.43	86.23	5	...	+19.536	+0.094	...	...	3837
1793	70 Leonis	3.5	11. 7. 56.524	81.25	8	...	+ 3.1591	-0.0099	-0.0059	73. 54. 53.51	80.49	11	...	+19.539	+0.095	+0.063	1548	3838
1794	72 Leonis	4.9	11. 8. 49.169	79.66	3	...	+ 3.2026	-0.0149	-0.0038	66. 15. 2.81	79.66	3	...	+19.556	+0.095	-0.003	1549	3842
1795	74 Leonis	4.5	11. 10. 33.630	80.38	1	...	+ 3.0573	+0.0007	-0.0083	92. 59. 44.87	80.38	1	...	+19.590	+0.087	+0.024	1551	3848
1796	W. B. XI. 148	6.0	11. 10. 53.306	85.49	5	...	+ 3.0400	+0.0025	...	96. 28. 48.86	85.74	11	...	+19.596	+0.086	...	...	...
1797	W. B. XI. 152	...	11. 10. 57.455	85.53	4	...	+ 3.0400	+0.0025	...	96. 28. 56.14	85.53	4	...	+19.597	+0.086	...	...	...
1798	75 Leonis	5.4	11. 11. 6.860	82.24	5	...	+ 3.0855	-0.0022	+0.0023	87. 19. 47.69	82.70	6	...	+19.600	+0.087	+0.144	1552	3850
1799	53 Ursæ Majoris	4.9†	11. 11. 46.726	78.56	7	...	+ 3.2481	-0.0213	-0.0367	57. 47. 45.06	78.44	6	...	+19.612	+0.091	+0.573	...	...
1800	53 Ursæ Majoris (mean)	3.8	11. 11. (46.)	...	...	...	+ 3.2481	-0.0213	-0.0367	57. 47. 45.08	79.26	1	...	+19.612	+0.091	+0.573	1553	3851

1761. The magnitude given in the *Uranometria Nova Osoniensis* is 2.2.

1767, 1768. The magnitudes given in B. D. are 6.2 and 7.4.

1772. This star is designated 9 Crateris in B. F.

1783. The magnitude given in the *Uranometria Nova Osoniensis* is 6.1.1787, 1788. The magnitudes given in Struve's *Mensure Micrometricæ* are 7.0 and 7.5.1799. The magnitude is taken from Struve's *Mensure Micrometricæ*.

1764. Authority for Proper Motion: Bonn Observations, Vol. VII.

1770. Authority for Proper Motion: Bonn Observations, Vol. VII.

1781. This star is designated 10 Crateris in B. F.

1787. Authority for Proper Motion: Bonn Observations, Vol. VII.

1796, 1797. The magnitudes given in B. D. are 6.5 and 9.2.

{xlviij}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1801	53 Ursæ Majoris	4.9†	11. 11. 46.922	78.64	3	...	+ 3.2481	-0.0213	-0.0367	57. 47. 45.74	78.33	2	...	+19.612	+0.091	+0.573	...	...
1802	54 Ursæ Majoris	3.8	11. 11. 59.656	79.27	7	...	+ 3.2580	-0.0227	+0.0005	56. 15. 4.15	80.12	12	...	+19.616	+0.090	-0.052	1554	3852
1803	55 Ursæ Majoris	4.8	11. 12. 35.283	79.92	3	...	+ 3.2935	-0.0277	-0.0058	51. 9. 22.87	79.92	3	...	+19.627	+0.090	+0.068	1555	3856
1804	12 Crateris	3.9	11. 13. 20.489	81.86	26	...	+ 3.0043	+0.0064	-0.0106	104. 7. 46.09	82.94	21	...	+19.640	+0.080	-0.209	1557	3859
1805	Piazzi XI. 34.....	6.4	11. 13. 32.497	84.81	3	4	+ 3.7307	-0.1032	...	22. 14. 27.54	84.58	3	4	+19.644	+0.101	...	...	...
1806	Oeltz Arg.(N.) 11677	9.0*	11. 13. 45.349	83.01	5	1	+ 3.6883	-0.0952	...	23. 30. 11.29	82.84	5	1	+19.648	+0.099	...	...	...
1807	77 Leonis	4.1	11. 14. 56.888	79.05	8	...	+ 3.1029	-0.0041	-0.0071	83. 18. 47.76	79.05	8	...	+19.668	+0.080	0.000	1558	3862
1808	Piazzi XI. 43.....	5.9	11. 15. 42.798	82.53	3	6	+ 3.6225	-0.0861	-0.0174	25. 0. 47.22	81.21	19	12	+19.681	+0.093	-0.027	...	3864
1809	71 Leonis	6.7*	11. 16. 12.061	79.70	5	...	+ 3.1553	-0.0107	...	71. 54. 17.79	80.69	21	...	+19.689	+0.079	...	...	3869
1810	78 Leonis (1st Star) ...	4.0	11. 17. 40.089	86.23	12	...	+ 3.1209	-0.0065	+0.0085	78. 48. 35.90	86.23	13	...	+19.713	+0.075	+0.063	1560	3877
1811	78 Leonis (2nd Star) ...	5.5	11. 17. 40.325	86.24	1	...	+ 3.1209	-0.0065	+0.0085	78. 48. 33.39	86.24	1	...	+19.713	+0.075	+0.063	...	...
1812	79 Leonis	5.5	11. 17. 52.819	80.48	7	...	+ 3.0811	-0.0015	-0.0034	87. 56. 2.24	80.48	7	...	+19.717	+0.074	-0.008	1562	3879
1813	14 Crateris	5.0	11. 18. 32.945	78.61	3	...	+ 3.0290	+0.0048	-0.0041	100. 12. 4.60	78.61	3	...	+19.727	+0.071	-0.050	1563	3881
1814	Piazzi XI. 60.....	5.8	11. 18. 45.437	83.26	4	...	+ 3.1236	-0.0069	...	77. 54. 38.65	83.79	8	...	+19.730	+0.073	...	...	3882
1815	Piazzi IX. 59	5.9	11. 19. 10.438	84.50	4	4	+ 3.4302	-0.0553	...	33. 29. 30.67	84.38	5	5	+19.737	+0.080	...	...	3885
1816	81 Leonis	5.5	11. 19. 20.940	79.66	5	...	+ 3.1449	-0.0099	-0.012	72. 53. 2.82	80.36	16	...	+19.740	+0.072	+0.003	1565	3886
1817	83 Leonis	6.1	11. 20. 40.836	78.95	3	...	+ 3.0869	-0.0022	-0.0514	86. 19. 59.26	78.95	3	...	+19.760	+0.068	-0.181	1568	3894
1818	Piazzi XI. 71	5.1	11. 20. 41.833	78.95	3	...	+ 3.0869	-0.0022	-0.0514	86. 20. 24.41	78.95	3	...	+19.760	+0.068	-0.181	...	...
1819	84 Leonis	5.1	11. 21. 45.950	82.47	33	...	+ 3.0859	-0.0021	-0.0010	86. 28. 59.30	82.33	44	...	+19.776	+0.066	+0.006	1570	3900
1820	W. B. XI. 349.....	5.1	11. 21. 46.778	80.52	8	...	+ 3.0858	-0.0021	-0.0010	86. 30. 31.28	81.25	11	...	+19.776	+0.066	+0.006	...	...
1821	Piazzi XI. 74.....	5.8	11. 22. 12.530	81.71	3	3	+ 3.4927	-0.0723	-0.0192	27. 34. 8.05	80.11	9	3	+19.782	+0.075	-0.253	...	3904
1822	Groombridge 1787...	5.9	11. 22. 59.870	85.54	4	3	+ 3.4083	-0.0565	...	32. 36. 1.36	85.31	5	3	+19.794	+0.071	...	...	...
1823	Groombridge 1782...	6.1	11. 23. 18.898	82.37	3	3	+ 4.5488	-0.4014	...	8. 12. 44.10	83.67	3	7	+19.798	+0.097	...	...	3906
1824	Lacaille 4757.....	5.7	11. 23. 40.673	85.08	4	...	+ 2.9792	+0.0121	...	113. 48. 12.62	85.98	4	...	+19.803	+0.060	...	...	...
1825	58 Ursæ Majoris	5.9	11. 24. 1.335	84.69	3	...	+ 3.2730	-0.0322	-0.0062	46. 10. 5.25	85.35	5	...	+19.808	+0.066	-0.070	1574	3913
1826	87 Leonis	5.1	11. 24. 11.007	80.81	14	...	+ 3.0638	+0.0011	-0.0005	92. 20. 29.65	80.81	14	...	+19.810	+0.061	0.000	1576	3916
1827	86 Leonis	5.7	11. 24. 13.246	79.29	4	...	+ 3.1442	-0.0108	-0.0078	70. 55. 46.75	81.46	17	...	+19.810	+0.063	-0.025	1575	3915
1828	1 Draconis	4.1	11. 24. 15.806	82.25	23	9	+ 3.6425	-0.1115	-0.0085	20. 0. 24.53	82.00	49	11	+19.811	+0.074	+0.027	1572	3914
1829	Groombridge 1797...	5.6	11. 25. 32.300	84.81	3	4	+ 3.4450	-0.0686	...	28. 15. 11.20	84.70	3	4	+19.828	+0.067	...	...	3918
1830	W. B. (2) XI. 448-9	6.1	11. 25. 32.488	82.55	4	...	+ 3.1261	-0.0083	-0.0255	74. 57. 50.01	82.55	4	...	+19.828	+0.060	+0.182	...	...
1831	88 Leonis	5.0	11. 25. 33.161	82.19	9	...	+ 3.1260	-0.0083	-0.0255	74. 58. 2.34	82.03	12	...	+19.828	+0.060	+0.182	1577	3919
1832	Piazzi XI. 95.....	5.0	11. 26. 19.283	81.78	8	...	+ 2.9655	+0.0151	+0.0020	118. 36. 21.00	82.78	8	...	+19.838	+0.055	-0.180	1578	3921
1833	Bradley 1578.....	3.8	11. 26. 19.674	81.41	7	...	+ 2.9656	+0.0151	+0.0020	118. 36. 12.69	82.78	8	...	+19.838	+0.055	-0.180	...	3922
1834	Bradley 1580.....	5.7	11. 27. 6.142	82.25	5	...	+ 2.9565	+0.0167	-0.0166	121. 11. 38.30	82.08	6	...	+19.848	+0.053	+0.025	1580	3928
1835	Lalande 21944	5.7	11. 27. 11.460	84.20	3	...	+ 3.0190	+0.0081	...	105. 36. 58.94	84.20	3	...	+19.849	+0.054	...	...	...
1836	Groombridge 1800...	6.2†	11. 28. 27.797	85.66	5	4	+ 3.3386	-0.0504	...	34. 33. 6.65	85.54	4	3	+19.865	+0.058	...	...	3931
1837	Bradley 1584.....	5.5	11. 28. 39.728	86.59	2	...	+ 2.9575	+0.0174	-0.053	122. 11. 44.06	86.16	3	...	+19.867	+0.050	-0.868	1584	3934
1838	2 Draconis.....	5.5	11. 28. 59.838	80.05	3	3	+ 3.5674	-0.1075	+0.0191	20. 0. 34.24	80.15	5	7	+19.871	+0.062	+0.127	1581	3933
1839	W. B. XI. 481	6.7*	11. 29. 18.684	83.59	3	...	+ 3.1098	-0.0062	...	78. 8. 50.57	83.59	3	...	+19.875	+0.052	...	...	...
1840	Piazzi XI. III.	5.8	11. 29. 58.959	79.98	3	...	+ 3.1669	-0.0169	...	61. 33. 20.04	79.59	10	...	+19.883	+0.052	...	...	3937

1801. The magnitude is taken from Struve's *Mensura Micrometrica*.1805. The magnitude given in the *Uranometria Nova Ozoniensis* is 6.1.1816. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.8.

1819, 1820. The magnitudes given in B. D. are 5.0 and 8.2.

1827. The magnitude given in the *Uranometria Nova Ozoniensis* is 6.0.1830, 1831. The magnitudes given in Struve's *Mensura Micrometrica* are 8.4 and 6.4.

1833. This star is designated 17 Crateris in B. F.

1837. The magnitude is taken from the *Uranometria Argentina*. This star is designated 20 Crateris in B. F.1802. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.5.1810, 1811. The magnitudes given in Struve's *Mensura Micrometrica* are 3.9 and 7.1.

1817, 1818. The magnitudes given in B. D. are 7.5 and 8.0.

1821. Authority for Proper Motion: Bonn Observations, Vol. VII.

1828. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.8.1832, 1833. In the *Uranometria Argentina* the magnitude of each star is 6.

1834. This star is designated 19 Crateris in B. F.

1899GOAMM. 49J...1C	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1841	21 Crateris	4.7	11. 30. 35.671	80.31	2	...	+ 3.0448	+0.0049	-0.0058	99. 8. 19.32	79.65	3	...	+19.890	+0.048	-0.032	1585	3943
1842	91 Leonis	4.5	11. 30. 48.260	82.39	33	...	+ 3.0718	+0.0003	-0.0018	90. 9. 41.05	81.71	47	...	+19.892	+0.048	-0.047	1586	3946
1843	59 Ursæ Majoris.....	5.5	11. 31. 56.711	84.21	4	...	+ 3.2315	-0.0317	-0.0145	45. 42. 32.76	84.21	3	...	+19.904	+0.049	+0.055	1588	3952
1844	1 Virginis	5.5	11. 32. 16.286	84.05	10	...	+ 3.0973	-0.0043	-0.0020	81. 12. 6.33	84.68	9	...	+19.908	+0.046	+0.001	1590	3954
1845	Radcliffe 2724	6.5*	11. 32. 24.687	80.05	4	...	+ 3.2372	-0.0335	...	44. 13. 41.44	80.05	4	...	+19.909	+0.048	...	...	...
1846	Groombridge 1812...	6.5*	11. 32. 25.664	80.05	4	...	+ 3.2372	-0.0335	-0.0613	44. 13. 40.40	79.96	3	...	+19.909	+0.048	-0.035	...	...
1847	Oeltz.Arg.(N.)11942	9.0*	11. 32. 34.307	80.29	3	...	+ 3.2363	-0.0334	...	44. 13. 37.48	80.29	3	...	+19.911	+0.048	...	...	...
1848	Groombridge 1813...	7.7*	11. 33. 24.381	80.05	4	...	+ 3.2316	-0.0334	...	44. 10. 42.30	80.05	4	...	+19.919	+0.046	...	...	...
1849	W. B. XI. 563	6.5*	11. 33. 46.682	85.25	3	...	+ 3.0348	+0.0076	...	103. 48. 13.10	85.25	3	...	+19.923	+0.042	...	...	...
1850	92 Leonis.....	5.5	11. 34. 32.616	79.09	5	...	+ 3.1322	-0.0120	-0.0049	67. 58. 50.64	80.15	8	...	+19.931	+0.042	+0.049	1592	3964
1851	Bradley 1597.....	5.4	11. 35. 44.695	84.65	3	...	+ 2.9846	+0.0180	-0.006	121. 49. 59.93	84.65	3	...	+19.942	+0.038	0.000	1597	3969
1852	3 Draconis.....	5.5	11. 35. 45.919	82.33	6	3	+ 3.4114	-0.0868	-0.0063	22. 35. 27.80	82.98	19	6	+19.942	+0.044	-0.033	1595	3968
1853	Piazzi XI. 146	6.5*	11. 37. 15.905	81.27	4	...	+ 3.1931	-0.0288	...	47. 36. 41.83	80.40	8	...	+19.956	+0.038	...	...	3973
1854	Piazzi XI. 148	6.5*	11. 37. 47.363	79.11	5	...	+ 3.0587	+0.0038	...	96. 0. 36.19	79.11	5	...	+19.960	+0.035	...	...	3975
1855	27 Crateris	4.9	11. 38. 40.908	79.97	3	...	+ 3.0327	+0.0100	+0.0010	107. 41. 1.18	79.97	3	...	+19.968	+0.033	+0.009	1598	3978
1856	Groombridge 1822...	7.8*	11. 39. 15.200	81.52	4	...	+ 3.2082	-0.0357	-0.0620	41. 39. 27.16	81.52	4	...	+19.972	+0.034	+0.252	...	...
1857	3 Virginis	4.2	11. 39. 41.428	86.24	5	...	+ 3.0873	-0.0031	-0.0026	82. 47. 54.72	86.24	7	...	+19.976	+0.030	+0.165	1601	3982
1858	63 Ursæ Majoris.....	3.9	11. 39. 42.544	81.30	2	...	+ 3.2056	-0.0358	-0.0145	41. 33. 18.47	81.30	2	...	+19.976	+0.033	-0.030	1600	3981
1859	Groombridge 1825...	5.3	11. 40. 29.781	85.49	5	...	+ 3.2426	-0.0489	...	33. 42. 15.19	85.49	5	...	+19.982	+0.032	...	...	3985
1860	Groombridge 1826...	6.5*	11. 40. 38.638	82.42	3	4	+ 3.2850	-0.0632	...	27. 55. 49.15	81.57	10	6	+19.983	+0.032	...	...	...
1861	4 Virginis	5.2	11. 41. 44.967	79.34	3	...	+ 3.0890	-0.0039	-0.0048	81. 5. 16.11	79.34	3	...	+19.991	+0.037	-0.024	1602	3989
1862	93 Leonis	4.6	11. 41. 47.630	79.39	3	...	+ 3.1128	-0.0108	-0.0123	69. 6. 51.57	79.15	4	...	+19.991	+0.028	-0.012	1603	3990
1863	Piazzi XI. 151	5.7	11. 42. 41.540	86.33	3	...	+ 3.0229	+0.0151	...	116. 4. 57.05	86.32	4	...	+19.997	+0.025	...	...	3994
1864	Piazzi XI. 162	8.2*	11. 42. 48.200	79.35	1	...	+ 3.0995	-0.0073	...	74. 49. 36.30	79.35	1	...	+19.998	+0.025	...	...	...
1865	94 Leonis	2.2	11. 42. 56.274	82.36	72	...	+ 3.0994	-0.0073	-0.0356	74. 45. 26.42	82.24	52	...	+19.999	+0.025	+0.098	1605	3995
1866	B. F. 1658	5.8	11. 43. 2.863	85.81	4	...	+ 3.1023	-0.0083	...	73. 5. 19.06	85.81	4	...	+19.999	+0.023	...	...	3997
1867	5 Virginis	3.7	11. 44. 26.669	83.04	26	...	+ 3.0762	-0.0003	+0.0481	87. 33. 32.92	83.64	32	...	+20.008	+0.022	+0.262	1606	4002
1868	B. A. C. 4005.....	6.0	11. 44. 45.842	79.63	3	...	+ 3.0927	-0.0059	...	77. 3. 17.66	80.63	6	...	+20.010	+0.021	...	...	4005
1869	Piazzi XI. 167	5.7	11. 44. 54.167	80.29	13	...	+ 3.0651	+0.0035	...	94. 39. 58.31	80.29	13	...	+20.011	+0.021	...	...	4006
1870	Groombridge 1830...	6.4	11. 46. 3.533	78.92	8	...	+ 3.1371	-0.0237	+0.3461	51. 25. 13.92	78.49	14	...	+20.017	+0.019	+5.776	...	4010
1871	Oeltz.Arg.(N.)12144	9.0*	11. 46. 42.330	84.35	3	...	+ 3.1802	-0.0433	...	35. 41. 51.55	84.35	3	...	+20.021	+0.018	...	...	...
1872	64 Ursæ Majoris.....	2.6	11. 47. 30.776	82.31	28	6	+ 3.1738	-0.0432	+0.0098	35. 38. 16.92	82.19	29	6	+20.025	+0.017	-0.008	1608	4017
1873	Lalande 22439	5.6	11. 48. 36.156	83.93	3	...	+ 3.0412	+0.0149	...	115. 2. 55.86	83.93	3	...	+20.029	+0.014	...	...	4024
1874	95 Leonis	5.4	11. 49. 30.217	78.66	3	...	+ 3.0902	-0.0076	-0.0004	73. 41. 8.40	78.66	3	...	+20.033	+0.012	-0.018	1613	4031
1875	Groombridge 1838...	6.2	11. 50. 36.815	81.31	3	3	+ 3.1761	-0.0592	...	27. 46. 53.74	80.20	5	3	+20.037	+0.010	...	...	4036
1876	Groombridge 1841...	6.4	11. 51. 3.965	83.83	4	...	+ 3.1176	-0.0254	...	48. 59. 10.79	83.71	5	...	+20.039	+0.009	...	...	...
1877	Lacaille 4961.....	6.3	11. 52. 47.275	83.94	3	...	+ 3.0525	+0.0153	...	115. 14. 25.90	84.31	2	...	+20.044	+0.005	...	...	4042
1878	W. B. (2) XI. 1013...	6.0	11. 53. 7.005	79.00	3	...	+ 3.0992	-0.0189	...	56. 9. 52.40	79.00	3	...	+20.045	+0.005	...	...	...
1879	7 Virginis.....	5.2	11. 53. 48.130	84.97	7	...	+ 3.0750	-0.0007	-0.0022	85. 40. 35.24	85.27	6	...	+20.047	+0.004	-0.015	1617	4049
1880	Groombridge 1845...	6.2*	11. 54. 0.162	84.49	4	2	+ 3.3064	-0.2295	...	8. 28. 39.01	83.69	12	6	+20.047	+0.004	...	...	4050

1845, 1846. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 8.0 and 5.9.
 1851. This star is designated 26 Crateris in B. F.
 1870. Authority for Proper Motion : Bonn Observations, Vol. VII.
 1874. The letter omicron in the B. A. C. is evidently a misprint.

1846. Authority for Proper Motion : Bonn Observations, Vol. VII.
 1856. Authority for Proper Motion : Bonn Observations, Vol. VII.
 1872. The magnitude given in the *Uranometria Nova Ozoniensis* is 2.3.

{1}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1881	W. B. XI. 914	5.5	h m s 11. 54. 34.957	83.14	6	...	+ 3.0669	+0.0067	+0.0070	99. 45. 43.99	83.16	8	...	+20.049	+0.002	+0.468	...	...
1882	8 Virginis	4.4	11. 54. 43.389	82.46	27	...	+ 3.0762	-0.0022	-0.0028	82. 42. 59.64	82.92	22	...	+20.049	+0.002	+0.017	1618	4052
1883	W. B. (2) XI. 1066..	5.7	11. 55. 30.833	85.02	4	...	+ 3.0918	-0.0209	...	53. 17. 14.69	85.02	4	...	+20.050	0.000	...	...	...
1884	1 Comæ	6.7*	11. 55. 35.469	79.65	6	...	+ 3.0831	-0.0110	-0.0051	67. 14. 13.85	80.10	14	...	+20.051	0.000	+0.005	1620	4056
1885	67 Ursæ Majoris	5.1	11. 56. 1.031	84.28	4	...	+ 3.0945	-0.0273	-0.0294	46. 17. 19.40	84.57	6	...	+20.051	-0.001	-0.060	1621	4057
1886	Piazzi XI. 227	7.5*	11. 58. 34.472	78.28	4	...	+ 3.0729	-0.0004	...	85. 45. 28.35	78.28	4	...	+20.054	-0.006	...	...	4069
1887	Groombridge 1850...	5.7*	11. 58. 41.240	82.96	4	3	+ 3.1881	-0.4868	...	3. 44. 51.77	83.74	4	6	+20.054	-0.006	...	...	4070
1888	9 Virginis	4.3	11. 59. 5.748	82.61	25	...	+ 3.0732	-0.0031	-0.0159	80. 36. 1.92	83.11	22	...	+20.054	-0.007	-0.049	1623	4072
1889	Groombridge 1853...	6.2	11. 59. 35.440	82.83	4	4	+ 3.0770	-0.0587	...	26. 23. 47.42	80.27	23	5	+20.054	-0.008	...	...	4074
1890	Piazzi XI. 230	6.4	11. 59. 51.157	81.63	3	...	+ 3.0723	+0.0032	...	92. 27. 46.59	81.55	4	...	+20.054	-0.005	...	...	4077
1891	1 Corvi	4.3	12. 2. 13.444	79.99	3	...	+ 3.0781	+0.0154	+0.0045	114. 3. 35.22	79.99	3	...	+20.053	-0.013	+0.034	1624	4090
1892	10 Virginis	6.1	12. 3. 32.375	84.73	5	...	+ 3.0714	+0.0008	+0.0008	87. 25. 42.17	84.67	6	...	+20.052	-0.016	+0.187	1625	4094
1893	2 Corvi	3.1	12. 3. 57.246	82.73	29	...	+ 3.0816	+0.0142	-0.0059	111. 57. 8.79	82.88	20	...	+20.051	-0.016	-0.021	1626	4097
1894	Lalande (F.) 2015 ..	7.0*	12. 4. 6.445	82.18	1	...	+ 2.9588	-0.1286	...	11. 56. (40.)	...	...	...	+20.051	-0.016	...	...	...
1895	3 Comæ	6.3	12. 4. 24.630	79.98	3	...	+ 3.0642	-0.0072	-0.0017	72. 31. 22.39	79.98	3	...	+20.051	-0.017	-0.003	1628	4099
1896	Piazzi XII. 3	5.7	12. 4. 40.258	80.01	3	...	+ 3.0579	-0.0135	...	62. 3. 1.22	80.01	3	...	+20.050	-0.018	...	...	4100
1897	3 Corvi	5.3	12. 4. 53.175	86.21	3	...	+ 3.0844	+0.0149	-0.0005	112. 56. 1.71	86.21	3	...	+20.050	-0.018	+0.002	1629	4101
1898	4 Comæ	5.9	12. 5. 45.786	79.01	3	...	+ 3.0555	-0.0125	-0.0035	63. 27. 40.25	78.78	9	...	+20.048	-0.020	+0.037	1630	4107
1899	Bradley 1633	7.3*	12. 6. 8.397	82.52	2	1	+ 2.9024	-0.1238	+0.0042	11. 53. 30.76	82.22	3	1	+20.047	-0.020	+0.04	1633	4111
1900	W. B. XII. 69	7.3*	12. 6. 24.644	80.23	4	...	+ 3.0739	+0.0035	...	92. 25. 51.34	80.23	4	...	+20.046	-0.021	...	...	...
1901	Bradley 1634	5.1	12. 6. 33.490	81.57	6	2	+ 2.8881	-0.1244	+0.0013	11. 43. 0.37	82.51	10	3	+20.046	-0.021	-0.025	1634	4112
1902	W. B. XII. 107	6.1	12. 9. 0.058	82.37	14	...	+ 3.0812	+0.0075	+0.0068	99. 36. 41.34	83.19	24	...	+20.039	-0.026	+0.986	...	...
1903	Lalande 22963	Cum	12. 9. 16.137	85.28	3	...	+ 3.0127	-0.0292	...	42. 13. 0.88	85.28	3	...	+20.038	-0.026	...	...	...
1904	Groombridge 1863...	5.9	12. 9. 24.502	81.76	5	6	+ 2.9143	-0.0747	...	19. 7. 55.33	81.66	8	6	+20.037	-0.026	...	...	4122
1905	69 Ursæ Majoris	3.4	12. 9. 28.823	81.46	5	2	+ 2.9848	-0.0421	+0.0133	32. 18. 1.86	81.49	5	3	+20.037	-0.027	-0.004	1637	4123
1906	W. B. XII. 114	8.2*	12. 9. 29.830	80.35	3	...	+ 3.0817	+0.0075	...	99. 36. 20.69	80.35	3	...	+20.037	-0.027	...	...	...
1907	4 Corvi	2.8	12. 9. 38.170	79.36	4	...	+ 3.0893	+0.0116	-0.0123	106. 52. 32.60	79.36	4	...	+20.037	-0.028	-0.034	1638	4124
1908	6 Comæ	5.1	12. 9. 54.551	82.49	5	...	+ 3.0562	-0.0058	-0.0067	74. 25. 58.78	83.02	7	...	+20.036	-0.028	+0.014	1639	4125
1909	W. B. XII. 124	8.6*	12. 9. 58.487	80.23	4	...	+ 3.0747	+0.0037	...	92. 20. 44.78	80.23	4	...	+20.035	-0.028	...	...	...
1910	2 Canum Ven. (1st Star)	6.0	12. 10. 5.505	84.35	2	...	+ 3.0205	-0.0229	+0.0025	48. 40. 21.18	84.35	2	...	+20.035	-0.028	+0.031	1640	4126
1911	2 Canum Ven. (2nd Star)	6.0	12. 10. 6.571	84.35	3	...	+ 3.0204	-0.0229	+0.0025	48. 40. 18.89	84.35	3	...	+20.035	-0.028	+0.031	1641	4127
1912	7 Comæ	5.2	12. 10. 16.194	82.66	2	...	+ 3.0449	-0.0109	-0.0038	65. 23. 15.00	79.54	8	...	+20.034	-0.029	0.000	1641	4127
1913	Piazzi XII. 29	5.1	12. 10. 28.029	84.35	4	...	+ 3.0315	-0.0169	...	56. 16. 3.90	84.05	7	...	+20.033	-0.029	...	...	4128
1914	Lalande 23006	6.7*	12. 10. 51.965	86.25	3	...	+ 3.0905	+0.0112	...	106. 1. 36.77	86.25	3	...	+20.032	-0.030	...	...	...
1915	W. B. (2) XII. 199..	5.6	12. 11. 27.783	82.59	3	...	+ 3.0343	-0.0140	...	60. 23. 50.15	83.28	5	...	+20.029	-0.031	...	...	...
1916	Piazzi XII. 32	6.0	12. 11. 59.862	83.74	4	...	+ 3.0763	+0.0043	...	93. 17. 17.57	83.74	4	...	+20.027	-0.032	...	...	4134
1917	Piazzi XII. 33	6.0	12. 12. 0.271	83.90	3	...	+ 3.0763	+0.0043	...	93. 16. 58.43	83.90	3	...	+20.027	-0.032	...	...	4135
1918	Piazzi XII. 35	7.5*	12. 12. 21.914	81.89	5	...	+ 3.0827	+0.0069	...	98. 14. 6.66	81.89	5	...	+20.025	-0.033	...	...	4136
1919	13 Virginis	6.3*	12. 12. 31.209	83.10	5	...	+ 3.0725	+0.0027	-0.0001	90. 7. 12.09	83.10	5	...	+20.024	-0.033	+0.029	1643	4137
1920	W. B. XII. 172	7.7*	12. 12. 49.155	86.31	3	...	+ 3.0894	+0.0095	...	102. 52. 30.42	85.09	5	...	+20.023	-0.034	...	...	...

1881. Authority for Proper Motion : Bonn Observations, Vol. VII.

1903. In H.P. the magnitude appears as "cum," indicating that the proximity of other stars prevented estimation.

1910, 1911. The magnitudes given in Struve's *Mensurae Micrometricae* are 8.0 and 5.7.

1902. Authority for Proper Motion : Bonn Observations, Vol. VII.

1916, 1917. The magnitudes given in B. D. are 7.5 and 6.8.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{11}

1880	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1921	Bradley 1656	6.3	h m s 12. 13. (21.)	86.97	1	...	+ 1.5687	-0.0084	+0.2786	2. 53. 49.31	86.46	...	4	+20.022	-0.022	+0.02	1656	4150
1922	14 Virginis	7.0*	12. 13. 9.661	82.73	8	...	+ 3.0834	+0.0070	+0.0021	98. 14. 50.65	83.26	11	...	+20.021	-0.034	+0.017	1644	4140
1923	8 Comæ.....	6.3*	12. 13. 15.452	79.96	3	...	+ 3.0384	-0.0101	-0.0034	66. 17. 54.91	81.70	10	...	+20.021	-0.034	+0.003	1645	4141
1924	Bradley 1650	5.8*	12. 13. 25.992	83.78	2	3	+ 2.7622	-0.0915	-0.0084	14. 10. 22.96	84.31	7	4	+20.020	-0.032	-0.007	1650	4143
1925	15 Virginis	4.1	12. 13. 45.968	83.00	31	...	+ 3.0723	+0.0027	-0.0056	89. 59. 59.16	83.53	33	...	+20.018	-0.036	+0.022	1647	4145
1926	16 Virginis	5.2	12. 14. 15.272	85.90	3	...	+ 3.0665	+0.0006	-0.0213	86. 1. 7.36	86.22	2	...	+20.016	-0.036	+0.063	1652	4151
1927	B. F. 1711	5.8	12. 14. 17.660	80.02	3	...	+ 3.0293	-0.0122	...	62. 42. 37.02	80.02	3	...	+20.015	-0.036	...	...	4153
1928	Bradley 1672	6.3	12. 14. 20.767	79.75	2	...	+ 0.1410	+0.9549	-0.0878	1. 38. 5.37	79.75	2	...	+20.015	-0.010	-0.076	1672	4165
1929	11 Comæ.....	4.9	12. 14. 39.207	80.98	3	...	+ 3.0438	-0.0070	-0.0098	71. 32. 37.87	78.72	9	...	+20.013	-0.037	-0.090	1654	4156
1930	Piazzi XII. 54	5.4	12. 14. 43.953	82.79	6	...	+ 3.0920	+0.0096	...	102. 54. 0.36	82.58	7	...	+20.013	-0.038	...	...	4157
1931	70 Ursæ Majoris	5.8	12. 15. 1.638	82.59	3	2	+ 2.9291	-0.0414	+0.0043	31. 28. 2.50	82.89	3	4	+20.011	-0.037	+0.064	1655	4159
1932	Piazzi XII. 57	5.9	12. 16. 8.838	84.06	4	...	+ 3.0275	-0.0110	...	64. 33. 37.54	84.30	5	...	+20.005	-0.040	...	...	...
1933	12 Comæ	4.8	12. 16. 28.309	78.81	4	...	+ 3.0244	-0.0116	-0.0017	63. 39. 15.86	79.63	17	...	+20.003	-0.040	-0.006	1658	4169
1934	W. B. XII. 262.....	8.6*	12. 17. 44.431	86.36	1	...	+ 3.0863	+0.0070	...	97. 42. 9.68	86.36	1	...	+19.994	-0.044	...	...	...
1935	13 Comæ	5.1	12. 18. 17.234	83.24	3	...	+ 3.0186	-0.0115	-0.0020	63. 14. 9.38	83.24	3	...	+19.991	-0.044	+0.021	1661	4181
1936	W. B. XII. 276	6.0	12. 19. 0.342	83.21	3	...	+ 3.0937	+0.0088	...	100. 56. 40.89	83.27	5	...	+19.985	-0.046	...	...	...
1937	Piazzi XII. 75	6.2	12. 19. 12.808	78.68	3	...	+ 3.0211	-0.0102	...	65. 24. 27.52	78.68	3	...	+19.984	-0.046	...	...	4184
1938	Groombridge 1888..	6.3	12. 19. 29.957	81.90	3	3	+ 2.8344	-0.0495	...	25. 31. 56.56	80.64	13	3	+19.982	-0.044	...	...	...
1939	6 Canum Venaticum.	5.3	12. 19. 56.112	83.64	3	...	+ 2.9759	-0.0201	-0.0079	50. 18. 55.79	83.64	3	...	+19.978	-0.046	+0.023	1664	4188
1940	15 Comæ	4.7	12. 20. 57.388	78.86	6	...	+ 3.0048	-0.0126	-0.0081	61. 3. 51.59	80.15	26	...	+19.971	-0.049	+0.086	1666	4195
1941	16 Comæ	5.1	12. 20. 59.192	78.31	3	...	+ 3.0087	-0.0117	-0.0016	62. 30. 34.08	78.31	3	...	+19.970	-0.049	+0.001	1667	4196
1942	Piazzi XII. 87	6.8*	12. 21. 35.813	82.19	1	...	+ 3.1083	+0.0118	...	105. 58.	...	...	...	+19.965	-0.051	...	...	4198
1943	Groombridge 1894..	7.4	12. 21. 39.792	84.39	5	...	+ 2.9586	-0.0216	...	47. 58. 49.81	84.37	5	...	+19.965	-0.049	...	...	...
1944	Piazzi XII. 91.....	5.7	12. 21. 42.134	82.33	20	...	+ 3.0810	+0.0052	...	93. 57. 4.06	82.55	23	...	+19.964	-0.051	...	...	4200
1945	W. B. XII. 334	6.3*	12. 21. 45.995	80.51	7	...	+ 3.0901	+0.0074	...	98. 0. 45.17	80.51	7	...	+19.964	-0.051	...	...	4201
1946	73 Ursæ Majoris	5.9	12. 21. 52.239	85.28	3	...	+ 2.8808	-0.0359	-0.0038	33. 37. 21.91	85.28	3	...	+19.963	-0.049	+0.019	1670	4203
1947	18 Comæ	5.5	12. 23. 26.809	83.50	4	...	+ 3.0093	-0.0099	-0.0033	65. 13. 38.84	83.84	7	...	+19.949	-0.054	+0.004	1674	4209
1948	7 Corvi	3.1	12. 23. 38.381	80.07	4	...	+ 3.1114	+0.0119	-0.0142	105. 51. 10.16	80.07	4	...	+19.948	-0.055	+0.146	...	...
1949	7 Corvi	3.1	12. 23. 39.355	82.03	20	...	+ 3.1114	+0.0119	-0.0142	105. 50. 50.10	82.30	27	...	+19.948	-0.055	+0.146	1675	4211
1950	Piazzi XII. 105	6.0	12. 24. 0.672	85.98	3	...	+ 3.1318	-0.0163	...	113. 1. 59.42	85.98	3	...	+19.944	-0.056	...	...	4214
1951	4 Draconis	5.3	12. 24. 50.647	82.84	9	4	+ 2.6776	-0.0568	-0.007	20. 8. 1.69	82.37	21	9	+19.937	-0.051	+0.064	1680	4222
1952	W. B. XII. 385	8.2*	12. 24. 51.738	86.34	2	...	+ 3.0956	+0.0081	...	99. 7. 27.76	86.34	2	...	+19.936	-0.058	...	...	...
1953	W. B. XII. 387	8.7*	12. 24. 58.370	86.36	1	...	+ 3.0949	+0.0080	...	98. 49. 24.96	86.66	2	...	+19.935	-0.058	...	...	...
1954	21 Comæ	5.5	12. 25. 0.971	78.96	3	...	+ 3.0037	-0.0100	-0.0023	64. 46. 9.46	79.52	5	...	+19.935	-0.056	+0.011	1679	4223
1955	Groombridge 1903 ..	6.2	12. 25. 7.438	84.39	3	...	+ 2.8728	-0.0318	-0.0009	36. 15. 59.38	84.39	3	...	+19.934	-0.055	-0.201	...	...
1956	Piazzi XII. 111	6.3*	12. 25. 28.525	80.44	6	...	+ 3.0837	+0.0056	...	94. 23. 26.27	80.44	6	...	+19.930	-0.059	...	...	4225
1957	8 Corvi	4.5	12. 25. 53.189	84.64	3	...	+ 3.1142	+0.0118	-0.0326	105. 31. 53.12	84.67	9	...	+19.927	-0.060	+0.049	1681	4226
1958	W. B. XII. 417	5.7	12. 26. 23.394	84.84	4	...	+ 3.1083	+0.0105	...	103. 11. 40.44	84.84	4	...	+19.922	-0.061	...	...	...
1959	W. B. XII. 429	5.9	12. 27. 20.938	86.35	3	...	+ 3.1066	+0.0100	...	102. 10. 10.88	85.48	7	...	+19.912	-0.063	...	...	...
1960	21 Virginis	5.7	12. 27. 35.205	81.54	10	...	+ 3.0971	+0.0081	-0.0082	98. 47. 24.21	82.12	13	...	+19.909	-0.063	-0.008	1683	4230

1935. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.
 1941. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.4.
 1948, 1949. The magnitudes given in B. D. are 9.0 and 3.0.

1940. The letter γ was added in the B. A. C.
 1943. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.8.
 1955. Authority for Proper Motion : Bonn Observations, Vol. VII.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
1961	8 Canum Venaticum β	4.3	12. 28. 2'54.3	82.87	12	2	+ 2'9253	-0'0206	-0'0650	47. 59. 24.75	81.23	16	(1)	+19'904	-0'061	-0'285	1686	4235
1962	9 Corvi	2.8	12. 28. 5'13.2	82.79	18	...	+ 3'1408	+0'0164	-0'0033	112. 43. 59.28	81.23	15	...	+19'904	-0'065	+0'052	1685	4234
1963	5 Draconis	3.8	12. 28. 21'24.5	84.20	4	16	+ 2'6078	-0'0545	-0'0160	19. 33. 0'38	82.00	19	20	+19'901	-0'056	+0'002	1689	4239
1964	24 Comae (1st Star) ...	5.0	12. 29. 5'15.0	83.79	2	...	+ 3'0139	-0'0063	-0'0009	70. 57. 43'37	83.79	2	...	+19'893	-0'064	-0'031	1688	4242
1965	24 Comae (2nd Star) ...		12. 29. 6'58.4	83.62	3	...	+ 3'0138	-0'0063	-0'0009	70. 57. 43'95	83.62	3	...	+19'893	-0'064	-0'031		
1966	W. B. (2) XII. 602... Cum		12. 29. 19'13.4	85.93	3	...	+ 2'9434	-0'0169	...	52. 54. 46'93	85.93	3	...	+19'890	-0'063	...	...	4244
1967	B. D. + 17° No. 2501	9.1*	12. 30. (13.)	...	...	...	+ 3'0159	-0'0055	...	72. 12. 59'10	81.34	2	...	+19'880	-0'066	...	...	...
1968	Groombridge 1909...	6.8*	12. 30. 28'29.1	82.82	4	3	+ 1'9644	-0'0474	...	9. 5. 15'89	84.15	6	7	+19'877	-0'047	...	...	4249
1969	25 Virginis	5.9	12. 30. 36'51.0	80.43	10	...	+ 3'0884	+0'0063	-0'0035	95. 10. 13'33	79.99	9	...	+19'876	-0'069	+0'019	1690	4247
1970	25 Comae	5.6	12. 30. 57'28.9	81.71	5	...	+ 3'0147	-0'0055	-0'0047	72. 14. 56'49	83.41	9	...	+19'872	-0'068	+0'022	1692	4248
1971	Piazzi XII. 140	5.5	12. 31. 20'67.4	86.36	4	...	+ 3'1631	+0'0192	...	116. 28. 32'22	86.36	4	...	+19'867	-0'071	...	...	4253
1972	W. B. XII. 503	6.3	12. 31. 57'36.4	83.84	4	...	+ 3'0595	+0'0017	...	86. 3. 25'21	83.84	4	...	+19'860	-0'071	...	...	...
1973	Lalande 23618	6.0	12. 32. 28'79.4	84.01	3	...	+ 3'1322	+0'0134	...	107. 35. 27'88	83.83	4	...	+19'853	-0'073	...	...	...
1974	9 Canum Venaticum...	6.1	12. 32. 59'67.4	83.96	3	...	+ 2'9024	-0'0195	-0'0021	48. 27. 53'39	83.96	3	...	+19'847	-0'069	+0'021	1696	4258
1975	Lacaille 5230	7.5†	12. 33. 1'72.7	86.19	1	...	+ 3'1782	+0'0211	...	118. 52. 35'75	86.19	1	...	+19'846	-0'075	...	...	...
1976	26 Virginis	4.7	12. 33. 3'22.1	79.41	14	...	+ 3'0970	+0'0076	-0'0069	97. 20. 6'21	79.41	14	...	+19'846	-0'074	+0'021	1694	4257
1977	26 Comae	5.5	12. 33. 9'11.1	79.94	3	...	+ 2'9955	-0'0074	-0'0069	68. 16. 38'87	79.86	7	...	+19'845	-0'072	+0'005	1695	4260
1978	Lacaille 5232	7.7†	12. 33. 25'30.7	86.36	1	...	+ 3'1799	+0'0213	...	118. 59. 48'10	86.36	1	...	+19'842	-0'076	...	...	...
1979	W. B. (2) XII. 683...	6.3	12. 33. 26'48.9	85.96	3	...	+ 2'9278	-0'0161	...	53. 23. 17'90	85.96	3	...	+19'841	-0'071	...	...	...
1980	W. B. XII. 559		12. 35. 2'19.1	79.62	3	...	+ 3'1169	+0'0105	...	102. 21. 19'37	79.62	3	...	+19'821	-0'078	...	...	...
1981	W. B. XII. 560		12. 35. 2'52.8	79.62	3	...	+ 3'1169	+0'0105	...	102. 21. 22'56	79.62	3	...	+19'821	-0'078	...	...	...
1982	29 Virginis	2.8	12. 35. 34'67.8	81.37	16	...	+ 3'0752	+0'0043	-0'0385	90. 47. 25'21	83.20	32	...	+19'813	-0'078	-0'015	1698	4268
1983	29 Virginis	2.8	12. 35. 34'85.2	81.22	9	...	+ 3'0752	+0'0043	-0'0385	90. 47. 30'58	81.79	14	...	+19'813	-0'078	-0'015	1699	4269
1984	28 Virginis	7.0*	12. 35. 45'36.6	84.30	3	...	+ 3'0972	+0'0075	-0'0012	96. 50. 24'89	84.30	3	...	+19'811	-0'079	+0'028	1700	4269
1985	30 Virginis	5.1	12. 35. 48'63.0	82.57	19	...	+ 3'0322	-0'0016	+0'0033	79. 6. 10'41	81.35	13	...	+19'810	-0'077	+0'088	1701	4271
1986	76 Ursae Majoris	6.1	12. 36. 18'98.3	80.61	5	4	+ 2'6515	-0'0386	-0'0062	26. 37. 40'46	81.09	22	3	+19'803	-0'070	+0'021	1703	4276
1987	W. B. XII. 600	7.0	12. 37. 17'75.9	81.85	6	...	+ 3'1231	+0'0111	...	103. 12. 3'76	82.20	8	...	+19'789	-0'082	...	...	...
1988	Piazzi XII. 168	5.9	12. 37. 36'93.3	84.34	3	...	+ 3'1868	+0'0205	...	117. 39. 53'92	83.85	2	...	+19'785	-0'084	...	...	4278
1989	Groombridge 1919...	6.4	12. 38. 47'08.0	84.18	3	1	+ 2'8490	-0'0208	...	45. 14. 24'25	83.29	3	(2)	+19'768	-0'079	...	...	4282
1990	10 Canum Venaticum...	5.9	12. 39. 18'57.4	78.94	3	...	+ 2'8813	-0'0174	-0'0334	50. 4. 7'49	80.01	7	...	+19'760	-0'080	-0'153	1705	4285
1991	Groombridge 1922...	5.6	12. 39. 29'25.8	84.82	6	...	+ 2'8342	-0'0216	...	43. 54. 12'99	84.82	6	...	+19'757	-0'079	...	...	4287
1992	33 Virginis	5.9	12. 40. 16'73.5	83.31	4	...	+ 3'0302	-0'0010	+0'0180	79. 47. 21'38	83.34	3	...	+19'745	-0'086	+0'444	1706	4288
1993	27 Comae	5.3	12. 40. 39'06.2	84.37	3	...	+ 2'9991	-0'0045	...	72. 46. 0'83	84.37	3	...	+19'740	-0'086	...	...	4290
1994	34 Virginis	5.9	12. 41. 11'17.8	80.02	4	...	+ 3'0188	-0'0022	+0'0026	77. 23. 8'20	81.09	5	...	+19'731	-0'087	+0'019	1707	4292
1995	Piazzi XII. 183	6.1	12. 41. 21'32.7	81.34	4	...	+ 3'0960	+0'0078	...	95. 38. 40'64	81.34	4	...	+19'729	-0'090	...	...	4294
1996	35 Virginis	6.7*	12. 41. 44'80.0	81.72	27	...	+ 3'0544	+0'0021	-0'0030	85. 46. 18'15	82.29	18	...	+19'722	-0'089	+0'006	1708	4296
1997	Lacaille 5285	5.9	12. 42. 2'56.8	85.97	3	...	+ 3'1963	+0'0203	...	116. 56. 24'28	85.97	3	...	+19'718	-0'093	...	...	4297
1998	Groombridge 1926...	5.9	12. 42. 11'14.6	81.53	6	5	+ 2'5829	-0'0356	...	26. 33. 49'47	81.54	6	6	+19'716	-0'077	...	...	4300
1999	7 Draconis	5.8	12. 42. 39'76.4	83.20	5	3	+ 2'4765	-0'0387	0'000	22. 33. 15'57	82.02	21	3	+19'708	-0'075	+0'004	1713	4302
2000	W. B. (2) XII. 854...	6.4	12. 42. 56'19.9	80.01	4	...	+ 2'9536	-0'0086	...	64. 30. 5'43	80.29	3	...	+19'703	-0'089	...	...	...

1961. The letter β was added in the B. A. C.

1966. In H.P. the magnitude appears as "cum," indicating that the proximity of other stars prevented estimation.

1975. The magnitude is taken from the *Uranometria Argentina*.1980, 1981. The magnitude of each star in Struve's *Mensurae Micrometricae* is 6.5.1982, 1983. The magnitude of each star in Struve's *Mensurae Micrometricae* is 3.0.1964, 1965. The magnitudes given in Struve's *Mensurae Micrometricae* are 6.2 and 4.7.1978. The magnitude is taken from the *Argentine General Catalogue*.1991. The magnitude given in the *Uranometria Nova Osoniensis* is 5.3.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{liii}

1899GOAMM. 49J...1C	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2001	11 Canum Venaticum.	6.2	12. 43. 10.279	84.11	4	...	+ 2.7831	-0.0231	-0.001	40. 52. 43.79	84.03	3	...	+19.700	-0.085	-0.002	1712	4303
2002	Groombridge 1930..	6.0	12. 43. 25.833	81.94	3	1	+ 2.6184	-0.0328	...	29. 1. 31.25	82.67	3	3	+19.695	-0.081	...	...	4305
2003	30 Comæ	6.0	12. 43. 26.541	79.15	6	...	+ 2.9372	-0.0100	-0.0083	61. 47. 37.70	79.34	5	...	+19.695	-0.089	-0.035	1711	4304
2004	Groombridge 1931..	5.9	12. 44. 28.430	78.44	5	...	+ 2.8697	-0.0156	...	51. 49. 47.09	78.44	5	...	+19.678	-0.089	...	...	4311
2005	31 Comæ	5.0	12. 45. 51.154	81.81	33	...	+ 2.9299	-0.0097	-0.0027	61. 48. 21.58	81.40	22	...	+19.654	-0.093	+0.018	1715	4315
2006	38 Virginis	6.2*	12. 47. 2.486	84.28	6	...	+ 3.0861	+0.0060	-0.0174	92. 54. 2.87	84.28	6	...	+19.633	-0.100	+0.007	1718	4323
2007	W. B. XII. 780	7.8*	12. 47. 9.749	79.36	1	...	+ 3.0086	-0.0020	...	76. 52. 54.80	79.36	1	...	+19.631	-0.098	...	...	...
2008	35 Comæ	5.1	12. 47. 23.170	80.51	4	...	+ 2.9620	-0.0064	-0.007	68. 5. 8.42	81.29	10	...	+19.627	-0.097	+0.016	1719	4328
2009	41 Virginis	6.4	12. 47. 48.438	79.82	4	...	+ 3.0080	-0.0021	+0.006	76. 55. 43.79	80.98	5	...	+19.620	-0.099	+0.030	1720	4329
2010	W. B. XII. 793	6.0	12. 48. 3.878	84.14	4	...	+ 3.1264	+0.0104	...	100. 59. 50.21	84.27	10	...	+19.615	-0.103	...	...	...
2011	40 Virginis	5.0	12. 48. 6.793	80.24	22	...	+ 3.1159	+0.0092	-0.0035	98. 53. 13.33	80.28	21	...	+19.614	-0.103	+0.017	1721	4330
2012	Bradley 1730	5.0	12. 48. 7.648	82.28	3	3	+ 0.3887	+0.2155	-0.0171	5. 55. 46.74	81.30	5	3	+19.614	-0.020	-0.018	1730	4339
2013	Bradley 1731	5.0	12. 48. 15.564	82.47	2	3	+ 0.3845	+0.2160	-0.0194	5. 56. 4.82	82.28	3	3	+19.612	-0.020	-0.015	1731	4342
2014	W. B. (2) XII. 959 ..	6.4	12. 48. 28.987	84.40	3	...	+ 2.8817	-0.0127	...	55. 48. 54.35	84.40	3	...	+19.607	-0.097	...	...	...
2015	77 Ursæ Majoris	1.9	12. 48. 44.740	80.39	7	6	+ 2.6441	-0.0272	+0.0115	33. 23. 18.89	80.23	7	6	+19.602	-0.090	+0.021	1722	4335
2016	Groombridge 1933..	6.1	12. 49. 27.530	84.57	3	3	+ 2.7560	-0.0208	...	42. 9. 7.58	84.32	3	(3)	+19.589	-0.095	...	...	4341
2017	43 Virginis	3.7	12. 49. 33.525	82.52	36	...	+ 3.0520	+0.0026	-0.0336	85. 57. 0.72	82.07	19	...	+19.587	-0.104	+0.047	1723	4340
2018	Lacaille 5332	6.7	12. 50. 3.183	85.96	3	...	+ 3.2124	+0.0200	...	115. 48. 33.78	85.96	3	...	+19.578	-0.110	...	...	4343
2019	Bradley 1724	3.0	12. 50. 23.521	79.47	14	...	+ 2.8365	-0.0152	-0.0218	51. 2. 13.16	79.73	19	...	+19.571	-0.099	-0.07	1724	4345
2020	12 Canum Venaticum a	3.0	12. 50. 24.772	78.93	22	...	+ 2.8363	-0.0152	-0.0220	51. 2. 0.04	79.07	40	...	+19.571	-0.099	-0.066	1725	4346
2021	8 Draconis	5.3	12. 50. 41.579	80.63	3	3	+ 2.4106	-0.0324	+0.003	23. 54. 36.90	80.37	10	4	+19.566	-0.086	+0.051	1727	4347
2022	Groombridge 1942 ..	6.2	12. 51. 38.883	83.46	3	1	+ 2.7538	-0.0197	...	43. 10. 19.66	83.29	3	(1)	+19.547	-0.098	...	...	4350
2023	W. B. XII. 880	7.7*	12. 52. 52.952	78.88	5	...	+ 3.1218	+0.0096	-0.0573	99. 11. 33.85	78.88	5	...	+19.523	-0.113	-0.165	...	...
2024	36 Comæ	5.0	12. 52. 59.382	78.85	4	...	+ 2.9724	-0.0040	-0.0031	71. 56. 36.41	79.13	4	...	+19.521	-0.108	-0.052	1728	4351
2025	44 Virginis	5.9	12. 53. 28.629	82.82	6	...	+ 3.0894	+0.0066	-0.0036	93. 9. 51.94	82.32	7	...	+19.511	-0.113	-0.010	1729	4352
2026	Groombridge 1946 ..	7.2*	12. 53. 43.330	81.60	6	...	+ 2.2482	-0.0305	...	20. 38. 44.31	81.60	6	...	+19.506	-0.085	...	...	...
2027	46 Virginis	6.1	12. 54. 25.113	83.21	3	...	+ 3.0873	+0.0063	-0.0041	92. 43. 22.81	83.54	9	...	+19.492	-0.114	-0.064	1732	4358
2028	Groombridge 1947 ..	8.0*	12. 54. 29.990	81.50	5	...	+ 2.2333	-0.0298	-0.0586	20. 34. 31.29	81.50	5	...	+19.490	-0.085	-0.257	...	...
2029	37 Comæ	5.1	12. 54. 31.867	79.37	3	...	+ 2.8797	-0.0106	-0.0027	58. 34. 2.70	79.37	3	...	+19.489	-0.107	+0.001	1733	4360
2030	9 Draconis	5.6	12. 55. 22.712	81.54	4	3	+ 2.3095	-0.0296	-0.020	22. 45. 18.56	81.79	8	7	+19.472	-0.089	+0.013	1737	4365
2031	78 Ursæ Majoris	4.8	12. 55. 34.587	85.27	3	...	+ 2.5776	-0.0252	+0.0072	32. 59. 11.31	85.27	3	...	+19.467	-0.099	+0.02	1736	4366
2032	47 Virginis	3.0	12. 56. 12.175	81.96	69	...	+ 3.0056	-0.0007	-0.0192	78. 23. 44.31	82.40	52	...	+19.454	-0.115	-0.029	1735	4367
2033	Piazzi XII. 255	6.0	12. 57. 5.388	80.54	3	1	+ 2.3889	-0.0280	...	25. 44. 41.74	80.40	3	1	+19.435	-0.094	...	...	4371
2034	Lalande 24277	5.6	12. 57. 20.620	83.67	6	...	+ 3.1924	+0.0163	...	109. 56. 19.14	83.67	6	...	+19.430	-0.124	...	...	...
2035	48 Virginis	6.6	12. 57. 43.508	85.82	7	...	+ 3.0899	+0.0066	-0.0060	93. 1. 2.19	85.72	9	...	+19.422	-0.121	+0.018	1738	4373
2036	Groombridge 1953 ..	7.1	12. 58. 24.552	83.97	3	...	+ 2.7507	-0.0166	...	46. 20. 52.22	83.97	3	...	+19.406	-0.110	...	...	...
2037	Lacaille 5400	6.0†	13. 0. 13.694	83.39	1	...	+ 3.3175	+0.0287	...	125. 13. 0.13	83.39	1	...	+19.366	-0.134	...	...	4383
2038	Groombridge 1956 ..	5.7	13. 0. 28.258	85.26	4	3	+ 2.7124	-0.0175	...	44. 5. 21.72	84.14	6	3	+19.360	-0.112	...	...	4389
2039	39 Comæ	6.1	13. 0. 30.295	77.94	6	...	+ 2.9328	-0.0052	-0.0067	68. 12. 8.79	79.76	9	...	+19.360	-0.120	+0.053	1740	4387
2040	49 Virginis	5.2	13. 1. 36.655	80.63	12	...	+ 3.1356	+0.0105	-0.0002	100. 5. 54.68	80.85	11	...	+19.334	-0.130	-0.008	1742	4391

2012, 2013. The magnitudes given in B. D. are 6.5 and 5.5.

2019, 2020. The magnitudes given in Struve's *Mensure Micrometricæ* are 5.7 and 3.2.

2023. Authority for Proper Motion: Bonn Observations, Vol. VII.

2037. The magnitude is taken from the *Uranometria Argentina*.2017. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.5.2020. The letter *a* was added in the B. A. C.

2028. Authority for Proper Motion: Bonn Observations, Vol. VII.

{liv}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2041	Piazzi XII. 278.....	6.3	h m s 13. 1. 38.265	83.63	8	6	+ 2.3845	-0.0253	...	27. 18. 52.62	83.88	12	6	+19.333	-0.101	...	...	4392
2042	B. F. 1805	5.9	13. 2. 17.068	80.89	8	...	+ 3.1249	+0.0096	...	98. 20. 28.59	81.28	8	...	+19.318	-0.131	...	...	4394
2043	45 Hydræ	5.1	13. 2. 35.542	79.72	3	...	+ 3.2215	+0.0183	-0.0042	112. 28. 33.62	79.72	3	...	+19.311	-0.135	+0.040	1744	4395
2044	W. B. XIII. 8	6.0	13. 3. 11.812	83.33	3	...	+ 3.0038	+0.0002	...	79. 20. 14.01	83.35	5	...	+19.297	-0.128	...	...	...
2045	51 Virginis	4.4	13. 3. 44.248	82.63	49	...	+ 3.1038	+0.0078	-0.0043	94. 53. 53.08	83.43	25	...	+19.284	-0.133	+0.037	1747	4401
2046	42 Comæ	4.4	13. 4. 9.028	81.53	5	...	+ 2.9511	-0.0033	-0.0326	71. 50. 7.21	81.36	4	...	+19.274	-0.127	-0.146	1748	4406
2047	15 Canum Venaticum..	6.3	13. 4. 10.583	81.50	4	...	+ 2.7712	-0.0133	-0.0024	50. 49. 34.33	81.81	2	...	+19.273	-0.120	-0.007	1749	4408
2048	17 Canum Venaticum..	6.1	13. 4. 32.541	82.26	5	...	+ 2.7699	-0.0133	-0.0083	50. 51. 46.33	82.99	3	...	+19.264	-0.121	-0.046	1751	4415
2049	53 Virginis	5.1	13. 5. 40.465	83.77	4	...	+ 3.1774	+0.0139	+0.0039	105. 33. 2.76	82.87	5	...	+19.237	-0.139	+0.279	1752	4418
2050	43 Comæ	4.4	13. 6. 16.361	83.20	5	...	+ 2.8655	-0.0079	-0.0605	61. 30. 47.58	84.21	4	...	+19.222	-0.127	-0.897	1755	4421
2051	W. B. (2) XIII. 76..	8.4*	13. 6. 29.415	85.67	3	...	+ 2.9380	-0.0037	...	70. 38. 57.85	85.67	3	...	+19.216	-0.131	...	...	...
2052	Piazzi XIII. 16.....	5.7	13. 6. 34.586	86.12	4	...	+ 2.9895	-0.0004	...	77. 48. 19.78	86.12	4	...	+19.214	-0.133	...	...	4423
2053	Piazzi XIII. 18.....	6.1	13. 6. 44.269	85.56	4	...	+ 2.9372	-0.0037	...	70. 36. 39.51	85.65	3	...	+19.210	-0.131	...	...	...
2054	W. B. (2) XIII. 98..	6.1	13. 7. 22.082	85.38	4	...	+ 2.9361	-0.0036	...	70. 38. 4.67	85.37	3	...	+19.194	-0.132	...	...	...
2055	Piazzi XIII. 27.....	5.0	13. 8. 16.377	86.59	3	...	+ 2.7337	-0.0135	...	49. 12. 40.61	86.59	3	...	+19.171	-0.125	...	...	4433
2056	Lalande 24586	5.7	13. 8. 32.081	85.58	4	...	+ 2.9888	-0.0001	...	78. 1. 51.53	85.58	4	...	+19.164	-0.137	...	...	...
2057	Groombridge 1971..	7.0*	13. 8. 53.231	86.67	2	3	+ 2.0952	-0.0196	...	22. 3. 14.97	86.62	2	3	+19.155	-0.099	...	...	...
2058	Groombridge 1972..	6.7*	13. 9. 21.698	86.67	2	3	+ 2.0898	-0.0193	...	22. 4. 33.96	86.62	2	3	+19.143	-0.099	...	...	...
2059	Piazzi XIII. 31.....	5.5	13. 10. 13.457	85.65	3	...	+ 3.3133	+0.0252	...	120. 52. 13.89	85.65	3	...	+19.120	-0.154	...	...	4437
2060	59 Virginis	5.1	13. 10. 49.119	84.58	4	...	+ 3.0002	+0.0009	-0.0238	79. 56. 54.44	84.58	4	...	+19.105	-0.141	-0.201	1760	4440
2061	58 Virginis	7.0*	13. 11. 9.177	82.83	7	...	+ 3.1437	+0.0109	-0.0075	99. 54. 48.14	82.83	7	...	+19.095	-0.148	-0.032	1761	4442
2062	Piazzi XIII. 41.....	5.6	13. 11. 19.453	86.28	2	...	+ 2.9679	-0.0010	...	75. 41. 32.38	86.28	2	...	+19.091	-0.141	...	...	4444
2063	60 Virginis	5.0	13. 11. 32.760	86.39	3	...	+ 3.0284	+0.0028	-0.0034	83. 53. 50.54	86.41	3	...	+19.085	-0.144	-0.023	1762	4446
2064	61 Virginis	4.8	13. 12. 7.694	84.56	5	...	+ 3.2039	+0.0155	-0.0762	107. 38. 36.07	84.56	5	...	+19.069	-0.153	+1.055	1763	4449
2065	46 Hydræ	3.4	13. 12. 23.938	81.83	4	...	+ 3.2447	+0.0188	+0.0024	112. 32. 17.40	81.83	4	...	+19.062	-0.155	+0.033	1764	4450
2066	Lalande (F.) 2236..	6.1	13. 12. 31.769	81.82	...	3	+ 1.9863	-0.0155	...	20. 57. 32.88	81.82	...	3	+19.059	-0.097	...	...	...
2067	Lalande 24703	5.8	13. 12. 46.340	84.96	3	...	+ 3.0408	+0.0037	...	85. 40. 47.37	84.96	3	...	+19.052	-0.147	...	...	...
2068	Lalande 24708	5.8	13. 13. 1.643	84.80	4	...	+ 3.0404	+0.0037	...	85. 38. 42.66	84.80	4	...	+19.045	-0.147	...	...	...
2069	21 Canum Venaticum..	5.2	13. 13. 8.246	86.93	...	3	+ 2.5669	-0.0170	-0.0045	39. 41. 10.43	86.93	...	3	+19.042	-0.126	+0.001	1767	4456
2070	W. B. (2) XIII. 234.	6.7	13. 13. 33.074	86.34	3	...	+ 2.7686	-0.0105	...	54. 14. 27.62	86.34	3	...	+19.030	-0.136	...	...	4457
2071	Centauri	3.0†	13. 13. 51.100	86.42	1	...	+ 3.3808	+0.0305	...	126. 4. 47.91	86.40	2	...	+19.022	-0.164	...	...	4458
2072	B. F. 1841	5.8	13. 15. 35.605	78.99	3	...	+ 3.0517	+0.0046	...	87. 16. 54.26	78.99	3	...	+18.973	-0.152	...	...	4470
2073	Piazzi XIII. 71.....	6.4	13. 16. 48.821	86.32	3	...	+ 2.6396	-0.0138	...	45. 28. 7.00	86.32	3	...	+18.938	-0.135	...	...	...
2074	66 Virginis	5.8	13. 18. 18.497	85.55	3	...	+ 3.1079	+0.0083	+0.0087	94. 32. 11.45	85.55	3	...	+18.895	-0.160	+0.022	1773	4478
2075	Groombridge 1986..	6.4	13. 18. 27.496	84.69	3	...	+ 2.7259	-0.0107	...	52. 20. 20.24	84.69	3	...	+18.890	-0.142	...	...	4479
2076	67 Virginis	1.2	13. 18. 52.297	81.51	162	...	+ 3.1562	+0.0115	-0.0044	100. 32. 4.53	80.56	86	...	+18.879	-0.163	+0.018	1774	4480
2077	79 Ursæ Majoris.....	2.1	13. 19. 5.485	82.31	4	2	+ 2.4130	-0.0171	+0.0134	34. 26. 51.00	82.42	4	2	+18.872	-0.127	+0.022	1776	4484
2078	79 Ursæ Majoris.....	2.4	13. 19. 6.371	81.39	1	2	+ 2.4129	-0.0171	+0.0147	34. 27. 3.35	81.37	1	2	+18.872	-0.127	+0.034	1777	4486
2079	Piazzi XIII. 77.....	5.9	13. 19. 23.219	84.67	3	...	+ 2.8657	-0.0049	...	65. 31. 11.17	84.67	3	...	+18.863	-0.150	...	...	...
2080	68 Virginis.....	5.5	13. 20. 22.859	80.62	3	...	+ 3.1706	+0.0124	-0.0121	102. 4. 57.37	78.63	3	...	+18.833	-0.167	+0.023	1775	4492

2046. The letter α was added in the B. A. C.
 2053, 2054. The magnitude is taken from p. 91 of the Introduction to H. P.: the magnitudes given in B. D. are 6.5 and 6.3, in the *Uranometria Nova Oxoniensis* 6.7 and 6.5. The magnitude of the 2nd star given in H. P. is 6.8.
 2067, 2068. The magnitude is taken from p. 91 of the Introduction to H. P.: the magnitudes given in B. D. are 6.7 and 7.7, in the *Uranometria Nova Oxoniensis* 6.2 and 6.5. The magnitude of the 1st star given in H. P. is 6.3.
 2073. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.
 2077, 2078. The combined magnitude given in the *Uranometria Nova Oxoniensis* is 2.1; the magnitudes given in Struve's *Mensura Micrometrica* are 2.1 and 4.2.
 2079. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.6.
 2090. The letter β was added in the B. A. C.
 2071. The magnitude is taken from the *Uranometria Argentina*.
 2076. The magnitude given in the *Uranometria Nova Oxoniensis* is 1.0.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley, 1755.	No. in B.A.C., 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2081	69 Virginis	4.9	13. 21. 3.208	81.76	5	...	+ 3.1994	+0.0144	-0.0106	105. 21. 2.84	81.76	5	...	+18.813	-0.170	-0.027	1778	4494
2082	Groombridge 1991 ..	5.7	13. 21. 7.573	86.79	1	3	+ 2.5812	-0.0139	...	43. 20. 48.21	86.41	1	(3)	+18.811	-0.139	...	...	...
2083	Piazzi XIII. 96	6.5*	13. 21. 53.682	83.51	3	5	+ 2.1187	-0.0151	-0.0560	26. 7. 20.50	83.85	3	5	+18.787	-0.116	-0.195	...	4497
2084	70 Virginis	5.2	13. 22. 33.661	79.04	3	...	+ 2.9512	-0.0004	-0.0180	75. 34. 48.19	80.75	6	...	+18.767	-0.160	+0.569	1780	4499
2085	Groombridge 1996 ..	6.7*	13. 23. 1.936	85.99	3	4	+ 2.0394	-0.0133	...	24. 38. 34.05	85.66	4	4	+18.752	-0.113	...	...	...
2086	Piazzi XIII. 109 ...	6.1	13. 23. 4.442	82.69	4	3	+ 1.5204	+0.0078	-0.0024	16. 59. 6.77	82.67	5	7	+18.751	-0.087	+0.023	...	4506
2087	Groombridge 1997 ..	6.7*	13. 23. 8.012	85.99	3	4	+ 2.0390	-0.0133	...	24. 39. 32.36	85.66	4	4	+18.749	-0.114	...	...	...
2088	Groombridge 1994 ..	6.5	13. 23. 8.374	86.50	3	...	+ 2.6547	-0.0115	...	48. 38. 47.52	86.50	3	...	+18.749	-0.145	...	...	...
2089	Hydra	R. Var	13. 23. 9.400	82.96	3	...	+ 3.2704	+0.0193	...	112. 39. 37.37	82.96	3	...	+18.749	-0.177	...	...	4501
2090	71 Virginis	5.7	13. 23. 16.273	85.33	3	...	+ 2.9761	+0.0009	-0.0051	78. 33. 32.15	85.33	3	...	+18.745	-0.162	+0.034	1781	4504
2091	Piazzi XIII. 105 ...	6.3	13. 23. 49.515	86.11	1	2	+ 2.4745	-0.0148	...	38. 39. 27.81	85.94	1	3	+18.728	-0.137	...	...	...
2092	Piazzi XIII. 110 ...	5.4	13. 24. 2.699	84.71	3	2	+ 2.2227	-0.0155	-0.0093	29. 26. 2.57	85.06	3	2	+18.721	-0.124	-0.008	...	4510
2093	W. B. (2) XIII. 465	8.1*	13. 25. 5.856	79.56	4	...	+ 2.8476	-0.0046	...	65. 8. 49.12	79.56	4	...	+18.688	-0.159	...	...	...
2094	B. F. 1857	7.8*	13. 25. 10.850	78.99	6	...	+ 2.8473	-0.0046	...	65. 8. 36.41	79.50	6	...	+18.685	-0.159	...	...	4513
2095	73 Virginis	6.0	13. 25. 34.654	83.40	3	...	+ 3.2318	+0.0163	-0.0091	108. 6. 34.32	83.40	3	...	+18.672	-0.180	+0.007	1783	4514
2096	Piazzi XIII. 114 ...	7.5*	13. 25. 35.779	79.97	5	...	+ 3.0869	+0.0071	-0.0564	91. 42. 27.31	79.97	5	...	+18.672	-0.172	-0.242	...	4515
2097	74 Virginis	4.9	13. 25. 43.590	85.71	4	...	+ 3.1205	+0.0091	-0.0081	95. 38. 8.18	85.77	5	...	+18.667	-0.174	+0.030	1784	4516
2098	Piazzi XIII. 112 ...	6.4	13. 25. 52.327	83.35	3	...	+ 3.3429	+0.0243	...	118. 56. 50.94	83.35	3	...	+18.663	-0.187	...	...	4517
2099	Lacaille 5580	5.6	13. 25. 55.046	86.34	1	...	+ 3.3334	+0.0236	...	118. 4. 28.13	86.34	1	...	+18.662	-0.186	...	...	...
2100	Piazzi XIII. 133 ...	6.1	13. 25. 56.428	81.82	5	4	+ 0.4900	+0.1073	...	10. 44. 10.18	81.31	12	6	+18.661	-0.034	...	...	4527
2101	Groombridge 2008 ..	6.2	13. 26. 3.217	85.69	3	...	+ 2.6196	-0.0116	...	47. 16. 33.74	85.69	3	...	+18.657	-0.148	...	...	4519
2102	75 Virginis	5.7	13. 26. 27.001	83.38	6	...	+ 3.2019	+0.0142	-0.0052	104. 44. 43.23	83.80	7	...	+18.644	-0.180	0.00	1785	4520
2103	76 Virginis	5.5	13. 26. 38.872	83.10	7	...	+ 3.1553	+0.0112	-0.0044	99. 32. 46.47	83.10	7	...	+18.638	-0.178	+0.023	1786	4521
2104	78 Virginis	4.9	13. 28. 3.097	79.17	4	...	+ 3.0348	+0.0044	+0.0014	85. 43. 27.11	79.17	4	...	+18.592	-0.174	+0.015	1788	4529
2105	Piazzi XIII. 126 ...	5.7	13. 28. 17.745	79.06	4	...	+ 3.1846	+0.0130	...	102. 35. 54.79	78.46	5	...	+18.584	-0.183	...	...	4531
2106	79 Virginis	3.5	13. 28. 34.720	82.60	77	...	+ 3.0721	+0.0064	-0.0205	89. 58. 54.53	82.52	36	...	+18.575	-0.177	-0.056	1789	4532
2107	Piazzi XIII. 136 ...	5.0	13. 29. 26.203	80.06	3	...	+ 2.6778	-0.0093	+0.0043	52. 12. 8.84	79.54	6	...	+18.547	-0.157	+0.007	...	4536
2108	81 Ursæ Majoris	5.5	13. 29. 30.362	84.79	3	4	+ 2.3188	-0.0140	-0.0018	34. 2. 10.51	84.71	3	4	+18.544	-0.137	+0.002	1792	4540
2109	24 Canum Venaticum ..	4.8	13. 29. 32.822	80.08	3	...	+ 2.4734	-0.0131	-0.0134	40. 22. 11.33	80.08	3	...	+18.543	-0.145	-0.011	1791	4538
2110	Groombridge 2017 ..	6.5	13. 30. 7.548	85.30	3	3	+ 2.5634	-0.0116	...	45. 11. 20.59	84.01	3	(3)	+18.523	-0.151	...	...	4545
2111	Cape (1880) No. 7454		13. 30. 8.890	86.00	3	...	+ 3.3210	+0.0219	...	115. 53. 6.25	86.07	4	...	+18.523	-0.194	...	...	...
2112	Piazzi XIII. 135 ...	5.6	13. 30. 9.152	85.72	5	...	+ 3.3209	+0.0219	-0.0114	115. 52. 56.27	85.82	6	...	+18.523	-0.194	0.000	...	4541
2113	Oeltz Arg. (N.) 13800	8.3*	13. 30. 58.761	79.59	4	...	+ 2.3776	-0.0135	...	36. 39. 12.73	79.59	4	...	+18.495	-0.142	...	...	...
2114	81 Virginis	7.0*	13. 31. 18.009	79.97	3	...	+ 3.1384	+0.0102	-0.0030	97. 15. 32.28	79.97	3	...	+18.484	-0.185	+0.04	1793	4546
2115	W. B. (2) XIII. 596	5.9	13. 31. 20.217	78.67	3	...	+ 2.8279	-0.0043	...	64. 46. 26.86	78.67	3	...	+18.483	-0.168	...	...	...
2116	Bradley 1794	7.2*	13. 31. 49.839	79.14	5	...	+ 2.3726	-0.0132	+0.003	36. 41. 56.69	78.85	4	...	+18.466	-0.143	+0.044	1794	4550
2117	Piazzi XIII. 146 ...	5.6	13. 31. 57.652	83.37	3	...	+ 3.3611	+0.0245	...	118. 56. 51.20	83.37	3	...	+18.461	-0.200	...	...	4548
2118	25 Canum Venaticum ..	5.0	13. 32. 7.756	79.35	3	...	+ 2.6795	-0.0086	...	53. 5. 39.36	81.53	12	...	+18.456	-0.161	...	...	4552
2119	Oeltz Arg. (N.) 13817	8.7*	13. 32. 10.807	82.36	1	...	+ 2.3717	-0.0131	...	36. 45. 39.92	82.36	1	...	+18.454	-0.143	...	...	...
2120	Bradley 1795	7.0*	13. 32. 29.857	81.66	3	...	+ 2.3703	-0.0131	-0.001	36. 47. 41.62	81.66	3	...	+18.443	-0.144	+0.013	1795	4555

2083. Authority for Proper Motion : Bonn Observations, Vol. VII.
 2089. The limits of magnitude are 3.5 — 5.5 and 9.7 : the period about 497^d.
 2096. Authority for Proper Motion : Bonn Observations, Vol. VII.
 2112. Authority for Proper Motion : Bonn Observations, Vol. VII.

2085, 2087. The combined magnitude given in H. P. is 6.0.
 2090. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.9.
 2111, 2112. The magnitudes given in the *Uranometria Argentina* are 7.3 and 6.3.

{lvi}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2121	B. F. 1872	5.6	13. 33. 39.552	81.36	5	...	+ 2.9656	-0.0016	...	78. 38. 37.44	81.89	7	...	+18.403	-0.180	...	...	4559
2122	Groombridge 2029...	5.6	13. 34. 18.185	83.63	11	6	+ 1.4408	-0.0125	-0.0088	18. 8. 48.93	83.25	15	10	+18.381	-0.092	-0.011	...	...
2123	W. B. (2) XIII. 686	6.1	13. 34. 47.739	79.01	3	...	+ 2.7415	-0.0064	...	58. 22. 57.14	78.87	4	...	+18.363	-0.169	...	...	...
2124	1 Boötis	5.7	13. 34. 56.597	79.74	3	...	+ 2.8704	-0.0021	-0.0051	69. 26. 12.95	80.18	10	...	+18.358	-0.176	-0.020	1797	4562
2125	Piazzi XIII. 163 ...	6.3	13. 35. 6.736	84.02	3	...	+ 2.7775	-0.0053	...	61. 19. 36.98	84.02	3	...	+18.352	-0.171	...	...	...
2126	82 Virginis	5.3	13. 35. 18.845	82.87	32	...	+ 3.1491	+0.0107	-0.0085	98. 5. 48.85	83.77	29	...	+18.345	-0.193	-0.046	1796	4565
2127	2 Boötis	5.8	13. 35. 21.698	80.03	3	...	+ 2.8417	-0.0031	-0.0041	66. 53. 43.97	80.66	7	...	+18.343	-0.175	+0.027	1798	4566
2128	83 Ursæ Majoris	4.8	13. 36. 11.120	85.30	4	...	+ 2.2858	-0.0121	-0.0062	34. 42. 38.08	85.30	4	...	+18.314	-0.144	+0.003	1802	4568
2129	84 Virginis	5.7	13. 37. 1.802	83.36	3	...	+ 3.0325	+0.0049	-0.0223	85. 51. 15.06	83.36	3	...	+18.284	-0.190	+0.062	1800	4570
2130	Oeltz. Arg. (N.) 13904	8.3*	13. 37. 16.923	84.05	3	...	+ 1.9194	-0.0069	...	25. 31. 39.58	84.05	3	...	+18.275	-0.123	...	...	...
2131	Piazzi XIII. 184 ...	5.6	13. 37. 45.743	83.81	2	6	+ 1.8625	-0.0053	...	24. 34. 16.83	82.62	8	7	+18.257	-0.120	...	...	4577
2132	Oeltz. Arg. (S.) 13106	8.5*	13. 38. 43.705	81.36	1	...	+ 3.2253	+0.0149	...	105. 19. 16.27	81.36	1	...	+18.222	-0.204	...	...	...
2133	1 Centauri	4.5†	13. 38. 52.317	83.88	12	...	+ 3.4276	+0.0279	-0.0374	122. 26. 10.31	83.88	12	...	+18.217	-0.217	+0.151	1803	4579
2134	Piazzi XIII. 180 ...	5.8	13. 38. 55.193	85.65	3	...	+ 3.3392	+0.0219	...	115. 30. 46.42	85.80	4	...	+18.215	-0.212	...	...	4581
2135	85 Virginis	6.7*	13. 39. 7.474	79.02	8	...	+ 3.2242	+0.0149	-0.0059	105. 9. 51.15	78.95	9	...	+18.207	-0.205	+0.029	1804	4582
2136	Piazzi XIII. 189 ...	5.9	13. 39. 15.460	85.64	4	4	+ 2.3367	-0.0114	...	37. 19. 55.32	85.39	4	4	+18.203	-0.151	...	...	...
2137	86 Virginis	6.0	13. 39. 32.692	83.38	2	...	+ 3.1901	+0.0129	-0.0028	101. 49. 29.80	83.38	2	...	+18.192	-0.204	-0.013	1805	4585
2138	W. B. (2) XIII. 805	8.5*	13. 39. 39.272	80.35	5	...	+ 2.9157	+0.0002	+0.1268	74. 27. 27.94	80.35	5	...	+18.188	-0.187	+1.435	...	...
2139	B. F. 1886	6.3	13. 40. 52.915	84.53	9	...	+ 3.1636	+0.0115	...	99. 6. 27.85	84.32	14	...	+18.143	-0.204	...	...	4591
2140	87 Virginis	5.7	13. 40. 53.788	79.57	5	...	+ 3.2493	+0.0162	+0.0011	107. 15. 30.78	79.38	6	...	+18.142	-0.210	+0.028	1806	4590
2141	Groombridge 2043...	5.8	13. 41. 7.145	85.02	5	...	+ 2.6082	-0.0082	...	50. 53. 42.78	85.02	5	...	+18.134	-0.170	...	...	4595
2142	Groombridge 2044...	5.8	13. 41. 7.665	85.38	3	...	+ 2.5637	-0.0090	...	48. 18. 32.96	85.38	3	...	+18.133	-0.167	...	...	4596
2143	3 Boötis	5.8	13. 41. 8.942	79.92	7	...	+ 2.7900	-0.0039	-0.0035	63. 41. 42.80	80.47	16	...	+18.133	-0.182	+0.065	1808	4594
2144	4 Boötis	4.5	13. 41. 33.564	81.52	26	...	+ 2.8854	-0.0007	-0.0346	71. 56. 40.79	82.45	21	...	+18.117	-0.188	-0.040	1810	4597
2145	Groombridge 2047...	5.5	13. 41. 49.125	85.97	5	...	+ 2.6046	-0.0081	...	50. 51. 23.45	85.97	5	...	+18.108	-0.171	...	...	4600
2146	2 Centauri	4.6†	13. 42. 29.795	83.52	8	...	+ 3.4601	+0.0295	-0.0047	123. 51. 5.72	83.52	8	...	+18.082	-0.226	+0.093	1807	4603
2147	85 Ursæ Majoris	2.0	13. 42. 48.654	82.09	25	14	+ 2.3834	-0.0104	-0.0115	40. 5. 14.54	82.08	25	17	+18.070	-0.159	+0.014	1815	4607
2148	Lacaille 5695	6.0	13. 43. 18.595	85.82	2	...	+ 3.3883	+0.0244	...	118. 29. 1.78	85.82	2	...	+18.051	-0.223	...	...	...
2149	89 Virginis	5.2	13. 43. 21.190	80.02	4	...	+ 3.2564	+0.0164	-0.0087	107. 32. 9.00	80.02	4	...	+18.050	-0.215	+0.033	1811	4608
2150	5 Boötis	4.1	13. 43. 41.321	78.11	4	...	+ 2.9003	0.0000	-0.0093	73. 36. 22.69	80.09	17	...	+18.037	-0.193	-0.042	1813	4615
2151	3 Centauri	5.1	13. 44. 54.303	83.42	10	...	+ 3.4472	+0.0281	-0.0043	122. 23. 54.45	83.42	10	...	+17.990	-0.230	+0.017	1814	4623
2152	3 Centauri	6.7†	13. 44. 54.950	82.84	4	...	+ 3.4473	+0.0281	-0.0043	122. 23. 56.41	82.84	4	...	+17.989	-0.230	+0.017	...	...
2153	B. F. 1904	6.4	13. 45. 46.784	83.42	3	...	+ 2.6497	-0.0065	...	54. 37. 57.79	83.42	3	...	+17.956	-0.180	...	...	4627
2154	Piazzi XIII. 263 ...	6.3	13. 45. 49.593	83.63	4	4	+ 2.0397	+0.5436	...	6. 38. 44.58	85.32	5	10	+17.954	+0.124	...	...	4643
2155	Groombridge 2055...	6.1	13. 45. 51.111	82.89	4	9	+ 1.9477	-0.0059	...	27. 54. 43.32	82.75	10	12	+17.953	-0.135	...	...	...
2156	B. F. 1905	6.0	13. 45. 51.460	80.10	4	...	+ 2.6511	-0.0065	...	54. 44. 20.91	80.26	10	...	+17.953	-0.180	...	...	4628
2157	4 Centauri	4.7	13. 46. 18.361	82.86	6	...	+ 3.4365	+0.0271	-0.0031	121. 20. 3.20	82.93	7	...	+17.936	-0.232	0.000	1817	4629
2158	Piazzi XIII. 225 ...	6.1	13. 46. 25.688	83.37	4	...	+ 2.9367	+0.0017	...	77. 14. 28.10	83.37	4	...	+17.930	-0.200	...	...	...
2159	Piazzi XIII. 230 ...	6.6	13. 47. 29.188	85.01	3	...	+ 3.3933	+0.0241	...	117. 58. 34.16	85.01	3	...	+17.889	-0.231	...	...	4636
2160	Piazzi XIII. 235 ...	5.8	13. 47. 43.694	83.71	3	...	+ 2.7333	-0.0043	...	60. 45. 38.67	83.71	3	...	+17.879	-0.188	...	...	4640

2128. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.1.2133. The magnitude is taken from the *Uranometria Argentina*.2146. The magnitude is taken from the *Uranometria Argentina*.2152. The magnitude is taken from the *Uranometria Argentina*.2156. The magnitudes given in the *Uranometria Nova Ozoniensis* is 6.4.2129. The magnitude given in the *Uranometria Nova Ozoniensis* is 6.0.

2138. Authority for Proper Motion: Bonn Observations, Vol. VII.

2151. The magnitude is taken from the *Uranometria Argentina*.2153. The magnitude given in the *Uranometria Nova Ozoniensis* is 6.0.2160. The magnitude given in the *Uranometria Nova Ozoniensis* is 6.1.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lvii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880° 0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880° 0.	Secular Variation, 1880° 0.	Annual Proper Motion, 1880° 0.	Mean N.P.D., 1880° 0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880° 0.	Secular Variation, 1880° 0.	Annual Proper Motion, 1880° 0.	No. in Answers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2161	10 Draconis	4.7	13. 47. 55.661	81.62	6	3	+ 1.7524	-0.0004	-0.0017	24. 41. 0.99	81.08	16	3	+17.871	-0.124	+0.014	1823	4646
2162	Oeltz.Arg.(N.)14064	8.3*	13. 48. 27.309	85.77	3	1	+ 2.2231	-0.0090	...	35. 39. 26.92	85.75	3	1	+17.851	-0.156	...	...	...
2163	90 Virginis	5.3	13. 48. 32.451	83.05	7	...	+ 3.0820	+0.0076	-0.0068	90. 54. 43.05	83.57	9	...	+17.847	-0.213	+0.012	1819	4645
2164	Bradley 1820 (1st Star) ...	6.7†	13. 48. 40.568	83.35	1	...	+ 3.1523	+0.0108	-0.0139	97. 28. 3.24	83.35	1	...	+17.841	-0.218	0.00	...	...
2165	Bradley 1820 (as one mass)	6.4	13. 48. 40.686	83.87	4	...	+ 3.1523	+0.0108	-0.0139	97. 28. 3.33	83.71	6	...	+17.841	-0.218	0.00	1820	4647
2166	Bradley 1820 (2nd Star) ..	7.9†	13. 48. 40.718	83.35	1	...	+ 3.1523	+0.0108	-0.0139	97. 28. 2.80	83.35	1	...	+17.841	-0.218	0.00	...	...
2167	8 Boötis	2.9	13. 48. 58.231	81.11	50	...	+ 2.8616	-0.0006	-0.0049	71. 0. 0.64	81.92	59	...	+17.830	-0.199	+0.344	1821	4648
2168	B. D. + 37° No. 2463	8.9*	13. 49. 3.011	86.35	4	...	+ 2.6005	-0.0068	...	52. 23. 29.33	86.35	4	...	+17.827	-0.181	...	...	...
2169	86 Ursæ Majoris	5.5	13. 49. 26.046	85.16	5	4	+ 2.2166	-0.0088	0.000	35. 40. 50.70	85.19	4	4	+17.811	-0.156	+0.017	1824	4649
2170	W. B. (2) XIII. 1070	7.0*	13. 49. 27.082	86.36	6	...	+ 2.5981	-0.0067	...	52. 20. 25.73	86.36	6	...	+17.811	-0.182	...	...	...
2171	Groombridge 2066 ..	6.6*	13. 50. 27.328	80.81	3	3	+ 0.2999	+0.01809	...	10. 24. 43.32	79.46	4	3	+17.770	+0.013	...	...	4659
2172	B. F. 1917	6.4	13. 50. 50.979	83.75	3	...	+ 2.6744	-0.0051	...	57. 22. 52.48	83.75	3	...	+17.754	-0.189	...	...	4652
2173	9 Boötis	5.1	13. 51. 5.388	79.01	3	...	+ 2.7399	-0.0037	+0.0010	61. 55. 8.23	79.35	6	...	+17.744	-0.194	+0.055	1826	4656
2174	47 Hydræ	5.1	13. 51. 47.367	83.36	3	...	+ 3.3563	+0.0213	-0.0050	114. 23. 9.09	83.36	3	...	+17.716	-0.237	+0.030	1825	4657
2175	Piazzi XIII. 264 ...	5.6	13. 52. 52.375	79.76	5	...	+ 2.9001	+0.0010	...	74. 45. 51.06	80.56	11	...	+17.670	-0.208	...	...	4662
2176	10 Boötis	5.3	13. 53. 1.573	79.03	4	...	+ 2.8129	-0.0015	-0.0010	67. 43. 3.93	79.12	9	...	+17.664	-0.202	+0.051	1828	4664
2177	Piazzi XIII. 265 ...	8.0*	13. 53. 3.211	79.34	3	...	+ 2.9009	+0.0011	...	74. 51. 12.30	79.37	3	...	+17.664	-0.208	...	...	...
2178	48 Hydræ	5.9	13. 53. 17.076	83.41	3	...	+ 3.3604	+0.0214	-0.0161	114. 25. 26.38	83.41	3	...	+17.654	-0.240	+0.090	1827	4663
2179	W. B. (2) XIII. 1164	8.8*	13. 54. 1.663	86.34	4	...	+ 2.5810	-0.0062	...	52. 24. 9.87	86.34	4	...	+17.623	-0.187	...	...	...
2180	W. B. XIII. 932.....	5.9	13. 55. 24.106	79.14	4	...	+ 2.9646	+0.0034	...	80. 31. 26.57	79.38	3	...	+17.565	-0.216	...	...	...
2181	93 Virginis	4.4	13. 55. 32.365	82.32	24	...	+ 3.0483	+0.0065	-0.0005	87. 52. 26.57	83.82	33	...	+17.560	-0.222	+0.033	1829	4672
2182	Piazzi XIII. 274 ...	5.7	13. 55. 33.450	86.01	3	...	+ 3.3993	+0.0233	...	116. 50. 58.51	86.01	3	...	+17.559	-0.247	...	...	4671
2183	11 Boötis	6.1	13. 55. 43.970	80.20	6	...	+ 2.7289	-0.0032	-0.0069	62. 1. 59.47	80.63	8	...	+17.551	-0.200	-0.018	1830	4675
2184	Piazzi XIII. 276 ...	7.3*	13. 55. 55.836	82.68	6	...	+ 3.2983	+0.0178	...	109. 13. 46.34	82.68	6	...	+17.543	-0.241	...	...	4673
2185	Lacaille 5791.....	6.5†	13. 56. 3.918	83.39	1	...	+ 3.4636	+0.0270	...	121. 6. 27.28	83.39	1	...	+17.537	-0.253	...	...	4674
2186	Piazzi XIII. 289 ...	6.5	13. 57. 26.196	84.46	5	3	+ 2.3855	-0.0074	...	43. 39. 55.01	83.06	6	(3)	+17.479	-0.178	...	...	...
2187	Piazzi XIII. 286 ...	6.5*	13. 57. 57.293	79.35	5	...	+ 3.2412	+0.0148	...	104. 23. 39.97	79.35	5	...	+17.457	-0.240	...	...	4679
2188	Piazzi XIII. 306 ...	6.3*	13. 59. 12.004	80.81	4	4	+ 1.3180	+0.0180	...	20. 44. 36.14	80.20	10	5	+17.402	-0.103	...	...	4689
2189	49 Hydræ	3.5	13. 59. 32.429	80.34	3	...	+ 3.3987	+0.0226	+0.0019	116. 6. 14.24	80.34	3	...	+17.388	-0.254	+0.170	1832	4685
2190	5 Centauri	1.7	13. 59. 37.445	83.08	13	...	+ 3.5526	+0.0318	-0.0442	125. 46. 46.35	83.32	14	...	+17.384	-0.266	+0.613	1831	4686
2191	94 Virginis	6.8*	13. 59. 56.571	80.68	13	...	+ 3.1700	+0.0115	-0.0032	98. 19. 5.73	80.69	17	...	+17.370	-0.239	-0.012	1833	4688
2192	95 Virginis	5.7	14. 0. 22.090	86.32	2	...	+ 3.1754	+0.0117	-0.0122	98. 44. 24.28	86.32	2	...	+17.351	-0.240	-0.015	1834	4690
2193	11 Draconis	3.6	14. 1. 8.440	83.27	26	8	+ 1.6298	+0.0048	-0.0092	25. 3. 0.86	82.89	61	16	+17.318	-0.127	-0.016	1836	4696
2194	B. D. + 38° No. 2514	9.1*	14. 1. 24.267	86.38	3	...	+ 2.5368	-0.0055	...	51. 35. 54.34	86.38	3	...	+17.306	-0.195	...	...	...
2195	Groombridge 2099 ..	7.5*	14. 1. 50.854	85.32	...	3	- 7.5022	+2.3755	...	3. 40. 3.06	85.96	...	7	+17.286	+0.547	...	...	...
2196	96 Virginis	6.5*	14. 2. 37.011	79.16	5	...	+ 3.1896	+0.0123	-0.0007	99. 45. 55.29	78.86	6	...	+17.252	-0.245	-0.019	1835	4698
2197	13 Boötis	5.5	14. 3. 48.325	83.92	4	3	+ 2.2522	-0.0063	-0.0070	39. 58. 28.90	84.48	3	3	+17.190	-0.176	-0.044	1838	4701
2198	Oeltz.Arg.(N.)14328	8.4*	14. 3. 59.112	84.00	3	2	+ 0.4770	+0.0753	...	14. 51. 26.00	83.74	3	4	+17.191	-0.043	...	...	...
2199	Piazzi XIII. 317 ...	5.3	14. 4. 17.336	79.01	8	...	+ 3.2667	+0.0157	...	105. 44. 4.13	79.01	8	...	+17.177	-0.253	...	...	4700
2200	12 Boötis	4.8	14. 4. 55.557	79.86	4	...	+ 2.7393	-0.0018	-0.0020	64. 20. 21.28	80.23	8	...	+17.148	-0.215	+0.081	1839	4706

2164, 2166. The magnitudes are taken from Struve's *Messure Micrometricæ*.
2185. The magnitude is taken from the *Cronometria Argentina*.

{lviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2201	W. B. (2) XIV. 77	7.5*	14. 5. 27.160	86.37	7	...	+ 2.5175	-0.0051	...	51. 25. 56.39	86.37	7	...	+17.124	-0.198	...	...	...
2202	3 Ursæ Minoris	6.7*	14. 6. 0.434	81.51	4	14	+ 0.4353	+0.0078	...	14. 50. 15.80	81.40	10	13	+17.099	-0.041	...	...	4718
2203	98 Virginis	4.3	14. 6. 29.707	83.12	19	...	+ 3.1923	+0.0123	-0.0004	99. 42. 51.92	83.64	34	...	+17.076	-0.252	-0.141	1842	4716
2204	B. F. 1943	6.1	14. 8. 4.517	83.65	7	...	+ 3.4607	+0.0249	...	118. 43. 13.16	83.20	6	...	+17.003	-0.275	...	...	4719
2205	14 Boötis	5.5	14. 8. 18.936	79.88	4	...	+ 2.9019	+0.0024	-0.0186	76. 28. 37.92	81.81	7	...	+16.992	-0.232	+0.053	1844	4721
2206	Piazzi XIV. 22	5.5	14. 8. 47.412	79.35	10	...	+ 3.2988	+0.0169	...	107. 38. 24.60	79.16	10	...	+16.971	-0.264	...	...	4722
2207	15 Boötis	5.2	14. 8. 58.234	80.05	3	...	+ 2.9383	+0.0035	-0.0003	79. 20. 1.55	80.05	3	...	+16.962	-0.236	+0.153	1845	4724
2208	Piazzi XIV. 30	4.4	14. 9. 9.815	85.89	2	3	+ 2.1465	-0.0048	+0.0048	37. 39. 1.16	86.03	2	3	+16.953	-0.175	+0.038	1849	...
2209	17 Boötis	4.4	14. 9. 10.997	85.80	3	3	+ 2.1463	-0.0048	+0.0048	37. 38. 53.67	85.88	3	3	+16.952	-0.175	+0.038	...	4726
2210	4 Ursæ Minoris	4.9	14. 9. 20.311	80.49	7	4	- 0.3240	+0.1546	-0.0110	11. 53. 19.43	80.38	10	4	+16.945	+0.018	-0.023	1859	4733
2211	Groombridge 2089	6.0	14. 9. 33.144	82.03	3	...	+ 2.4257	-0.0051	...	47. 55. 2.69	81.60	4	...	+16.935	-0.197	...	...	4728
2212	99 Virginis	4.2	14. 9. 43.393	83.40	3	...	+ 3.1404	+0.0100	-0.0031	95. 25. 39.10	83.40	3	...	+16.927	-0.253	+0.417	1846	4727
2213	Groombridge 2091	5.3	14. 9. 50.386	84.01	4	4	+ 1.1014	+0.0283	...	20. 0. 14.41	84.28	4	13	+16.921	-0.093	...	...	4732
2214	16 Boötis	0.0	14. 10. 11.286	82.30	141	...	+ 2.8132	+0.0004	-0.0799	70. 11. 32.09	81.66	184	...	+16.905	-0.228	+1.977	1847	4729
2215	W. B. (2) XIV. 197	7.3*	14. 10. 40.424	85.02	3	...	+ 2.4172	-0.0050	...	49. 45. 53.95	85.38	3	...	+16.882	-0.198	...	...	...
2216	B. F. 1955	6.3	14. 11. 31.235	84.82	2	...	+ 2.4568	-0.0047	...	49. 41. 53.71	84.85	2	...	+16.842	-0.202	...	...	4738
2217	19 Boötis	4.3	14. 11. 49.289	82.80	6	5	+ 2.3022	-0.0051	-0.0191	43. 21. 36.55	83.11	7	(3)	+16.828	-0.190	-0.151	1852	4741
2218	21 Boötis	4.8	14. 11. 55.038	86.42	2	2	+ 2.1434	-0.0044	-0.0165	38. 4. 44.44	86.41	2	2	+16.823	-0.177	-0.085	1854	4742
2219	Lalande 26150	6.2*	14. 12. 0.248	79.57	5	...	+ 3.3111	+0.0172	...	108. 9. 35.24	79.57	5	...	+16.819	-0.270	...	...	4739
2220	Oeltz Arg. (N.) 14435	6.5	14. 12. 7.249	86.26	3	1	+ 1.9398	-0.0019	...	32. 45. 2.58	86.20	3	1	+16.813	-0.161	...	...	...
2221	Lacaille 5892	5.9	14. 12. 12.302	86.38	5	...	+ 3.4166	+0.0222	...	115. 16. 19.73	86.38	5	...	+16.809	-0.279	...	...	4740
2222	Lalande 26209	6.5*	14. 12. 16.703	86.56	2	1	+ 1.9373	-0.0019	...	32. 43. 50.26	86.51	2	1	+16.805	-0.162	...	...	...
2223	100 Virginis	4.6	14. 12. 37.047	83.35	9	...	+ 3.2387	+0.0141	-0.0025	102. 49. 4.56	83.35	9	...	+16.790	-0.266	-0.029	1850	4743
2224	Boötis	4.8	14. 12. 55.411	80.77	3	...	+ 2.5388	-0.0038	...	53. 56. 10.41	79.90	6	...	+16.775	-0.210	...	...	4747
2225	18 Boötis	5.2	14. 13. 27.863	80.37	3	...	+ 2.8950	+0.0026	+0.0078	76. 26. 29.58	80.37	3	...	+16.749	-0.239	+0.010	1853	4751
2226	W. B. XIV. 213	6.1	14. 13. 33.481	83.38	5	...	+ 3.0602	+0.0075	...	89. 3. 44.54	83.58	10	...	+16.744	-0.253	...	...	...
2227	20 Boötis	4.9	14. 14. 4.519	79.72	3	...	+ 2.8486	+0.0015	-0.0110	73. 8. 33.86	80.40	7	...	+16.720	-0.237	-0.058	1855	4753
2228	103 Virginis	6.7	14. 15. 47.533	83.58	4	...	+ 3.0910	+0.0085	-0.0073	91. 26. 18.61	83.74	8	...	+16.636	-0.259	+0.007	1858	4762
2229	2 Libræ	6.3	14. 16. 58.302	84.32	6	...	+ 3.2208	+0.0132	-0.0031	101. 9. 54.33	84.58	8	...	+16.578	-0.272	+0.059	1860	4765
2230	Piazzi XIV. 69 (S. Star)	5.1	14. 17. 28.572	84.64	4	...	+ 2.9529	+0.0044	...	81. 0. 30.41	84.23	6	...	+16.553	-0.250	...	...	4766
2231	Piazzi XIV. 69 (N. Star)	5.1	14. 17. 28.645	84.00	5	...	+ 2.9529	+0.0044	...	81. 0. 24.06	83.96	9	...	+16.553	-0.250	...	...	...
2232	Groombridge 2105	6.8*	14. 17. 33.284	81.15	3	3	+ 1.1718	+0.0235	...	21. 40. 6.35	82.13	10	5	+16.550	-0.104	...	...	...
2233	W. B. (2) XIV. 359	6.0	14. 17. 43.561	83.72	3	...	+ 2.7055	-0.0010	...	64. 7. 2.68	83.58	5	...	+16.540	-0.230	...	...	...
2234	B. D. + 39° No. 2759	8.8*	14. 18. 6.600	86.37	3	...	+ 2.4463	-0.0038	...	50. 26. 35.53	86.37	3	...	+16.521	-0.209	...	...	...
2235	Piazzi XIV. 73	5.1	14. 18. 13.066	78.37	3	...	+ 2.9877	+0.0054	...	83. 38. 4.62	78.37	3	...	+16.517	-0.254	...	...	4773
2236	W. B. (2) XIV. 383	7.3*	14. 18. 38.892	86.37	3	...	+ 2.4370	-0.0038	...	50. 7. 17.94	86.37	3	...	+16.495	-0.209	...	...	...
2237	Groombridge 2108	7.4*	14. 18. 48.146	80.46	4	3	+ 1.1549	+0.0242	...	21. 39. 0.27	80.23	6	3	+16.488	-0.103	...	...	...
2238	W. B. (2) XIV. 394	9.3*	14. 19. 24.289	86.42	3	...	+ 2.4386	-0.0037	...	50. 19. 25.50	86.41	4	...	+16.458	-0.210	...	...	...
2239	22 Boötis	5.4	14. 20. 52.460	82.41	26	...	+ 2.7952	+0.0009	-0.0057	70. 13. 58.51	82.09	28	...	+16.384	-0.242	-0.029	1864	4785
2240	52 Hydræ	5.0	14. 21. 8.918	81.99	13	...	+ 3.4996	+0.0251	-0.0036	118. 57. 5.66	81.99	13	...	+16.370	-0.302	+0.042	1862	4784

2208, 2209. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 7.2 and 5.1.
 2212. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.9.
 2214. The magnitude given in the *Uranometria Nova Oxoniensis* is 0.3.
 2230, 2231. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 6.8 and 5.5.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lix}

No.	Star's Name.	Magnitude.	Mean R.A. 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Answers Bradley. 1755.	No. in B.A. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
18896	0AMM. 1.2		h m s				s	s	s	° ' "				"	"	"		
2241	W. B. (2) XIV. 451..	8.8*	14. 21. 59.505	86.38	4	...	+ 2.4285	-0.0034	...	50. 19. 50.83	86.38	6	...	+16.327	-0.213	...	...	...
2242	105 Virginis	4.9	14. 22. 1.154	79.78	3	...	+ 3.0952	+0.0088	-0.0102	91. 41. 21.16	79.78	3	...	+16.326	-0.269	+0.002	1865	4792
2243	106 Virginis	5.9	14. 22. 22.047	79.37	3	...	+ 3.1591	+0.0109	-0.0030	96. 21. 39.96	79.37	3	...	+16.308	-0.275	+0.051	1866	4795
2244	Piazzi XIV. 96	5.8	14. 23. 43.473	83.41	3	...	+ 3.0536	+0.0076	...	88. 38. 8.96	83.41	5	...	+16.239	-0.268	...	...	4798
2245	Lalande 26457	7.8	14. 24. 7.180	84.03	3	...	+ 3.4353	+0.0217	...	114. 46. 49.84	84.03	3	...	+16.218	-0.302	...	...	4800
2246	24 Boötis	5.6	14. 24. 27.356	84.99	3	3	+ 2.1204	-0.0026	-0.0328	39. 37. 3.77	84.69	3	3	+16.201	-0.189	+0.067	1868	4804
2247	Piazzi XIV. 103.....	6.5*	14. 24. 41.267	79.35	3	...	+ 2.5729	-0.0020	...	57. 40. 26.71	80.56	5	...	+16.189	-0.228	...	...	4803
2248	25 Boötis	3.6	14. 26. 39.479	82.94	29	...	+ 2.5946	-0.0016	-0.0085	59. 6. 4.17	81.72	27	...	+16.087	-0.233	-0.125	1869	4808
2249	B. F. 1988	5.9	14. 27. 1.541	84.09	6	...	+ 2.6610	-0.0007	...	62. 47. 28.88	84.28	7	...	+16.067	-0.239	...	...	4809
2250	27 Boötis	3.1	14. 27. 14.761	79.03	5	...	+ 2.4274	-0.0028	-0.0106	51. 9. 58.03	78.93	6	...	+16.055	-0.219	-0.153	1871	4812
2251	5 Ursæ Minoris	4.3	14. 27. 47.647	81.76	10	5	- 0.2069	+0.1206	+0.0013	13. 46. 13.64	81.73	16	9	+16.027	+0.011	-0.026	1873	4822
2252	Groombridge 2123...	6.0	14. 27. 55.217	78.01	...	2	+ 1.4440	+0.0118	...	26. 17. 0.62	78.01	...	2	+16.020	-0.134	...	...	4817
2253	Piazzi XIV. 116.....	6.4	14. 28. 5.690	81.35	4	...	+ 3.3639	+0.0083	...	109. 54. 42.99	81.35	4	...	+16.011	-0.303	...	...	4814
2254	Piazzi XIV. 126.....	6.1	14. 28. 27.466	84.85	3	3	+ 1.6315	+0.0061	-0.0093	29. 14. 42.73	84.40	5	4	+15.992	-0.151	+0.026	...	...
2255	Oeltz. Arg. (N.) 14665	6.0	14. 28. 45.512	82.30	3	...	+ 1.8775	+0.0009	...	34. 4. 22.24	82.30	3	...	+15.976	-0.173	...	...	...
2256	28 Boötis	4.5	14. 29. 27.308	84.52	8	...	+ 2.5988	-0.0012	+0.0140	59. 43. 58.07	84.28	10	...	+15.939	-0.237	-0.133	1872	4823
2257	Piazzi XIV. 128.....	6.2*	14. 29. 44.204	80.21	5	...	+ 2.4565	-0.0023	...	52. 50. 46.61	80.21	5	...	+15.924	-0.225	...	...	4825
2258	B. F. 1996	5.8	14. 30. 27.793	84.38	3	...	+ 2.1035	-0.0018	...	40. 6. 27.33	84.38	3	...	+15.885	-0.194	...	...	4830
2259	Piazzi XIV. 127.....	6.0*	14. 30. 36.837	79.57	5	...	+ 3.2429	+0.0125	-0.0586	101. 47. 39.94	79.57	5	...	+15.877	-0.296	-0.387	...	4828
2260	Groombridge 2131...	6.1	14. 30. 38.316	85.42	3	...	+ 1.7852	+0.0027	+0.0267	32. 24. 4.24	85.41	4	...	+15.875	-0.166	+0.274	...	...
2261	Groombridge 2132...	6.7*	14. 31. 4.478	84.23	4	2	+ 1.2401	+0.0192	...	24. 4. 48.53	81.98	12	3	+15.853	-0.118	...	...	4834
2262	Groombridge 2135...	6.0	14. 33. 42.007	83.37	3	...	+ 2.2654	-0.0022	...	45. 50. 22.49	83.37	3	...	+15.711	-0.212	...	...	4841
2263	33 Boötis.....	5.3	14. 34. 22.235	84.21	5	...	+ 2.2406	-0.0021	-0.0073	45. 4. 36.55	84.21	5	...	+15.675	-0.211	+0.049	1878	4843
2264	Piazzi XIV. 156.....	5.6	14. 34. 26.910	84.38	3	...	+ 1.9008	+0.0010	...	35. 27. 27.32	84.38	3	...	+15.670	-0.180	...	...	4845
2265	W. B. (2) XIV. 703..	6.0*	14. 34. 54.804	79.71	3	...	+ 2.7260	+0.0009	...	67. 30. 33.74	79.71	3	...	+15.645	-0.256	...	...	...
2266	29 Boötis (1st Star)...	4.6	14. 35. 5.239	78.76	6	...	+ 2.8174	+0.0024	-0.0008	73. 3. 59.76	78.81	5	...	+15.635	-0.264	+0.006	1875	4847
2267	29 Boötis (2nd Star)...	...	14. 35. 5.663	79.40	2	...	+ 2.8174	+0.0024	-0.0008	73. 4. 1.23	79.09	3	...	+15.635	-0.264	+0.006	...	...
2268	30 Boötis	3.8	14. 35. 25.131	79.51	2	...	+ 2.8594	+0.0033	+0.0019	75. 45. 21.92	81.32	9	...	+15.617	-0.268	+0.010	1876	4849
2269	31 Boötis	5.0	14. 35. 45.203	79.73	3	...	+ 2.9441	+0.0051	-0.0002	81. 19. 28.04	79.73	3	...	+15.599	-0.277	+0.014	1877	4850
2270	32 Boötis	5.6	14. 35. 57.659	85.35	4	...	+ 2.8908	+0.0039	-0.012	77. 49. 17.14	85.64	15	...	+15.587	-0.272	+0.111	1879	4853
2271	Piazzi XIV. 150.....	4.3†	14. 36. 19.313	82.46	13	...	+ 3.6549	+0.0301	...	124. 39. 25.29	82.97	12	...	+15.568	-0.343	...	...	4852
2272	107 Virginis	3.9	14. 36. 44.210	79.74	3	...	+ 3.1482	+0.0104	+0.0056	95. 8. 8.16	79.74	3	...	+15.545	-0.297	+0.305	1880	4855
2273	34 Boötis	W. Var.	14. 38. 8.950	81.06	3	...	+ 2.6379	0.0000	-0.0011	62. 57. 40.94	81.03	6	...	+15.466	-0.252	+0.008	1883	4864
2274	W. B. XIV. 695.....	6.3	14. 39. 1.236	79.35	3	...	+ 3.0859	+0.0087	...	90. 54. 34.56	79.35	3	...	+15.418	-0.294	...	...	...
2275	54 Hydræ (1st Star)...	5.0	14. 39. 3.453	84.64	4	...	+ 3.4698	+0.0216	-0.0147	114. 55. 57.20	84.64	4	...	+15.416	-0.330	+0.102	1881	4865
2276	54 Hydræ (2nd Star)...	...	14. 39. 4.013	83.35	1	...	+ 3.4699	+0.0216	-0.0147	114. 56. 5.02	83.35	1	...	+15.415	-0.330	+0.102	...	...
2277	Groombridge 2146...	6.2	14. 39. 3.841	83.78	4	9	+ 1.4792	+0.0105	...	28. 13. 34.91	82.50	15	12	+15.415	-0.145	...	...	4874
2278	Groombridge 2145...	5.6	14. 39. 5.174	85.34	3	...	+ 2.3297	-0.0017	...	49. 1. 56.27	85.34	3	...	+15.414	-0.224	...	...	4870
2279	Lalande 26855	6.1	14. 39. 13.520	86.43	1	...	+ 3.4294	+0.0199	...	112. 38. 40.20	85.91	2	...	+15.406	-0.327	...	...	...
2280	5 Libræ	6.2*	14. 39. (21.)	...	...	...	+ 3.3010	+0.0152	-0.0028	104. 57. 10.45	84.36	1	...	+15.399	-0.315	-0.006	1882	4868

2251. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.7.

2259. Authority for Proper Motion: Bonn Observations, Vol. VII.

2266, 2267. The magnitudes given in Struve's *Mensura Micrometricæ* are 4.9 and 6.0.

2273. The limits of magnitude are 5.2 and 6.1: the period long and irregular.

2258. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.

2260. Authority for Proper Motion: Bonn Observations, Vol. VII.

2271. The magnitude is taken from the *Uranometria Argentina*.2275, 2276. The magnitudes given in the *Uranometria Argentina* are 5.3 and 7.0.

{1x}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2281	35 Boötis	4.8	14. 39. 38.486	82.39	3	...	+ 2.8023	+0.0025	-0.0051	72. 31. 35.79	82.39	3	...	+15.382	-0.269	+0.052	1888	4873
2282	36 Boötis	2.6	14. 39. 44.697	82.01	2	...	+ 2.6240	0.0000	-0.0043	62. 25. 6.59	80.32	6	...	+15.377	-0.252	-0.001	1890	4876
2283	36 Boötis	2.6	14. 39. 44.759	82.20	55	...	+ 2.6239	0.0000	-0.0043	62. 25. 8.77	82.22	71	...	+15.377	-0.252	-0.001	...	...
2284	109 Virginis	3.7	14. 40. 10.979	80.66	4	...	+ 3.0362	-0.0074	-0.0090	87. 36. 2.19	80.66	4	...	+15.352	-0.292	+0.026	1889	4878
2285	Groombridge 2150...	6.3*	14. 41. 5.278	85.49	2	3	+ 1.4735	+0.0107	...	28. 23. 37.08	85.56	2	3	+15.301	-0.146	...	...	...
2286	Lalande 26952	5.7	14. 42. 22.822	80.06	3	...	+ 3.4552	+0.0206	...	113. 45. 3.27	80.06	3	...	+15.228	-0.334	...	...	4888
2287	7 Libræ	5.4	14. 42. 44.531	85.02	1	...	+ 3.2839	+0.0145	-0.0066	103. 38. 51.98	85.02	1	...	+15.207	-0.319	+0.016	1891	4890
2288	W. B. (2) XIV. 908...	6.1	14. 43. 4.033	84.23	5	...	+ 2.6677	+0.0008	...	65. 8. 2.75	84.23	5	...	+15.189	-0.261	...	...	...
2289	58 Hydræ	5.0	14. 43. 14.559	85.44	2	...	+ 3.5264	+0.0234	-0.0195	117. 27. 33.99	85.44	2	...	+15.177	-0.343	+0.056	1892	4891
2290	W. B. XIV. 794.....	7.0	14. 43. 49.012	84.04	4	...	+ 2.9416	+0.0053	...	81. 30. 51.87	83.92	5	...	+15.146	-0.288	...	...	...
2291	8 Libræ	5.3	14. 44. 3.066	79.78	5	...	+ 3.3156	+0.0155	-0.0098	105. 29. 50.62	79.87	6	...	+15.132	-0.324	+0.090	1893	4894
2292	9 Libræ	3.0	14. 44. 14.471	81.31	25	...	+ 3.3165	+0.0155	-0.0093	105. 32. 32.02	82.79	47	...	+15.121	-0.324	+0.072	1894	4895
2293	Groombridge 2152...	6.0	14. 44. 24.098	84.43	3	...	+ 2.3780	-0.0011	-0.0209	51. 41. 36.80	84.43	3	...	+15.112	-0.234	-0.122	...	4897
2294	Bradley 1895	6.7*	14. 44. 52.356	81.36	4	...	+ 3.3465	+0.0165	-0.0076	107. 17. 25.08	81.36	4	...	+15.085	-0.328	+0.12	1895	4896
2295	W. B. (2) XIV. 945...	5.8	14. 44. 53.755	79.73	3	...	+ 2.6725	+0.0010	...	65. 35. 30.82	79.73	3	...	+15.083	-0.263	...	...	...
2296	38 Boötis	5.6	14. 45. 2.042	85.73	3	...	+ 2.1394	-0.0006	-0.0006	43. 22. 58.57	85.64	4	...	+15.076	-0.212	+0.098	1900	4903
2297	6 Ursæ Minoris	6.8*	14. 45. 13.766	83.92	3	6	+ 0.2789	+0.0677	-0.015	17. 31. 59.84	83.38	6	10	+15.064	-0.033	-0.024	1906	4909
2298	Oeltz. Arg. (N.) 14883	7.0*	14. 45. 19.326	84.06	3	...	+ 2.1230	-0.0005	...	42. 55. 22.72	84.06	3	...	+15.059	-0.211	...	...	...
2299	39 Boötis (1st Star) ...	5.8†	14. 45. 36.435	84.40	3	...	+ 2.0475	-0.0002	-0.0073	40. 47. 8.10	84.40	3	...	+15.043	-0.204	-0.075	...	...
2300	39 Boötis (as one mass)	5.5	14. 45. 36.806	86.92	...	1	+ 2.0474	-0.0002	-0.0073	40. 47. 8.37	86.92	...	1	+15.043	-0.204	-0.075	1902	4907
2301	39 Boötis (2nd Star)...	6.5†	14. 45. 36.748	84.42	2	...	+ 2.0474	-0.0002	-0.0073	40. 47. 5.95	84.40	3	...	+15.042	-0.204	-0.075	...	...
2302	Groombridge 2154...	5.5	14. 45. 45.442	80.72	3	...	+ 2.3869	-0.0010	-0.0198	52. 14. 5.63	80.72	3	...	+15.034	-0.237	-0.093	...	4906
2303	37 Boötis	4.6	14. 45. 51.287	79.62	4	...	+ 2.7571	+0.0022	+0.0089	70. 24. 1.26	81.32	14	...	+15.028	-0.273	+0.101	1898	4905
2304	12 Libræ	5.7	14. 47. 21.968	85.44	2	...	+ 3.4722	+0.0208	-0.0014	114. 9. 1.49	85.44	2	...	+14.940	-0.344	+0.037	1899	4913
2305	13 Libræ	5.9	14. 47. 52.013	86.38	4	...	+ 3.2527	+0.0133	-0.0061	101. 24. 28.08	86.38	4	...	+14.911	-0.324	+0.011	1901	4915
2306	Piazzi XIV. 204 ...	5.8†	14. 48. 23.023	81.95	7	...	+ 3.6625	+0.0283	...	123. 22. 3.20	81.95	7	...	+14.881	-0.365	...	...	4916
2307	Piazzi XIV. 217 ...	5.7	14. 48. 23.693	85.43	4	...	+ 1.5334	+0.0091	-0.0167	30. 13. 4.70	85.43	4	...	+14.880	-0.156	-0.169	...	4918
2308	15 Libræ	5.8	14. 50. 15.461	81.59	14	...	+ 3.2468	+0.0130	-0.0019	100. 55. 27.72	82.02	12	...	+14.771	-0.327	-0.006	1903	4922
2309	Piazzi XIV. 212(1stStar)	5.9	14. 50. 26.710	80.47	1	...	+ 3.4174	+0.0185	+0.0691	110. 52. 18.31	80.47	1	...	+14.759	-0.344	+1.766	...	4923
2310	Piazzi XIV. 212(2ndStar)	5.9	14. 50. 27.644	78.84	6	...	+ 3.4175	+0.0185	+0.0691	110. 52. 22.87	78.84	6	...	+14.758	-0.344	+1.766	...	...
2311	Piazzi XIV. 221 ...	5.7	14. 50. 33.446	83.44	3	...	+ 2.8308	+0.0035	-0.0014	75. 4. 4.17	83.44	4	...	+14.753	-0.286	-0.020	...	4926
2312	7 Ursæ Minoris	2.1	14. 51. 4.177	81.56	34	20	- 0.2339	+0.1018	-0.0077	15. 21. 14.38	81.70	67	31	+14.722	+0.017	+0.005	1917	4936
2313	1 Serpentis	5.6	14. 51. 24.132	85.79	3	...	+ 3.0673	+0.0083	+0.0017	89. 40. 58.81	85.69	4	...	+14.703	-0.311	+0.006	1908	4931
2314	Piazzi XIV. 226 ...	5.8	14. 51. 36.006	80.74	3	...	+ 2.7963	+0.0031	...	73. 7. 40.84	80.74	3	...	+14.691	-0.284	...	...	4933
2315	17 Libræ	7.0*	14. 51. (43.)	...	...	...	+ 3.2439	+0.0129	-0.0041	100. 40. 19.22	83.43	2	...	+14.684	-0.329	+0.001	1907	4932
2316	Lalande 27298	7.7*	14. 51. 46.564	83.85	3	...	+ 1.8117	+0.0035	-0.1129	35. 51. 0.00	84.63	4	...	+14.680	-0.186	-0.488	...	...
2317	Piazzi XIV. 235 ...	5.6	14. 52. 24.085	84.49	3	1	+ 1.9790	+0.0013	+0.0039	39. 52. 48.73	84.44	3	1	+14.643	-0.204	+0.232	...	4937
2318	18 Libræ	6.2*	14. 52. 24.150	83.97	3	...	+ 3.2443	+0.0129	-0.0084	100. 39. 39.73	83.97	3	...	+14.643	-0.330	+0.072	1909	4935
2319	W. B. XIV. 983	6.3	14. 53. 23.612	84.44	3	...	+ 2.9912	+0.0066	...	84. 57. 8.23	84.04	5	...	+14.583	-0.306	...	...	...
2320	40 Boötis	5.4	14. 55. 0.808	78.72	3	...	+ 2.3036	-0.0002	-0.0130	50. 15. 29.36	78.72	3	...	+14.486	-0.239	-0.047	1914	4943

2282, 2283. The magnitudes given in Struve's *Mensurae Micrometricae* are 6.3 and 3.0.

2289. This star is designated 6 Libræ in B. F.

2299, 2301. The magnitudes are taken from Struve's *Mensurae Micrometricae*.2306. The magnitude is taken from the *Uranometria Argentina*.2309, 2310. The magnitudes given in the *Uranometria Argentina* are 7.3 and 6.3. Authority for Proper Motion: Bonn Observations, Vol. VII.

2316. Authority for Proper Motion: Bonn Observations, Vol. VII.

2284. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.0.

2293. Authority for Proper Motion: Bonn Observations, Vol. VII.

2302. Authority for Proper Motion: Bonn Observations, Vol. VII.

2309, 2310. Authority for Proper Motion: Bonn Observations, Vol. VII.

2317. Authority for Proper Motion: Bonn Observations, Vol. VII.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY GREENWICH, 1877 TO 1886.

{1xi}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley, 1755.	No. in B.A.C., 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2321	Piazzi XIV. 239	5.9	14. 55. 58.10	83.38	3	...	+ 3.1091	+0.0093	...	92. 16. 40.99	83.74	12	...	+14.480	-0.320	...	...	4941
2322	Piazzi XIV. 260	4.8	14. 55. 40.678	82.37	2	4	+ 0.9486	+0.0282	-0.0074	23. 35. 22.64	80.57	6	4	+14.445	-0.102	-0.059	...	4949
2323	B. F. 2056	6.2	14. 56. 33.047	84.06	3	...	+ 2.0473	+0.0010	...	42. 14. 52.58	84.06	3	...	+14.392	-0.214	...	...	4952
2324	110 Virginis	4.6	14. 56. 50.298	79.73	3	...	+ 3.0306	+0.0075	-0.0050	87. 26. 11.67	79.73	3	...	+14.375	-0.314	-0.010	1915	4951
2325	41 Boötis	4.9	14. 56. 51.123	81.07	3	...	+ 2.6279	+0.0013	-0.0020	64. 31. 05.7	81.07	3	...	+14.374	-0.273	+0.048	1916	4953
2326	20 Libræ	3.3	14. 57. 2.920	78.97	2	...	+ 3.5037	+0.0209	-0.0070	114. 48. 33.10	78.97	2	...	+14.362	-0.363	+0.033	1913	4950
2327	42 Boötis	3.6	14. 57. 25.553	80.07	7	...	+ 2.2636	0.0000	-0.0048	49. 8. 6.88	80.36	9	...	+14.338	-0.237	+0.036	1918	4958
2328	Piazzi XIV. 263	5.6	14. 58. 18.620	84.09	4	...	+ 2.3986	+0.0001	...	54. 19. 25.28	84.09	4	...	+14.284	-0.252	...	...	4961
2329	Groombridge 2196...	5.8	14. 58. 31.805	84.19	3	3	- 4.5816	+0.7017	...	6. 59. 48.99	84.79	5	5	+14.271	+0.463	...	...	4982
2330	Groombridge 2182...	5.8	14. 58. 38.535	84.29	3	4	+ 1.3992	+0.0125	...	29. 19. 24.79	84.11	5	4	+14.265	-0.150	...	...	4967
2331	B. F. 2060	6.3	14. 58. 52.165	84.42	3	...	+ 2.1279	+0.0006	...	44. 53. 9.66	84.39	5	...	+14.250	-0.225	...	...	4965
2332	43 Boötis	4.5	14. 59. 18.195	81.84	20	...	+ 2.5834	+0.0011	-0.0145	62. 35. 1.47	82.22	21	...	+14.224	-0.272	+0.008	1922	4969
2333	44 Boötis (1st Star)...	4.9	14. 59. 49.719	85.45	3	...	+ 2.0186	+0.0015	-0.0432	41. 52. 42.56	85.45	3	...	+14.191	-0.214	-0.023	1923	4974
2334	44 Boötis (2nd Star)...	4.9	14. 59. 50.223	85.82	3	1	+ 2.0186	+0.0015	-0.0432	41. 52. 40.09	85.45	3	(1)	+14.191	-0.214	-0.023	1923	4974
2335	22 Libræ	6.8*	15. 0. 7.229	84.01	4	...	+ 3.3438	+0.0154	-0.0078	106. 1. 7.71	84.05	8	...	+14.173	-0.351	+0.012	1920	4971
2336	9 Ursæ Minoris	6.3*	15. 0. 17.821	84.58	5	3	+ 0.1179	+0.0705	...	17. 45. 57.04	83.58	11	5	+14.162	-0.018	...	...	4978
2337	W. B. XIV. 1112 ...	7.2*	15. 0. 21.122	83.43	1	...	+ 2.9725	+0.0064	...	83. 58. 58.56	83.43	1	...	+14.159	-0.313	...	...	...
2338	47 Boötis	5.6	15. 1. 27.439	85.02	3	1	+ 1.9926	+0.0018	-0.0080	41. 23. 5.40	83.78	3	(1)	+14.090	-0.213	-0.01	1925	4980
2339	W. B. XIV. 1141 ...	6.2	15. 1. 43.137	83.40	2	...	+ 2.9728	+0.0064	...	84. 2. 19.22	83.40	2	...	+14.074	-0.315	...	...	...
2340	Piazzi XIV. 281	5.9	15. 1. 50.275	85.77	3	...	+ 2.7459	+0.0029	...	71. 5. 37.72	85.77	3	...	+14.067	-0.291	...	...	...
2341	W. B. (2) XIV. 1327	6.3	15. 1. 52.839	85.40	1	...	+ 2.3562	+0.0003	...	53. 4. 53.59	85.40	1	...	+14.064	-0.251	...	...	...
2342	45 Boötis	5.0	15. 2. 1.819	79.08	3	...	+ 2.6207	+0.0016	+0.0116	64. 39. 45.80	79.37	2	...	+14.054	-0.279	+0.191	1924	4981
2343	Oeltz Arg.(N.) 15117	5.2	15. 2. 51.132	83.80	3	1	+ 1.7046	+0.0057	...	34. 58. 53.10	83.88	3	2	+14.003	-0.184	...	...	4992
2344	Piazzi XIV. 282 ...	6.8†	15. 2. 51.466	80.18	5	...	+ 3.4890	+0.0198	...	113. 31. 33.72	80.18	5	...	+14.003	-0.370	...	...	4984
2345	46 Boötis	5.8	15. 3. 12.954	81.48	4	...	+ 2.5889	+0.0014	-0.0005	63. 14. 16.98	81.44	8	...	+13.980	-0.277	+0.033	1926	4991
2346	Groombridge 2213...	7.5*	15. 3. 53.539	85.67	2	2	- 6.7585	+1.1588	...	5. 35. 6.43	85.81	4	2	+13.937	+0.703	...	...	5022
2347	24 Libræ	4.9	15. 5. 22.946	83.42	25	...	+ 3.4117	+0.0171	-0.0037	109. 20. 11.29	82.95	27	...	+13.844	-0.366	+0.042	1927	4995
2348	W. B. (2) XV. 106...	6.0	15. 6. 36.642	83.66	4	...	+ 2.7294	+0.0029	...	70. 34. 17.57	83.86	11	...	+13.765	-0.295	...	...	...
2349	W. B. XV. 99	7.0*	15. 7. 49.968	80.40	5	...	+ 3.0874	+0.0087	-0.0084	90. 53. 6.36	80.17	4	...	+13.688	-0.335	+0.502	...	...
2350	W. B. (2) XV. 151...	7.3*	15. 7. 50.971	83.41	3	...	+ 2.2685	+0.0007	...	50. 33. 41.70	83.41	3	...	+13.687	-0.248	...	...	...
2351	Piazzi XV. 19	5.8	15. 9. 25.769	80.04	3	...	+ 3.4688	+0.0185	...	111. 57. 15.71	80.04	3	...	+13.585	-0.378	...	...	5023
2352	48 Boötis	5.3	15. 9. 28.117	79.05	3	...	+ 2.5133	+0.0013	-0.0077	60. 23. 22.18	79.11	8	...	+13.583	-0.275	-0.033	1935	5031
2353	2 Lupi	4.7	15. 10. 31.908	85.22	5	...	+ 3.6359	+0.0238	-0.0025	119. 42. 21.42	85.19	4	...	+13.514	-0.398	+0.028	1931	5032
2354	27 Libræ	2.7	15. 10. 33.011	82.16	25	...	+ 3.2277	+0.0118	-0.0079	98. 56. 20.98	82.86	22	...	+13.513	-0.354	+0.017	1934	5034
2355	49 Boötis	3.5	15. 10. 39.910	79.75	4	...	+ 2.4116	+0.0010	+0.0069	56. 14. 11.87	81.17	7	...	+13.505	-0.266	+0.105	1936	5036
2356	Piazzi XV. 36	5.6	15. 13. 1.658	83.74	3	...	+ 2.6891	+0.0028	...	68. 59. 15.98	83.74	3	...	+13.552	-0.298	...	...	5048
2357	5 Serpentis	5.1	15. 13. 11.251	82.38	7	...	+ 3.0336	+0.0076	+0.0238	87. 46. 46.63	82.61	9	...	+13.342	-0.336	+0.528	1937	5047
2358	Lalande 27943	6.6†	15. 13. 12.392	85.41	3	...	+ 2.5576	+0.0018	...	62. 43. 23.27	85.41	3	...	+13.340	-0.284	...	...	...
2359	Groombridge 2214...	5.5	15. 13. 15.976	82.74	3	4	+ 0.6252	+0.0383	+0.0364	22. 11. 50.36	82.86	10	4	+13.336	-0.074	+0.392	...	5058
2360	28 Libræ	6.0*	15. 14. 5.475	84.44	3	...	+ 3.3924	+0.0159	-0.0018	107. 43. 17.84	84.14	4	...	+13.282	-0.376	+0.061	1938	5055

2324. The magnitude given in the *Uranometria Nova Osoniensis* is 5.0.2344. The magnitude is taken from the *Uranometria Argentina*.2353. In the B. A. C. the letter δ is assigned to a different Star.2333, 2334. The magnitudes given in Struve's *Mensura Micrometrica* are 6.1 and 5.2.

2349. Authority for Proper Motion: Bonn Observations. Vol. VII.

2358. The magnitude is taken from H. P. Part II. p. 412.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2361	Lalande 27992	7 ⁰	15. 14. 11 ⁰ 17	83 ⁶ 66	4	...	+ 2 ⁰ 326	+0 ⁰ 022	...	43. 56. 32 ⁹ 6	83 ⁶ 66	4	...	+13 ² 76	-0 ² 28	...	...	...
2362	29 Libræ	6 ⁰	15. 14. 18 ⁹ 81	84 ² 27	3	...	+ 3 ³ 431	+0 ⁰ 0145	+0 ⁰ 007	105. 6. 53 ⁰ 7	84 ² 27	3	...	+13 ² 68	-0 ³ 71	-0 ⁰ 038	1939	5057
2363	W. B. XV. 227	6 ⁰ *	15. 14. 47 ² 46	85 ³ 36	3	...	+ 3 ¹ 671	+0 ⁰ 0103	...	95. 23. 25 ⁵ 1	85 ³ 36	3	...	+13 ² 37	-0 ³ 53	...	...	...
2364	1 Coronæ	5 ⁷	15. 15. 10 ⁶ 58	83 ⁴ 44	2	...	+ 2 ⁴ 903	+0 ⁰ 0015	-0 ⁰ 0107	59. 56. 51 ⁵ 2	80 ⁶ 68	8	...	+13 ² 211	-0 ² 79	+0 ⁰ 049	1942	5061
2365	W. B. (2) XV. 326...	7 ³ *	15. 15. 58 ² 94	85 ⁴ 44	2	...	+ 2 ⁴ 441	+0 ⁰ 0014	...	58. 5. 28 ⁷ 0	85 ⁴ 44	2	...	+13 ² 159	-0 ² 75	...	...	...
2366	30 Libræ	6 ²	15. 16. 20 ² 63	83 ⁰ 4	14	...	+ 3 ³ 374	+0 ⁰ 0142	-0 ⁰ 0025	104. 42. 16 ² 29	83 ⁷ 4	21	...	+13 ² 135	-0 ³ 73	-0 ⁰ 013	1941	5063
2367	Groombridge 2283...	7 ¹	15. 16. 25 ⁹ 49	86 ⁸ 1	1	2	-22 ⁰ 135	+7 ⁴ 584	...	2. 18. 29 ¹ 9	86 ² 3	3	2	+13 ² 127	+2 ⁴ 21	...	...	5140
2368	Coronæ	S. Var.	15. 16. 30 ⁴ 45	85 ⁸ 7	2	...	+ 2 ⁴ 455	+0 ⁰ 0014	...	58. 12. 0 ⁷ 8	85 ⁸ 7	2	...	+13 ² 124	-0 ² 75	...	...	...
2369	B. D. + 52° No. 1869	5 ⁶	15. 16. 33 ⁵ 31	86 ¹ 4	1	2	+ 1 ⁷ 596	+0 ⁰ 0052	...	37. 36. 31 ⁷ 5	85 ³ 2	1	1	+13 ² 119	-0 ² 00	...	...	5071
2370	7 Serpentis	6 ⁴ *	15. 16. 42 ² 92	81 ⁸ 88	4	...	+ 2 ⁸ 388	+0 ⁰ 0046	-0 ⁰ 0019	77. 0. 7 ² 6	80 ⁶ 7	7	...	+13 ² 111	-0 ³ 19	+0 ⁰ 018	1943	5067
2371	50 Boötis	5 ³	15. 17. 0 ³ 07	82 ⁷ 5	3	...	+ 2 ⁴ 054	+0 ⁰ 0014	-0 ⁰ 0050	56. 38. 9 ⁸ 8	82 ⁴ 3	5	...	+13 ² 091	-0 ² 71	-0 ⁰ 004	1946	5072
2372	11 Ursæ Minoris	5 ¹	15. 17. 12 ⁰ 24	80 ⁴ 6	5	...	- 0 ⁰ 959	+0 ⁰ 0744	+0 ⁰ 008	17. 44. 26 ⁵ 5	81 ⁷ 9	11	...	+13 ² 077	+0 ⁰ 005	-0 ⁰ 003	1954	5079
2373	Piazzi XV. 54	6 ⁰ *	15. 17. 17 ² 04	84 ⁶ 5	4	...	+ 3 ² 867	+0 ⁰ 0129	...	101. 56. 24 ⁵ 9	84 ⁶ 5	4	...	+13 ² 072	-0 ³ 69	...	...	5070
2374	W. B. (2) XV. 381...	8 ⁸ *	15. 18. 6 ³ 54	85 ⁴ 4	1	...	+ 2 ⁰ 352	+0 ⁰ 0023	...	44. 26. 18 ⁷ 9	85 ⁴ 4	1	...	+13 ² 018	-0 ² 31	...	...	...
2375	W. B. (2) XV. 382...	9 ² *	15. 18. 6 ⁶ 75	85 ⁴ 4	1	...	+ 2 ⁰ 349	+0 ⁰ 0024	...	44. 25. 52 ⁸ 5	85 ⁴ 4	1	...	+13 ² 017	-0 ² 31	...	...	...
2376	Groombridge 2221...	5 ⁹	15. 18. 11 ⁰ 25	85 ³ 8	3	...	+ 2 ² 184	+0 ⁰ 0015	...	49. 59. 22 ⁵ 3	85 ³ 8	4	...	+13 ² 012	-0 ² 52	...	...	5076
2377	2 Coronæ	5 ⁰	15. 18. 14 ⁸ 42	80 ⁷ 6	3	...	+ 2 ⁴ 676	+0 ⁰ 0016	+0 ⁰ 0083	59. 16. 41 ¹ 8	80 ⁷ 6	3	...	+13 ² 008	-0 ² 80	+0 ⁰ 191	1947	5075
2378	51 Boötis	4 ⁴	15. 19. 57 ⁴ 16	81 ⁰ 4	4	...	+ 2 ² 781	+0 ⁰ 0015	-0 ⁰ 0143	52. 12. 4 ⁵ 8	80 ³ 7	15	...	+12 ² 894	-0 ² 60	-0 ⁰ 084	1950	5084
2379	W. B. (2) XV. 420...	6 ²	15. 20. 2 ³ 47	80 ³ 8	3	...	+ 2 ⁰ 229	+0 ⁰ 0025	...	44. 18. 14 ⁶ 8	80 ³ 8	3	...	+12 ² 888	-0 ² 32	...	...	...
2380	Groombridge 2231...	5 ⁷	15. 20. 23 ² 53	85 ⁴ 1	3	...	+ 1 ¹ 043	+0 ⁰ 0195	...	27. 31. 31 ⁹ 6	85 ⁴ 1	3	...	+12 ² 865	-0 ² 19	...	...	...
2381	Oeltz Arg. (N.) 15361	5 ⁷	15. 20. 38 ² 97	85 ⁵ 1	3	3	+ 0 ⁹ 889	+0 ⁰ 0230	...	26. 13. 47 ⁸ 0	85 ⁰ 6	3	2	+12 ² 848	-0 ¹ 16	...	...	5091
2382	13 Ursæ Minoris	3 ²	15. 20. 55 ⁷ 30	80 ² 3	13	4	- 0 ¹ 402	+0 ⁰ 0748	+0 ⁰ 004	17. 44. 20 ⁵ 2	81 ² 1	20	4	+12 ² 828	+0 ⁰ 010	-0 ⁰ 019	1962	5094
2383	32 Libræ	6 ¹	15. 21. 29 ⁴ 08	82 ⁷ 1	17	...	+ 3 ³ 733	+0 ⁰ 0148	-0 ⁰ 0010	106. 17. 49 ² 0	82 ⁷ 4	22	...	+12 ² 791	-0 ³ 84	+0 ⁰ 046	1949	5089
2384	Groombridge 2234...	7 ² *	15. 21. 56 ⁹ 88	84 ⁶ 0	5	3	+ 1 ² 143	+0 ⁰ 0162	-0 ⁰ 0547	29. 2. 3 ⁷ 5	83 ⁷ 8	5	3	+12 ² 759	-0 ¹ 42	-0 ¹ 177	...	...
2385	12 Draconis	3 ⁴	15. 22. 15 ⁷ 02	80 ¹ 3	5	2	+ 1 ³ 272	+0 ⁰ 0134	-0 ⁰ 002	30. 36. 47 ⁵ 0	80 ² 3	5	3	+12 ² 738	-0 ¹ 55	-0 ⁰ 022	1957	5097
2386	Piazzi XV. 83	6 ³	15. 22. 29 ¹ 76	79 ⁸ 0	3	...	+ 2 ⁵ 789	+0 ⁰ 0024	...	64. 28. 46 ⁸ 6	79 ⁸ 0	3	...	+12 ² 723	-0 ² 96	...	...	...
2387	10 Serpentis	5 ¹	15. 22. 34 ⁵ 89	83 ⁴ 3	3	...	+ 3 ⁰ 315	+0 ⁰ 0076	-0 ⁰ 0068	87. 44. 24 ¹ 4	83 ³ 8	4	...	+12 ² 717	-0 ³ 47	+0 ⁰ 039	1952	5095
2388	33 Libræ	7 ⁰ *	15. 22. 47 ⁵ 58	84 ¹ 4	4	...	+ 3 ³ 891	+0 ⁰ 0151	-0 ⁰ 0068	107. 1. 32 ¹ 1	84 ⁰ 8	3	...	+12 ² 702	-0 ³ 88	-0 ⁰ 010	1951	5096
2389	3 Coronæ	3 ⁸	15. 22. 52 ⁸ 69	81 ⁰ 8	3	...	+ 2 ⁴ 863	+0 ⁰ 0019	-0 ⁰ 0134	60. 28. 46 ⁸ 8	79 ⁵ 2	9	...	+12 ² 696	-0 ² 86	-0 ⁰ 074	1955	5098
2390	34 Libræ	5 ⁸	15. 23. 54 ² 46	83 ⁰ 4	5	...	+ 3 ³ 740	+0 ⁰ 0147	-0 ⁰ 0006	106. 11. 47 ⁶ 6	82 ⁸ 7	5	...	+12 ² 627	-0 ³ 88	+0 ⁰ 010	1953	5100
2391	B. D. + 47° No. 2227	5 ⁹	15. 24. 52 ⁷ 15	85 ³ 7	3	...	+ 1 ⁹ 303	+0 ⁰ 0035	...	42. 23. 4 ⁹ 6	85 ³ 7	3	...	+12 ² 560	-0 ² 25	...	...	...
2392	W. B. (2) XV. 526...	8 ⁵ *	15. 24. 53 ⁹ 81	78 ⁴ 5	3	...	+ 2 ⁵ 269	+0 ⁰ 0022	...	62. 22. 34 ⁶ 6	78 ⁴ 5	3	...	+12 ² 559	-0 ² 93	...	...	...
2393	Groombridge 2241...	6 ³	15. 25. 28 ⁶ 94	82 ⁸ 5	3	2	+ 1 ¹ 815	+0 ⁰ 0169	...	28. 54. 55 ⁵ 0	83 ⁸ 2	5	1	+12 ² 519	-0 ¹ 40	...	...	5115
2394	Piazzi XV. 110	6 ⁷ *	15. 25. 32 ⁸ 74	79 ⁷ 3	3	...	+ 1 ⁰ 491	+0 ⁰ 0206	...	27. 18. 32 ⁷ 1	81 ⁴ 4	5	2	+12 ² 515	-0 ¹ 25	...	...	5116
2395	Piazzi XV. 96	5 ⁴	15. 25. 43 ¹ 96	82 ⁴ 1	2	...	+ 3 ⁴ 375	+0 ⁰ 0161	...	109. 15. 37 ⁷ 9	82 ⁴ 1	2	...	+12 ² 504	-0 ³ 97	...	...	5109
2396	W. B. (2) XV. 555...	6 ⁶	15. 25. 55 ⁰ 23	83 ⁷ 4	3	...	+ 2 ² 779	+0 ⁰ 0018	...	52. 47. 9 ³ 0	83 ⁷ 4	3	...	+12 ² 490	-0 ² 65	...	...	...
2397	35 Libræ	5 ⁴	15. 26. 8 ⁴ 72	83 ⁷ 4	3	...	+ 3 ³ 813	+0 ⁰ 0147	-0 ⁰ 0028	106. 26. 41 ³ 7	83 ⁶ 2	4	...	+12 ² 474	-0 ³ 91	+0 ⁰ 016	1956	5112
2398	52 Boötis	5 ¹	15. 26. 37 ¹ 54	83 ⁵ 5	8	...	+ 2 ¹ 529	+0 ⁰ 0021	+0 ⁰ 0005	48. 45. 25 ⁶ 6	83 ⁵ 5	8	...	+12 ² 442	-0 ² 52	+0 ⁰ 014	1965	5122
2399	W. B. (2) XV. 581...	6 ³	15. 26. 48 ⁵ 21	83 ⁷ 4	3	...	+ 2 ² 808	+0 ⁰ 0018	...	52. 58. 25 ⁴ 3	83 ⁷ 4	3	...	+12 ² 428	-0 ² 66	...	...	...
2400	36 Libræ	5 ³	15. 27. 20 ⁹ 82	85 ⁴ 2	3	...	+ 3 ⁶ 228	+0 ⁰ 0211	-0 ⁰ 0021	117. 38. 29 ⁰ 9	85 ⁴ 2	3	...	+12 ² 391	-0 ⁴ 21	+0 ⁰ 038	1958	5121

2368. The limits of magnitude are 6¹ — 7⁸ and 11⁹ — 12⁵; the period 360^d.57.

2384. Authority for Proper Motion: Bonn Observations, Vol. VII.

2398. The magnitude given in the *Uranometria Nova Ozoniensis* is 4⁶

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxiii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Anvers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.				1755.	1850.
2401	W. B. XV. 477	7.9*	15. 27. 23.356	81°62	3	...	+ 3'1255	+0°0092	...	92. 53. 55.54	81°62	3	...	+12'389	-0°364	...	...	...
2402	53 Boötis	5.0	15. 27. 29.237	81°03	5	...	+ 2'1481	+0°0022	-0°0034	48. 41. 33.30	81°18	4	...	+12'382	-0°252	+0°017	1967	5130
2403	B. F. 2110	5.0	15. 27. 57.751	82°27	6	...	+ 3'2350	+0°0113	...	98. 46. 42.79	82°56	8	...	+12'349	-0°377	...	...	5129
2404	4 Coronæ	4.3	15. 28. 5.503	80°94	2	...	+ 2'4198	+0°0019	-0°0055	58. 14. 6.28	81°42	3	...	+12'341	-0°284	+0°02	1968	5131
2405	38 Libræ	4.0	15. 28. 48.890	85°10	7	...	+ 3'3433	+0°0136	+0°0037	104. 23. 17.52	85°31	10	...	+12'290	-0°391	-0°019	1964	5134
2406	13 Serpentis (S. Star) δ	4.0†	15. 29. (4.)	...	...	...	+ 2'8679	+0°0052	-0°0057	79. 3. 37.47	80°47	4	...	+12'273	-0°336	-0°024	...	...
2407	13 Serpentis (Mean) δ	4.0	15. 29. 4.149	79°78	3	...	+ 2'8679	+0°0052	-0°0057	79. 3. 35.47	78°46	1	...	+12'273	-0°336	-0°024	1969	5135
2408	13 Serpentis (N. Star) δ	3.0†	15. 29. 4.234	84°45	3	...	+ 2'8679	+0°0052	-0°0057	79. 3. 33.09	83°98	9	...	+12'273	-0°336	-0°024	...	...
2409	Piazzi XV. 136	5.9	15. 29. 14.646	84°65	2	4	+ 0°8428	+0°0265	...	25. 23. 14.15	83°92	10	9	+12'260	-0°103	...	...	5147
2410	5 Coronæ	2.4	15. 29. 36.416	82°19	59	...	+ 2'5298	+0°0024	+0°0085	62. 52. 50.64	82°16	71	...	+12'236	-0°298	+0°094	1973	5143
2411	15 Serpentis	6.1	15. 30. 6.354	83°75	3	...	+ 2'7264	+0°0037	-0°0041	71. 56. 37.88	83°75	3	...	+12'201	-0°321	-0°007	1974	5146
2412	16 Serpentis	5.3	15. 30. 43.603	85°12	3	...	+ 2'8769	+0°0054	...	79. 35. 15.46	85°17	4	...	+12'157	-0°339	...	...	5150
2413	6 Coronæ	5.4	15. 30. 50.708	83°78	3	...	+ 2'1983	+0°0021	+0°0013	50. 35. 25.99	82°47	2	...	+12'149	-0°260	-0°002	1979	5155
2414	18 Serpentis	5.7	15. 30. 57.498	83°76	3	...	+ 2'7568	+0°0040	+0°0062	73. 28. 57.83	83°76	3	...	+12'141	-0°325	0°00	1977	5153
2415	40 Libræ	3.9	15. 31. 17.254	81°42	1	...	+ 3'6721	+0°0223	-0°0060	119. 22. 56.17	81°42	1	...	+12'119	-0°432	+0°034	1970	5151
2416	B. D. — 20° No. 4285	5.8*	15. 31. 17.755	82°13	3	...	+ 3'4731	+0°0165	...	110. 37. 7.98	82°13	3	...	+12'118	-0°409	...	...	...
2417	41 Libræ	5.7	15. 32. 0.191	82°97	5	...	+ 3'4380	+0°0156	+0°0057	108. 54. 19.99	82°97	5	...	+12'069	-0°406	+0°078	1975	5161
2418	3 Lupi	4.6	15. 32. 8.865	82°40	4	...	+ 3'7933	+0°0256	-0°006	124. 1. 7.76	80°90	2	...	+12'059	-0°447	+0°030	1972	5160
2419	W. B. XV. 576	5.7	15. 32. 11.373	83°72	3	...	+ 3'2301	+0°0110	...	98. 23. 59.69	83°61	5	...	+12'056	-0°382	...	...	...
2420	W. B. XV. 577	5.7	15. 32. (12.)	...	...	...	+ 3'2300	+0°0110	...	98. 23. 48.11	83°90	2	...	+12'056	-0°382	...	...	...
2421	B. D. + 52 No. 1886	6.2	15. 32. 42.374	84°61	3	2	+ 1'6794	+0°0066	...	37. 32. 11.77	84°04	3	2	+12'020	-0°201	...	...	...
2422	Groombridge 2257 ..	5.8	15. 32. 51.907	85°75	3	...	+ 1'5416	+0°0087	...	34. 58. 21.67	85°75	3	...	+12'008	-0°185	...	...	...
2423	W. B. (2) XV. 750 ..	7.2	15. 33. 7.584	85°43	3	...	+ 2'5745	+0°0027	...	65. 5. 3.68	85°43	3	...	+11'990	-0°306	...	...	...
2424	42 Libræ	5.2	15. 33. 11.376	83°44	5	...	+ 3'5367	+0°0180	-0°0031	113. 25. 35.87	83°44	5	...	+11'986	-0°419	+0°012	1978	5166
2425	54 Boötis	5.4	15. 33. 31.071	81°08	3	...	+ 2'1479	+0°0024	+0°0052	49. 15. 18.26	81°08	3	...	+11'963	-0°257	-0°052	1982	5168
2426	Piazzi XV. 153	5.7	15. 34. 25.648	86°50	1	...	+ 1'9104	+0°0040	...	42. 48. 23.77	86°50	1	...	+11'898	-0°229	...	...	5177
2427	Groombridge 2260 ..	6.1	15. 34. 26.943	85°77	4	2	+ 1'5409	+0°0087	...	35. 5. 52.48	85°62	4	2	+11'897	-0°186	...	...	...
2428	7 Coronæ (1st Star) ζ	4.8	15. 34. 51.069	78°80	3	...	+ 2'2594	+0°0022	-0°0022	52. 58. 22.58	78°80	3	...	+11'869	-0°271	+0°001	...	...
2429	7 Coronæ (2nd Star) ζ	4.8	15. 34. 51.602	78°80	3	...	+ 2'2593	+0°0022	-0°0022	52. 58. 25.74	79°25	6	...	+11'868	-0°271	+0°001	3242	5178
2430	15 Ursæ Minoris	5.3	15. 35. 0.439	84°65	3	4	- 1'8928	+0°1918	-0°040	12. 15. 5.83	84°16	7	6	+11'858	+0°217	-0°014	2008	5191
2431	19 Serpentis	5.8	15. 35. 28.090	81°42	4	...	+ 2'7543	+0°0041	-0°0005	73. 35. 14.77	81°75	6	...	+11'825	-0°330	-0°001	1983	5180
2432	21 Serpentis	4.6	15. 36. 12.019	84°41	8	...	+ 2'6771	+0°0035	-0°0065	69. 56. 32.76	84°23	10	...	+11'773	-0°321	+0°028	1986	5187
2433	Groombridge 2275 ..	7.0*	15. 36. 12.829	78°22	13	9	- 3'6441	+0°4083	-0°0669	9. 9. 16.30	78°27	13	9	+11'772	+0°425	-0°126	...	5205
2434	Groombridge 2276 ..	8.3*	15. 36. 25.547	78°22	13	9	- 3'6497	+0°4073	-0°0555	9. 9. 11.57	78°28	13	8	+11'757	+0°426	-0°169	...	5207
2435	44 Libræ	5.5	15. 37. 19.345	83°99	5	...	+ 3'3692	+0°0123	-0°0045	105. 17. 21.75	83°84	7	...	+11'694	-0°404	+0°063	1985	5190
2436	Lalande (F.) 2677 ...	6.0	15. 37. 19.603	86°31	...	3	+ 0'1404	+0°0520	...	20. 19. 45.00	86°31	...	3	+11'693	-0°022	...	...	...
2437	8 Coronæ	4.2	15. 37. 42.223	80°10	3	...	+ 2'5259	+0°0027	-0°0082	63. 19. 20.91	80°10	3	...	+11'667	-0°305	-0°034	1991	5192
2438	24 Serpentis	2.7	15. 38. 21.425	82°75	34	...	+ 2'9423	+0°0062	+0°0079	83. 11. 45.07	81°96	29	...	+11'621	-0°355	-0°056	1990	5196
2439	Lalande 28670	7.7†	15. 38. 41.420	82°98	5	...	+ 3'5657	+0°0181	...	114. 20. 14.52	82°98	5	...	+11'596	-0°429	...	...	...
2440	Lalande 28716	6.7*	15. 39. 27.563	85°39	3	...	+ 2'9608	+0°0064	...	84. 10. 30.61	85°39	3	...	+11'541	-0°358	...	...	...

2406, 2408. The magnitudes are taken from Struve's *Mensure Micrometricæ*.

2419, 2420. The magnitudes given in B. D. are 7.0 and 8.0.

2430. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.

2433, 2434. Authority for Proper Motion: Dunkin (Monthly Notices R. A. S., Vol. xxxviii).

2437. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.9.2418. This star is designated ψ¹ Lupi in the B. A. C.2428, 2429. The magnitudes given in Struve's *Mensure Micrometricæ* are 5.0 and 4.1.2439. The magnitude is taken from the *Argentine General Catalogue*.

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2441	Groombridge 2286...	7.5*	h m s 15. 39. 54.939	84.41	1	2	- 5.4267	+0.6148	...	7. 20. 24.46	85.18	3	2	+11.510	+0.643	...	...	5237
2442	27 Serpentis.....λ	4.4	15. 40. 37.147	80.07	3	...	+ 2.9234	+0.0060	-0.0162	82. 16. 11.85	80.07	3	...	+11.458	-0.355	+0.057	1995	5214
2443	28 Serpentis.....β	3.8	15. 40. 39.008	80.80	4	...	+ 2.7618	+0.0043	+0.0034	74. 12. 6.09	80.83	21	...	+11.456	-0.336	+0.035	1996	5216
2444	31 Serpentis.....ν	5.7	15. 41. 42.885	83.39	4	...	+ 2.7879	+0.0045	...	75. 30. 49.47	83.39	4	...	+11.379	-0.340	...	...	5223
2445	35 Serpentis.....κ	4.3	15. 43. 20.304	80.76	3	...	+ 2.7019	+0.0038	-0.0039	71. 29. 13.27	80.42	4	...	+11.263	-0.331	+0.083	2002	5234
2446	32 Serpentis.....μ	3.5	15. 43. 21.472	79.28	4	...	+ 3.1315	+0.0088	-0.0077	93. 3. 42.46	79.28	4	...	+11.261	-0.383	+0.013	2001	5230
2447	Coronæ.....R. Var.		15. 43. 37.803	84.00	5	...	+ 2.4705	+0.0027	...	61. 28. 27.11	83.91	4	...	+11.241	-0.303	...	...	5236
2448	Oeltz.Arg.(N.)15653	6.5*	15. 43. 42.917	84.30	7	3	+ 1.4401	+0.0102	...	34. 9. 25.17	84.08	7	3	+11.235	-0.179	...	...	...
2449	1 Scorpii.....b	4.8	15. 43. 45.829	80.43	5	...	+ 3.5979	+0.0184	-0.0058	115. 23. 6.47	80.43	5	...	+11.231	-0.440	+0.038	2000	5232
2450	Oeltz.Arg.(N.)15662	8.8*	15. 44. 19.525	86.54	2	3	+ 1.4421	+0.0101	...	34. 14. 18.37	86.44	2	2	+11.190	-0.179	...	...	...
2451	10 Coronæ.....δ	4.6	15. 44. 33.681	80.48	3	...	+ 2.5203	+0.0028	-0.0075	63. 33. 47.79	80.48	3	...	+11.173	-0.310	+0.078	2010	5244
2452	Oeltz.Arg.(N.)15666	6.0	15. 44. 44.111	84.75	9	4	+ 1.4412	+0.0101	...	34. 15. 19.04	84.58	9	4	+11.161	-0.179	...	...	5248
2453	37 Serpentis.....ε	3.7	15. 44. 50.054	82.94	31	...	+ 2.9782	+0.0066	+0.0068	85. 9. 35.94	83.52	25	...	+11.154	-0.366	-0.059	2005	5245
2454	Piazzi XV. 198.....	5.2	15. 44. 50.371	81.02	5	3	+ 0.8945	+0.0224	+0.0070	27. 1. 45.08	81.14	7	3	+11.154	-0.113	+0.063	...	5249
2455	Groombridge 2281...	7.0	15. 45. 13.162	83.53	...	2	+ 1.1506	+0.0158	...	30. 3. 47.48	84.68	...	3	+11.126	-0.144	...	...	...
2456	18 Ursæ Minoris.....	6.7*	15. 46. 16.542	85.48	1	2	- 3.4952	+0.3280	...	9. 38. 30.74	85.48	1	2	+11.049	+0.420	...	...	5274
2457	45 Libræ.....λ	5.0	15. 46. 22.095	82.08	3	...	+ 3.4742	+0.0152	-0.0026	109. 48. 24.73	82.08	3	...	+11.042	-0.428	+0.013	2007	5251
2458	2 Scorpii.....A	4.7	15. 46. 24.553	82.68	4	...	+ 3.5920	+0.0179	-0.0035	114. 58. 2.19	82.68	4	...	+11.038	-0.442	+0.014	2006	5250
2459	11 Coronæ.....κ	4.7	15. 46. 42.647	84.01	5	...	+ 2.2597	+0.0026	-0.0033	53. 58. 10.37	84.01	5	...	+11.016	-0.280	+0.357	2018	5259
2460	Bradley 2009.....	5.6	15. 46. 43.899	85.97	2	...	+ 3.5738	+0.0174	-0.0049	114. 10. 26.24	85.97	2	...	+11.015	-0.440	+0.03	2009	5253
2461	Piazzi XV. 192.....	5.4	15. 46. 47.446	83.77	3	...	+ 3.5608	+0.0171	...	113. 37. 9.78	83.77	3	...	+11.012	-0.439	...	...	5254
2462	46 Libræ.....θ	4.3	15. 46. 59.628	84.63	10	...	+ 3.4009	+0.0136	+0.0067	106. 22. 33.36	84.63	10	...	+10.996	-0.420	-0.131	2011	5257
2463	3 Scorpii.....	6.7†	15. 47. 27.389	78.79	3	...	+ 3.5916	+0.0178	-0.0047	114. 53. 10.81	78.79	3	...	+10.963	-0.443	+0.04	2012	5260
2464	47 Libræ.....	6.3*	15. 48. 4.308	82.67	4	...	+ 3.4591	+0.0147	-0.0040	109. 1. 38.35	82.67	4	...	+10.917	-0.428	+0.014	2015	5264
2465	16 Ursæ Minoris.....ζ	4.5	15. 48. 22.332	82.82	10	6	- 2.2830	+0.2027	+0.003	11. 50. 13.47	82.86	19	9	+10.895	+0.275	+0.004	2041	5285
2466	1 Herculis.....χ	4.5	15. 48. 31.602	85.48	4	...	+ 2.0328	+0.0034	+0.0373	47. 12. 42.78	85.47	4	...	+10.883	-0.254	-0.601	2021	5271
2467	Lupi.....ξ ¹		15. 49. 13.163	83.76	6	...	+ 3.8202	+0.0234	...	123. 36. 47.21	83.76	6	...	+10.833	-0.474	...	...	5268
2468	Lupi.....ξ ²	4.5	15. 49. 13.926	85.43	3	...	+ 3.8202	+0.0234	...	123. 36. 43.49	85.43	3	...	+10.832	-0.474	...	...	5269
2469	Piazzi X. 212.....	6.1	15. 49. 17.323	79.72	4	...	+ 2.6479	+0.0036	...	69. 20. 10.73	80.13	3	...	+10.828	-0.330	...	...	5273
2470	5 Scorpii.....ρ	4.0	15. 49. 28.618	85.44	1	...	+ 3.6929	+0.0200	-0.0031	118. 51. 44.22	84.82	3	...	+10.813	-0.458	+0.015	2017	5272
2471	Groombridge 2288...	5.9	15. 49. 29.208	86.07	3	...	+ 1.3915	+0.0108	...	33. 49. 5.56	86.07	3	...	+10.813	-0.176	...	...	5279
2472	Piazzi XV. 215.....	6.5	15. 50. 17.451	84.13	4	...	+ 2.6844	+0.0038	...	71. 1. 37.85	84.13	4	...	+10.754	-0.335	...	...	...
2473	2 Herculis.....	5.5	15. 50. 37.718	81.40	3	...	+ 2.0007	+0.0036	-0.0055	46. 30. 40.06	81.40	3	...	+10.728	-0.251	-0.054	2025	5287
2474	B. F. 2173.....	6.5*	15. 50. 39.751	82.69	5	...	+ 3.4977	+0.0153	...	110. 38. 1.48	82.50	5	...	+10.726	-0.436	...	...	5281
2475	41 Serpentis.....γ	4.0	15. 50. 54.623	82.00	31	...	+ 2.7470	+0.0043	+0.0194	73. 56. 45.03	81.68	14	...	+10.707	-0.343	+1.286	2023	5284
2476	Lalande 29017.....	5.4	15. 51. 23.245	78.48	1	...	+ 3.5877	+0.0172	...	114. 29. 1.99	78.48	1	...	+10.673	-0.448	...	...	5286
2477	12 Coronæ.....λ	5.6	15. 51. 25.709	79.73	3	...	+ 2.1785	+0.0029	+0.0031	51. 42. 20.46	79.73	3	...	+10.669	-0.274	-0.084	2027	5295
2478	48 Libræ.....	4.8	15. 51. 28.116	86.32	2	...	+ 3.3531	+0.0123	-0.0028	103. 55. 54.29	86.32	2	...	+10.667	-0.419	+0.014	2022	5290
2479	4 Herculis.....	5.7	15. 51. 28.225	83.82	3	...	+ 2.0197	+0.0036	-0.0001	47. 5. 2.76	83.82	3	...	+10.667	-0.254	+0.009	2028	5298
2480	6 Scorpii.....π	3.1	15. 51. 35.635	80.42	2	...	+ 3.6190	+0.0179	-0.0034	115. 46. 2.15	80.42	2	...	+10.657	-0.452	+0.033	2020	5289

2442. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.7.
 2445. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.9.
 2451. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.9.
 2463. The magnitude is taken from the *Uranometria Argentina*.

2443. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.6.
 2447. The limits of magnitude are 5.8 and 13.0: the period irregular.
 2459. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.
 2467, 2468. The magnitudes given in the *Uranometria Argentina* are 5.6 and 6.2.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2481	Serpentis.....	5.4	15. 51. 42.342	85.39	3	...	+ 2.7739	+0.0045	...	75. 14. 26.90	85.39	3	...	+10.649	-0.347	...	...	5293
2482	13 Coronæ.....	4.1	15. 52. 37.120	78.43	3	...	+ 2.4880	+0.0029	-0.0074	62. 46. 25.43	79.81	11	...	+10.581	-0.313	+0.062	2029	5302
2483	7 Scorpil.....	2.5	15. 53. 14.334	80.03	10	...	+ 3.5384	+0.0159	-0.0018	112. 16. 44.08	79.88	11	...	+10.536	-0.444	+0.028	2024	5303
2484	Groombridge 2295..	6.1	15. 53. 30.063	84.54	3	1	+ 1.1582	+0.0150	...	30. 44. 30.09	84.80	3	2	+10.516	-0.148	...	...	5307
2485	49 Libræ.....	5.6	15. 53. 35.605	85.15	9	...	+ 3.4027	+0.0131	-0.0474	106. 10. 43.15	85.15	9	...	+10.508	-0.427	+0.368	2026	5304
2486	Lalande 29166.....	7.8*	15. 54. 27.081	81.73	3	...	+ 1.9871	+0.0038	...	46. 26. 35.13	81.73	3	...	+10.445	-0.252	...	...	...
2487	3 Herculis.....	6.0	15. 54. 53.739	83.95	8	...	+ 2.9771	+0.0065	-0.0047	85. 14. 8.63	83.95	8	...	+10.411	-0.376	-0.077	2031	5309
2488	Groombridge 2296..	5.0	15. 54. 56.681	81.79	3	...	+ 1.4347	+0.0098	-0.0254	34. 54. 38.33	81.79	3	...	+10.407	-0.183	-0.104	...	5313
2489	Groombridge 2297..	5.9	15. 55. 40.025	81.06	3	...	+ 1.6969	+0.0063	...	39. 46. 35.73	81.06	3	...	+10.354	-0.216	...	...	5316
2490	5 Herculis.....	5.3	15. 55. 50.813	79.12	3	...	+ 2.6967	+0.0040	-0.0050	71. 50. 56.29	79.12	3	...	+10.340	-0.341	-0.158	2032	5315
2491	Groombridge 2315..	7.3*	15. 55. 59.213	86.73	2	2	- 6.6932	+0.7142	...	6. 41. 34.11	85.28	4	3	+10.330	+0.832	...	...	5352
2492	Piazzi XV. 237.....	5.4	15. 56. 5.571	83.46	3	...	+ 3.6197	+0.0174	...	115. 31. 44.88	83.46	3	...	+10.321	-0.457	...	...	5314
2493	Lalande 29156.....	7.5*	15. 56. 8.702	79.79	3	...	+ 3.4784	+0.0144	...	109. 30. 19.83	79.79	3	...	+10.317	-0.439	...	...	...
2494	44 Serpentis.....	5.0	15. 57. 7.690	80.82	3	...	+ 2.5811	+0.0034	0.0000	66. 51. 41.45	82.12	9	...	+10.244	-0.328	-0.037	2038	5322
2495	51 Libræ.....	4.1	15. 57. 46.196	79.11	3	...	+ 3.2969	+0.0109	-0.0065	101. 2. 27.89	81.47	4	...	+10.196	-0.418	+0.019	2033	5324
2496	17 Ursæ Minoris.....	6.5*	15. 57. 53.327	80.62	3	2	- 1.5186	+0.1299	+0.001	14. 4. 56.80	80.62	3	2	+10.187	+0.187	+0.023	2063	5343
2497	8 Scorpil.....	3.1	15. 58. 27.630	83.37	25	...	+ 3.4802	+0.0142	-0.0026	109. 28. 32.40	83.42	26	...	+10.143	-0.442	+0.027	2034	5329
2498	8 Scorpil.....	3.2	15. 58. 28.063	82.66	8	...	+ 3.4801	+0.0142	-0.0026	109. 28. 20.25	82.60	11	...	+10.143	-0.442	+0.027	...	5330
2499	Lalande 29289.....	9.2*	15. 58. 33.881	85.43	3	...	+ 2.4211	+0.0029	...	60. 33. 16.35	85.43	3	...	+10.136	-0.309	...	...	...
2500	Piazzi XV. 266.....	5.9	15. 58. 54.665	83.42	6	...	+ 2.2034	+0.0030	...	53. 2. 11.11	81.54	8	...	+10.109	-0.282	...	...	5336
2501	6 Herculis.....	4.7	15. 59. 3.650	84.14	3	...	+ 1.8606	+0.0047	+0.0052	43. 37. 45.83	84.14	3	...	+10.098	-0.239	+0.064	2044	5338
2502	13 Draconis.....	4.2	15. 59. 38.441	78.86	5	...	+ 1.1558	+0.0145	-0.0037	31. 6. 49.98	78.86	5	...	+10.055	-0.150	-0.345	2053	5348
2503	9 Scorpil.....	4.1	15. 59. 47.326	83.81	3	...	+ 3.5013	+0.0144	-0.0029	110. 20. 35.17	83.81	3	...	+10.044	-0.446	+0.020	2039	5337
2504	Bradley 2043.....	7.5*	16. 0. 8.522	80.45	3	...	+ 2.8626	+0.0053	-0.0003	79. 44. 17.15	79.98	2	...	+10.016	-0.366	-0.019	2043	5344
2505	10 Scorpil.....	4.6	16. 0. 22.111	80.94	6	...	+ 3.5066	+0.0145	+0.0010	110. 32. 35.52	80.94	6	...	+ 9.999	-0.448	+0.046	2040	5342
2506	Piazzi XV. 265.....	5.8	16. 0. 48.903	83.26	5	...	+ 3.6383	+0.0172	...	116. 0. 13.24	83.26	5	...	+ 9.965	-0.465	...	...	5347
2507	11 Scorpil.....	5.6	16. 0. 56.544	82.15	3	...	+ 3.3279	+0.0112	-0.0050	102. 25. 17.03	82.97	4	...	+ 9.955	-0.426	+0.033	2042	5351
2508	Lalande 29345.....	6.3†	16. 1. 33.774	81.12	3	...	+ 3.5744	+0.0157	...	113. 21. 48.46	81.12	3	...	+ 9.908	-0.458	...	...	5354
2509	W. B. (2) XV. 1569.	6.4	16. 2. 10.234	83.50	3	...	+ 2.5985	+0.0035	...	67. 51. 15.84	83.50	3	...	+ 9.863	-0.334	...	...	...
2510	7 Herculis.....	4.8	16. 2. 39.521	78.46	3	...	+ 2.7078	+0.0041	-0.0061	72. 37. 57.10	78.44	6	...	+ 9.824	-0.349	+0.011	2049	5367
2511	Bradley 2050.....	4.8	16. 2. 40.004	78.46	3	...	+ 2.7076	+0.0041	-0.0070	72. 37. 27.56	78.46	3	...	+ 9.824	-0.349	+0.011	2049	5367
2512	W. B. XVI. 20.....	5.5	16. 3. 33.725	85.62	5	...	+ 3.1366	+0.0082	...	93. 8. 58.60	85.95	8	...	+ 9.756	-0.404	...	...	...
2513	Piazzi XV. 280.....	5.1	16. 3. 34.765	85.79	3	...	+ 3.7224	+0.0187	...	119. 5. 53.24	85.79	3	...	+ 9.754	-0.479	...	...	5374
2514	16 Coronæ.....	5.2	16. 4. 35.066	79.15	3	...	+ 2.1964	+0.0031	-0.0058	53. 12. 12.26	78.88	5	...	+ 9.678	-0.285	-0.338	2058	5385
2515	13 Scorpil.....	4.7	16. 4. 54.788	80.41	3	...	+ 3.6853	+0.0176	+0.0002	117. 36. 48.37	80.41	3	...	+ 9.652	-0.475	+0.022	2052	5381
2516	Piazzi XVI. 3.....	4.2	16. 5. 0.246	79.76	3	...	+ 3.4790	+0.0135	-0.0028	109. 8. 12.61	79.76	3	...	+ 9.646	-0.449	+0.013	...	5383
2517	14 Scorpil.....	4.2	16. 5. 1.309	81.24	5	...	+ 3.4793	+0.0135	-0.0028	109. 8. 50.94	81.24	5	...	+ 9.645	-0.449	+0.013	2055	5382
2518	15 Scorpil.....	4.8	16. 5. 26.436	78.83	3	...	+ 3.2740	+0.0101	-0.0035	99. 45. 7.12	78.83	3	...	+ 9.613	-0.423	+0.007	2056	5386
2519	16 Scorpil.....	5.5	16. 5. 37.188	83.49	4	...	+ 3.2422	+0.0096	-0.0015	98. 14. 11.27	83.48	6	...	+ 9.599	-0.419	-0.005	2057	5387
2520	Groombridge 2320..	5.4	16. 6. 0.057	80.51	4	1	+ 0.1456	+0.0407	...	21. 52. 25.66	79.86	16	3	+ 9.569	-0.023	...	...	5406

2487. B. A. C. assigns this star to Serpens.
 2497, 2498. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 2.0 and 4.0.
 2508. The magnitude is taken from the *Uranometria Argentina*.
 2516, 2517. The magnitudes given in B. D. are 7.3 and 4.5.

2494. The magnitude given in the *Uranometria Nova Ozoniensis* is 4.5.
 2502. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.9.
 2510, 2511. The magnitudes given in B. D. are 5.5 and 7.0.

{lxvi}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2521	Bradley 2060.....	5.9	h m s 16. 6. 2.744	84.14	3	...	+ 2.7136	+0.0042	-0.0023	73. 1. 22.59	84.14	3	...	+9.565	-0.352	-0.001	2060	5392
2522	10 Herculis	6.1	16. 6. 31.631	84.38	3	...	+ 2.5533	+0.0034	-0.0043	66. 11. 38.23	84.38	3	...	+9.528	-0.332	+0.011	2064	5399
2523	Piazzi XVI. 25	5.7	16. 7. 24.876	79.46	3	...	+ 2.1924	+0.0032	...	53. 15. 51.01	79.46	3	...	+9.460	-0.286	...	...	5411
2524	Lalande (F.) 2749...	5.7	16. 7. 30.812	83.89	4	...	- 2.0815	+0.1544	...	12. 53. 12.37	84.09	5	...	+9.452	+0.264	...	...	...
2525	1 Ophiuchi	2.8	16. 8. 3.423	82.10	25	...	+ 3.1421	+0.0081	-0.0049	93. 23. 2.98	84.00	37	...	+9.411	-0.409	+0.137	2065	5414
2526	W. B. XVI. 125.....	7.5*	16. 8. 20.280	85.45	3	...	+ 3.0113	+0.0066	...	87. 2. 45.38	85.45	3	...	+9.389	-0.392	...	...	...
2527	W. B. (2) XVI. 216.	7.8	16. 8. 26.124	84.15	3	...	+ 2.7169	+0.0042	...	73. 15. 38.11	84.15	3	...	+9.381	-0.354	...	...	...
2528	18 Scorpil	5.7	16. 9. 5.987	85.45	3	...	+ 3.2397	+0.0094	+0.0112	98. 3. 2.20	85.45	3	...	+9.330	-0.422	+0.514	2067	5420
2529	W. B. XVI. 140... ..	6.0	16. 9. (6.)	...	...	...	+ 3.3794	+0.0115	...	104. 32. 50.92	85.38	1	...	+9.330	-0.440	...	...	...
2530	17 Coronæ (2nd Star)σ	5.3	16. 10. 10.997	77.17	1	...	+ 2.2671	+0.0031	-0.0258	55. 50. 10.36	77.17	1	...	+9.246	-0.297	+0.061	2074	5432
2531	Bradley 2070.....	6.0*	16. 10. 36.587	78.44	3	...	+ 3.1482	+0.0081	+0.0003	93. 39. 17.59	78.44	3	...	+9.212	-0.412	-0.014	2070	5431
2532	Piazzi XVI. 31	5.0	16. 10. 51.365	85.48	2	...	+ 3.7124	+0.0174	...	118. 18. 50.16	85.48	2	...	+9.194	-0.485	...	...	5429
2533	Piazzi XVI. 35	7.3†	16. 11. 56.242	83.12	6	...	+ 3.7769	+0.0186	...	120. 36. 32.46	82.85	5	...	+9.110	-0.495	...	...	...
2534	18 Coronæ	5.8	16. 11. 56.332	78.81	3	...	+ 2.3998	+0.0032	+0.0003	60. 33. 6.74	79.47	9	...	+9.110	-0.316	+0.026	2078	5440
2535	Piazzi XVI. 36	6.0†	16. 11. 57.379	83.01	9	...	+ 3.7771	+0.0186	...	120. 36. 50.04	83.01	9	...	+9.110	-0.495	...	...	5435
2536	2 Ophiuchi	3.4	16. 11. 58.272	79.30	5	...	+ 3.1639	+0.0082	+0.0040	94. 23. 55.21	79.16	6	...	+9.107	-0.415	-0.034	2073	5437
2537	Groombridge 2326..	6.2	16. 11. 58.490	84.83	3	1	+ 0.2039	+0.0367	...	22. 33. 6.38	84.57	5	1	+9.106	-0.030	...	...	...
2538	20 Scorpil	3.0	16. 13. 53.786	78.92	9	...	+ 3.6378	+0.0155	-0.0022	115. 18. 12.11	78.85	8	...	+8.956	-0.479	+0.007	2077	5447
2539	19 Ursæ Minoris	5.5	16. 14. 15.868	83.17	5	3	- 1.7939	+0.1263	-0.005	13. 49. 15.20	83.08	14	3	+8.927	+0.230	-0.003	2096	5462
2540	Groombridge 2332..	5.4	16. 15. 15.230	81.44	3	...	+ 0.9904	+0.0161	...	29. 57. 12.91	81.95	3	2	+8.850	-0.133	...	...	5459
2541	20 Ursæ Minoris	6.8*	16. 15. 33.972	84.75	4	...	- 1.5722	+0.1119	-0.009	14. 29. 33.09	84.83	7	2	+8.825	+0.202	-0.032	2099	5475
2542	Groombridge 2328..	5.5	16. 15. 48.495	83.61	3	...	+ 2.0645	+0.0037	...	50. 0. 13.60	83.61	3	...	+8.806	-0.274	...	...	5460
2543	50 Serpentis	4.8	16. 15. 59.684	78.45	3	...	+ 3.0448	+0.0067	-0.0131	88. 41. 15.54	78.45	4	...	+8.791	-0.403	-0.035	2081	5456
2544	22 Herculis	3.9	16. 16. 8.072	83.73	10	1	+ 1.8012	+0.0052	-0.005	43. 24. 0.68	83.91	10	(1)	+8.781	-0.240	-0.036	2086	5463
2545	Lalande 29917	8.6*	16. 16. 30.846	84.11	4	2	+ 0.1642	+0.0364	-0.0854	22. 28. 22.83	83.76	4	2	+8.751	-0.025	-0.070	...	...
2546	Groombridge 2337..	6.0	16. 16. 32.565	85.49	3	...	- 1.0384	+0.0834	...	16. 18. 43.64	85.04	3	2	+8.749	+0.133	...	...	5483
2547	20 Herculis	3.8	16. 16. 37.591	82.41	39	...	+ 2.6477	+0.0039	-0.0049	70. 33. 50.62	81.68	41	...	+8.741	-0.351	-0.048	2084	5466
2548	4 Ophiuchi	4.6	16. 17. 4.958	83.43	2	...	+ 3.5048	+0.0128	-0.0028	109. 45. 18.82	83.43	2	...	+8.706	-0.464	+0.062	2082	5467
2549	Piazzi XVI. 60	5.4	16. 17. 7.756	84.40	2	...	+ 3.7516	+0.0172	...	119. 25. 19.24	84.40	2	...	+8.702	-0.497	...	...	5464
2550	19 Coronæ	4.5	16. 17. 25.269	81.42	3	...	+ 2.3432	+0.0032	-0.006	58. 49. 43.98	81.42	3	...	+8.680	-0.312	-0.115	2087	5473
2551	20 Coronæ	5.1	16. 17. 50.433	81.14	3	...	+ 2.2561	+0.0032	...	55. 55. 2.31	81.50	2	...	+8.645	-0.301	...	...	5479
2552	21 Coronæ	5.0	16. 17. 58.017	82.69	4	...	+ 2.2589	+0.0032	...	56. 0. 58.53	82.69	4	...	+8.636	-0.301	...	...	5480
2553	Lalande 29965	9.0*	16. 18. 10.227	86.21	1	1	+ 0.1513	+0.0362	...	22. 27. 9.58	86.32	1	2	+8.620	-0.024	...	...	...
2554	Lalande (F.) 2763..	7.0*	16. 18. 21.635	81.45	3	...	+ 0.9760	+0.0160	...	29. 56. 40.24	81.45	3	...	+8.605	-0.132	...	...	...
2555	24 Herculis	4.7	16. 19. 52.691	79.43	3	...	+ 2.7633	+0.0044	-0.003	75. 41. 22.07	80.37	11	...	+8.485	-0.369	+0.033	2090	5490
2556	21 Ursæ Minoris	5.0	16. 21. 1.542	82.14	5	3	- 1.8090	+0.1184	-0.019	13. 58. 7.66	83.52	4	5	+8.393	+0.236	-0.254	2111	5511
2557	25 Herculis.....	5.5	16. 21. 7.738	80.10	3	...	+ 2.1347	+0.0035	-0.0009	52. 19. 54.13	80.10	3	...	+8.385	-0.287	+0.009	2093	5496
2558	21 Scorpil	1.1	16. 22. 3.022	81.84	28	...	+ 3.6700	+0.0150	-0.0022	116. 9. 50.99	81.79	32	...	+8.312	-0.491	+0.028	2091	5498
2559	Groombridge 2347..	5.4	16. 22. 5.367	84.25	5	...	- 0.1626	+0.0446	...	20. 36. 47.86	84.25	5	...	+8.310	+0.018	...	...	5514
2560	Groombridge 2345..	6.5*	16. 22. 11.780	83.40	3	...	+ 0.7862	+0.0191	...	28. 1. 48.07	83.40	3	...	+8.300	-0.108	...	...	5509

2521. This star is designated 48 Serpentis in B. F.

2533, 2535. The magnitudes are taken from the *Uranometria Argentina*. The combined magnitude in H. P. is 5.4.2535. The magnitude is taken from the *Uranometria Argentina*.2547. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.6.

2545. Authority for Proper Motion : Bonn Observations, Vol. VII.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxvii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2561	14 Draconis	2.8	16. 22. 21.980	82.31	25	5	+ 0.8031	+ 0.0187	+ 0.006	28. 12. 50.00	81.62	40	5	+ 8.287	- 0.110	- 0.050	2104	5512
2562	W. B. XVI. 394	5.6	16. 22. 27.178	78.66	3	...	+ 3.0524	+ 0.0066	...	89. 3. 54.43	78.44	3	...	+ 8.281	- 0.409	...	...	...
2563	W. B. XVI. 402	5.8	16. 23. 0.002	83.49	3	...	+ 3.3827	+ 0.0044	...	104. 17. 9.72	83.50	4	...	+ 8.237	- 0.453	...	...	...
2564	Piazzi XVI. 92	4.6†	16. 23. 32.605	83.44	10	...	+ 3.9091	+ 0.0193	...	124. 26. 29.31	83.44	10	...	+ 8.194	- 0.524	...	...	5508
2565	8 Ophiuchi	4.4	16. 24. 16.240	85.45	10	...	+ 3.4308	+ 0.0110	- 0.0051	106. 20. 59.25	85.45	10	...	+ 8.136	- 0.461	+ 0.028	2094	5516
2566	W. B. XVI. 439	7.6*	16. 24. 34.353	80.86	5	...	+ 2.9764	+ 0.0059	- 0.0292	85. 30. 47.55	80.86	5	...	+ 8.112	- 0.401	+ 1.364	...	...
2567	30 Hercules	Var.	16. 24. 42.062	79.79	3	...	+ 1.9654	+ 0.0041	0.0000	47. 51. 12.20	79.79	3	...	+ 8.101	- 0.266	- 0.042	2102	5523
2568	10 Ophiuchi	4.0	16. 24. 51.672	83.38	17	...	+ 3.0243	+ 0.0063	- 0.0027	87. 45. 8.30	83.58	21	...	+ 8.088	- 0.407	+ 0.065	2097	5520
2569	9 Ophiuchi	4.7	16. 25. 1.468	83.31	1	...	+ 3.5472	+ 0.0126	+ 0.0001	111. 12. 29.38	83.31	1	...	+ 8.074	- 0.477	- 0.047	2095	5519
2570	27 Hercules	2.8	16. 25. 3.714	80.64	7	...	+ 2.5840	+ 0.0036	- 0.0090	68. 14. 52.39	80.18	16	...	+ 8.071	- 0.349	+ 0.015	2100	5525
2571	Herculis	4.7	16. 25. 21.025	83.80	3	...	+ 2.6086	+ 0.0037	...	69. 15. 27.33	83.80	3	...	+ 8.049	- 0.352	...	...	5527
2572	Groombridge 2351	6.4	16. 25. 39.779	86.01	2	1	+ 1.5225	+ 0.0075	...	38. 19. 45.61	85.54	2	...	+ 8.023	- 0.207	...	...	...
2573	B. F. 2270	8.5*	16. 26. 8.745	78.85	5	...	+ 2.8187	+ 0.0047	...	78. 18. 58.67	78.85	5	...	+ 7.985	- 0.381	...	...	5529
2574	Oeltz Arg. (N.) 16270	9.1*	16. 26. 17.914	86.48	3	...	+ 0.9438	+ 0.0155	...	29. 57. 21.80	86.48	4	...	+ 7.973	- 0.130	...	...	...
2575	34 Hercules	6.1	16. 26. 48.315	79.09	3	...	+ 1.6486	+ 0.0062	- 0.0007	40. 46. 37.71	79.09	3	...	+ 7.932	- 0.224	+ 0.059	2107	5535
2576	29 Hercules	5.0	16. 26. 59.354	79.03	4	...	+ 2.8169	+ 0.0047	- 0.0147	78. 15. 11.89	78.76	8	...	+ 7.918	- 0.381	+ 0.070	2105	5532
2577	W. B. (2) XVI. 839	5.3	16. 28. 10.037	80.44	3	...	+ 1.8042	+ 0.0050	...	44. 9. 6.13	80.44	3	...	+ 7.822	- 0.246	...	...	...
2578	W. B. (2) XVI. 840	5.3	16. 28. 10.513	80.44	3	...	+ 1.8041	+ 0.0050	...	44. 8. 49.88	80.44	3	...	+ 7.821	- 0.246	...	...	...
2579	15 Draconis	5.0	16. 28. 13.273	83.78	5	4	- 0.1395	+ 0.0411	- 0.0009	20. 58. 20.33	83.13	18	9	+ 7.818	+ 0.015	- 0.036	2118	5545
2580	23 Scorpil	2.9	16. 28. 24.811	83.24	13	...	+ 3.7262	+ 0.0151	- 0.0022	117. 57. 55.41	83.24	13	...	+ 7.802	- 0.504	+ 0.023	2103	5539
2581	Piazzi XVI. 111	4.4†	16. 28. 28.797	84.21	5	...	+ 3.9350	+ 0.0190	...	125. 0. 24.17	84.42	4	...	+ 7.797	- 0.532	...	...	5538
2582	32 Hercules	6.9*	16. 28. 48.583	79.00	3	...	+ 2.3390	+ 0.0033	- 0.0047	59. 14. 53.57	78.41	8	...	+ 7.770	- 0.318	+ 0.003	2110	5541
2583	Piazzi XVI. 127	6.8*	16. 29. 30.389	80.44	3	...	+ 2.0963	+ 0.0036	...	51. 39. 36.80	80.44	3	...	+ 7.715	- 0.286	...	...	...
2584	12 Ophiuchi	5.8	16. 30. 3.251	81.42	3	...	+ 3.1169	+ 0.0069	+ 0.0254	92. 4. 1.40	81.42	3	...	+ 7.670	- 0.423	+ 0.309	2108	5547
2585	35 Hercules	4.3	16. 30. 14.077	81.19	3	...	+ 1.9326	+ 0.0043	- 0.0020	47. 18. 52.81	80.85	8	...	+ 7.656	- 0.264	- 0.026	2113	5552
2586	13 Ophiuchi	2.8	16. 30. 33.074	81.97	30	...	+ 3.2975	+ 0.0087	- 0.0007	100. 19. 21.93	82.82	23	...	+ 7.630	- 0.448	- 0.035	2109	5548
2587	Lalande 30197	8.0*	16. 30. 43.690	80.14	3	...	+ 3.4411	+ 0.0105	...	106. 36. 20.03	80.14	3	...	+ 7.615	- 0.468	...	...	...
2588	Piazzi XVI. 140	6.0	16. 30. 43.939	82.33	3	1	+ 0.8341	+ 0.0169	...	28. 55. 29.64	80.65	14	1	+ 7.615	- 0.116	...	...	5560
2589	W. B. XVI. 570	6.0	16. 31. 35.923	83.49	3	...	+ 3.2089	+ 0.0077	...	96. 17. 42.47	83.51	5	...	+ 7.545	- 0.437	...	...	...
2590	Oeltz Arg. (S.) 15798	8.5*	16. 31. 51.573	81.82	3	...	+ 3.5681	+ 0.0121	...	111. 48. 11.41	81.82	3	...	+ 7.525	- 0.486	...	...	...
2591	Oeltz Arg. (N.) 16374	9.0*	16. 32. 27.696	85.48	3	...	+ 0.4755	+ 0.0236	...	25. 32. 11.42	85.48	3	...	+ 7.475	- 0.068	...	...	...
2592	Groombridge 2362	6.0	16. 32. 41.186	84.82	3	1	+ 1.7481	+ 0.0053	...	43. 8. 34.97	84.10	3	(1)	+ 7.457	- 0.240	...	...	5568
2593	Lalande 30264	7.7*	16. 32. 55.455	86.50	1	...	+ 3.4371	+ 0.0102	...	106. 22. 25.51	86.50	1	...	+ 7.437	- 0.469	...	...	...
2594	16 Draconis	5.6	16. 33. 21.190	82.02	5	...	+ 1.4149	+ 0.0082	- 0.0013	36. 51. 30.12	82.02	5	...	+ 7.403	- 0.195	- 0.027	2122	5574
2595	17 Draconis	5.2	16. 33. 23.577	81.63	5	...	+ 1.4133	+ 0.0082	- 0.0035	36. 50. 2.07	81.78	6	...	+ 7.399	- 0.195	- 0.021	2124	5575
2596	Radcliffe 3584	5.2	16. 33. 24.121	82.48	4	...	+ 1.4134	+ 0.0082	- 0.0035	36. 50. 4.07	81.84	5	...	+ 7.399	- 0.195	- 0.021	...	...
2597	36 Hercules	6.6	16. 34. 37.676	85.54	3	...	+ 2.9756	+ 0.0056	- 0.0018	85. 33. 27.14	85.54	3	...	+ 7.298	- 0.407	- 0.003	2116	5581
2598	24 Scorpil	5.2	16. 34. 37.983	85.42	8	...	+ 3.4651	+ 0.0105	- 0.0027	107. 30. 31.07	85.42	8	...	+ 7.298	- 0.474	- 0.018	2114	5579
2599	37 Hercules	5.7	16. 34. 41.246	85.54	3	...	+ 2.9755	+ 0.0056	- 0.0025	85. 32. 42.13	85.52	5	...	+ 7.293	- 0.407	+ 0.010	2117	5582
2600	Bradley 2115	5.7	16. 34. 50.509	84.36	2	...	+ 3.5182	+ 0.0111	- 0.0002	109. 41. 34.22	84.36	2	...	+ 7.281	- 0.481	- 0.044	2115	5580

2564. The magnitude is taken from the *Uranometria Argentina*.

2567. The limits of magnitude are 4.7 — 5.5 and 5.4 — 6.0; the period irregular.

2577, 2578. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 8.2 and 5.7.2595, 2596. The magnitudes given in Struve's *Mensuræ Micrometricæ* are 5.0 and 6.0.

2566. Authority for Proper Motion: Bonn Observations, Vol. VII.

2571. The letter S is omitted in the B. A. C.

2581. The magnitude is taken from the *Uranometria Argentina*.

2598. B. A. C. assigns this star to Ophiuchus.

{lxviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2601	Piazzi XVI. 154 ...	5.9	16. 35. 16.139	85.47	3	...	+ 2.7930	+0.0044	...	77. 22. 15.99	85.47	3	...	+7.247	-0.383	...	...	5587
2602	42 Hercules	5.2	16. 35. 29.486	79.79	3	...	+ 1.6294	+0.0061	-0.001	40. 50. 9.84	79.79	3	...	+7.228	-0.225	-0.021	2128	5596
2603	Groombridge 2369 ..	5.5	16. 35. 34.972	86.52	4	...	+ 1.2056	+0.0105	...	33. 44. 57.52	86.52	4	...	+7.221	-0.167	...	...	5599
2604	Groombridge 2370 ..	6.5*	16. 35. 42.563	80.84	3	...	+ 0.5902	+0.0205	...	26. 41. 7.97	79.02	9	...	+7.211	-0.083	...	...	5601
2605	Lacaille 6950.....	6.8†	16. 35. 55.966	82.13	3	...	+ 3.8484	+0.0160	...	121. 52. 36.58	82.70	4	...	+7.192	-0.527	...	...	5588
2606	B. F. 2299	6.1	16. 36. 2.108	83.79	3	...	+ 2.4878	+0.0034	...	64. 54. 31.78	83.79	3	...	+7.184	-0.342	...	...	5597
2607	39 Hercules	5.8	16. 36. 44.647	85.46	3	...	+ 2.4315	+0.0033	-0.0015	62. 51. 3.14	85.46	3	...	+7.126	-0.335	+0.049	2125	5602
2608	40 Hercules	3.1	16. 36. 45.735	80.87	48	...	+ 2.2968	+0.0033	-0.0356	58. 10. 44.38	81.33	56	...	+7.124	-0.316	-0.410	2127	5604
2609	Piazzi XVI. 159 ...	6.4†	16. 37. 29.990	81.64	6	...	+ 3.7456	+0.0140	...	118. 17. 4.59	81.64	6	...	+7.064	-0.514	...	...	5603
2610	15 Ophiuchi	6.5*	16. 37. 55.732	79.45	3	...	+ 3.6027	+0.0119	-0.004	112. 57. 32.20	79.45	3	...	+7.029	-0.495	-0.029	2123	5606
2611	44 Hercules	3.7	16. 38. 46.917	78.96	7	...	+ 2.0514	+0.0037	+0.0028	50. 50. 55.27	79.68	14	...	+6.959	-0.284	+0.077	2133	5617
2612	Piazzi XVI. 172 ...	7.7*	16. 38. 47.620	80.50	3	...	+ 2.1365	+0.0035	...	53. 15. 52.19	80.50	3	...	+6.958	-0.295	...	...	5615
2613	Piazzi XVI. 177 ...	5.8	16. 39. 26.054	80.51	3	...	+ 2.2174	+0.0034	...	55. 44. 20.73	80.23	4	...	+6.906	-0.307	...	...	5619
2614	B. F. 2310	5.6	16. 39. 56.494	83.46	3	...	+ 2.7129	+0.0040	...	74. 1. 56.07	83.43	4	...	+6.863	-0.375	...	...	5620
2615	43 Hercules	5.5	16. 40. 4.202	85.72	7	...	+ 2.8778	+0.0048	-0.0014	81. 11. 51.05	85.89	9	...	+6.854	-0.397	-0.046	2131	5621
2616	18 Draconis	5.0	16. 40. 5.413	80.06	3	1	+ 0.4001	+0.0233	+0.0001	25. 10. 59.91	81.22	26	3	+6.852	-0.058	+0.015	2141	5628
2617	W. B. (2) XVI. 1289	5.9	16. 41. 25.990	79.46	3	...	+ 1.8800	+0.0044	...	46. 33. 42.31	79.46	3	...	+6.741	-0.261	...	...	...
2618	26 Scorpii	2.2	16. 42. 23.573	82.08	14	...	+ 3.9252	+0.0160	-0.0501	124. 4. 26.21	82.38	15	...	+6.661	-0.542	+0.271	2132	5632
2619	B. D. + 54° No. 1834	8.4*	16. 43. 58.805	84.52	3	...	+ 1.2930	+0.0088	...	35. 23. 32.00	84.52	3	...	+6.530	-0.181	...	...	...
2620	B. F. 2318	6.0	16. 44. 2.215	85.38	3	...	+ 2.7695	+0.0042	...	76. 31. 40.64	85.38	3	...	+6.526	-0.385	...	...	5647
2621	Lalande 30599	7.4†	16. 44. 2.243	78.20	4	...	+ 3.6518	+0.0118	...	114. 37. 37.11	78.20	4	...	+6.526	-0.506	...	...	5641
2622	Piazzi XVI. 219 ...	6.8	16. 44. 23.770	84.36	3	1	+ 1.2234	+0.0096	...	34. 22. 37.72	84.12	3	1	+6.496	-0.172	...	...	5658
2623	47 Hercules	5.4	16. 44. 29.786	85.48	5	...	+ 2.9067	+0.0048	+0.0013	82. 32. 38.22	85.70	10	...	+6.488	-0.404	-0.012	2139	5648
2624	21 Ophiuchi	5.5	16. 45. 19.773	83.37	3	...	+ 3.0409	+0.0056	-0.0009	88. 34. 42.80	84.02	7	...	+6.419	-0.423	+0.002	2140	5659
2625	52 Hercules	5.0	16. 45. 43.502	79.14	3	...	+ 1.7510	+0.0050	-0.0036	43. 48. 25.32	79.14	3	...	+6.387	-0.245	+0.063	2149	5667
2626	50 Hercules	5.8	16. 45. 57.954	81.61	6	...	+ 2.3400	+0.0033	-0.0034	59. 59. 16.11	80.18	28	...	+6.366	-0.326	-0.015	2145	5666
2627	Piazzi XVI. 214 ...	6.6*	16. 46. 20.174	82.02	3	...	+ 3.5393	+0.0101	...	110. 12. 48.85	82.02	3	...	+6.336	-0.493	...	...	5663
2628	B. D. + 54° No. 1839	9.5*	16. 46. 58.927	84.86	3	...	+ 1.2765	+0.0088	...	35. 15. 40.51	84.76	4	...	+6.282	-0.180	...	...	...
2629	Lacaille 7047.....	7.0†	16. 47. 41.938	83.97	2	...	+ 3.8760	+0.0143	...	122. 18. 24.44	83.97	2	...	+6.222	-0.540	...	...	5679
2630	23 Ophiuchi	5.6	16. 48. 10.871	83.49	3	...	+ 3.2050	+0.0067	-0.0044	95. 57. 22.59	83.49	4	...	+6.182	-0.447	+0.005	2146	5688
2631	25 Ophiuchi	4.4	16. 48. 19.802	78.47	3	...	+ 2.8397	+0.0044	-0.0052	79. 38. 9.83	78.47	3	...	+6.169	-0.397	+0.034	2150	5692
2632	53 Hercules	5.4	16. 48. 25.049	79.85	5	...	+ 2.2803	+0.0033	-0.0090	58. 5. 55.45	79.54	16	...	+6.162	-0.319	+0.019	2151	5693
2633	Groombridge 2391 ..	5.9	16. 48. 27.656	83.48	4	4	- 2.7729	+0.1264	...	12. 16. 48.72	81.76	14	5	+6.158	+0.382	...	...	5705
2634	Piazzi XVI. 232 ...	6.2*	16. 49. 6.311	84.69	9	...	+ 3.4523	+0.0089	...	106. 36. 48.96	84.69	9	...	+6.106	-0.482	...	...	5695
2635	24 Ophiuchi	5.6	16. 49. 33.877	78.27	5	...	+ 3.6121	+0.0106	-0.0009	112. 57. 30.03	78.27	5	...	+6.067	-0.505	0.00	2148	5698
2636	W. B. (2) XVI. 1513	5.6	16. 49. 44.916	79.49	3	...	+ 2.5791	+0.0035	...	68. 50. 50.06	79.50	3	...	+6.051	-0.361	...	...	...
2637	B. D. + 54° No. 1846	8.0*	16. 49. 59.525	84.52	2	...	+ 1.2663	+0.0087	...	35. 13. 18.35	84.50	3	...	+6.030	-0.179	...	...	...
2638	Piazzi XVI. 236 (1st *)	6.9*	16. 50. 0.827	82.00	2	...	+ 3.5201	+0.0095	...	109. 20. 58.14	82.00	2	...	+6.029	-0.492	...	...	5700
2639	Piazzi XVI. 236 (2nd *)	6.9*	16. 50. 1.024	83.24	6	...	+ 3.5200	+0.0095	...	109. 20. 55.04	83.24	6	...	+6.029	-0.492	...	...	...
2640	54 Hercules	5.5	16. 50. 5.722	79.50	3	...	+ 2.6425	+0.0036	-0.0082	71. 22. 26.29	81.11	8	...	+6.022	-0.370	-0.025	2152	5702

2605. The magnitude is taken from the *Uranometria Argentina*.
 2609. The magnitude is taken from the *Uranometria Argentina*.
 2629. The magnitude is taken from the *Uranometria Argentina*.

2608. The magnitude given in the *Uranometria Nova Ozoniensis* is 2.6.
 2621. The magnitude is taken from the *Argentine General Catalogue*.
 2638, 2639. The magnitudes given in the *Argentine General Catalogue* are 8 and 6.7.

1889B.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2641	27 Ophiuchi	3.4	h m s 16. 51. 59.282	82.26	47	...	+ 2.8569	+ 0.0044	- 0.0212	80. 26. 14.93	83.62	44	...	+ 5.865	- 0.401	- 0.015	2156	5708
2642	Groombridge 2390...	6.5*	16. 52. 23.924	83.08	3	1	+ 0.8062	+ 0.0138	...	29. 26. 43.14	83.09	3	2	+ 5.830	- 0.115	...	...	5717
2643	57 Herculis	6.3*	16. 52. 35.429	79.49	4	...	+ 2.4609	+ 0.0033	+ 0.0008	64. 27. 39.65	79.50	7	...	+ 5.815	- 0.346	- 0.004	2157	5714
2644	Bradley 2153	6.3†	16. 52. 36.950	83.01	4	...	+ 3.6665	+ 0.0108	- 0.0014	114. 54. 29.33	83.01	4	...	+ 5.812	- 0.514	+ 0.01	2153	5709
2645	26 Ophiuchi	6.1†	16. 52. 48.515	79.47	3	...	+ 3.6638	+ 0.0108	- 0.0035	114. 48. 14.44	79.47	3	...	+ 5.796	- 0.514	+ 0.083	2155	5711
2646	Groombridge 2393...	7.2*	16. 53. 34.423	84.07	5	2	+ 0.6330	+ 0.0161	- 0.0514	27. 42. 33.68	83.97	5	2	+ 5.731	- 0.091	+ 0.037	...	5728
2647	Piazzi XVI. 255 ...	5.3	16. 54. 7.067	83.45	6	...	+ 3.8723	+ 0.0131	...	121. 57. 48.87	82.87	7	...	+ 5.686	- 0.544	...	...	5718
2648	30 Ophiuchi	5.0	16. 54. 43.972	78.87	4	...	+ 3.1630	+ 0.0060	- 0.0051	94. 2. 29.23	78.87	4	...	+ 5.634	- 0.445	+ 0.071	2159	5724
2649	29 Ophiuchi	6.5*	16. 54. 50.093	83.04	10	...	+ 3.5069	+ 0.0089	- 0.0051	108. 42. 27.47	83.04	10	...	+ 5.626	- 0.493	- 0.004	2158	5723
2650	Piazzi XVI. 282 ...	7.0*	16. 55. 8.964	85.27	3	1	+ 0.6004	+ 0.0162	...	27. 26. 43.89	85.31	3	1	+ 5.599	- 0.037	...	...	5734
2651	19 Draconis	4.7	16. 55. 22.303	82.16	4	2	+ 0.2781	+ 0.0214	+ 0.0357	24. 40. 54.53	81.53	19	4	+ 5.581	- 0.042	- 0.044	2169	5740
2652	58 Herculis	4.0	16. 55. 41.902	82.33	32	...	+ 2.2972	+ 0.0032	- 0.0047	58. 53. 45.53	80.91	38	...	+ 5.553	- 0.324	- 0.032	2161	5731
2653	20 Draconis	6.7*	16. 55. (49.)	...	...	...	+ 0.2888	+ 0.0211	- 0.003	24. 46. 41.92	81.91	2	1	+ 5.543	- 0.043	- 0.030	2170	5745
2654	W. B. (2) XVI. 1688	5.7	16. 55. 54.105	79.46	3	...	+ 2.5319	+ 0.0033	...	67. 11. 23.65	79.46	3	...	+ 5.536	- 0.357	...	...	...
2655	Piazzi XVI. 268 ...	5.5†	16. 56. 55.789	82.57	9	...	+ 3.9386	+ 0.0135	...	123. 57. 8.47	82.16	10	...	+ 5.449	- 0.555	...	...	5735
2656	59 Herculis	5.3	16. 57. 10.569	79.82	3	...	+ 2.2126	+ 0.0033	- 0.0014	56. 15. 25.20	79.99	4	...	+ 5.428	- 0.313	- 0.008	2165	5747
2657	B. D. + 53° No. 1910	7.5*	16. 57. 20.933	85.28	4	...	+ 1.3503	+ 0.0073	...	36. 46. 47.30	85.28	4	...	+ 5.414	- 0.192	...	...	...
2658	W. B. (2) XVI. 1735	6.1	16. 57. 23.517	83.50	3	...	+ 2.4534	+ 0.0032	...	64. 19. 27.27	83.50	3	...	+ 5.410	- 0.347	...	...	...
2659	Bradley 2163	5.1	16. 57. 38.026	79.16	3	...	+ 2.7449	+ 0.0038	- 0.0002	75. 44. 2.95	79.23	4	...	+ 5.390	- 0.388	+ 0.042	2163	5749
2660	W. B. (2) XVI. 1751	6.9	16. 57. 44.701	83.84	3	...	+ 2.2657	+ 0.0032	...	57. 56. 37.57	83.84	3	...	+ 5.380	- 0.321	...	...	...
2661	22 Ursæ Minoris	4.5	16. 58. 18.719	83.46	11	2	- 6.3757	+ 0.3092	+ 0.0090	7. 46. 4.17	82.17	19	2	+ 5.334	+ 0.894	+ 0.003	2201	5780
2662	Groombridge 2411...	6.2	16. 58. 40.119	83.63	3	1	- 1.2276	+ 0.0545	...	16. 41. 28.88	84.35	3	7	+ 5.303	+ 0.170	...	...	5769
2663	W. B. XVI. 1089 ...	5.9	16. 59. 10.242	85.69	5	...	+ 3.0527	+ 0.0051	...	89. 7. 12.61	85.69	10	...	+ 5.261	- 0.432	...	...	...
2664	61 Herculis	6.5*	16. 59. 11.775	78.23	4	...	+ 2.1491	+ 0.0034	+ 0.004	54. 24. 55.98	78.23	4	...	+ 5.258	- 0.305	+ 0.025	2168	5763
2665	Piazzi XVI. 289 ...	5.6	16. 59. 21.173	83.44	3	...	+ 3.0887	+ 0.0053	...	90. 43. 33.85	83.91	5	...	+ 5.245	- 0.437	...	...	5760
2666	Piazzi XVI. 292 ...	6.1	16. 59. 27.948	81.49	6	...	+ 2.6085	+ 0.0034	...	70. 14. 2.63	81.49	6	...	+ 5.236	- 0.370	...	...	...
2667	W. B. (2) XVI. 1807	5.9	16. 59. 33.510	84.50	3	...	+ 2.1699	+ 0.0033	...	55. 2. 30.13	84.50	3	...	+ 5.227	- 0.308	...	...	...
2668	W. B. XVI. 1125 ...	6.2	17. 0. 39.586	84.47	4	...	+ 3.1060	+ 0.0053	...	91. 29. 34.92	84.48	6	...	+ 5.134	- 0.440	...	...	...
2669	W. B. (2) XVI. 1844	5.9	17. 1. 13.746	78.85	3	...	+ 2.5433	+ 0.0033	...	67. 45. 8.63	78.85	3	...	+ 5.088	- 0.361	...	...	...
2670	Oeltz, Arg. (N.) 16790	8.9†	17. 1. 15.516	85.83	3	...	+ 1.3312	+ 0.0072	...	36. 36. 15.11	85.99	2	...	+ 5.083	- 0.190	...	...	...
2671	B. D. + 53° No. 1915	7.8*	17. 1. 16.672	85.83	3	...	+ 1.3326	+ 0.0072	...	36. 37. 33.41	85.99	2	...	+ 5.082	- 0.190	...	...	...
2672	Piazzi XVI. 297 ...	6.2*	17. 1. 16.749	85.14	5	...	+ 3.4788	+ 0.0079	...	107. 26. 55.55	85.49	7	...	+ 5.082	- 0.493	...	...	5771
2673	Piazzi XVI. 307 ...	6.2	17. 1. 25.616	85.73	3	...	+ 1.8242	+ 0.0042	...	46. 1. 26.52	85.73	3	...	+ 5.069	- 0.260	...	...	5775
2674	Oeltz, Arg. (N.) 16802	8.8*	17. 1. 41.126	86.24	2	2	+ 0.8542	+ 0.0117	- 0.0519	30. 15. 24.95	86.09	2	2	+ 5.048	- 0.123	- 0.231	...	...
2675	Groombridge 2419...	6.5*	17. 1. 53.379	86.71	2	1	- 2.9276	+ 0.1084	...	12. 10. 19.77	85.12	7	1	+ 5.031	+ 0.411	...	...	...
2676	Piazzi XVI. 303 ...	5.9	17. 2. 2.357	83.49	3	...	+ 3.0931	+ 0.0052	...	90. 55. 11.22	83.49	3	...	+ 5.018	- 0.439	...	...	5774
2677	21 Draconis (N. Star) μ	5.0†	17. 2. 50.876	79.62	2	...	+ 1.2474	+ 0.0078	- 0.0114	35. 22. 14.82	79.62	2	...	+ 4.949	- 0.178	- 0.078	...	...
2678	21 Draconis	5.2	17. 2. 50.933	81.60	5	...	+ 1.2474	+ 0.0078	- 0.0114	35. 22. 16.95	82.27	4	...	+ 4.949	- 0.178	- 0.078	2175	5785
2679	21 Draconis (S. Star) μ	5.1†	17. 2. 50.986	79.62	2	...	+ 1.2474	+ 0.0078	- 0.0114	35. 22. 17.58	79.62	2	...	+ 4.949	- 0.178	- 0.078	...	...
2680	W. B. XVII. 3	5.6	17. 3. 9.872	83.79	3	...	+ 3.3094	+ 0.0064	...	100. 21. 54.83	83.79	3	...	+ 4.922	- 0.470	...	...	...

2644. The magnitude is taken from the *Uranometria Argentina*.2645. The magnitude is taken from the *Uranometria Argentina*. The P.M. is queried in Auwers' "*Neue Reduction der Bradleyschen Beobachtungen*."

2646. Authority for Proper Motion: Bonn Observations, Vol. VII.

2659. This star is designated 32 Ophiuchi in B. F.

2674. Authority for Proper Motion: Bonn Observations, Vol. VII.

2655. The magnitude is taken from the *Uranometria Argentina*.

2670. The magnitude is taken from Oeltz, Arg. (N.).

2677, 2679. The magnitudes are taken from Struve's *Messure Micrometricæ*.

{lxx}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2681	35 Ophiuchi	2.6	17. 3. 29.781	82.54	25	...	+ 3.4337	+0.0073	+0.0003	105. 34. 29.67	82.84	24	...	+ 4.894	-0.488	-0.097	2171	5781
2682	Piazzi XVII. 3	5.5	17. 3. 46.788	79.22	3	...	+ 2.1268	+0.0033	...	53. 54. 29.31	81.22	17	...	+ 4.870	-0.303	...	...	5788
2683	Groombridge 2415 ..	6.3	17. 3. 52.041	84.55	3	...	+ 1.9577	+0.0037	-0.0084	49. 19. 35.13	84.51	2	...	+ 4.863	-0.279	+0.014	...	5790
2684	Groombridge 2427 ..	6.7	17. 5. 27.365	82.34	3	1	- 1.9382	+0.0085	...	14. 32. 13.40	83.26	3	2	+ 4.728	+0.273	...	...	5811
2685	W. B. (2) XVII. 114	5.1	17. 5. 39.999	81.84	3	...	+ 1.9455	+0.0037	...	49. 4. 18.92	81.84	3	...	+ 4.710	-0.278	...	...	...
2686	63 Herculis	6.2	17. 6. 5.122	79.72	5	...	+ 2.4830	+0.0032	+0.006	65. 36. 53.27	79.72	5	...	+ 4.675	-0.354	-0.066	2177	5798
2687	Piazzi XVII. 15	7.2*	17. 6. 18.901	79.27	4	...	+ 2.4824	+0.0032	...	65. 36. 2.75	79.27	4	...	+ 4.655	-0.354	...	...	...
2688	Bradley 2174	7.0†	17. 6. 45.924	78.73	7	...	+ 3.7306	+0.0095	-0.0037	116. 50. 21.23	78.73	7	...	+ 4.616	-0.531	+0.008	2174	5800
2689	37 Ophiuchi	5.5	17. 6. 48.343	85.47	4	...	+ 2.8257	+0.0038	-0.0015	79. 16. 6.29	85.47	4	...	+ 4.614	-0.403	+0.026	2178	5802
2690	Lalande 31378	6.2	17. 7. 45.670	84.87	5	1	+ 1.3716	+0.0065	...	37. 26. 39.04	84.68	5	1	+ 4.531	-0.197	...	...	...
2691	Oeltz Arg. (S.) 16505	8.0†	17. 7. 46.405	83.98	2	...	+ 3.7185	+0.0092	...	116. 23. 27.06	83.98	2	...	+ 4.531	-0.530	...	...	...
2692	36 Ophiuchi	5.8†	17. 7. 58.105	82.98	10	...	+ 3.7196	+0.0092	-0.0386	116. 25. 31.03	83.03	11	...	+ 4.514	-0.531	+1.138	...	...
2693	36 Ophiuchi	4.7	17. 7. 58.213	78.40	1	...	+ 3.7196	+0.0092	-0.0386	116. 25. 30.52	78.40	1	...	+ 4.514	-0.531	+1.138	2176	5808
2694	36 Ophiuchi	5.8†	17. 7. 58.314	82.14	8	...	+ 3.7196	+0.0092	-0.0386	116. 25. 25.93	82.30	9	...	+ 4.514	-0.531	+1.138	...	...
2695	22 Draconis	3.3	17. 8. 26.471	82.29	7	2	+ 0.1640	+0.0193	-0.0027	24. 8. 14.95	82.12	23	6	+ 4.474	-0.025	-0.022	2193	5823
2696	Bradley 2179	6.8†	17. 8. 50.846	83.46	4	...	+ 3.7187	+0.0091	-0.039	116. 22. 17.17	83.46	4	...	+ 4.439	-0.531	+1.134	2179	5813
2697	64 Herculis	Var.	17. 9. 10.533	82.48	36	...	+ 2.7343	+0.0035	-0.0019	75. 28. 18.50	80.90	38	...	+ 4.410	-0.391	-0.030	2183	5821
2698	64 Herculis	6.1†	17. 9. 10.926	80.97	5	...	+ 2.7344	+0.0035	-0.0019	75. 28. 20.77	81.29	7	...	+ 4.410	-0.391	-0.030	...	...
2699	Piazzi XVII. 23	5.9†	17. 9. 15.312	82.95	2	...	+ 3.9041	+0.0108	...	122. 31. 30.53	81.46	3	...	+ 4.405	-0.557	...	...	5817
2700	Ophiuchi	U	17. 10. 26.367	80.42	3	...	+ 3.0416	+0.0045	...	88. 39. 16.31	80.42	3	...	+ 4.304	-0.435	...	...	...
2701	41 Ophiuchi	5.0	17. 10. 27.036	80.32	6	...	+ 3.0793	+0.0047	-0.0041	90. 18. 31.00	80.31	5	...	+ 4.302	-0.441	+0.064	2184	5830
2702	Piazzi XVII. 31	5.2	17. 10. 41.526	86.05	4	...	+ 3.6580	+0.0083	-0.0061	114. 9. 5.08	86.05	4	...	+ 4.281	-0.523	+0.017	...	5829
2703	39 Ophiuchi	5.2	17. 10. 41.564	84.21	7	...	+ 3.6581	+0.0083	-0.0061	114. 9. 16.27	84.21	7	...	+ 4.281	-0.523	+0.017	2181	5827
2704	67 Herculis	3.4	17. 10. 52.045	78.64	3	...	+ 2.0898	+0.0033	-0.0035	53. 3. 17.94	81.43	7	...	+ 4.267	-0.300	-0.005	2187	5834
2705	W. B. XVII. 158 ...	8.7*	17. 11. 22.138	86.12	3	...	+ 3.2607	+0.0055	...	98. 12. 12.88	86.12	3	...	+ 4.224	-0.467	...	...	...
2706	Piazzi XVII. 61	5.5	17. 11. 30.652	84.85	4	1	+ 0.5057	+0.0139	...	26. 59. 19.16	83.90	6	1	+ 4.211	-0.074	...	...	5840
2707	W. B. XVII. 163	8.7*	17. 11. 35.160	86.12	3	...	+ 3.2603	+0.0055	...	98. 11. 3.57	86.27	5	...	+ 4.205	-0.467	...	...	...
2708	Piazzi XVII. 45	6.6	17. 12. 34.997	83.78	3	...	+ 3.1335	+0.0048	...	92. 40. 48.41	83.78	3	...	+ 4.120	-0.449	...	...	...
2709	W. B. (2) XVII. 308	5.9	17. 12. 45.278	79.73	4	...	+ 2.6610	+0.0033	...	72. 33. 9.83	79.73	4	...	+ 4.105	-0.382	...	...	...
2710	68 Herculis	Var.	17. 12. 53.607	79.65	2	...	+ 2.2148	+0.0031	-0.0039	56. 46. 11.09	81.08	4	...	+ 4.092	-0.318	-0.008	2194	5842
2711	Piazzi XVII. 43	6.0*	17. 12. 54.315	85.11	6	...	+ 3.4882	+0.0068	...	107. 37. 45.85	84.70	8	...	+ 4.091	-0.500	...	...	5839
2712	Bradley 2191	5.5	17. 12. 58.483	82.17	3	...	+ 2.8180	+0.0036	-0.0028	79. 0. 16.13	81.24	4	...	+ 4.087	-0.404	+0.080	2191	5841
2713	69 Herculis	4.9	17. 13. 31.897	84.16	3	...	+ 2.0704	+0.0033	-0.0046	52. 34. 55.83	84.16	3	...	+ 4.038	-0.298	-0.084	2195	5847
2714	Piazzi XVII. 69	5.9	17. 13. 45.393	84.83	3	...	+ 1.5212	+0.0052	...	40. 10. 46.51	84.83	3	...	+ 4.020	-0.219	...	...	5853
2715	40 Ophiuchi	4.5	17. 13. 48.755	83.74	8	...	+ 3.5747	+0.0073	+0.0165	110. 58. 57.18	83.87	10	...	+ 4.014	-0.513	+0.201	2186	5844
2716	Piazzi XVII. 64 ...	5.9	17. 14. 6.132	85.46	3	...	+ 2.3475	+0.0030	...	61. 3. 2.13	85.47	3	...	+ 3.990	-0.337	...	...	...
2717	W. B. (2) XVII. 377	5.9	17. 14. 21.454	84.20	3	...	+ 2.0135	+0.0034	...	51. 3. 53.00	84.20	3	...	+ 3.967	-0.290	...	...	...
2718	Groombridge 2432 ...	6.7*	17. 14. 37.196	81.32	3	2	+ 0.7229	+0.0110	...	29. 9. 28.78	79.46	8	2	+ 3.945	-0.105	...	...	...
2719	42 Ophiuchi	3.4	17. 14. 38.432	80.73	22	...	+ 3.6801	+0.0080	-0.0024	114. 52. 41.09	81.59	24	...	+ 3.944	-0.528	+0.035	2189	5851
2720	Piazzi XVII. 68	5.1	17. 15. 1.554	85.74	4	...	+ 2.6416	+0.0032	...	71. 49. 5.94	85.80	3	...	+ 3.910	-0.380	...	...	5856

2684. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.4.2691. The magnitude is taken from the *Argentine General Catalogue*.2695. This star is designated 39 Scorpii in B. F. The magnitude is taken from the *Uranometria Argentina*.2698. The magnitude is taken from Struve's *Mensurae Micrometricae*.

2700. The limits of magnitude are 6.0 and 6.7; the period about 20.

2710. The limits of magnitude are 4.6 and 5.1; the period uncertain.

2715. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.5.2688. This star is designated 29 Scorpii in B. F. The magnitude is taken from the *Uranometria Argentina*.2692, 2694. The magnitude is taken from the *Uranometria Argentina*.

2697. The limits of magnitude are 3.1 and 3.9; the period irregular.

2699. The magnitude is taken from the *Uranometria Argentina*.2702, 2703. The magnitudes given in the *Uranometria Argentina* are 7 and 6.

2712. This star is designated 66 Herculis in B. F.

2719. The magnitude given in the *Uranometria Nova Oxoniensis* is 2.8.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Anwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2721	Groombridge 2433...	6.3	17. 15. 2'097	81'76	3	2	+ 0'7262	+0'0109	...	29. 12. 6'45	80'09	7	2	+ 3'910	-0'106	...	...	...
2722	Piazzi XVII. 71 ...	5'4	17. 15. 16'372	81'15	6	...	+ 2'4422	+0'0030	...	64. 20. 22'16	81'15	6	...	+ 3'890	-0'351	...	...	...
2723	43 Ophiuchi	5'6	17. 15. 48'502	82'88	10	...	+ 3'7707	+0'0085	-0'0018	118. 1. 29'75	82'47	8	...	+ 3'844	-0'541	+0'031	2192	5857
2724	70 Herculis	5'3	17. 15. 57'673	80'56	4	...	+ 2'4709	+0'0030	-0'0027	65. 22. 48'08	79'43	20	...	+ 3'829	-0'355	-0'008	2197	5860
2725	Piazzi XVII. 76 ...	6'5*	17. 17. 31'507	83'62	1	...	+ 3'5854	+0'0069	...	111. 19. 41'11	83'62	1	...	+ 3'695	-0'516	...	...	5866
2726	Groombridge 2437...	6'8*	17. 18. 5'212	83'48	9	3	- 0'9540	+0'0329	...	18. 4. 59'63	82'73	27	6	+ 3'647	-0'135	...	...	5887
2727	Piazzi XVII. 84 ...	6'0	17. 18. 13'522	83'47	3	...	+ 2'8649	+0'0036	...	81. 2. 3'90	83'92	5	...	+ 3'635	-0'412	...	...	...
2728	44 Ophiuchi	4'5	17. 19. 2'448	80'49	4	...	+ 3'6598	+0'0072	-0'0028	114. 3. 47'54	80'49	4	...	+ 3'566	-0'527	+0'120	2198	5876
2729	73 Herculis	5'8	17. 19. 5'218	84'19	4	...	+ 2'5118	+0'0030	0'000	66. 55. 37'43	84'26	6	...	+ 3'561	-0'362	+0'032	2204	5883
2730	Piazzi XVII. 95 ...	5'8	17. 19. 9'016	79'16	3	...	+ 2'6847	+0'0032	...	73. 35. 15'04	79'08	5	...	+ 3'556	-0'387	...	...	...
2731	Piazzi XVII. 94 ...	6'1	17. 19. 9'264	83'49	3	...	+ 2'7020	+0'0032	...	74. 17. 1'20	83'49	3	...	+ 3'556	-0'389	...	...	...
2732	B. D. + 53° No. 1937	6'0	17. 19. 9'581	83'01	5	1	+ 1'2918	+0'0061	...	36. 27. 53'82	82'92	5	1	+ 3'554	-0'187	...	...	...
2733	75 Herculis	4'1	17. 19. 32'355	80'04	4	...	+ 2'0712	+0'0032	-0'0061	52. 44. 31'70	80'20	6	...	+ 3'523	-0'299	-0'016	2207	5886
2734	75 Herculis	4'1	17. 19. 32'637	80'13	5	...	+ 2'0712	+0'0032	-0'0061	52. 44. 34'44	81'16	23	...	+ 3'521	-0'299	-0'016	...	...
2735	45 Ophiuchi	4'4	17. 19. 41'537	82'59	14	...	+ 3'8249	+0'0083	-0'0003	119. 45. 24'15	82'59	14	...	+ 3'508	-0'551	+0'147	2200	5881
2736	W. B. XVII. 322 ...	8'0*	17. 19. 47'149	82'51	5	...	+ 3'0204	+0'0040	-0'0389	87. 44. 29'79	83'24	4	...	+ 3'501	-0'435	+1'057	...	...
2737	Piazzi XVII. 99 ...	4'6	17. 20. 15'805	82'77	6	...	+ 3'1870	+0'0045	...	94. 58. 45'06	83'27	10	...	+ 3'459	-0'459	...	...	5890
2738	47 Ophiuchi	6'3	17. 20. 18'025	84'14	3	...	+ 3'3620	+0'0053	+0'0002	102. 24. 17'98	85'16	14	...	+ 3'457	-0'484	+0'037	2202	5888
2739	B. F. 2390	6'0	17. 20. 31'442	84'87	3	...	+ 2'8942	+0'0036	...	82. 17. 53'69	84'87	3	...	+ 3'436	-0'417	...	...	5894
2740	49 Ophiuchi	4'4	17. 20. 33'631	82'60	32	...	+ 2'9745	+0'0038	-0'0017	85. 45. 14'90	82'80	26	...	+ 3'435	-0'429	-0'015	2206	5893
2741	W. B. XVII. 351 ...	6'2*	17. 21. 31'460	85'55	5	...	+ 3'2599	+0'0048	...	98. 6. 7'32	85'55	5	...	+ 3'352	-0'470	...	...	...
2742	Piazzi XVII. 109 ...	5'4	17. 21. 38'373	78'75	4	...	+ 2'5876	+0'0030	...	69. 48. 56'61	79'88	8	...	+ 3'342	-0'374	...	...	5900
2743	Lalande 31840	7'0*	17. 21. 42'988	85'20	3	...	+ 1'4561	+0'0051	...	39. 12. 14'73	85'20	3	...	+ 3'334	-0'211	...	...	...
2744	W. B. (2) XVII. 633	6'0	17. 22. 27'520	83'49	3	...	+ 2'1556	+0'0030	...	55. 12. 10'76	83'49	3	...	+ 3'270	-0'312	...	...	...
2745	Piazzi XVII. 112 ...	5'2	17. 22. 42'396	83'43	4	...	+ 3'0624	+0'0039	...	89. 34. 13'53	83'43	4	...	+ 3'250	-0'442	...	...	5903
2746	77 Herculis	5'8	17. 23. 33'397	85'88	5	...	+ 1'5875	+0'0044	-0'0019	41. 38. 19'39	85'88	5	...	+ 3'176	-0'230	+0'023	2211	5911
2747	51 Ophiuchi	4'9	17. 24. 5'640	80'73	6	...	+ 3'6566	+0'0065	-0'0023	113. 52. 5'01	80'80	7	...	+ 3'129	-0'528	+0'012	2209	5907
2748	Radcliffe 3714	5'8	17. 24. 8'282	82'63	8	3	+ 0'7710	+0'0089	...	29. 51. 2'18	80'63	23	4	+ 3'126	-0'112	...	...	5917
2749	B. D. — 0° No. 3300	5'4	17. 24. 13'081	78'88	3	...	+ 3'0945	+0'0040	-0'0084	90. 57. 42'54	78'88	3	...	+ 3'118	-0'447	+0'136	...	5910
2750	Piazzi XVII. 127 ...	5'6	17. 25. 20'273	83'92	6	...	+ 3'0073	+0'0037	...	87. 11. 3'47	84'16	7	...	+ 3'022	-0'435	...	...	5919
2751	Lalande 32047	6'5*	17. 25. 22'316	83'74	6	1	- 0'1040	+0'0168	-0'0934	22. 35. 33'86	83'58	6	1	+ 3'019	+0'014	0'000	...	...
2752	76 Herculis	4'3	17. 25. 53'327	80'21	6	...	+ 2'4217	+0'0028	-0'0002	63. 47. 52'69	80'42	17	...	+ 2'974	-0'351	-0'022	2213	5922
2753	B.D. + 50° No. 2412 (1st Star)	6'8*	17. 26. 4'679	85'28	5	...	+ 1'4415	+0'0048	...	39. 2. 9'57	85'47	4	...	+ 2'957	-0'209	...	...	...
2754	B.D. + 50° No. 2412 (2nd Star)	6'8*	17. 26. 5'111	84'99	4	...	+ 1'4415	+0'0048	...	39. 2. 9'21	85'15	3	...	+ 2'957	-0'209	...	...	...
2755	W. B. (2) XVII. 738	8'0*	17. 26. 7'632	83'55	3	...	+ 2'5051	+0'0029	...	66. 46. 56'73	83'51	5	...	+ 2'953	-0'363	...	...	...
2756	Piazzi XVII. 143 ...	5'8	17. 26. 22'776	83'52	3	...	+ 2'2698	+0'0029	...	58. 45. 5'06	83'50	4	...	+ 2'931	-0'329	...	...	5927
2757	W. B. XVII. 470 ...	5'8	17. 27. 5'446	85'46	4	...	+ 3'2033	+0'0042	...	95. 39. 19'63	85'46	4	...	+ 2'870	-0'464	...	...	...
2758	78 Herculis	5'6	17. 27. 6'801	79'05	4	...	+ 2'3540	+0'0028	+0'0003	61. 30. 17'22	79'05	4	...	+ 2'868	-0'341	-0'039	2214	5931
2759	23 Draconis	3'0	17. 27. 43'264	82'73	25	1	+ 1'3540	+0'0051	-0'0020	37. 36. 33'15	82'31	24	1	+ 2'816	-0'197	-0'004	2221	5937
2760	W. B. XVII. 493 ...	6'0*	17. 28. 5'952	85'54	4	...	+ 3'3335	+0'0045	...	101. 9. 33'17	85'53	6	...	+ 2'782	-0'483	...	...	...

2721. The magnitude given in the *Uranometria Nova Oxoniensis* is 6'0.

2736. Authority for Proper Motion: Bonn Observations, Vol. VII.

2748. The magnitude given in the *Uranometria Nova Oxoniensis* is 5'5.

2751. Authority for Proper Motion: Bonn Observations, Vol. VII.

2753, 2754. The magnitudes given in Struve's *Mensurae Micrometricae* are 7'2 and 7'0.2733, 2734. The magnitudes given in Struve's *Mensurae Micrometricae* are 5'1 and 4'0.

2738. B. A. C. assigns this star to Serpens.

2749. Authority for Proper Motion: Bonn Observations, Vol. VII.

2752. The magnitude given in the *Uranometria Nova Oxoniensis* is 4'7.

{lxix}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2761	W. B. (2) XVII. 813	6.5	17. 28. 9.958	79.80	3	...	+ 2.6074	+0.0029	...	70. 39. 18.92	79.80	3	...	+ 2.777	-0.378	...	...	...
2762	W. B. (2) XVII. 817-8	5.5	17. 28. 17.289	79.48	3	...	+ 2.6825	+0.0029	...	73. 35. 47.61	79.48	3	...	+ 2.767	-0.389	...	...	...
2763	Groombridge 2456 ..	5.9	17. 28. 43.563	85.09	4	...	- 4.6284	+0.1016	...	9. 45. 34.33	85.14	7	...	+ 2.728	+0.668	...	...	...
2764	53 Ophiuchi (1st Star) f	5.9	17. 28. 54.243	83.44	1	...	+ 2.8469	+0.0032	-0.004	80. 20. 33.18	83.44	1	...	+ 2.713	-0.413	+0.015	...	...
2765	53 Ophiuchi (2nd Star) f	5.9	17. 28. 54.802	83.45	3	...	+ 2.8466	+0.0032	-0.004	80. 19. 51.13	83.45	3	...	+ 2.712	-0.413	+0.015	2215	5940
2766	55 Ophiuchi	2.2	17. 29. 21.844	82.96	77	...	+ 2.7750	+0.0029	+0.0066	77. 21. 5.70	82.27	79	...	+ 2.673	-0.402	+0.217	2218	5941
2767	24 Draconis	4.9	17. 29. 48.740	84.77	4	...	+ 1.1606	+0.0058	+0.0183	34. 43. 59.38	84.77	4	...	+ 2.634	-0.169	-0.048	2222	5950
2768	25 Draconis	4.8	17. 29. 54.159	84.77	4	...	+ 1.1609	+0.0058	+0.0179	34. 44. 41.48	84.77	4	...	+ 2.626	-0.169	-0.044	2224	5951
2769	Piazzi XVII. 163 ..	5.8	17. 30. 51.929	84.17	3	...	+ 2.5613	+0.0028	...	68. 55. 34.83	84.17	3	...	+ 2.542	-0.372	...	...	...
2770	W. B. (2) XVII. 9489	7.1*	17. 31. 2.988	84.51	3	...	+ 1.8147	+0.0034	...	46. 31. 21.29	84.51	3	...	+ 2.527	-0.264	...	...	...
2771	57 Ophiuchi	4.7	17. 31. 19.324	84.53	4	...	+ 3.2598	+0.0040	-0.0031	98. 2. 39.40	84.53	6	...	+ 2.503	-0.473	+0.006	2220	5953
2772	Bradley 2219	6.3*	17. 31. 32.279	85.71	5	...	+ 3.6040	+0.0053	-0.0042	111. 50. 24.14	85.71	5	...	+ 2.485	-0.523	+0.035	2219	5954
2773	Piazzi XVII. 176 ..	5.7	17. 32. 2.680	78.43	3	...	+ 2.2794	+0.0028	...	59. 8. 24.16	79.63	10	...	+ 2.440	-0.331	...	...	5962
2774	27 Draconis	5.3	17. 32. 26.640	80.89	7	1	- 0.2482	+0.0153	-0.0070	21. 47. 19.12	80.57	27	3	+ 2.405	+0.035	-0.125	2234	5972
2775	79 Herculis	5.8	17. 32. 34.401	83.45	3	...	+ 2.4707	+0.0027	-0.0022	65. 37. 3.54	83.45	4	...	+ 2.393	-0.359	-0.008	2223	5967
2776	Cape (1880) 9620 ..	7.8†	17. 32. 54.417	84.74	4	...	+ 3.9047	+0.0064	...	122. 5. 16.69	84.74	4	...	+ 2.366	-0.566	...	...	...
2777	Piazzi XVII. 167 ..	6.8†	17. 33. 9.297	85.13	3	...	+ 3.9068	+0.0064	...	122. 8. 50.60	85.13	3	...	+ 2.344	-0.567	...	...	5964
2778	26 Draconis	5.3	17. 33. 45.066	79.50	3	...	+ 0.5778	+0.0085	+0.0379	28. 1. 59.97	79.50	3	...	+ 2.292	-0.084	+0.518	...	5978
2779	Piazzi XVII. 196 ..	6.4	17. 35. 25.552	79.46	4	...	+ 2.2652	+0.0027	...	58. 43. 58.76	79.87	5	...	+ 2.146	-0.329	...	...	5986
2780	85 Herculis	3.9	17. 36. 4.593	83.84	27	...	+ 1.6920	+0.0035	-0.0004	43. 55. 45.28	84.03	26	...	+ 2.089	-0.246	-0.005	2233	5990
2781	Bradley 2228	6.3*	17. 36. 9.825	80.01	4	...	+ 2.4642	+0.0026	-0.0001	65. 25. 34.95	80.01	4	...	+ 2.082	-0.358	-0.054	2228	5988
2782	58 Ophiuchi	5.0	17. 36. 14.361	83.55	5	...	+ 3.5994	+0.0047	-0.0071	111. 37. 23.30	83.55	5	...	+ 2.076	-0.523	+0.043	2226	5987
2783	Piazzi XVII. 203 ..	5.7	17. 36. 35.519	79.13	3	...	+ 2.6907	+0.0027	...	73. 59. 27.89	78.96	4	...	+ 2.044	-0.391	...	...	5991
2784	Piazzi XVII. 207 ..	7.8*	17. 36. 47.547	79.97	4	...	+ 2.4624	+0.0026	...	65. 21. 57.42	79.97	4	...	+ 2.027	-0.358	...	...	5994
2785	Piazzi XVII. 237 ..	7.7*	17. 37. 6.714	79.52	5	...	- 0.3146	+0.0138	...	21. 26. 34.46	79.52	5	...	+ 1.999	+0.045	...	...	...
2786	Oeltz. Arg. (N.) 17415	9.1*	17. 37. 7.400	80.08	4	...	- 0.2960	+0.0137	-0.0679	21. 33. 4.15	80.08	4	...	+ 1.999	+0.042	+1.213	...	...
2787	Oeltz. Arg. (N.) 17419	7.9*	17. 37. 16.367	80.49	7	1	- 0.2962	+0.0136	...	21. 33. 9.52	80.65	6	1	+ 1.986	+0.042	...	...	...
2788	60 Ophiuchi	2.9	17. 37. 32.661	82.88	59	...	+ 2.9648	+0.0030	-0.0041	85. 22. 53.17	83.55	45	...	+ 1.961	-0.431	-0.167	2229	5996
2789	83 Herculis	5.7	17. 37. 33.111	80.15	3	...	+ 2.4624	+0.0026	-0.0061	65. 22. 28.10	80.15	3	...	+ 1.961	-0.358	+0.106	2232	5999
2790	28 Draconis	4.9	17. 37. 39.299	81.27	3	3	- 0.3606	+0.0139	+0.0024	21. 11. 12.27	83.52	16	13	+ 1.953	-0.052	-0.308	2238	6006
2791	B. D. + 14° No. 3321	6.2	17. 37. 53.965	79.58	3	...	+ 2.7319	+0.0027	...	75. 38. 58.38	79.58	3	...	+ 1.931	-0.397	...	...	...
2792	84 Herculis	6.0	17. 38. 26.096	78.91	5	...	+ 2.4690	+0.0026	-0.0096	65. 37. 8.64	80.16	8	...	+ 1.884	-0.359	-0.088	2235	6005
2793	Lalande 32455	6.2	17. 38. 36.583	84.29	4	...	+ 1.3760	+0.0042	...	38. 7. 24.86	84.29	4	...	+ 1.868	-0.201	...	...	...
2794	Piazzi XVII. 219 ..	7.2*	17. 38. 48.820	83.53	3	...	+ 2.7444	+0.0027	...	76. 9. 47.69	83.53	3	...	+ 1.851	-0.399	...	...	...
2795	W. B. XVII. 744 ..	6.1	17. 38. 49.573	79.78	3	...	+ 2.7289	+0.0027	...	75. 32. 12.09	79.78	3	...	+ 1.850	-0.397	...	...	...
2796	W. B. XVII. 751 ..	9.0*	17. 39. 24.436	86.20	3	...	+ 2.9389	+0.0029	...	84. 16. 50.71	86.20	3	...	+ 1.799	-0.428	...	...	...
2797	Oeltz. Arg. (N.) 17464	6.0	17. 39. 25.557	84.53	5	3	- 1.1556	+0.0198	...	17. 28. 54.56	84.46	6	3	+ 1.797	+0.167	...	...	...
2798	Piazzi XVII. 222 ..	7.8*	17. 39. 40.922	85.80	7	...	+ 2.9378	+0.0029	...	84. 14. 0.33	85.80	7	...	+ 1.775	-0.428	...	...	...
2799	Lalande 32405	8.0*	17. 39. 41.583	83.80	3	...	+ 3.4530	+0.0038	...	105. 57. 16.08	83.80	3	...	+ 1.774	-0.502	...	...	...
2800	3 Sagittarii	X Var.	17. 40. 0.485	80.64	5	...	+ 3.7740	+0.0047	-0.0033	117. 47. 1.48	80.64	5	...	+ 1.746	-0.549	+0.014	2230	6008

2764, 2765. The magnitudes given in B. D. are 8.5 and 6.7.
 2776. The magnitude is taken from the *Uranometria Argentina*.
 2778. Authority for Proper Motion: Bonn Observations, Vol. VII.
 2800. The limits of magnitude are 4 and 6; the period 7^d or.

2772. This star is designated 2 Sagittarii in B. F.
 2777. The magnitude is taken from the *Uranometria Argentina*.
 2786. Authority for Proper Motion: Bonn Observations, Vol. VII.

1880 G.O.A.M.M. 49J...1C	Star's Name.	Magnitude.	Mean R.A. 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"		
2801	Piazzi XVII. 226 ...	Cum	17. 40. 4'33.1	85'82	6	...	+ 2'9383	+0'0029	...	84. 15. 21'24	85'82	6	...	+ 1'744	-0'428	...	...	6012
2802	Piazzi XVII. 230 ...	7'7*	17. 40. 18'024	85'90	3	...	+ 2'9392	+0'0028	...	84. 17. 33'92	85'90	3	...	+ 1'722	-0'428	...	...	...
2803	W. B. (2) XVII. 1304	6'5	17. 41. 9'495	83'61	3	...	+ 2'2541	+0'0026	...	58. 26. 50'44	83'61	3	...	+ 1'646	-0'328	...	...	...
2804	Lalande 32566	5'8	17. 41. 28'862	81'44	3	...	+ 1'2480	+0'0044	...	36. 8. 50'34	81'44	3	...	+ 1'619	-0'182	...	...	...
2805	86 Herculis	3'5	17. 41. 45'700	82'88	61	...	+ 2'3699	+0'0025	-0'0244	62. 12. 29'41	82'47	49	...	+ 1'594	-0'345	+0'745	2237	6021
2806	W. B. (2) XVII. 1314	5'7	17. 41. 50'225	80'50	4	...	+ 2'6459	+0'0026	...	72. 15. 27'18	80'50	4	...	+ 1'588	-0'385	...	...	...
2807	62 Ophiuchi	3'8	17. 41. 52'520	78'51	3	...	+ 3'0082	+0'0028	-0'0037	87. 14. 47'39	78'51	3	...	+ 1'584	-0'438	+0'056	2236	6020
2808	Groombridge 2464...	6'2	17. 41. 54'030	80'56	2	...	+ 1'9956	+0'0028	...	51. 4. 14'57	80'56	2	...	+ 1'582	-0'291	...	...	...
2809	Groombridge 2465...	6'5	17. 42. 0'758	84'23	6	...	+ 1'9787	+0'0028	...	50. 37. 53'31	84'23	6	...	+ 1'572	-0'288	...	...	...
2810	Piazzi XVII. 238 ...	7'0†	17. 42. 50'810	84'75	5	...	+ 3'7522	+0'0042	...	117. 1. 16'87	84'75	5	...	+ 1'499	-0'546	...	...	6024
2811	B. D. + 49° No. 2689	7'3*	17. 42. 57'019	84'54	3	...	+ 1'5078	+0'0036	...	40. 26. 13'64	84'54	3	...	+ 1'491	-0'220	...	...	...
2812	B. D. + 20° No. 3570	5'9	17. 43. 15'831	79'75	3	...	+ 2'5709	+0'0025	...	69. 23. 36'09	79'75	3	...	+ 1'463	-0'375	...	...	...
2813	Piazzi XVII. 255 ...	6'0	17. 43. 35'113	80'17	3	...	+ 2'6054	+0'0025	...	70. 42. 19'53	79'90	7	...	+ 1'435	-0'380	...	...	6030
2814	87 Herculis	5'4	17. 43. 57'220	79'89	3	...	+ 2'4315	+0'0025	-0'0010	64. 20. 10'17	78'98	5	...	+ 1'403	-0'354	+0'037	2239	6033
2815	31 Draconis (1st *) †	4'5	17. 44. 4'326	79'73	4	4	- 1'0835	+0'0156	-0'0006	17. 47. 34'43	79'64	14	5	+ 1'393	+0'157	+0'268	2251	6047
2816	31 Draconis (2nd *) †	4'5	17. 44. 6'007	77'39	...	3	- 1'0856	+0'0156	-0'0008	17. 47. 4'45	79'05	3	3	+ 1'390	+0'157	+0'278	2252	6048
2817	W. B. (2) XVII. 1438	5'7	17. 45. 43'785	79'54	3	...	+ 2'3218	+0'0025	...	60. 38. 41'87	79'54	3	...	+ 1'248	-0'339	...	...	...
2818	W. B. (2) XVII. 1433	5'9	17. 45. 45'189	83'62	3	...	+ 2'5237	+0'0025	...	67. 38. 57'00	84'03	5	...	+ 1'246	-0'368	...	...	...
2819	30 Draconis	5'2	17. 46. 12'380	82'55	3	...	+ 1'4354	+0'0035	-0'0050	39. 11. 24'67	82'55	3	...	+ 1'207	-0'210	-0'202	2243	6052
2820	Radcliffe (1860) 1691	7'2*	17. 46. 21'036	81'26	3	...	+ 2'3009	+0'0025	...	59. 58. 16'62	80'18	5	...	+ 1'194	-0'336	...	...	...
2821	Piazzi XVII. 266 ...	6'2	17. 46. 30'564	81'50	6	...	+ 3'0412	+0'0026	...	88. 39. 50'35	81'50	6	...	+ 1'179	-0'443	...	...	...
2822	Piazzi XVII. 271 ...	5'9	17. 47. 23'511	78'53	3	...	+ 2'9290	+0'0025	...	83. 52. 22'35	78'53	3	...	+ 1'102	-0'427	...	...	...
2823	Bradley 2245	6'2*	17. 48. 10'504	81'86	3	...	+ 1'9516	+0'0027	-0'001	49. 59. 26'96	81'57	4	...	+ 1'035	-0'285	-0'062	2245	6062
2824	Lalande 32834	6'5	17. 48. 41'501	84'60	3	...	+ 1'6566	+0'0030	...	43. 19. 29'24	84'60	3	...	+ 0'988	-0'242	...	...	...
2825	Oeltz Arg. (N.) 17595	8'2*	17. 48. 49'702	84'60	3	...	+ 1'5196	+0'0033	...	40. 41. 51'95	84'60	3	...	+ 0'977	-0'222	...	...	...
2826	Piazzi XVII. 277 ...	6'5	17. 48. 51'478	84'51	11	...	+ 3'5264	+0'0030	...	108. 46. 45'65	84'67	14	...	+ 0'975	-0'514	...	...	6060
2827	Lalande 32727	5'8	17. 49. 7'291	80'57	3	...	+ 3'7837	+0'0033	...	118. 2. 39'58	80'57	3	...	+ 0'952	-0'552	...	...	6063
2828	90 Herculis	5'3	17. 49. 23'655	86'31	4	...	+ 1'9504	+0'0027	+0'0005	49. 58. 6'85	86'10	6	...	+ 0'927	-0'285	-0'064	2248	6068
2829	Piazzi XVII. 291 ...	5'8	17. 50. 11'496	84'60	3	...	+ 3'0562	+0'0024	...	89. 18. 37'02	84'60	2	...	+ 0'857	-0'446	...	...	6069
2830	Piazzi XVII. 293 ...	5'7	17. 50. 27'503	84'66	4	...	+ 3'1672	+0'0025	...	94. 3. 48'03	84'66	4	...	+ 0'834	-0'462	...	...	6071
2831	89 Herculis	5'6	17. 50. 34'739	82'07	19	...	+ 2'4188	+0'0024	+0'0003	63. 55. 47'87	82'78	20	...	+ 0'824	-0'353	-0'009	2249	6073
2832	W. B. (2) XVII. 1591	5'8	17. 50. 48'313	82'03	4	...	+ 2'5194	+0'0023	...	67. 30. 59'16	82'03	4	...	+ 0'805	-0'368	...	...	...
2833	32 Draconis	3'9	17. 51. 27'161	81'25	3	2	+ 1'0235	+0'0038	+0'0149	33. 6. 28'92	81'91	3	7	+ 0'748	-0'150	-0'077	2263	6079
2834	91 Herculis	4'0	17. 52. 8'208	82'64	3	...	+ 2'0556	+0'0025	-0'0018	52. 43. 58'38	82'64	3	...	+ 0'688	-0'300	-0'024	2256	6082
2835	64 Ophiuchi	3'5	17. 52. 25'134	84'48	2	...	+ 3'3021	+0'0024	-0'0019	99. 45. 27'50	84'48	2	...	+ 0'663	-0'482	+0'105	2250	6078
2836	4 Sagittarii	4'6	17. 52. 28'000	84'61	5	...	+ 3'6617	+0'0027	-0'0013	113. 48. 12'95	84'61	5	...	+ 0'659	-0'534	+0'054	2246	6077
2837	Piazzi XVII. 304 ...	6'5*	17. 52. 51'796	84'39	5	...	+ 3'5674	+0'0025	...	110. 19. 44'41	84'39	5	...	+ 0'624	-0'520	...	...	6081
2838	92 Herculis	3'9	17. 53. 6'064	83'74	4	...	+ 2'3235	+0'0024	+0'0006	60. 44. 16'99	83'74	4	...	+ 0'604	-0'339	+0'028	2258	6084
2839	B. D. + 49° No. 2714	8'4*	17. 53. 33'734	84'91	3	...	+ 1'5260	+0'0029	...	40. 50. 5'74	85'06	2	...	+ 0'563	-0'223	...	...	...
2840	33 Draconis	7'2	17. 53. 49'186	81'99	38	10	+ 1'3920	+0'0031	-0'0018	38. 29. 47'46	81'95	36	10	+ 0'541	-0'203	+0'028	2267	6091

2801. In H. P. the magnitude appears as "cum," indicating that the proximity of other stars prevented estimation.

2804. The magnitude given in the *Uranometria Nova Oxoniensis* is 5'5.2814. The magnitude given in the *Uranometria Nova Oxoniensis* is 5'7.2817. The magnitude given in the *Uranometria Nova Oxoniensis* is 6'2.2810. The magnitude is taken from the *Uranometria Argentina*.2815, 2816. The magnitudes given in Struve's *Mensura Micrometricae* are 4'0 and 5'2.2834. The magnitude given in the *Uranometria Nova Oxoniensis* is 3'7.

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion. 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2841	94 Herculis	4.6	h m s 17. 53. 54.610	84.60	3	...	+ 2.2945	+0.0023	-0.0006	59. 47. 59.75	84.60	3	...	+ 0.532	-0.335	-0.007	2261	6087
2842	57 Serpentis	4.5	17. 54. 8.578	84.67	3	...	+ 3.1583	+0.0022	+0.0080	93. 40. 52.28	84.67	3	...	+ 0.512	-0.461	+0.042	2254	6085
2843	66 Ophiuchi	4.8	17. 54. 19.191	82.66	3	...	+ 2.9700	+0.0022	-0.0024	85. 37. 23.88	82.66	3	...	+ 0.497	-0.433	-0.020	2257	6089
2844	6 Sagittarii	6.1	17. 54. 24.787	85.00	5	...	+ 3.4848	+0.0023	-0.0017	107. 9. 3.16	85.00	5	...	+ 0.489	-0.508	-0.012	2253	6086
2845	W.B. (2) XVII. 1719	6.0	17. 54. 31.297	86.51	1	...	+ 2.0905	+0.0025	...	53. 42. 1.75	86.51	1	...	+ 0.478	-0.305	...	...	...
2846	Piazzi XVII. 312 ...	6.0*	17. 54. 38.224	81.59	1	...	+ 3.6335	+0.0024	...	112. 46. 32.10	81.59	1	...	+ 0.470	-0.530	...	...	6088
2847	93 Herculis.....	4.5	17. 54. 42.875	84.56	2	...	+ 2.6698	+0.0022	-0.0014	73. 14. 28.17	84.65	2	...	+ 0.462	-0.389	-0.009	2262	6094
2848	35 Draconis.....	5.1	17. 54. 49.503	82.03	...	3	- 2.7070	+0.0126	+0.0135	13. 1. 20.83	80.19	2	3	+ 0.452	+0.395	-0.239	2287	6114
2849	Groombridge 2494...	6.1	17. 55. 26.743	86.87	1	2	+ 1.7129	+0.0027	...	44. 30. 59.14	86.64	1	(1)	+ 0.398	-0.250	...	...	...
2850	Piazzi XVII. 323 ...	6.5*	17. 55. 27.803	83.62	1	...	+ 3.5783	+0.0022	...	110. 44. 7.54	83.62	1	...	+ 0.397	-0.522	...	...	6098
2851	Piazzi XVII. 347 ...	6.1	17. 56. 12.625	84.62	3	...	+ 2.1969	+0.0023	...	56. 46. 52.12	84.62	3	...	+ 0.331	-0.320	...	...	...
2852	W. B. XVII. 1148 ...	6.3	17. 56. 22.351	85.22	3	...	+ 3.1976	+0.0021	...	95. 21. 23.12	85.22	3	...	+ 0.318	-0.466	...	...	...
2853	95 Herculis.....	4.6	17. 56. 24.531	85.05	3	...	+ 2.5431	+0.0022	-0.0027	68. 24. 11.08	85.05	3	...	+ 0.314	-0.371	-0.027	2268	6106
2854	Piazzi XVII. 353 ...	5.9	17. 56. 30.648	85.98	3	2	+ 1.7117	+0.0026	...	44. 29. 33.90	85.32	3	(2)	+ 0.305	-0.250	...	...	6109
2855	9 Sagittarii	5.7	17. 56. 30.949	82.82	4	...	+ 3.6776	+0.0021	-0.0031	114. 21. 41.56	82.82	4	...	+ 0.305	-0.536	+0.005	2260	6102
2856	69 Ophiuchi	4.9	17. 56. 32.935	80.35	3	...	+ 3.2644	+0.0021	+0.0016	98. 10. 44.18	80.35	3	...	+ 0.302	-0.476	+0.008	2265	6104
2857	Piazzi XVII. 333 ...	8.3†	17. 56. 35.464	82.47	1	...	+ 3.6763	+0.0021	...	114. 18. 48.89	82.47	1	...	+ 0.258	-0.536	...	...	...
2858	W.B.(2) XVII. 1797	6.4	17. 57. 12.228	84.58	3	...	+ 2.1938	+0.0023	...	56. 41. 15.60	84.58	3	...	+ 0.245	-0.320	...	...	...
2859	96 Herculis.....	5.1	17. 57. 15.287	80.70	5	...	+ 2.5635	+0.0022	-0.0016	69. 9. 56.62	81.22	4	...	+ 0.241	-0.374	+0.007	2269	6110
2860	34 Draconis.....	5.6	17. 57. 15.979	86.56	4	...	- 1.0460	+0.0056	+0.0006	17. 59. 2.31	83.70	6	6	+ 0.239	+0.152	+0.003	2285	6122
2861	Sagittarii	Var.	17. 57. 21.309	82.69	7	...	+ 3.8312	+0.0020	...	119. 35. 1.07	82.68	8	...	+ 0.232	-0.559	...	...	6107
2862	97 Herculis	6.7*	17. 57. 29.178	81.23	3	...	+ 2.5069	+0.0022	-0.0034	67. 4. 35.49	81.23	3	...	+ 0.220	-0.366	-0.008	2270.	6116
2863	Groombridge 2497..	7.0*	17. 57. 40.667	86.51	1	...	+ 1.7189	+0.0026	...	44. 38. 53.30	86.51	1	...	+ 0.203	-0.251	...	...	...
2864	Piazzi XVII. 342 ...	6.5†	17. 57. 48.931	84.61	1	...	+ 3.6788	+0.0019	...	114. 24. 10.76	85.56	2	...	+ 0.191	-0.537	...	...	6111
2865	70 Ophiuchi (1st Star)	4.1†	17. 59. 23.367	78.57	6	...	+ 3.0133	+0.0020	+0.0131	87. 28. 16.66	78.57	6	...	+ 0.054	-0.440	+1.109	...	...
2866	70 Ophiuchi	4.1	17. 59. 23.483	78.39	1	...	+ 3.0133	+0.0020	+0.0131	87. 28. 16.55	78.39	1	...	+ 0.054	-0.440	+1.109	2271	6123
2867	70 Ophiuchi (2nd Star)	6.1†	17. 59. 23.562	78.61	4	...	+ 3.0133	+0.0020	+0.0131	87. 28. 16.36	78.57	5	...	+ 0.054	-0.440	+1.109	...	...
2868	W. B. XVII. 1235 ...	5.9	17. 59. 51.940	86.08	4	...	+ 3.1836	+0.0019	...	94. 45. 33.49	86.08	4	...	+ 0.012	-0.464	...	...	...
2869	Groombridge 2502...	6.2*	18. 0. 0.857	86.63	4	...	+ 1.5634	+0.0026	...	41. 32. 27.73	86.63	4	...	- 0.002	-0.228	...	...	6129
2870	Radcliffe 3829		18. 0. 3.184	86.65	2	...	+ 1.5635	+0.0026	...	41. 32. 41.98	86.65	2	...	- 0.004	-0.228	...	...	...
2871	Piazzi XVII. 359 ...	4.7	18. 0. 28.989	82.99	14	...	+ 3.7972	+0.0015	...	118. 28. 8.67	82.72	13	...	- 0.042	-0.554	...	...	6127
2872	Oeltz.Arg.(S.)17670	5.9	18. 0. 50.790	86.17	3	...	+ 3.4853	+0.0016	...	107. 10. 7.60	86.26	4	...	- 0.074	-0.508	...	...	...
2873	98 Herculis.....	5.4	18. 0. 58.667	82.02	2	...	+ 2.5265	+0.0021	-0.0024	67. 47. 27.83	82.02	2	...	- 0.086	-0.368	+0.005	2274	6134
2874	W.B. (2) XVII. 1941	6.0	18. 1. 21.747	81.18	3	...	+ 2.2297	+0.0022	...	57. 46. 45.12	81.18	3	...	- 0.120	-0.325	...	...	...
2875	72 Ophiuchi	3.9	18. 1. 39.623	82.30	85	...	+ 2.8474	+0.0019	-0.0056	80. 27. 7.86	83.14	37	...	- 0.146	-0.415	-0.089	2275	6143
2876	103 Herculis	4.0	18. 2. 51.660	78.84	5	...	+ 2.3390	+0.0022	-0.0007	61. 15. 10.77	78.85	5	...	- 0.251	-0.341	-0.003	2281	6150
2877	W. B. (2) XVIII. 44	7.9*	18. 2. 55.487	82.65	1	...	+ 2.0865	+0.0023	...	53. 35. 40.02	82.65	1	...	- 0.255	-0.304	...	...	...
2878	100 Herculis (S. Star)...	5.2	18. 2. 59.229	83.55	2	...	+ 2.4180	+0.0021	-0.0019	63. 55. 11.50	84.00	4	...	- 0.261	-0.353	-0.027	2279	6151
2879	100 Herculis (N. Star)...		18. 2. 59.351	83.85	3	...	+ 2.4179	+0.0021	+0.001	63. 54. 56.48	84.00	4	...	- 0.263	-0.353	-0.025	2280	6152
2880	Groombridge 2514...	8.0*	18. 3. 10.851	84.53	3	...	+ 1.8064	+0.0023	...	46. 33. 43.62	84.53	3	...	- 0.279	-0.263	...	...	...

2857. The magnitude is taken from the *Argentine General Catalogue*.2864. The magnitude is taken from the *Uranometria Argentina*.2869, 2870. The magnitudes given in Struve's *Mensura Micrometrica* are 6.3 and 8.2.2873. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.7.2878, 2879. The magnitude of each star in Struve's *Mensura Micrometrica* is 5.9.2861, W Sagittarii. The limits of magnitude are 5 and 6.5; the period 7^d. 59.2865, 3867. The magnitude is taken from Struve's *Mensura Micrometrica*.2876. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.7.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxxv}

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2881	101 Herculis.....	5.2	18. 3. 42.416	79.10	4	...	+ 2.5851	+0.0020	-0.0016	69. 58. 20.90	78.43	9	...	- 0.324	-0.377	+0.011	2283	6159
2882	Groombridge 2517..	5.1	18. 3. 51.876	84.50	5	...	+ 1.8061	+0.0023	...	46. 33. 10.25	84.50	5	...	- 0.338	-0.263	...	...	6162
2883	W.B. (2) XVIII. 76	5.6	18. 3. 52.550	80.59	4	...	+ 2.0871	+0.0022	...	53. 36. 36.48	80.59	4	...	- 0.340	-0.304	...	...	...
2884	1 Sagittarii	5.3	18. 4. 24.017	82.28	8	...	+ 3.6597	+0.0010	-0.0003	113. 43. 25.87	82.28	8	...	- 0.385	-0.534	+0.006	2276	6161
2885	W.B. XVIII. 46 ...	5.7	18. 4. 40.547	78.51	3	...	+ 2.9952	+0.0017	...	86. 41. 53.73	78.51	3	...	- 0.408	-0.437	...	...	...
2886	Lalande 33412	6.2	18. 4. 47.248	78.50	3	...	+ 2.6775	+0.0019	...	73. 32. 42.35	78.50	3	...	- 0.419	-0.390	...	...	...
2887	Piazzi XVIII. 23 ...	6.5*	18. 5. 18.646	84.08	4	...	- 0.0659	+0.0012	...	23. 4. 13.25	81.11	10	...	- 0.465	+0.010	...	...	...
2888	W.B. (2) XVIII. 137	5.9	18. 5. 48.386	81.27	3	...	+ 2.0854	+0.0022	...	53. 33. 28.94	81.59	4	...	- 0.509	-0.304	...	...	...
2889	Bradley 2295.....	7.0*	18. 6. 4.178	84.67	3	I	+ 0.3075	+0.0014	-0.0006	25. 47. 50.95	84.46	3	I	- 0.531	-0.045	-0.002	2295	6177
2890	13 Sagittarii.....	4.1	18. 6. 35.189	82.09	23	...	+ 3.5877	+0.0009	-0.0014	111. 5. 19.56	82.29	19	...	- 0.576	-0.523	-0.001	2284	6168
2891	14 Sagittarii	5.9	18. 7. 3.233	84.59	5	...	+ 3.6052	+0.0008	-0.0032	111. 44. 37.15	84.59	5	...	- 0.617	-0.525	+0.021	2286	6172
2892	W.B. (2) XVIII. 183	5.9	18. 7. 21.871	84.53	3	...	+ 2.1906	+0.0021	...	56. 34. 52.75	84.53	3	...	- 0.645	-0.319	...	...	...
2893	104 Herculis	4.3	18. 7. 23.216	84.70	3	...	+ 2.2574	+0.0021	-0.0020	58. 37. 25.07	81.05	4	...	- 0.646	-0.329	-0.033	2291	6178
2894	Lalande 33477	8.7*	18. 7. 52.294	84.53	2	...	+ 3.5827	+0.0007	...	110. 54. 14.80	84.53	2	...	- 0.688	-0.522	...	...	...
2895	15 Sagittarii	5.6	18. 8. 3.391	84.77	5	...	+ 3.5789	+0.0007	-0.0018	110. 45. 44.34	84.77	5	...	- 0.704	-0.521	-0.009	2288	6179
2896	Groombridge 2527..	5.9	18. 8. 4.200	86.66	2	I	+ 1.2162	+0.0019	...	35. 44. 53.89	86.62	2	I	- 0.706	-0.177	...	...	6185
2897	16 Sagittarii	6.2	18. 8. 4.518	84.63	2	...	+ 3.5698	+0.0007	-0.0018	110. 25. 20.40	84.63	2	...	- 0.706	-0.520	+0.014	2289	6180
2898	Groombridge 2529..	6.6	18. 8. 53.818	84.56	3	...	+ 1.9062	+0.0022	...	48. 53. 0.16	84.56	3	...	- 0.777	-0.278	...	...	...
2899	40 Draconis.....	6.5*	18. 9. 0.794	80.58	4	I	- 4.4910	-0.0215	+0.0219	10. 1. 0.34	81.11	3	I	- 0.788	+0.655	-0.13	2318	6206
2900	Groombridge 2530..	5.9	18. 9. 4.663	84.59	2	...	+ 2.0005	+0.0021	...	51. 15. 32.95	84.59	2	...	- 0.795	-0.291	...	...	6193
2901	41 Draconis.....	6.5*	18. 9. 7.053	80.58	4	I	- 4.4930	-0.0217	+0.0195	10. 0. 48.63	81.11	3	I	- 0.798	+0.654	-0.126	2321	6208
2902	Piazzi XVIII. 21 ...	6.7†	18. 9. 47.551	85.35	4	...	+ 3.7923	0.0000	...	118. 19. 27.09	85.35	4	...	- 0.856	-0.552	...	...	6191
2903	Lalande 33537	6.6†	18. 9. 47.620	86.49	1	...	+ 3.8033	0.0000	...	118. 41. 24.82	86.49	1	...	- 0.857	-0.554	...	...	6190
2904	Lalande 34027	8.5*	18. 10. 13.152	80.58	4	I	- 4.4627	-0.0246	...	10. 3. 5.35	81.11	3	I	- 0.894	+0.651	...	...	...
2905	Piazzi XVIII. 24 ...	4.7	18. 10. 32.470	82.74	5	...	+ 3.7553	0.0000	...	117. 5. 4.43	82.74	5	...	- 0.921	-0.547	...	...	6194
2906	Bradley 2293.....	6.5*	18. 10. 35.697	84.20	3	...	+ 3.1432	+0.0012	-0.0045	93. 2. 18.37	84.20	3	...	- 0.927	-0.458	+0.264	2293	6196
2907	Lalande 33604	8.2*	18. 10. 55.357	86.51	1	...	+ 3.5255	+0.0005	...	108. 44. 40.73	86.51	1	...	- 0.955	-0.513	...	...	...
2908	23 Ursæ Minoris	4.3	18. 11. 1.883	82.35	136	62	-19.4659	-0.3201	+0.0256	3. 23. 27.09	81.89	388	201	- 0.965	+2.836	-0.040	2395	6281
2909	Lalande 33642	7.3*	18. 11. 40.380	86.51	2	...	+ 3.5233	+0.0004	...	108. 39. 49.32	86.51	2	...	- 1.020	-0.513	...	...	6201
2910	Oeltz. Arg. (8.) 18017-8	9.0*	18. 11. 41.330	86.51	2	...	+ 3.5233	+0.0004	...	108. 39. 38.65	86.51	2	...	- 1.022	-0.513	...	...	...
2911	Groombridge 2533..	5.3	18. 11. 54.891	84.44	3	...	+ 1.8651	+0.0020	-0.0078	47. 52. 51.37	84.46	5	...	- 1.042	-0.271	-0.004	...	6203
2912	W.B. (2) XVIII. 319	6.1	18. 12. 51.181	83.47	3	...	+ 2.6363	+0.0017	...	71. 54. 49.13	83.47	3	...	- 1.124	-0.383	...	...	...
2913	36 Draconis.....	5.0	18. 13. 12.214	84.36	4	...	+ 0.2920	-0.0006	+0.0518	25. 38. 35.58	84.74	5	...	- 1.154	-0.042	-0.013	2309	6224
2914	Bradley 2296.....	5.8	18. 13. 14.144	86.21	3	...	+ 3.4520	+0.0004	+0.0009	105. 52. 44.24	86.21	3	...	- 1.157	-0.502	+0.006	2296	6210
2915	Groombridge 2538..	6.1	18. 13. 18.311	84.49	3	...	+ 1.9165	+0.0020	...	49. 6. 36.07	84.49	3	...	- 1.163	-0.279	...	...	6218
2916	19 Sagittarii.....	2.8	18. 13. 18.700	78.60	1	...	+ 3.8390	-0.0007	+0.0014	119. 52. 40.98	78.60	1	...	- 1.165	-0.559	+0.029	2294	6209
2917	B. A. C. 6213	5.7	18. 13. 21.322	85.96	3	...	+ 2.9034	+0.0014	...	82. 47. 16.76	85.96	3	...	- 1.168	-0.422	...	...	6213
2918	Sagittarii	Y Var.	18. 14. 19.374	86.26	4	...	+ 3.5294	+0.0001	...	108. 54. 42.36	86.26	4	...	- 1.253	-0.513	...	...	...
2919	Lalande 33738	6.5†	18. 14. 24.542	83.20	9	...	+ 3.7963	-0.0007	...	118. 28. 58.50	83.14	10	...	- 1.259	-0.552	...	...	6220
2920	58 Serpentis	3.4	18. 15. 6.023	83.55	49	...	+ 3.1405	+0.0009	-0.0400	92. 55. 43.43	84.53	38	...	- 1.320	-0.456	+0.677	2298	6229

2883. The magnitude given in the *Uranometria Nova Oroniensis* is 5.9.

2899, 2901. The combined magnitude given in H. P. is 5.2.

2903. The magnitude is taken from the *Uranometria Argentina*.

2909, 2910. In H. P. the magnitude appears as "cum," indicating that the proximity of other stars prevented estimation.

2911. The magnitude given in the *Uranometria Nova Oroniensis* is 5.7.2919. The magnitude is taken from the *Uranometria Argentina*.

2884. Flamsteed's number is not used in the B. A. C.

2902. The magnitude is taken from the *Uranometria Argentina*.2904. The magnitude is taken from the *Uranometria Argentina*.2918. The limits of magnitude are 5.8 and 6.6; the period 5^d.77.2918. The limits of magnitude are 5.8 and 6.6; the period 5^d.77.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2921	24 Ursæ Minoris	5.9	18. 15. 13.003	77.09	...	I	-22.2831	-0.5723	+0.0670	3. 0. 41.73	77.09	...	I	-1.331	+3.243	+0.019	2417	6320
2922	Bradley 2302	6.5*	18. 15. 14.179	80.17	3	...	+2.3140	+0.0019	+0.003	60. 23. 5.45	80.17	3	...	-1.332	-0.336	-0.005	2302	6232
2923	1 Lyrae	4.4	18. 15. 39.354	82.22	5	...	+2.1028	+0.0020	-0.0021	53. 59. 19.55	81.23	7	...	-1.368	-0.305	-0.035	2305	6235
2924	37 Draconis	6.1	18. 15. 58.909	84.30	4	...	-0.3505	-0.0041	+0.0024	21. 17. 16.22	83.82	4	I	-1.396	+0.051	+0.061	2316	6243
2925	20 Sagittarii	2.1	18. 16. 12.404	85.13	7	...	+3.9868	-0.0017	-0.0043	124. 26. 23.21	85.13	7	...	-1.416	-0.579	+0.149	2297	6233
2926	Lalande 33895	5.9	18. 17. 0.380	79.57	3	...	+2.7896	+0.0014	...	78. 1. 42.89	79.57	3	...	-1.486	-0.405	...	...	...
2927	W. B. XVIII. 339 ...	5.0	18. 17. 5.145	85.94	5	...	+3.2833	+0.0004	...	98. 59. 42.54	86.09	6	...	-1.494	-0.477	...	...	...
2928	Groombridge 2549 ...	6.3	18. 17. 7.383	84.05	4	...	+1.4084	+0.0014	...	38. 42. 16.21	84.05	4	...	-1.496	-0.204	...	...	6246
2929	Bradley 2308	5.7	18. 17. 8.484	81.24	3	...	+2.5002	+0.0018	-0.003	66. 46. 28.63	81.24	3	...	-1.498	-0.363	-0.082	2308	6241
2930	Lalande 33873	8.0*	18. 17. 15.145	86.51	4	...	+3.3714	+0.0002	...	102. 38. 42.14	86.51	4	...	-1.508	-0.490	...	...	...
2931	Piazzi XVIII. 52 ...	5.7	18. 17. 18.636	85.25	3	...	+3.8675	-0.0015	...	120. 48. 58.21	85.25	3	...	-1.514	-0.562	...	...	6239
2932	Radcliffe 3896	5.5	18. 17. 30.907	80.55	3	...	+2.6452	+0.0016	...	72. 13. 57.76	80.56	3	...	-1.531	-0.384	...	...	6245
2933	38 Draconis	6.8*	18. 17. 40.931	83.31	3	3	-0.3454	-0.0048	-0.0080	21. 18. 21.63	83.22	3	3	-1.546	+0.051	+0.097	2322	6257
2934	B. D. + 47° No. 2621	9.2*	18. 17. 57.681	84.92	4	I	+1.6175	+0.0016	...	42. 29. 46.01	84.60	4	(I)	-1.571	-0.235	...	...	...
2935	21 Sagittarii	4.9	18. 18. 12.212	82.95	3	...	+3.5733	-0.0005	-0.0019	110. 36. 15.83	82.95	3	...	-1.591	-0.519	+0.004	2303	6247
2936	Groombridge 2555 ...	5.1	18. 18. 28.501	82.63	4	...	+1.5360	+0.0015	...	40. 56. 18.64	82.63	4	...	-1.614	-0.223	...	...	6255
2937	109 Herculis	3.9	18. 18. 35.050	80.17	5	...	+2.5416	+0.0017	+0.0131	68. 17. 1.75	82.56	15	...	-1.624	-0.369	+0.257	2311	6251
2938	B. D. + 47° No. 2625	9.0*	18. 18. 57.674	84.60	4	...	+1.6178	+0.0016	...	42. 29. 31.33	84.60	4	...	-1.658	-0.235	...	...	...
2939	W. B. XVIII. 427 ...	5.8	18. 19. 52.362	78.53	3	...	+2.8859	+0.0012	...	82. 2. 3.22	78.53	3	...	-1.736	-0.419	...	...	...
2940	Piazzi XVIII. 93 ...	7.0*	18. 19. 55.557	82.37	4	3	-0.1237	-0.0046	...	22. 37. 24.07	82.39	11	3	-1.741	+0.019	...	...	6272
2941	Lalande 34062	7.8*	18. 19. 56.936	83.53	4	...	+2.2379	+0.0019	...	57. 56. 2.43	83.53	4	...	-1.744	-0.324	...	...	...
2942	2 Lyrae	4.9	18. 20. 16.598	79.20	5	...	+1.9767	+0.0018	-0.0033	50. 33. 26.84	80.24	15	...	-1.771	-0.286	+0.001	2315	6268
2943	22 Sagittarii	3.1	18. 20. 33.875	82.56	37	...	+3.7071	-0.0013	-0.0052	115. 29. 11.03	82.44	35	...	-1.797	-0.538	+0.198	2310	6263
2944	Lalande 34035	6.7*	18. 20. 56.368	83.77	4	...	+3.5016	-0.0006	...	107. 52. 17.99	83.82	3	...	-1.829	-0.508	...	...	6267
2945	59 Serpentis (N. Star) d	7.8†	18. 21. 3.980	86.00	5	...	+3.0693	+0.0007	-0.0018	89. 52. 23.68	85.92	6	...	-1.841	-0.445	+0.002	...	...
2946	59 Serpentis	5.2	18. 21. (4.)	...	...	...	+3.0694	+0.0007	-0.0018	89. 52. 26.31	85.62	2	...	-1.841	-0.445	+0.002	2312	6269
2947	59 Serpentis (S. Star) d	5.5†	18. 21. 4.101	86.97	5	...	+3.0694	+0.0007	-0.0018	89. 52. 25.92	86.06	8	...	-1.841	-0.445	+0.002	...	...
2948	Lalande 34131	5.8	18. 21. 21.074	85.49	3	...	+2.3112	+0.0018	...	60. 14. 21.47	85.49	3	...	-1.866	-0.335	...	...	...
2949	Piazzi XVIII. 83 ...	6.9	18. 21. 39.664	84.31	10	...	+2.4118	+0.0018	...	63. 36. 32.38	84.34	12	...	-1.893	-0.349	...	...	...
2950	Piazzi XVIII. 84 ...	6.2	18. 21. 51.285	84.17	9	...	+2.4122	+0.0018	...	63. 37. 17.34	84.07	11	...	-1.911	-0.349	...	...	...
2951	Lalande 34128	5.7	18. 22. 7.133	86.21	11	...	+2.9295	+0.0010	...	83. 52. 41.22	86.28	18	...	-1.932	-0.424	...	...	...
2952	39 Draconis	4.8	18. 22. 9.499	81.57	4	3	+0.8810	-0.0004	-0.0051	31. 16. 7.16	82.01	4	5	-1.937	-0.127	-0.049	2328	6289
2953	Lalande (F.) 2947 ..	4.8	18. 22. 13.442	82.02	2	...	+0.8792	-0.0004	...	31. 14. 43.50	82.02	2	...	-1.942	-0.127	...	...	...
2954	43 Draconis	4.2	18. 22. 28.403	81.08	4	2	-0.8526	-0.0111	-0.0001	18. 43. 35.49	82.37	13	9	-1.963	+0.125	-0.021	2334	6297
2955	9-Yr. Cat. (1872) No. 1693	8.5*	18. 22. 58.133	79.59	3	...	+2.4861	+0.0017	...	66. 13. 5.60	79.22	5	...	-2.006	-0.360	...	...	...
2956	Piazzi XVIII. 82 ...	5.7	18. 23. 8.632	83.11	4	...	+3.5252	-0.0009	...	108. 48. 12.19	83.46	8	...	-2.022	-0.511	...	...	6287
2957	Piazzi XVIII. 79 ...	5.8†	18. 23. 12.548	83.06	13	...	+3.9383	-0.0029	...	123. 3. 59.82	83.06	13	...	-2.028	-0.571	...	...	6285
2958	60 Serpentis	5.5	18. 23. 26.269	83.59	3	...	+3.1202	+0.0005	0.0000	92. 3. 41.70	83.87	7	...	-2.046	-0.452	+0.025	2317	6290
2959	Piazzi XVIII. 88 ...	7.5*	18. 24. 16.579	82.35	1	...	+3.5296	-0.0011	-0.0103	108. 58. 59.79	82.35	1	...	-2.121	-0.511	+0.202	...	6292
2960	Piazzi XVIII. 92 ...	5.2	18. 24. 24.411	84.35	8	...	+3.5167	-0.0010	...	108. 28. 59.93	84.36	8	...	-2.131	-0.509	...	...	6294

2939. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.
 2946. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.
 2957. The magnitude is taken from the *Uranometria Argentina*.

2945, 2947. The magnitude is taken from Struve's *Mensurae Micrometricae*.
 2952, 2953. The magnitudes given in B. D. are 4.8 and 9.0.
 2959. Authority for Proper Motion: Bonn Observations, Vol. VII.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Aurors Bradley, 1755.	No. in B. A. C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
2961	Piazzi XVIII. 100...	5.7	h m s 18. 24. 37.193	79.11	6	...	+ 2.4864	+0.0016	...	66. 12. 45.50	80.77	17	...	- 2.150	-0.360	...	...	6300
2962	42 Draconis.....	5.0	18. 25. 38.280	81.82	7	...	+ 0.1586	-0.0047	+0.0158	24. 30. 38.72	82.03	23	...	- 2.238	-0.022	+0.043	2336	6316
2963	W. B. (2) XVIII. 703 ..	5.7	18. 25. 44.155	79.55	4	...	+ 2.6700	+0.0014	...	73. 9. 12.37	79.55	4	...	- 2.247	-0.386	...	...	...
2964	Bradley 2323	5.8	18. 25. 52.131	84.80	21	...	+ 3.4270	-0.0008	-0.0035	104. 57. 3.95	84.75	32	...	- 2.259	-0.496	-0.002	2323	6306
2965	24 Sagittarii	5.9	18. 26. 33.621	79.82	6	...	+ 3.6669	-0.0020	-0.0022	114. 7. 12.68	79.82	6	...	- 2.320	-0.530	-0.004	2324	6312
2966	Bradley 2327	5.8	18. 26. 47.668	84.87	20	...	+ 3.4266	-0.0009	-0.0025	104. 56. 29.10	84.94	19	...	- 2.338	-0.495	-0.001	2327	6313
2967	Piazzi XVIII. 116...	6.0	18. 27. 46.584	78.24	6	...	+ 2.4944	+0.0016	...	66. 28. 17.82	80.62	29	...	- 2.424	-0.360	...	...	6322
2968	W. B. (2) XVIII. 794 ..	5.4	18. 28. 14.630	78.93	3	...	+ 2.2919	+0.0017	...	59. 32. 6.20	78.93	3	...	- 2.466	-0.331	...	...	...
2969	1 Aquilæ	4.0	18. 28. 40.571	83.46	3	...	+ 3.2664	-0.0004	-0.0029	98. 19. 36.06	84.35	19	...	- 2.502	-0.472	+0.307	2330	6325
2970	W. B. (2) XVIII. 845 ..	5.7	18. 29. 55.714	83.49	3	...	+ 2.6388	+0.0013	...	71. 53. 29.84	83.50	4	...	- 2.612	-0.380	...	...	...
2971	Lalande 34541	7.8*	18. 30. 5.919	85.39	5	...	+ 1.3573	+0.0004	...	37. 41. 50.17	85.38	5	...	- 2.626	-0.195	...	...	...
2972	45 Draconis	4.8	18. 30. 30.351	82.09	3	4	+ 1.0354	-0.0009	-0.0002	33. 2. 45.82	82.08	3	6	- 2.661	-0.149	+0.014	2340	6348
2973	Piazzi XVIII. 132...	5.8	18. 30. 30.787	78.07	6	...	+ 2.4959	+0.0015	...	66. 29. 26.05	79.66	14	...	- 2.661	-0.360	...	...	6341
2974	Bradley 2332	6.3*	18. 30. 43.293	80.90	6	...	+ 3.5941	-0.0022	-0.0044	111. 29. 43.30	80.90	6	...	- 2.680	-0.518	+0.006	2332	6336
2975	W. B. XVIII. 710	5.5	18. 30. 44.357	78.49	3	...	+ 2.8618	+0.0008	...	80. 58. 15.78	78.49	3	...	- 2.681	-0.413	...	...	...
2976	Lalande 34486	5.3	18. 30. 48.877	79.84	4	...	+ 2.9195	+0.0007	...	83. 25. 17.96	80.75	6	...	- 2.688	-0.421	...	...	...
2977	W. B. (2) XVIII. 894 ..	5.9	18. 30. 53.310	83.62	4	...	+ 2.1665	+0.0017	...	55. 38. 19.65	83.62	3	...	- 2.694	-0.312	...	...	...
2978	Lalande 34579	5.4	18. 31. 10.679	86.33	4	...	+ 1.3611	+0.0003	...	37. 44. 28.24	86.33	4	...	- 2.720	-0.195	...	...	...
2979	Groombridge 2612...	5.4	18. 31. 13.428	84.78	8	...	+ 1.3611	+0.0003	...	37. 44. 28.76	84.78	8	...	- 2.723	-0.195	...	...	6350
2980	Lalande 34499	5.8	18. 31. 25.979	80.17	4	...	+ 3.0818	+0.0001	...	90. 24. 32.94	81.27	7	...	- 2.742	-0.444	...	...	...
2981	Bradley 2335	6.0	18. 31. 44.036	80.96	5	...	+ 3.5846	-0.0022	-0.0076	111. 8. 57.94	80.96	5	...	- 2.768	-0.517	+0.015	2335	6347
2982	W. B. (2) XVIII. 906 ..	6.4	18. 31. 46.012	83.82	4	...	+ 2.6902	+0.0012	...	73. 54. 12.98	83.97	15	...	- 2.771	-0.387	...	...	...
2983	W. B. (2) XVIII. 934 ..	5.3	18. 32. 13.240	79.98	3	...	+ 2.2004	+0.0017	...	56. 37. 51.52	79.98	3	...	- 2.810	-0.317	...	...	...
2984	3 Lyrae.....	0.2	18. 32. 52.501	82.23	190	...	+ 2.0133	+0.0016	+0.0173	51. 19. 38.17	81.30	217	...	- 2.868	-0.289	-0.295	2341	6355
2985	26 Sagittarii	6.2	18. 34. 32.424	80.61	5	...	+ 3.6592	-0.0030	+0.0006	113. 56. 36.52	80.61	5	...	- 3.010	-0.526	+0.015	2338	6356
2986	Groombridge 2655...	5.7	18. 35. 32.338	82.20	4	8	- 2.8624	-0.0568	+0.0086	12. 32. 52.07	83.44	7	10	- 3.097	+0.414	+0.015	...	6375
2987	Groombridge 2627...	6.2*	18. 35. 40.999	78.91	3	...	+ 1.9313	+0.0014	...	49. 10. 27.02	81.59	10	...	- 3.110	-0.277	...	...	6364
2988	2 Aquilæ	4.8	18. 35. 42.171	83.07	78	...	+ 3.2854	-0.0010	-0.0004	99. 9. 57.25	84.40	80	...	- 3.111	-0.472	-0.005	2342	6361
2989	Piazzi XVIII. 173...	5.9	18. 35. 50.557	84.25	6	...	+ 0.1902	-0.0078	-0.0030	24. 37. 7.29	84.93	8	2	- 3.124	-0.026	-0.027	...	...
2990	Piazzi XVIII. 74	5.5	18. 36. 28.445	84.16	5	3	+ 0.5455	-0.0049	...	27. 34. 57.87	84.08	5	3	- 3.178	-0.077	...	...	...
2991	Groombridge 2642...	6.8*	18. 36. 56.860	81.63	3	3	+ 0.7303	-0.0036	...	29. 24. 0.60	81.44	5	3	- 3.219	-0.104	...	...	6373
2992	3 Aquilæ	5.1	18. 36. 59.094	79.98	3	...	+ 3.2670	-0.0010	-0.0004	98. 23. 32.76	83.09	10	...	- 3.222	-0.469	-0.017	2343	6367
2993	Piazzi XVIII. 170...	5.8	18. 37. 7.335	78.15	3	...	+ 1.3784	-0.0001	...	37. 54. 59.57	78.81	4	...	- 3.234	-0.197	...	...	6372
2994	Piazzi XVIII. 155...	5.7	18. 37. 26.966	82.43	5	...	+ 3.6911	-0.0037	...	115. 7. 48.15	82.43	5	...	- 3.262	-0.530	...	...	6369
2995	27 Sagittarii.....	3.3	18. 38. 9.553	78.51	6	...	+ 3.7474	-0.0042	+0.0014	117. 6. 45.29	78.51	6	...	- 3.324	-0.538	+0.019	2344	6371
2996	Groombridge 2644...	6.5*	18. 39. 16.667	79.19	3	...	+ 1.9986	+0.0014	...	50. 49. 10.53	79.19	3	...	- 3.421	-0.286	...	...	...
2997	Lalande 34853	5.5	18. 39. 21.116	79.83	4	...	+ 2.2552	+0.0016	...	58. 11. 23.88	80.98	2	...	- 3.426	-0.323	...	...	...
2998	Lalande 3480 (1st Star) ..	5.7	18. 39. 34.368	85.56	4	...	+ 2.9483	+0.0002	...	84. 37. 24.11	85.56	4	...	- 3.445	-0.422	...	...	...
2999	Lalande 3480 (2nd Star) ..	5.7	18. 39. 34.563	85.56	4	...	+ 2.9483	+0.0002	...	84. 37. 25.56	85.56	4	...	- 3.445	-0.422	...	...	...
3000	W. B. (2) XVIII. 1164...	6.5*	18. 39. 39.982	83.53	3	...	+ 2.5004	+0.0013	...	66. 31. 46.78	83.92	5	...	- 3.454	-0.358	...	...	...

2978, 2979. The magnitudes given in B. D. are 8.6 and 5.5.

2998, 2999. The magnitudes given in Struve's *Mensura Micrometrica* are 6.2 and 6.6.

{lxxviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers' Bradley, 1755	No. in B.A.C. 1850.
					Above Pole.	Below Pole						Above Pole.	Below Pole.					
3001	Groombridge 2658...	6.0	h m s 18. 39. 53.180	83.79	4	2	+ 0.5288	-0.0058	...	27. 22. 10.18	83.18	3	2	- 3.472	-0.074	...	...	6393
3002	W. B. XVIII. 970...	5.8	18. 40. 6.212	83.67	3	...	+ 3.3104	-0.0015	...	100. 15. 4.07	83.62	5	...	- 3.491	-0.474	...	...	...
3003	5 Aquilæ (1st Star)...	5.8	18. 40. 16.774	84.41	3	...	+ 3.0973	-0.0005	-0.0005	91. 5. 11.88	84.41	5	...	- 3.507	-0.443	+0.033	2349	6384
3004	5 Aquilæ (2nd Star)...	5.8	18. 40. 17.574	84.40	2	...	+ 3.0973	-0.0005	-0.0005	91. 5. 18.58	84.40	2	...	- 3.508	-0.443	+0.033	...	...
3005	46 Draconis	5.2	18. 40. 18.566	84.34	4	...	+ 1.1628	-0.0014	-0.0044	34. 34. 54.12	84.34	4	...	- 3.508	-0.165	-0.018	2360	6395
3006	5 Lyræ (1st Star) ... ϵ^2	4.6	18. 40. 24.027	84.66	3	...	+ 1.9877	+0.0014	-0.0005	50. 30. 43.09	84.66	3	...	- 3.517	-0.284	-0.074	...	...
3007	5 Lyræ (2nd Star) ... ϵ^2	4.6	18. 40. 24.300	84.66	3	...	+ 1.9878	+0.0014	-0.0005	50. 30. 45.18	84.66	3	...	- 3.518	-0.284	-0.074	2356	6391
3008	Bradley 2347	7.0*	18. 40. 45.134	81.86	3	...	+ 3.5619	-0.0032	-0.0011	110. 24. 11.37	81.86	3	...	- 3.547	-0.510	+0.03	2347	6386
3009	6 Aquilæ	4.4	18. 40. 48.354	84.11	4	...	+ 3.1845	-0.0009	-0.0024	94. 52. 30.52	84.11	4	...	- 3.551	-0.456	+0.017	2350	6388
3010	Scuti	Var.	18. 41. 4.501	82.88	3	...	+ 3.2067	-0.0010	...	95. 49. 56.76	82.04	2	...	- 3.576	-0.459	...	...	...
3011	W. B. (2) XVIII. 1218...	4.9	18. 41. 14.341	82.37	3	...	+ 2.4155	+0.0014	...	63. 27. 54.64	82.37	3	...	- 3.589	-0.345	...	...	...
3012	111 Herculis	4.5	18. 41. 43.276	82.33	4	...	+ 2.6438	+0.0010	+0.0033	71. 57. 3.43	84.05	3	...	- 3.630	-0.378	-0.118	2354	6397
3013	Groombridge 2660...	8.5*	18. 41. 51.139	85.61	5	...	+ 1.9182	+0.0013	...	48. 43. 18.39	85.61	5	...	- 3.642	-0.274	...	...	...
3014	Groombridge 2664...	5.7	18. 42. 22.855	85.60	5	...	+ 1.9173	+0.0012	...	48. 41. 12.81	85.60	5	...	- 3.688	-0.273	...	...	6404
3015	Oeltz Arg. (N.) 18618	6.3	18. 42. 30.021	86.16	4	...	+ 1.2117	-0.0013	...	35. 13. 46.21	86.16	4	...	- 3.698	-0.172	...	...	...
3016	29 Sagittarii	5.5	18. 42. 32.823	83.87	10	...	+ 3.5626	-0.0034	-0.0017	110. 27. 34.82	84.12	9	...	- 3.702	-0.509	-0.043	2352	6399
3017	Bradley 2370	6.3	18. 42. 53.146	86.97	...	1	+ 0.7101	-0.0048	-0.001	29. 4. 44.77	86.81	1	1	- 3.731	-0.100	-0.013	2370	6410
3018	B. D. + 23° No. 3461	6.0	18. 43. 15.519	85.90	3	...	+ 2.5046	+0.0013	...	66. 37. 3.77	85.90	3	...	- 3.764	-0.357	...	...	...
3019	Lalande 35045	5.8	18. 43. 25.594	82.24	3	...	+ 2.2638	+0.0015	...	58. 22. 31.37	82.24	3	...	- 3.778	-0.323	...	...	...
3020	Piazzi XVIII. 203...	5.9	18. 43. 39.282	84.57	3	...	+ 2.6153	+0.0011	...	70. 48. 16.94	84.57	3	...	- 3.797	-0.373	...	...	...
3021	Lalande 35056	6.9*	18. 43. 56.820	83.64	1	...	+ 2.4901	+0.0013	...	66. 4. 43.17	83.64	1	...	- 3.822	-0.355	...	...	...
3022	Groombridge 2671...	5.8	18. 44. 2.171	84.63	3	...	+ 1.3398	-0.0007	...	37. 8. 36.55	84.63	3	...	- 3.829	-0.190	...	...	6419
3023	W. B. (2) XVIII. 1314...	6.6	18. 44. 18.948	84.03	2	...	+ 2.4063	+0.0014	...	65. 5. 20.14	84.03	2	...	- 3.854	-0.343	...	...	...
3024	Groombridge 2677...	6.0	18. 45. 6.166	84.52	3	...	+ 1.5835	+0.0003	...	41. 22. 9.63	84.52	3	...	- 3.921	-0.225	...	...	6428
3025	10 Lyræ	8 ¹ Var	18. 45. 38.958	81.65	26	...	+ 2.2140	+0.0015	-0.0007	56. 46. 32.72	80.89	33	...	- 3.968	-0.315	-0.017	2369	6429
3026	10 Lyræ	8 ² 8.5*	18. 45. 40.850	80.92	6	...	+ 2.2143	+0.0015	-0.0007	56. 47. 12.08	81.04	7	...	- 3.971	-0.315	-0.017	...	...
3027	W. B. XVIII. 1152...	6.0	18. 46. 31.850	80.00	3	...	+ 2.7501	+0.0006	...	76. 10. 36.79	80.00	3	...	- 4.044	-0.391	...	...	...
3028	33 Sagittarii	6.0	18. 46. 49.728	84.52	3	...	+ 3.5881	-0.0041	-0.0017	111. 30. 19.86	84.52	3	...	- 4.070	-0.511	-0.016	2363	6432
3029	34 Sagittarii	2.3	18. 47. 49.439	78.05	6	...	+ 3.7228	-0.0054	-0.0012	116. 26. 38.93	78.05	6	...	- 4.154	-0.529	+0.067	2365	6440
3030	Lalande 35162	5.1	18. 47. 50.369	83.99	3	...	+ 3.4412	-0.0031	...	105. 45. 4.60	83.99	3	...	- 4.155	-0.489	...	...	...
3031	W. B. (2) XVIII. 1460...	6.1	18. 48. 16.037	84.22	3	...	+ 1.9262	+0.0011	...	48. 45. 42.91	84.22	3	...	- 4.192	-0.273	...	...	...
3032	Oeltz Arg. (S.) 18841-2	5.6	18. 48. 36.195	83.58	4	...	+ 3.4600	-0.0033	...	106. 31. 16.70	83.57	3	...	- 4.221	-0.492	...	...	6447
3033	Groombridge 2719...	5.4	18. 48. 45.972	82.98	3	...	- 1.4689	-0.0148	...	16. 3. 14.26	82.89	4	...	- 4.235	+0.211	...	...	6469
3034	Oeltz Arg. (S.) 18847	7.3*	18. 48. 49.452	83.58	4	...	+ 3.4594	-0.0033	...	106. 29. 57.24	83.57	3	...	- 4.238	-0.491	...	...	...
3035	11 Lyræ	5.3	18. 49. 32.081	82.05	7	...	+ 2.0947	+0.0013	-0.0021	53. 10. 39.81	82.05	7	...	- 4.301	-0.297	-0.004	2380	6456
3036	113 Herculis	4.6	18. 49. 40.900	79.64	4	...	+ 2.5317	+0.0011	-0.0014	67. 30. 20.98	80.11	8	...	- 4.314	-0.359	-0.014	2378	6453
3037	Lalande 35281	6.0	18. 50. 8.700	83.70	4	...	+ 3.1168	-0.0011	...	91. 57. 11.64	83.70	9	...	- 4.353	-0.499	...	...	...
3038	36 Sagittarii	5.0	18. 50. 12.548	81.60	1	...	+ 3.5683	-0.0043	-0.0033	110. 48. 43.53	81.60	2	...	- 4.359	-0.506	+0.015	2372	6454
3039	50 Draconis	5.6	18. 50. 14.470	82.45	2	1	- 1.8990	-0.0541	-0.003	14. 42. 29.40	80.08	8	1	- 4.361	+0.272	-0.066	2404	6478
3040	63 Serpentis	4.0*	18. 50. 15.183	79.32	4	...	+ 2.9799	-0.0004	+0.0010	85. 57. 5.67	79.32	4	...	- 4.362	-0.422	-0.042	2376	6460

3003, 3004. The magnitudes given in Struve's *Mensurae Micrometricae* are 5.6 and 7.4; the combined magnitude in the *Uranometria Nova Orionensis* is 6.1.3006, 3007. The letter ϵ^2 was added in the B. A. C. The magnitudes given in Struve's *Mensurae Micrometricae* are 4.9 and 5.2.3010. The limits of magnitude are 4.7—5.7 and 6.0—9.0; the period 71^d.1.3020. The magnitude given in the *Uranometria Nova Orionensis* is 6.2.

3040. The combined magnitude of this star and No. 3042 given in H. P. is 4.1.

3012. The magnitude given in the *Uranometria Nova Orionensis* is 4.3.3025. The limits of magnitude are 3.4 and 4.5; the period about 12^d. 22^h.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley.	No. in B.A.C.
					Above Pole	Below Pole						Above Pole	Below Pole					
3041	Groombridge 2709...	4.9	h m s 18. 50. 15.216	84.63	3	...	+ 1.4860	-0.0005	...	39. 26. 26.77	84.63	3	...	- 4.362	-0.210	...	...	6470
3042	Bradley 2377	4.3*	18. 50. 16.603	79.32	4	...	+ 2.9800	-0.0004	+0.0010	85. 57. 10.69	79.32	4	...	- 4.363	-0.422	-0.057	2377	6462
3043	12 Lyræ	4.5	18. 50. 18.476	85.29	6	...	+ 2.0980	+0.0013	-0.0018	53. 15. 11.17	85.44	5	...	- 4.368	-0.297	-0.020	2383	6466
3044	W. B. (2) XVIII. 1530...	6.0	18. 50. 28.094	79.26	3	...	+ 2.1980	+0.0014	...	56. 10. 15.78	79.26	3	...	- 4.380	-0.311	...	...	...
3045	Bradley 2381		18. 50. 28.676	79.26	3	...	+ 2.1984	+0.0014	-0.0006	56. 11. 0.81	79.26	3	...	- 4.382	-0.311	+0.004	2381	6468
3046	37 Sagittarii	3.5	18. 50. 34.232	82.70	8	...	+ 3.5800	-0.0045	-0.0005	111. 15. 45.64	82.70	8	...	- 4.389	-0.507	+0.006	2373	6461
3047	9 Aquilæ	5.1	18. 50. 38.125	80.58	4	...	+ 3.2094	-0.0017	+0.0026	95. 0. 1.78	80.58	4	...	- 4.375	-0.455	+0.028	2375	6464
3048	W. B. (2) XVIII. 1528...	5.8	18. 50. 48.480	80.32	3	...	+ 2.6497	+0.0008	...	72. 2. 38.06	80.65	4	...	- 4.409	-0.375	...	...	...
3049	Groombridge 2711	5.4	18. 51. 1.616	86.11	2	...	+ 1.9207	+0.0010	...	48. 33. 0.77	86.11	2	...	- 4.429	-0.271	...	...	6473
3050	64 Serpentis	7.2	18. 51. 14.506	84.14	3	...	+ 3.0182	-0.0006	-0.0008	87. 37. 16.61	83.91	5	...	- 4.447	-0.427	+0.003	2379	6471
3051	Piazzi XVIII. 254...	5.9	18. 51. 37.149	84.65	3	...	+ 1.5884	0.0000	...	41. 17. 25.54	84.66	3	...	- 4.479	-0.224	...	...	6476
3052	13 Lyræ	R. Var.	18. 51. 40.991	82.24	13	1	+ 1.8232	+0.0008	+0.0014	46. 12. 40.38	82.38	13	(1)	- 4.484	-0.257	-0.07	2389	6475
3053	W. B. XVIII. 1295...	5.3	18. 52. 39.234	83.72	4	...	+ 3.3729	-0.0030	...	103. 0. 6.90	83.72	4	...	- 4.567	-0.477	...	...	...
3054	W. B. (2) XVIII. 1593...	5.2	18. 52. 54.416	80.00	3	...	+ 2.6694	+0.0007	...	72. 47. 57.35	80.00	3	...	- 4.588	-0.377	...	...	...
3055	Lalande 35445	6.2	18. 53. 31.986	80.21	3	...	+ 2.6083	+0.0009	...	70. 22. 3.02	80.21	3	...	- 4.642	-0.368	...	...	...
3056	Piazzi XVIII. 259...	7.7*	18. 53. 45.296	80.17	13	...	+ 2.7247	+0.0005	...	75. 1. 59.06	80.63	11	...	- 4.660	-0.385	...	...	...
3057	W. B. (2) XVIII. 1641...	5.9	18. 53. 55.498	85.88	5	...	+ 2.0527	+0.0012	...	51. 53. 43.93	85.84	5	...	- 4.675	-0.289	...	...	...
3058	13 Aquilæ	4.1	18. 54. 10.542	82.88	60	...	+ 2.7263	+0.0005	-0.0049	75. 5. 36.84	81.81	58	...	- 4.696	-0.385	+0.080	2390	6487
3059	B. D. + 14° No. 3737	9.0*	18. 54. 17.192	80.61	6	...	+ 2.7250	+0.0005	...	75. 2. 10.40	80.91	7	...	- 4.706	-0.384	...	...	...
3060	14 Lyræ	3.0	18. 54. 27.293	80.67	7	...	+ 2.2437	+0.0014	-0.0018	57. 28. 27.03	80.05	22	...	- 4.720	-0.316	-0.005	2392	6491
3061	Piazzi XVIII. 260...	6.4	18. 54. 42.020	83.07	4	...	+ 3.4313	-0.0037	...	105. 27. 2.09	83.07	4	...	- 4.741	-0.484	...	...	6488
3062	48 Draconis	5.6	18. 54. 43.240	84.21	3	...	+ 1.0210	-0.0039	-0.0054	32. 20. 39.31	84.21	3	...	- 4.743	-0.142	+0.063	2400	6496
3063	Groombridge 2727	6.1	18. 54. 50.993	85.54	7	...	+ 1.9624	+0.0011	...	49. 29. 5.33	85.54	7	...	- 4.754	-0.276	...	...	6493
3064	Lalande 35511	5.3	18. 54. 52.138	79.04	3	...	+ 2.4370	+0.0012	...	63. 56. 4.72	79.22	2	...	- 4.755	-0.343	...	...	...
3065	38 Sagittarii	2.9	18. 54. 58.500	83.93	3	...	+ 3.8236	-0.0075	-0.0040	120. 3. 1.07	83.93	3	...	- 4.765	-0.540	-0.009	2384	6489
3066	Piazzi XVIII. 261...	5.7	18. 55. 7.017	81.65	5	...	+ 3.6781	-0.0060	...	115. 0. 38.73	81.65	5	...	- 4.777	-0.519	...	...	6490
3067	Groombridge 2728...	6.2	18. 55. 9.840	84.27	3	...	+ 2.0189	+0.0012	...	50. 56. 52.03	84.27	3	...	- 4.781	-0.284	...	...	6495
3068	Lalande 35695	5.8	18. 55. 53.620	83.69	4	3	+ 0.2778	-0.0126	...	24. 54. 12.41	84.20	9	3	- 4.842	-0.037	...	...	...
3069	Lalande 35497	5.9	18. 56. 0.531	83.97	3	...	+ 3.5296	-0.0047	...	109. 25. 2.90	83.97	3	...	- 4.852	-0.497	...	...	...
3070	Groombridge 2742...	6.1*	18. 56. 4.886	81.33	4	...	+ 0.6085	-0.0084	...	27. 45. 56.07	82.47	17	4	- 4.859	-0.084	...	...	6508
3071	B. D. + 20° No. 4022	6.5	18. 56. 12.495	78.97	3	...	+ 2.5832	+0.0009	...	69. 20. 12.80	78.97	3	...	- 4.869	-0.363	...	...	...
3072	W. B. (2) XVIII. 1721...	5.5	18. 56. 24.873	83.56	3	...	+ 2.4365	+0.0012	...	63. 52. 41.00	83.56	3	...	- 4.887	-0.343	...	...	...
3073	Piazzi XVIII. 267...	5.5	18. 56. 42.693	84.24	3	...	+ 3.8579	-0.0082	...	121. 13. 17.01	84.24	3	...	- 4.912	-0.543	...	...	6499
3074	Lalande 35680	5.4	18. 57. 12.592	82.86	7	...	+ 1.5083	-0.0007	...	39. 38. 9.54	83.06	8	...	- 4.955	-0.211	...	...	...
3075	Piazzi XVIII. 290...	6.1	18. 57. 22.256	84.82	5	...	+ 2.2166	+0.0013	...	56. 33. 1.75	84.82	5	...	- 4.968	-0.311	...	...	...
3076	W. B. XVIII. 1431...	5.8	18. 57. 27.927	82.08	8	...	+ 3.0351	-0.0010	...	88. 21. 12.27	81.96	8	...	- 4.976	-0.427	...	...	...
3077	39 Sagittarii	3.9	18. 57. 29.501	81.07	9	...	+ 3.5934	-0.0054	+0.0029	111. 54. 56.55	81.07	9	...	- 4.979	-0.506	+0.057	2393	6507
3078	W. B. (2) XVIII. 1757...	6.4	18. 57. 38.860	78.92	3	...	+ 2.6141	+0.0008	...	70. 30. 45.42	78.92	3	...	- 4.992	-0.367	...	...	...
3079	16 Lyræ	5.0	18. 58. 2.660	84.50	3	1	+ 1.6957	+0.0002	...	43. 14. 5.51	83.94	3	(1)	- 5.025	-0.237	...	...	6520
3080	49 Draconis	5.7	18. 58. 20.827	84.28	3	...	+ 1.1907	-0.0029	-0.0025	34. 30. 48.16	84.28	3	...	- 5.051	-0.166	+0.015	2408	6522

3042. The combined magnitude of this star and No. 3040 given in H. P. is 4.1.

3044, 3045. The magnitudes given in B. D. are 8.7 and 7.0.

3052. The limits of magnitude are 4.0 and 4.7; the period 46d.0.

3074. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.

{lxxx}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3081	Bradley 2398.....	5'6	18. 58. 36'33I	84'38	4	...	+ 3'1677	-0'0019	-0'0044	94. 13. 3'31	84'38	4	...	- 5'072	-0'445	+0'005	2398	6517
3082	15 Aquilæ h	5'6	18. 58. 37'476	84'24	5	...	+ 3'1675	-0'0019	-0'0008	94. 12. 31'15	84'15	6	...	- 5'075	-0'445	+0'007	2399	6518
3083	B. D. — 15°. No. 5223	6'0	18. 58. 48'718	85'52	3	...	+ 3'4391	-0'0041	...	105. 50. 22'34	85'52	3	...	- 5'090	-0'483	...	...	6519
3084	40 Sagittarii.....7	3'5	18. 59. 26'852	81'38	5	...	+ 3'7549	-0'0075	-0'0072	117. 50. 39'13	81'38	5	...	- 5'144	-0'527	+0'255	2397	6521
3085	Piazzi XVIII. 294 ..	7'2*	18. 59. 45'328	81'25	5	...	+ 3'6121	-0'0059	...	112. 40. 47'57	81'25	5	...	- 5'169	-0'507	...	...	6524
3086	16 Aquilæ λ	3'6	18. 59. 52'786	80'49	6	...	+ 3'1867	-0'0021	-0'0038	95. 3. 40'06	81'08	7	...	- 5'181	-0'447	+0'080	2401	6526
3087	17 Aquilæ ζ	3'1	18. 59. 53'667	82'95	54	...	+ 2'7578	+0'0003	-0'0026	76. 18. 50'22	82'79	73	...	- 5'182	-0'386	+0'089	2405	6528
3088	Lalande 35693	5'8	18. 59. 58'078	85'88	4	...	+ 3'4527	-0'0044	...	106. 24. 42'63	85'88	4	...	- 5'188	-0'484	...	...	...
3089	B. F. 2580	5'7	19. 0. 23'539	83'69	3	...	+ 2'2793	+0'0013	...	58. 26. 3'28	83'70	3	...	- 5'224	-0'319	...	...	6534
3090	Bradley 2402.....	5'5	19. 1. 13'660	82'06	4	...	+ 3'5284	-0'0052	-0'0018	109. 28. 37'07	82'30	7	...	- 5'295	-0'494	-0'01	2402	6536
3091	18 Aquilæ π	5'1	19. 1. 19'710	78'67	3	...	+ 2'8243	0'0000	-0'0029	79. 6. 45'85	78'67	3	...	- 5'303	-0'395	+0'015	2407	6543
3092	Bradley 2409.....	5'6	19. 1. 38'182	83'68	5	...	+ 2'4967	+0'0010	+0'0050	65. 56. 4'18	83'67	7	...	- 5'328	-0'349	-0'027	2409	6542
3093	51 Draconis.....	5'4	19. 2. 13'375	85'15	5	2	+ 1'3498	-0'0020	-0'0014	36. 47. 14'25	84'66	5	2	- 5'378	-0'187	-0'013	2416	6551
3094	W. B. (2) XIX. 20...	6'0	19. 2. 23'671	83'67	3	...	+ 1'9439	+0'0009	...	48. 46. 16'70	83'67	3	...	- 5'393	-0'271	...	...	...
3095	Lalande 35851	5'9	19. 2. 34'295	79'94	4	...	+ 2'6867	+0'0005	...	73. 19. 27'86	79'94	4	...	- 5'407	-0'375	...	...	...
3096	41 Sagittarii.....π	3'1	19. 2. 37'593	84'34	14	...	+ 3'5719	-0'0058	-0'0022	111. 12. 46'58	84'47	13	...	- 5'413	-0'499	+0'034	2406	6548
3097	W. B. (2) XIX. 17...	6'2	19. 2. 55'214	83'54	4	...	+ 2'5652	+0'0009	...	68. 29. 31'06	83'94	6	...	- 5'437	-0'358	...	...	...
3098	Bradley 2440.....	6'5*	19. 2. 58'549	81'53	5	4	- 2'4481	-0'0893	-0'0124	13. 7. 17'09	82'10	21	6	- 5'441	+0'346	+0'09	2440	6563
3099	W. B. (2) XIX. 22...	7'7*	19. 3. 1'036	83'66	4	...	+ 2'5631	+0'0009	...	68. 24. 29'05	83'66	4	...	- 5'445	-0'357	...	...	...
3100	18 Lyræ t	5'2	19. 3. 1'170	79'04	8	...	+ 2'1404	+0'0012	-0'0007	54. 5. 14'05	79'08	21	...	- 5'445	-0'298	-0'009	2414	6556
3101	19 Aquilæ π	5'3	19. 3. 7'222	85'97	5	...	+ 2'9397	-0'0007	-0'0021	84. 6. 51'38	86'10	6	...	- 5'453	-0'410	+0'064	2410	6552
3102	Lalande 35976	6'6	19. 4. 21'543	83'65	4	...	+ 2'1872	+0'0012	...	55. 25. 51'53	83'65	4	...	- 5'559	-0'304	...	...	...
3103	Lalande 35978	6'6	19. 4. 22'620	83'66	6	...	+ 2'1872	+0'0012	...	55. 25. 52'27	83'66	5	...	- 5'559	-0'304	...	...	...
3104	W. B. XIX. 41	6'8*	19. 4. 31'140	83'57	3	...	+ 3'2258	-0'0027	...	96. 48. 58'91	83'61	5	...	- 5'571	-0'450	...	...	...
3105	Piazzi XIX. 4	7'0*	19. 5. 17'826	78'90	5	...	+ 3'5869	-0'0063	...	111. 51. 20'81	78'90	5	...	- 5'637	-0'500	...	...	6561
3106	Piazzi XIX. 7	6'3†	19. 5. 50'214	80'16	6	...	+ 3'7006	-0'0078	...	116. 6. 23'82	80'16	6	...	- 5'682	-0'515	...	...	6562
3107	20 Aquilæ π	5'3	19. 6. 10'096	86'03	12	...	+ 3'2556	-0'0031	-0'0018	98. 8. 19'70	86'34	22	...	- 5'710	-0'453	-0'007	2415	6564
3108	W. B. XIX. 91	5'8	19. 6. 32'950	85'60	3	...	+ 3'3559	-0'0040	...	102. 28. 57'73	85'60	3	...	- 5'742	-0'466	...	...	...
3109	W. B. (2) XIX. 159.	7'4	19. 6. 44'140	83'76	5	...	+ 2'4455	+0'0011	...	63. 55. 12'54	83'98	7	...	- 5'757	-0'339	...	...	...
3110	Lalande (F.) 3154...	6'9	19. 6. 46'989	79'59	3	...	- 6'2703	-0'3158	...	7. 48. 16'83	82'15	3	2	- 5'761	+0'878	...	...	...
3111	W. B. (2) XIX. 165.	7'5*	19. 6. 51'362	83'76	5	...	+ 2'4464	+0'0011	...	63. 56. 59'48	83'76	5	...	- 5'767	-0'339	...	...	...
3112	19 Lyræ π	5'7	19. 7. 9'850	79'31	3	...	+ 2'3007	+0'0012	-0'0014	58. 54. 57'47	80'09	19	...	- 5'794	-0'319	-0'005	2422	6571
3113	21 Aquilæ π	5'2	19. 7. 39'587	85'97	6	...	+ 3'0256	-0'0014	-0'0010	87. 54. 33'28	86'15	8	...	- 5'834	-0'420	-0'011	2419	6572
3114	W. B. XIX. 145.....	6'3	19. 7. 49'603	83'65	3	...	+ 2'9534	-0'0009	...	84. 41. 14'04	84'16	7	...	- 5'849	-0'409	...	...	...
3115	42 Sagittarii.....λ	5'2	19. 8. 10'883	82'62	26	...	+ 3'6809	-0'0078	+0'0004	115. 27. 43'35	83'00	22	...	- 5'879	-0'511	+0'029	2418	6575
3116	Piazzi XIX. 22	6'4	19. 8. 14'540	79'99	5	...	+ 3'6516	-0'0075	...	114. 22. 56'49	79'99	5	...	- 5'884	-0'507	...	...	6576
3117	Groombridge 2789...	5'8	19. 8. 58'536	85'22	7	...	+ 1'5704	-0'0009	-0'0153	40. 22. 10'57	85'22	7	...	- 5'946	-0'216	-0'619	...	6579
3118	Lalande (F.) 3120...	5'8	19. 8. 59'257	85'22	7	...	+ 1'5702	-0'0009	-0'0153	40. 22. 3'60	85'22	7	...	- 5'946	-0'216	-0'619	...	...
3119	55 Draconis.....	6'9*	19. 9. 18'713	82'63	8	4	+ 0'2354	-0'0173	-0'0011	24. 13. 19'90	81'80	28	10	- 5'973	-0'030	-0'015	2443	6586
3120	W. B. XIX. 197.....	8'2*	19. 9. 45'902	83'67	3	...	+ 2'7336	+0'0002	...	75. 7. 32'53	83'67	3	...	- 6'011	-0'378	...	...	...

3081, 3082. The magnitudes given in B. D. are 8'1 and 5'7.

3102, 3103. The magnitudes given in B. D. are 8'5 and 6'5.

3109. The magnitude given in the *Uranometria Nova Oxoniensis* is 6'8.3117, 3118. The magnitudes given in Struve's *Mensura Micrometrica* are 6'5 and 6'0.

3120. The combined magnitude of this star and No. 3121 given in H. P. is 5'5.

3086. The magnitude given in the *Uranometria Nova Oxoniensis* is 3'3.3106. The magnitude is taken from the *Uranometria Argentina*.

Authority for Proper Motion : Bonn Observations, Vol. VII.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxxxi}

1880 GOAMM.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3121	W. B. XIX. 200.....	6.1*	h m s 19. 9. 52.035	83.62	5	...	+ 2.7336	+0.0002	...	75. 7. 27.92	83.65	13	...	- 6.019	-0.378	...	...	...
3122	Lalande (F.) 3124...	7.2*	19. 9. 59.658	83.00	6	1	+ 1.0743	-0.0052	...	32. 32. 42.87	83.04	5	1	- 6.029	-0.147	...	...	...
3123	22 Aquilæ	5.4	19. 10. 34.654	84.39	4	...	+ 2.9693	-0.0011	-0.0004	85. 22. 32.08	84.02	9	...	- 6.079	-0.410	+0.001	2424	6585
3124	43 Sagittarii	4.9	19. 10. 36.797	83.90	18	...	+ 3.5151	-0.0061	-0.0024	109. 9. 54.38	83.87	19	...	- 6.082	-0.486	+0.004	2423	6584
3125	Lalande 36282	6.2	19. 10. 45.192	81.16	6	...	+ 2.3274	+0.0012	...	59. 40. 56.28	81.16	6	...	- 6.093	-0.321	...	...	...
3126	Lalande 36268	5.4	19. 10. 57.095	79.56	4	...	+ 2.7469	+0.0001	...	75. 40. 1.13	79.56	4	...	- 6.110	-0.379	...	...	...
3127	1 Vulpeculæ	4.7	19. 11. 3.567	78.76	3	...	+ 2.5790	+0.0007	-0.0009	68. 49. 13.93	80.11	20	...	- 6.118	-0.356	+0.001	2428	6589
3128	W. B. (2) XIX. 304.	6.2	19. 11. 10.863	84.56	3	...	+ 2.4035	+0.0011	...	62. 17. 5.06	84.54	6	...	- 6.129	-0.331	...	...	...
3129	54 Draconis	5.3	19. 11. 46.595	83.43	4	3	+ 1.0760	-0.0054	-0.0016	32. 30. 5.99	83.47	4	3	- 6.179	-0.147	+0.073	2444	6601
3130	25 Aquilæ	5.1	19. 12. 11.008	82.82	40	...	+ 2.8164	-0.0003	-0.0014	78. 37. 12.13	83.01	25	...	- 6.199	-0.388	-0.025	2432	6595
3131	21 Lyræ	4.3	19. 12. 12.176	80.26	3	...	+ 2.0819	+0.0011	-0.0042	52. 4. 44.73	79.24	5	...	- 6.214	-0.286	0.000	2438	6599
3132	B. D. + 37° No. 3399	9.1*	19. 12. 20.310	80.58	1	...	+ 2.0818	+0.0010	...	52. 4. 11.92	80.58	1	...	- 6.225	-0.286	...	...	...
3133	23 Aquilæ	5.4	19. 12. 26.147	78.97	3	...	+ 3.0530	-0.0018	-0.0016	89. 7. 54.08	78.97	3	...	- 6.233	-0.421	-0.022	2430	6597
3134	57 Draconis	3.2	19. 12. 31.349	81.24	16	6	+ 0.0125	-0.0228	+0.0156	22. 32. 58.47	81.21	66	6	- 6.240	+0.001	-0.079	2449	6612
3135	2 Vulpeculæ	5.6	19. 12. 38.907	85.60	3	...	+ 2.5380	+0.0008	...	67. 11. 23.51	85.60	3	...	- 6.251	-0.349	...	...	6602
3136	Lalande 36441.....	6.1	19. 13. 24.901	84.23	3	1	+ 1.7223	-0.0002	...	43. 13. 32.70	84.24	3	(1)	- 6.315	-0.236	...	...	...
3137	28 Aquilæ.....	5.4	19. 14. 3.334	79.56	3	...	+ 2.7993	-0.0002	-0.0015	77. 50. 45.27	81.81	11	...	- 6.368	-0.384	-0.019	2441	6615
3138	26 Aquilæ	5.2	19. 14. 8.495	85.94	6	...	+ 3.1975	-0.0031	+0.0053	95. 38. 19.93	86.06	11	...	- 6.374	-0.439	-0.060	2435	6614
3139	1 Cygni	3.9	19. 14. 19.719	82.94	11	2	+ 1.3815	-0.0026	+0.0066	36. 51. 9.08	82.77	11	3	- 6.391	-0.188	-0.112	2447	6623
3140	27 Aquilæ	5.6	19. 14. 24.191	85.63	3	...	+ 3.0970	-0.0022	-0.0015	91. 6. 50.61	86.02	5	...	- 6.397	-0.425	+0.004	2439	6618
3141	44 Sagittarii	3.9	19. 14. 42.734	86.03	5	...	+ 3.4856	-0.0062	-0.0033	108. 4. 18.09	85.61	6	...	- 6.423	-0.479	-0.026	2434	6619
3142	B. D. + 37° No. 3411	9.0*	19. 14. 46.784	85.02	3	...	+ 2.1114	+0.0011	...	52. 48. 37.80	85.02	3	...	- 6.428	-0.289	...	...	...
3143	Lalande 36478	6.1	19. 14. 47.687	83.80	5	...	+ 2.1102	+0.0011	...	52. 46. 32.13	83.80	5	...	- 6.430	-0.289	...	...	...
3144	45 Sagittarii	6.1	19. 14. 50.842	85.46	5	...	+ 3.4967	-0.0063	+0.0055	108. 31. 45.99	85.46	5	...	- 6.434	-0.480	+0.065	2436	6620
3145	46 Sagittarii.....	4.7	19. 14. 51.210	83.90	6	...	+ 3.4397	-0.0057	-0.0013	106. 10. 44.32	84.26	12	...	- 6.434	-0.472	+0.009	2437	6621
3146	W. B. (2) XIX. 437..	6.4	19. 15. 25.635	83.66	3	...	+ 2.1149	+0.0011	...	52. 53. 8.17	83.66	3	...	- 6.482	-0.289	...	...	...
3147	W. B. XIX. 346.....	8.0*	19. 15. 28.006	84.48	1	...	+ 2.8585	-0.0006	...	80. 24. 28.99	84.48	1	...	- 6.485	-0.392	...	...	...
3148	W. B. (2) XIX. 457..	6.1	19. 16. 10.242	83.72	4	...	+ 2.1886	+0.0012	...	55. 2. 17.99	83.72	4	...	- 6.543	-0.299	...	...	...
3149	W. B. XIX. 357.....	6.0	19. 16. 11.278	78.65	3	...	+ 3.0829	-0.0022	+0.0040	90. 28. 42.10	78.65	3	...	- 6.544	-0.422	-0.128	3250	...
3150	W. B. XIX. 378.....	6.3	19. 17. 5.459	83.58	3	...	+ 2.8570	-0.0006	...	80. 19. 7.83	83.58	3	...	- 6.619	-0.391	...	...	...
3151	60 Draconis	4.5	19. 17. 51.179	80.64	9	3	- 1.0851	-0.0563	-0.0313	16. 52. 4.22	82.39	41	3	- 6.682	+0.152	-0.108	2472	6650
3152	3 Vulpeculæ	5.0	19. 17. 56.019	79.25	5	...	+ 2.4567	+0.0010	-0.0013	63. 58. 0.98	80.45	15	...	- 6.689	-0.335	+0.013	2450	6637
3153	47 Sagittarii	5.1	19. 17. 58.287	79.58	5	...	+ 3.6531	-0.0088	+0.0023	114. 44. 23.81	79.58	5	...	- 6.692	-0.499	+0.049	2445	6633
3154	W. B. (2) XIX. 512..	6.3	19. 18. 3.845	83.70	3	...	+ 2.2449	+0.0012	...	56. 42. 37.00	83.70	3	...	- 6.700	-0.306	...	...	...
3155	Groombridge 2827 ..	6.0	19. 18. 4.004	82.91	2	3	+ 1.1005	-0.0058	...	32. 34. 53.76	82.84	3	4	- 6.700	-0.148	...	...	6640
3156	49 Sagittarii	5.9	19. 18. 13.839	79.42	5	...	+ 3.6384	-0.0086	-0.0034	114. 11. 45.35	79.42	5	...	- 6.714	-0.497	+0.005	2446	6636
3157	W. B. XIX. 408.....	5.8	19. 18. 34.731	85.61	3	...	+ 3.3893	-0.0054	...	104. 8. 0.10	86.05	5	...	- 6.742	-0.463	...	...	...
3158	2 Sagittæ	6.0	19. 18. 58.743	85.03	11	...	+ 2.6947	+0.0002	-0.0020	73. 17. 42.54	84.90	16	...	- 6.775	-0.367	+0.005	2453	6642
3159	Groombridge 2833 ..	6.3	19. 19. 14.144	84.29	3	...	+ 1.0952	-0.0060	...	32. 27. 50.67	84.29	3	...	- 6.796	-0.147	...	...	...
3160	31 Aquilæ	5.3	19. 19. 14.868	79.28	3	...	+ 2.8121	-0.0004	+0.0487	78. 18. 40.97	78.60	5	...	- 6.797	-0.383	-0.651	2452	6644

3121. The combined magnitude of this star and No. 3120 given in H. P. is 5.5.
3135. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.3.

3131. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.6.
3146. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.

{lxxxii}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"		
3161	Piazzi XIX. 107 ...	5.7	19. 19. 21.398	84.54	5	...	+ 3.4161	-0.0058	...	105. 17. 23.64	84.45	7	...	- 6.806	-0.466	...	...	6643
3162	Piazzi XIX. 102 ...	5.8	19. 19. 21.408	84.65	4	...	+ 3.7977	-0.0112	...	119. 58. 44.90	84.66	3	...	- 6.806	-0.518	...	...	6639
3163	3 Sagittæ	6.6	19. 19. 21.745	85.08	10	...	+ 2.6944	+0.0002	+0.0013	73. 16. 37.13	84.84	12	...	- 6.807	-0.367	+0.008	2454	6647
3164	2 Cygni	4.9	19. 19. 23.635	83.63	3	...	+ 2.3641	+0.0011	+0.0001	60. 36. 44.84	83.63	3	...	- 6.810	-0.321	-0.013	2456	6648
3165	30 Aquilæ	3.5	19. 19. 26.836	82.55	47	...	+ 3.0091	-0.0017	+0.0153	87. 7. 23.90	83.31	36	...	- 6.814	-0.410	-0.091	2451	6646
3166	58 Draconis	4.6	19. 20. 3.086	83.04	7	6	+ 0.3179	-0.0189	-0.001	24. 30. 59.47	82.59	21	12	- 6.863	-0.041	-0.030	2471	6662
3167	Groombridge 2832 ..	6.0	19. 20. 9.009	85.71	3	...	+ 1.8947	+0.0005	...	46. 50. 43.37	85.71	3	...	- 6.871	-0.257	...	...	6656
3168	4 Vulpeculæ	5.2	19. 20. 12.668	79.69	3	...	+ 2.6260	+0.0005	+0.0034	70. 26. 9.36	79.69	3	...	- 6.877	-0.357	+0.065	2458	6654
3169	32 Aquilæ	4.8	19. 20. 22.816	80.62	4	...	+ 3.0701	-0.0023	-0.0009	89. 53. 57.71	81.04	5	...	- 6.891	-0.418	-0.024	2455	6653
3170	Bradley 2459	6.0	19. 20. 27.845	80.66	4	...	+ 2.4950	+0.0009	-0.0150	65. 18. 10.18	79.60	10	...	- 6.897	-0.339	+0.626	2459	6657
3171	Lalande 36666	7.3*	19. 20. 41.221	85.05	7	...	+ 3.4944	-0.0069	...	108. 35. 24.29	85.05	7	...	- 6.915	-0.475	...	...	...
3172	W. B. XIX. 474	5.8	19. 20. 49.487	81.78	7	...	+ 2.7876	-0.0003	...	77. 13. 1.04	82.88	8	...	- 6.926	-0.379	...	...	...
3173	Lalande 36688	7.0*	19. 21. 6.397	83.99	16	...	+ 3.4944	-0.0070	...	108. 36. 1.22	83.99	16	...	- 6.949	-0.475	...	...	6658
3174	W. B. XIX. 511	6.2	19. 22. 2.785	78.66	3	...	+ 2.7592	0.0002	...	75. 57. 33.67	78.66	3	...	- 7.027	-0.374	...	...	...
3175	35 Aquilæ	5.7	19. 22. 56.883	84.82	10	...	+ 3.0350	-0.0021	-0.0010	88. 17. 36.75	84.82	12	...	- 7.101	-0.411	+0.022	2463	6670
3176	Radcliffe 4326	8.6*	19. 23. 30.718	79.52	2	...	+ 1.5883	-0.0014	...	40. 5. 15.72	79.52	2	...	- 7.147	-0.213	...	...	...
3177	B. D. + 14° No. 3935	8.3*	19. 23. 31.944	80.08	4	...	+ 2.7534	-0.0001	...	75. 40. 44.31	80.08	4	...	- 7.149	-0.372	...	...	...
3178	Piazzi XIX. 154	7.3*	19. 23. 36.679	79.58	3	...	+ 1.5891	-0.0014	...	40. 5. 59.37	79.58	3	...	- 7.156	-0.213	...	...	...
3179	6 Vulpeculæ	4.7	19. 23. 42.711	82.60	58	...	+ 2.5053	+0.0009	-0.0108	65. 34. 38.02	82.13	40	...	- 7.164	-0.338	+0.102	2467	6674
3180	Piazzi XIX. 138	6.5*	19. 23. 46.595	80.55	2	...	+ 3.5657	-0.0082	...	111. 33. 37.56	80.55	2	...	- 7.169	-0.483	...	...	6671
3181	W. B. XIX. 562	5.7	19. 23. 51.360	79.48	6	...	+ 2.7529	-0.0001	...	75. 38. 59.81	79.49	7	...	- 7.175	-0.372	...	...	...
3182	8 Vulpeculæ	6.4*	19. 23. 56.615	79.95	11	...	+ 2.5028	+0.0009	-0.0009	65. 28. 40.88	80.59	10	...	- 7.183	-0.338	+0.03	2470	6676
3183	36 Aquilæ	5.2	19. 24. 23.228	84.23	8	...	+ 3.1385	-0.0031	-0.0015	93. 2. 15.84	84.93	13	...	- 7.218	-0.424	-0.004	2465	6679
3184	Lalande 37241	6.5*	19. 25. 48.096	79.02	3	4	- 2.0400	-0.1048	...	13. 40. 45.31	79.02	3	4	- 7.335	+0.280	...	...	6702
3185	6 Cygni	3.0	19. 25. 52.951	79.60	6	...	+ 2.4189	+0.0011	-0.0017	62. 17. 29.33	80.89	18	...	- 7.340	-0.325	+0.013	2473	6690
3186	Bradley 2474		19. 25. 55.118	78.95	4	...	+ 2.4187	+0.0011	-0.0020	62. 17. 9.62	79.03	3	...	- 7.343	-0.325	+0.001	2474	6691
3187	Piazzi XIX. 164	5.8	19. 26. 26.320	84.47	5	...	+ 2.1700	+0.0011	...	54. 1. 23.72	84.44	8	...	- 7.385	-0.291	...	...	...
3188	8 Cygni	4.8	19. 27. 18.729	79.04	3	...	+ 2.2290	+0.0012	-0.0008	55. 48. 5.09	80.48	5	...	- 7.457	-0.299	-0.017	2480	6698
3189	Lalande 37102	7.8*	19. 27. 50.766	85.22	3	1	+ 1.5975	-0.0015	...	40. 3. 27.49	84.97	3	1	- 7.500	-0.213	...	...	...
3190	Lalande 37122	5.7	19. 28. 8.620	85.53	5	1	+ 1.5928	-0.0015	...	39. 57. 0.05	85.40	5	1	- 7.525	-0.212	...	...	...
3191	38 Aquilæ	4.7	19. 28. 13.598	82.31	34	...	+ 2.9174	-0.0013	+0.0129	82. 52. 29.51	83.38	22	...	- 7.531	-0.391	+0.133	2479	6701
3192	37 Aquilæ	5.3	19. 28. 30.445	85.85	6	...	+ 3.3090	-0.0052	-0.0001	100. 49. 16.35	86.05	12	...	- 7.553	-0.444	+0.004	2477	6703
3193	Groombridge 2900	5.9	19. 28. 55.494	83.17	4	6	- 3.5158	-0.1977	+0.0019	10. 38. 21.30	82.93	14	10	- 7.587	+0.478	+0.032	...	...
3194	W. B. (2) XIX. 852 ..	6.5*	19. 29. 3.597	80.67	3	...	+ 2.4742	+0.0009	...	64. 11. 52.90	80.67	3	...	- 7.599	-0.331	...	...	...
3195	Groombridge 2875	6.4*	19. 29. 8.274	81.67	5	...	+ 1.0658	-0.0074	-0.0616	31. 39. 24.93	81.67	5	...	- 7.604	-0.141	+0.390	...	6712
3196	9 Vulpeculæ	5.0	19. 29. 18.676	78.95	3	...	+ 2.6341	+0.0004	-0.0014	70. 29. 15.93	79.18	14	...	- 7.619	-0.352	-0.019	2483	6709
3197	52 Sagittarii	4.6	19. 29. 24.221	82.21	21	...	+ 3.6528	-0.0103	+0.0016	115. 8. 49.74	81.62	20	...	- 7.626	-0.489	+0.010	2478	6706
3198	Piazzi XIX. 176	6.2	19. 29. 26.350	85.68	4	...	+ 3.5008	-0.0079	...	109. 6. 59.16	85.68	4	...	- 7.629	-0.469	...	...	6707
3199	Groombridge 2874	8.2*	19. 29. (51.)	...	...	...	+ 1.9560	+0.0006	...	47. 54. 7.44	85.77	1	...	- 7.662	-0.260	...	...	...
3200	W. B. XIX. 728	6.6	19. 29. 59.154	78.64	3	...	+ 2.7333	-0.0001	...	74. 39. 9.87	78.64	3	...	- 7.673	-0.365	...	...	...

3163. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.3.

3170. This star is designated 3 Cygni in B. F.

3185, 3186. The magnitudes given in B. D. are 3.0 and 6.5.

3195. Authority for Proper Motion: Bonn Observations, Vol. VII.

3169. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.1.3179. The letter *a* was added in the B.A.C.3191. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.1.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxxxiii}

1880GGAAMM.49J...1C	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3201	Piazzi XIX. 180 ...	6°0	h m s 19. 30. 5'544	85°62	5	...	+ 3'4854	-0°0077	...	108. 29. 46'39	85°29	6	...	- 7'681	-0°466	...	...	6710
3202	Groombridge 2876 ..	6°1	19. 30. 23'411	84°63	3	...	+ 1'6523	-0°0011	...	40. 59. 54'35	84°63	3	...	- 7'705	-0°219	...	...	6717
3203	Lalande (F.) 3268...	6°3	19. 30. 24'836	83°05	3	2	- 7'3189	-0°5554	...	6. 46. 25'92	83°58	3	3	- 7'707	+0°989	...	...	...
3204	39 Aquilæ	4°9	19. 30. 26'108	80°79	5	...	+ 3'2303	-0°0044	-0°0010	97. 17. 34'90	82°00	14	...	- 7'709	-0°432	-0°007	2482	6713
3205	41 Aquilæ	4°3	19. 30. 30'773	80°23	3	...	+ 3'1057	-0°0031	-0°0009	91. 33. 4'83	80°23	3	...	- 7'716	-0°415	+0°005	2484	6715
3206	Groombridge 2877 ..	5°2	19. 30. 46'504	86°40	4	...	+ 1'9558	+0°0006	...	47. 50. 58'98	86°32	6	...	- 7'736	-0°260	...	...	6718
3207	W. B. XIX. 734.....	5°6	19. 30. 48'550	85°56	3	...	+ 3'3927	-0°0065	...	104. 33. 50'55	85°57	2	...	- 7'740	-0°453	...	...	...
3208	W. B. XIX. 760.....	6°0	19. 31. 12'414	84°28	3	...	+ 2'8326	-0°0007	...	78. 59. 38'68	84°26	3	...	- 7'771	-0°377	...	...	...
3209	Piazzi XIX. 211 ...	5°6	19. 31. 13'367	81°33	3	...	+ 1'5514	-0°0020	...	39. 1. 13'28	81°33	3	...	- 7'773	-0°205	...	...	6723
3210	11 Cygni	6°0	19. 31. 29'557	79°54	3	...	+ 2'1549	+0°0011	-0°0006	53. 19. 15'93	78°82	5	...	- 7'796	-0°286	-0°026	2491	6722
3211	4 Sagittæ	5°6	19. 31. 51'465	78°47	9	...	+ 2'7148	0°0000	-0°0008	73. 48. 20'80	79°70	11	...	- 7'824	-0°361	-0°006	2489	6724
3212	W. B. (2) XIX. 956..	8°1*	19. 31. 57'746	78°17	6	...	+ 2'7148	0°0000	...	73. 48. 7'12	78°11	7	...	- 7'833	-0°361	...	...	...
3213	61 Draconis	4°7	19. 32. 35'353	80°27	4	2	- 0°2081	-0°0370	+0°0973	20. 32. 35'04	79°98	11	2	- 7'883	+0°031	+1°766	2505	6735
3214	Bradley 2496	7°0*	19. 32. 43'014	84°28	5	...	+ 1'6092	-0°0015	-0°0028	40. 1. 48'29	84°28	5	...	- 7'894	-0°212	-0°05	2496	6730
3215	Groombridge 2893..	5°2	19. 32. 54'834	86°04	3	...	+ 1'8679	+0°0002	...	45. 34. 14'12	86°18	4	...	- 7'910	-0°247	...	...	6731
3216	13 Cygni	4°7	19. 33. 13'417	84°42	11	...	+ 1'6119	-0°0015	-0°0033	40. 3. 22'16	84°42	11	...	- 7'934	-0°214	-0°239	2498	6734
3217	44 Aquilæ	5°0	19. 33. 16'274	79°04	3	...	+ 2'9622	-0°0018	-0°0018	84. 52. 28'94	79°04	3	...	- 7'938	-0°393	-0°004	2492	6729
3218	Groombridge 2899 ..	6°3*	19. 33. 29'604	81°40	4	1	+ 0°6462	-0°0154	...	26. 49. 56'82	82°46	4	...	- 7'957	-0°083	...	...	6737
3219	54 Sagittarii	5°6	19. 33. 50'879	81°48	19	...	+ 3'4372	-0°0074	+0°0026	106. 34. 1'79	82°37	22	...	- 7'985	-0°456	+0°039	2490	6733
3220	Oeltz. Arg.(S.)19857		19. 33. 53'034	82°05	11	...	+ 3'4369	-0°0074	+0°0026	106. 33. 27'62	82°05	11	...	- 7'987	-0°456	+0°039	...	...
3221	12 Cygni	4°9	19. 34. 38'198	79°19	3	...	+ 2'3689	+0°0012	-0°0005	60. 7. 20'48	79°44	7	...	- 8°047	-0°313	-0°047	2497	6740
3222	5 Sagittæ	4°3	19. 34. 43'962	78°72	3	...	+ 2'6807	+0°0002	0°0000	72. 15. 40'61	78°72	3	...	- 8°055	-0°355	+0°012	2495	6739
3223	14 Cygni	5°3	19. 35. 32'110	85°78	3	...	+ 1'9504	+0°0006	+0°0012	47. 27. 31'48	85°78	3	...	- 8°120	-0°257	-0°042	2503	6745
3224	W. B. XIX. 884.....	5°9	19. 35. 32'197	79°16	4	...	+ 2'7779	-0°0004	...	76. 27. 43'38	79°16	4	...	- 8°120	-0°367	...	...	...
3225	Groombridge 2917 ..	6°7*	19. 35. 36'761	83°19	3	2	- 0°5467	-0°0499	...	18. 39. 41'79	81°97	12	7	- 8°126	+0°076	...	...	6752
3226	55 Sagittarii	5°0	19. 35. 39'227	80°04	8	...	+ 3'4320	-0°0075	+0°0027	106. 24. 14'10	84°33	9	...	- 8°129	-0°454	+0°007	2494	6742
3227	6 Sagittæ	4°4	19. 35. 39'522	84°19	3	...	+ 2'6940	+0°0001	-0°0008	72. 48. 3'99	84°19	3	...	- 8°130	-0°356	+0°044	2499	6744
3228	W. B. XIX. 901.....	8°7*	19. 36. 4'258	79°61	1	...	+ 2'7777	-0°0004	...	76. 26. 2'95	79°61	1	...	- 8°162	-0°367	...	...	...
3229	Piazzi XIX. 230 ...	5°5	19. 36. 42'841	84°48	6	...	+ 3'4162	-0°0073	...	105. 44. 50'27	84°48	6	...	- 8°214	-0°451	...	...	6746
3230	47 Aquilæ	5°4	19. 36. 55'312	86°65	1	...	+ 2'8232	-0°0008	-0°0018	78. 27. 19'51	86°65	1	...	- 8°230	-0°372	-0°017	2501	6749
3231	Piazzi XIX. 237 ...	6°8†	19. 37. 48'369	82°68	1	...	+ 3'8091	-0°0144	...	121. 11. 20'76	82°68	1	...	- 8°300	-0°502	...	...	6753
3232	Groombridge 2912 ..	6°1	19. 37. 51'398	85°78	2	...	+ 2°0523	+0°0009	...	50. 1. 45'59	85°78	2	...	- 8°304	-0°269	...	...	...
3233	Lalande 37527	5°8	19. 38. 7'529	78°62	3	...	+ 2°3081	+0°0012	...	57. 51. 25'06	78°62	3	...	- 8°327	-0°303	...	...	...
3234	16 Cygni	5°5	19. 38. 37'578	86°16	2	...	+ 1°6115	-0°0017	-0°0180	39. 45. 11'29	86°16	2	...	- 8°367	-0°210	+0°149	2512	6763
3235	Bradley 2513		19. 38. 40'310	86°16	2	...	+ 1°6120	-0°0017	-0°0134	39. 45. 37'96	86°16	2	...	- 8°369	-0°210	+0°152	2513	6764
3236	10 Vulpeculæ	5°4	19. 38. 43'573	78°97	3	...	+ 2°4933	+0°0009	-0°0007	64. 30. 52'43	78°97	3	...	- 8°375	-0°327	-0°026	2508	6758
3237	56 Sagittarii	5°1	19. 39. 21'670	80°82	6	...	+ 3°5151	-0°0091	-0°0114	110. 2. 53'91	80°82	6	...	- 8°425	-0°462	+0°078	2504	6760
3238	15 Cygni	5°0	19. 39. 56'871	84°25	3	...	+ 2°1569	+0°0012	+0°0064	52. 56. 4'17	84°25	3	...	- 8°471	-0°282	-0°042	2514	6771
3239	50 Aquilæ	2°8	19. 40. 33'254	81°40	46	...	+ 2°8518	-0°0010	-0°0005	79. 40. 41'88	81°52	24	...	- 8°519	-0°373	-0°008	2511	6772
3240	18 Cygni	3°1	19. 41. 13'439	83°12	7	...	+ 1°8705	+0°0002	+0°0046	45. 9. 41'26	83°12	7	...	- 8°573	-0°243	-0°035	2520	6779

3219, 3220. The magnitudes given in B. D. are 5°5 and 8°7.
 3234, 3235. The magnitudes given in B. D. are 6°3 and 6°2.
 3240. The magnitude given in the *Uranometria Nova Oxoniensis* is 2°8.

3231. The magnitude is taken from the *Uranometria Argentina*.
 3238. The magnitude given in the *Uranometria Nova Oxoniensis* is 5°4.

{lxxxiv}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3241	17 Cygni	5.0	h m s 19. 41. 52.279	84.28	3	...	+ 2.2748	+0.0013	-0.0010	56. 33. 3.08	82.06	5	...	-8.623	-0.296	+0.434	2517	6784
3242	7 Sagittæ	3.7	19. 42. 2.238	79.33	3	...	+ 2.6746	+0.0002	-0.0008	71. 45. 39.27	79.33	3	...	-8.636	-0.348	-0.031	2516	6783
3243	Bradley 2515	6.3	19. 42. 25.089	86.65	1	...	+ 3.3104	-0.0062	+0.0003	101. 10. 5.20	86.65	1	...	-8.667	-0.432	-0.008	2515	6785
3244	W. B. XIX. 1060	7.0*	19. 42. 48.351	85.07	3	...	+ 2.8512	-0.0011	...	79. 36. 11.80	85.07	3	...	-8.697	-0.371	...	...	...
3245	52 Aquilæ	5.7	19. 43. 2.694	81.59	3	...	+ 2.8270	-0.0009	-0.0013	78. 28. 55.13	80.04	5	...	-8.716	-0.368	+0.004	2518	6789
3246	Groombridge 2948	8.5*	19. 43. 29.703	78.63	2	...	- 0.0709	-0.00375	...	20. 56. 33.76	78.63	2	...	-8.751	+0.013	...	...	...
3247	8 Sagittæ (N. Star)	5.0	19. 43. (39.)	...	...	...	+ 2.6619	+0.0002	+0.0018	71. 9. 24.60	85.77	1	...	-8.764	-0.346	-0.033	2523	6794
3248	8 Sagittæ (S. Star)	5.0	19. 43. 39.013	85.37	3	...	+ 2.6619	+0.0002	+0.0018	71. 9. 29.09	85.47	4	...	-8.764	-0.346	-0.033	...	...
3249	Groombridge 2941	6.2	19. 43. 56.482	86.85	1	2	+ 1.7558	-0.0006	...	42. 23. 21.98	86.59	1	(2)	-8.787	-0.226	...	...	6799
3250	Ursæ Minoris	6.5	19. 44. 9.808	82.21	114	60	-62.0712	-29.4218	-0.0512	1. 3. 23.16	82.34	332	157	-8.804	+8.137	+0.005	2795	6999
3251	51 Aquilæ	5.6	19. 44. 10.617	83.41	3	...	+ 3.3072	-0.0063	-0.0038	101. 3. 59.97	83.41	3	...	-8.806	-0.430	-0.057	2519	6796
3252	Groombridge 2952	5.8	19. 44. 28.185	82.36	5	1	- 0.0621	-0.00376	...	20. 57. 22.67	81.97	7	1	-8.828	+0.012	...	...	6808
3253	53 Aquilæ	1.0	19. 44. 55.670	81.77	85	...	+ 2.8920	-0.0014	+0.00351	81. 26. 51.72	82.25	59	...	-8.865	-0.375	-0.384	2524	6802
3254	W. B. XIX. 1109	6.3	19. 44. 55.786	85.01	3	...	+ 3.1302	-0.0039	...	92. 45. 48.20	85.01	3	...	-8.865	-0.406	...	...	...
3255	Bradley 2529	6.8*	19. 45. 12.687	85.47	4	...	+ 2.1221	+0.0011	+0.0004	51. 35. 29.05	85.47	4	...	-8.887	-0.274	+0.003	2529	6806
3256	57 Sagittarii	6.2	19. 45. 13.439	86.76	1	...	+ 3.4931	-0.0094	-0.0011	109. 20. 55.25	86.76	1	...	-8.888	-0.453	+0.045	2522	6803
3257	12 Vulpeculæ	5.0	19. 45. 54.117	82.66	3	...	+ 2.5813	+0.0006	+0.0003	67. 41. 38.59	82.66	3	...	-8.940	-0.334	+0.004	2527	6810
3258	Lalande 37835	Var.	19. 45. 57.244	82.97	3	...	+ 2.3067	+0.0013	...	57. 23. 19.54	82.97	3	...	-8.944	-0.297	...	...	...
3259	19 Cygni	5.5	19. 46. 18.898	86.09	3	...	+ 2.1242	+0.0012	+0.0006	51. 35. 9.07	86.09	3	...	-8.973	-0.273	-0.112	2534	6813
3260	55 Aquilæ	Var.	19. 46. 21.561	85.07	3	...	+ 3.0577	-0.0031	-0.0017	89. 18. 4.84	85.24	4	...	-8.977	-0.395	+0.003	2526	6811
3261	Groombridge 2950	5.5	19. 46. 30.273	83.81	1	...	+ 2.0589	+0.0010	...	49. 42. 17.71	83.81	1	...	-8.987	-0.265	...	...	6817
3262	W. B. (2) XIX. 1501	5.8	19. 46. 58.687	81.94	8	...	+ 2.5235	+0.0009	...	65. 18. 55.35	82.42	7	...	-9.025	-0.325	...	...	...
3263	B. F. 2695	5.7	19. 47. 1.521	86.71	3	...	+ 3.1437	-0.0042	...	93. 25. 26.51	86.71	3	...	-9.029	-0.406	...	...	6815
3264	20 Cygni	5.0	19. 47. 37.019	85.65	3	...	+ 1.5082	-0.0030	-0.0031	37. 18. 58.17	85.37	3	...	-9.075	-0.192	+0.075	2542	6824
3265	56 Aquilæ	5.8*	19. 47. 37.559	79.31	3	...	+ 3.2587	-0.0058	-0.0012	98. 53. 5.26	79.31	3	...	-9.075	-0.420	+0.024	2530	6821
3266	13 Vulpeculæ	4.7	19. 48. 21.646	79.32	3	...	+ 2.5482	+0.0008	+0.0006	66. 13. 57.45	79.88	4	...	-9.133	-0.327	-0.042	2537	6827
3267	Lalande 37957	5.6	19. 48. 22.026	82.32	3	...	+ 1.8085	-0.0003	...	43. 16. 53.86	82.33	3	...	-9.133	-0.231	...	...	...
3268	59 Aquilæ	4.9	19. 48. 25.923	83.92	3	...	+ 2.9018	-0.0016	+0.0056	81. 50. 53.07	83.92	3	...	-9.138	-0.373	-0.068	2536	6825
3269	58 Sagittarii	5.0	19. 48. (29.)	...	...	...	+ 3.6686	-0.0131	+0.0127	116. 36. 58.75	78.38	1	...	-9.142	-0.472	-0.093	2528	6823
3270	Groombridge 2968	6.1*	19. 48. 31.044	86.04	3	...	+ 0.9345	-0.0120	...	29. 5. 58.63	86.04	3	...	-9.145	-0.118	...	...	6834
3271	63 Draconis	3.9	19. 48. 34.512	86.03	4	3	- 0.1898	-0.0440	+0.0123	20. 2. 15.82	85.76	4	8	-9.149	+0.028	-0.016	2554	6836
3272	Groombridge 2962	5.8	19. 48. 35.060	82.65	3	...	+ 1.7684	-0.0006	...	42. 22. 39.35	83.12	4	...	-9.150	-0.226	...	...	6830
3273	58 Aquilæ	5.6	19. 48. 35.878	85.66	3	...	+ 3.0731	-0.0034	+0.0003	90. 2. 20.10	85.69	4	...	-9.151	-0.395	+0.015	2535	6826
3274	60 Aquilæ	4.0	19. 49. 25.070	83.29	35	...	+ 2.9452	-0.0020	+0.0007	83. 53. 30.69	83.81	28	...	-9.215	-0.378	+0.473	2538	6833
3275	59 Sagittarii	4.7	19. 49. 34.871	84.68	4	...	+ 3.6899	-0.0137	-0.0023	117. 29. 12.79	84.27	2	...	-9.228	-0.474	+0.024	2533	6832
3276	W. B. (2) XIX. 1617	8.2*	19. 50. 6.336	82.31	3	...	+ 2.1404	+0.0012	...	51. 50. 2.42	82.70	3	...	-9.268	-0.273	...	...	...
3277	Lalande 38039	5.7	19. 50. 25.230	79.43	3	...	+ 2.1899	+0.0013	...	53. 19. 12.28	79.43	3	...	-9.292	-0.279	...	...	...
3278	10 Sagittæ	Var.	19. 50. 34.161	78.54	3	...	+ 2.7256	-0.0002	-0.0004	73. 40. 55.46	78.54	3	...	-9.304	-0.348	-0.010	2544	6839
3279	61 Sagittarii	5.0	19. 51. 8.624	84.00	14	...	+ 3.4072	-0.0084	-0.0014	105. 48. 31.03	84.00	14	...	-9.349	-0.436	+0.081	2540	6340
3280	Radcliffe 4511	6.0	19. 51. 26.554	85.68	4	...	+ 1.0744	-0.0097	...	30. 36. 29.39	85.68	4	...	-9.372	-0.135	...	...	6852

3241. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.3.3247, 3248. The magnitudes given in *Struve's Mensura Micrometrica* are 8.8 and 5.7.3257. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.3258. This star is called χ Cygni in Chandler's Catalogue. The limits of magnitude are 4.0 — 6.5 and 13.5; the period about 406^d.3260. The limits of magnitude are 3.5 and 4.7; the period 7^d. 4^h. 14^m.3274. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.7.3266. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.3278. The limits of magnitude are 5.6 and 6.4; the period 8^d. 9^h. 11^m.3250. The letter λ is omitted in the B. A. C.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxxxv}

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°0.	Secular Vari- ation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3281	22 Cygni	4.7	19. 51. 34.441	80.98	3	...	+ 2.1435	+0.0013	-0.0003	51. 49. 53.61	80.71	2	...	- 9.381	-0.272	-0.007	2547	6849
3282	60 Sagittarii	5.0	19. 51. 38.471	78.68	1	...	+ 3.6618	-0.0134	0.0000	116. 31. 9.56	78.68	1	...	- 9.387	-0.468	-0.034	2539	6842
3283	21 Cygni	4.0	19. 51. 48.220	81.72	4	...	+ 2.2525	+0.0014	-0.0029	55. 14. 4.69	81.55	5	...	- 9.399	-0.286	+0.029	2548	6851
3284	Piazzi XIX. 330 ...	4.2	19. 51. 55.136	86.16	4	...	+ 3.9175	-0.0194	...	125. 35. 58.63	86.16	4	...	- 9.409	-0.501	...	...	6843
3285	24 Cygni	4.8	19. 52. 31.591	84.04	3	...	+ 1.5568	-0.0026	-0.0059	37. 52. 45.37	84.04	3	...	- 9.456	-0.197	+0.046	2556	6856
3286	Groombridge 2992...	6.8*	19. 52. 45.927	84.66	4	...	+ 0.9892	-0.0115	...	29. 29. 40.04	84.06	5	...	- 9.474	-0.123	...	...	6861
3287	Groombridge 2993...	6.6*	19. 52. 50.079	84.31	3	...	+ 1.0070	-0.0112	...	29. 42. 12.23	84.31	3	...	- 9.479	-0.125	...	...	6862
3288	Groombridge 2984...	5.6	19. 53. 3.838	86.31	3	...	+ 2.0826	+0.0011	...	49. 57. 14.43	86.18	4	...	- 9.497	-0.263	...	...	6857
3289	W. B. XIX. 1300...	5.9	19. 53. 15.614	85.88	5	...	+ 3.2856	-0.0066	...	100. 16. 16.03	86.00	6	...	- 9.513	-0.418	...	...	...
3290	12 Sagittæ	3.7	19. 53. 25.157	80.35	3	...	+ 2.6634	+0.0003	+0.0030	70. 49. 58.03	80.35	3	...	- 9.524	-0.338	-0.037	2550	6858
3291	Bradley 2566	6.3*	19. 53. 36.985	82.96	3	...	+ 0.6176	-0.0202	-0.0020	25. 35. 52.77	83.12	4	...	- 9.540	-0.075	+0.024	2566	6869
3292	Piazzi XIX. 371 ...	5.2	19. 53. 37.850	86.57	3	...	+ 1.1515	-0.0085	...	31. 28. 27.70	86.57	3	...	- 9.541	-0.144	...	...	6867
3293	Piazzi XIX. 346 ...	8.3†	19. 53. 40.640	82.73	3	...	+ 3.5706	-0.0117	...	112. 57. 51.43	83.19	4	...	- 9.543	-0.454	...	...	...
3294	W. B. (2) XIX. 1739	5.4	19. 53. 52.475	83.28	3	...	+ 2.3757	+0.0014	...	59. 20. 27.16	83.28	3	...	- 9.560	-0.300	...	...	...
3295	Lalande 38193	6.6	19. 53. 54.156	85.19	2	...	+ 2.0165	+0.0009	...	48. 3. 45.54	85.24	3	...	- 9.561	-0.254	...	...	...
3296	14 Vulpeculæ	5.7	19. 54. 1.651	82.46	4	...	+ 2.5790	+0.0007	-0.0065	67. 13. 28.25	83.19	14	...	- 9.572	-0.326	-0.019	2553	6866
3297	Piazzi XIX. 351 ...	6.0	19. 54. 15.921	82.32	6	...	+ 3.5723	-0.0118	...	113. 3. 56.60	82.32	6	...	- 9.590	-0.454	...	...	6864
3298	13 Sagittæ	5.5	19. 54. 38.124	79.50	4	...	+ 2.7094	0.0000	-0.0013	72. 48. 38.82	79.50	4	...	- 9.618	-0.343	+0.011	2555	6868
3299	Piazzi XIX. 362 ...	7.5*	19. 54. 43.368	79.73	3	...	+ 2.7073	0.0000	...	72. 43. 2.45	79.73	3	...	- 9.624	-0.342	...	...	...
3300	Lalande 38199	6.1	19. 55. 10.604	83.72	3	...	+ 2.9029	-0.0017	...	81. 46. 16.97	83.72	3	...	- 9.660	-0.367	...	...	...
3301	62 Sagittarii	4.7	19. 55. 16.655	81.06	23	...	+ 3.6962	-0.0147	+0.0004	118. 2. 31.96	80.67	12	...	- 9.668	-0.468	-0.024	2549	6870
3302	Groombridge 3001...	5.7	19. 55. 34.282	85.39	4	...	+ 1.8834	+0.0002	...	44. 33. 17.11	85.39	4	...	- 9.689	-0.236	...	...	6876
3303	Piazzi XIX. 380 ...	6.0	19. 56. 4.614	86.08	3	...	+ 1.5905	-0.0023	...	38. 16. 21.61	86.00	4	...	- 9.729	-0.199	...	...	6881
3304	15 Vulpeculæ	4.9	19. 56. 9.500	82.51	6	...	+ 2.4658	+0.0012	+0.0029	62. 34. 38.14	83.84	6	...	- 9.734	-0.310	-0.026	2558	6879
3305	Piazzi XIX. 369 ...	6.4	19. 56. 37.521	81.59	3	...	+ 3.5662	-0.0120	...	112. 55. 52.48	81.59	3	...	- 9.771	-0.450	...	...	6878
3306	Bradley 2559	5.9	19. 56. 39.633	83.09	5	...	+ 2.5411	+0.0010	-0.0008	65. 31. 54.18	83.42	7	...	- 9.774	-0.319	+0.001	2559	6882
3307	Piazzi XIX. 366 ...	5.1	19. 56. 42.922	86.35	3	...	+ 3.8128	-0.0176	...	122. 23. 29.82	86.35	3	...	- 9.777	-0.481	...	...	6877
3308	16 Vulpeculæ	5.4	19. 56. 55.991	78.62	3	...	+ 2.5381	+0.0010	+0.0051	65. 23. 49.55	78.62	3	...	- 9.794	-0.319	-0.061	2561	6883
3309	Groombridge 3019...	6.5*	19. 56. 58.527	86.69	3	...	+ 0.7622	-0.0172	...	26. 47. 35.82	85.25	5	5	- 9.798	-0.093	...	...	...
3310	Piazzi XIX. 377 ...	7.0*	19. 57. 54.340	82.78	5	...	+ 3.5343	-0.0115	...	111. 39. 3.01	82.78	5	...	- 9.868	-0.445	...	...	6889
3311	26 Cygni	5.2	19. 57. 57.837	84.46	8	...	+ 1.6966	-0.0013	+0.0021	40. 13. 43.47	84.60	9	...	- 9.873	-0.211	+0.001	2570	6895
3312	B. D. + 49° No. 3159	5.2	19. 58. 0.266	86.33	3	...	+ 1.6972	-0.0013	...	40. 14. 18.97	86.33	3	...	- 9.875	-0.211	...	...	...
3313	14 Sagittæ	5.3	19. 58. 0.536	83.09	3	...	+ 2.7453	-0.0003	-0.0011	74. 18. 16.97	82.88	5	...	- 9.875	-0.344	-0.001	2565	6890
3314	W.B.(2)XIX.1904-5	5.8	19. 58. 34.533	78.62	2	...	+ 2.4117	+0.0014	...	60. 22. 44.28	78.62	2	...	- 9.918	-0.301	...	...	...
3315	W.B.(2)XIX.1906...	5.8	19. 58. 41.416	79.80	5	...	+ 2.4130	+0.0014	+0.0549	60. 25. 21.64	79.80	5	...	- 9.927	-0.301	+0.553	...	...
3316	15 Sagittæ	6.0	19. 58. 42.771	84.70	3	...	+ 2.7228	-0.0001	-0.0297	73. 15. 14.25	84.66	5	...	- 9.930	-0.341	+0.379	2568	6897
3317	65 Sagittarii	6.5	19. 58. 45.961	84.27	3	...	+ 3.3405	-0.0078	-0.0027	103. 0. 11.18	83.81	6	...	- 9.934	-0.419	+0.018	2563	6894
3318	Lalande 38383	7.0*	19. 58. 51.374	84.20	7	...	+ 2.5786	+0.0008	-0.0740	66. 57. 58.89	84.72	11	...	- 9.940	-0.322	+1.148	...	...
3319	W.B.(2)XIX.1915-6	7.5*	19. 58. 54.071	78.60	4	...	+ 2.4114	+0.0014	...	60. 20. 52.59	78.60	4	...	- 9.944	-0.301	...	...	...
3320	16 Sagittæ	5.4	19. 59. 50.162	79.72	4	...	+ 2.6587	+0.0003	0.0000	70. 21. 7.19	79.72	4	...	- 10.015	-0.332	-0.093	2569	6901

3281. The magnitude given in the *Uranometria Nova Oroniensis* is 5.1.

3311, 3312. The magnitudes given in B. D. are 5.1 and 9.5.

3315. Authority for Proper Motion: Bonn Observations, Vol. VII.

3293. The magnitude is taken from the *Argentine General Catalogue*.

3314, 3315. The magnitudes given in B. D. are 8.5 and 6.0.

3318. Authority for Proper Motion: Bonn Observations, Vol. VII.

{lxxxvi}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3321	W. B. (2) XIX. 1957	5.5	19. 59. 53.832	79.71	3	...	+ 2.3520	+0.0015	...	58. 7. 14.83	80.18	2	...	-10.020	-0.293	...	...	...
3322	Lalande 38415	6.5	19. 59. 55.199	79.58	3	...	+ 2.7586	-0.0004	...	74. 50. 28.32	79.58	3	...	-10.021	-0.344	...	...	...
3323	64 Draconis	5.4	20. 0. 12.173	82.59	3	...	+ 0.6476	-0.0208	-0.0022	25. 30. 52.95	82.70	4	2	-10.042	-0.077	+0.022	2578	6905
3324	Lalande 38525	6.0	20. 0. 53.327	83.68	3	...	+ 1.7943	-0.0004	...	42. 6. 41.16	83.68	3	...	-10.094	-0.222	...	...	...
3325	Lalande 38458	7.0	20. 1. 41.961	81.59	3	...	+ 3.2160	-0.0059	...	97. 6. 26.02	81.59	3	...	-10.156	-0.400	...	...	...
3326	17 Vulpeculae	5.3	20. 1. 43.995	79.93	4	...	+ 2.5766	+0.0008	0.0000	66. 43. 50.07	81.44	17	...	-10.158	-0.320	-0.004	2572	6912
3327	64 Aquilae	6.1	20. 1. 49.985	84.60	3	...	+ 3.0929	-0.0041	+0.0061	91. 1. 20.70	84.60	3	...	-10.166	-0.384	+0.062	2571	6910
3328	Groombridge 3036 ..	6.2	20. 1. 51.615	85.27	4	...	+ 1.6239	-0.0021	...	38. 30. 16.45	85.27	4	...	-10.168	-0.200	...	...	6918
3329	W. B. XIX. 1531 ..	6.4	20. 2. 3.431	83.99	3	...	+ 2.8888	-0.0016	...	80. 56. 52.93	83.99	3	...	-10.183	-0.358	...	...	...
3330	67 Draconis	4.6	20. 2. 16.392	80.42	4	1	+ 0.2888	-0.0324	+0.0006	22. 28. 6.78	81.52	9	3	-10.198	-0.032	-0.034	2587	6926
3331	W. B. XX. 9	6.0	20. 2. 54.904	81.20	6	...	+ 2.8619	-0.0013	...	79. 37. 22.95	81.20	6	...	-10.247	-0.354	...	...	...
3332	Lalande 38591-2 ...	6.2	20. 3. 5.867	79.29	3	...	+ 2.2953	+0.0016	...	55. 55. 28.49	79.29	3	...	-10.261	-0.283	...	...	...
3333	Groombridge 3051 ..	6.5*	20. 3. 13.971	82.03	3	...	+ 0.7647	-0.0183	...	26. 27. 18.43	82.03	3	...	-10.271	-0.091	...	...	6930
3334	66 Draconis	5.6	20. 3. 38.156	81.28	4	...	+ 0.9466	-0.0138	+0.0150	28. 21. 9.52	82.21	12	...	-10.301	-0.114	-0.049	2586	6932
3335	28 Cygni	4.8	20. 4. 58.183	80.33	4	...	+ 2.2269	+0.0016	+0.0003	53. 30. 47.04	81.21	10	...	-10.401	-0.273	-0.050	2582	6937
3336	65 Aquilae	3.4	20. 5. 6.750	81.87	57	...	+ 3.0958	-0.0042	-0.0001	91. 10. 34.65	83.18	52	...	-10.412	-0.381	-0.014	2576	6934
3337	Lalande 38832	7.0*	20. 5. 59.948	85.31	5	2	+ 0.5170	-0.0260	...	24. 2. 30.72	85.09	5	1	-10.478	-0.060	...	...	...
3338	W. B. (2) XX. 172 ..	6.2	20. 6. 6.201	79.26	3	...	+ 2.6230	+0.0007	...	68. 28. 50.78	79.26	3	...	-10.486	-0.322	...	...	...
3339	19 Vulpeculae	5.8	20. 6. 47.094	80.04	3	...	+ 2.5063	+0.0013	0.0000	63. 32. 52.56	80.04	3	...	-10.537	-0.306	+0.004	2585	6943
3340	Piazzi XX. 29	6.0	20. 7. 48.134	81.07	5	...	+ 3.6601	-0.0155	+0.0982	117. 23. 23.57	81.07	5	...	-10.612	-0.448	+0.260	...	6947
3341	Lacaille 8386	6.5†	20. 8. 23.264	83.19	8	...	+ 3.7360	-0.0176	...	120. 22. 11.20	83.19	8	...	-10.656	-0.458	...	...	6948
3342	Sagittae	R. Var.	20. 8. 35.003	80.66	4	...	+ 2.7399	-0.0002	...	73. 38. 9.35	80.66	4	...	-10.670	-0.334	...	...	...
3343	Oeltz. Arg. (S.) 20345	8.3*	20. 8. 38.229	77.62	3	...	+ 3.3786	-0.0093	...	105. 8. 44.34	77.62	3	...	-10.674	-0.413	...	...	...
3344	67 Aquilae	5.1	20. 8. 43.475	78.96	3	...	+ 2.7726	-0.0004	+0.0028	75. 10. 1.81	78.43	5	...	-10.680	-0.338	-0.081	2590	6952
3345	B. D. + 16° No. 4200	9.3*	20. 8. 55.575	80.66	4	...	+ 2.7398	-0.0002	...	73. 37. 1.07	80.66	4	...	-10.696	-0.334	...	...	...
3346	Groombridge 3087 ..	6.5	20. 9. 11.376	84.95	4	...	+ 1.6716	-0.0016	...	38. 53. 50.10	84.95	4	...	-10.715	-0.202	...	...	6959
3347	21 Vulpeculae	5.3	20. 9. 18.710	81.63	3	...	+ 2.4632	+0.0015	-0.0006	61. 40. 4.55	81.43	4	...	-10.725	-0.299	+0.032	2594	6957
3348	30 Cygni	4.9	20. 9. 31.721	83.54	13	2	+ 1.8845	+0.0004	+0.0017	43. 32. 48.58	84.43	13	(2)	-10.741	-0.228	+0.016	2601	6962
3349	68 Draconis	5.7	20. 9. 36.868	85.30	4	1	+ 0.9746	-0.0139	+0.0161	28. 17. 4.66	85.07	9	4	-10.747	-0.115	-0.060	2610	6970
3350	31 Cygni	3.8	20. 9. 51.198	83.84	12	1	+ 1.8886	+0.0004	-0.0004	43. 37. 19.23	83.15	14	(1)	-10.764	-0.228	-0.002	2603	6965
3351	B. F. 2758	4.8	20. 10. 10.772	82.22	7	...	+ 2.5413	+0.0012	...	64. 46. 25.13	82.65	8	...	-10.789	-0.308	...	...	6966
3352	W. B. XX. 206	7.2*	20. 10. 32.852	84.97	3	...	+ 3.1482	-0.0052	...	93. 51. 23.35	84.97	3	...	-10.816	-0.382	...	...	...
3353	33 Cygni	4.4	20. 10. 36.469	84.47	4	...	+ 1.3908	-0.0056	+0.0098	33. 47. 57.13	84.73	5	...	-10.819	-0.166	-0.10	2611	6976
3354	Lalande 38943	5.8	20. 10. 44.152	86.65	2	...	+ 2.3313	+0.0018	...	56. 38. 1.53	86.65	2	...	-10.829	-0.282	...	...	...
3355	23 Vulpeculae	4.8	20. 10. 47.746	79.93	5	...	+ 2.4880	+0.0014	-0.0046	62. 33. 11.38	81.24	29	...	-10.834	-0.301	-0.010	2602	6973
3356	4 Capricorni	6.0	20. 10. 58.248	82.62	5	...	+ 3.5307	-0.0128	-0.0002	112. 10. 45.47	82.62	6	...	-10.846	-0.428	+0.027	2591	6971
3357	5 Capricorni	4.5	20. 10. 59.728	80.48	21	...	+ 3.3294	-0.0085	-0.0008	102. 52. 40.32	80.02	9	...	-10.849	-0.404	-0.026	2593	6972
3358	6 Capricorni	3.8	20. 11. 23.742	80.87	38	...	+ 3.3298	-0.0085	+0.0022	102. 54. 56.56	82.28	19	...	-10.878	-0.403	-0.017	2595	6974
3359	24 Vulpeculae	5.5	20. 11. 38.987	86.63	3	...	+ 2.5656	+0.0011	+0.0004	65. 41. 52.39	86.63	3	...	-10.897	-0.309	+0.032	2606	6979
3360	Oeltz. Arg. (N.) 20313	9.1*	20. 11. 47.195	85.64	4	3	+ 0.5665	-0.0259	...	24. 7. 10.00	85.88	4	3	-10.906	-0.065	...	...	...

3340. Authority for Proper Motion: Bonn Observations, Vol. VII.

3342. The limits of magnitude are 8.5 — 8.7 and 9.8 — 10.4; the period 70^d.43.3351. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.1.3341. The magnitude is taken from the *Uranometria Argentina*.3350. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.3.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{lxxxvii}

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in E.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3361	Groombridge 3110...	5.8	20. 12. 7.229	84.32	3	...	+ 1.9431	+0.0008	...	44. 47. 16.73	84.32	3	...	-10.931	-0.233	...	...	...
3362	Piazzi XX. 66	7.6*	20. 12. 18.953	77.60	3	...	+ 3.3655	-0.0093	...	104. 39. 51.55	77.60	3	...	-10.946	-0.407	...	...	...
3363	7 Capricorni	5.6	20. 12. 28.113	79.55	2	...	+ 3.4687	-0.0115	-0.0013	109. 29. 29.96	79.55	2	...	-10.957	-0.419	-0.008	2597	6981
3364	1 Cephei	4.4	20. 12. 54.222	82.01	3	5	- 1.9103	-0.1655	-0.0015	12. 39. 2.71	80.82	12	5	-10.988	-0.238	-0.014	2632	7005
3365	Oeltz. Arg. (S.) 20407	8.0*	20. 13. 7.708	77.65	2	...	+ 3.3800	-0.0096	...	105. 23. 27.73	77.65	2	...	-11.004	-0.407	...	...	...
3366	8 Capricorni	4.7	20. 14. 0.443	84.16	4	...	+ 3.3324	-0.0087	-0.0016	103. 8. 8.18	84.16	4	...	-11.070	-0.401	+0.005	2608	6991
3367	Bradley 2607	6.7†	20. 14. 1.980	82.50	5	...	+ 3.3744	-0.0096	-0.0002	105. 9. 43.87	82.51	6	...	-11.071	-0.406	0.00	2607	6992
3368	35 Cygni	5.2	20. 14. 2.620	80.42	3	...	+ 2.3031	+0.0019	+0.0004	55. 23. 29.83	81.25	9	...	-11.072	-0.275	-0.010	2616	6998
3369	9 Capricorni	3.4	20. 14. 16.091	82.73	31	...	+ 3.3741	-0.0096	+0.0008	105. 9. 33.75	83.05	33	...	-11.088	-0.405	-0.022	2609	6995
3370	Groombridge 3133...	7.5*	20. 14. 47.397	77.85	1	...	+ 2.1748	+0.0019	...	51. 6. 9.52	77.85	1	...	-11.126	-0.259	...	...	...
3371	Lalande 39102	6.2	20. 14. 54.448	83.99	3	...	+ 2.7235	+0.0001	...	72. 35. 1.21	84.14	7	...	-11.134	-0.326	...	...	...
3372	Groombridge 3142...	5.7	20. 15. 26.903	85.93	4	...	+ 1.4856	-0.0042	...	34. 58. 40.66	85.93	4	...	-11.174	-0.175	...	...	...
3373	Groombridge 3140...	6.8*	20. 15. 54.274	78.36	5	...	+ 2.1737	+0.0019	...	50. 58. 28.98	78.36	5	...	-11.207	-0.258	...	...	7008
3374	Groombridge 3150...	6.2	20. 16. 20.291	81.57	5	...	+ 0.5296	-0.0283	+0.0887	23. 31. 55.33	81.57	5	...	-11.238	-0.059	-0.269	...	7017
3375	Piazzi XX. 102	7.0*	20. 16. 43.458	77.62	3	...	+ 3.3612	-0.0095	...	104. 38. 24.78	77.62	3	...	-11.266	-0.401	...	...	7009
3376	W. B. (2) XX. 580...	7.6*	20. 16. 51.027	84.39	4	...	+ 2.3795	+0.0019	...	57. 55. 37.55	84.39	4	...	-11.276	-0.282	...	...	...
3377	B. F. 2775	5.4	20. 17. 13.864	85.70	3	...	+ 2.9765	-0.0027	...	85. 2. 22.24	85.68	5	...	-11.304	-0.354	...	...	7014
3378	W. B. XX. 396	6.3	20. 17. 16.524	78.64	3	...	+ 2.7936	-0.0006	...	75. 49. 56.09	78.64	3	...	-11.306	-0.332	...	...	...
3379	Lacaille 8427	7†	20. 17. 20.371	83.14	6	...	+ 3.6959	-0.0178	...	119. 27. 43.72	83.63	7	...	-11.311	-0.440	...	...	7011
3380	71 Draconis	5.6	20. 17. 36.356	84.24	3	2	+ 1.0083	-0.0141	-0.0011	28. 7. 24.10	84.25	5	6	-11.330	-0.117	-0.011	2628	7024
3381	37 Cygni	2.3	20. 17. 55.253	79.75	11	...	+ 2.1517	+0.0019	-0.0001	50. 7. 36.33	80.74	28	...	-11.353	-0.254	-0.020	2624	7022
3382	Lalande 39173	6.1	20. 18. 6.011	83.08	5	...	+ 3.6842	-0.0176	-0.0015	119. 3. 6.70	83.08	5	...	-11.366	-0.438	-0.095	3256	7018
3383	Lalande 39273	5.8	20. 18. 10.340	78.78	3	...	+ 1.9551	+0.0010	...	44. 35. 24.31	78.78	3	...	-11.371	-0.230	...	...	...
3384	W. B. (2) XX. 629...	8.0*	20. 18. 20.081	83.55	1	...	+ 2.3829	+0.0020	...	57. 56. 26.38	83.55	1	...	-11.383	-0.281	...	...	...
3385	Groombridge 3154...	6.0	20. 18. 29.813	84.12	3	...	+ 2.1279	+0.0018	...	49. 21. 26.09	84.12	3	...	-11.395	-0.251	...	...	7027
3386	Piazzi XX. 116	6.1	20. 18. 30.588	85.07	5	...	+ 3.0592	-0.0040	...	89. 19. 7.80	85.31	15	...	-11.396	-0.362	...	...	...
3387	Lalande 39210	8.3*	20. 18. 34.736	79.36	3	...	+ 3.3713	-0.0098	...	105. 12. 26.37	79.36	3	...	-11.401	-0.400	...	...	...
3388	39 Cygni	4.6	20. 19. 4.086	80.51	4	...	+ 2.3913	+0.0020	+0.0025	58. 11. 47.97	80.51	4	...	-11.436	-0.282	-0.012	2625	7029
3389	W. B. (2) XX. 665...	5.7	20. 19. 15.087	78.97	3	...	+ 2.2424	+0.0021	...	52. 54. 37.87	78.97	3	...	-11.449	-0.264	...	...	...
3390	Lalande 39247	7.4*	20. 19. 20.098	79.29	3	...	+ 3.3740	-0.0099	...	105. 22. 12.62	79.31	3	...	-11.455	-0.399	...	...	...
3391	B. D. + 63° No. 1618	5.8	20. 19. 29.122	81.46	3	1	+ 0.8631	-0.0183	...	26. 24. 16.13	80.97	2	1	-11.466	-0.098	...	...	...
3392	Bradley 2636	6.1	20. 19. 33.709	82.31	3	...	+ 0.2889	-0.0382	+0.013	21. 30. 12.66	80.91	7	...	-11.472	-0.030	-0.025	2636	7037
3393	Lalande 39329	5.9	20. 20. 22.167	79.06	3	...	+ 2.6520	+0.0008	...	68. 58. 51.16	79.06	3	...	-11.529	-0.312	...	...	...
3394	Piazzi XX. 139	8.0*	20. 21. 13.370	80.69	3	...	+ 3.1202	-0.0050	...	92. 30. 39.62	80.69	3	...	-11.590	-0.366	...	...	...
3395	Piazzi XX. 140	7.0*	20. 21. 14.050	80.04	3	...	+ 3.1198	-0.0050	...	92. 29. 40.28	80.04	3	...	-11.591	-0.366	...	...	...
3396	11 Capricorni	5.0	20. 22. 0.857	82.10	28	...	+ 3.4304	-0.0114	-0.0028	108. 12. 33.39	82.50	23	...	-11.647	-0.402	+0.007	2626	7042
3397	Piazzi XX. 145	7.3*	20. 22. 8.981	82.98	6	...	+ 3.4222	-0.0113	...	107. 49. 50.48	82.39	7	...	-11.656	-0.401	...	...	7043
3398	Bradley 2627	7.3*	20. 22. 9.511	81.63	3	...	+ 3.4314	-0.0115	-0.0013	108. 16. 5.51	81.87	4	...	-11.657	-0.402	+0.12	2627	7044
3399	Oeltz. Arg. (S.) 20541	8.3*	20. 22. 18.579	77.66	3	...	+ 3.3730	-0.0101	...	105. 27. 26.09	77.66	3	...	-11.668	-0.395	...	...	...
3400	40 Cygni	5.5	20. 23. 7.505	79.29	3	...	+ 2.2235	+0.0022	-0.0035	51. 57. 11.50	80.54	7	...	-11.725	-0.258	+0.040	2634	7061

3367. The magnitude is taken from the *Uranometria Argentina*.
 3378. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.9.

3374. Authority for Proper Motion : Bonn Observations, Vol. VII.
 3379. The magnitude is taken from the *Argentine General Catalogue*.

{lxxxviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	Mean N.P.D., 1880°0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°0.	Secular Variation, 1880°0.	Annual Proper Motion, 1880°0.	No. in Answers' Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3401	43 Cygni	5.6	20. 23. 22.242	83.80	12	...	+ 1.8262	+0.0001	+0.0067	41. 0. 50.89	83.88	12	...	-11.743	-0.211	-0.045	2639	7062
3402	69 Aquilæ	5.2	20. 23. 22.619	78.78	3	...	+ 3.1345	-0.0053	+0.0032	93. 17. 1.45	78.78	3	...	-11.744	-0.365	-0.003	2633	7058
3403	Lacaille 8466.....	6.5†	20. 23. 35.730	82.92	8	...	+ 3.6854	-0.0184	0.00	119. 30. 48.33	83.33	9	...	-11.759	-0.430	0.00	3258	7057
3404	B.A.C. 7063	6.2	20. 24. 20.822	83.70	4	...	+ 3.3711	-0.0102	...	105. 27. 23.12	83.70	4	...	-11.812	-0.392	...	...	7063
3405	41 Cygni	4.1	20. 24. 29.595	79.12	9	...	+ 2.4496	+0.0020	+0.0005	60. 1. 52.16	80.79	30	...	-11.823	-0.283	+0.001	2637	7067
3406	B. D. + 67° No. 1248	8.5*	20. 24. 41.595	84.10	3	2	+ 0.4160	-0.0348	...	22. 6. 39.86	84.08	2	2	-11.837	-0.044	...	...	...
3407	42 Cygni	6.0	20. 24. 45.733	85.36	4	...	+ 2.2868	+0.0023	+0.0003	53. 56. 42.67	84.92	7	...	-11.842	-0.264	-0.020	2640	7073
3408	Piazzi XX. 165	7.5†	20. 25. 10.290	80.96	3	...	+ 3.5810	-0.0156	...	115. 16. 28.35	80.55	3	...	-11.870	-0.416	...	...	...
3409	W. B. XX. 588	8.5*	20. 25. 11.877	77.56	3	...	+ 3.3445	-0.0097	...	104. 10. 46.26	77.56	3	...	-11.872	-0.388	...	...	...
3410	Piazzi XX. 170	6.4†	20. 25. 43.653	80.96	3	...	+ 3.5819	-0.0157	...	115. 20. 51.71	80.55	3	...	-11.910	-0.415	...	...	7077
3411	Piazzi XX. 174	5.6	20. 25. 49.508	83.06	3	...	+ 3.2670	-0.0080	+0.0194	100. 15. 39.92	83.06	3	...	-11.916	-0.378	-0.117	...	7080
3412	W. B. XX. 620	8.2*	20. 26. 13.376	84.16	3	...	+ 3.0383	-0.0038	...	88. 11. 7.65	84.16	3	...	-11.944	-0.351	...	...	...
3413	W. B. XX. 622 ...	7.5*	20. 26. 15.687	84.41	3	...	+ 3.0399	-0.0038	...	88. 16. 20.52	85.73	9	...	-11.946	-0.351	...	...	...
3414	B.A.C. 7086	5.9	20. 26. 27.203	86.59	3	...	+ 1.5012	-0.0042	...	34. 20. 3.01	86.59	3	...	-11.960	-0.171	...	...	7086
3415	Lalande 39594	6.3	20. 26. 50.134	80.28	3	...	+ 2.5634	+0.0016	...	64. 35. 59.48	80.94	3	...	-11.987	-0.295	...	...	...
3416	Piazzi XX. 199	7.5*	20. 27. 10.728	85.66	3	...	+ 1.8490	+0.0004	...	41. 11. 28.00	85.69	4	...	-12.012	-0.211	...	...	...
3417	2 Delphini	4.1	20. 27. 28.772	82.05	33	...	+ 2.8664	-0.0013	-0.0006	79. 6. 13.93	83.09	23	...	-12.033	-0.329	+0.022	2642	7088
3418	Piazzi XX. 187	6.2	20. 27. 30.821	80.79	9	...	+ 3.3416	-0.0098	...	104. 7. 57.49	80.30	8	...	-12.035	-0.385	...	...	7087
3419	2 Cephei	4.3	20. 27. 33.992	80.38	8	1	+ 1.0104	-0.0153	+0.0046	27. 24. 32.71	81.20	26	4	-12.039	-0.113	+0.027	2651	7098
3420	46 Cygni	5.6	20. 27. 36.543	85.66	5	...	+ 1.8504	+0.0004	+0.0014	41. 11. 3.52	85.68	6	...	-12.041	-0.211	+0.040	2647	7091
3421	W. B. XX. 664	8.9*	20. 28. 3.422	81.70	3	...	+ 3.3554	-0.0101	...	104. 51. 7.71	81.70	3	...	-12.072	-0.386	...	...	...
3422	3 Delphini	5.2	20. 28. 16.466	80.73	3	...	+ 2.8335	-0.0009	+0.0033	77. 22. 59.67	79.54	5	...	-12.089	-0.325	-0.047	2644	7094
3423	Piazzi XX. 194	6.2*	20. 28. 44.764	82.28	5	...	+ 3.3966	-0.0112	...	106. 56. 13.25	82.28	5	...	-12.121	-0.389	...	...	7097
3424	Piazzi XX. 217	6.3	20. 28. 50.570	85.05	3	...	+ 1.4715	-0.0048	...	33. 37. 38.73	85.05	3	...	-12.128	-0.166	...	...	7105
3425	47 Cygni	4.8	20. 29. 14.178	79.32	4	...	+ 2.3321	+0.0025	-0.0013	55. 9. 33.71	80.14	6	...	-12.155	-0.265	+0.009	2650	7103
3426	Lalande 39671 (1st Star)...	8.5†	20. 29. 34.502	77.55	2	...	+ 3.3713	-0.0106	...	105. 43. 24.58	77.56	2	...	-12.178	-0.385	...	...	...
3427	Lalande 39671 (as one mass)	8.3*	20. 29. 34.682	83.71	2	...	+ 3.3713	-0.0106	...	105. 43. 23.66	84.81	1	...	-12.178	-0.385	...	...	...
3428	Lalande 39671 (2nd Star) ..	8.5†	20. 29. 34.717	77.56	1	...	+ 3.3713	-0.0106	...	105. 43. 21.82	77.56	1	...	-12.178	-0.385	...	...	...
3429	4 Delphini	4.7	20. 29. 41.911	83.72	3	...	+ 2.8024	-0.0005	+0.0012	75. 44. 20.30	83.72	3	...	-12.187	-0.319	+0.002	2648	7107
3430	Groombridge 3226...	5.6	20. 29. 59.037	84.06	3	...	+ 1.9630	+0.0014	...	43. 43. 3.61	84.06	3	...	-12.207	-0.222	...	...	7112
3431	70 Aquilæ	5.3	20. 30. 28.632	79.02	3	...	+ 3.1271	-0.0054	-0.0003	92. 57. 52.95	79.02	3	...	-12.242	-0.356	-0.003	2649	7109
3432	6 Delphini	3.7	20. 31. 55.277	79.06	3	...	+ 2.8061	-0.0005	+0.0057	75. 49. 17.44	79.06	3	...	-12.341	-0.317	+0.031	2656	7121
3433	27 Vulpeculæ	5.6	20. 31. 57.505	79.91	4	...	+ 2.5574	+0.0018	+0.0013	63. 57. 18.04	79.88	8	...	-12.343	-0.289	+0.012	2660	7126
3434	71 Aquilæ	4.4	20. 32. 8.448	83.76	3	...	+ 3.1003	-0.0049	-0.0003	91. 31. 24.51	83.73	5	...	-12.356	-0.351	+0.001	2654	7122
3435	W. B. (2) XX. 1060-1	9.1*	20. 32. 15.406	86.61	1	...	+ 2.6206	+0.0014	...	66. 46. 23.35	86.61	1	...	-12.365	-0.296	...	...	...
3436	14 Capricorni	5.3	20. 32. 33.676	83.57	14	...	+ 3.3614	-0.0106	-0.0012	105. 22. 29.51	83.57	14	...	-12.386	-0.380	+0.012	2652	7127
3437	Lalande 39885	6.4	20. 32. 52.694	84.41	3	...	+ 2.2543	+0.0027	...	52. 5. 18.92	84.41	3	...	-12.407	-0.253	...	...	...
3438	Bradley 2659	6.3	20. 32. 58.584	86.38	4	...	+ 3.1243	-0.0054	-0.0003	92. 50. 1.67	85.80	8	...	-12.414	-0.353	+0.008	2659	7130
3439	73 Draconis.....	5.1	20. 33. 4.385	80.86	4	2	- 0.7238	-0.01012	+0.0017	15. 27. 25.15	80.76	18	4	-12.420	-0.088	+0.021	2682	7156
3440	15 Capricorni	5.3	20. 33. 12.969	86.78	3	...	+ 3.4246	-0.0122	-0.0034	108. 33. 37.61	86.84	2	...	-12.430	-0.387	-0.013	2657	7134

3403. The magnitude is taken from the *Uranometria Argentina*.
 3410. The magnitude is taken from the *Uranometria Argentina*.
 3417. The magnitude given in the *Uranometria Nova Ozoniensis* is 3.6.
 3426, 3428. The magnitude is taken from the *Argentine General Catalogue*.

3408. The magnitude is taken from the *Argentine General Catalogue*.
 3411. Authority for Proper Motion: Bonn Observations, Vol. VII.
 3425. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.0.
 3439. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.4.

No.	Star's Name.	Magnitude.	Mean R.A., 1880 ^o .	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880 ^o .	Secular Vari- ation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	Mean N.P.D., 1880 ^o .	Mean Date, 1880 +	No. of Obs.		Annual Preces- sion, 1880 ^o .	Secular Vari- ation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3441	28 Vulpeculæ.....	5.1	20. 33. 18.250	84.42	3	...	+ 2.6120	+0.0015	-0.0010	66. 18. 15.75	84.76	4	...	-12.436	-0.294	+0.009	2668	7143
3442	W. B. (2) XX. 1107..	6.3	20. 33. 20.254	84.71	3	...	+ 2.6215	+0.0014	...	66. 44. 24.00	85.47	5	...	-12.438	-0.295	...	...	...
3443	Bradley 2667.....	5.9	20. 33. 30.944	80.39	17	...	+ 2.7833	-0.0002	-0.0008	74. 34. 57.75	81.14	10	...	-12.451	-0.313	+0.006	2667	7146
3444	W. B. XX. 821	8.4*	20. 33. 32.272	80.68	5	...	+ 3.0257	-0.0036	+0.0581	85. 27. 10.58	80.68	5	...	-12.452	-0.341	-0.048	...	...
3445	W. B. (2) XX. 1116..	5.9	20. 33. 50.858	79.15	3	...	+ 2.6621	+0.0011	...	68. 36. 18.04	79.15	3	...	-12.474	-0.299	...	...	...
3446	9 Delphini	4.0	20. 34. 3.842	81.98	32	...	+ 2.7824	-0.0001	+0.0031	74. 30. 38.07	81.68	25	...	-12.489	-0.312	+0.002	2670	7149
3447	Bradley 2701.....	7.5*	20. 34. 20.436	83.32	3	1	- 3.5451	-0.3917	+0.0183	8. 58. 29.64	83.76	6	1	-12.507	+0.410	0.000	2701	7169
3448	Groombridge 3248..	6.1	20. 35. 9.861	83.80	3	...	+ 2.1931	+0.0027	...	49. 50. 39.31	83.80	3	...	-12.564	-0.244	...	...	7158
3449	75 Draconis.....	5.6	20. 35. 42.046	82.89	6	2	- 3.5024	-0.3908	+0.0091	8. 59. 21.75	82.81	13	2	-12.600	+0.403	+0.006	2704	7178
3450	W. B. (2) XX. 1193..	6.3	20. 35. 51.564	78.75	3	...	+ 2.1018	+0.0024	...	46. 57. 51.33	78.75	3	...	-12.612	-0.233	...	...	...
3451	49 Cygni	5.8	20. 36. 11.125	80.49	4	...	+ 2.4265	+0.0026	+0.0006	58. 7. 7.84	80.17	5	...	-12.633	-0.269	+0.016	2675	7164
3452	Groombridge 3252..	6.5*	20. 36. 30.962	78.41	4	...	+ 2.2428	+0.0028	...	51. 20. 39.79	78.41	4	...	-12.656	-0.248	...	...	7167
3453	50 Cygni	1.5	20. 37. 20.412	81.90	25	1	+ 2.0435	+0.0022	-0.0003	45. 8. 52.90	81.85	27	(1)	-12.711	-0.225	-0.003	2679	7171
3454	Groombridge 3258..	5.5	20. 37. 36.409	86.26	5	...	+ 2.1651	+0.0027	...	48. 42. 43.66	86.32	6	...	-12.730	-0.239	...	...	7174
3455	Groombridge 3263..	5.9	20. 37. 44.872	84.02	4	...	+ 1.2787	-0.0092	...	29. 55. 41.36	84.07	4	2	-12.739	-0.139	...	...	7176
3456	11 Delphini	4.6	20. 37. 51.361	78.70	7	...	+ 2.8026	-0.0003	-0.0025	75. 21. 18.60	78.69	9	...	-12.746	-0.310	+0.036	2678	7173
3457	Cygni	X Var.	20. 38. 42.318	83.99	3	...	+ 2.3476	+0.0029	...	54. 50. 39.03	83.77	3	...	-12.803	-0.258	...	...	...
3458	Lalande 40215	7.2*	20. 38. 56.076	85.09	5	...	- 0.8074	-0.1127	+0.1014	14. 50. 35.39	84.70	4	...	-12.819	+0.096	-0.478	...	...
3459	17 Capricorni	5.8	20. 39. 12.484	79.27	3	...	+ 3.4863	-0.0145	-0.0007	111. 56. 57.43	79.27	3	...	-12.837	-0.385	+0.015	2677	7179
3460	Piazzi XX. 302	7.0*	20. 39. 17.809	86.31	3	...	+ 1.4940	-0.0046	...	33. 2. 46.21	85.54	3	1	-12.844	-0.162	...	...	7189
3461	30 Vulpeculæ	5.1	20. 39. 40.919	80.58	4	...	+ 2.5976	+0.0018	-0.0035	65. 9. 29.23	79.79	9	...	-12.869	-0.285	+0.177	2680	7188
3462	Groombridge 3269..	6.7	20. 40. 38.427	84.34	3	...	+ 1.9818	+0.0019	...	43. 8. 17.94	84.34	3	...	-12.933	-0.216	...	...	7198
3463	Lalande (F.) 3616-7	6.2*	20. 40. 56.363	80.44	...	3	- 5.4960	-0.7423	...	6. 47. 33.85	83.58	3	3	-12.953	+0.618	...	...	7230
3464	2 Aquarii.....	3.8	20. 41. 10.752	82.08	24	...	+ 3.2509	-0.0084	-0.0002	99. 56. 2.91	83.68	26	...	-12.970	-0.356	+0.027	2681	7196
3465	Oeltz Arg. (N.) 21043-4	6.3	20. 41. 15.157	82.65	4	...	+ 1.5578	-0.0035	...	33. 56. 49.87	82.65	4	...	-12.974	-0.168	...	...	...
3466	53 Cygni	2.7	20. 41. 21.368	79.56	6	...	+ 2.3972	+0.0030	+0.0280	56. 28. 43.00	79.06	15	...	-12.981	-0.261	-0.335	2689	7204
3467	3 Aquarii	4.6	20. 41. 24.276	79.84	3	...	+ 3.1698	-0.0065	-0.0024	95. 27. 58.57	79.84	3	...	-12.984	-0.347	+0.027	2684	7201
3468	Oeltz Arg. (N.) 21053-4	8.3*	20. 41. 33.004	84.62	3	...	+ 1.5616	-0.0034	...	33. 58. 57.80	84.62	3	...	-12.994	-0.168	...	...	...
3469	B. F. 2827	8.5*	20. 41. 35.782	79.94	5	...	+ 3.4157	-0.0127	...	108. 38. 25.69	79.94	5	...	-12.998	-0.374	...	...	7202
3470	Lalande 40125	8.1*	20. 41. 36.794	79.94	5	...	+ 3.4157	-0.0127	...	108. 38. 32.79	79.94	5	...	-12.999	-0.374	...	...	...
3471	4 Cephei.....	5.5	20. 41. 40.913	86.67	3	...	+ 0.7622	-0.0257	+0.0022	23. 46. 44.03	86.67	3	...	-13.003	-0.079	-0.020	2697	7211
3472	13 Delphini.....	5.5	20. 41. 51.658	86.13	5	...	+ 2.9731	-0.0027	+0.0007	84. 25. 54.37	85.99	7	...	-13.015	-0.324	+0.001	2688	7206
3473	Piazzi XX. 305	5.7	20. 42. 9.987	86.77	3	...	+ 3.5727	-0.0174	...	116. 13. 23.99	86.77	3	...	-13.035	-0.390	...	...	7205
3474	Piazzi XX. 332	4.6	20. 42. 22.312	83.97	3	...	+ 1.5000	-0.0045	-0.0121	32. 51. 1.98	84.18	4	...	-13.049	-0.160	+0.246	...	7215
3475	Cygni	T Var.	20. 42. 23.417	85.97	3	...	+ 2.3893	+0.0030	...	56. 3. 58.34	86.13	4	...	-13.050	-0.259	...	...	...
3476	Microscopii	5.1†	20. 42. 28.152	86.71	3	...	+ 3.7625	-0.0240	...	124. 13. 22.39	86.71	3	...	-13.055	-0.411	...	...	7207
3477	Piazzi XX. 310	6.7*	20. 42. 32.062	81.75	3	...	+ 3.4114	-0.0126	...	108. 28. 40.06	82.10	5	...	-13.060	-0.372	...	...	7209
3478	3 Cephei	3.6	20. 42. 50.744	81.70	6	4	+ 1.2156	-0.0112	+0.0127	28. 37. 37.40	80.72	30	6	-13.081	-0.129	-0.810	2698	7220
3479	Piazzi XX. 359	6.7*	20. 43. 48.911	85.75	4	3	+ 0.3981	-0.0418	...	20. 41. 9.41	85.16	5	7	-13.145	-0.038	...	...	...
3480	Oeltz Arg. (N.) 211126	5.5	20. 43. 52.180	84.25	3	1	+ 1.9749	+0.0020	...	42. 36. 36.48	84.50	5	(1)	-13.148	-0.212	...	...	...

3444. Authority for Proper Motion : Bonn Observations, Vol. VII.
 3458. Authority for Proper Motion : Bonn Observations, Vol. VII.
 3476. The magnitude is taken from the *Uranometria Argentina*.

3457. The limits of magnitude are 6.4 and 7.2 — 7.7 ; the period 15^h. 14^m. 24^{sec}.
 3475. The limits of magnitude are 5.5 ? and 6 ? the period about a year.

{xc}

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3481	15 Delphini.....	6.2	h m s 20. 43. 54.667	84.72	3	...	+ 2.8560	-0.0008	+0.0023	77. 54. 9.72	84.49	8	...	-13.151	-0.309	-0.100	2693	7223
3482	Piazzi XX. 325	6.3*	20. 44. 4.838	83.66	3	...	+ 3.3050	-0.0098	+0.0094	102. 59. 17.96	83.66	3	...	-13.162	-0.358	+0.057	...	7221
3483	18 Capricorni	4.4	20. 44. 39.414	81.39	3	...	+ 3.5933	-0.0184	-0.0027	117. 22. 1.77	81.39	3	...	-13.200	-0.389	-0.003	2690	7227
3484	Lalande 40328	6.4	20. 45. 5.309	82.62	3	...	+ 1.8106	+0.0004	...	38. 32. 3.86	82.62	3	...	-13.228	-0.193	...	...	...
3485	6 Aquarii	4.8	20. 46. 10.805	82.44	26	...	+ 3.2385	-0.0083	+0.0008	99. 25. 57.94	83.53	26	...	-13.300	-0.348	+0.031	2696	7239
3486	Vulpecula	Var.	20. 46. 22.573	84.77	3	...	+ 2.5451	+0.0025	...	62. 11. 55.54	84.77	3	...	-13.313	-0.272	...	...	...
3487	Piazzi XX. 351	6.5*	20. 46. 31.700	83.45	4	...	+ 3.2852	-0.0095	...	102. 1. 34.45	83.45	4	...	-13.323	-0.352	...	...	7242
3488	W. B. (2) XX. 1483	6.7	20. 46. 59.092	79.35	3	...	+ 2.7563	+0.0006	...	72. 25. 23.28	79.35	3	...	-13.353	-0.294	...	...	...
3489	31 Vulpecula	4.7	20. 46. 59.492	80.10	4	...	+ 2.5717	+0.0024	-0.0063	63. 21. 5.82	78.88	13	...	-13.353	-0.274	+0.074	2703	7246
3490	19 Capricorni	6.0	20. 48. 0.897	79.41	3	...	+ 3.4023	-0.0128	-0.0058	108. 22. 37.28	79.41	3	...	-13.420	-0.363	+0.003	2700	7249
3491	B. D. + 32° No. 3980	5.8	20. 49. 2.220	81.04	3	...	+ 2.4302	+0.0033	...	57. 1. 4.46	81.04	3	...	-13.486	-0.257	...	...	...
3492	Groombridge 3319...	5.6	20. 49. 7.105	85.41	6	...	+ 2.7925	+0.0031	...	45. 16. 20.58	85.41	6	...	-13.491	-0.220	...	...	7254
3493	Lalande 40482	8.2*	20. 49. 20.080	86.76	2	...	+ 2.0942	+0.0031	...	45. 17. 56.20	86.76	2	...	-13.505	-0.220	...	...	...
3494	32 Vulpecula	5.1	20. 49. 26.744	82.94	19	...	+ 2.5557	+0.0026	-0.0016	62. 23. 53.30	83.35	27	...	-13.513	-0.270	+0.002	2709	7256
3495	Piazzi XX. 370	5.9	20. 49. 39.413	84.72	4	...	+ 3.5699	-0.0182	...	116. 45. 9.31	84.72	4	...	-13.526	-0.379	...	...	7252
3496	Piazzi XX. 376	5.9	20. 49. 40.144	79.48	3	...	+ 3.0020	-0.0032	...	85. 55. 30.49	79.48	3	...	-13.527	-0.317	...	...	7255
3497	Piazzi XX. 391	6.5*	20. 49. 52.608	84.65	5	...	+ 1.7121	-0.0008	...	35. 56. 33.49	84.65	5	...	-13.541	-0.178	...	...	7262
3498	16 Delphini.....	5.4	20. 49. 55.020	81.70	3	...	+ 2.8607	-0.0008	+0.0015	77. 53. 22.34	80.55	5	...	-13.543	-0.302	-0.010	2707	7257
3499	Piazzi XX. 386	6.0	20. 50. 57.461	81.29	7	...	+ 3.3630	-0.0118	...	106. 29. 32.57	81.29	7	...	-13.610	-0.355	...	...	7263
3500	76 Draconis.....	5.7	20. 51. 10.590	82.59	4	2	- 3.9847	-0.5262	+0.0141	7. 54. 51.98	83.43	19	8	-13.625	+0.432	-0.008	2754	7291
3501	Bradley 2720.....	5.8	20. 51. 46.780	83.17	2	...	+ 2.0244	+0.0028	-0.0008	43. 2. 30.37	83.17	2	...	-13.663	-0.210	-0.024	2720	7268
3502	W. B. XX. 1293.....	6.0	20. 52. 3.010	83.95	3	...	+ 3.3332	-0.0111	...	104. 56. 44.84	83.91	5	...	-13.680	+0.350	...	...	...
3503	Lalande (F.) 3638...	7.8*	20. 52. 27.764	85.93	5	...	- 0.4011	-0.0947	+0.1021	15. 41. 41.05	85.75	4	...	-13.707	+0.049	-0.521	...	...
3504	Groombridge 3341...	5.9	20. 52. 36.993	85.98	3	...	+ 1.8988	+0.0017	...	39. 43. 54.85	85.98	3	...	-13.716	-0.196	...	...	7278
3505	20 Capricorni	6.2	20. 52. 46.892	84.63	3	...	+ 3.4174	-0.0136	0.0000	109. 29. 59.07	84.63	3	...	-13.727	-0.357	+0.010	2713	7270
3506	33 Vulpecula	5.8	20. 52. 54.519	81.39	6	...	+ 2.6814	+0.0017	-0.0010	68. 8. 14.46	80.15	14	...	-13.735	-0.279	+0.006	2719	7275
3507	Bradley 2749.....	5.5	20. 52. 58.883	83.29	3	5	- 2.5087	-0.3111	-0.0076	9. 53. 55.18	81.80	14	8	-13.740	+0.272	+0.04	2749	7299
3508	1 Equulei (1st Star)	5.4	20. 53. 4.618	85.38	4	...	+ 3.0070	-0.0033	-0.0100	86. 9. 57.78	85.38	4	...	-13.746	-0.313	+0.139	2717	7276
3509	1 Equulei (2nd Star)	5.4	20. 53. 5.399	84.96	3	...	+ 3.0070	-0.0033	-0.0100	86. 9. 54.15	84.96	3	...	-13.746	-0.313	+0.139	...	...
3510	8 Aquarii	6.8*	20. 53. 19.074	85.99	3	...	+ 3.3063	-0.0104	-0.0039	103. 31. 37.04	85.99	3	...	-13.760	-0.345	+0.001	2715	7279
3511	Groombridge 3359...	7.5*	20. 53. 28.523	85.23	8	5	+ 0.4747	-0.0413	...	20. 30. 45.72	84.58	7	6	-13.772	-0.044	...	...	...
3512	21 Capricorni	6.3*	20. 54. 6.529	79.95	6	...	+ 3.3872	-0.0128	-0.0041	107. 59. 52.57	79.95	6	...	-13.812	-0.352	-0.012	2718	7282
3513	9 Aquarii	7.0*	20. 54. 31.426	83.78	8	...	+ 3.3136	-0.0107	-0.0029	103. 59. 53.79	83.78	8	...	-13.837	-0.344	+0.006	2722	7288
3514	Lalande (F.) 3648...	9.1*	20. 54. 34.455	86.80	2	...	+ 0.4760	-0.0417	...	20. 26. 11.67	86.83	2	...	-13.841	-0.044	...	...	...
3515	Piazzi XX. 411	5.9	20. 54. 37.774	84.73	3	...	+ 3.5726	-0.0189	...	117. 20. 57.36	85.26	2	...	-13.845	-0.371	...	...	7287
3516	Piazzi XX. 429 (1st Star)...	6.0†	20. 54. 39.441	80.85	1	...	+ 1.9199	+0.0020	...	40. 0. 15.19	80.85	1	...	-13.846	-0.197	...	...	...
3517	Piazzi XX. 429 (as one mass)...	5.5	20. 54. 39.341	82.86	5	...	+ 1.9199	+0.0020	...	40. 0. 13.19	82.86	5	...	-13.846	-0.197	...	...	7294
3518	Piazzi XX. 429 (2nd Star)...	7.3†	20. 54. 39.601	80.85	1	...	+ 1.9199	+0.0020	...	40. 0. 13.25	80.85	1	...	-13.847	-0.197	...	...	...
3519	Lalande 40682	6.1	20. 54. 58.635	78.65	3	...	+ 2.7423	+0.0011	...	71. 8. 10.93	78.65	3	...	-13.867	-0.283	...	...	...
3520	59 Cygni	4.6	20. 55. 44.709	82.56	13	...	+ 2.0379	+0.0031	+0.0009	42. 56. 49.24	82.56	13	...	-13.915	-0.208	+0.009	2732	7301

3482. Authority for Proper Motion : Bonn Observations, Vol. VII.
 3503. Authority for Proper Motion : Bonn Observations, Vol. VII.
 3516, 3518 The magnitude is taken from Struve's *Mensura Micrometrica*.

3486. The limits of magnitude are 5.5 and 6.5 ; the period 4^d. 10^h. 29^m.
 3508, 3509. The magnitudes given in Struve's *Mensura Micrometrica* are 6.2 and 5.7.

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3521	Piazzi XX. 452	6.4*	20. 57. 44.849	79.49	4	...	+ 2.2983	+0.0042	...	50. 57. 48.83	79.17	7	...	-14.041	-0.233	...	...	7313
3522	Piazzi XX. 443	7.7*	20. 58. 7.089	79.52	4	...	+ 3.3754	-0.0127	...	107. 38. 20.95	79.52	4	...	-14.064	-0.345	...	...	7312
3523	Groombridge 3378	5.9	20. 58. 50.579	84.72	4	...	+ 1.6532	-0.0016	...	33. 48. 14.44	84.72	4	...	-14.109	-0.165	...	...	...
3524	Vulpeculæ R	Var.	20. 59. 2.918	82.38	4	...	+ 2.6626	+0.0022	...	66. 39. 15.92	82.38	4	...	-14.122	-0.270	...	...	...
3525	23 Capricorni θ	4.3	20. 59. 11.982	82.95	34	...	+ 3.3752	-0.0128	+0.0040	107. 42. 31.91	82.59	22	...	-14.131	-0.343	+0.054	2733	7322
3526	Piazzi XX. 465	7.0*	20. 59. 22.636	81.80	3	...	+ 2.2438	+0.0042	...	48. 50. 45.24	81.78	5	...	-14.142	-0.226	...	...	7326
3527	24 Capricorni A	4.6	21. 0. 6.379	84.68	4	...	+ 3.5227	-0.0178	-0.0051	115. 29. 4.74	84.68	4	...	-14.187	-0.357	+0.021	2737	7328
3528	Groombridge 3383	6.2	21. 0. 7.763	86.38	3	...	+ 1.8272	+0.0012	...	37. 11. 29.72	86.24	2	...	-14.189	-0.182	...	...	7332
3529	62 Cygni ξ	3.7	21. 0. 34.005	82.86	10	2	+ 2.1790	+0.0042	+0.0006	46. 33. 1.64	83.88	10	(2)	-14.216	-0.218	+0.008	2746	7333
3530	W. B. (2) XX. 1866..	6.0	21. 1. 28.203	79.29	3	...	+ 2.5145	+0.0037	...	59. 17. 45.76	79.29	3	...	-14.271	-0.251	...	...	...
3531	61 Cygni (1st Star) ...	5.1	21. 1. 31.128	83.63	14	...	+ 2.3344	+0.0044	+0.3444	51. 50. 24.39	83.65	15	...	-14.274	-0.233	-3.230	2744	7336
3532	61 Cygni (2nd Star) ...	5.1	21. 1. 32.656	83.63	14	...	+ 2.3346	+0.0044	+0.3497	51. 50. 33.39	83.65	15	...	-14.276	-0.233	-3.033	2745	7337
3533	25 Capricorni χ	5.3	21. 1. 41.040	85.65	3	...	+ 3.4453	-0.0153	-0.0004	111. 40. 29.31	85.65	3	...	-14.284	-0.347	+0.053	2741	7335
3534	63 Cygni f ²	5.1	21. 2. 28.119	85.02	6	...	+ 2.0636	+0.0037	+0.0013	42. 50. 0.41	85.29	5	...	-14.332	-0.204	+0.014	2750	7345
3535	13 Aquarii ν	4.6	21. 3. 3.379	83.99	15	...	+ 3.2681	-0.0098	+0.0043	101. 51. 24.45	84.26	19	...	-14.368	-0.326	+0.007	2747	7344
3536	Piazzi XXI. 1 (1st Star)	5.5	21. 3. 33.294	83.42	3	...	+ 2.5410	+0.0036	...	60. 16. 40.24	82.43	4	...	-14.398	-0.252	...	...	...
3537	Piazzi XXI. 1 (2nd Star)	5.5	21. 3. 33.485	81.20	6	...	+ 2.5410	+0.0036	...	60. 16. 43.23	81.60	24	...	-14.400	-0.252	...	...	...
3538	Groombridge 3409..	6.0	21. 5. 39.805	81.83	9	3	+ 0.4029	-0.0497	...	19. 2. 57.36	80.96	21	7	-14.527	-0.034	...	...	7363
3539	3 Piscis Australis	5.7	21. 6. 10.229	85.99	4	...	+ 3.5635	-0.0201	+0.0061	118. 6. 29.67	85.99	4	...	-14.557	-0.351	+0.109	2753	7357
3540	64 Cygni ζ	3.5	21. 7. 49.758	82.41	59	...	+ 2.5511	+0.0039	-0.0015	60. 15. 52.87	82.05	51	...	-14.657	-0.248	+0.066	2760	7368
3541	77 Draconis.....	5.8	21. 7. 52.351	82.20	4	3	- 1.0909	-0.1731	+0.0068	12. 21. 38.48	82.54	18	3	-14.659	+0.115	-0.023	2777	7381
3542	Piazzi XXI. 51	5.5	21. 8. 44.843	84.72	3	...	+ 1.5302	-0.0041	-0.0013	30. 30. 23.24	84.72	3	...	-14.711	-0.145	+0.018	...	7377
3543	Lalande (F.) 3738...	8.6*	21. 8. 49.122	85.30	5	...	+ 0.0596	-0.0731	-0.0732	16. 46. 48.41	84.91	5	...	-14.713	0.000	+0.559	...	...
3544	29 Capricorni	5.5	21. 9. 6.271	82.29	7	...	+ 3.3268	-0.0119	+0.0002	105. 40. 9.14	82.61	9	...	-14.732	-0.323	-0.010	2759	7374
3545	Lalande 41221	8†	21. 9. 14.829	82.16	2	...	+ 3.5700	-0.0208	...	118. 46. 7.20	82.16	2	...	-14.741	-0.347	...	...	...
3546	8 Equulei α	4.1	21. 9. 49.482	82.74	15	...	+ 2.9972	-0.0028	+0.0021	85. 14. 51.26	83.11	18	...	-14.775	-0.289	+0.078	2764	7380
3547	14 Aquarii	6.9	21. 9. 51.187	84.06	3	...	+ 3.2270	-0.0088	-0.0024	99. 42. 49.68	84.06	3	...	-14.777	-0.312	-0.004	2763	7379
3548	65 Cygni	3.9	21. 10. 0.046	81.22	2	...	+ 3.2784	-0.0050	-0.0121	52. 27. 58.83	80.55	8	...	-14.786	-0.228	-0.460	2767	7385
3549	4 Piscis Australis.....	4.8	21. 10. 39.588	85.76	5	...	+ 3.6497	-0.0243	+0.0005	122. 40. 23.76	85.76	5	...	-14.825	-0.352	+0.029	2762	7386
3550	Piazzi XXI. 53	7.5*	21. 10. 46.546	86.82	3	...	+ 2.9975	-0.0028	...	85. 14. 52.50	86.81	4	...	-14.832	-0.288	...	...	...
3551	31 Capricorni	7.5*	21. 11. 32.674	77.64	5	...	+ 3.3630	-0.0132	+0.0034	107. 57. 54.59	77.64	5	...	-14.876	-0.322	-0.023	2766	7391
3552	67 Cygni	4.3	21. 12. 42.177	82.02	7	...	+ 2.3531	+0.0053	-0.0009	51. 6. 27.79	82.60	8	...	-14.944	-0.222	+0.013	2769	7398
3553	Lalande 41422	6.0	21. 12. 50.870	84.05	3	...	+ 2.2650	+0.0054	...	47. 49. 9.24	84.05	3	...	-14.953	-0.214	...	...	...
3554	66 Cygni	4.4	21. 12. 59.033	79.65	3	...	+ 2.4628	+0.0049	-0.0005	55. 36. 23.00	79.65	3	...	-14.961	-0.233	+0.004	2770	7399
3555	Oeltz. Arg. (N.) 21988..	6.0	21. 13. 16.767	80.66	3	...	+ 1.8711	+0.0025	...	36. 30. 22.77	80.66	3	...	-14.978	-0.175	...	...	...
3556	B. D. + 38° No. 4439	8.5*	21. 13. 26.058	83.22	7	...	+ 2.3568	+0.0053	...	51. 9. 0.26	83.22	7	...	-14.987	-0.222	...	...	...
3557	16 Aquarii	5.9	21. 14. 46.792	83.02	7	...	+ 3.1506	-0.0067	-0.0031	95. 4. 7.39	83.13	8	...	-15.065	-0.297	-0.004	2771	7404
3558	W. B. (2) XXI. 319..	6.0	21. 14. 46.890	80.07	3	...	+ 2.7244	+0.0025	...	68. 28. 52.67	80.07	3	...	-15.065	-0.256	...	...	...
3559	Groombridge 3432	5.4	21. 15. 21.106	86.35	3	...	+ 2.0599	+0.0047	...	40. 59. 49.55	86.35	3	...	-15.098	-0.191	...	...	7411
3560	Bradley 2773.....	7.0*	21. 15. 32.253	80.14	6	...	+ 3.2247	-0.0089	-0.0017	99. 50. 10.26	80.14	6	...	-15.108	-0.303	+0.11	2773	7408

3524. The limits of magnitude are 7.5 — 8.5 and 12.5 — 13.6: the period about 137^d.

3531, 3532. The magnitudes given in B. D. are 5.0 and 5.3. In the B. A. C. Flamsteed's No. is affixed to No. 3531 only.

3536, 3537. The magnitudes given in Struve's *Mensura Micrometrica* are 8.0 and 6.0.

3543. Authority for Proper Motion: Bonn Observations, Vol. VII.

3548. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.7.3529. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.0.3531. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.1.3540. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.1.

3545. The magnitude is taken from Lalande (B. A.)

{xcii}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880-0.	Secular Variation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers' Bradley.		No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.				1755.	1850.	
3561	32 Capricorni	4.4	21. 15. 33 ^s 81 ^m 12 ^s	82 ^m 06 ^s	22	...	+ 3 ^s 3468	-0 ^s 0130	-0 ^s 0003	107. 20. 41 ^m 50 ^s	81 ^m 74 ^s	19	...	-15 ^s 110	-0 ^s 314	-0 ^s 013	2772	7407	
3562	34 Vulpeculæ	5.8	21. 15. 38 ^s 90 ^m 2 ^s	82 ^m 65 ^s	4	...	+ 2 ^s 6929	+0 ^s 0029	...	66. 38. 56 ^m 45 ^s	82 ^m 15 ^s	10	...	-15 ^s 115	-0 ^s 252	...	...	7410	
3563	5 Cephei	2.6	21. 15. 42 ^s 79 ^m 2 ^s	81 ^m 90 ^s	26	13	+ 1 ^s 4150	-0 ^s 0072	+0 ^s 0211	27. 55. 21 ^m 42 ^s	81 ^m 81 ^s	61	16	-15 ^s 119	-0 ^s 129	-0 ^s 025	2786	7416	
3564	Piazzi XXI. 87	5.8	21. 16. 7 ^s 70 ^m 6 ^s	84 ^m 06 ^s	3	...	+ 3 ^s 4476	-0 ^s 0167	...	113. 10. 50 ^m 59 ^s	84 ^m 06 ^s	3	...	-15 ^s 143	-0 ^s 323	...	...	7413	
3565	W.B. (2) XXI. 360..	6.1	21. 16. 18 ^s 76 ^m 1 ^s	84 ^m 16 ^s	3	...	+ 2 ^s 5229	+0 ^s 0048	...	57. 53. 48 ^m 11 ^s	84 ^m 16 ^s	3	...	-15 ^s 153	-0 ^s 235	...	...	...	
3566	17 Aquarii	6.4	21. 16. 30 ^s 234 ^m	80 ^m 50 ^s	7	...	+ 3 ^s 2239	-0 ^s 0089	-0 ^s 0052	99. 49. 48 ^m 35 ^s	80 ^m 50 ^s	7	...	-15 ^s 164	-0 ^s 301	+0 ^s 023	2776	7415	
3567	1 Pegasi	4.3	21. 16. 32 ^s 230 ^m	82 ^m 39 ^s	3	...	+ 2 ^s 7661	+0 ^s 0019	+0 ^s 0064	70. 42. 30 ^m 52 ^s	80 ^m 97 ^s	5	...	-15 ^s 166	-0 ^s 258	-0 ^s 075	2780	7418	
3568	6 Cephei	5.3	21. 16. 52 ^s 608 ^m	83 ^m 06 ^s	2	4	+ 1 ^s 2527	-0 ^s 0125	-0 ^s 0008	25. 38. 12 ^m 42 ^s	83 ^m 96 ^s	2	6	-15 ^s 186	-0 ^s 113	-0 ^s 016	2788	7428	
3569	Oeltz.Arg.(N.)22131	8.5*	21. 16. 57 ^s 076 ^m	85 ^m 27 ^s	7	6	+ 0 ^s 4382	-0 ^s 0522	...	18. 20. 3 ^m 75 ^s	85 ^m 30 ^s	7	7	-15 ^s 190	-0 ^s 035	...	...	...	
3570	Oeltz.Arg.(N.)22100	8.0*	21. 17. 7 ^s 846 ^m	86 ^m 97 ^s	...	1	+ 1 ^s 5542	-0 ^s 0034	...	29. 52. 39 ^m 96 ^s	86 ^m 97 ^s	...	1	-15 ^s 199	-0 ^s 141	...	...	...	
3571	Oeltz.Arg.(N.)22116	6.8	21. 17. 19 ^s 285 ^m	86 ^m 80 ^s	2	1	+ 1 ^s 5522	-0 ^s 0035	...	29. 49. 18 ^m 61 ^s	86 ^m 84 ^s	1	1	-15 ^s 211	-0 ^s 141	...	...	...	
3572	Oeltz.Arg.(N.)22127	6.8*	21. 17. 28 ^s 417 ^m	85 ^m 29 ^s	3	...	+ 1 ^s 5492	-0 ^s 0035	...	29. 45. 11 ^m 31 ^s	84 ^m 60 ^s	2	...	-15 ^s 219	-0 ^s 141	...	...	7430	
3573	18 Aquarii	5.4	21. 17. 37 ^s 921 ^m	86 ^m 09 ^s	5	...	+ 3 ^s 2794	-0 ^s 0107	+0 ^s 0048	103. 23. 32 ^m 22 ^s	86 ^m 09 ^s	5	...	-15 ^s 229	-0 ^s 305	-0 ^s 002	2781	7427	
3574	Groombridge 3441...	5.8	21. 17. 50 ^s 352 ^m	83 ^m 84 ^s	3	...	+ 2 ^s 0770	+0 ^s 0051	...	41. 7. 29 ^m 71 ^s	83 ^m 84 ^s	3	...	-15 ^s 240	-0 ^s 191	...	...	7431	
3575	W.B. (2) XXI. 427..	6.3*	21. 18. 31 ^s 422 ^m	86 ^m 07 ^s	6	...	+ 2 ^s 4223	+0 ^s 0056	...	53. 6. 28 ^m 28 ^s	86 ^m 07 ^s	6	...	-15 ^s 279	-0 ^s 222	...	...	...	
3576	Piazzi XXI. 114 ...	5.6	21. 18. 34 ^s 415 ^m	79 ^m 34 ^s	3	...	+ 2 ^s 6912	+0 ^s 0032	...	66. 14. 27 ^m 26 ^s	80 ^m 22 ^s	8	...	-15 ^s 282	-0 ^s 248	...	...	7437	
3577	19 Aquarii	5.7	21. 18. 46 ^s 029 ^m	82 ^m 28 ^s	9	...	+ 3 ^s 2288	-0 ^s 0091	-0 ^s 0021	100. 15. 30 ^m 99 ^s	82 ^m 28 ^s	9	...	-15 ^s 293	-0 ^s 298	+0 ^s 167	2782	7435	
3578	W.B. (2) XXI. 433.	6.5	21. 18. 57 ^s 013 ^m	86 ^m 07 ^s	6	...	+ 2 ^s 4251	+0 ^s 0057	...	53. 9. 45 ^m 62 ^s	86 ^m 07 ^s	6	...	-15 ^s 303	-0 ^s 222	...	...	...	
3579	Piazzi XXI. 142	7.7*	21. 19. 54 ^s 814 ^m	82 ^m 67 ^s	6	5	+ 1 ^s 3319	-0 ^s 0099	...	26. 17. 17 ^m 99 ^s	81 ^m 15 ^s	11	5	-15 ^s 358	-0 ^s 118	...	...	7449	
3580	B. F. 2925	6.7*	21. 20. 52 ^s 194 ^m	84 ^m 77 ^s	5	...	+ 2 ^s 7801	+0 ^s 0020	...	71. 8. 37 ^m 13 ^s	84 ^m 78 ^s	4	...	-15 ^s 411	-0 ^s 253	...	...	7450	
3581	Oeltz.Arg.(N.)22261	6.8*	21. 21. 0 ^s 718 ^m	85 ^m 09 ^s	4	4	+ 0 ^s 5108	-0 ^s 0493	...	18. 27. 18 ^m 74 ^s	85 ^m 01 ^s	4	4	-15 ^s 420	-0 ^s 041	...	...	...	
3582	Groombridge 3462...	7.5*	21. 21. 50 ^s 149 ^m	85 ^m 67 ^s	9	...	+ 1 ^s 9694	+0 ^s 0044	...	37. 39. 27 ^m 07 ^s	85 ^m 67 ^s	7	...	-15 ^s 465	-0 ^s 176	...	...	...	
3583	Groombridge 3477...	7.8*	21. 22. 3 ^s 946 ^m	81 ^m 30 ^s	5	...	-1 ^s 6702	-0 ^s 2709	+0 ^s 0633	10. 9. 44 ^m 96 ^s	81 ^m 94 ^s	4	...	-15 ^s 478	+0 ^s 161	-0 ^s 070	...	...	
3584	Oeltz.Arg.(N.)22293	8.3*	21. 22. 21 ^s 003 ^m	84 ^m 54 ^s	4	2	+ 0 ^s 5200	-0 ^s 0493	...	18. 23. 45 ^m 96 ^s	84 ^m 52 ^s	4	2	-15 ^s 494	-0 ^s 042	...	...	...	
3585	35 Vulpeculæ	5.4	21. 22. 22 ^s 740 ^m	79 ^m 41 ^s	7	...	+ 2 ^s 6383	+0 ^s 0042	+0 ^s 0021	62. 54. 48 ^m 61 ^s	80 ^m 78 ^s	17	...	-15 ^s 496	-0 ^s 238	-0 ^s 025	2793	7461	
3586	70 Cygni	5.1	21. 22. 27 ^s 795 ^m	81 ^m 41 ^s	3	...	+ 2 ^s 4424	+0 ^s 0059	...	53. 24. 14 ^m 68 ^s	81 ^m 41 ^s	3	...	-15 ^s 500	-0 ^s 219	...	...	7462	
3587	Lalande 41797	5.3	21. 22. 36 ^s 047 ^m	82 ^m 29 ^s	6	...	+ 2 ^s 1201	+0 ^s 0058	...	41. 41. 10 ^m 77 ^s	82 ^m 29 ^s	6	...	-15 ^s 508	-0 ^s 189	...	...	...	
3588	Piazzi XXI. 156 ...	5.7	21. 22. 47 ^s 656 ^m	85 ^m 36 ^s	6	...	+ 1 ^s 9735	+0 ^s 0046	...	37. 37. 20 ^m 59 ^s	85 ^m 36 ^s	6	...	-15 ^s 518	-0 ^s 176	...	...	7468	
3589	Piazzi XXI. 153	5.7	21. 23. 0 ^s 680 ^m	83 ^m 64 ^s	3	...	+ 2 ^s 5499	+0 ^s 0052	...	58. 17. 58 ^m 65 ^s	83 ^m 64 ^s	3	...	-15 ^s 531	-0 ^s 229	...	...	7465	
3590	Groombridge 3548...	7.4	21. 23. 17 ^s 338 ^m	86 ^m 83 ^s	3	...	-10 ^s 8856	-3 ^s 0935	...	3. 27. 44 ^m 44 ^s	86 ^m 48 ^s	7	...	-15 ^s 547	+1 ^s 009	...	...	7504	
3591	W.B. (2) XXI. 536..	6.3	21. 23. 30 ^s 765 ^m	78 ^m 67 ^s	3	...	+ 2 ^s 7374	+0 ^s 0029	...	68. 20. 40 ^m 37 ^s	78 ^m 67 ^s	3	...	-15 ^s 558	-0 ^s 245	...	...	...	
3592	2 Pegasi	4.8	21. 24. 30 ^s 715 ^m	80 ^m 36 ^s	3	...	+ 2 ^s 7142	+0 ^s 0033	+0 ^s 0011	66. 53. 11 ^m 69 ^s	81 ^m 30 ^s	13	...	-15 ^s 614	-0 ^s 242	-0 ^s 002	2798	7474	
3593	22 Aquarii	3.1	21. 25. 14 ^s 430 ^m	83 ^m 23 ^s	41	...	+ 3 ^s 1616	-0 ^s 0071	-0 ^s 0006	96. 5. 54 ^m 17 ^s	83 ^m 52 ^s	36	...	-15 ^s 653	-0 ^s 281	+0 ^s 001	2797	7478	
3594	W. B. XXI. 557.....	5.9	21. 25. 21 ^s 346 ^m	81 ^m 46 ^s	3	...	+ 2 ^s 9007	-0 ^s 0001	...	78. 23. 21 ^m 66 ^s	81 ^m 46 ^s	3	...	-15 ^s 659	-0 ^s 258	...	...	...	
3595	7 Cephei	5.4	21. 25. 26 ^s 947 ^m	81 ^m 57 ^s	3	2	+ 1 ^s 1719	-0 ^s 0162	-0 ^s 0027	23. 42. 51 ^m 46 ^s	83 ^m 26 ^s	7	6	-15 ^s 665	-0 ^s 100	+0 ^s 042	2805	7482	
3596	Groombridge 3476...	7.2*	21. 25. 53 ^s 627 ^m	84 ^m 78 ^s	1	...	+ 1 ^s 9908	+0 ^s 0050	...	37. 35. 33 ^m 52 ^s	84 ^m 78 ^s	1	...	-15 ^s 689	-0 ^s 174	...	...	...	
3597	Groombridge 3480...	5.9	21. 26. 20 ^s 601 ^m	84 ^m 11 ^s	3	...	+ 1 ^s 9925	+0 ^s 0051	...	37. 34. 10 ^m 83 ^s	84 ^m 11 ^s	3	...	-15 ^s 714	-0 ^s 174	...	...	7483	
3598	8 Cephei	3 ^s	21. 27. 3 ^s 890 ^m	83 ^m 50 ^s	8	...	+ 0 ^s 7951	-0 ^s 0346	+0 ^s 0012	19. 58. 2 ^m 00 ^s	83 ^m 63 ^s	8	...	-15 ^s 753	-0 ^s 065	+0 ^s 012	...	...	
3599	8 Cephei	3 ^s	21. 27. 6 ^s 315 ^m	81 ^m 96 ^s	32	7	+ 0 ^s 7953	-0 ^s 0346	+0 ^s 0012	19. 57. 57 ^m 55 ^s	82 ^m 07 ^s	65	9	-15 ^s 754	-0 ^s 065	+0 ^s 012	2811	7493	
3600	Groombridge 3489...	5.4	21. 27. 41 ^s 503 ^m	85 ^m 74 ^s	5	...	+ 1 ^s 6482	-0 ^s 0008	...	30. 4. 9 ^m 73 ^s	85 ^m 74 ^s	5	...	-15 ^s 786	-0 ^s 142	...	...	7495	

3583. Authority for Proper Motion : Bonn Observations, Vol. VII.

3598, 3599. The magnitudes given in Struve's *Mensura Micrometrica* are 8.0 and 3.0.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3601	Groombridge 3511 ..	6°0	21. 28. 18'386	78°92	11	...	-1'5885	-0'2743	...	9. 59. 55'77	78°83	11	...	-15'819	+0'149	...	...	7510
3602	Oeltz. Arg. (N.) 22436	5°7	21. 28. 42'107	81°40	3	...	+2'1142	+0'0064	...	40. 33. 15'93	81°40	3	...	-15'841	-0'182	...	...	...
3603	Groombridge 3508 ..	7°3*	21. 28. 58'221	82°83	3	3	-0'1812	-0'1079	...	14. 7. 27'06	82°83	3	3	-15'855	+0'023	...	...	7509
3604	Piazzi XXI. 190. ...	5°8	21. 29. 1'617	83°65	3	...	+3'1369	-0'0064	...	94. 31. 2'59	83°69	5	...	-15'859	-0'273	...	...	7499
3605	8 Piscis Australis.....	5°8	21. 29. 13'333	80°93	3	...	+3'4835	-0'0196	+0'0061	116. 42. 20'96	80°93	3	...	-15'868	-0'304	+0'025	2802	7500
3606	73 Cygni	4°2	21. 29. 28'043	80°95	3	...	+2'2542	+0'0070	-0'0034	44. 56. 17'96	80°95	3	...	-15'882	-0'194	+0'105	2810	7503
3607	72 Cygni	5°0	21. 29. 52'491	80°44	3	...	+2'4360	+0'0066	+0'0095	52. 0. 13'10	81°32	5	...	-15'903	-0'210	-0'105	2809	7505
3608	23 Aquarii.....	4°8	21. 31. 21'769	83°43	38	...	+3'1914	-0'0082	+0'0058	98. 23. 30'13	84°02	38	...	-15'983	-0'274	+0'022	2808	7514
3609	B. F. 2941	6°2	21. 31. 23'939	84°02	3	...	+3'0854	-0'0048	...	90. 55. 40'03	83°99	4	...	-15'984	-0'265	...	...	7515
3610	5 Pegasi	5°3	21. 32. 8'492	79°49	4	...	+2'7990	+0'0024	+0'0053	71. 13. 15'02	80°61	9	...	-16'024	-0'239	-0'026	2814	7520
3611	4 Pegasi	5°7	21. 32. 31'297	83°75	3	...	+2'9989	-0'0022	+0'0056	84. 46. 8'89	83°71	5	...	-16'043	-0'256	-0'031	2813	7522
3612	B. F. 2953	5°8	21. 33. 25'641	83°71	3	...	+2'7862	+0'0028	...	70. 16. 32'27	84°11	5	...	-16'091	-0'236	...	...	7528
3613	40 Capricorni.....	3°8	21. 33. 26'467	78°25	11	...	+3'3193	-0'0130	+0'0119	107. 12. 13'15	78°25	11	...	-16'091	-0'282	+0'013	2815	7525
3614	W. B. (2) XXI. 816..	7°7*	21. 33. 46'386	83°52	6	...	+2'3363	+0'0076	...	47. 15. 0'67	83°52	6	...	-16'109	-0'196	...	...	...
3615	9 Cephei	4°8	21. 34. 41'985	83°82	5	4	+1'6113	-0'0015	-0'0011	28. 27. 33'40	83°54	10	7	-16'157	-0'132	+0'012	2830	7542
3616	42 Capricorni	5°3	21. 35. 1'343	83°78	6	...	+3'2779	-0'0115	-0'0106	104. 34. 55'54	83°81	9	...	-16'174	-0'276	+0'299	2820	7537
3617	Piazzi XXI. 248	5°5	21. 35. 14'190	84°01	3	...	+1'8593	+0'0040	+0'0009	33. 3. 12'31	84°01	3	...	-16'185	-0'153	+0'015	...	7545
3618	75 Cygni	5°3	21. 35. 28'561	81°73	4	...	+2'3441	+0'0078	+0'0058	47. 16. 13'44	81°73	4	...	-16'198	-0'195	-0'011	2826	7544
3619	44 Capricorni	5°8	21. 36. 31'480	79°11	6	...	+3'2815	-0'0117	-0'0026	104. 56. 52'08	79°11	6	...	-16'251	-0'274	-0'030	2823	7551
3620	Cygni Nova	Var.	21. 36. 59'964	77°77	5	...	+2'3617	+0'0079	...	47. 42. 18'69	77°77	5	...	-16'276	-0'194	...	...	...
3621	B. D. + 42° No. 4184	9°1*	21. 37. 24'815	77°77	3	...	+2'3640	+0'0079	...	47. 43. 32'51	77°77	3	...	-16'297	-0'194	...	...	...
3622	45 Capricorni	5°8	21. 37. 27'724	78°55	5	...	+3'2854	-0'0119	-0'0036	105. 17. 55'86	78°55	5	...	-16'299	-0'272	+0'005	2828	7556
3623	Bradley 2854	7°1*	21. 37. 29'219	78°13	...	1	+0'8400	-0'0348	+0'0245	19. 13. 59'33	84°54	2	1	-16'300	-0'064	+0'008	2854	7564
3624	Bradley 2829	8°3*	21. 37. 43'204	81°45	3	...	+3'3030	-0'0127	-0'0004	106. 31. 9'88	81°45	3	...	-16'312	-0'273	+0'008	2829	7558
3625	9 Piscis Australis.....	4°2	21. 37. 47'774	84°78	7	...	+3'5882	-0'0260	-0'0028	123. 34. 23'85	84°78	7	...	-16'316	-0'297	+0'097	2825	7557
3626	8 Pegasi	2°4	21. 38. 17'507	82°64	39	...	+2'9451	-0'0005	+0'0008	80. 40. 28'86	83°88	37	...	-16'342	-0'242	-0'011	2835	7561
3627	79 Cygni	5°5	21. 38. 27'916	85°89	5	...	+2'4732	+0'0075	+0'0016	52. 15. 55'29	85°89	5	...	-16'350	-0'202	0'00	2843	7566
3628	Bradley 2833	8°0*	21. 38. 31'057	81°53	1	...	+3'2030	-0'0088	+0'0039	99. 35. 14'23	81°53	1	...	-16'353	-0'263	+0'001	2833	7562
3629	46 Capricorni	5°2	21. 38. 36'310	81°90	5	...	+3'2036	-0'0088	-0'0023	99. 37. 58'40	82°42	9	...	-16'357	-0'263	-0'020	2834	7563
3630	W. B. (2) XXI. 933..	7°2*	21. 38. 39'024	85°94	4	...	+2'4734	+0'0075	...	52. 14. 38'23	85°94	4	...	-16'359	-0'202	...	...	...
3631	78 Cygni	4°4	21. 38. 46'532	79°58	6	...	+2'6580	+0'0055	+0'0187	61. 47. 55'46	79°58	6	...	-16'366	-0'217	+0'253	2839	7568
3632	Bradley 2840.....	4°4	21. 38. 46'856	80°08	3	...	+2'6580	+0'0055	+0'0171	61. 47. 57'66	80°08	3	...	-16'366	-0'217	+0'25	2840	7569
3633	9 Pegasi	4°4	21. 38. 49'738	82°59	5	...	+2'8391	+0'0021	+0'0020	73. 11. 59'79	81°41	11	...	-16'369	-0'232	+0'004	2837	7567
3634	Piazzi XXI. 267.....	7°7*	21. 38. 59'816	79°74	4	...	+2'6589	+0'0055	...	61. 46. 0'38	79°74	4	...	-16'377	-0'217	...	...	7570
3635	10 Pegasi	4°2	21. 39. 12'696	82°75	3	...	+2'7114	+0'0047	0'000	64. 54. 21'83	82°24	19	...	-16'388	-0'221	-0'010	2848	7571
3636	Piazzi XXI. 285	Var.	21. 39. 50'197	86°46	3	...	+1'8328	+0'0040	...	31. 46. 12'42	86°46	3	...	-16'419	-0'146	...	...	7582
3637	47 Capricorni	6°2	21. 39. 52'098	84°66	4	...	+3'2053	-0'0089	-0'0015	99. 49. 43'87	84°68	6	...	-16'421	-0'261	-0'001	2838	7573
3638	48 Capricorni	5°4	21. 40. 4'454	86°38	5	...	+3'2341	-0'0100	+0'0009	101. 55. 7'32	86°55	4	...	-16'431	-0'203	+0'013	2844	7577
3639	11 Cephei	4°8	21. 40. 9'529	79°82	5	4	+0'8773	-0'0333	+0'0207	19. 14. 27'87	80°88	15	4	-16'435	-0'066	-0'080	2856	7588
3640	W. B. (2) XXI. 968..	8°5*	21. 40. 18'033	85°99	4	...	+2'4791	+0'0077	...	52. 13. 28'54	85°75	3	...	-16'443	-0'200	...	...	...

3620. The limits of magnitude are 3°0 and 13°5 (!).

3631, 3632. The magnitudes given in Struve's *Messure Micrometricae* are 4°0 and 5°0.3636. The limits of magnitude are 4° and 5°; the period 432^d. In Heis's *Atlas Celestis Novus* this star is designated μ Cephei; in B. F. and B. A. C. the letter μ is assigned to No. 3661 of this Catalogue.

TEN-YEAR CATALOGUE OF STARS FOR 1880.0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Varia- tion, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3641	49 Capricorni	3.0	21. 40. 24.962	81.87	14	...	+ 3'3014	-0.0127	+0.0166	106. 40. 15.90	80.68	10	...	-16.448	-0.268	+0.297	2847	7580
3642	10 Piscis Australis ...	5.1	21. 40. 41.435	85.21	2	...	+ 3'5394	-0.0240	-0.0062	121. 27. 11.43	85.21	2	...	-16.462	-0.288	-0.035	2842	7583
3643	10 Cephei	4.5	21. 41. 59.221	81.49	3	4	+ 1'7300	+0.0019	-0.0002	29. 25. 57.84	82.85	5	7	-16.526	-0.136	+0.007	2857	7595
3644	81 Cygni	4.4	21. 42. 21.584	84.10	15	3	+ 2'2107	+0.0085	+0.0011	41. 14. 43.05	83.96	15	(3)	-16.545	-0.175	+0.021	2855	7598
3645	Groombridge 3571...	7.2	21. 43. 20.539	80.35	3	...	+ 2'4773	+0.0081	...	51. 36. 2.49	80.04	5	...	-16.594	-0.196	...	...	7602
3646	Lalande 42563	5.8	21. 43. 30.395	84.01	3	...	+ 2'4844	+0.0081	...	51. 54. 31.72	84.01	3	...	-16.601	-0.196	...	...	...
3647	13 Pegasi.....	5.3	21. 44. 26.079	80.45	4	...	+ 2'8482	+0.0023	+0.0032	73. 16. 18.22	80.40	9	...	-16.647	-0.225	+0.072	2858	7606
3648	14 Pegasi.....	5.0	21. 44. 32.186	79.34	3	...	+ 2'6488	+0.0063	+0.0007	60. 23. 2.91	79.34	3	...	-16.652	-0.208	+0.025	2859	7607
3649	W. B. (2) XXI. 1080	6.4	21. 44. 47.310	84.13	3	...	+ 2'4350	+0.0086	...	49. 24. 36.76	84.13	3	...	-16.664	-0.190	...	...	...
3650	Groombridge 3590...	6.7*	21. 44. 53.757	82.91	5	3	+ 1'0744	-0.0233	...	20. 24. 20.30	83.42	13	8	-16.670	-0.080	...	...	7610
3651	Groombridge 3588...	6.5*	21. 45. 13.732	82.91	4	3	+ 1'5096	-0.0043	...	25. 23. 17.93	83.19	4	3	-16.686	-0.115	...	...	7611
3652	Piazzi XXI. 312. ...	5.6	21. 45. 56.120	83.66	3	...	+ 2'8143	+0.0033	...	70. 44. 8.83	83.66	3	...	-16.720	-0.219	...	...	...
3653	Groombridge 3594...	7.5*	21. 46. 43.125	77.16	...	1	+ 1'5205	-0.0040	...	25. 19. 38.16	77.16	...	1	-16.758	-0.115	...	...	...
3654	51 Capricorni	5.2	21. 46. 45.103	80.99	7	...	+ 3'2570	-0.0112	+0.0181	104. 6. 57.93	81.06	6	...	-16.759	-0.254	-0.013	2860	7618
3655	15 Pegasi.....	5.6	21. 47. 8.496	83.73	3	...	+ 2'6791	+0.0061	-0.0055	61. 46. 4.00	83.73	3	...	-16.778	-0.207	+0.075	2863	7623
3656	B. F. 2988	6.5	21. 47. 10.962	83.81	12	...	+ 3'2130	-0.0094	...	100. 52. 33.70	83.81	12	...	-16.780	-0.249	...	...	7620
3657	16 Pegasi.....	5.0	21. 47. 36.130	82.54	46	...	+ 2'7262	+0.0053	-0.0005	64. 38. 20.35	83.31	52	...	-16.800	-0.210	+0.002	2864	7627
3658	Piazzi XXI. 320. ...	6.1	21. 47. 54.300	83.02	4	...	+ 3'1340	-0.0063	...	94. 50. 18.16	83.64	7	...	-16.814	-0.242	...	...	7628
3659	W. B. (2) XXI. 1136	5.7	21. 47. 58.593	79.15	3	...	+ 2'8201	+0.0033	...	70. 53. 50.30	79.34	4	...	-16.818	-0.217	...	...	...
3660	Piazzi XXI. 339. ...	6.5	21. 50. 47.316	80.49	4	...	+ 2'8027	+0.0040	...	69. 19. 47.23	80.49	4	...	-16.950	-0.211	...	...	...
3661	13 Cephei	6.1	21. 50. 51.267	84.85	4	2	+ 2'0118	+0.0081	-0.0030	33. 57. 24.48	84.76	4	2	-16.953	-0.149	+0.02	2872	7643
3662	Piazzi XXI. 342. ...	6.8*	21. 50. 58.818	81.91	9	...	+ 2'8043	+0.0040	...	69. 24. 35.05	82.42	11	...	-16.960	-0.211	...	...	...
3663	17 Pegasi.....	5.5	21. 51. 5.303	79.57	4	...	+ 2'9271	+0.0008	-0.0033	78. 29. 34.87	80.49	11	...	-16.964	-0.220	+0.012	2869	7641
3664	79 Draconis.....	6.6	21. 51. 22.341	80.10	4	3	+ 0'7250	-0.0470	+0.0085	16. 51. 55.21	80.52	9	3	-16.978	-0.049	-0.004	2880	7654
3665	Piazzi XXI. 343. ...	6.4	21. 52. 2.107	83.04	6	...	+ 3'3550	-0.0160	...	111. 45. 18.05	82.98	7	...	-17.009	-0.252	...	...	7649
3666	Piazzi XXI. 360. ...	5.2	21. 53. 16.011	82.48	3	3	+ 1'6909	+0.0017	...	26. 56. 44.52	81.92	5	6	-17.065	-0.122	...	...	7658
3667	12 Piscis Australis ...	5.5	21. 53. 56.439	83.01	13	...	+ 3'4601	-0.0218	-0.0005	119. 1. 44.13	83.01	13	...	-17.097	-0.257	-0.017	2873	7657
3668	Groombridge 3636...	7.5*	21. 53. 56.778	85.12	3	...	+ 1'5421	-0.0030	...	24. 32. 43.04	85.12	3	...	-17.097	-0.110	...	...	...
3669	Groombridge 3637...	6.3	21. 54. 7.078	84.77	9	3	+ 1'5348	-0.0033	...	24. 24. 58.41	84.92	9	9	-17.104	-0.110	...	...	...
3670	Groombridge 3639...	6.8*	21. 54. 19.798	84.57	8	3	+ 1'5384	-0.0032	...	24. 26. 1.33	84.55	7	5	-17.114	-0.110	...	...	...
3671	20 Pegasi.....	5.6	21. 55. 14.571	81.33	4	...	+ 2'9182	+0.0013	+0.0032	77. 27. 16.41	81.47	16	...	-17.156	-0.213	+0.050	2879	7664
3672	Piazzi XXI. 361. ...	6.4	21. 55. 35.443	83.03	6	...	+ 3'3031	-0.0138	...	108. 28. 44.75	83.14	9	...	-17.171	-0.241	...	...	7665
3673	29 Aquarii (1st Star)...	6.8*	21. 55. 52.230	80.37	3	...	+ 3'2902	-0.0132	-0.0017	107. 32. 33.27	80.37	3	...	-17.184	-0.240	-0.019	2878	7666
3674	29 Aquarii (2nd Star)...	5.6	21. 55. 52.570	80.16	2	...	+ 3'2902	-0.0132	-0.0017	107. 32. 30.62	80.37	3	...	-17.184	-0.240	-0.019	2878	7666
3675	30 Aquarii	5.6	21. 56. 57.676	81.87	13	...	+ 3'1575	-0.0072	+0.0010	97. 6. 6.14	81.99	15	...	-17.233	-0.228	-0.013	2882	7670
3676	Piazzi XXI. 383. ...	5.6	21. 57. 26.768	84.30	3	...	+ 2'1907	+0.0107	...	37. 41. 45.80	84.42	4	...	-17.255	-0.155	...	...	7676
3677	16 Cephei	5.2	21. 57. 31.696	79.87	4	5	+ 0'8984	-0.0369	-0.0144	17. 23. 28.25	81.52	15	5	-17.259	-0.059	+0.176	2900	7686
3678	Piazzi XXI. 378. ...	5.8	21. 57. 47.178	86.14	3	...	+ 3'4247	-0.0203	...	117. 24. 11.09	86.14	3	...	-17.270	-0.246	...	...	7675
3679	Groombridge 3655...	5.6	21. 58. 6.182	80.32	3	...	+ 2'4159	+0.0108	...	45. 55. 42.84	80.32	3	...	-17.284	-0.171	...	...	7681
3680	34 Aquarii.....	3.2	21. 59. 37.193	82.85	36	...	+ 3'0829	-0.0041	-0.0008	90. 54. 7.93	83.85	34	...	-17.351	-0.218	-0.002	2890	7688

3643. The magnitude given in the *Uranometria Nova Ozoniensis* is 4.8.
 3646. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.9.
 3661. See note to 3636.

3644. The magnitude given in the *Uranometria Nova Ozoniensis* is 4.8.
 3655. The magnitude given in the *Uranometria Nova Ozoniensis* is 5.9.
 3673, 3674. The magnitude of each star in Struve's *Mensurae Micrometricae* is 7.5.

No.	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3681	22 Pegasi	4.8	21. 59. 37.629	80°70	3	...	+ 3.0199	-0.0018	+0.0049	85. 31. 39.20	80°70	3	...	-17.351	-0.213	-0.107	2891	7689
3682	Lalande 43081	6.0	21. 59. 41.273	85°69	4	...	+ 2.7442	+0.0064	...	63. 54. 34.90	85°69	4	...	-17.354	-0.193	...	...	...
3683	33 Aquarii	4.3	21. 59. 57.289	80°47	11	...	+ 3.2446	-0.0112	0.0000	104. 27. 5.16	80°47	11	...	-17.365	-0.229	+0.049	2889	7691
3684	23 Pegasi	5.5	22. 0. 8.481	80°14	3	...	+ 2.7115	+0.0071	+0.0016	61. 37. 6.97	80°25	20	...	-17.373	-0.190	+0.010	2895	7693
3685	18 Cephei	5.4	22. 0. 17.269	83°44	4	2	+ 1.7890	+0.0050	+0.0009	27. 27. 49.96	83°88	6	2	-17.380	-0.123	-0.002	2906	7699
3686	17 Cephei	4.5	22. 0. 17.962	83°73	3	2	+ 1.7022	+0.0026	+0.0028	25. 57. 22.82	83°96	3	4	-17.381	-0.116	-0.065	2907	7700
3687	17 Cephei	4.5	22. 0. 19.010	83°57	3	4	+ 1.7024	+0.0026	+0.0028	25. 57. 24.29	83°72	3	4	-17.381	-0.116	-0.065	...	...
3688	B. D. + 66° No. 1471	8.3*	22. 0. 24.579	85°09	3	1	+ 1.5378	-0.0030	...	23. 28. 27.85	84°83	4	1	-17.385	-0.104	...	...	...
3689	B. F. 3014	6.8*	22. 0. 54.481	81°55	5	...	+ 3.2017	-0.0092	...	101. 1. 53.41	81°55	5	...	-17.407	-0.224	...	...	7697
3690	Piazzi XXI. 405	5.3	22. 1. 10.402	86°14	3	...	+ 2.4228	+0.0113	...	45. 34. 9.52	86°14	3	...	-17.418	-0.168	...	...	7705
3691	24 Pegasi	4.0	22. 1. 25.499	81°07	25	...	+ 2.7673	+0.0060	+0.0209	65. 14. 26.35	81°26	33	...	-17.429	-0.192	-0.020	2899	7706
3692	19 Cephei	5.2	22. 1. 26.936	85°40	3	1	+ 1.8446	+0.0065	+0.0104	28. 18. 13.31	82°60	15	2	-17.431	-0.125	+0.033	2910	7708
3693	Groombridge 3689 ..	7.9*	22. 2. 22.122	85°60	4	...	+ 2.2150	+0.0117	-0.0545	37. 26. 36.36	85°10	4	...	-17.470	-0.151	+0.340	...	...
3694	Bradley 2935	7.5*	22. 2. 26.673	83°23	4	1	- 1.7752	-0.4158	-0.0706	7. 42. 30.21	83°23	4	1	-17.473	+0.135	+0.033	2935	7732
3695	Groombridge 3709 ..	8.0*	22. 2. 32.953	83°23	4	1	- 1.7715	-0.4158	...	7. 42. 26.83	83°23	4	1	-17.478	+0.134	...	...	7735
3696	Bradley 2904	6.5*	22. 3. 9.850	80°00	6	...	+ 3.1654	-0.0078	+0.0047	98. 7. 18.03	80°00	6	...	-17.504	-0.218	+0.47	2904	7717
3697	27 Pegasi	5.7	22. 3. 54.672	79°45	3	...	+ 2.6577	+0.0088	-0.0050	57. 24. 48.66	81°01	4	...	-17.536	-0.181	+0.061	2915	7721
3698	37 Aquarii	6.5*	22. 4. 7.655	80°71	5	...	+ 3.2030	-0.0094	+0.0018	101. 24. 37.97	80°71	5	...	-17.546	-0.219	-0.047	2908	7719
3699	26 Pegasi	3.8	22. 4. 8.782	78°73	3	...	+ 3.0087	-0.0011	+0.0177	84. 23. 31.96	78°73	3	...	-17.546	-0.205	-0.036	2914	7723
3700	38 Aquarii	5.4	22. 4. 12.475	83°11	5	...	+ 3.2117	-0.0098	+0.0008	102. 9. 16.35	83°28	7	...	-17.548	-0.219	-0.010	2909	7722
3701	29 Pegasi	4.4	22. 4. 39.513	79°30	4	...	+ 2.6601	+0.0088	-0.0020	57. 24. 36.75	80°58	5	...	-17.568	-0.180	+0.005	2917	7731
3702	W. B. XXII. 53	5.9	22. 4. 44.104	80°11	3	...	+ 2.9466	+0.0012	...	78. 57. 47.99	80°11	3	...	-17.571	-0.200	...	...	...
3703	28 Pegasi	6.4	22. 4. 49.928	84°17	4	...	+ 2.8330	+0.0047	-0.0026	69. 36. 41.50	84°17	4	...	-17.575	-0.191	-0.002	2916	7733
3704	Piazzi XXII. 15	6.3*	22. 6. 3.605	80°03	3	...	+ 2.8961	+0.0030	...	74. 33. 1.41	80°71	5	...	-17.627	-0.194	...	...	7742
3705	Groombridge 3703 ..	5.4	22. 6. 30.274	85°29	2	2	+ 2.3089	+0.0127	...	39. 46. 8.43	85°12	2	2	-17.645	-0.153	...	...	7746
3706	21 Cephei	3.5	22. 6. 41.504	81°49	3	3	+ 2.0722	+0.0114	-0.0016	32. 23. 24.08	82°33	5	3	-17.653	-0.136	+0.006	2925	7749
3707	Piazzi XXII. 19	5.7	22. 6. 59.758	85°76	3	...	+ 3.3779	-0.0189	...	115. 46. 29.59	85°76	3	...	-17.666	-0.226	...	...	7745
3708	Bradley 2926	5.4	22. 7. 28.941	85°07	3	...	+ 2.1292	+0.0121	+0.0285	33. 45. 25.94	85°07	3	...	-17.686	-0.139	-0.127	2926	7754
3709	Piazzi XXII. 29	5.4	22. 7. 29.294	85°69	4	...	+ 2.6469	+0.0095	...	55. 59. 11.82	85°72	5	...	-17.686	-0.174	...	...	7753
3710	16 Piscis Australis ...	5.6	22. 7. 30.531	83°77	4	...	+ 3.4125	-0.0210	+0.0004	118. 21. 38.39	83°77	4	...	-17.686	-0.227	+0.012	2922	7750
3711	W. B. (2) XXII. 154	7.5*	22. 7. 42.213	77°92	3	...	+ 2.7555	+0.0072	...	63. 16. 24.29	77°92	3	...	-17.695	-0.182	...	...	...
3712	Cephei	8.2†	22. 7. 51.653	86°94	...	1	+ 1.3882	-0.0096	...	20. 27. 38.08	86°94	...	1	-17.701	-0.088	...	...	...
3713	Bradley 2934	6.7*	22. 7. 54.036	81°84	...	3	+ 1.1927	-0.0204	0.0000	18. 28. 46.56	82°23	8	3	-17.703	-0.074	+0.038	2934	7761
3714	Groombridge 3719 ..	6.2†	22. 7. 54.321	81°27	...	7	+ 1.3886	-0.0096	...	20. 27. 36.88	82°80	2	9	-17.703	-0.088	...	...	7760
3715	Oeltz, Arg. (N.) 23668	5.4	22. 8. 3.745	84°84	3	...	+ 1.9785	+0.0103	...	29. 50. 2.79	84°84	3	...	-17.710	-0.128	...	...	7759
3716	Piazzi XXII. 32	6.1	22. 8. 8.736	84°05	3	...	+ 2.7388	+0.0076	...	61. 59. 8.24	83°98	5	...	-17.713	-0.180	...	...	7757
3717	Piazzi XXII. 42	6.1	22. 8. 38.210	83°34	3	4	+ 1.8627	+0.0079	...	27. 18. 7.12	82°82	4	4	-17.733	-0.119	...	...	7766
3718	Piazzi XXII. 36	4.7	22. 8. 43.353	81°11	3	...	+ 2.5649	+0.0111	...	50. 52. 48.01	81°42	5	...	-17.737	-0.167	...	...	7765
3719	Groombridge 3717 ..	5.8	22. 8. 53.241	86°21	4	...	+ 2.4526	+0.0125	...	45. 9. 15.08	86°24	4	...	-17.743	-0.159	...	...	...
3720	Groombridge 3725 ..	5.7	22. 9. 42.032	86°07	3	...	+ 2.5080	+0.0121	...	47. 38. 27.65	86°07	3	...	-17.776	-0.162	...	...	7770

3686, 3687. The magnitudes given in Struve's *Mensura Micrometrica* are 6.5 and 4.7. The combined magnitude given in the *Uranometria Nova Oroniensis* is 4.7.
 3693. Authority for Proper Motion: Bonn Observations, Vol. VII.
 3701. The magnitude given in the *Uranometria Nova Oroniensis* is 4.1.
 3712, 3714. The magnitudes are taken from Struve's *Mensura Micrometrica*; the combined magnitude in H. P. is 5.5.
 3713. This star is designated 80 Draconis in B. F.

{xcvi}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3721	Bradley 2938	7.0*	22. 10. 3'169	84'35	2	1	+ 1'8835	+0'0086	-0'0066	27. 25. 58'21	81'61	7	1	-17'790	-0'119	+0'01	2938	7775
3722	43 Aquarii..... ^θ	4'3	22. 10. 30'028	82'09	35	...	+ 3'1629	-0'0076	+0'0057	98. 22. 49'29	82'08	33	...	-17'809	-0'204	+0'019	2929	7773
3723	Bradley 2930.....	6'2	22. 10. 32'399	85'00	3	...	+ 3'1767	-0'0083	-0'0012	99. 38. 15'32	85'00	3	...	-17'811	-0'205	+0'011	2930	7774
3724	23 Cephei	4'2	22. 10. 37'067	83'88	2	3	+ 2'1464	+0'0129	+0'0543	33. 33. 16'18	83'62	2	3	-17'813	-0'136	-0'031	2937	7778
3725	1 Lacertæ	4'1	22. 10. 44'486	84'60	3	...	+ 2'6074	+0'0108	-0'0004	52. 50. 55'13	81'36	9	...	-17'818	-0'167	-0'009	2933	7777
3726	W. B. XXII. 190 ...	7'5*	22. 10. 47'337	80'52	4	...	+ 2'9383	+0'0020	...	77. 40. 39'46	80'52	4	...	-17'820	-0'189	...	...	...
3727	44 Aquarii	5'9	22. 10. 50'538	83'37	13	...	+ 3'1366	-0'0063	-0'0019	95. 59. 9'95	83'37	13	...	-17'823	-0'202	-0'042	2931	7776
3728	W. B. XXII. 196 ...	7'0*	22. 11. 15'327	80'52	4	...	+ 2'9391	+0'0020	+0'0574	77. 42. 11'73	80'52	4	...	-17'839	-0'188	-0'052	...	...
3729	Groombridge 3735...	7'0*	22. 11. 15'394	82'67	1	3	+ 0'6468	-0'0035	...	14. 8. 3'24	82'67	1	3	-17'839	-0'036	...	...	...
3730	Groombridge 3739...	7'0*	22. 13. 40'481	83'29	3	2	+ 1'7578	+0'0058	...	24. 28. 17'14	82'11	9	2	-17'934	-0'107	...	...	7786
3731	46 Aquarii..... ^p	5'4	22. 13. 53'006	80'37	6	...	+ 3'1607	-0'0075	-0'0008	98. 25. 23'94	80'37	6	...	-17'943	-0'198	-0'007	2939	7784
3732	25 Cephei.....	6'2	22. 14. 17'992	83'36	3	...	+ 1'9437	+0'0107	+0'0018	27. 47. 48'95	83'17	3	1	-17'959	-0'119	+0'005	2947	7789
3733	30 Pegasi.....	5'2	22. 14. 25'223	85'68	3	...	+ 3'0183	-0'0009	-0'0010	84. 48. 47'56	85'68	3	...	-17'964	-0'188	+0'005	2941	7788
3734	47 Aquarii	5'4	22. 14. 59'091	86'68	4	...	+ 3'3136	-0'0160	-0'0034	112. 11. 57'68	86'52	5	...	-17'986	-0'206	+0'069	2940	7790
3735	Piazzi XXII. 68.....	7'5*	22. 15. 6'963	84'79	3	...	+ 3'1431	-0'0067	...	96. 50. 47'49	84'79	3	...	-17'991	-0'195	...	...	7793
3736	Piazzi XXII. 76 ...	6'5*	22. 15. 25'698	77'92	3	...	+ 2'7808	+0'0076	...	63. 40. 4'30	77'92	3	...	-18'005	-0'171	...	...	...
3737	48 Aquarii..... ^γ	4'1	22. 15. 27'454	81'52	27	...	+ 3'0928	-0'0042	+0'0068	91. 59. 29'56	81'80	13	...	-18'004	-0'191	-0'017	2943	7795
3738	31 Pegasi.....	5'1	22. 15. 36'669	80'79	4	...	+ 2'9516	+0'0019	-0'0013	78. 23. 56'62	82'30	7	...	-18'010	-0'182	-0'010	2944	7796
3739	32 Pegasi.....	4'9	22. 15. 46'884	81'03	3	...	+ 2'7637	+0'0082	-0'0001	62. 16. 24'67	80'11	11	...	-18'016	-0'169	+0'003	2946	7798
3740	2 Lacertæ	4'8	22. 16. 4'124	84'13	3	...	+ 2'4672	+0'0139	-0'0005	44. 4. 2'96	84'13	3	...	-18'027	-0'150	+0'020	2948	7800
3741	Piazzi XXII. 96.....	6'8*	22. 16. 52'956	83'99	3	3	+ 0'7601	-0'0562	...	14. 6. 53'27	84'21	5	3	-18'058	-0'040	...	...	...
3742	W. B. (2) XXII. 364	8'7*	22. 17. 50'872	84'74	6	...	+ 2'8596	+0'0055	...	69. 44. 33'58	84'74	6	...	-18'095	-0'172	...	...	...
3743	51 Aquarii	5'8	22. 17. 51'779	82'26	20	...	+ 3'1272	-0'0058	-0'0010	95. 26. 37'53	82'39	19	...	-18'095	-0'189	-0'002	2950	7805
3744	33 Pegasi.....	6'0	22. 17. 53'139	81'52	6	...	+ 2'8598	+0'0055	+0'0225	69. 45. 28'49	82'09	8	...	-18'096	-0'172	+0'019	2951	7807
3745	W. B. (2) XXII. 365	6'0	22. 17. 53'226	85'49	9	...	+ 2'8598	+0'0055	...	69. 45. 28'40	85'70	8	...	-18'096	-0'172	...	...	...
3746	Groombridge 3760...	6'5*	22. 18. 10'945	80'94	7	5	+ 1'7756	+0'0069	...	23. 53. 58'87	80'73	18	5	-18'108	-0'103	...	...	7810
3747	Radcliffe 5671	4'5	22. 18. 11'675	82'45	4	4	+ 1'7758	+0'0069	...	23. 53. 59'35	82'68	4	5	-18'108	-0'103	...	...	...
3748	3 Lacertæ	4'5	22. 18. 50'607	84'64	3	3	+ 2'3510	+0'0153	-0'0036	38. 22. 18'84	84'65	3	3	-18'133	-0'139	+0'203	2956	7815
3749	52 Aquarii	4'6	22. 19. 8'844	84'88	3	...	+ 3'0647	-0'0027	-0'0012	89. 13. 51'09	84'88	3	...	-18'144	-0'183	+0'004	2952	7814
3750	4 Lacertæ	4'6	22. 19. 39'151	79'38	3	...	+ 2'4232	+0'0151	-0'0027	41. 7. 53'77	79'38	3	...	-18'162	-0'142	+0'031	2958	7820
3751	B. D. + 0° No. 4873..	9'3*	22. 20. 25'263	85'55	3	...	+ 3'0650	-0'0027	...	89. 15. 24'26	85'55	3	...	-18'191	-0'181	...	...	...
3752	B. D. + 0° No. 4875..	9'2*	22. 21. 25'261	86'69	3	...	+ 3'0667	-0'0028	...	89. 25. 18'61	86'69	3	...	-18'227	-0'179	...	...	...
3753	35 Pegasi.....	5'0	22. 21. 47'000	86'16	3	...	+ 3'0325	-0'0011	+0'0031	85. 54. 20'83	86'08	4	...	-18'241	-0'176	+0'300	2959	7827
3754	W. B. (2) XXII. 467	6'1	22. 22. 11'078	79'37	3	...	+ 2'6210	+0'0129	...	50. 48. 4'64	79'37	3	...	-18'255	-0'150	...	...	...
3755	Piazzi XXII. 113 ...	6'3	22. 22. 16'659	80'49	3	...	+ 2'7371	+0'0100	...	58. 46. 22'10	79'37	5	...	-18'259	-0'157	...	...	...
3756	W. B. (2) XXII. 474	7'5*	22. 22. 33'394	77'92	3	...	+ 2'8238	+0'0074	...	65. 44. 30'72	77'92	3	...	-18'269	-0'162	...	...	...
3757	W. B. (2) XXII. 475	6'8*	22. 22. 34'424	77'92	3	...	+ 2'8247	+0'0074	...	65. 49. 11'50	77'92	3	...	-18'269	-0'162	...	...	...
3758	Bradley 2993.....	5'4	22. 22. 37'800	85'85	3	2	- 3'9348	-1'2322	+0'0527	4. 29. 48'55	85'59	3	6	-18'272	+0'244	-0'043	2993	7851
3759	55 Aquarii	3'8	22. 22. 39'068	81'35	2	...	+ 3'0784	-0'0033	+0'0110	90. 37. 59'89	81'35	2	...	-18'272	-0'177	-0'042	2960	7832
3760	55 Aquarii	3'8	22. 22. 39'261	82'88	1	...	+ 3'0784	-0'0033	+0'0110	90. 38. 3'22	82'88	1	...	-18'272	-0'177	-0'042	...	...

3724. The magnitude given in the *Uranometria Nova Oxoniensis* is 4'8.

3728. Authority for Proper Motion: Bonn Observations, Vol. VII.

3744, 3745. The magnitudes given in Struve's *Mensura Micrometrica* are 6'0 and 9'2.3746, 3747. The magnitudes given in Struve's *Mensura Micrometrica* are 7'0 and 8'0.3759, 3760. The magnitudes given in Struve's *Mensura Micrometrica* are 4'1 and 4'0.3725. The magnitude given in the *Uranometria Nova Oxoniensis* is 4'6.

3742, 3744, 3745. The combined magnitude given in H. P. is 6'0.

3748. The letter β was added in the B. A. C.

1880 No. in G.O.A.M.M.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880.0.	Secular Vari- ation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Anwers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"	1755.	1850.
3761	B. D. + ° No. 4878	9.2*	22. 22. 45.538	86.09	3	...	+ 3.0654	-0.0026	...	89. 17. 2.59	86.69	2	...	-18.276	-0.176	...	...	...
3762	B. D. + ° No. 4880	9.3*	22. 22. 53.626	86.71	1	...	+ 3.0656	-0.0026	...	89. 18. 23.79	86.71	1	...	-18.281	-0.176	...	...	...
3763	Lalande (F.) 4151...	5.7	22. 22. 54.490	80.06	3	3	+ 1.5492	-0.0017	...	19. 50. 25.36	80.81	3	5	-18.282	-0.085	...	...	...
3764	Piazzi XXII. 112 ...	5.9	22. 23. 3.142	86.50	3	...	+ 3.3607	-0.0301	...	117. 43. 13.82	86.50	3	...	-18.287	-0.193	...	...	...
3765	Bradley 2997.....	6.5*	22. 23. 4.325	86.92	1	...	- 4.0881	-1.3011	+0.0251	4. 22. 57.86	86.92	1	...	-18.287	+0.253	-0.012	2997	7854
3766	Piazzi XXII. 120 ...	6.0	22. 23. 32.896	80.08	3	...	+ 2.8042	+0.0082	...	63. 51. 0.21	80.08	3	...	-18.304	-0.159	...	...	...
3767	B. D. + ° No. 4884	9.0*	22. 24. 12.882	86.73	2	...	+ 3.0672	-0.0027	...	89. 27. 50.87	86.73	2	...	-18.328	-0.174	...	...	...
3768	Piscis Australis ...	6.6	22. 24. 13.476	83.80	3	...	+ 3.3450	-0.0192	...	116. 41. 11.47	83.80	3	...	-18.328	-0.190	...	...	7839
3769	57 Aquarii.....	4.8	22. 24. 17.747	81.62	22	...	+ 3.1806	-0.0088	-0.0011	101. 17. 30.15	81.95	17	...	-18.331	-0.180	+0.037	2966	7840
3770	5 Lacertæ	4.8*	22. 24. 31.814	79.33	3	...	+ 2.4903	+0.0156	-0.0033	42. 54. 23.86	79.33	3	...	-18.339	-0.139	+0.027	2970	7845
3771	38 Pegasi.....	5.5	22. 24. 32.647	82.15	3	...	+ 2.7349	+0.0105	+0.0014	58. 2. 28.57	81.97	5	...	-18.340	-0.154	-0.004	2968	7843
3772	Lalande 43993	8.6*	22. 24. 33.236	79.33	3	...	+ 2.4893	+0.0156	...	42. 50. 59.45	79.33	3	...	-18.340	-0.139	...	...	...
3773	17 Piscis Australis ...	4.3	22. 24. 40.812	86.82	3	...	+ 3.4226	-0.0248	+0.0007	122. 57. 37.49	85.34	4	...	-18.344	-0.194	+0.036	2964	7842
3774	Bradley 2972.....	7.5*	22. 24. 41.907	78.94	4	3	+ 2.2150	+0.0167	+0.0031	32. 12. 35.79	79.06	4	3	-18.345	-0.123	+0.001	2972	7847
3775	27 Cephei	Var.	22. 24. 42.975	78.94	4	3	+ 2.2148	+0.0167	+0.0004	32. 11. 55.91	79.06	4	3	-18.346	-0.122	+0.009	2973	7848
3776	Lalande (F.) 4162...	7.7*	22. 24. 43.920	80.33	...	1	+ 1.5737	-0.0004	...	19. 48. 42.00	80.33	...	1	-18.347	-0.085	...	...	...
3777	W. B. XXII. 493	6.2	22. 25. 0.633	83.67	3	...	+ 3.1400	-0.0065	...	97. 10. 1.69	83.67	3	...	-18.357	-0.177	...	...	...
3778	58 Aquarii	6.8*	22. 25. 19.520	77.76	7	...	+ 3.1817	-0.0089	+0.0030	101. 31. 12.81	77.76	7	...	-18.367	-0.178	+0.023	2967	7849
3779	28 Cephei.....	5.8	22. 25. 47.248	82.78	4	4	+ 0.5207	-0.0882	-0.0054	11. 49. 33.04	83.32	15	10	-18.383	-0.023	+0.046	2980	7857
3780	7 Lacertæ	3.9	22. 26. 20.951	82.50	12	5	+ 2.4467	+0.0165	+0.0133	40. 20. 3.32	82.80	14	5	-18.403	-0.134	-0.005	2975	7855
3781	Lalande 44036	8.2*	22. 26. 33.252	86.42	3	...	+ 3.0678	-0.0026	...	89. 30. 47.75	86.25	4	...	-18.410	-0.170	...	...	...
3782	39 Pegasi.....	6.3	22. 26. 47.567	82.75	7	...	+ 2.8838	+0.0058	+0.0086	70. 23. 17.51	81.98	10	...	-18.418	-0.159	-0.032	2974	7856
3783	Groombridge 3804...	5.6	22. 27. 8.209	79.97	3	...	+ 2.6430	+0.0135	...	50. 50. 13.52	81.45	5	...	-18.430	-0.144	...	...	7858
3784	59 Aquarii.....	5.2	22. 28. 7.670	84.14	3	...	+ 3.2759	-0.0150	+0.0140	111. 19. 21.86	84.04	4	...	-18.465	-0.179	+0.152	2976	7864
3785	29 Cephei	5.4	22. 28. 48.238	82.13	7	5	+ 0.5905	-0.0829	-0.0005	11. 47. 29.52	82.56	16	7	-18.487	-0.025	+0.027	2988	7874
3786	Piazzi XXII. 146 ...	6.2	22. 29. 0.236	85.04	3	...	+ 3.3091	-0.0174	...	114. 36. 40.07	85.21	4	...	-18.494	-0.179	...	...	7866
3787	62 Aquarii.....	4.2	22. 29. 11.358	82.55	32	...	+ 3.0789	-0.0031	+0.0042	90. 44. 8.11	82.12	15	...	-18.500	-0.165	+0.053	2979	7868
3788	Groombridge 3834...	5.7	22. 30. 9.638	84.01	3	4	+ 1.0815	-0.0337	...	14. 23. 30.77	84.41	5	6	-18.533	-0.052	...	...	7881
3789	Lacaille 9190.....	5.6	22. 31. 13.770	86.75	1	...	+ 3.4141	-0.0257	...	124. 5. 28.74	86.75	1	...	-18.569	-0.180	...	...	...
3790	63 Aquarii.....	5.5	22. 31. 32.458	82.63	25	...	+ 3.1150	-0.0051	-0.0060	94. 50. 47.87	82.58	25	...	-18.579	-0.163	+0.108	2983	7884
3791	B. D. + 25° No. 4779	8.0*	22. 32. 6.035	77.91	3	...	+ 2.8305	+0.0088	...	64. 12. 3.55	77.91	3	...	-18.597	-0.146	...	...	...
3792	9 Lacertæ	4.8	22. 32. 26.715	84.89	5	3	+ 2.4585	+0.0182	-0.0015	39. 4. 27.55	84.69	6	3	-18.609	-0.126	+0.109	2987	7888
3793	31 Cephei	5.3	22. 32. 48.102	80.20	3	3	+ 1.4463	-0.0072	+0.0416	16. 58. 46.92	80.77	8	3	-18.620	-0.070	-0.023	2994	7896
3794	64 Aquarii	6.9*	22. 32. 57.117	77.80	2	...	+ 3.1655	-0.0082	-0.0040	100. 39. 6.64	77.80	2	...	-18.625	-0.163	+0.003	2984	7890
3795	Lalande 44254	6.5†	22. 33. 3.182	85.75	3	...	+ 3.3462	-0.0208	...	118. 56. 55.53	85.75	3	...	-18.628	-0.173	...	...	7891
3796	40 Pegasi.....	5.8	22. 33. 4.190	79.32	3	...	+ 2.9028	+0.0059	-0.0053	71. 5. 54.40	79.31	3	...	-18.629	-0.149	+0.094	2985	7893
3797	Lalande 44261	7.7†	22. 33. (5.)	...	...	...	+ 3.3463	-0.0208	...	118. 58. 16.43	85.87	1	...	-18.629	-0.173	...	...	...
3798	10 Lacertæ	5.0	22. 33. 52.688	79.60	5	...	+ 2.6831	+0.0142	+0.0011	51. 34. 26.87	79.04	14	...	-18.655	-0.136	0.000	2990	7901
3799	Groombridge 3847...	5.6	22. 33. 54.851	84.70	4	...	+ 2.3405	+0.0195	...	33. 49. 39.26	84.55	5	...	-18.656	-0.117	...	...	...
3800	18 Piscis Australis ...	4.1	22. 34. 0.922	79.70	3	...	+ 3.3292	-0.0197	-0.0004	117. 40. 8.64	79.70	3	...	-18.659	-0.170	+0.006	2986	7898

3768. The letter ζ was added in the B. A. C.

3775. The limits of magnitude are 3.7 and 4.9; the period 5^d. 8^h. 47^m. 40^s.3795, 3797. The magnitudes are taken from the *Uranometria Argentina* and the *Argentine General Catalogue* respectively. The combined magnitude in H. P. is 6.3.

3770, 3772. The combined magnitude in H. P. is 4.6.

3780. The letter α was added in the B. A. C.

{xcviii}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	Mean N.P.D., 1880-0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880-0.	Secular Vari- ation, 1880-0.	Annual Proper Motion, 1880-0.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3801	Lalande 44342	7.3*	22. 34. 6.492	84.22	2	...	+ 2.7019	+0.0136	...	52. 52. 51.52	84.03	3	...	-18.662	-0.136	...	...	...
3802	Lalande 44344	6.0	22. 34. 8.716	79.21	4	...	+ 2.7040	+0.0134	...	53. 1. 54.75	79.48	5	...	-18.663	-0.136	...	...	...
3803	30 Cephei.....	5.2	22. 34. 23.800	84.03	3	6	+ 2.1164	+0.0185	-0.0026	27. 2. 20.98	83.29	9	8	-18.671	-0.105	+0.039	2996	7902
3804	Lalande 44361	7.8*	22. 34. 47.515	79.74	4	...	+ 2.7076	+0.0136	...	53. 5. 50.43	80.02	3	...	-18.684	-0.136	...	...	...
3805	Piazzi XXII. 186 ...	5.8	22. 34. 55.839	77.87	1	...	+ 2.9521	+0.0039	...	76. 4. 52.95	77.87	1	...	-18.689	-0.148	...	...	...
3806	11 Lacertæ	4.7	22. 35. 15.244	84.91	9	...	+ 2.6113	+0.0163	+0.0076	46. 20. 59.48	84.91	9	...	-18.699	-0.130	+0.016	2995	7906
3807	Groombridge 3854 ..	6.0	22. 35. 25.662	84.83	3	...	+ 2.4272	+0.0194	...	36. 46. 45.63	84.83	3	...	-18.704	-0.120	...	...	...
3808	42 Pegasi	3.6	22. 35. 28.624	81.12	27	...	+ 2.9855	+0.0023	+0.0044	79. 47. 41.47	82.21	15	...	-18.706	-0.149	+0.018	2992	7908
3809	19 Piscis Australis ...	6.5†	22. 35. 41.475	85.47	4	...	+ 3.3498	-0.0216	-0.0020	119. 59. 15.73	85.47	4	...	-18.712	-0.168	0.000	2991	7909
3810	Piazzi XXII. 195 ...	6.2	22. 36. 1.874	78.80	4	...	+ 2.9539	+0.0040	...	76. 6. 36.74	78.80	4	...	-18.723	-0.146	...	...	7912
3811	43 Pegasi	4.9	22. 36. 7.371	81.46	3	...	+ 2.8105	+0.0103	-0.0009	61. 19. 6.55	81.24	5	...	-18.726	-0.139	+0.031	2999	7914
3812	67 Aquarii	6.2	22. 36. 58.248	81.98	11	...	+ 3.1355	-0.0063	-0.0029	97. 35. 27.39	82.35	14	...	-18.752	-0.154	-0.023	3001	7921
3813	44 Pegasi	3.1	22. 37. 22.725	79.82	4	...	+ 2.8045	+0.0108	+0.0001	60. 24. 21.79	80.10	16	...	-18.765	-0.137	+0.033	3003	7923
3814	Groombridge 3869...	6.2	22. 38. 40.248	84.89	11	...	+ 2.6984	+0.0149	...	51. 9. 47.18	84.89	11	...	-18.805	-0.129	...	...	7931
3815	13 Lacertæ	5.1	22. 38. 44.467	83.72	2	...	+ 2.6661	+0.0159	-0.0029	48. 48. 36.88	83.72	2	...	-18.807	-0.127	-0.012	3005	7932
3816	20 Piscis Australis ...	6.5†	22. 38. 57.275	78.37	5	...	+ 3.2968	-0.0180	+0.0013	115. 52. 3.87	78.37	5	...	-18.813	-0.158	-0.043	3004	7930
3817	Groombridge 3887...	6.7*	22. 39. 7.487	80.86	4	3	+ 0.2302	-0.1476	...	9. 14. 7.16	80.80	5	3	-18.818	-0.004	...	...	7941
3818	46 Pegasi	4.2	22. 40. 41.845	78.62	7	...	+ 2.9796	+0.0032	+0.0126	78. 26. 32.26	78.60	10	...	-18.866	-0.139	+0.479	3008	7943
3819	47 Pegasi	4.2	22. 40. 45.099	79.07	3	...	+ 2.8806	+0.0082	+0.0031	67. 3. 56.14	78.57	5	...	-18.867	-0.134	+0.004	3010	7945
3820	Groombridge 3882...	5.7	22. 40. 51.043	86.69	8	...	+ 2.6365	+0.0173	...	46. 5. 11.29	86.70	7	...	-18.870	-0.122	...	...	7948
3821	70 Aquarii	6.3	22. 42. 11.287	84.04	4	...	+ 3.1604	-0.0081	+0.0022	101. 11. 21.14	84.07	7	...	-18.909	-0.145	-0.027	3012	7952
3822	71 Aquarii	4.1	22. 43. 14.215	78.85	6	...	+ 3.1837	-0.0099	-0.0030	104. 13. 32.71	78.87	4	...	-18.940	-0.144	+0.040	3013	7954
3823	48 Pegasi	3.7	22. 44. 12.722	82.17	54	...	+ 2.8793	+0.0090	+0.0096	66. 1. 54.62	82.51	41	...	-18.968	-0.128	+0.042	3016	7958
3824	Groombridge 3900...	5.4	22. 44. 49.332	85.79	3	...	+ 2.4510	+0.0225	...	34. 44. 0.34	85.79	3	...	-18.985	-0.107	...	...	7961
3825	Groombridge 3904...	6.5*	22. 44. 55.475	80.34	3	3	+ 2.0110	+0.0200	...	22. 3. 59.17	80.29	3	3	-18.988	-0.089	...	...	7963
3826	Oeltz Arg.(N.)24748	5.8	22. 44. 56.121	79.98	3	2	+ 2.0113	+0.0200	...	22. 3. 57.77	80.01	3	2	-18.988	-0.089	...	...	7962
3827	14 Lacertæ	5.8	22. 44. 57.165	83.80	3	...	+ 2.6943	+0.0168	-0.0005	48. 40. 55.27	83.80	3	...	-18.989	-0.118	+0.007	3018	7962
3828	32 Cephei	3.6	22. 45. 24.622	80.38	6	3	+ 2.1313	+0.0225	-0.0142	24. 25. 49.87	80.99	23	3	-19.002	-0.091	+0.140	3022	7967
3829	49 Pegasi	5.3	22. 46. 19.173	84.01	3	...	+ 3.0039	+0.0024	+0.0344	80. 48. 10.65	84.01	3	...	-19.027	-0.130	-0.048	3020	7971
3830	73 Aquarii.....	3.8	22. 46. 21.198	81.51	42	...	+ 3.1333	-0.0063	-0.0016	98. 13. 4.37	82.40	42	...	-19.028	-0.136	-0.040	3019	7970
3831	15 Lacertæ	5.1	22. 46. 37.401	80.76	3	...	+ 2.6843	+0.0177	+0.0088	47. 19. 30.11	80.76	3	...	-19.035	-0.115	-0.007	3023	7972
3832	Piazzi XXII. 241 ...	5.7	22. 47. 7.877	78.98	3	...	+ 2.9508	+0.0057	...	73. 47. 43.61	79.97	7	...	-19.049	-0.126	...	...	7975
3833	74 Aquarii	5.8	22. 47. 9.521	77.65	10	...	+ 3.1631	-0.0085	+0.0002	102. 15. 16.08	77.65	9	...	-19.050	-0.136	+0.012	3021	7974
3834	75 Aquarii	7.0*	22. 47. 47.299	77.79	5	...	+ 3.1666	-0.0088	+0.0010	102. 49. 38.37	77.79	5	...	-19.067	-0.135	+0.035	3024	7976
3835	Bradley 3038	4.8	22. 47. 54.272	83.15	3	4	- 0.0771	-0.2276	+0.0055	7. 28. 59.05	81.99	5	4	-19.070	+0.012	-0.043	3038	7990
3836	Groombridge 3918...	5.7	22. 48. 18.118	85.80	3	...	+ 2.6734	+0.0187	...	45. 53. 18.96	85.80	3	...	-19.081	-0.112	...	...	7983
3837	78 Aquarii	6.3	22. 48. 19.162	86.09	4	...	+ 3.1290	-0.0060	-0.0039	97. 50. 32.16	86.09	4	...	-19.081	-0.132	+0.034	3027	7981
3838	Groombridge 3919...	6.1	22. 48. 36.938	80.08	3	...	+ 2.7317	+0.0167	...	50. 15. 45.57	80.08	3	...	-19.089	-0.114	...	...	7984
3839	Piazzi XXII. 250 ...	5.8	22. 48. 57.541	82.71	13	...	+ 3.1125	-0.0048	...	95. 37. 37.08	83.07	15	...	-19.098	-0.130	...	...	7986
3840	23 Piscis Australis .	4.4	22. 49. 17.942	84.48	3	...	+ 3.3377	-0.0238	-0.0009	123. 10. 53.81	84.48	3	...	-19.108	-0.140	-0.086	3029	7987

3808. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.3.
 3816. The magnitude is taken from the *Uranometria Argentina*.
 3839. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.

3809. The magnitude is taken from the *Uranometria Argentina*.
 3825, 3826. The magnitude of each star in Struve's *Mensura Micrometrica* is 7.2.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY, GREENWICH, 1877 TO 1886.

{xcix}

1899GOAMM.49J...1C	Star's Name.	Magnitude.	Mean R.A., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Auwers' Bradley, 1755.	No. in B. A. C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3841	W. B. (2) XXII. 1121	6°	h m s 22. 49. 27.818	79.38	3	...	+ 2.7733	+0.0152	...	53. 33. 45.48	79.38	3	...	-19.112	-0.115	...	...	...
3842	W. B. (2) XXII. 1132	9.1*	22. 50. 5.675	78.68	3	...	+ 2.7838	+0.0149	...	54. 17. 41.77	78.68	2	...	-19.129	-0.114	...	...	...
3843	W. B. (2) XXII. 1133	5.6	22. 50. 9.236	78.65	4	...	+ 2.7839	+0.0149	...	54. 17. 18.60	78.65	4	...	-19.130	-0.114	...	...	...
3844	24 Piscis Australis ...	1.3	22. 51. 0.997	83.08	26	...	+ 3.3035	-0.0210	+0.0232	120. 15. 29.08	82.68	29	...	-19.153	-0.135	+0.159	3032	7992
3845	Groombridge 3930...	5.2	22. 51. 10.469	86.03	4	...	+ 2.6158	+0.0216	...	40. 54. 25.16	86.03	4	...	-19.157	-0.104	...	...	7995
3846	51 Pegasi.....	5.6	22. 51. 34.256	80.53	4	...	+ 2.9282	+0.0078	+0.0152	69. 52. 27.73	81.42	16	...	-19.167	-0.117	-0.059	3035	7997
3847	Groombridge 3933...	5.1	22. 51. 46.534	84.72	6	4	+ 2.6362	+0.0212	...	41. 57. 25.02	84.56	6	(4)	-19.172	-0.105	...	...	7999
3848	W. B. XXII. 1047...	8.7*	22. 51. 49.044	78.08	7	...	+ 3.1540	-0.0081	...	101. 46. 24.96	77.77	5	...	-19.173	-0.127	...	...	...
3849	Piazzi XXII. 261 ...	6.1	22. 52. 8.269	84.25	4	...	+ 2.7601	+0.0166	...	51. 19. 58.03	84.25	4	...	-19.181	-0.109	...	...	...
3850	W. B. XXII. 1063...	7.7*	22. 52. 27.600	80.73	4	...	+ 3.0095	+0.0027	...	80. 48. 59.33	80.73	4	...	-19.190	-0.119	...	...	...
3851	W. B. XXII. 1075...	8.9*	22. 52. 55.310	81.10	3	...	+ 3.0101	+0.0028	...	80. 50. 14.14	81.10	3	...	-19.201	-0.119	...	...	...
3852	Piazzi XXII. 264 ...	6.5*	22. 53. 16.437	77.62	5	...	+ 3.1660	-0.0091	-0.0025	103. 42. 49.45	77.62	5	...	-19.210	-0.124	-0.009	3264	8004
3853	Piazzi XXII. 267 ...	5.9	22. 53. 35.847	85.74	3	...	+ 3.2570	-0.0172	...	115. 48. 18.89	85.76	3	...	-19.218	-0.128	...	...	8007
3854	Groombridge 3940...	6.4	22. 53. 58.633	81.38	3	...	+ 2.5860	+0.0236	...	37. 59. 20.85	81.38	3	...	-19.228	-0.099	...	...	...
3855	3 Piscium	6.5	22. 54. 28.624	80.21	9	...	+ 3.0753	-0.0019	+0.0030	90. 27. 30.01	80.16	10	...	-19.240	-0.118	-0.019	3039	8012
3856	Lacaille 9333.....	5.6	22. 54. 46.073	86.69	3	...	+ 3.2847	-0.0202	...	119. 29. 51.70	86.69	3	...	-19.247	-0.126	...	...	...
3857	W. B. (2) XXII. 1231	6.5	22. 54. 59.032	81.35	3	...	+ 2.8524	+0.0129	...	59. 33. 39.16	81.35	3	...	-19.253	-0.108	...	...	...
3858	Oeltz Arg.(N.)24991	5.6	22. 55. 1.891	84.34	5	2	+ 2.5116	+0.0260	...	33. 41. 53.83	84.14	5	2	-19.254	-0.094	...	...	...
3859	81 Aquarii	6.8*	22. 55. 9.428	80.10	3	...	+ 3.1228	-0.0056	-0.0030	97. 42. 19.07	80.10	3	...	-19.257	-0.119	+0.002	3040	8016
3860	Bradley 3058	5.0	22. 55. (17.)	...	...	...	- 0.3034	-0.3114	+0.0560	6. 17. 45.78	80.67	8	...	-19.260	+0.021	-0.014	3058	8026
3861	W. B. XXII. 1156...	8.0*	22. 56. 14.989	78.38	12	...	+ 3.1497	-0.0079	...	101. 54. 37.90	77.72	5	...	-19.283	-0.118	...	...	...
3862	82 Aquarii	6.8*	22. 56. 18.729	81.47	7	...	+ 3.1187	-0.0053	-0.0014	97. 13. 5.46	82.60	11	...	-19.285	-0.117	+0.032	3042	8020
3863	1 Andromedæ	3.8	22. 56. 24.120	84.72	6	...	+ 2.7462	+0.0188	+0.0007	48. 19. 7.91	83.06	11	...	-19.287	-0.101	0.000	3043	8023
3864	Bradley 3044	6.5	22. 56. 26.443	82.15	4	1	+ 2.5200	+0.0265	-0.001	33. 32. 20.19	81.86	4	1	-19.288	-0.092	+0.003	3044	8024
3865	W. B. (2) XXII. 1265	6.8	22. 56. 29.870	80.17	2	...	+ 2.9193	+0.0094	...	67. 18. 16.97	79.68	3	...	-19.289	-0.108	...	...	...
3866	4 Piscium	β 4.6	22. 57. 46.142	79.51	1	...	+ 3.0524	+0.0001	-0.0003	86. 49. 33.30	79.51	1	...	-19.319	-0.111	+0.015	3046	8031
3867	53 Pegasi	β Var.	22. 57. 57.417	81.34	5	...	+ 2.8867	+0.0118	+0.0130	62. 34. 4.35	81.33	15	...	-19.324	-0.104	-0.133	3047	8032
3868	W. B. XXII. 1204...	8.5*	22. 58. 12.407	77.81	5	...	+ 3.1534	-0.0084	...	102. 49. 31.98	77.81	5	...	-19.330	-0.114	...	...	...
3869	54 Pegasi	α 2.6	22. 58. 47.018	82.13	46	...	+ 2.9806	+0.0057	+0.0028	75. 26. 25.01	83.18	30	...	-19.343	-0.106	+0.030	3050	8034
3870	83 Aquarii	β 5.5	22. 58. 54.268	84.81	5	...	+ 3.1240	-0.0058	+0.0071	98. 20. 29.13	84.82	6	...	-19.346	-0.112	-0.022	3048	8035
3871	Bradley 3054	5.4	22. 58. 58.826	82.53	4	5	+ 2.2609	+0.0305	+0.001	23. 26. 14.95	82.24	10	12	-19.348	-0.078	-0.002	3054	8039
3872	W. B. XXII. 1232...	7.3*	22. 59. 37.279	77.62	5	...	+ 3.1405	-0.0073	...	101. 5. 6.60	77.63	4	...	-19.362	-0.111	...	...	...
3873	86 Aquarii	α 4.8	23. 0. 13.959	86.12	3	...	+ 3.2286	-0.0158	+0.0039	114. 23. 29.50	85.53	4	...	-19.376	-0.113	-0.002	3053	8047
3874	W. B. XXII. 1249...	8.3*	23. 0. 41.085	78.33	12	...	+ 3.1537	-0.0086	...	103. 22. 30.24	77.95	7	...	-19.386	-0.109	...	...	...
3875	55 Pegasi.....	4.7	23. 0. 57.577	80.03	3	...	+ 3.0198	+0.0030	-0.0012	81. 14. 18.71	79.70	4	...	-19.393	-0.104	+0.013	3056	8051
3876	W. B. XXII. 1261...	7.8*	23. 1. 7.367	77.74	5	...	+ 3.1473	-0.0080	...	102. 27. 18.52	77.74	5	...	-19.396	-0.108	...	...	...
3877	56 Pegasi.....	4.9	23. 1. 16.141	79.54	3	...	+ 2.9156	+0.0108	-0.0009	65. 10. 45.97	80.33	9	...	-19.399	-0.099	+0.025	3057	8052
3878	Groombridge 3982...	7.3*	23. 1. 16.580	81.26	...	1	+ 2.4197	+0.0310	...	27. 26. 7.37	81.26	...	1	-19.400	-0.081	...	...	...
3879	1 Cassiopeiæ	5.0	23. 1. 32.659	80.39	3	...	+ 2.5160	+0.0294	-0.0006	31. 13. 42.97	80.39	3	...	-19.406	-0.084	+0.011	3001	8054
3880	W. B. (2) XXII. 1378	5.9	23. 1. 33.630	85.74	3	...	+ 2.9463	+0.0087	...	69. 30. 47.31	85.74	3	...	-19.406	-0.100	...	...	...

3843. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.1.
 3869. The magnitude given in the *Uranometria Nova Oxoniensis* is 2.3.

3867. The limits of magnitude are 2.2 and 2.7; the period irregular.

{c}

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A. 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880°.	Secular Variation, 1880°.	Annual Proper Motion, 1880°.	No. in Answers Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3881	Piazzi XXII. 305 ...	5.9	23. 1. 51.458	86.82	2	...	+ 3.2619	-0.0197	...	119. 28. 20.06	86.82	2	...	-19.412	-0.111	...	...	8053
3882	4 Andromedæ	5.7	23. 2. 10.275	83.75	3	...	+ 2.7298	+0.0220	-0.0007	44. 15. 39.54	83.75	3	...	-19.419	-0.091	+0.030	3063	8058
3883	88 Aquarii ^{e2}	3.6	23. 3. 2.802	78.99	3	...	+ 3.2040	-0.0138	+0.0014	111. 49. 25.43	78.99	3	...	-19.438	-0.107	-0.054	3062	8062
3884	89 Aquarii ^{e3}	4.9	23. 3. 30.190	79.78	3	...	+ 3.2115	-0.0147	-0.0045	113. 6. 27.30	79.78	3	...	-19.448	-0.106	+0.009	3065	8069
3885	33 Cephei ^π	4.5	23. 4. 4.934	81.93	6	3	+ 1.8886	+0.0238	+0.0038	15. 15. 40.00	81.69	19	4	-19.460	-0.058	+0.041	3074	8074
3886	2 Cassiopeiæ.....	5.4	23. 4. 36.275	86.37	9	...	+ 2.5464	+0.0305	+0.0001	31. 19. 4.19	86.37	9	...	-19.472	-0.081	+0.007	3071	8075
3887	W. B. XXIII. 49	8.6*	23. 5. 13.391	78.29	8	...	+ 3.1348	-0.0071	...	101. 9. 34.45	77.71	4	...	-19.484	-0.100	...	...	...
3888	W. B. XXIII. 57 (1st *)	7.2*	23. 5. 42.870	77.89	2	...	+ 3.1423	-0.0079	...	102. 35. 3.39	77.91	1	...	-19.494	-0.099	...	...	...
3889	W. B. XXIII. 57	6.9*	23. 5. 42.885	77.75	4	...	+ 3.1423	-0.0079	...	102. 35. 5.12	77.81	4	...	-19.494	-0.099	...	...	...
3890	W. B. XXIII. 57 (2nd*)	7.2*	23. 5. 43.105	77.89	2	...	+ 3.1423	-0.0079	...	102. 35. 5.05	77.91	1	...	-19.494	-0.099	...	...	...
3891	60 Pegasi.....	6.5	23. 5. 59.799	79.51	4	...	+ 2.9187	+0.0119	-0.0147	63. 48. 2.88	80.84	11	...	-19.500	-0.091	+0.105	3073	8079
3892	7 Andromedæ	4.7	23. 7. 3.294	80.02	3	...	+ 2.7232	+0.0248	+0.0093	41. 14. 57.17	80.02	3	...	-19.521	-0.083	-0.091	3075	8082
3893	Bradley 3077.....	5.5	23. 7. 30.603	84.66	16	6	+ 2.6135	+0.0301	+0.249	33. 29. 38.66	84.42	15	8	-19.530	-0.078	-0.287	3077	8083
3894	W. B. XXIII. 97 ...	6.8*	23. 7. 31.050	77.96	5	...	+ 3.1482	-0.0087	...	104. 2. 49.41	77.96	5	...	-19.531	-0.096	...	...	...
3895	90 Aquarii..... ^φ	4.2	23. 8. 6.382	82.94	11	...	+ 3.1075	-0.0045	+0.0009	96. 41. 44.77	82.94	11	...	-19.542	-0.093	+0.184	3076	8085
3896	W. B. XXIII. 123...	6.3*	23. 8. 24.805	77.81	4	...	+ 3.1322	-0.0070	...	101. 20. 27.75	77.81	4	...	-19.548	-0.094	...	...	...
3897	W. B. (2) XXIII. 137	6.4	23. 8. 41.456	83.77	3	...	+ 2.9436	+0.0107	...	66. 33. 3.07	83.76	4	...	-19.554	-0.087	...	...	...
3898	Lalande 45504	7.7*	23. 9. 5.334	77.86	4	...	+ 3.1361	-0.0075	...	102. 13. 7.82	77.86	4	...	-19.561	-0.092	...	...	...
3899	W. B. XXIII. 138...	7.9*	23. 9. 20.626	77.87	4	...	+ 3.1361	-0.0075	...	102. 17. 11.08	77.87	4	...	-19.567	-0.092	...	...	...
3900	B. F. 3183	5.6	23. 9. 23.300	81.49	11	...	+ 3.0936	-0.0030	...	94. 9. 1.17	81.67	12	...	-19.567	-0.090	...	...	8094
3901	91 Aquarii ^{ψ1}	4.5	23. 9. 36.222	78.45	13	...	+ 3.1224	-0.0061	+0.0237	99. 44. 29.65	77.97	6	...	-19.571	-0.091	+0.005	3078	8095
3902	61 Pegasi.....	6.7	23. 9. 54.723	80.06	3	...	+ 2.9208	+0.0130	0.0000	62. 24. 22.43	80.07	6	...	-19.577	-0.084	+0.003	3080	8097
3903	Bradley 3085.....	5.6	23. 10. 31.302	82.82	5	...	+ 2.0973	+0.0358	+0.019	16. 25. 22.68	82.13	12	...	-19.586	-0.057	+0.003	3085	8104
3904	6 Piscium ^γ	3.8	23. 10. 56.653	82.84	38	...	+ 3.0593	+0.0005	+0.0487	87. 22. 23.80	83.08	44	...	-19.597	-0.086	-0.017	3082	8105
3905	Bradley 3084.....	5.6	23. 11. 14.349	80.42	3	...	+ 2.7035	+0.0284	+0.010	37. 26. 0.62	81.18	2	...	-19.602	-0.075	+0.276	3084	8107
3906	W. B. XXIII. 185...	6.3	23. 11. 24.141	80.23	8	...	+ 3.1340	-0.0075	...	102. 22. 6.80	79.97	9	...	-19.605	-0.088	...	...	...
3907	Groombridge 4025...	6.5	23. 11. 38.240	85.40	5	1	+ 2.7970	+0.0229	...	45. 29. 20.66	85.09	4	(1)	-19.609	-0.077	...	...	8110
3908	8 Andromedæ	4.9	23. 12. 11.066	85.64	5	3	+ 2.7608	+0.0256	+0.0021	41. 38. 25.22	85.08	6	(3)	-19.619	-0.075	+0.012	3089	8114
3909	Sculptoris ^γ	4.6	23. 12. 20.499	86.38	3	...	+ 3.2528	-0.0222	...	123. 11. 9.02	86.38	3	...	-19.622	-0.090	...	...	8113
3910	9 Andromedæ	6.0	23. 12. 41.875	82.08	3	...	+ 2.8331	+0.0210	-0.0014	48. 52. 54.32	81.46	6	...	-19.629	-0.076	-0.006	3091	8118
3911	95 Aquarii ^{ψ2}	5.1	23. 12. 43.071	77.65	9	...	+ 3.1219	-0.0062	+0.0015	100. 16. 0.14	77.65	9	...	-19.629	-0.085	-0.008	3087	8116
3912	W. B. XXIII. 228...	7.2*	23. 12. 46.467	77.90	4	...	+ 3.1346	-0.0077	...	102. 49. 35.96	77.90	4	...	-19.630	-0.085	...	...	...
3913	94 Aquarii ^ψ	5.2	23. 12. 47.867	78.39	12	...	+ 3.1410	-0.0084	+0.0184	104. 6. 42.18	77.74	5	...	-19.631	-0.085	+0.094	3088	8117
3914	96 Aquarii ^ψ	5.7	23. 13. 10.602	80.33	5	...	+ 3.0998	-0.0037	+0.0111	95. 46. 47.75	80.33	5	...	-19.637	-0.083	-0.002	3090	8119
3915	Groombridge 4040...	6.8*	23. 13. 32.890	83.51	3	4	+ 2.1903	+0.0405	...	16. 57. 59.93	84.51	3	15	-19.644	-0.056	...	...	8122
3916	34 Cephei (1st Star)...	5.2†	23. 13. 41.876	82.84	1	...	+ 2.4261	+0.0404	+0.0093	22. 32. 44.48	82.84	1	...	-19.646	-0.063	-0.006	...	...
3917	34 Cephei (as one mass)...	4.9	23. 13. 42.192	83.32	3	4	+ 2.4261	+0.0404	+0.0093	22. 32. 42.00	83.04	11	12	-19.646	-0.063	-0.006	3097	8124
3918	W. B. XXIII. 265...	7.8*	23. 14. 37.938	77.88	5	...	+ 3.1243	-0.0066	...	101. 11. 22.61	77.88	5	...	-19.663	-0.081	...	...	...
3919	62 Pegasi ^γ	4.7	23. 14. 41.927	79.93	5	...	+ 2.9604	+0.0110	+0.0009	66. 54. 58.86	79.92	12	...	-19.664	-0.076	+0.014	3096	8131
3920	Piazzi XXIII. 55 ...	5.9	23. 14. 51.719	86.54	4	...	+ 3.2093	-0.0174	...	117. 38. 38.80	86.54	4	...	-19.667	-0.083	...	...	8132

3888, 3890. The magnitudes are taken from Struve's *Mensuræ Micrometricæ*.3916. The magnitude is taken from Struve's *Mensuræ Micrometricæ*.3917. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.2.

1886 1885 1884 1883 1882 1881 1880 1879 1878 1877	Star's Name.	Magnitude.	Mean R.A. 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	Mean N.P.D., 1880°.	Mean Date. 1800 +	No. of Obs.		Annual Preces- sion, 1880°.	Secular Vari- ation, 1880°.	Annual Proper Motion, 1880°.	No. in Answers Bradley. 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3921	Bradley 3104.....	6.3	h m s 23. 15. 20.463	83.58	4	3	+ 2.5945	+0.0369	-0.0002	28. 26. 37.50	83.64	5	3	-19.675	-0.065	+0.006	3104	8138
3922	64 Pegasi.....	5.4	23. 16. 3.495	81.44	5	...	+ 2.9183	+0.0155	+0.0009	58. 50. 41.69	81.54	9	...	-19.687	-0.073	+0.016	3103	8141
3923	97 Aquarii	5.3	23. 16. 21.726	86.40	8	...	+ 3.1434	-0.0092	+0.0054	105. 41. 53.43	86.40	8	...	-19.692	-0.078	-0.020	3102	8142
3924	Piazzi XXIII. 64 ...	8.0*	23. 16. 46.875	78.39	12	...	+ 3.1230	-0.0066	...	101. 25. 53.43	78.07	7	...	-19.699	-0.077	...	...	...
3925	66 Pegasi.....	5.2	23. 17. 1.465	82.03	3	...	+ 3.0209	+0.0054	-0.0003	78. 20. 38.25	84.16	7	...	-19.703	-0.074	+0.026	3108	8149
3926	W. B. XXIII. 315...	8.0*	23. 17. 3.768	77.86	5	...	+ 3.1164	-0.0059	...	100. 2. 34.93	77.86	5	...	-19.703	-0.076	...	...	...
3927	Bradley 3110.....	6.0	23. 17. 11.671	81.42	3	...	+ 2.6513	+0.0359	0.000	30. 31. 28.34	81.42	3	...	-19.706	-0.063	+0.002	3110	8153
3928	Piazzi XXIII. 68 ...	6.7*	23. 17. 22.591	80.88	6	...	+ 3.0739	-0.0007	...	90. 22. 2.78	80.88	6	...	-19.709	-0.074	...	...	8152
3929	W. B. (2) XXIII. 346	9.1*	23. 18. 12.974	86.69	3	...	+ 2.9172	+0.0165	...	57. 24. 19.06	86.69	3	...	-19.722	-0.069	...	...	...
3930	Bradley 3112.....	7.0*	23. 18. 40.747	80.42	3	...	+ 2.7049	+0.0340	+0.004	33. 7. 24.00	80.42	3	...	-19.729	-0.062	0.000	3112	8158
3931	68 Pegasi	4.6	23. 19. 23.445	80.54	4	...	+ 2.9735	+0.0112	+0.0112	67. 15. 23.09	80.71	13	...	-19.740	-0.068	-0.039	3114	8160
3932	4 Cassiopeie	5.2	23. 19. 30.657	83.11	6	5	+ 2.6374	+0.0389	+0.0010	28. 22. 33.54	82.68	11	6	-19.742	-0.059	+0.021	3115	8162
3933	99 Aquarii	4.4	23. 19. 44.484	80.07	3	...	+ 3.1634	-0.0125	-0.0052	111. 18. 0.01	80.07	3	...	-19.746	-0.072	+0.054	3113	8161
3934	W. B. (2) XXIII. 380	9.0*	23. 19. 57.573	86.85	3	...	+ 2.9306	+0.0160	...	58. 37. 53.13	86.85	3	...	-19.749	-0.066	...	...	...
3935	W. B. XXIII. 377...	8.3*	23. 20. 22.686	78.40	11	...	+ 3.1157	-0.0061	...	100. 41. 39.20	77.84	5	...	-19.755	-0.070	...	...	...
3936	W. B. (2) XXIII. 395	7.7*	23. 20. 37.528	86.80	4	...	+ 2.9345	+0.0159	...	58. 54. 46.23	86.80	4	...	-19.759	-0.065	...	...	...
3937	8 Piscium	5.0	23. 20. 46.836	82.19	44	...	+ 3.0699	0.0000	+0.0041	89. 24. 4.62	82.53	37	...	-19.761	-0.068	+0.102	3116	8169
3938	9 Piscium	7.2*	23. 21. 5.952	80.94	6	...	+ 3.0705	0.0000	+0.0017	89. 32. 11.74	80.94	6	...	-19.766	-0.069	+0.023	3117	8170
3939	13 Andromedæ	5.8	23. 21. 20.520	84.22	2	...	+ 2.8684	+0.0230	+0.0071	47. 44. 56.14	84.22	2	...	-19.770	-0.062	-0.015	3118	8171
3940	Piazzi XXIII. 90 ...	6.3*	23. 21. 50.472	77.70	5	...	+ 3.1198	-0.0068	...	102. 6. 35.24	77.70	5	...	-19.777	-0.067	...	...	8175
3941	Bradley 3125.....	5.7	23. 22. 12.606	82.91	4	5	+ 2.4792	+0.0490	+0.028	20. 18. 1.56	83.31	9	18	-19.782	-0.051	+0.009	3125	8180
3942	W. B. XXIII. 427 ...	7.0*	23. 22. 48.172	77.84	7	...	+ 3.1101	-0.0055	...	99. 55. 35.15	77.84	6	...	-19.791	-0.065	...	...	...
3943	W. B. (2) XXIII. 457	8.0*	23. 22. 49.806	86.70	3	...	+ 2.8978	+0.0210	...	51. 2. 29.50	86.70	3	...	-19.791	-0.060	...	...	...
3944	W. B. (2) XXIII. 458	8.3*	23. 22. 51.052	86.70	3	...	+ 2.8974	+0.0211	...	50. 58. 15.25	86.71	2	...	-19.791	-0.060	...	...	...
3945	70 Pegasi	4.7	23. 23. 5.119	81.08	4	...	+ 3.0263	+0.0060	+0.0013	77. 54. 5.49	81.73	11	...	-19.795	-0.062	-0.030	3122	8182
3946	11 Piscium	6.5*	23. 23. 17.435	80.32	8	...	+ 3.0814	-0.0014	-0.0034	92. 27. 6.82	80.32	8	...	-19.797	-0.063	-0.008	3123	8183
3947	Piazzi XXIII. 96 ...	6.3	23. 23. 19.934	86.88	4	...	+ 3.0916	-0.0029	...	95. 11. 13.07	86.88	4	...	-19.798	-0.063	...	...	8184
3948	B. D. + 22° No. 4849	8.5*	23. 25. 13.587	86.74	3	...	+ 2.9869	+0.0118	...	67. 5. 38.13	86.73	4	...	-19.824	-0.057	...	...	...
3949	14 Andromede	5.3	23. 25. 23.484	81.81	4	...	+ 2.9118	+0.0211	+0.0232	51. 25. 22.24	81.86	7	...	-19.826	-0.055	+0.077	3128	8195
3950	W. B. (2) XXIII. 516	6.7	23. 25. 32.985	78.61	3	...	+ 2.9658	+0.0146	...	61. 59. 43.51	78.61	3	...	-19.828	-0.056	...	...	...
3951	B. D. + 22° No. 4854	8.5*	23. 25. 53.648	86.75	3	...	+ 2.9883	+0.0119	...	67. 1. 17.14	86.73	4	...	-19.833	-0.056	...	...	...
3952	B. D. + 39° No. 5099	8.0*	23. 26. 8.197	86.88	3	...	+ 2.9065	+0.0223	...	49. 53. 30.91	86.87	4	...	-19.836	-0.054	...	...	...
3953	W. B. XXIII. 497 ...	6.7	23. 26. 12.771	80.30	7	...	+ 3.1128	-0.0063	...	101. 39. 40.94	79.74	9	...	-19.837	-0.058	...	...	...
3954	B. D. + 40° No. 5099	8.9*	23. 26. 22.184	86.85	4	...	+ 2.9067	+0.0224	...	49. 43. 44.44	86.85	4	...	-19.839	-0.054	...	...	...
3955	101 Aquarii	4.7	23. 26. 59.754	84.14	3	...	+ 3.1482	-0.0123	-0.0043	111. 34. 40.35	84.14	3	...	-19.847	-0.057	-0.014	3130	8202
3956	Bradley 3147.....	5.6	23. 27. 49.506	85.18	1	5	- 0.1220	-0.5435	+0.0845	3. 21. 16.61	85.24	9	9	-19.857	+0.011	-0.003	3147	8213
3957	W. B. (2) XXIII. 567	6.4	23. 27. 54.354	78.68	3	...	+ 3.0037	+0.0105	...	69. 49. 17.05	78.68	3	...	-19.858	-0.053	...	...	...
3958	14 Piscium	5.9	23. 27. 58.779	85.53	11	...	+ 3.0785	-0.0009	+0.0060	91. 54. 36.83	85.53	11	...	-19.859	-0.054	+0.004	3133	8205
3959	72 Pegasi.....	5.2	23. 28. 0.058	85.42	5	...	+ 2.9620	+0.0164	+0.0019	59. 20. 13.84	85.59	4	...	-19.859	-0.052	+0.005	3134	8206
3960	Piazzi XXIII. 122...	6.3	23. 28. 34.709	85.18	3	...	+ 3.1244	-0.0086	...	105. 54. 23.40	85.18	3	...	-19.866	-0.054	...	...	...

3932. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.5.3941. The magnitude given in the *Uranometria Nova Oxoniensis* is 6.0.3945. The letter *q* was added in the B. A. C. The magnitude given in the *Uranometria Nova Oxoniensis* is 5.0.

TEN-YEAR CATALOGUE OF STARS FOR 1880-0,

No.	Star's Name.	Magnitude.	Mean R.A., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	Mean N.P.D., 1880.0.	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880.0.	Secular Variation, 1880.0.	Annual Proper Motion, 1880.0.	No. in Answers Bradley.	No. in B.A.C.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
3961	15 Andromedæ	5.5	23. 28. 45.461	79.51	3	...	+ 2.9221	+0.0223	-0.0016	50. 25. 31.46	79.51	3	...	-19.868	-0.049	+0.038	3137	8212
3962	W. B. XXIII. 571...	7.3*	23. 29. 15.012	77.85	5	...	+ 3.1078	-0.0059	...	101. 13. 6.70	77.85	5	...	-19.874	-0.052	...	...	...
3963	15 Piscium	7.2*	23. 29. 20.516	83.63	1	...	+ 3.0703	+0.0005	-0.0049	89. 20. 57.98	83.63	1	...	-19.875	-0.051	+0.031	3138	8215
3964	Piazzi XXIII. 126...	6.5	23. 29. 20.587	83.12	5	...	+ 3.0978	-0.0041	...	98. 7. 42.97	83.12	5	...	-19.875	-0.052	...	...	8214
3965	W. B. XXIII. 583 ...	8.0*	23. 29. 44.834	77.89	6	...	+ 3.1076	-0.0059	...	101. 21. 5.37	77.89	6	...	-19.880	-0.051	...	...	...
3966	W. B. XXIII. 585...	9.0*	23. 29. 47.852	77.89	5	...	+ 3.1076	-0.0059	...	101. 21. 53.72	77.90	4	...	-19.880	-0.051	...	...	...
3967	W. B. XXIII. 586...	7.4*	23. 29. 48.594	77.79	5	...	+ 3.1015	-0.0048	...	99. 25. 43.69	77.79	5	...	-19.881	-0.051	...	...	...
3968	W. B. (2)XXIII. 613	6.7	23. 29. 55.631	85.75	8	...	+ 2.9948	+0.0127	...	66. 6. 10.76	85.46	12	...	-19.882	-0.049	...	...	...
3969	16 Piscium	5.6	23. 30. 15.854	82.20	4	...	+ 3.0680	+0.0010	-0.0091	88. 33. 48.79	82.20	4	...	-19.886	-0.049	-0.061	3139	8218
3970	W. B. (2)XXIII. 627	6.5	23. 30. 33.587	86.51	4	...	+ 2.9643	+0.0177	...	57. 45. 35.45	86.51	4	...	-19.889	-0.047	...	...	...
3971	16 Andromedæ.....λ	4.0	23. 31. 41.606	83.77	11	4	+ 2.9029	+0.0275	+0.0157	44. 11. 30.54	83.62	11	(4)	-19.902	-0.044	+0.425	3143	8224
3972	75 Pegasi	5.4	23. 31. 53.338	78.71	3	...	+ 3.0200	+0.0095	+0.0024	72. 15. 51.23	78.71	3	...	-19.904	-0.046	-0.005	3142	8227
3973	W. B. XXIII. 629...	7.2*	23. 32. 0.594	78.30	12	...	+ 3.0990	-0.0046	...	99. 17. 29.79	77.77	5	...	-19.905	-0.047	...	...	...
3974	17 Andromedæ	4.3	23. 32. 15.144	81.49	7	2	+ 2.9238	+0.0250	+0.0014	47. 23. 46.14	81.07	8	(2)	-19.907	-0.043	+0.012	3144	8229
3975	18 Andromedæ	5.3	23. 33. 19.615	86.81	4	...	+ 2.8886	+0.0314	-0.0020	40. 11. 33.98	86.80	4	...	-19.919	-0.040	+0.008	3146	8231
3976	102 Aquarii	5.2	23. 33. 33.598	84.72	3	...	+ 3.1132	-0.0077	+0.0024	104. 53. 8.65	84.72	3	...	-19.921	-0.044	+0.041	3145	8232
3977	17 Piscium.....λ	4.3	23. 33. 46.664	82.76	40	...	+ 3.0590	+0.0030	+0.0234	85. 1. 26.72	83.42	27	...	-19.923	-0.042	+0.443	3148	8233
3978	Piazzi XXIII. 146...	6.2	23. 33. 48.169	85.06	3	...	+ 3.0481	+0.0051	...	80. 59. 15.44	85.06	3	...	-19.923	-0.042	...	...	8234
3979	35 Cephei	3.4	23. 34. 25.985	82.66	15	22	+ 2.4295	+0.0753	-0.0199	13. 2. 14.36	82.41	42	26	-19.930	-0.031	-0.135	3152	8238
3980	19 Andromedæ	4.4	23. 34. 30.037	83.42	7	4	+ 2.9306	+0.0263	+0.0069	46. 19. 50.30	83.06	7	(4)	-19.930	-0.039	+0.024	3149	8237
3981	W. B. (2)XXIII. 735	6.4	23. 34. 40.967	78.69	3	...	+ 2.9650	+0.0206	...	53. 56. 42.21	78.69	3	...	-19.932	-0.039	...	...	...
3982	Piazzi XXIII. 153...	6.1	23. 34. 56.234	78.72	3	...	+ 3.1042	-0.0062	...	102. 20. 45.76	78.72	3	...	-19.934	-0.041	...	...	8239
3983	103 Aquarii	5.7	23. 35. 20.949	78.69	3	...	+ 3.1208	-0.0099	-0.0042	108. 41. 23.53	78.69	3	...	-19.938	-0.040	+0.075	3150	8240
3984	104 Aquarii	4.8	23. 35. 31.918	78.69	3	...	+ 3.1199	-0.0097	+0.0010	108. 28. 54.58	78.69	3	...	-19.940	-0.040	-0.022	3151	8242
3985	18 Piscium	4.7	23. 35. 55.376	82.36	20	...	+ 3.0696	+0.0011	-0.0107	88. 52. 49.43	82.34	19	...	-19.944	-0.039	+0.137	3153	8243
3986	Lalande 46451	5.5	23. 36. 14.833	83.76	3	...	+ 3.1123	-0.0083	...	106. 6. 47.03	83.76	3	...	-19.947	-0.038	...	...	...
3987	105 Aquarii	4.7	23. 36. 29.880	78.87	5	...	+ 3.1095	-0.0077	+0.0053	105. 12. 30.02	78.87	5	...	-19.949	-0.038	+0.055	3154	8246
3988	76 Pegasi.....λ	6.3*	23. 36. 38.338	82.69	3	...	+ 3.0341	+0.0087	+0.0044	74. 19. 49.15	81.32	7	...	-19.950	-0.037	-0.012	3156	8248
3989	78 Pegasi.....λ	4.9	23. 37. 57.387	83.61	4	...	+ 3.0020	+0.0162	+0.0053	61. 18. 11.43	81.07	9	...	-19.962	-0.034	+0.034	3160	8256
3990	106 Aquarii	5.3	23. 37. 58.639	79.40	3	...	+ 3.1163	-0.0099	+0.0006	108. 56. 35.50	79.40	3	...	-19.962	-0.035	+0.011	3159	8255
3991	20 Andromedæ	5.0	23. 40. 5.496	85.96	6	...	+ 2.9533	+0.0290	+0.0005	44. 14. 45.06	85.96	6	...	-19.979	-0.029	+0.016	3163	8261
3992	B. D. + 45° No. 4322	8.8*	23. 40. 13.675	85.75	1	...	+ 2.9542	+0.0290	...	44. 17. 27.53	85.75	1	...	-19.980	-0.029	...	...	...
3993	19 Piscium	5.2	23. 40. 15.590	85.27	13	...	+ 3.0666	+0.0022	-0.0050	87. 10. 44.79	85.27	13	...	-19.980	-0.030	+0.023	3162	8262
3994	Oeltz Arg. (N.) 26014	6.0	23. 40. 53.856	84.37	4	4	+ 2.8210	+0.0572	...	23. 53. 3.66	84.66	4	8	-19.985	-0.026	...	...	...
3995	Lalande 46607	5.7	23. 41. 10.252	79.36	3	...	+ 2.9047	+0.0414	...	33. 12. 54.19	79.36	3	...	-19.987	-0.026	...	...	...
3996	20 Piscium	5.7	23. 41. 46.399	85.26	6	...	+ 3.0787	-0.0009	+0.0048	93. 25. 43.69	85.26	6	...	-19.991	-0.027	-0.003	3165	8271
3997	Bradley 3166.....λ	5.1	23. 42. 10.793	81.88	6	4	+ 2.8260	+0.0603	-0.004	22. 51. 36.02	82.11	16	10	-19.994	-0.024	+0.010	3166	8273
3998	Sculptoris.....δ	4.6	23. 42. 40.396	81.46	20	...	+ 3.1278	-0.0161	+0.009	118. 47. 39.32	83.19	14	...	-19.997	-0.026	+0.097	...	8275
3999	Piazzi XXIII. 193...	7.7*	23. 42. 40.795	83.67	2	...	+ 3.0696	+0.0017	...	88. 27. 5.83	83.67	2	...	-19.997	-0.025	...	...	8276
4000	W. B. XXIII. 853 ...	8.7*	23. 42. 56.188	82.71	2	...	+ 3.0692	+0.0019	+0.0641	88. 14. 2.56	83.55	5	...	-19.999	-0.025	+0.994	...	...

3971. The magnitude given in the *Uranometria Nova Oxoniensis* is 3.7.
3998. Authority for Proper Motion in R.A. : Cape Catalogue 1880.

3974. The magnitude given in the *Uranometria Nova Oxoniensis* is 4.6.
4000. Authority for Proper Motion : Bonn Observations, Vol. VII.

FROM OBSERVATIONS AT THE ROYAL OBSERVATORY GREENWICH, 1877 TO 1886.

{ciii}

No.	Star's Name	Magnitude.	Mean R.A., 1880 ^o .	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880 ^o .	Secular Variation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	Mean N.P.D., 1880 ^o .	Mean Date, 1800 +	No. of Obs.		Annual Precession, 1880 ^o .	Secular Variation, 1880 ^o .	Annual Proper Motion, 1880 ^o .	No. in Answers' Bradley.	
					Above Pole.	Below Pole.						Above Pole.	Below Pole.				1755.	1850.
			h m s				s	s	s	° ' "				"	"	"		
4001	6 Cassiopeie	5.5	23. 42. 59.931	83.56	3	3	+ 2.8895	+0.00494	-0.0023	28. 27. 9.05	84.41	7	3	-19.999	-0.023	+0.010	3169	8279
4002	21 Piscium	6.1	23. 43. 18.817	81.95	6	...	+ 3.0716	+0.0012	-0.0016	89. 35. 24.58	81.95	6	...	-20.001	-0.024	+0.030	3167	8281
4003	79 Pegasi.....	5.9	23. 43. 35.089	79.51	3	...	+ 3.0210	+0.0164	+0.0036	61. 49. 32.55	79.26	9	...	-20.003	-0.023	-0.014	3171	8284
4004	W. B. (2) XXIII. 907	5.9	23. 43. 38.939	83.19	9	...	+ 3.0037	+0.0215	...	54. 14. 25.50	83.19	9	...	-20.003	-0.023	...	...	...
4005	W. B. XXIII. 868...	6.5	23. 43. 56.095	86.79	4	...	+ 3.0918	-0.0053	...	101. 46. 11.66	86.79	4	...	-20.005	-0.023	...	...	...
4006	Piazzi XXIII. 200...	6.3	23. 44. 3.095	77.61	6	...	+ 3.0898	-0.0047	...	100. 38. 39.21	77.61	5	...	-20.006	-0.023	...	...	8285
4007	Piazzi XXIII. 203...	5.9	23. 44. 21.850	86.46	3	...	+ 3.0968	-0.0072	...	105. 4. 5.17	86.76	2	...	-20.008	-0.022	...	...	8288
4008	W. B. (2) XXIII. 928	9.3*	23. 45. 3.882	85.25	2	...	+ 3.0103	+0.0214	...	54. 32. 26.63	85.25	2	...	-20.012	-0.020	...	...	...
4009	W. B. (2) XXIII. 938	8.9*	23. 45. 28.290	86.34	4	...	+ 3.0118	+0.0216	...	54. 27. 12.50	85.55	4	...	-20.014	-0.019	...	...	...
4010	22 Piscium	5.9	23. 45. 49.259	79.42	12	...	+ 3.0690	+0.0023	0.0000	87. 44. 12.44	79.42	12	...	-20.016	-0.019	+0.011	3174	8295
4011	W. B. (2) XXIII. 945	7.8*	23. 46. 4.695	79.41	3	...	+ 3.0140	+0.0217	...	54. 18. 41.48	79.41	3	...	-20.017	-0.018	...	...	...
4012	Bradley 3181	6.9*	23. 46. 12.879	83.50	3	5	+ 2.7260	+0.1008	+0.083	13. 3. 54.11	84.33	5	7	-20.018	-0.015	+0.100	3181	8298
4013	81 Pegasi	5.2	23. 46. 23.054	80.11	3	...	+ 3.0458	+0.0109	-0.0033	71. 32. 46.02	82.36	5	...	-20.019	-0.018	+0.042	3176	8299
4014	Piazzi XXIII. 218...	6.3*	23. 46. 34.217	84.07	4	4	+ 2.7825	+0.0908	+0.0754	15. 7. 28.39	81.88	9	6	-20.020	-0.015	-0.009	...	...
4015	W. B. XXIII. 921 ...	5.9	23. 46. 40.037	85.94	4	...	+ 3.0855	-0.0040	...	99. 39. 50.03	85.94	4	...	-20.020	-0.018	...	...	...
4016	25 Piscium	6.3	23. 46. 55.964	81.77	3	...	+ 3.0704	+0.0019	-0.0015	88. 34. 36.47	81.77	3	...	-20.022	-0.017	+0.005	3180	8303
4017	B. D. + 58° No. 2667	7.8*	23. 47. 4.300	82.71	3	...	+ 2.9480	+0.0464	...	31. 14. 44.51	82.71	3	...	-20.022	-0.016	...	...	...
4018	7 Cassiopeie	4.6	23. 48. 23.635	85.34	9	3	+ 2.9688	+0.0439	-0.0032	33. 10. 5.93	85.35	9	3	-20.029	-0.013	+0.012	3182	8310
4019	26 Piscium	6.1	23. 48. 59.457	79.89	1	...	+ 3.0651	+0.0046	+0.0005	83. 35. 47.49	79.89	1	...	-20.031	-0.013	+0.009	3183	8312
4020	Groombridge 4163...	6.6	23. 49. 0.284	81.37	3	3	+ 2.8523	+0.0890	...	16. 15. 27.01	81.37	3	4	-20.031	-0.011	...	...	8314
4021	Piazzi XXIII. 229...	6.3*	23. 49. 16.782	81.17	3	...	+ 3.0428	+0.0151	...	64. 42. 45.37	79.85	5	...	-20.032	-0.012	...	...	...
4022	Groombridge 4165...	6.1	23. 49. 30.453	79.40	3	...	+ 3.0073	+0.0316	...	43. 18. 42.61	79.40	3	...	-20.033	-0.012	...	...	...
4023	Lalande 46906	7.0*	23. 49. 51.297	86.77	6	...	+ 3.0502	+0.0123	...	69. 30. 8.45	86.75	5	...	-20.035	-0.011	...	...	...
4024	B. D. + 20° No. 5397	9.3*	23. 49. 56.984	86.74	3	...	+ 3.0502	+0.0124	...	69. 19. 15.16	86.74	3	...	-20.035	-0.011	...	...	...
4025	Piazzi XXIII. 235...	6.1	23. 50. 34.733	79.36	3	...	+ 3.0501	+0.0133	...	68. 1. 10.96	79.36	3	...	-20.037	-0.010	...	...	...
4026	B. D. + 20° No. 5401	9.3*	23. 50. 48.782	86.75	5	...	+ 3.0523	+0.0124	...	69. 32. 0.29	86.76	4	...	-20.038	-0.009	...	...	...
4027	Piazzi XXIII. 236...	7.5*	23. 50. 53.212	85.26	3	2	+ 2.9961	+0.0422	...	34. 49. 38.98	85.17	3	2	-20.039	-0.009	...	...	...
4028	Groombridge 4172...	6.0	23. 50. 58.578	84.71	3	...	+ 3.0250	+0.0274	...	48. 0. 35.00	84.71	3	...	-20.039	-0.009	...	...	...
4029	Bradley 3185	5.5	23. 51. 5.926	84.53	3	4	+ 2.9981	+0.0421	-0.0014	34. 57. 44.11	84.61	2	4	-20.039	-0.008	+0.025	3185	8322
4030	84 Pegasi	4.6	23. 51. 38.677	78.96	5	...	+ 3.0501	+0.0148	-0.0043	65. 31. 32.62	80.00	12	...	-20.041	-0.008	+0.024	3186	8324
4031	Cassiopeie	R. Var.	23. 52. 19.133	86.30	2	...	+ 3.0175	+0.0367	...	39. 16. 47.42	86.30	2	...	-20.043	-0.006	...	...	...
4032	W. B. (2) XXIII. 1073	6.3	23. 52. 42.199	84.09	3	...	+ 3.0460	+0.0196	...	58. 17. 10.53	84.28	2	...	-20.044	-0.006	...	...	...
4033	8 Cassiopeie (1st Star)	7.5†	23. 52. 55.595	82.84	1	...	+ 3.0132	+0.0427	-0.0012	34. 54. 43.83	82.83	2	...	-20.045	-0.005	+0.015	...	...
4034	8 Cassiopeie	5.0	23. 52. 55.687	81.73	...	4	+ 3.0132	+0.0427	-0.0012	34. 54. 47.50	81.73	...	4	-20.045	-0.005	+0.015	3190	8330
4035	8 Cassiopeie (2nd Star)	5.4†	23. 52. 55.776	83.54	3	...	+ 3.0132	+0.0427	-0.0012	34. 54. 46.36	83.54	3	...	-20.045	-0.005	+0.015	...	...
4036	28 Piscium	4.2	23. 53. 8.933	82.02	47	...	+ 3.0680	+0.0047	+0.0087	83. 48. 4.20	81.88	38	...	-20.045	-0.005	+0.108	3191	8331
4037	Lalande 47034 (S. Star)	6.0†	23. 53. 22.640	80.83	1	...	+ 3.0472	+0.0206	...	56. 56. 29.12	79.76	2	...	-20.046	-0.004	...	...	...
4038	Lalande 47031 (Mean.)	5.8	23. 53. 22.657	79.72	2	...	+ 3.0472	+0.0206	...	56. 56. 27.74	80.75	1	...	-20.046	-0.004	...	...	...
4039	Lalande 47034 (N. Star)	6.0†	23. 53. 22.770	80.83	1	...	+ 3.0472	+0.0206	...	56. 56. 25.82	79.76	2	...	-20.046	-0.004	...	...	...
4040	W. B. (2) XXIII. 1096	7.5*	23. 53. 34.896	86.80	4	...	+ 3.0582	+0.0127	...	69. 22. 37.89	86.81	3	...	-20.046	-0.004	...	...	...

4014. Authority for Proper Motion: Bonn Observations, Vol. VII.

4033, 4035. The magnitudes are taken from Struve's *Mensura Micrometrica*.4031. The limits of magnitude are 4.8 — 7.0 and 9.8 — 12; the period 429^d.4037, 4039. The magnitudes are taken from Struve's *Mensura Micrometrica*.

{civ }

TEN-YEAR CATALOGUE OF STARS FOR 1880-0.

No.	Star's Name.	Magnitude.	Mean R.A., 1880 0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880'0.	Secular Vari- ation, 1880'0.	Annual Proper Motion, 1800'0.	Mean N.P.D., 1880'0.	Mean Date, 1800 +	No. of Obs.		Annual Preces- sion, 1880'0.	Secular Vari- ation, 1880'0.	Annual Proper Motion, 1800'0.	No. in Auwers' Bradley, 1755.	No. in B.A.C. 1850.
					Above Pole.	Below Pole.						Above Pole.	Below Pole.					
			h m s				s	s	s	° ' "				"	"	"		
4041	W. B. XXIII. 1069..	6'9	23. 53. 37'596	84'38	3	...	+ 3'0729	+0'0011	...	90. 56. 52'37	84'22	2	...	-20'047	-0'004	...	...	...
4042	Bradley 3194.....	8'0*	23. 53. 53'124	86'61	3	2	+ 2'5557	+0'2880	+0'0219	3. 57. 42'06	85'32	6	4	-20'047	-0'001	+0'03	3194	8336
4043	Groombridge 4194..	6'1	23. 54. 36'294	80'16	3	...	+ 3'0412	+0'0304	...	45. 24. 53'74	80'16	3	...	-20'049	-0'002	...	...	...
4044	Bradley 3195	5'7	23. 55. 30'091	82'99	3	3	+ 3'0258	+0'0530	+0'002	29. 26. 43'77	81'76	15	6	-20'050	0'000	+0'012	3195	8344
4045	Groombridge 4199..	6'1	23. 55. 35'813	84'82	3	...	+ 3'0494	+0'0279	...	48. 18. 3'93	84'82	3	...	-20'051	0'000	...	...	8345
4046	29 Piscium	5'1	23. 55. 40'426	86'84	4	...	+ 3'0739	-0'0003	-0'0002	93. 41. 44'74	86'84	4	...	-20'051	0'000	+0'002	3196	8346
4047	85 Pegasi.....	5'8	23. 55. 54'214	82'09	3	...	+ 3'0604	+0'0164	+0'0622	63. 33. 12'10	81'30	4	...	-20'051	+0'001	+0'080	3198	8350
4048	Sculptoris	5'0	23. 56. 10'528	86'78	3	...	+ 3'0554	+0'0161	...	120. 23. 21'93	86'78	3	...	-20'052	+0'001	...	...	8352
4049	32 Piscium	6'0	23. 56. 21'704	82'78	5	...	+ 3'0694	+0'0058	-0'0057	82. 10. 52'96	82'78	5	...	-20'052	+0'001	+0'027	3201	8354
4050	Bradley 3202.....	6'3*	23. 56. 27'728	80'04	3	3	+ 3'0272	+0'0654	-0'001	24. 34. 9'27	81'54	3	7	-20'052	+0'002	+0'034	3202	8355
4051	Oeltz, Arg. (N.) 26322	8'5*	23. 56. 30'030	79'80	3	2	+ 3'0276	+0'0654	-0'001	24. 34. 4'08	80'12	3	3	-20'052	+0'002	+0'034	...	...
4052	Piazzi XXIII. 263 ..	6'6	23. 57. 3'925	79'03	3	...	+ 3'0671	+0'0108	...	73. 6. 51'89	79'03	3	...	-20'053	+0'003	...	...	...
4053	2 Ceti	4'6	23. 57. 35'464	82'71	28	...	+ 3'0769	-0'0080	-0'0001	108. 0. 15'01	82'76	20	...	-20'053	+0'004	-0'005	3204	8358
4054	B. F. 3291	5'8	23. 58. 10'880	86'87	3	...	+ 3'0756	-0'0075	...	107. 11. 44'04	86'87	3	...	-20'054	+0'005	...	...	8360
4055	3 Ceti	5'2	23. 58. 21'566	83'90	3	...	+ 3'0742	-0'0041	-0'0039	101. 10. 39'76	84'64	5	...	-20'054	+0'005	+0'008	3206	8361
4056	W. B. (2) XXIII. 1239	5'9	23. 58. 26'939	85'92	2	...	+ 3'0643	+0'0281	...	48. 34. 31'37	85'92	2	...	-20'054	+0'006	...	...	...
4057	Groombridge 4220..	5'8	23. 58. 28'722	85'52	3	3	+ 3'0520	+0'0696	...	23. 30. 9'01	85'07	5	4	-20'054	+0'006	...	...	...
4058	Bradley 3207.....	6'5*	23. 58. 44'031	85'20	3	3	+ 3'0605	+0'0490	0'000	32. 8. 9'39	85'10	3	3	-20'054	+0'006	+0'041	3207	8364
4059	86 Pegasi.....	5'8	23. 59. 32'410	80'81	3	...	+ 3'0717	+0'0086	+0'0011	77. 16. 18'31	80'10	4	...	-20'054	+0'008	-0'003	3209	8370