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Results of Observations made with the
Reversible Meridian Circle
1950-1953

Catalogue of 812 Stars

Corrections to 347 FK3 Stars

BY

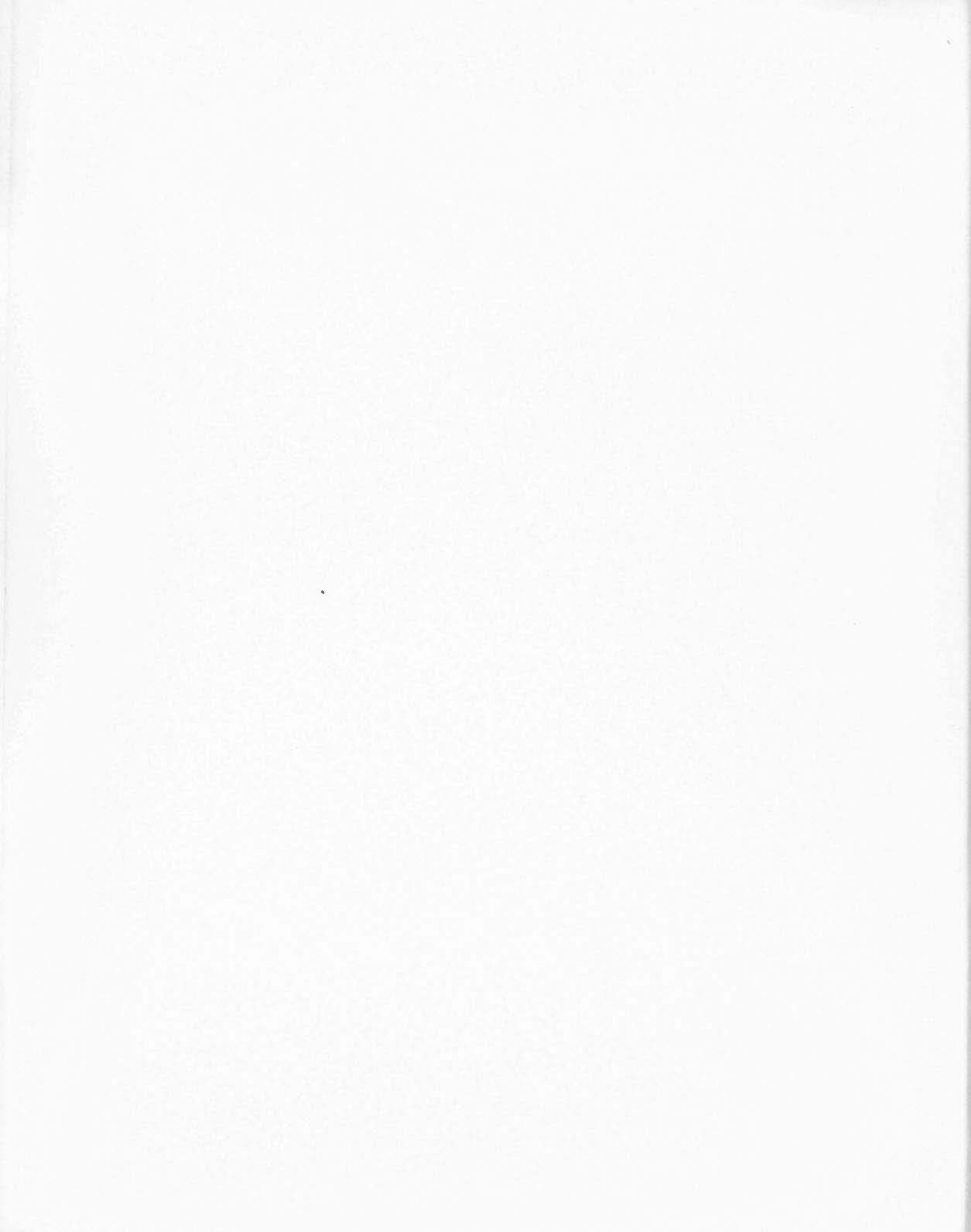
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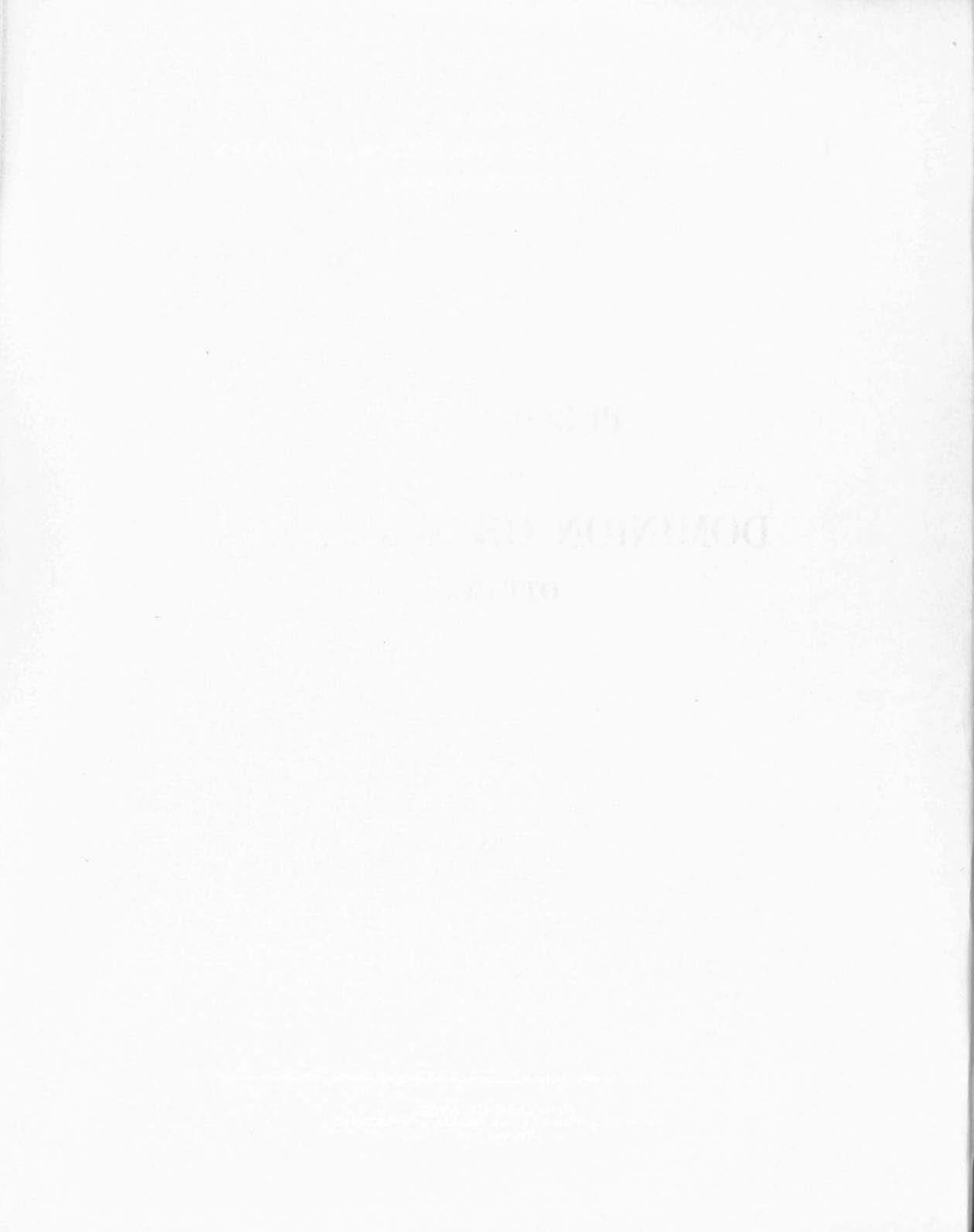
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Results of Observations with the Reversible Meridian Circle
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ABSTRACT

This publication contains the results of observations made with the Ottawa Meridian Circle from July 1950 to December 1953. The observing program comprised 639 stars required for the photographic zenith telescopes at Ottawa, Herstmonceux, England, and Richmond, Florida, U.S.A., and 173 additional stars; 72 from the Pleiades and Perseus groups and 101 B type stars from a list suggested by Dr. J. H. Oort. The final positions were obtained differentially from observations taken at the same time on 347 FK3 stars considered as fundamentals.

The internal probable error of the places is under $^{\circ}.20$; the attachment to FK3 is shown. New proper motions are given for the stars of the Ottawa zenith list.

INTRODUCTION

This short differential program, carried out under the general supervision of W. S. McClenahan, was undertaken in 1950 to provide improved positions in the FK3 system of stars suitable for use by the photographic zenith telescopes of Ottawa, Greenwich and Richmond. It was intended to familiarize new staff members with meridian circle work and leave time to devote to the publication of previous observations.

Photographic zenith telescopes determine relative star positions with great accuracy, but the attachment to the FK3 system is dependent on concurrent meridian circle observations, particularly of the fainter stars with poor observational histories. The three zenith lists were to be observed at Ottawa, Washington and Greenwich for this purpose.

The results of more than 360 nights of observing during three and one-half years were retained. Distribution of the observations was as follows:

9960 observations on 347 FK3 stars	
3639	“ 285 Ottawa zenith stars
1038	“ 105 Richmond zenith stars
2341	“ 249 Herstmonceux zenith stars
1469	“ 173 miscellaneous stars
—	—
18447	1159 stars
—	—

The miscellaneous stars added to round out the program included 72 members of the Pleiades and Perseus groups from lists of the Dominion Astrophysical Observatory, and 101 B type stars from a list supplied by J. H. Oort of Leiden.

The observers were:

E. G. Woolsey.....	from July 1950 to December 1953
R. W. Tanner.....	from July 1950 to December 1953
R. A. Jenkins.....	from July 1950 to October 1951
R. F. Rodgers.....	from July 1952 to September 1952
Ian Halliday.....	from November 1952 to December 1953

They were assisted in the reductions by E. C. Arbogast, Miss Olga Boshko, Mrs. B. Crawford and a number of summer assistants.

The probable error of a single observation as determined by examination of the residuals for the program stars in the three PZT zones were as follows:

Herstmonceux.....	R.A. $\pm^{\circ}028$ or $\pm'27$	Dec $\pm''33$
Ottawa.....	$\pm.022$ or $\pm.24$	Dec $\pm.32$
Richmond, Florida.....	$\pm.020$ or $\pm.27$	Dec $\pm.32$

INSTRUMENTAL EQUIPMENT

Some changes have been made in the instrumental equipment described in earlier numbers of these publications. Photographic registration of the divided circles, as reported in our Contributions, Vol. 2 No. 10, was in use throughout the program. The field illumination was reddened to aid in the observation of the fainter stars. The printing chronograph has been converted to a synchronous motor drive on crystal-controlled frequency, and served as observing clock with small nearly constant rate. Hourly comparisons of the chronograph were made; at first with the slave of Shortt 29, later with a mechanical sidereal converter controlled by a second mean time crystal.

These improved arrangements led to the determination of a relative personal equation in the clock correction as deduced by:

Woolsey—Tanner.....	$^{\circ}003$
Woolsey—Halliday.....	$-^{\circ}021$

This is in part a reflection of a difference in the collimation constant as read by:

Woolsey—Tanner.....	$^{\circ}003$
Woolsey—Halliday.....	$^{\circ}009$

No correction for these differences was applied to the right ascensions. Absolute personal equation was measured by observing transits of an artificial star located on the south azimuth mark pier and driven at uniform speeds corresponding to the speed of stars at declinations approximately 20° , 50° and 75° . Contacts in the personal equation machine were recorded on the chronograph together with the contacts of the impersonal micrometer of the telescope. Results are shown in Table I. No corrections for these errors were made to the star observations.

The errors of the declination micrometer have been redetermined with no significant changes from the values given in Vol. XV No. 1 of these publications; the table there given was recast for greater convenience in use. The value of one revolution of the right ascension micrometer screw was remeasured as $3^{\circ}225$, the difference from the previous value of $3^{\circ}22$ being negligible in application.

A series of experiments with a zenithal mirror failed to give any decisive measure of lateral flexure, as did several nights' observations of transits by reflexion.

The objective and eye ends remained in the position of the 1935-50 program. The relative errors of pairs of circle divisions at right angles as given by camera readings agreed with the tables in Vol. XV No. 1, and these were used.

OBSERVING PLAN

It was hoped to secure three or more observations on each program star in each clamp together with as many observations as possible of the FK3 reference stars. These comprised 24 azimuth stars between 80° and the pole; another 28 azimuth stars between 75° and 80° , and 295 stars between 17° and 65° , mainly in 10° zones centred on the three zeniths concerned.

An average night's work, covering a little more than four hours of right ascensions, included four azimuth stars, one at upper, one at lower culmination from each class, a score of clock stars in the zones observed and as many program stars. Collimations, azimuth marks, level and nadir points were read before and after the star observations, and level and nadir readings were repeated at two-hour intervals during the observations.

Barometer, barograph, external thermometer and thermograph and the observing room thermograph were read before and after observing. Thermometer readings at the instrument were taken several times per hour.

Clamp was changed on the first day of each month except December and each month at this time the mean of contacts and contact strip width were determined. The brighter stars were screened down to sixth magnitude and a reversing prism was used in all observations.

Observations of FK3 stars were retained for positions when at least 7 clock stars, two azimuth stars at different culminations and readings of both marks were secured. Program stars were retained when observed with at least 5 clock stars in the zone.

REDUCTION OF OBSERVATIONS

RIGHT ASCENSIONS

All observations were corrected for chronograph rate, pivot error, collimation, diurnal aberration and contact width, as described in Vol. XV No. 3. Using the apparent places (including short-period terms) of the fundamental stars as given in annual publications, a preliminary value of the n in Bessel's formula was found from comparison of the azimuth stars with the mean of the clock stars. Using the level given by autocollimation over mercury, preliminary values of Bessel's m and the azimuth a were determined. A mean azimuth of the marks for the month was found from all observations of polars during the period; then the azimuth of the telescope as deduced from the marks was given a weight approximately equal to that of four polars in combining it with the azimuth from the stars on the individual night to reach an improved azimuth a_0 . Final values of m_0 , n_0 were then calculated with which the subsequent reductions to apparent place of all stars was made.

The standard deviation, σ , of the residuals, observation - FK3 in right ascension was calculated for each night. Nights on which it exceeded $^{\circ}050$ were excluded.

When, as was usually the case, more than one zone was observed, the time stars were divided into corresponding groups, and corrections added to the apparent places of the program stars to refer them to the FK3 stars of the zone. Thus the Richmond stars were referred to 116 FK3 stars

between 20° and 30° , the Ottawa stars to 102 FK3 stars 40° to 50° , and the Greenwich stars to a list submitted by Greenwich of 95 FK3 stars between 42° and 59° , half of these stars being common to the Ottawa zone. The miscellaneous stars were referred to the mean of all FK3 stars observed.

Tables II and III exhibit the clamp differences in right ascension for the FK3 stars. The weights subjoined are given by $mn/(m + n)$ where there are m observations in one clamp and n in the other. Departures from the expected value of zero are small enough to be regarded as accidental. No correction for clamp was applied, the number of observations in each clamp being approximately equal.

Tables IV and V show the differences in right ascension with culmination, and weights dependent on m and n as before. The variation with declination appears to be accidental; that with right ascension possibly signifies a seasonal error in azimuth, which should however be of little effect in the places of the program stars. No correction was applied for the difference, and catalogue positions of the FK3 azimuth stars result from the combination of approximately equal numbers of upper and lower culminations.

Tables VI and VII show the attachment to FK3. The subscripts are the number of stars compared.

DECLINATIONS

All observations were corrected for refraction, division error, reduction to the meridian and inclination of the wires where necessary. No correction for run was required. In almost all cases the mean of three or more nadir pointings was taken to determine apparent zenith distance. Small and discordant values for horizontal flexure were measured with the collimators; no correction for flexure was applied. The refraction table of Vol. XV No. 2 (essentially Bessel's) was used; the auxiliary tables have been adapted to desk calculator from their logarithmic form.

A constant value of $45^\circ 23' 39''$ was first assumed for the latitude. The resulting apparent places of the FK3 time stars were compared with FK3, and a $\Delta\varphi$ assumed such as to make the residuals 0-FK3 in declination vanish in the average for the night thus allowing for the variation of latitude. Where the standard deviation σ exceeded $''60$ (for all the FK3 stars) the night was excluded.

The declinations of the program stars were thus referred to the mean of all the FK3 time stars observed on the night.

Tables VIII and IX show the clamp differences in declination for the FK3 stars, with weights dependent on the numbers of observations in each clamp. The departures from zero values are small and accidental.

Tables X and XI show differences with culmination. Since the latitude used in the reduction was derived from the stars 20° - 60° , the mean value $''16$ of the difference represents the combined effect of refraction errors, flexure, or a $\Delta\delta$, in the reference stars. Observations at both culminations were combined without corrections.

Table XII shows the attachment to FK3. The subscripts are the number of stars compared.

REDUCTION TO MEAN PLACE

The reduction to 1950.0 without proper motion for each year's observations was done at the Computing Centre of the University of Toronto. Values of the star constants and the Besselian day numbers in punched card form were supplied by the kindness of the U.S. Naval Observatory. The reduction for the FK3 stars was done also as a check.

Discrepancies exceeding about three times the standard deviations mentioned were re-examined, and generally the observations were rejected if they could not be corrected. No significant differences by clamp or observer were found, and the mean places and epochs of the catalogue were then formed.

A comparison of about 145 stars of the Ottawa zenith list with PZT places, whose accidental errors should be negligibly small in comparison, gave the following dependence of the differences on the number of meridian circle observations:

No. M.C. Obs.	Mean $\Delta\alpha$ (".01)	No. of Stars	Mean $\Delta\delta$ (".01)	No. of Stars
4 - 8	17	24	19	41
9 - 15	13	65	18	59
16 - 24	12	39	17	31
25 up	11	17	12	14

The magnitude equation indicated by (PZT-Meridian Circle) is given as follows:

Visual Mag.	$\Delta\alpha$ (PZT-MC)	No. of Stars	$\Delta\delta$ (PZT-MC)
4.2 - 5.9	+ .011	10	+ ".03
6.0 - 6.9	+ .001	27	- .05
7.0 - 7.9	- .001	66	- .05
8.0 - 9.2	+ .002	42	- .02

PROPER MOTIONS OF OTTAWA ZENITH LIST

The Ottawa PZT observed 263 of these stars in 1954, and a comparison of MC with PZT indicated a satisfactory attachment of the latter to the FK3 system. The zenith telescope positions have an accidental probable error of about ".05, and were accepted as definitive, where available, for finding the proper motions.

Eleven catalogues from the AGK to AGK2 were consulted for earlier places of the Ottawa stars. After reduction to FK3 where necessary and 1950 equinox, a least squares solution for proper motions only was carried out, using Boss' system of weights.

Weights of the resulting proper motions vary greatly; the probable error of the centennial motion corresponding to the modal weight is ".25. This value is confirmed by comparisons with the modern catalogues. The proper motions while not definitive are a considerable improvement over previously available values, and should meet the needs of the PZT for ten years or so.

OTTAWA MERIDIAN RESULTS

TABLE I
PERSONAL EQUATION MACHINE

Observer	Personal Equation		
	Fast	Medium	Slow
Woolsey	- ^s .020	- ^s .005	+ ^s .030
Tanner	-.011	-.001	-.021
Jenkins	+.016	-.020	+.041
Rodgers	-.017	—	—
Halliday	-.020	-.002	+.033

TABLE II
CLAMP DIFFERENCES IN RIGHT ASCENSION
Time Stars (Cl. West - Cl. East)

Decl.	$\Delta\alpha$ (Cl. West - Cl. East)								
	0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h	Mean
60° to 65°	- ^s .011 ₁₄	- ^s .010 ₄							- ^s .011 ₁₈
55° to 60°	-.009 ₂₂	+.007 ₁₇	+ ^s .001 ₁₈	- ^s .013 ₁₃	- ^s .010 ₂₃	+ ^s .006 ₁₆	+ ^s .007 ₂	+ ^s .004 ₂₈	-.002 ₁₄₈
50° to 55° .....	.000 ₄₂	+.020 ₁₇	+.013 ₁₉	.000 ₂₀	.000 ₁₈	-.017 ₂₁	+.005 ₄₅	+.002 ₂₁	+.003 ₂₂₄
45° to 50° .....	.000 ₇₈	+.001 ₇₁	-.003 ₄₅	+.004 ₂₀	+.001 ₂₂	-.003 ₁₉	-.003 ₄₈	-.004 ₆₇	-.001 ₄₃₃
40° to 45°	-.014 ₂₁	-.001 ₂₄	-.005 ₂₀	-.001 ₄₅	+.012 ₂₄	+.002 ₄₄	-.003 ₄₄	-.012 ₂₄	-.002 ₂₀₈
35° to 40°	+.016 ₃	-.008 ₁₇							-.005 ₂₀
30° to 35°	-.001 ₂	+.001 ₉							.000 ₅
25° to 30°	-.004 ₅₁	+.013 ₄₅	+.006 ₄₂	.000 ₂₄	+.004 ₄₆	-.007 ₄₉	+.001 ₇₉	+.003 ₄₉	+.002 ₂₂₅
20° to 25°	+.004 ₄₁	-.004 ₂₉	+.001 ₂₉	-.001 ₂₉	+.007 ₁₃	-.004 ₂₀	-.005 ₄₄	.000 ₁₈	.000 ₂₁₃
15° to 20°		-.014 ₁₇							-.014 ₁₇
Mean	-.002 ₂₂₂	+.002 ₂₄₄	+.001 ₁₈₄	.000 ₁₇₁	+.004 ₁₂₅	-.003 ₂₂₉	.000 ₂₂₂	-.002 ₂₇₇	.000 ₁₂₃₄

TABLE III
CLAMP DIFFERENCES IN RIGHT ASCENSION
AZIMUTH STARS (Cl. West - Cl. East) $\cos \delta$

Decl.	$\Delta\alpha$ (Cl. West - Cl. East) $\cos \delta$								
	0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h	Mean
Lower									
75° to 80°	+ ^s .006 ₁₁	- ^s .006 ₁₂	+ ^s .008 ₁₈	+ ^s .004 ₂₃	+ ^s .004 ₂₂	- ^s .009 ₁₆	+ ^s .012 ₁₂	^s .000 ₁₉	+ ^s .002 ₁₁₄
80° to 90°	+.014 ₂	-.014 ₁₄	+.010 ₁₄	+.016 ₂₄	.000 ₂₅	+.006 ₁₉	+.004 ₁₉	-.004 ₁₂	+.004 ₁₁₉
Upper									
80° to 90°	+.003 ₁₂	+.003 ₁₄	-.009 ₄	-.005 ₁₇	-.005 ₁₄	-.004 ₂	+.006 ₁₂	+.007 ₂₁	.000 ₁₁₈
75° to 80°	+.010 ₂₂	+.017 ₁₈	.000 ₁₉	-.008 ₅	-.003 ₁₇	-.008 ₂₀	+.006 ₁₂	+.007 ₁₂	+.004 ₁₂₂
Mean	+.008 ₁₃	+.001 ₆₂	+.005 ₄₈	+.005 ₅₄	.000 ₇₈	-.005 ₂₅	+.007 ₆₇	+.004 ₄₈	+.002 ₆₇₂

TABLE IV
DIFFERENCES IN RIGHT ASCENSION ABOVE AND BELOW POLE
By Declination

B.D. No.	FK3 No.	Decl.	$\Delta\alpha(U-L)\cos\delta$	No. of Obs.		Wt.
				U.	L.	
87° 51	Nd	87° 7'	-.029	7	14	5
86° 269	Nh	86 36	-.018	9	11	5
85° 19	Na	85 59	+.004	32	25	14
86° 161	N η	85 54	+.001	13	21	8
85° 74	N γ	85 53	+.004	9	11	5
85° 383	N ξ	85 51	+.012	58	18	14
86° 176	N θ	85 51	+.004	17	29	11
85° 63	Nc	85 25	+.006	18	13	8
85° 80	N δ	85 10	-.004	9	13	6
84° 59	N β	84 44	-.008	21	21	10
84° 451	N ν	84 31	+.002	24	7	5
84° 196	N ζ	84 23	+.004	11	15	6
84° 169	N ϵ	84 12	-.009	10	44	8
83° 640	No	84 4	+.017	24	13	8
82° 51	N α	83 19	+.008	18	10	6
83° 536	N μ	83 8	+.002	27	21	12
83° 453	N λ	83 6	+.027	11	6	4
83° 397	N ι	83 0	-.003	23	44	15
82° 743	N π	82 54	-.003	44	20	14
83° 297	N ϕ	82 48	-.001	27	41	16
83° 431	N κ	82 43	+.018	15	38	11
81° 718	Nk	82 20	+.021	24	17	10
82° 498	Ng	82 7	+.002	18	23	10
81° 302	Ne	81 33	-.011	19	24	11
79° 212	248	79 37	-.015	14	48	11
79° 628	734	79 30	+.009	17	16	8
78° 34	41	79 24	+.008	32	28	15
78° 103	105	79 13	-.022	58	18	14
79° 169	191	79 10	-.002	12	16	7
78° 801	1593	78 34	+.016	8	11	5
78° 367	413	78 2	-.012	10	19	7
78° 527	590	77 56	+.010	21	7	5
77° 800	795	77 55	+.009	20	7	5
78° 412	454	77 53	-.003	16	22	9
78° 478	524	77 46	-.011	12	18	7
77° 764	759	77 33	+.008	27	12	8
77° 115	115	77 33	-.004	19	18	9
77° 627	623	77 32	+.009	10	16	6
77° 699	700	77 30	+.006	12	13	6
76° 928	893	77 21	-.018	14	13	7
77° 461	451	77 11	-.018	19	19	10
77° 266	260	77 2	-.004	13	16	7
76° 667	675	76 58	+.013	21	8	6
76° 594	606	76 0	-.012	24	27	13
76° 393	395	75 58	+.016	9	16	6
75° 836	1594	75 58	-.008	9	13	5
76° 527	1379	75 55	000	24	28	13
76° 310	310	75 54	+.002	16	12	7
76° 596	612	75 52	+.034	9	8	4
75° 189	173	75 51	+.003	23	30	13
75° 682	1494	75 22	+.016	21	9	6
74° 252	205	75 0	-.021	20	12	8

OTTAWA MERIDIAN RESULTS

TABLE V
DIFFERENCES IN RIGHT ASCENSION ABOVE AND BELOW POLE
By Right Ascension

R.A.	Wt.	$\Delta\alpha(U-L)\cos\delta$
0 ^h to 3 ^h .	52	- ^s .001
3 ^h to 6 ^h	62	- .003
6 ^h to 9 ^h	38	- .010
9 ^h to 12 ^h	54	- .002
12 ^h to 15 ^h	75	- .001
15 ^h to 18 ^h	53	+ .004
18 ^h to 21 ^h	56	+ .010
21 ^h to 24 ^h	57	+ .004

TABLE VI
DIFFERENCES IN RIGHT ASCENSION (O-FK3)

Dec.	$\Delta\alpha_{\delta}$	$\Delta\alpha_{\alpha}$							
		0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h
75°L to 80°L.....	+ ^s .007 ₂₈	+ ^s .071 ₂	+ ^s .003 ₄	+ ^s .034 ₃	+ ^s .037 ₂	+ ^s .023 ₄	- ^s .049 ₅	- ^s .065 ₄	+ ^s .021 ₄
80 L to 85 L.....	- .129 ₁₅	- .237 ₁	- .267 ₁	+ .107 ₁	+ .084 ₂	- .084 ₂	+ .015 ₂	+ .030 ₂	+ .098 ₂
85 L to 90.....	- .314 ₉	- .154 ₁	+ .014 ₂	- .163 ₁	+ .156 ₁	- .084 ₁	+ .392 ₁	.....	- .187 ₁
90 to 85.....	- .373 ₉	- .037 ₁	+ .105 ₂	- .684 ₁	+ .230 ₁	+ .025 ₁	+ .107 ₁	.....	+ .042 ₁
85 to 80.....	- .090 ₁₅	- .176 ₁	- .390 ₁	- .020 ₁	+ .031 ₂	- .062 ₂	+ .097 ₁	+ .056 ₂	+ .130 ₂
80 to 75.....	+ .008 ₂₈	+ .033 ₂	- .023 ₄	+ .004 ₂	+ .040 ₂	- .013 ₄	- .003 ₅	- .022 ₄	+ .023 ₄
65 to 60.....	+ .010 ₆	+ .017 ₄	- .033 ₂						
60 to 55.....	- .006 ₂₉	- .004 ₄	- .009 ₂	+ .015 ₄	+ .014 ₂	+ .008 ₄	- .010 ₂	- .014 ₁	- .003 ₅
55 to 50.....	+ .002 ₂₃	+ .007 ₇	- .019 ₄	+ .018 ₂	+ .015 ₄	- .013 ₂	+ .009 ₄	- .009 ₂	- .001 ₂
50 to 45.....	- .007 ₁₀	+ .008 ₇	- .002 ₂	+ .007 ₇	+ .009 ₂	- .009 ₂	- .006 ₇	+ .003 ₄	- .007 ₂
45 to 40.....	- .002 ₂₂	- .001 ₄	- .008 ₂	- .006 ₇	+ .003 ₇	+ .005 ₇	+ .008 ₂	+ .005 ₂	- .003 ₅
40 to 35.....	- .013 ₂	- .006 ₁	+ .002 ₄						
35 to 30.....	- .018 ₂	+ .022 ₁	- .022 ₁						
30 to 25.....	+ .003 ₂₁	+ .005 ₂	- .006 ₇	- .005 ₁₀	- .006 ₄	- .001 ₂	+ .002 ₂	+ .005 ₂	+ .002 ₂
25 to 20.....	+ .005 ₁₆	+ .004 ₇	- .007 ₂	- .007 ₂	+ .002 ₂	+ .010 ₄	+ .007 ₂	+ .001 ₂	+ .001 ₂
20 to 15.....	+ .006 ₂	.....	000 ₂						

TABLE VII
DIFFERENCES IN RIGHT ASCENSION (O-FK3)

Dec.	$\Delta\alpha_{\delta} \cos\delta$	$\Delta\alpha_{\alpha} \cos\delta$							
		0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h
Over 80°.....	- ^s .017 ₂₄	- ^s .015 ₂	- ^s .009 ₄	- ^s .007 ₂	+ ^s .009 ₄	- ^s .008 ₂	+ ^s .013 ₂	+ ^s .011 ₂	- ^s .002 ₂
75° to 80°.....	+ .002 ₂₈	+ .006 ₂	- .003 ₄	+ .006 ₂	+ .008 ₂	+ .001 ₄	- .005 ₂	- .007 ₄	+ .005 ₄

TABLE VIII
CLAMP DIFFERENCES IN DECLINATION
Time Stars (Cl. West - Cl. East)

Dec.	$\Delta \delta$ (Cl. West - Cl. East)								
	0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h	Mean
60° to 65°.....	-.2612	+.154							-.1716
55° to 60°.....	-.0230	+.0815	+.0816	+.0220	+.0121	+.1223	+.391	-.0523	+.03147
50° to 55°.....	-.0245	-.1315	.003	+.2212	-.0216	+.2013	+.0656	-.0918	+.02183
45° to 50°.....	+.0455	+.0161	+.0843	-.1033	.0031	.0060	-.0442	-.1159	-.01333
40° to 45°.....	-.0328	+.0130	-.0731	-.0743	-.0853	-.0563	+.0650	+.0947	-.02343
35° to 40°.....	-.102	+.0717							+.0519
30° to 35°.....	-.152	+.522							+.174
25° to 30°.....	+.3245	.0042	-.0739	+.1821	+.1045	+.0943	+.0470	.0040	+.06350
20° to 25°.....	-.1349	-.0934	-.0937	-.1237	+.1713	+.0523	-.0139	-.0561	-.06377
15° to 20°.....		+.0215							+.0215
Mean.....	+.02376	.00235	-.02173	-.02161	+.01173	+.03239	+.03255	-.03237	.001767

TABLE IX
CLAMP DIFFERENCES IN DECLINATION
AZIMUTH STARS (Cl. West - Cl. East)

Dec.	$\Delta \delta$ (Cl. West - Cl. East)								
	0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h	Mean
75° to 80°.....	-.1111	-.2016	+.0415	+.487	-.2418	-.2713	-.4910	+.0710	-.12100
80° to 90°.....	+.193	-.3813	+.0112	-.1321	+.3125	-.469	+.2210	.0013	-.01110
Upper									
80° to 90°.....	+.0912	+.0912	+.064	+.0816	-.1113	-.059	+.1817	.0038	+.04111
75° to 80°.....	-.2719	-.0616	+.249	-.305	-.0417	+.1820	+.0714	-.2311	-.03111
Mean.....	-.0750	-.1427	+.0840	-.0149	+.0273	-.0961	+.0361	-.0361	-.03433

TABLE X
DIFFERENCES IN DECLINATION ABOVE AND BELOW POLE
By Right Ascension

Dec.	$\Delta \delta$ (Upper-Lower)								
	0 ^h to 3 ^h	3 ^h to 6 ^h	6 ^h to 9 ^h	9 ^h to 12 ^h	12 ^h to 15 ^h	15 ^h to 18 ^h	18 ^h to 21 ^h	21 ^h to 24 ^h	Mean
80° to 90°.....	-.1820	+.2127	+.0112	+.2937	+.1236	+.1419	-.0225	+.1634	+.12210
75° to 80°.....	-.0527	+.3534	+.1223	+.3512	+.2635	+.2031	+.2624	+.0620	+.20206
Mean.....	-.1147	+.2961	+.0835	+.3049	+.1971	+.1850	+.1249	+.1254	+.16416

OTTAWA MERIDIAN RESULTS

TABLE XI

DIFFERENCES IN DECLINATION ABOVE AND BELOW POLE

By Declination

B.D. No.	FK3 No.	Decl.	$\Delta\delta(U-L)$	No. of Obs.		Wt.
				U.	L.	
87° 51	Nd	87° 7'	+''24	7	13	5
86° 269	Nh	86 36	-.09	8	11	5
85° 19	Na	85 59	-.08	32	25	14
86° 161	Nη	85 54	+.04	13	18	8
85° 74	Nγ	85 53	+.30	8	13	5
85° 383	Nξ	85 51	+.39	50	17	13
86° 176	Nθ	85 51	+.24	18	29	11
85° 63	Nc	85 25	+.40	16	14	8
85° 80	Nδ	85 10	+.54	7	13	5
84° 59	Nβ	84 44	-.13	19	21	10
84° 451	Nν	84 31	-.09	23	6	5
84° 196	Nζ	84 23	+.23	10	14	6
84° 169	Nε	84 12	-.13	10	37	8
83° 640	No	84 4	+.01	22	13	8
82° 51	Nα	83 19	-.41	17	9	6
83° 536	Nμ	83 8	-.02	26	20	11
83° 453	Nλ	83 6	-.09	12	6	4
83° 397	Nι	83 0	+.13	21	37	13
82° 743	Nπ	82 54	+.03	39	19	13
83° 297	Nφ	82 48	+.39	26	34	15
83° 431	Nκ	82 43	.00	16	37	11
81° 718	Nk	82 20	+.02	20	17	9
82° 498	Ng	82 7	+.33	20	20	10
81° 302	Ne	81 33	+.38	17	21	9
79° 212	248	79 37	+.13	14	42	10
79° 628	734	79 30	+.01	15	13	7
78° 34	41	79 24	.00	26	27	13
78° 103	105	79 13	-.10	15	19	14
79° 169	191	79 10	+.88	9	14	6
78° 801	1593	78 34	+.33	7	11	4
78° 367	413	78 2	+.13	10	17	6
78° 527	590	77 56	-.43	18	5	4
77° 800	795	77 55	-.07	18	7	5
78° 412	454	77 53	+.08	18	19	9
78° 478	524	77 46	+.26	11	13	6
77° 764	759	77 33	+.39	25	12	8
77° 115	115	77 33	+.04	18	17	9
77° 627	623	77 32	+.52	10	15	6
77° 699	700	77 30	+.62	9	12	5
76° 928	893	77 21	+.27	11	13	6
77° 461	451	77 11	+.04	17	17	8
77° 266	260	77 2	.00	11	15	6
76° 667	675	76 58	+.29	20	7	5
76° 594	606	76 0	+.09	25	24	12
76° 393	395	75 58	+.60	9	14	6
75° 836	1594	75 58	-.33	9	10	5
76° 527	1379	75 55	+.57	22	22	11
76° 310	310	75 54	+.23	14	11	6
76° 596	612	75 52	+.57	9	7	4
75° 189	173	75 51	+.53	20	31	12
75° 682	1494	75 22	-.05	18	5	4
74° 252	205	75 0	+.03	17	13	7

CATALOGUE OF 812 STARS
REDUCED WITHOUT PROPER MOTION 1950.0

The catalogue is divided into four parts as follows:

- 285 Ottawa Zenith Stars.
- 105 Richmond, Florida, Zenith Stars.
- 249 Herstmonceux Zenith Stars.
- 173 Additional Stars.

The various columns give:

1. A current number within the group in order of right ascension.
2. The BD number.
3. The visual magnitude and spectral type, mostly from the Henry Draper Catalogue.
4. and 8.
The observed right ascension and declination reduced to 1950.0 without proper motion.
5. and 6. 9 and 10.
The first and second terms of the precession taken from AGK2.
7. and 11.
Centennial proper motion. For the Ottawa stars these are newly derived in the FK3 system as explained above; for the Richmond stars Washington has derived preliminary values from various catalogues reduced to FK3. For the additional stars common to GC the proper motions of that catalogue are given. No proper motions are given for the Herstmonceux stars.
- 12 and 13.
The number of observations in each coordinate. When these are equal only one is quoted.
- 14 and 15.
The mean epoch of the observations in each coordinate.
When these are equal only one is quoted.

An asterisk refers to a footnote on the same page.

PART I
CATALOGUE OF 285
OTTAWA ZENITH STARS
OBSERVED IN THE YEARS 1950 TO 1953
REDUCED WITHOUT PROPER MOTION
TO THE
EQUINOX 1950.0

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term				1st Term	2nd Term				
1	44°	4549	7.6 F8	0 ^b	2 ^m 22 ^s .575	+306.73	+ 1 ^s .62	+ 0 ^s .15	45° 23' 46 ^s .82	+2004.2	- 0 ^s .6	- 6 ^s .0	15 15	52.00	52.14	
2	44	18	8.8	8	23.741	312.31	1.68	+ 0.05	30 42.63	2002.9	1.2	+ 0.4	6 5	52.24	52.16	
3	44	50	8.0 F0	13	6.817	315.04	1.71	+ 0.15	15 59.04	2001.0	1.7	- 1.1	31 26	52.35	52.45	
4	44	51	8.4 A0	13	29.333	315.23	1.70	+ 0.02	10 29.53	2000.8	1.7	+ 0.2	10 9	51.56	51.65	
5	44	62	7.0 F5	17	53.280	317.83	1.74	+ 0.59	13 54.42	1998.2	2.2	- 0.6	42 33	52.30	52.33	
6	45	124	7.6 G5	0	29 4.370	+324.62	+ 1.86	+ 0.23	45 39 2.81	+1988.1	- 3.4	- 3.2	24 21	52.29	52.48	
7	45	128	8.5 Ma	34	53.242	327.82	1.87	+ 0.12	19 45.85	1981.1	4.1	+ 1.5	9 6	51.58	51.52	
8	45	181	7.4 K5	40	2.992	331.10	1.94	- 0.23	39 21.29	1973.7	4.6	- 0.2	14 12	51.60	51.84	
9	45	188	8.6 G6	41	34.833	331.99	1.95	- 0.46	38 46.94	1971.4	4.8	+ 3.8	6 6	51.42	51.25	
10	45	192	8.6 B9	43	4.828	332.84	1.95	- 0.13	37 21.86	1968.9	4.9	+ 0.3	7 6	51.17	51.08	
11	44	162	7.8 A3	0	43 40.235	+332.77	+ 1.93	- 0.21	45 9 13.13	+1968.0	- 5.1	+ 0.5	9 7	52.27	52.39	
12	44	186	8.8 A5	49	56.712	336.39	1.96	- 0.35	10 13.58	1956.8	5.7	- 1.7	6	51.93		
13	45	237	6.2 K0	54	49.221	339.62	2.03	+ 0.07	34 10.26	1947.2	6.3	- 0.5	21 16	52.39	52.52	
14	44	206	7.2 A3	55	26.108	339.70	2.01	- 0.21	19 39.78	1945.9	6.3	- 1.6	10 8	51.80	51.56	
15	44	215	7.0 F5	58	27.373	341.25	2.01	+ 0.96	11 0.94	1939.4	6.7	- 1.5	29 24	52.36	52.44	
16	44	252	8.7 F8	1	7 3.190	+346.52	+ 2.09	+ 0.54	45 28 53.60	+1919.1	- 7.7	- 1.5	7 8	52.53	52.67	
17	44	272	8.8 K0	14	19.677	350.40	2.11	+ 0.01	19 59.74	1899.8	8.5	- 0.3	11 8	51.90	51.91	
18	44	279	7.5 K2	16	6.742	351.57	2.13	- 0.02	26 35.53	1894.7	8.7	+ 1.8	10 11	51.59	51.79	
19	44	312	8.1 K0	25	43.160	356.79	2.17	+ 0.58	22 31.73	1865.7	9.9	+ 0.3	8 8	51.66	51.91	
20	44	326	8.7 A5	31	37.208	359.95	2.19	+ 0.17	20 24.10	1846.2	10.6	+ 1.1	11	52.01		
21	44	341	6.3 A0	1	35 30.432	+361.69	+ 2.18	- 0.16	45 8 45.62	+1832.7	-11.1	+ 0.8	14 10	52.44	52.28	
22	45	404	6.7 G5	36	32.794	363.17	2.22	+ 2.08	37 39.30	1829.1	11.3	-22.5	17 12	52.13	52.33	
23	45	464p	9.0 A0	48	35.963	369.51	2.25	- 0.03	33 49.53	1783.4	12.7	- 1.5	8	51.46		
24	44	392	8.1 A5	54	49.035	372.30	2.24	- 0.14	21 22.42	1758.0	13.4	+ 0.7	21 20	52.09	52.10	
25	45	519	8.8	59	44.837	375.18	2.26	- 0.01	29 56.48	1736.8	14.0	0.0	6	52.19		
26	45	523	8.1 A3	2	0 0.249	+375.40	+ 2.26	+ 0.04	45 32 14.81	+1735.7	-14.1	- 0.5	9 8	51.82	51.82	
27	45	554	7.7 F5	6	1.451	378.64	2.27	- 0.19	36 15.81	1708.8	14.8	+ 0.5	17 14	51.51	52.63	
28	45	583	7.5 A0	13	55.558	382.62	2.27	- 0.01	36 26.47	1671.7	15.8	- 0.6	11 10	52.46	52.50	
29	44	473	8.8 A0	19	32.476	384.50	2.24	- 0.07	16 56.87	1644.1	16.4	+ 0.4	8 5	52.92	53.02	
30	44	483	7.6 G5	21	50.208	386.00	2.25	- 0.23	25 22.50	1632.5	16.6	- 7.8	18 15	52.60	52.60	
31	44	512	7.3 G5	2	27 10.323	+387.94	+ 2.23	+ 0.05	45 12 36.37	+1605.0	-17.2	- 0.8	10 8	52.09	52.12	
32	45	624	8.6	30	13.130	390.02	2.24	- 0.07	26 6.58	1588.9	17.6	0.0	10 8	51.84	51.71	
33	44	558	8.4 F8	38	28.572	393.37	2.21	+ 0.86	16 53.91	1543.9	18.6	- 3.0	12 9	52.01	52.15	
34	44	569	8.1 F8	41	28.785	395.06	2.21	- 0.18	23 20.71	1527.0	18.9	- 4.4	6 5	51.92	51.47	
35	44	573	8.1 A0	43	1.365	395.29	2.19	- 0.03	14 29.09	1518.2	19.1	+ 0.4	18 15	52.26	52.33	
36	44	582	8.7 G5	2	46 22.396	+396.64	+ 2.18	- 0.03	45 11 51.45	+1498.9	-19.5	- 0.4	8 7	51.65	51.62	
37	45	710s	7.8 B9	3	3 24.430	405.09	2.14	+ 0.35	33 32.07	1396.0	21.5	- 4.4	13	52.90		
38	45	721	8.6 K2	8	17.935	407.07	2.11	- 0.19	33 1.58	1365.0	22.0	- 1.7	9 7	51.67	51.73	
39	44	648	6.4 Ma	12	40.012	407.45	2.04	+ 0.28	9 45.38	1336.8	22.4	- 3.0	12 10	52.45	52.44	
40	44	677	7.5 B8	18	4.382	409.70	2.02	- 0.06	12 28.92	1301.2	22.9	+ 1.0	12 11	52.43	52.49	
41	44	695	7.6 B8	3	22 11.246	+411.73	+ 2.00	- 0.01	45 20 25.60	+1273.6	-23.4	+ 0.2	13 11	52.32	52.31	
42	44	744	8.1 K2	31	35.549	414.95	1.93	- 0.13	16 59.82	1209.0	24.5	- 0.1	22 18	52.25	52.27	
43	45	811	5.6 B9	42	28.792	419.65	1.86	+ 0.21	31 36.05	1131.8	25.5	- 2.2	7 6	51.60	52.02	
44	45	828	8.1 K0	48	7.121	420.62	1.79	- 0.10	18 14.99	1090.7	26.0	+ 0.3	12 11	52.25	52.52	
45	45	836	7.9 K0	50	29.488	421.62	1.78	+ 0.03	21 53.77	1073.3	26.1	- 2.9	13 12	52.45	52.49	
46	45	858	8.6 A0	3	56 23.117	+424.23	+ 1.74	+ 0.14	45 33 25.21	+1029.4	-26.7	- 1.2	14	52.06		
47	45	868	8.8 A2	4	2 7.732	425.66	1.67	+ 0.03	29 15.82	986.0	27.2	- 1.2	6 4	52.23	52.43	
48	45	887	7.8 G5	7	34.408	426.32	1.60	+ 0.16	16 24.32	944.2	27.6	- 4.0	9 9	51.91	52.15	
49	45	921	7.6 A0	17	17.999	429.21	1.50	+ 0.22	20 46.34	868.4	28.3	- 2.8	9 7	52.21	52.67	
50	45	937	9.0	24	45.663	430.73	1.40	- 0.09	16 13.79	809.1	29.0	0.0	7 4	51.45	51.51	

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
					1st Term	2nd Term			1st Term	2nd Term				
51	45°	947	8.8	4 ^h 28 ^m 40 ^s .875	+432 ^s .53	+ 1 ^s .37	- 0 ^s .02	45° 28' 27".51	+ 777".6	-29".2	- 0".5	7 4	51.99	52.24
52	45	955	7.7 B9	30 27.485	433.19	1.36	0.00	31 54.72	763.3	29.4	- 1.0	10 8	52.32	52.41
53	45	971	9.0 F8	35 56.141	434.35	1.28	+ 0.31	31 21.20	718.8	29.7	+ 0.1	7 6	52.09	52.11
54	45	987	7.7 A0	44 15.208	435.50	1.17	+ 0.07	24 5.26	650.4	30.1	- 3.3	10 8	52.28	52.47
55	45	999	8.2 G0	50 54.231	437.62	1.08	+ 0.03	36 1.14	595.1	30.6	+ 0.4	7 8	51.65	51.92
56	45	1000	8.0 F5	4 51 5.939	+437.77	+ 1.09	+ 0.02	45 37 35.32	+ 593.5	-30.6	- 3.4	8 6	52.17	52.51
57	45	1023	7.8 B9	57 39.207	437.72	0.98	- 0.09	22 25.03	538.5	30.8	- 0.8	10 10	52.27	52.45
58	45	1054	8.8 A0	5 6 43.301	439.21	0.86	- 0.01	24 23.66	461.7	31.2	+ 0.9	8 6	52.29	52.03
59	45	1070	9.0 F0	9 59.167	440.06	0.81	+ 0.07	29 49.30	433.9	31.3	- 2.6	7 5	52.31	52.21
60	45	1090s	8.4 F0	15 16.834	439.31	0.74	+ 0.14	11 44.66	388.6	31.5	+ 0.5	7 5	52.26	52.52
61	45	1099	8.4 F0	5 17 15.638	+439.63	+ 0.70	- 0.08	45 13 3.74	+ 371.6	-31.6	+ 0.9	7 6	53.19	53.38
62	45	1115	8.5 A0	21 38.171	439.93	0.64	+ 0.04	11 4.18	333.9	31.7	+ 0.2	10 7	52.03	52.33
63	45	1131	7.8 F8	28 57.632	442.06	0.54	- 0.06	30 6.70	270.6	32.0	- 3.5	10 8	52.30	52.51
64	45	1132	7.9 G5	29 3.010	441.85	0.54	+ 0.11	27 22.21	269.8	32.0	- 1.9	8 5	51.96	51.88
65	45	1150	8.1 G5	35 20.233	442.14	0.44	+ 0.70	25 17.95	215.3	32.1	-10.8	11 7	52.14	52.47
66	45	1163	8.5 F6	5 40 9.186	+441.39	+ 0.36	+ 0.20	45 12 8.56	+ 173.3	-32.1	- 6.7	6 4	51.70	51.77
67	45	1178	8.0 F3	45 2.925	441.70	0.29	- 0.02	13 17.70	130.7	32.2	- 2.2	8 6	52.12	52.17
68	45	1183	8.5 A2	48 1.231	442.11	0.24	- 0.07	17 14.27	104.7	32.2	- 1.3	7 9	51.63	51.73
69	45	1216	6.6 A0	55 42.870	443.83	0.13	- 0.01	37 0.64	37.5	32.3	- 1.6	7 6	51.85	51.82
70	45	1225	7.6 A0	57 36.654	441.68	0.10	- 0.02	9 35.51	20.9	32.2	- 1.1	8	52.43	
71	45	1235	7.2 A2	6 0 51.733	+443.73	+ 0.05	+ 0.04	45 35 24.70	- 7.5	-32.3	- 5.5	14 10	52.05	52.16
72	45	1237	8.1 K5	1 22.911	443.26	0.04	- 0.04	29 30.77	12.1	32.3	- 0.5	7 6	52.10	52.11
73	45	1248	7.3 A0	4 37.137	443.57	- 0.01	- 0.07	33 44.34	40.4	32.3	- 2.0	21 18	52.19	52.27
74	45	1270	8.0 A0	11 53.356	443.72	0.12	+ 0.11	37 38.27	103.9	32.3	- 2.0	16 13	52.09	52.10
75	45	1278	8.5 A0	13 14.736	443.90	0.14	+ 0.01	40 29.76	115.8	32.3	+ 0.2	8 7	52.24	52.27
76	45	1284	8.4	6 14 12.648	+443.04	- 0.15	+ 0.08	45 30 7.55	- 124.2	-32.2	- 0.5	7 5	52.65	52.74
77	45	1289	7.4 K0	18 3.541	443.52	0.21	+ 0.05	38 7.33	157.8	32.2	- 1.5	14 12	51.70	51.71
78	45	1296	8.0 K5	20 52.438	441.30	0.25	+ 0.13	11 41.42	182.3	32.0	+ 0.3	8 6	52.21	52.46
79	45	1328	8.8 A2	34 4.495	440.35	0.44	- 0.10	11 23.58	296.9	31.7	- 0.2	9	52.25	
80	45	1346	8.7 G5	40 22.152	440.79	0.54	+ 0.09	24 50.31	351.2	31.6	- 3.2	6 5	52.61	52.52
81	45	1360	9.1 K5	6 49 41.813	+440.83	- 0.69	+ 0.11	45 39 12.72	- 431.2	-31.3	- 1.4	7 6	52.12	51.97
82	45	1363	9.0 A2	50 50.701	438.80	0.69	- 0.12	14 51.08	441.0	31.1	- 4.1	5 6	52.37	52.49
83	45	1367	4.8 A2	53 58.312	437.99	0.73	- 0.19	9 40.38	467.6	30.9	- 0.5	7	51.76	
84	45	1380	8.9 A0	59 55.151	438.68	0.83	- 0.02	30 1.09	518.1	30.8	- 0.7	6 5	52.40	52.26
85	45	1383	7.6 F0	7 0 28.583	436.95	0.82	- 0.12	8 18.62	522.8	30.6	- 3.8	9 6	52.20	52.28
86	45	1388	8.5 F0	7 3 31.744	+437.99	- 0.88	0.00	45 28 26.84	- 548.5	-30.5	- 2.0	19 14	52.02	52.06
87	45	1394	7.8 K0	7 13.713	436.72	0.91	- 0.12	19 48.15	579.5	30.3	- 0.8	19 16	52.29	52.45
88	45	1408	6.7 K0	11 59.663	436.63	0.99	- 0.08	29 52.45	619.3	30.1	- 2.9	8 7	51.61	51.70
89	45	1415	7.6 F2	14 24.084	434.94	1.01	- 0.08	13 12.42	639.3	30.0	- 6.9	6 4	52.12	52.12
90	45	1422	5.6 F0	17 40.510	434.77	1.06	- 0.46	19 21.71	666.4	29.7	+ 0.7	11 8	51.75	52.00
91	45	1434	9.2	7 24 35.153	+433.51	- 1.15	- 0.17	45 21 28.21	- 723.0	-29.2	- 0.3	8 6	51.41	51.16
92	45	1441	8.1 G5	27 57.536	432.17	1.18	- 0.08	13 6.33	750.5	29.0	- 2.3	24 20	51.97	52.15
93	45	1459	8.3 F2	34 7.726	430.57	1.25	- 0.05	10 21.53	800.2	28.6	- 2.9	8 8	51.86	51.99
94	45	1474	8.8 G5	40 20.277	430.39	1.34	- 0.17	28 49.41	849.7	28.2	- 1.7	6	51.84	
95	45	1476	7.6 K0	40 45.648	430.32	1.35	0.00	29 20.58	853.1	28.2	- 2.9	12 11	52.13	52.23
96	45	1496	8.0 K2	7 46 58.980	+428.61	- 1.42	+ 0.09	45 28 4.53	- 902.0	-27.7	- 1.0	18 16	52.12	52.26
97	45	1509	8.1 A3	53 21.671	427.35	1.49	- 0.19	35 2.97	951.4	27.3	- 1.1	10	52.34	
98	45	1550	7.8 K0	8 8 24.265	421.94	1.63	+ 0.31	21 32.30	1065.1	25.9	- 0.4	10 8	52.14	52.43
99	45	1561	7.7 K2	16 5.005	420.52	1.71	+ 0.02	37 29.33	1121.4	25.2	- 3.2	15 14	52.12	52.20
100	45	1568	8.1 K0	19 5.899	419.07	1.74	- 0.37	30 44.81	1143.1	24.9	- 7.3	10 8	51.82	51.77

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term				1st Term	2nd Term				
1	44°	4549	7.6 F8	0 ^b	2 ^m 22 ^s .575	+308.73	+ 1.62	+ 0 ^s .15	45° 23' 46.82	+2004.2	- 0.6	- 6.0	15	15	52.00	52.14
2	44	18	8.8	8	23.741	312.31	1.68	+ 0.05	30 42.63	2002.9	1.2	+ 0.4	6	5	52.24	52.16
3	44	50	8.0 F0	13	6.817	315.04	1.71	+ 0.15	15 59.04	2001.0	1.7	- 1.1	31	26	52.35	52.45
4	44	51	8.4 A0	13	29.333	315.23	1.70	+ 0.02	10 29.53	2000.8	1.7	+ 0.2	10	9	51.56	51.65
5	44	62	7.0 F5	17	53.280	317.83	1.74	+ 0.59	13 54.42	1998.2	2.2	- 0.6	42	33	52.30	52.33
6	45	124	7.6 G5	0	29 4.370	+324.62	+ 1.86	+ 0.23	45 39 2.81	+1988.1	- 3.4	- 3.2	24	21	52.29	52.48
7	45	128	8.5 Ma	34	53.242	327.82	1.87	+ 0.12	19 45.85	1981.1	4.1	+ 1.5	9	6	51.58	51.52
8	45	181	7.4 K5	40	2.992	331.10	1.94	- 0.23	39 21.29	1973.7	4.6	- 0.2	14	12	51.60	51.84
9	45	188	8.6 G6	41	34.833	331.99	1.95	- 0.46	38 46.94	1971.4	4.8	+ 3.8	6	6	51.42	51.25
10	45	192	8.6 B9	43	4.828	332.84	1.95	- 0.13	37 21.86	1968.9	4.9	+ 0.3	7	6	51.17	51.08
11	44	162	7.8 A3	0	43 40.235	+332.77	+ 1.93	- 0.21	45 9 13.13	+1968.0	- 5.1	+ 0.5	9	7	52.27	52.39
12	44	186	8.8 A5	49	56.712	336.39	1.96	- 0.35	10 13.58	1956.8	5.7	- 1.7	6		51.93	
13	45	237	6.2 K0	54	49.221	339.62	2.03	+ 0.07	34 10.26	1947.2	6.3	- 0.5	21	16	52.39	52.52
14	44	206	7.2 A3	55	26.108	339.70	2.01	- 0.21	19 39.78	1945.9	6.3	- 1.6	10	8	51.80	51.56
15	44	215	7.0 F5	58	27.373	341.25	2.01	+ 0.96	11 0.94	1939.4	6.7	- 1.5	29	24	52.36	52.44
16	44	252	8.7 F8	1	7 3.190	+346.52	+ 2.09	+ 0.54	45 28 53.60	+1919.1	- 7.7	- 1.5	7	8	52.53	52.67
17	44	272	8.8 K0	14	19.677	350.40	2.11	+ 0.01	19 59.74	1899.8	8.5	- 0.3	11	8	51.90	51.91
18	44	279	7.5 K2	16	6.742	351.57	2.13	- 0.02	26 35.53	1894.7	8.7	+ 1.8	10	11	51.59	51.79
19	44	312	8.1 K0	25	43.160	356.79	2.17	+ 0.58	22 31.73	1865.7	9.9	+ 0.3	8	8	51.66	51.91
20	44	326	8.7 A5	31	37.208	359.95	2.19	+ 0.17	20 24.10	1846.2	10.6	+ 1.1	11		52.01	
21	44	341	6.3 A0	1	35 30.432	+361.69	+ 2.18	- 0.16	45 8 45.62	+1832.7	-11.1	+ 0.8	14	10	52.44	52.28
22	45	404	6.7 G5	36	32.794	363.17	2.22	+ 2.08	37 39.30	1829.1	11.3	-22.5	17	12	52.13	52.33
23	45	464 _p	9.0 A0	48	35.963	369.51	2.25	- 0.03	33 49.53	1783.4	12.7	- 1.5	8		51.46	
24	44	392	8.1 A5	54	49.035	372.30	2.24	- 0.14	21 22.42	1758.0	13.4	+ 0.7	21	20	52.09	52.10
25	45	519	8.8	59	44.837	375.18	2.26	- 0.01	29 56.48	1736.8	14.0	0.0	6		52.19	
26	45	523	8.1 A3	2	0 0.249	+375.40	+ 2.26	+ 0.04	45 32 14.81	+1735.7	-14.1	- 0.5	9	8	51.82	51.82
27	45	554	7.7 F5	6	1.451	378.64	2.27	- 0.19	36 15.81	1708.8	14.8	+ 0.5	17	14	51.51	52.63
28	45	583	7.5 A0	13	55.558	382.62	2.27	- 0.01	36 26.47	1671.7	15.8	- 0.6	11	10	52.46	52.50
29	44	473	8.8 A0	19	32.476	384.50	2.24	- 0.07	16 56.87	1644.1	16.4	+ 0.4	8	5	52.92	53.02
30	44	483	7.6 G5	21	50.208	386.00	2.25	- 0.23	25 22.50	1632.5	16.6	- 7.8	18	15	52.60	52.60
31	44	512	7.3 G5	2	27 10.323	+387.94	+ 2.23	+ 0.05	45 12 36.37	+1605.0	-17.2	- 0.8	10	8	52.09	52.12
32	45	624	8.6	30	13.130	390.02	2.24	- 0.07	26 6.58	1588.9	17.6	0.0	10	8	51.84	51.71
33	44	558	8.4 F8	38	28.572	393.37	2.21	+ 0.86	16 53.91	1543.9	18.6	- 3.0	12	9	52.01	52.15
34	44	569	8.1 F8	41	28.785	395.06	2.21	- 0.18	23 20.71	1527.0	18.9	- 4.4	6	5	51.92	51.47
35	44	573	8.1 A0	43	1.365	395.29	2.19	- 0.03	14 29.09	1518.2	19.1	+ 0.4	18	15	52.26	52.33
36	44	582	8.7 G5	2	46 22.396	+396.64	+ 2.18	- 0.03	45 11 51.45	+1498.9	-19.5	- 0.4	8	7	51.65	51.62
37	45	710 _s	7.8 B9	3	3 24.430	405.09	2.14	+ 0.35	33 32.07	1396.0	21.5	- 4.4	13		52.90	
38	45	721	8.6 K2	8	17.935	407.07	2.11	- 0.19	33 1.58	1365.0	22.0	- 1.7	9	7	51.67	51.73
39	44	648	6.4 Ma	12	40.012	407.45	2.04	+ 0.28	9 45.38	1336.8	22.4	- 3.0	12	10	52.45	52.44
40	44	677	7.5 B8	18	4.382	409.70	2.02	- 0.06	12 28.92	1301.2	22.9	+ 1.0	12	11	52.43	52.49
41	44	695	7.6 B8	3	22 11.246	+411.73	+ 2.00	- 0.01	45 20 25.60	+1273.6	-23.4	+ 0.2	13	11	52.32	52.31
42	44	744	8.1 K2	31	35.549	414.95	1.93	- 0.13	16 59.82	1209.0	24.5	- 0.1	22	18	52.25	52.27
43	45	811	5.6 B9	42	28.792	419.65	1.86	+ 0.21	31 36.05	1131.8	25.5	- 2.2	7	6	51.60	52.02
44	45	828	8.1 K0	48	7.121	420.62	1.79	- 0.10	18 14.99	1090.7	26.0	+ 0.3	12	11	52.25	52.52
45	45	836	7.9 K0	50	29.488	421.62	1.78	+ 0.03	21 53.77	1073.3	26.1	- 2.9	13	12	52.45	52.49
46	45	858	8.6 A0	3	56 23.117	+424.23	+ 1.74	+ 0.14	45 33 25.21	+1029.4	-26.7	- 1.2	14		52.06	
47	45	868	8.8 A2	4	2 7.732	425.66	1.67	+ 0.03	29 15.82	986.0	27.2	- 1.2	6	4	52.23	52.43
48	45	887	7.8 G5	7	34.408	426.32	1.60	+ 0.16	16 24.32	944.2	27.6	- 4.0	9	9	51.91	52.15
49	45	921	7.6 A0	17	17.999	429.21	1.50	+ 0.22	20 46.34	868.4	28.3	- 2.8	9	7	52.21	52.67
50	45	937	9.0	24	45.663	430.73	1.40	- 0.09	16 13.79	809.1	29.0	0.0	7	4	51.45	51.51

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
					1st Term	2nd Term			1st Term	2nd Term				
51	45°	947	8.8	4 ^h 28 ^m 40 ^s .875	+432 ^s .53	+ 1 ^s .37	- 0 ^s .02	45° 28' 27".51	+ 777".6	-29".2	- 0".5	7 4	51.99	52.24
52	45	955	7.7 B9	30 27.485	433.19	1.36	0.00	31 54.72	763.3	29.4	- 1.0	10 8	52.32	52.41
53	45	971	9.0 F8	35 56.141	434.35	1.28	+ 0.31	31 21.20	718.8	29.7	+ 0.1	7 6	52.09	52.11
54	45	987	7.7 A0	44 15.208	435.50	1.17	+ 0.07	24 5.26	650.4	30.1	- 3.3	10 8	52.28	52.47
55	45	999	8.2 G0	50 54.231	437.62	1.08	+ 0.03	36 1.14	595.1	30.6	+ 0.4	7 8	51.65	51.92
56	45	1000	8.0 F5	4 51 5.939	+437.77	+ 1.09	+ 0.02	45 37 35.32	+ 593.5	-30.6	- 3.4	8 6	52.17	52.51
57	45	1023	7.8 B9	57 39.207	437.72	0.98	- 0.09	22 25.03	538.5	30.8	- 0.8	10 10	52.27	52.45
58	45	1054	8.8 A0	5 6 43.301	439.21	0.86	- 0.01	24 23.66	461.7	31.2	+ 0.9	8 6	52.29	52.03
59	45	1070	9.0 F0	9 59.167	440.06	0.81	+ 0.07	29 49.30	433.9	31.3	- 2.6	7 5	52.31	52.21
60	45	1090s	8.4 F0	15 16.834	439.31	0.74	+ 0.14	11 44.66	388.6	31.5	+ 0.5	7 5	52.26	52.52
61	45	1099	8.4 F0	5 17 15.638	+439.63	+ 0.70	- 0.08	45 13 3.74	+ 371.6	-31.6	+ 0.9	7 6	53.19	53.38
62	45	1115	8.5 A0	21 38.171	439.93	0.64	+ 0.04	11 4.18	333.9	31.7	+ 0.2	10 7	52.03	52.33
63	45	1131	7.8 F8	28 57.632	442.06	0.54	- 0.06	30 6.70	270.6	32.0	- 3.5	10 8	52.30	52.51
64	45	1132	7.9 G5	29 3.010	441.85	0.54	+ 0.11	27 22.21	269.8	32.0	- 1.9	8 5	51.96	51.88
65	45	1150	8.1 G5	35 20.233	442.14	0.44	+ 0.70	25 17.95	215.3	32.1	-10.8	11 7	52.14	52.47
66	45	1163	8.5 F6	5 40 9.186	+441.39	+ 0.36	+ 0.20	45 12 8.56	+ 173.3	-32.1	- 6.7	6 4	51.70	51.77
67	45	1178	8.0 F3	45 2.925	441.70	0.29	- 0.02	13 17.70	130.7	32.2	- 2.2	8 6	52.12	52.17
68	45	1183	8.5 A2	48 1.231	442.11	0.24	- 0.07	17 14.27	104.7	32.2	- 1.3	7 9	51.63	51.73
69	45	1216	6.6 A0	55 42.870	443.83	0.13	- 0.01	37 0.64	37.5	32.3	- 1.6	7 6	51.85	51.82
70	45	1225	7.6 A0	57 36.654	441.68	0.10	- 0.02	9 35.51	20.9	32.2	- 1.1	8	52.43	
71	45	1235	7.2 A2	6 0 51.733	+443.73	+ 0.05	+ 0.04	45 35 24.70	- 7.5	-32.3	- 5.5	14 10	52.05	52.16
72	45	1237	8.1 K5	1 22.911	443.26	0.04	- 0.04	29 30.77	12.1	32.3	- 0.5	7 6	52.10	52.11
73	45	1248	7.3 A0	4 37.137	443.57	- 0.01	- 0.07	33 44.34	40.4	32.3	- 2.0	21 18	52.19	52.27
74	45	1270	8.0 A0	11 53.356	443.72	0.12	+ 0.11	37 38.27	103.9	32.3	- 2.0	16 13	52.09	52.10
75	45	1278	8.5 A0	13 14.736	443.90	0.14	+ 0.01	40 29.76	115.8	32.3	+ 0.2	8 7	52.24	52.27
76	45	1284	8.4	6 14 12.648	+443.04	- 0.15	+ 0.08	45 30 7.55	- 124.2	-32.2	- 0.5	7 5	52.65	52.74
77	45	1289	7.4 K0	18 3.541	443.52	0.21	+ 0.05	38 7.33	157.8	32.2	- 1.5	14 12	51.70	51.71
78	45	1296	8.0 K5	20 52.438	441.30	0.25	+ 0.13	11 41.42	182.3	32.0	+ 0.3	8 6	52.21	52.46
79	45	1328	8.8 A2	34 4.495	440.35	0.44	- 0.10	11 23.58	296.9	31.7	- 0.2	9	52.25	
80	45	1346	8.7 G5	40 22.152	440.79	0.54	+ 0.09	24 50.31	351.2	31.6	- 3.2	6 5	52.61	52.52
81	45	1360	9.1 K5	6 49 41.813	+440.83	- 0.69	+ 0.11	45 39 12.72	- 431.2	-31.3	- 1.4	7 6	52.12	51.97
82	45	1363	9.0 A2	50 50.701	438.80	0.69	- 0.12	14 51.08	441.0	31.1	- 4.1	5 6	52.37	52.49
83	45	1367	4.8 A2	53 58.312	437.99	0.73	- 0.19	9 40.38	467.6	30.9	- 0.5	7	51.76	
84	45	1380	8.9 A0	59 55.151	438.68	0.83	- 0.02	30 1.09	518.1	30.8	- 0.7	6 5	52.40	52.26
85	45	1383	7.6 F0	7 0 28.583	436.95	0.82	- 0.12	8 18.62	522.8	30.6	- 3.8	9 6	52.20	52.28
86	45	1388	8.5 F0	7 3 31.744	+437.99	- 0.88	0.00	45 28 26.84	- 548.5	-30.5	- 2.0	19 14	52.02	52.06
87	45	1394	7.8 K0	7 13.713	436.72	0.91	- 0.12	19 48.15	579.5	30.3	- 0.8	19 16	52.29	52.45
88	45	1408	6.7 K0	11 59.663	436.63	0.99	- 0.08	29 52.45	619.3	30.1	- 2.9	8 7	51.61	51.70
89	45	1415	7.6 F2	14 24.084	434.94	1.01	- 0.08	13 12.42	639.3	30.0	- 6.9	6 4	52.12	52.12
90	45	1422	5.6 F0	17 40.510	434.77	1.06	- 0.46	19 21.71	666.4	29.7	+ 0.7	11 8	51.75	52.00
91	45	1434	9.2	7 24 35.153	+433.51	- 1.15	- 0.17	45 21 28.21	- 723.0	-29.2	- 0.3	8 6	51.41	51.16
92	45	1441	8.1 G5	27 57.536	432.17	1.18	- 0.08	13 6.33	750.5	29.0	- 2.3	24 20	51.97	52.15
93	45	1459	8.3 F2	34 7.726	430.57	1.25	- 0.05	10 21.53	800.2	28.6	- 2.9	8 8	51.86	51.99
94	45	1474	8.8 G5	40 20.277	430.39	1.34	- 0.17	28 49.41	849.7	28.2	- 1.7	6	51.84	
95	45	1476	7.6 K0	40 45.648	430.32	1.35	0.00	29 20.58	853.1	28.2	- 2.9	12 11	52.13	52.23
96	45	1496	8.0 K2	7 46 58.980	+428.61	- 1.42	+ 0.09	45 28 4.53	- 902.0	-27.7	- 1.0	18 16	52.12	52.26
97	45	1509	8.1 A3	53 21.671	427.35	1.49	- 0.19	35 2.97	951.4	27.3	- 1.1	10	52.34	
98	45	1550	7.8 K0	8 8 24.265	421.94	1.63	+ 0.31	21 32.30	1065.1	25.9	- 0.4	10 8	52.14	52.43
99	45	1561	7.7 K2	16 5.005	420.52	1.71	+ 0.02	37 29.33	1121.4	25.2	- 3.2	15 14	52.12	52.20
100	45	1568	8.1 K0	19 5.899	419.07	1.74	- 0.37	30 44.81	1143.1	24.9	- 7.3	10 8	51.82	51.77

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term			1st Term	2nd Term				
101	45°	1587	9.1	8 ^b 24 ^m 43. ^s 022	+416. ^s 87	- 1. ^s 78	+ 0. ^s 02	45° 26' 42".27	-1183. ^s 1	-24".2	- 1. ^s 75	9	10	52.06	51.96
102	45	1601	7.8 F0	30 49.183	414.41	1.82	- 0.28	22 7.34	1225.8	23.6	- 2.3	11	8	52.26	52.44
103	45	1613	8.1 G5	37 33.110	411.78	1.86	0.00	19 39.91	1271.8	22.9	+ 1.5	10		52.48	
104	45	1624	8.1 F5	40 29.382	411.79	1.90	- 0.23	38 6.62	1291.6	22.7	- 5.2	14	12	52.06	52.08
105	45	1641	7.6 G0	46 21.397	407.84	1.90	- 0.57	9 52.00	1330.4	21.9	- 1.7	11	10	52.05	52.14
106	45	1649	6.1 K0	8 48 43.217	+408.06	- 1.95	- 0.11	45 30 6.26	-1346.3	-21.7	- 3.4	27	25	52.12	52.25
107	45	1666	8.8 A3	58 34.871	403.51	1.98	0.00	20 3.60	1408.4	20.6	- 0.1	7	6	52.01	51.84
108	45	1680	8.4 G5	9 3 59.550	401.38	2.00	- 0.58	22 41.62	1441.7	20.0	- 4.9	9	8	52.17	52.18
109	46	1484	8.6 K0	12 11.033	398.70	2.06	- 0.18	38 54.18	1490.5	19.1	- 1.6	10	11	52.07	51.98
110	45	1708	6.6 K0	18 6.180	395.84	2.07	- 0.07	35 0.34	1524.6	18.4	- 3.0	23	21	52.04	52.03
111	45	1723	8.9 A3	9 24 29.418	+391.63	- 2.05	- 0.11	45 8 56.27	-1560.3	-17.6	- 1.6	17	16	52.19	52.27
112	45	1727	9.0 A2	27 27.736	390.57	2.06	- 0.17	15 6.93	1576.5	17.3	- 0.8	16	14	52.31	52.34
113	45	1731	8.3 K0	28 54.750	390.02	2.08	- 0.26	17 51.56	1584.3	17.0	+ 2.0	10	9	51.89	51.98
114	45	1741	9.0 K0	34 20.450	387.50	2.08	+ 0.03	18 21.46	1612.9	16.4	- 0.5	11	9	52.12	52.11
115	45	1762	6.8 K0	43 31.116	383.19	2.09	+ 0.48	20 51.54	1659.2	15.3	-13.0	13	11	52.03	52.20
116	45	1769	8.0 F2	9 47 19.955	+381.24	- 2.09	- 0.78	45 19 8.28	-1677.7	-14.8	- 9.1	21	17	52.01	52.10
117	45	1778	8.7 G5	52 36.876	378.87	2.10	+ 0.16	25 8.03	1702.5	14.2	- 0.9	19	17	52.37	52.38
118	46	1566	6.5 K0	54 48.113	378.34	2.12	+ 0.05	39 12.78	1712.6	14.0	- 3.4	12	10	51.73	51.76
119	45	1787	8.6	58 8.705	375.81	2.09	- 0.18	18 40.90	1727.6	13.5	+ 1.2	12		51.89	
120	45	1798	7.5 F2	10 4 2.076	372.78	2.08	- 0.07	18 15.71	1753.1	12.8	- 0.6	30	27	52.28	52.40
121	45	1811	7.8 K2	10 11 8.530	+369.15	- 2.07	- 0.09	45 20 7.67	-1782.4	-11.9	+ 0.4	22	21	52.24	52.29
122	45	1814	7.4 F5	13 27.851	367.84	2.06	- 0.13	17 34.29	1791.6	11.6	+ 2.3	15	14	51.90	51.97
123	45	1819	7.8 G5	14 27.382	367.27	2.05	- 0.63	16 9.17	1795.5	11.5	- 2.0	8		52.32	
124	45	1832	6.5 K0	25 36.228	361.70	2.04	- 0.19	28 5.40	1836.6	10.1	- 2.3	14	14	52.08	52.23
125	46	1643	8.4 K5	32 46.099	357.87	2.02	- 0.22	30 55.99	1860.8	9.3	+ 1.6	10	9	52.40	52.54
126	45	1860s	8.1 K0	10 42 20.026	+352.11	- 1.96	- 0.18	45 13 58.05	-1890.3	- 8.1	+ 0.5	24	23	52.18	52.13
127	46	1671	8.0 K0	49 38.783	348.49	1.94	- 0.71	33 11.13	1910.6	7.3	- 3.6	16	14	51.99	52.11
128	45	1879	7.0 K0	56 8.874	344.68	1.90	- 0.48	27 58.80	1927.0	6.5	- 3.7	8	7	52.09	52.08
129	45	1890	9.0 G5	11 1 40.649	341.47	1.86	+ 0.09	25 37.80	1939.7	5.8	- 2.6	11		52.07	
130	45	1903	7.5 G0	12 20.125	335.24	1.79	- 0.48	20 5.58	1961.1	4.7	- 6.1	8		52.01	
131	45	1912	6.7 F0	11 17 46.625	+332.04	- 1.75	- 0.63	45 16 21.01	-1970.3	- 4.0	- 2.8	22	20	52.40	52.42
132	46	1717	7.9 A2	19 5.615	331.56	1.76	- 0.56	36 23.52	1972.4	3.9	- 1.5	12	13	52.42	52.41
133	45	1924	* Mb	25 6.821	327.92	1.71	- 0.07	27 38.76	1981.1	3.2	- 2.3	14		52.36	
134	45	1926	6.9 K0	25 13.438	327.63	1.69	+ 0.06	9 14.65	1981.2	3.2	- 2.2	17	19	52.43	52.46
135	45	1947p	8.4 G0	36 6.324	321.41	1.62	- 5.40	23 4.03	1993.4	2.0	- 0.7	6		52.26	
136	45	1947s	6.3 G0	11 36 7.225	+321.40	- 1.62	- 5.62	45 23 6.63	-1993.4	- 2.0	+ 1.4	11		52.27	
137	45	1952	7.9 F2	37 9.719	320.82	1.62	+ 0.15	26 1.88	1994.3	1.9	- 1.4	17		52.15	
138	45	1966	8.6 G0	48 18.874	314.23	1.52	- 0.27	23 1.74	2001.6	0.8	+ 3.1	16		52.21	
139	45	1977	8.3 Ma	54 41.979	310.45	1.46	- 0.20	17 18.98	2003.7	0.1	- 0.6	11	12	52.18	52.19
140	45	2001	8.8 F8	12 8 12.920	302.46	1.35	+ 0.30	27 13.47	2003.0	+ 1.2	- 6.5	10		51.76	
141	45	2016	8.5	12 14 23.880	+298.83	- 1.29	- 0.26	45 22 1.43	-2000.3	+ 1.7	- 2.2	11		52.45	
142	45	2023	8.5	17 3.513	297.33	1.26	- 0.24	9 28.35	1998.7	2.0	- 8.1	9	11	52.15	52.27
143	45	2030	8.9	21 29.288	294.68	1.23	- 0.11	18 43.14	1995.5	2.4	+ 1.5	8		51.92	
144	45	2039	8.8	25 51.639	292.07	1.19	- 0.30	24 15.68	1991.5	2.8	+ 7.5	15	16	51.96	51.98
145	46	1791	7.7 A3	29 13.741	290.03	1.16	- 0.26	30 5.78	1988.0	3.1	- 1.4	22	21	52.26	52.20
146	46	1802	8.0 F0	12 35 10.379	+286.52	- 1.11	+ 0.15	45 31 42.12	-1980.7	+ 3.6	+ 1.2	22	20	52.25	52.30
147	46	1805	7.1 F2	36 10.614	285.96	1.09	- 1.35	29 31.88	1979.3	3.7	- 3.8	31	32	52.33	52.30
148	46	1811	8.8	38 15.852	284.73	1.08	- 0.26	29 39.97	1976.4	3.8	- 0.3	14	15	51.87	51.90
149	45	2069	9.2 K5	52 38.926	276.49	0.93	0.00	22 46.60	1951.6	5.0	- 2.0	8		51.81	
150	45	2096	8.6 F5	13 12 12.576	265.27	0.76	- 0.02	26 41.16	1905.6	6.4	- 1.0	12	12	52.24	52.07

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).
 * 133, 6^m5 to 7^m3.

T in centuries from 1950.0, T' in centuries from epoch

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+
					1st Term	2nd Term			1st Term	2nd Term			
151	45°	2104	8.7 F5	13 ^h 17 ^m 5 ^s .520	+262.66	- 0 ^s .71	- 1 ^s .38	45° 21' 45".27	-1891.9	+ 6".7	- 3".4	8	52.06
152	45	2105	8.2 G5	18 12.339	262.03	0.70	- 0.23	22 17.17	1888.7	6.8	- 2.1	10	52.12
153	45	2120	8.3 F5	33 51.771	253.62	0.56	- 0.44	16 12.89	1838.5	7.8	- 1.8	10	52.25
154	45	2123	8.2 G5	37 15.528	251.86	0.53	- 0.13	14 6.55	1826.5	8.0	+ 2.7	23 25	52.33 52.29
155	45	2124	8.0 K2	38 14.814	251.32	0.52	+ 0.03	14 23.80	1822.9	8.0	- 1.1	22	52.33
156	46	1894	8.9 F5	13 41 17.123	+248.98	- 0.51	+ 0.06	45 35 47.08	-1811.7	+ 8.1	- 1.8	11 14	52.80 52.49
157	45	2131	8.6 F5	46 33.439	246.53	0.45	- 0.35	25 6.49	1791.5	8.5	+ 1.0	8 9	52.34 52.23
158	45	2140	8.6 F8	55 33.211	241.87	0.38	- 0.08	23 55.55	1754.8	8.9	+ 0.1	21 23	52.49 52.44
159	45	2148	8.1 K0	59 10.984	239.70	0.36	+ 0.17	31 36.54	1739.3	9.0	- 0.8	12	52.42
160	45	2155	9.0	14 3 46.824	237.41	0.31	+ 0.17	29 53.08	1719.0	9.3	+ 1.7	11 13	52.16 52.11
161	45	2160p	9.2 K0	14 10 39.235	+234.12	- 0.26	- 0.33	45 25 52.19	-1687.3	+ 9.6	+ 2.4	7	52.22
162	45	2170	8.4 K0	19 18.624	229.57	0.20	- 0.01	32 21.19	1645.2	9.8	+ 1.0	15 13	52.36 52.43
163	45	2178	9.1 G5	22 45.812	228.35	0.18	- 1.45	22 22.32	1627.8	10.1	+ 3.4	9	51.80
164	45	2193s	8.7 A2	30 56.065	224.65	0.13	+ 0.05	18 52.82	1585.1	10.3	- 0.7	8 10	52.70 52.43
165	45	2203	8.4 F8	36 54.248	221.20	0.08	- 0.07	32 45.41	1552.6	10.5	- 1.7	9 9	52.13 52.14
166	46	1981	7.7 G5	14 39 16.592	+219.86	- 0.07	- 1.10	45 37 44.04	-1539.4	+10.6	-19.3	24 26	52.69 52.67
167	45	2214	6.8 F0	42 38.357	219.05	0.06	+ 0.52	23 47.50	1520.4	10.7	- 2.0	13 13	52.34 52.19
168	45	2230	8.5 F8	49 57.372	215.88	0.02	- 0.68	22 33.73	1477.9	11.0	+ 6.8	17	52.64
169	45	2233	7.9 F5	52 37.587	214.32	0.00	- 0.62	30 1.01	1462.1	11.0	+ 5.4	21 19	52.73 52.77
170	45	2237	8.7 G0	54 26.486	213.18	+ 0.01	+ 0.22	36 38.09	1451.2	11.0	- 1.5	5	53.01
171	45	2253	8.8 F8	15 1 51.754	+211.48	+ 0.04	- 1.65	45 10 51.01	-1405.6	+11.3	+30.6	10	52.86
172	45	2266	8.7 G5	10 23.089	207.45	0.08	- 0.86	20 56.86	1351.5	11.4	+15.4	11 12	52.45 52.35
173	45	2270	8.8	13 17.506	206.57	0.09	- 0.29	16 27.21	1332.7	11.5	0.0	8 7	51.99 52.08
174	45	2277	7.9 K0	16 56.978	205.42	0.11	- 0.39	11 53.11	1308.6	11.7	+ 0.9	11 10	52.73 52.88
175	45	2284	6.2 K2	22 23.848	202.45	0.12	- 0.16	26 48.52	1272.2	11.6	- 0.3	14	52.72
176	45	2307	8.8 K2	15 34 0.418	+197.59	+ 0.17	+ 0.15	45 36 46.00	-1192.1	+11.8	- 2.1	9	52.34
177	45	2311	8.6	34 48.538	198.81	0.16	+ 0.08	13 1.58	1186.5	12.0	-13.0	7 9	52.51 52.27
178	45	2317	7.9 F0	37 32.785	197.64	0.18	+ 0.27	16 42.99	1167.1	11.9	+ 1.4	12 13	52.63 52.54
179	45	2323	8.3 K5	41 9.621	196.88	0.18	- 0.21	9 30.47	1141.3	12.1	- 0.2	12 12	53.01 52.85
180	45	2325	8.0 G5	42 27.958	195.22	0.18	- 0.41	28 18.93	1131.8	12.0	+ 3.1	8 10	52.66 52.40
181	45	2329	7.9 K0	15 44 38.434	+195.66	+ 0.19	+ 0.12	45 10 35.08	-1116.1	+12.1	- 3.1	16 15	52.32 52.25
182	45	2355	8.7 F2	58 7.324	189.75	0.22	- 0.27	35 35.80	1016.3	12.1	- 0.5	8	52.13
183	45	2360	8.8 G5	59 18.074	191.26	0.21	+ 0.02	8 11.93	1007.4	12.3	- 1.8	8 7	52.66 52.84
184	45	2374	7.4 K0	16 6 25.414	187.67	0.23	- 0.03	30 41.91	953.1	12.2	+ 0.9	17	52.52
185	45	2377	8.0 F5	7 20.758	187.52	0.23	+ 0.18	29 1.10	946.0	12.3	- 0.2	11	52.51
186	45	2385	8.3 F0	16 13 25.106	+185.56	+ 0.24	- 0.33	45 33 21.37	- 898.8	+12.2	+ 0.1	11 13	52.67 52.56
187	45	2404	7.4 G5	23 47.703	183.20	0.24	- 0.64	29 27.27	816.8	12.4	+ 1.7	11	52.71
188	45	2411	8.5 A5	26 16.468	183.06	0.24	+ 0.03	23 11.57	797.0	12.4	+ 1.9	9 12	52.52 52.33
189	45	2420	9.0	29 15.880	182.34	0.24	0.00	23 33.32	772.9	12.4	- 2.8	7 8	52.41 52.53
190	45	2432	8.8	36 5.265	181.44	0.24	- 0.20	15 25.65	717.5	12.5	+ 2.7	7	52.68
191	45	2446	8.4 G5	16 43 41.715	+180.19	+ 0.23	- 0.28	45 11 37.99	- 655.0	+12.5	- 0.5	6 7	52.66 52.07
192	45	2453	8.4 G0	47 27.462	179.07	0.23	- 0.33	17 12.81	623.8	12.5	- 0.7	12 13	52.21 52.14
193	45	2460	8.3 G8	50 30.278	176.92	0.24	0.00	38 31.36	598.5	12.4	+ 0.9	7 8	52.67 52.16
194	45	2473	8.8 K0	55 44.144	176.52	0.23	+ 0.05	31 53.09	554.7	12.5	- 1.0	10 12	51.95 51.95
195	45	2487	8.0 K0	17 2 27.215	175.54	0.23	+ 0.06	31 2.89	498.0	12.5	- 0.4	10	52.16
196	45	2504	6.9 K2	17 10 12.142	+175.09	+ 0.21	- 0.01	45 23 1.14	- 432.1	+12.5	- 1.2	21 21	52.32 52.35
197	45	2506	8.7 G0	10 52.768	174.98	0.21	- 0.71	23 23.41	426.3	12.5	+16.0	9 8	52.40 52.37
198	45	2509	7.4 B3	12 0.261	174.65	0.21	- 0.12	25 45.75	416.7	12.5	- 1.1	11 12	52.12 52.13
199	45	2519	8.9 F8	16 18.794	173.18	0.21	+ 0.60	38 9.66	379.7	12.4	- 5.5	6 7	52.50 52.63
200	45	2521	6.6 F0	18 23.775	174.26	0.20	- 0.36	21 24.76	361.8	12.6	+ 8.6	18 18	52.67 52.66

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950			Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+	
							1st Term	2nd Term				1st Term	2nd Term				
201	45°	2531	8.3 K0	17 ^h 23 ^m 11 ^s .763	+173 ^s .59	+ 0 ^s .19	- 0 ^s .06	45° 23' 44".45	- 320 ^s .5	+12 ^s .5	+ 1 ^s .3	12 14	52.59	52.51			
202	45	2545	8.9 F8	29 51.788	171.72	0.18	- 0.33	40 20.65	262.8	12.4	- 5.4	6 4	53.01	53.01			
203	45	2573	7.3 G0	36 37.740	171.67	0.17	+ 0.02	35 3.12	204.0	12.5	+ 4.7	16 13	52.27	52.12			
204	45	2620	8.2 G5	53 14.175	171.13	0.14	+ 0.41	33 40.11	59.2	12.5	+ 2.2	7	52.75				
205	45	2621	8.0 A0	53 17.769	172.72	0.13	- 0.07	13 27.08	58.6	12.6	+ 0.4	9 6	52.52	52.34			
206	45	2627	6.2 Mb	17 55 22.300	+172.07	+ 0.13	+ 0.12	45 21 21.36	- 40.5	+12.6	- 3.2	9 7	52.44	52.26			
207	45	2635	6.2 B9	57 26.428	171.47	0.13	- 0.07	28 40.95	22.4	12.5	+ 2.5	24 24	52.52	52.51			
208	45	2638	5.9 K2	58 30.380	171.35	0.12	- 0.05	30 9.78	13.1	12.5	- 3.0	18 18	52.24	52.23			
209	45	2643p	7.4 B9	59 41.024	172.07	0.12	- 0.11	21 0.43	2.8	12.6	+ 1.4	17 13	52.76	52.81			
210	45	2667	8.5 F0	18 8 22.085	170.94	0.10	+ 0.02	36 21.75	+ 73.2	12.4	- 1.8	12 11	52.47	52.37			
211	45	2679	7.5 K0	18 12 9.556	+170.83	+ 0.10	+ 0.14	45 39 2.96	+ 106.3	+12.4	+ 0.1	27 27	52.67	52.71			
212	45	2684	6.3 G0	14 6.167	173.06	0.09	- 0.81	11 33.93	123.3	12.5	-11.2	15 14	52.97	52.94			
213	45	2690	7.9 A0	16 45.248	173.44	0.09	- 0.01	8 7.18	146.4	12.6	+ 0.8	31 29	52.89	52.84			
214	45	2704	8.1 A0	21 37.360	173.41	0.08	0.00	11 34.76	188.8	12.5	+ 3.0	16 17	52.26	52.28			
215	45	2721	8.3 A0	26 24.188	173.97	0.07	- 0.46	8 8.47	230.4	12.5	+ 2.8	11 9	52.66	52.67			
216	45	2731	8.5 K0	18 29 41.241	+172.87	+ 0.06	+ 0.33	45 25 10.93	+ 258.9	+12.4	+ 0.2	12 14	52.13	52.12			
217	45	2747	8.0 F0	35 47.793	172.41	0.05	- 0.10	37 38.31	311.8	12.3	+ 1.1	11 11	52.18	52.17			
218	45	2777	6.8 F0	47 8.252	175.60	0.04	+ 0.26	12 10.45	409.3	12.4	+ 8.5	8 7	51.39	50.80			
219	45	2797	7.9 F8	54 54.136	175.52	0.03	+ 0.15	26 21.72	475.5	12.3	+ 5.8	9 8	52.44	52.17			
220	45	2807	8.7 F8	57 36.454	176.15	0.02	0.00	23 10.60	498.5	12.3	+ 1.8	16 14	51.64	51.63			
221	45	2824	8.9 F5	19 2 16.858	+176.20	+ 0.01	+ 0.18	45 31 58.00	+ 538.0	+12.2	- 0.9	7 5	52.02	51.77			
222	45	2842	8.9	7 57.552	177.67	0.01	+ 0.02	24 57.59	585.6	12.3	+ 0.4	9 10	51.81	51.89			
223	45	2847	8.5 A0	9 5.310	176.73	0.00	- 0.16	40 3.68	595.1	12.2	+ 1.0	11 12	52.05	51.93			
224	45	2865	7.3 A0	13 56.288	179.51	0.01	+ 0.10	14 48.19	635.4	12.2	- 1.0	22 23	52.24	52.34			
225	45	2877	8.6 K	18 55.970	179.34	0.00	- 0.07	29 58.78	676.7	12.2	+ 0.6	13 12	51.98	52.08			
226	45	2912	8.3 K2	19 28 33.893	+181.92	+ 0.00	+ 0.04	45 22 42.90	+ 755.4	+12.1	+ 2.3	8 9	52.06	52.10			
227	45	2949	5.0 F2	39 17.549	184.33	0.00	+ 0.75	24 20.26	841.4	12.0	+12.2	26 23	52.16	51.94			
228	45	2971	7.5 K0	44 44.966	184.83	0.00	- 0.04	36 45.29	884.5	11.9	- 0.8	25 23	52.52	52.41			
229	45	3001	7.8 K0	52 12.061	188.00	0.01	- 0.09	20 19.37	942.5	11.9	+ 0.1	23 21	52.41	52.31			
230	45	3025	5.8 A2	57 46.118	188.36	0.01	- 0.02	38 6.25	985.2	11.8	- 1.7	22 21	52.10	51.97			
231	45	3038	7.5 A2	20 0 11.313	+190.30	+ 0.02	+ 0.28	45 20 10.63	+1008.5	+11.8	+ 2.3	17 15	51.79	51.81			
232	45	3066	8.1 G5	6 32.292	191.98	0.03	- 0.12	23 48.19	1051.2	11.7	- 3.3	13 11	52.16	52.07			
233	45	3113	6.9 A3	13 40.364	193.49	0.04	- 0.10	35 12.94	1103.8	11.5	+ 0.2	8 6	52.72	52.75			
234	45	3119	5.9 F5	14 23.307	194.36	0.04	+ 0.05	25 31.74	1109.1	11.6	- 5.0	6 4	52.28	52.08			
235	44	3414	7.5 K2	14 58.117	195.50	0.05	+ 0.03	11 0.96	1113.3	11.6	+ 1.6	5	52.69				
236	45	3127s	8.8 A5	20 15 53.058	+194.64	+ 0.04	- 0.08	45 28 53.82	+1119.9	+11.6	- 1.0	8 8	52.35	52.34			
237	45	3429	7.0 F5	18 11.252	196.48	0.05	+ 0.18	12 19.73	1136.6	11.6	- 2.0	19 19	52.44	52.49			
238	45	3152	5.9 K0	20 27.371	195.58	0.05	+ 0.18	38 0.70	1152.8	11.4	+ 4.3	8 8	52.58	52.71			
239	45	3191	7.3 B9	27 9.453	198.24	0.07	0.00	33 4.94	1200.3	11.3	- 0.5	30 25	52.44	52.37			
240	45	3196	6.6 K0	28 20.550	197.88	0.06	+ 0.75	45 28.44	1208.6	11.2	+15.2	15 13	52.30	52.26			
241	45	3233	6.5 B3	20 37 41.833	+202.33	+ 0.11	- 0.03	45 29 21.50	+1272.8	+11.1	+ 0.2	14 12	52.04	51.94			
242	45	3245s	7.6 G0	40 39.006	202.88	0.11	- 0.58	38 44.43	1292.7	11.0	-18.4	13 12	52.44	52.33			
243	45	3275	6.7 K5	45 37.777	205.72	0.13	- 0.02	23 43.22	1325.6	11.0	- 1.8	10 9	52.00	51.92			
244	44	3590	7.5 A0	46 42.890	206.60	0.14	+ 0.04	15 58.39	1332.7	10.9	+ 0.1	9 8	52.60	52.59			
245	44	3615	8.0 A	51 14.964	208.36	0.16	+ 0.04	16 37.34	1362.1	10.8	+ 1.5	7 7	51.48	51.76			
246	45	3374	6.2 B8	21 1 2.908	+211.12	+ 0.19	0.00	45 39 1.69	+1423.7	+10.6	+ 0.1	25 22	52.26	52.39			
247	45	3410	7.3 G0	5 5.646	213.43	0.22	- 0.08	28 25.82	1448.4	10.4	- 1.0	18 17	52.41	52.40			
248	45	3427	7.5 B5	7 47.278	214.39	0.23	- 0.08	32 3.94	1464.6	10.3	+ 0.1	16 14	52.34	52.15			
249	44	3718	6.5 B5	8 10.786	215.32	0.23	+ 0.11	17 53.03	1466.9	10.3	+ 0.9	13 10	52.28	52.48			
250	44	3728	8.1	9 23.797	215.99	0.24	- 2.40	15 15.64	1474.2	10.3	-29.8	10 7	52.33	52.22			

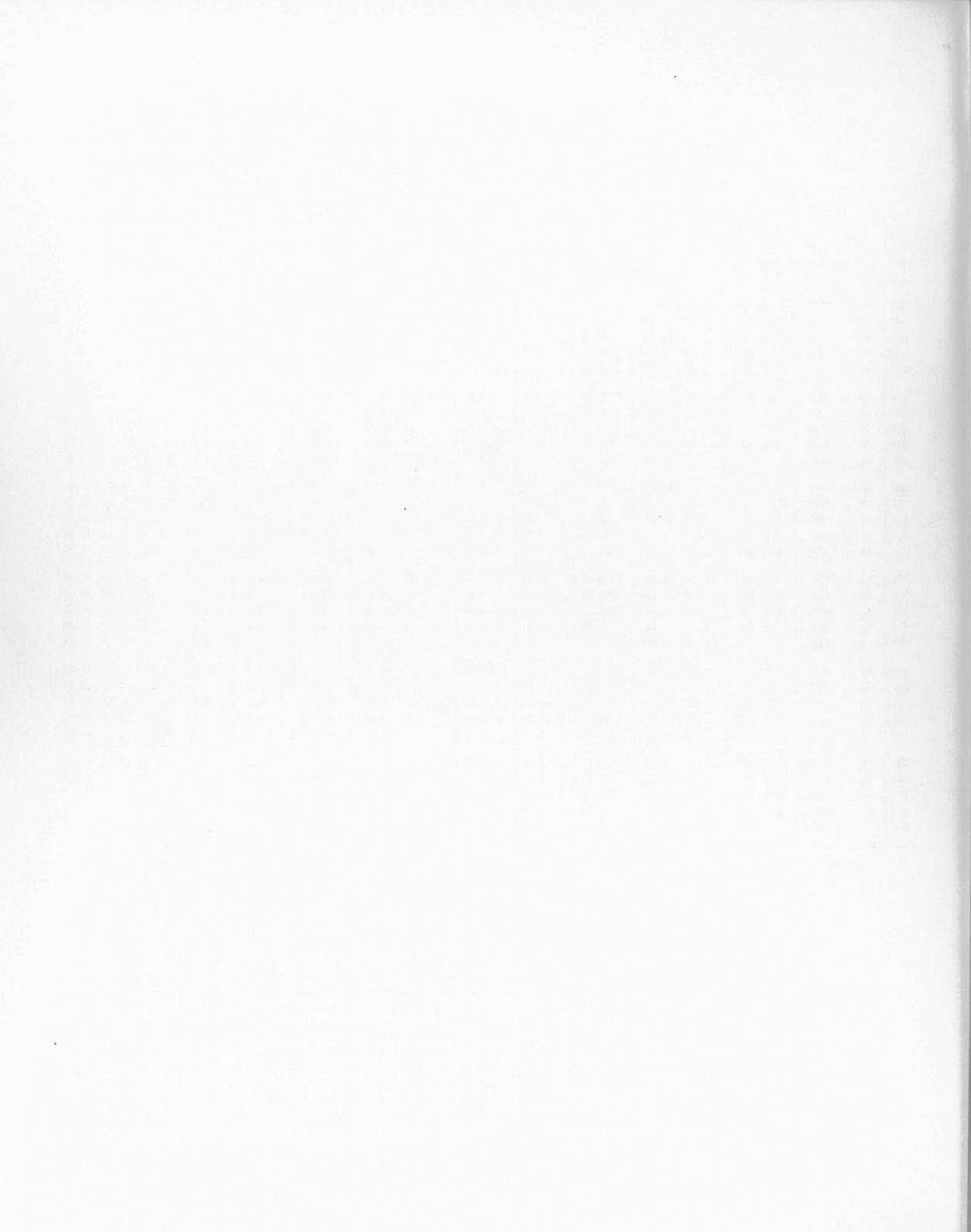
Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
					1st Term	2nd Term			1st Term	2nd Term				
251	45°	3438	6.7 A0	21 ^h 9 ^m 27 ^s .737	+215 ^s .33	+ 0 ^s .24	- 0 ^s .08	45° 28' 77.79	+1474 ^s .5	+10 ^s .3	- 0 ^s .6	24 21	52.54	52.52
252	45	3442	7.9 B8	10 18.944	215.61	0.24	+ 0.02	29 50.88	1479.6	10.3	- 0.4	14 11	52.35	52.36
253	45	3456	7.5 B5	11 53.380	216.60	0.25	- 0.04	24 14.59	1488.8	10.3	- 0.1	14 10	52.14	51.83
254	44	3744	7.9 K5	11 55.243	216.85	0.25	+ 0.30	19 46.03	1489.0	10.3	+ 1.6	9	51.90	
255	45	3476	7.6 B9	14 9.125	217.23	0.26	- 0.03	31 20.28	1502.0	10.1	- 0.7	31 26	52.44	52.48
256	44	3825	8.5 G0	21 26 15.508	+223.22	+ 0.33	- 0.01	45 21 34.14	+1569.9	+ 9.8	- 3.7	9	51.70	
257	44	3840	7.0 B5	28 8.515	224.34	0.34	- 0.02	16 26.26	1580.1	9.8	- 0.5	5 4	52.04	52.16
258	45	3584	6.6 K2	31 25.266	224.85	0.36	- 0.11	37 53.23	1597.6	9.6	- 0.2	8 7	52.43	52.40
259	44	3877	* Mc	34 8.259	227.49	0.38	+ 0.59	9 0.30	1611.8	9.6	+ 0.9	9	51.91	
260	45	3637	6.5 Mb	40 13.482	229.35	0.42	- 0.07	32 13.51	1642.9	9.2	- 1.7	35 31	52.41	52.44
261	45	3680	8.0 K2	21 46 11.974	+232.19	+ 0.46	- 0.01	45 34 17.22	+1672.3	+ 9.0	+ 0.2	8 6	52.16	52.17
262	45	3721	8.5 A0	52 51.875	235.57	0.51	- 0.01	33 15.90	1703.7	8.6	- 0.3	12	51.93	
263	45	3813	6.5 G5	22 6 39.433	242.80	0.61	- 0.56	29 45.89	1764.1	8.0	+ 5.1	23 18	52.09	52.05
264	44	4073	5.5 A0	11 45.576	246.13	0.65	+ 0.70	11 31.54	1784.8	7.8	+ 1.0	26 24	52.32	52.34
265	45	3919	7.8 K2	22 52.998	251.36	0.75	- 0.21	31 46.74	1827.0	7.1	- 1.1	6 7	52.24	52.69
266	45	3941	7.3 A2	22 24 54.857	+252.45	+ 0.77	- 0.25	45 32 3.20	+1834.2	+ 7.0	- 1.5	16 13	52.56	52.63
267	45	3958	8.2 K2	27 45.274	254.09	0.79	- 0.05	29 17.32	1844.1	6.9	+ 0.5	7 6	52.29	52.40
268	44	4183	7.9 K0	35 36.998	258.98	0.85	- 0.19	8 53.13	1869.9	6.4	+ 0.5	12 11	51.81	51.80
269	45	4002	7.1 F8	36 2.532	258.50	0.86	- 1.05	34 11.05	1871.3	6.3	-16.9	19 15	52.38	52.31
270	44	4209	8.3 K2	41 1.698	261.77	0.90	+ 0.06	15 58.06	1886.4	6.1	+ 1.7	7 5	51.99	51.93
271	45	4065	8.6 A0	22 47 9.008	+264.63	+ 0.95	- 0.01	45 37 57.22	+1903.8	+ 5.7	+ 1.1	11 9	51.80	51.48
272	44	4263	8.1 K0	50 58.173	267.09	0.99	- 0.02	25 37.47	1914.0	5.4	+ 0.1	21 15	51.93	52.02
273	45	4094	8.4 F8	53 55.392	268.63	1.02	- 0.16	31 29.38	1921.5	5.1	- 3.7	9 5	51.78	51.07
274	44	4307	7.9 K0	59 17.441	272.05	1.05	+ 0.26	14 28.18	1934.3	4.8	+ 2.1	9 5	51.69	51.50
275	44	4320	8.8 F5	23 1 58.636	273.61	1.08	+ 0.17	12 42.63	1940.4	4.6	+ 0.8	9 6	52.27	52.25
276	44	4347	7.1 K0	23 8 31.444	+277.31	+ 1.15	- 0.75	45 14 40.05	+1953.9	+ 4.1	-27.5	14 11	51.95	52.20
277	44	4373	6.3 B9p	15 34.818	281.40	1.21	+ 0.24	12 56.13	1966.7	3.5	- 0.9	32 29	52.37	52.48
278	44	4399	8.5 K0	21 5.451	284.33	1.26	+ 1.71	31 7.56	1975.4	3.1	- 0.5	10 8	51.40	51.32
279	44	4424	7.9 K0	26 3.207	287.32	1.31	+ 0.02	25 4.21	1982.3	2.7	- 0.4	22 20	52.19	52.14
280	45	4252	7.6 K2	29 35.157	289.26	1.35	0.00	36 47.05	1986.6	2.3	- 1.5	28 23	52.09	52.04
281	44	4454	8.0 G5	23 34 4.951	+292.12	+ 1.37	+ 0.26	45 14 22.18	+1991.5	+ 2.0	- 8.8	10 5	51.95	51.75
282	44	4464	7.8 A2	36 53.574	293.67	1.41	- 0.06	26 34.57	1994.1	1.7	- 0.9	8 7	51.90	52.06
283	44	4466	8.8 K5	37 23.641	294.09	1.40	- 0.07	10 0.46	1994.5	1.7	- 0.3	6	52.16	
284	44	4519	8.8 A0	52 18.748	302.77	1.54	- 0.07	29 15.11	2003.1	0.3	+ 0.1	7 8	51.87	51.74
285	44	4540	9.0	59 24.259	306.97	1.61	+ 0.02	31 4.34	2004.2	- 0.3	+ 0.1	8 7	52.22	51.89

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).
 *259, 5^m0 to 6^m7.

T in centuries from 1950.0, T' in centuries from epoch.



PART 2

CATALOGUE OF 105

RICHMOND FLORIDA ZENITH STARS

OBSERVED IN THE YEARS 1950 TO 1953

REDUCED WITHOUT PROPER MOTION

TO THE

EQUINOX 1950.0

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term			1st Term	2nd Term				
1	24°	123	7.4 G5	0 ^h 47 ^m 58 ^s .080	+320 ^s .46	+ 0 ^s .97	- 0 ^s .16	25° 18' 47".49	+1960 ^s .5	- 5 ^s .3	- 3 ^s .0	8 7	51.65	51.78	
2	24	136	8.6 F0	51 42.827	321.55	0.99	- 0.06	26 38.97	1953.4	5.7	- 4.4	10 8	51.87	51.66	
3	25	232	8.2 F2	1 21 6.841	329.58	1.07	+ 0.05	39 53.73	1880.0	8.7	- 3.8	6 4	51.93	52.29	
4	25	258	7.6 F0	27 53.156	331.34	1.08	- 0.12	39 24.36	1858.7	9.4	+ 6.0	14 11	52.08	52.27	
5	25	276	6.3 F5	38 30.666	333.88	1.10	+ 0.85	29 37.65	1821.9	10.5	- 4.3	12 7	52.24	52.25	
6	25	295	8.0 F8	1 43 57.263	+335.47	+ 1.11	- 0.91	25 40 12.82	+1801.6	-11.1	-12.3	9 7	52.14	52.26	
7	25	311	8.2 A0	48 9.888	336.44	1.10	0.00	36 15.38	1785.1	11.5	- 3.1	9 7	52.11	52.21	
8	25	319	7.8 F0	51 6.492	337.07	1.11	+ 0.74	31 52.73	1773.3	11.8	- 5.6	7 5	51.96	52.23	
9	25	343	7.2 G5	2 1 30.766	339.82	1.12	+ 0.21	40 51.60	1729.1	13.0	+ 0.4	7 6	51.56	51.70	
10	25	349	6.0 B8	3 58.757	340.10	1.11	+ 0.12	28 1.12	1718.1	13.1	- 0.6	10 8	51.91	52.06	
11	25	355	5.1 F0	2 6 34.176	+341.07	+ 1.12	+ 0.55	25 42 15.15	+1706.3	-13.5	- 3.3	6 5	52.16	52.44	
12	24	325	7.0 F5	10 50.244	341.56	1.11	+ 0.14	21 50.00	1686.4	13.8	- 8.7	6 4	52.02	52.36	
13	25	373	5.8 F2	12 53.881	342.33	1.12	+ 1.28	33 6.76	1676.6	14.1	- 5.8	7 6	51.59	51.73	
14	25	398	7.1 F5	24 5.025	345.34	1.12	- 0.39	49 2.23	1621.0	15.2	- 3.4	8 7	51.83	51.99	
15	24	381	8.0 A0	38 16.490	347.74	1.10	- 0.22	24 4.09	1545.0	16.4	- 2.5	8 8	52.12	52.37	
16	25	441	6.4 A2	2 40 56.737	+348.36	+ 1.09	- 0.08	25 25 36.96	+1530.0	-16.7	- 0.2	7 6	52.14	52.37	
17	25	536	6.4 K0	3 17 27.366	355.66	1.01	+ 0.09	29 2.58	1305.3	19.9	- 8.4	7 4	51.62	51.92	
18	25	620	8.7 B9	45 41.215	360.78	0.92	- 0.08	38 54.31	1108.5	22.2	+ 0.5	6 5	52.00	51.98	
19	25	641	7.2 A0	50 33.482	361.25	0.89	+ 0.18	32 9.05	1072.8	22.5	- 3.0	5 4	51.31	51.44	
20	25	677	8.2 A0	4 3 39.556	363.24	0.83	- 0.78	35 18.75	974.3	23.4	+ 0.6	6	51.72		
21	25	703	7.8 B9	4 17 27.437	+365.33	+ 0.76	+ 0.08	25 42 31.86	+ 867.1	-24.1	- 0.8	5	52.54		
22	25	707	5.4 B9	19 32.115	365.07	0.74	+ 0.22	30 47.24	850.7	24.3	- 1.4	10	52.36		
23	25	710	7.7 F5	22 7.543	365.69	0.73	+ 0.36	38 8.95	830.2	24.4	- 0.9	7	52.00		
24	25	720	7.6 K2	34 20.766	367.00	0.66	+ 0.24	37 40.12	731.7	25.0	- 2.0	9 8	51.81	51.91	
25	25	918	8.5 A	5 38 33.513	370.75	0.23	+ 0.05	29 21.98	187.2	26.9	- 1.1	11 10	52.10	52.00	
26	25	941	6.9 B2p	5 40 33.651	+370.60	+ 0.22	- 0.18	25 25 4.77	+ 169.8	-27.0	+ 1.4	8	52.55		
27	25	978	6.6 K0	44 29.005	371.06	0.20	- 0.01	33 5.97	135.6	27.0	+ 0.5	7 6	51.95	52.10	
28	25	1058	6.6 K0	55 47.021	371.83	0.11	- 0.32	46 26.22	36.9	27.1	- 3.1	6 4	52.21	52.28	
29	25	1272	8.6 A2	6 23 1.462	370.85	- 0.09	- 0.20	32 27.59	-201.0	26.8	- 3.2	8	51.95		
30	25	1287	8.0 A0	25 39.452	371.10	0.11	- 0.21	39 13.72	223.9	26.8	- 1.9	7	51.97		
31	25	1446	7.2 K2	6 46 38.218	+369.86	- 0.25	+ 0.20	25 32 34.61	-405.0	-26.3	- 3.1	8	52.14		
32	25	1469	6.6 A2	48 53.125	370.24	0.27	- 0.20	43 25.11	424.3	26.3	- 0.4	8 9	51.95	52.08	
33	25	1496	5.8 G0	52 14.175	369.24	0.29	- 0.31	26 23.89	452.9	26.2	+ 1.6	7	51.69		
34	25	1542	6.9 A2	59 2.801	368.95	0.33	- 0.09	29 54.07	510.7	25.9	+ 0.3	8	52.02		
35	25	1594	7.0 G0	7 6 31.240	369.25	0.40	- 0.97	48 44.59	573.6	25.7	-17.7	12	51.97		
36	25	1609	6.9 A0	7 9 44.925	+369.04	- 0.42	- 0.06	25 50 2.10	- 600.6	-25.6	- 1.5	14 15	52.28	52.34	
37	25	1854	8.2 F5	8 5 19.189	362.25	0.71	- 0.14	41 57.36	1042.1	22.4	- 0.6	6	52.62		
38	25	1865	5.8 G5	7 26.641	361.85	0.72	- 0.53	39 37.57	1058.0	22.2	-35.0	7 6	52.54	52.45	
39	25	1950	8.1 A3	31 8.078	357.48	0.80	- 0.35	24 20.18	1228.0	20.3	- 1.1	9	52.06		
40	26	1901	6.8 A5	9 4 57.479	352.06	0.91	- 0.27	49 43.36	1447.5	17.5	- 1.1	6 7	52.00	51.86	
41	25	2062	8.2 A5	9 10 47.152	+350.15	- 0.91	- 0.29	25 27 41.93	-1482.3	-16.8	- 1.5	7	51.88		
42	26	1989	7.2 F0	36 20.535	344.87	0.94	- 0.04	35 36.88	1623.2	14.5	+ 1.4	21 22	52.25	52.25	
43	26	1993	7.8 K0	39 29.201	344.53	0.95	- 0.17	49 8.05	1639.2	14.2	- 1.5	12	52.02		
44	26	2064	6.0 K0	10 13 54.392	335.94	0.93	- 0.80	37 13.59	1793.3	10.6	+ 2.4	8 7	52.06	52.20	
45	26	2081	6.9 K0	21 2.538	334.39	0.93	- 0.15	49 20.60	1820.3	9.8	- 6.4	15	52.41		
46	26	2144	8.8 A3	10 50 0.757	+326.77	- 0.87	- 0.31	25 49 38.26	-1911.5	- 6.8	+ 1.4	13 12	52.39	52.32	
47	26	2152	6.4 K0	53 51.830	325.68	0.86	- 0.20	46 3.38	1921.4	6.3	- 2.0	13 11	52.07	52.06	
48	25	2335	7.5 G0	11 2 35.459	323.10	0.82	- 2.98	28 22.12	1941.7	5.4	- 7.4	7 6	52.08	52.24	
49	26	2189	7.3 A2	15 1.278	319.89	0.80	- 0.47	44 2.70	1965.8	4.1	- 4.1	12 13	52.32	52.32	
50	26	2238	8.1 G0	34 49.254	314.38	0.72	+ 0.09	41 48.47	1992.2	2.1	+ 1.6	10	52.36		

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0. T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+
					1st Term	2nd Term			1st Term	2nd Term			
51	26°	2241	8.0 G0	11 ^b 36 ^m 52 ^s .090	+313 ^u .77	- 0 ^s .72	- 0 ^s .73	25° 34' 44 ^s .96	-1994 ^u .1	- 1 ^u .9	- 4 ^u .6	8	52.55
52	26	2250	6.2 K5	41 37.104	312.43	0.69	- 0.14	29 44.80	1997.8	1.4	+ 1.4	17 18	52.34 52.22
53	26	2270	7.0 K0	52 50.150	309.35	0.65	- 0.48	48 2.09	2003.3	0.3	- 0.5	9 10	52.22 52.23
54	25	2442	8.0 F8	55 29.868	308.57	0.64	+ 0.51	24 58.54	2003.9	0.1	- 1.1	10	52.33
55	26	2307	8.6 F8	12 5 27.775	305.80	0.60	+ 0.07	39 21.88	2003.7	+ 0.9	- 6.2	14 13	52.20 52.27
56	26	2323	8.4 F2	12 15 19.542	+303.00	- 0.57	- 0.19	25 50 56.81	-1999.8	+ 1.9	- 1.2	12	52.28
57	26	2345	6.4 A5	21 56.325	301.14	0.54	- 0.12	51 34.24	1995.1	2.5	- 0.8	14 15	52.30 52.37
58	26	2369	8.0 K2	33 32.924	297.95	0.48	+ 0.05	41 57.42	1982.8	3.6	- 5.3	13	52.27
59	26	2455	7.4 K0	13 21 24.470	284.85	0.27	- 0.35	48 29.63	1879.1	7.6	+ 0.4	9	52.23
60	26	2559	8.2 F5	14 20 17.289	270.25	0.04	- 0.53	46 38.01	1640.3	11.6	- 3.2	11 11	52.44 52.27
61	25	2770	6.2 F2	14 20 52.062	+270.47	- 0.04	- 1.21	25 33 49.93	-1637.4	+11.7	+ 6.6	11	52.46
62	25	2853	7.3 G5	55 11.820	263.17	+ 0.05	- 0.43	31 23.55	1446.6	13.5	+ 1.2	6	52.51
63	26	2647	8.1 F8	15 2 34.606	261.44	0.07	- 0.56	39 17.79	1401.2	13.9	- 7.3	7	52.90
64	26	2670	6.7 A0	13 31.864	258.98	0.10	- 0.01	49 35.24	1331.1	14.4	- 0.2	11 13	52.65 52.47
65	26	2685	7.4 K0	20 16.267	257.79	0.11	+ 0.27	48 6.52	1286.5	14.7	- 1.9	11 9	52.55 52.59
66	25	2908	8.1 F5	15 21 42.593	+258.29	+ 0.12	0.00	25 27 41.51	-1276.8	+14.8	- 0.9	8	52.62
67	25	2981	7.9 K0	49 22.260	253.78	0.15	- 0.18	27 12.22	1081.5	15.8	- 1.0	8	52.16
68	25	3039	7.5 K0	16 8 0.973	250.76	0.16	- 0.09	37 1.80	940.7	16.4	0.0	7	52.56
69	25	3119	9.4 G0	40 10.382	247.36	0.17	+ 0.03	31 32.59	684.1	17.1	+15.9	6 7	52.71 52.51
70	25	3137	7.9 F8	46 1.193	246.52	0.16	- 0.03	38 2.41	635.8	17.2	+ 3.4	8 9	52.25 51.94
71	25	3156	6.3 K0	16 52 59.238	+245.45	+ 0.16	+ 0.07	25 48 36.07	- 577.7	+17.2	- 2.2	21 22	52.51 52.47
72	25	3183	6.0 K0	17 0 15.602	245.54	0.16	+ 0.37	34 29.40	516.6	17.4	+ 8.8	17 19	52.28 52.41
73	25	3246	5.3 A2	18 7.438	244.41	0.15	+ 0.12	35 13.65	364.2	17.6	- 1.6	11 10	52.12 51.89
74	25	3308	7.3 K0	34 22.757	243.58	0.13	- 0.08	38 46.50	223.6	17.7	- 2.8	13 11	52.48 52.29
75	25	3344	6.9 A0	44 39.143	242.97	0.12	- 0.49	46 1.56	134.1	17.7	- 1.2	7 6	52.26 52.06
76	25	3353	5.3 K0	17 46 47.362	+243.30	+ 0.12	- 0.08	25 38 17.43	- 115.5	+17.7	- 3.9	7	52.25
77	25	3404	7.6 A0	59 32.273	243.63	0.11	+ 0.13	29 20.21	4.0	17.8	- 0.1	14	52.04
78	25	3453	6.8 K0	18 9 30.124	243.51	0.10	- 0.39	32 53.55	+ 83.1	17.7	+ 2.0	20 19	52.24 52.18
79	25	3564	7.5 G5	30 33.648	244.30	0.08	+ 0.09	27 3.44	266.5	17.6	+ 1.1	9	51.88
80	25	3581	8.5 A5	33 55.686	243.83	0.08	+ 0.03	39 47.62	295.6	17.5	- 1.0	6	52.05
81	25	3623	8.0 A0	18 44 34.209	+244.84	+ 0.06	- 0.11	25 29 2.30	+387.3	+17.4	- 1.1	7 6	52.12 52.04
82	25	3663	7.8 A0	53 38.758	244.97	0.06	- 0.16	37 45.41	464.9	17.3	- 0.4	9	52.12
83	25	3710	6.9 B8	19 1 15.183	245.16	0.06	- 0.22	45 5.18	529.3	17.1	- 2.7	22 20	52.07 51.97
84	25	3757	6.8 A0	11 50.182	246.23	0.05	- 0.14	40 18.43	618.0	17.0	- 0.5	23 20	52.46 52.33
85	25	3864	6.9 F2	30 0.953	248.48	0.04	+ 0.33	29 16.99	767.1	16.6	+ 6.2	6 7	51.76 51.88
86	25	3876	7.6 K0	19 31 58.068	+248.14	+ 0.05	- 0.03	25 41 46.28	+ 782.9	+16.5	- 2.4	13 10	51.84 51.61
87	25	4067	8.8 A3	59 10.171	251.92	0.05	+ 0.10	32 26.75	995.8	15.7	- 1.8	9	51.59
88	25	4085	8.0 K0	20 2 4.176	252.06	0.06	- 0.55	38 53.70	1017.8	15.6	- 4.8	12 13	52.04 52.16
89	25	4165	4.8 B3	13 8.655	254.20	0.06	+ 0.01	26 16.84	1100.0	15.3	- 0.3	6	51.43
90	25	4189	6.8 B3	16 9.676	254.54	0.06	- 0.18	29 28.57	1121.9	15.2	+ 2.5	11 8	52.38 52.40
91	25	4299	6.3 A2	20 33 59.625	+256.98	+ 0.09	+ 0.10	25 42 29.38	+1247.6	+14.4	+ 1.4	20 16	52.24 52.03
92	25	4324	8.6 A2	38 9.357	257.93	0.10	- 0.04	36 39.20	1275.9	14.2	- 2.5	5 4	52.01 51.86
93	25	4347	7.0 F0	41 10.659	258.40	0.10	- 0.08	38 37.86	1296.2	14.1	+ 0.5	8 7	51.48 51.32
94	25	4384	7.6 B9	46 54.998	259.80	0.11	- 0.07	29 1.38	1334.0	13.9	+ 0.7	6 4	52.98 52.93
95	25	4533	7.1 A0	21 22 34.617	266.61	0.20	+ 0.12	39 52.05	1549.7	11.9	+ 0.2	15 15	51.91 51.98
96	24	4471	6.6 B8	21 43 40.331	+271.85	+ 0.25	+ 0.06	25 21 8.05	+1660.0	+10.8	- 0.6	11 9	51.74 51.65
97	25	4621	8.0 F0	46 38.930	272.34	0.26	+ 0.31	28 34.98	1674.4	10.6	- 1.1	8	51.82
98	24	4525	7.1 A0	22 2 14.588	276.12	0.32	0.00	24 56.01	1745.5	9.6	- 1.0	12 11	52.08 52.03
99	25	4691	6.8 G5	10 52.494	277.86	0.35	- 0.36	41 39.83	1781.3	8.9	-14.3	8 7	51.78 51.66
100	25	4709	7.6 A3	16 25.032	279.46	0.37	+ 0.15	31 22.76	1803.0	8.5	- 0.3	9	52.01

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term				1st Term	2nd Term				
101	25°	4730	7.1 A0	22 ^b 23 ^m 43 ^s .565	+281 ^s .13	+ 0 ^s .40	- 0 ^s .18	25° 40' 23 ^s .02	+1830 ^s .70	+ 7 ^s .9	- 0 ^s .4	9	52.04			
102	25	4810	7.9 A0	44 21.464	286.63	0.48	- 0.25	32 22.92	1896.1	6.4	- 3.0	9 8	52.18	52.12		
103	24	4737	6.7 K0	23 12 55.601	294.39	0.60	0.00	23 57.21	1962.1	4.0	+ 2.1	10 9	52.01	52.15		
104	25	4927	6.6 K2	20 0.228	296.19	0.63	+ 0.06	38 39.10	1973.8	3.3	- 1.7	10 8	51.98	52.02		
105	24	4836	7.0 F2	45 59.860	303.46	0.74	- 0.99	22 34.18	2000.5	0.9	- 2.0	16 11	52.38	52.41		

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

PART 3

CATALOGUE OF 249

HERSTMONCEUX ENGLAND ZENITH STARS

OBSERVED IN THE YEARS 1950 TO 1953

REDUCED WITHOUT PROPER MOTION

TO THE

EQUINOX 1950.0

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term			1st Term	2nd Term				
1	50°	2	9.0	0 ^h 5 ^m 13 ^s .115	+311.07	+ 1.99	°	50° 55' 40.766	+2003.7	- 0.79	?	7 7	52.43	52.31	
2	50	47	8.6 A5	15 11.628	318.18	2.09	.....	50 47 48.96	1999.8	1.9	.....	6 7	52.13	52.08
3	50	72	7.2 F2	23 36.661	324.30	2.20	.....	51 0 13.62	1993.6	2.9	.....	21 19	52.01	52.10
4	50	93	7.9 A2	29 49.355	328.61	2.25	.....	50 49 41.02	1987.3	3.6	.....	8 6	51.53	51.43
5	50	115	7.8 A2	35 37.640	332.87	2.32	.....	50 59 38.86	1980.1	4.2	.....	8	52.15	
6	50	147	5.0 B9	0 45 59.246	+339.86	+ 2.38	.....	50 41 44.68	+1964.0	- 5.3	.....	9 8	51.88	51.90
7	50	165	8.3	48 48.278	342.11	2.42	.....	50 55 42.29	1959.0	5.7	.....	8 6	52.14	52.25
8	50	179	8.4	52 4.962	344.41	2.45	.....	50 55 58.79	1952.7	6.0	.....	7 6	51.66	51.76
9	50	198	7.6 B5	58 1.647	348.09	2.47	.....	50 36 36.08	1940.3	6.8	.....	8 8	51.66	51.75
10	50	212	6.6 B3	1 1 50.522	350.91	2.51	.....	50 44 31.73	1931.7	7.3	.....	12 13	52.11	52.09
11	50	228	7.0 F5	1 7 36.145	+354.86	+ 2.55	.....	50 44 50.10	+1917.7	- 7.9	.....	11 10	52.06	52.07
12	50	245	8.9 G5	12 44.583	358.11	2.58	.....	50 36 29.38	1904.1	8.6	.....	10 10	51.93	52.00
13	50	267	7.8 A2	21 8.587	364.36	2.65	.....	50 54 47.83	1879.9	9.6	.....	5	51.81	
14	50	280	8.9	24 56.933	366.55	2.66	.....	50 44 35.02	1868.1	10.1	.....	6 5	52.44	52.17
15	50	315	8.9 A0	34 0.449	373.31	2.74	.....	51 4 36.60	1838.0	11.2	.....	9 7	52.26	52.12
16	50	323	8.9 A2	1 37 14.933	+374.45	+ 2.70	.....	50 39 54.59	+1826.5	-11.6	.....	7	52.68	
17	50	352	9.1	43 46.484	379.19	2.76	.....	50 52 27.56	1802.3	12.5	.....	6	53.02	
18	50	378	8.8 B9	48 41.995	382.56	2.77	.....	50 57 7.29	1783.0	13.1	.....	6 5	52.47	52.42
19	50	390	9.0 A2	51 28.157	384.08	2.78	.....	50 51 53.88	1771.8	13.4	.....	7 6	52.24	52.15
20	50	416	8.8 A2	55 35.943	386.04	2.77	.....	50 38 7.48	1754.6	14.1	.....	9 8	51.95	52.07
21	50	455	8.2 A0	2 4 22.736	+392.12	+ 2.80	.....	50 51 37.57	+1716.3	-15.1	.....	6	51.78	
22	50	466	7.6 A0	7 22.476	393.82	2.80	.....	50 49 9.70	1702.6	15.5	.....	8	52.30	
23	50	522	6.8 F5	16 48.487	399.19	2.79	.....	50 43 46.87	1657.6	16.8	.....	7 4	52.57	53.32
24	50	541	8.6 A0	20 28.024	401.15	2.78	.....	50 40 34.41	1639.4	17.1	.....	6 6	52.87	53.17
25	50	555	8.5 F5	24 39.401	403.77	2.78	.....	50 43 55.45	1618.1	17.7	.....	7 6	52.49	52.59
26	50	587	9.1	2 31 46.878	+408.69	+ 2.80	.....	50 58 15.95	+1580.5	-18.7	.....	7 7	52.72	52.97
27	50	636	7.8 B9	45 2.360	414.95	2.72	.....	50 41 21.85	1506.6	20.2	.....	10 8	52.26	52.06
28	50	654	6.6 K0	50 52.753	419.12	2.73	.....	50 57 51.27	1472.5	21.1	.....	14 12	52.37	52.26
29	50	670	9.0 A2	53 37.549	419.37	2.68	.....	50 39 54.68	1456.1	21.3	.....	6 6	52.53	52.82
30	50	689	8.6 F8	3 0 25.389	423.24	2.66	.....	50 45 49.46	1414.6	22.1	.....	6	51.52	
31	50	706	7.2 A2	3 4 53.002	+426.36	+ 2.66	.....	50 58 33.11	+1386.7	-22.8	.....	6	51.64	
32	50	729	5.9 K0	12 36.910	429.17	2.57	.....	50 45 13.92	1337.1	23.6	.....	6 5	52.21	52.24
33	50	738	7.2 B9	16 29.846	431.15	2.56	.....	50 47 19.12	1311.6	24.0	.....	10 9	52.37	52.29
34	50	757	7.4 B8	23 1.858	433.63	2.49	.....	50 40 21.26	1267.9	24.7	.....	8 7	52.01	52.02
35	50	771	8.6 A0	27 7.116	436.31	2.47	.....	50 51 34.70	1240.0	25.3	.....	5 4	52.47	52.83
36	50	802	7.8 G0	3 38 58.935	+442.15	+ 2.37	.....	51 1 0.80	+1156.9	-26.6	.....	6	51.44	
37	50	831	7.2 F2	45 11.894	443.09	2.27	.....	50 41 19.66	1112.1	27.1	.....	6 4	51.74	51.89
38	50	849	7.6 B9	49 14.881	445.72	2.25	.....	50 54 9.42	1082.4	27.6	.....	7 6	51.74	51.70
39	50	873	8.7 A2	56 55.304	449.44	2.17	.....	51 3 58.62	1025.4	28.3	.....	8 7	51.90	52.02
40	50	896	8.6 F0	4 1 51.860	448.98	2.06	.....	50 37 28.84	988.0	28.7	.....	8	52.63	
41	50	908	7.8 B8	4 4 41.814	+450.91	+ 2.04	.....	50 48 37.78	+ 966.3	-29.0	.....	7 6	52.09	52.27
42	50	926	7.9 F5	8 50.430	453.51	2.00	.....	51 2 26.13	934.4	29.4	.....	7 6	52.13	52.16
43	50	963	7.0 K2	13 25.037	453.46	1.92	.....	50 44 35.60	898.9	29.7	.....	9 8	52.67	52.74
44	50	973	6.0 B3	16 23.616	454.71	1.88	.....	50 48 5.88	875.5	29.9	.....	9 8	52.48	52.29
45	50	986	7.1 F2	20 44.396	455.67	1.82	.....	50 43 52.77	841.2	30.3	.....	10 9	51.99	52.00
46	50	995	8.8 A	4 23 38.310	+455.86	+ 1.76	.....	50 36 24.22	+ 818.1	-30.5	.....	10 9	52.68	52.63
47	50	1016	7.7 F0	30 48.878	459.45	1.67	.....	50 54 0.94	760.4	31.2	.....	7 6	52.41	52.29
48	50	1028	8.0 K0	36 23.515	461.53	1.59	.....	51 0 37.26	715.0	31.5	.....	7 6	52.43	52.32
49	50	1051	7.8 K2	42 34.456	463.04	1.49	.....	51 0 22.49	664.3	32.0	.....	7 6	52.58	52.52
50	50	1076	8.4 B9	48 33.998	462.75	1.37	.....	50 42 23.67	614.6	32.3	.....	9	52.17	

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+
						1st Term	2nd Term				1st Term	2nd Term			
51	50°	1093	8.7	4 ^b 53 ^m 54. ^s 313	+464. ^s 98	+ 1. ^s 29	.	50° 54' 15".37	+ 570".0	-32".7	"	8	52.03		
52	50	1106	8.8	58 1.122	465.98	1.23	.....	50 56 13.18	535.4	32.9	.....	5	52.24
53	50	1127	9.0 A	5 4 36.234	465.85	1.10	.....	50 42 12.74	479.7	33.1	.....	5 4	52.85 52.79
54	50	1135	8.9	11 0.646	467.70	0.99	.....	50 50 51.28	425.2	33.4	.....	8 7	52.71 52.65
55	50	1149	8.0 A2	15 55.316	469.13	0.90	.....	50 58 19.24	383.1	33.6	.....	6 7	53.13 53.22
56	50	1166	8.4 F5	5 20 59.986	+469.58	+ 0.81	.....	50 56 13.08	+ 339.4	-33.8	.....	7 6	52.17 52.02
57	50	1178	8.7 A0	24 33.750	469.78	0.74	.....	50 53 56.92	308.7	33.9	.....	8 7	52.12 51.99
58	50	1184	7.6 K0	27 57.398	470.67	0.68	.....	50 59 30.63	279.3	34.0	.....	12 10	52.20 52.24
59	50	1204	8.6 A0	34 26.181	471.66	0.55	.....	51 3 39.94	223.1	34.2	.....	6 5	52.05 52.05
60	50	1218	7.6 K0	39 28.161	469.81	0.45	.....	50 40 49.05	179.2	34.2	.....	11 10	52.11 52.21
61	50	1229	8.8 B8	5 44 23.665	+471.96	+ 0.36	.....	51 0 7.17	+ 136.4	-34.4	.....	6	52.04
62	50	1240	8.4 G5	48 35.338	470.75	0.28	.....	50 45 56.77	99.7	34.3	.....	6	51.94
63	51	1139	6.9 A0	56 13.176	472.78	0.14	.....	51 4 44.96	33.1	34.4	.....	5 6	52.68 52.75
64	50	1271	9.0 G5	6 4 26.513	470.93	- 0.03	.....	50 45 52.36	- 38.9	34.3	.....	8	52.32
65	50	1285	8.7 F8	10 36.481	470.93	0.16	.....	50 47 30.41	92.7	34.2	.....	12	52.13
66	51	1176	9.1	6 15 53.032	+471.99	- 0.25	.....	51 0 33.82	-138.8	-34.3	.....	6	52.29
67	50	1297	8.1 K0	19 25.796	470.38	0.32	.....	50 46 3.40	169.7	34.1	.....	8	51.72
68	50	1316	8.2 F8	28 6.455	469.25	0.48	.....	50 40 58.13	245.2	33.9	.....	9	51.80
69	50	1329	8.0 K0	34 24.952	468.10	0.59	.....	50 35 22.59	299.8	33.7	.....	8	52.26
70	50	1340	9.1 F5	38 38.746	468.12	0.67	.....	50 40 33.26	336.4	33.6	.....	7 7	52.29 52.02
71	50	1358	8.5 F5	6 47 32.049	+466.50	- 0.83	.....	50 35 53.62	- 412.7	-33.1	.....	7 6	51.71 51.66
72	51	1258	8.0 A2	53 1.496	468.34	0.95	.....	51 4 17.33	459.6	33.1	.....	6 5	52.79 52.74
73	50	1383	8.5 A2	58 41.657	465.39	1.04	.....	50 43 27.39	507.7	32.7	.....	8	52.13
74	50	1390	9.2 A0	7 1 57.977	464.48	1.09	.....	50 40 16.51	535.3	32.5	.....	7	52.29
75	50	1405	8.2 F0	9 48.300	462.75	1.23	.....	50 38 40.02	601.1	32.0	.....	11 10	52.33 52.25
76	50	1411	8.1 A0	7 14 28.800	+461.46	- 1.30	.....	50 35 43.58	- 639.9	-31.8	.....	7 6	52.43 52.32
77	50	1449	8.3	32 58.243	456.87	1.59	.....	50 36 53.91	790.9	30.4	.....	6	52.80
78	50	1452	6.7 F5	35 34.179	456.29	1.63	.....	50 38 39.09	811.8	30.2	.....	21 18	52.48 52.72
79	50	1457	8.7 F0	38 25.310	455.67	1.67	.....	50 41 4.38	834.5	30.1	.....	9	52.05
80	50	1475	8.6 G5	46 39.887	453.30	1.79	.....	50 43 0.27	899.5	29.3	.....	12 11	51.91 51.98
81	50	1489	8.6 G5	7 52 24.010	+451.22	- 1.87	.....	50 40 33.80	- 944.0	-28.8	.....	8 6	52.75 52.98
82	51	1381	8.6 F8	56 44.347	450.38	1.94	.....	50 48 13.26	977.3	28.4	.....	10 9	52.24 52.37
83	51	1384	8.4 F5	8 0 56.841	450.28	2.02	.....	51 4 40.01	1009.3	28.1	.....	10 9	52.14 52.26
84	51	1393	8.5 F8	5 33.398	448.60	2.08	.....	51 4 59.56	1043.9	27.6	.....	6 5	52.99 52.97
85	51	1399	8.6 F0	12 10.749	445.34	2.13	.....	50 56 22.78	1092.9	27.0	.....	9	52.15
86	51	1413	8.7 G5	8 19 17.406	+443.34	- 2.23	.....	51 6 52.33	-1144.5	-26.3	.....	7	52.32
87	51	1422	8.4 A5	24 4.492	441.13	2.28	.....	51 4 21.15	1178.6	25.7	.....	11 10	51.97 52.06
88	51	1431	7.6 G0	28 16.943	438.01	2.29	.....	50 47 26.53	1208.2	25.2	.....	15 13	51.82 51.94
89	50	1556	8.4 G5	31 23.617	435.98	2.30	.....	50 38 40.84	1229.8	24.8	.....	8 6	52.14 52.15
90	51	1440	8.8 K	35 10.031	435.20	2.35	.....	50 50 24.04	1255.6	24.5	.....	6 5	51.48 51.56
91	51	1446	8.8	8 38 40.641	+433.59	- 2.39	.....	50 50 0.62	-1279.4	-24.1	.....	7 5	52.13 52.15
92	51	1454	8.2 G0	45 49.461	430.37	2.44	.....	50 51 34.74	1326.9	23.3	.....	9 7	52.15 52.17
93	51	1460	7.6 A0	53 39.010	426.91	2.50	.....	50 56 6.18	1377.4	22.3	.....	22 21	52.43 52.50
94	51	1468	8.4 G5	57 12.122	425.95	2.55	.....	51 7 31.59	1399.8	21.9	.....	6 5	51.47 51.55
95	51	1478	7.0 F2	9 1 48.267	423.18	2.56	.....	51 1 28.57	1428.4	21.3	.....	9 8	52.06 51.93
96	51	1485	8.2 G5	9 5 24.947	+421.19	- 2.56	.....	50 59 33.74	-1450.4	-20.9	.....	5	52.77
97	51	1488	6.6 A0	8 27.762	418.20	2.56	.....	50 38 43.15	1468.6	20.4	.....	15	52.23
98	51	1492	8.7 K0	12 39.742	416.94	2.60	.....	50 53 20.08	1493.3	20.0	.....	12	52.11
99	51	1494	8.6 K5	16 28.186	414.21	2.59	.....	50 42 32.18	1515.3	19.4	.....	15 13	52.19 52.36
100	51	1500p	8.8 G5	19 11.307	413.15	2.61	.....	50 49 3.03	1530.8	19.2	.....	15 13	52.08 52.14

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950			Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+	
							1st Term	2nd Term				1st Term	2nd Term				
101	51°	1510	9.4	9 ^h 22 ^m 17 ^s .773	+411 ^a .22	- 2 ^b .61	°	50° 45' 30 ^c .80	-1548 ^d .2	-18 ^e .7	?	7	7	51.90	51.76		
102	51	1529	8.8	34 15.960	405.09	2.66	.....	50 56 5.70	1612.5	17.3	.....	12	10	52.02	52.21
103	51	1537	8.0 G5	39 33.969	401.61	2.65	.....	50 49 1.90	1639.6	16.5	.....	15	16	52.13	52.07
104	51	1553s	7.2 G5	50 0.011	395.54	2.66	.....	50 51 26.45	1690.4	15.2	.....	11	9	51.91	52.10
105	51	1566	7.8 F2	58 37.389	389.86	2.63	.....	50 43 18.84	1729.7	14.0	.....	15	14	52.20	52.28
106	51	1572	7.4 K2	10 2 0.002	+387.99	- 2.63	.....	50 47 40.88	-1744.4	-13.5	.....	9	9	51.95	52.08
107	51	1577	7.6 A2	5 55.717	386.29	2.66	.....	51 4 0.51	1761.1	13.1	.....	21	20	52.23	52.29
108	51	1585	6.6 A3	10 33.127	382.48	2.60	.....	50 44 40.40	1780.0	12.5	.....	18	17	52.12	52.18
109	51	1597	8.2 G5	19 21.166	376.85	2.58	.....	50 44 51.25	1814.1	11.4	.....	10		52.00	
110	51	1605	6.6 F2	27 9.871	371.95	2.55	.....	50 49 34.32	1842.1	10.3	.....	8		52.60	
111	51	1606	8.9	10 30 50.355	+369.93	- 2.55	.....	51 0 31.17	-1854.5	- 9.8	.....	8		52.42	
112	51	1615	8.6	34 18.467	367.19	2.51	.....	50 48 39.59	-1865.8	9.4	.....	18		52.14	
113	51	1621p	7.0 A3	39 50.846	363.99	2.50	.....	51 3 40.90	1832.9	8.7	.....	9		51.88	
114	51	1625	8.3 F2	45 50.869	359.55	2.44	.....	50 52 22.45	1900.3	7.9	.....	22	21	52.16	52.21
115	51	1648	8.4	11 2 57.905	348.10	2.34	.....	51 5 25.89	1942.5	5.8	.....	10		52.36	
116	51	1658	8.8	11 13 8.341	+340.73	- 2.23	.....	50 54 48.61	-1962.5	- 4.7	.....	6	7	52.28	52.28
117	51	1662	8.9	19 9.674	336.53	2.19	.....	50 57 44.67	1972.5	4.0	.....	8		52.38	
118	51	1663	8.5 F5	22 27.809	334.01	2.14	.....	50 46 23.59	1977.4	3.6	.....	11	12	52.26	52.26
119	51	1679	6.0 K0	35 11.142	325.09	2.02	.....	50 53 43.66	1992.5	2.1	.....	10	11	52.40	52.38
120	51	1684	8.6	40 38.284	321.19	1.96	.....	50 53 15.92	1997.1	1.5	.....	11		52.26	
121	51	1693	7.6 F0	11 43 29.670	+319.13	- 1.93	.....	50 50 28.47	-1999.1	- 1.3	.....	7	8	52.14	52.15
122	51	1707	9.3	49 34.142	314.81	1.86	.....	50 53 48.69	2002.2	0.6	.....	8	9	52.76	52.70
123	51	1733	8.0 F5	12 8 20.776	301.36	1.64	.....	50 49 32.71	2002.9	+ 1.2	.....	13	12	51.96	52.03
124	51	1777	8.9 G5	39 1.435	279.67	1.27	.....	50 41 23.39	1975.3	3.9	.....	9		52.53	
125	51	1790	9.2	48 39.946	272.84	1.15	.....	50 46 14.66	1959.2	4.7	.....	8		52.57	
126	51	1824	8.4 G5	13 13 23.334	+255.21	- 0.87	.....	51 5 47.49	-1902.4	+ 6.3	.....	8		52.19	
127	51	1829	7.7 F2	15 58.258	254.18	0.82	.....	50 42 33.08	1895.1	6.4	.....	8		52.05	
128	51	1837	8.6 F8	21 12.999	250.74	0.76	.....	50 40 15.53	1879.7	6.7	.....	8		52.34	
129	51	1846	7.1 A3	26 8.874	247.09	0.71	.....	50 50 42.63	1864.3	7.0	.....	28	27	52.51	52.52
130	51	1859p	6.8 F8	38 24.316	239.19	0.58	.....	50 46 16.37	1822.3	7.6	.....	13	12	52.51	52.52
131	51	1885	8.8	13 57 34.278	+227.04	- 0.37	.....	50 45 31.79	-1746.2	+ 8.5	.....	8	9	52.48	52.46
132	51	1892	8.6 G0	14 7 1.816	220.91	0.28	.....	50 51 39.06	1704.2	8.8	.....	6	7	52.19	52.21
133	51	1899	7.9 A0	11 7.165	218.16	0.24	.....	50 56 46.27	1685.1	9.0	.....	13	14	52.89	52.79
134	51	1906	8.1 K2	14 33.132	216.71	0.21	.....	50 45 26.37	1668.6	9.1	.....	8		52.37	
135	51	1920	9.2 G5	25 2.872	209.86	0.12	.....	50 57 46.14	1616.1	9.4	.....	8		52.61	
136	51	1929	9.0	14 30 47.517	+206.25	- 0.07	.....	51 2 53.25	-1585.9	+ 9.5	.....	8		52.49	
137	51	1936	8.9	34 13.562	204.09	0.04	.....	51 6 27.68	1567.3	9.6	.....	10		52.45	
138	51	1945	8.7 F8	42 12.006	200.72	+ 0.01	.....	50 49 32.36	1522.9	9.8	.....	7	8	52.78	52.60
139	51	1965	8.7 A0	51 29.932	195.67	0.08	.....	50 50 46.66	1468.8	10.0	.....	8	9	52.74	52.59
140	51	1970	8.6 G0	55 53.506	192.55	0.10	.....	51 3 9.47	1442.4	10.1	.....	8		53.09	
141	51	1972	7.6 A2	14 58 59.277	+192.10	+ 0.12	.....	50 46 29.73	-1423.5	+10.1	.....	13	12	52.74	52.86
142	51	1987	9.1 G5	15 9 41.557	186.22	0.18	.....	50 54 29.72	1356.0	10.3	.....	9		52.13	
143	51	1990	6.8 G5	14 18.910	183.05	0.20	.....	51 7 21.09	1326.0	10.3	.....	8		52.85	
144	50	2169	8.8 K0	19 26.240	182.90	0.21	.....	50 36 54.02	1292.1	10.5	.....	10		52.56	
145	51	2003	7.4 K5	24 2.132	180.13	0.24	.....	50 46 7.04	1261.1	10.5	.....	11	10	52.21	52.09
146	51	2013	8.4 F8	15 28 11.992	+178.68	+ 0.25	.....	50 40 54.17	-1232.6	+10.5	.....	10		52.38	
147	51	2025	8.6 K2	42 44.168	170.73	0.31	.....	51 3 50.51	1129.9	10.5	.....	8		52.77	
148	51	2032	8.1 K0	46 48.872	168.88	0.32	.....	51 6 25.32	1100.3	10.6	.....	8		52.77	
149	51	2036	8.4 A0	49 51.293	168.30	0.33	.....	50 59 5.60	1077.9	10.6	.....	7		52.52	
150	51	2050	8.4 F5	59 12.670	164.93	0.34	.....	50 57 30.81	1008.1	10.6	.....	8	9	52.63	52.72

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+
				1st Term	2nd Term	1st Term	2nd Term							
151	50°	2250	9.2 K0	16 ^h 2 ^m 25 ^s .490	+165 ^s .35	+ 0 ^s .33	8	50° 38' 55".28	- 983".7	+10".7	8	8	52.00	
152	51	2061	8.3 F2	7 45.844	162.43	0.35	.....	50 51 46.80	942.7	10.6	.....	6	53.04
153	50	2269	9.1	15 55.251	160.45	0.34	.....	50 44 1.23	879.2	10.7	.....	8	52.76
154	51	2088	8.7 K0	21 32.549	157.99	0.35	.....	50 52 21.44	834.8	10.6	.....	9 6	52.74 52.55
155	51	2107	8.0 F5	27 48.545	156.17	0.35	.....	50 52 28.69	784.7	10.6	.....	7 8	52.65 52.50
156	51	2115	7.9 G5	16 32 51.974	+153.71	+ 0.35	.....	51 4 18.07	- 743.8	+10.6	.....	6 8	52.84 52.63
157	51	2125	6.9 K0	37 45.166	153.24	0.34	.....	50 55 34.84	703.9	10.6	.....	7	52.76
158	50	2322p	8.5	42 25.740	153.02	0.34	.....	50 45 28.15	665.5	10.7	.....	7	52.40
159	51	2142	7.7 K0	50 7.981	150.74	0.32	.....	50 51 19.04	601.6	10.6	.....	5 6	52.50 52.44
160	50	2352	7.3 G5	56 56.643	149.82	0.31	.....	50 46 13.54	544.5	10.6	.....	21 21	52.65 52.62
161	51	2161	7.5 K0	17 1 25.693	+147.61	+ 0.31	.....	51 0 44.54	- 506.6	+10.5	.....	12 12	52.54 52.36
162	51	2178	6.9 B9	7 3.316	147.25	0.29	.....	50 54 17.72	458.9	10.5	.....	10 9	52.29 51.94
163	50	2382	8.1 G5	15 25.414	147.40	0.27	.....	50 39 29.22	387.4	10.6	.....	7 10	52.44 52.45
164	50	2391	8.5 K0	20 0.545	145.43	0.25	.....	50 53 47.82	348.0	10.5	.....	10 11	52.41 52.33
165	50	2402	7.2 G5	23 24.434	145.97	0.24	.....	50 43 49.96	318.6	10.6	.....	18 14	52.62 52.57
166	50	2409	8.6	17 26 36.532	+146.29	+ 0.24	.....	50 36 53.95	- 291.0	+10.6	.....	5 6	52.30 52.35
167	50	2420	7.8 G5	30 21.240	145.36	0.23	.....	50 42 52.57	258.5	10.5	.....	7	52.90
168	51	2234	8.0 A3	35 34.429	143.18	0.21	.....	51 0 48.68	213.2	10.4	.....	11 10	52.46 52.44
169	50	2451	8.9	41 7.994	143.18	0.19	.....	50 56 58.30	164.8	10.4	.....	13 13	52.45 52.37
170	50	2468	5.7 A2	47 52.486	143.78	0.17	.....	50 47 31.90	106.0	10.5	.....	8 6	52.57 52.54
171	51	2268	8.1 K0	17 50 27.131	+141.73	+ 0.16	.....	51 7 30.99	- 83.5	+10.3	.....	11 10	52.70 52.71
172	50	2502	7.8 F0	58 52.273	142.78	0.13	.....	50 55 21.60	9.9	10.4	.....	9 9	52.13 52.24
173	50	2525	6.9 K0	18 5 41.620	143.47	0.11	.....	50 48 50.04	+ 49.8	10.5	.....	10 9	51.90 51.82
174	50	2534	8.2 A0	9 54.653	143.76	0.10	.....	50 46 50.03	86.7	10.5	.....	6 6	52.05 52.18
175	50	2549	7.3 F8	14 8.380	142.91	0.08	.....	50 57 13.98	123.6	10.3	.....	6 7	51.40 51.69
176	51	2354	9.0	18 18 16.810	+142.25	+ 0.07	.....	51 6 7.14	+ 159.7	+10.3	.....	9 8	52.24 52.17
177	50	2575	8.5 F5	22 23.275	144.49	0.06	.....	50 45 49.82	195.5	10.4	.....	6 8	51.73 52.16
178	50	2592	6.7 K0	26 49.733	143.44	0.04	.....	51 0 11.52	234.1	10.3	.....	15 13	52.15 52.26
179	50	2618	7.8 B5	33 11.991	143.63	0.02	.....	51 4 19.49	289.3	10.3	.....	5 3	51.97 51.89
180	50	2651	8.0 A2	40 32.676	144.46	- 0.01	.....	51 4 34.32	352.7	10.3	.....	13 12	51.95 51.89
181	50	2671	9.1	18 47 39.865	+147.25	- 0.02	.....	50 45 40.06	+413.8	+10.4	.....	6	53.18
182	50	2686	4.9 G5	51 59.163	148.57	0.03	.....	50 38 42.54	450.7	10.4	.....	16 13	52.30 52.54
183	50	2705	6.6 G5	57 44.813	149.01	0.04	.....	50 44 20.15	499.7	10.4	.....	22 19	52.43 52.31
184	50	2718	8.6	19 2 16.149	149.50	0.06	.....	50 48 6.49	537.9	10.4	.....	10 10	51.49 51.79
185	50	2731	9.0	6 26.310	149.94	0.07	.....	50 52 12.70	572.9	10.4	.....	7 7	52.88 52.58
186	50	2738	8.4 A2	19 9 33.198	+151.89	- 0.06	.....	50 38 11.29	+ 599.0	+10.4	.....	15 13	51.87 51.90
187	50	2744	8.2 A	12 22.895	151.48	0.08	.....	50 49 18.16	622.5	10.4	.....	14	52.04
188	50	2777	8.6	18 30.001	154.06	0.08	.....	50 36 28.71	673.2	10.5	.....	9 8	52.28 52.24
189	50	2789	8.4 A2	21 43.916	153.06	0.09	.....	50 56 10.03	699.7	10.3	.....	20 19	52.18 52.30
190	50	2794	8.1 G0	25 4.776	154.20	0.09	.....	50 53 4.60	727.1	10.3	.....	6 5	51.62 51.41
191	50	2812	8.5 F0	19 31 38.131	+156.30	- 0.10	.....	50 49 18.81	+ 780.2	+10.4	.....	9 9	52.27 52.26
192	50	2833	8.0 F5	37 44.639	157.17	0.10	.....	50 59 18.78	829.1	10.2	.....	15 11	51.88 51.62
193	50	2863	7.9 A0	42 44.650	159.80	0.10	.....	50 46 40.69	868.7	10.3	.....	10 11	51.59 51.60
194	50	2881	8.6	45 17.670	159.97	0.10	.....	50 53 49.25	888.8	10.2	.....	11	51.78
195	50	2904	7.7 K0	50 12.053	162.88	0.09	.....	50 38 37.84	927.0	10.3	.....	14 14	51.88 52.02
196	50	2920	7.7 A0	19 53 34.198	+163.78	- 0.09	.....	50 41 12.22	+ 953.0	+10.3	.....	14 11	52.17 52.24
197	50	2940	9.1	56 49.215	163.55	0.10	.....	50 57 6.20	977.9	10.2	.....	10 9	52.00 51.84
198	50	2980	8.4 A0	20 4 19.440	166.59	0.09	.....	50 53 9.04	1034.7	10.1	.....	8 7	52.23 52.19
199	50	2990	8.7	7 14.177	166.59	0.08	.....	51 6 8.27	1056.4	10.1	.....	7 7	52.60 52.75
200	50	3028	7.6 A2	12 22.825	168.67	0.07	.....	51 5 11.02	1094.4	10.1	.....	3 3	51.97 51.95

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950		Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term				1st Term	2nd Term				
201	50°	3046	7.7 K2	20 ^h 16 ^m 9 ^s .873	+170.62	- 0.07	°	50° 59' 43.80	+1121.9	+10.1	°	8	51.40			
202	50	3073	8.4 A0	22 0.237	174.75	0.04	.....	50 37 53.09	1163.9	10.1	.....	8 6	51.37	50.95	
203	50	3095	7.8 A2	25 10.402	174.61	0.04	.....	50 56 26.32	1186.4	10.0	.....	11 11	51.73	51.74	
204	50	3112	8.5	29 21.146	177.67	0.02	.....	50 40 10.30	1215.6	10.0	.....	10	51.84		
205	50	3132	9.0	32 33.369	177.27	0.02	.....	51 3 35.37	1237.8	9.9	.....	12	51.95		
206	50	3145p	7.8 A0	20 35 12.862	+180.04	+ 0.00	.....	50 42 53.04	+1256.0	+10.0	.....	10	51.54		
207	50	3174	8.0 G5	41 40.284	181.87	0.02	.....	50 57 47.34	1299.5	9.8	.....	8 6	52.51	52.45	
208	50	3209	7.6 K5	47 59.804	186.45	0.06	.....	50 35 47.86	1341.1	9.8	.....	7 8	51.49	51.62	
209	50	3232	6.0 B8	54 38.417	188.46	0.08	.....	50 52 55.51	1383.7	9.6	.....	10 8	51.83	51.62	
210	50	3260	8.6 G	21 3 37.417	192.71	0.13	.....	50 57 0.23	1439.4	9.5	.....	6	52.29		
211	50	3284	8.8 A2	21 11 55.089	+198.28	+ 0.19	.....	50 38 25.08	+1489.0	+ 9.4	.....	9 8	51.87	51.76	
212	50	3303	8.0 A2	16 12.863	199.21	0.21	.....	50 59 46.78	1513.9	9.2	.....	10 9	51.85	51.87	
213	50	3317	8.1 A0	19 58.185	202.66	0.24	.....	50 37 25.80	1535.2	9.1	.....	11 10	51.85	51.96	
214	50	3333	7.6 A2	23 41.202	203.62	0.26	.....	50 54 58.52	1555.9	9.0	.....	12 10	51.79	51.63	
215	50	3355	8.8 A0	29 24.062	206.44	0.30	.....	51 1 42.46	1586.9	8.8	.....	6	52.50		
216	50	3382	7.1 K5	21 35 32.285	+210.63	+ 0.36	.....	50 50 19.78	+1619.1	+ 8.7	.....	5 4	51.42	51.11	
217	50	3411	7.2 B9	40 33.757	214.26	0.40	.....	50 37 44.65	1644.6	8.5	.....	12 11	51.74	51.66	
218	50	3429	9.1	44 11.967	216.23	0.42	.....	50 40 41.44	1662.6	8.4	.....	8 6	52.35	52.40	
219	50	3451	7.7 F0	48 42.760	218.64	0.47	.....	50 45 52.51	1684.3	8.3	.....	9	52.25		
220	50	3486	8.8 A2	53 33.750	221.56	0.51	.....	50 45 58.07	1706.9	8.1	.....	7	52.06		
221	50	3506	8.1	21 56 11.338	+223.50	+ 0.53	.....	50 39 14.82	+1718.8	+ 8.0	.....	13 13	52.51	52.52	
222	50	3522	8.4 A0	58 58.288	224.20	0.56	.....	50 59 42.55	1731.2	7.8	.....	14 14	52.19	52.20	
223	50	3551	8.8 A0	22 3 37.120	227.40	0.61	.....	50 53 31.71	1751.3	7.7	.....	8 8	52.30	52.07	
224	50	3581	8.8	7 7.704	229.86	0.64	.....	50 47 59.76	1766.1	7.5	.....	8 7	51.95	51.83	
225	50	3616	8.2 G5	11 1.543	231.95	0.68	.....	50 56 32.21	1781.9	7.3	.....	7 5	52.16	52.15	
226	50	3651	7.8 B8	22 15 40.892	+234.61	+ 0.73	.....	51 4 3.07	+1800.2	+ 7.1	.....	13 9	52.08	51.94	
227	50	3673	6.6 K2	18 40.530	237.41	0.76	.....	50 43 43.43	1811.5	7.0	.....	11 10	52.45	52.44	
228	50	3695	7.2 A3	21 37.519	238.80	0.79	.....	50 56 31.82	1822.4	6.8	.....	8 7	52.58	52.57	
229	50	3730	7.8 B9	26 24.391	241.68	0.84	.....	51 3 1.09	1839.4	6.6	.....	5 5	52.26	52.23	
230	50	3743	8.0 A0	29 36.204	243.96	0.88	.....	50 59 2.15	1850.4	6.4	.....	7 6	52.71	52.72	
231	50	3767	8.0 A0	22 34 52.689	+247.76	+ 0.94	.....	50 51 5.20	+1867.6	+ 6.2	.....	14 13	51.82	51.75	
232	50	3780	6.6 F5	37 28.266	249.40	0.96	.....	50 53 38.62	1875.7	6.0	.....	19 17	52.29	52.19	
233	50	3797	8.8 A2	40 39.792	251.78	1.00	.....	50 46 53.00	1885.4	5.8	.....	8	52.13		
234	50	3836	6.8 G0	47 9.157	256.28	1.07	.....	50 42 49.96	1903.9	5.5	.....	10 9	51.71	51.60	
235	50	3868	8.7 A0	52 37.834	260.03	1.13	.....	50 41 48.33	1918.3	5.1	.....	9 8	51.63	51.50	
236	50	3898s	8.9	22 56 48.238	+262.35	+ 1.19	.....	51 2 2.57	+1928.5	+ 4.8	.....	6 5	52.37	52.32	
237	50	3923	9.0 A2	23 0 48.733	265.17	1.24	.....	51 0 39.17	1937.8	4.5	.....	7 8	52.31	52.36	
238	50	3946	7.4 B5	4 17.820	267.89	1.27	.....	50 48 24.70	1945.3	4.3	.....	8	51.63		
239	50	3979	9.5 A0	9 29.826	271.37	1.33	.....	50 55 4.60	1955.8	3.9	.....	4 5	52.75	52.94	
240	50	4000	9.0 A2	14 34.421	275.13	1.40	.....	50 44 29.51	1965.0	3.5	.....	8	52.26		
241	50	4025	7.6 K2	23 20 27.310	+279.22	+ 1.46	.....	50 46 23.35	+1974.5	+ 3.1	.....	12	51.81		
242	50	4048	8.2 K0	25 50.388	282.75	1.54	.....	51 5 18.18	1982.0	2.6	.....	11 12	51.49	51.52	
243	50	4063	9.1 B9	28 25.333	284.79	1.56	.....	50 50 22.51	1985.3	2.4	.....	7 6	52.59	52.58	
244	50	4084	8.4 A0	32 15.697	287.33	1.61	.....	51 5 54.07	1989.6	2.1	.....	12 11	51.89	51.90	
245	50	4099	8.1 B9	35 35.854	289.81	1.66	.....	50 57 56.33	1992.9	1.8	.....	7	51.75		
246	50	4130	8.0 A0	23 40 56.224	+293.80	+ 1.70	.....	50 37 51.50	+1997.3	+ 1.4	.....	14 13	52.02	52.04	
247	50	4147	7.5 B5	44 27.637	296.17	1.75	.....	50 57 4.17	1999.7	1.1	.....	9 5	51.85	51.61	
248	50	4169	7.6 K0	48 29.179	299.00	1.81	.....	51 7 12.53	2001.7	0.7	.....	22 20	52.07	52.00	
249	50	4203	9.0	56 0.608	304.45	1.89	.....	51 2 41.20	2003.9	0.0	.....	6	51.93		

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

T in centuries from 1950.0, T' in centuries from epoch.

PART 4
CATALOGUE OF 173 STARS
COMPRISING 72 PLEIADES AND PERSEUS STARS
AND 101 B TYPE STARS
OBSERVED IN THE YEARS 1950 TO 1953
REDUCED WITHOUT PROPER MOTION
TO THE
EQUINOX 1950.0

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+
					1st Term	2nd Term			1st Term	2nd Term			
1	57°	28	7.1 B5	0 ^h 8 ^m 58 ^s .543	+315 ^s .68	+ 2 ^s .62	- 0 ^s .09	57° 56' 27.07	+2002 ^s .7	- 1 ^s .3	- 0 ^s .71	7	52.18
2	50	46	6.1 B0	15 3.347	318.22	2.11	- 0.09	51 9 19.70	1999.9	1.9	- 0.2	10 8	51.74 51.76
3	53	82	4.9 B8	29 0.026	330.75	2.54	+ 0.48	54 14 47.82	1988.2	3.5	- 0.8	11 8	52.14 51.91
4	59	146	5.5 B9	53 45.120	361.31	3.65	+ 0.44	60 5 33.98	1949.4	6.6	- 0.3	7	51.93
5	46	245	6.7 B8p	1 1 0.000	345.51	2.21	- 0.02	47 22 27.26	1933.7	7.0	- 0.2	11 6	51.94 51.65
6	63	149	5.5 B9	1 8 10.336	+387.40	+ 4.69	+ 0.61	63 56 15.08	+1916.2	- 8.6	- 0.8	6 7	52.48 52.37
7	57	260	5.2 F5p	16 55.096	377.67	3.57	0.00	57 58 10.05	1892.4	9.5	+ 0.1	9 8	51.60 51.56
8	63	176	6.3 A0	17 43.419	400.09	4.99	+ 0.89	64 23 47.96	1890.1	10.1	- 1.4	6 5	51.77 51.79
9	57	320	6.0 *	30 9.902	389.53	3.70	+ 0.14	58 4 15.86	1851.1	11.2	+ 0.6	16 13	52.22 52.30
10	54	396	5.5 B3	48 41.247	394.15	3.30	+ 0.24	54 54 2.73	1783.1	13.5	- 0.5	6 6	51.15 51.46
11	57	494	5.9 A2p	2 5 9.927	+419.20	+ 3.92	- 0.13	58 11 13.30	+1712.7	-16.2	+ 0.7	7 5	52.37 52.39
12	56	438	6.4 B3p	7 59.150	418.08	3.77	- 0.15	57 24 38.47	1699.8	16.5	+ 0.9	8 6	52.41 52.46
13	57	519	6.5 A0p	10 8.602	423.81	3.95	- 0.14	58 19 37.91	1689.7	17.0	+ 2.4	6 5	52.34 52.45
14	56	470	7.2 B1	13 15.613	419.47	3.67	+ 0.02	56 47 52.39	1674.9	17.1	+ 0.1	7 5	52.57 52.45
15	56	471	6.4 B1p	13 20.887	419.64	3.67	+ 0.02	56 49 26.54	1674.5	17.2	+ 0.1	7 6	51.83 51.81
16	56	522	6.7 B0	2 15 32.629	+421.63	+ 3.68	- 0.01	56 54 20.49	+1663.8	-17.5	- 0.4	6	52.33
17	56	530	6.7 B0	15 41.970	421.89	3.69	+ 0.05	56 56 22.00	1663.1	17.5	+ 0.7	8	52.46
18	55	588	6.8 B9p	17 13.137	417.64	3.48	- 0.17	55 40 49.81	1655.6	17.5	- 0.3	7 5	52.72 52.68
19	49	640	5.6 A0p	17 38.752	397.07	2.69	+ 0.34	49 55 24.24	1653.5	16.8	- 2.6	5 6	52.40 52.66
20	56	568	6.5 A2p	18 22.310	424.21	3.70	- 0.05	57 0 54.44	1649.9	17.9	- 0.7	7	52.43
21	55	598	5.2 A2p	2 18 51.195	+418.53	+ 3.47	0.00	55 37 5.06	+1647.5	-17.7	+ 0.3	7	51.69
22	56	593	7.0 B8p	19 26.607	425.65	3.73	+ 0.03	57 9 35.84	1644.6	18.0	+ 0.1	7 6	52.38 52.47
23	40	501	7.7 B	19 46.530	374.45	1.93	- 0.01	41 15 11.00	1642.9	16.0	+ 0.2	6	51.72
24	54	535	6.5 G0p	20 22.053	417.59	3.39	+ 0.09	55 8 18.33	1639.9	17.8	- 2.2	8 6	52.06 52.08
25	55	612	6.2 B2	21 43.131	423.84	3.60	- 0.02	56 23 3.68	1633.1	18.3	+ 1.1	6 5	51.84 51.84
26	49	656	4.9 K5	2 22 16.485	+400.13	+ 2.71	+ 0.24	50 3 13.12	+1630.3	-17.3	- 1.3	8 7	51.73 51.72
27	57	568	7.3 B1	23 9.756	429.77	3.79	- 0.40	57 27 16.78	1625.8	18.7	- 1.0	7 6	51.96 51.79
28	57	576	7.3 A2p	26 21.136	432.82	3.81	+ 0.33	57 35 55.23	1609.3	19.1	+ 1.0	6	51.67
29	54	598	5.7 B8	39 27.165	429.16	3.31	+ 0.46	54 53 38.51	1538.4	20.3	- 2.1	6	51.52
30	56	718	6.5 F5p	45 48.264	442.89	3.62	+ 0.08	56 52 38.33	1502.2	21.7	- 0.7	10	52.04
31	46	669	5.6 G5p	2 56 25.496	+407.13	+ 2.29	+ 0.20	47 1 19.13	+1439.2	-20.9	+ 2.5	8 7	52.45 52.36
32	51	665p	5.4 B5	57 17.544	427.49	2.84	+ 0.32	52 9 15.94	1433.9	22.0	- 2.5	7	52.24
33	56	798	5.9 A0p	3 11 57.069	459.94	3.44	- 0.01	56 57 22.55	1341.4	25.2	+ 0.6	10 9	52.08 52.10
34	43	674	5.4 B5	14 24.873	403.59	1.94	+ 0.32	43 50 34.70	1325.3	22.3	- 2.8	10 9	52.19 52.22
35	49	899	5.3 B3	15 3.283	427.25	2.48	+ 0.32	50 2 26.59	1321.1	23.7	- 2.6	11 8	51.95 52.15
36	49	902	5.1 B3	3 15 33.370	+426.94	+ 2.46	+ 0.25	49 54 50.28	+1317.8	-23.8	- 2.5	8 5	51.91 51.70
37	48	899	5.3 B3	19 39.890	425.08	2.34	+ 0.24	49 2 10.08	1290.5	24.0	- 2.0	8	51.96
38	33	636p	5.6 A0	21 21.651	375.05	1.30	+ 0.32	33 21 36.20	1279.2	21.3	- 2.8	7	51.62
39	48	913	5.9 B5	22 23.634	425.87	2.32	+ 0.28	48 56 45.94	1272.2	24.2	- 2.2	7	52.12
40	48	920	4.9 B5	24 29.053	426.52	2.30	+ 0.26	48 53 25.00	1258.0	24.4	- 2.8	8 7	52.00 52.14
41	33	656	5.6 A0	3 25 11.859	+376.70	+ 1.30	+ 0.32	33 38 8.94	+1253.2	-21.7	- 5.7	9 8	52.27 52.32
42	49	944	5.6 B5	25 16.413	430.22	2.37	+ 0.31	49 40 35.67	1252.6	24.7	- 2.6	7 8	52.17 52.36
43	49	945	4.7 B5	25 46.825	428.97	2.32	+ 0.28	49 20 15.39	1249.2	24.8	- 2.7	6	52.34
44	47	844	6.0 B9	27 4.453	423.62	2.18	+ 0.32	47 56 0.70	1240.3	24.5	- 2.9	7 6	51.85 51.86
45	47	847	5.5 B8	28 35.927	423.91	2.16	+ 0.20	47 51 17.64	1229.8	24.7	- 2.5	9 8	51.57 51.64
46	44	734	6.3 B3	3 29 12.474	+411.90	+ 1.91	+ 0.13	44 41 14.43	+1225.6	-24.0	- 1.2	6 5	51.86 51.82
47	47	857	4.3 B5p	32 55.494	426.32	2.14	+ 0.27	48 1 41.37	1199.7	25.1	- 2.6	9 7	51.59 51.46
48	56	824	6.8 B0	33 48.292	469.97	3.14	- 0.22	56 34 32.30	1193.5	27.8	+ 0.6	9	52.08
49	22	523	6.6 A0	35 44.343	352.06	0.86	+ 0.24	22 29 52.15	1179.9	21.0	- 4.0	8 7	51.71 51.80
50	20	602	6.4 A0	36 5.654	348.30	0.81	+ 0.06	20 45 15.25	1177.4	20.8	- 2.6	7	52.06

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).
 *9 K0 + A0.

T in centuries from 1950.0, T' in centuries from epoch.

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
					1st Term	2nd Term			1st Term	2nd Term				
51	24°	527	7.1 A0	3 ^h 36 ^m 8 ^s .012	+356.71	+ 0.92	°	24° 32' 29".09	+1177.1	-21.3	?	7 4	51.53 51.94	
52	21	492	7.3 A0	36 17.717	350.35	0.84	.....	21 40 55.25	1176.0	20.9	.....	6	51.86
53	37	811	5.6 B5	37 52.111	390.52	1.41	+ 0.22	37 25 13.62	1164.8	23.4	- 3.0	7 6	51.89 51.88	
54	24	537	7.5 A2	40 43.670	358.30	0.91	.....	24 55 26.27	1144.4	21.7	.....	7 5	51.38 51.58
55	36	742	5.6 A2	41 16.835	388.05	1.34	+ 0.40	36 18 14.00	1140.4	23.5	- 3.5	6	51.83	
56	23	505	5.4 B5	3 41 49.539	+356.64	+ 0.88	+ 0.11	24 8 1.53	+1136.5	-21.6	- 4.5	9 8	51.43 51.47	
57	24	546	5.6 B8	42 10.352	357.96	0.90	+ 0.17	24 41 1.72	1134.0	21.7	- 4.6	9 6	51.79 51.75	
58	24	547 _a	4.4 B5	42 13.557	357.11	0.89	+ 0.16	24 18 42.82	1133.6	21.7	- 4.4	8 5	51.68 51.76	
59	20	624	8.1 A3	42 36.748	349.88	0.80	.....	21 5 30.57	1130.8	21.3	.....	6 5	52.12 52.13
60	23	512	8.2 B9	42 39.040	356.87	0.89	+ 0.13	24 10 50.98	1130.5	21.7	- 4.0	6	52.09	
61	23	516	4.0 B5	3 42 50.750	+356.97	+ 0.89	+ 0.17	24 12 47.15	+1129.1	-21.7	- 4.5	6	51.80	
62	22	545	8.1 A0	42 51.385	354.17	0.85	+ 0.31	22 59 32.92	1129.0	21.6	- 5.8	5 5	53.54 53.52	
63	24	553	5.8 B8	42 55.413	357.42	0.89	+ 0.11	24 23 59.46	1128.6	21.8	- 4.1	6 7	53.21 53.29	
64	24	556	6.5 B9	43 3.851	357.38	0.89	+ 0.13	24 22 24.64	1127.5	21.8	- 4.3	5 4	52.43 52.57	
65	23	522	4.2 B5	43 21.178	356.08	0.87	+ 0.18	23 47 38.96	1125.4	21.7	- 4.4	6	52.66	
66	23	523	7.0 A0	3 43 28.500	+356.80	+ 0.88	.....	24 6 3.19	+1124.6	-21.7	.....	6 3	51.64 51.30
67	24	562	6.7 B9	44 0.294	357.50	0.88	+ 0.13	24 21 59.84	1120.7	21.8	- 3.7	6 5	51.19 51.28	
68	23	537	6.8 A0	44 22.639	355.89	0.86	.....	23 39 0.74	1118.0	21.7	.....	5 6	52.76 52.93
69	24	566	7.3 A0	44 24.865	357.72	0.88	.....	24 26 7.26	1117.8	21.8	.....	7 6	52.51 52.61
70	23	538 _a	6.9 B9	44 26.011	356.16	0.86	+ 0.05	23 45 41.95	1117.6	21.8	- 3.3	6	53.84	
71	23	540	6.8 B9	3 44 30.583	+357.03	+ 0.87	+ 0.13	24 8 7.33	+1117.1	-21.9	- 3.9	9 7	51.29 51.26	
72	22	563	5.5 B8	45 22.870	355.16	0.85	+ 0.19	23 16 8.80	1110.7	21.8	- 4.9	7 6	51.84 51.83	
73	23	553	6.6 A0	45 31.069	357.32	0.87	+ 0.17	24 11 36.92	1109.7	21.9	- 5.0	7 6	51.38 51.44	
74	52	714 _b	6.8 B0	45 40.682	452.42	2.46	- 0.03	52 30 12.42	1108.6	27.7	+ 0.5	5	52.26	
75	23	558	5.2 B8 _p	46 12.403	356.93	0.87	+ 0.12	23 59 7.68	1104.7	22.0	- 4.9	6	51.87	
76	22	569	7.9 A0	3 46 14.236	+353.41	+ 0.83	.....	22 27 29.53	+1104.5	-21.7	.....	5 5	52.78 52.82
77	23	561	6.6 B9	46 22.628	357.53	0.87	+ 0.13	24 13 47.28	1103.5	22.0	- 5.6	6	51.73	
78	52	715	6.9 B2	46 38.435	451.92	2.43	+ 0.07	52 19 51.70	1101.5	27.8	- 0.6	5 5	53.00 53.34	
79	23	563	6.1 B8	46 45.184	356.02	0.85	+ 0.13	23 33 39.74	1100.7	21.9	- 4.8	7 6	53.01 53.19	
80	23	567	7.3 A0	46 57.454	357.54	0.87	+ 0.10	24 11 54.14	1099.2	22.0	- 5.0	7	51.41	
81	23	569	6.7 B9	3 46 59.543	+356.37	+ 0.85	+ 0.25	23 41 53.56	+1099.0	-21.9	- 5.0	6	53.22	
82	24	578	7.3 A2	47 28.740	357.96	0.87	+ 0.25	24 20 42.80	1095.4	22.0	- 3.3	6	51.88	
83	23	570	6.8 A0	47 53.703	356.77	0.85	+ 0.19	23 48 42.73	1092.4	22.1	- 3.3	6 7	51.94 51.94	
84	25	631	8.1 A0	48 56.142	361.76	0.91	.....	25 51 1.38	1084.7	22.5	.....	10 7	51.65 51.54
85	48	1015	5.9 K0	50 0.606	434.72	2.02	+ 0.40	48 30 11.69	1076.8	27.0	- 2.9	7	52.63	
86	52	726	6.7 Oe5	3 51 50.282	+454.91	+ 2.37	+ 0.14	52 29 44.50	+1063.3	-28.3	- 0.9	8 6	51.95 51.96	
87	47	912	5.3 B5	52 21.475	432.10	1.94	+ 0.19	47 43 35.55	1059.4	26.9	- 2.8	8 5	51.60 51.35	
88	50	860 _p	5.5 F5 _p	52 52.738	445.38	2.17	+ 1.00	50 33 8.99	1055.6	27.9	-12.9	6	51.71	
89	23	594	7.1 B9	55 21.510	358.09	0.83	.....	23 56 21.29	1037.1	22.6	.....	6	51.70
90	52	771	7.1 K0	4 4 46.099	464.00	2.28	- 0.04	53 13 44.52	965.8	29.9	- 0.1	6	52.40	
91	40	912	4.9 *	4 11 28.683	+408.39	+ 1.30	+ 0.15	40 21 32.33	+ 914.0	-26.6	- 2.5	6 5	51.65 51.59	
92	21	623	5.3 A0 _p	16 38.834	355.07	0.67	+ 0.24	21 39 15.77	873.5	23.5	- 4.0	7	51.71	
93	46	872	4.9 B3	17 55.694	433.87	1.55	+ 0.21	46 22 53.06	863.4	28.7	- 3.9	6	52.65	
94	40	1000	4.5 *	33 13.176	415.88	1.12	- 0.10	41 9 50.99	740.9	28.3	- 1.8	13	52.35	
95	48	1128	5.7 A0	37 39.872	447.26	1.40	+ 0.46	48 12 20.78	704.7	30.7	- 4.4	7 6	51.90 52.05	
96	43	1043	5.2 A0	4 39 21.100	+425.41	+ 1.14	+ 0.39	43 16 18.77	+ 690.8	-29.3	- 5.1	7 6	52.01 52.17	
97	43	1147	7.3 B2	55 46.880	428.11	0.93	.....	43 14 54.50	554.3	30.1	.....	8 7	51.66 51.74
98	57	874	6.2 B3	5 15 8.607	517.62	1.28	+ 0.11	58 3 58.84	389.8	37.0	- 2.2	6	52.03	
99	41	1162	5.1 B3	18 15.829	424.64	0.62	+ 0.18	41 45 24.52	363.0	30.5	- 3.5	9 7	51.60 51.76	
100	28	788	6.4 B9	20 12.674	379.95	0.40	+ 0.17	28 53 27.86	346.2	27.4	- 3.1	13 12	52.29 52.16	

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).
 *91, G0 + A5. *94, K0 + A3.

T in centuries from 1950.0, T' in centuries from epoch.

OTTAWA MERIDIAN RESULTS

No.	BD or CD No.		M + Sp.	R.A. 1950	Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
					1st Term	2nd Term			1st Term	2nd Term				
101	20°	948	6.8 B2	5 ^h 22 ^m 11 ^s .887	+356 ⁸ .71	+ 0 ² .31	0 ⁰ .00	20° 32' 23.736	+ 329 ⁷ .1	-25 ⁷ .7	- 0 ⁷ .1	8 7	52.04 52.03	
102	27	914	7.7 B2	52 31.448	377.46	0.14	.....	27 42 30.31	65.4	27.5	.....	8	52.01
103	24	1033	6.0 B3	53 52.278	367.48	0.12	+ 0.05	24 14 38.98	53.6	26.7	- 0.2	7 5	51.78 51.87	
104	25	1052	4.9 B2	54 53.406	372.34	0.11	+ 0.03	25 56 58.07	44.7	27.1	- 0.3	8 7	51.69 51.78	
105	27	945	6.1 B8p	57 51.844	377.09	0.09	+ 0.02	27 34 18.41	18.7	27.5	- 0.5	10 9	52.28 52.42	
106	20	1233	4.7 B2p	6 0 56.932	+358.33	+ 0.07	+ 0.04	20 8 28.46	- 8.3	-25.9	- 0.8	5 4	51.46 51.56	
107	48	1339	6.5 B0	2 3.900	457.05	0.03	+ 0.10	48 15 14.76	18.1	33.3	+ 0.1	6	52.27	
108	28	1008	7.4 B0	2 55.895	381.20	0.05	.....	28 56 24.40	25.6	27.8	.....	7 6	51.96 52.12
109	23	1226	5.8 B1	6 41.742	364.36	0.03	+ 0.08	23 7 24.27	58.5	26.5	- 0.4	17 15	52.20 52.16	
110	23	1275	6.3 B2	13 55.631	366.04	- 0.01	+ 0.04	23 45 34.76	121.7	26.6	- 0.4	6 5	51.78 51.72	
111	23	1300	7.0 B0	6 16 16.624	+365.25	- 0.03	+ 0.04	23 29 27.52	- 142.2	-26.5	- 0.9	7 5	51.68 51.93	
112	28	1207	6.5 K0	38 11.855	378.11	0.22	+ 0.09	28 14 40.84	332.5	27.0	- 1.1	8	51.96	
113	61	1320	5.9 F5	12 46 29.283	259.58	1.56	+ 1.45	60 35 32.21	1963.2	+ 4.2	- 0.5	26 25	52.41 52.34	
114	57	1408	4.9 F0	58 35.326	256.02	1.20	+ 1.38	56 38 7.55	1939.1	5.1	- 1.6	16 16	52.04 51.91	
115	57	1425	6.7 G0	13 11 34.461	244.18	0.99	+ 1.35	56 58 22.89	1907.3	5.9	- 3.5	16	52.31	
116	55	1598s	4.0 A2	13 21 55.760	+240.10	- 0.81	+ 1.38	55 10 56.77	-1877.5	+ 6.5	- 3.6	7 6	52.18 51.98	
117	55	1603	4.0 A5	23 13.555	238.92	0.79	+ 1.39	55 14 52.83	1873.6	6.6	- 2.4	23 21	52.65 52.59	
118	50	2239	5.9 F0	15 57 39.048	170.13	+ 0.31	+ 0.06	50 1 21.28	1019.9	10.9	- 6.1	10 10	52.81 52.61	
119	50	2457	7.3 F8p	17 43 41.270	148.13	0.17	+ 0.04	50 3 48.44	142.5	10.8	- 1.8	12 10	52.67 52.68	
120	20	3674	4.3 B3	18 6 37.095	256.58	0.10	0.00	20 48 18.80	+ 57.9	18.6	- 1.2	10 9	52.17 52.01	
121	56	2113	5.0 F8p	18 31 42.690	+103.49	- 0.06	- 0.11	57 0 24.70	+ 276.4	+ 7.4	- 0.7	10 8	52.65 52.55	
122	23	3465	6.5 B3	46 50.963	249.08	+ 0.06	- 0.13	23 59 53.53	406.9	17.7	- 0.1	7	50.98	
123	20	4022	6.6 B3	59 13.273	258.36	0.04	+ 0.01	20 45 37.92	512.2	18.0	+ 1.4	14 13	51.78 51.72	
124	22	3648	5.4 B0	19 15 36.594	253.84	0.04	- 0.03	22 56 3.16	694.3	17.4	- 0.8	7	51.15	
125	55	2215	6.5 *	30 10.082	126.92	- 0.24	- 0.07	55 37 29.36	768.3	8.4	- 1.4	7 6	53.00 52.92	
126	20	4200	* G5	19 34 26.521	+262.23	+ 0.02	- 0.06	20 13 13.02	+ 802.7	+17.4	- 1.4	13	52.06	
127	20	4218	6.4 B0	38 17.121	262.23	0.02	- 0.05	20 21 36.98	833.4	17.2	- 2.5	22 19	52.32 52.17	
128	28	3460	* F2p	42 48.543	240.20	0.06	- 0.03	29 8 34.60	869.2	15.6	- 0.3	6 5	51.91 51.77	
129	44	3236	8.1 B0	44 3.960	187.91	0.01	.....	44 50 27.66	879.1	12.1	.....	9 3	51.95 51.64
130	40	3902	5.6 B2	48 54.261	205.95	0.05	- 0.06	40 28 17.54	917.0	13.2	- 0.9	28 22	51.60 52.61	
131	27	3536	* K0	19 49 27.819	+246.00	+ 0.05	.....	27 19 52.68	+ 921.3	+15.7	.....	11 8	51.74 51.30
132	46	2793	5.5 B0	50 28.578	180.82	- 0.02	- 0.08	46 53 50.73	929.2	11.4	- 0.4	10 11	52.28 52.22	
133	47	2939	5.7 B2	50 38.671	176.80	0.03	- 0.10	47 48 6.46	930.5	11.2	- 1.0	8 6	52.24 52.11	
134	47	2945	6.2 B2	51 32.383	177.64	0.03	- 0.14	47 40 36.93	937.4	11.2	- 1.2	10 10	52.34 52.24	
135	21	4027	6.6 B0	20 0 11.744	260.57	+ 0.04	0.00	22 0 40.38	1003.6	16.2	- 0.1	7 5	52.18 52.01	
136	21	4088	6.1 B0	20 9 9.770	+262.32	+ 0.04	- 0.04	21 43 30.62	+1070.7	+15.9	+ 0.5	10 11	52.40 52.33	
137	23	3944	5.4 G5	13 20.561	259.12	0.05	- 0.04	23 21 17.55	1101.4	15.6	- 1.6	6 5	53.05 52.97	
138	47	3059	4.2 *	13 55.450	185.45	0.01	- 0.04	47 33 35.34	1105.7	11.0	+ 0.5	4 5	52.89 52.81	
139	40	4103s	5.8 B2p	16 20.598	212.56	0.08	- 0.03	40 34 30.81	1123.3	12.6	- 0.4	15 12	52.59 52.45	
140	45	3139	6.3 B1	17 13.425	192.37	0.04	- 0.09	46 9 52.86	1129.6	11.4	+ 0.8	9 6	52.28 52.27	
141	43	3571	6.8 Oa	20 18 46.709	+202.36	+ 0.06	- 0.06	43 41 42.16	+1140.8	+11.9	- 1.0	9 7	52.54 52.52	
142	40	4150	7.0 B0	21 31.110	213.96	0.09	.....	40 35 49.18	1160.4	12.5	.....	6 5	52.64 52.47
143	40	4165	7.4 B	24 35.050	212.82	0.10	.....	41 12 51.52	1182.2	12.3	.....	14 11	52.39 52.17
144	43	3630	7.2 B	28 52.849	204.05	0.09	- 0.12	44 8 45.65	1212.3	11.6	- 0.9	9 4	52.17 52.34	
145	47	3136	6.8 B2	30 50.637	189.74	0.04	- 0.33	48 2 43.62	1226.0	10.7	- 0.9	23 22	52.56 52.42	
146	56	2477	6.4 B3	20 41 58.049	+151.25	- 0.22	- 0.20	56 55 58.15	+1301.4	+ 8.1	+ 0.3	7	52.36	
147	45	3291	4.9 B2	47 13.967	204.45	+ 0.13	+ 0.01	45 55 40.17	1336.1	10.8	- 0.1	10 7	52.45 52.36	
148	27	3890	* F8p	49 20.752	254.67	0.13	- 0.02	28 3 43.40	1349.8	13.5	- 0.2	16 15	52.27 52.19	
149	27	3909	6.4 B3	52 14.919	254.69	0.14	+ 0.02	28 19 51.76	1368.5	13.3	- 1.0	10 9	51.41 51.27	
150	48	3242	7.1 B2	52 15.486	193.66	0.10	- 0.04	49 20 33.71	1368.5	10.0	+ 0.2	7 7	51.92 51.60	

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).

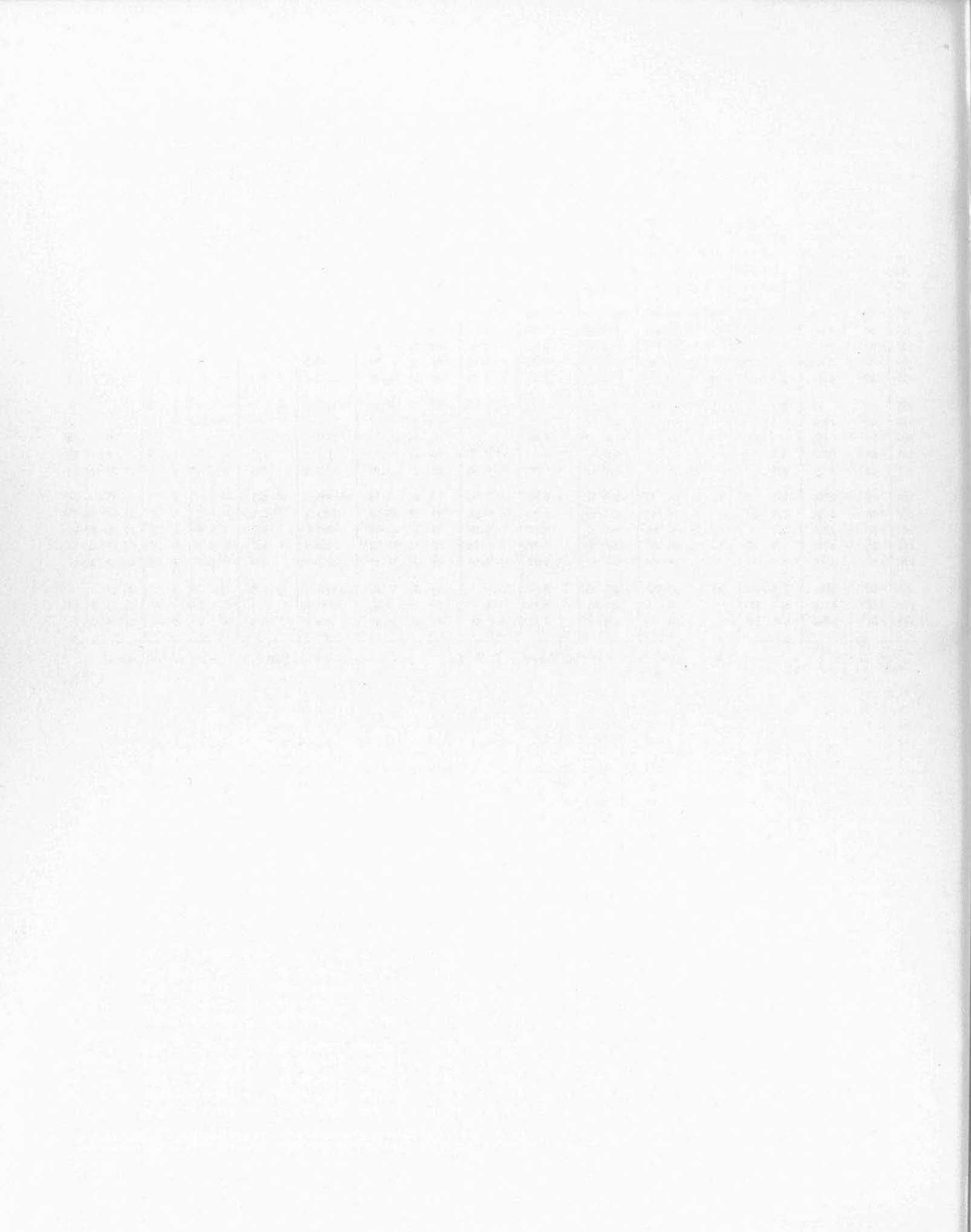
T in centuries from 1950.0, T' in centuries from epoch.

*125 K2 + A3; *126 6=5 to 7=6; *128 6=4 to 7=1; *131 7=7 to 9=6; *138 K0 + A3; *148 5=4 to 6=3.

No.	BD or CD No.		M + Sp.	R.A. 1950		Precession		P.M.	Dec. 1950	Precession		P.M.	No. Obs.	Epoch 1900+	
						1st Term	2nd Term			1st Term	2nd Term				
151	46°	3111	5.8 B8p	20 ^h 54 ^m 8 ^s .378	+202 ^s .63	+ 0 ^s .15	- 0 ^s .06	47° 13' 30".98	+1380 ^s .5	+10 ^s .5	- 0 ^s .3	7 6	52.36	52.31	
152	44	3639	6.0 Oe5	54 48.831	211.63	0.17	- 0.08	44 43 54.29	1384.8	10.9	+ 0.7	7 5	52.08	51.85	
153	54	2470	7.2 B2	21 2 25.907	173.68	- 0.01	- 0.10	55 1 50.83	1432.2	8.6	+ 0.2	9	51.78		
154	43	3877	5.1 Oe5	16 35.141	223.70	+ 0.28	- 0.01	43 44 4.93	1516.0	10.3	- 0.9	12 11	51.64	51.73	
155	46	3294	7.1 B2	22 1.848	216.36	0.29	.....	46 56 57.24	1546.7	9.7	.....	17 10	51.78	51.66
156	51	3079	6.2 *	21 29 46.493	+201.57	+ 0.28	+ 0.07	52 23 54.92	+1588.9	+ 8.6	+ 0.3	4	52.17		
157	40	4648	6.5 A0	47 37.831	244.10	0.45	- 0.07	40 54 54.23	1679.1	9.3	- 0.5	8 6	52.06	52.03	
158	52	3043	6.6 B2	48 15.879	212.78	0.44	- 0.07	52 27 47.42	1682.2	8.1	- 0.9	9 8	52.21	52.15	
159	55	2644p	6.0 B9p	53 12.086	201.76	0.42	- 0.10	56 22 25.93	1705.2	7.3	- 0.2	8 7	52.02	51.93	
160	57	2441	5.5 B0	22 0 23.508	201.72	0.47	- 0.06	57 45 31.29	1737.4	6.9	+ 0.1	19 14	52.51	52.60	
161	52	3114	6.5 A3p	22 5 34.240	+222.23	+ 0.62	- 0.10	53 3 45.54	+1759.6	+ 7.4	- 0.8	7 6	52.11	52.03	
162	58	2402	5.2 Od	9 48.465	203.80	0.57	+ 0.01	59 10 2.50	1777.0	6.5	- 0.9	9 5	51.77	51.26	
163	51	3341	7.1 B2p	18 24.887	235.00	0.76	.....	51 36 32.83	1810.6	6.9	.....	7 6	52.27	52.36
164	48	3715	4.6 B8p	22 29.032	243.38	0.78	- 0.10	49 13 20.50	1825.5	7.0	- 0.3	7 6	52.25	52.02	
165	46	3719	4.6 *	27 26.451	250.12	0.80	+ 0.03	47 27 1.93	1843.0	6.8	- 0.4	6 5	52.21	52.13	
166	56	2794	6.7 *	22 28 24.722	+227.37	+ 0.89	- 0.08	56 58 7.24	+1846.3	+ 6.1	- 1.0	6	53.19		
167	48	3887	5.1 K0	54 14.049	263.10	1.11	- 0.01	49 27 58.26	1922.3	5.0	- 0.2	6 6	51.67	51.85	
168	56	2923	5.5 G0p	57 58.200	252.99	1.35	- 0.06	56 40 37.01	1931.3	4.5	+ 0.8	7 6	51.75	51.76	
169	24	4716	5.0 K0	23 4 40.360	292.30	0.56	- 0.06	25 11 52.94	1946.1	4.7	- 3.0	12 6	52.47	52.58	
170	49	4045	6.8 A5p	4 51.066	269.48	1.26	+ 0.08	49 55 18.41	1946.5	4.3	- 0.6	6 5	52.40	52.14	
171	52	3383	7.1 B0	23 8 52.288	+268.40	+ 1.39	.....	52 47 11.63	+1954.6	+ 3.9	.....	8	52.12	
172	56	3115	6.0 B0	53 2.644	301.05	2.29	- 0.11	57 8 1.83	2003.3	0.2	0.0	7 4	51.74	51.54	
173	54	3082	4.9 B2	56 27.660	304.33	2.21	+ 0.09	55 28 35.69	2004.0	0.0	- 0.2	7 6	51.88	51.91	

Position 1950 + T = Position 1950 + T (1st Term) + T² (2nd Term) + T' (P.M.).
 *156 K0 + A3; *165 K0 + A0; *166 A2p + G.

T in centuries from 1950.0, T' in centuries from epoch.



CORRECTIONS TO 347 FK3 STARS

The differences $\Delta\alpha$, $\Delta\delta$ for the 347 fundamental reference stars in the sense observation minus catalogue are listed by FK3 number. The mean epoch and the number of observations in each co-ordinate are given, together with the BD numbers.

OTTAWA MERIDIAN RESULTS

FK3 No.	B.D. No.	$\Delta\alpha$	Epoch	No.	$\Delta\delta$	Epoch	No.	FK3 No.	B.D. No.	$\Delta\alpha$	Epoch	No.	$\Delta\delta$	Epoch	No.
1	28° 4	-.015	52.59	11	-.703	53.05	11	111	40° 673	-.001	52.48	19	+.711	52.54	20
2	58 3	-.003	52.41	13	+.11	52.33	13	112	49 857	-.005	52.67	43	-.16	52.64	38
4	45 17	-.008	52.40	33	+.12	52.47	29	1088	28 499	+.008	52.07	18	+.15	52.40	16
16	62 102	+.052	52.76	22	-.02	52.76	22	114	19 477	+.003	52.60	53	-.12	52.65	43
17	53 105	+.010	52.62	55	-.03	52.61	52	1089	20 527	-.004	52.46	31	+.06	52.60	23
19	28 103	+.007	53.00	23	-.08	52.96	24	115	77 115	-.035	52.58	37	-.12	52.66	35
21	55 139	+.016	52.69	60	+.17	52.75	55	1094	20 543	+.009	52.54	26	+.14	52.54	23
25	47 183	+.001	52.59	65	+.18	52.70	58	N β	84 59	-.438	52.48	42	+.07	52.55	40
27	23 106	+.006	52.71	50	-.01	52.85	40	1096	64 391	-.023	52.65	6	+.05	52.49	6
1021	40 171	+.007	52.46	42	+.11	52.66	35	120	49 917	-.006	52.74	13	+.32	52.95	10
29	63 99	-.003	52.66	13	+.05	52.59	13	122	59 660	+.005	52.37	17	+.19	52.50	15
32	59 144	+.010	52.57	16	+.05	52.70	17	124	47 843	-.007	52.73	43	-.02	52.73	37
1023	28 157	+.009	52.68	22	-.01	52.77	23	1098	34 674	-.014	52.72	22	-.10	52.67	21
N α	85 19	-.435	52.70	57	+.06	52.70	57	1103	24 529	.000	52.57	34	-.09	52.73	29
1030	54 223	+.046	52.41	24	-.10	52.36	21	129	62 597	-.023	52.64	10	+.47	52.73	9
42	34 198	-.019	52.85	11	+.03	53.05	8	131	47 876	-.028	52.98	34	+.15	53.07	32
41	78 34	+.056	52.53	60	-.09	52.61	53	134	42 815	-.013	52.73	13	+.11	52.76	10
1032	20 172	-.009	52.32	9	-.44	52.45	6	136	23 507	-.009	53.02	10	-.07	53.13	10
43	29 190	+.014	52.73	11	-.04	52.72	10	139	23 541	-.010	52.26	8	-.09	51.99	8
45	26 220	+.018	52.80	43	+.17	52.82	40	142	23 557	-.010	53.24	5	+.45	53.40	5
1035	44 287	-.013	52.39	62	+.24	52.49	54	1105	57 752	-.002	52.58	10	+.75	52.84	8
48	59 248	-.034	52.86	29	+.18	52.86	29	1106	16 523	+.010	52.39	17	+.36	52.57	17
1040	44 307	+.053	52.48	56	-.02	52.52	48	144	31 666	-.040	52.54	12	+.02	52.70	8
1045	40 332	+.006	52.42	34	-.03	52.40	26	147	39 895	-.018	52.57	18	+.05	52.60	17
52	47 467	-.008	52.52	27	-.03	52.43	23	148	35 775	-.010	52.52	19	+.16	52.45	18
1047	34 297	+.004	52.45	9	+.27	52.57	10	1112	21 585	-.007	51.98	46	-.10	52.18	40
57	49 444	-.005	52.45	19	-.40	52.39	13	1113	49 1101	-.027	52.31	15	+.18	52.36	10
1052	50 379	+.024	52.89	27	+.17	52.95	22	152	47 939	-.002	52.37	49	+.06	52.52	40
64	28 312	+.017	52.47	13	+.06	52.64	10	1116	26 686	-.011	52.11	36	-.06	52.30	29
63	62 320	+.049	52.74	9	+.31	52.72	7	1117	48 1063	-.013	52.64	39	+.21	52.79	34
66	20 306	+.004	52.74	27	+.16	52.80	24	N ϵ	85 63	-.338	52.28	31	-.01	52.33	30
1054	53 439	+.001	52.62	46	-.02	52.70	39	165	53 779	+.002	52.63	31	-.10	52.64	29
73	41 395	-.017	52.75	39	+.08	52.90	33	1124	42 990	-.020	52.30	14	+.17	52.39	13
74	22 306	+.012	52.70	45	+.12	52.87	36	1126	28 680	+.006	52.63	18	-.16	52.69	19
N α	82 51	-.291	52.73	28	+.21	52.64	26	174	22 739	+.019	52.29	6	+.15	52.13	5
77	50 481	+.007	52.56	21	+.01	52.58	18	1128	49 1230	-.018	52.47	13	-.02	52.74	11
1059	24 329	+.008	52.43	24	-.28	52.50	18	173	75 189	+.009	52.64	53	+.33	52.59	51
1063	46 552	-.002	52.25	44	-.22	52.28	35	175	56 973	-.025	52.50	13	+.16	52.66	14
1068	29 417	+.018	52.66	35	.00	52.77	29	183	43 1166	-.006	52.69	20	+.19	52.72	16
89	21 362	+.024	52.52	70	+.14	52.68	55	1137	40 1142	-.015	52.24	12	+.05	52.56	10
94	27 424	-.002	52.26	28	-.10	52.29	22	184	21 751	-.009	52.70	18	-.02	52.62	21
93	48 746	-.015	52.62	21	-.09	52.77	17	185	41 1058	+.007	52.42	43	+.06	52.46	39
1077	43 566	-.008	52.58	11	+.34	52.53	10	1141	27 732	-.007	52.47	40	+.27	52.54	41
99	55 714	-.018	52.82	29	-.08	52.90	28	193	45 1077	-.011	52.47	20	-.06	52.49	19
100	26 471	+.009	52.29	25	+.03	52.34	22	N γ	85 74	-.353	52.50	20	+.06	52.65	21
103	52 641	-.023	52.46	22	-.11	52.50	20	191	79 169	-.015	52.49	28	-.17	52.46	23
1081	20 480	+.019	52.56	26	-.01	52.76	21	1145	39 1248	-.011	52.85	11	+.33	52.66	8
105	78 103	+.034	52.38	76	+.05	52.43	70	202	28 795	-.009	52.52	24	-.18	52.62	23
108	52 654	-.009	52.45	14	+.16	52.44	10	1150	57 859	-.031	52.47	18	-.40	52.61	18
109	38 630	-.001	52.94	13	+.18	53.00	14	205	74 252	+.021	52.32	32	+.11	52.41	30

FK3 No.	B.D. No.	$\Delta\alpha$	Epoch	No.	$\Delta\delta$	Epoch	No.	FK3 No.	B.D. No.	$\Delta\alpha$	Epoch	No.	$\Delta\delta$	Epoch	No.
211	21° 908	- ⁵ .001	52.38	19	+ ⁷ .11	52.44	18	339	42° 1956	- ⁵ .001	52.62	21	+ ⁷ .31	52.62	21
216	49 1398	+ .006	52.27	35	+ .12	52.49	29	341	47 1633	+ .012	52.23	24	- .06	52.38	23
N δ	85 80	- .154	52.54	22	- .43	52.49	20	340	54 1272	+ .028	52.72	15	- .21	52.72	15
1158	27 899	- .006	52.62	14	+ .04	52.53	14	N ζ	84 196	+ .023	52.04	26	+ .06	52.10	24
1157	55 1027	- .021	52.28	10	- .18	52.32	8	1239	22 2061	+ .012	52.27	9	- .01	52.27	9
225	54 970	- .035	52.62	14	- .18	52.74	13	346	43 1893	+ .010	52.41	26	+ .08	52.41	26
227	44 1328	- .025	52.24	11	+ .25	52.20	9	1244	26 1939	- .003	52.39	30	- .17	52.55	28
1163	23 1170	+ .003	52.48	18	+ .32	52.55	16	358	52 1401	+ .020	52.55	14	- .05	52.51	13
1168	29 1154	- .002	52.59	23	- .06	52.56	20	N ϵ	81 302	- .109	52.41	43	- .28	52.42	38
237	59 959	- .012	52.58	27	+ .23	52.57	24	367	24 2129	+ .004	52.43	29	- .15	52.43	25
241	22 1304	- .020	52.60	20	- .08	52.60	18	1255	46 1551	+ .007	52.20	38	+ .04	52.25	35
242	49 1488	- .017	52.10	15	+ .09	52.01	13	371	26 2019	+ .005	52.36	29	- .19	52.34	26
1172	42 1552	- .018	52.21	26	+ .13	52.37	22	374	41 2033	+ .005	52.34	37	- .05	52.40	32
1173	20 1441	- .002	52.36	30	+ .08	52.44	26	1259	54 1348	+ .010	52.42	33	+ .30	52.49	29
248	79 212	+ .015	52.45	62	- .30	52.41	56	384	24 2209	+ .012	52.23	9	- .02	52.36	8
254	25 1406	+ .019	52.46	17	+ .20	52.38	17	383	43 2005	+ .001	52.69	11	+ .02	52.73	10
255	43 1595	- .014	52.28	12	- .06	51.98	9	386	42 2115	+ .006	52.43	23	- .04	52.49	22
1176	48 1436	+ .014	52.17	28	- .12	52.32	24	N η	83 297	- .068	52.22	68	- .12	52.16	60
260	77 266	+ .015	52.55	29	- .32	52.51	26	1271	29 2057	+ .007	52.22	7	- .36	52.04	6
265	58 982	+ .008	53.00	8	+ .01	53.00	8	394	56 1459	+ .019	52.31	9	- .35	52.31	9
1182	24 1502	+ .003	52.48	11	- .15	52.58	11	395	76 393	+ .035	52.37	25	- .12	52.40	23
269	20 1687	- .006	52.73	15	+ .01	52.73	15	398	57 1277	+ .021	52.02	13	+ .18	52.11	14
1190	47 1419	- .020	52.57	33	- .03	52.59	29	1276	46 1657	- .025	52.35	30	- .01	52.44	28
276	41 1630	+ .011	52.54	14	+ .01	52.44	12	405	23 2253	- .004	52.42	12	- .25	52.42	12
279	22 1645	+ .001	52.05	15	+ .25	52.09	14	413	78 367	+ .057	52.57	29	- .01	52.46	27
N d	87 51	- .670	52.41	21	- .25	52.30	20	1282	41 2147	- .019	52.18	11	- .22	52.18	11
280	55 1192	+ .024	52.54	12	.00	52.54	10	416	57 1302	- .015	52.50	31	+ .16	52.53	28
1191	40 1852	- .005	52.15	32	- .14	52.38	28	420	45 1897	- .015	52.13	30	- .23	52.17	28
282	28 1385	- .010	52.68	11	- .17	52.60	12	N η	86 161	- .152	52.48	34	+ .01	52.46	31
1196	27 1424	- .008	52.06	11	- .16	52.42	8	422	21 2298	.000	52.21	18	+ .13	52.21	16
1195	46 1286	+ .002	52.25	20	- .07	52.25	20	424	50 1807	+ .023	52.34	28	- .01	52.34	28
292	59 1103	+ .015	52.45	26	+ .01	52.59	25	1295	27 2021	- .021	52.53	31	- .41	52.55	29
294	24 1759	- .005	52.49	17	- .27	52.49	17	432	43 2122	+ .017	52.46	42	+ .12	52.46	42
295	28 1463	- .003	52.32	12	+ .07	52.40	12	441	48 1966	- .008	52.51	42	+ .07	52.48	41
1207	27 1499	- .015	52.47	12	+ .14	52.54	10	1304	21 2358	+ .016	52.54	40	+ .16	52.47	38
299	47 1499	+ .007	52.19	29	- .11	52.23	27	447	54 1475	+ .011	52.64	21	- .05	52.64	21
1209	44 1693	- .015	52.38	22	- .45	52.46	20	N θ	86 176	- .381	52.54	46	+ .15	52.44	47
1211	25 1812	+ .003	52.42	23	+ .10	52.47	20	451	77 461	- .003	52.34	38	+ .52	52.42	34
305	28 1532	+ .009	52.58	22	+ .09	52.62	20	454	78 412	+ .030	52.54	38	- .04	52.58	37
307	51 1391	+ .002	52.14	9	- .22	52.47	7	1314	54 1504	- .011	52.31	17	- .19	52.32	15
N ϵ	84 169	- .038	52.39	54	- .20	52.33	47	456	57 1363	+ .001	52.38	12	+ .23	52.38	12
310	76 310	+ .074	52.08	28	- .29	52.17	25	458	41 2284	- .012	52.25	17	+ .26	52.20	18
1217	27 1589	- .003	52.54	19	+ .18	52.52	20	1316	49 2130	- .018	52.46	34	- .10	52.40	34
314	43 1815	- .013	52.44	24	+ .18	52.57	22	1318	26 2337	- .001	52.49	33	- .23	52.57	31
321	20 2109	+ .007	52.42	20	- .10	52.50	19	466	21 2424	+ .018	52.42	17	- .34	52.30	15
323	53 1272	+ .039	52.46	32	+ .07	52.65	27	467	59 1444	+ .036	52.52	27	+ .13	52.58	26
1225	46 1422	+ .010	52.41	24	+ .11	52.41	24	470	42 2321	+ .003	52.48	34	- .10	52.54	31
1228	21 1895	- .002	52.54	17	+ .08	52.58	18	1323	23 2475	+ .026	52.23	15	- .13	52.23	15
328	29 1824	- .005	52.37	20	- .37	52.42	20	1327	46 1817	- .025	52.39	47	+ .02	52.32	45
335	48 1707	+ .002	52.41	38	+ .46	52.42	37	1332	28 2156	+ .009	52.67	26	+ .03	52.65	25

OTTAWA MERIDIAN RESULTS

FK3 No.	B.D. No.	$\Delta\alpha$	Epoch	No.	$\Delta\delta$	Epoch	No.	FK3 No.	B.D. No.	$\Delta\alpha$	Epoch	No.	$\Delta\delta$	Epoch	No.
483	56° 1627	-.030	52.50	34	-.14	52.47	34	627	57° 1702	-.008	52.60	21	+.16	52.69	21
1338	46 1847	+.015	52.20	18	-.11	52.14	17	1440	24 3069	-.012	52.72	27	-.25	52.70	25
1339	21 2487	+.039	52.21	9	-.08	52.31	8	N _g	82 498	+.036	52.33	41	-.16	52.37	40
492	28 2193	+.013	52.36	23	+.06	52.27	21	1448	44 2652	+.008	52.76	44	+.08	52.70	52
494	41 2380	-.012	52.59	40	-.08	52.55	38	636	40 3103	-.017	52.64	48	-.14	52.63	54
1346	40 2647	+.007	52.66	34	+.10	52.64	33	641	25 3221	-.001	52.93	17	+.17	52.99	15
497	55 1598	-.001	52.77	19	+.09	52.74	18	650	48 2517	-.014	52.71	48	+.05	52.68	49
1353	44 2285	+.017	52.78	31	-.10	52.69	31	1460	26 3034	+.013	52.68	21	+.02	52.60	18
N _i	83 397	-.224	52.56	67	+.04	52.67	58	653	52 2065	-.008	52.60	20	+.16	52.73	21
1358	26 2494	+.011	52.42	13	-.27	52.50	12	1462	41 2850	+.025	52.77	28	+.23	52.76	33
509	50 2027	-.038	52.39	15	-.02	52.39	17	663	46 2349	-.010	52.68	56	.00	52.77	57
517	28 2287	+.014	52.72	25	+.07	52.70	24	667	27 2888	-.002	52.64	25	-.66	52.67	26
1368	44 2325	+.004	52.65	37	-.17	52.65	35	1465	20 3570	+.033	52.64	14	+.41	52.71	14
522	25 2737	.000	52.74	18	-.12	52.79	16	N _h	86 269	-.059	52.66	20	+.20	52.56	19
524	78 478	-.001	52.41	30	+.20	52.50	24	675	76 667	-.010	52.31	29	+.12	52.31	27
528	52 1784	-.018	52.68	18	-.05	52.76	17	671	56 2033	-.018	52.55	20	+.13	52.61	15
527	46 1949	-.016	52.58	23	-.01	52.50	22	1468	26 3120	+.027	52.29	8	-.28	52.44	9
531	52 1804	-.005	52.65	35	+.05	52.64	34	676	51 2282	+.011	52.72	25	+.10	52.72	25
1379	76 527	+.030	52.54	52	-.10	52.52	44	674	29 3156	-.004	52.54	21	-.01	52.44	19
1380	30 2536	-.018	52.86	29	+.07	52.81	30	681	28 2925	-.004	52.68	41	-.32	52.72	39
540	45 2204	+.011	52.67	32	.00	52.66	34	684	42 3035	+.013	52.63	43	+.07	52.60	43
1383	27 2413	-.009	52.65	27	-.12	52.66	26	690	21 3411	-.006	52.49	45	-.04	52.41	40
N _k	83 431	-.170	52.48	53	-.18	52.46	53	1479	29 3259	+.062	52.64	46	-.22	52.60	41
1392	22 2764	-.024	52.92	13	+.14	53.02	11	N _μ	83 536	-.148	52.52	48	+.22	52.49	46
555	40 2840	+.008	52.59	15	+.17	52.59	15	700	77 699	-.030	52.21	25	-.23	52.26	21
557	27 2447	+.012	52.80	15	-.09	52.79	16	1483	46 2508	+.006	52.52	18	+.07	52.22	19
1395	48 2262	-.017	52.47	21	+.08	52.43	20	703	20 3926	+.023	52.57	24	.00	52.61	21
1397	55 1730	-.004	52.78	16	+.08	52.78	16	1488	26 3349	-.023	52.83	16	-.43	52.73	14
1396	25 2873	+.001	52.62	17	+.33	52.57	16	1492	52 2280	-.027	52.59	31	+.30	52.70	29
1400	21 2755	+.011	52.65	20	+.15	52.56	20	1494	75 682	-.019	52.98	30	-.33	53.06	23
572	29 2670	-.005	52.52	37	+.08	52.74	36	711	43 3117	-.011	52.64	26	-.02	52.58	26
573	41 2609	+.002	52.61	42	-.21	52.54	39	1498	28 3193	-.003	52.64	55	-.29	52.65	50
578	27 2512	-.008	52.65	37	-.12	52.67	35	726	53 2216	+.004	52.70	54	+.11	52.78	49
580	40 2907	+.010	52.87	19	+.09	52.91	22	1506	44 3133	+.012	52.66	46	+.02	52.61	48
1412	47 2253	+.005	52.51	26	-.10	52.56	23	734	79 628	-.070	52.08	33	-.11	52.10	28
590	78 527	-.059	52.64	28	-.21	52.62	23	1508	24 3759	+.004	52.77	35	-.03	52.72	34
N _λ	83 453	-.110	52.87	17	+.02	52.79	18	733	51 2605	-.019	52.52	42	+.03	52.46	36
1416	42 2648	+.029	52.70	30	+.07	52.70	30	732	27 3410	+.011	52.52	22	+.27	52.52	22
593	27 2558	+.015	52.53	22	+.01	52.49	21	738	49 3062	+.020	52.71	58	+.09	52.66	53
595	55 1793	+.045	52.74	28	+.18	52.71	27	1515	25 3933	+.009	52.79	53	+.04	52.82	48
601	45 2376	.000	52.46	22	+.10	52.35	26	750	52 2572	-.001	52.97	45	+.02	52.99	38
606	76 594	-.002	52.43	51	-.03	52.44	49	1523	27 3587	+.010	52.85	42	-.10	52.85	35
1425	23 2916	+.015	53.05	15	+.13	52.98	13	N _ν	84 451	+.031	52.44	31	+.18	52.44	29
608	46 2169	-.022	52.86	27	+.13	52.74	27	759	77 764	-.005	52.20	39	-.19	52.16	37
612	76 596	-.040	52.96	17	+.15	53.08	16	757	46 2882	-.003	52.60	30	-.06	52.53	26
614	55 1845	-.026	52.62	25	-.04	52.50	25	758	56 2376	-.020	52.62	8	+.22	52.75	8
618	21 2934	+.018	52.81	30	-.04	52.83	28	760	24 4075	-.003	52.71	16	-.03	52.64	16
621	42 2724	-.011	52.61	33	-.01	52.55	35	765	39 4159	+.003	52.60	61	+.24	52.61	53
623	77 627	+.045	52.38	26	-.09	52.37	25	1539	20 4658	+.024	52.60	51	-.14	52.59	46
1434	49 2531	-.031	52.56	38	-.36	52.57	41	777	44 3541	-.005	52.48	67	+.15	52.49	59

