

KG
11365
438

*Absolute Work.
Note Book
S.C.B.*

15G-11365.438



1898phae.proj..439B

KG 11365.438



Absolute Work. 1879, 1880, 1881.

July 1898

Work on copying of Journal from F 67 to F 85

November. Means of Microscope Readings for Runs. E_1 to E_6 .

Nov 16. Copying of Data for Runs.

" 17 " " Journal. F 85.

" " 18 " " Star List

" 19 " " Journal F 86.

" 21 Notes on Runs examined E_1 - E_2 with Miss Winlock." 22 " " " E_2 & E_3 " " "

" " " Broken Transits F 67 & 768.

" 23 & 27 " " F 69 - F 75

" 28 Examination of notes on Runs completed Nov 28th

29-29 Data for Curve of Runs. pp 50-56. Book Absolute Work.

29 Notes on Broken Transits examined

30

" " " " " Letter of
8) Non Fundamentals

Dec 1-2

entered in Books and copy.

" 3 Numbered consecutively sheets of Copy of Journal F 67-84

" 5 Star List Entered 41 Stars by letters a b c d. and 24

" bracketed stars from Star List.

" 10 List of Dates of Observations from F 67-88 for Curve of Runs.

6-12 Copying Journal F 87-88 — Numbered Sheets F 87-88

13-24 Absolute work Copy of Dates of Observations F 67-88. in
Star List Book. Completing Star List. Entering Authorities
Comet work. Major Aps of Comets. (East Orbit) Data from Galli's List 1800-1870
Began Computation of Apparent Place.

1898 - 1899

Absolute Work 1879 1880 & 1881.

December 1898

26th - Jan³ 9

Star List. Entering Dates of Observations F67 - F88.
Comet Computations. List of Obs for which Chr. Sheets are
to be examined. also lists of incomplete Decs & C. Read^g.

Jan³ 10 - 112

" " "

" 12

Star List. Entering date of Observations F67 - F88.
Continued lists of Obs for examination. (Classification)

" "

" 13 - 16

Comet Computations. Check of Comets 1870 - 1894.

" 17

Star List Entering Dates.

" 21

Finished entering Dates excepting those of a Mrs. Min^g & ^{Mrs. Min^g}
changed letters of Non Fundamentals in
Journal and F67 - F88, making these coin-
cide with the letters in Star List Book.

" 23

" "

Began counting Dates in Star List Book.

" 24 - 25

Comet work - checking computation of 6 and 11.

" 25

checked the 24 stars in Absolute List not
found in 539 List Jahrb. 1879. & found all correct.

" 25 - 26

Comet work - checking

" 27 - 31

" " Made lists of Comets 1800 to 1870 in
order of Quadrants of 13.

Made list of Comets 1800 to 1893 in order of
Galle's No. Finished Classification of
Notes on Journal.

Feb 1

Examined list of Dates in Star List book for two or
more ~~dates~~ entries of one date of same star and found none
of more than 2 entries to a star. (two triple entries having
been previously corrected).

Feb 2 - 11

Work on Comets. Arrange Lists in order of
Quadrants 1st all having i less than 90° , 2nd all
* These are the bracketed stars.

1899

Feb 11-20

92
1Count of star
Observations

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Incomplete RAs

x Dec.

Feb 21

22-23

" 24

" 25-28

March 7

years. This latter includes Obs. of Sun.

Completed this work.

* This number has been changed (in red) to 460 in the List Book.

rich

Notes.

clusions.

f

f

f

f

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f

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f

f

1899

Feb 11-20

greater than 90° . Counting stars obs. 1879-1882
 1st each star for each year, 2 each star for all
 the years. 3rd all the stars for all the years
 Count of star observations 1879 to 1882 inclusive. Thus giving Total Number
 of each star observations of each star; the observa-
 tions of Polaris have not been entered & are not
 included in this count.

The number of star observations is 6035

" " Sun " " 450

" " Polaris " "

Total " " "

This count is made from the Ledger which
 was taken from the Journal & from Notes.
 Incomplete R.A.s Checked Stars for ^{list of} incomplete Right Ascensions,
 & Decl. and Declinations. from Journal & Notes.

Feb 21

Counting observations in Star List Book.

22-23

" " " " " Finished
 Count of Stars. The number of observations ^{of Sun} taken
 from Ledger now agrees with that in Star List
 Book viz 459. having been carefully compared.

" 24

Counting obs. in Star List Book

" 25-28

" " " " " Making up Totals
 of each star ^{& Sun} for each year, for all the years &
 all the stars for each year & all Obs. for all the
 years. This latter includes Obs. of Sun.

March 7

Completed this work.

* This number has been changed (in red) to 460 in Star List Book.

1899
March

1-2

Notes - Absolute Work.
Completing Count of Obs. from Star
List Book & Ledger.

Tues. 7th

Checked Dates for use in Runs.
Compared counts of observations from Star
List Book & Ledger & found all agree.
Began entering Stars with ^{approx.} RA & Dec. for 1880
into Star List Book. pp 166-180. Completed.
Looked up 5 stars included in list of
Prof. Rogers & not found in present Star List
Computed fraction of day RA-T for Ledger. 1880.
Thurs. day for Ledger

Wed 8- 31

Continued computation for fraction of day.

April 1-12

Examination of Circle Readings - A, &c (at Obs^y)
Occasional ^{work} on Eros. for Miss Winlock.

" 30

~~Examination~~ of Circle Readings continued
occasional computations ~~of~~ Eros and
Nova Sagittarii. Position of comparison stars.

May 1-3

Ex. of Circle Readings. - Copying Constants from
1885 - Dr G. Muller's Table for Apparent Place for Stars
into Star List Book. answers Cat.

4-

Computation of Reduction to Apparent
Place -

1899

Note made May 17. To be done on return.

L.C.s

L.C. Observations have not been indicated in Star List book. They are to be entered from examination of the F Books, and to be checked by comparison with Prof. Rogers' List in M 25. All the dates in the Star List are to be compared with the dates in M 25. Look up L.C.s on Journal Sheets, & enter L.C. in red ink over date in Star List Book.

pp 15-21

The L.C. Obs. are made 12 hours from the Star's R.A.

1900 April

The List of dates and L.C. obs. have been compared with the F Books and with M 25. The L.C.s being entered over their dates.

May 20

Work for Summer of 1899. -

Finish the fractions of day ^{in Mean Time} for Ledger for all the stars 1879-1881. Taking $T = \text{Sid Time for Mean Noon}$ from the Am. Ephemeris pp 324-329 Subtract T from R.A. ($R.A. - T$) & reduce to fraction of day.

Fraction of Day

May 26

Condition of this work to date: 1879 is finished. 1880 is partly done & 1881 is begun. Will need for this work Am. Ephemeris for 1879, 1880, & 1881.

* This is a mistake: The work is not completed by years. ~~but~~ each star is worked for the 3 years 1879-80 & 81. All therefore are begun, & none are finished. See Ledger For completion of this work see p. 26

N 13

Work for Summer - Continued

Reduction to Apparent Place.

Computation of independent ^{star numbers} a & b & c & d & a' & b' & c' & d' for the 182 stars observed in 1879-1881. -

α Uss. Min. = Polaris
p 40

Omit reductions for α & δ Uss. Min. & 51 Hephie. for the present. Daily Ephemeris given for these 4 stars in Am. ^{Ephemeris} ~~Star~~.

These constants are to be computed for 1880 in the New Book, using 1880 m & n & w see p 258 of a .
1879 $m = 3.07232$ $\log n = 0.12610$ (see table)
Am Ephem. 1880 $m = 3.07234$ & $n = 0.12610$ These constants are used for computation of a .
 $w = 23.2717''$. This value is to be used for 1879 & 1880.
[see p 248 Am. Ephem. w is used in computation of c' .

For the computation of a' , the constant for 1879 is 20.0539 . and for 1880 20.0538 .

Computations for 1879 are to be done on sheets.

Omit the 1879 reductions for the 13 stars for which the ^{values of} a & b & c & d & e are given in Pub. XIV Astr. Geill: - 105, 76, 111, 116, 363, 365, 383, 420, 421, 425, 429, 436, 491, 497.

~~Be~~ Be sure to use ¹⁸⁷⁹ constants for 1879 reductions, and 1880 constants for 1880 reductions. using also α & δ for each year.

In the reductions use hours minutes, seconds & tenths of seconds in R.A. reduced to degrees minuty & seconds of Arc. and Declination also

to seconds of Arc. for all the stars, making
no exception for Northern Declinations.

Allow space in New Book for ^asecond computation.

Recompute the 13 stars found in Publ. XIV
Astr. Gesell. using the directions just given for
tenths of seconds of RA and seconds of Arc. ^{enter} DO
This in red beside the reduction already entered.

For the 13 stars, put in the RA's to be used for
the red ink reductions. see α Andromeda in
New Book.

Bracketted
stars
see p 8

Brackets indicate no Ephemeris. These stars are
not in 539 List. See Publ. XVII & Introduction to
Star List Book. They are 24 in number, 25 counting
[606 & 607 & γ d² Capricorni] as two stars

1899

List of things wanted for Work.

^{Schwin}
3 Bagay Tables - Newcomb - Cholev's Tables.

3 Ann. Ephemer. for 1879-80 & 81.

1 Record Books viz. Red. to App. Places for 1880.

1 ⁸⁵ Sheets for Red. to App. Places for 1879.

These are for the Computation of Constants a bed^g for reduction to App. Place.

Ledger of the Observations 1879-1881, 82. Dates only given. Fraction of day to be finished.

June 1

April 1900

The ^{of the} first star of Ledger & Androm is at the Observing. All.
Miss Winlock returned the ledger sheet of first star & Andromeda

Aug ast.

I find this note on loose sheet of paper; "Stars not in Jahrbuch (539 List) to be taken from Star List, noting they are for 1879. on lower line in pencil"
This has been done

1899

May

21-22

Constants a b c d.

Arranged Table (on double sheet) of Constants a b c d
Comparison of my computed values with the
Pub. XIV values reduced to 1880. For 13 stars for which
values are given in Publ. XIV. This table is to be enter-
ed on pp 188-189 of the a b c Book, when final reductions
have been made.

Circle Readings
sup p 38 & 39 & 41

Note on Circle Readings — Circle Readings in
Books I have been compared with the originals
in A, & changes made on Journal, & notes
made of these changes, which are to be made
in the I books. I 67-72 inclusive, & I 76 have
been examined. I 73, 74 & 75 and 77 to 82 re-
main to be examined. Reduced places for brack-
etted stars for 1879 & 1880, from Publ. XVII, arranged on sheets.

23-30th

Bracketted Stars
Red. of Constants

Copied all the stars ^{for 1879} in Star List Book, on sheets,
for reduction of Constants to Apparent Place
including the Bracketted Stars which have the
R.A. & Decl. reduced to Publ. XVII places reduced to 1879.
Checked these stars on sheets (R.A. Decl. & names) by
539 Star List. 1879. Checked also the places for
1880 in a b c d book

Came to Owl's Head — no work done until June
29th.

1899

June 29th Resumed work this P.M. ^{h m l m} 430-530.
arranging work.

Friday 30

Began Computation of Constants for Reduction
to Apparent Place for 1879. (On sheets)
Interrupted & did not compute.

July

Sat 1st 8th
8th - 22nd

Computation of Constants. 1879

" " " RA of α Orionis
is not on 1879 sheets (p 20). * nor is it in Gardiner
a b c d Book. [c γ Leonis] & [d ϵ Bootis] also omitted.

See pp 38 12 b. & Colomba is also to be examined. Safford's * has no
declination. Miss Winlock has given for [b α Columba] ^{RA} 5^h 35^m 18.3-34^s 19
taken from Am. Ephemer. for 1880. The same for [c γ Leonis] & [d ϵ Bootis]

Sent p. 12 of Red. to App. Place to Miss
Winlock Harmon Way. Rockport Mass.
(This sheet was returned later.)

September
Fri. 22

Finished Computation of Constants for
Red. to App. Place for 1879 on sheets 1-86
Began Reductions for 1880 in a b c d Book same day.

Wed Oct 18

Came to Rockland. Sent account of work done
to Miss Winlock before leaving Owl's Head.

a γ Orionis

Mon " 23

* RA & Decl of [a γ Orionis] for 1880 ^{was later} taken from fraction of
Day sheets viz 5^h 34^m 20^s 2'. Miss Winlock gives 5^h 34^m 39^s - 20'
taken from J. Prokes Oct 7 1879 & Safford's (c) * 1879 from J. Prokes
apr 1, 6, 7, 8 RA 20^h 16^m 42^s Dec - 88 46

Sawyer

Sep 38

1899
Nov 8th

Returned to Cambridge.

" 11

Finished Constants for Red. to App. Place for 1880, & began recomputation of the 13 stars ^{for 1880} found in Publ. XIV Astr. Gesell. (in red) to be entered (in red) beside the previous computation in a b c, book.

In the first computation (in black) of these 13 stars the nearest minute of arc, R.A. & δ has been used. and the nearest tenths of seconds of δ in δ of R.A. for reduction to arc.

" 16

Finished recomputation of 13 stars in Publ. Gesell. with the exception of No 111 (51 H Cephei) which is one of the ^{close Polar} four stars (α δ γ Urs Minor) to be omitted for the present.

" 20

Resumed work on Fraction of Day

" 16

Began arrangement of 182 stars in order of ^{log} a b c d e on sheets for 1879. - Completed.

19- 21

work on Eros: - $a + \frac{1}{100} \alpha$, check on Constants.

21-

Began list of a b c d e for 1880, as for 1879.

22

a b c list for 1880. No Davidson's has date 1880 marked with ?.

27

Look up δ of 193 γ Bootis $14^h 27^m$. It is $35^{\circ} 50' 1.07''$ in a b c Book & $38^{\circ} 50' 17''$ on 1879 Sheets. It is also 38° on ^{Loger} Fr. of day sheets. $= 38^{\circ}$ is right. = & the work corrected in a b c Book.

1899

November & December

Tu 27

Wed 28

Wed. to Hpp. Pl.

1880

Checks for Eros. Computed above for 1879 for α [b
 α Columba] & ϵ γ Leonis, using R.A. & Decl. taken
 from Am. Ephem. for respective years, using
 tenths of seconds for reduction to arc and nearest
 seconds of arc for R.A. & Decl.
 Recomputed 193 γ Bootis with correct δ $38^{\circ} 50' 1''$
 for 1880. The right δ was used for 1879.

- 1- " Recomputed δ of 309 ϵ Pegasi for 1879 with the
 correct δ viz $9^{\circ} 19' 16''$. First computation erased
 where wrong, & right figures put in.
 The

Old note = "List α^2 Libra = 590, or δ Libra = 589? To
 be corrected in F Books & on journal to
 590 for α^2 Libra. - Make list of any dates of
 δ Libra. Correct also in Star List. Copy the
 dates of 589 from Star List."

This note is marked "on the back." The name
 is 590 α^2 Libra, & the needed corrections have been
 made."

See p 10

δ ϵ Bootis has been recomputed with R.A. & Dec
 taken from Am. Ephem. - α γ Orionis, ^{(e) Safford's #} remains
 to be done, Miss W. gives place from F Books δ = $5^{\circ} 34' 39''$
 $- 2^{\circ} 0'$. " " of Safford's (e) # from F Books
 1879 Apr 1, 6, 7, & 8 = $20^{\circ} 16' 42'' + 88^{\circ} 46'$. Plans for

Dec 8

α γ Orionis, & Safford's δ & ϵ are now completed. for
 1879

1899-1900 December and January

Jan 12-

Sup 42

Entered RA on sheets of a b c &c for 1880 in red.

Have taken the differences between ^(log 5) 1879 & 1880 values of a b c &c 1879-1880.

These values have been compared.

Class II: Non Fundamentals to be computed These have

p 42

Completed computation of Class II with α & δ taken from Fooks the same places being used for both 1879 & 1880.

Made a second copy of a b c &c for 1879 including Class II in order of RA with Class I.

Check Computations on Eros, continued to Jan^y 30

Jan^y 30 Began taking out Cor. Numbers of Constants a b c d &c for 1879 & 1880 to find differences. 1879-1880.

Eros.

Feb 12 Check Computations on Eros
Constants " Cor. Nos. of Constants a b c d &c continued

March 1 Check Computations continued
Cor. Nos. of Constants a b c d &c for diff 1879-1880 Cont'd

1900.

March 5
Constants

The corresponding numbers being taken out for 1879 & 1880 (of the logs. of constants a, b, c & e) & the differences taken, those differences (1879-1880) exceeding one in fourth decimal place are to be looked up & corrected if wrong.

There is but one observation of 36 c Cass. viz Feb 22/79

Red. to App. Pl.
March 12

Red. to App. Place. Preparing snets for computation of a, A, a, B, c & a, A, c Log A by B & taken from Am. Ephem. (p 249-251). and Moon Terms taken from Am. Ephem. & Tables IV & V of Appendix.

March 27

1900
March 27
Ledger

Ledger --
Fraction of Day — Computation of Fraction
for 1879 is completed. ^{may 24th} 3 or 4 dates accidentally omitted, ^{are yet to be done.}
" 1880 " " " " "
" 1881 " " " " "

p26
Ledger

These sheets are to be numbered in order of
R A, and are also to be numbered for
each star as in Star List in red. a.e. 12 And over.
The Class II stars are to be paged with the
rest in order of R A.

Supp 49-52
" 30
Fundm. Stars

Checking of dates of Fundamental Stars for 1879 in
Star List Book by M 25. and indicating the
LC observations by 'LC' over that date.

Notes " 132 Cass. 6^m 49 has June 22 entered & erased in Star List
1879 Book; it stands in M. 25. chp.

Sup 49 ✓ B Arietis has Dec 18, in M 25 it is $\frac{17}{18}$. F 74 Dec 18
of Andromeda June 23, there is no such date in M 25 but a blank
is left. ^{Aug 21 in M 25} Dates Sept 29 Dec 4 7 9 15 16 are not entered in
Star List Book. (They are entered at α Arietis.)

✓ α Arietis Apr. 20 21 ^{20 & 21 in F 69} are $\frac{19}{20}$ $\frac{20}{21}$ in M 25. Dec 21 is Dec 23 in
M 25. ^{it is Dec 23 in F 74} Jan 1. 1880 is entered with 1879 in M 25.

67 Ceti 2^h 10^m Dec 1 29 is not in M 25. nor is Cass 2^h 19^m in M 25
& Erid. 327 Feb 21 is not in M 25.

under p 71 B Erid. 5^h 7^m Sept 15 ~~is~~ are omitted in Star List and Sept 16 is not in
M 25. ^{it is Sept 16 in F 72}

B Orionis 5^h 8^m same dates omitted ^{Sept 16 in F 72}
B Tauri 5^h 18^m Apr 30 in M 25 is June 30 in Star List & Sept 15 is 16 in S.L. ^{there is no Apr. 30 in F 67 June 30 is in F 71}
^{in F 72 Sept 24 chp in F 72} Sept 16 in F 72 Sept 20 & 24 are omitted ^{in S.L.} Sept 19 is not in M 25 Sept 19 is not in F 72
^{Sept 16 in F 72} B Orionis 5^h 26^m Star List has Sept 16 M 25 has Sept 15 & Leporis 5^h 27^m the same

1879

Check on Dates Continued

- ✓ Orion. 5 29 Sept 15 in M 25 is 16 in S List It is Sept 16 in 772
- 1901 Nov. { E " 5 30 March 2 is omitted in Star List It is not in 767.
 { The date March 2 (in red) stands in Star List.
 S " 5 34 Sept 15 in M 25 is 16 in " " It is 16 in 772. Sept 15
 stands in red in S L of Orionis
 K " 5 42 " " " 772 " March 2 is
 omitted. March 2 is not in 767
- α " 5 49 The same and Sept 27 Oct 7 are not in M 25 Sept 27 & Oct 7 are in 772
- μ Gem. 6 15 Sept 16 in S L. Sept 15 in M 25 Sept 16 in 772
- ζ " 6 30 Same " "
- α Cassio 7 37 " " " " " "
- β Gem 7 37 Apr 30 M 25 in June 30 in Star List. Sept 15 is 16
 There is no Apr 30 in 767
- α Hydra 9 21 Sept 25 is omitted in Star 767 " Chf in 772
- α Leonis 10 1 Apr 27 " " " " Chf. Aug 24 is not
 Aug 24 is not in 771 in M 25 & Sept 4 is omitted in S L Sept 4 is in 771
- α Ursa Maj 10 56 Nov 15 26 30 & Dec 7 are not in M 25. They are in 773 74
- δ Leonis 11 8 Apr 23 is " " "
- β " 11 43 " " " " Apr. 9 is entered
 in Star List & excised. Oct 19 is marked
- None in 773 No such Obs. (?) α Oct. 20 is omitted. Chf in 773
- γ Virginis 12 36 Apr 23 " not in M 25
- These stars are { δ " 12 50 Mar 2 is " " Star List It is not in 767
 not in 767 Mar 2 { ε " 12 56 " " " " " " Apr 23 is not in M 25
 α " 13 18 " " " " " " Nov 12 in M 25 is
- There is no Nov 12 773 Nov 9 in Star List Nov 9 773
- γ Ursa Maj 13 43 June 21 " " is 20 in M 25 It is 21 in 770
- γ Bootis 13 49 " " " " " 21 in 770
- α Virg. 13 56 " " " " " 21 in 770
- α Bootis 14 10 " " " " " 21 in 770 Sept 12 in M 25
 is 12 in 772 Oct 5 is not in Star List Chf. 772
 Oct 26 is 25 in Star List. 25 in 773
- γ Bootis 14 27 June 20 is 21 in " " 21 in 773

1879

15

~~α Proctis 14 39. June 9 is not in Star List & June 20 in M 25~~
~~June 9 is not in F 70 is 21 in Star List ^{21 in F 70} Oct 7 occurs twice in~~
~~Star List once in M 25. It is once in F 72~~

B " 14 57 June 20 in M 25 is 21 in Star List It is 21 in F 70
 γ Uss. Min 15 21 Feb 16 is not in M 25.

~~α Cor Bor 15 30 Sept 8 " " " Star List It is not in F 71~~

~~α Serpenti 15 38 " 25 in M 25 is 26 in Star List It is 26 in F 72~~

~~δ Ophiuchi 16 8 Mar. 11 crossed out " " " Mar 24, 25, 26~~

These Mar 24-30 are not in F 68

~~30. July 1 3 9 Sept 12 15 26 30 Oct are~~
~~all omitted in Star List or is the name of~~
~~months June omitted in M 25 before these dates?~~

~~α Scorpii 16 21 Oct 7 in M 25 is 5 in S.L. Oct 5 is not in F 71~~

~~β Herculis 16 25 Oct 8 is not in M 25. It is in F 72~~

~~γ Ophi. 17 3 Mar 1 is not in Star List. It is in F 67~~

~~α Herc. 17 9 July 6 in M 25 is 8 in S.L. Sept 30 is not~~
~~in S.L. Chf in F 72~~

~~α Ophi 17 29 July 2 is not in S.L. also Sept 26 30. It is in~~
~~Chf in F 71. " 30 Chf. Sept 26. F 72~~

~~γ Serp. 18 15 Aug. 14 " " " Chf in F 71~~

~~γ Aquilae 19 0 Apr 21 " " " Aug 24 is crossed out. It is in F 71~~

~~Sept 27 is not in F 69. It is not in S.L. nor in F 72. Oct 14 & Aquilae is in~~
~~also Sept 27 and Oct. 14 not in M 25.~~

~~α Aquilae 18 59 Apr. 21 is not in M 25. nor Sept 27. Sept 23 Chf F 72~~
~~are entered on p 34~~

~~δ Draco. 19 12 Apr 2 4 8 21 Oct 7 14 20 are not in M 25. They~~

~~β Aquilae 19 49 Sept 20 is not in M 25 It is in F 72~~

~~α Cephei 21 15 May 1 occurs twice in S.L. once in M 25 May 1 is twice~~
~~in F 69, May 5 is in S.L. & M 25. May 10 & 16 are not in M 25 May 7, 10 & 16~~

~~γ Pegasi 22 37 Mar 11 is not in M 25. It is not in F 67 68~~

~~α Piscis 22 50 Oct 30 in M 25 is 30 in S.L. It is Oct 30 in F 73~~

~~β Uss Min 14 51 June 9 is not in M 25 It is in F 70~~

~~γ Draco sgr. 16 22 Sept 11 & 14 are marked Ex in M 25~~
~~" " is not in F 71~~

April 4, 1890 Check on Dates in Star List Book. by M 25. Cont^d
 Dates in M 25 not found in Star List are now entered
 in Red.

1879

~~ε Urs Min 16 58~~ Feb 15 U C & L C are not given in M 25. in S L they
 are entered in pencil. Feb 23 has two entries but no L C ^{the}
~~first obs. in L C 767~~ Feb 15 occurs twice in 767 the second obs is not entered
 77 Draconis Nov 10 has one entry in M 25, two in S L. It is entered once in 773

for the years 1879-80-81 & 82

Dates

The dates in M 25 have been entered in Star List Book
 where omitted, & also for on Journal (Comp. of
 Fraction of day.) and L C's have also been entered.

L C's

see note in Star
 List p 3

L C's were taken from M 25 & compared with F Books

Dates for 1880-81 & 82.

1 α Androm ¹⁸⁸⁰ June 2 & 3 not in Star List Book. Not in 777
 Nov 28 Dec 16 & 23 same. Nov 2 & 8 occur once. Dec 16 & 23 are not in 782
 37 Pegasi ^{June 2 & 3 are not in 777} 1880. June 2 & 3 Nov 2 & 8 are in 781 not in S L Book.
 7 Cass ^{June 3 & 4 not in 777} June 3 & 4 Nov 2 in 781
 20 δ Cass " " 18 is not in 777
 30 β Arietis July 5 31 1881 May 10 Not in F Books
 32 γ Androm. " " 5 31 " Feb 13 " " " "
 α Arietis " " 5 " " " "
 α Persei " ^{Sept} June 28 Aug 12 Ex Date Aug 12 or 13 in 778
 δ " " Aug 15 ^{Chp.} 778
 61 γ Tauri " July 31 Aug 12 15 Not in F Books
 77 Draconis 1881 Feb. 14 15 17 19 23 24 Sept 12 Oct 11 16 Not in " ^{then are in 782}
 α Tauri 1880 June 26 1881 May 1 In 785 under date Apr 31
 79 ε Aurigae " " 28
 84 β Eridani " Feb 29 Not in 775 1881 March 20 23 Is this date to be entered in } ^{771, Ledger?}

86 α Auriga	1880	Aug. 28	1881 Feb 14	not in F 79	not in S.L.
87 β Orionis	"	Feb 29	"	75	"
90 β Tauri	"	July 28	Sept 15	1881. May 1. Apr 31 in F 85	"
93 δ Orionis	1881	Aug 22	It is in F 86	"	"
97 ϵ "	"	Feb 14	chf in F 82	"	"
100 κ Orionis	"	Sept 12	It is in F 86	"	"
549 102 α "	1880	Mar 8	is doubtful No name given. it is not in M 25		
	1881	Mar 25	It is not in F 83	not in S.L.	"
γ Geminae	1880.	May 1	Not in F 76	Apr 31 is not there.	"
561 α C. Maj.	"	Feb. 29	It is March 1 in F 75	"	"
566 ϵ "	"	"	is not in F 75	Sept 6 is in F 86	"
118 β C. Min	"	Sept. 23	1881 Sept. 6	Oct. 20 not in F 87	"
120 α "	"	Apr. 7	not in F 75	Apr. 3 not in F 84	"
122 β Gem	"	Mar. 28	Apr. 7	Mar. 21 Apr. 17 Oct 13 not in F 87	"
570 α Argus	"	"	8 not in F 75	Apr. 3 not in F 84	"
138 α Hydra	"	"	30	Nov 1 2 7 There are in F 81 once	"
140 δ H. Maj.	"	Nov 1 2	are in F 81 once	"	"
β Lepus	1881	Mar 26	28 Apr 2 3 4 9 11 18 19 20 21 23 Oct 9 10 25	"	"
ϵ Leonis	"	Apr. 3	chf in F 84	not in S.L.	"
α "	1880	Nov 7	15 in F 81 once	"	"
553 β H. Maj	"	Nov 1 2 6	1881 May 7 Oct 18 chf	"	"
154 α "	"	June 26	not in F 78	"	"
155 γ "	1881	"	Oct 9 10 in F 87	"	"
156 δ Leonis	1880	Apr 26	in F 86	"	"
ϵ Corvi	"	Apr 27 31	are there May 27 31? in S.L. also not in F 86	"	"
150 δ "	"	May 27 31	Dec 8 This is in F 81	"	"
γ Virginis	"	June 4	not in F 77	"	"
173 ϵ H. Maj	"	Nov 27	Sept 30 in F 87 once	"	"

184 δ Virginis	1880 June 13	not in γ 77	not in S.L.
α " 587	" Nov 7	γ 79 δ 81	" "
181 η U. Maj	not in γ 78	in γ 79	" "
182 η Bootis	" June 26	Sept 15 1881 Aug 27 in γ 86	" "
183 γ Virginis	" " "	not in γ Book	" "
184 α Draconis	" " "	"	" "
[α & Bootis]	" Nov 2 in γ 81 once	"	" "
195 β U. Min	not in γ 77	May 31 July 28 not in γ 78	" "
The L.C.s of 1881 dates seem to be omitted from M 25			
199 β Bootis	1880 May 31	1881 Sept 12	not in γ Book
γ^2 U. Maj 15 21	M 25 is entered as γ U. Min in Star list, ^{should be Min} no		
δ Bootis	June 26 29 Aug 16	not in γ Book	"
L.C.s are entered in either Book.			
α Cor Bor 15 30	" Nov 2	"	not in S.L.
α Serpenti 15 38	" "	1881 Sept 6 29	" "
594 δ Scorpii	" May 31 June 3	"	red erased
595 β "	" " "	Sept 17 1881 Sept 6	red erased
222 δ Ophiuchi	" June 3 Sept 5 17	"	" "
226 η Draconis	" "	1881 Sept 6	" "
228 β Herculis	" "	" "	red strands
597 δ Ophi.	" July 19 in γ Book	" Feb 23 Sept 6 Oct 6	not in γ 87
237 α Herculis	" Sept 23 chf	" "	red erased
241 α Ophiuchi	" Aug 17 "	" "	" "
252 γ Draconis	" Nov 7 in once	" "	" "
257 η Serpenti	" " "	1881 Sept 17 in γ Book	" "
260 α Lyrae	" " "	" "	" "
270 γ Aquila	" Apr. 28 Nov 7	Aug 17	red erased
269 λ "	" Aug 17 Nov 7	" "	" Aug 17
275 β Cygni	" Nov 3 chf	" March 24 is in "	" Nov 3 78
277 γ Aquila	" Sept. 15 Nov 3	" "	" "

280 ~~2~~ Aquila	1880	Mar 3	~~Sept 15~~	~~Oct 13~~	~~Nov 3~~	~~1881 Sept 13~~	~~Not in J. L.~~
289 ~~β~~	"		red stands	"	7 is in 7 Book	red erased Nov 3	
287 ~~α~~	"		red stands	"		" stands	
289 ~~γ~~ Cygni	"	Sept 15				red erased	
294 ~~α~~	"	Nov 3	in once	(2 ^d entry in red erased)		"	
298 ~~ε~~	"	"	"	"	stands	"	
306 ~~α~~ Cephei	"	"	chf			red stands	
309 ~~ε~~ Pegasi	"	May 10	Nov 2	in once	(2 ^d entry in red erased)	"	
311 ~~α~~ Aquarii	"	"	"	"	"	"	
322 ~~γ~~ Pegasi	"	"	6 chf	2	2	"	
329 ~~α~~	"	Nov 3	(2 ^d entry in red stands)	1881	Apr. 7	chf	

* This note applies to taking out the Moon Series.

1900
Ledger

(2)

p 15

Work for the Summer.

Work on the Fraction of Day 1880 & 1881 to be finished. (See p 26 Friday May 25).

Computation of the Reduction of the Mean to Apparent Place.

Mark in Star-List Book all Stars for which the Apparent Place is given in the American Ephemeris. This has been done & is to be checked.

(3)

80 Stars not
in Am Ephm.

pp 31 & 32

Enter the ^{dates on} dates and ^{for 5 or 10 day intervals, to include} fraction of a day from the ^{for the} ~~ledger~~ ^{for the} sheets. Enter the ^{for the} ~~data~~ ^{for the} from the ^{from pp 244-51 of the} ~~Nautical Almanac~~ ^{Nautical Almanac}. This is given for Wash, Mean Midnight, which is .5 of a day. Since Cambridge Longitude from Washington is $-0^{\text{h}} 23^{\text{m}} = .02$ of a day the data will be for the date + .52 of day. (Enter ^{this is} this date & and fraction for which the data is given, below the date & fraction for which computation is wanted.)

Five or Ten-day intervals are sufficient for all stars, excepting the four close Polars, which are to be omitted for the present.

Enter in Red ink at the beginning of a new Star the a b c d & the a' b' c' d' to be used throughout that star.

^{for 5 or 10 day intervals} At the dates are to be entered, and extra ones where the interval is greater than ten days.

The daily difference is to be found & multiplied by the difference between the Cambridge Mean Time for which the data is given and the Cambridge Mean Time for which the Reduction to App. Place is wanted; ^{date of obs. in Dec. day} and the sign of this fraction will be minus when the date wanted is smaller than that for which the data is given.

The Reduction to App. Place for the date of observation is the sum of $A + B$ corrected by the fraction of a day just mentioned.

(4)
another Book

p 28 July 26

The Moon Terms for every date wanted are to be taken from the Am. Ephemer. Tables VI and VII Appendix.

Look out for the Fraction of a Day for the below-pole stars. whether L C precedes or follows the M C observation.

p 28 July 26

The Reduction to App. Place for 10 day intervals for stars not in Am. Ephemeris are to be done in one Book, and the Moon Terms taken out for every date for all stars in another Book.

p 25 (5)

p 44

The Reduction to App. Place for stars in the Am. Ephemeris is to be found by getting the Apparent Place from p. 275 ^{p 259} for the day & fraction of day & subtracting the Mean Place from it.

Books to be taken.

The Am. Ephemeris for 1879-80 & 81 -
Newcombs Tables -

One copy " "

2 New Record Books. (One & other to be sent.)
The ^ab c Book -

" Note " "

" Star List " ? To be sent

" Ledger Sheets, about 400 in all. -

" Sheets for Reduction of Constants 1879. -

- from 1879 Sheets
- (1) In a b c Book, check the signs of all functions, especially for the sign of secant in 2^d and 4th Quadrants. (See new list of signs)

- sep 24 (5) Take out the Reduction to App. Place for stars in Am. Ephem. The result to be put in Moon Term Book.

After (1) is done send a b c Book & single sheets of differences &c.

(3 & 4) are to be sent to me.

1900
April 17th
Wed 18

Came to Rockland. Resumed writing on 18th.
Checked signs of 1879 Constants on sheets and
signs of 1880-82 Constants in a bc Book.

Sent to Miss Winlock The Eros computations
D6350 & 6351 of B 16108. also sent a few examples
of Red. to App. Place for stars in Am. Ephem.
(α Andromeda.)

May
Mon 13

Came to Owl's Head on Thursday last (10th)
have done no computing until today when
I take up the Fraction of Day computation
a part of 1880-1881 being unfinished

Fri 25
Ledger
P 15

Computation of Fraction of day for 1879, 1880,
& 1881 are completed with the exception of
a few dates accidentally omitted, which
will be filled in later. The LC obser-
vations must also be examined to be sure
whether LC precedes or follows the UC
observation, and all LC dates filled in.

The fraction of day for 1882 dates
have not been completed as I have not
the Almanac at hand. There are few
in number. See p 33

p 15

The Ledger sheets have been numbered
in order of R.A. and when the observa-
tions of a star extend over more than one sheet
these are numbered consecutively in red. The
number of Ledger sheets is 392, including Mercury

1900

Notes on LCs on Ledger sheets.

May

1880

~~α Androm.~~ ~~Nov 7~~ There is no Nov 7 1880 on Ledger sheet.
 but a note saying it was correctly Nov 8 & ~~Nov~~ in Star list.
 There is no LC.

see pp 49-

but not the observations of α Mrs. Minors and the Sun.

1900

May 26

Reduction to Apparent Place.

Began sample sheets of 1. & Andromeda $0^h 2^m$ according to plan given by Miss Winlock (3)

I have arranged the sheets the longer way of the sheet to avoid crowding, using the same number of lines as are in the Books, viz 30.

This work is to be done independently of the sheets previously begun, & afterward compared with them.

July 26
Sept 24

Miss Winlock having decided not to use the Moon Terms this part of the work will not be continued.

Miss Winlock came to Owl's Head on Tuesday July 17th

July 24

~~Ignored~~ Entered Am. Ephem. stars in abc Book by A.A. over name.

47

" 25-26

Corrected in Star List Book the number of observations of Stars Class I where dates were added or omitted (in Red). This correction increased the Total by 72 obs.

" 27-28

Made a list of all stars not in Am. Ephem. with total number of observations of each star from pp 166-178 Star List Book.

1900
Aug. 9

Reduction to App. Place.
 & Andromeda ^{1st computation} $\Sigma a' A$ finished through Dec. 17
 1881. and compared with 2^d computation. The results
 agree well.

1900

Notes from Miss W's dictation

Aug 27

Take out the App. Pl. in α & δ for the 102
 Section I stars that are in N.A., entering thousands
 is to be done in α of hundredths in δ for convenience in
 on ledger sheet checking, & take $\alpha - \alpha'$ & $\delta - \delta'$ to hundredths
 p 42 & 24(5) of R.A. & Tenths of Dec. only.

α = Mean Place α' = App. Place.

$\alpha - \alpha'$ = Red. of App. to Mean Place.

$\alpha' - \alpha$ = " of Mean to Apparent "

~~From~~ Computation gives the Reduction of
 Mean to App. Place = $\alpha' - \alpha$.

on the ledger sheets the results are given
 to hundredths for R.A. & tenth for Dec. only.

Computation

2. Compute Red. to App. Place, without Δ Terms,
 is to be done for the Eighty stars not in N.A., using
 in Book I 10 day intervals for 1879-80 & 81. For example of reduction,
 but not of the proper 10 day intervals, see
 α Andromeda. ~~The 1880~~ For constants for use
 in reduction see the a b c Book.

23 912
 see pp 32

~~Make out a list of 10 day intervals,
 center for all ^{the 50} stars (to be computed) for the 3
 years 1879/80 & 81. & enter the number of dates
 (10 day intervals) to be computed, on List of Stars
not in N.A., by the side of Total No.~~

Notes for Red. to App. Place

1900

August

Section I

3^dTabulation
to be on sheets.4th

After obtaining the computed reductions to App. Pl. for the 10 day intervals, tabulate the results, & interpolate for single days & get Daily Diff. for day & fraction wanted.

To find Diff. for day & fraction is the last step.

2

Work in Detail

This is the
first thing
to be done

p 31 Sec 2

Make a list of 10 Day Intervals for the 80 stars not in A.A. These are the dates for which the computations indicated on p 31 Section 2, are to be done.

When beginning the computations in Book I. make sure of these 10 day Intervals again & enter them for the 80 stars, using as many Books as are necessary. allowing 7 dates to a double page. For description of detail of this work see Section 3. p 23.

p 23

Begin a new star in Book I on a new page

1950
Aug 28
abc Book

Extra Work on a b c Book
copy the 1880 constants ^{from pp. 1-1887} into the a b c Book
on pp 190-203 allowing 26 stars to a double
page of Book. Check by comparison with
copy already made (in envelope tied with
yellow ribbon).
% Copy the 13 stars from Publ.
XIV on pp 204 & 205.

constants
Nov 7

% Copy list of cases of Constants
to be examined on p 206. This list need
not be copied; the list is to be kept. - Letter from Miss
Winlock of Nov 5.

LC Obs.

In this letter Miss W. says "In regard to LC Observations
the fraction of day will be .5^d later than for the Ra
obs. on same date. The fraction of day for the
1882 observations we can leave for the present."

"I enclose ^{the} computation of Red. to App. Pl. for γ & δ Draco-
nis, & a note on γ Androm for which the computation
of Constants had better be checked".

γ & δ Draconis
Sep 41
327 And. ³⁴ p. 36, 42
Tabulation
of 23 Cass.

The Tabulation of 23 Cass. is also sent with notes.
I do not find the same 2^d Diff. as Miss W's Example
gives (p. 1). Explained.

Nov 16

Left Owl's Head for Rockland. Returned to D.H. Dec 4th

" 17

The 10 Day Int. date next after last date in Ledger is shown
by a dot (.) over the date in Book I (see p 6 Dec 26).

1900

Owls Head

- Sept 11
10 Day Intervals Finished list of 10 Day Intervals for 80 stars not in am. Ephemeris. The total number of these 10 Day Intervals is 1153, The number of observations is 1947
The number of 10 Day Intervals was changed later //
- " "
Began tabulation of results (see sec 3) on sheets.
- " 29 Completed Tabulation of Values for 2 β Cassiope to be sent to Miss Winlock. 1st computation used wrong constants, made second Table & sent to Miss W Oct 27th.
(on sheets)
- Oct 1-15
Constants Began copying into the a b c Book the logs a b c d a' b' c' d' on pp 190-203, taking them from pp 2-188 of a b c Book. Finished copy & compared with Copy of Constants tied with yellow ribbon, where these disagreed compared them with the Computation on pp 2-188 of a b c Book. The following corrections were made on pp 2-188 also on pp 190-203 and on sheets of Constants (yellow ribbon copy): -
- 12 Androm. d' 9.67740 corr. to 9.67764 by Miss Winlock Aug 25/00 & changed by one to 9.67763 Oct 13/00. pp 2 & 190 and on sheet 1 of copy.
- 358 47 A Cep. a 0.88638 corr. to 0.88640 by Miss W. Aug 24/00 pp 17, 190 & sheet 1. c' 9.76376 corr. to 9.76377 of same.

1900
Oct 15
Constants

Purs Maj. b'
4132 Hydra c . Inserted on Sheet 4 of Copy abc Book
being correct.
383 22 Camel. b 763450 corr. to 763726 on pp 52 & 192 & Sheet 3 of Copy
also b' inserted on . a should be 0.82088 not 0.00082; correct
1382 Hydra c . Inserted on p 194

j c Inserted on p 196

[5962 Scorpi] c' " " on Sheet 8

[6030 Sagitt.] c' " " " 9

The Constants on pp 2-188 and on pp 190-203 and
the yellow ribbon copy now agree.

into a b c Book pp 204 & 5
copied Preliminary Table of the 13 stars from
Publ. XIV. Astr. Gesell. 1865 & 1885. Constants c .
and compared copy with original Reduction
in a b c Book pp 2-188.

Oct 27 Tabular Values of 2 B Class. with Constants taken
Tabular Values from a b c Book completed & sent to Miss Winlock.
Began Table of 13 entering in Book I. The 10 day
Intervals of 80 stars not in N.A. (p 31 sec. 2). preparatory
to Red. to App. Pl.

Nov 6-7 Miss W. returns the 2 B Class. sheets with notes.
write for information, ^{about 2nd diff.} returning the sheets. She says
When the 2nd Diff. amounts to anything interpolate into the middle first. also -
Constants "The constants a b c c used should be for 1891.0."

Reduction & App. Place

1900

Oct 27 - Dec 26 Continued entering the 80 stars not in Red. to App. Pl. & A. into Book I Red. App. Pl. and completing the reduction of each star as it is entered.

Dec 26 Made the following changes on sheets of Diff's. of Constants 1879-1880:-

381 36 Camel. The corresponding Nos. of logs a b c ¹⁸⁷⁹ were changed
^{4th 0th 40th}
 a from +6.03865 to +6.03850 Diffs from -.00014 to +.00014
 b " - 0.00050 " .00043 " - 7 " + 7
 c " - .00055 " .00048 " - 7 " + 7

Those for 1880

a from +6.03851 to +6.03865
 b " - .00043 " - .00050
 c " - .00048 " - .00055

These changes do not affect the Constants, but the 1880 Constant for log b differs 6.139 from 1879. cos α has in pencil 06 for the figures in 4th & 5th dec. place instead of 42 in ink. The value in ink is the one used.

sup. 33-36 Oct 13 pp 190-203 ~~2192~~ of abe Book & sheet 3 of yellow Ribbon copy.
 Check of Constants 383 22 H Camel. p 52, b corrected from 7.63450 to 7.63726
 b' inserted in
 Corrections made a cor. from 0.00082 to 0.82088

32 γ Androm.

Feb 19 1901

pp 42 & 33, 36

42.74.78.

Made another change in abe Book ^{pp 10 & 190} & sheet 3 of Constants viz: 32 γ Androm. 1880 log a changed from 0.56267 to 0.56269 & Cor. No from 3.65317 to 3.65333. I changed the diff. sheets but it does not affect the 4th Dec. Place.

1901

Jan^y 5
hope for
Ledger

On Ledger Sheet 148 of Leonis 1880 has April 22, in Star List there is no April 22, there is a date Sept 22 which is not on Ledger. Most likely the name of the month (Sept) has been omitted on Ledger sheet. The Ledger for this date is corrected by the insertion of Sept. & the frac. day changed to Sept 22.91

LC

Jan^y 14
see p 49-

2 β Cass 1880 Dec 16 occurs twice - no L.C. over either in Star List; also Dec 22 1880. & 1881. May 3, 4.

3 γ Pegasi 1880 May 27 occurs twice no L.C. over.

13 γ Cass 1880 Dec 20 " " " "

Jan^y 16
Red. App. Pl.

149 μ Urs. Maj. Daily diff. changes from decrease to decrease between 1880 May 31 and June 10.

Jan^y 19
St A errors

There seems to be an error in St A 1881 Nov 4 p. 251 log δ should be 0.0582 not 0.0882. I have ^{made this} correction in the reduction of 149 μ Urs. Majoris & in pencil in the St A.

Feb. 4th

An error also, (previously noticed & corrected in margin of St A, p 249 St A for 1881) Apr. 16 log D Characteristic should be 0 not 9

Feb 13
corrections

148 γ Leonis 1881 April 16 log D is correctly entered in ~~St A~~ Book I p 162 Red. to App. Pl.

made for errors 149 μ Urs. Maj. 1881 Nov 4 has been corrected also. - These in St A. are the only cases I find in Book I.

" "

Finished Book I Red. to App. Pl. containing the 10 Day Interval Dates for Stars not in St A. 2 β Cass to 584 δ Corvi inclusive. This Book was begun Oct 27. it contains 48 Stars.

15

Sent book to Miss Winlock by post. 17th.

Note by A W in Red. to App. Pl Book I 2 Androm. for δ "use hundredths in tabulating."

1901

Feb 14

ra or
162 α Draconis.
Decl. of
282 ϵ Draconis

marking, ^{with a} in Ledger those stars which are in American Ephemeris; in doing so I have found the R.A. of 162 α Draconis in Ledger is 10^h ; in the ^{abc Book & 1879 sheet} Star List & Am. Ephem. it is 11^h . — also 282 ϵ Draconis $19^h 49^m$ has in Ledger Dec. = $+69^\circ$; in the Star List Book it is 60° . In Am. Ephem. it is $+69^\circ$, also in a b c Book & 1879 sheets.

Feb 16

Circle Readings
see p 9 & 41

The following notes are copied from bits of paper of memoranda made at the time.

"Correct γ for: - 306 α Cephei last reading $25'$ not $24'$.

164 β Leonis 3 last Readings $14'$ not $12'$." This note refers apparently to Circle Readings.

"List of stars for 1879 omitted on sheets,
Nos 76 111 116 363 365 383 420 421 425 429 436 491 497;
These are the 13 stars in Publ. XIV. Nos. 76 & 365 were done inadvertently."

[β & Columba] (in Am. Ephem. 79/80 "AW")

[α & Orionis]

[ϵ & Leonis] } "These 3 stars have no α & δ on sheets."

[δ & Bootis] } (in Am. Ephem. 79/80) "AW"

"In a b c Book the following stars have α & δ for 1880 viz: - [α & Orionis] $5^h 34^m - 2^\circ 0'$

[ϵ & Leonis] $10^h 13^m + 20^\circ 27'$ (See Am. Ephem. 79/80) "AW"

[δ & Bootis] $14^h 39^m + 27^\circ 35'$ (" " " "

"The place for [α & Orionis] in a b c Book was afterward entered from Ledger sheets 1880."

"Want δ for Safford's star. δ $20^h 16^m$ "AW. - Safford's

α & Orionis
see p 10

Star 1879 $h^m s$
 almanac 6.7.8. $+91^{\circ} 14'$

LC

$$\delta = 180 + 91^{\circ} 14' "$$

$$\delta = 88^{\circ} 46' "$$

This note is by A.W.

5 Orionis 1879

almanac 6.7.8. $h^m s$
 Oct 7 $5^h 34^m 39^s$
 $- 20'$

Circle Readings

Sup p 9 & 41 "Checking of Circle Readings by A Books.
 at Observatory F 72 is the last book finished.

F 76 is wholly done

F 73 74 & 75 are not begun. There is no date to this note; The work was done at the Observatory. April 1899. (See p 9)

Non Fundamental Stars. - Notes F 69, F 75 F 76.
 List of Dates.

See p 2

1899 F 69
 Apr 22 c (comparison star of 123) $h^m s +^{\circ}'$
 $10^h 41^m 19^s + 1^{\circ} 15'$
 " 23 c " " " "
 May 1 c " " " "
 " 5 c " " " "

1880

April f to same F 75. $7^h 45^m 54^s + 30^{\circ} 59'$
 " 5 f $0^h 42^m 15^s + 70^{\circ} 31'$
 " 8 f F 76 $7^h 45^m 50^s + 30^{\circ} 59'$
 " 10 f (Learles star) $0^h 42^m 15^s + 109^{\circ} 29'$
 " 12 h Comp. star of (112) $11^h 23^m 6^s + 1^{\circ} 23'$
 " 12 i " " (112) $11^h 29^m 37^s + 0^{\circ} 52'$

1901 February

1880

1880

F 76

H

April 26 h Comp. star of (112)

 $h \quad m \quad s \quad + \quad ^\circ \quad ' \quad ''$
11 23 6 + 1 23

" " " " "

supp 6 7

The following notes were made for the computation of Red. to App. Place, in 1899, and this work has already been explained.

"Enter the 1880 R.A. & Decl. in new Book (abc) for the 182 stars from Star List and check by comparison with 1880 539 List."

Compute in the new Book the a b c d &c using hour, minute, & nearest second of R.A., reduced to arc & then use the degree & nearest minute of arc for functions." (Copy into new Book).

Copy the α & δ 1879 on Sheets from Jahrbuch for the 182 stars, omitting the 13 stars found in Publ. XIV.

Examine all the reductions for the 13 stars that differ more than .0019, & recompute all of the 13 for which the nearest minute of R.A. has been used.

 α & δ Wm Min &

51 H Cephei

see pp 6 7

Omit Reductions for α & δ & Wm. Min. and for 51 H Cephei."

A change was made in the ^{form of} reduction by using tenths of seconds in R.A., reduced to seconds of arc. and in Declination using seconds of arc.

This note by
Miss Winlock

Comp. of a b c d, a' b' c' d' Notes. App. Pl.
(c) Can use either sec. of time and minutes & tenths of arc
or :-

1901 February.

Miss W's
Notes Cont'd

(1) is sufficient, but adopted (2) for Miss Bond's work, (for constants), on account of em all angles.

5 Place logs. sufficient, but can use Bagay or (Schön) rather than interpolate with Newcomb.

$RA \begin{smallmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \end{smallmatrix} = \begin{smallmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \end{smallmatrix}$ are sufficient.

Def. $\overset{0}{0} \overset{1}{0}, 0 = 0 \ 0, 0$.

Adopted 0.1" because of small angles.

Notes on ab'e Book II.

"Last note entered 1879. is Oct 8 514 Aphei 111.
First " " 1880 " May 11 of Mrs Maj 166."
This note. refers I think to work done at the
Obs^y. Perhaps Circle Readings.

No date
Constants

Feb 18

 $d^1 \times d^2$ Cass.

"Examine place of α^1 & α^2 caps. differs 24⁵ in 1880⁵

" 6^s " 1879.

The cor. ts of c' for 1879 had been entered on 1880 sheet of Constants. —

Both stars have been corrected for wrong sign
of $\Sigma = \log n \sin \alpha \tan \delta$. on all sheets.

150 Feb 19

9 H Draconis

step 33

The note referred to by Miss Winlock is as follows:—9 H Draco.

10 24 + 46 a 0.7234^s a' 1.2636^{na}
b 9.3994^{uq} b' 9.6056^{uq}
c 9.4118^u c 9.4614^u
d 9.0560^s d' 9.9490⁸⁹

9 H Draconis $1024^{\text{h m}} + 76^{\circ}$ Constants 1880 to be used.

$a = 0.7234$ $a' = 1.2636$ m
 $b = 9.3994$ m $b' = 9.6056$ m
 $c = 9.4118$ m $c' = 9.4614$ m
 $d = 9.0560$ $d' = 9.9490$ m

I have reworked the above
& found the two compps.
to agree. S. C. B.

1901

February

Tu 19

see p 13

1) Note of A.W. Enter Approx. RA h m. in red ink on Constants Red. App. Pl. Sheets 1880. & brackets.

2) Compute with 1880 Place & 1879 Constants the a b c for the non-Catalogue stars of Class II.

3) Take differences 1879 & 1880 values of a b c on a separate sheet.

4) Copy again the 1879 a b c with all stars included, after 2) above.

Notes seems to end here 5) Indicate which values were computed for 1880 with 1879 & δ^* .

32 γ Androm
p 36

pp 33-36 & 42.

pp 74, 76

Made changes in a b c Book pp 10 & 1903 log a of 32 γ Androm; also on Constant Sheets. These changes do not affect the fourth decimal place of differences.

I reworked the reduction for 32 γ Androm. for 1879 & 1880. The RA differs 54" for the two years.

Feb 20

p 31

Resumed work on A. A. Stars. & Androm.

δ^* entered on Ledger Sheets to thousandths; δ' to hundredths, & δ'' to hundredths, and $\delta - \delta'$ to tenths only.

March

Mon 4

Red App. Pl.
Stars in
Ann. Ephemer.

In Postal of 2 March Miss W. says. "Prof. S. (Searle?) said yesterday not to pay any attention to the fraction of day given in the date column in taking out the App. Pl. from A. A. but to regard the correction of .02^d diff. between Wash. & Camb. if it ever amounts to anything, as it probably will not." Miss W. wishes me to send

1901
March
Wed 6

an example.

date 5th inst

Letter rec^d from Miss W., requesting me to send her the Star List Book and the a b c Book by Express. She also wishes to have a Ledger Sheet of Star with large Declinations. I shall send 360 48 H cephei & 76 9 Camelop. the latter has 2 LC obsv. about which I ask Miss W. to send me directions; also about the Fraction of Day to be used.

Red to App. Pl. She says "In new book (Red to App. Pl. II) omit the last step of reduction, the multiple catch of Daily Diff by 24 of Day, the one before tabulating the results." Today have entered the names of stars on Ledger; also paged the sheets correctly. one or two stars had been wrongly numbered.

Must wait for instructions before going on with reductions on Ledger. in a d a d - 5.

March 9

Miss W writes again on the 6th returning the Examples (α Androm. & γ Persei) which I sent with notes. She tells me I should ~~use~~ both Fractions of Day ^{unless} when they are alike, ^{when both may be rejected} and (as I supposed) use both these & the correction .02 to Camb. Time. In correcting the example Miss W. uses the two fractions of day & .02 and then takes the nearest ^{tenths day} second ^{in for 2.96 near 3.0 of 2.94 near 3.0 nearest tenths} for completing the reduction. I have done some stars today using the nearest ^{day} seconds from S. I & Ledger and find the results differ very little from those done with both fractions. ^{hundredths} one & two hundredths of a d are the largest differences in α γ Persei.

March 19th

More Postals & Letters from Miss W. On the 14th inst. She says "Regard the fract. of day when the Interval in margin of S. I.

1901

March

In 19 cont^d is 9 days, and also when the Ledger & A.A. differ at Inst. from Min^W all. Disregard the fract. when the Ledger & A.A. agree exactly." A later letter contains fuller directions; in A.A. for reductions also of L.C.s.

Fri 21

see next page

Is 9 Camelop. $h = 42^{\circ} 1.678^{\circ}$ $\alpha = 66^{\circ} 8' 4.16''$ mag. 4
 star as 2 Camelop. $h = 42^{\circ} 13.515^{\circ}$ $\alpha = 66^{\circ} 8' 16.92''$ mag. 5.4
 1879.0 the same
 1881.0 ?

" "
 see p 24

I make the Reductions of A.A. Stars with nearest tenth of day, e.g. 1879 April 30.90 = diff. between Washington & Cambridge
 28.9 Date from A.A. = α'

1.98
 2.0

+0.025 d. diff. " " Interval of 2 days

+0.050 " " for interval of 2 days

8.66 app. R.A. from A.A. for Apr 28.9

8.710 " " for 30.90 $\Delta m. S. = \alpha$

8.089 Mean Place $\alpha - \alpha'$

0.621 = $\alpha - \alpha'$ The Red. from App. Pl. to Mean Pl.

*2.0 from
 0.28
 + 2.28*

When the A.A. interval is 9.9 I use the fraction to nearest tenth, i.e. If the Interval of Apr 30.90 were 9.9 I should use 2.0 (the same as above) that being the diff. to nearest tenth. if the diff. was 2.48 I should use 2.5. It makes however no appreciable difference ^{as it} changes only the thousandths of α & only occasionally the ^{hundredths} tenths of δ .

from 25th

Have checked the 9.9 Intervals of the stars reduced before Miss W's letters of 2-19 inst were received. The changes required are quite small - some mistakes were found. I now begin where I left off - at $93^{\circ} 5' 55''$ Orionis 1880 Sept 23
 Mar 16 1881.

Absolute Work

1901

March 26 - to Correcting sheets 1-128 for nearest date in A.A.
 April 12 Letter from A.W. Apr. 11. with sheet my letter returned
 Ledger α $\frac{1}{2}$ 5' corrected for 48 H Cephei 1879 Feb 16.22. made corrections
 on sheet of Ledger.

9 Camelops. With regard to the identity of 9 Camelops.
 tot of A.W. with α Camelops. "Apparently same star, but please
 make a note whenever 1881. place is referred to, and
 say, given α in A.A. 1881."

A.A. 1879 place In A.A. 1879. 9 Camelops is $4^h 42^m 13.678 + 66^{\circ} 8' 4.16$ Mag. 4
 α Camelops " 1881 α " " $4^h 42^m 13.515 + 66^{\circ} 8' 16.92$ Mag. 5.4
 α " is given q in Jahrbuch 1881 $4^h 42^m 13.662 + 66^{\circ} 8' 17.08$ " 4
 Supp 444 & 48 In A.A. 1879 there is 9 Camelops. & no α Camelops.

" " 1881 " " α " " " 9 " "
 e Argus There are two stars with this designation: - 15 Argus (e)
 in below $8^h 2^m 23^s - 23^{\circ} 57'$ and e Argus $9^h 13^m 51^s - 58^{\circ} 46'$ both in A.A.
 In A. Brooks find this # as v Argus with e Argus in pencil in 775.

Apr 26 Sheets of Ledger to be taken to Cambridge: - 170-199 &
 4 & 10-21 120-122 L.C.s. - Returned.

e Argus In Star List Book of 182 Stars this star is given for
 $1879-1881$ as 570 e Argus $8^h 2^m - 23^{\circ} 57'$ also on p 170. In A.A.
 the name is 15 Argus (e) $8^h 2^m - 23^{\circ} 58'$. There is another e Argus
 $9^h 14^m - 58^{\circ} 47'$. In Star List Book the name of star
 is from 539 Star List.

L Hall 5 Interpolations to be examined.

1401

May 8
Circle Readings
supp 9

Begin^{at} Oct 22 1879 in F 73 to compare A Books with Journal and F Books, making changes only in Journal, & at the same time making notes of these changes, for reexamination by Miss Winlock of F Books.

Apr 30 29-
May 18-26
Circle Readings
supp 9

Came to Boston from Owl's Head.
Resumed examination of Circle Readings checked Journal by comparison with A & F Books, F 72 & 73 and 74 with Miss Winlock, she making corrections & notes in F & A Books, & I correcting Journal at the same time; this was work on old notes for F 72 & for F 73 to Oct 22 1879, and part of F 74. — I have also checked ~~Journal~~ F 73 from Oct 22 1879 by F 73 (see May 8) Journal ch^k by F 74 & A Book corresponding through 1879.

Mon 13-16
Circle Readings
supp 9

Began checking Journal by F 75 & A book making notes as before. Finished F 75 and also the checking of notes with Miss W. Thus the checking of Journal by F 73, 74 & 75, and the checking of the notes made of corrections to be made by Miss W. have been completed, and the gap left in the work between F 72 & F 76 is now filled up.

Note Copied

x 120. 1879 March 13 changed minute in Journal from 7^h 8-58.02

Circle Readings

a Draconis Readings are entered in A & means taken but questioned Ch^f & Books has no reading in A. — Ch^f. Feb 15. 1879.
Feb 15 a Scorpius.

1901

July 13
circle Readth

Lorse Note: - 1879 Feb. 15. α Draco. Readths are entered in A, & means Taken, but questioned, chf.
Feb 15 α Bootis has no Readth in A. - chf.

" 18 α Scorpi

Mch 13. 1879. 120

changed minutes
in Journal from 7 to 8. 58.02 -

These notes copied from those shut July 13

July 13

Note made

* ϕ Draconis pr. in N A Mean Place is $17^h 44^m 55^s.58$
(RA in BII is $18^h 22^m$) $+ 72^o 12' 28.21$

July 3

In Ledger it is

The mistake is in name. Ledger has ψ Draco. $+ 71^o 16' 24.62$
see $17^h 44^m + 72^o 12' 28.21$ ϕ Draco. $18^h 22^m + 71^o 16'$ ψ Draco. ψ Draco is not in N A

July 13

Still working on N A Stars α - α S - S' on
Ledger Shuts Have reached 270 ϕ Argillae 1879

Oct 15

Red. to d. d. se

Have today looked over Letters & Notes to make sure I am
using the right fract. of day in reductions of α - α se
N A Stars. Miss Winlock says the nearest tenth, (for
interval) should be used, this I have done; very
often the tenths are zero, or the hundredths over 5, so
that there is no fraction to be used. On looking over
the N A 9.9 date intervals I find that at α Mrs. Maj.
 $10^h 56^m + 62^o 23'$, I begin to use hundredths for cases where the
N A interval is 9.9. At first tenths were used. This is
the only deviation from instructions received in March.

7.44

Sent today a letter to Miss Winlock with the two
Ledger Shuts 6 32 Reg. where the work is done with whole numbers,
of days in black, and in red using the nearest day. and p 194 Solonis
156. where hundredths for date intervals are used in black, and tenths in Red.

1901 Oct 23

Red. to α - δ -S' Note on Ledger Sheet 286 of Hercules 232. "1880 Began here
 of this in N.A. to use nearest tenth.

p 47

Oct 23

~~pp~~ Sheets Ledger ^{pp} 5 & 6 of Peg. 3. - B. Aritis 30 pp 23 24 & have changes
 made in black, to show the difference of occults taken with
 nearest tenths. The original figures are the results with hun-
 dredths. The differences of R.A. intervals are large for these
 stars in N.A.

Nov 9

See p

C 76. 9 Camelop. Identity of this star questioned. In Star List p 18
 or a Camelop. 1879 it is 76. 9 Camelop., same ^{on} p 104 1880. It is given a Camel
 See pp 45 44 & 45 in N.A. 1881. Ledger has 9 K Camel.

L p 104 Ledger 61

116 Gm 1308 γ 18^m 22.770 + 68° 42' 28.38 Star List p 28. Is this star the same with Piazzi
 VII. 67 given in N.A. 1879^{50, 51} RA γ 18^m 16.658 Decl + 68° 42' 34.63?
 It is ~~used~~ in Ledger as VII⁶⁷ Pi. 116 Gm 1308 is not in N.A.

Nov 23

Constants Red. to
 App Pl.

log b for 353. 67 Ceti 1879. on Sheet 1, ^{is} omitted; the corresponding δ
 has minus sign. log b for 1880 (yellow ribbon copy) is negative.
 log b is negative in a b c book also. It has not been corrected but
 note is made on sheet. (This refers to the copy on half sheets)
 Constant b has π in B I & work is done with this sign.
 The reduction of α - α . N.A. stars was about this
 date finished, L C's included.

see B I p 56

Nov 7

Cases of disagreement in dates between Ledger & 49
Star List Book. also -

1901 Notes on L C S

Nov 6 B Cass. $\delta^h 3^m$ 1880

Ledger p 4 Dec 16 occurs twice, is not marked LC in Star list

See pp 15-21 " 22 " " " " " " " " " "

87^m 1881 May 3 & 4 " " " " " " " " " "

3 Reg p 7 1880 " 27 " " " " " " " " " "

" Nov 2 2 entries in ledger, 1 do in S.L. 2nd being erased,

$\delta^h 49^m$ 7 Cass p 14 1880 May 6 LC should precede, in S.L. the 2nd date is marked. Ledger, has, or date

" " Do. 25th Do

June 3 & 4th red entry erased in S.L.

Nov 2 " " " " " " " " " "

1881 Mar 3rd L C precedes, follows in S.L.

Nov 9th S Cass

1881 Dec 15, 18, 30 are not marked LC in S.L., all occur twice.

1880 Dec 17/18 is on Ledger but not in S.L. Dec 17 is not there, 18 is there

Barick's 2nd " 1879 Apr. 8 erased in Ledger & replaced by 9. Apr 8 is in S.L. but not 9.

" " 14 " " " " 15. " 14 " " 15

7 Jan 340 1880 Aug. 12 questioned in S.L. Aug 12 & 13 are in S.L.

" " 15 is erased in " ; it is in Ledger.

8 Vini 347 " " 12 questioned in Ledger. It is not in S.L.; Aug 13 is there.

519 17 Camel. 1879 Mch 12 Not marked LC in S.L. 2 entries

2 Hydra 922 1880. Nov 1, 2, 7. 2 entries (in red) are erased in S.L. They are in ledger

0 U. Maj 925 1880 " 1, 2. " " " " " " " " " "

2 Leonis 102 1880 " 7, 15 Second dates (red) erased in S.L. " Erased in ledger retained

1881 Sept. 21 This date is questioned in S.L.

1484 Leonis 1880 April 22. Ledger p 167 should be Sept 22. Corrected. See Note in S.L. p 120 (Date changed to Sept 22 on Ledger Nov 9 1901.)

10 13 8 Leonis 1055 1881 Nov 6 is changed, in pencil, to Nov 9 in Ledger. In S.L. it is Nov 9.

B U. Maj 1880 Nov 1 & 6 erased (red) in S.L. retained in ledger.

" Nov 11 & 18 occur twice in S.L. but are not marked LC, also

1881 May 5 Nov 22. Oct 18th erased in S.L. retained in ledger

1901

Nov 9

α U Maj. 10 56

γ U Maj 11 3

λ Draconis

i " 11 23

ε Corvi 12 3

ζ U Maj 11 48

δ Corvi 12 23

ζ Virg. 12 36

ε U Maj 12 49

ε Virg. 12 56

α " 13 18

γ U Maj 13 43

γ Bootis 13 49

ζ Virg. 13 56

α Bootis 14 10

γ " 14 27

β U Min 14 51

β Bootis 14 57

δ Bootis 15 11

J

1880 June 26 erased in SL, retained in Ledger

" Nov 11 & 18 2 entries in SL, no SL mark.

" Oct 9 & 10 Erased (nd) in SL. Oct 16 is on Ledger, not in SL. Oct 18 is in SL.

1879 R A is given in SL & in N A 11^h 24^m; in Ledger it is 10^h. 11^h is used.

1880 April 26 is in Ledger but not in SL, Aug 26 is in SL but not in Ledger. Inserted Apr 27 & 31 erased SL

1880 Apr 3 in Ledger is not in SL but Apr 5 is there & not in Ledger. Inserted it.

" Nov 18 & Dec 18 are in SL twice not marked SL & Nov 15, 1881

" May 27 & 31 erased SL entered in Ledger. Dec 7 has two entries, no mark etc

" Dec 8 Inserted in Ledger Dec 7 is in Ledger, not in SL

1881 " 18 " " " 17 " " "

" Sept 30 2 entries, one erased SL

1879 Mch. 2 Erased in SL, retained in Ledger.

1880 Nov 7 9 11 " " " "

1879 June 20 " " " "

" " " " " " "

" " " " " " "

" " " " " " June 16 is in Ledger, not in SL

but June 17 in Ledger. June 26 erased in SL, retained in Ledger

" " " Erased in SL also Sept 12 Oct 5, 26

" " " " " " "

1880 May 31 " " " "

" June 16 July 7 Dec 16 22 30. 1881 Jan 3 15 Dec 15 & C not marked in SL

1879 June 20 1880 May 31¹⁸⁸¹ Sept 12 Erased in SL, retained in Ledger

1880 " 26 29 July 16 Nov 7 (2 entries) " " " "

" Dec. 21 is in SL, Dec 20 is not; both are in Ledger.

November 1901

- γ U Min ^{15 21} Is this γ^2 ? γ^2 is in N 1879. 15 20 + 72 15
 1879 Feb 15 γ^2 entry erased in S L no L C mark. retained in ledger.
 1530 α Cor Bor " Sept 8 Erased in S L, retained in ledger.
 1880 Nov 2 " " " "
 1538 α Serpentes 1879 Sept 25 1880 Nov 2 1881 Sept 6 Erased in S L retained in ledger.
 1553 δ Scorpii " May 31 June 3 " " " "
 1558 β " 1880 " Sept 17 1881 Sept 6 " " " "
 168 δ Ophiuchi " June 3 Sept 5 17 " " " "
 1622 γ Dracones ¹⁸⁸⁰ Sept 21 ^{2nd entry} Marked in S L as "L C, not entered" It is in ledger.
 1622 γ " 1879 Sept 11 Marked "E" in S L & erased Sept 14 Marked "E & L C" in S L & not
 1621 α Scorpii ^{erased} 1880 Sept 21 L C marked "not entered" S L Sept 6 erased S L
 1625 β Hercules 1879 Oct 5 Erased in S L, retained in ledger
 1630 γ Ophiuchi 1880 Sept 6 put in Ledger by mistake, it belongs in 1881. Erased it.
 179 α Hercules 1881 Feb 23 Erased in S L. Retained in ledger.
 1729 α Ophiuchi 1879 July 6 " " " "
 1754 γ Draconis " Sept 30 " " chf. "
 1815 γ Lep. 1880 Sept 23 " " " "
 1833 α Cyra 1879 March 12 Omitted in Ledger. put it in. Sept 30 ^{chf} Erased in S L, Retained in ledger.
 1900 α Aquila 1880 Aug 17 Erased in S L. retained in ledger
 1900 γ " " Nov 7 γ^2 entry erased in S L not L C mark. Retained in ledger
 1900 γ " " " " " " " " " " not worked
 1900 α Cyra " Aug 12 is questioned in S L.
 1900 α Aquila 1879 Sept 23 Erased in S L. not worked in ledger. 1880 Aug 17 Erased S L
 1900 γ " 1880 " 24 not in S L but Sept 25 is.
 1926 β Cygni 1879 Aug 24 stands in S L it was erased & replaced. now in ledger Sept 27 erased S L
 also Oct 4 & 14. retained in ledger. 1880. Apr 28 " "
 retained in ledger. Nov 7 is not in S L, it is in ledger. Nov 7 is
 omitted in " erased in S L
 1880 Nov 3 γ erased in S L; retained in ledger.

November 1901.

♂ Aquilae 1941

1880 Sept 15 Erased in S.L., retained in Ledger.

Nov 3 " " " " not worked

α " 1945

1880 Mch 3 " chf. " " Sept 15 Erased S.L.

Oct 13 Nov 2 " "

β Aquilae 1949

" Nov 3 7 Erased in S.L. " "

♂ Cygni 2018

1879 Ledger had May 6 in 1880 changed it to 1879 as in S.L. Sept 15
erased in S.L., retained in Ledger

ε " 2041

1880 Nov 3 2 Entries in S.L. no L.C. mark.

α Cephei 2116

1881 Apr. 18 20 23 Entered twice in S.L. No L.C. mark.

β Aquarii 2125

" Two dates in Ledger with name of month they are Nov 20 24 in S.L.

ε Pegasi 2138

1880 Nov 2 2 Entry erased in S.L.

α Aquarii 220

" " " " " 1881 Nov 16 is questioned in S.L. & Ledger

α Pegasi 2259

1881 Apr 7 ex " " chf. retained in Ledger

1901

November.

1902

January
Wed 22

Th 23

BII was begun between Nov 7th & 30th
 Finished entering stars in BII Red. to App Pl.
 and began BIII. BII has 30 stars, BIII has 2.
 Finished this after correcting dates Jan^y 1881 of J. Cass.
 p 16 BI, putting in dates Jan^y 1 11 21 instead
 of Jan^y 5 15 25. 1881.

p 48

The L C's have been filled in correctly.

Fri 24

Began Tabulation of results of 10 day Interval
 reductions. - Use Thousands in α , & hundredths in δ ,
 entering hundredths in α on Ledger sheets & tenths only in δ .

p 38

Feb 14 1901

to April 26 -
 Nov 7 1901

p 46

Apr 30 - May 21

Work on A A Stars. Finished about Nov 7 1901,
 and the reductions continued in BII of 10 day intervals.

Work at Obs^y. Ex of Circle Readys.

March 11

Red. to App Pl.
 Tabulating
 for.

Still working on Tabulation of 48 Stars BI

March 11

C Hall 5

The date 1880, of C Hall 5 is questioned in Ledger & in BI
 Red. of 48 Stars &c. See Star List pp 77 & 180

1902

July

Have been since last entry in March at work on Red. & App. Pl. Tabulation of Results of 10 day Interval Reductions of Stars not in A.A.

July 14
Constant a'
S Corvi

This computation has been corrected in Book I. p 208. On referring to the above Book I find the Constant a' should be negative and the original reduction is right. The Yellow Ribbon Copy of 1880 Constants & the 1879 Constants on sheets are also negative. I have made the correction in Book I. & on working sheet

July 19

Red. App. Pl.
of Stars not in
A.A.

Finished computation of Red. & App. Pl. for B.I. 2 B Caps to S Corvi inclusive. shall now enter results on Ledger Sheets // 1903 March 5. These results have not yet been entered on Ledger excepting 2 B Caps, 32 Peg. 132 Caps, 208 Caps & part of 32 & Androm.

July 21 - Aug 13

" " —

Miss Winlock sent work from Obs. on Dr Gills & Octantis: (1) Gills combined place for 7 stars.
(2) Dr Gills' Helometer places for 9 stars.
(3) " Johnson to be recomputed.
(4) " X Octantis x & y. to be checked.

Aug 1

Received the following:—

- (1) Cape, Gill. 1865 7 Stars
- (2) " " 1895 (1900 pos.) 7 Stars.
- (3) Extra " 1890 5 8 Stars

checked 4 & 4 of all these, sent the last group (3) to Miss Wood, the others to Miss Winlock.

1902

Aug 13 Resumed work on Tabular Values. Red. App. Pl.
 July 22⁰ ^{Rec'd by Miss W} Sheets sent to Obs^y for Miss Winlock's examination.
 Tabular Values 2 B Caps April 26, 1880 - May 18, 1881. Returned
 Red. App. Pl. with corrections.

Nov. - Feb. 1903 Work on Red. to App. Place continued until
 my return to Cambridge in November.
 After that time it was much interrupted,
 my attention being called to other work.
 South Polar I have helped Miss Winlock on her
 South Polar reductions and other work.

1903

February

Still computing South Polar with occasional work on Red. App. Place.

Mon. 9

Returned 4851 D South Polar * 7923 an air computed.

I have now in hand 19 sheets of Gillies stars pp 30-49. (Sheet 40 is missing, was not received with the others.). On these stars the Precession is to be checked. * Miss W. has the missing sheet 40.

Thurs 19

At work on Gillies Stars.

Thurs. 19
1st

Today begin the "Absolute Example". First Date is 1849. Feb 15 and the first star observed is β Orionis No 84. Enter on sheets Stars No. App. R & Decl. T from Journal. (This will be given me by Miss W.) $T - R \cdot t = \text{approx. Clock-Error.}$ $\text{tab. tang } \delta$. — Mean of steel wires = $T \delta$
 No 87. 1879 Feb 15. Mean of Circle Readings. $T = T_m = \text{mean of R & wires.}$
 There are 25 observations.

2nd

Take $T_m - T \delta$ $\log T_m - T \delta$ $\log T_m - T \delta^2$. Done.

Wed 25

Have done but little of Absolute Exa work

"

Rec^d of Miss W. 14 Gillies Stars p 67-50 to check Precessions.

"

" Halls l 5 with her corrected Interpolation.

Returned Gillies Stars p 30-49.

March

Mon. 2

" " " p 50-67 14 sheets. these sheets not rec^d
 p 50-67 these sheets returned

Th 4

Abs. Ex.

Work on Absolute Ex. looking up missing R & Decl. & planning work to be done first. with Miss W.

1903

March

List of Observatory books & papers which I have
in use.

List of Books &c. 3 Nautical Almanacs 1879 1880 1881.

1 Schrenk's Tables

all Books re 1 Annals Vol. 5.

turned to Obsⁿ on 1 New Combs. Tables

Oct 1903 1 Le Coy's "

Exp 1 Clandels "

Computing Books

1 Star list

1 abc Constants

3 Absolute Work in which are the 10 Day Interval computation

1 Note book

Papers

Miss Winkler has
this paper
Re (1) The Ledger 1-395 sheets, including Mr. Ann. Funds. (The data
for Sun & Polaris obs. are ~~not~~ completed, the Sun dates only being
entered on sheets).

(2) Constants for Red. & App. Pl. from Am. Ephem. Computation of
abc &c.

(3) Same computations for Non-Fundamentals, 1-8

(4) Constants for Red. App. Pl. Results. Diff's. Cor. Nos. &c.

(5) 1st 2nd Computation of Red. App. Pl. & Androm.

Constants for Red. App. Pl. 13 Stars from Publ. XIV.

" " " 1880 22 H Camel.

(6) List of Non-Fundamentals Stars

" Bracketted

(7) Count of Observations

(8) List of 10 Day Intervals

(9) Notes on Lc Obs. Do relating to Red. of obs in A.A.

(10) Interpolation Comp. of 82 Stars not in A.A.

(11) Absolute Example Comp. of all obs. on 1879 Feb 15. for Red. App. Pl.

Miss W has taken this list.

1903

March - April - May

5-20 Checked Gillis Stars. - Returned
 Gillis Smith Preparing sheets for Interpolation of Stars not
 Polar work in N.A. Book II. These are half done.
 Interpolation
 for Red App. Pl.

April 10 Have been busy with Absolute work. Have finished
 Absolute The Example Feb 15 1879 very nearly; have been at
 Example the Observatory engaged in checking Circle Readings
 & Notes thereon. Miss W. being ill I have brought
 Circle Read^{gs} home an A Book²⁸ & 2 F Books⁵¹ to finish. The Interpolat
 ion sheets for Book II are not yet prepared, about
 half of them are ready for interpolating.

The copying of Results for Declination is in
 order of Declination i for Declination 1879 Feb 15 to
 Declination i 1881 Dec 18 occupied several days. These were for all
 stars between -34° & $+34^{\circ}$. They were copied from
 Book for Collection of Results.

April 10-27
 Ledger Sheets Miss Winlock has the Ledger Sheets for the 95 dates
 on which Polaris was observed at A.C. & L.C.

Notes on April 27
 Circle Read^{gs} Finished Notes on Circ. Read^{gs} comparing F & A
 Books & the Notes on C.R. previously made.

May 2
 Absolute Ex. Have worked on Absolute Example, completing
 Feb 15 1879 Read Read. excepting for #226 the δ being uncertain
 and for #241 of which T is not entered, a Note says "Archib
 to be read".

62

1903

May 2 I now take up Interpolation of the 48 Stars
 Red App Pl. not in N.A. The sheets only are prepared, taking
 out data from App. Pl. Book II & III. The compu-
 81 48 stars tation to be done during the summer.

May 8 Book I has 48 Stars, B II has 31 Stars B III has 2 Stars,
 no of Stars not including those in 1882, which are not yet
 not in N.A. begun.

Have entered data on sheets for interpo-
 lation from B II & III Red App. Pl. for summer
 work.

May 8th Miss Winlock took today the Interpolation
 sheets from 2 B Cass. to 5845 Corvi (end of B I).
 9th Miss W took remaining sheets of Interpolation for
 B I.

Last 10 d Inter- She says the last 10 Day Interval of a Series should
 val of Series have $\frac{1}{25}$ applied to $\frac{1}{2}$ 1st Diff. (see next page).

1903

May

App. Place Tables for 32 Stars - order of computation

Work to be done
at Owl's Head.1st Take 1st & 2nd Differences of the 10 Day intervals before interpolating to middle date.

Make notes of any suspected wrong & send to Miss W.

2nd Interpolate to middle ($\frac{1}{2}$ 1st Diff., $\frac{1}{8}$ 2nd Diff. ^{ie. the diff. from 1st diff.} at the end, ie. the last 10 Day interval) of a Series. Do not use 10th of 1st Diff.3rd Take 1st & 2nd Diffs for 5 day Intervals
Do this on single sheet4th Then begin to interpolate for each day by taking $\frac{1}{5}$ of 1st diff of 5 day Intervals & $\frac{1}{25}$ of 2nd diff. of 5 day intervals. This last $\frac{1}{25}$ will be about $\frac{1}{1000}$. & applies to the one fifth. increasing or decreasing it. The proper diff for a single day applies to the proper given five-day interval.
(For Ex. see of Cass, & Anderson 205 Cass. Aug/79. Sept/81.)Error in NA
1879.There is an error in the NA 1879 June 28, p 250 viz: -
log A should be 9.9045 not 9.8045. Correction is made in N.A. also for J. Bort's p 67 B II, & Bort's p 74 B IITo be done at once
at O.H.Interpolate first Tables for 172, 174, 176, 287, 298. ^{done excepting from Nov 30/81 to end. Sup 68}

The 21

Computed Runs for Absolute Example.

64

1903

May
In 26
Interpolation

Red. to App. Place
Revising sheets for Interpolation of 32 stars
in B II & III. - Completed to fifths & 7th 172.

4 " Checked South Polar Gillies ~~pp~~ 89-92.

see p 66

" Changed 10 Day Intervals for the 1882 Star B III
June 9-17? Checked last set of Gillies South Polar, & sent
them to Miss W. at Magalia.

" 18 For work since about 9th inst. on Obsⁿ reductions; arrived
Owl's Head Fri. 19 AM. & resumed work on
Interpolations on Tuesday 23rd inst.

June 19 - Aug 10 In this interval but little has been done. The latter part
of June Miss W sent one of reductions of Gillies Stars to be
checked & later I checked more of them. Miss W's address
for August is Highland House Lunenburg. port. N.H.

May 27 Miss W. returned # 172 (Interpolation) which she checked.

Notes of Miss W

I "Must take 2 Diffs. of 5 day points to see that they run smoothly,
Before getting daily values."

II Put all of one series of 10 day intervals together.

III Dec. 1881 not on Lips.

IV It looks almost as if there were a small error in Comp.
May 22 or thereabouts. but as Miss Woods has Book II, I cannot
look it up now. It is only .001 00002 at most. Am almost
through with Tab. Values 48 Stars from Book I, & then you can
have them, Will mark places to do again. - Notice that you
did not take 5 day points first in many cases & think it

August 1903

65

would be better to do so in all." MW May 27 1903.

2. Miss W. June 1 In Postal says "I find that in the a b c book reference is made to notes which are not copied in; I meant to ask you for them, but forgot it". I think these notes were not copied in to Book, Miss W. not thinking it necessary, they are ^{preserved}.
 Aug. 10 Am now at work on $\times 174 \alpha$. arranging the interpolations on small sheets in columns: - Σ ^{1st Diff} 5 day $\times 2$
 Σ ^{1st Diff} 10 day - this for first set of sheets.
 For the daily values: $\Sigma \delta' \delta'' \Delta' \Delta''$. Δ being = ^{1st 5 day} Diff. $\times$
 Δ = differences of ^{2nd 5 day} Diff.

Oct. 26-27 Left Owl's Head on 26; came to South Danville 27th Oct.
 " 29 Resumed work, which was discontinued Monday 19th inst.
 Sept 29 But little work has been done since Aug. 10: -
 1903 1904 Work interrupted by illness.
 Nov 19 - Mar 7

4. Letters of Miss Letitia rec (& kept) from Miss A. W. about the work, Winlock from 1900-1903: - 1900 Nov 12. Tab. Vals. Nov 5 Red App. Plate.
 1900-1903 1901 Jan 30, Feb 6, Mar 1, 2 (P), 5, 6, 9 (P), 13, 26. Nov. 30. 7.
 1902. July 24, 25.

*Notes a b c book 1903 May 27. June 1 P, ? South Polars (2). Aug. 31, Sept. 23, Oct 9, 14.
 Oct 21, 27.

Tab. Vals. to date Tab. Vals. to be examined: SCBs red. of 2 B Cans. ^{done}
 10 Day Interv.

a b c Constants Changes made on sheets. Notes by S C B.
 Example of Red. App. Pl. for A A stars.
 Tab. Vals. & Androm.
 " 2 B Cans.

1903

August
Tabular Values
Interpolation
#172 Σ
pp 68 68

Cases to be reexamined.

#172 BII Σ . 1880 April 4 to 6 se. From Apr. 9

this difference come right. // Mch 17 Examined this
date & found all right on small sheets. // 1905.

1881. Nov 30 Σ is not entered from BII.

1879

Oct 26th

Books ret
to Obs^y

Left Owl's Head 26th Resumed work 29th Oct.
Postal from A. W. Oct 27 acknowledging receipt of
the following books: - Naut. Al. 1879, 1880 & 1881. Schöry's Tables.
Newcombs Do. Leepys Do. Claudel's Do.

1903 - 1904

Nov 19th - Mch 7th
Illness of
S C B

The work has been interrupted by illness
for nearly four months and is today Mch 7th
resumed.

1904

Jan^y 4th

Miss Anna
Winlock.

It is with deep regret I have to record here
the death of Miss Anna Winlock on Jan^y
4th 1904. She was in charge of the work here-
in recorded, which is the completion of Prof.
W. A. Rogers series of Meridian Circle Observa-
tions made at the H. C. Observatory.
She was for many years a faithful & efficient
assistant at the Obs^y.

1904

March
mon 7th

B II

Resumed computation of Interpolations

List of Stars
sent to Obs^y.
Oct 8 1903

#176 B II α 1879 Dec. 1880-81 sent to Obs^y (Sheet 16) ^{Sheet 17. α 187} ~~also~~
therefore the interpolation ^{final single} sheets for the intervals
1879 Dec 1 - to end of Star 176 are not done. // all Completed 1906 //

#173 1881 Sept.

..176 1879 Dec 21. 1880 Feb 29 - June 8. 1881 May 16 - June 25

..193 1880. Aug 18.

..201 " July 28 Nov 7 Dec 7

..228 " " 8 1880. Aug 21 1881.

..598 1879 Oct 13 1881. Feb 12

..485 " Mar 23

..489 " " 25 Apr 24

..491 " " 30 (not rec. & W)

..269 1880 Apr 1. 1881 Sept 17

..275 1879 Oct 12

..287 " Sept 2 &c

// Completed. 7/2/06

..e Safford 1879 March 22 &c

..289 1880 Apr 30

..298 " March 24. Oct 18 &c 1881

..322 " June 13 23. ^{Sept 21 Oct 1} Nov 30. 1881 March 5, Oct 4.

March 8 1904
Interpolation
of #172

#172 was returned for α checked by Miss Winlock
but Σ is not complete. Σ for Nov 30 ^{Dec 30} 1881 is not comput-
ed as I have not the books. Ex. this Dec 30. Σ is it?

+21.90 or +31.90? It is -22.00 in B II p 13. ^(work is done correctly.) There was a mistake in sign of the

March 7 & May 11
see p 63

This interval has been occupied in interpolating the
Stars 172, 174, 176, 287, 298

There remain unfinished the following to be examined :-

#176 B II p 38, 1879 Feb 20. α 1879. Feb 20 Ex. Σ + 2.061 it looks to small. ^{has been corrected to 2.361 as in B II p 35} 2.061 is wrong & might be

#176 .. done. March 2 1879. also stars 164, 174 sent to Obs^y. also see

Interpolations & examined Continued
 176 computations have ~~not~~ been completed.
 287 sheets for Sept - Nov. sent to Obs? - ~~not~~ completed.
 " First " including Sept 2 - Nov 1. 1879, also July Aug &
 Sept. 1879 sent to Obs? - ~~not~~ completed.
 298 α sheets for 1880 March 24 & 1881 October sent to Obs?.

* " Σ for 1879 April 21 - May 11 in B II. * (see below).
 " Σ for 1879 April 21 - May 11 in B II. * (see below).

* 298 α sheets for 1880 March 24 & 1881 October sent to Obs?.
 Ex. Intervals for 1881 March 24 &.

* " Σ 1880 Aug. 24 Ex. Σ for sign; in B II the computation
 has been done with + sign; the sign for Aug. 24 is
 minus on sheet; the following dates are plus.

" " 1881 Sept 23-30 begins next series & is the only sheet of
 the series here; was the rest sent to Obs? - Yes.

289 Apr 30 1880.

* 287 B II 141 - a mistake in dD from 1879 April through Aug. 23 corrected in
 B II pp 142, 143 & Interpolations correct on sheets.

* 298 B II p 174

"

1880. Aug 24 Σ Σ + sign is right. see B II, & small sheets, where ^{work} sheets
 are correctly interpolated.

70

1904

May

Tues. 10

Obs^y

Prof. Pickering

Prof. Searle

Went this day to the Obs^y & saw the Director Prof. Pickering who told me Prof. Searle was to take charge of the work on which I am engaged, left in good order by Miss Winlock. Prof. Searle has placed the arrangement of work & overseeing of it with Mr. Dunn, whom I do not know. I am to go on with the interpolations. Prof. also told me I could have work after the Red. to App. Place was finished if I desired.

June

Sun 28

Returned to Oolo Head this month and resumed work on the 28th Red. to App. Place. Interpolations. Checking those stars marked by Miss Winlock &c.

138 Cass. ^{h m} 049

Copying corrected sheets where the work is confused.

September 13

Continued examination of sheets 2 B Cass ^{h m} 03^m to 8 Corvi ^{h m} 12^m 23^m.

"

14

Rec^d from Obs^y Books I II III Red. to App. Pl.
The Naut. Almanac 1882 was rec some time ago.

1904 - 1905

71

October

Mon 10

Wed 12

Th 13

Left Owl's Head

arrived at South Danville N.H.

Resumed Interpolation work. Examination of Reductions.

Free day = RA-T

South Danville.

1905

Mon Jan 9-76

Finished examination of Interpolations 2/3 Cassiopea - Interpolations δ Corvi. $0^h 3^m$ to $12^h 23^m$ BI. Sheets where corrections had reductions not been made have been copied, & notes taken of yet completed. cases where the work could not be completed until access could be had to data at Observatory.

Tu. 10-12

Notes BI

Interpolations

hours a.

Have examined Cases to be looked at and corrected all but those that need books & papers that are at Obs'y.

Jan 12 Th

Interpolations

Now begin on BII γ Virginis $12^h 36^m$ - η Pegasi $22^h 37^m$ 30 Stars. Reduced to Σ . The interpolation is not completed & will now be done. Stars 172, 174, 176, 287, and 298. to be finished first. - Completed.

Feb 28.

BI

Extra Σ

Interpolations for all stars in BI are now done, excepting the Σ extra dates to be computed. There are also many fractions of day in Date Column to be taken from Ledger, all those in BII & III remain to be done. There are doubtful cases

Interpolation of Σ & others where additional dates are needed.

in March

Differences are large in Jan left Dec, March & need ex-

72

1905

February & March

Interpolations

Reduction to Apparent Place.

List of doubtful cases also of extra Σ s to be computed.

amimation. A List has been made of all doubtful Σ s and of extra 10 day intervals; occasionally a change in the first date of an interval seems advisable, to form a new series, but this can not be sure until the Ledger dates are all entered.

Sheets sent to Obs?

Many sheets which were sent to the Obs^{rs} have not been returned; the work on these has not been completed, and errors & omissions on them are not included in the Lists.

Date of Obs
True day

Fractions of Date of Obs. have been entered in B.I. Those for extra intervals have not all been done, awaiting comparison with Ledger. (These extras were done later.)

10 Day Interval
Dates

Fractions of Day of 10 Day Interval dates have also been checked in all the Books.

Error in A & A

There is an error in A & A 1879 Feb 20, p 324. For 21^h read 22^h.

21

Left S. Dunville.

March 23

Resumed work in Boston

Non-Fundamen^{tal}

Prof. Seare, after examining the work has decided to have it continued, as heretofore. The interpolations are to be finished on the large sheets, and the Red. to App. Place entered as before. The following are changes to be made. The Non-Fundamental Stars are not to be used.

1905-06

Owls Head

July 3^d Resumed work today.

Lidger It seems there are sheets of the Lidger missing, I think they must be at the Obs^y, as I have not had the Lidger here. & those sheets in use at Cambridge were all returned to the Obs^y.

Oct 6 Came to Rockland on the 5th inst. & resumed work today. But little work has been done during the summer. Prof. Searle's instructions were that no printing would be done immediately and haste was not desired.

The last step, $\alpha' - \alpha$ & $\delta' - \delta$ to be entered in Lidger have been checked; many changes had been made in interpolation, of daily differences, which required this to be done.

Dec The $\alpha' - \alpha$ has been entered on Lidger from the small sheets where these are done. Many notes have been looked up.

26th Sent the first Lidger sheet, 2 B Cass to Prof. Searle today.

Miss Woods List of 1st & 2^d diffs. of 10 day intervals is being compared with B & disagreements noted. (not continued).

28th Sent first Lidger sheet (2 B Cass.) with $\alpha' - \alpha$ & $\delta' - \delta$ entered to
(see above) Observatory. Notes on this star were looked up & corrected

* These missing Lidger sheets may be among the N & S stars.

1906
January

Reduction to Apparent Place of the 48 Stars not in Nautical Almanac.

18th Continue reductions, & looking up many notes,
Miss Woods list also comparing Miss Woods list with B I and
noting disagreements. (not continued)
6th Sent to Obs^y Ledger Sheets of 132 Cass (6 sheets). 40th
18 " " " " 20 S Cass (7 ")

327 Androm. 327 Androm. is kept to complete Fraction of day & to Exp^y # 1880 Dec 10
Jan^y 29 Sent 35th H Cephei, 487 Persei & E Eridani. (5 sheets). 67 Ceti was
67 Ceti accidentally left out. (sent later.)
Feb. 5 Sent 67 Ceti (1) 8 Eridani (2) 9 H Camel (1) 10 Camelopard (1)
9 H Camel on Note (3 Eridani (3)). 8 sheets in all.
Book pp 44, 45, 48

pp 6 & 40 The four close Polars & Mrs Min = Polaris
Close Polars 5 " "
2 " " & 51 H Cephei, of which
the computation was to be deferred as A A stars.
Mrs. Min. was computed inadvertently, & should be
examined.

327 Androm. Reductions for dates between 1879 Oct. & 1880 Aug. were delayed by the
sheets of Ledger & Tabular Reductions being at the Obs^y. They
are not complete, excepting $\delta \epsilon$ from 1879 Oct 29 to - 1880 Dec 30 which
are not in the package of small sheets at hand, but they may be
with those at the Obs^y.

* 1880. Nov 20 - Dec 30 In error of ϵ the reduction has been examined by Miss W. who could

Reduction to Apparent Place.

75

1906

February
Feb 5th

327 Androm.
see pp 33, 42, 36

There are still many doubtful places to be looked up taking a good deal of time; 327 Androm. has ledger dates to be replaced 1879 Sept 29 - 1880 July 25 & the Interpolation sheets being also missing it will be necessary to get data from the Journal (^{copy by Mrs. May} 7 Books) (M 25). The reduction also from 1880 Nov 20 - Dec 30 is troublesome, a note of Miss Winlock says "Ex Constants". (This has been done, but without needing correction).

1906

Feb 6 - May 3

List of
Ledger sheets
for stars
in B I sent
to Obs^y.

See 327 Androm.
p 74

Continued computation of α & δ & Δ for the 48 stars not in Naut. Almanac and have sent ^{to Obs^y} the Ledger sheets containing these results for stars 2 B Cass, 137 Cass, 205 Cass, 47 H Cephei, 487 Persei, ϵ Eridani, 67 Ceti, δ Eridani, 9 H Camel., 10 Camelop., β Erid., 17 Camel., γ Orionis, δ Orionis, ζ Orionis, κ Orionis, β Auriga, 36 Camel., β Aur. Min., α Urs. Maj., η Urs. Maj., σ Urs. Maj., ϵ Urs. Maj. & Urs. Maj., Grmbr. 1564, Grmbr. 1556, 148 γ Leonis, 149, Urs. Maj., 30 H Urs. Maj., 30 H Camel., 35 H Urs. Maj., β Urs. Maj., γ Urs. Maj., 436 Grmbr. 1771, 162 λ Draco, ϵ Corvi, δ Corvi. This completes the stay in B I.

Apr 17

Exp 63

Apr 27

Sent the five stars, 174, 176, 287, & 298. (172 sent on 27th inst)

Sent 172, 173, 183, & 193. 172 is the first star in B II. The remaining stars of B II were sent later - between July 10 & Aug 30. The 4 close Polars are not included.

At Owl's Head1906
May-

Returned to Owl's Head on May 5, but
did not resume work until June 22

June 22-

Resumed computation of $\alpha_1 - \alpha_2$ & $\delta_1 - \delta_2$ for Chass in B II

June 16

Mr Pickering sends letter of this date to say papers
relating to work for Clock Rate will be sent
by Express in a few days, & requesting me
to examine the directions, & return answer
if I understand them before July 1st.
Having no notice from the Express Office in
Rockland, I sent to them, & was told
nothing was there, (this was on Thursday June 28)
~~On June 30~~ ^{Then} I received a note from Mr Gerrish
of the Obs^y dated June 30, saying notice had
been received from the American Express
that the case sent to me could not be de-
livered, as my address was beyond their limits.
The box was dispatched from the Obs^y on June 18
& on June 28 was said at the Rockland
Exp. Office not to be there; Could it take
10 days for transmission from Cambridge
to Rockland? if not, where was it?

By this unexplained delay I have been
unable to comply with the Directors re-
quest, as the box did not reach me until
July 2 after sending a second time to the
office.

1906
July 2

Received papers for Clock Rate work, (Mr Perry having brought the box from The Rockland Am. Exp. Office) & I at once began examination of the contents. The directions are clear, & I think will enable me to do the work correctly.

There is a note by Mr Dunn as follows:-

"The book M²⁵ is probably in possession of Miss Bond". I have not got book M²⁵ now, nor do I think it has ever been used by me unless at the Observatory. In Oct. 1903 all books belonging to the Obs^y were returned, & since then there has been no work done requiring M²⁵, nor do I find it in the different lists of books taken from the Obs^y.

(The M Book was sent to me later from the Obs^y.)

The work on the Clock Rate has been much interrupted during the summer.

July - stop. I have also completed many cases of Interpolation, and looked up a large number of notes sent by Mr Dunn of omittings and errors on the large sheets, and find most of these ^{cases} had already been correctly done on the small sheets. The small sheets are the ones to be referred to, as the work is there carried out to second differences, & is, in the main, reliable.

1906
Nov 12

I received today a letter from Prof. Pickering enclosing one from the Corporation of the College telling me that my work at the Observatory was to be discontinued, and that the position of assistant with a salary had been given me yearly for life.

Having been engaged in making computations for many years, this conclusion of my services cannot but be satisfactory to me. Though I do regret the unfinished and imperfect condition in which the work is left. I would ^{have} liked very much to complete it.

1907.

The following notes are needed to explain some of the omissions and mistakes that will be noticed:—

Red. to App. Pl. The Fraction of day for 1882 is not done. 137 Cass. 208 Cass. &c

1879 Nov 24 - Dec 24 Interpolation to be finished for δ . Σ for Dec 14 & 24 ¹⁸⁷⁹ not done.

32 β Androm. Ledger Sheets containing fraction of day should be looked for among those of Naut. Al. Stars. 1880 May 25 - July 31 ^{to day} to be entered Ex. Aug 1 - 23

84 β Eridani ^h 5^m 2 1881 March 20.23. This date has been entered in Ledger ^{from} Tabular Reductions.

298 Σ Cygni 20^h 41^m Ex. fraction of day 1879 April 18 - May 1. Ledger Sheets.

275 19^h 26^m Date 1879 Mch 30 should be March 29 on Interpolation sheets.

420 9^h 32^m Fr. of day not entered 1879 Nov 6 - Dec 6 & 25.

421 9^h 45^m " " " " " " Σ for Nov 6 16 26 Σ not done. Is this all

Nautical Almanac Star(?)

1907

#160

Notes Continued. —

103 K Orion⁵⁴²

1880 June 23 An error. Ex Constant. A note of Miss W's says "Cannot find error anywhere".

"

"

Σ of δ to be looked up 1879 Mch 27 - 1881 Aug 21 on small sheets. also Ex. Ledger for Fr. of day & day (where -27 is). 1879 Mch 8-11.

also Ex " " " 1881 Sept 30 Entered though not in M 25. Ex also entry 1879 Sept 15.75 & Sept 30.71 not in M 25. also dates 1880 Mch 16 26 Apr 5 15 Sept 12 & Oct 2 not in M 25. 1881 Apr 17 Sept 20, 30 Apr 17 is not in M 25 & is probably a mistake of fr. day for whole day. Apr 17 & Sept 30 are not in M 25.

205 Cass^{4m}

Extra list

1880 Nov 20.39 Mistake found in δ & 9.9808 should be 0.9808 c 6 δ should be δ 1881 Σ should be 6.638 not 5.569. for α $\log c$ should be 9.8157 - 0.657 Σ = 36.37 not 36.96 " δ This mistake has not been corrected in BI.

913 Orion⁵¹⁹

1881 May 1.11 A mistake was found in α & (Extra list) which should be 0.3688 not 9.3688 & Σ should be -3.852 not -5.955. As this date has been rejected The work is not affected. It has not been changed in BI.

"

Another mistake is 1881 May 11 Feb 3 $\delta \Sigma$ is -3.135 not -3.414 This has been corrected on the small sheets & the work is not right; It has not been changed in BI. The δ sheets are at the Obs^y.

137 Cass⁶⁴⁹

1882 Jan 6 - 26 Reduction done with only 3 dates, The differences change but little.

2 Mrs. May
Prof Pickering

This star^{2 Mrs. May} is named δ Mrs. May in BI. & on Ledger sheets, also on small Interpolation sheets. These latter have been corrected, BI & the Ledger have not been changed.

Letters and Notes of Miss Woollock's.

1907

3
 7 Virginis 13^h 55^m

In a letter of Miss W's there is mention of error in Mean Places, ^{taking} from Ledger, affecting reduction of the stars 7 Virg. 183 - 917 Orionis, look Orionis.

7 Virg. used for absolute Example. The Mean Places were taken for wrong year; they should have been 1879. I think the work was corrected, but am not sure.

Note: This note book of Miss Bond was returned by her, at the Observatory, April 4, 1907, together with the remainder of mss. in her possession relating to Roger's ~~Absolute~~ Absolute Work.

J. D. Durrie

18982412 (P01) 4398