

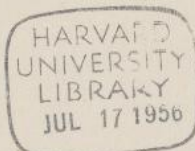
KG
11366
178

Ida E. Woods.
Book I.
Instructions,
etc.

NG 11 366 .178

Nova Sequence selected in numbers
Variable " " " letters.

KG 11366.178



Spanish - terms on cards,

p. 105

Date. November 17, 1911.

Reference. Young's General Astronomy.
Chap. Astronomical Instruments, p. 50

"The Equatorial. To find an object, the telescope is turned in declination until the reading of the declination circle corresponds to the declination of the object, and then the polar axis is turned until the hour-circle of the instrument (not to be confounded with an hour-circle in the sky) reads the hour-angle of the object. This hour-angle, it will be remembered, is simply the difference between the sidereal-time and the right ascension of the object. The hour angle is east if the right ascension exceeds the time; west, if it is less.

(over)

When the telescope is thus set, the object will be found (with a low magnifying power) in the field of view, unless it is near the horizon, in which case refraction must be taken into account."

Directions for sign of Residuals, M3.

13

If the measured value of the var. is brighter than that indicated by the curve (i.e. if the plotted position is above curve) the residual is Negative

Date. November 17, 1911.

Work. Reading Residuals from curves, M3 Variables.

Reference Volume 38, p. 13.

confirming
directions.

"The fifth column contains the residuals between the individual magnitudes, and a smooth curve drawn through all the measures employed in the determination of the period. Drawings of these curves and the plotted observations are found in Plates.... The residuals, when positive, indicate that the measured magnitude is fainter, and when negative, that it is brighter, than is indicated by its light curve, as determined. Negative residuals are indicated by Italics.... Whenever the residual in the fifth column amounted to 40 or more, the star has
(over)

If measure is ^{longer} ~~smaller~~, i.e. above curve. —
 " " " fainter ... below " +

been remeasured. The results of these re-measurements are given in Table V. When the difference between the magnitude thus determined, and that found in Table IV, was less than 40, the original residual is retained in Table IV."

R.P.

Keep .65 or less
Pay .66 + gtr.

Residuals Areguipa. Nov. 1911

Catalogue of ^RM. P.

Directions, Feb.-March 1912.

17

Order:

(North always first when minutes and tenths agree.)
except in case of a.

- In same zone, retain order of DM.
- When zones change, do not regard seconds. Enter minutes and tenths with north preceding.

Example: -29 40 0 6 38.4 = 0 6.6 -29 55
-30 41 0 6 38.0 = 0 6.6 -30 10

A star "not seen" in one J.D., enter J.D.; enter R in resid.
" " "too faint" " " " " F " "
" " with only one magn., " " a " "
" " rejected, in one J.D., enter J.D., R in resid.

A star observed both Arquipa and Africa, take mean of all observations.

Greenwich Mean Time - add 5^h

Asteroids: Residuals of comparison star
Magnitude = final correction.

In Summary of Series, use mean of observation where a beginning & end (of one star) are used.

A Rumford Photometer.

Instructions for tables:

Asteroids.

Comparison Stars.

Summary of Series.

Mo. J.D. | ~~Cap. Star~~ | Res. | ^{magn. from mean of all} ~~6606.498~~ | ^{order of} ~~Cap. Star~~ | ^{from mean of} ~~Res.~~ | ^{Adopted} ~~M.~~

0000 9
 0000,000 18
 0000 12
 39
 8
 47

H me page.
 7 code.

Summary of Series. Obs. Ref. Photo

J.D.	0000	11
Date		15
Beginning		13
Ending		13
A		8
S		8
B		8
		76
Obs.		10
		86
Age Mean		8
		94

Observers.

R. H.
 M.

Age of Moon. Used in Summary of Series,
R.P. See Nautical Almanac.

Age of Moon

To age in Ephemeris
add for Arg.

5^h. (for Long.) +

diff bet Sid. Time at Greenwich
and mean⁵ Time of obs.

For Hammer. subt.

2^h (for hour) from
above diff -

eg -

Arg. Aug. 30. ^{1902.} ~~1901~~

age in Eph.

26.7

Eph. p 129, S.T. 10^h.5

1.6
27.3

M. T. of obs. " 19.5^h ±

9^h.5 = ~~6.4~~ 2
10.0 ± 0.6

which is 5th W. of Green.

For Areg. this
 unit to be added to
age in Eph. will
 always be 0.5 or a little
 more
 0.5 representing 7 P.M.

For Hammer which
 is $\pm 2^{\text{th}}$ East of Green.
 This will at 7 P.M.
 be $7^{\text{th}} - 5^{\text{th}} = 2^{\text{th}} = +0.1$
 &c.

May 11, 1912.

Some stars in Zones -29°, -39°, & -49° have extra readings in Hanover. When they are same stars as already published in Jones, combine. Extra stars, do not add to Jones but put in Miscel. table.

Tables
of
Rumford
Photometer.

May 11, 1912

1. Zones -29 -39 -49

2. *Em. Cat.* including ~~all~~ all stars
(Except S. P. Seq. + Var. s)

3. *S. P. Seq.* in order of R. A. - South up. the fl-
star in 53. No 1. Make cards

4. *Em. Cat.*

5. *Art. Cat.*

6. *Var. s.*

Give C. P. Nos. + for
H. star Nos in 53, No 1.
Have ab. stand. St. in 88

There are to go in separate table.
Giving J. D. + decimal, mag, + c

Save this

June 6 or 7, 1912.

Rumford Photometer.

DM	R.A. 1902.	Dec. 1900	Magn.	Julian Day	Residual
00000	00 00.0	-00 00	00.00	0000,0000,0000,	00,00,00,

Misc. Cat.

Make up the first page of
the table in this form.

DM. Magn. included ?

Estimates in clusters.

Reductions in M 3, etc.

Illustration	Occurs in	Explanation	Enter in Magn.
m 1 <u>N</u>	M 3, Var. 72.	Var. n. seen. m, faintest comp. star, is .1 brighter than invisibility. estimate from magn. of m. 1.2. m = 16.49 ∴ var at least 51 as 16.59 ∴ < 16.5 - write <u>16.5</u>	Enter in Magn. Enter to tenths. <u>Underlines</u> No residual. No remarks. If plotted, enter marks like this: $\times \vee$ (N.B. Must not increase tenths in changing from hundredths to tenths. comp. st. = 13.59, var. N., would be <u>13.5</u> not <u>13.6</u>)
m <u>F</u> 1	M 3, Var. 73.	Var. faint. Comparison star on limit of visibility used. ∴ star and variable are equal. In above case 16.8	Enter magn. to tenths equal to letter given as comparison. No resid. No remarks.
m 1 <u>R</u>	M 3, Var. 72.	Variable estimated by comp. star as usual. Next comp. star is off plate. <u>R</u> entered. No mean; not a complete measure, but entered in hundredths. In this case 16.92	Reduce to hundredths using given comp. star. Plot. Read residual. <u>No</u> remark.

P. 1. B -

Plotting variables.

$$R.A. \quad 1 \text{ square} = \frac{4}{\cos \text{Dec.}}$$

Novae.

Novae.

Select Regenera

Estimate intensity a grade

Determine absd. mag.

See gull.

Select plates for charts.

Nov. 6, 1912.

Time.

A Sidereal Day is shorter than mean solar day
by $3^m 56.555^s$ sidereal time.
About March 23, the

$$15^m \quad 28.95^s$$

Add to local
Cam. mean time
to give E. Sta time
Sub from. E. Time to
give local Cam. M.T.

Time.

A Sidereal Day is shorter than mean solar day
by $3^m 56.555$ sidereal time.
About March 23, the

Blue
Prints
 $\frac{1}{2}$ of a
" " b

" " (6) Hagen

 c
 $\frac{1}{2}$ " " b
 " " R^c

 From
 Professor
 Bailey
 April 28, 1914.

Instructions for
 Comparison of Blue Prints
 with Vol. 63, Table V.

Enter dots or c in column
 to correspond with prints
 of photographic enlargements,
 or DM, or Hagen.

DM Enl.	1 mm	= 60" (1')
Photog "	1 mm	= 20"
Hagen	1 mm	24"

Scales of Enlargements for
 Variable Sequences.

M5

1915.

See instructions for signs of residuals p. 13.

Estimates, N , P , R . See page 29.

Jan. 1915.
Prof. Bailey.

Given two measures of a plate, reduce and take mean, unless one meas. is discordant and should be rejected.

to remarks of original readings, before mean is taken, need be given.

~~(Northern)~~

1881.

~~(Summer & Autumn)~~~~400. January 5th~~~~Interpreted by clouds & made out & coded~~

(star)

(Catalogue)

2046. Double. w. too faint to measure & to

use form like this &

give any remarks of special

M5

1915.

See instructions for signs of residuals p. 13.

Estimates, N , T , R . See page 29.

Jan. 1915.
Prof. Bailey. Given two measures of a plate, reduce and take mean, unless one meas. is discordant and should be rejected.
No remarks of original readings, before mean is taken, need be given.

For the General Catalog of
Misc. Stars: do not use the
numerous values of $(\pm .9)''$ which come
from measures of Gros. Publish the
value used for σ , derived from all compar-
isons with Std Stars & the comparison
residuals. The residuals given in
Table of σ for Asteroid will give a
means of finding the values of σ during Gros
Series if desired.

1915.

Estimates, π , Φ , R . See page 29.

Given two measures of a plate, reduce and take mean, unless one meas. is discordant, and should be rejected.

to remarks of original readings, before mean is taken,
need be given.

In General give ^{but a} miscellaneous
 stars any values wh. ^{ad} will be
 naturally derived if ~~from~~ ^{from} best
 not been measured at
 all.

M5

1915.

See instructions for signs of residuals p. 13.

Estimates, N , F , R . See page 29.

Jan. 1915.
Prof. Bailey.

Given two measures of a plate, reduce and take mean, unless one meas. is discordant and should be rejected.

No remarks of original readings, before mean is taken, need be given.

Giving
Months of Year
and Hours of
R.A.

dec	5	-	13
nov	5	-	15
oct	7	-	17
sep	9	-	19
aug	11	-	21
jul	13	-	23
jun	15	-	1
may	17	-	3
apr	19	-	5
mar	21	-	7
feb	23	-	9
jan	1	-	11

Hours R.A.
Visible.
Cambridge.

Miss R.

Please Convert
C to Fahr. (temperature)

JP

Meteorology, Special Tables,
where C is comparison
therm.

Variable

Read:

Ten Variable Stars of the Algol Type: Vol. LX, No. 5.

Photographic Obs. of Seven Circumpolar Variables:
H.C. 84, No. 1.

H.A. 71, 201
60 5

1916.
Miss Learitt.

Printer's Copy of Ledger of Variable

Ledger:

Year	J.D. (decimal)	letter of plate	Exp.	Magn.	Phase	Resid. fr. light curve.
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Tab. of Comp. Stars:

Des.	D.M.	R.A. Dec.	Ptn.	Sp.	Adopted Magn.
------	------	-----------	------	-----	---------------

-26° 9905 Comparison Stars:

Adopted Magn. include: —

- 1) Magn. 1913 corrected to scale of 1916.
- 2) " 1916 from A M plates.
- 3) " 1916 from Prism. Comp.

Mean of 1, 2, and 3.

Variables.

Letter designating instrument, following J. Day.

a = A (Bruce 24-inch)
 b = B (8-inch Bache)
 i = I (8-inch Draper)
 m = MC (16-inch Mitcalf)
 c = C (11-inch Draper)

e = AB (1-inch Cooke)
 f = AM (Cooke)
 ? o = MF (10-inch Mitcalf)

H.A. 84, No. 1, p. 10.

Following magnitude, letters indicating Remarks.
 ? Doubtful observation
 d Discordant obj. rejected on later obs., and replaced by magnitude given. Orig. obs. given in Remarks.
 e Edge of plate.
 f Image extremely faint, near limit of visibility.
 i Trails or elongated images.
 p Poor plate.
 q Poor image.
 r See Remarks.

Italics Var. not seen, fainter than magn. given (tenths)
 J.D. For diff. plates on same date, ditto J.D. if decimal is given.
 " repeated obs. by same obs., take mean.
 " " " " diff. obs., a line given to each.

Added - 1926

$$y = aY$$

$$z = aX$$

1931

RH

RB

MB

or repeat J.D.

Class C plates, line for each exposure.

Or, one estimate, with Remarks of no change during
— exposures.

Variable not seen, fainter than comp. star,
Estimate in tenths, underlined.

Variable seen, fainter than Comp. star.

Estimate in tenths, underlined, followed by L

Defective comparison, i.e., one comp star off
plate, as c 2, d not seen.

Compared with comp. star, tenths only.

When estimate is given in tenths, take residual
in hundredths. Text explains.

Example Est. 8.5

Curve 8.64

Resid. 14

Computation of Period of Variables.

Use computing machines.

Decimal that may be used = $0.\overset{d}{3}5$ to $0.\overset{d}{9}0$

Measures
of Position.

Measuring Machine.

Miss Leavitt.
Dec. 1918.

Put in plate, glass up, to adjust; ^{measuring} film up, for
North up, or, if plate is at right angles
to usual position, North at left.

for X Plates,
twist plate } Focus eye piece.
& N. & S., } Bring required star between images 1 and 2
stick into frame } of scale.
with bees' wax.

Be very careful of film.

Have rim of eye piece, outer edge, entirely
off of plate.

Select 3 to 5 cat. stars.

Use Geelf. positions for northern stars.
May mark ^{cat. stars} vars. in red ink.

Scales read x and y in tenths of
millimeters.

Reduction of Visual Observations.

Use Popular Astronomy, See Reports of Am. As. of Var.
St. Observers.

Means of ten days

Julian Dates ending 5 to ending 4

J.E.W. has made out cards for ten day intervals of
dates.

Any reading in which magn. differs 1 magn.
from the run of the observations may be
rejected as erroneous, with Remarks.

Cluster Variables.

See special instructions, steps of work on
N.G.C. 3201.

To reduce Position of Center from Cat. Stars.

Reduction of
Coordinates
to Position.

Reduce X to R.A.

$$1 \text{ sec. arc.} = \frac{1 \text{ sec. time} \overset{(\text{secant})}{\text{sec. } \delta}}{15}$$

1 sec. time

H.A. 71,
No. 3,
p. 55.

Scale of Series Plates.

0.5-inch	Ross Zeiss,	Series AI,	scale about	1200"
1-inch	Cooke	, Series AC,	" "	600"
4-inch	"	, " L,	" "	193"
8-inch	Bache	, " B,	" "	179"
8-	" Draper	, " I,	" "	163"
11-	"	, " C,	" "	57"
12-	" Metcalf	, " MA,	" "	93"
13-	" Boyden	, " X,	" "	42.4
16-	" Metcalf	, " MC,	" "	90*
24-	" Reflector	, " H,	" "	60"
24-	" Yerkes Reflector	,	" "	88"
36-	" Crossley	"	" "	39"
60-	" Mount Wilson Reflector	,	" "	27.2

* MC to 3548-90
later 98.2

See large card
for letters to
rise indicating
telescope used.

Also, p. 48 of this book.

MF = 167

AX in Cambridge, Novem ber

= 0.1 cm., field about 45° square.
 = 0.1 cm., " " 30° "
 = " " , " " 10° "
 = " " , " " 10° "
 = " " , " " 10° "
 = " " , " " 1.5° "
 = " " , " " 5° "
 = " " , " " 1.5° "
 = " " , " " 5° "
 = " " , " " 1.5° "
 = " " , " " 2° "
 = " " , " " 1° "
 = " " , " " 0.8° "

ber 29, 1922, to Jan. 29, 1924. Peru, after April 22, 1924.

Correction of Photometric Magn. for Spectra,

See H. A. 80, p. 151.

Orientation of Plates

Select catalogue stars having same R.A. (or
nearly so.)

Draw lines indicating R.A. (and Dec).

Reduction for Correction for Equation of Light.

Select a star of near position
Geschichte und Literature des
Lichtwechsels, Vol. 3.

Use dates as given for selected var.

Convert minutes to decimal of a day
by Table III, p. 136.

Compute dates of changes, .000 to .006
Note signs.

Correct Computed G.M.T. by results.

Example: See papers of Comas Solá Var.,
151308

Measure of Positions, Variables, etc April, 1926

Three Catalogue Stars.

Orient.

Read directly Diff. of Cat. Star - Var.

1 mm = 4 sec. 0° to 26°

5 sec 27° to 42°

Phillips Library

Broken red line in Stock Book, refers to
another entry under some other head.
Example: F. G.O. may refer to M.O.

Russian Alphabet — see Library
Materials
Mr. Davidovitch 1925

A	А	
B	Б	
C	С	
D	Д	
E	Е	
F	Ф	
G	Г (ж)	
H	Х	
I	И	
J	Ж	
K	К	
L	Л	
M	М	
N	Н	
O	О	
P	П	
Q	—	
R	Р	
S	С	
T	Т	
U	У	
V	В	
W	—	с Ч
X	—	ch ч
Y	—	sh ш
Z	—	

Proof-reading & Correspondence.

Rules at H. C. Observatory.

observatory small letter when not a special observatory.

numeral: in Nova No II or 2 use Arabic.

Camelopardalis, nomenative.

Centre, not center - Prof. P.

Sun, Moon, & Earth, ^{like} names of Planets, all capitals.

Statics, always begin with capital.

Madam not Madame

after dollars (in amount) no period. \$40 not \$40.

Decimal of a Day —
for Bulletin.

Convert G. M. T. to decimal by
Loomis' Table, p. 359.

Kept on special shelf, A 11.

Spanish
on acknowledgment cards.

Fecha = Date

Firma = Signature.

Sello = Seal

To examine MC records for needed
Plates.

Examine:

Index, Bk. 3

" " 36

Cards of regions

Decision of Prof. Pickering in
January, 1919.
Relating to titles of Prof., Dr., etc.

M.D. = Dr.
D.D. = Prof. (if title Prof. applies)
Ph.D. = Prof.

1915phae.proj.1180W