

KG
11366
v.648

Chronograph Record
1876
From 1876, Mar. 7
1876, Aug. 8

Charles W. Sever, University Bookstore, Cambridge

$$\begin{array}{r} 51 \\ \hline 16.7 \\ 16.7 \\ 16.6 \\ 16.8 \\ \hline 16.6 \\ 4 \end{array}$$

$$\begin{array}{r} 422428 \\ \hline 731254 \\ 45336 \end{array}$$

$$\begin{array}{r} 11038 \\ \hline 1451 \\ 1451 \\ \hline 1451 \end{array}$$

$$\begin{array}{r} 1451 \\ 1451 \\ \hline 1451 \end{array}$$

$$\begin{array}{r} 37.2 = 800 \\ 29.87 = 800 \\ 41.1 = 800 \end{array}$$

$$\begin{array}{r} 42212762 \\ 71033000 \end{array}$$

$$\begin{array}{r} 42213440 \\ 7103268 \end{array}$$

$$\begin{array}{r} 42223307 \\ 71031952 \end{array}$$

1876phae.proj.1652R

Mar 7 1896

W & R obs zone

No 1 = 1447

2 = 1448

3 = 1449

Mar 13 1876 Monday
Lyme 40 45¹3¹¹.1 36.2 34.2 39.3

May 14, 1876

W. R. Holmes

No 1 = 1453

2 = 1454

3 = 1455

4 = 1456

Mar 14 1876 Monies

~~G. 966~~

~~20 4 40.6 43.7 48.8 42.6~~

~~20 4 13.2 17.6 21.8 16.8~~

Lyne 40 4 29.7 30.7 33.9 34.6

April 50 1 25.7 23.9 30.2 35.0

Cygni A.R. Rij ✓

Mar 15-1876
W.D.R.,
No 1-1457

Mar 18 1876

W. R.

Came up observing on
account of bad seeing

W. R. = 1458

Mar 19 1876

W.H. Poles, zone.

Began observations of pole stars
on 21 wires; in 11 double and 10 single
in order to ascertain whether the differ-
ence between these wires shown for
equatorial stars is really a ~~diff~~
personal equation.

$$W1 = 1459$$

$$2 = 1460$$

$$3 = 1461$$

Mar 19 Morning

31drow 20 2 20.2 22.3 26.3 24.2
 17 15 20 3 11.9 14.7 17.4 15.4
 cont-1228 $\frac{1}{2}$

Shzumi 45 4 43.9 44.9 48.8 46.2
 Clouds, wind $\frac{1}{2}$ 234 rattle + 23-7
 S. Lyman, 45 0 12.8 16.4 20.1 22.1

March 1876
W. R. S.
No 1 = 1462
2 = 1463

Mar 22 1876

No 1 = 1464

2 = 1465

3 = 1466

Mar 22 Morning

Puckin. all times sunny cool

45 4 10.1 14.2 17.3 14.6

50 0 20.0 27.7 27.8 26.2

Q. Lynce

40 4 27.2 32.3 32.4 35.0

2 Lyridae 5 0 14.6 10.6 19.9 24.2

1 Aquin 50 1 27.8 30.6 33.1 39.6

1 Pleiades 15 2 51.5 56.5 58.3 4.8

a Cygni 30 4 25.6 29.8 31.8 31.2
 20 37 35 0 10.0 13.2 17.9 15.7

Mar 27 W.P.R.
Clouds,

W1 = 1467

2 = 1468

3 = 1469

Mar 27

Pushkin (415-4 58 112 172 114)
 50 0 181 23.8 29.1 25.4
 all runs

2 Lyrae 410 4 212 24.9 29.7 30.9

2 Cygni 30-0 155 18.7 25.0 23.9
 mid in fall?

2 Lyrae

Mar 2 Morning

ms min

45 4 55 3 61.2 67.8 634
Oh. f. for some min

XDms 45 0 51.2 54.2 60.3 57.7

78 23 Right

XDms 40 4 44.1 47.2 54.4 54.0
78 32 Left 1st m

XDms 5 0 37.8 37.2 46.3 51.1

XDms 50 1 13.1 13.8 22.2 28.2

~~XDms 15 3 14.3 14.8 23.2 30.4~~

W1 = 1470

2 = 1471

Examined inclination
and found it correct.

Mar 30 ^{morning} 1876 W & R_{os}

X April 50 1 2 2.7 21.4 30.4 35.6

B .. 15 2 50.8 50.9 58.0 56

Mar 30 1876

W & R, Shs

no 1 = 1472

2 = 1473

1876, March 31

~~J.F.M. obs for time~~~~S Geminor = 7 12~~~~a Geminor = 7 26 foll. #~~

Apr. 2 1876

W.F.R. obs done.

Nov = 1474

2 = 1475

3 = 1476

Apr 6 1876

W. R. des some

$\alpha_1 = 1477$

Aug 1876

W. A. R. obs.

Nov = 1478

2 = 1479

Aug Morning

2 Aug 50 d 1 7.5 18.4 25.9 30.8

B 11 15 2 50.3 45.3 56.3 60.0

Apr 18 1876

W & R obs none

$$w_1 = 1480$$

$$2 = 1481$$

$$3 = 1482$$

~~Star Comparison (160)~~

$$\alpha = 10^{\circ} 20' 20'' \quad \delta = +14^{\circ} 28' 7''$$

~~2 7 2 16~~

Apr 10 morning

7

2 Lyrae 140 4 30.6 33.7 36.8 38.2

51 Cep. (40 0 55.0 69.9 57 3.2)
(40 0 25.4 31.7 37.0 34.1)

2 Aquil 50 17.8 16.8 22.1 27.9

2 Aquil 50 1 21.3 22.4 27.9 34.2

~~B Aquil~~

Apr 11

Astronil Compulsions $\frac{2}{3}$

$$9 \quad 50 \quad 54 + 15 \quad 24 = \begin{pmatrix} 55 & 1 & 296 & 25 & 2 \\ 55 & 2 & 9.2 & 139 \end{pmatrix}$$

$$10 \quad 0 \quad 16 = 0 \quad 3 \quad 39.9 \quad 45.9$$

$$10 \quad 9 \quad 14 = 25 \quad 4 \quad 48.4 \quad 54.3$$

$$10 \quad 20 \quad 20 \quad \begin{pmatrix} 55 & 0 & 52.1 & 59.0 \\ 55 & 2 & 0.3 & 5.2 \end{pmatrix}$$

W. K. Rolston

$$wv = 1483$$

$$2 = 1484$$

$$3 = 1485$$

Aug 11 Morning 1876

2 specimens 5-1 34.0 31.6 38.7 44.3
 2 and fore.

2 specimens 5-2 3.1 3.8 10.2 17.7
 2 and fore

3 specimens 5-1 2 3.1 3.8 10.2 17.7
 2 and fore
 Lost ✓

1876, Apr. 15

J. F. M. Str. for time

 ϵ Hydrae = 8 40

false observation

 ι Ursae. May = 8 50

1876 Apr. 16

J. T. M. for time

ℓ Uas. Maj = 8 50

σ^2 Uas. Maj = 8 59

K Cancri = 9 1

1876 ~~Mut Morning~~
Morning

Argule 5 0 22.2 21.1 32.8 38.3

α 11 50 1 50.2 46.6 58.0 3.3

B 15 4 0.9 58.7 8.2 13.3

port-
41
 α Cygni 30 4 38.1 37.8 47.3 46.0

α Pegasi 50 2 1.9 0.2 9.4 12.9

W.R. as.

W1 = 1486

Apr 20 1876 W.R.

W1 = 1487

Apr.

May 1 1876

Nov = 14 + 7 8 1488

3 = 148990 14'90

1876
 May 1 Morning

~~250~~
 & logyri 250 318 314 420 432
 cont. 1st 2 evening.

~~20~~

May 8 Morning

Lynx 30 4 30.6 29.3 41.3 41.1

Midway 0 1 10.5 10.6 23.6 25.6
A₂₃ A₋₂

Polaris 45 2 13.5 15.3 17.1 23.7
A₉ and A₋₁ 23

Nov = 1491
2 = 1492

May 16 1876

W. R. S.

1st = 1493

2 = 1494

3 = 1495

4 = 1496

~~Let the South Crooks 2^m ahead~~

~~And added shot - supposed to measure
the rate of ⁵ feed day.~~

Nov 16 morning

2 Pyram	15-4	7.0	1.4	17.8	2.58
2 Pyram	50	1	43.2	39.3	54.8 0.3
Polun's	45	2	18.7	20.5	34.5 84.1
Lat-3w.					

Set the Sun Clock 2^m ahead of 1^h 0^m S.T.
and added shot supposed to increase
the ~~rate~~ rate 0.4^s per day.

Sept 17 1876

My

W. R. L.

To cloudy for now.

No. = 1497

My 21

not R or.

$$201 = 1498$$

$$2 = 1499$$

$$3 = 1500$$

$$4 = 1501$$

May 21 Morning

α Hydrum 15 4 19.2 18.5 20.8 36.2
21 59

α Discis 35 3 14.3 4.3 22.2 33.6
22 50

α Peras' 50 1 44.4 39.5 56.0 45
22 58

α Androm. 0 0 9.3 4.7 21.5 27.0

May 23

W R Dunsen

W - 1502

2 = 1503

3 = 1504

May 28 Morning

α Aquarii 20 0 9.9 0.6 21.5 29.2
21 59. A45 A-1 A-2

α Pisces 35 2 58.3 57.3 9.8 18.8
22.50

α Reg 50 1 47.2 39.8 57.0 4.6
22.58

May 24. 1896

M.P.R. Sus. none,

Nov = 1505

2 = 1506

3 = 1507

4 = 1508

5 = 1509

May 24 Morning

Audum^o 4 5-13 454 5.7 11.3
0 1

Polaris A.R. only A 3 78 A 1
-1

May 25 1946.

WPK's home

W1 = 1570

2 = 1511

3 = 1512

May 25-1876

Morning

Reg 52 75.3 47.8 50 17.0
2258 A 45- A₁, A₂

Androm 0 1 7.6 0.0 19.1 26.3
0 1 A 345 A₁, A₂

Polaris 45 2 29.2 25.7 42.2 45.2
1 12

May 29 1876 Morning

Pisces 35 3 39.6 26.6 46.5 0.7
22.50

Androm. 0 0 4.6 0.0 18.4 26.8

Palais | 45-2 18.8 13.1 81.3 34.2
41-2 34.6 30.8 46.8 50.5

$M = 1513$

May 30 1876

Orx Rds none.

Int = 1574

2 = 1575

3 = 1576

May 30 Morning

2 Reg. 50 1 51.1 41.3 58.9 11.8

22 IF ~~0 0 3.1~~

2 Andromeda 0 0 3.1 56.9 18.0 26.2

0 1

Polaris 45 2 14.1 11.4 30.0 33.1

2 31.9 28.7 47.3 51.0

Polaris 45 2 44.8 51.0 57.2 46.3

49 and 12, 2 & 3

May 31 1876

W.A.R. Es.

Too bad seeing for name

Nov - 1517

2 = 1518

3 = 1519

May 31 Morning 1896

α Fapcun

215.9 15 4 17.3 6.9 27.1 29.3

α Pisce
22 50

35.3 6.7 56.9 18.9 33.3

α Pegasi
22 58

50 1 52.7 42.3 1.0 14.2

α Androm
0 1

0 0 14 55.9 17.2 25.9

Polaris

45-1 48.8 44.7 4.2 7.3

Set - the north collimator in azimuth.

Adjusted the microscopes so that - by rods
about - 14" greater than E and R = N
when the telescope points in the north
collimator.

Adjusted the mirror illumination
with gas
Cleaned and oiled the pivots.

June 1 1876

W & R Obs.

Stopped descending on
acct of bad seeing

Nov = 1520

June 5 1876

Nov = 1521

2 = 1522

Jan 5 Morning 1876

Albion 0 0 12.6 16.3 17.5 18.1
 0 1

Polaris A.R. A 12 3
~~A.R.~~ -1

Mer = 15.2

June 6 Morning

2 Reg. 50 2 1.3 55.1 1.9 1.8
22 58

Audun 0 0 14.8 13.7 21.7 19.6

not 1523

June 7 1875 W.S.R.s.

No 1 = 1524

Continued trouble with *Chromysope* pen.

1876, June 13
 No. R. 2029. V. B. M. 2029. for both reading

Adjusted for stellar focus
 before Ga. 2029 ^h 13 ^m 34 ^s 11

No. = 1525

June 14 1826

W. R. R.

My = 1826

June 15 1876

WHR obs.

Nov - 1527

June 15-1876 Morning
WVR

Nov-15-28

α Peris 35 3 158 143 174 220

2210

α Reg. 50 1 578 562 573 597

~~α Andromeda 111 145 173 173~~

W.V.R. starts on his
Vacation.

July 10 1876 Morning

Plain. 45 2 33.1 38.2 37.9 31.9
 1 12 45 2 55.6 61.4 59.6 54.5

~~2 Aug. 30 1 59.9 59.6 61.0 61.6~~
 2 0

2 Louri 5 3 50.9 47.6 50.1 54.1
 4 28 10 0 19.6 17.7 20.4 21.7

2 Aurigae 30 2 42.1 43.7 47.3 43.9
 5 7

3 Louri 50 4 58.5 58.3 1.6 0.7
 5 18 55 0 48.7 49.6 54.5 52.2
 lost 1st two wires

W = 1529
 2 = 1530

W & R returns from
 his vacation

July 12 1876 W & R des.

201 = 1531

2 = 1532

Since α is found to be about 100°
it is probable that the collimation
error was set wrong.

July 12 Morning

L Tauri	5	3	52.4	48.0	51.1	54.0
H 28	10	0	6.1	0.9	5.5	8.4

L Aurigae	30	2	52.8	53.1	56.8	55.4
57						

~~B Aurigae~~	~~45~~	~~0~~	~~34.6~~	~~28.5~~	~~35.4~~	~~137.5~~
58	Ref 1st	5th	2nd			

B Tauri	50	4	32.9	32.4	36.6	37.1
5 18	55	0	54.2	53.3	58.6	58.6

July 13 1876
V. & R. J.,
Vol - 1533
2 = 1534

Aug 17 1876

Not- 1535

2- 1536

1876 July 18 Morning

 α m
 Δ Aurigae = 5 7

30	2	49.2	44.4	53.8	46.4
----	---	------	------	------	------

 α m
 β Orionis = 5 8

40	4	52.9	39.1	51.4	49.8
45	0	53.4	41.5	52.5	50.8

 α m
 β Tauri = 5 18

50	4	34.1	30.8	40.5	35.1
55	1	1.7	57.3	7.5	3.6

 α m
 Δ Orionis = 5 48

0	1	14.2	8.8	18.8	18.8
0	2	24.4	18.3	28.0	28.0

 $207 = 1437$
 $201 = 1437$
 1537

~~Part Cost.~~
 Sheet found.

Aug 19 1876 W. R. R.

Nov- 1438 1538
1439 1539
1440 1540

1876 July 19 Morning

			Σ	F	e	He
α Aurigae	30	2	44.2	40.4	50.2	41.4
β Orionis	40	4	51.1	39.9	49.9	48.5
δ 8	45	0	45.2	35.4	46.5	43.8

β Jauri	-50	4	33.6	31.5	40.4	36.2
δ 18	55	0	55.2	50.4	0.0	56.3

α Orionis	= 0	1	10.5	3.6	14.4	13.8
δ 48	0	2	32.8	27.0	32.1	36.1

$$\Sigma = 7441 \quad 1541$$

Aug 22 1976

W.A.R.

Nov - 1442 1542

2 - 1443 1543

July 23

After tomorrow - July 24 -
 Pass and the third
 Anaphylin

47.252	46.340
254	-20
25.0	3.20
264	46.320
47.288	47.258
	13008
	46.904

July 22 1876

W. P. M. left the Stutters open
 and during a shower on Sunday
 morning, water got ~~between~~ ^{into} the tube.
 Mr. Clark came up and took out
 and cleaned the object-glasses. W. P. M.
 took out Tail piece and cleaned glass
 diaphragm.
 Dried the interior of the tube by
 a current of hot-air.
 Adjusted microscope as a new.
 Set the wires exactly ~~for~~ ^{for} ~~use~~ ^{use} ~~of~~ ^{of} ~~the~~ ^{the} ~~instrument~~ ^{instrument},
 for use.

Aug 24 1876

N. A. R. Obs.

Observed for inclination of wires
J. P. M Reed second reading 5

Wt = ~~1444~~ 1544
1545
2 = ~~1445~~ 1546
3 = ~~1446~~

July 24 Morning
 L beta

255 45° 3' 56.3 52.3 57.2 529

3 Orionis 40 4 29.2 21.7 22.6 19.6
 5 8 45 0 23.5 14.8 17.5 14.4

2 Orionis 0 2 7.0 4.0 3.9 4.4
 5 48 0 2 42.7 40.4 39.9 38.0
 lost 1st 2 wires

1876phae.proj.1652R
Aug 25 1876 7.20 P.M.

1 P.M. rods both circle working

Work out - Tail piece and
cleaned machine for glass diaphragm

In 1 = ~~1447~~ 1547
2 = ~~1441~~ 1548

~~Sts~~

$$63.7 = 5 \ 50$$

$$30.12 = 5 \ 50$$

$$67.23$$

1876. July 25, Morning

α Orionis 0 1 40.2 37.2 37.2 36.5
lost A₋₁ & A₋₂

July 26 1876

W. R. D. Juss.

J. F. M. reads both settings

1 = 1449	1549
2 = 1450	1550
3 = 1451	1551

67.1 5 10
 30.7 5 10
 64.9
 1876, July 26, Morning

Δ Aurigae 30 2 12.8 13.1 11.1 3.1
 5 7

Blaenoria 4.5 0 36.1 28.7 31.4 25.4
 5.8

Obs. in inclination

B Tauri 50 4 47.8 46.2 46.9 40.8
 5 18 55 1 33.3 34.5 34.5 28.8

July 31

The South Clock, has several times tripped the record hand. Mr Searles caught it - in the net - July 28, when it stopped short 25° the pendulum swinging meanwhile.

Mr. Aster came out and endeavored to remedy the trouble. Not certain what it was.

Aug - ~~1452~~ 1552
2 = ~~1453~~ 1553

I. B. M Records for
both readings

July 31 1876 Morning

~~10 0 357~~

2 Jami 10 0 357 32.5 30.3 29.1
4 28 A₁, A₂

3 Jami

5-17 50 4 58.5 56.3 55.3 50.4

2 Orionis

0 1 54.4 52.2 51.3 50.8

5 48 0 2 56.9 53.7 53.7 52.8

2 Can. Maj.

55 2 3.8 57.5 59.9 59.5

6 39 55 2 42.1 35.8 36.6 38.2

lost 1st 3 wires

~~J P M~~

Aug 1 11th 2nd

M1 = 1452 1554

2 = 1455 1555

3 = 1456 1556

4 = 1457 1557

P.F. M. reads
for the readings

Aug 1 1876

Morning

2 Corli 45.3 17.3 13.8 12.0 12.6
2 55

2 Anjura 30 4 22.1 20.7 19.9 12.1
5-7

~~B. J. J. J.~~

2 Can. May. 55 1 32.9 27.1 28.7 30.5
6 39 55 2 59.3 52.0 54.1 55.6

J 1

Aug 2 1876

W.R.

I.T.M. read

Substr reading

W07 = 1458 1558

2 = 1459 1559

Aug 2

2 Jauri 10 0 25.1 20.2 20.4 19.1
428 Lost $\frac{1}{2}$ 12 and it,

2 Quiper 30 3 16.4 14.4 13.7 6.8

3 Jauri 55 0 4.8 3.2 3.2 0.3
517

2 Orion 0 1 43.3 40.2 39.7 38.0
0 2 50.9 46.9 47.1 46.0
5-48

2 Can. Maj 55 1 31.2 23.4 25.8 27.2
6 39 55 2 51.4 45.3 46.4 48.2

Aug 3 1876

WRRds 30m
WRRuds 2nd.

W1 = 1460 1560

2 = 1461 1561

3 = 1462 1562

Aug 8/186 Morning

α Tauri

428 5 4 10.2 41 3.7 4.5

δ Aurigae

30 3 18.2 17.4 15.6 9.4

β Tauri

55 0 4.6 3.2 3.2 0.9

α Orionis

0 1 38.8 36.2 34.8 33.9

548

0 2 56.9 53.3 52.9 52.1

Aug 5. 1876

W. R. S.

Attempt to observe.

Stars very faint - Gave it up.

Per = ~~1463~~ 1563

Aug 6 1876

Before beginning observations
Mr Clark took out the object-
glass. Found it covered with
moisture, which had evidently
condensed upon it.

After putting it back. (There was
no moisture between the glasses)
adjusted carefully. In use
today.

Since the glass has been cleaned
and set-again, the definition is
very much improved.

W. R. Johnson.

No 1 = H 64 1564

2 = H 65 1565

Aug 6 1876

Compound E.C. with S.C.
on N.C. of 19^h 35^m

Aug 6.

Observations of occultation
of Saturn's Emersion

(Appearance. )

Order of observations

(a) same
(d)

Right next to last stroke.



Immersion



Cladding observation

a
b
c
d

$a = \frac{10}{\text{tor late}}$

$b = \text{no stakes, 1st probably right.}$

Immersion blocks

Immersion syringe

power =

Gravelot

1 Immersion ball = 20 14 25 6 236
20 16 4 " "

Immersion

$d = n 45 \text{ s}$

$236 = 1^{\text{st}} \text{ 24 } \frac{1}{2} \text{ s } \text{ far - of S.B.}$

Aug 6 1876

Aug 6 1876

Morning

α Aquinas AR. Lat 11' m

Barnes. Lat 42

41.0 14.3 43.9 45.5 43.0

β Tauri 55 0 81.0 27.7 28.3 23.6

α Orion

5-18 0 216.8 12.1 11.8 11.4

α Can. Maj. = $6^h 39^m$

55	2	7.8	58.5	2.8	2.3
55	3	22.4	13.5	15.9	17.8

Aug 7 1886 Morning

24 Aug 1886 A.R.

B Jan 1886 15-0 5-29 46.7 45.8 44.6

Nov = 1466
1566

Aug 7 18

Net = 1466

Aug LF 426

Woods house

J. R. M. Woods Lstr.

Nov = 1467 1567

2 = 1468 1568

3 = 1469 1569

Aug 8 Morning
 & Aug 9 A.R.

B Gami 55-0 38.8 36.3 36.2 30.2

548 0 2 9.2 4.5 4.2 0.6

Phoskin 0 4 6.1 4.2 4.7 53.4
 At 12 & 3

& Can Ray

55 2 48.1 39.4 40.5 41.1

55-3 37.2 28.5 30.5 29.1

1876phae.proj.1652R

$$\begin{array}{r} 44 \ 50 \\ 42 \ 23 \\ \hline 2 \ 27 \end{array}$$

$$\begin{array}{r} 42 \ 23 \\ 44 \ 50 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 34 \ 31 \\ 42 \ 23 \\ \hline 44 \ 49 \end{array}$$

$$\begin{array}{r} 32 \ 58 \\ 42 \ 23 \\ \hline 25 \end{array}$$

~~For stars north of meridian~~
 subtract minutes of δ from $23'$

~~For stars south of meridian~~

For stars south of meridian
 subtract $23'$ from minutes of δ
 add

$$\begin{array}{r} 34 \ 8 \\ 23 \\ \hline \end{array}$$

$$\begin{array}{r} 43 \ 39 \\ 44 \end{array}$$

$$\begin{array}{r} 34 \ 8 \\ 42 \ 23 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \ 52 \\ 42 \ 23 \\ \hline \end{array}$$

$$\begin{array}{r} 23 \\ 40 \ 53 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 23 \\ 22 \ 52 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 30 \ 16 \\ 23 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 15 \\ 14 \ 42 \ 23 \\ \hline 15 \\ 52 \end{array}$$

$$\begin{array}{r} 656 \\ 23 \\ \hline 9 \end{array}$$

