

KG
11365
289

No 6.

Observations with E. Equatorial.

1866 Sept 12 to Oct. 2.

No 6.

(Original)

KG 11365.289

+

μ

10.0 10.0

1866. Sept. 12^h J.M. Sid T. 19. 36 20.15

Jupiter
Position of angle of belts. ~~270.40~~

reading 270°.40'

Polar. Diam.

$44^{\circ} 91$ $4^{\circ} 35$
40.56

- (1) 44.812 wire in contact with apparent upper edge.
- (2) 42.75. wire on middle of appar^t upper belt
- (3) 42.17.3 next belt
- (4) 40.405 Coincidence.

- (1) 44^T.65 App^t upper limit
- (2) 42.70 Middle of App^t upper belt.
- (3) 42.12
- (4) 40.25

2

KG 11365.289



(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)

1866. Sept. 12^h M.

3

(1) 45.175

(2) 43.332.

(3) 42.39

(4) 40.635

(1) 45.235

(2) 43.39

(3) 42.54

(4) 40.77

Micrometer wire on preceding limb

42.71.

41.18.

39.50

38.05

1st bright spot.

Black spots.

Coincidence with wire on following limb

20^h 37

42.88.

38.12

43.015

38.20

Preceding limb

Coincidence with wire on foll. limb

Preceding limb.

Coincidence

4

Jupiter

$$\begin{array}{r}
 42^{\tau}.88 \\
 38.18 \\
 \hline
 4^{\tau}.70
 \end{array}
 \begin{array}{l}
 \text{preceding limb} \\
 \text{following " .}
 \end{array}$$

$$\begin{array}{r}
 42^{\tau}.80 \\
 38.16 \\
 \hline
 4^{\tau}.64
 \end{array}
 \begin{array}{l}
 \text{preceding limb} \\
 \text{following}
 \end{array}$$

A. Clark's new Double star $\alpha = 20.35^h$ $\delta = +40.06^{\circ} 30''$

J.W. Power. 1200.

$$\begin{array}{r}
 328^{\circ}.28' \\
 328^{\circ}.28' \\
 325^{\circ}.15' \\
 325^{\circ}.30' \\
 327^{\circ}. \\
 \hline
 34.41
 \end{array}
 \begin{array}{l}
 \text{Very Satisfactory} \\
 \text{Measurement}
 \end{array}$$

$$\begin{array}{r}
 S. P. L. \\
 329^{\circ} 52' \\
 320 \quad 14 \\
 321 \quad 6 \\
 \hline
 971 \quad 12 \\
 323 \quad 44
 \end{array}$$

$$326.56 \text{ W. } \alpha = .20$$

6

JW.

$$\begin{array}{r} \tau \\ .19 \\ .09 \\ \hline \tau, 10 \end{array}$$

$$\begin{array}{r} 55 \\ 46 \\ \hline .11 \end{array}$$

$$22 \cdot 45.$$

$$43.5 \cdot 08.0$$

$$\underline{51.5}$$

Perhaps involves backlash

$$\begin{array}{r} \text{SPL} \\ .423 \quad 78 \\ .527 \\ \hline .104 \end{array}$$

$$\begin{array}{r} .78 \\ 69.5 \\ \hline 8.5 \\ .085 \end{array}$$

$$\begin{array}{r} 10. \\ 11 \\ 08 \\ 10.4 \\ 08.5 \\ \hline 5 \overline{) 479} \\ .096 \end{array}$$

mean τ

$$\begin{array}{r} 324^{\circ} 10' \quad \text{Position} \\ 1634 \quad 41 \end{array}$$

$$6 \overline{) 1958.51} \quad 324.$$

$$326^{\circ} 28' \quad w. 6$$

$$323.44 \quad w. 3$$

$$\text{mean of 9.} = 325^{\circ} 34'$$

8

Vefune JW.0.^h30.^m

Power No. 39

Reading of Position Circle 260°

r
58.64358.375

r .268 Vertical Diameter

.54

19

r .35

.475

.20

r .275

.47

21

r .26

.49

14.5

35. Certainly large enough.

.268

.35

.275

.26

.35

5/1503

30.

r
~~.395~~~~1.5~~~~.245~~~~meant to be small enough but
perhaps involves.~~

.14

10

JW.

δ Cygni. —

Est. position. (Approximate) 40°

Turned on M^r Clark Star $\left\{ \begin{array}{l} \alpha \ 26.85 \\ \delta \ 40.06 \end{array} \right.$

Not Separable.

Turned on 37 Regni. —

Not separable. —

Turned on. P. XXII 275

Not separable

12

Sept. 15 Saturday.

P XVIII 226 ~~FW~~. Σ 2410

J W

254° 20'

253 45

256 5

mean 254 43

25

SPL

251.55

250 2

255 50 (w2).

mean 253.24.

GmL.

254.37

257.

254.06

254.45

mean 255.07

J W

58.000

57.865

.135

SPL

57.613

57.724

.111

14

Σ 2410

g. m. s.

57.669

57 523

r. 146

o Draconis.

SPL

189 43

190 14

189 53

mean 189 57

21^h 30^m

JW

190 33

SPL

63.85

67.07

2.22

21 45

67.07

63.83

3.24

64.03

67.26

3.23

16

A. Clark's new double star.

17

$220^{\circ} 10' 56''$ Verrier III.

$21^h 59^m 47^s$ } Chronom. sid. t
+ $1^h 23^m 20^s$ } hour angle (instrumental)

G.M.S.
Angle of Position
330.15

Sept 16 Sunday

Sid. Clock 19 29 30.0

Chronom. 236 19 30 39.5

Corr. to blocks

Turned to Alvan Clark's new star. Unable
to resolve it with any power

18

Sept 16 Sunday

61 Cygni ~~fw~~239° 20' fw
239 45238° 40' } g.m.s
238 38 }
239 0 }
238 31 }21^h 25^mDist 50.55-?
50 48
50 58
50.49
50.50Come 52 47
52 46
52 47ε Equulei - D
AB

Power of 1245.

241 45
241 45 fw
241 522^h 0^m

mean 241 32

50.08
50.015
.06550.08
50.03
.05

20

G M S

(21)

	Coinc.	Diff.
49.93	49.82	
.93	1.82	
mean 49.93	49.82	0.11

Wires being set at 0.06 apart the distances appeared certainly too small (GMS)

can allow the following	GMS
50.33	50.23
50.25	50.34
0.08	0.11

f.w.

Power of 401

50.352	50.368
.286	.29
.072	.078

$\frac{A+B}{2} \cdot C$

f.w.

274	15
274	15
275	45
273	50
272	0
271	40

~~diff part of~~

275	0	} Made in a diff. part of the field from the others.
275	40	
274	3	mean of all.

22

22^h 40^m

(23

~~48.77~~~~47.62~~~~1.06~~Mum. of wires
feet.

48.44

47.26

1.18

48.43

47.26

1.17

Better Mum.

48.16

47.03

1.13

24

4 Aquarii

(25)

261°

253

} Power 401

23^h 0^m~~Power 1245~~

Neptune J w.

48.83

48.40

0.43

Diameter. Pos. circle 260°

Power of 401. Measured considered large.

48.79

48.44

0.35

Power no 2.

This also considered too large.

Observer not satisfied with either measure.

Pomona, measurements of $\alpha = \Delta \alpha \cos \delta$

7.09	32.45	Asteroid 1	41.59	41.24	12.7 ^m
11.17	39.54	W XXIII 418	49.04	48.92	76 ^m
	50.715	Asteroid 2	59.90	59.82	

26

A

Chronom. sid. t. (27)

39.09 Asteroid 1
47.75 W XXIII 418
 8.66

0^h 10^m 10^s

J.W.

Reading for transits 170° 20'

IIIIII Comparisons of Pomona & W XXIII 418 over
 on chronograph one wire

Best two comparisons not very good

Clock sid. time of transits.

Pomona		W XXIII 418	$\Delta \alpha$
0	13 47.4	0 13 52.8	- 5.4
	14 6.5	14 11.6	[5.1]
	14 37.9	14 43.7	5.8
	14 55.7	15 1.1	5.4
	15 22.5	15 28.1	5.6
	15 45.5	15 51.3	5.8
	16 8.3	16 14.2	- 5.9
	<u>7) 403 8</u>		
	14 57.7		

28

$$9) \frac{448}{50}$$

Pomona & VV XXIII 418. $\Delta 8$

29

Rattle on Chronograph at
times of comparisons.
Clock side.

52.40	0	21	53	52.42
56	56	22	41	
45	10.16	[23	45]	
54		23	49	
42		24	26	
46		[25	0]	
59		25	34	
51		26	4	
52.55		26	29	
52.50	2.46			52.55

Coincidence 40.83

.88

.89

.91

.86

.89

.89

.87

.88

.91

40.88

8) 692

8

30

Sept 21. Friday 3^h 30^m M T

31.

GMS observer.

Measurement of screw revolution. Conditions of observation same as those of Aug 29 by J.W.

~~Therm. at observer~~

1 Coincidence with
a by + rotation

2
by - rotation

0.505

Therm. at observer

67.4

0.551

514

" in alcove of dome

65.9

550

515

564

508

547

499

548

522

554

510

549

526

549

529

550

530

550

0.516

Backlash 0.035

0.551

Coincidence with b

3

4

25.528

25.584

530

580

530

593

521

579

522

593

523

590

590

32

25.521
528
534
25.526

Backlash 0.063
Coincidence with c

25.586
587
590
25.587

50.532
540
522
532
530
532
530
537
540
528

Therm. at obs. 69.0

50.586
570
562
576
580
568
580
574
582
584

50.532

Backlash 0.044

50.576

Coinc with a ~~Coinc with a~~ Coinc with b

with c

5.537
542
543
546
540
5.588
587
592
580
594

30.545
550
549
551
560
610
612
612
600
620

55.560
552
563
550
558
609
604
599
600
614

5.542 5.588

30.551 30.611

55.557 55.605

34

70

Therm. at observer
Coinc with c with b 72.0

with a

(35)

rot. +	-	+	-	+	-
- 60.527	579	35.529	583	10.508	565
525	582	504	582	521	562
539	576	517	582	494	570
534	572	517	580	510	569
522	580	506	588	510	576
60.529	60.578	35.515	583	10.509	568

Therm at observer 72.7

with a

with b

with c

15.360	418	40.370	445	65.381	442
342	421	379	432	382	432
361	430	370	435	382	433
371	429	380	441	371	429
356	432	368	452	378	428
15.358	426	40.373	441	65.379	433

Therm at observer 73.2

with c

with b

with a

70.395	429	45.377	449	20.369	439
390	432	374	448	368	423
395	442	364	439	369	421
387	441	375	446	369	432
396	439	378	451	376	422
70.393	437	45.374	447	20.370	427

36

70

Therm. at observer 73.2

(37)

Cone.
with a

b

c

rot. +	-	+	-	+	-
25.476	537	50.480	540	75.512	75.537
480	530	490	534	498	519
469	541	500	537	505	550
482	531	492	548	511	532
472	546	498	557	510	530
25.476	537	50.492	543	75.507	534

Therm at observer 73.4

c

b

a

80.512	540	55.495	560	30.481	543
508	540	506	560	470	550
520	549	500	550	470	550
518	542	498	563	485	558
520	533	502	566	490	538
80.516	541	55.500	560	30.479	548

Therm at observer 73.3

a

b

c

35.258	331	60.271	337	85.290	313
261	322	272	322	290	330
258	330	288	341	291	327
260	340	279	331	290	334
258	338	285	338	297	322
35.259	332	60.279	334	85.292	325

38

Oct. 12. 1876. 12. 1876. 12. 1876.

$\Delta + 11^{\text{h}} 45^{\text{m}} 12^{\text{s}}$ 1876.
 - 17^s. 36 Sept 6.4 W.A.R.
 - 16. 11 " 9.4 J.F.

Therm at observer 73.3

39

c		b		a	
90.341	350	65.319	376	40.302	367
330	360	310	368	310	367
330	361	318	370	295	363
345	368	315	360	290	370
340	365	312	365	293	371
90.337	.361	65.315	.368	40.298	.368

Therm at observer 73.2

a		b		c	
45.422	478	70.450	478	95.440	468
410	490	439	484	442	480
410	480	439	480	451	464
403	490	433	472	461	461
401	472	440	474	450	461
45.409	.482	70.440	.478	95.449	.467

Therm at observer 73.1

c		b		a	
100.544	541	75.516	548	50.486	547
548	541	515	545	483	536
531	551	515	548	480	536
530	530	530	538	493	540
536	550	530	550	491	553
100.538	.543	75.521	.546	50.487	.542

Therm at observer 73.0

Chronometer " in alcove 70.8

Time 5 35

40

Mean distance	ab	by + rotation	by - rotation
		25.018	25.013
"	bc	by + rotation	by - rotation
		25.014	24.991

Distance ab

+ rotation

$$25.526 - 0.516 = 25.010$$

$$30.551 - 5.542 = 25.009$$

$$35.515 - 10.509 = 25.006$$

$$40.373 - 15.358 = 25.015$$

$$45.374 - 20.370 = 25.004$$

$$50.492 - 25.476 = 25.016$$

$$55.500 - 30.479 = 25.021$$

$$60.279 - 35.259 = 25.020$$

$$65.315 - 40.298 = 25.017$$

$$70.440 - 45.409 = 25.031$$

$$75.521 - 50.487 = 25.034$$

- rotation

$$25.587 - 0.551 = 25.036$$

$$30.611 - 5.588 = 25.023$$

$$35.583 - 10.568 = 25.015$$

$$40.441 - 15.426 = 25.015$$

$$45.447 - 20.427 = 25.020$$

$$50.543 - 25.537 = 25.006$$

$$55.560 - 30.548 = 25.012$$

$$60.334 - 35.332 = 25.002$$

$$65.368 - 40.368 = 25.000$$

$$70.478 - 45.482 = 24.996$$

$$75.546 - 50.542 = 25.004$$

Distance bc

$$50.532 - 25.524 = 25.008$$

$$55.557 - 30.551 = 25.006$$

$$60.529 - 35.515 = 25.014$$

$$65.379 - 40.373 = 25.006$$

$$70.393 - 45.374 = 25.019$$

$$75.507 - 50.492 = 25.015$$

$$80.516 - 55.500 = 25.016$$

$$85.292 - 60.279 = 25.013$$

$$90.337 - 65.315 = 25.022$$

$$95.449 - 70.440 = 25.009$$

$$100.538 - 75.521 = 25.017$$

$$50.576 - 25.587 = 24.989$$

$$55.605 - 30.611 = 24.994$$

$$60.578 - 35.583 = 24.995$$

$$65.433 - 40.441 = 24.992$$

$$70.437 - 45.447 = 24.990$$

$$75.534 - 50.543 = 24.991$$

$$80.541 - 55.560 = 24.981$$

$$85.325 - 60.334 = 24.991$$

$$90.361 - 65.368 = 24.993$$

$$95.467 - 70.478 = 24.989$$

$$100.543 - 75.546 = 24.997$$

42

(43)
MeanBacklash
obsno on a

b

c

0 ^{rev}	0.035			0.035
5	0.046			0.046
10	0.059			0.059
15	0.068			0.068
20	0.057			0.057
25	0.061	0.061		0.061
30	0.069	0.060		0.064
35	0.073	0.068		0.070
40	0.070	0.068		0.069
45	0.073	0.073		0.073
50	0.045	0.051	0.044	0.047
55		0.060	0.048	0.054
60		0.055	0.049	0.052
65		0.053	0.054	0.054
70		0.038	0.044	0.041
75		0.025	0.027	0.026
80			0.025	0.025
85			0.033	0.033
90			0.024	0.024
95			0.018	0.018
100			0.005	0.005

44

Sept 22 Saturday

45

Telescope ~~E. of mer~~ reversed.

circle follows.

Vernier II reads $90 - 8$ with no correction, from
Obsns. of W XXIII 310 for zero point of setting
position circle.

260 45

30.

21^h 15^m

W XXIII
320 23 27.

W XXIII 310 & Pomona.

11 Transits over 2 wires

J W. " over 3 wires (micrometer wire
Obs. between the other two.

Reading for transits $170^{\circ} 30'$

Planet very faint. Moon quite near.

	W	XXIII	310	Pomona	$\Delta \alpha$
Wire 1	21	20	20.0	21 21 10.0	50.0
2		20	36.3	21 26.1	49.8
	21	21	55.5	22 45.4	49.9
		22	12.4	23 2.9	50.5
Wire 1	24	7.3		24 57.2	49.9
2	24	15.8		25 5.2	49.4
3	24	23.9		25 13.7	49.8

46

21	25	38.7	21	26	29.0	50.3
	25	47.0		26	37.5	50.5
	25	55.1		26	45.4	50.3
	28	6.7		28	56.6	49.9
	28	14.9		29	4.7	49.8
	28	23.0		29	12.6	49.6

Mean

21 25 27
Clock sid t.+ 49^s.98
 $\Delta \alpha$

Observations necessarily rather
rough, owing to faintness of
planet. $\Delta \delta$

58.00

63.24

5.24

58.05

63.07

5.02

58.17

63.40

5.23

58.22

63.03

4.81

Corr. to Chron. - 0^m.5
Chron. sid. t. - 27.55

21^h. 39Planet
N of star.

42

44.5

47.0

(47)

48

58.35

63.42

5.07

Mean + 5.07

21 50.7

49

21^h 44^m.6
Chron. sid. t

Time	22 ^h 35 ^m	22 ^h 38 ^m	22 ^h 45 ^m
Northern	77.37	76.11	83.27
Middle	85.99	84.60	91.86
Southern	98.18	96.47	104.02
Coincidence	61.42	60.00	67.20
on W.O. 361			

Panopaea

22^h 54^m83.25 - asteroid
83.15 - asteroid
82.9366.65 = coincidence
63
62
66.63

22 56

56 30

57

82.98
82.90
82.88
83.10
82.81
24.00
83.00

Planet S. of star.

22^h 55^m
Chron. sid. t-16.37
Δ8

- Seeing too bad to observe anything else.
Images excessively indistinct.

50

Transits of

51

W	O	361	Panopaea	$\Delta \alpha$
22	22	46.3	23 21.5	35.2
	23	3.4	23 38.2	34.8
	24	7.1	24 41.7	34.6
	24	23.8	24 57.2	[33.4]
	25	19.8	25 55.0	35.2
	25	36.9	26 11.8	34.9
	26	41.7	27 16.7	35.0
	26	57.8	27 33.7	35.9
	27	57.2	28 32.2	35.0
	28	14.0	28 48.8	34.8
	29	20.7	29 55.0	34.3
	29	37.5	30 12.3	34.8
	30	42.5	31 17.5	35.0
	30	58.4	31 34.0	35.6

22^h 27^m + 35.01
Clock sid. t.

No check on chronograph, making the
time uncertain. The seconds given above
are arbitrary.



52

1866 Sept 23 Sunday

Set on Jupiter but found the seeing even worse than last night.

Sept 27 Thursday

δ Equulei

Could not be sure of ~~delta~~ elongation of principal star.

J W 8 9 M S

20^h 35^m vernier II reads $199^{\circ} 31'$ when star Chron. set. it. is on centre of field.

Chronometer
time.

20 43

β Aquilae

vernier II reads $196^{\circ} 7' 24''$

J W
334 12

GMS
329 53

53.44

Coinc.
52.34

336 10

331 0

48

34

333 7

333 15 best

44

31

330 50

331 45

51

29

334 45

331 32 good

55

31

51

54



~~Dawes' b~~

II III 16

α 20^h 24^m. 8 $\delta = +10^{\circ} 49$ 1867

BC. discovered by Dawes Ast. Soc. Notices
Vol. V. p. 61.

Jw

333° 45

327 0

Seen several times distinctly
separated; but only at rare
intervals. J. W.

GMS

322

320

Schjellerup AN LXII 333

Jw

No. 32.

268 35

269 28

267 30

266 30

267 15

266 35

Observer thought he saw a
faint star between the two,
but could not afterwards assure
himself of it.

56

(57)

~~51.36~~
~~50.69 0.67~~

51.04

50.54 0.50

50.78

50.25 0.53

22^h 20^m

50.64

50.065

0.575

50.58

50.06

0.52

SMS

49.83

80

82

83

49.82

Coinc.

50.44

44

40

45

42

50.43

0.61

22^h 30^m

58

Otto Struve Ast. Soc. Notices Vol XX p 12
 No 536

Jw
 60° or 70°
 SMS
 61°

~~X~~ ~~z~~ ~~ac~~ 57.98
 57.64
~~X~~ ~~z~~ = ab + 0.34
 Xy Position = 334° 28'
 Zy = 34° 8'

Pomona.

First declination	11 ^h 32 ^m 30 ^s	24. 70
Fordham	Coincid. by my rotation	24. 75
		24. 74
* Hulse XXIII 248	3 4 ^m 10 ^s	24. 60
	3 5 ^m 0 ^s	24. 69
	3 5 ^m 55 ^s	24. 78
	3 6 ^m 25 ^s	24. 76
		<u>24. 76</u>
Coincidence	85. 14	50 2
	85. 13	24. 717
	85. 13	85. 133
	det. north of *	<u>60. 416</u>

60

IV 0 884 & Ausonia

Planet N of star ⁶¹

Coinc. by neg. rotation.

42.17

75.88

.02

.87

.17

.85

.26

mean

42.15

75.87

One transit over two wires

Two " " Three "

γ Andromedae

L. W.

Components of Companion

218° 8'

G. M. S

243° 13'

Images seen distinct by L. W. & G. M. S.
but not at the time of measurement.

36 Andromedae

L. W.

356 30

359 30

359 5

358 35

357 30

354 15

Stars steady and observation
satisfactory

2 h 30 m

62

79
99

Wires not placed on stars

9116 } 85-
98

52.185-
99
187
196

ϵ Arctis

Saturation easily, however
400 - 10.4

2^h 24^m

S. M. S.

330° 0'
328° 48'
332° 0'
330° 40'
328° 34'
329° 13'
179 15-
29

dist-

54.20)
54.27)
54.18)
54.29)
54.18)
54.20)
54.17)
54.24)

2^h 50^m

64

Sept 28 Friday

(65)

Comparison of Sid. Clock & Chron. 236

Clock			Chron.		
21	39	20	21	39	36.5
		34			50.4
	40	3			19.4

$$\text{Clock} - \text{Chron.} = -16^s.47$$

Occultation of α Tauri.

Observed with S.M.S. telescope.

	Observer	S.M.S.		Red. to Clock
	Chron.	time.		time
Immersion	22 ^h	6 ^m 57.8	22 6	35.25
Emersion	22	59 57.2	22 59	40.49

$$\begin{aligned} \text{Imm.} \quad \text{Clock} - \text{Chron.} &= -16^s.55 \\ \text{Em.} \quad \text{"} \quad \text{"} \quad \text{"} &= -16.71 \end{aligned}$$

66

Jw. at Equatorial

67

Immersion 22 6 35.3
 22 59 40.9
~~clock~~

Clock

Chron.

	~~5~~	~~0~~		~~5~~	~~15.6~~
23	5	50		6	~~15.6~~
	6	30	23	6	6.6
				6	46.6
23	6	50	23	7	6.7

Clock - Chron. = - 16.63

	Clock	Chron.	Clock - Chron.
	23 16 53.3	23 17 10	-16.7
	58.3	15	-16.7
Observed	17 3.2	20	-16.8
on	8.1	25	-16.9
Chronograph	13.2	30	-16.8
	18.2	35	-16.8
	23.3	40	-16.7
			<u>-16.77</u>

$$\begin{array}{r}
 45 - 5.9 \\
 10.4 - 20.1 \\
 30.5 - 5.5 \\
 36.0
 \end{array}$$

$$\begin{array}{r}
 45 \quad 4 \\
 18.0 \\
 \hline
 32.6
 \end{array}$$

Region of Nysa.

(69)

W 1,504

c

a

b

$\Delta \alpha$ W 1504 $\alpha = 30^{\circ} 2$

M.T. 11 45

c	^s 2.5	^s 7.2	^s 4.5
b	8.2	13.5	10.5
W 1504	15.5	20.8	17.7

70

Jw. Comparison of Ausonia & W 0 884
Planet precedes.

Transits over one wire.

Observed on chronograph.

		Coinc.
	44.46	58.425
	44.50	45
	44.58	48
	44.46	40
Planet North of	44.50	48
star	44.49	.45
		.435

Long rattle.

Two transits of W 1 504 ? & 540 over
three wires. Star a also observed on
second transit.

72

Search for Gench ^{distance} Star Sept 30 1866 (3)
Sunday

Δx

* X ~~from~~ line a
2 moments were 99.72
Coincid with line 92.80

20^h 42^m sid time

line a on X

mic. on following #3 60.64

20^h 46^m

mic. on preceding #2 57.41

mic. on #1 44.11

Coinciding 41.93

star following y which is a little nearer in
mic. the computed place called Z

coincidence 63^r 33

20^h 48^m

Z 89.82

diff between y & Z 26^r 49

Star following Z north of it Z is north of y
Z about same dec. as X

reading -61 33

21^h 44

Coinc. 37 14

24.19

74

1866phae.proj...289W

75
 δ Equulei showed a round and tolerably
steady disk ^{with rings.} under a power of 2000.
w 8 S.

Turned on β Andromedae w 8 S
Not quite bright enough for a power of 2000
though direction could be measured with that.
Haze too thick.

Beautifully distinct and steady with a power
of 1600. 2000 tried again.

With power of 400, a star of one third the
distance could be elongated.

γ Andromedae
Power of 400. J w 8 S MS
Companion elongated. Seeing not so
good as before. Stars less steady.

76

W
251 30

Power of 400
Components of companion.

77

Power of 1500

251 0

247 45

G M S could not measure the direction,
not being sure enough of it.

Σ 3062

J W
256 45

257 50

256 50

G. M. S. W

254° 10' $\frac{1}{2}$

253.30' better

252 10 $\frac{1}{2}$

251 26

best

list

49.59

49.59

.58

49.59

49.49

49.49

49.49

come

2 3^h 5^m

G. M. S. Limits

258 55 greatest
hostile

251 10

The means of these ^{above} _{below}
to be trusted than all
The best put together
misses not places on the stars

by + rotation.

78

$$\begin{array}{r}
 J \ w \\
 49.63 \\
 \underline{50} \\
 0.13
 \end{array}$$

$$\begin{array}{r}
 \text{Coinc.} \\
 \text{wire placed on one side} \quad .51 \\
 \text{" " the other " } \quad .42 \\
 \hline
 .465
 \end{array}$$

X 79

$$\begin{array}{r}
 \text{Coinc.} \\
 .485 \\
 .47 \\
 \hline
 \text{mean } 48
 \end{array}$$

$$\begin{array}{r}
 \text{wires on stars} \\
 .585 \\
 .48 \\
 \hline
 0.105
 \end{array}
 \begin{array}{l}
 \text{wires on stars} \\
 \text{coincidence}
 \end{array}$$

~~28~~

$$\Sigma \quad 3037$$

$$\begin{array}{r}
 \text{G.M.S.} \\
 1 \ 318^{\circ} \ 10' \\
 2 \ 316 \ 43 \\
 3 \ 314 \ 14
 \end{array}$$

2 & 3 Comets only visible by glim / sec

Companion too faint to measure its distance.

80

4''
24

Oct 1 1866 Monday
 This is G. M. Seale. Obs.

739 Bradshaw

Time	$\Delta\delta$
20 ^h 42 ^m	~~50.77~~
	50.77
	.85-
38 ^m 30 ^s	.81
	.87
	.94 ⁹
	.76
43 30	75-
	82
	<u>50.82</u>

come.

$$\Delta\alpha \cos\delta = -0.49$$

Asteroid

51.30
 51.32
51.31
 51.31

S. P.

Time	$\Delta\delta$	Time	$\Delta\alpha$
20 46 ^m	43.98	21 8 45	50.06
	1.94	9 25	49.99
47 ^m	95-	9 50	50.02
47 45	44.03	10 17	50.01
48 10	44.00	17	50.03
48 44	43.96		<u>50.02</u>
	<u>43.98</u>		

$$\Delta\delta = -5.93$$

Time	$\Delta\delta$	Time	$\Delta\alpha$
21 3 ^m 8 ^s	44.70	21 8 45	50.06
3 30	.63	9 25	49.99
47	44.70	9 50	50.02
4 00	44.71	10 17	50.01
20	.76	17	50.03
50	70		<u>50.02</u>
	<u>44.70</u>		

Set S. P.

$$\Delta\delta = -5.82$$

$$\Delta\alpha \cos\delta = +0.79$$

82

1866phae.proj. 289w

Star α of last night is (89) GMS obs. (83)
11 Transits of (89) and α' over two wires.

44.38

$\Delta 8$

.33

.33

.28

Rattle on chronograph at
times of comparisons.

Reading $170^{\circ} 30'$. stars run
well on wires.

No coincidence !

11 Transits of (89) and α' over two wires,

1 Transits of α α' 544 (89) & α' over
two wires. J. W. obs.

Turned on Otto Struve's 536 and
36 Andromedae but found the seeing
not good enough for high powers. 536 not
certainly elongated.

~~Smoke from brick kiln seems to make
the air unsteady.~~

84

Comparison of W 0 227 and Panopaea. J. W. ⁸⁵
 $\Delta \delta$ Coincidence

59 5
 0 10
 30

51.88

91

89

mean 51.89

~~39.29~~

39.37

34

36

39.36

Planet S.P. off star.

 $\Delta \alpha \cos \delta$

1 7 40

44.97

9 5

.88

10 30

45.05

11 30

45.14

12 30

44.97

coinc.
 same as
 before.

Planet
 very faint

13 50

 $\Delta \delta$
 51.86

15 10

.80

15 30

.81

15 50

85

51.83

coincidence
 same as
 before

86

(87)

			$\Delta \alpha \cos \delta$	
1	17	0	45.50	
	18	40	45.41	
	20	0	45.68	
	20	50	45.93	Corner same as before
	21	45	45.52	39.32
	23	0	45.75	.34
	23	30	45.67	.32
	23	45	45.89	.33
	24	20	45.85	.33
				<u>33</u>
				39.33 mean

Search for nysa

Sid Time	$\Delta \alpha$	com.e.
1 48 ^m	39 23	35.04
	39 20	35.05

Turned on the region of W 504 star
 supposed to be W 504 on night of Sept 28
 found to have disappeared, and must
 have been the Asteroid no other greater than
 12^{mag} within 4' of the place in a circle
 of 5' about the place of the star

88

Search for Myra resumed

(89)

2^h 7^m 30 36 10 time
31 68

Returned to place of Mase 504
satisfied that the above statement is so
far correct that 13th may may be
substituted for 12th

2^h 22^m 29 90 25-69

Error in Ephemeris detected and
asteroid found but not observed.

90

Oct 2: Tuesday

91

Arg. Durch. ~
 follows W 1420 $1^m 35^s$, $4'$ N of it.
 $\Delta \delta$

} and Nysa.

Comparison star on wire *a*.
 by chronometer

Planet South.

1	5	0	46.61
		40	66
	6	10	$\frac{1}{2}$ wt. 55
		35	61
			<u>46.62</u>

asteroid very faint in
 this comp.
 distinct

Coincidence with *c* 55.41

.38

.36

.39

55.38

$$\Delta \delta = ac - 8.76$$

Planet
 follows.

1 12 50

14 20

15 0

15 35

15 50

16 0

 $\Delta \alpha \cos \delta$
 28.68

67

74

63

64

70

28.68

Coing.
 with *b*.
 fixed wire not
 altered.

30.27

.285

.29

30.28

92

Oct 2 Tuesday

93

G. M. S. Observer

36. Andromedae, home 400, Seeing indifferent

3⁰ 43^m1 14^m

2 13

35⁹ 463 51[']2 44[']1^h 37^m Sid Time

good seeing, measuring good,

- Distance

56.87

56.89 Seeing good

56.87

56.74

56.77 come.

56.77

78

78

1877 ~~10~~ April 19. This book indexed,
except for double stars.

