KG
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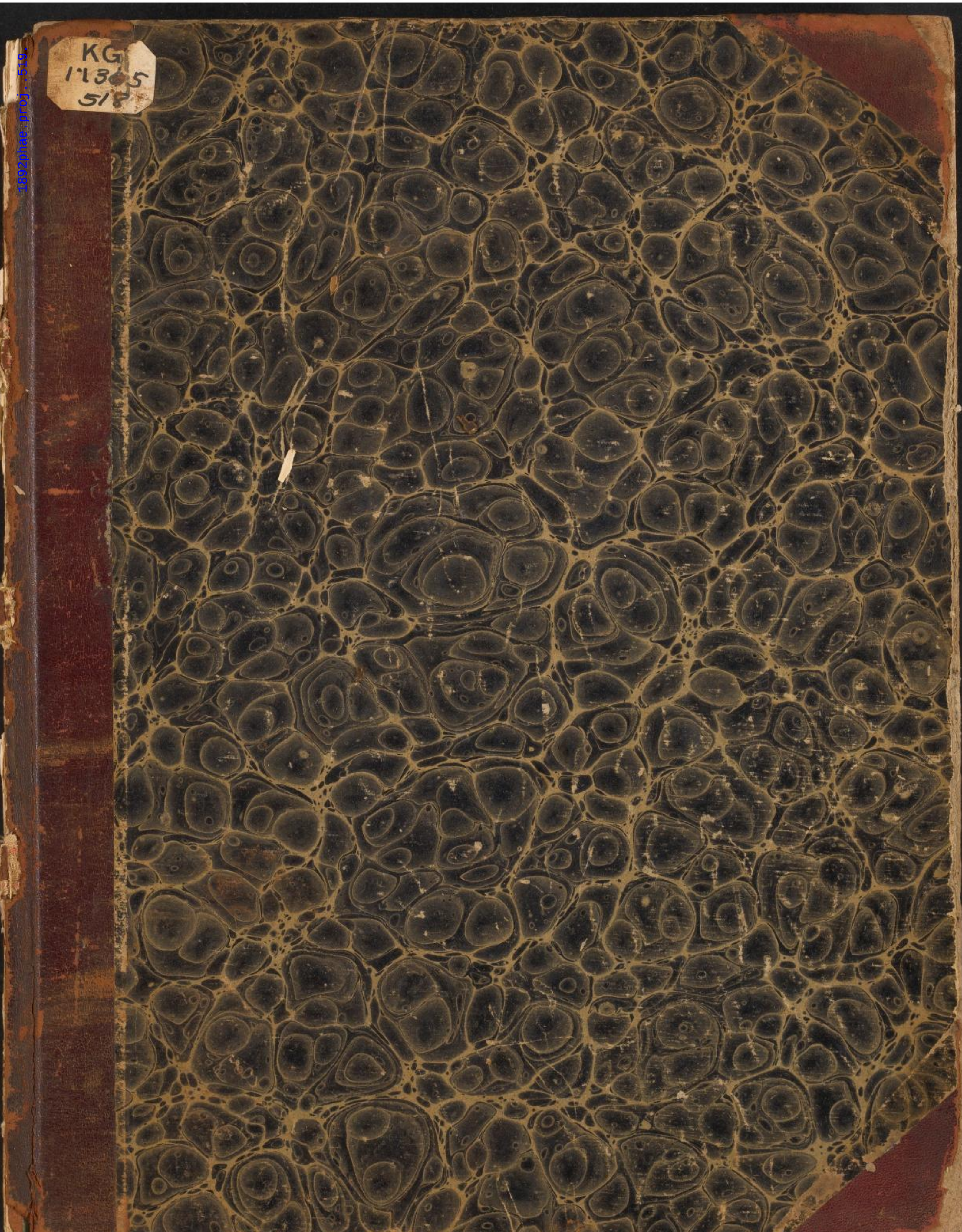

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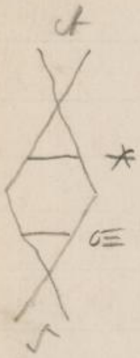
New Comet disc'd by Holmes.

2d Obs. of Nov. 8. 1892.



☄	*		
5 1 32.2	3 38.4		
2 10.0	4 23.5		
3 42.2	8 1.9	4 19.7	2 9.85
7 42.7	9 50.0		
8 21.5	10 35.5		
16 4.2	20 25.5	4 21.3	2 10.65
11 19.8	13 26.5		
11 57.5	14 11.1		
23 17.3	27 37.6	4 20.3	2 10.15
16 27.8	18 34.6		
17 5.5	19 19.1		
33 33.3	37 53.7	4 20.4	2 10.20
20 59.1	23 6.0		
21 36.0	23 50.0		
42 35.1	46 56.0	4 20.9	2 10.45
			51.30
			2 10.26

5^h 11^m 55.2^s = Mean of ☄ times.

+2 20.8^s = Chr. cor.

5 14 16.0^s = Cor. time of mean.

15 13 18.9^s = Sid time Camb. mean noon.

14 0 57.1^s =

−2 17.8^s = Sid. Equivalent.

13 58 39.3^s C. M. T. obs.

Δ ☉	Δ *	
37.8 ✓	45.1 ✓	82.9 ✓
38.8 ✓	45.5 ✓	84.3 ✓
37.7 ✓	44.6 ✓	82.3 ✓
37.7 ✓	44.5 ✓	82.2 ✓
36.9 ✓	44.0 ✓	80.9 ✓
		82.52 ✓

+38 29 18.6
−3 20.8
+38 25 57.8

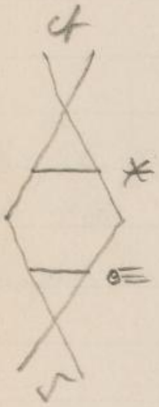
82.52 = +1.91656 ✓
75 = +0.87506 ✓
cos δ. = +9.89361
484.4 = +2.68523
886.0
2/401.6
200.8

+1.91656 ✓
+0.87506 ✓
+9.89395 ✓
+2.68557 ✓ = 484.8 ✓
886.0 ✓
401.2 ✓
−6 41.2 ✓

Comet Holmes.
2d obs. of Nov. 8. 1892.

App. pl. ✱ =	0	48	21.99 ✓	+38	29	18.6 ✓
☄ − ✱ =		−2	10.26 ✓		−6	41.2 ✓
App. pl. ☄ =	0	46	11.73 ✓	+38	22	37.4 ✓

New Comet Holmes.
1st Obs. of Nov. 8. 1892.



	☄		*					
0	27	19.5	29	16.6				
	28	0.0	30	9.7				
	55	19.5 ✓	59	26.3 ✓	4	6.8 ✓	2	3.40 ✓
	30	39.2	32	35.6				
	31	19.5	33	28.7				
	61	58.7 ✓	66	4.3 ✓	4	5.6 ✓	2	2.80 ✓
	33	54.6	35	51.7				
	34	35.5	36	45.0				
	68	30.1 ✓	72	36.7 ✓	4	6.6 ✓	2	3.30 ✓
	37	10.5	39	7.5				
	37	50.8	40	0.5				
	75	1.3 ✓	79	8.0 ✓	4	6.7 ✓	2	3.35 ✓
							−2.	3.21 ✓

0	32	36.4 ✓	
	+2	20.8 ✓	Chr. cor.
0	34	57.2 ✓	
15	13	18.9 ✓	
9	21	38.3 ✓	
	−1	32.0 ✓	
9	20	6.3 ✓	C. M. T.

Δ☾	Δ*	
40.5 ✓	53.1 ✓	93.6 ✓
40.3 ✓	53.1 ✓	93.4 ✓
40.9 ✓	53.3 ✓	94.2 ✓
40.3 ✓	53.0 ✓	93.3 ✓
		93.62 ✓

+38 29 19.
−2 49.
+38 26 30.

93.62 = +1.97137
7.5 = +0.87506
Cos δ = +9.89361
549.6 = +2.74004
486.0
2/336.4
168.2 = −2 48.2

+1.97137 ✓
+0.87506 ✓
+9.89390 ✓
+2.74033 = 550.0 ✓
486.0 ✓
336.0
− 5′ 36.″0 ✓

+3.273
+19.7

(1859)
67 yrs.

Comet Holmes.
Obs. of Nov. 8. 1892.

Comp.-Star = D.M. + 38° 136 (8.0 K)
" " = W. Bessel. 0h 1193.

	0	44	38.98	+38	6	56.8	(1825)
		+1	49.65		+10	59.9	
mid pl.	0	46	28.63	+38	17	56.7	

11° 37′ 9.″

Log $\frac{u}{v}$ = +0.12611
" sin t = +9.30807
" tan δ = +9.49788
+0.2126 = +9.32766
+3.07084 =
+3.28348 = +0.51632
67. = +1.82607
219.98 = +2.34239

log u +1.30220
+9.99101
67. = +1.82607
1316.1 = +3.11928
+21′ 56.″1

	0	44	38.98	+38	6	56.8
		+3	39.98		+21	56.1
* 1892.0	0	48	18.96	+38	28	52.9
			+3.03			+25.7
Ap. pl. *	0	48	21.99	+38	29	18.6
☄ − *		−2	3.21		−5	36.0
Ap. pl. ☄ =	0	46	18.78	+38	23	42.6

f = +1.933

G = 22 1.5

H = 2 41.0

Log g' = +1.1622

" h = +1.2942

" i' = +0.7418

22 1.5
0 48.3
22 49.8
(G+t)

2 41.0
0 48.3
3 29.3
(H+t)

Log 1/15 = +8.8239

" g = +1.1622

" sin(G+t) = −9.4793

" tan δ = +9.9004

−0.232 = −9.3658

" 1/15 = +8.8239

" h = +1.2942

" sin(H+t) = +9.8984

" sec δ = +0.1064

+1.327 = +0.1229

+1.933

+3.260

−0.232

+3.028

Log g = +1.1622

" cos(G+t) = +9.9793

+13.85 +1.1415

" h = +1.2942

" cos(H+t) = +9.7861

" sin δ = +9.7940

+7.49 +0.8743

" i' = +0.7418

" cos δ = +9.8936

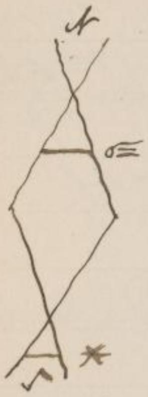
+4.32 = +0.6354

13.85

7.49

+25.66

Comet Holmes.
Obs. of Nov. 10. 1892



☄	✱		
4h 28m 42.5s ✓	30 38.8 ✓		
29 20.0 ✓	30 57.8 ✓		
58 2.5 ✓	61 36.6	3m 34.1 ✓	1m 47.05 ✓
32 2.0 ✓	33 58.0 ✓		
32 38.1 ✓	34 16.1 ✓		
64 40.1 ✓	68 14.1	3 34.0 ✓	1 47.00 ✓
35 6.0 ✓	37 2.0 ✓		
35 43.2 ✓	37 20.2 ✓		
70 49.2 ✓	74 22.2	3 33.0 ✓	1 46.50 ✓
38 8.2 ✓	40 4.5 ✓		
38 44.5 ✓	40 22.4 ✓		
76 52.7 ✓	80 26.9	3 34.2 ✓	1 47.10 ✓
49 40.0 ✓	51 36.0 ✓		
50 15.0 ✓	51 52.4 ✓		
99 55.0 ✓	103 28.4	3 33.4 ✓	1 46.70 ✓
			−1 46.87 ✓

4 37 1.95 ✓

+1 52.2 ✓

4 38 54.2 ✓

15 21 12.0 ✓

13 17 42.2 ✓

−2 10.7 ✓

13 15 31.5 ✓ C. M. T. hs.

Δ o≡	Δ ★	− o≡ + ★
37.5 ✓	19.0 ✓	−18.5 ✓
36.1 ✓	18.1 ✓	−18.0 ✓
37.2 ✓	18.2 ✓	−19.0 ✓
36.3 ✓	17.9 ✓	−18.4 ✓
35.0 ✓	16.4 ✓	−18.6 ✓
		−18.50 ✓

+37 58 16.8
+6 28.3
+38 4 45.1

−18.50 = n1.26717 ✓
7.5 = +0.87506 ✓
cos δ = +9.89670 ✓
−109.4 = n2.03893 ✓
886.0
2/776.6
388.3 ✓

n1.26717 ✓
+0.87506 ✓
+9.89606 ✓
n2.03829 ✓ −109.2
886.0
776.8
+.12 56.8 ✓

+3.256
+19.72

(92 yrs. / 46 ")

Comet Holmes.
Obs. of Nov. 10. 1892.

Comp. Star = Dm. +37° 459 (6.7 L)
$0^h\ 44^m\ 55^s.8$ +37° 46.0'
Comp. Star = Lalande 1443.

0	41	55.43	+37°	27'	40.3"	(1800)
	+2	29.78		+15	7.1	
0	44	25.21	+37	42	47.4	
11°	6'	18"				

Log m/15 +0.12613
" sin t +9.28467
" tan δ +9.88832
+0.1991 = +9.29912
+3.0705
+3.2696 = +0.51449
92. = +1.96379
+300.80 = +2.47828

Log n = +1.30223
" cos t = +9.99179
" 92 = +1.96379
+1810.5" = +3.25781

	0^h	41^m	$55^s.43$	+37°	27'	40.3"
		5	0.80		+30	10.5
* 1892 =	0	46	56.23	+37	57	50.8
			+3.01			+26.0
App. pl. * =	0	46	59.24	+37	58	16.8
☄ − * =		−1	46.87		+12	56.8
App. pl. ☄ =	0	45	12.37	+38	11	13.6

$f = +1.961$ ✓
$G = 22\ \ 2.4$ ✓
$H = 2\ \ 33.1$ ✓
Log $g = +1.1672$ ✓
" $h = +1.2955$ ✓
" $i = +0.7247$ ✓

$G = 22\ \ 2.4$ ✓
$\underline{\ \ \ 0\ \ 46.9}$ ✓
$22\ \ 49.3 = (G+\alpha)$
$(G+\alpha)$

$H = 2\ \ 33.1$ ✓
$\underline{\ \ 0\ \ 46.9}$ ✓
$3\ \ 20.0$ ✓
$(H+\alpha)$

Log $\frac{1}{15} = +8.8239$
" $g = +1.1672$
— " $\sin(G+\alpha) = -9.4823$ ✓
" $\tan\delta = \underline{+9.8922}$ ✓
$-0.232 = -9.3656$ ✓

" $\frac{1}{15} = +8.8239$
" $h = +1.2955$
— " $\sin(H+\alpha) = +9.8843$ ✓
" $\sec\delta = \underline{+0.1032}$ ✓
$+1.279 = +0.1069$ ✓
$\underline{+1.961}$ ✓
$+3.240$ ✓
$\underline{-0.232}$ ✓
$+3.008$ ✓

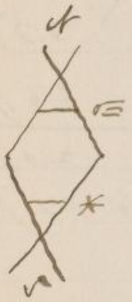
Log $g = +1.1672$
— " $\cos(G+\alpha) = \underline{+9.9790}$
$+14.00$ ✓ $+1.1462$ ✓

" $h = +1.2955$
— " $\cos(H+\alpha) = +9.8081$ ✓
" $\sin\delta = \underline{+9.7889}$ ✓
$+7.81 = +0.8925$ ✓

" $i = +0.7247$ ✓
" $\cos\delta = \underline{+9.8968}$ ✓
$+4.18$ ✓ $= +0.6215$ ✓
$+14.00$ ✓
$\underline{+7.81}$ ✓
$+25.99$ ✓

Comet Holmes.

Obs. of Nov. 11. 1892.



	☄	*		
0	24 36.9 ✓	26 55.0 ✓		
	25 18.6 ✓	27 21.7 ✓		
	49 55.5 ✓	54 16.7 ✓	4 21.2 ✓	2 10.60 ✓
	27 45.5 ✓	30 4.0 ✓		
	28 26.4 ✓	30 30.5 ✓		
	56 11.9 ✓	60 34.5 ✓	4 22.6 ✓	2 11.30 ✓
	31 59.2 ✓	34 18.2 ✓		
	32 41.4 ✓	34 44.5 ✓		
	64 40.6 ✓	69 2.7 ✓	4 22.1 ✓	2 11.05 ✓
	35 19.6 ✓	37 38.7 ✓		
	36 1.5 ✓	38 4.8 ✓		
	71 21.1 ✓	75 43.5 ✓	4 22.4 ✓	2 11.20 ✓
	39 38.0 ✓	41 57.5 ✓		
	40 20.0 ✓	42 23.3 ✓		
	79 58.0	84 20.8 ✓	4 22.8 ✓	2 11.40 ✓
				−2 11.11 ✓

0 32 12.7 ✓
+1 58.8 ✓ Chr. cor.

0 34 11.5 ✓
15 25 8.6 ✓

9 9 2.9 ✓
−1 29.9 ✓

9 7 33.0 ✓ C. M. T.

Δ ☄	Δ *	
41.7 ✓	26.7 ✓	68.4 ✓
40.9 ✓	26.5 ✓	67.4 ✓
42.2 ✓	26.3 ✓	68.5 ✓
41.9 ✓	26.1 ✓	68.0 ✓
42.0 ✓	25.8 ✓	67.8 ✓
		68.02

+37 58 17.
+4 2
+38 2 19.

68.02 = 1.83264 ✓
7.5 = 0.87506 ✓
cos δ = 9.89670 ✓
402.2 = 2.60440 ✓
886.0
2|483.8
241.9 = 4′ 1.9″

1.83264 ✓
0.87506 ✓
9.89630 ✓
2.60400 ✓ = 401.8
886.0
484.2
+8′ 4.2″

Comet Holmes.
Obs. of Nov. 11, 1892.

Comp. Star = DM. +37° 159 (6.7 L.)

★ 1892.0 =	0h	46m	56.23s ✓	+37°	57'	50.8" ✓
			+3.00 ✓			+26.1 ✓
Ap. pl. ★ =	0	46	59.23 ✓	+37	58	16.9 ✓
		−2	11.11 ✓		+8	4.2 ✓
Ap. pl. ☄ =	0	44	48.12 ✓	+38	6	21.1 ✓

Transits of suspected secondary nucleus in Comet Holmes, fol. prim. nucleus. Prim. nucleus called x and secondary nucleus, y, below.

	x	y		
1	58 28.5	58 31.5		
	59 3.5	59 12.0		
	117 32.0	117 43.5	11.5	
2	1 47.5	1 49.6		
	2 29.5	2 32.5		
	4 17.0	4 22.1	5.1	2.55
	3 14.5	3 16.5		
	3 55.5	4 1.0		
	7 10.0	7 17.5	7.5	3.75
	5 27.5	5 30.0 ~~6 10.5~~		
	6 10.5			
	~~5 30.0~~	6 13.5		
	11 38.0 ~~10 57.5~~	11 43.5 ~~12 24.0~~	5.5 ~~6.5~~	2.75
	6 48.0	6 51.0		
	7 31.5	7 35.0		
	14 19.5	14 26.0	6.5	3.25
	12 28.5	12 31.2		
	13 13.0	13 16.3		
	25 41.5	25 47.5	6.0	3.00
	15 37.0	15 39.5		
	16 23.5	16 26.6		
	32 0.5	32 6.1	5.5	2.75

Page 18
2nd Nucleus

Comet Holmes, Parallax.

Nov. 8. 1st obs.

$T_1 = 0 \quad 35.0$

R.A. $= 0 \quad 46.3$ $\qquad +38^\circ.4$

-11.3

$0.''026 \qquad 0.''57$

$8.4150 \qquad 9.7559$

$0.0139 \qquad 0.0139$

$n8.4289 \qquad +9.7698$

Nov. 8. 2nd obs.

$T_1 = 5 \quad 14.3$

R.A. $= 0 \quad 46.2$ $\qquad +38.4$

$+4 \quad 28.1$

$0.''497 \qquad 2.''97$

$9.6964 \qquad 0.4728$

$0.0139 \qquad 0.0139$

$+9.7103 \qquad 0.4867$

Nov. 10.

$T = 4 \quad 38.9$

R.A. $= 0 \quad 45.2$ $\qquad +38.2$

$+3 \quad 53.7$

$0.''459 \qquad 2.''48$

$9.6618 \qquad 0.3945$

$0.0139 \qquad 0.0139$

$+9.6757 \qquad 0.4084$

Nov. 11.

$T_1 = 0 \quad 34.2$

R.A. $= 0 \quad 44.8$ $\qquad +38^\circ.1$

-10.6

$0.''025 \qquad 0.''63$

$8.3979 \qquad 9.7993$

$0.0139 \qquad 0.0139$

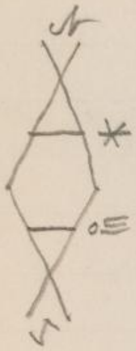
$n8.4118 \qquad +9.8132$

Comet Holmes.

Nov. 14. 1892.

☄	*
$23^h\ 25^m\ 51^s.5$	$29^m\ 26^s.5$
$26\ \ 29.5$	$29\ \ 37.0$
$52\ \ 21.0$	$59\ \ 3.5$

$6^m\ 42^s.5$ $-3^m\ 21^s.25$



$23^h\ 26^m\ 10^s.5$ mean of wires,
$+2\ \ 17.0$ Chr. cor.

$23\ \ 28\ \ 27.5$
$15\ \ 36\ \ 58.2$

$7\ \ 51\ \ 29.3$
$-1\ \ 17.2$

$7\ \ 50\ \ 12.1$ C. M. T. obs.

Δ ☄ Δ ✱

38.0^s 10.5^s 48.5

+37 58 17.
−4 59.
~~−2 23~~

~~+37 55 54.~~
+37 53 18.

48.5 = +1.68574
75 = +0.87506
cos δ = +9.89670
~~2/~~286.7 = 2.45750
~~143.4~~

286.7
886.0
2/599.3
299.6

+1.68574
+0.87506
+9.89725
~~+9.89694~~
~~+2.45777 = 286.9~~
~~4' 46.9"~~

+2.45805 = 287.1
886.0
598.9
−9' 58.9"

Nov. 14. 1892,
Comet Holmes.

Obs. of Nov. 14. 1892.

Comp. Star = Dur. +37° 159 (6.7 L) (Sep. 16)

* 1892.0 =	0	46	56.23	+37	57	50.8
Red. to Ap. Pl. =			+2.96			+26.5
Ap. pl. * =	0	46	59.19	+37	58	17.3
		−3	21.25		−9 ~~4~~	58.9 ~~46.9~~
Ap. pl. ☄ =	0	43	37.94	~~+37~~	~~53~~	~~30.4~~
				+37	48	18.4

$f = +1.986$
$G = 22\ \ 3.0$
$H = 2\ \ 17.3$
$\text{Log}\ g = +1.1722$
$\text{"}\ h = +1.2980$
$\text{"}\ i = +0.6865$

$$\begin{array}{rr} 22 & 3.0 \\ 0 & 46.9 \\ \hline 22 & 49.9 \end{array}$$
$(G+\alpha)$

$$\begin{array}{rr} 2 & 17.3 \\ 0 & 46.9 \\ \hline 3 & 4.2 \end{array}$$
$(H+\alpha)$

$\text{Log}\ \frac{1}{15} = +8.8239$
$\text{"}\ g = +1.1722$
$\text{"}\ \sin(G+\alpha) = -9.4787$
$\text{"}\ \tan\delta = +9.8923$
$-0.233 = -9.3671$

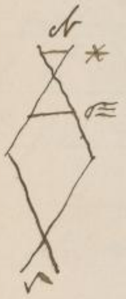
$\text{"}\ \frac{1}{15} = +8.8239$
$\text{"}\ h = +1.2980$
$\text{"}\ \sin(H+\alpha) = +9.8573$
$\text{"}\ \sec\delta = +0.1033$
$+1.209 = +0.0825$
$+1.986$
$+3.195$
-0.233
$+2.962$ Cor. in α

$\text{Log}\ g = +1.1722$
$\text{"}\ \cos(G+\alpha) = +9.9793$
$+14.17 = +1.1515$

$\text{"}\ h = +1.2980$
$\text{"}\ \cos(H+\alpha) = +9.8414$
$\text{"}\ \sin\delta = +9.7890$
$+8.48 = +0.9284$

$\text{"}\ i = +0.6865$
$\text{"}\ \cos\delta = +9.8967$
$+3.83 = +0.5832$
14.17
8.48
26.48 Cor. in δ

Comet Holmes.
Obs. of Nov. 16. 1892.



	☄		*					
6	32	43.5 ✓	33	27.0 ✓				
	33	1.0 ✓	33	45.4 ✓				
	65	44.5	67	12.4	1^{m}	$27^{s}.9$	0^{m}	43.95 ✓
	35	3.0 ✓	35	46.0 ✓				
	35	19.4 ✓	36	5.0 ✓				
	70	22.4	71	51.0	1	28.6	0	44.30 ✓
	37	0.5 ✓	37	43.0 ✓				
	37	16.5 ✓	38	2.2 ✓				
	74	17.0	75	45.2	1	28.2	0	44.10 ✓
	38	54.0 ✓	39	36.0 ✓				
	39	10.5 ✓	39	56.2 ✓				
	78	4.5	79	32.2	1	27.2	0	43.60 ✓
	41	22.0 ✓	42	3.5 ✓				
	41	37.7 ✓	42	23.8 ✓				
	82	59.7	84	27.3	1	27.6	0	43.80 ✓
							− 0	43.95 ✓

6	37	8.81 ✓	
	+2	32.0 ✓	Chr. cor.
3 ~~6~~	39	40.8 ✓	
15	44	51.4 ✓	
14	54	49.4 ✓	
	2	26.6 ✓	
14	52	22.8 ✓	

Δ ☄	Δ ✱	
17.5	18.4	35.9″
16.4	19.0	35.4
16.0	19.2	35.2
16.5	20.2	36.7
15.7	20.3	36.0
		35.84 ✓

+37 37 25.1 ✓
−1 46.4 ✓
+37 35 38.7 ✓

35.84 = 1.55437 ✓ +1.55437 ✓
7.5 = 0.87506 ✓ +0.87506 ✓
cos δ = 9.89875 ✓ +9.89891 ✓
2/212.9 = 2.32818 ✓ +2.32834 = −213.0″ ✓
106.4

− 3′ 33.0″ ✓

+3.24s
+19.8"

92yrs.
46 "

Comet Holmes.

Obs. of Nov. 16. 1892.

Comp. Star = Dm. +37° 183 (7.7 L)
" " = Ll. 1323.

1800.0	0h	38m	38.21s	+37°	6'	42.9"
		+2	29.04		15	10.8
* mid. pl. =	0	41	7.25	+37	21	53.7

10° 16' 49."

Log u/15 = +0.12614
" sin t = +9.25155
" tan δ = +9.88286
+0.1822 = +9.26055
+3.0705
+3.2527 = +0.51224
+299.25 +1.96379
2.47603

Log u = +1.30223
" cos t = +9.99297
" pr. = +1.96379
+1815.5" = +3.25899

	0h	38m	38.21s	+37°	6'	42.9"
		+4	59.25		+30	15.5
* 1892.0 =	0	43	37.46	+37	36	58.4
			+2.91			+26.7
Ap. pl. * =	0	43	40.37	+37	37	25.1
		−0	43.95		−3	33.0
Ap. pl. ☌ =	0	42	56.42	+37	33	52.1

Comet Holmes.

Obs. of Nov. 16. 1892.

$f = +1^{s}.995$ ✓ ✓
$G = 22\ 4.3$ ✓ ✓
$H = 2\ 9.5$ ✓ ✓
Log $g = +1.1728$ ✓ ✓
" $h = +1.2992$ ✓ ✓
" $i = +0.6651$ ✓ ✓

$22^{h}\ 4^{m}.3 = G$
$0\ 43.6 = \alpha$
$22\ 47.9$ ✓
$(G+\alpha)$

$2\ 9.5 = H$
$0\ 43.6 = \alpha$
$2\ 53.1$ ✓
$(H+\alpha)$

Log $\frac{1}{15} = +8.8239$ ✓✓
" $g = +1.1728$ ✓✓
" $\sin(G+\alpha) = -9.49\overset{06}{\cancel{52}}$ ✓✓
" $\tan\delta = +9.8868$ ✓✓
-0.237 ✓✓ $= -9.37\cancel{47}$ ✓✓ 41

" $\frac{1}{15} = +8.8239$ ✓✓
" $h = +1.2992$ ✓✓
" $\sin(H+\alpha) = +9.8360$ ✓✓
" $\sec\delta = +0.1012$ ✓✓
$+1.149$ ✓ $= +0.0603$ ✓✓
$+1.995$ ✓✓ —
$+3.144$ ✓✓
-0.237 ✓
$+2.907$ ✓✓ $(\alpha'-\alpha)$

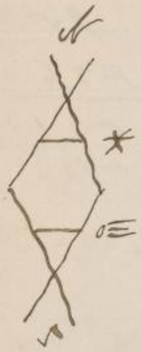
Log $g = +1.1728$ ✓✓
" $\cos(G+\alpha) = +9.9781$ ✓✓
$+14.15$ ✓ $= +1.1509$ ✓✓

" $h = +1.2992$ ✓✓
" $\cos(H+\alpha) = +9.8622$ ✓✓
" $\sin\delta = +9.7856$ ✓✓
$+8.85$ ✓ $= +0.9470$ ✓✓

" $i = +0.6651$ ✓✓
" $\cos\delta = +9.8988$ ✓✓
$+3.66$ ✓✓ $= +0.5639$ ✓✓
$+14.15$ ✓✓
$+8.85$ ✓✓
$+26.66$ ✓ $(\delta'-\delta)$

Comet Holmes.

Obs. of Nov. 17. 1892.



	☄		*					
23	43	6.5✓	44	7.8✓				
	43	47.0✓	44	35.8✓				
	86	53.5	88	43.6	1	50.1✓	0	55.05✓
	45	9.6✓	46	10.4✓				
	45	49.0✓	46	38.5✓				
	90	58.6	92	48.9	1	50.3✓	0	55.15✓
	47	20.0✓	48	20.6✓				
	47	59.5✓	48	49.5✓				
	95	19.5	97	10.1	1	50.6✓	0	55.30✓
	49	23.4✓	50	24.2✓				
	50	3.2✓	50	52.6✓				
	99	26.6	101	16.8	1	50.2✓	0	55.10✓
	51	14.2✓	52	14.6✓				
	51	53.5✓	52	45.2✓				
	103	7.7	104	59.8	1	52.1✓	0	56.05✓
							− 0	55.33✓

23 47 34.6✓
+2 10.3 Chr. cor.
23 49 44.9✓
15 48 47.9✓
8 0 57.0✓
−1 18.8✓
7 59 38.2✓ C. M. T.

Δ☾	Δ*	
40.5 ✓	28.0 ✓	68.5 ✓
39.4 ✓	28.1 ✓	67.5 ✓
39.5 ✓	28.9 ✓	68.4 ✓
39.8 ✓	28.4 ✓	68.2 ✓
39.3 ✓	30.6 ✓	69.9 ✓
		68.50

+37	37	25.2
	−3	59.6
+37	33	25.6 ✓

68.50 = +1.83569 ✓
7.5 = +0.87506 ✓
cos δ = +9.89875
406.9 = +2.60950
886.0
2/479.1
239.6 = −3′ 59.6″

+1.83569 ✓
+0.87506 ✓
+9.89914 ✓
+2.60989 = 407.3
886.0
478.7
−7′ 58.7″ ✓

1892phae.proj..519.

Comet Holmes.

Obs. of Nov. 17. 1892.

Comp. Star same as on ~~the~~ Nov. 16. = ~~Ll. +37~~ Ll. 1323.

* 1892.0 =	0	43	37.46 ✓	+37	36	58.4 ✓
			+2.90 ✓			+26.8 ✓
Ap. pl. * =	0	43	40.36 ✓	+37	37	25.2 ✓
		−0	55.33 ✓		−7	58.7 ✓
Ap. pl. ☄ =	0	42	45.03 ✓	+37	29	26.5 ✓

Comet Holmes.

Obs. of Nov. 17. 1892.

f = +2.002
g = 22 5.3
H = 2 5.6
Log g = +1.1733
" h = +1.2998
" i = +0.6538

22 5.3
0 43.6
22 48.9

2 5.6
0 43.6
2 49.2

Log $\frac{1}{15}$ = +8.8239
" g = +1.1733
" sin (G+α) = −9.4847
" tan δ = +9.8868
−0.234 = −9.3687

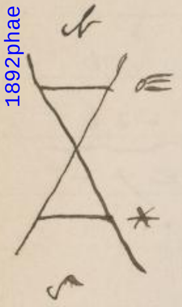
" $\frac{1}{15}$ = +8.8239
" h = +1.2998
" sin (H+α) = +9.8280
" sec δ = +0.1012
+1.130 = +0.0529
+2.002
+3.132
−0.234
+2.898 (α′−α)

Log g = +1.1733
" cos. (G+α) = +9.9787
+14.19 = +1.1520

" h = +1.2998
" cos. (H+α) = +9.8690
" sin δ = +9.7856
+9.00 = +0.9544

" i = +0.6538
" cos δ = +9.8988
+3.57 = +0.5526
+14.19
+9.00
+26.76

Comet Holmes.
Nov. 20. 1892.



5 55 59.3
+2 28.9
5 58 28.2
16 0 37.6
13 57 50.6
2 17.3
13 55 33.3
C.m.T.

☄	*		
49 47.2	49 23.2		
49 57.1	49 37.3		
99 44.3	99 0.5	+43.8	+21.90
50 43.8	50 19.2		
50 53.6	50 33.7		
101 37.4	100 52.9	+44.5	+22.25
52 57.0	52 32.5		
53 6.4	52 47.0		
106 3.4	105 19.5	+43.9	+21.95
53 52.3	53 28.1		
54 1.8	53 42.3		
107 54.1	107 10.4	+43.7	+21.85
56 1.2	55 36.9		
56 10.8	55 51.2		
112 12.0	111 28.1	+43.9	+21.95
57 11.8	56 48.0		
57 21.6	57 2.0		
114 33.4	113 50.0	+43.4	+21.70
58 11.5	57 48.0		
58 22.0	58 1.9		
116 33.5	115 49.9	+43.6	+21.80
59 4.3	58 39.5		
59 12.8	58 53.3		
118 17.1	117 32.8	+44.3	+22.15
60 0.4	59 36.5		
60 10.5	59 50.8		
120 10.9	119 27.3	+43.6	+21.80
61 15.1	60 51.2		
61 24.7	61 5.4		
122 39.8	121 56.6	+43.2	+21.60
			+21.90

mean of times = 5h 55m 59.3s

9.9	14.1	24.0
9.8	14.5	24.3
9.4	14.5	23.9
9.5	14.2	23.7
9.6	14.3	23.9
9.8	14.0	23.8
10.5	13.9	24.4
8.5	13.8	22.3
10.1	14.3	24.4
9.6	14.2	23.8 23.85

37 2 55.3 ✓
+2 22.8
37 5 18.1

~~+37 2 28.2~~
~~+1 11.4~~
~~+37 3 39.6~~ ✓

23.85 = 1.37749 ✓
~~7.5~~ 15 = ~~0.87506~~ 1.17609 ✓
cos δ = 9.90211 ✓
~~2/142.8~~ ~~2.15466~~ ✓
~~71.4 = +1 11.4~~
285.6 ✓ = 2.45569
142.8
2 22.8

~~+1.37749~~ ✓
~~+0.87506~~ ✓
~~+9.90200~~ ✓
~~+2.15455~~ ✓
~~142.7″~~

~~+2′ 22.7″~~

+3.14
+19.8

67 yrs.
33.5″

Comet Holmes.

Nov. 20. 1892.

Comp. Star = Düm. + 36° 126 (A.G.K.)
" " = W. Bessel. 0^h 1029.

* 1825.0 = 0 38 10.17   +36 40 24.9
+1 45.19   +11 3.3
* mid. pl. = 0 39 55.36   +36 51 28.2

9° 58′ 50.″

Log $\frac{u}{15}$ = +0.12611
" sin t = +9.23883
" tan δ = +9.87487
+0.1737 +9.23981
+3.07088
+3.2445 = +0.51114
67. = +1.82607
217.38 = +2.33721

Log u = +1.30220
" cos t = +9.99338
" 67. = +1.82607
+1323.3 = +3.12165
+22′ 3.3″

* 1825.0 0^h 38^m $10^s.17$
3 37.38
* 1892.0 = 0 41 47.55
☌ − * = +21.90
Ap. pl. ☌ = 0 42 9.45
+2.87
Ap. pl. ☌ = 0 42 12.32

~~+36° 40′ 24.9″~~
~~+22 3.3~~
~~+37 2 28.2~~
~~+4 45.4~~
~~+2 22.7~~
~~+37 4 50.9~~
~~+37 7 13.6~~
~~+27.1~~
~~+37 5 18.0~~
~~+37 7 40.7~~

See next page for re-reduction.

See next page.

$f = +2.039$ ✓
$G = 22\ \ 8.9$ ✓
$H = 1\ \ 53.9$ ✓
$\text{Log}\ g = +1.1776$ ✓
" $h = +1.3016$ ✓
" $i' = +0.6172$ ✓

$$\begin{array}{rr} 22 & 8.9 \\ 0 & 42.2 \\ \hline 22 & 51.1 \end{array} \qquad \begin{array}{rr} 1 & 53.9 \\ 0 & 42.2 \\ \hline 2 & 36.1 \end{array}$$

$\text{Lg}\ \frac{1}{15} = +8.8239$
" $g = +1.1776$
" $\sin(G+\alpha) = -9.4715$
" $\tan\delta = +9.8784$
$-0.225 = -9.3514$ ✓

" $\frac{1}{15} = +8.8239$
" $h = +1.3016$
" $\sin(H+\alpha) = +9.7991$
" $\sec\delta = +0.0981$
$+1.054 = +0.0227$ ✓

$$\begin{array}{r} 2.039 \\ \hline +3.093 \\ -0.225 \\ \hline +2.868 \end{array}$$

$\text{Lg}\ g = +1.1776$
" $\cos(G+\alpha) = +9.9801$
$+14.38 = +1.1577$

" $h = +1.3016$
" $\cos(H+\alpha) = +9.8903$
" $\sin\delta = +9.7803$
$+9.38 = +0.9722$

" $i' = +0.6172$ ✓
" $\cos\delta = +9.9019$
$+3.30$ ✓ $= +0.5191$

$$\begin{array}{r} +3.30 \\ +14.38 \\ +9.38 \\ \hline +27.06 \end{array}$$

$$\begin{array}{rrr} +36 & 40 & 24.9 \\ & +22 & 3.3 \\ \hline +37 & 2 & 28.2 \\ & & +27.1 \\ \hline +37 & 2 & 55.3 \\ & +5 & 44.3 \\ & ~~+4~~ & ~~45.4~~ \\ \hline ~~+37~~ & ~~7~~ & ~~40.7~~ \\ +37 & 8 & 39.6 \end{array}$$

$= \text{Final cor. Dec}$

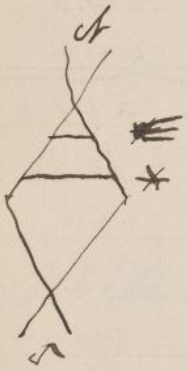
$2\overline{)23.85}$
$11.92 = 1.07628$

$$\begin{array}{r} 1.07628 \\ 0.38278 \\ 1.17609 \\ 9.90207 \\ \hline 2.53722 \end{array} \qquad \begin{array}{r} 1.07628 \\ 0.38278 \\ 1.17609 \\ 9.90186 \\ \hline 2.53695 = 344.3 \end{array}$$

$2\overline{)344.5}$
172.2

$+5'\ 44.3''$

Comet Brooks (Nov. 19)
Obs. of Nov. 21. 1892.



	☄	✱		
8	43 35.5	44 24.5		
	44 4.8	45 13.5		
	87 40.3	89 38.0	1 57.7	0 58.85
	46 12.1	47 1.0		
	46 41.5	47 50.0		
	92 53.6	94 51.0	1 57.4	0 58.70
	48 40.3	49 28.8		
	49 9.7	50 17.8		
	97 50.0	99 46.6	1 56.6	0 58.30
	51 7.8	51 55.5		
	51 37.0	52 45.0		
	102 44.8	104 40.5	1 55.7	0 57.85
	55 27.0	56 14.4		
	55 54.1	57 3.8		
	111 21.1	113 18.2	1 57.1	0 58.55
				−0 58.45

8	49	15.0
	+2	41.9
8	51	56.9
16	4	34.2
16	47	22.7
	−2	45.0
16	44	37.7 C. m. t.

Δ o≡	Δ *	
29.3 ✓	49.0 ✓	19.7 ✓
29.4 ✓	49.0 ✓	19.6 ✓
29.4 ✓	49.0 ✓	19.6 ✓
29.2 ✓	49.5 ✓	20.3 ✓
27.1 ✓	49.4 ✓	22.3 ✓
		20.30

+13 48 0.
1 14.
+13 49 14.

20.30 = +1.30750 ✓
7.5 = +0.87506 ✓
cos δ = +9.98728 ✓
+147.9 = 2.16984
73.9

+1.30750 ✓
+0.87506 ✓
+9.98728 ✓
+2.16980 ✓ 147.8 ✓
+2′ 27.8″

Comet Brooks (Nov. 19.)
Nov. 21. 1892.

+2.99
+19.4

67 yrs
33.5

Comp. Star = DM. + 14° 2578 (7.4 K)
* 55 = 12 58 21.6 +14° 0.7
Comp. Star = W. Bessel. 12h 1004.

* 1825.0 = 12h 56m 52.79s ✓ +14° 9' 53.9" ✓
+1 40.5 ✓ −10 49.9 ✓
Mid Pl. = 12 58 33.3 ✓ +13 59 4.0 ✓
194° 38' 19"

Log n/15 = +0.12611 ✓
" sin α = n 9.40265 ✓
" tan δ = + 9.39627 ✓
−0.0841 = n 8.92503 ✓
+3.0708 ✓
+2.9867 ✓ = +0.47519 ✓
+1.82607 ✓
200.10 +2.30126 ✓

Log n = +1.30220 ✓
" cos α = ~~+~~9.98566 ✓
" 67. = +1.82607 ✓
−1300.0 = ~~+~~3.11393 ✓

12 56 52.79 ✓✓ +14 9 53.9 ✓✓
+3 20.10 ✓✓ −21 40.0 ✓✓
* 1892 = 13 0 12.89 ✓✓ +13 48 13.9 ✓✓
+1.18 ✓✓ −14.4 ✓✓
Ap. pl. * = 13 0 14.07 ✓✓ +13 47 59.5 ✓✓
☄ − * = −58.45 ✓✓ +2 27.8 ✓✓
Ap. pl. ☄ = 12 59 15.62 ✓✓ +13 50 27.3 ✓✓

f = +2.055 ✓
G = 22 9.9 ✓
H = 1 50.0 ✓
Log g = +1.1800 ✓
" h = +1.3021 ✓
" c' = +0.6040 ✓

22 9.9 ✓
13 0.2 ✓
~~35 10.1~~
11 10.1 ✓
$(G+\alpha)$

1 50.0 ✓
13 0.2 ✓
14 50.2 ✓
$(H+\alpha)$

Log $\frac{1}{15}$ = +8.8239 ✓
" g = +1.1800 ✓
" sin$(G+\alpha)$ = +9.3344 ✓ ^{5}
" tan δ = +9.3904 ✓
+0.054 ✓ = +8.7287 ✓

" $\frac{1}{15}$ = +8.8239 ✓
" h = +1.3021 ✓
" sin$(H+\alpha)$ = −9.8301 ✓
" sec δ = +0.0127 ✓
−0.931 ✓ = −9.9688 ✓

Log g = +1.1800 ✓
" cos$(G+\alpha)$ = −9.9896 ✓
−14.78 ✓ = −1.1696 ✓

" h = +1.3021 ✓
" cos$(H+\alpha)$ = −9.8673 ✓
" sin δ = +9.3777 ✓
−3.52 ✓ = −0.5471 ✓

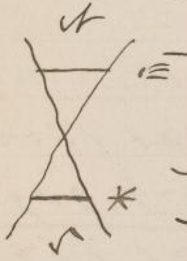
" c' = +0.6040 ✓
" cos δ = +9.9873 ✓
+3.90 ✓ = +0.5913 ✓

+2.055 ✓
+0.054 ✓
+2.109 ✓
−0.931 ✓
+1.178 ✓ Cor. in α

−14.78 ✓
− 3.52 ✓
−18.30 ✓
+ 3.90 ✓
−14.40 ✓ Cor. in δ

Comet Holmes.

Nov. 19. 1892.



	☄	*			
2	24 57.5 ✓	27 5.0 ✓			
	25 6.0 ✓	27 17.5 ✓			
	50 3.5 ✓	54 22.5 ✓	4	19.0 ✓	2 9.50 ✓
	29 14.5 ✓	31 21.5 ✓			
	29 22.0 ✓	31 34.5 ✓			
	58 36.5 ✓	62 56.0 ✓	4	19.5 ✓	2 9.75 ✓
	32 31.5 ✓	34 39.5 ✓			
	32 40.0 ✓	34 52.0 ✓			
	65 11.5 ✓	69 31.5 ✓	4	20.0 ✓	2 10.00 ✓
	35 24.0	37 31.0			
	35 31.7	37 42.7			
	70 55.7 ✓	75 13.7 ✓	4	18.0 ✓	2 9.00 ✓
	38 48.6	40 57.1			
	38 57.2	41 8.7			
	77 45.8 ✓	82 5.8 ✓	4	20.0 ✓	2 10.00 ✓
	46 35.5	48 43.4			
	46 44.0	48 55.5			
	93 19.5 ✓	97 38.9 ✓	4	19.4 ✓	2 9.70 ✓
	52 23.4	54 32.2			
	52 32.5	54 43.5			
	104 55.9 ✓	109 15.7 ✓	4	19.8 ✓	2 9.90 ✓
	55 12.3	57 21.4			
	55 21.5	57 32.5			
	110 33.8 ✓	114 53.9 ✓	4	20.1 ✓	2 10.05 ✓
					−2 9.74 ✓

2	39	27.6 ✓	mean ☄ times.
	+2	24.6 ✓	
2	41	52.2 ✓	
15	56	41.0 ✓	
10	45	11.2 ✓	
	−1	45.7 ✓	
10	43	25.5 ✓	C. M. T.

Δ̇ o≡	Δ ✱	
8.5 ✓	12.5 ✓	21.0 ✓
7.5 ✓	13.0 ✓	20.5 ✓
8.5 ✓	12.5 ✓	21.0 ✓
7.7 ✓	11.7 ✓	19.4 ✓
8.6 ✓	11.6 ✓	20.2 ✓
8.5 ✓	12.1 ✓	20.6 ✓
9.1 ✓	11.3 ✓	20.4 ✓
9.2 ✓	11.1 ✓	20.3 ✓
		20.42 ✓

+37 11 2.
+2 2
~~+1 1.~~

~~+37 12 3.~~
+37 13 4.

20.42 = +1.31006 ✓
15. +1.17609 ✓
~~7.5~~ = ~~+0.87506~~ ✓
cos δ = +9.90130 ✓
~~+122.0~~ +2.08642 ✓
~~+61.0~~ = 2.32745
1220 ~~244.0~~

+1.31006 ✓
+9.90111
~~+0.87506~~ ✓
+1.17609 ✓
~~+9.90120~~
~~+2.08632~~ ✓ 122.0
2.38726
243.9 ~~122.0 = +2 12.0″~~

37 yrs.
1855

Comet Holmes,
Nov. 19, 1892.

Comp. Star = Dm. + 36° 134 (9.1 B)

* 1855 = 0 42 28.03 ✓ +36 58 26.1 ✓ (Bonn place)
+1 0.31 ✓ +6 4.4 ✓
Mid. Pl. = 0 43 28.34 ✓ +37 4 30.5 ✓
10° 52' 5."

Log $\frac{n}{15}$ = +0.12607 ✓
" sin α = +9.27542 ✓
" tan δ = +9.87830 ✓
+0.1905 = +9.27979 ✓
+3.0711 ✓ =
+3.2616 = +0.51343 ✓
37. = +1.56820 ✓
120.68 = +2.08163 ✓

Log n = +1.30217 ✓
" cos α = +9.99214 ✓
" 37. = +1.56820 ✓
+728.6 = +2.86251 ✓

* 1855 = 0 42 28.03 ✓ +36 58 26.1 ✓
+2 0.68 ✓ +12 8.6 ✓
* 1892.0 = 0 44 28.71 ✓ +37 10 34.7 ✓
Ap. Pl. = +2.78 ✓ +27.6 ✓
Ap. pl. * = 0 44 31.49 ✓ +37 11 2.3 ✓
☄ − * = −2 9.74 ✓ ~~+4 3.9~~ ✓ ~~+2 2.0~~
Ap. pl. ☄ = 0 42 21.75 ✓ ~~+37 13 4.3~~ ✓ ~~+37 15 6.2~~ ✓

See next page.

$f = +2.025$ ✓
$G = 22\ 7.8$ ✓
$H = 1\ 57.8$ ✓
$\text{Log } g = +1.1757$ ✓
" $h = +1.3010$ ✓
" $c' = +0.6299$ ✓

$$\begin{array}{rr} 22 & 7.8 \\ 0 & 44.5 \\ \hline 22 & 52.3 \end{array}$$
$(G + x)$

$$\begin{array}{rr} 1 & 57.8 \\ 0 & 44.5 \\ \hline 2 & \overset{4}{2}2.3 \end{array}$$ ✓ ⊙
$(H + x)$

" $\frac{1}{15} = +8.8239$ ✓
" $\sin(G+x) = -9.4640$ ✓
" $g = +1.1757$ ✓
" $\tan\delta = +9.8798$ ✓
$-0.220 = -9.3434$ ✓

" $\frac{1}{15} = +8.8239$ ✓
" $h = +1.3010$ ✓
" $\sin(H+x) = +9.7648$ ✓
" $\sec\delta = +0.0987$ ✓
$+0.974 = +9.9884$ ✓
$+2.025$ ✓
$+2.999$ ✓
-0.220 ✓
$+2.779 = \alpha' - \alpha$

$\text{Log } g = +1.1757$ ✓
" $\cos(G+x) = +9.9808$ ✓
$+14.34 = +1.1565$ ✓

" $h = +1.3010$ ✓
" $\cos(H+x) = +9.9103$ ✓
" $\sin\delta = +9.7812$ ✓
$+9.83 = +0.9925$ ✓

" $c' = +0.6299$ ✓
" $\cos\delta = +9.9013$ ✓
$+3.40 = +0.5312$ ✓
$+14.34$ ✓
$+9.83$ ✓
$+27.57$ ✓

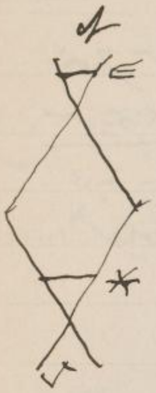
$\text{Log} \sin 67.5^\circ = 9.96562$
" " $22.5 = 9.58284$
" factor $= 0.38278$
" $10.21 = 1.00903$
" $15. = 1.17609$
" $\cos\delta = 9.90130$
$2/294.6 = 2.46920$
147.3

0.38278
1.00903
1.17609
9.90106
$294.4 = 2.46896$
$+4'\ 54.4$

$$\begin{array}{rrr} +37 & 11 & 2.3 \\ & +2 & 27.3 \\ \hline +37 & 13 & 29.6 \end{array}$$

$$\begin{array}{rrr} +37 & 11 & 2.3 \\ & +4 & 54.4 \\ \hline +37 & 15 & 56.7 \end{array}$$ =
Final Dec.

Comet Brooks.
Nov. 22. 1892.



☄	*		
8 26 8.3 ✓ 26 20.5 ✓	26 27.0 ✓ 26 33.8 ✓		
52 28.8 ✓	53 0.8 ✓	0ᵐ 32.0 ✓	0ᵐ 16.00 ✓
27 19.5 ✓ 27 31.5 ✓	27 38.5 ✓ 27 45.0 ✓		
54 51.0 ✓	55 23.5 ✓	0 32.5 ✓	0 16.25 ✓
28 22.2 ✓ 28 32.5 ✓	28 39.5 ✓ 28 46.5 ✓		
56 54.7 ✓	57 26.0 ✓	0 31.3 ✓	0 15.65 ✓
~~31 21.5~~ ~~31 24.0~~	~~31 30.0~~ ~~31 36.2~~		
~~62 45.5~~	~~63 6.2~~	~~07~~	
35 29.0 ✓ 35 42.0 ✓	35 48.3 ✓ 35 54.9 ✓		
71 11.0 ✓	71 43.2 ✓	0 32.2 ✓	0 16.10 ✓
37 51.0 ✓ 38 4.0 ✓	38 10.0 ✓ 38 16.0 ✓		
75 55.0 ✓	76 26.0 ✓	0 31.0 ✓	0 15.50 ✓
			− 0 15.90 ✓

8 31 8.05 ✓
+2 49.5 ✓ Chr. cor.
8 33 57.55 ✓
16 8 30.7 ✓
16 25 26.8 ✓
−2 41.4 ✓
16 22 45.4 ✓ C. M. T.

Δ☾	Δ✱	
+12.2	−6.8	+5.4
12.0	6.5	+5.5
10.3	7.0	+3.3
13.0	6.6	+6.4
13.0	6.0	+7.0
0 12.10	6.58	5.52

+14 0 52.3
7 43.1
+14 8 35.4

5.52 = +0.74194
7.5 = +0.87506
cos δ = +9.98688
+40.2 = +1.60388
886.0
926.2
463.1 +7' 43.1''

+0.74194
+0.87506
+9.98663
+1.60363 = +40.1
886.0
926.1
+15 26.1

+2.98
−19.4

67 yrs.
33.5"

Comet Brooks.
Nov. 22 1892.

Comp. Star = Dm. +14° 2579 (A.G.C.)
12 59 1.0 +14° 13.1 = Dm. Place.
Comp Star = Weisse 12h 1014.

* 1825 =	12 57	31.00	+14	22	46.1
	+1	39.83		−10	49.9
Mid. Pl. =	12 59	10.83	+14	11	56.2

194° 47' 42."

Log $\frac{u}{15}$ = +0.12611
" sin α = n9.40716
" tan δ = +9.40316
−0.08644 = n8.93643
+3.07084
+2.98440 = +0.47486
67. = +1.82607
+199.95 = +2.30093

Log u = +1.30220
" cos α = n9.98536
" 67. = +1.82607
−1299.1 = n3.11363
−21' 39.1"

	h	m	s	°	'	"
	12	57	31.00	+14	22	46.1
		+3	19.95		−21	39.1
* 1892.0 =	13	0	50.95	+14	1	7.0
			+1.21			−14.7
Ap. pl. * =	13	0	52.16	+14	0	52.3
			−15.90		+15	26.1
Ap. pl. ☌ =	13	0	36.26	+14	16	18.4

$f = +2.071$ 　 22 10.6 　 1 46.1

$G = 22\ 10.6$ 　 13 0.8 　 13 0.8

$H = 1\ 46.1$ 　 ~~35 11.4~~ 　 14 46.9

11 11.4

Log $g = +1.1827$

" $h = +1.3026$

" $c' = +0.5902$

Log $\frac{1}{15} = +8.8239$

" $g = +1.1827$

" $\sin(G+x) = +9.3232$

" $\tan\delta = +9.3974$

$+0.053 = +8.7272$

" $\frac{1}{15} = +8.8239$

" $h = +1.3026$

" $\sin(H+x) = -9.8232$

" $\sec\delta = +0.0130$

$-0.918 = -9.9627$

Log $g = +1.1827$

" $\cos(G+x) = -9.9902$

$-14.89 = -1.1729$

" $h = +1.3026$

" $\cos(H+x) = -9.8730$

" $\sin\delta = +9.3842$

$-3.63 = -0.5598$

" $c' = +0.5902$

" $\cos\delta = +9.98\overset{68}{70}$

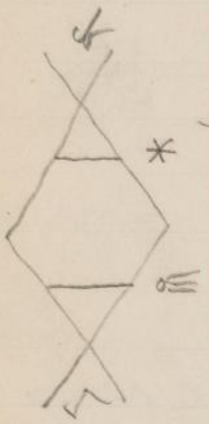
$+3.78 = +0.5772$

$+2.071$
$+0.053$
$+2.124$
-0.918
$+1.206$

-14.89
-3.63
-18.52
$+3.78$
-14.74

Nov. 22. 1892.

Comet Holmes.



	☄	*		
0	11 48.0	11 39.5		
	12 37.1	12 24.5		
	24 25.1	24 4.0	+21.1^{s}	+10.55
	13 23.4	13 13.5		
	14 13.0	13 59.2		
	27 36.4	27 12.7	23.7^{s}	+11.85
	14 48.5	14 38.5		
	15 37.3	15 23.8		
	30 25.8	30 2.3	23.5^{s}	+11.75
	17 33.4	17 20.0		
	18 18.5	18 8.0		
	35 51.9	35 28.0	23.9^{s}	+11.95
	19 1.6	18 49.5		
	19 48.3	19 37.5		
	38 49.9	38 27.0	22.9^{s}	+11.45
	20 29.4	20 16.0		
	21 14.3	21 4.5		
	41 43.7	41 20.5	23.2^{s}	+11.60
	23 11.2	22 57.5		
	23 56.5	23 46.0		
	47 7.7	46 43.5	24.2^{s}	+12.10
	25 10.5	24 57.3		
	25 56.3	25 45.5		
	51 6.8	50 42.8	24.0^{s}	+12.00
				+11.66

0	18	34.2
	+2	46.4
0	21	20.6
16	8	30.7
8	12	49.9
	−1	20.7
8	11	29.2 C. m. T.

Δ ☉	Δ *	
49.1	45.0	94.1
49.6	45.7	95.3
48.8	45.3	94.1
45.1	48.0	93.1
46.7	48.0	94.7
44.9	48.5	93.4
45.3	48.5	93.8
45.8	48.2	94.0
		94.06

+37 2 56.
−2 42.
+37 0 14.

94.06 = 1.97340
75 = 0.87506
cos δ = 9.90206
= 2.75052

886.0
563.0
323.0
[illegible]

1.97340
0.87506
9.90233
2.75079 = 563.4

886.0
563.4
322.6
− 5 22.6

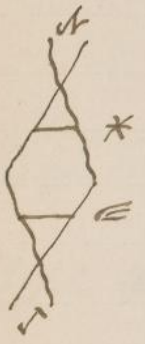
Nov. 22, 1892.
Comet Holmes.

Dm. +36° 126.
0 39 47.2 + 36 50.4 (1855)

Sup. 36 Pos. for 1892.0 =	0 41 47.55 ✓	+37 2 28.2 ✓
	+2.85 ✓	+27.4 ✓
Ap. pl. ✱ =	0 41 50.40 ✓	+37 2 55.6 ✓
	+11.66 ✓	−5 22.6 ✓
Ap. pl. ☄ =	0 42 2.06 ✓	+36 57 33.0 ✓

Brooks New Comet

Nov. 24. 1892.



	☄	*		
8	25 18.0	22 9.5		
	26 3.0	22 39.0		
	51 21.0	44 48.5	6 32.5	3 16.25
	29 55.5	26 46.8		
	30 41.5	27 16.7		
	60 37.0	54 3.5	6 33.5	3 16.75
	34 40.9	31 31.0		
	35 25.5	32 1.2		
	70 6.4	63 32.2	6 34.2	3 17.10
	39 36.8	36 27.2		
	40 22.5	36 57.5		
	79 59.3	73 24.7	6 34.6	3 17.30
	44 23.0	41 12.6		
	45 9.0	41 43.5		
	89 32.0	82 56.1	6 35.9	3 17.95
	49 32.8	46 22.1		
	50 19.1	46 53.7		
	99 51.9	93 15.8	6 36.1	3 18.05
				+3 18.68

8 37 37.3
+1 7.8
8 38 45.1
16 16 23.8
16 22 21.3
−2 40.9
16 19 40.4 C. m. T.

Δ o≡	Δ ✳	
45.0 ✓	29.5 ✓	74.5 ✓
46.0 ✓	29.9 ✓	75.9 ✓
44.6 ✓	30.2 ✓	74.8 ✓
45.7 ✓	30.3 ✓	76.0 ✓
46.0 ✓	30.9 ✓	76.9 ✓
46.3 ✓	31.6 ✓	77.9 ✓
45.60	30.4	77.20

+15 18 2.
−2 44.
+15 15 18. ✓

77.20 = +1.88762 ✓
75 = +0.87506 ✓
cos δ = +9.98433 ✓
5585 ✓ = +2.74701 ✓
886.0
2)327.5
163.8 = −2′ 43.8″

+1.88762 ✓
+0.87506 ✓
+9.98442 ✓
+2.74710 ✓ = 5586
886.0
327.4
−5′ 27.4″

+2.98
−1.95
92 yrs.

Brooks New Comet.
Nov. 28, 1892.

Comp. Star = BD. + 15° 2541 (7.9 L.)
12 58 18.4 +15° 30.5

Ll. 24330 = 12 55 35.17 ✓ +15° 48′ 4.5″ ✓ (1800)
+2 17.08 ✓ −14 57.0 ✓
Mid. pl. = 12 57 52.25 ✓ +15 33 7.5 ✓
194° 28′ 4″

Log m/15 = +0.12613 ✓
" sin α = n9.39765 ✓
" tan δ = +9.44452 ✓
−0.0930 = n8.96830 ✓
+3.0705 ✓
+2.9775 ✓ = +0.47385 ✓
92. = +1.96379 ✓
273.93 = +2.43764 ✓

Log n = +1.30223 ✓
" cos α = n9.98601 ✓
" 92. = +1.96379 ✓
−1786.″6 = n3.25203 ✓

* 1800.0 = 12 55 35.17 ✓ +15 48 4.5 ✓
+4 33.93 ✓ −29 46.6 ✓
* 1892.0 = 13 0 9.10 ✓ +15 18 17.9 ✓
+1.27 ✓ −15.6 ✓
Ap. pl. * = 13 0 10.37 ✓ +15 18 2.3 ✓
☄ − * = +3 18.68 ✓ −5 27.4 ✓
" " ☄ = 13 3 29.05 ✓ +15 12 34.9 ✓

$f = +2.097$

$g = 22\ 11.1$

$H = 1\ 38.5$

$\log g = +1.1876$

$\text{"}\ h = +1.3036$

$\text{"}\ i' = +0.5608$

$$\begin{array}{rr} 22 & 11.1 \\ 13 & 0.2 \\ \hline 35 & 11.3 \\ \hline 11 & 11.3 \end{array} \qquad \begin{array}{rr} 1 & 38.5 \\ 13 & 0.2 \\ \hline 14 & 38.7 \end{array}$$

$$\begin{aligned} \log \tfrac{1}{15} &= +8.8239 \\ \text{"}\ \sin(G+t) &= +9.3241 \\ \text{"}\ g &= +1.1876 \\ \text{"}\ \tan \delta &= \underline{+9.4372} \\ +0.059 &= +8.7728 \end{aligned}$$

$$\begin{aligned} \log g &= +1.1876 \\ \text{"}\ \cos(G+t) &= \underline{-9.9901} \\ -15.06 &= -1.1777 \end{aligned}$$

$$\begin{aligned} \text{"}\ h &= +1.3036 \\ \text{"}\ \cos(H+t) &= -9.8863 \\ \text{"}\ \sin \delta &= \underline{+9.4215} \\ -4.09 &= -0.6114 \end{aligned}$$

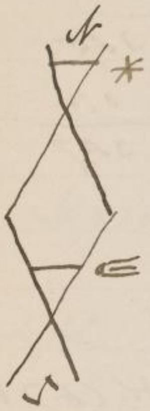
$$\begin{aligned} \log \tfrac{1}{15} &= +8.8239 \\ \text{"}\ h &= +1.3036 \\ \text{"}\ \sin(H+t) &= -9.8051 \\ \text{"}\ \sec \delta &= \underline{+0.0157} \\ -0.888 &= -9.9483 \end{aligned}$$

$$\begin{aligned} \text{"}\ i' &= +0.5608 \\ \text{"}\ \cos \delta &= \underline{+9.9843} \\ +3.51 &= +0.5451 \end{aligned}$$

$$\begin{array}{r} +2.097 \\ \underline{+0.059} \\ +2.156 \\ \underline{-0.888} \\ +1.268 = \alpha' - \alpha \end{array} \qquad \begin{array}{r} -15.06 \\ \underline{-4.09} \\ -19.15 \\ \underline{+3.51} \\ -15.64 = \delta' - \delta \end{array}$$

Comet Holmes.

Nov. 23. 1892.



	☄		*			
0	2	47.5	2	53.5		
	3	36.3	3	9.6		
	6	23.8 ✓	6	3.1 ✓	20.7 ✓	10.35 ✓
	3	55.5	4	1.7		
	4	44.8	4	19.4		
	8	40.3 ✓	8	21.1 ✓	19.2 ✓	9.60 ✓
	5	46.0	5	53.0		
	6	34.3	6	9.2		
	12	20.3 ✓	12	2.2 ✓	18.1 ✓	9.05 ✓
	7	7.0	7	13.5		
	7	55.4	7	30.0		
	15	2.4 ✓	14	43.5 ✓	18.9 ✓	9.45 ✓
	8	48.5	8	54.4		
	9	36.7	9	10.7		
	18	25.2 ✓	18	5.1 ✓	20.1 ✓	10.05 ✓
	10	29.6	10	35.5		
	11	17.8	10	51.6		
	21	47.4 ✓	21	27.1 ✓	20.3 ✓	10.15 ✓
	11	51.6	11	57.3		
	12	40.2	12	13.5		
	24	31.8 ✓	24	10.8 ✓	21.0 ✓	10.50 ✓
						+9.88 ✓

mean = $0^h\ 7^m\ 39.4^s$ ✓

+2 56.0 ✓ Chr. cor.

0 10 35.4 ✓

16 12 27.3 ✓

7 58 8.1 ✓

−1 18.3 ✓

7 56 49.8 ✓ C. M. T.

Δ☄	Δ*	
− 48.8 ✓	+ 16.1 ✓	− 32.7 ✓
49.3 ✓	17.7 ✓	− 31.6 ✓
48.3 ✓	16.2 ✓ ~~15.4~~	− 32.1 ✓ ~~− 32.9~~
48.4 ✓	16.5 ✓	− 31.9 ✓
48.2 ✓	16.3 ✓	− 31.9 ✓
48.2 ✓	16.1 ✓	− 32.1 ✓
48.6 ✓	16.2 ✓	− 32.4 ✓
		− 32.10 ✓

+ 37 2 55.7
 − 5 46.9
+ 36 57 8.8

− 32.10 = n1.50651
75 = + 0.87506
cos δ = + 9.90206
− 192.1 = n2.28363
886.0
693.9 = ~~− 11′ 33.9~~
346.9 = − 5 46.9

n1.50651
+ 0.87506
+ 9.90261
− 2.28418 = − 192.4
886.0
693.6
− 11′ 33.6″ ✓

~~Comet~~ Comet Holmes.

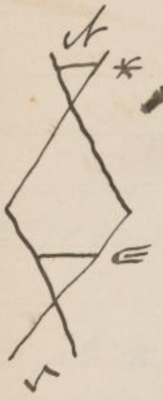
Nov. 23. 1892.

Comp. Star = DM. + 36° 126 (8.5 K)

* 1892.0	=	0h	41m	47.55s ✓	+37°	2′	28.2″ ✓	
				+2.84 ✓			+27.5 ✓	
App. pl. *	=	0	41	50.39 ✓	+37	2	55.7 ✓	
☄ − *	=			+9.88 ✓		−11	33.6 ✓	
App. Pl. ☄	=	0	42	0.27	+36	51	22.1	

(1st obs.)

Comet Holmes.
Nov. 23. 1892.



2 53 57.6
+2 56.0
2 56 53.6
16 12 27.3
10 44 26.3
−1 45.6
10 42 40.7

C. M. T.

	☄	*		
2	48 49.5	48 52.5		
	49 30.5	49 8.3		
	98 20.0 ✓ <	98 0.8 ✓	19.2 ✓	9.60 ✓
	49 49.0	49 51.2		
	50 30.2	50 8.3		
	100 19.2 ✓ <	99 59.5 ✓	19.7 ✓	9.85 ✓
	50 55.5	50 58.2		
	51 35.7	51 14.5		
	102 31.2 ✓ <	102 12.7 ✓	18.5 ✓	9.25 ✓
	51 55.5	51 58.5		
	52 37.0	52 15.2		
	104 32.5 ✓ <	104 13.7 ✓	18.8 ✓	9.40 ✓
	53 1.5	53 3.3		
	53 42.6	53 20.5		
	106 44.1 ✓ <	106 23.8 ✓	20.3 ✓	10.15 ✓
	54 6.5	54 9.5		
	54 47.6	54 26.5		
	108 54.1 ✓ <	108 36.0 ✓	18.1 ✓	9.05 ✓
	55 15.0	55 18.0		
	55 57.0	55 35.2		
	111 12.0 ✓	110 53.2 ✓	18.8 ✓	9.40 ✓
	56 20.0	56 22.0		
	57 1.0	56 39.0		
	113 21.0 ✓	113 1.0 ✓	20.0 ✓	10.00 ✓
	57 27.2	57 29.5		
	58 8.6	57 46.5		
	115 35.8 ✓	115 16.0 ✓	19.8 ✓	9.90 ✓
	58 30.0	58 32.1		
	59 11.3	58 49.5		
	117 41.3 ✓	117 21.6 ✓	19.7 ✓	9.85 ✓
				+9.64 ✓

Δ ☄	Δ ✱	
−41.0 ✓	+15.8 ✓	−25.2 ✓
41.2 ✓	17.1 ✓	−24.1 ✓
40.2 ✓	16.3 ✓	−23.9 ✓
41.5 ✓	16.7 ✓	−24.8 ✓
41.1 ✓	17.2 ✓	−23.9 ✓
41.1 ✓	17.0 ✓	−24.1 ✓
42.0 ✓	17.2 ✓	−24.8 ✓
41.0 ✓	17.0 ✓	−24.0 ✓
41.4 ✓	17.0 ✓	−24.4 ✓
41.3 ✓	17.4 ✓	−23.9 ✓
		−24.31 ✓

+37 2 55.7
−6 10.2
+36 56 45.5 ✓

−24.31 = n1.38578
7.5 ρ = +0.87506
cos δ = +9.90261
−145.7 = n2.16345
886.0
2)740.3
370.2 = −6′ 10.2

n1.38578
+0.87506
+9.90265
n2.16349
−145.7
886.0
740.3
−12′ 20.3″ ✓

Comet Holmes.
Nov. 23. 1892.

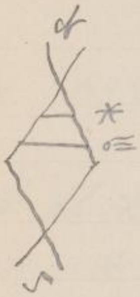
Comp.-Star = Dm. +36° 126 (8.5 M)

* 1892.0 =	0h	41m	47.55s ✓	+37°	2′	28.2″ ✓	
			+2.84 ✓			+27.5 ✓	
Ap. pl. * =	0	41	50.39 ✓	+37	2	55.7 ✓	
☄ − * =			+9.64 ✓		−12	20.3 ✓	
Ap. pl. ☄ =	0	42	0.03 ✓	+36	50	35.4 ✓	

Comet Holmes. = Comet f.

Dec. 7. 1892.

	☄		*					
1	28	58.3 ✓	28	9.5 ✓				
	29	43.0 ✓	28	32.5 ✓				
	58	41.3 ✓	56	42.0 ✓	1^m	59.3^s	$+0^m$	59.6^s ✓



1	29	20.6 ✓	= mean ☄ times.
	+2	31.6 ✓	= Chr. cor.
1	31	52.2 ✓	
17	7	39.1 ✓	
8	24	13.1 ✓	
	−1	22.6 ✓	
8	22	50.5 ✓	C. m. T.

Δ o≡	Δ *	
44.7 ✓	23.0 ✓	$21.\overset{s}{7}$

$$\begin{array}{rrr} +35 & 31 & 10. \\ & -1 & 6. \\ \hline +35 & 30 & 4. \end{array}$$

$$\begin{array}{rl} 21.7 & = 1.33646 \\ 7.5 & = 0.87506 \\ \cos\delta & = 9.91058 \\ \hline -132.5 & = 2.12210 \\ 66.2 & \end{array}$$

$$\begin{array}{l} 1.33646 \\ 0.87506 \\ 9.91068 \\ \hline 2.12220 = 132''.5 \end{array}$$

(37 yrs.)
(18.5)

+3.24
+19.7

Comet Holmes.

Dec. 7. 1892.

Comp. Star = B.D. + 35° 151 (8.5 B)

B.D. +35° 151 =	0h 42m 2.25s ✓	+35° 18′ 33.1″ ✓ (1855)
	+59.94 ✓	+6 4.4 ✓
mid. pl.	0 43 2.19 ✓	+35 24 37.5 ✓
	10° 45′ 33.″	

Log n/15 = +0.12607 ✓
" sin α = +9.27110 ✓
" tan δ = +9.85183 ✓
+0.17774 = +9.24900 ✓
+3.0711 ✓ =
+3.2485 = +0.51168
37. = +1.56820
+120.19 ✓ = +2.07988

Log n = +1.30217 ✓
" cos α = +9.99230 ✓
" 37. = +1.56820 ✓
+728.″9 = +2.86267

	0h 42m 2.25s ✓	+35° 18′ 33.1″ ✓
	+2 0.19 ✓	+12 8.9 ✓
✱ 1892.0 =	0 44 2.44 ✓	+35 30 42.0 ✓
	+2.72 ✓	+28.2 ✓
Ap. pl. ✱ =	0 44 5.16 ✓	+35 31 10.2 ✓
☾ − ✱ =	+0 59.65 ✓	−2 12.5 ✓
Ap. pl. ☾ =	0 45 4.81 ✓	+35 28 57.7 ✓

Comet Holmes.
Dec. 7. 1892.

f = +2.253
G = 22 19.2
H = 0 49.1
Log g = +1.2111
" h = +1.3088
" i = +0.2741

22 19.2	0 49.1
0 44.0	0 44.0
23 3.2	1 33.1
(G+H)	(H+L)

Log $\frac{1}{15}$ = +8.8239
" sin(G+H) = −9.3897
" g = +1.2111
" tan δ = +9.8535
−0.190 = −9.2782

" $\frac{1}{15}$ = +8.8239
" h = +1.3088
" sin(H+L) = +9.5967
" sec δ = +0.0894
+0.659 = +9.8188
+2.253
+2.912
−0.190
+2.722 = (α′−α)

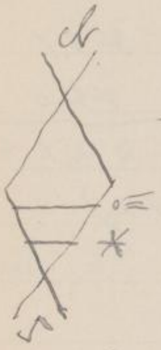
Log g = +1.2111
" cos(G+H) = +9.986
+15.76 = +1.1976

" h = +1.3088
" cos(H+L) = +9.9631
" sin δ = +9.7641
+10.86 = +1.0360

" i = +0.2741
" cos δ = +9.9106
+1.53 = +0.1847
+15.76
+10.86
+28.15 = δ′−δ

Comet Holmes.

Dec. 9. 1892.



	☄	*				
1	36 18.1	35 56.5				
	36 53.2	36 8.6				
	73 11.3	72 5.1	1	6.2	0	33.10
	~~37 40.5~~	~~37 17.5~~				
	~~38 16.1~~	~~37 29.7~~				
	~~75 56.6~~	~~74 47.2~~	~~1~~	~~9.4~~		
	39 57.2	39 35.2				
	40 32.6	39 47.8				
	80 29.8	79 23.0	1	6.8	0	33.40
	42 53.6	42 32.0				
	43 29.0	42 44.5				
	86 22.6	85 16.5	1	6.1	0	33.05
	44 13.1	43 51.5				
	44 49.5	44 4.0				
	89 2.6	87 55.5	1	7.1	0	33.55
	45 39.7	45 17.5				
	46 16.0	45 29.8				
	91 55.7	90 47.3	1	8.4	0	34.20
	47 0.8	46 39.0				
	47 37.0	46 51.5				
	94 37.8	93 30.5	1	7.3	0	33.65
	48 17.5	47 55.0				
	48 53.5	48 8.0				
	97 11.0	96 3.0	1	8.0	0	34.00
	49 32.5	49 10.5				
	50 8.4	49 23.3				
	99 40.9	98 33.8	1	7.1	0	33.55
	52 23.5	52 1.5				
	53 0.0	52 14.0				
	105 23.5	104 15.5	1	8.0	0	34.00
					+0	33.61

1ʰ 45ᵐ 26.4ˢ
+2 41.8
1 48 8.2
17 15 32.2
8 32 36.0
−1 24.0
8 31 12.0
C. m. T.

Δ☾	Δ★	
35.1 ✓	12.1 ✓	23.0 ✓
35.4 ✓	12.6 ✓	22.8 ✓
35.4 ✓	12.5 ✓	22.9 ✓
36.4 ✓	12.5 ✓	23.9 ✓
36.3 ✓	12.3 ✓	24.0 ✓
36.2 ✓	12.5 ✓	23.7 ✓
36.0 ✓	13.0 ✓	23.0 ✓
35.9 ✓	12.8 ✓	23.1 ✓
36.5 ✓	12.5 ✓	24.0 ✓
		23.38 ✓

+35 15 59.
+1 12
+35 17 11. ✓

23.38 = 1.36884
75 = 0.87506
cos δ = +9.91194
+143.2 = +2.15584
71.6

+1.36884
+0.87506
+9.91183
143.1 +2.15573
+2' 23.1"

Comet Holmes.

Dec. 9. 1892.

Comp. Star = Dm. + 35° 154 (A.g. K)

Tr. 0h 1122-3 = 0 41 46.62 ✓ +34 53 31.4 ✓ (1825)
+1 48.54 ✓ +10 59.9 ✓
0 43 35.16 ✓ +35 4 31.3 ✓
10° 53' 47.''

Log u/15 = +0.12611 ✓
" sin α = +9.27654 ✓
" tan δ = +9.84644 ✓
+0.1775 = +9.24909 ✓
+3.0708 ✓
+3.2483 ✓ = +0.51166 ✓
67. = +1.82607 ✓
217.64 ✓ = +2.33773 ✓

Log u = +1.30220 ✓
" cos α = +9.99210 ✓
" 67. = +1.82607 ✓
+1319.''4 = +3.12037 ✓

0 41 46.62 ✓ +34 53 31.4 ✓
+3 37.64 ✓ +21 59.4 ✓
* 1892.0 = 0 45 24.26 ✓ +35 15 30.8 ✓
+2.70 ✓ +28.2 ✓
Ap. Pl. * = 0 45 26.96 ✓ +35 15 59.0 ✓
☄ - * = +0 33.61 ✓ +2 23.1 ✓
☄ = 0 46 0.57 ✓ +35 18 22.1 ✓

$f = +2.275$ ✓
$G = 22\ 19.1$ ✓
$H = 0\ 41.6$ ✓
Log $g = +1.21555$ ✓
" $h = +1.3093$ ✓
" $i = +0.2035$ ✓

22 19.1 ✓	0 41.6 ✓
0 45.4 ✓	0 45.4 ✓
23 4.5 ✓	1 27.0 ✓
$(G+A)$	$(H+A)$

Log $\frac{1}{15} = +8.8239$ ✓
" $\sin(G+A) = -9.38\overset{7\,9\,8}{49}$
" $g = +1.21555$ ✓
" $\tan\delta = +9.8495$ ✓
$-0.188 = -9.2738$ ✓

" $\frac{1}{15} = +8.8239$ ✓
" $h = +1.3093$ ✓
" $\sin(H+A) = +9.5689$ ✓
" $\sec\delta = +0.0881$ ✓
$+0.617$ ✓ $= +9.7902$ ✓
$+2.275$ ✓
$+2.892$ ✓
-0.188
$+2.704 = \alpha' - \alpha$

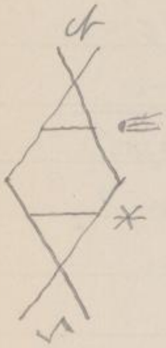
Log $g = +1.21555$ ✓
" $\cos(G+A) = +9.9872$ ✓
$+15.95$ ✓ $= +1.2027$ ✓

" $h = +1.3093$ ✓
" $\cos(H+A) = +9.9679$ ✓
" $\sin\delta = +9.7615$ ✓
$+10.93$ ✓ $+1.0387$ ✓

" $i = +0.2035$ ✓
" $\cos\delta = +9.9119$ ✓
$+1.30$ ✓ $= +0.1154$ ✓
$+15.95$ ✓
$+10.93$ ✓
$+28.18$ ✓ $= \delta' - \delta$

Comet Holmes.

Dec. 16. 1892.



	☄	*		
1	39 10.5 ✓	39 42.0 ✓		
	40 7.2 ✓	39 58.0 ✓		
	79 17.7 ✓	79 40.0 ✓	0 22.3 ✓	0 11.15 ✓
	40 33.1 ✓	41 6.2 ✓		
	41 32.5 ✓	41 22.5 ✓		
	82 5.6 ✓	82 28.7 ✓	0 23.1 ✓	0 11.55 ✓
	42 1.0 ✓	42 30.7 ✓		
	43 1.5 ✓	42 50.0 ✓		
	85 2.5 ✓	85 20.7 ✓	0 18.2 ✓	0 9.10 ✓
	44 22.5 ✓	44 54.0 ✓		
	45 22.0 ✓	45 10.5 ✓		
	89 44.5 ✓	90 4.5 ✓	0 20.0 ✓	0 10.00 ✓
	46 32.3 ✓	47 5.0 ✓		
	47 33.5 ✓	47 21.0 ✓		
	94 5.8 ✓	94 26.0 ✓	0 20.2 ✓	0 10.10 ✓
	48 24.5 ✓	48 56.4 ✓		
	49 24.8 ✓	49 12.6 ✓		
	97 49.3 ✓	98 9.0 ✓	0 19.7 ✓	0 9.85 ✓
	50 24.2 ✓	50 55.6 ✓		
	51 24.0 ✓	51 12.0 ✓		
	101 48.2 ✓	102 7.6 ✓	0 19.4 ✓	0 9.70 ✓
				− 0 10.21 ✓

1h 44m 59.5s ✓ = mean of times.
+3 23.0 ✓ Chr. cor.
1 48 22.5 ✓
17 43 8.1 ✓
8 5 14.4 ✓
1 19.5 ✓
8 3 54.9 ✓ C. M. T. obs.

Δ☉	Δ✳	
56.7 ✓	16.0 ✓	72.7 ✓
59.4 ✓	16.3 ✓	75.7 ✓
60.5 ✓	19.3 ✓	79.8 ✓
59.5 ✓	16.5 ✓	76.0 ✓
61.2 ✓	16.0 ✓	77.2 ✓
60.3 ✓	16.2 ✓	76.5 ✓
59.8 ✓	16.4 ✓	76.2 ✓
		76.30

+34 39 4. ✓
+3 28. ✓
+34 42 32. ✓

76.30 = 1.88252 ✓
75 = 0.87506 ✓
cos δ = 9.91521 ✓
470.7 = 2.67279 ✓
886.0
½415.3
207.6 = +3′ 27.6

+1.88252 ✓
+0.87506 ✓
+9.91490 ✓
+2.67248 ✓ = 470.4
886.0
415.6
+6′ 55.″6 ✓

+3.26
+19.6

(33.5)

Comet Holmes.

Dec. 16. 1892.

Comp. Star = Dm. + 34° 148 (7.0 M)
0h 48m 18.3s ✓ +34° 26.2' ✓ (Dm. place)

Tr. 1241-2 = 0h 46m 40.52s ✓ +34° 16' 42.4" ✓ (1825)
+1 49.21 ✓ 10 56.6 ✓
Mid. pl. = 0 48 29.73 ✓ +34 27 39.0 ✓
12° 7' 26."

Log w/15 = +0.12611 ✓
" sin δ = +9.32228 ✓
" tan δ = +9.83650 ✓
+0.1927 = +9.28489 ✓
+3.07088 ✓ =
+3.26355 ✓ = +0.51368 ✓
67. = +1.82607 ✓
+218.65 ✓ = +2.33975 ✓

Log w = +1.30220 ✓
" cos δ = +9.99021 ✓
" 67. = +1.82607 ✓
+1313.″6 = +3.11848 ✓

* 1825.0 = 0 46 40.52 ✓ +34 16 42.4 ✓
+3 38.65 ✓ 21 53.6 ✓
* 1892.0 = 0 50 19.17 ✓ +34 38 36.0 ✓
+2.64 ✓ +28.0 ✓
Ap. pl. * = 0 50 21.81 ✓ +34 39 4.0 ✓
☄ – * = −10.21 ✓ +6 55.6 ✓
Ap. pl. ☄ = 0 50 11.60 ✓ +34 45 59.6 ✓

Comet Holmes.
Dec. 16. 1892.

$f = +2.334$ ✓
$g = 22\ 22.7$ ✓
$\nu = 0\ 15.4$ ✓
Log $g = +1.2234$ ✓
" $h = +1.3104$ ✓
" $i = +9.7751$ ✓

$$\begin{array}{rr} 22 & 22.7 \\ 0 & 50.3 \\ \hline 23 & 13.0 \end{array} \qquad \begin{array}{rr} 0 & 15.4 \\ 0 & 50.3 \\ \hline 1 & 5.7 \end{array}$$

Log $\frac{1}{15} = +8.8239$ ✓
" $\sin(G+\alpha) = -9.3089$ ✓
" $g = +1.2234$ ✓
" $\tan\delta = +9.8396$ ✓
$-0.157 = -9.1958$ ✓

" $\frac{1}{15} = +8.8239$ ✓
" $h = +1.3104$ ✓
" $\sin(H+\alpha) = +9.4514$ ✓
" $\sec\delta = +0.0848$ ✓
$+0.468 = +9.6705$ ✓

$$\begin{array}{r} +2.334 \\ \hline +2.802 \\ -0.157 \\ \hline +2.645 \end{array} = (\alpha' - \alpha)$$

Log $g = +1.2234$ ✓
" $\cos(G+\alpha) = +9.9908$ ✓
$+16.38 = +1.2142$ ✓

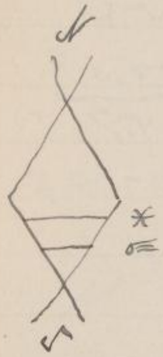
" $h = +1.3104$ ✓
" $\cos(H+\alpha) = +9.9819$ ✓
" $\sin\delta = +9.7548$ ✓
$+11.15 = +1.0471$ ✓

" $i = +9.7751$ ✓
" $\cos\delta = +9.9152$ ✓
$+0.49 = +9.6903$ ✓

$$\begin{array}{r} +0.49 \\ +16.38 \\ +11.15 \\ \hline +28.02 \end{array} = \delta' - \delta$$

Comet Holmes.

Dec. 22. 1892.



	○=	*				
2h	34 34.2	31 40.5				
	35 9.6	32 30.5				
	69 43.8	64 11.0	5	32.8	2	46.40
	38 55.2	36 0.7				
	39 30.5	36 50.8				
	78 25.7	72 51.5	5	34.2	2	47.10
	42 54.5	40 1.2				
	43 31.0	40 51.6				
	86 25.5	80 52.8	5	32.7	2	46.35
	47 32.7	44 39.7				
	48 9.0	45 30.2				
	95 41.7	90 9.9	5	31.8	2	45.90
	51 47.4	48 53.5 ~~43.5~~				
	52 23.1	49 44.2				
	104 10.5	98 27.7	5	42.8	2	51.40
	57 7.0	54 12.0				
	57 43.1	55 3.2				
	114 50.1	109 15.2	5	34.9	2	47.45
	61 10.8	58 16.0				
	61 46.9	59 7.0				
	122 57.7	117 23.0	5	34.7	2	47.35
					+2	47.42

2 48 1.1 mean

+3 56.7 Chr. cor.

2 51 57.8

18 6 47.5

8 45 10.3

−1 26.0

8 43 44.3 C. M. T.

35.4 ✓ 50.0 ✓ 14.6

35.3 ✓ 50.1 ✓ 14.8

36.5 ✓ 50.4 13.9

36.3 ✓ 50.5 ✓ 14.2

35.7 ✓ 50.7 ✓ 15.0

36.1 ✓ 51.2 ✓ 15.1

36.1 ✓ 51.0 ✓ 14.9

14.64 ✓

+34 24 48.1

− 45.1

+34 24 3.

14.64 = +1.16554

7.5 = +0.87506

cos δ = +9.91645

+90.6" = +1.95705

45.3"

+1.16554 ✓

+0.87506 ✓

+9.91651

+1.95711

90.6"

−1' 30.6"

92 yrs.
+3.2553 ✓
+19.6 ✓

Comet Holmes.

Dec. 22. 1892.

Comp. Star = DM. + 34° 154 (7.9 L.)

Ll. 1625 = $0^h\ 46^m\ 58^s.63$ ✓ $+33°\ 54'\ 17''.6$ ✓ (1800)
$+2\ \ 29.50$ ✓ $+15\ \ 1.6$ ✓
mid. pl. = $0\ \ 49\ \ 28.13$ ✓ $+34\ \ 9\ \ 19.2$ ✓
$12°\ 22'\ 2''$

Log $\frac{n}{15}$ = +0.12614 ✓
" sin α = +9.33077 ✓
" tan δ = +9.83153 ✓
+0.1943 = +9.28844 ✓
+3.0705 ✓
+3.2648 = +0.51385 ✓
92. = +1.96379 ✓
+300.36 = +2.47764 ✓

Log n = +1.30223 ✓
" cos α = +9.98980 ✓
" 92 = +1.96379 ✓
+1802.″3 = +3.25582 ✓

* 1800 = $0^h\ 46^m\ 58^s.63$ ✓ $+33°\ 54'\ 17''.6$ ✓
$+5\ \ 0.36$ ✓ $+30\ \ 2.3$ ✓
* 1892 = $0\ \ 51\ \ 58.99$ ✓ $+34\ \ 24\ \ 19.9$ ✓
$+2.90$ ✓ $+28.1$ ✓
Ap. pl. * = $0\ \ 52\ \ 1.89$ ✓ $+34\ \ 24\ \ 48.0$ ✓
☄ − * = $+2\ \ 47.42$ ✓ $-1\ \ 30.6$ ✓
Ap. pl. ☄ = $0\ \ 54\ \ 49.31$ ✓ $+34\ \ 23\ \ 17.4$ ✓

f = $+2^s.425$
G = 22 24.7
H = 23 53.0
Log g = +1.2384
" h = +1.3105
" i = −9.4339

22 24.7
0 52.0
23 16.7
(G+A)

23 53.0
0 52.0
0 45.0
(H+A)

Log $\frac{1}{15}$ = +8.8239
" sin (G+A) = +9.2737
" g = +1.2384
" tan δ = +9.8356
+0.148 = +9.1716

" $\frac{1}{15}$ = +8.8239
" h = +1.3105
" sin (H+A) = +9.2902
" sec δ = +0.0835
+0.322 = +9.5081

+2.425
+0.148
+2.895 = α′−α

Log g = +1.2384
" cos (G+A) = +9.9922
+17.01 = +1.2306

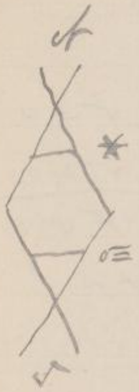
" h = +1.3105
" cos (H+A) = +9.9916
" sin δ = +9.7521
+11.33 = +1.0542

" i = −9.4339
" cos δ = +9.9165
−0.224 = −9.3504

+17.01
+11.33
+28.34
− 0.22
+28.12 = δ′−δ

Jan. 16. 1893.

Comet Holmes.



	☄		*					
6	55	55.1 ✓	54	50.0 ✓				
	56	17.5 ✓	55	9.5 ✓				
	112	12.6 ✓	109	59.5 ✓	2	13.1 ✓	1	6.55 ✓
	58	11.3 ✓	57	5.0 ✓				
	58	34.0 ✓	57	25.5 ✓				
	116	45.3 ✓	114	30.5 ✓	2	14.8 ✓	1	7.40 ✓
	60	19.8 ✓	59	13.2 ✓				
	60	42.6 ✓	59	34.0 ✓				
	121	2.4 ✓	118	47.2 ✓	2	15.2 ✓	1	7.60 ✓
	62	57.8 ✓	61	51.5 ✓				
	63	20.3 ✓	62	11.9 ✓				
	126	18.1 ✓	124	3.4 ✓	2	14.7 ✓	1	7.35 ✓
	65	1.0 ✓	63	54.5 ✓				
	65	23.5 ✓	64	14.6 ✓				
	130	24.5 ✓	128	9.1 ✓	2	15.4 ✓	1	7.70 ✓
	67	53.2 ✓	66	46.5 ✓				
	68	15.8 ✓	67	7.0 ✓				
	136	9.0 ✓	133	53.5 ✓	2	15.5 ✓	1	7.75 ✓
							+1	7.39 ✓
						Ref. Cor.		−0.03 ✓
							+1	7.36 ✓

mean ☄ time = 7 1 54.3 ✓
+52.7 ✓
7 2 47.0 ✓
19 45 21.4 ✓
11 17 25.6 ✓
−1 51.0 ✓
11 15 34.6 ✓ C. M. T. obs.

22.4	19.5	41.9
22.7	20.5	43.2
22.8	20.8	43.6
22.5	20.4	42.9
22.5	20.1	42.6
22.6	20.5	43.1
22.58	20.30	42.88

+33 49 28.
−5 9.
+33 44 19.

42.88 = 1.63225
7.5 = 0.87506
cos δ = +9.91947
267.2 = 2.42678
886.0
2/618.8 =
309.4

+1.63225
+0.87506
+9.91990
+2.42721 = 267.4
886.0
618.6

−10 18.6
Ref. Cor. −07
−10 19.3

93 yrs.
46.5 "
+3.355
+18.97

Jan. 16. 1893.
Comet Holmes.

Comp. Star = DM. +33° 234 (6.6 L.)
" " = Lalande 2604.

Ll. 1800 =	1	15	46.65	+33	20	2.9
		+2	36.01		+14	42.1
	1	18	22.66	+33	34	45.0
	19°	35′	40.″			

Log n/15 = +0.12614
" sin α = +9.52551
" tan δ = +9.82208
+0.2977 = +9.47373
+3.0705 =
+3.3682 = +0.52740
93. = +1.96848
313.24 = +2.49588

Log n = +1.30223
" cos α = +9.97409
" 93. = +1.96848
+1757.1 = +3.24480

	1	15	46.65	+33	20	2.9
		5	13.24		+29	17.1
* 1893.0 =	1	20	59.89	+33	49	20.0
			−0.84			+8.4
Ap. pl. * =	1	20	59.05	+33	49	28.4
		+1	7.3~~9~~6		−10	~~18.6~~ 19.3
Ap. pl. ☄ =	1	22	6.4~~4~~1	+33	39	9.~~8~~1

Jan. 16, 1893.
Comet Holmes.

$f = -0.358$ ✓
$G = 16\ 48.9$ ✓
$H = 22\ 18.3$ ✓
Log $g = +0.8819$ ✓
" $h = +1.3032$ ✓
" $i = -0.5735$ ✓

$$\begin{array}{rr} G = 16 & 48.9 \\ 1 & 21.0 \\ \hline 18 & 9.9 \end{array} \qquad \begin{array}{rr} H = 22 & 18.3 \\ 1 & 21.0 \\ \hline 23 & 39.3 \end{array}$$

Log $\frac{1}{15} = +8.8239$
" $\sin(G+\alpha) = -9.9996$
" $g = +0.8819$
" $\tan\delta = +9.8261$
$-0.340 = -9.5315$ ✓

" $\frac{1}{15} = +8.8239$
" $h = +1.3032$
" $\sin(H+\alpha) = -8.9551$
" $\sec\delta = +0.0805$
-0.145 ✓ $= -9.1627$ ✓
-0.358 ✓
-0.340 ✓
-0.843 ✓ $= \alpha' - \alpha$

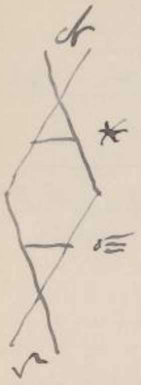
Log $g = +0.8819$
" $\cos(G+\alpha) = +8.6351$
$+0.33 = +9.5170$

" $h = +1.3032$
" $\cos(H+\alpha) = +9.9982$
" $\sin\delta = +9.7456$
$+11.14$ ✓ $= +1.0470$ ✓

" $i = -0.5735$ ✓
" $\cos\delta = +9.9195$ ✓
$-3.11 = -0.4930$

$+0.33$ ✓
$+11.14$ ✓
$+11.47$ ✓
-3.11 ✓
$+8.36$ ✓ $= \delta' - \delta$

Comet Holmes.
Jan. 17. 1893.



	☄	*		
4	50 8.2	47 46.7		
	50 26.1	48 10.5		
	100 34.3	95 57.2	4 37.1	2 18.55
	53 28.5	51 6.6		
	53 46.8	51 30.8		
	107 15.3	102 37.4	4 37.9	2 18.95
	56 47.0	54 25.1		
	57 5.2	54 49.0		
	113 52.2	109 14.1	4 38.1	2 19.05
	60 6.0	57 44.4		
	60 24.5	58 7.5		
	120 30.5	115 51.9	4 38.6	2 19.30
	63 35.3	61 13.9		
	63 54.1	61 36.5		
	127 29.4	122 50.4	4 39.0	2 19.50
				+2 19.07

4 56 58.2 = Mean ☄ times.
+1 0.3 = Chr. cor.
4 57 58.5
19 49 18.0
9 8 40.5
1 29.9
9 7 10.6 C. M. T.

17.9 ✓	23.8 ✓	41.7				
18.3 ✓	24.2 ✓	42.5				
				+33	49	28.3
					− 5	12.6
18.2 ✓	23.9 ✓	42.1		+33	44	15.7
18.5 ✓	23.1 ✓	41.6				
18.8 ✓	22.6 ✓	41.4				
		41.86 ✓				

41.86 ✓ = +1.62180 ✓

7.5 = +0.87506 ✓

cos δ = +9.91947 ✓

260.8 = +2.41633 ✓

886.0

2/625.2

312.6

+1.62180 ✓

+0.87506 ✓

+9.91991 ✓

+2.41677 ✓ = 261.1 ✓

886.0 ✓

624.9 ✓

−10′ 24.9″ ✓

Comet Holmes.
Jan. 17. 1893.

$f = -0.344$ ✓
$G = 16\ 51.9$ ✓
$H = 22\ 14.5$ ✓
Log $g = +0.8834$ ✓
" $h = +1.3027$ ✓
" $i = -0.5881$ ✓

16 51.9	22 14.5
1 21.0	1 21.0
18 12.9	23 35.5

Log $\frac{1}{15} = +8.8239$ ✓
" $g = +0.8834$ ✓
" $\sin(G+A) = -9.9993$ ✓
" $\tan\delta = +9.8261$ ✓
$-0.341 = -9.5327$ ✓

" $\frac{1}{15} = +8.8239$ ✓
" $h = +1.3027$ ✓
" $\sin(H+A) = -9.0281$ ✓
" $\sec\delta = +0.0805$ ✓
$-0.172 = -9.2352$ ✓
-0.344 ✓
-0.341 ✓
-0.857 ✓

Log $g = +0.8834$ ✓
" $\cos(G+A) = +8.7500$ ✓
$+0.43$ $+9.6334$ ✓

" $h = +1.3027$ ✓
" $\cos(H+A) = +9.9975$ ✓
" $\sin\delta = +9.7456$ ✓
$+11.11 = +1.0458$ ✓

" $i = -0.5881$ ✓
" $\cos\delta = +9.9195$ ✓
$-3.22 = -0.5076$

$+0.43$ ✓
$+11.11$ ✓
$+11.54$ ✓
-3.22 ✓
$+8.32 = \delta' - \delta$

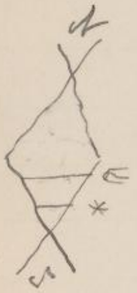
Comet Holmes.
Jan. 17. 1893.

Comp. Star = Ll. 2604 (Supp. 84)

* 1893.0 =	1	20	59.89 ✓	+33	49	20.0 ✓
			−0.86 ✓			+8.3 ✓
App. pl. * =	1	20	59.03 ✓	+33	49	28.3 ✓
		+2	19.07 ✓		−10	24.9 ✓
" " ☰ =	1	23	18.10 ✓	+33	39	3.4 ✓

Comet Holmes.

Jan. 19. 1893.



	o≡	*		
√	33 0.4 ✓	31 55.0 ✓		
	33 39.5 ✓	32 20.0 ✓		
	66 39.9 ✓	64 15.0 ✓	2 24.9 ✓	1 12.45 ✓
	35 20.0 ✓	34 14.5 ✓		
	36 0.5 ✓	34 40.1 ✓		
	71 20.5 ✓	68 54.6 ✓	2 25.9 ✓	1 12.95 ✓
	37 46.7 ✓	36 41.5 ✓		
	38 27.1 ✓	37 7.0 ✓		
	76 13.8 ✓	73 48.5 ✓	2 25.3 ✓	1 12.65 ✓
	40 11.5 ✓	39 6.0 ✓		
	40 52.0 ✓	39 31.7 ✓		
	81 3.5 ✓	78 37.7 ✓	2 25.8 ✓	1 12.90 ✓
	42 31.3 ✓	41 25.5 ✓		
	43 11.7 ✓	41 51.6 ✓		
	85 43.0 ✓	83 17.1 ✓	2 25.9 ✓	1 12.95 ✓
	44 53.5 ✓	43 47.6 ✓		
	45 34.3 ✓	44 14.5 ✓		
	90 27.8 ✓	88 2.1 ✓	2 25.7 ✓	1 12.85 ✓
				+1 12.79 ✓

5 39 17.4 ✓ mean o≡ times.
+1 16.3 ✓
√ 5 40 33.7 ✓
19 57 11.1 ✓
9 43 22.6 ✓
−1 35.6 ✓
9 41 47.0 ✓ C. M. T. obs.

39.1	25.0	14.1
40.5	25.6	14.9
40.4	25.5	14.9
40.5	25.7	14.8
40.4	26.1	14.3
40.8	26.9	13.9
		14.48

+33 37 28.
+45.
+33 38 13.

14.48 = +1.16077
75 = +0.87506
cos δ = +9.92048
+90.4 = +1.95631
+45.2

+1.16077
+0.87506
+9.92042
+1.95625

+ 90.4″
+1′ 30.4″

68 yrs.
+3.37
+18.82

Comet Holmes.
Jan. 19. 1893.

Comp. Star = D.M. + 33° 246 (AGK)
" " = W. Bessel 1h 491.

(* 1825) = 1 20 58.18 ✓ +33 16 4.1 ✓
+1 54.58 ✓ +10 39.9 ✓
Mid. Pl. = 1 22 52.76 ✓ +33 26 44.0 ✓
20° 43′ 11.″

Log $\frac{n}{15}$ = +0.12611
" sin α = +9.54875
" tan δ = +9.81989
+0.3124 = +9.49475
+3.0708
+3.3832 = +0.52932 ✓
68. = +1.83251 ✓
230.05 = +2.36183

Log n = +1.30220
" cos α = +9.97096
" 68. = +1.83251 ✓
+1275.5 = +3.10567 ✓

1 20 58.18 ✓ +33 16 4.1 ✓
+3 50.05 ✓ 21 15.5 ✓
* 1893.0 1 24 48.23 ✓ +33 37 19.6 ✓
−0.86 ✓ +8.3 ✓
Ap. Pl. * = 1 24 47.37 ✓ +33 37 27.9 ✓
+1 12.79 ✓ +1 30.4 ✓
" = 1 26 0.16 ✓ +33 38 58.3 ✓

Comet Holmes.
Jan. 19. 1893.

f = −0.324 ✓
G = 16 56.7 ✓
H = 22 6.7 ✓
Log g = +0.8878 ✓
" h = +1.3016 ✓
" i = −0.6154 ✓

16 56.7 ✓
1 24.8 ✓
18 21.5 ✓

22 6.7 ✓
1 24.8 ✓
23 31.5 ✓

Log $\frac{1}{15}$ = +8.8239 ✓
" g = +0.8878 ✓
" sin(G+A) = −9.9981 ✓
" tan δ = +9.8228 ✓
−0.341 ✓ = −9.5326 ✓

" $\frac{1}{15}$ = +8.8239 ✓
" h = +1.3016 ✓
" sin(H+A) = −9.0935 ✓
" sec δ = +0.0795 ✓
−0.199 ✓ = −9.2985 ✓
−0.324 ✓
−0.341 ✓
−0.864 ✓

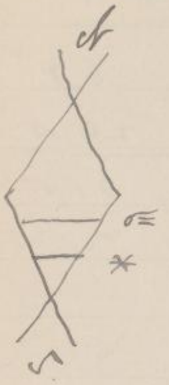
Log g = +0.8878 ✓
" cos(G+A) = +8.9715 ✓
+0.72 ✓ = +9.8593 ✓

" h = +1.3016 ✓
" cos(H+A) = +9.9966 ✓
" sin δ = +9.7433 ✓
+11.00 ✓ = +1.0415 ✓

" i = −0.6154 ✓
" cos δ = +9.9205 ✓
−3.43 ✓ = −0.5359 ✓

+0.72 ✓
+11.00 ✓
+11.72 ✓
−3.43 ✓
+8.29 ✓ = δ′ − δ

Comet Holmes.
Jan. 20. 1893.



	☄		*			
7	0 0.0 ✓	6	57 30.1 ✓			
	0 42.0 ✓		57 55.8 ✓			
	0 42.0 ✓		115 25.9 ✓	5 16.1 ✓	2	38.05 ✓
	3 48.5 ✓		1 18.1 ✓			
	4 30.4 ✓		1 44.0 ✓			
	8 18.9 ✓		3 2.1 ✓	5 16.8 ✓	2	38.40 ✓
	10 11.6 ✓		7 41.0 ✓			
	10 54.6 ✓		8 7.5 ✓			
	21 6.2 ✓		15 48.5 ✓	5 17.7 ✓	2	38.85 ✓
	14 3.5 ✓		11 32.5 ✓			
	14 46.5 ✓		12 0.1 ✓			
	28 50.0 ✓		23 32.6 ✓	5 17.4 ✓	2	38.70 ✓
	17 47.2 ✓		15 16.0 ✓			
	18 30.6 ✓		15 43.8 ✓			
	36 17.8 ✓		30 59.8 ✓	5 18.0 ✓	2	39.00 ✓
					+2	38.60 ✓

7 9 31.5 ✓ mean ☄ times.
+1 25.0 ✓ Chr. cor.
7 10 56.5 ✓
20 1 7.7 ✓
11 9 48.8 ✓
1 49.7 ✓
11 7 59.1 ✓ C. M. T.

42.0 ✓	25.7 ✓	16.3 ✓
41.9 ✓	25.9 ✓	16.0 ✓
43.0 ✓	26.5 ✓	16.5 ✓
43.0 ✓	27.6 ✓	15.4 ✓
43.4 ✓	27.8 ✓	15.6 ✓
42.66 ✓	26.70 ✓	15.96 ✓

+33 37 28.
+50.
+33 38 18. ✓

15.96 = +1.20303
75 = +0.87506
cos δ = +9.92048
2/+99.7 = +1.99857
49.8

+1.20303
+0.87506
+9.92041
1.99850 = +99.7
+1 39.7

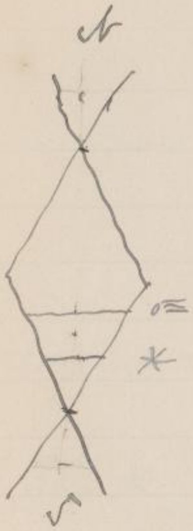
Comet Holmes.
Jan. 20. 1893.

Comp. Star = D.M. + 33° 246 (8.1 K)
Same star as used on Jan. 19. See p. 92.

* 1893.0 =	1	24	48.23 ✓	+33	37	19.6 ✓
			−0.87 ✓			+8.3 ✓
Ap. pl. * =	1	24	47.36 ✓	+33	37	27.9 ✓
		+2	38.60 ✓		+1	39.7 ✓
" " ☄ =	1	27	25.96 ✓	+33	39	7.6 ✓

1892pmae.proj..510.

Comet Holmes.
Jan. 21. 1893.



	☄		*					
6	24	10.1 ✓	25	48.2 ✓				
	25	5.0 ✓	26	6.4 ✓				
	49	15.1 ✓	51	54.6 ✓	2	39.5 ✓	1	19.75 ✓
	26	34.8 ✓	28	12.6 ✓				
	27	29.9 ✓	28	30.5 ✓				
	54	4.7 ✓	56	43.1 ✓	2	38.4 ✓	1	19.20 ✓
	29	2.0 ✓	30	39.5 ✓				
	29	57.0 ✓	30	57.8 ✓				
	58	59.0 ✓	61	37.3 ✓	2	38.3 ✓	1	19.15 ✓
	31	38.8 ✓	33	16.0 ✓				
	32	34.0 ✓	33	34.8 ✓				
	64	12.8 ✓	66	50.8 ✓	2	38.0 ✓	1	19.00 ✓
	34	8.4 ✓	35	46.0 ✓				
	35	4.2 ✓	36	4.5 ✓				
	69	12.6 ✓	71	50.5 ✓	2	37.9 ✓	1	18.95 ✓
							−1	19.21 ✓

$6^h\ 29^m\ 34^s.4$ ✓ mean of times.
+1 32.2 ✓ Chr. cor.

6 31 6.6 ✓
20 5 4.2 ✓

10 26 2.4 ✓
−1 42.6 ✓

10 24 19.8 ✓ C. m. T.

54.9 ✓ 18.2 ✓ 36.7 ✓

55.1 ✓ 17.9 ✓ 37.2 ✓

+33 35 32,
+1 55,

+33 37 27.

55.0 ✓ 18.3 ✓ 36.7 ✓

55.2 ✓ 18.8 ✓ 36.4 ✓

55.8 ✓ 18.5 ✓ 37.3 ✓

36.86 ✓

36.86 = +1.56656 ✓
75 = +0.87506 ✓
cos δ = +9.92064 ✓
2/ +230.3'' = +2.36226 ✓
115.2''

+1.56656 ✓
+0.87506 ✓
+9.92048 ✓
+2.36210 = 230.2''
+3' 50.2'' ✓

68 yrs.
+3.39
+12.7

Comet Holmes.
Jan. 21. 1893.

Comp. Star = D M. +33° 260. (9.0 K)
" " = Fr. Bessel 615. (9)

* 1825.0 = 1	26	13.75	+33	14	20.2
	+1	55.26		+10	35.8
1	28	9.01	+33	24	56.0
22°	2′	15″			

Log $\frac{n}{15}$ = +0.12610
" sin α = +9.57828
" tan δ = +9.81939
+0.3310 = +9.51977
+3.0708
+3.4018 = +0.53171
68. = +1.83251
+231.32 = +2.36422

Log n = +1.30220
" cos α = +9.96705
" 68. = +1.83251
+1264.0 = +3.10176

* 1825.0 = 1	26	13.75	+33	14	20.2
	3	51.32		+21	4.0
* 1893.0 = 1	30	5.07	+33	35	24.2
		−0.87			+8.3
Ap. pl. * = 1	30	4.20	+33	35	32.5
	−1	19.21		+3	50.2
Ap. pl. ☄ = 1	28	44.99	+33	39	22.7

$f = -0.311$
$G = 16\ 59.7$
$H = 21\ 58.9$
Log $g = +0.8911$
" $h = +1.3004$
" $i = -0.6405$

$$\begin{array}{rr} 16 & 59.7 \\ 1 & 30.1 \\ \hline 18 & 29.8 \end{array}$$
$(G+A)$

$$\begin{array}{rr} 21 & 58.9 \\ 1 & 30.1 \\ \hline 23 & 29.0 \end{array}$$
$(H+A)$

Log $\frac{1}{15}$ $= +8.8239$
" g $= +0.8911$
" $\sin(G+A) = -9.9963$
" $\tan\delta$ $= +9.8223$
$-0.342 = -9.5336$

" $\frac{1}{15}$ $= +8.8239$
" h $= +1.3004$
" $\sin(H+A) = -9.1299$
" $\sec\delta$ $= +0.0794$
$-0.216 = -9.3336$
-0.311
-0.342
$-0.869 = \alpha' - \alpha$

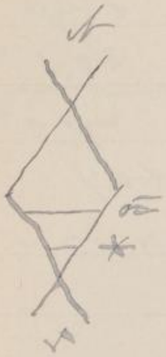
Log g $= +0.8911$
" $\cos(G+A) = +9.1128$
$+1.01 = +0.0039$

" h $= +1.3004$
" $\cos(H+A) = +9.9960$
" $\sin\delta$ $= +9.7429$
$+10.95 = +1.0393$

" i $= -0.6405$
" $\cos\delta$ $= +9.9206$
$-3.64 = -0.5611$

$+1.01$
$+10.95$
$+11.96$
-3.64
$+8.32 = \delta' - \delta$

Comet Rordame Disc. July 8 1893.
1st Obs. of July 10. 1893.



	☄	*		
16	25 12.6	27 6.0		
	26 27.1	27 22.4		
	51 39.7	54 28.4	2 48.7	1 24.35
	~~27 57.6~~	~~29 47.0~~		
	~~29 12.0~~	~~29 54.3~~		
	~~57 9.6~~	~~59 41.3~~	~~2 31.7~~	
	30 43.6	32 27.5		
	31 57.0	32 45.6		
	62 40.6	65 13.1	2 32.5	1 16.25
	34 7.6	35 45.5		
	35 19.0	36 4.6		
	69 26.6	71 50.1	2 23.5	1 11.75
	36 50.1	38 23.1		
	38 7.2	38 49.4		
	74 57.3	77 12.5	2 15.2	1 7.60
	39 30.9	40 58.9		
	40 46.0	41 26.1		
	80 16.9	82 25.0	2 8.1	1 4.05
				−1 12.80

16 33 54.11 mean.
Chr. cor. = +3 11.70
16 37 5.81
7 15 18.8
9 21 46.83
−1 32.0
9 20 14.83 = C. m. T.

1	14.5 ✓	0	16.4 ✓	0 58.1 ✓

+46 48 35.3 ✓
+2 15.7 ✓
+46 50 51.0 ✓

1	13.4 ✓	0	18.1 ✓	55.3 ✓
1	11.4 ✓	0	19.1 ✓	52.3 ✓
1	17.1 ✓	0	26.3 ✓	50.8 ✓
1	15.1 ✓	0	27.2 ✓	47.9 ✓
1	14.30	0	21.42	52.88

52.88 = 1.72329
7.5 = 0.87506
cos. δ = 9.83527
2)+271.4 = 2.43362
135.7 = +2 15.7

1.72329 ✓
0.87506 ✓
9.83502 ✓
2.43337 +271.3" ✓
+4 31.3 ✓

Comet Rordame Quénisse. July 8. 1893.
Obs. of July 10. 1893c

Plate. 9189-90 Comp. Star = Dur. +46° 1421 (8.5 M.)

(1852.0) = 8 29 56.07 ✓ +46 58 55.8 ✓
+1 47.36 ✓ −5 11.1 ✓
Mid. pl. = 8 31 43.43 ✓ +46 53 44.7 ✓
129° 55′ 51.4″ ✓

Log n/15 +0.12609 ✓ +1.30218 ✓
" sin α +9.89694 ✓ n9.78867 ✓
" tan δ +0.02876 ✓ 51. = +1.70757 ✓
+0.05179 ✓ −628.7″ = n2.79842

+1.1267
+3.0710 ✓
+4.1977 ✓ = +0.62301 ✓
51. = +1.70757
+214.08 = +2.33058 ✓

1852.0 = 8 29 56.07 ✓ +46 58 55.8 ✓
+3 34.08 ✓ −10 28.7 ✓
1893.0 = 8 33 30.15 ✓ +46 48 27.1 ✓
+0.18 ✓ +8.2 ✓
Ap. pl. ★ = 8 33 30.33 ✓ +46 48 35.3 ✓
−1 12.80 ✓ +4 31.5 ✓
8 32 17.53 ✓ +46 53 6.8 ✓
Cor. for Prop. mot. = +0.11 ✓ −4.6 ✓
Ap. pl. ☌ = 8 32 17.64 ✓ +46 53 2.2 ✓

Ref. Cor. in δ = +0″.20 nothing in R.A.

Rordame
Comet disc. July 8. 1893.
Obs. of July 10. 1893.

$f = +1.231^s$ ✓
$G = 21\ \ 3.0$ ✓
$H = 10\ \ 49.6$ ✓
Log $g = +1.0503$ ✓
" $h = +1.3069$ ✓
" $i = +0.4248$ ✓

$$\begin{array}{rr} 21 & 3.0 \\ 8 & 33.5 \\ \hline 5 & 36.5 \end{array}$$

3 + +

$$\begin{array}{rr} 10 & 49.6 \\ 8 & 33.5 \\ \hline 19 & 23.1 \end{array}$$

18 + +

Log $\frac{1}{15} = +8.8239$
" $g = +1.0503$
" $\sin(G+\alpha) = +9.9977$ ✓
" $\tan\delta = +0.0274$ ✓
$+0.793$ ✓ $\quad +9.8993$ ✓

" $\frac{1}{15} = +8.8239$
" $h = +1.3069$
" $\sin(H+\alpha) = -9.9708$
" $\sec\delta = +0.1646$
-1.846 ✓ $= -0.2662$ ✓

$+1.231$
$+0.793$
$+2.024$ ✓
-1.846 ✓
$\alpha'-\alpha = +0.178$ ✓

Log $g = +1.0503$
" $\cos(G+\alpha) = +9.0100$ ✓
$+1.15 \quad +0.0603$

" $h = +1.3069$
○ " $\cos(H+\alpha) = +9.54\overset{8}{9}9$ ✓
" $\sin\delta = +9.8627$
$+5.24 = +0.7195$

" $i = +0.4248$
" $\cos\delta = +9.8354$
$+1.82 = +0.2602$
$+1.15$
$+5.24$
$+8.21 = \delta'-\delta$

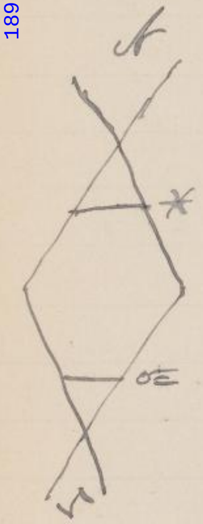
$a = +\overset{s}{.}012$
$d = -\overset{''}{.}030$

$\log\ (t''-t') = 1.87097$ ✓ $(74\overset{m}{.}30)$
" $d = n8.4839$ ✓
" $\frac{1}{30} = +8.5229$ ✓
" $\sec\delta = +0.1650$ ✓
$x = +0.110$ ✓ $= n9.0427$ ✓

$\log\ \frac{15}{2} = +0.87506$ ✓
" $a = +8.0792$ ✓
" $(t''-t') = +1.8709$ ✓
" $\cos\delta = +9.8350$ ✓
$y = -4\overset{''}{.}57$ ✓ $= +0.6602$ ✓

New Comet Rordame (2d series)

2d Obs. of July 11. 1893.



	☄		*				
16 59	28.1	59	1.6				
59	50.4	59	14.5				
119	18.5 ✓	118	16.1 ✓	1	2.4 ✓	0m	31.20
17 0	56.1	0	22.0				
1	12.8	0	39.7				
122	8.9 ✓	121	1.7 ✓	1	7.2 ✓	0	33.60
2	6.9	1	32.1				
2	23.4 ✓	1	49.0 ✓				
124	30.3	123	21.1	1	9.2 ✓	0	34.60
						+0	33.13 ✓
~~3~~	~~25.1~~	~~2~~	~~47.1~~				
~~3~~	~~49.5~~	~~3~~	~~3.6~~				
~~127~~	~~14.6~~	~~125~~	~~50.7~~	~~1~~	~~23.9~~		
~~4~~	~~41.8~~	~~4~~	~~2.4~~				
~~4~~	~~45.9~~	~~4~~	~~19.6~~				
~~129~~	~~27.7~~	~~128~~	~~22.0~~	~~1~~	~~5.7~~		
~~7~~	~~59.3~~	~~7~~	~~16.4~~				
~~8~~	~~12.9~~	~~7~~	~~31.3~~				
~~136~~	~~12.2~~	~~134~~	~~47.7~~	~~1~~	~~24.5~~		

17	0	59.62 ✓
	+3	18.0 ✓
17	4	17.6 ✓
7	19	15.3 ✓
9	45	2.3 ✓
	−1	35.8 ✓
9	43	26.5 ✓ C. m. T.

Δ☉	Δ*	
22.3	12.9	35.2
16.7	17.7	34.4
16.5	16.9	33.4
18.50 ✓	15.83	34.33

$$\begin{array}{rrr} +45 & 15 & 49.5 \\ & -5 & 52.4 \\ \hline +45 & 9 & 57.1 \end{array}$$

34.33 = 1.53567 ✓
75 = 0.87506 ✓
cos δ = 9.84747 ✓
181.2 = 2.25820 ✓

$$\begin{array}{r} 181.2 \\ 886.0 \\ \hline 2)\,704.8 \\ \hline 352.4 \end{array}$$

$$\begin{array}{r} 1.53567 \\ 0.87506 \\ 9.84823 \\ \hline 2.25896 ✓ \end{array}$$

$$\begin{array}{r} 181.5 \\ 886.0 \\ \hline 704.5 \end{array}$$

−11′ 44.5″

New Comet Rordame. (2d series)
Obs. of July 11. 1893.

Comp. Star = Oe A 9666. (See p. 114)

App. pl. *	=	9	4	40.97 ✓	+45	15	49.5 ✓
			+0	32.92 ~~33.13~~ ✓		−11	46.9 ~~41.5~~ ✓
		~~9~~	~~5~~	~~14.10~~ ✓	~~+45~~	~~4~~	~~8.0~~
☾ cor. for Ref.	=	9	5	13.89 ✓	+45	4	2.6 ✓
Cor. for Par.	=			−0.09 ✓			+1.4 ✓
App. pl. ☾	=	9	5	13.80 ✓	+45	4	4.0 ✓

Ref. Cor. in R.A. = $-0^s.21$ Cor in δ = $-2''.4$

Comet Rordame.

Obs. of July 11. 1893. (2d series)
Comp. of Prop. Motion.

$t''-t = 18^{h}.50$

$\text{Log } d = -9.0183$

$d = -0''.104$

$\text{" } a = +8.1707$

$a = +0^{s}.015$

$\text{Log } \frac{1}{30} = +8.5229$

$\text{" } d = -9.0183$

$\text{" } (t''-t') = +1.2672$

$\text{" } \sec\delta = \underline{+0.1518}$

$-0.09 = -8.9602$ ✓

$\text{" } \frac{15}{2} = +0.8751$

$\text{" } a = +8.1707$

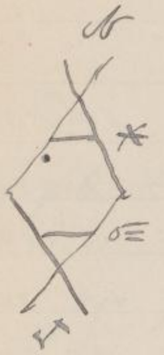
$\text{" } (t''-t') = +1.2672$

$\text{" } \cos\delta = \underline{+9.8482}$

$+1.45 = +0.1612$ ✓

New Comet Rordame. 1st series.

1st Obs. of July 11. 1893.



	☄		*			
16	29	31.0	29	54.2		
	30	21.6	30	9.3		
	59	52.6	60	3.5	− 10.9	− 0 5.45
	30	55.1	31	16.6		
	31	43.8	31	30.7		
	62	38.9	62	47.3	− 8.4	− 0 4.20
	32	13.9	32	34.5		
	33	2.7	32	48.2		
	65	16.6	65	22.7	− 6.1	− 0 3.05
						− 0. 4.23

16 31 18.0 = mean.
+3 18.0
16 34 36.0
7 19 15.3
9 15 20.7
−1 31.0
9 13 49.7 C. m. T.

$\Delta\alpha$ $\Delta\delta$

$50^{s}.6$ ✓ $15''.1$ ✓ 65.7 ✓

48.7 ✓ 14.1 ✓ 62.8 ✓

45 15 50.
−4 35.
+45 11 15.

48.8 ✓ 13.7 ✓ 62.5 ✓
3)148.1 14.30 63.67 ✓
49.37

63.67 = 1.80393 ✓
7.5 = 0.87506 ✓
cos. δ = 9.84747 ✓
336.1 = 2.52646

886.0
2)549.9
274.9

1.80393 ✓
0.87506 ✓
9.84805 ✓
2.52704 ✓

336.5
886.0
549.5 ✓

−9 9.5

Comet Rordame.
Obs. of July 11. 1893 (1st ser.)

Comp. Star = D.M. +45° 1688 (7.3 M)
" " = Oe. A. 9666.

1842.0 =	9h	1m	15.85s ✓	+45	27	53.8 ✓
		+1	42.51 ✓		−6	2.1 ✓
	9	2	58.36 ✓	+45	21	51.7 ✓
	135°	44′	35.4″ ✓			

Log n/15 = +0.12609 ✓
" sin α = +9.84378 ✓
" tan δ = +0.00553 ✓
+0.9449 ✓ = +9.97540
+3.0710 ✓
+4.0159 ✓ = +0.60378 ✓
51. = +1.70757 ✓
204.81 = +2.31135 ✓

Log n = +1.30218 ✓
" cos α = n9.85505 ✓
" 51 = +1.70757 ✓
−732.5″ ✓ = n2.86480 ✓
−12′ 12.5″

	9	1	15.85 ✓	+45	27	53.8 ✓
		+3	24.81 ✓		−12	12.5 ✓
* 1893.0 =	9	4	40.66 ✓	+45	15	41.3 ✓
Ap. pl.			+0.31 ✓			+8.2 ✓
Ap. pl. * =	9	4	40.97 ✓	+45	15	49.5 ✓
		−0	4.~~23~~ .16 ✓		−9	9.~~5~~ .1 ✓
	9	4	36.~~74~~ .81 ✓	+45	6	40.~~0~~ 4 ✓
Pr. Mot. Cor.			−0.24 ✓			+3.9 ✓
Ap. pl. Cor. comet =	9	4	36.57 ✓	+45	6	44.3 ✓

Ref. Cor. in R.A. = −0.07s in Dec = +0.4″

Comet Rordame.
Obs. of July 11. 1893. (1st ser.)

$f = +1.289$
$G = 21\ 4.5$
$H = 10\ 46.1$
$\log g = +1.0537$
$\ \ "\ \ h = +1.3065$
$\ \ "\ \ c = +0.4451$

$$\begin{array}{r}21\ 4.5\\ \underline{9\ 4.7}\\ 6\ 9.2\\ (G+\alpha)\end{array}\qquad\begin{array}{r}10\ 46.1\\ \underline{9\ 4.7}\\ 19\ 50.8\\ (H+\alpha)\end{array}$$

$\log \frac{1}{15} = +8.8239$
$\ \ "\ \ g = +1.0537$
$\ \ "\ \ \sin(G+\alpha) = +9.9997$
$\ \ "\ \ \tan\delta = \underline{+0.0040}$
$+0.761 = +9.8813$

$\log \frac{1}{15} = +8.8239$
$\ \ "\ \ h = +1.3065$
$\ \ "\ \ \sin(H+\alpha) = -9.9471$
$\ \ "\ \ \sec\delta = \underline{+0.1525}$
$-1.698 \quad -0.2300$

$$\begin{array}{r}+1.289\\ \underline{+0.761}\\ +2.010\\ \underline{-1.698}\\ +0.312 = \kappa' - \kappa\end{array}$$

$\log g = +1.0537$
$\ \ "\ \ \cos(G+\alpha) = \underline{-8.6031}$
$-0.45 \quad -9.6568$

$\ \ "\ \ h = +1.3065$
$\ \ "\ \ \cos(H+\alpha) = +9.6673$
$\ \ "\ \ \sin\delta = \underline{+9.8514}$
$+6.69 \quad +0.8252$

$\ \ "\ \ c = +0.4451$
$\ \ "\ \ \cos\delta = \underline{+9.8475}$
$+1.96 = +0.2926$

$$\begin{array}{r}+1.96\\ \underline{+6.69}\\ +8.65\\ \underline{-0.45}\\ +8.20 = \kappa\ +\kappa\end{array}$$

1892phae.proj..519L

Comet Rordame.
Cor. for Prop. Mot.

1st Obs. of July 11. 1893.

$t''-t' = 49.^s37$
Log $d = -9.0183$
$d = -0.''104$

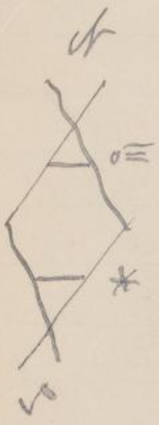
" $a = +8.1707$
$a = +0.^s015$

Log $\frac{1}{30} = +8.5229$ ✓
" $d = -9.0183$ ✓
" $(t''-t') = +1.6935$ ✓
" $\sec\delta = +0.1520$ ✓
$-0.^s244 = n9.3867$ ✓

" $\frac{15}{2} = +0.8756$ ✓
" $a = +8.1707$ ✓
" $(t''-t') = +1.6935$ ✓
" $\cos\delta = +9.8480$ ✓
$+3.''87 = +0.5878$ ✓

Comet Rordame. Dep. 134.

2d Obs. of July 13. 1893.



	☄		★					
~~17~~	~~48~~	~~32.0~~	~~50~~	~~9.0~~				
	~~49~~	~~20.0~~	~~51~~	~~27.6~~				
	~~97~~	~~52.0 ✓~~	~~101~~	~~36.6 ✓~~	~~3~~	~~44.6 ✓~~	~~1.~~	~~52.30 ✓~~
	52	15.8	54	20.5				
	53	7.1	55	12.5				
	105	22.9 ✓	109	33.0 ✓	4	10.1 ✓	2	5.05 ✓
	56	16.5	58	15.8				
	57	8.0	59	10.7				
	113	24.5 ✓	117	26.5 ✓	4	2.0 ✓	2	1.00 ✓
17	59	44.5	1	43.6				
18	0	40.7	2	41.4				
	120	29.2 ✓	4	25.0 ✓	3	55.8 ✓	1	57.90 ✓
	3	15.5	5	6.0				
	4	7.5	6	6.5				
	127	23.0 ✓	11	12.5 ✓	3	49.5 ✓	1	54.75 ✓
	6	51.9	8	38.8				
	7	45.0	9	42.0				
	134	36.9 ✓	18	20.8 ✓	3	43.9 ✓	1	51.95 ✓
	10	17.2	12	0.0				
	11	11.5	13	6.5				
	141	28.7 ✓	25	6.5 ✓	3	37.8 ✓	1	48.90 ✓
							—1	56.59 ✓

✓ 18 1 53.77 ~~13.77~~ ✓

+3 31.70 ✓

18 4 45.47 ✓

-7 27 8.42 ✓

10 37 37.05 ✓

-1 44.46 ✓

10 35 52.59 C. M. T. obs.

51.3 ✓	52.0 ✓	103.3 ✓
51.5 ✓	54.9 ✓	106.4 ✓
52.2 ✓	57.8 ✓	110.0 ✓
52.0 ✓	~~+0.5~~ 60.5 ✓	112.5 ✓
53.1 ✓	63.2 ✓	116.3 ✓
54.3 ✓	66.5 ✓	120.8 ✓
52.40 ✓		111.55 ✓

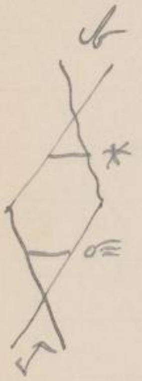
+40 35 0.
+2 5.
+40 37 5

111.55 = 2.04747 6
7.5 = 0.87506
cos δ. = 9.88051
635.4 = 2.80304 ✓
886.0
250.6
125.3

2.04747
0.87506
9.88028
2.80281 = 635.1
886.0
250.9
+4' 10.9" ✓

Comet Rordame.

1st obs. of July 13. 1893.



☄	*		
16 33 12.0	30 33.0		
33 46.0	30 50.2		
66 58.0	61 23.2	+5 34.8	+2 47.40
37 7.0	34 24.0		
37 37.8	34 40.0		
74 44.8	69 4.0	5 40.8	+2 50.40

+2 48.90 ✓
−0.09 ✓
+2 48.81 ✓

16 35 25.7 ✓ mean.
+3 31.7 ✓
16 38 57.4 ✓
7 27 8.4 ✓
9 11 49.0 ✓
−1 30.4 ✓
9 10 18.6 C. M. T.

This obs. ½ wt.

Ref. Cor. −0.^{s}09 ✓ −1.″4 ✓

340 17.2 51.2

$\frac{30.8}{32.40}$ $\frac{16.0}{166.0}$ $\frac{46.8}{2/98.0}$
49.00

+40 46 36.
$\underline{\quad\; -5 \quad 4.}$
+40 41 32.

49.00 = 1.69020
7.5 = +0.87506
cos. δ = $\underline{+9.87920}$
+2.44446

278.3
$\underline{886.0}$
$\underline{2/607.7}$
303.8

1.69020
0.87506
$\underline{9.87980}$
2.44506

278.7
$\underline{886.0}$
607.3
−10 7.3
Ref. Cor. $\underline{-1.4}$
−10 8.7 ✓

Prop. Mot. Cor.

16.20 Log $\frac{t_2'-t_1'}{2}$ = +1.2095
" Δδ' = $\underline{-8.9956}$ ✓✓
Sum = −0.2051 ✓
Log 15 cos δ' = $\underline{+1.0559}$ ✓
$-0^s.14$ = −9.1492 ✓

Log $\frac{t_2'-t_1'}{2}$ = +1.2095
" Δα' = +8.1461 ✓✓
" 15 = +1.1761
" cos δ' = $\underline{+9.8798}$
+ 2".8 = +0.4115 ✓

Comet Rordame.

1st obs. of July 13. 1893.

Comp. Star = B.D. + 40° 2278 (A.G.K.)
" " = W. Bessel 9h 1084.

1825.0 9 49 5.07 +41 5 49.7
+2 5.80 −9 34.6

Mid. pl. * = 9 51 10.87 +40 56 15.1
147° 47' 43."

Log n/w = +0.12611 +1.30220
" sin α = +9.72669 −9.92745
" tan δ = +9.93420 68. =1.83251
+0.61840 = +9.79100 = −3.06216
+3.07004 1153.9
+3.68844 = +0.56689 −19' 13.9"
68. = +1.83251
250.84 = +2.39940

* 1825.0 = 9 49 5.07 +41 5 49.7
+4 10.84 −19 13.9
* 1893.0 = 9 53 15.91 +40 46 35.8
+0.45 +7.6
App. pl. * = 9 53 16.36 +40 46 43.4
+2 ~~48.90~~ 48.81 −10 ~~7.9~~ 8.7
App. pl. ☄ = 9 56 5.17 +40 36 34.7
+0.14 −2.6
Final ☄ = 9 56 ~~5.40~~ 5.31 +40 36 ~~33.5~~ 32.1

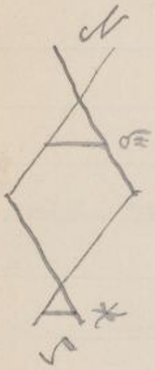
July 13. 1893.

f = +1.2843 c
G = 21 6.5 c
H = 10 3.89 c
Log g = +1.0615 c
" h = +1.3057 c
" i = +0.4828 c

By interpolation.

Ap. Pl. in R.A. = $+0.^{s}85$
" " " Dec = $+7.''6$

Comet Rordame.
1st obs. of July 14. 1893.



☄	*				
16 29 5.2	25 45.8				
29 48.5	26 3.5				
58 53.7	51 49.3	7	4.4	3	32.20
33 48.6	30 28.0				
34 36.8	30 45.2				
68 25.4	61 13.2	7	12.2	3	36.10
39 9.5	35 47.3				
40 2.0	36 3.9				
79 11.5	71 51.2	7	20.3	3	40.15
44 2.0	40 38.5				
44 58.5	40 54.0				
89 0.5	81 32.5	7	28.0	3	44.00
49 6.0	45 41.2				
50 6.5	45 55.7				
99 12.5	91 36.9	7	35.6	3	47.80
56 21.8	52 55.2				
57 23.0	53 3.2				
113 44.8	105 58.4	7	46.4	3	53.20
				+3	42.24
			Ref.		+0.08
				+3	42.32

16 42 22.4 Mean.
+3 38.1 Chr. cor.
16 46 0.5
7 31 5.0
9 14 55.5
−1 30.9
9 13 24.6 C. M. T. obs.

3 4x

3.7

−43.3	+17.7	−25.6
48.2	17.2	−31.0
52.5	16.6	−35.9
56.5	15.5	−41.0
60.5	14.5	−46.0
61.2	8.0	−53.2
53.70	1492	−3878

+38 ~~8~~ 43.
+5 28.
+38 8 11.

−3878 = n1.58861 ✓
75 = +0.87506 ✓
cos δ = +9.89627 ✓
−229.1 ✓ = −2.35994 ✓
886.0
2/656.9 ✓
328.4

n1.58861 ✓
+0.87506 ✓
+9.89572 ✓
−228.8″ = n2.35939 ✓
886.0
657.2 = +10′ 57.2″
+0.9 Refr
+10 58.1

+3.57
−17.7
68 yrs.

Comet Rordame.

1st obs. of July 14. 1893.

Comp. Star = AW. + 2125 (7.7K)

1855 =	10	9	49.8	+38	13.7	
Tr. 10ʰ 197. =	10	8	3.32 ✓	+38	22	45.8 ✓
		+2	1.38 ✓		−10	1.8 ✓
Mid. pl. =	10	10	4.70 ✓	+38	12	44.0 ✓

152° 31′ 10.5″

Log $\frac{u}{v}$ = +0.12611 ✓
" sin t = +9.66412 ✓
" tan δ = +9.89612 ✓
+0.4857 = +9.68635 ✓
+3.0708 ✓
+3.5565 = +0.55102 ✓
68. = +1.83251 ✓
+241.84 ✓ = +2.38353 ✓

+1.30220 ✓
−9.94800 ✓
68. = +1.83251 ✓
= −3.08271 ✓
1209.8 = −20′ 9.8″

* 1825.0 =	10	8	3.32 ✓	+38	22	45.8 ✓
		+4	1.84 ✓		−20	9.8 ✓
* 1893.0	10	12	5.16 ✓	+38	2	36.0 ✓
			+0.59 ✓			+6.9 ✓
Ap. pl. * =	10	12	5.75 ✓	+38	2	42.9 ✓
		+3	42.32 ✓		+10	58.1 ✓
	10	15	48.07	+38	13	41.0 ✓
Pr. mot.			−0.24			+4.7 ✓
	10	15	47.83 ✓	+38	13	45.7 ✓

Comet Rordame.
July 18. 1893.

f = +1.296 ✓
G = 21 7.0 ✓
H = 10 35.3 ✓
Log g = +1.0653 ✓
" h = +1.3053 ✓
" i = +0.5005 ✓

21 7.0 ✓
10 12.1 ✓
7 19.1
(G+α)

10 35.3 ✓
10 12.1 ✓
20 47.4
(H+α)

" $\frac{1}{\omega}$ = +8.8239 ✓
" g = +1.0653 ✓
" sin(G+α) = +9.9736 ✓
" tan δ = +9.6935 ✓
+0.571 = +9.7563 ✓

" $\frac{1}{\omega}$ = +8.8239 ✓
" h = +1.3053
" sin(H+α) = −9.8721
" sec δ = +0.1037
−1.274 = −0.1050 ✓

+1.296 ✓
+0.571 ✓
+1.867 ✓
−1.274 ✓
α′−α = +0.593 ✓

Log g = +1.0653
" cos(G+α) = −9.5293
−3.93 = −0.5946

" h = +1.3053
" cos(H+α) = +9.8242
" sin δ = +9.7898
+8.30 = +0.9193 ✓

" i = +0.5005
" cos δ = +9.8963
+2.49 = +0.3968 ✓
+8.30
+10.79
−3.93
+6.86 = δ′−δ

Comet Rordame.

1st. obs. of July 18. 1893.

$t''-t' = 53.70$

$\text{Log } \frac{1}{30} = +8.5229$ ✓

$\text{"} \ d = -9.0183$

$\text{"} \ (t''-t') = +1.7300$

$\text{"} \ \sec \delta = \underline{+0.1043}$

$-0.^{s}24 = -9.3755$

$\text{"} \ \frac{15}{2} = +0.8751$

$\text{"} \ a = +8.1707$

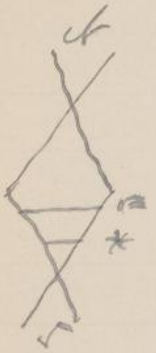
$\text{"} \ (t''-t') = +1.7300$

$\text{"} \ \cos \delta = \underline{+9.8957}$

$+4.''69 = +0.6715$ ✓

Comet Rordame.

2d obs. of July 14. 1893.



☄ *

18 5 39.5 1 11.0
6 34.3 1 36.0

12 13.8 ✓ 2 47.0 ✓ 9 26.8 ✓ 4 43.40 ✓

13 32.3 8 53.8
14 25.8 9 26.0

27 58.1 ✓ 18 19.8 ✓ 9 38.3 ✓ 4 49.15 ✓

19 59.5 15 14.0
20 55.5 15 53.4

40 55.0 ✓ 31 7.4 ✓ 9 48.6 ✓ 4 54.30 ✓

18 13 31.15 = Mean. 4 48.95 ✓

+3 38.50 = Chron. cor. No ref.

18 17 9.65 ✓

−7 31 4.98 ✓

10 46 4.67 ✓

−1 45.85 ✓

10 44 18.82 ✓ = C. M. T.

54.8 ✓ 25.0 ✓ 29.8 ✓

53.5 ✓ 32.2 ✓ 21.3 ✓

56.0 ✓ 39.4 ✓ 16.6 ✓

54.77 32.20 ✓ 22.57

~~+0 12 5.8~~

+38 2 43.
+1 6.
+38 3 49.

22.57 = 1.35353 ✓
75 = 0.87506 ✓
cos δ = 9.89572 ✓
+133.″1 = 2.12431 ✓
66.6

1.35353
0.87506
9.89616
2.12475 = 133.3
+2′ 13.″3
+0.4
+2 13.7

Comet Rordame, 2d obs. of July 14. 1893.

(See also p. 126)

App. pl. *	=	10	12	5.75 ✓	+38	2	42.9 ✓
☄ − *	=		+4	48.95 ✓		+2	13.7 ✓
App. pl. ☄	=	10	16	54.70 ✓	+38	4	56.6 ✓
Pr. mot.	=			+0.23 ✓			−4.5 ✓
☄ Final	=	10	16	54.93 ✓	+38	4	52.1 ✓

Pr. mot. Computation:

27.38

$\log \frac{t_2'-t_1'}{2} = +1.4374$

" $\Delta\alpha' = -8.9956$

Sum. = −0.4330 ✓

" $15 \cos\delta' = +1.0723$ ✓

−0".23 = −9.3607 ✓

$\log \frac{t_2'-t_1'}{2} = +1.4374$

" $\Delta\delta' = +8.1461$

" $15 \cos\delta' = +1.0723$

+4".53 = +0.6558

See p. 118

Comet Rordame.
2d obs. of July 13. 1893.

Comp. Star = DM. +40° 2285 (8.3 Mag.)
This star is in Schj. sup. list of stars in A.N. and is found in A.N. Vol. 37. p. 215.
The position of the star was obtained with the ring micrometer and is given in apparent place for July 7. 1893.

(for July 7 1893)

Ap. pl. * =	9h	56m	51.58s ✓	+40°	35'	0.4" ✓
			+0.49 ✓			−8.4 ✓
Mean Pl. * =	9	56	52.07 ✓	+40	34	52.0 ✓
			+0.45 ✓			+7.6 ✓
Ap. pl. * =	9	56	52.52 ✓	+40	34	59.6 ✓

2d obs. of July 13. 1893. (see p. 134)

Reduction of App. Pl. for July 7. 1893. to deduct from given place. and then carry forward again to App. Pl. for July 13. 1893.

This is App. Pl. reduction for July 7. 1893.

$f = +8.82'' = +0.588^s$

$G = 338^\circ 31' = 22^h 34.1^m$

$h = +20.30''$ log $= +1.3075$

$H = 165^\circ 33' = 11^h 2.2^m$

$i = +2.19''$ log $= +0.3404$

$g = +4.13''$ " $= +0.6160$

22 34.1	11 2.2
9 56.9	9 56.9
8 31.0	20 59.1
(G+α)	(H+α)

Log $\frac{1}{15}$ = +8.8239
" g = +0.6160
" sin (G+α) = +9.8980
" tan δ = +9.9328
+0.187 = +9.2707

" $\frac{1}{15}$ = +8.8239
" h = +1.3075
" sin (H+α) = −9.8512
" sec δ = +0.1195
−1.265 = −0.1021

+0.588
+0.187
+0.775
−1.265
−0.490 = α′ − α

Log g = +0.6160
" cos (G+α) = −9.7869
−2.53″ = −0.4029

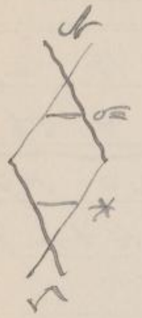
" h = +1.3075
" cos (H+α) = +9.8478
" sin δ = +9.8133
+9.30″ = +0.9686

" i = +0.3404
" cos δ = +9.8805
+1.66 = +0.2209

+1.66
+9.30
+10.96
−2.53
+8.43 = δ′ − δ

Comet Rordame.

Obs. of July 19. 1893.



	☄	*		
17	13 54.5	14 26.2		
	14 43.2	15 12.0		
	28 37.7 ✓	29 38.2 ✓	−1 0.5 ✓	−0 30.25 ✓
	15 48.0	16 19.1		
	16 37.5	17 5.4		
	32 25.5 ✓	33 24.5 ✓	0 59.0 ✓	0 29.50 ✓
	17 38.3	18 9.0		
	18 28.3	18 56.0		
	36 6.6 ✓	37 5.0 ✓	0 58.4 ✓	0 29.20 ✓
	19 31.3	20 1.5		
	20 21.9	20 48.6		
	39 53.2 ✓	40 50.1 ✓	0 56.9 ✓	0 28.45 ✓
	21 57.5	22 27.2		
	22 48.6	23 15.3		
	44 46.1 ✓	45 42.5 ✓	0 56.4 ✓	0 28.20 ✓
	~~23 56.0~~	~~24 35.5~~		
	~~24 59.0~~	~~25 23.9~~		
	~~48 55.0~~	~~49 59.4~~	~~1 4.4~~	~~0 32.20~~
	26 4.1	26 33.2		
	26 58.0	27 21.8		
	53 2.1 ✓	53 55.0 ✓	0 52.9 ✓	0 26.45 ✓
				−0 28.68 ✓

17 19 34.3 ✓ mean.
4 8.0 ✓ = Chron. cor.

Ref. Cor. = +0.09 ✓
−0 28.59 ✓

17 23 42.3 ✓
7 50 47.8 ✓

9 32 54.5 ✓
− 1 33.84 ✓

9 31 20.66 ✓ ~~C. M. T.~~
+0.8 Cor. to assumed error of 1327.

9 31 21.5 − C. M. T.

Δ ☉	Δ *	
48.7 ✓	45.8 ✓	94.5 ✓
49.5 ✓	46.3 ✓	95.8 ✓
50.0 ✓	47.0 ✓	97.0 ✓
50.6 ✓	47.1 ✓	97.7 ✓
51.1 ✓	48.1 ✓	99.2 ✓
~~63.0~~	~~48.4~~	~~111.4~~
53.9 ✓	48.6 ✓	102.5 ✓
50.63 ✓	47.15	97.78 ✓

+28 4 36. ✓
+1 59. ✓
+28 6 35. ✓

97.78 = +1.99025 ✓
7.5 = +0.87506 ✓
cos δ = +9.94563 ✓
647.1 ✓ = +2.81094 ✓
486.0
238.9
119.4

+1.99025
+0.87506
+9.94549
+2.81020 ✓

646.8 ✓
486.0 ✓
239.2 ✓
+3′ 59.2″
+1.4
+4 0.6

+3.22
−1.96
68 yrs.

Comet Rordame.
Obs. of July 19. 1893.

Comp. Star = DM. +28° 1993 (9.0M) ✓

Gr. 11h 24m.	11	11	50.22 ✓	+28	26	47.5 ✓	(1825)
		+1	49.48 ✓		−11	6.4 ✓	
Mid. pl. =	11	13	39.70	+28	15	41.1 ✓	
	168°	24′	55.				

Log [illegible]/15 = +0.12611 ✓
" sin α = +9.30280 ✓
" tan δ = +9.73044 ✓
+0.14443 = +9.15935 ✓
+3.0708
+3.2151 ✓ = +0.50719 ✓
68. = +1.83251 ✓
+218.62 +2.33970 ✓

Log n = +1.30220 ✓
" cos α = −9.99106 ✓
" 68. = +1.83251 ✓
−1335.″9 ✓ = −3.12577 ✓
−22′ 15.″9 ✓

*1825.0 =	11	11	50.22 ✓	+28	26	47.5 ✓
		+3	38.62 ✓		−22	15.9 ✓
*1893.0 =	11	15	28.84 ✓	+28	4	31.6 ✓
App. pl. cor. =			+0.76 ✓			+4.0 ✓
App. pl. * =	11	15	29.60 ✓	+28	4	35.6 ✓
		−0	28.59 ~~28.60~~ ✓		+4 ~~+3~~	0.6 ~~59.2~~ ✓
☄ cor for Ref. =	11	15	1.01 ✓	+28	8	36.2 ✓
Cor. for Prop. Mot.			−0.07 ✓			+1.7 ✓
Final pl. ☄ =	11	15	0.94 ✓	+28	8	37.9 ✓

Comet Rordame.

Obs. of July 19. 1893.

$f = +1.331^{s}$ ✓

$G = 21^{h}\ 7.4^{m}$ ✓

$H = 10^{h}\ 17.2^{m}$ ✓

Log $g = +1.0758$ ✓

" $h = +1.3031$ ✓

" $i = +0.5772$ ✓

$$\begin{array}{rr} 21 & 7.4 \\ 11 & 15.5 \\ \hline 8 & 22.9 \end{array} \quad (G+A)$$

$$\begin{array}{rr} 10 & 17.2 \\ 11 & 15.5 \\ \hline 21 & 32.7 \end{array} \quad (H+A)$$

" $\frac{1}{15} = +8.8239$ ✓

" $g = +1.0758$ ✓

" $\sin(G+A) = +9.9094$ ✓

" $\tan \delta = +9.7270$ ✓

$+0.344 = +9.5361$ ✓

" $\frac{1}{15} = +8.8239$ ✓

" $h = +1.3031$ ✓

" $\sin(H+A) = -9.7777$ ✓

" $\sec \delta = +0.0544$ ✓

$-0.910 = -9.9591$ ✓

$+1.331$

$+0.344$

$+1.675$

-0.910

$+0.765 = (\alpha' - \alpha)$

Log $g = +1.0758$

" $\cos(G+A) = -9.7663$

$-6.95 = -0.8421$ ✓

" $h = +1.3031$

" $\cos(H+A) = +9.9023$

" $\sin \delta = +9.6725$

$+7.57 = +0.8779$ ✓

" $i = +0.5772$

" $\cos \delta = +9.9456$

$+3.33 = +0.5228$ ✓

$+7.57$

$+10.90$

-6.95

$+3.95$ ~~$(\alpha' - \alpha)$~~ $\delta' - \delta$

Prop. Mot. Cor.

(25.32^{s}) Log $\frac{t_2' - t_1'}{2} = +1.4035$ ✓

" $\Delta \delta' = -8.5631$ ✓

Sum $= -9.9666$ ✓

Log $15 \cos \delta' = +1.1214$ ✓

$-0.07^{s} = -8.8452$ ✓

Log $\frac{t_2' - t_1'}{2} = +1.4035$ ✓

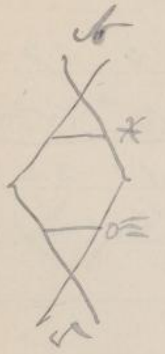
" $\Delta \alpha' = +7.6970$ ✓

" $15 \cos \delta' = +1.1214$ ✓

$+1.67 = +0.2219$

Comet Rordame.

July 20. 1893.



	☄	*		
16	25 20.0 ✓	22 59.3 ✓		
	26 1.8 ✓	23 47.5 ✓		
	51 21.8 ✓	46 46.8 ✓	+4 35.0 ✓	+2 17.50 ✓
	29 6.5 ✓	26 44.1 ✓		
	29 46.4 ✓	27 31.7 ✓		
	58 52.9 ✓	54 15.8 ✓	4 37.1 ✓	+2 18.55 ✓
	32 54.2 ✓	30 29.8 ✓		
	33 31.8 ✓	31 17.2 ✓		
	66 26.0 ✓	61 47.0 ✓	4 39.0 ✓	+2 19.50 ✓
	36 33.5 ✓	34 7.8 ✓		
	37 10.5 ✓	34 55.2 ✓		
	73 44.0 ✓	69 3.0 ✓	4 41.0 ✓	+2 20.50 ✓
	40 14.5 ✓	37 47.8 ✓		
	40 49.5 ✓	38 34.0 ✓		
	81 4.0 ✓	76 21.8 ✓	4 42.6 ✓	+2 21.30 ✓
				+2 19.47 ✓

16 33 8.9 ✓
+4 15.2 ✓
16 37 24.10 ✓
7 54 44.33 ✓
8 42 39.77 ✓
−1 25.63 ✓
8 41 14.14 ✓

Δ os	Δ *	
41.8 ✓	48.2 ✓	90.0 ✓
39.9 ✓	47.6 ✓	87.5 ✓
37.6 ✓	~~48.4~~ 47.4	~~86.0~~ 85.0 ✓
37.0 ✓	47.4 ✓	84.4 ✓
35.0 ✓	46.6 ✓	81.6 ✓
38.26 ✓	~~47.64~~ 47.44 ✓	~~85.90~~ 85.70 ✓

26 44 14 ✓
−2 ~~35~~ 36 ✓
+26 41 ~~39~~ 38 ✓

~~85.90~~ 85.70 = ~~1.93399~~ 1.93298 ✓
7.5 = 0.87506 ✓
cos δ = 9.95090 (89) ✓
~~575.4~~ 574.4 = ~~2.75995~~ 2.75894 ✓
886.0
~~310.6~~ 311.6
~~155.3~~ 155.8

1.93298 ✓
~~1.93399~~
0.87506 ✓
9.95106 ✓
~~9.95106~~
~~2.76011~~ 2.75910 ✓
~~575.6~~ 574.2
886.0
~~310.4~~ 311.8
~~−5′ 10.″4~~
−5′ 11.″8

+3.20
−19.7

Comet Rordame.
July 20. 1893.

Comp. Star = Dur. +26° 2208 (83K)

1855.0	= 11	17	25.9 ✓	+26	56.9 ✓		
Pr. 11^h 319	11	.15	47.01	+27	6	30.3	(1825)
Mid. Pl. =	11	17	.35.81	+26	55	20.5	

169° 23′ 57.″

Log $\frac{u}{15}$ = +0.12611
" sin α = +9.26473
" tan δ = +9.70571
+0.1249 = +9.09655
+3.0708
+3.1957 = +0.50457
6α = +1.83251
217.31 = +2.33708

Log u = +1.30220
" cos α = −9.99252
" 6α. = +1.83251
−1340.4 = −3.12723

* 1825.0 =	11	15	47.01 ✓	+27	6	30.3 ✓
		+3	37.31 ✓		−22	20.4 ✓
* 1893.0 =	11	19	24.32 ✓	+26	44	9.9 ✓
			+0.76 ✓			+3.6 ✓
Ap. pl. * =	11	19	25.08 ✓	+26	44	13.5 ✓
		+2	19.4~~2~~3		−5	~~10.4~~ 11.0 ✓
☌ cor. for ref. =	11	21	44.51 ✓	+26	39	2.5 ✓
Cor for Pr. wct. →			+0.08 ✓			−1.0 ✓
Cor. Ap. pl. ☌ =	11	21	44.59 ✓	+26	39	1.5 ✓

Ref. Cor. −0.^{s}04   −0.″6

Comet Rordame.
July 20. 1893.

$f = +1.337$
$g = 21\ 8.2$
$H = 10\ 13.6$
Log g = $+1.0766$
" h = $+1.3026$
" i = $+0.5910$

21 8.2
11 19.4
8 27.6

10 13.6
11 19.4
21 33.0

Log $\frac{1}{15}$ = $+8.8239$
" g = $+1.0766$
" $\sin(G+\delta)$ = $+9.9029$
" $\tan\delta$ = $+9.7022$
$+0.320$ = $+9.5056$

" $\frac{1}{15}$ = $+8.8239$
" h = $+1.3026$
" $\sin(H+\delta)$ = -9.7769
" $\sec\delta$ = $+0.0491$
-0.896 = -9.9525

$+1.337$
$+0.320$
$+1.657$
-0.896
$+0.761 = \alpha'-\alpha$

Log g = $+1.0766$
" $\cos(G+\delta)$ = -9.7785
-7.16 = -0.8551

" h = $+1.3026$
" $\cos(H+\delta)$ = $+9.9038$
" $\sin\delta$ = $+9.6531$
$+7.24$ = $+0.8595$

" i = $+0.5910$
" $\cos\delta$ = $+9.9509$
$+3.48$ = $+0.5419$

$+7.24$
$+10.72$
-7.16
$+3.56 = \delta'-\delta$

Prop. mot.

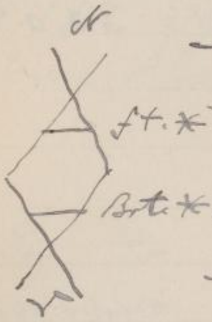
$\underline{19.73} =$
$(-.''056)$

Log $\frac{t_2'-t_1'}{2}$ = 1.2817
" $\Delta\delta'$ = -8.7482
Sum = -0.0299
" $15\cos\delta'$ = $+1.1272$
-0.08 = -8.9027

$(+.''004)$

Log. $\frac{t_2'-t_1'}{2}$ = $+1.2817$
" $\Delta\alpha'$ = $+7.6021$
" $15\cos\delta'$ = $+1.1272$
$+1.''03$ = $+0.0110$

Location of 12 magn. star with reference to A.G.C. 24887.
(This 12 magn. star is very close to ~~to~~ Plan. Neb. N.G.C. 6578)



	Ft. *	Brt. *				
20	28 37.3	28 59.2				
	29 19.0	29 37.0				
	57 56.3<	58 36.2<	0	39.9<	0	19.95<
	31 8.4	31 30.0				
	31 50.0	32 8.5				
	62 58.4<	63 38.5<	0	40.1<	0	20.05<
	32 29.1	32 50.0				
	33 10.0	33 29.0				
	65 39.1<	66 19.0<	0	39.9<	0	19.95<
	33 45.5	34 7.5				
	34 27.4	34 46.4				
	68 12.9<	68 53.9<	0	41.0<	0	20.50<
	35 6.0	35 27.0				
	35 47.0	36 6.0				
	70 53.0<	71 33.0<	0	40.0<	0	20.00<
					—0	20.09<

Plan. Neb. N.G.C. 6578 was discovered Aug. 18, 1882. It fol. the 12 magn. star by 1.5 secs. and is 10" north. The 12 magn pre. A.G.C. 24887 by 20.1 secs. and is 5' 23" north.

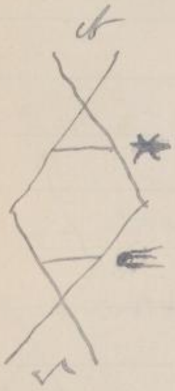
∴ Neb. pre. A.G.C. 24887 by 18.6 secs. and is 5' 33" north.

41.7 ✓<	37.8 ✓<	79.5 ✓<
41.6 ✓<	38.5 ✓<	80.1 ✓<
40.9 ✓<	39.0 ✓<	79.9 ✓<
41.9 ✓<	38.9 ✓<	80.8 ✓<
41.0 ✓<	39.0 ✓<	80.0 ✓<
		400.3 ✓<
		80.06 ✓<

80.06 = 1.90342 ✓
7.5 = 0.87506 ✓
cos. δ = 9.97182 ✓
562.7 ✓ = 2.75030 ✓
886.0 ✓
323.3 = $5'\ 23.3''$ ✓

Brooks Com. ☄. (Disc. Oct. 16. 1893)

Obs. of Oct. 17. 1893.



☄	*				
6 41 0.3	41 36.5				
41 45.4	41 58.0				
82 45.7 v<	83 34.5 v<	0m	48.8 v<	0	24.40 v<
42 34.1	42 56.0				
43 4.5	43 31.9				
85 38.6 v<	86 27.9 v<	0	49.3 v<	0	24.65 v<
44 24.3	44 54.0				
45 3.5	45 22.0				
89 27.8 v<	90 16.0 v<	0	48.2 v<	0	24.10 v<
47 1.2	47 30.0				
47 40.0	47 59.0				
94 41.2 v<	95 29.0 v<	0	47.8 v<	0	23.90 v<
48 28.3	48 57.5				
49 7.3	49 26.8				
97 35.6 v<	98 24.3 v<	0	48.7 v<	0	24.35 v<
50 4.8	50 33.0				
50 43.5	51 2.6				
100 48.3 v<	101 35.6 v<	0	47.3 v<	0	23.65 v<
				−0	24.18 v<
				Ref. Cor. =	+0.12
				−0	24.06

6h 45m 54.8s v<

+5 9.8 v Chr. cor.

6 51 4.6 v<

13 45 37.7 v<

17 5 26.9 v<

2 48.0 v<

17 2 38.9 v< C. M. T.

Δ ☄	Δ *	
45.1 <	21.5 <	66.6 <
30.4 <	35.9 <	66.3 <
39.2 <	28.0 <	67.2 <
38.8 <	29.0 <	67.8 <
39.0 <	29.3 <	68.3 <
38.7 <	29.6 <	68.3 <
		67.42 <

+13	40	39.4
	−3	17.4
+13	37	22.0

67.42 = 1.82879<
7.5 = 0.87506<
cos. δ = 9.98751<
491.3 = 2.69136
886.0
2)394.7
197.4

1.82879<
0.87506<
9.98761<
2.69146 = 491.4
886.0
394.6

Δδ = −6 34.6
Ref. Cor. = −1.8
−6 36.4

+ 3.04
- 20.0

34 yrs.
68 "

New ☄ Brooks. - Disc.
Oct. 16. 1893.

Obs. of Oct. 17. 1893.

Comp. Star = Dm. +13° 2540 (85 K)
" " = W. Bessel 12h

*1825.0 = 12h 19m 55.83s +14° 3' 25.7"
+1 43.36 -11 20.0
Mid. Pl. = 12 21 39.19 +13 52 5.7
185° 24' 48."

Log $\frac{n}{15}$ = +0.12611
" sin α = n8.97469
" tan δ = +9.39250
-0.0311 = n8.49330
+3.0708
+3.0397 = +0.48283
+1.83251
+206.70 = +2.31534

Log n = +1.30220
" cos α = n9.99806
" 68. = +1.83251
-1357.6 = n3.13277

	12	19	55.83	+14	3	25.7
		+3	26.70		-22	37.6
* 1893.0 =	12	23	22.53	+13	40	48.1
Ap. pl. cor. =			+0.95			-8.7
Ap. pl. * =	12	23	23.48	+13	40	39.4
		-0	24.06		-6	36.4
☄ - * =		~~-0~~	~~24.18~~		~~-6~~	~~34.6~~
Ap. pl. ☄ =	~~12~~	~~22~~	~~59.30~~	~~+13~~	~~34~~	~~4.8~~
	12	22	59.42	+13	34	3.0

(Now of Brooks) Oct. 17. 1893.

$f = +2.051$
$g = 21\ 44.9$
$H = 4\ 11.9$
Log $g = +1.2071$
" $h = +1.2803$
" $i = +0.8677$

$$\begin{array}{r} 12\ 23.4 \\ \underline{21\ 44.9} \\ 10\ 08.3 \end{array}$$
$(g+\alpha)$

$$\begin{array}{r} 12\ 23.4 \\ \underline{4\ 11.9} \\ 16\ 35.3 \end{array}$$
$(H+\alpha)$

Log $\frac{1}{\Delta} = +8.8239$
" $g = +1.2071$
" $\sin(g+\alpha) = +9.6705$
" $\tan\delta = \underline{+9.386\overset{3}{2}}$
$+0.122 = +9.0877$

" $\frac{1}{\Delta} = +8.8239$
" $h = +1.2803$
" $\sin(H+\alpha) = -9.9696$
" $\sec\delta = \underline{+0.0125}$
$-1.220 = -0.0863$

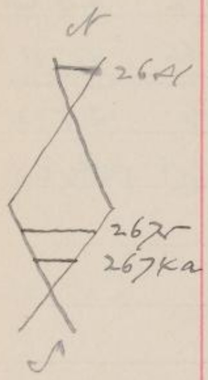
$+2.051$
$\underline{+0.122}$
$+2.173$
$\underline{-1.220}$
$+0.953 =$ Cor. in α

Log $g = +1.2071$
" $\cos(g+\alpha) = \underline{-9.9462}$
$-14.23 = -1.1533$
=
" $h = +1.2803$
" $\cos(H+\alpha) = -9.5577$
" $\sin\delta = \underline{+9.3738}$
$-1.63 = -0.2118$

" $i = +0.8677$
" $\cos\delta = \underline{+9.9875}$
$+7.16 = +0.8552$

-14.23
$\underline{-1.63}$
-15.86
$\underline{+7.16}$
$-8.70 =$ Cor. in δ

Transits of Dm. +47° 2674a, 2674b and 2681.



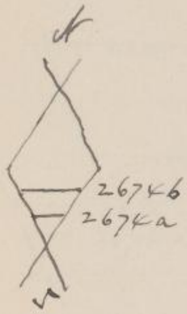
	2674a		2675		2681					
0	52	18.0	52	27.5	55	5.4				
	52	44.0	53	0.2	55	26.0				
	105	2.0	105	27.7	110	31.4	25.7	~~5 3.7~~	12.85	
	56	53.7	57	3.4	59	44.0				
	57	21.3	57	37.0	1 0	4.6				
	114	15.0	114	46.4	119	48.6	25.4	5 8.2	12.70	2 34.10
1	0	29.1	0	39.0	3	18.8				
	0	56.0	1	11.8	3	39.5				
	121	25.1	121	50.8	126	58.3	25.7	5 7.5	12.85	2 33.75
	4	5.7	4	15.8	6	50.0				
	4	33.4	4	49.1	7	16.0				
	128	39.1	129	4.9	134	11.6	25.8	5 6.1	12.90	2 33.05
	7	40.5	7	49.6	10	30.2				
	8	8.2	8	23.5	10	51.1				
	135	48.7	136	13.1	14~~0~~1	21.3	24.4	5 8.2	12.20	2 34.10
									12.70	2 33.75

Δ 2674a	Δ 2675	Δ 2681
26.0	32.7	20.6
27.6	33.6	20.6
26.9	32.8	20.7
27.7	33.3	21.0
27.7	33.9	20.9
27.18	33.26	20.76

+47 27 57.8
−6 51.3
+47 21 6.5

−33.26
+20.76
−12.50 = n1.09691
75 = +0.87506
cos δ = +9.82996
−63.4 = n1.80193
+886.0
+822.6 = +13′ 42.″6
6 51.3

n1.09691
+0.87506
+9.83091
n1.80288 = −63.″5
+886.0
+822.5



	2674a		2674b			
1	14	48.0	14	49.5		
	15	17.7	15	24.2		
	30	5.7	30	13.7	8.0	4.00
	16	16.9	16	18.5		
	16	46.6	16	53.3		
	33	3.5	33	11.8	8.3	4.15
	17	41.6	17	43.3		
	18	11.3	18	18.2		
	35	52.9	36	1.5	8.6	4.30
	19	0.0	19	1.6		
	19	30.1	19	37.1		
	38	30.1	38	38.7	8.6	4.30
	20	23.6	20	25.4		
	20	53.6	21	0.6		
	41	17.2	41	26.0	8.8	4.40
					8.46	4.23

Δ 2674a	Δ 2674b
29.7	34.7
29.7	34.8
29.7	34.9
30.1	35.5
30.0	35.2
29.84	35.02

+47° 2681 =	1h	39m	54.58s ✓	+47°	27′	57.8″ ✓	(1893.0)
		−2	33.75 ✓		−13	42.5 ✓	
+46° 2675 =	1	37	20.83 ✓	+47	14	15.3 ✓	"
			−12.70 ✓			−31.0 ✓	
+46° 2674a =	1	37	8.13 ✓	+47	13	44.3 ✓	"
			+4.23 ✓			+26.4	
+46° 2674b =	1	37	12.36 ✓	+47	14	10.7 ✓	"

+47 14 15.3 ✓
−15.5

+47 13 59.8

27.18
33.26

6.08 = 0.78390 ✓
7.5 = 0.87506 ✓
cos. δ = 9.83184 ✓2
31.0 = 1.49080 ✓

0.78390 ✓
0.87506 ✓
9.83188 ✓2
1.49084 ✓ = −31.0″

+47 13 44.3
+13.2

+47 13 57.5

29.84
35.02

5.18 = 0.71433
7.5 = 0.87506
cos. δ = 9.83192
26.4″ = 1.42131

0.71433
0.87506
9.83188
1.42127 = +26.4″

38 yrs.

Dm. +47° 2675 (9.1 B)

(1855) 18h 36m 18s.37 +47° 12′ 16″.7
+31.27 +59.66

mid. pl. = 18 36 49.64 47 13 16.36
279° 12′ 25″

Log $\frac{n}{15}$	+0.12607
" sin α	n9.99437
" tan δ	+0.03371
−1.4261 =	n0.15415

$\frac{m}{15}$ = +3s.0711

+1.6450	+0.21617
Log. 38.	+1.57978
+62s.51	+1.79595

Log n = +1.30217
" cos α = +9.20812
" 38 = +1.57978
+121″.9 = +2.08607

1855.0 = 18h 36m 18s.37 +47° 12′ 16″.7
+1 2.51 +2 1.9
1893.0 = 18 37 20.88 +47 14 18.6

83 yrs.

Dec. +47° 2681.

Gr. 2647 = 18^h 37^m $38.^s78$ +47 23 17.5 (1810)

1 8.06 2 16.0

18 38 46.84 +47 25 33.5

279° 41′ 43.″

Log $\frac{n}{15}$ = +0.12612

" sin α = n9.99376

" tan δ = +0.03682

−1.43455 = n0.15670

$\frac{m}{15}$ = +3.0706

+1.6361 = +0.21381

Log. 83. = +1.91908

+135.80 = +2.13289

Log n = +1.30221

" cos α = +9.22636

" 83. = +1.91908

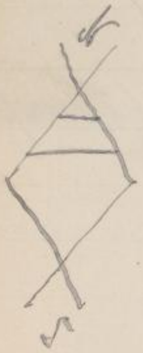
+280.″3 = +2.44765

18 37 38.78 +47 23 17.5

+2 15.80 +4 40.3

1893.0 = 18 39 54.58 +47 27 57.8

Location of Anderson's New. Var. in Andromeda.



	Var.		Comp. Star.			
3^h	25^m	27.5^s	25^m	27.0^s		
	25	47.2	25	5.2		
	51	14.7^s	49	32.2^s	1^m	42.5^s	51.25^s
	27	5.1	26	4.4		
	27	25.0	26	42.2		
	54	30.1^s	52	46.6^s	1	43.5^s	51.75^s
	28	44.5	27	44.0		
	29	4.1	28	22.2		
	57	48.6^s	56	06.2^s	1	42.4^s	51.20^s
	30	22.4	29	22.4		
	30	42.5	30	0.5		
	61	4.9^s	59	22.9^s	1	42.0^s	51.00^s
	32	7.0	31	6.5		
	32	26.6	31	44.5		
	64	33.6^s	62	51.0^s	1	42.6^s	51.30^s
							$+51.30^s$

Δ Var. Δ Comp. Star.

– 19.~~5~~7 38.2

26 9 23.6
+2 20.2
26 11 43.8

– 19.9 37.8

– 19.6 38.2

– 20.1 38.1

– 19.6 38.0

19.7~~4~~8 38.06 +18.~~32~~28

Log [illegible] =	+1.6198		+1.6198
" 7.5 =	+0.87506		+0.87506
" cos δ =	+9.95208		+9.95294
2)+280.5	+2.44794	280.4	+2.44780
140.2		4′	40.4″

+3.ˢ104
+20.″03
30 yrs.

Location of Anderson's Nov. Var.

Comp. Star = DM. +26° 50 (7.5 M) =
= W. Bessel 0h 366.

1825.0	0h	12m	25.ˢ65	+25°	59′	22.″9
		~~1~~ 0	~~47.~~ 6.56		~~11~~ 5	~~31.0~~ 0.4
	0	~~14~~ 13	12.~~74~~ 21	+26	~~10~~ 4	~~53.9~~ 23.3
	3°	~~33~~ 18′	~~11.16~~ 3″.15			

Log n/15 +0.1261~~2~~ 5
" sin α +8.79~~220~~ 6626
" tan δ +9.67~~167~~ 8958
+8.~~60998~~ 57579

+0.″03765
~~+0.04074~~
m/15 +3.070~~8~~ 4
+3.1080
~~+3.1115~~

+0.492~~77~~ 48
Log 30 +1.47712
+93.ˢ24 +1.96960

Log n +1.3022~~8~~ 4
" cos α +9.9992~~7~~ 8
~~69~~ 30 + ~~1.83885~~ 1.47712
+600.″7 +2.77864
~~+381.1~~ ~~+3.14022~~
+10′ 0.7″

1825.0	0h	12m	25.ˢ65	+25°	59′	22.″9
		+ 1	33.24		+10	0.7
1855.0	0	13	58.99	+26	9	23.6
			+51.30		4	40.4
Anderson's New Var.	0	14	50.29	+26	14	4.0

75 yrs

1825.0	0^h	12^m	$25^s.65$	$+25°$	$59'$	$22''.9$
		$+1$	$56,40$		$+12$	31.1
	0	14	22.05	$+26°$	11	54.0
	$3°$	$35'$	$30''.75$			

Log $\frac{n}{15}$	+0.12610
" sin α	+8.79692
" tan δ	+9.69199
+0.0412	+8.61501
$\frac{m}{15}$ +3.0708	
+3.1120	+0.49304
Log. 75	+1.87506
$+2\,33^s.40$	+2.36810

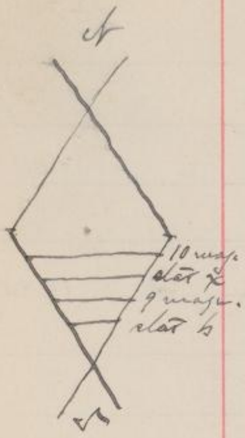
Log. n	+1.30219
" cos. α	+9.99914
" 75	+1.87506
$1501''.0$	+3.17639
$25'$ $1''.0$	

1825.0	0^h	12^m	$25^s.65$	$+25°$	$59'$	$22''.9$
		$+3$	53.40		$+25$	1.0
1900.0	0	16	19.05	$+26$	24	23.9

Location of stars near new Variable.

	Star x		10th magn.		Star b		9th magn.	
5^{h}	47^{m}	$26^{s}.2$	47^{m}	$46^{s}.1$	48^{m}	$6^{s}.5$	51^{m}	$11^{s}.8$
	48	21.9	49	14.3	48	41.2	51	57.6
	95	48.1	97	0.4	96	47.7	103	9.4
	52	47.3	53	7.1	53	27.1	56	32.2
	53	43.0	54	35.7	54	02.1	57	19.0
	106	30.3	107	42.8	107	29.2	113	51.2
	59	2.9	59	22.4	59	42.3	62	48.0
	59	58.6	60	51.6	60	18.6	63	34.6
	119	1.5	120	14.0	120	0.9	126	22.6
	63	56.7	64	16.5	64	37.0	67	42.0
	64	53.1	65	46.5	65	13.1	68	29.2
	128	49.8	130	3.0	129	50.1	136	11.2

7^{m} 21.3^{s}	6^{m} 9.0^{s}	6^{m} 21.7^{s}	3 40.65	3 4.50	3 10.85
7 20.9	6 8.4	6 22.0	3 40.45	3 4.20	3 11.00
7 21.1	6 8.6	6 21.7	3 40.55	3 4.30	3 10.85
7 21.4	6 8.2	6 21.1	3 40.70	3 4.10	3 10.55
			−3 40.59	−3 4.28	−3 10.81



Δ star x	Δ 10 magn.	Δ star b	Δ 9th/11 magn.	
55.7^{s}	1 28.2^{s}	34.7^{s}	45.8^{s}	
55.7^{s}	1 28.6^{s}	35.0^{s}	46.8^{s}	
55.7^{s}	1 29.2^{s}	36.3^{s}	46.6^{s}	
56.4^{s}	1 30.0^{s}	36.1^{s}	47.2^{s}	
55.88^{s}	1 29.00^{s}	35.52^{s}	46.60^{s}	+9.28^{s}, +42.40^{s}, −11.08^{s}

Lg 9.28 = +0.96755
" 7.5 = +0.87506
" cos δ = +9.74435
+38.63 +1.58696
+19.32
Lg 42.40 = +1.62737
" 7.5 = +0.87506
" cos δ = +9.74435
+176.5 +2.24678
+88.2

56 17 3.3
+19.3
56 17 22.6

0.96755
0.87506
9.74429
38″.63 +1.58690

56 17 3.3
+1 28.2
56 18 31.5

1.62737
0.87506
9.74407
+176″.4 +2.24650

Lg 11.0 A =	-1.04454		-1.04454	56	17	3.3
" 7.5 =	+0.87506		+0.87506			-23.1
" cos δ =	+9.74435		+9.74442	56	16	40.2
-46.13	-1.66395	46″.13	-1.66402			
-23.06						

+8.04
+17.5

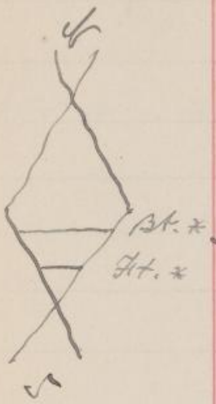
Comp. Star for p.p. 162-5 incl. is
Dur. +56° 418 (9.0) =
Helsingfors - Gotha No. 1835 (9.3)

1875.0 =	1h 56m 21.09s	+56° 9' 46.2"
	+50.50	+3 38.7
	1 57 11.59	+56° 13' 24.9
	29° 18' 53.35	

Log $\frac{m}{15}$	+0.12604	Log n	+1.30214
" sin α	+9.68984	" cos. α	+9.94049
" tan δ	+0.17467	" 25	+1.39794
+0.9785	+9.99055	+437.1"	+2.64057
$\frac{m}{15}$ +3.0714		7' 17.1	
4.0499	+0.60745		
Log. 25	+1.39794		
101.25	2.00539		

1875.0	1h 56m 21s.09	+56° 9' 46.2"
	+1 41.25	+7 17.1
1900.0	1 58 2.34	+56° 17 3.3
	-3 40.59	+38.6
Star x	1 54 21.75	+56° 17 41.9
	1 58 2.34	+56° 17 3.3
	-3 .4.28	+2 56.4
10 magn.	1 54 58.06	+56 19 59.7
	1 58 2.34	+56 17 3.3
	3 10.81	-46.1
Star b.	1 54 51.53	+56 16 17.2

Jan. 31. 1894. (R 69. p. 10)
Transits of faint star preceding χ Cygni and χ Cygni itself.



Ft. *	Brt. *		
3^h 23^m 0.0^s ✓	23^m 3.0^s ✓		
23 26.7 ✓	23 59.5 ✓		
46 26.7 ✓	47 2.5 ✓	0^m 35.8^s ✓	0 17.90 ✓
24 14.0 ✓	24 16.3 ✓		
24 42.5 ✓	25 14.0 ✓		
48 56.5 ✓	49 30.3 ✓	0 33.8 ✓	0 16.90 ✓
25 28.1 ✓	25 30.2 ✓		
25 59.1 ✓	26 31.2 ✓		
51 27.2 ✓	52 1.4 ✓	0 34.2 ✓	0 17.10 ✓
26 58.5 ✓	27 0.1 ✓		
27 30.3 ✓	28 2.7 ✓		
54 28.8 ✓	55 2.8 ✓	0 34.0 ✓	0 17.00 ✓
			−0 17.22 ✓

Δ Ht. *	Δ Brh. *	
26.7	56.5	29.8
28.5	57.7	29.2
31.0	61.0	30.0
31.8	62.6	30.8
		29.95

32° 38.0'
−1.6
32 36.4

29.95 = 1.47640
75 = 0.87506
cos. δ = 9.92538
2/149.2" = 2.27684
94.6

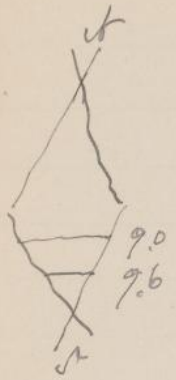
1.47640
0.87506
9.92551
2.27697 = 149.2"

− 3' 9.2"
0.4
− 3' 9.6

(Ref. comp. in Ref. Book. p. 96)

Oct. 19, 1894.

Location of Cordoba Dur. −27° 13151 (9.6) with C. Dur. 13173 (9.0) by transits over square bar.



0^h 6^m $15^s.4$ ✓ 7^m $12^s.2$ ✓
6 40.7 ✓ 8 4.0 ✓
12 56.1 ✓ 15 16.2 ✓ 2^m $20^s.1$ 1^m $10^s.05$

8 35.9 ✓ 9 32.9 ✓
9 3.0 ✓ 10 26.9 ✓
17 38.9 ✓ 19 59.8 ✓ 2 20.9 1 10.45

11 23.3 ✓ 12 20.0 ✓
11 52.6 ✓ 13 16.8 ✓
23 15.9 ✓ 25 36.8 ✓ 2 20.9 1 10.45

0.95
1 10.32 ✓

25.3 ✓ 51.8 ✓ 26.5 ✓

27.1 ✓ 54.0 ✓ 26.9 ✓

$$\begin{array}{r} -27^\circ\ 54.2' \\ -1.5 \\ \hline -27\ \ 55.7 \end{array}$$

29.3 ✓ 56.8 ✓ 27.5 ✓

$$\begin{array}{r} \underline{27.5} \\ 3\,\underline{/80.9} \\ 26.97 \end{array}$$

Log. 26.97 = 1.43088 ✓

" 7.5 = 0.87506 ✓

" cos δ = 9.94633 ✓

178.8 = 2.25227

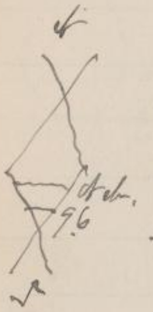
89.4

$$\begin{array}{r} 1.43088 \\ 0.87506 \\ \underline{9.94622} \\ 2.25216 \end{array} = 178.7''$$

2′ 58.7″

Location of Planetary Nebula near C. D.M. 13151.

Oct. 27. 1894.



	Nebula		9.6 mag.			
22^h	2^m	8.5	2^m	16.0		
	2	54.9	2	47.5		
	5	3.4 ✓ <	5	3.5 ✓ <	0.1 ✓ <	0.05 <
22	3	34.2	3	42.2		
	4	23.4	4	16.3		
	7	57.6 ✓ <	7	58.5 ✓ <	$0^s.9$ ✓ <	0.45 <
22	4	52.4	5	1.0		
	5	40.2	5	35.3		
	10	32.6 ✓ <	10	36.3 ✓ <	$3^s.7$ ✓ <	1.85 <
22	6	12.4	6	21.0		
	7	4.9	6	56.5		
	13	17.3 ✓ <	13	17.5 ✓ <	$0^s.2$ ✓ <	0.10 <
22	8	33.0	8	41.2		
	9	21.5	9	14.6		
	17	54.5 ✓ <	17	55.8 ✓ <	$1^s.3$ ✓ <	0.65 <
22	10	35.7	10	43.0		
	11	26.8	11	21.0		
	22	2.5 ✓ <	22	4.0 ✓ <	$1^s.5$ ✓ <	0.75 <
~~22~~	~~12~~	~~20.5~~	~~12~~	~~29.0~~		3.85 < ✓
	~~14~~		~~13~~	~~8.0~~ ✓		− 0.642 <
			~~25~~	~~38.0~~		

Δ Nebula	Δ *	
$46^{s}.4$	31.5	14.9
49.2	34.1	15.1
47.8	34.3	13.5
52.5	35.5	17.0
48.5	33.4	15.1
51.1	38.0	13.1
		6)88.7
		14.78

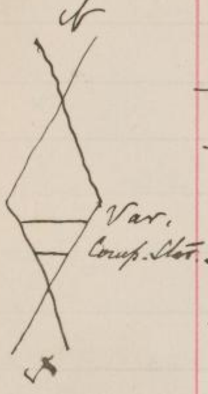
−27° 57′.5
+ 0.8
−27° 56.7

Log 14.78 = 1.16967
" 7.5 = 0.87506
" cos δ = 9.94610
+97″.91 1.99083
+48.96

1.16967
0.87506
9.94616
1.99089 = +97″.92
= +1′ 37″.9
Cor. for dif. ref. +0″.9
+1′ 38″.8

R74.p.196.

Location of Variable disc. by Photography (Wells' Variable) near +79° 467 (9.4 B.)



Var.	Comp. Star.				
13h 9m 53.4s ✓	10m 18.2s ✓				
11 48.6 ✓	11 22.7 ✓				
21 42.0 <	21 40.9 <	+0m	1.1s <	+0m	0.55s <
12 56.3 ✓	13 20.4 ✓				
14 50.7 ✓	14 24.6 ✓				
27 47.0 <	27 45.0 <	+0	2.0 <	+0	1.00 <
16 18.1 ✓	16 43.5 ✓				
18 13.0 ✓	17 47.1 ✓				
34 31.1 <	34 30.6 <	+0	0.5 <	+0	0.25 <
20 49.5 ✓	21 14.0 ✓				
22 43.9 ✓	22 18.6 ✓				
43 33.4 <	43 32.6 <	+0	0.8 <	+0	0.40 <
27 12.9 ✓	27 37.8 ✓				
29 7.6 ✓	28 42.1 ✓				
56 20.5 <	56 19.9 <	+0	0.6 <	+0	0.30 <
32 23.2 ✓	32 47.5 ✓				
34 19.4 ✓	33 52.8 ✓				
66 42.6 <	66 40.3 <	+0	2.3 <	+0	1.15 <
36 32.4 ✓	36 57.5 ✓				
38 27.3 ✓	38 1.2 ✓				
74 59.7 <	74 58.7 <	+0	1.0 <	+0	0.50 <
39 4.5 ✓	39 29.0 ✓				
40 59.2 ✓	40 34.0 ✓				
80 3.7 <	80 3.0 <	+0	0.7 <	+0	0.35 <
42 20.0 ✓	42 45.2 ✓				
44 15.3 ✓	43 49.1 ✓				
86 35.3 <	86 34.3 <	+0	1.0 <	+0	0.50 <
45 7.0 ✓	45 31.2 ✓				
47 2.1 ✓	46 35.6 ✓				
92 9.1 <	92 6.8 <	+0	2.3 <	+0	1.15 <
				+0	0.62
					0.615 <

Δ Ver.	Δ C.S.	
1m 55.2 <	1m 4.5 <	0m 50.7 ✓ <
1 54.4 <	1 4.2 <	0 50.2 ✓ <
1 54.9 <	1 3.6 <	0 51.3 ✓ <
1 54.4 <	1 4.6 <	0 49.8 ✓ <
1 54.7 <	1 4.3 <	0 50.4 ✓ <
1 56.2 <	1 5.3 <	0 50.9 ✓ <
1 54.9 <	1 3.7 <	0 51.2 ✓ <
1 54.7 <	1 5.0	0 49.7 ✓ <
1 55.3 <	1 3.9 <	0 51.4 ✓ <
1 55.1 <	1 4.4 <	0 50.7 ✓ <
		0 50.63 ✓ <

Location of Variable disc. by Photography

Comp. Star = 8m. + 79° 467 (9.44 B.)

B.B. VI 467 = 15^h 35^m $17.^s96$ +79° 5′ $59.''2$ (1855)

233° 49′ $29.''4$

Log $\frac{n}{15}$ = +0.12607
" sin α = n9.90699
" tan δ = +0.71540
−5.6035 = n0.74846
+3.0711
−2.5324
Log do. = n0.40353
" 20. = +1.30103
$-50.^s65$ = n1.70456

Log n = +1.30216
" cos α = n9.77104
" 20. = +1.30103
$-236.''7$ = n2.37423
−3′ $56.''7$

	15	35	17.96	+79	5	59.2
			−50.65		−3	56.7
Mid. Pl.	15	34	27.31	+79	2	2.5

233° 36′ $49.''6$

Log $\frac{n}{15}$ = +0.12607
" sin α = n9.90581
" tan δ = +0.71272
−5.5539 = n0.74460
+3.0711
−2.4828
Log do. = n0.39494
" 40. = +1.60206
$-99.^s31$ = n1.99700

Log n = +1.30216
" cos α = n9.77322
" 40. = +1.60206
$-475.''8$ = n2.67744
−7′ $55.''8$

See next page.

Location of 11th mag. star with relation to Dec. +79° 169 (5.2)

Used in Triangular System in Costery

Phot. T.

	169	11th mag.		
15	15 16.0 ✓	14 58.2 ✓		
	17 55.0 ✓	17 12.8 ✓		
	33 11.0 ✓	32 11.0 ✓	$-1^m\ 0.^s0$ ✓	$-0^m\ 30.^s00$ ✓
	19 45.5 ✓	19 4.5 ✓		
	22 1.2 ✓	21 41.2 ✓		
	41 46.7 ✓	40 45.7 ✓	−1 1.0 ✓	−0 30.50 ✓
	23 31.4 ✓	22 48.6 ✓		
	25 43.5 ✓	25 27.4		
	49 14.9 ✓	48 16.0 ✓	−0 58.9 ✓	−0 29.45 ✓
	28 11.0 ✓	27 49.1 ✓		
	30 45.3 ✓	30 8.2 ✓		
	58 56.3 ✓	57 57.3 ✓	−0 59.0 ✓	−0 29.50 ✓
	31 53.6 ✓	31 33.0 ✓		
	34 32.1 ✓	33 47.8 ✓		
	66 25.7 ✓	65 20.8 ✓	−1 4.9 ✓	[−0 32.45]
				$-0^m\ 29.^s86$ ✓

8169

$2^m\ 39^s.0$ $2^m\ 14^s.6$ $4^m\ 53^s.6$

2 15.7 2 36.7 4 52.4

2 12.1 2 38.8 4 50.9

2 34.3 2 19.1 4 53.4

10.3

4 52.6 4 52.6

292.6 = 2.46627 ~~4~~

7.5 = 0.87506

cos δ = 9.27734

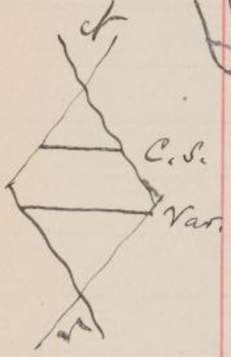
2.61867

415.6

886.0

470.4 = 7′ 50″.4

Clymer's New Var. at $22^h\ 10^m$ $-21°\ 52'$



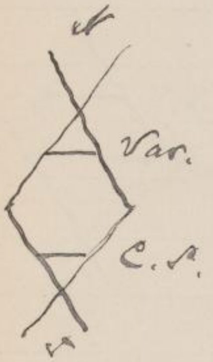
	Var.	Comp. *		
0	3 41.5	4 18.0		
	4 35.5	5 12.0		
	8 17.0	9 30.0	1 13.0	0 36.50
	5 42.0	6 18.0		
	6 36.0	7 12.5		
	12 18.0	13 30.5	1 12.5	0 36.25
	7 35.0	8 10.5		
	8 28.5	9 5.0		
	16 3.5	17 15.5	1 12.0	0 36.00
	9 35.5	10 11.0		
	10 29.0	11 5.5		
	20 4.5	21 16.5	1 12.0	0 36.00
	11 31.0	12 7.5		
	12 25.2	13 2.0		
	23 56.2	25 9.5	1 13.3	0 36.65
	13 25.5	14 1.5		
	14 19.5	14 55.4		
	27 45.0	28 56.9	1 11.9	0 35.95
				0 36.22

Clymer's new star turns out to be Vesta.

Δ Var.	Δ C.S.	
0^{m} 54.0^{s} ✓	0^{m} 54.0^{s} ✓	1^{m} 48.0^{s} ✓
0 54.0 ✓	0 54.5 ✓	1 48.5 ✓
0 53.5 ✓	0 54.5 ✓	1 48.0 ✓
0 53.5 ✓	0 54.5 ✓	1 48.0 ✓
0 54.2 ✓	0 54.5 ✓	1 48.7 ✓
0 54.0 ✓	0 53.9 ✓	1 47.9 ✓
		1 48.18 ✓

Clymer's New Var. turns out to be Vesta.

New Photographic Variable. at about 21h 37.0 +42° 55'.



Var.			Comp. Star					
h	m	s	m	s	m	s	m	s
23	43	4.7	45	9.8				
	43	37.5	45	35.2				
	86	42.2	90	45.0	4	2.8	2	1.40
	45	57.1	48	1.1				
	46	29.6	48	27.6				
	92	26.7	96	28.7	4	2.0	2	1.00
	48	51.8	50	55.9				
	49	24.1	51	22.7				
	98	15.9	102	18.6	4	2.7	2	1.35
	57	37.6	59	41.6				
	58	9.6	60	8.4				
	115	47.2	119	50.0	4	2.8	2	1.40
	60	37.4	62	41.2				
	61	8.5	63	8.0				
	121	45.9	125	49.2	4	3.3	2	1.65
							− 2	1.36

32.8 ✓	25.4 ✓	58.2 ✓
32.5 ✓	26.5 ✓	59.0 ✓
32.3 ✓	26.8 ✓	59.1 ✓
32.0 ✓	26.8 ✓	58.8 ✓
31.1 ✓	26.8 ✓	57.9 ✓
		43.0 ✓
		58.60 ✓

★ = + 42° 58' 10.0"
+ 4 42.2 ✓
+ 43 2 52.2

Log. 58.60 = 1.76790 ✓
" 7.5 = 0.87506 ✓
" cos δ = 9.86434 ✓
321.6" ✓ = 2.50730 ✓
886.0 ✓
2/564.4
282.2

+1.76790 ✓
+0.87506 ✓
+9.86379 ✓
+2.50675 ✓ = + 321.
886.0
+ 564.4
= 9' 24.4" ✓

See previous page.

Determination of place of New Photographic Variable at about 21h 37.0m +42° 55'.

Comp. Star = B.D. +42° 4195 (8.54) = Astr. Gesell. (Bonn) No. 15917 (7.7)

+2.360 +16.42

1875.0 21h 39m 48.57s ✓ +42° 51' 19.0" ✓

+29.50 ✓ +3 25.2 ✓

Vmid pl. = 21 40 18.07 ✓ +42 54 44.2 ✓

325° 4' 31.0"

Log. $\frac{n}{15}$ = +0.12604 ✓

" sin α = n9.75778 ✓

" tan δ = +9.96832 ✓

−0.7114 ✓ = n9.85214

+3.0714 ✓ =

+2.3600 ✓ =

Log dα = +0.37291 ✓

" 25. = +1.39794 ✓

+59.00 ✓ = +1.77085 ✓

Log n = +1.30214 ✓

" cos α = +9.91377 ✓

" 25. = +1.39794 ✓

+411.0" ✓ = +2.61385 ✓

1875.0 = 21 39 48.57 ✓ +42° 51' 19.0" ✓

+59.00 ✓ +6 51.0 ✓

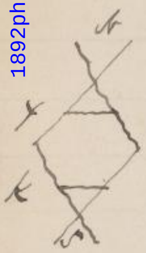
*1900.0 = 21 40 47.57 ✓ +42 58 10.0 ✓

−2 1.36 ✓ +9 24.8 ✓

Var. 1900.0 = 21 38 46.21 ✓ +43 7 34.8 ✓

mean place

Location of Comp. Stars for S S Cygni. with square bar. Nov. 23. (89).



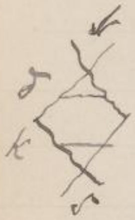
✓

y k

~~3^h 17^m 47.5^s 18^m 18.0^s~~
~~18 42.5 19 8.2~~
~~36 30.0 37 26.2 0^m 56.2^s 0^m 28.1^s~~

y k

20 19.2 ✓ 20 49.3 ✓
21 13.3 ✓ 21 49.4 ✓
41 32.5 ✓ 42 38.7 ✓ 1^m 6.2 ✓ 0^m 33.10^s ✓



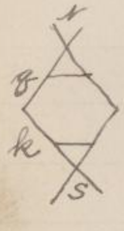
✓

δ k

~~25 33.8 ✓ 25 47.3 ✓~~
~~26 48.0 26 14.5~~
~~52 21.8 52 1.8 0^m 20.0^s 0^m 10.0^s~~

δ k

27 36.0 ✓ 27 49.5 ✓
28 17.4 ✓ 28 50.5 ✓
55 53.4 ✓ 56 40.0 ✓ 0^m 46.6^s ✓ 0^m 23.30^s ✓



✓

g k

30 33.7 ✓ 30 19.4 ✓
30 57.0 ✓ 31 28.0 ✓
61 30.7 ✓ 61 47.4 ✓ 0^m 16.7^s ✓ 0^m 8.35^s ✓

g k.

32 57.0 ✓ 32 42.4 ✓
33 20.0 ✓ 33 51.0 ✓
66 17.0 ✓ 66 33.4 ✓ 0^m 16.4^s ✓ 0^m 8.20^s ✓

Δ Δ

– –

54.1 ✓ 60.1 ✓ 114.2 ✓

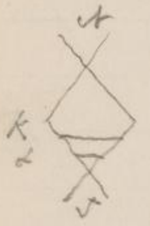
41.4 ✓ 61.0 ✓ 102.4 ✓

0ᵐ – 23.3ˢ ✓ 1ᵐ 8.6ˢ ✓ 91.9 ✓

0ᵐ 23.0ˢ ✓ 1ᵐ 8.6ˢ ✓ 91.6 ✓

– –

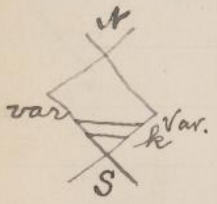
Faint comp. stars for SS Cygni. Nov. 23. 1897.



✓

α		k					
3h 35m	2.0s ✓	35m	37.4s ✓				
35	26.3 ✓	36	12.6 ✓				
70	28.3 ✓	71	50.0 ✓	1m	21.7s ✓	0m	40.8s ✓

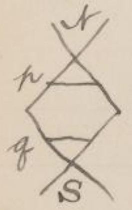
α		k					
36	51.3 ✓	37	26.0 ✓				
37	14.5 ✓	38	3.1 ✓				
74	5.8 ✓	75	29.1 ✓	1m	23.3s ✓	0m	41.6s ✓



✓

k		var					
40	5.4 ✓	39	37.0 ✓				
40	19.6 ✓	39	54.5 ✓				
80	25.0 ✓	79	31.5 ✓	0m	53.5s ✓	0m	26.7s ✓

k		var					
41	17.4 ✓	40	49.2 ✓				
41	32.3 ✓	41	5.5 ✓				
82	49.7 ✓	81	54.7 ✓	0m	55.0s ✓	0m	27.50s ✓



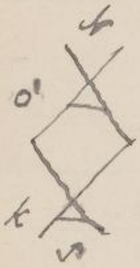
✓

p		q					
43	45.4 ✓	43	26.4 ✓				
43	57.0 ✓	44	3.5.5 ✓				
87	42.4 ✓	88	1.9 ✓	0m	19.5s ✓	0m	9.7s ✓

~~p~~		~~q~~					
~~45~~	~~36.3~~ ✓	~~45~~	~~18.2~~ ✓				
~~46~~	~~48.0~~ ✓	~~47~~	~~27.2~~ ✓	0	21.1 ✓	0	10.55 ✓
~~92~~	~~24.3~~ ✓	~~92~~	~~45.4~~ ✓	~~0m~~	~~35.9~~	~~0m~~	~~19.4~~

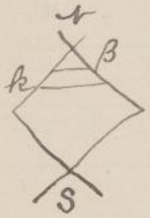
B		A		
0^m	$24^s.3$ ✓	0^m	$35^s.2$ ✓	10.9 ✓
0^m	$23^s.2$ ✓	0^m	$37^s.1$ ✓	13.9 ✓
0^m	$14^s.2$ ✓	0^m	$17^s.5$ ✓	3.3 ✓
0^m	$14^s.9$ ✓	0^m	$16^s.3$ ✓	1.4 ✓
0	11.6 ✓	1	9.1 ✓	50.7 ✓
~~1~~	~~11.7~~ ✓	~~2~~	~~9.0~~ ✓	

Faint Comp. Stars for SS Cygni. Nov. 23. 1897.



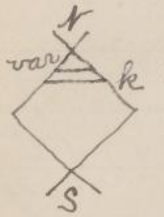
	o'	k		
✓ 3^h	48^m 8.0^s ✓	49^m 12.5^s ✓		
	48 48.0 ✓	49 31.2 ✓		
	96 56.0 ✓	98 43.7 ✓	1^m 47.7^s ✓	0^m 53.8^s ✓

o'	k		
49 58.1 ✓	51 2.5 ✓		
50 38.0 ✓	51 21.0 ✓		
100 36.1 ✓	102 23.5 ✓	1^m 47.4^s ✓	0^m - 53.7^s 0 ✓

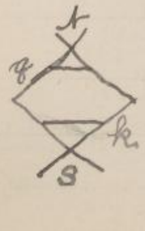


	β	k.		
	55 39.3 ✓	55 19.4 ✓		
✓	56 27.2 ✓	56 24.4 ✓		
	112 6.5 ✓	111 43.8 ✓	0^m 22.7^s ✓	0^m 11.3^s ✓

β	k		
58 14.5 ✓	57 55.0 ✓		
59 2.3 ✓	58 59.5 ✓		
117 16.8 ✓	116 54.5 ✓	0^m 22.3^s ✓	0^m 11.2^s ✓



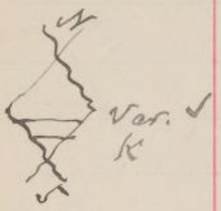
	k	var		
✓ 4	1 47.8 ✓	1 21.7 ✓		
	2 41.8 ✓	2 14.3 ✓		
	4 29.6 ✓	3 36.0 ✓	0^m 53.6^s ✓	0^m 26.8^s 0 ✓



	q	k		
	3 47.8 ✓	3 33.0 ✓		
✓	4 10.5 ✓	4 40.6 ✓		
	7 58.3 ✓	8 13.6 ✓	0^m 15.3^s ✓	0^m 7.6^s ✓

-0^{m}	$40\overset{s}{.}0$ ✓	$+0^{m}$	$18\overset{s}{.}7$ ✓	$-21\overset{n}{.}3$ ✓
-0^{m}	39.9 ✓	$+0^{m}$	$18\overset{s}{.}5$ ✓	-21.4 ✓
0^{m}	$47\overset{s}{.}9$ ✓	1^{m}	$5\overset{s}{.}0$ ✓	17.1 ✓
0^{m}	$47\overset{s}{.}8$ ✓	1^{m}	$4\overset{s}{.}5$ ✓	16.7 ✓
0^{m}	$54\overset{s}{.}0$ ✓	0^{m}	$52\overset{s}{.}6$ ✓	1.4 ✓
0^{m}	$22\overset{s}{.}7$ ✓	1^{m}	$7\overset{s}{.}6$ ✓	9.3 ✓

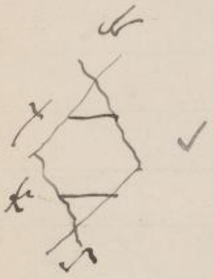
Faint comp. stars for SS Cygni.
Nov. 24. 1897.



	K		var.					
3	26	35.5	26	7.0				
	27	12.5	26	46.4				
	53	48.0	52	53.4	0^m	$54^s.6$	0^m	27.30

Same again.

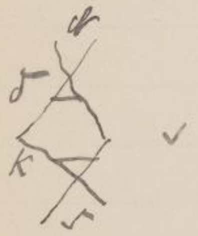
28	22.7	27	55.0				
29	0.2	28	34.5			0	26.80
57	22.9	56	29.5	0^m	$53^s.4$	0	26.70
						0	26.75
						0	27.50
						5)	35.05
						0	27.01



Y		K					
30	25.0	30	47.2				
31	10.9	31	55.4				
61	35.9	62	42.6	1^m	$6^s.7$	0	33.35

Same again.

32	15.0	32	36.0				
33	0.2	33	44.1				
65	15.2	66	20.1	1^m	$4^s.9$	0	32.45
						0	33.10
						3)	8.90
						0	32.97



δ		K					
34	24.6	34	37.7				
35	5.3	35	39.0				
69	29.9	70	16.7	0^m	$46^s.8$	0	23.40

Same again.

37	15.1	37	26.9				
37	54.1	38	28.5				
75	9.2	75	55.4	0^m	$46^s.2$	0	23.10
						0	23.30
						3)	69.80
						0	23.27

Δ	Δ	
37.0 ✓	39.4 ✓	2.4 ✓
37.5 ✓	39.5 ✓	2.0 ✓
		3.3 ✓
		1.4 ✓
		1.4 ✓
		5/10.5 ✓
		2.10

Log 2.10 = 0.32222 ✓
" 7.5 = 0.87506 ✓
" cos δ = 9.86283 ✓
11.5″ = 1.06011 ✓

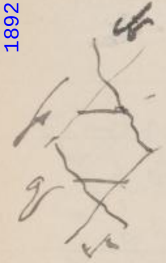
45.9 ✓	68.2 ✓	114.1 ✓
45.2 ✓	68.1 ✓	113.3 ✓
		114.2 ✓
		3/341.6 ✓
		113.9 ✓

Log 113.9 = 2.05652 ✓
" 7.5 = 0.87506 ✓
" cos δ = 9.86283 ✓
622.9″ = 2.79441 ✓
886.0 ✓
263.1 ✓

40.7 ✓	61.3 ✓	102.0 ✓
39.0 ✓	61.6 ✓	100.6 ✓
		102.4 ✓
		3/305.0
		101.7 ✓

Log. 101.7 = 2.00732 ✓
" 7.5 = 0.87506 ✓
" cos δ = 9.86283 ✓
556.2 = 2.74521 ✓
886.0
329.8 ✓

Faint comp. stars for 55 Cygni.
Nov. 24. 1897.



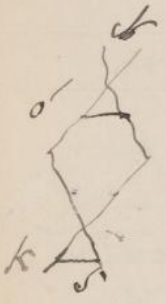
p q

3 40 48.0 41 6.3
41 37.3 41 38.3
82 25.3 82 44.6 0m 19.3s 0m 9.65

Same again.

43 24.9 43 43.9
44 14.3 44 15.6
87 39.2 87 59.5 0m 20.3s

~~0 10.55~~
0 10.15
0 9.75
3/29.55
0 9.85



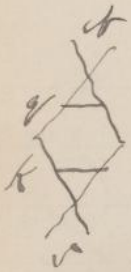
o k

46 29.3 47 33.4
47 7.4 47 51.2
93 36.7 95 24.6 1m 47.9s 0 53.95

Same again.

48 34.0 49 37.9
49 12.1 49 55.4
97 46.1 99 33.3 1m 47.2

0 53.60
0 53.85
0 53.70
4/215.10
0 53.78



g k

51 55.0 52 21.3
52 59.1 52 48.4
104 54.1 105 9.7 0 15.6 0 7.80

Same again.

53 12.4 53 39.0 0 7.65
= 54 17.2 54 6.7
107 29.6 107 45.7 0 16.1 0 8.05

0 8.35
0 8.20
5/40.05
— 0 8.01

Δ Δ

49.3 32.0 81.3

Log 81.0 = 1.90849
" 7.5 = 0.87506
" cos δ = 9.86283
443.0″ = 2.64638
886.0
443.0

49.4 31.7 81.1
80.7
3.1
81.0

−38.1 +17.8 −20.3

Log 20.9 = 1.32015
" 7.5 = 0.87506
" cos δ = 9.86283
−114.3″ = 2.05804
886.0
771.7

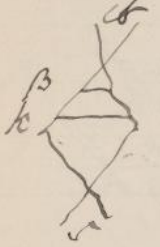
−38.1 +17.5 −20.6
−21.3
−21.4
3.6
−20.9

64.1 27.1 91.2

Log 91.5 = 1.96142
" 7.5 = 0.87506
" cos δ = 9.86283
500.4″ = 2.69931
886.0
385.6

64.8 27.7 92.5
91.9
91.6
90.3
7.5
91.5

Faint comp stars for 55 Cygni.
Nov. 24. 1897.

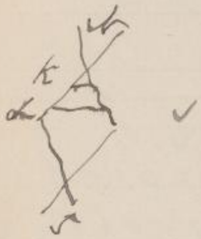


	β		κ					
3	56	2.0	55	42.0				
	56	34.5	56	32.0				
✓	112	36.5	112	14.0	0m	22.5s	0m	11.25s

Same again.

57	28.1	57	8.4				
58	0.2	57	57.7				
115	28.3	115	6.1	0	22.2	0	11.10

0 11.35
0 11.15
44.85
0 11.21



	α		κ					
4	1	22.3	2	10.0				
	1	53.8	2	29.0				
✓	123	16.1	124	39.0	1	22.9	0	41.45

Same again.

3	4.0	3	52.4				
3	35.8	4	10.4				
126	39.8	128	2.8	1	23.0	0	41.50

0 40.85
0 41.65
165.45
0 41.36

Δ	A	
32.5 ✓	50.0 ✓	17.5 ✓
32.1 ✓	49.8 ✓	17.2 ✓ 17.1 16.7 5 17.1 ✓

Log 17.1 = 1.23300 ✓
" 7.5 = 0.87506 ✓
" cos δ = 9.86283 ✓
93.″54 ✓ = 1.97089 ✓

31.5 ✓	19.8 ✓	12.5 ✓
31.8 ✓	18.0 ✓	13.8 ✓ 10.9 ✓ 13.9 ✓ 4)51.1 12.8 ✓

Log 12.8 = 1.10721 ✓
" 7.5 = 0.87506 ✓
" cos δ = 9.86283 ✓
70.″0 ✓ = 1.84510 ✓

1900.0 places of Faint Comp. Stars for SS Cygni. (See this book. p. 186 ff.)

Var.	=	21	38	46.21 ✓	+43	7	34.8 ✓	(1900.0)
				+27.01			−11.5	
k	=	21	39	13.22 ✓	+43	7	23.3 ✓	"
				−32.97		+4	23.1	
γ	=	21	38	40.25 ✓	+43	11	46.4 ✓	"
k	=	21	39	13.22 ✓	+43	7	23.3 ✓	"
				−23.27 ✓		+5	29.8	
δ	=	21	38	49.95 ✓	+43	12	53.1 ✓	"
k	=	21	39	13.22 ✓	+43	7	23.3 ✓	"
				−8.01		+6	25.6 ✓	
g	=	21	39	5.21 ✓	+43	13	48.9 ✓	"
				−9.85		+7	23.0	
p	=	21	38	55.36 ✓	+43	21	11.9 ✓	"
k	=	21	39	13.22 ✓	+43	7	23.3 ✓	"
				−53.78		+12	51.7 ✓	
o′	=	21	38	19.44 ✓	+43	20	15.0 ✓	"
k	=	21	39	13.22 ✓	+43	7	23.3 ✓	"
				−41.36 ✓		−1	10.0 ✓	
α	=	21	38	31.86 ✓	+43	6	13.3 ✓	"
k	=	21	39	13.22 ✓	+43	7	23.3 ✓	"
				+11.21 ✓		+1	33.5 ✓	
β	=	21	39	24.43 ✓	+43	8	56.8 ✓	"

Errata on Comets.

The ~~sta~~ following errata have all been made right ~~for~~ on the sheets for the volume of Annals – but presumably have not been sent to Nachrichten or Astronomical Journal, whenever they occur in them.

Comet 1889 I = 1888 e = Barnard Sept. 2. (Vol. right)

See Astr. Journal Vol 9. p. 91.
" " Nach. " 123. p. 297.

Comet 1888 V (Barnard Oct. 30.) (Vol. right)

See Astr. Journal Vol. 9. p. 92.
" Astr. Nach. " 123. pp. 297–8.

(1892 VI) Comet d 1892 (Brooks Aug. 28.) (Vol. right)

See Astr. Journal Vol. 12. pp. 94–5
Astron. Nach. is all right.

(1892 III) Comet f 1892 (Holmes.) (Vol. right)

See Astr. Journal Vol. 12. p. 142.
Astron Nach. is all right.

Comet 1889. V (Brooks-Lexell) (Vol right)

See Astr. Journal Vol. 10. p. 69.
" Astr. Nach. Vol. 126. pp. 43 and 44 and 86.

Errata on Comets: con.

Comet 1886 VII. Finlay.

See Astr. Nach. Vol. 124. p. 363. (Vol. all right)
" " Journal. Vol. 9. p. 191.

Comet 1890 VI (Denning July 23)

See Astr. Nach. Vol. 126 p. 48. (Vol. all right)
Not sent to Astr. Journal.

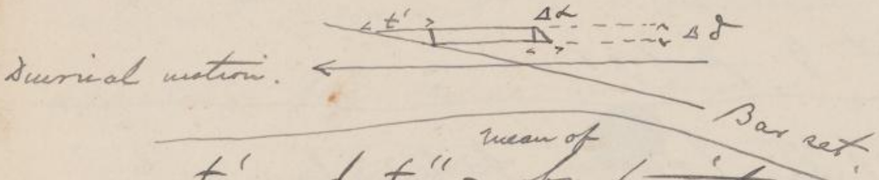
New Star in Auriga.

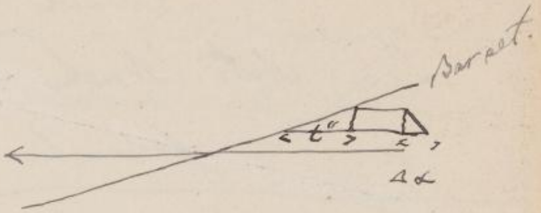
See Astr. Nach. Vol. 129. p. 113.

Olbers Comet 1887 V.

See Ast. Nach. Vol. 123. p. 296. (Vol. all right)
" " Journal. Vol. 9. p. 91.

To develop formula for reducing transits over inclined lines.





t' and t'' = mean of obs. transits.

$(t+\Delta\alpha)$

$$t' = \frac{\Delta\delta \cot 5^\circ \times 15}{\cos\delta} + \Delta\alpha$$

$$t'' = \quad `` \quad - \Delta\alpha$$

$$\therefore \frac{t'-t''}{2} = \Delta\alpha$$

$$\tfrac{1}{2}(t'+t'') = \frac{\Delta\delta \cos 5^\circ}{15 \times \cos\delta}$$

$$\Delta\delta = \frac{\cos\delta\,(t'+t'')}{\cot 5^\circ} \times \frac{15}{2}$$