KG
362
99

No. 25
Observations Double Stars
S. I. Bailey. +Planets
March 12, 1894 – May 9, 1896.

1894pmae.proj...700B

KG 11365.699

KG 11365.499

Double Star Observations

with the

13"

Boyden Refractor at Arequipa Peru

by

S. I. Bailey.

HARVARD
UNIVERSITY
LIBRARY
JUL 17 1956

March 12. 1894 -

The 13" which thus far has been used for photography was recently changed for visual work.

At first the images were bad, with wing on one side -

The lenses were removed and cleaned all papers removed from edges. and the inner rim of metal which supports within the flint glass was adjusted. This was found to be untrue - so that this lens was not perpendicular to the tube. The screws were removed & slots made in the telescope tube so that this rim might be adjusted - This was accomplished with great care - and the lenses, having been cleaned & replaced, gave apparently perfect definition, without any wings at all - with the expectation of being obliged to render the two parts of the lens parallel by inserting strips of paper between, as experienced by Professor W.H. Pickering three holes were made through the brass tube, so that these strips might be inserted, without the risk and labor of removing the lenses. It proved however that thus far this was unnecessary, as by the careful adjustment of the rim & other parts the definition seems perfect at present without further trouble -

		Cape			Estimates.		
A.G.C. No.	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magn.
16942-3					no other stars seen except these		
17411					" companion "		
17541-2					" close " " " "		
17572					" " " "		
17540					" " "		

Date - March 12. Mon. - 1894

Time - Remarks. &c.

10:30 P.M. Night at first cloudy - later partly clear but with hazy light clouds and dew - later worse -

Nebula in Orion was first set on -

Six stars of Trapezium seen plainly

Last Saturn was set on -

Dark line between rings very clear & distinct -

Bond's dusky ring quite plain -

		Cape.			Estimate		
A.G.C. No.	Cape. No.	Dist.	Position	Magn.	Dist.	Position.	Magn.

Date - Tues. March. 13

Hour - P.M. Remarks.

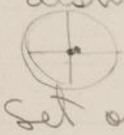
9:15 Set on η Orionis for ~~test of instrument~~ tonight sep. it into two perfectly distinct. stars, with power of 450. Sky at present very hazy with light clouds. power of 800 also separated it beautifully & image quite distinct & definite. about = in ease. 150 failed to separate, but possibly elongated it. position est. 85°

Set on (32) A Orion. not seen dbl. Sky hazy & cloudy in vicinity. but believe if right star was set on ~~that~~ angle is less than 0."5-

set on ξ Cancri - Close pair separated perfectly & completely with 450 & 800. A B est. position 200°

A C. position est 100°.

Set on 8 Sextantis - elongated with 450 and distinctly dbl. with 800 - image touching however.



Est. position 95°. dist 0."4.

Set on γ Cent. separated perfectly & distinctly with

11 20 450 & 800. Est. 0°, ~~position~~ : dist 1."2

A.G.C. No.	Cape No.	Dist.	position	magn.	Dist.	Position	Magn.

Date. Thurs. March. 15 '94

Hour -	Remarks -
	First p'night very cldy - Now - light clouds & haze -
8: 45 -	Set on Bu. 556 - comp. seen with difficulty - Est. Position 255°, dist 0.8"
9:00	Growing more cldy & hazy. Set on trapez - in Orion Neb - only 4 stars visible
9:15 -	Growing very cldy -

H.G.C. No.	Dist	Position	Magn

Sat March. 17. 1894

Evening with light clds & haze _ Moon ◍

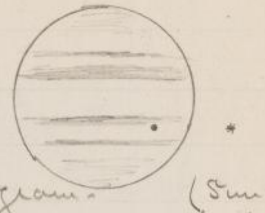
Set on Bu. 220 - seen dbl distinctly with 450
and better with 800 -
Est. Position 135°, Dist 0".5 - Magn 6.0, 6.5

9:00 P.M. Growing thy clouds:
Set on Saturn, with micrometer -

Polar diameter	14.836	16.686	1.850
	14.653	16.443	$1.\overset{7}{8}90$
	14.716	16.488	1.772
	14.600	16.376	1.776
	14.417	16.233	1.816
		5	9.004
			1.801

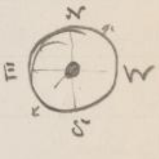
1.801 × 9.942 = 8".95.25.

Sun. March 18, 1894



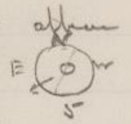
P.M. 5:55 at about 5:55 P.M. Jupiter seen with shadow of I on disc as seen in diagram. (Sun shining) Shadow very black and apparently circular. Watched it till it disappeared at 6:26 P.M. For last three minutes it appeared as a notch in edge of Jupiter - appearing quite sharp till the last.)

6:26 P.M.



7:20 7:25 4th sat. - yellowish red - appearance of ellipse S 45 E (but this is also a perpendicular direction)

7:35 3d sat. - appears almost perfectly round but slight tendency to elongate as IV.



Night hazy with some light clouds. Moon

powers of 450 & 800

I and II also show a tendency to elongation in about the same direction. (perhaps owing to low position of Jupiter & position of lens) Especially I seems elongated. Seeing rather poor - 3. (5) -

8.00 P.M. Growing very cloudy west. Further obs. impossible. General impression was that all the satellites show elongation as above but II least.

Mon. – March 19. 1894

P.M. Small clock set with vault M.T. clock @ $5^h\,40^m\,40^s$. P.M. –

7:00 III ₀ II ₂ I ₃ IV – power 150. seen thro' ligt clds –

8:30 Have spent last 1.5^h looking at Jupiter satellites. All seem as last night where slight tendency to elongation vertically, nearly in direction of R.A. motion – Jupiter low west, early part in clouds (thin). later nearly clear – power of 150 gave best detail on surface (next $\overset{3}{8}$50). 800 gave satellite rather obscure, no details – & no tendency to ellipse obs. except ~~that~~ given above. either due to lens or position of Jupiter –

8:30 Set on 47 Tauri. Separated distinctly & well: but seeing not so good as at times. perhaps owing to low alt. (about = Jupiter) – Est. position 355 (– 360), Dist. 0.″6 – Mag. – 5.0, 7.2

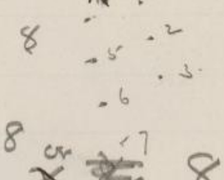
9:15 Attempted to look at Nova Aurigae, but from lack of suitable chart & by ligt clds did not succeed –

Cloudy large part of evening.

Nova Normae $\overset{\frown}{8^u}$

$2_4\ 3_0\ \overset{N.}{\times}\ .\ 5_2\ \overset{N.}{\times}_2\ 8.$ (13′) ; $\overset{N}{\times}_1$ 8

or $\underset{N}{\times}$ ~~X~~$_0$ 8 –



Examined Nova with powers up to 800 and could see no disc except the spurious one common to all stars. Seeing rather poor, with some clouds –

A.G.C. no.	Dist.	Position	Magns.
14383	—	—	—

Date Mon. – March 2~~7~~6, 1894

Hour Remarks – Field of 450 power = 10', rad. 5'

First of night more cloudy. – Now. 7:40 clear toward S.

8:05 – Not seen dbl. – Seeing. 3.

8:30 Sky very cloudy.

	Cape Cat.				Est.		
A.G.C. No	Cape No.	Dist	Position	Magn	Dist.	Position	Magn.
14667	1 —						
14653	—						
14702	—						
√√ 14337	—				1.″5	10°	6.0, 8.0
(√) 4(:)	—				0.4	100	6.0, 10.0
14769	—						
14775	—						
x 14764	—						
15848	—						
15640	—						
15365 —	4415	20	128.5	6, 14.	40.0	120	6.0, 10.0
√. 15588	4432	2.4	288.9	6, 8	2.5	315	6.0, 6.8
√ 16085 —	4471	—	272.9	5, 14			
16133	—						
15937	—						
16481	—						
16641	—						
16162	—						

Date - Tues. March 27. 1894

Hour. Remarks -

Not seen dbl. no comp. Seam. with 150, 450 + 800

" " " " " " " "

" " " " " " " "

9 00 " "

9 20 This comp. very dbtfull. " "

No comp. seen " " "

" " " " " "

" " " " " "

" " " " " "

" " " " " "

" " "

" " "

" " " " " "

" " " " " "

" " " " " "

" " " " " "

" " " " " "

" " " " "

10 50

Sky cloudy + hazy.

Seeing 2 - 3.

	Cape				Est.		
AG C. No	Cape No	Dist.	Posit. Angle	Magn.	Dist.	Position	Magn.
14392	—				—	—	—
14054	—						
14673.	—						
14910	Tab. II 1582	65.3	13.0	4.8			
14304	—						
14656	—						
14558	Tab. II 1558	15.3	21.4	6.9.	25"	15°	6.5 8.8

Hour. P.M.	Tues. ~~Mar~~ April 3. 1894.	B. growing cldy.
	Remarks. seeing 3-4.	
7:45	N. S. dbl.	Eo. with 150, 450 & 810.
	" " "	" " " " " "
	" " "	" " " " "
	" " "	" " " " "
	" " " St comp. 40″ ±	" " " " " " "
	" " "	" " "
8 50		" " " "

Sky growing cldy in South.

Some time spent in seeing if better adjustment of lenses could be obtained.

14504 — - - -

Date - April 4. 1894

Jupiter satellites - satellite all app. elongated slightly in direction angle
6:10(?) 105° ± - doubtless instrumental.

Set on star in Orion. Perf. app. very good - dif. rings very nearly perfectly concentric. No elongation in images of stars seen -

Reset on Jup. satellites -

I. dif. at times round. at other times strong apparent
P.M. - elongation of about 115° but slight - Near Jup. lft bgt
7:10 II tendency to elongation but more or less as I. Near Jup.
III. persistently elongated at angle 130° ± -
IV. " " " " 120-130 less than III
III was plainest of all -
All low in West.

8 00 Sky nearly all cloudy.
8:15- N. S. dbl! - Eye. with 150, 450, 800
Clouds -

		Cape			Est-		
A.G.C.-No.	Cape No.	Dist-	Position-	Magn.	Dist	position	Magn-
✓✓ 14751	—				2".0	70°	3.0, 8.0
~~ti~~	—						
14517	—				—	—	—
14397.	4330	30	160.6	5,10	$\overset{5}{\cancel{6}}0''.0$	170°	6.0, 7.5
14372-3	1540	14	37.8	6, 6.	20".0	220°	6.2, 6.5
14384	—				—	—	—
13968	—				—	—	—
14156	—				—	—	—
13991	—				—	—	—
14191	—				—	—	—
14440	—				—	—	—
15048	—				—	—	—
✓ 15224	4409	1.5	278	5,8.	1".5	265°	6.0, 8.5
15043	—				—	—	—

Date - Mon. April 9. 1894

First ½ night cloudy -

Hour Remarks:

P.M. -

11. 15 - Ex. with 150, 450, 800. Seen in 150, 450, 800 - but not seen with 150 till after seen in 450 - Splendid pair -

Ex. with 150, 450, 800. Not seen dbl -

" " "

" " "

" " " " " " .

Sky" growing very hazy" esp." S. " + E.

" " " " " " .

" " " " " " .

" " " " " " .

" " " " " " . Very red.

" " " " " " bluish wh. to yel.

" " " Fine dbl.

" " " " " " .

Seeing 4.

1:00 A.M.

	Cape				Est.		
A.G.C. No.	Cape No.	Dist	Position	Magn.	Dist.	Position.	Magns.
8518	—				—	—	—
8528	—				60"	75°	6., 8
8351	—				40"	95°	6, 9.5
X 8382	3891	5.0	222.0	6, 10	5"	220	6, 8.5
8212	—				—	—	—
7681	—				—	—	—
7731	—				—	—	—
7904	—				—	—	—
√√ 7914	—				1".0	40°	6.5, 9.
8068	—				—	—	—
8017	~~Ident prob wrong ?~~				—	—	—
~~8160~~	~~—~~	~~—~~	~~—~~	~~?~~	30"	30°	6.0, 7.0
8017	3869	25	249.3	7, 9	30	260	6.0 7.0
8160	—				50.	135	6.0 7.2
7274	—				—	—	—
7321	—				—	—	—
7234	—				—	—	—
14295	—				—	—	—
14478	—				—	—	—
14145	Tab. II 1530	7.1	103.3	5, 10	5"	95	5, 8
~~14105~~		36.7	191.6	5.10	50"	190	5, 8.
14105	—				—	—	—
14002	—				—	—	—
14277	—				—	—	—
2 14369	4329	17.5	17.4	5. 9	40"	85°	5.5, 8.5
13850	—				—	—	—
13945	—				—	—	—

Date. Tues. April 10. 1894

Time P.M. Remarks

7 : 30 Ev. with 150, 450, 800. N. S. dbl. seeing 3-4.

" " " " no close dbl.

" " " " " " " "

" " " fine.

" " " N. S. dbl. red.

" " " " " " bl. w.

" " " " " " red.

" " " " " " gr. bl.

" " " v. fine

" " " N. S. dbl. st. close at 70". red.

" " " " " " . 2 pt stars distant.

" " "

" " " "

9:00 " " "

" " " no close comp. (seeing poorer 2-3

" " " N. S. dbl. y.

" " " " " " .

" " " " " "

" " " " " "

" " "

"

" " " " " " " Red

" " " " " " " y. R.

" " " " " " " " R.

" " " " bl. w. but comp. red.

10 45 " " " " " " "

" " " " " " " .

	Cape				Est.ⁿ		
A.G.C. No.	Cape No.	Dist	Pos.	Magn.	Dist.	Position	Magn.
13942	—				—	—	—
14569	—				60"	100°	5, 7.
14767	—				—	—	—
14886	—				—	—	—
15215	—				—	—	—
15266	—				—	—	—
15356	4414	12	278.4	5, 12.	25"	275	5. 10
15269	—				—	—	—
15222	—				—	—	—

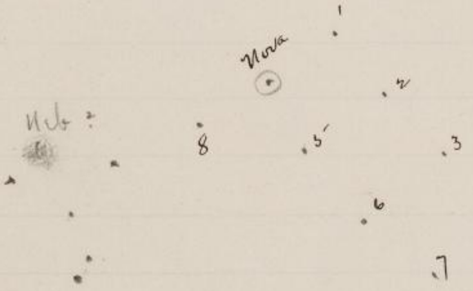
Date Tues. Apr. 10. 1894.

Time P.M. | Remarks -

10 : 50 Ex- with 150 + 450 Seeing rather poor 3 ±.
" - - " no close comp. seen .
" " " " U. S. dbl.
" " " " " "
" " " " " " In fine scat. clus. - sev. ft stars not far away -
" " " " " " "Edge" " " "
" " " .
" " " " " ".
11 : 40. " " " " " "

set on Nova. Normae in 8".
$6_3 \overset{N}{x}_0 5''_3 8$, also $2_2 \overset{N}{x}$. x = Nova -
See page. 13-

12 : 15-



With power of 450. Nova shows disc but about same as the adjacent stars. am inclined to think however that the focus is different for the Nova-

	Cape				Est.		
A.G.C. No.	Cape No.	Dist	Position	Magn.	Dist.	Position.	Magns.
12438					—	—	—
12593					~~10~~ 6"	10°	6.5, 9.0
12635					—	—	—
12515					—	—	—
12989					—	—	—
13028					—	—	—
12620					—	—	—
12617					—	—	—
12640					—	—	—
12930					—	—	—
12977-8					12"	220	7, 7
13001					—	—	—
13132					—	—	—
13618					40"	320	5.5, 11

DATE Wed - April - 11 - 1894

Time Remarks - First of evening cloudy. Now 0.4 cldy

P.M. -

9:20 Ex. with 150, 450, 800. N. S. dbl. Seeing 3-4.

" " " " "

" " " " " " " ".

" " " " " " " ".

" " " " " " " ",

" " " " " " " ".

" " " " " " " ".

" " " " " " " ".

" " " " " " " ".

" " " " " " " ".

10:20 " " " " "

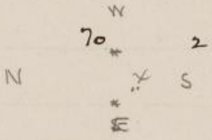
" " " " " " " ".

" " " " " " " ".

" " " " " " "

10:40. Sky growing too cloudy for further work.

	Cape.				Est.		
A.G.C. No.	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magns.
7697	—				—	—	—
7586	—				—	—	—
7343	—				—	—	—
7120	—				—	—	—
7359	—				—	—	—
7416	—				—	—	—
7266	—				—	—	—
✓ 7279	3834	1¼	245°9	6, 10	3″.5	230°	6.5, 9.5
9288	—	70	211.8	3, 8	—	—	—
9338	—				—	—	—
9326.	—				—	—	—
x 9336-7	—		*		2″.0	220	8; 8
9276	—				—	—	—
9664	—				—	—	—
9621	—				—	—	—
9616-7	Cat II. 1367	9.5	51.8	7, 8.	12″.0	50°	6.2, 6.7
9503	—				—	—	—
9464	—				—	—	—
9455	—				—	—	—
9266	—				—	—	—
9221	—				—	—	—
9175	—				—	—	—
10113	—				—	—	—
10188	—				12″.0	85°	6.0, 11.0
9978	—				—	—	—
9925	—				—	—	—
9934-5	—				—	—	—



Date Thurs - April 12. 1894

Time P.M. Remarks.

Sky 0.6 cldy

7:15 Ex. with /50, 450, 800 N. S. dbl. Seeing 4.

" " " " ", " " ". Sgt. clds.

" " " " ". " " ". " ".

" " " " " " " ", " —

" " " " " " " ",

" " " ", " " ";

" " " ", " " ".

" " " ",

" " " ", " " ", Sgt clds

" " " ". " " "; " —

" " " ". " " ", " ".

" " " " see * ".

" " " ", " ", ".

" " " " " " ".

" " " " " " ". 2 ft st. @ 70" ±

" " " ".

" " " ", " " ".

" " " ". " " ",

" ", " " " " ",

" " " ". " " ". red. dist St. comp.

" " " ". " " ", (60"–80" 190° 7.5)

" " " " " " "

" " " " ", " " ".

" " ".

" " ", " " ",

" " " , " " ". (2 comp. 60" +.)

9:45 " " " " ". " " " (Each seen Single)

	Cape				Est.		
A.G.C. no.	Cape No.	Dist.	Position.	Magns	Dist.	Position	Magns.
10350	—				—	—	—
10546	—				—	—	—
10691	—				—	—	—
10668	4038	29.1	345°.4	7,8.	30"	330	6.0, 7.5
10343	—				—	—	—
10060	—				—	—	—
10901	—				—	—	—
10984	4062	5.0	343.4	5, 10	—	—	—
10963	* 4058	4	190	6, 7	—	—	—
~~10973~~							

* 10963 seems = Cape Cat I. 4058. By the list given iden- as such a dbl would be easily seen. (Unless

Date Thurs - April 12. 1894.

Time Remarks -

9:45 - Ex. with 150, 450 - N. S dbl -

" " " ". " " ".

" " " " 800. " " ".

" " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " "

" " " " " " " 1 dist. comp.

" " " ". " " " repeat. lgt clds -

10:25 - Growing too cldy -

it is dble as above. N. S. dbl. There must be some mistake, pos - it has changed enormously since Herschel observed it.) : Repeat.

	Cape.				Esp–		
A.G.C. No.	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magn.
7801	–				20"	260	6.2, 9.5
7606	–				–	–	– –
7609	–				–	–	–
7839	–				–	–	–
7841–2	–				3"	310	8.5, 9.0
8023	–				–	–	–
8057	–				–	–	–
√√8093	3875	20	297.3	6, 13	0".7 30.0	260° 300	6.5, 7.5 6.5, 9.5
8155	–				–	–	–
8455	3893	60	290	5	–	–	–
8551	–				–	–	–
8577	–				–	–	–
8757	–				–	–	–
8736	–				–	–	–
9341	–				–	–	–
9060	–				–	–	–
9013	–				–	–	–
9152	–				–	–	–
8181	–				–	–	–
9652	cat II 1372	22.5	75	5, 10	30"	75	3.5, 8.0
9194	–				–	–	–
√√9197	3943	–	210	5	–	–	–
9339					–	–	–
8936	Cat II. 1321	20.4	121	6.7	25"	120°	6.0, 7.0
8935	–				–	–	–
9637	–				–	–	–
10067	–				–	–	–

Date Sat. April. 14. 1894

Time P.M. – Remarks. First of ev. clds. now. 0.5 clds.

7:40 Ex. with 150, 450 –
" " " " . N. S. dbl.
" " " " , " " " , Haze.
" " " " . " " " .
" " " " . Pol. 7839 8^s± N 2'.
" " " " , N. S. dbl.

very fine close dbl – not sep. in 150. but perf. plain in 450. + 800 – light clds
Ex. with 150, 450 + 800. N. S. Dbl.
" " " " . " " " " (dist. comp.)
" " " " , " " " .
" " " " " . " " " .
" " " " " . " " " .
" " " " " " " " .
" " " " " " " " .
" " " " " . " " " .
" " " " , " " " .
" " " " " . " " " .
" " " " " . " " " .
" " " " " , " " " .
" " " " " , " " " ,
" " " " " , " " " .
" " " " , " " .
" " " " " " " " .
" " " " " " " " ,
" " " " " " " " ,
9:55 – " " " " " . " " " .

	Cape-				Est.		
A.G.C. No.	Cape No.	Dist.	Position	Magns.	Dist.	Position	Magns.
10031	—				—	—	—
9895	—				—	—	—
9751	—				—	—	—
9850	—				—	—	—
10120	—				—	—	—
10357	—				—	—	—
10391	—				—	—	—
✓✓ 10335	—				2".5	285	5.7, 9.5
11111	—				—	—	—
11194	4085	5	270	5, 14.	6"	270	5.8, 10.0
10973	Cat II 1433	67.7	175.2	5, 6.	—	—	—
✓✓ 10963	4058	4	1904	6.7	—	—	—
11104	—				—	—	—
11191	—				—	—	—
10434	—				—	—	—
16541	4501	30	297.7	5, 11	—	—	—
✓✓ 16200	—				2".(-)	170	5.8 8.5
16479	—				—	—	—
16451	—				—	—	—
16151	—				—	—	—

Date. Sat. April 14. '94

Time P.M. — Remarks.

10:00 Ex. with 150, 450 – U. S. dbl.

" " " " " " ". (Ft comp. 50"-70")

" " " " " " ".

" " " ". " " ".

" " " " " " ".

" " " ". " " ".

" " " " " " ".

" " " ".. Fine

" " " ". " " ".

" " " ".

" " " ". " " ". (80" 175° 6,7)

" " " " 800 " " ". Seems good as +. – Fig dbl. less than 0".3. [illegible] dbl

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ". (40± 210° @ 10.0)

" " " ". ".

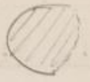
" " " ". " " ".

" " " ". " " "..

" " " ". " " ".

	Cape				Est.		
A.G.C. No.	Cape No.	Dist.	Position.	Magns.	Dist.	Position	Magns
10482	—				—	—	—
10699	—				—	—	—
7843	—				—	—	—
8133	—				—	—	—
8034	—				—	—	—
✓✓✓ 7991	Cat II. 1307	13".5	318°	6, 9	12"	300°	6.0, 9.
*					0".5	268	6.5, 6.5
	It comp at 300° is A.G.C 7990 This is also dbl Frey						
7990					0".3	255	9.5, 9.5
✓✓ 7874	—				1".2	125	6.2, 8.5
7467	—				—	—	—

Date Sunday April 15. 1894

Time   Remarks.   Moon - 

7:20   Ex. with 150 & 450   N.S. dbl.   Scattering clds -
„ „ „ „ „   „ „ „.   „ + -
„ „ „ „ 800   „ „ „.
„ „ „ „ „ & 1500.   „ „ „ „
„ „ „ „.   „ „ „.
„ „ „ „ „ „.
„ „ „ „ „ „ Vy fine -

close -

Brighter pair seen dbl in 450 to 1500 distinctly -
Ft. „ suspected „ „, elongated but better in 800. occasional as touching. image
nearly distinct configuration
Ex. with 150, 450, 800.   not sep. sep.: with 150.
9:10   „ „ „ „.   N.S. dbl.

* 7990 is a most interesting star. Herschel found it dbl. I find it quadruple. The brighter pair perfectly separated. The fainter pair difficult. Necessary to verify -

	Cape				Est.		
A.G.C. No.	Cape No.	Dist.	Position.	Magns.	Dist.	Position	Magns
8568	—				—	—	—
8473	—				—	—	—
~~8~~7991	see p. 38.				quadruple		
8227	Cat. II 1309.	13.1	317.1	6.9	12″	320°	6, 8.5
8554	—				—	—	—
8739	—				—	—	—
9176	—				—	—	—
9243	—				—	—	—
9283	—				—	—	—
9244	—				—	—	—
9135	—				—	—	—
8948	—				—	—	—
8874	—				—	—	—
9046	—				—	—	—
8573	—				—	—	—
8412	—				—	—	—
8408	—				—	—	—
8511	—				—	—	—
8570	—				—	—	—
✓. 8973	Cat II 1329	2.5	74.8	7,7	2.″5	85°	6., 6.8
8984	—				—	—	—
✓✓ 9234	—				0.″2 to 0.″3	170°	6.2, 6.5
9407	—				—	—	—
8934	—				—	—	—
7513	—				—	—	—
7985	—				—	—	—
7911	—				—	—	—

Date Mon. April 16. 1894

Time Remarks. moon. 0.3 cldy.

P.M. –

6:35 – Sn. with 150, 450, 800. N.S. dbl.

" " " ", " " "

" " " " " ". same estimates as last night

" " " ",

" " " ", N.S. dbl. –

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ", –

" " " ", " " ",

" " " ", " " ",

" " " ", " " ", –

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " 800, & 1200. { with 450 both images, esp. right, app. elongated. In 1200 not seen. perhaps opt. illusion, low alt. instrument error or what?

" " " ". N.S. dbl.

150 – 1500. elong. in 450 dist. seen in 800 – 1500.

" 450 & 1200. N.S. dbl.

" " 800, & " { app. along Vert. in 450 but effect less in higher powers – low alt?

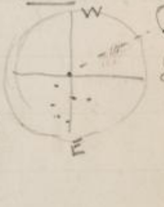
" " " N.S. dbl.

" " " " " ",

9:05 – " " " " " ".

Seeing 4 – 5.

Stellar disc is very perfect in 450 round in 800 – 1500.



92
~~2~~34
field in 8"

	Cape				Est.		
A.G.C. No.	Cape No.	Dist.	Position	Magns.	Dist.	Position	Magns
7413	—				—	—	—
7557	—				—	—	—
12372	—				—	—	—
12526	—				—	—	—
12235	4161	20	329.3	6, 13	35″	330	6, 9.5 –
13331	—				—	—	—
13417	—				—	—	—
13451	—				—	—	—
13455	—				—	—	—
13518	Cat II 1512	5.9	239	7, 9	4″	255°	6, 9
13159	—				—	—	—
13797	—				—	—	—
✓ 13077	4220	2.8	202	7, 7	2″.5	200	5, 5.5
13145	—						

Date Mon. - April 16 1894

Time P. M. — Remarks -

9:10 So. with 150, 400, 800. N-S. dbl. (alt by low -)

" " " " . " " " . " "

" " " " " " " " -

" " " " " " " " ,

" — — — —

" " " " " " " " ,

" " " " " " "

" " " " , " " "

" " " " " " "

" " " " .

" " " " " " "

" " " " 800 " " "

11:05 " " " " "

sky 0.8 cl'dy light cl'ds

	Cape				Est		
A.G.C. No	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magn.
9234	See page 40						
7066	—				—	—	—
7410	—				—	—	—
7880	—				—	—	—
7655	—				—	—	—
7859	—				—	—	—
✓ 8071	~~3~~874	3"	224°.5	6, 12	2"	230	6, 9.5
7940	—				—	—	—
8007	—				—	—	—
7827	—				—	—	—
11283	—				—	—	—
10904	—				—	—	—
10641	—				—	—	—
10561	—				—	—	—
10320	4012	12"	105.5	5, 13	—	—	—
10248	—				—	—	—
11239	—				—	—	—
11407	—				—	—	—
11201	—				—	—	—
10923	Cat. II. 1431	6".9	22°.8	5, 9	6"	20°	5, 8.5
10372	—				—	—	—
✓✓ 11097	—				4"	75	6, 8.5
10779	—				—	—	—
10678	—				—	—	—
10889	—				—	—	—
10507	—				—	—	—
10389	—				—	—	—

Date – Tues. – April 17 1894

Time Remarks. moon 0.4. cldy

P. M.

6 : 55 – Estimates same as last night – seen best tonight in 800.
Eye. with 150, 450, 800. N.S. dbl –

" " " " " " " " .

" " " " . " " " .

" " " " , " " " .

" " " " , " " " .

" " " " " 1200.

" " " " . " " " .

" " " " . " " " .

" " " " . " " " .

" " " " . " . " " " .

" " " " . " " " .

" " " " , " " " .

" " " " . " " " .

This comp. may have been invis. on acct. of bright moon. & its st ness –

" " " " . " " " .

" " " . " " " .

" " " " . " " " .

" " " " . " " " .

" " " " , " " " .

" " " " . " " " .

" " " " , " " " .

" " " – .

" " " " , " " " ,

" " " " , " " " .

" " " " 1200. " " " impression of elong – but not verified 45°

" " " " 800, " " " .

9 : 40 " " " " . " " " .

Some light clouds

	Cape				Est.		
A.G.C. No.	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magn.
10277	—				—	—	—
10301	—				—	—	—
10470	—				—	—	—
9845	—				—	—	—
9697	—				—	—	—
9433	—				—	—	—
9594	—				—	—	—
15975	—				—	—	—
16039	—				—	—	—
15901	—				—	—	—
15877	—				—	—	—
15652	—				—	—	—
16100	—				—	—	—
15755	4445	15"	126°.3	7, 12	18"	120°	6, 12
15756	—				—	—	—

Date Tues. April 17 '94

Time Remarks -

9:45- Ex. with 150, 450. N. S. dbl. light clouds.
" " " ", " " ".
" " " ", " " ".
" " " ", " " ".
" " " ", " " ". Clearer.
" " " ", " " ". Stars low.
" " " ", " " ".
" " " ", " " ".
" " " ", " " ".
" " " ", " " ".
" " " ", " " ".
" " " ", " " ".
" " " ", " " ".
" " " ".
11:00 " " " ", " " ".

Looked at 5 brightest stars in Cross -
δ alone close dbl.

	Cape				Est		
A.G.C. No	Cape No.	Dist.	Position	Magns.	Dist.	Position	Magns.
12636	—				—	—	—
12717	—				—	—	—
12465	—				—	—	
11810	4134	35	105.8	5.9	40"	105	6, 9
11474	—				—	—	—
12672	—				—	—	—
12652	—				—	—	—
12613	—				—	—	—
12788	—				—	—	—
13030	—				—	—	
13234	—				—	—	—
13593	—				—	—	—
12885	—				—	—	—
13157	—				—	—	—
13282	—				—	—	—
12991	—				—	—	—
13090	—				—	—	—
12676	—				—	—	—
13535	—				—	—	—
13512	—				—	—	—

Date Thursday April 26 94

Time Remarks - First of evening cloudy -
P.M.

8 : 35 - Ex. with 150, 450, 800 U.S. dbl. - Hazy.

" " " " ", " " " " ..

" " " " ", " " " " - Less. cloudy -

" " " " ,

" " " " ", " " ".

" " " " " " " ". Red.

" " " " " " " ",

" " " ", " " ",

" " " " " " " bl. wh.

" " " ", " " ". rd yel.

" " " " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " ", " " ",

" " " " " " ".

" " " " " " "

" " " " " " ",

" " " " " " " "

" " " " " " " " ...

10 - 5 - Very hazy. Seeing 3.

		Cape				Est.		
	A.G.C. No.	Cape No.	Dist	Direction	Magns.	Dist.	Direction	Magns
	11988	—				—	—	—
	11806	—				—	—	—
	11714	—				—	—	—
	11852	4133	47.2	60.8	5, 13.	—	—	—
	11653	—				—	—	—
	12297	—				—	—	—
	12253	—				—	—	—
	11994	—				—	—	—
	?	(fol 11994, 15^{s}, 3' S.)				5''	25°	9.3, 9.5
✓✓	11727					3''.5	70	6, 9.5
	11900	—				—	—	—

Date Fri. April 27. 94.

Time Remarks.

P.M. Early evening cloudy.

7:15 – Ex. with 150 + 450, N.S. dbl. Seeing 4.

" " " " , " " " . bl. wh

" " " " – " " " . red.

" " " " " " " . dist comp.

" " " " . " " " .

" " " " , " " " ,

" " " " , " " " ,

" " " " , " " " ,

" " " "

" " " " .

" " " " " " "

8:20 Cloudy.

	Cape				Est		
A.G.C. No.	Cape No.	Dist.	Direction	Magns.	Dist.	Direction	Magn.
11917	—				—	—	—
12013	—				—	—	—
11786	—				—	—	—
√√ 12035	—				4"	87°	6, 13
12122	—				—	—	—
11755	4127	30	57.7	5, 11.	45"	60	5, 9.5
✓ 11770	—				60"	275	6, 9
11797	—				—	—	—
11849	—				—	—	—
11583	—				—	—	—
√ 11424	4104	4.4 20.1	242.3 39.9	6.10 6.9	20" 3.5	30° 250	6. 10 6, 8.5
11248	—				—	—	—
√√ 105~~8~~34	4025	40 18	34.8 47.6	6, 12 6, 12	45" 25" 7"	35 45 7~~2~~0	5, 8 5, 14 5, 10
10566-8	Cat II. 1405	17.4	46.9	7, 7	15"	40	6, 6.
10390	—				—	—	—
10392	—				—	—	—
10861-3	Cat II 1421	41.2	220.2	3, 5	35"	220°	3, 5
10873	—				—	—	—
10853	—				—	—	—
✓ 10986	—				40	335	6, 9
√ 11429	Cat II 1444	5.7	350.4	6, 9	3.5"	350	6, 8
11326	—				—	—	—
16206	—				—	—	—
16341	—				—	—	—
15539	—				—	—	—
15825	—				—	—	—
15347	—				—	—	—

Date Sat. Apr. 28 '94

Remarks.

8 : 20 Early evening cldy Sky then hazy + some clouds.

Ex. with 150, 450. N.S. dbl.

" " " " " " " ,

" " " " " " " ,

" " " " ,

" " " " , " " " ,

" " " " .

" " " " "

" " " " " " " " , 2 dist comp 60"+

" " " " . " " " .

" " " " , " " " / " " , "

" " " " ,

" " " " 800. Susp. elong 90°±. low Exam Earlier eve.

" " " "

" " " " .

" " " " . " " " "

" " " " . " " " "

" " " " . ~~" " " "~~ bl Hi blue gr.

" " " " , " " " ,

" " " " " " " /

" " " " ,

" " " "

" " " " . " " " ,

" " " " " " " , ted.

" " " " " " "

" " " " , " " " . bl. yellw

" " " " . " " " .

11:05 " " " " " " " ,

A.G.C. No.	Cape Cape No.	Dist.	Direction	Magns.	Est. Dist.	Direction	Magns.
15153	—				—	—	—
15827	—				—	—	—
15832	—				—	—	—
15841	—				—	—	—
15883	—				—	—	—
16179	—				—	—	—
16080	—				—	—	—
15983	—				—	—	—
15684	Cat. H. 1595	12.8	166.8	6, 9	18"	170°	6, 9
15776	—				—	—	—
√√ 15795	—				0".6	87°	6.5, 6.5
— 16103					—	—	—

Date. Sat. April 28. 94.

Time Remarks.

11:08 Exp with 150, 450. N.S. dbl.
" " " ". " " ". Red.
" " " ". " " ". "
" " " ". " " ".
" " " ". " " ".
" " " ". " " ".
" " " ". " " ".
" " " " " " ".
" " " ". " " ".
" " " ". " " ".
" " " " Srv. Fine close dbl.
12:00 " " " " N.S. dbl.

	Cape.				Est		
A.G.C. No.	Cape No.	Dist.	Direction	Magn.	Dist	Direction	Magn.
10211	—				—	—	—
10249	—				—	—	—
10268	—				—	—	—
10269	—				—	—	—
10042	—				—	—	—
9863	—				—	—	—
9917	—				—	—	—
10769	—				—	—	—
10856	—				—	—	—
10913	4057	23.8	297.8	6, 11	25"	285	6, 8.5
✓ 10496	—				15"	30	6, 14
10489	—				—	—	—
11814-7	—				—	—	—
11760	—				—	—	—
11761	—				—	—	—
11751	4126	16.0	31.5	7, 11	20"	30	6, 9
✓ 11712	—				25	280	6, 14
11723	—				—	—	—
11402	—				—	—	—
✓ 11340	—				45	15	6, 10
					70	150	6, 9.5
					35	220	6, 9
✓✓ 12180	—						
					35.0	50	~~6.12~~ 5, 12
					2.5	345	5, 9
✓ 12330	4165	1.4	88.0	6, 8	1".0	90	6, 7.5
✓✓ 11887	4136	80	64	2, 10	1".0	170	2, 7
					70.0	60	2, 8
11956	—				—	—	—
12090	—				—	—	—

Date Mon. April 30 1894

Time. Remarks -

P.M. 7:20 Seen with 150, 450, 800 N.S. dbl. Seeing 4 ±

" " " " , " " " , red

" " " " , " " " comp. at 60" ± bl.

" " " " , " " " ,

" " " " , " " " ,

" " " " 800, 1120, " " " ,

" " " " , " " " ,

" " " " , " " " , red

" " " " , " " " , Scattering clouds

" " " " ,

" " " " ,

" " " " , " " " ,

" " " " , " " " ,

" " " " . " " " . H. gl.

" " " " . " " " .

" " " " . " " " ,

" " " " ,

" " " " . " " " ,

" " " " ' " " " '

" " " " .

" " " " .

" " " " 800, 1120. Fine -

" " " " " " , close comp. fine - & sure though in dif. rings of 2.0

" " " " , N.S. dbl.

10:05 " " " " . " " " . 3 comp. 60"-80".

	Cape				Est.		
A.G.C. No	Cape No.	Dist	Direction	Magns.	Dist	Direction	Magns.
12221	Cat. II. 1475	40.6	75.1	5,7	50"	75	5,7
✓ 12286	—				40	20	6,15
12175	4156	25	322.3	5,14	~~30~~	215	~~5,14~~
12557	—				—	—	—
12782	—				—	—	—
13112	—				—	—	—
13217	—				—	—	—
13336	—				—	—	—
13466	—				—	—	—
13389	Cat. II 1507	5.2	125.8	3,9	5"	105	3,7
12378	—				—	—	—
✓ 12101	—				18.0"	250	6,14
11622	—				—	—	—
11624	—				—	—	—
11791	4125	8	230.3	7,11	10.0	240	6,12
11790	—				—	—	—

Date. Mon. April 30. 1894.

Time Remarks.

10 : 10 Ev. with 150, 450.

" " " " .

" " " " N-S. dbl. (later seen (30" 2/5-5/14) Alt. low - hazy

" " " " " " " .

" " " " . " " " .

" " " " . " " " .

" " " " 800. " " " " .

" " " " " . " " " .

" " " " " " " " .

" " " " " .

" " " " " " " " .

" " " " "

" " " " " " " .

" " " " " " " .

11 : 20 " " " " .

" " " " " " " .

	Cape				Est		
A.G.C. No.	Cape No.	Dist.	Direction	Magns.	Dist.	Direction	Magns
9199, 9206	1346	12.8	301.4	5,7	15"	295	4,6
8738	~				—	—	—
7639	~				—	—	—
7209	~				—	—	—
14266	~				—	—	—
14319	4321	10	225	6, 10	15"	230	6, 9

Date. Tues - May 1, 1894

Time Remarks -

P.M. First of evening sky cldy - Now hazy 0.4 cldy -

9:10 Co with 150, 450 - .. Seen in ~~[illegible]~~ -

" " " ", " " ", N.S. dbl.

" " " ", " " ", " ",

" " " ", " " ", " ",

South sky cloudy.

Co. - 150, 450, N.S. dbl Hazy -

" " ", "

9:55 - Whole sky bad. Growing very cldy -

C

		Cape			Est.		
A.G.C. No.	Cape No.	Dist	Position	Magns.	Dist.	Position	Magn.
9199-9206	1346	12.8	301.4	5, 7	18"	290	4, 6.5
8738	—				—	—	—
7209	—				—	—	—
7639	—				—	—	—
8667	—				—	—	—
9054	—				—	—	—
9843	—				—	—	—
13840	—				—	—	—
13246	—				—	—	—
13048	—				—	—	—
12139	—				—	—	—
12016	—				—	—	—
11598	—				—	—	—
11405	—				—	—	—
11334	—				—	—	—
14817	—				—	—	—
14829	—				—	—	—
14557	—				—	—	—
13447	—				—	—	—
16766	—				—	—	—
✓ 16382	4486	1.6	178.3	6, 6	1.5"	180	6, 6.5
15525	—				—	—	—
10203	—	— 18.[illegible]	117.7	5, 9	15.0	105	4, 8
11293	—				—	—	—
11297	—				—	—	—
11378	4103	45 30	158.4 287.4	5, 14 5, 13	45" 35	160 290	5.5, 10 5.5, 10
12472	—				—	—	—

Date. Thurs. May 3. 1894.

Time P.M. Remarks -

7:05 Ex. with 150; + 50 - Seeing 4.

" " " " N.S. dbl. -

" " " " " " -

" " " " " " -

" " " " " " "

" " " " " " -

" " " " " " "

" " " " " " "

" " " " " " " Scat.

" " " " " " Clds

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " { 80" 60° 5, 6

" " " " " " 120" 50 5; 7

" " " " = 11/27

9:05 - " " " " " "

C

	Cape				Est		
A.G.C. No.	Cape No.	Dist	Position	Magns	Dist	Position	Magns
12767	—				—	—	—
12768	4206	5 40	338.5 347.7	6, 13 6, 11	6" 45	345 350	6, 12 6, 10
13107	—				—	—	—
12994	—				—	—	—
14276	—				—	—	—
14405	4333	30	96.1	6, 12	40"	98	5.5, 12
14383	—				—	—	—
14731–5	—				50" 90	50 80	6, 10 6, 6, 2"
15243	—				—	—	—
15612	—				—	—	—
16484	—				—	—	—
16560	—				—	—	—
15898	—				—	—	—
15189	—				—	—	—
12688	4211	1.5	113.2	~~6, 11~~	50"	210	6, 11
14266	—				—	—	—
14319	4321	10	225	6, 10	10	230	5.5, 10
14635	—				—	—	—
14778	—				—	—	—
14820	—				—	—	—
15020	—				—	—	—
15061	—				—	—	—
14963	—				—	—	—
15155	—				—	—	—
15279	—				40"	280	6, 10
15571	—				—	—	—
15619	—				—	—	—

Date - Thurs - May 3. 1894.

Time Remarks -

9 : 10 Exa. with 150. 450. N-S. dbl. -

" " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ".

" " " ". " " ".

14 7^{35} " " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ". sev. comp. 1' to 2"

" " " " 800. Herschels close comp. N.S. -

" " " " alt. low. comp. (?). Repeat. N.S. dbl.

" " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

" " " ". " " ". (?)

" " " ". " " ".

" " " ". " " ".

" " " ". " " ".

11 : 20 " " " ". " " ".

	15777	—					—	—	—
	15786	4449	60	170	4, 11		—	—	—
	15815	—					—	—	—
✓	15854	4455	4.0	244.8	6, 9		4".5	260	6, 8
	15950	—					—	—	—
✓	15986	4465	7	315±	7, 13	Triple,	80" ~~30~~ ~~350~~ 30	50 ~~360~~ 350	5, 8 5, 12
✓	16217	4478	2.1	339.8	5, 5		1".5	350	5.2, 5.5
	16192	—					—	—	—
	16512	—					—	—	—

Thurs - May. 3 - 1894.

P. M.

11:25 - Ex. w. 150, 450. ν Σ dbl. Seeing 3 - 4.

" " " ". " " ". dist. comp.

" " " ". " " ".

" " " " ".

" " " " ". " " ".

" " " " ".

" " " ". " " ".

12:10 " " " ". " " ".

Thurs. May 10. 1894 . sky 0.6 cldy-

P. M. A.G.C. 7279-

7 45 R.A angle 4.°7 Set 40.°8 Set 47.°7 48.°1 47.6 42.3

(~~14~~ 13.457 13.848)(13.568 13.820)(~~13.483~~ 2)(13.464 14.263) Double (13.487 Double 14.197) Double Last two between two clouds.

Cloudy -

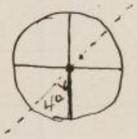
9 : 45 A.G.C. 14751

Position 37.°6 ; 42.°2 ; 39.9 ; 39.7 ; 35.7

Stopped by clds -

Position 40.°8
47.7
48.1
47.6
42.3
5 | 26.5
45.°3
corr. 4.7
40.°6
270.
229.°4

angl 4.7 when star runs along wire -



A.G.C. 7279

Mean Position 229.4

Dif. 0.391 bet. single
.262
.355
.3995
1.3975
.3.494 rw

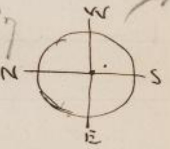
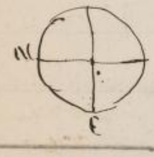
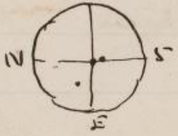
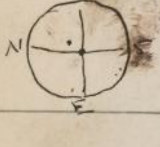
.710 ÷ 2 = .355-
.799 .3995-

1 rw. = 9.″942 (Prof. W.H.P.)
.3.494
39768
89478
39768
29826
3.4737348

Mean Distance 3.″5-

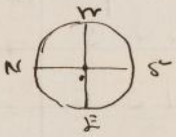
C

Date - Friday May 11. 1894

Name of Star A.G.C. No.	Position	Distance		Remarks
7279	44.2 45.0 42.5 Mean posn. 230°.8	13.418 13.485 13.482 fair Mean 3".6	14.172 14.195 14.168	Est. 230° 3".5 6,9.5 R. H. angle 4°.7 
7874 	334.4 332.6 Mean 328.8 (326°.4) 328.2 124.6 331.7	13.606 13.553 13.541 Mean 2".5 Not very exact.	14.038 14.114 14.076	Est. 120° 1" 6,10 Est of dist made by setting wires 1" apart & comparing. Very low south. Hazy. Difficult
11887 St. comp. dist	31°.3 34.5 32.3 Mean (32.7) 57°.3	6.527 	20.725 65".6	Est. R.H. Angle 0° Est. 60° 60" 2, 11 190 2" 2, 8 Through clouds.
11887 Bgt comp.	[illegible] 85.0 93.2 263.9 (87.97) 270. 182°.0	13.761 13.777 13.428 Mean 2".3 rather doubtful.	14.183 14.088 14.111	Est. scat clds 0.8 cldy seeing poor
12180 cl. comp. 	288.4 289.9 287.5 865.8 288.6 341°.4	13.570 13.555 13.547 Good.	14.200 14.175 14.200 Mean 3".2	Est. ~~345° 2".5~~ 5, 8 335 2.5 5.8 sky 0.3 + cldy
			sky	0.8 cldy

C

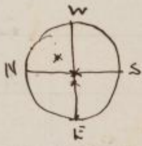
Date Friday May 11. 94

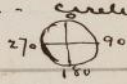
A.G.C. No.	Position	Distance		Remarks
15795	°1.8 2.6 2.5 6.9 2.3 87°.7	13.684 13.680 13.660 Mean 1″.7 Seeing 2 - 3	14.000 14.020 14.025	Est. 88° 1.2 6.5; 6.5 
		Cloudy		Est. Distances are dbl distances
7279	44.2 45. 42.5 11.7 43.9 4.7 39.2 270. 230°.8	.754 .710 .696 2160 .360 9.94 3″.578	dbl	Est. 7874 334.4 332.6 328.8 328.2 331.7 1555.7 331°.1 - 4.7 = 326.4 90° 360 45.0 326.4 124.6 .432 .561 .535 1.528 .255 = 2″.5
11887	31.3 34.5 32.3 8.1 32.7	13.198 6.599 × 9.94 65″.6	.424 .311 .683 1418 .236 2″.3	Est. 15795 .316 .340 .365 1.021 .170
12180	.683 .620 .653 1956 .326 3″.2			Est.
				Est.

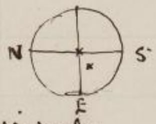
C

Date Sat. May. 12 1894

A.G.C. No.	Position	Distance		Remarks.
7991.	AB + CD 315.7 314.3 313.6 943.6 314.5 mean pos 315.5	12.768 12.766 12.782 2.537 2.592 2.556 7.683 1.281	15.303 15.358 15.338 12.7"	Est. 315° 10" 6, 9 90° 1 6.5, 6.5 mi position circle was set at zero when star trailed along W E - circle runs
7991	~~188.0~~ 189.0 191.8 190.0 189.9 pos 260.1 (or 80.1)	13.980 .206 13.748 .210 13.433 .167 .583 .097	14.186 13.958 13.600 1.0" -	Est. By comp. with wires placed 1" apart, 0.8 Faint star not seen double. Elongated angle 70°?
7874	302.8 312.0 313.0 927.8 309.3 140.7 (?) Too large, [illegible] prob. too large -	27.198 27.210 27.194 good.	27.386 27.383 .382 .092 = 0.9"	Est. 125° 1" 6. 10 After readjusted 0 of position circle changed to 270 - i.e. when star trails along wire circle reads 270.
8071	308.5 308.5 306.8 923.8 307.9 pos. 132.1	27.028 27.103 27.127	27.477 27.475 27.506 .200 = 2.0"	Est. 230° 2.5" 6, 9.5 after 7874.
8973	282.0 281.0 284.7 282.6 pos. 77.4	27.098 27.136 27.140	27.432 27.465 27.445 .161 1.6"	Est 80° 2.5" 6, 6.5
9234	234.7 216.5 218.7 223.3 pos. 136.7	power 350 ±		Est. 140° 0.5" ? Est. by wires 1" apart 0.5" Not separated by micrometer but elongated.







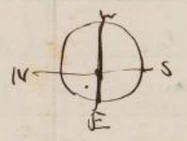
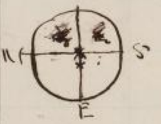
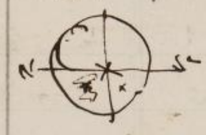
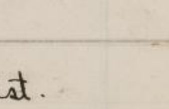
C

Date Sat. May 12 1894.

A.G.C. No.	Position	Distance	Remarks
11097	296.3 298.0 297.2 297.2 pos - 62°.8	27.085 27.918 8: (27.100 27.085) 27.055 27.845 mean of 1, + 3 : .406 = 4".0	Est. 60° 4' 6, 9 0.9 cloudy.
12035 ~~11887~~	276.0 277.3 133 276.6 pos - 83°.4	Stopped by thick clds	Est. 85° 4' 6, 13.
			Est. Cloudy nearly whole evening — work done between clouds —
			Est.
			Est.
			Est.

C

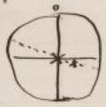
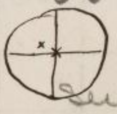
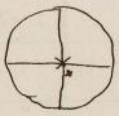
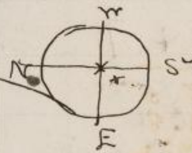
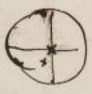
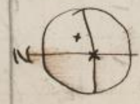
Date Mon. May 14 94

A.G.C. No	Position	Distance	Remarks –
7914	42.0 40.5 41.2 37 41.2 pos – 48°.8	27.832 .267 28.119 27.838 .265 28.108 27.828 292 28.120 .824 .137 rev. = 1".4	Est. – 48° 1".2 6, 9 R. a angle 0 
79.91	312.0 311.7 312.7 36.4 312.1 pos. 317°.7	26.695 2.594 29.289 26.336 ~~26.336~~ 29.248 2.912 26.666 29.268 2.602 8.108 1.351 13".4	Est. ~~330~~ 325 10 6, 9 88 1.2 6.5, 6.3 
7991	7.0 8.5 9.7 25.2 8.4 pos. 81°.6 or 261°.6	27.880 .227 28.107 27.911 .198 28.109 .188 27.917 .613 28.105 .102 1".0	Est. by mires placed 1" apart .8 ft contr. difficult elongated & est. 80° 0".5 9.5, 9.5 power used 700 ±
7874	324.4 319.9 321.2 65.5 321.8 pos. 128°.2	27.888 .225 28.113 27.845 .263 28.108 309 27.834 .797 28.143 .133 1".3	Est. ~~40~~ 130 1 6, 9 
8093	dist comp. 326.2 327.7 331.0 84.9 328.3 pos. 301°.7	Stopped by clouds –	Est. 265 0.8 6.~~7~~9 290 10 6.9.5 
14337	Not seen dbl. –		Est.

probably star seen Mar. 27 was some other star – a star marked V near region sure dbl. Est. 315°.0 2" 6.5, 6.5.

14337 ex. carefully US dbl. No such pr seen as rec. Mar. 27.

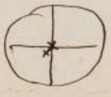
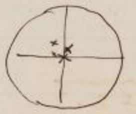
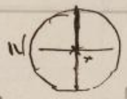
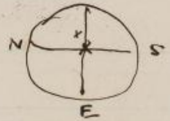
Date Mon. May 14. 94 C

A.G.C. No	Position	Distance	Remarks
16200	108.6 111.3 113.5 110.3 111.5 114.0 159°.0 pos.	27.775 28.188 .413 .754 .215 .461 .795 .175 .380 1254 .209 2".1	Est. 175° 2" 6, 9 
12180	285.8 285.8 285.7 285.8 pos. 344°.2	27.692 28.283 .591 .672 .300 .628 .622 .310 .688 1.907 3.18 3".2	Est. 335° 2".5 5, 9.5  Star low Seeing from 1–3
12330	347.0 352.0 353.0 359.0 354.5 353.1 avg. 96°.9	27.806 28.160 .304 27.905 28.105 .200 27.880 28.112 .232 736 .123 1".2	Est. 95° 1" 6, 7  low dif.
13077	276.7 281.3 276.0 276.3 310.3 277°.6 pos. 172°.4	27.672 28.245 .573 27.620 28.255 .635 27.600 28.290 .690 1.898 .316 3".1	Est. 155° 1".5 6. 9.5  This must have been wrong star does not agree with 13077 –
14751	27.4 30.2 28.8 86.4 28.8 P. 61°.2	27.734 28.296 .562 27.670 28.287 .617 27.725 28.257 .532 1.711 .285 2".8	Est. 65° 2" 2.8 
15588	332.9 334.2 331.5 P. 297°.1	27.700 28.223 .523 27.684 28.243 .559 27.687 28.235 .548 1.630 2".7	Est. 295° 2".5 6, 7 

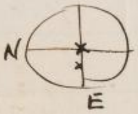
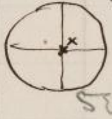
Seeing was bad whole evening. at times sky hd. 1 – 3, occasionally 3 + 4.

C

Date ~~Mon~~ Tues – May ~~14~~ 15 '94

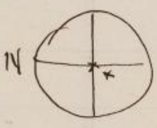
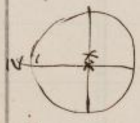
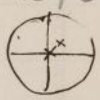
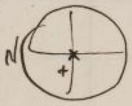
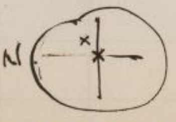
A.G.C. No.	Position	Distance	Remarks
6:20 P.M ~~[illegible]~~ 7914	45.0 41.3 41.8 8 1 42.7 47°3	27.833 28 ~~83~~ .175 .342 .860 262 .122 .867 263 .130 .867 .145 good 1.″4	Est. 45° 1.″5 6, 9.5 
8093 dist. comp.	329.3 330.6 327.8 87.7 329.2 300.8	25.637 4.446 30.083 .643 4.355 29.998 .684 4.367 30.054 13.168 ~~495~~ 2.195 21.″8 ~~4.″9~~ good	Est. 263° 0.″8 6,7 300 12. 6,9.5 
8093 cl. comp.	good. 11.9 12.5 12.3 6 7 12.2 257°8	27.899 28 .150 .251 .888 .215 .103 .880 .227 .107 .693 .116 good. power 700 seeing fine. 1.″2	Est.
9234	295.0 298.8 294.7 18.5 296.2 P. 153°8	27.904 28.010 .106 27.910 28.022 .112 27.887 .158 28.045 .376 .063 0.″6	Est. N  150° 0.″5 6,7 seeing good power 700 very close. dif. but at times seen perfect. dist.
10335	337.5 339.2 340.4 117.1 339.0 P 291°0	27.698 28.265 .567 .710 .568 .278 .698 .565 .263 1.700 .283 good 2.″8	Est. 285° 3″ 6,9 
11727 8:50 P.M	26.9 28.5 26.5 21.9 27.3	P 62°7 good. 27.575 28.332 .757 27.586 .791 28.377 27.620 .782 28.402 2.330 .388 = 3.″9	Est. 55° 4″ 6,10

Date Tues. May 15th. '94

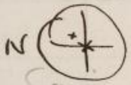
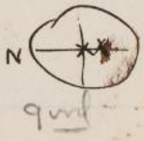
Ag. C No.	Position	Distance	Remarks
12035	9.6 10.2 6.5 26.3 8.8 P-81°.2	27,645 28,374 .729 " ,610 .810 ,420 " ,634 768 " 402 2.307 .384+ 3″.8	Est. 85° 4″ 6.13 Fair N  E
9:30 P.M. 13077	54.8 59.2 58.7 22.7 57.6 P 212°.4	27.723 28.243 .520 .664 .598 .262 .685 .600 .285 1.718 .266 2″.6	Est. 215° 2″.5 6.65  (Star taken May 14 for 13077 is marked x on chart - doubtful.) Est same as then 155° 1.5 6.5 9.5 Seeing much poorer 2 - 3 13, 13, 5
14337			Est. Not seen dbl - power 350 - seeing poor
13224 10:30 P.M.			Est. Not dist. seen dbl - Seeing growing very poor. 1 - 2 -
		Cloudy	Est.
			Est.

C

Date. Wed - May 16 '94

AG.C. No.	Position	Distance	Remarks
14337			Est. Sky 0.8 cl'dy seen with by power not seen dbl. Seeing fine?
16200	104.3 104.1 104.4 104.3 P 165°.7	27.800 28.187 .387 .804 429 .233 .803 427 .230 1.243 .207 2".1	Est. 155° 2" 6,9  Same
15224	358.5 360.5 359.7 178.7 359.6 P 270°.4	~~358~~ 27.784 28.195 .411 .755 .438 .193 .777 396 .173 1245 .208 good 2".1	Est. 270° ~~1".0~~ 2.0 6, 8 
13077	64.5 62.0 62.5 189.0 good 63.0 P 207°.0	27.775 28.208 .433 .773 464 .237 787 426 .213 1323 .221 good 2".2	Est. 210° 2".5 6, 6.5  seeing 4-5
14751	33.0 32.0 34.2 99.2 33.1 P 66°.9	27.760 28.246 .486 .765 452 .217 .786 455 .241 1.393 262 good 2".6	Est. 60° 3" 3, 8 
15588 333.7 296.3	334.8 333.0 333.4 1001.2	27.744 28.228 .484 .725 477 .202 445 748 1406 .193 good 234 2".3	Est. 305° 3" 6.7 

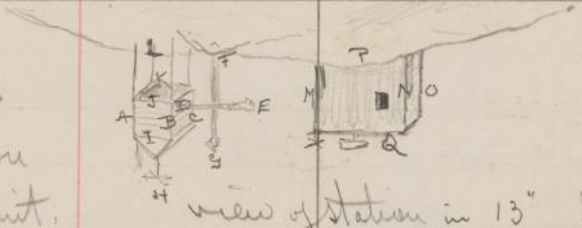
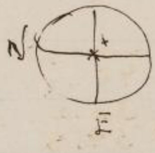
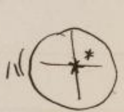
Data.

A.G.C. No.	Position	Distance	Remarks.
			Est
	0.7	27.897 28.095	~~155° 2" 6.9~~
		.198	
15795	1.4	.878 .214 .092	90° 1" 6.5-6.5
	3.5	.876 .228 .104	Est. by wires placed 1" apart; 1".
		.640	
P 88°.1	5.6 1.9	1.1" .107	fair
		27.780 28.147	Est.
	283.5	.367	
	284.0	.772 .374 .146	325° 1.5" 5, 5.5
16217	286.5	.765 .363 .128	N 
		1.104	fair
	288.8	.184	
P 344.2	286.3 29.1 285.8	1.8"	
			Est
16382	89.0	27.875 28.145	183° 1.5" 6-6.5
		.270	
	84.3	.856 .149	N 
		.293	
	85.4	.855 .298 .153	good
P 183°.8	187 86.2	1.4" .861 .140	
			Est.
			Est.
			Est.

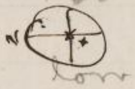
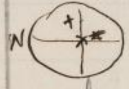
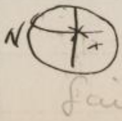
Night quite cloudy. Heavy haze & cloud 1.-3 class- over whole sky for most of the evening - but seeing very good, exceptionally good -

C

Date Thurs May 17 — 1894

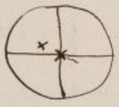
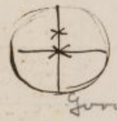
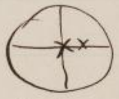
A.G.C. No	Position	Distance		Remarks
Mist: Station Summit.	 L K F J D E A B C I G H P M N O Q view of station in 13"		power 350 ±. low poweruerson-eye piece	~~Est~~. 4.15 P.M.
AB 26.970 AC 26.357 BC 27.312	28.812 29.380 28.572 1.260 1.150 1.124 3.534	27.018 26.483 27.312 .589 5."86	28.793 29.325 28.462 5."86 8.75 14.61 alt. meas. 27.061 26.352 27.372	~~Est~~. 28.721 29.354 28.496 .879 8."7 (8.75) 1.842 1.775 1.660 5.277 ~~1.759~~ ~~17."5~~ ~~8.8~~ 3.023 2.842 3.002 ~~8.867~~ 1.4 ~~2.956~~ 1.47 ~~29."4~~ 8 (1.89)
window in hut ~~height~~ width height	.611 .718 .723 2052 .342 27.577 27.567	3."4 width 28.188 28.313	.746 .774 .808 2.328 .388 27.523 28.241 27.628 28.402	~~Est~~. 3."9 27.524 28.247 27.597 28.405 5.15 P.M.
8093 P 254.7	6:45 P.M. 15.0 16.2 17.0 15.0 13.5 76.7 15.3	27.878 .894 .885	28.127 .249 211 .242 .702 .117 good 1."2 .105 .127	Est. 255° .1" 6,7 
8071 P 232.1	36.3 38.5 38.9 23.7 37.9	27.726 .725 .718	28.308 .082 .580 .585 1.747 .291 good 2."9 .305 .303	Est. 228° 3" 6,10 
8973 P 79.°4	12.6 9.0 10.3 31.9 10.6	27.794 .784 .791	28.224 .430 .452 446 1.328 221 2."2 .236 .237	Est. 85° 2,5" 6,7 good

Date Thurs. May 17 - 1894

A.G.C. No	Position	Distance	Remarks
9234 9'	289.5 290.6 289.5 269.6 289.9 P 160°.1	Est. by wires placed at 2" apart 0".4 by wires placed 1" apart 0".5	Est. 160° 5" 6,5, 7,5  lower - seeing 2 - 3 -
10335	340.4 343.0 338.8 1222 340.7 P 289°.3	27.720 28.332 .612 27.670 28.315 .645 .715 .598 .313 1.855 .309 3".1	Est- 290° 3" 5.8, 10  good
11097 P 63°.7	25.5 26.8 26.5 78.8 26.3	27.627 28.409 .782 .609 .798 .407 .604 .809 .413 2.389 .398 4".0 -	Est 65° 4" 6, 9 fair growing poor
11727	29.4 29.8 31.5 90.7 30.2 P 59°.8	27.617 28.373 .756 .671 .699 .370 .597 .769 .366 2.224 .371 3".7	Est- 65° 4" 6, 10 fair
~~11887~~ 12330 P 93.8	357.3 354.0 357.3 18.6 356.2	27.887 28.198 .311 .880 .267 .147 .865 .282 .147 .860 .143 1".4	Est-. 92° 1".2 6, 6.5 Seeing poor 2 - 3.
16200 P 158°.2	292.4 291.6 291.4 5.4 291.8	27.748 28.102 .354 .773 .327 .100 .753 .375 .128 1.056 .176 1".7 +	Est- 160° 2".2 6, 9  fair

C

Date. Thurs - May 17 - '94

A.G.C. No.	Position	Distance		Remarks
16217 P 346°.3	282,8 286.5 281.9 11.2 283.7	27.813 .807 .805	28.148 .335 .319 126 .335 140 989 .165 good 1."6	Est. 340° 2" 6, 6.5 
15224 P. 271°.6	358.4 359.6 252 356.3 358.4 0.9	27.826 .800 .807	28.195 .369 .408 .208 391 1168 .198 .195 1."9	Est. 270° 1."8 6, 9  Good
16382. P 182°.9	86.2 86.7 88.4 21.3 87.1	27.830 .822 .865	28.154 .324 .335 .157 337 .202 .996 .166 1."7	Est. 182° 1,5 6,6.5  fair.
				Est.
				Est.
				Est.

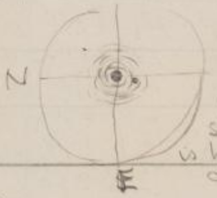
C

Date Friday May 18. 94

A.G.C. No	Position		Distance		Remarks
Misti Station see Page shelter 80.	AC.	2~~7~~6.585 29.567 26.329 29.556 26.465 29.447	AB 27.008 28.834 26.952 28.813 26.964 28.800	BC 27.325 28.413 27.394 28.445 27.440 28.512	Est: Telescope set on Shelter ~~Hour~~ angle - 4h 40m E ~~Dec. +24.0~~ A.C. 2.982 3.227 2.982 9.191 1.532 15".2 AB 1.826 1.861 1.836 5.523 .920 = 9".1 B.C. 1.088 1.051 1.072 3.211 .535 5".3
Hut.	No .954 .936 .947 .8~~60~~ .912 4.614 .4614 4".6	27.448 28.402 27.454 28.390 27.437 28.384 27.470 28.335 27.448 28.360	MN 25.303 30.440 25.347 30.462 25.387 30.514 25.385 30.536 25.305 30.472 5.137 5.115 5.127 5.151 5.167 25.697 2.569 25".5	MO 24.953 30.965 24.991 30.968 24.995 30.965 24.960 30.860 25.095 30.845 6.012 5.977 5.970 5.900 5.750 29.609 2.961 29".4	Est. First 3 readings of MO made after sunset [illegible]
2nd Summit - pier width (pier said to be 8".25 wide		27.707 .680 .694 708 .712	28.133 .123 .150 .137 145	.426 .443 .456 429 433 2.187 .2187	Est. 2".2 (2.18)
16085			Ex. with 350 - 800 -		Est. ~~90°~~ ~~15"~~ ~~3.5, 11~~ Ghost 110 30 3.5, 15 272 30 3.5, 13
8738 9199-06					Est. N.S. dbl. 285° 10" 4.7
10963 -			Ex. with 350 - 800		Est. Seeing 4 - 5. N.S. dbl. image round.

C

Date - Saturday. May 19 '94

A.G.C. No.	Position	Distance -		Remarks -
12688	Later seen better - & independently ^but^ confirmed by H.C. B. as to position Est 135°	0."3	6, 10	Est N.S. dbl. surely At times suspicion of 3d comp. at position 135° If genuine dist. not more than 0."3
11887 36.4 277.3 P 172.7°	276.8 280.3 279.4 276.5 273.4	27.743 .728 .710 .718 .747	28.132 .389 .400 .128 .407 .411 .117 .405 2.012 .129 .402 .201 2."0 .152	Est 177° 2" 3, 8  Very interesting dbl. perfectly dist. in good seeing - When seeing is bad (poor night) comp. disappears
12035 43.9 8.8° P 81.2°	9.4 7.5 8.0 11.2 7.8	27.655 .662 .667 .618 .656	28.347 .692 .728 .390 .704 .749 .371 .714 3.587 .367 .3587 3."6 .370	Est 85° 4" 6, 13. good
Saturn.		Diameter of Disc 26.053 .100 .008 .030 .064	29.876 3.873 3.799 .899 3.914 3.910 .922 3.874 .940 19.370 1.937 .938	Est
		.005 ~~.088~~ .088	19."25 .915 .923	Est

equatorial diam. of disc. taken to clear of rings.

Seeing very good
dif. ring about 11887 is about 3" from disc
comp. at ~ 2" - discs very sharp & round -
no ring distinguishable about comp. -
Est. diam. of disc of 11887 0".5 ; of comp. 0".2

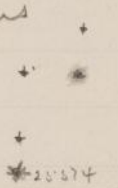
AGC. No -	Dist -	Direc -	Mags.
25105	—	—	—
= 24703 W	15"	220°	6, 13.
25255	—	—	—
25243	but at limit obl. elong at position angle about 0.		
25140	—	—	—
25095	—	—	—
24574	—	—	—
24818	—	—	—
24598	1"	75	6, 6.2
24713	—	—	—
24763	—	—	—
25040	—	—	—
25262	—	—	—
25297	—	—	—
25428	—	—	—
25666	—	—	—
25691	—	—	—
25647	—	—	—
25572	—	—	—
25548	{ 40" { 25	50 215	6, 9 6, 9
25305-6.	20	5	6.5, 6.6
25274.	70 45	40 80	6, 9.5 6, 9
25155	—	—	—
25003	—	—	—

Tues. August 28 - 1894

Time	Remarks.
P.M. 8:00	Ex with 150 450 & 800 - N-S. dbl.
-	" " 130 " " " .
-	" " " " " , " " ,
	" . " " " " " 1120, " " "
	" " " " " , " " . .
	" " " " " " , " " " .
	" " " " " " , " " " ,
	" " " " " " , " " " ,
	— — — — — — , —
	" " " — — — . " " "
	" " " " " " " close " "
	" " " . " " " . " " " "
	" " " " " " " " " "
	" " " " " " " " " "
	" " " " " — " " " "
	" " " " " " . " " " —
	" " — " " — " " " "
	" " — " " " . " " " "
	" " — . " — — . " " .
	" — — . — — —
	" " " —
	" " " " " .
	" " " " " , " " " "
10 45-	" " " " " " " " — R.

G. C. No	Dist -	Position	Magns -
27468	—	—	—
27298	—	—	—
27273	—	—	—
27224	—	—	—
27219	—	—	—
27225	—	—	—
25786	—	—	—
25923	—	—	—
26091	—	—	—
26287	0.7"	15°	6.2, 6.5
25454	—	—	—
25500	—	—	—
25574	—	—	—
26287	mis setting - est same as above -		
25692	—	—	—
25872	—	—	—
25153	—	—	—
24958	—	—	—
24618	—	—	—
24745	40" 35	0° 120	6, 8 6, 9.5
24559	—	—	—
C	—	—	—
25055	3"	265	6, 8
25088	—	—	—
24816	—	—	—
25137	20 40	120 240	6, 9.0 6, 10.

nebula (?) near 25574 - in telescope thus



a nebulous star, cent. bright - does not resolve (readily)

Thurs. Aug. 30 - 1894

Time P.M.	Remarks		Color
7:30	Exe. with 150 - 450, 800 -	N - S - dbl.	Y.W.
	" " " " " .	" " " ,	
	" " " " " .	" " " .	
	" " " " " Seeing	" " " .	
	" " " " " .	" " " .	
	" " " " " "	" " " .	G.Y.
	" " " " " 3	" " " .	R.Y.
	" " " " "	" " " .	Y.
	" " " " " 4	" " " .	Y.
	" " " " " .	dif. repeat -	"
	" " " " " .	N-S - dbl -	
	" " " " " .	" " " .	Y.R.
	" " " " " "	" " " .	"
	" " " " - 1120 - cut dbl. best seen with 800.		
	" " " " " .	N. S. dbl.	B.
	" " " " " .	" " " .	R.
	" " " " " -	" " " ,	B.
	" " " " " -	" " " .	R
	" " " " -	" " " ,	
	" " " " -	" "	
	" " " " " .	" " " .	
	" " " "	" " " .	R
	" " " " .	.	
	" " " "	" " "	
	" " " " .	" " "	
10 45	" " " "	"	

Seeing growing from 2 ± -

AG.C. No.	—	—	—
28338	—	—	—
28259	—	—	—
28430	—	—	—
28~~4~~995	—	—	—
29336	—	—	—
29309	—	—	—
29552	—	—	—
29294	—	—	—
28900	—	—	—
28519	2".5	95°	6.2, 6.5
28179	—	—	—
28140	—	—	—
28236	—	—	—
27918	—	—	—
28615	—	—	—

Friday - Aug - 31 - 1894.

Time P.M. - Remarks -

7:30 Sp with 150, 450, 800 - N.S. dbl.

〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃 R

〃 〃 〃 〃 〃 〃 〃 R

〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃 S.

〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃 〃

〃 〃 〃 〃 〃 〃 〃 〃 B

9 35 - 〃 〃 〃 〃 〃 〃 〃 〃

Seeing 4 ±.

AG.C. No.	Dist.	Position	Magns.
25748	—	—	—
25897	—	—	—
26085	—	—	—
26026	{10" 25	70° 85	6, 13.5 6, 13
26462 ✓	—	—	—
26593	—	—	—
26709	—	—	—
27144	30"	150°	6, 7
27043	—	—	—
27100	—	—	—
27237	—	—	—
27330	—	—	—
27496	—	—	—
27647	—	—	—
28363	—	—	—
28555 ✓	—	—	—
28735	—	—	—
28844	—	—	—
29117	—	—	—
29216	4"	275	5, 7.5
29331	—	—	—
29999	—	—	—
30105 ✓	—	—	—
30176	—	—	—
27083	—	—	—

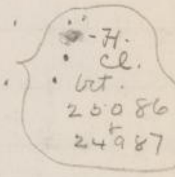
Mon - Sept 3. 1894

Time	Remarks -	Color
7:30	Ee with 150. 450, 800. N.S. dbl -	R.
	" " " " " . " " "	G.B.
	" " " " " . " " "	~~R~~
	" " " " " .	R
	" " " " " . " " " .	Y
	" " " " " -	R
	" " " " " N.S. dbl { Herschel's " dist " coml - seen - " close st " N.S. Seeing 4 - 5 -	Y
	" " " " " - "	
8 30	" " " " " N.S. dbl -	Yw
	" " " " " . " " " ,	-
	" " " " " . " " " .	w
	" " " " " . " " " .	R
	" " " " " , " " "	R
	" " " " " . " " " .	R
	" " " " " . " " " .	Yw
	" " " " " . " " " .	Y.
9:30	" " " " " . " " " .	
	" " " " " . " " " .	RY
	" " " " " . " " " .	Yw
	" " " " " . B.Y^{a} + Y. -	
	" " " " " . " " " .	RYw
	" " " " " . " " " .	Y.
	" " " " " . " " " .	RY
	" " " " " . " " "	R
10 30	" " " " " . " " " .	

Set on Mars but too low East to observe to advantage -

A.G.C. No	Dist	Position	Magns.
24596	—	—	—
24708	4"	355	6, 9.5
24987	—	—	—
25086	—	—	—
25259	2".5	210	6, 10
25330	—	—	—
25060	—	—	—
24888	3"	95°	4, 10
25020	—	—	—
25037	—	—	—
25565	—	—	—
26041	(0".2 - 0".3	45 ±	4,4) (?
25806	—	—	—
26084	—	—	—
25886	—	—	—
25928	—	—	—
25978-81	15"	280°	6.3, 6.5
26123	2"	350°	6, 6.
26189	—	—	—
26044	—	—	—
26206	—	—	—
26162	—	—	—
26198	—	—	—
26027	—	—	—
25870	—	—	—

Thurs. Sept. 6. 1894

Time	Remarks	Seeing	Color
7 : 30	Exa. with 150, 450, 800. N.-S. dbl.	Seeing 4.+	Yw.
	" " " " " .		
	" " " " " . " " " .		Yw
	" " " " " , " " " . 		R.
	" " " " " .		
	" " " " " . " " " .		Y
	" " " " " . " " " ,		Bw
	" " " " " . Interesting pair		1. R. 2. w or pale Y.
	" " " " " . N.-S. dbl.-		Yw
	" " " " " " " " " .		R.
	" " " " " , " " " -		Y:W
(2/1)	" " " " " 1120+1500. Dbl+fl. abt. elongated at 45°. but did not divide it -		
	" " " " " . N.S. dbl.-	Seeing good 4-5.	
	" " " " " . " " .. .		
	" " " " " . " " " .		
	" " " " " " " " ,		both (Y)w
	" " " " ..		
	" " " " " . pos. angle est twice abt. rapid motion		with Yw
10 : 00	" " " " " N.S. dbl.-	Seeing growing poorer 3-4	Y.
	" " " " " . " " " .		(R?)w
	" " " " " . " " "		RY.
	" " " " " . " " " .		Y
	" " " " " , " " " .		Yw.
	" " " " " . " " "		Y.
10 : 30	" " " " " , " " " .		R.

Seeing 3 ∓

AG. C.No		Dist	Position	Magns
26527		—	—	—
26444		—	—	—
26776		—	—	—
26987		—	—	—
27165		—	—	—
27239		—	—	—
27354		18"	220°	6, 14
27440		—	—	—
27663		—	—	—
27600		10"	130°	6, 13
27344		—	—	—
25758		—	—	—
25779		—	—	—
26311		—	—	—
26355		—	—	—
26485-6		35"	85°	5, 8.5
26500		—	—	—
26648		—	—	—
26741		—	—	—
26780		—	—	—
27352		—	—	—
27346		45"	150°	6, 10
27363		—	—	—
27463		—	—	—
27053		—	—	—
27879	H. mon dist comp seen closer " N. "	Moon bgt + near:	—	—
27909		1".5	225	6, 7
28141		—	—	—
28213		70"	200	3, 13

Mon. Sept 10 - 1894

Time	Remarks -	Color
7:30	Ex with 150, 450, 800 - N.S. dbl.	B.W.
	" " " " " - seeing 4 " " "	
	" " " " " " " " "	
	" " " " " " " " "	
	" " " " " " " " "	(Y)W.
	" " " " " " " "	R.
	" " " " " " "	
	" " " " " " " " "	R
	" " " " " " " " "	YW
	" " " " " "	(Pr.) Y W
	" " " " " " seeing 3-4 " " "	-Y
	" " " " " " " " "	RY.
	" " " " " " " " "	
	" " " " " " " " "	Y.
	" " " " " " " " "	RY
	" " " " " "	½ Y R.?,
	" " " " " " " " "	Y.
	" " " " " " " " "	Y.
	" " " " " " " " "	Y.
	" " " " " " " " "	RY
	" " " " " " " " "	Y
	" " " " " " "	
	" " " " " " " " "	(Y)
10 00	" " " " " " { H. ft comp N.S. mean bgt near	YR
	" " " " " " seeing 3 N.S. dbl	Y.
	" " " " " " " "	Y.
dist. dbl.	but seeing poor " " " " " " Fine dbl -	
	3± " " " " " N.S. dbl	Y.
	" " " " " "	
	Seeing 3±	

A.G.C. No	Dist -	Position	Magn.
~~30241~~	—	—	—
30241 ~~29935~~	—	—	—
29989	—	—	—
30004	—	—	—
30054	—	—	—
29935	—	—	—
30209	—	—	—
29737	—	—	—
29795	30"	340	5.5; 9
29580	—	—	—
29490	—	—	—
28510	—	—	—
28490	—	—	—
28444	—	—	—
28625	—	—	—
28810	—	—	—
28821	—	—	—
28565	—	—	—
28544	25"	170°	5.5; 10
28597	—	—	—
28305	—	—	—
28337	—	—	—

Wed - Sept 12 - 1894

First glow - cldy -

8:15 - Remarks - Sky ~~with~~ scat. clds - Color

~~Seen with 150, 450, + 800 - H.S. dbl - B.Y.~~

" " " " " " " " " " B.

" " " " " " " " " Seeing 4 Y

" " " " " " " " " R

" " " " " " " " " R

" " " " " " " " " Y

" " " " " " " " " R

" " " " " " " " " Y

9 " " " " " " (½) Y

" " " " " " " " " Y

" " " " " " " " " " YR

" " " " " " " " " " (Y)

" " " " " " " " " " Y.

" " " " " " " " " " RY

" " " " " " " " " " RY

" " " " " " " " " " Y.

" " " " " " " " " " R.

10 " " " " " " " "

" " " " " " " " " " Y.

" " " " " " " " " " RY

10 40 " " " " " " " " R.

Seeing 4-.

A.G.C. No	Dist.	Position	Magns
29785	40"	5°	6, 9
29495	—	—	—
29232	—	—	—
29368	2"	140°	6, 9.5
29248	—	—	—
29314	0".8	300°	6.5, 7.0
29482	—	—	—
29358	—	—	—
30913	—	—	—
30974	—	—	—
30534	—	—	—
30657	—	—	—
30647	—	—	—
30405	—	—	—
30395	—	—	—
30930	—	—	—
30814	3".0	260°	6.5, 13
30805	—	—	—
30641	—	—	—
29200	—	—	—
28918	—	—	—
28782	—	—	—
28907	—	—	—
29058	2".5	24~~0~~5	6.5, 9.5
29084	—	—	—
29075	—	—	—
29048	—	—	—
28904	—	—	—
28791	—	—	—

Sat. Sept 15-1894

B yright dly. Nov. 0.3 moon full.

Time P.M. Remarks Seeing 4 ± Color

8:30 Eye pieces 150, 450, 800 — 1. yel. R. 2. y (?).

" " " " ". N.S. dbl. Ry

" " " " ", " " ". R

" " " " ". (1) y. (2) L ?

" " " " ". " " ". yw.

" " " " ". Fine. (1)(2) y.y

" " " " ". N.S. dbl. yw.

" " " " ". " " ". R

" " " " ". " " " Ry

" " " " ". " " ". Ry

" " " " ". " " ". y

" " " " ". " " ". R

" " " " ". " " ". yw

" " " " ". " " ". Ry.

" " " " ". " " ". yw

" " " " ". " " ". Rw

" " " " ". yw

" " " " ". " " ". yw

" " " " " ". " " ". Ryw

" " " " " ". " " ". y

" " " " " " " " ". R

" " " " " " " " ". Ry

" " " " " " " ". yV

" " " " " " ——— yw

" " " " " " " " " " y.

" " " " " " " " " y.

" " " " " " " " yR

" " " " " " " " "

12:08 " " " " " " " " "

A.G.C. No.		Dist.	Position	Magns
30261		—	—	—
30290		—	—	—
30260		—	—	—
30294		~~30~~ —	—	—
30704		30"	~~26~~170°	4.5, 8
30810	H. 15m comp. N.S. Hagg.	—	—	—
30855		—	—	—
31213		—	—	—
31247		—	—	—
31123		3"	275°	5, 9.5
31184		4"	230°	5, 12
31327		—	—	—
31591		—	—	—
~~31594~~				

Tues. Sept. 18. 1894

Early even. cldy. Now. 0.4 cldy.

Time	Remarks.	Color.
8:10	Ex. with 150, 450, 800 N.S. dbl	R
	" " " " " . " " " .	Ym
	" " " " " . " " " .	Ym
	" " " " " . " " " .	Y
	" " " " " . ———— .	1 Bw 2 R(?)
	" " " " " " " " " .	Ry.
	" " " " " " " " " .	Y
	" " " " " . . " " " .	Bw.
	" " " " . " " " " .	Y
	" " " " " . ———— .	1 Y 2 Ym(?)
	" " " " " .	YR(?).
	" " " " " " " " .	Ym
	" " " " " " " " .	Ry.
9 55	Stopped by clouds - Sky 0.7 cldy.	

A.G. C.No	Dist	Position	Magns
31044	—	—	—
31276	—	—	—
30968	35"	190°	6, 15
31340	—	—	—
31273	—	—	—
31388	12"	265°	6.5, 6.7
31161-2	—	—	—
31196	—	—	—
31445	—	—	—
31549	30"	48°	6, 13
31380	1".8	25°	5, 7
31437	—	—	—
31337	—	—	—
31523	—	—	—
31580	—	—	—
31441	—	—	—
31383	—	—	—
31099	—	—	—
31594	—	—	—
31859	—	—	—
32003	—	—	—
32265-6	—	—	—
32337	—	—	—
32389	—	—	—
31906	—	—	—
32102	—	—	—
32256	—	—	—
32355	—	—	—

Wed. Sept. 19. 1894

0.3 Cldy Hazy.

Time P.M.	Remarks.			Color
7 25 –	Ex. with 150, 450, 800 –		N.p. dbl.	Ywr –
	" " " " " "		" " ".	R.
	" " " " " ".	Seeing		RY.
	" " " " " .		" " ".	RY.
	" " " " " .	4+.	" " ".	RY.
	" " " " " ..			$\left.\begin{matrix}1\\2\end{matrix}\right\}$ Y
	" " " " " .		" " ".	Ywr.
	" " " " " .		" " "	Ywr
	" " " " " .		" " ".	RY.
	" " " " " .			2 Y?
	" " " " - - -	Fine pr. –		$\left.\begin{matrix}1\\2\end{matrix}\right\}$ Ywr
	" " " " " .		" " ".	Ywr –
	" " " " " .		" " ".	Ywr
	" " " " " .		" " ".	RY
	" " " " " .		" " ".	Ywr
	" " " " " .		" " ".	R
	" " " " " .		" " ".	Ywr.
9 25 –	" " " " " .		" " " –	RY
	" " " " " –		" " ".	Ywr
	" " " " " .		" " ".	Ywr –
	" " " " " .		" " ".	Y
	" " " " " –	Seeing	" " " ".	both Ywr
	" " " " " .		" " ".	R
	" " " " " .	4+.	" " ".	Ywr
	" " " " " .		" " ".	Ywr
	" " " " " –		" " " –	Ywr
	– – – – –		– – –	"
10 40	– – – – –	4)	– – –	Y

A.G.C. No	Dist.	Position	Magns
30422	—	—	—
30468	stopped by clouds — Skey		

Thurs - Sept 20 - 1894

sky 0.3 cldy

Time	Remarks.	Color
7:30	Ex with 150, 450, 800 - N.S. dbl. - 0.7 cl'dy -	Rdy.

A.G. C No.	Dist.	Position	Magns
30468	—	—	—
30557	—	—	—
30779	—	—	—
30875	—	—	—
30425	2″.5	10°	5.5, 13
30709	—	—	—
30594	5″	280	4, 11
30611	—	—	—
31328	—	—	—
31100	—	—	—
32347	—	—	—
32311	—	—	—
32307	—	—	—
32065	—	—	—
31773	—	—	—
31547	—	—	—
31563	—	—	—
31750	—	—	—
31714	—	—	—
32435	—	—	—
31687	30″	210°	6, 6.5
31737	—	—	—
31697	—	—	—
31630	15″	215°	6, 9.5
31752	—	—	—
32130	—	—	—
32333	—	—	—
32372	—	—	—

Fri – Sept – 21 – 1894   Sky 0.3

Time	Remarks –			Color
7 20	Sp w. 150. 450. 800.	Seeing 4 to 5.	N. S. dbl.	R.
	" " " "		" " "	Ry.
	" " " "		" " "	Yw
	" " " "		" " "	R
	" " " "	Sey int. dbl.		1 2() Yw
	" " " "		" " "	R
	" " " "		"	1 Yw 2 R:.
	" " " "		" " "	Yw
	" " " "		" " "	Yw
	" " " "		" " "	Ry.
	" " " "		" " "	Y.
	" " " "		" " "	Yw
	" " " "		" " "	Ry.
	" " " "		" " "	R
	" " " "		" " "	Y.
	" " " "		" " "	Ry
	" " " "		" " "	Yw.
	" " " "		" " "	Yw.
	" " " "		" " "	Ry.
	" " " "		" " "	Yw
	" " " "			1 2 } Y
	" " " "		" " "	Ry.
	" " " "		" " "	R
	" " " "			Y W
	" " " "		" " "	Yw!
	" " " "		" " "	Yw!
	" " " "		" " "	R(Y)
10:30	" " " "		" " "	R

AGC. No.	Dist.	Position	Magns.
32446	70"	60°	6, 12
	~~150~~ 40"	150	6, 13
	4"	175	6, 14
32365	—	—	—
31981-2	4"	270°	6, 6.5
31955	—	—	—
31826	—	—	—

Fri. Sept 21 1894

Time	Remarks	Color.
10 45	Ex. w. 150. 450. 800 - St cl. comb. seen best in 150, 450.	Y.W.
	" " " " " . Seeing 4+ N.S. dbl.	Ref.
	" " " " " .	⅔ Yw
	" " " " " " " " .	Yw.
11 15	" " " " " " " " " .	Yw

AG.C. No.	Dist.	Position	Magn
25383	—	—	—
25527	2"	270°	6.5, 9.5
25083	—	—	—
24821	—	—	—
24483	30"	240°	6, 14
24570	2"	230°	6, 10
27225	—	—	—
26980	50"	30°	6, 14
28171	20"	15°	6.5, 7
28162	—	—	—
28706	—	—	—
29533	—	—	—
27956	—	—	—
27836	35"	355°	6, 12
28851	6"	130	6, ~~16~~ 15 ±
28995	—	—	—
×	—	—	—
29790	—	—	—
29670	—	—	—
25049	—	—	—
29042	—	—	—
24176	—	—	—
30879	—	—	—
30980	—	—	—
30358	—	—	—
29624	4"	85°	6, 8

Sat - Sept 22. 1894

gn	Time	Remarks.	Sky char.	Color.
	7 : 30	Ex. w 150, 450, 800. seeing **	N. S. dbl. (H. comp. 40"±, 350°±)	RY.
9.5		〃 〃 〃 〃 〃 .		Gr
		〃 〃 〃 〃 .	〃 〃 〃 〃	RY.
		〃 〃 〃 〃 .	〃 〃 〃 〃	Gr
4		〃 〃 〃 〃	〃	R
0		〃 〃 〃 〃 .		RY.
		〃 〃 〃 〃 〃 .	〃 〃 〃 .	Gr.
14		〃 〃 〃 〃 .		RYgr
7		〃 〃 〃 〃 〃		
		〃 〃 〃 〃 〃 .	〃 〃 〃 .	Y.
		〃 〃 〃 〃 〃 .	〃 〃 〃 ,	RYgr.
		〃 〃 〃 〃 〃	〃 〃 〃 .	RW
		〃 〃 〃 〃 〃	〃 〃 〃 .	R(Y)
12		〃 〃 〃 〃 〃		Y
~~H~~ 15 ±		〃 〃 〃 〃 〃	comp. seen distinctly only w 150 - - certainly seen in 150 - but about at the limit of visibility - N-S - dbl	RY
		〃 〃 〃 〃 〃		RY.
		〃 〃 〃 〃 〃	〃 〃 〃 .	RY
		〃 〃 〃 〃 .	〃 〃 〃 .	Y.
		〃 〃 〃 〃 〃	〃 〃 〃	Ygr
		〃 〃 〃 〃 〃 Seeing	〃 〃 〃	Gr
		〃 〃 〃 〃 〃 . near	〃 〃 〃 .	Gr
		〃 〃 〃 〃 〃 pole	〃 〃 〃 .	RY:
		〃 〃 〃 〃 〃 poor	〃 〃 〃	Y
		〃 〃 〃 〃 〃 . 2-3	〃 〃 〃	YGr.
		〃 〃 〃 〃 〃	〃 〃 〃 〃	RY
8		〃 〃 〃 〃 〃		Y.

Seeing grown quite poor.

AG. Clo.	Dist.	Position	Magns.
31530	—	—	—
30380	—	—	—
32303	—	—	—
32200	—	—	—
32060	—	—	—
31840	—	—	—
32376	—	—	—
x	—	—	—
30350	—	—	—
30034	40"	75	6,11
30520	20"	85	6,10
30500	—	—	—
30532	45	320	6,12
31127	—	—	—
31381	—	—	—
32421	—	—	—
32064	—	—	—

Mon - Sept 24. 1894

Time	Remarks -	Char -	Color.
7:30	Ep w. 150, 450, 800.	N.S. - dbl.	Y
	" " " " "	" "	Ygr.
	" " " " "	" "	Y
	" " " " "	" "	Ygr
	" " " " "	" "	Y
	" " " "	" "	Ygr
	" " " "	" "	RY
	" " " "	" "	Ygr
	" " " "	" "	Ygr
	" " " "		Y
	" " " "		Y
	" " " "	" " "	Y
	" " " "	"	Ygr
	" " " "	" "	RY
	" " " "	" "	RY
	" " " "	" "	Ygr
9:00	" " " "	" "	RY

seeing 4 in pole poor 2-3.

seeing somewhat better higher w. 3-4.

This completes the examination of the brighter stars to 0h.

Tues. Sept 25 1894 -

2:00 am

47 Tucanae - visual 8" + 13"

3,4 dif.

390_5 - 487_5 - 328_5 - 486_5 b_8 C_0 a_2 T

b a mag. ± bgtr than a.

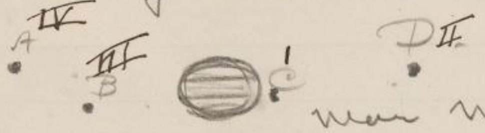
T_{10} 1_3 2_0 3. S invisible.

f_2 h_0 g_5 d_{10} U. f two mags. ± fntr than b

In 13" pow of 150 in genl. most satisfactory - Centre prob. entirely resolved - though the tendency is to appear nebulous - prob. due to confusion of images of cl. packed ft stars, rather than to nebulosity - By fixing the attention for a moment on a particular part the nebulous effect, I think quite disappears, but reappears an instant later as the eye tires or the attention becomes genl. -

While there is no special difficulty in identifying any stars in the cluster shown on the photograph, if not too ft, the work is very tiring to the eye from the confusion of images; also many ft stars shown on the photographs are either entirely invisible or seen with great difficulty in the 13" - altogether the photographic method seems easier & safer except for verification & comparison: magnitudes near centre of cluster are dif. to estimate from close ft stars -

Thurs - Jan. 17 - 1895 —

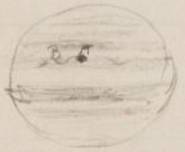


Sky 0.5 - same night cldy.
near merid -

P.M.

10 00 A B C. D all app. round - confirmed by
power 800 - H.C. P. - though slgt tendency in (~~A~~)B & (D) to look slgtly elong. ↓ and C ← same as Jupiter -
N & S - i.e. to pole
Still call all round. Some lgt clds seeing good 3 - 4 -
scale 0.5 -

10 30 all app. round. seeing good 4 + .



small black spot A with lgt spot at B.
Sat. C. disappeared. at about 10:40 -
spot (A) is 2 or 3 times as dark as any other part of surface, small & sharply defined - slgt elong -

11 00 A.B. & D all round. exc. a slgt tend to elong of A & B N & S. but believe them round -

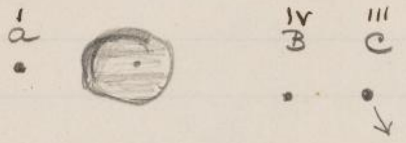
11 30 appearance of A, B, & D unchanged. The better the seeing & more sharply defined the sat's limb, the more perfectly round it appears in all cases -

black spot revolves with planet. when image is thrown out of focus - it makes image elong. in same direc as seen in poorer seeing -

12:00 appearance same image round -
Mt

Friday Jan. 25 - 1895 -

Jupiter & Sat. Sky 0.4 cldy -



4th Sat. indis.

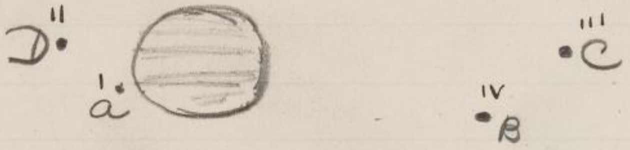
P.M.

8:00 a app. elong in same direc as Jup. (sympathetic ?)
B round -
C. round or elongated in direc of arrow.

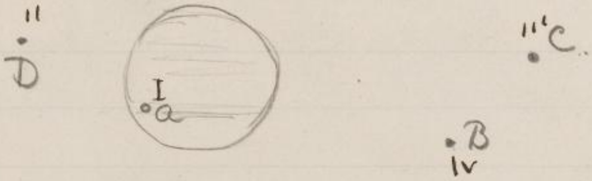
H.C.B. in both hours Sup all round.

9:00 appearances of a.B.C. unchanged

9 30



10 00

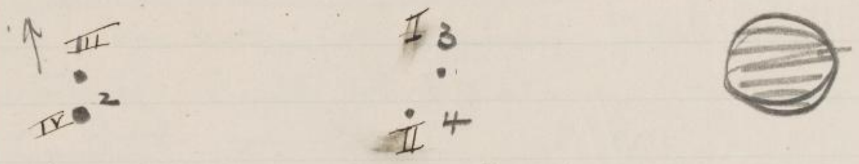


appearance same - except that a plainly seen on surface of planet looks perfectly round. -

growing very cloudy -
Seeing during evening 4 ± (1 - 5) -
hazy but seeing steady -
powers used 300 — 1100 -

Wed. Feb. 20 1895

W. frigid cldy.



Observed satellites of Jupiter from 10:15 P.M. till 11:15 when it got rather low & sky w. rather cloudy. Seeing 3-4. Images of all the satellites all the time seemed elongated in about the direction of the arrow - all about alike - Also when images (of stars as well) thrown out of focus there was a wing - or if not a wing an unequal enlargement of image in that direction. ● in focus out of focus ◉ - Tried readjusting the lens slightly but with no better results, by putting piece of paper between object glasses. but direction of wing & elong. changed in all of images alike in quant & direction obs. verified by H.C.B. -

Total Eclipse of Moon

Mar. 10-1894 Sunday —

Beginning (of Eastern part ch.) of moon first noticed dimmed at 8:45. (by penumbra)

~~Contact with Shad.~~ at 9:06 S.I.B.
- 9:04. Clymer
9:04.5 H.C.B. -

Time of Std Time Clock in vault.

Totality - at 10h: 01.3 S.I.B.
10:01.9 Clymer & G.W.
10:01.5 H.C.B.

Colors - from first after contact of Shadow part covered clear red - till totality - at totality whole red except western edge deep green - also green just before totality near bright rim - after totality ~~eastern~~ western edge much brighter than ~~western~~ Eastern for some time & (just) before close of totality for some time Eastern Edge (limb) much brighter than western. Only a short time when light was apparently equal. 10:40 - H.C.B. - (approx. i.e. the light was brighter for a longer time on eastern side -): at 10:55 seen lighter on Eastern side.

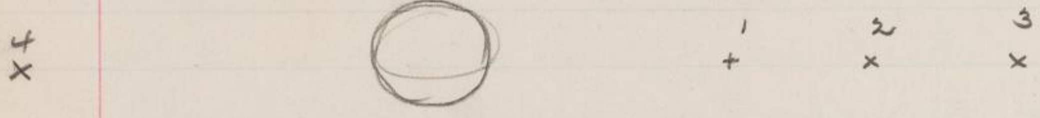
End of totality S.I.B. 11h:37m.0

observed 4 occultations all disappearances instantaneous. but in one case, the brightest the star appeared for an instant to stand on very edge of moon & then drop out of sight

From mean of times show our time abt. - about 4m slow - if Long. is correctly known.

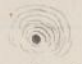
Mon- Mar. 11- 95-

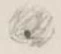
P.M-
7:30 Jupiter -   Sky - 0.7 cldy -



7 40 1, 2, 3, 4, abt. perf. round - Seeing 3-4 -
H.C.B. verifies form - as above -
Clymer. " " " " -

Set on bright star, seeing 4+ but dif. slightly one sided, dif. rings - as in fig 1-
thrown out of focus seen in Fig. 2


1.


2.

Many attempts made to correct dif- by moving both lenses together - Slight improvement.
Then by moving front one by slipping piece of paper between lenses - Greater improvement by this way.
Put paper bet. lenses on side of wing. or move on off side.

9:30 Satellites exp 3 - images round but pos. showing slight tendency to elongation in direc. of bright rings -
others nice round. A.E.D.
H.C.B. says perfectly round -
Clymer " round -

10 P.M. adjusted further or wedge of pad-paper bet. lenses. at last a thickness of paper changed trace of wing fr. one side to trace on other, but by placing a thinner piece of paper. seems to be about exact -

10:10 Sky 0.9 + cloudy -

Wed Mar 13 - 95 -

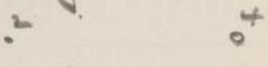
Early evening cldy.

Jupiter -

Paper placed in tubes for adj. found fallen out by use of tel. in day on Mists -
Placed new paper but adj. not perfect -

P.M. 8:30 Satellites 2, 3. 4. in best moments nearly round. but slight tendency to elong. in same direc of slight mirage. when just out of focus image ● + in focus ◉ slight tend. to form ell - not great - Jupiter rather low west. through light clds. watched 40 minutes till too low + cldy -
No change seen -
Verified by H.C.B -

Tues March. 19 - 95 -

8:00 P.M. - First of ev. very cldy. - now 0.6 cldy.
Jupiter about 45° above hor. - mainly clr. of cld.
Lenses have been removed since ~~last nights~~ obs. -
Slight wing at direction 
all 4 sat. at times apl. elong. in direction of
wing but in moment of best seeing all round. -

adjusted by putting 2 thickness of paper bet. lenses.
on wing side. adjusting lenses by bright star -
result almost perfectly sym. in form of rings &c. -
but seeing not fine 4 - .

8:20 moons rather hazy. but in best seeing round.
H.C. B. says - .

8:40 all round. seeing 4 - 5 - .
H.C.B. " - 3 distinctly & perf. round.

9 00 all round but not so sharply defined - occasional
change of form shared by all.

9:50 all round - rather low west -
HCB " " .

10:10 Seeing much worse 2 - 3 - Jup. low - & some cldy.
images however all round -
No change of form during evening -
Sky 0.5 - .

Friday March. 22 - 95

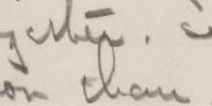
P.M - afternoon cldy & rainy - Early ev. very cloudy -
8:00 Sky 0.6 cldy & all hazy -
Jupiter seen thro - light cld or such haze -
Seeing steady but dim -
All 4 sat - app. round - no pearl. seen -
9:00. Seeing growing worse. Jup getting low & cldy.
Evidence during evening to elong . . O . . ↙ ♃
but less the better the seeing & app. canal in
direction faint in all.
Also this direction is same as that of irregularity ^
in many satellites (& stars) when thrown out of
focus just a little (esp. on one side) -

Mar. 24 1895 –

Sunday - P.M. - 7:30
Sky .0.3 cldy + haze -

P.M. 7:30 all four ~~satellites~~ seen, app. slightly elongated in direction ↓ ·² ·¹ O·⁴ ·³ all about equally + in same direction as certain faint ring of outline seen when images are out of focus
images ~~round~~ in best seeing -

8:00 Seeing better, images all alike + round -
IV very near occul. - skirting along edge of Jup. - in best seeing round.



images of two limbs sharp. no running together. seen sharply distinct until dist. between not more than 1/10 of diam. of IV.
M Contact app. about 8:10 P.M. (my watch).

seeing good
2 - 3 -

8:40 Sky not somewhat cldy. - seeing poorer.
images some app. slightly elong. as at 7:30 - but rounder at times seeing better.
but H.E.B. says that all look very round to him. -
.. R.E.B. agrees with me. but R. + I ~~we all~~ agree that the shape of all is alike in direction + quantity -
but H.E.B. cannot see them anything but round.
(IV is behind planet)
seeing growing poor

[illegible]

Wed - Mar. 27 - 1895 —

9: P.M. Early evening cldy. Now 0.5 cldy —
Jupiter rather far west —
seeing poor. images of satellites very hazy. & ill defined —
2 + 3. close together. . .   ·:   O   ·
at times all round but in all cases seen of same shape. 2 + 3. from nearness together easily comparable. In general somewhat elongated in usual direction ↓ . or ↓ . but at times for a moment round. but in all cases the images of the two seemed precisely of same form. i.e. all contortions or changes of form or of appearance seemed shared exactly by both (a very good opportunity to study it)
A.E.D. verifies my view
A.E.D. thinks one (3) more elongated than the other (2) & slightly diff angle.

9:45 — Very cldy.

seeing prob 2 - 3.

P.M. – Sat – April 13 – 1895.

7-00 Jup. satellite – (2 in transit):
Seen for a few minutes – seeing bad but image app. round – tho' shadows on disc (on dark band) of I + III. appeared elongated in same direction as bands of Jupiter. Later very cldy –

Sun. April 14. 1895 –

P.M. –

7:00 Jup. Sat. 3 satellites seen –
at first 2 seemed look elongated –
Looked at 4 + 3, both round. Instant on 2
also appeared round. not more than
3 minutes difference in time – during [illegible] them
then + they seemed the same to me –

8:00 all 4 visible + all round – except that 2 for
a moment appeared seemed elong. – bad seeing ?)

8:30 – Getting low west. all 4 sat. show a tendency
to elongation in vertical (perp, to horizon) direction.

A.G.C No	Cape No	Dist.	Position	Magn.	Dist.	Position	Magn.
✓ 451-2	✓			✓	35"	350°	5, 5
✓ ~~467~~					0".4	335	5, 7
✓ 467					—	—	—
✓ 233					—	—	—
✓ 653					—	—	—
✓ 253					—	—	—
✓ 860					—	—	—
✓ 1210				✓	6"	0°	5.5, 8
✓ X = A.G.C 1197				✓	1".5	180°	8, 9

ASB.

Thurs Dec. 5 1895.

Time Remarks

Exam. with 150, 450, 800 & 1100.

" " " " " " susp. with 450 - best seen 800 & 1100.

" " " " ". N. A. dbl.

" " " " ". " " ".

" " " " ". " " ".

" " " " ". " " ".

" " " " ". " " ".

" " " " [illegible].

" " " " ... Precedes 1210 few sec. (1m *) about 6' N.

seeing 3 - 4.

Sky o9 cldy.

A.G.C. No.	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magn.
✓ 662				✓	25"	215°	5, 13
✓ 633				✓	20"	255	6, 10
✓ 501					—	—	— —

Friday Dec 6 - 1895 -

Sky - o - s - clds

Looked at 457-2. Close comp. not seen by Cl. + self

Ep. with 150, 450 + 800 - Seeing 3. ± -

" " " " " "

" " " " " "

Stopped by clds

Sky completely cldy -

A.G.C. No.	Cape	Dist	Position	Magn	Dist	Position	Magn
✓ 518 A.G.C.					—	—	—
✓ × 480			✓		{ 10"	260°	7, 10.
✓ —					0".5	290	7.5, 8.5
✓ 451-2					close comb. believe I see it -		
✓ 617					—	—	—
✓ 652					—	—	—
✓ (× 684			✓		4"	75°	6.8, 8.5
✓ (825					—	—	—
✓ 1057					—	—	—
✓ 1231			✓		4"	355	6.5, 8.0
✓ 1373					—	—	—
✓ 1924					—	—	—
✓ (1981					—	—	—
✓ { × 1908-9				✓	3"	50°	7.5, 7.5
✓ 1977					—	—	—
✓ 1551					—	—	—
✓ 1580					—	—	—
✓ 1594					—	—	—
✓ 1633-4				✓	6"	45	7, 7
✓ 1069				✓	8	255	4.5, 8
✓ 959					—	—	—
✓ 1905					—	—	—
✓ 1932					—	—	—
✓ 1733					—	—	—
✓ 1816					—	—	—
✓ 1681					—	—	—
✓ 1737					—	—	—
✓ 1462					—	—	—
✓ 769					—	—	—

Dat - Dec. 7 1895 -

Time S.T. Remarks - Sky 0.3 Hazy. Early Evening Cldy

1: 15 - Ex with 150. 450. 800. No var. seen. Seeing 4 ±.

" " " " " . mag 7 includes dbl.

" " " " " + 1100. difficult, but blume Same.

" " " " " . " "

" " " " " . Not seen dbl.

" " " " " . " " "

" " " " " .

" " " " " . " " " .

" " " " " , " " " ,

" " " " " ,

" " " " " , " " " .

" " " " " " " " ,

" " " " " . " " " .

" " " " " .

" " " " " . " " " .

" " " " " . " " " ,

" " " " " , " " " ,

" " " " " 1100. " " " .

" " " " "

" " " " " .

" " " " . " " " .

" " " " . " " " . Hor. ft cond. N.S. Very hazy.

" " " " . " " " .

" " " " . " " " .

" " " " . " " " .

" " " " . " " "

" " " " . " " " .

" " " " . " " " .

4 00 " " " " " " " .

AG C. No	Cape No.	Dist.	Position	Magn.		Dist	Position	Mags
✓ 1024					✓	0".8	15°	4, 4
✓ —						45'.0	40	4, 13
✓ 965						—	—	—
✓ 1174						—	—	—
✓ 1411						—	—	—
✓ 626						—	—	—
✓ 745						—	—	—
✓ 702					✓	10 ±	280 ±	6, 14
✓ 579						—	—	—
✓ 427						—	—	—
✓ 443						—	—	—
✓ 1931					✓	60" 100	185 190	6, 13 6, 11
✓ 1864						—	—	—
✓ 2016						—	—	—
✓ 1871						—	—	—
✓ 1973						—	—	—

Sat - Dec. 14 - 1895

Time Remarks -

3 45 Ex. with 150, 450, 800 - Fine dbl. dist. separated - with 450 -

" " " " " " .

" " " " " . N. S. Dbl. Seeing

" " " " " . " " " . 3-4

" " " " " . " " " . Hazy.

" " " " " " " " ,

" " " " " " " " .

" " " " " . Ft comp. near limit of visibility. Seen only in 150.

" " " " " . N. S. dbl

" " " " " . " " .

" " " " " . " " .

" " " " " . Comp. not of much interest -

" " " " " . N. S. dbl.

" " " " " . " " .

" " " " . " " .

5 30 " " " " " " " .

Obs made in connection with photo. work.

Seeing growing worse -

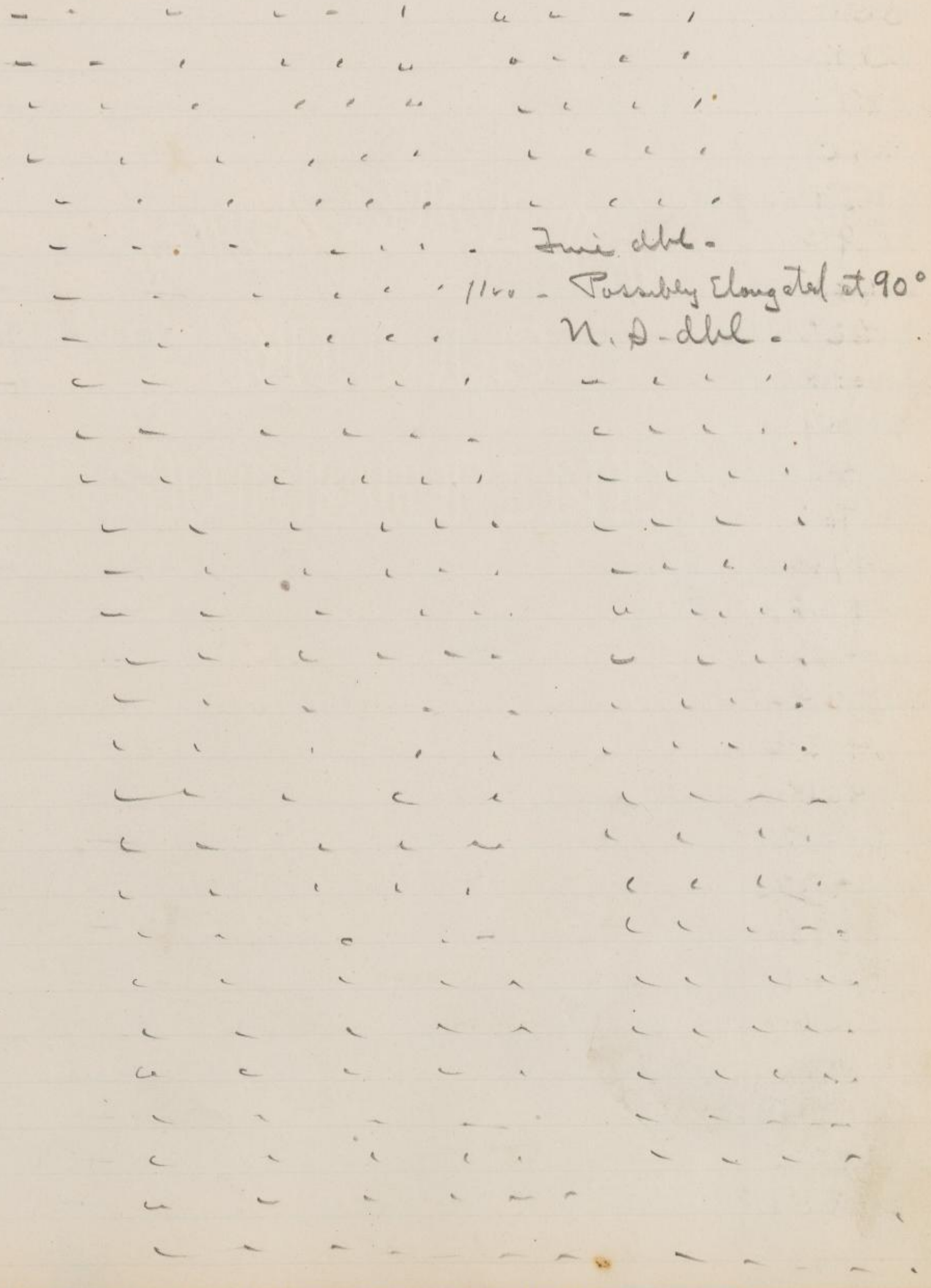
A.G.C. No	Cafello. Dist. Position Magn.	Dist.	Position	Mags.
355		—	—	—
351		—	—	—
218		—	—	—
57		—	—	—
390		—	—	—
759		—	—	—
780	✓	1".0	0°	6.6, 6.8
645	✓	—	—	—
666		—	—	—
377		—	—	—
167		—	—	—
30		—	—	—
95		—	—	—
476		—	—	—
902		—	—	—
953		—	—	—
1345		—	—	—
1052		—	—	—
943		—	—	—
1133		—	—	—
1132		—	—	—
1493		—	—	—
1590		—	—	—
2 1660		—	—	—
1660		—	—	—
1323		—	—	—
1461		—	—	—
1546-7	✓	2".5	90°	6,7
1998		—		

Mon. Dec-16-1895

S. T.
Time
2:25

Remarks - Early Eve. cldy. - sky 0.6

Ex with 150., 450, 800 N. P. Dbl.


Fine dbl.

1100 - Possibly Elongated at 90°.

N. P-dbl.

Some Clds ~

Seeing 3-4

5 10

		Cape.				Estimate		
A.G.C. No.	Cape No.	Dist.	Position	Magn.		Dist.	Position	Magn.
2498						—	—	—
2331						—	—	—
2352						—	—	—
2887						—	—	—
3003						—	—	—
✓ 2965 *					✓	—	—	—
3279						—	—	—
~~3198~~ 3054						—	—	—
~~3189~~ 2992					✓	20"	70°	6, 13
~~3054~~ 3189						—	—	—
3198						—	—	—
2745						—	—	—
2541						—	—	—
3352						—	—	—
3514						—	—	—
2412					✓	30"	83°	6, 12
2339					✓	—	—	—
2475						—	—	—
2866						—	—	—
2802						—	—	—
2935						—	—	—
2898						—	—	—
3141						—	—	—
2556						—	—	—
2838						—	—	—
2174						—	—	—
2274						—	—	—
2851						—	—	—

* repeat.

Sat. Dec 21-1895 —

Early evening vy cldy now 0.4.

Time Remarks —

2 45 Sn with 150, 450 · 800 N. F. dbl. Seeing 3 ± .

" " " " " " " " "

" " " " " " " " " "

" " " " " " " " " "

" " " " " " " " "

" " " " " " " " , but pos. chang. at 75° Repeat –

" " " " " " " " " "

" " " " " " " " " "

" " " " " " " " Seeing 3-4.

" " " " " " " " " "

" " " " " " " " " " "

" " " " " " " " " " "

" " " " " " " " " " "

" " " " " " " " " Seeing 4

" " " " " " " " " "

" " " " "

" " " " " " " " " " , but Hi dist comb. seen.

" " " " " " " " " " "

" " " " " " " " " " " "

" " " " " " " " " " " (Dist. comp.)

" " " " " " " " " " " (" comp)

" " " " " " " " " " "

" " " " " " " " " " "

" " " " " " " " " " "

" " " " " " " " " " "

" " " " " " " " "

" " " " " " " " "

4 55. " " " " " " " " "

	Cape					Est		
A.G.C. No.	Cape No.	Dist.	Position	Magn.		Dist.	Position	Magn.
✓ 2905					✓	2"	50°	6.5, 6.5
✓ 3045						—	—	—
✓ 3223-4					✓	5"	88	4, 4.5
✓ 3103						—	—	—
- 3209						—	—	—
✓ 3030					✓	3.5	10	6, 10
✓ 3039						—	—	—
✓ 2775						—	—	—
✓ 2681						—	—	—
✓ 2565						—	—	—
✓ 2237						—	—	—
✓ 2576						—	—	—
✓ 2752						—	—	—
✓ 2797						—	—	—
✓ 2919						—	—	—
✓ 3009						—	—	—
✓ 3245						—	—	—

Date.

Sat. Dec. 21. 1895 –

Time — Remarks –

5h 00m — Ex with 150, 450, 800. Fine abl. seeing 4 ±.

– – – – – – N. S. abl.

– – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – –

– – – – – – – – – –

– – – – – – – – –

6 15 – — – – – – – – – – –

seeing 4 ±

Clear.

		Calc				Est.		
	AG.C. No.	Calc No.	Dist.	Position	Magn.	Dist.	Position	Magns.
✓	860					—	—	—
✓	491					—	—	—
✓	253					—	—	—
✓	336					—	—	—
✓	762					—	—	—
✓	78					—	—	—
✓	1738					—	—	—
✓	1800					—	—	—
✓	1869				✓	—	—	—
✓	1736				✓	15"	350	6,12
✓	1586				✓	—	—	—
✓	2824					—	—	—
✓	3568				✓	12"	225°	6,8
✓	4040					—	—	—
✓	4181					—	—	—
✓	3375					—	—	—
✓	3171					—	—	—
✓	2552					—	—	—
✓	4353					—	—	—
✓	3704					—	—	—

Date Sun - Dec - 22 - 1895 -

Energy ev cldy

Time Remarks -

2:25 Ex. with 150. 450. 800. N. A. dbl.

– – – – – – – – – – seeing 4 ±

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – –

– – – – – – – – – st ft comp. N.A.

– – – – – –

– – – – – – – – – Dist comp. seen

– – – – – – – – – – –

– – – – – – – – – –

– – – – – – – – –

– – – – – – – – – –

– – – – – – – – – Seeing 3 X.

– – – – – – – – – –

– – – – – – – – – – –

– – – – – – – – – –

4 10 – – – – – – – – – – –

Growing cloudy.

			Calc.			Est.		
	A.G.C. No.	Cape No.	Dist.	Position	Magn.	Dist.	Position	Magn.
✓	3634					—	—	—
✓	3626					—	—	—
✓	3879				✓	—	—	—
✓	4211					—	—	—
✓	3932					—	—	—
	3657					—	—	—
✓	3830					—	—	—
✓	4444					—	—	—
✓	4545					—	—	—
✓	4487					—	—	—
✓	4550					—	—	—
✓	4395				✓	15"	265°	6.2, 14.5
✓	4187					—	—	—
✓	4363					—	—	—
✓	4241-2				✓	8"	205	5, 5.2
✓	4121					—	—	—
✓	4256					—	—	—
✓	4346					—	—	—
✓	4468					—	—	—
✓ ✗	~~3778~~ 3793				✓	5"	260	6, 11
✓	3778					—	—	—
✓	3744					—	—	—
✓	3522					—	—	—
✓	3490					—	—	—
✓	4101					—	—	—
✓	4219					—	—	—
✓	4006					—	—	—
✓	4368				✓	22"	175°	5.5, 12.5

Date Mon - Dec - 23 '95 -

Hour. Remarks - Sgt scat clds - .

1 50 Ex. with 150, 450, 800, W. D. dbl -

— — — — — — , — — —

— — — — — — — , — — — . Dist conf. Scin.

— — — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — , Setting ☉ ✶ -

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — , Comp. at limit of visibility.

— — — — — , — — — ,

— — — — — , — — — ,

— — — — —

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — — ,

— — — — — , — — —

— — — — — , — — — ,

4 35 - — — — — ,

		Cape.					Est.		
	A.G.C. No.	Cape No.	Dist.	Position	Magn.		Dist.	Position	Magn.
✓	3831						—	—	—
✓	3840						—	—	—
✓	3623						—	—	—
✓	3487					✓	{ 0".~~4~~5	190°	6.2, 6.5
✓	—						3.0	200	6.2, 11
✓	3312						—	—	—
✓	3454						—	—	—
✓	3598					✓	50"	50°	6, 10
✓	3864						—	—	—
✓	3912						—	—	—

Date. Mon - Dec. 23 - 95 —

Hour. Remarks - -

4 : 40 Ex with 150, 450, 800. N. f. dbl.

- - - - - , - - - ,

- - - - - , - - - ,

- - - - - , } Very fine triplet

- - - - - - } close dbl perfectly seen -

- - - - - , N f dbl ,

- - - - - , - - - ,

- - - - - ,

- - - - - , - - - ,

5 40 - - - - - , - - - ,

Quite clear Seeing rather worse 3 ± -

	A.G.C. No.		Dist	Position	Magn
✓	4812.	✓	45"	355	4.5, 13
✓	4820	✓	5	265	6, 12
✓	4880	✓	4	0	6, 7.5
✓	4962		—	—	—
✓	5081		—	—	—
✓	5223	✓	35	100	5, 8
✓	5276	✓	35	5	5.5, 12
✓	——	✓	40	135	5.5, 11
✓	5971		—	—	—
✓	6119		—	—	—
✓	6972		—	—	—
✓	6852		—	—	—
✓	6553		—	—	—
✓	x = 6494	✓	6"-8"	75 ±	6.5, 14
✓	6561		—	—	—
✓	7066.		—	—	—

Sat - Jan 4 - 1896 -

Hour - Remarks - Sky 0.4 cldy -

3 h 45 - Se with 150. 450. 200 -

" " " " " .

" " " " " . Seeing 3-4.

" " " " " . N. f. dbl.

" " " " " " . " " " .

" " " " " " .

" " " " " " . Primary very red.

" " " " " . N. D. dbl.

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " . very

" " " " " . comb. very fst - hazy.

" " " " " . N. D. dbl.

5 00 " " " " " . " " " .

Sky 0.8 cldy -

	A.G. Cno		Dist.	Position	Magns
✓	4845	✓	0."6	345	6, 6.5
✓	4840		—	—	—
✓	5418		—	—	—
✓	5893		—	—	—
✓	6387		—	—	—
✓	6979		—	—	—
✓	6915		—	—	—
✓	7034		—	—	—
✓	6925		—	—	—
	6848		—	—	—
	7184		—	—	—
	6167		—	—	—
✓	6313	✓	50"	290	6.5, 7.0
✓	5798		—	—	—
✓	5850		—	—	—
✓	5350		—	—	—
✓	5555	✓	15"	65	6, 6.8
✓	5198	✓	—	—	—
	4868		—	—	—
✓	4811		—	—	—
✓	4686		—	—	—
✓	4757		—	—	—
✓	4859	✓	—	—	—
✓	5106		—	—	—
✓	5066		—	—	—
✓	5017		—	—	—
✓	4649		—	—	—

S. T. ~~Hour~~ Thurs. Jan. 9. 1896

Remarks – Sky 0.4 cldy + hazy.

3:35 – Ex with 150, 450, 800. Fine all. Very plain. Seeing 3-4.

– – – – – . N. S. dbl.

– – – – – , – – – ,

– – – – – , – – – ,

– – – – – , – – – ,

– – – – – , – – – ,

– – – – – , – – – ,

– – – – – , – – – , Seeing 4+.

– – – – , – – – ,

– – – – , – – – ,

– – – – , – – – ,

– – – – , – – – .

– – – – ,

– – – – . N. S. dbl.

– – – – , – – – ,

– – – – , – – – ,

– – – – ,

– – – – . – – – . Hi dist comp. seen!

– – – – . – – – ,

– – – – . – – – ,

– – – – . – – – ,

– – – – , – – – ,

– – – – , – – – . Hi dist comp. seen.

– – – – , – – – ,

– – – – , – – – ,

– – – – . – – – ,

6:15 – – – – , – – – ,

Sky growing too cldy + hazy.

	N.G.C.-No		Dist	Position	Magns.
✓	4821	✓	—	—	—
✓	4940		—	—	—
✓	X (4841)?2	✓	8"	160°	6.2, 11
✓	5137		—	—	—
✓	5187		—	—	—
	5215		—	—	—
✓	5328		—	—	—
	5313		—	—	—
✓	5295	✓	3"	125±	4, 14
✓	5510	✓	12	280	6, 11
✓	5524		—	—	—
✓	5807	✓	3"	315	4.5, 10
✓	6423	✓	30	240	5.5, 13
✓	6817	✓	40	200	6, 13
	6454		—	—	—
✓	7120	✓	—	—	—
	6996		—	—	—
✓	6931	✓	{40 15	15 240	6, 12 6, 13
-	7011		—	—	—
-	6038		—	—	—
	6098		—	—	—
✓	5972		—	—	—

Date - Fri - Jan 10. 1896 -

S.T. Time — Remarks - 0.3 cldy

3:30 Ex. with 150. 450, 800 – { St ft comp. & dist seen } Seeing 4 ± .

– – – – – . N. S. dbl.

Ex with – – – . Follows. 4821 a little South

– – – – – , N.S. dbl.

– – – 7 – , – – – ,

– – – + – – – – – ,

– – – – – . – – – .

– – – – – – . – – – ,

– – – – – . comp. very ft seen in 150. + 450. Sure.

– – – – – .

– – – – – . N. S. dbl.

– – – – – . Pretty dbl. Easy seen with all powers.

– – – – – .

– – – – – .

– – – – – , N S dbl.

– – – – – . Dist comp. faint at 350° + 10°

– – – – – . N. S. dbl.

– – – – – , .

– – – – – , – – – .

– – – – – – – – – .

– – – – – , – – – ,

6:10 – – – – – . – – – ,

sky clear but hazy -

	A.G.C. No		Dist.	Position	Magns
✓	6427		—	—	—
✓	6372		—	—	—
✓	6465		—	—	—
✓	6246		—	—	—
✓	6348		—	—	—
✓	6623		—	—	—
✓	6633	✓	6" ±	0 ±	3, 14
✓	5295	✓	verified	from last	night
✓	6693		—	—	—
✓	6520		—	—	—
✓	6515		—	—	—
✓	6637		—	—	—
✓	6780		—	—	—
✓	6690		—	—	—
✓	7021		—	—	—
✓	7234		—	—	—
✓	7159		—	—	—
✓	6937		—	—	—
✓	7064	✓	30"	110	5, 13
✓	6896		—	—	—
✓	5787		—	—	—
✓	6674	✓	—	—	—
✓	6694		—	—	—
✓	6739		—	—	—
✓	5456		—	—	—
✓	5919		—	—	—
✓	6827		—	—	—
✓	7209		—	—	—
✓	6907		—	—	—

Date; Sat - Jan - 11 - 1896

sky 0.4 cldy

Hour. Remarks.

3:10 Ex. with 150. 450. 800. N-S. dbl. - Seeing 3±

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

4 " " . . . . { Very f.t but seen. Seen well only with 150.
Minnie did not see it.
Mrs. B. - " see it in right position -

" " " . seen - but not seen by Mrs. B -

" " " 450, 800 . N-S- dbl.

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " .

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " . Hi dist comp- seen

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " "

" " " " " . " " " .

" " " " " . " " " .

" " " " " . " " " "

6:15 " " " " " . " " " .

AG No.	Dist.	Position	Magns.
✓ 6105	—	—	—
✓ 5219	—	—	—
✓ 5090	—	—	—
✓ 7097	—	—	—

Date Sat-Jan. 11-'96

Hour	Remarks.	
6:20	Ex with 150, 450, 800 - N. D. dbl-	Seeing
	- - - - - - - - -	3.±
	- - - - - - - - -	
6:35	- - - - - - - - -	

Sky 0.1

This completes so far as known the examination of the brigts stars South of -30°.
S.I.B.

A.G.C. No.	Dist	Position	Magns.
451-2	-	-	dbl.
x near 578.	10″ 0.4	275 290	7, 10 7.5, 8.0
-			
-			
1024	{ 40″ 1	50 20	dbl 3, 11 4, 4
-			
780	as on page 150 -		
3487	{ 0.″7 4.0	190° 200	6.2, 6.6 6.2, 10
-			
-			
4395	comp. glimpsed as on p 158		
x near 6553	seen clearly as p 162.		
4845	0.″7	350°	6, 6.2
5295	4″	110°	4, 14
6633	7″	15	3.14

Date Feb. 3. 1896.

Hour. Remarks -

far west

4:30 set on with 450 + 800 +1120 - but close comp. see p/142 not seen.

- - - - - Seeing 3. unsteady + region cov. with lgt cl'ds.

Sli. comp. elg. + not well separable

but I believe it is dbl. as seen first.

. There two close stars on perf. plain in 450

Perfectly plain in 450 -

} fine triple perfectly plain -

but could not hold companion - steady - later seen better pretty sure -

very fine + plain

sure. but pos ± as set with 150 no wires -

Sure - - - - - - - - - -

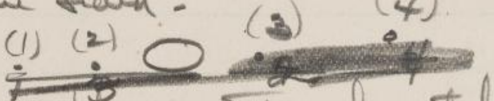
7:20 ~~Set.~~ on Jupiter + Satellites

seeing poor + image bad -

Full moon

P.M. 13^{in} Visual April 27-1896

9 15 Set on Jupiter - ~~Instrument~~ just turned & lenses adj - by scale - i.e. put by measurement at = dist from edge. images slightly one sided -

Fol. 

See below for true numbers.

1 round but 2 3 & 4 abt. a little elongated at about right angles to equator of Jupiter - i.e. ↓ -
Set on bright star slight wing. on west side. i.e. 20" west in eyepiece. One thickness of paper (writing) placed between lenses - on wing side - Definition better Diffraction rings about equal on all sides but somewhat broken -
Set again on Jupiter - 1 round 2 round or elongated as above. Mr. Stewart agrees with me indep. but thinks 4 less " than 2 + 3.

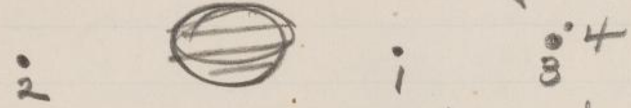
10 40 Later 2 projected on disc of Jup. on darkest of S. equat. belt plainly visible - To me appears elongated in line of belts. i.e. at right angles to its former appearance while off the disc. called 10m later Mr. Stewart indept. regarded it either round or elongated in direc of bands - but immediately after I trying it again found it so much more difficult to distinguish ~~that~~ should be doubtful as to form -

Powers 450 & 800 -

13" inch tel. April 28 '96

S.T.

9 30 7.00 P.M. Jupiter - a little west of mer. well north.



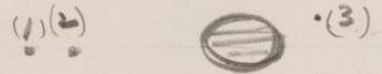
Seeing 3 ±. all round but with tendency at times to appear elong at about ⊥ to belts.

10 00 Clymer calls 3 + 4 alike and round.

10 20 growing cldy N.W. Seeing poorer. No change except ~~that~~ all have rather increased tendency to elong. as above -

April 29. 1896 13^4

P.M.
4:00 Sky clear - Sun bright
Set on Jupiter - Two moons seen plainly



other (4) not seen.

Later one moon seen at 3 -
Satellite at 4 seen at 5:30 though doubtless might have been seen at first if had looked up. - So far away

6:50 Quite light, but Sun set 15m ±
all four round with tendency to elongation ⊥ at L to equator of Jupiter - albedo of (3) very much less the others (3) is # 4

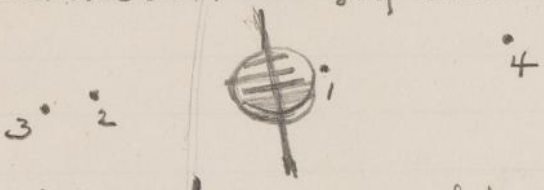
6:45 Same as above but perhaps tendency to Elongation greater in (3)
Mr. Stewart says (4) round - (1) round. (2) doubtful - (3) elong. quite a little in direc- of polar axis -
7:10 Mr. Clymer says - that (1) round. (2) round or elongated a little in direc of polar axis - (3) round (probably). (4) round or perhaps a trifle Elongated as (2).
7:20 Same as above. (3) close to planet -

(1) = 1. (2) = 2 (3) = 4 . (4) = 3 -

May 9 - 1896

S.T.

10 00 Jupiter moons, sky clear. Seeing 4 ±



3 + 2 elong ↓ 1. 1. somewhat in direc of pole. 3 ecp. D.I.B
1 round or elong ← with belts. 4 tendency as 2 + 3.

10 ~~:~~ 10 3 elong. close to direc. of polar axis. Dr. D.
2 round. 1. elong. par. with equator. quite a little
1 when obs about time it drawn from limb. 4 round.

10 20 3. elong in direc. about ~~[illegible]~~ of polar axis.
2. round.
4. " "
W.B.C.

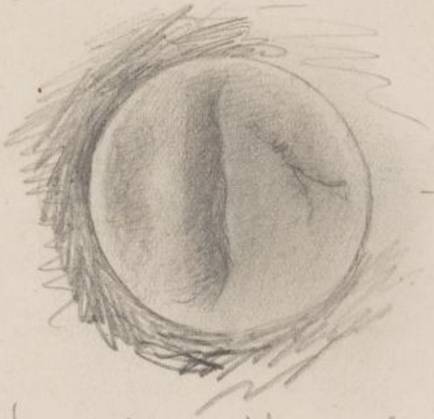
12 05 1 invisible - 3 2 + 4 perhaps round, at least
tendency to elongation seem less but image very hazy
+ indistinct + forms not well marked - S.I.B

12 10 3. slightly elong. as above.
2 - round -
4 - " "
D.D.

~~S~~ E Sel

Mars.

S ~~E~~



~~W~~ N

form too gibbous in drawing

W

Fri. P.M. Sept 21-1894

33