KG
11365
767

Photom

KG11365.767

Eclipses of Jup's Sattellites Observed in Arequipa

L.C. Obs.

		Comp with	Obs	Rec	Secs	Tel	
Reap I.	Sept 23, 1913.	Sat IV	L.C.	C.W.	54	8"	
Reap I	" 30, 1913.	II	L.C.	C.W.	54	8"	
Reap I	Oct 16, 1913	III	L.C.	C.W.	7	8"	
Reap II	Oct 16, 1913	I	L.C.	C.W. H.P.	43	8"	
Reap III	Oct 25, 1913	I	L.C.	C.W. H.P.	51	13"	
Reap I	Nov. 8. 1913	IV	L.C.	C.W.	20	13	rejected hazy cld.
Reap I	Dec 1, 1913	IV	L.C.	H.P.	32	13"	
Reap III	Dec 7, 1913	I	L.C.	R.H.S.	19	13'	
Dis. III	June 11, 1914	I	L.C.	H.P.	114	13"	
Dis I	June 24, 1914	II	L.C.	H.P.	86	13"	
Dis I	July 10, 1914	III	L.C.	H.P.	36	13"	
Dis IV	July 16, 1914	II	L.C.	H.P.	144	13"	
Dis II	July 20, 1914	I	L.C.	H.P.	64	13"	
Dis III	" 24 "	I	L.C.	H.P.	113	13"	
Dis I	" 26 "	II	L.C.	H.P.	44	13"	
Dis IV	Aug 2 "	I	L.C.	H.P.	78	13"	
Dis I	" 2 "	II	L.C.	H.P.	53	13"	
R. II	" 14 "	I	L.C.	H.P.	5	13"	
R I	" 18 "	III	L.C.	H.P.	48	13"	
R IV	" 19 "	II	L.C.	H.P.	72	13"	
R I	" 20 "	IV	L.C.	H.P.	50	13"	
R III	" 22 "	I	L.C.	H.P.	70	13.	
R I	" 27 "	II	L.C.	H.P.	53	13'	
R [illegible]	" 29 "	I	L.C.	H.P.	80	13	

KA 11365.767

HARV
UNIVER
LIBRARY
JUL 17 1958

Wed. Sept. 17, 1913

Exper with double image phot.

L.C.B.

Double S.p. - S Cor Aust.

P&a

332.4 78.4
508 77.8
9 50 1538 156.2 0.45
281.6

0.475

334.8 77.6
9 53 52.4 76.4
155.4 154.0 0.50
231.8

Reversed L & B.

Mean = 0.260

330.8
10 15 59.4 88.6
147.6 89.6
237.2 178.2 0.03

0.045

329.8 89.6
59.4 87.0
10 18 151.2 176.6 0.06
238.2

Sept 17, 1913

Exper, Gibbon Jup's ~~Sattellites~~ Sats I & II

10 30	154.8)	81.0	
	235.8	79.9	160.9
	336.7)	~~67~~	163.9
	56.6	84.0	167.4
	153.3)	83.4	168.0
	237.3		170.4
	332.4)		
	55.8		
	149.8)	84.6	
	234.4	85.8	
	330.6)		
10 33	56.4		

Thurs. Sept 18, 1913.

LC
Phot.

191033 RY Sagitt.
2152
2x2

Too far apart to measure

Jupiter's ~~Sattellite~~ LC Obs.
II with IV
Clw. Rec

10 24.30.5	94.9	63.7	129.8	63.7	
" 25 1.5	158.6	66.1	133.4	67.3	
" 25 24.0	92.5	67.3	129.9	131.0	0.96
" 25 41.0	159.8	62.6	126.2		
" 25 58.8	97.2	63.6	127.6		
" 26.19.0	160.8	64.0	128.4	63.6	
" 26 45.0	96.8	64.4	131.4	64.4	
" 27 3.5	161.2	67.0	137.2	128.0	1.02
" ~~27 44.0~~					
" 28 8.8	94.2	70.2	137.2		
" 28 50.0	164.4	67.0	130.6	70.2	
" 29.08.0	97.4	63.6	129.2	63.6	
" 29 22.5	161.0	65.6	130.4	133.8	0.90
" 29 42.5	95.4	64.8	128.4		
" 30 00.5	160.2	63.6	128.4	64.8	
" 30 18.5	96.6	64.8		64.8	
10 30 37.0	161.4			129.6	0.99

1913phae.proj..76BC

Sept 18, 1913

RT Sag. 20 11 39

22 40

2 29 W -45.0

Tues Sept. 23, 1913

Reap. Jup I. L.C. Obs.

Cw. Rec. A

Observed by B&C. Phot.

B&C = 3m 41.0s fast.

Comp with Sat IV (on same side)

4 51 58.0 Susp. 8" Finder
4 52 2.5 Seen.
4 52 42.0 115.6 Sat IV dis.
-3.2 4 53 11.5 24.9 140.5 51.8
26.9
4 53 28.5 31.0 113.6
2.6 4. 53 50.5 37.1 144.6 68.1
54 11.0 48.3 107.5
1.7 54 46.8 51.4 155.8 99.7
55 3.0 50.8 104.4
1.7 55. 19.0 155 2. 98.0
47.2
55 31.0 39.5 108. 0.
2.2 55 47.6 39.3 147. 5. 78.8
1.9 56 1.5 44.4 108. 2.
56 18.0 46.2 152.6 90.6
1.8 56 31.0 46.1 106.4
56 46.0 46.7 152.5 92.8
1.8 57 03.0 46.8 105 8
57 16.2 48.6 152.6 95.4
1.5 57 35.8 51.0 184.0
57 59.8 55.0 155.0 106.0
1.7 58 00.8 50.0 100.0
5~~0~~8 19.5 47.8 150.0 97.8
1.5 58 36.8 52.6 102.2
58 53.0 53.6 154.8 106.2

Sept 23, 1913

	7	59	27.2	48.0	101.2	
-1.8	—	59	43.5	45.2	149.2	93.2
1.6	8.	00	03.0	51.8	104.0	102.6
	—	00	20.6	50.8	155.8	
1.3		00	42.0	58.0	105.0	
		00	53.6	57.0	158.0	115.0
1.4		01	7.2	55.0	101.0	
		01	21.0	54.8	156.0	109.8
1.4		01	36.0	54.8	101.2	
		01	51.2	56.0	156.0	110.8
1.3		02	20.	58.4	100.0	
		02.	44.6	56.2	158.4	114.6
1.3		02.	57.0	57.8	102.2	
		03	19.0	57.8	160.0	115.6
1.4		03	35.5	55.9	102.2	
		03	48.8	54.5	158.1	110.4
1.1		04	00.0	58.6	103.6	122.5
		04	13.0	63.9	162.2	
1.2		04	25.8	61.7	98.3	119.6
		04	39.8	57.2	160.0	
1.3		04	56.0	57.1	102.1	
		05	10.0	56.8	159.2	113.9
1.2		05	22.0	57.6	102.4	
		05	37.0	60.7	160.0	118.3
1.2		05	52.0	61.5	99.3	120.2
1.2		06	09.0	58.7	160.8	
		06	50.0	57.9	102.1	119.1
		07	3.8	61.2	160.0	
		07	15.0	64.5	98.8	

Sept 23, 1913

0.9	8. 07	33.0	673	163.3	131.8
– 1.0	07	45.5	632	96.0	130.5
	08	00.8		159.2.	

Alt. very high & obs. diff.

8" Finder

Tuesday Sept 30/13

9 46 27 Seen.

Reap. Jup I

LC Alt

CW Rec

B&C used = [illegible]

Comp with Sat II.

Sat. reap quite [illegible]

9 45	52.	29.8	LN
46.	14	50.0	
46	~~24~~ 40.	13.6	51.2
46	53.5	64.8	
47	8.8	7.4	61.8
47	21.5	69.2	
47	32.	11.2	62.1
47	48.8	73.3	
48	06	358.8	85.0
48	23	83.8	
48	38	356.0	86.2
48	54	82.2	
49	07	356.0	88.8
49	24	84.8	
49	38	352.2	84.6
49	51	86.8	
50	05	356.0	86.2
50	20	82.2	
50	34	354.8	88.6
50	54	82.4	174.8
51	09	355.8	86.1
51	26	82.4	
52	45	353.6	91.4
53	02.	85.0	178.0
53	25	357.6	88.2
53	38	85.8	
54	11	358.0	86.8 175.0
54	28	84.8	
54	40	357.0	87.8

Sept 30/13.

9	55	01	84.8	
—	55	12	354.8	91.0
—	55	24	85.8	178 8
—	55	32	357.2	88.2
—	55	46	85.4	
—	55	57	357.6	866
—	56	11	84.2	1748
—	56	21	357.4	
—	56	35	83.8	86.4
—	56	47	354.0	932
—	57	02	87.2	179.6
—	57	16	355.2	
—	57	30	87.2	920
—	57	39	352.2	956
—	57	52	87.8	1876
—	58	03	354.0	906
—	58	15	84.6	
—	58	24	354.8	924
—	58	36	87.2	183.0
—	58	52	356.0	
	~~59~~	~~04~~		

9	59	43	24.8	
10	00	03	52.4	27.6
—	00	17	25.2	29.6
—	00	31	524.8	57.2

J. V.

Thursday Oct 16th/13

LCOb
CW Rec

51. 24.0 1. 37.7
52. 13.0 1. 47.0
52. 26.0 1. 37.4
52. 40.0 1. 47.2

L.V.

8: 01 51.
01. 53 Seen ~~Susp seen~~ Susp
02. 17. 70.4

BOC used for times
0m 24.76 slow

Reappearance of Sat I the l.v of Satt III
impossible to compare Sat I with III on
a/c of great distance apart

Reappearance of Satt II, Sat II compared
with Satt I.

~~8 07 33~~ ~~60.8~~
~~8 07 50.~~ ~~60.8~~
8 08 18. 38.4 16.4
08 38 54.8
~~08 52~~ 09.17 37.7 19.7
09 28. 57.4 36.1

L.V.

Rec.

LCOb
CW+AB.

Thursday Oct 16th/13

8:	21 13	Sup	
	21. 14	Seen	
	21. 21	- 33 4.	33.4
	21 37	66.8	39.1
	21 50	27.7	40.1
	22 03.5	67.8	40.1
	22 17	27.7	51.1
	22. 32.	78.8	63.0
	22. 50	15.8	78.2
	23 14.5	94.0	93.0
	23 34	01.0	86.7
	23 53.5	87.7	79.5
	24 09	08.2	80.3
	24 22	88.5	
	24 36	03.3	95.8
	24 49.5	98.8	83.2
	25 08.	06.8	179.0
	25 26.5	90.0	
	25 40	10.0	80.0 ?
	26 01	90.0	
	26 18.5	87.8	
	26 40	07.4	81.0
	27 08.5	88.4	
	27 24	05.4	79.4
	27 52.	84.8	160.4
	28 09	04.3	
	28 22.5	88.0	83.7
	28 36.0	04.1	83.4
	28 52.0	84.5	167.1
	29 03	07.2	

Thursday Oct 16th/13

8. 29 16 = 88.0 80.8
29 28.5 03.4 88.3
29 41 91.7 169.1
29 54.5 04.5
30 09 86.1 81.6
32 07 09.7 74.4
32 21 84.1 156.0
32 34.5 09.8
32 47.0 83.0 73.2
33. ~~05~~ 00.5 10.3 75.7
8 33.13 86.0 148.9

Saturday Oct 25th/13

Reap. Jup. III S.C. Obs. & Recorder
& H.P. Recorder
B&C used,

> = $1^m 53^s$ slow

7 - 26 35 = 2.19.2. S.N.
— 48 2 32.6
27 00 2.20.8
— 13. 2.31.4

Compared with Satt I. B&C

B&C 7. 42 30 Lun = 300.1~~0~~ < Sat I dis.
— — 47 = 3.10.0
43 06 = 300.5~~0~~
— 27 = 3.07.4 1 ? assumed.
— 45 = 3.01.4 —
44 02. = 3 38.2.
— 22 = 2.98.1.
40 = 3 46.4
56 = 2.90.4
45: 11 = 3.49.5
33 = 2 81.8
50 = 3 53.6
46: 04 = 28~~4~~5.4
16 = 3.57.5
30. = 2.79.0
47 = 3.59.2.
47 04 = 2.78.2
19 = 0.1.1

Oct 23, 1913

7. 47. 44 = 2.75.0
59 = 0.2.0
48 14 = 2.79.0
29 = 0.2.1
42. - 2.76.0
58 = 0.2.5
49. 10 = 2.74.8
26 = 0.1.7
41. = 2.76.0
58 = 0 7.~~46~~
50 : 13 = 2.70.7 ~~(?)~~
29 = 0.2.9
43. = 2.72.5
55 = 0.3.2
51 : 12 = 2.77.3
27 = 0.7.5
42 = 2.71.2.
51 58 = 0.4.9
52 13 = 2.70.3
27 = 10.4
54 - 10 = 2.79.2
25 = 3 57.9
40 = 2.73.5
52 = 0.5.9
55 04 = 2.73.0
20 = 6.0
33 = 2.72.2
48 = 6.1
56 32. = 2.73.8
46 = 0.5.0

Nov. 8th, Saturday 1913

P&C used;-   SC Obs at Rec.

7. 58: 09	2 19.0	S.Y.
– 58: 23	2 36.8	
– 58: 39	2 18 8	
– 58: 53	2 35 0	

13" Boyd.

Reappearance of Sat I compared with Satt on same side equals Satt IV

Error of BOC = 3m 10s slow.

8 13 48   Seen

~~Satt [illegible]~~

14 00 = 301.88
14 23 – 307.88
14 42 = 293 0
15 ~~00~~ 22 = 300.0
15 45 – 278.4
16 08 = 290.4
16 23 = 284.2
16 39 = 290.2
17 10   282.0
~~18 03   288.2~~
18 25   287.2
~~18~~ 19. ~~58~~.08   298.4
19 24   290.0
19 40.   282.0
20 12.   292.0
20 31   280.0
~~[illegible]~~

Measures rejected on a/c of so much haze & cloud, Observer was confounded in manipulation of Photometer

Monday Dec 1st, 1913

~~JB~~C

13" Boyden

LC Obs
HP Rec

Reap. of no I Sat.

8	01	51	216.6	L V.
8	02.	13	237. 0	
8	02	28	215.4	
8	02	39	233.6	

Sat I compared with Sat IV

(Sat IV Disag

8 ~~24~~ 05 ~~05~~ 24 seen

24:26		123.8	319
24	43	155.7	345
24:	57	119.2	406
25	10	159.8	427
25	25	117.1	48.3
25	37	165.4	576
25	51	113.8	528
26	05	166.6	553
26	18	111.3	589
26	32	170.2	648
26	51	105.4	636
27	05	169.0	642
27	19	104.8	602
27	29	165.0	600
27	42	105.0	610
27	53.	166.0	620
28	07	104.0	682
28	20	172.2	710
28	33	101.2	726
28	46	173.8	730

Dec. 1, 1913

8	28	59	100.8	709
	29	17	171.7	683
	29	26	103.4	638
	29	38	177.2	788
	29	51	98.4	759
	30	02	174.3	727
	30	19	101.6	71.0
	30	32	172.6	

~~30~~ Too low to continue to advantage

BOC = $5^{m}\ 27.^{s}54$ slow at 8:43 BOC Time

Daily Rate of BOC = $7.^{s}32$ =

Hourly " of " = $0.^{s}305$

13" Boyden

Sun Dec. 7, 1913

Reap Jup. ~~III~~ L.C. Obs.
R.H. Shankie Rec.

Comp with Sat I on same side of Jupiter

B&C. 1131 = 6^m 17^s ~~11.5~~ slow.

~~7 40.13~~	~~114.0~~	
7 41:8	84.8	
41:29	126.0	
41:45	84.8	
42:4	126.0	
44:34	seen	
44:48	84.4	45.6
45:5	130.0	42.8
45:16	87.2	46.6
45:30	133.8	51.0
45:45	82.8	56.0
45:57	138.8	58.8
46.7	80.0	59.4
46.17	139.4	66.2
46.50	73.2	70.4
47.2	143.6	73.5
47.15	70.1	76.7
47.29	146.8	81.0
47.40	65.8	86.2
47.56	152.0	84.0
48.10	68.0	84.2
48.26	152.2	clouds
~~49~~		

41.2
41.2
82.4

< Sat I Dis.

50.30 Jupiter has disappeared in clouds impossible to continue further

Thurs June 11, 1914

13" Boyden.

Dis Jup III L.C.Ob.
140 Rec

Comp with Sat I on same side –

L V BTC –

11 50 14 112.4 10.8

133
11 50 33.2
4 44.2
11 45 49.0

26 123.2

40 113.3 10.4

53 123.7 21.2 – 5.16

Sat I ~~Reap.~~ ~~disappear~~ Disappears

11 51 39 71.4 92.2

114
180
294
11 52 13.5
4 44.2
11 47 29.3

52 01 163.6

29 71.7 92.7
184.9

45 164.4 175.1 +0.09

91
11 53 22.8
4 44.2
11 48 38.6

53 00 72.2 88.2

15 160.4

31 73.0 88.8
~~187.0~~

45 161.8 177.0 – 0.06

57 71.8

89
11 54 22.2
4 44.2
11 49 38.0

54 13 166.0 94.2

32 72.4 92.8
187.0

47 165.2 173.0 +0.13

148
11 57 37.0
4 44.2
11 52 52.8

57 08 72.2

29 166.3 94.1

48 70.0 96.4
190.5

58 03 166.4 169.5 +0.20

June 11th 1914

Disap.
Sat I ~~Reap.~~

12

11 58 22 72.6
171
11 58 47.8 42 164.4 91.8
4 44.2 56 75.8 90.2
11 54 03.6 182.0
59 11 166.0 178.0 + 0.04

26 70.0
193
11 59 48.2 40 166.9 96.9
4 44.2 56 73.7 89.6
11 55 04.0 186.5
12 00 11 163.3 173.5 + 0.12

195 27 72.8
12 00 48.8 42 162.0 89.2
4 44.2 55 72.6 90.4
11 56 04.6 179.6 − 0.01
01 11 163.0

1 20
108
~~1318~~
228 33 71.1
46 165.2 94.1
12 01 57.0
4 44.2 02 07 75.0 90.0 + 0.08
11 57 12.8 184.1
175.9
22 165.0

87 52 76.8 88.4
12 03 21.8 03 15 165.2
4 44.2 32 72.8 92.5
11 58 37.6 180.9 + 0.02
48 165.3 179.1 Unadjusted pencils.

192 06 25 69.8 97.4
12 06 48.0 41 167.2
4 44.2 55 72.3 94.3
12 02 03.8
07 11 166.6 191.7 + 0.22
168.3

171 09 22 70.0
12 09 42.8 36 168.0 98.0
4 44.2 48 72.2 93.9
12 04 58.6
10 05 166.1 191.9 + 0.22
168.1

June 11 1914

Sat I Disappear

			12	10	05	166.1		92.3		
12	5	36.8	12	10	37	73.8	88.4	88.4	180.7	+ 0.01
		58.3			48	162.2	8[illegible].2	86.2	174.6	- 0.10
	6	14.8		11	10	76.0	90.2	90.2	176.4	- 0.07
		31.3			21	166.2	~~[illegible]~~	89.6	179.8	0.00
		43.3			34	76.6	89.6 ~~88.4~~	88.4	178.0	- 0.04
		54.8			44	165.0	88.4 7	92.7	181.1	+ 0.02
	7	06.3			57	72.3	92.1	92.1	184.8	+ 0.09
		18.8		12	09	164.4	~~[illegible]~~	92.6	184.7	+ 0.09
		31.3			22	71.8	91.0	91.0	183.6	+ 0.07
		46.3			39	162.8		89.1	180.1	0.00
	8	0.8			51	73.7	87.5	87.5	176.6	- 0.06
		12.8		13	03	161.2	~~178.8~~	88.9	176.4	- 0.07
		24.3			14	72.3	90.5	90.5	179.4	- 0.01
		35.3			25	162.8		88.4	178.9	- 0.02
		46.8			27	74.4	88.6	88.6	177.0	- 0.06
		58.8			49	163.0	~~179.1~~	87.0	175.6	- 0.08
	9	11.8		14	03	76.0	87.0	88.2	175.2	- 0.09
		24.8			15	164.2	88.2	87.9	176.1	- 0.07
		41.8			37	76.3	91.7	91.7	179.6	- 0.01
		58.3			48	168.0	~~179.9~~	92.0	183.7	+ 0.07
	10	11.3		15	03	76.0	92.0	86.0	178.0	- 0.04
		24.8			15	162.0	86.0	93.7	179.7	- 0.01
		37.3			28	68.3	89.0	89.0	182.7	+ 0.05
		49.8			40	157.3	~~[illegible]~~	79.3	168.3	- 0.22
	11	01.8			52	78.0 :		82.0	161.3	- 0.36
		13.3		16	03	160.0	82.0	78.0	160.0	- 0.38
		23.8			13	82.0	~~8~~84	78.4	156.4	- 0.45
		33.3			22	160.0	~~[illegible]~~	77.6	156.0	- 0.46

June 11, 1914

12	11 44.3 12	16	$\overset{3}{\cancel{2}}$5	82.8	74.2	151.8	−0.54
	56.8		47	157.0	76.0	150.2	0.57
12	08.8		59	81.0	75.0	151.0	0.56
	20.8	17	11	156.0	75.6	150.6	0.56
	32.3		22	80.4	75.2	150.8	0.56
	43.8		34	155.6	74.3	149.5	0.58
	54.3		43	81.3	76.7	151.0	0.56
13	04.3		54	156.0	71.6	148.3	0.61
	15.8	18	06	84.4	66.2	137.8	0.82
	27.3		17	150.6	64.3	130.5	0.97
	39.8		31	86.3	62.4	126.7	1.05
	55.3		48	148.7	60.7	123.1	1.13
14	04.8		58	88.0	59.0	119.7	1.20
	19.8	19	10	147.0	58.2	117.2	1.25
	31.3		21	88.8	57.4	115.6	1.29
	42.3		32	146.2	55.6	113.0	1.35
	53.3		43	90.6	52.7	108.3	1.46
15	03.8		53	143.3	50.0	102.7	1.59
	13.3	20	02	93.3	53.0	103.0	1.58
	22.3		11	146.3	47.4	100.4	1.65
	33.3		24	98.9	39.5	86.9	2.00
			35	138.4	38.4	77.9	2.26
	45.3		52	100.0	37.3	75.7	2.32
	59.3	21	02	137.3	36.9	74.2	2.37
16	12.8	21	14	100.4	33.9	70.8	2.48
	23.8		28	134.3	28.3	62.2	2.78
	36.8		33	106.0	26.4	54.7	3.07
	46.3		40	132.4	25.6	52.0	3.18

June 11 1914

12 16 52.3	12	21	47	106.8	23.2	488	3.33
59.3			55	130.0	19.8	430	3.61
17 06.8		22	03	110.2	17.2	370	3.94
14.8			14	127.4	16.4	336	4.15
24.3			24	111.0	14.3	307	4.35
34.8			32	125.3	11.3	256	4.75
43.8			39	114.0	8.8	201	5.28
51.3			49	122.8	7.8	166	5.70
59.8			59	115.0	6.4	~~6.4~~ 14.2	6.04
18 9.8		23	06	121.4			
18.3			13 suspect.				
			21.5 gone				

BfC 12 31 41.5 = $4^m\ 44.^s2$ fast.

Thod. 18 03 0.0 Thod = $3^m\ 26.^s7$ fast

15 45 Utterly impossible to observe the Roof of III, telescope is too near Zenith!

18 03 00.0
3 26.7
17 59 33.3
3.61
17 59 36.91
5 16 46.33
12 42 50.58
2 4.84
12 40 45.74
14
12 40 45.60
13 48.27
12 26 57.33

12 26 57.33
12 31 41.50
∴ 4 44.2 BfC is fast.

Wed. June 17, 1914

Dis Jup I.

11 10 Very cloudy

11 20 Very cloudy

11 30 No use to watch further
so cloudy.

Thurs June 18, 1914

Dis Jup II L.C.ab.

10 30 to 10 53 } all cldy could not even see Jupiter in telescope.

Wed. June 24, 1914

L.C. Obs
H.O. Rec

13" Boyden

Dis Jup I.
Comp. with Sat. II on
same side & nearest to I.

B+C. 13 00:35 — 76.3

LV

13 01	19	36.6	LV	9.6	
	35	46.2		9.8	
02	59	35.4		19.4	5.36
	22	45.2			
02	51	9.8			
03	15	76.8	67.0		
	45	11.4	65.2		
04	02	76.6	132.2	0.93	

Sat II Dis

~~Sat II~~

04	45	6.7		
05	03	77.4	70.7	
	20	8.0	68.8	
	35	76.8	139.5	0.78
	50	8.6		
06	05	76.6	68.0	
	23	7.9	69.1	
	35	77.0	137.1	0.83
	50	6.8		
07	65	75.3	68.5	
	40	6.2	70.6	
	54	76.8	139.1	0.79

June 24 1914

Jet C	13	08	05	9.2		
			19	28.8	696	
			38	6.6	760	
			53	82.6	1456	0.66
		09	08	6.8		
			25	73.2	664	
			38	8.4	625	
			57	70.9	1289	1.00
		10	15	13.3		
			30	73.0	597	
			53	10.6	61.6	
		11	14	72.2	121.3	
			28	10.8	61.2	
			43	72.0	63.9	
			55	8.2	125.1	1.08
		~~12~~	~~14~~	~~72.1~~		
		14	27	9.6	64.8	
			43	74.4		
			57	10.6	61.2	
		15	16	71.8	126.0	1.06
		15	29	12.4		
			47	68.2	55.8	
			58	11.9	58.1	
		16	12	70.0	113.9	1.33
		16	24	12.8		
			42	71.2	58.4	
			58	10.0	61.2	
		17	16	71.2	119.6	1.20

June 24 1914

B+C

13	17	35	5.4		
		49	77.8	72.4	
	18	04	5.0	74.8	
		18	79.8	147.2	0.63
		27	11.4		
		50	70.3	58.9	
	19	04	10.0	64.2	1.13
		18	74.2	123.1	
		50	8.4		
	20	06	73.2	64.8	
		25	11.2	61.2	
		40	72.4	126.0	1.06
		53	12.2		
	21	09	70.2	58.0	
		30	10.9	64.1	
	22	03	75.0	122.1	1.14
		17	10.8		
		29	69.8	59.0	
		40	12.4	57.8	
		54	70.2	116.8	1.26
	23	10	12.8		
		23	70.0	57.2	
		53	16.8	53.4	
	24	05	70.2	110.6	1.40
		17	18.0		
		31	70.2	52.2	
		45	13.0	53.0	
	25	04	66.0	105.2	1.53

June 24 1914

BTC	13	25	22	12.4				
			32	69.0	56.6			
			49	14.0	56.0			
		26	04	70.0	112.6	1.36		
			23	11.8				
			38	68.0	56.8			
			50	12.8	56.4	1.39		
		27	02	69.2	111.2			
			12	12.9				
			25	70.0	57.1			
			39	13.4	56.6			
			44	70.0	113.7	1.33		
		28	15	10.9				
			32	72.2	61.3			
		29	04	12.2	58.2	1.20		
			18	70.4	119.5			
			31	10.9		59.5	116.6	1.27
			46	68.0	~~57.1~~	57.1	107.8	1.47
			59	17.3	~~45.7~~	50.7	96.4	1.75
		30	11	63.0	~~102.8~~	45.7	87.9	1.97
			22	20.8		42.2	87.5	1.98
			31	66.1	~~42.3~~	45.3	92.2	1.86
			41	19.2		46.9	89.1	1.94
			52	61.4		42.2	80.6	2.18
		31	03	23.0		38.4	72.3	2.43
			15	63.9		33.9	58.7	2.91
			27	28.4		24.8 21.8 ~~17.8~~	46.6	3.43
			40	53.2				

June 24, 1914

β+C 13:31:50 31.4 10.8 406 3.74
32 01 50.2
15.0 gone

Sat. Dis close to limb of Jup.

Obs. diff throughout, and altitude high.

βoC = 4m 22.1s fast

Friday July 10th 1914

Dis Sat I compared with III on opposite side -

L V

~~11 37 21 124.2~~ 58

11 39 09 114.4
11 39 19 124.1
11 39 31 114.8
11 39 38 123.7

P.J.

9.7
8.9
18.6

L.C. Obs.
~~HO~~ Rec

Plot on 13" Boyden

B+C

11 40 16 77.2
38 150.1
56 80.4 Sat III ~~dis~~:
41 12 151.6

29 86.8
46 153.4
42 06 81.6
23 162.6

Readj. images

11 43 27 83.8
37 149.6
53 87.2
44 08 154.0

26 82.0
41 149.2
57 84.4
45 13 149.8

1913phae.proj..76BC

July 10th 1914

BtC	11	45	30	86.2	
			41	150.2	
			57	85.1	
		46	19	145.8	
			34	86.9	
			53	144.8	
		47	09	91.6	
			23	141.2	
			32	98.7	
			40	140.2	
			50	99.9	
		48	03	135.1	
			12	104.2	
			21	128.2	18.4
			34	109.8	11.4
			43	121.2	
	11	48	46.5	gone	

BtC error = $3^m\ 42^s$ fast

Thursday July 16th 1914

Dir. Sat. IV compared with Sat. II on same side & nearer of ~~the two~~.

∠C Clb
H.P. Rec
13" Boyden
D.I. Phot.

B Cursed =
3m 33 faint.

			L.V		
~~11~~	~~22~~	~~16~~	~~36.1~~		
		~~32~~	~~?~~		
11	23	19	27.3	L.V. 7.9	
		29	35.2		
		39	28.3	8.1	
		48	36.4	16.0	5.78
11	27	51	356.3	∠Sat II dis.	
	28	15	67.2	70.9	
		35	355.6	72.6	
		52	68.2	143.5	0.70
11	29	13	355.8		
	30	26	64.8	69.0	
	31	11	172.2	72.2 141.2	0.75
		~~31~~	~~244.4~~		
		42	173.3		
		55	245.2	71.9	
	32	13	171.3	75.3 147.2	0.63
		25	246.6		
		40	171.9		
		54	247.6	75.7	
	33	9	171.2	74.6 150.3	0.57
		21	245.8		

July 16th 1914

11 53	39	170.6		
	54	246.8	76.2	
54	06	169.4	77.4	
	18	246.8	153.6	0.58
	30	173.3		
	42	242.9	69.6	
	56	173.4	70.4	
55	09	243.8	140.0	0.77
	21	171.7		
	33	243.8	72.1	
	46	170.4	76.2	
56	00	246.6	148.3	0.61
	14	171.2		
	27	245.2	74.0	
	38	170.7	70.2	
	57	240.9	144.2	0.69
12 07	18	171.2		
	36	247.2	76.0	
	48	169.8	76.9	
08	05	246.7	152.9	0.52
	19	168.8		
	36	243.7	74.9	
	47	173.1	75.6	0.57
09	02	248.7	150.5	
12 27	35	174.2		
	53	245.2	71.0	
28	11	244.6	70.0	
	29	244.6	141.0	0.75

July 16 1914

12	28	41	174.1		
		55	242.9	68.8	
	29	09	175.8	67.1	
		20	242.9	135.9	0.86
		30	174.8		
		40	246.2	71.4	
		59	171.4	75.4	
	30	12	246.8	146.8	0.64
		34	171.6		
		47	244.8	73.2	
		59	174.6	68.4	
	31	12	243.0	141.6	074
	38	37	174.2		
		54	243.1	68.9	
	39	12	174.8	71.6	
		28	246.4	140.5	0.76
		41	173.3		
		56	245.8	72.5	
	40	09	174.4	69.0	
		20	243.4	141.5	0-74
	47	32	174.8		
		45	242.7	67.9	
		58	173.3	69.9	
	48	13	243.2	137.8	082
		27	173.2		
		37	241.4	68.2	
	49	01	174.4	68.6	
		14	243.0	136.8	084

July 16th 1914

12	51	17	173.6			
		32	241.8	68.2		
		45	175.5	68.5	1367	0.84
		57	244.0			
	52	29	174.4	69.6		
		41	244.0	67.9	137.5	0.82
		52	176.1	68.5	136.4	0.85
	53	08	244.6	68.3	136.8	0.84
	56	33	176.3	66.7	135.0	0.88
		57	243.0	67.8	134.5	0.89
	57	05	175.2	71.0	138.8	0.80
		19	246.2	69.9	140.9	0.76
		34	176.3	68.7	138.6	0.80
		48	245.0	70.6	139.3	0.79
	58	03	174.4	68.4	139.0	0.79
		16	242.8	69.2	137.6	0.82
13	01	23	173.6	66.2	135.4	0.87
		40	239.8	62.0	128.2	1.02
		53	177.8	61.4	123.4	1.12
	02	11	239.2	58.5	119.9	1.19
		29	180.7	59.3	117.8	1.24
		41	240.0	57.8	117.1	1.26
		50	182.2	55.1	112.9	1.35
	03	02	237.3	53.5	108.6	1.45
		11	183.8	51.0	104.5	1.55
		19	234.8	51.5	10.25	1.60
		31	183.3	51.7	103.2	1.58
		42	235.0	50.2	101.9	1.61

July 16th 1914

,13	03	53	184.8	50.2	100.4	165
	04	06	235.0	46.8	97[illegible]	173
		16	188.2	44.8	91.6	187
		25	233.0	44.4	89.2	1.94
		35	188.6	45.2	89.6	1.92
		47	233.8	45.8	91.0	1.89
		59	188.0	43.1	88.9	1.94
	05	09	231.1	41.9	85.0 83.1	2.05
		19	189.2	41.2	81.5	2.10
		30	230.4	40.3	80.2	2.15
		40	190.7	39.9	79.1	2.19
		51	230.0	39.2	77.2	2.22
	06	00	190.8	38.0	76.2	2.28
		15	228.8	38.2	77.6	2.31
		24	190.6	39.4	~~7~~	2.27
		35	230.0	37.8	77.2	2.28
		56	192.2	35.5	73.3	2.40
	07	07	227.7	34.3	69.8	2.51
		20	193.4	31.8	66.1	2.64
		31	225.2	28.8	60.6	2.84
		40	196.4	28.0	58.8	2.91
		52	224.4	28.6	56.6	2.99
	08	01	195.8	27.4	56.0	3.02
		11	223.2	26.4	53.8	3.11
		19	196.8	25.6	52.0	3.18
		31	222.4	24.5	50.1	3.27
		42	197.9	25.1	49.6	3.29
		56	223.0	24.8	49.9	3.28

July 16th 1914

13	09	06	198.2	21.9	46.7	3.42
		17	220.1	19.7	41.6	3.68
		29	200.4	17.8	37.6	3.91
		41	218.2	16.4	34.2	4.11
		50	201.8	17.2	33.6	4.15
		59	219.0	15.6	32.8	4.21
	10	08	203.4	17.8	28.4	4.52
		17	216.2			
13	10	27	gone			

At close, telescope pointed very close to zenith, making observations rather difficult.

Monday July 20th 1914

13" Boyden — L. C. Obs
H. P. Rec

Dis of Sat II compared with Sat I on same side.

∠V

BOC	10 30 06	356.2	∠V	
	19	9.8		
	34	355.6		
	44	9.4		

---

10 31 03	324.8	∠ Sat I dir.
19	40.0	
30	324.8	
40	43.2	
52	322.0	
32 03	38.7	
37	322.8	
56	42.0	
33 09	322.8	
33	42.8	
46	327.2	
58	40.4	
34 08	326.2	
20	37.4	
57	327.2	
35 07	38.4	
18	324.4	
36 08	38.4	
11	324.2	
21	38.6	

July 20, 1914

10	36	31	330.0	
		42	36.2	
		52	325.8	
	37	05	36.0	
		17	324.7	
		28	28.8	
		39	328.0	
		49.	40.0	
	38	02	325.8	Sat I dis-
		15	40.0	
		28	324.8	
		45	38.8	
	39	01	320.8	
		12	43.3	
		29	323.6	
		41	40.4	
		53	324.4	
	40	02	40.4	
		13	327.4	
		22	36.6	
		37	327.8	
		48	35.2	
		59	330.6	
	41	08	35.2	
		17	333.3	
		29.	30.4	
		37	334.8	
		47	32.2	

July 20, 1914

10	41	57	339.2	
	42	06	26.6	
		13	340.8	
		20	24.6	
		27	342.8	
		33	19.4	
		42	345.5	
		50	17.6	
		59	349.2	
	43	08	14.8	21.5
		19	353.3	~~19~~ 15.1
		26	8.4	
		30.2	gone	

Sky clear

B&C = 3^m 26^s fast.

Friday July 24th 1914

~~C. Ob~~ H. P. Rec. 13" Boyden
D. S. Phot.

Dis. Jup III conj with Sat. I
on same side

BoC
used
m 2
= 3 18
fast.

~~11~~	~~56~~	~~50~~	~~294.4~~		
11	57	13	275.8	L.V 17.5	
		20	293.3	17.6	
		29	276.6		
〃		37	294.2	35.1	406
~~11~~	~~58~~	~~02~~	~~325.8~~		
11	58	23	238.2		
〃	〃	39	324.6	< Sat I dis. 86.4	
		49	242.5	81.7	
	59	02	324.2	168.1	0.22
		15	243.6		
〃	〃	29	322.4	78.8	
		42	244.2	80.4	
		55	324.6	159.2	0.40
12	00	09	240.8	87.8	
〃	〃	34	328.6	83.9	
		50	248.8	171.7	0.16
	01	02	324.7		
		19	236.8	87.0	
〃	〃	34	323.8	82.9	
		47	239.8	169.9	0.19
	02	02	322.7		
		23	239.3		
〃	〃	26	327.8	88.5	
		40	240.0	84.2	
〃		52	324.2	172.7	0.14

July 25th 1914

12	03	03	239.8		
		15	323.6	83.8	
		27	242.8	80.4	
		38	323.2	164.2	0.30
		49	240.8		
		59	323.7	82.9	
	04	09	244.4	75.4	
		21	319.8	158.3	0.41
		32	247.7		
		43	322.0	74.3	
		54	241.0	87.9	
	05	06	328.9	162.2	0.34
		21	248.5		
		31	326.0	77.5	
		43	247.8	74.4	
		54	322.2	151.9	0.54
	06	04	249.5		
		18	320.8	71.3	
		32	248.8	75.2	
		50	324.0	146.5	0.64
	07	02	248.0		
		34	320.4	72.4	
		46	246.0	77.3	
		58	323.3	149.7	0.58
	08	12	248.0		
		26	324.2	76.2	
		36	246.2	74.3	
		49	320.5	150.5	0.57

July 24th 1914

12	09	00	246.4			
		14	326.2	79.8		
		28	244.8	81.6		
		43	326.4	161.4	0.35	
		57	246.0			
	10	05	323.7	77.7		
		25	239.0	90.2		
		43	329.2	167.9	0.23	
		57	247.2			
	11	14	327.0	79.8		
		46	240.8	84.0		
		58	324.8	163.8	0.31	
	12	10	240.4	87.4		
		24	327.8	~~86.9~~		
		40	240.9	88.5	175.9 = 0.08	
		53	329.4	~~88.8~~		
	13	06	243.6	82.4		
		17	326.0	~~81.2~~		
		27	244.8	81.2	163.6	0.31
		38	326.0	~~81.8~~		
		53	244.2	78.0	$\boxed{155.8}$	0.46
		08	322.2	77.8	157.2	0.43
		18	244.4	79.4	155.4	0.47
		37	323.8	76.0	145.9	0.66
		13	247.8	69.9	139.8	0.78
		24	317.7	69.9	140.9	0.76
		37	247.8	71.0	140.2	0.77
		47	318.8	69.2	134.8	0.88

July 24th 1914

12	15	57	249.6	65.6	130.8	.096
	16	08	315.2	65.2	133.0	.092
		17	250.0	67.8	133.8	.090
		28	317.8	66.0	131.4	.095
		38	251.8	65.4	131.1	.096
		49	317.2	65.7	128.4	1.01
		59	251.5	62.7	123.6	1.11
	17	10	314.2	60.9	122.3	1.14
		21	253.3	61.4	121.7	1.16
		31	314.7	60.3	118.1	1.23
		39	~~8~~254.4	54.8	111.3	1.39
		48	312.2	~~46.6~~ 53.5	106.6	1.50
		58	258.7	~~53.1~~ ~~46.7~~ 53.1	104.9	1.54
	18	06	311.8	51.8	97.6	1.72
		15	260.0	45.8	89.4	1.93
		22	305.8	43.6	85.8	2.03
		31	262.2	42.2	81.4	2.15
		39	304.4	39.2	77.3	2.28
		49	265.2	38.1	75.2	2.34
		57	303.3	37.1	73.1	2.41
	19	09	266.2	36.0	71.6	2.45
		18	302.2	35.6	68.8	2.55
		27	266.6	33.2	64.6	2.69
		36	299.8	31.4	61.4	2.81
		45	268.4	30.0	58.4	2.92

July 24, 1914

12	19	54	298.4	28.4	54.8	3.07
	20	02	270.0	26.4	50.6	3.24
		10	296.4	24.2	48.0	3.36
		17	272.2	23.8	46.0	3.51
		25	296.0	21.2	38.6	3.85
		32	274.8	17.4	32.4	4.23
		39	292.2	15.0		
		47	277.2			
12	20	53.6	gone			

July 26th — 1914

Dis Jup. I.

Com. with Sat II.

H. O. Roe

9	55	50	73.8
"	56	07	136.4
		20	74.8
	"	34	148.0
9	" 56	47	75.2
	57	05	150.0
		20	73.3
		31	150.6
		46	77.2
	58	00	151.2
		12	73.4
		24	141.6
		~~27~~ 37	77.2
		50	142.4
	59	02	79.8
		14	145.2
		28	76.3
		41	144.2
		55	78.3
10	00	05	138.6
		21	79.8
		33	138.8
		48	78.0
	01	02	142.2
		15	78.3
		27	145.0
		42	78.3
		56	136.8

✓

July 26th 1914

10	02	08	82.8	
		20	137.4	
		48	78.3	
	03	13	142.8	
		28	79.4	
		45	132.2	
		58	90.2	
	04	11	130.4	
		35	93.2	
		55	1~~8~~29.3	
	05	13	101.0	
		23	122.2	
		~~1~~36	115.0	
10	06	07	99.2	LN.
		27	118.8	
		38	100.2	
		49	119.4	

Obs. very diff. due ~~to~~ large distance apart of ~~satellites~~ & closeness of I to limb of Jup.

R A C used = 3m 14s fast

C for C

Sunday Aug 2nd 1914

LC Obs WB Rec.

3" Boyden

Dis Jup IV

6	52	27	260.2
		50	307.4
	53	17	263.2
		26	306.8
		58	260.8
	54	20	308.4
		38	266.1
		35	305.2
	55	10	262.8
		28	306.6
		48	264.2
	56	04	307.3
		21	264.0
		40	308.2
		38	262.6
	57	17	308.0
		38	260.8
		56	305.3
	59	06	261.0
		21	309.5
		41	260.8
		57	309.2
7	00	44	260.4
	01	05	310.8

< Comp with Sat I: Sat I disappears. or wasn't it really Sat II.

Comp Sat. now appears as a double

Could I or ~~could~~ II have reap. from shad or eclipse

Aug 2nd 1914

Comp sat. = nearer of the two ~~satellites~~ to IV & on same side –

~~7 01 01 147.2~~

7	07 ~~16~~ ~~01~~	20	75.2	< Sat I disappear
		36	146.8	
	08 ~~7~~ ~~02~~	50	70.9	
		65	144.2	
		22	73.2	
		35	144.3	
	09 ~~8~~ ~~03~~	52	72.8	
		05	139.8	
		21	70.4	
		34	138.8	
		49	79.8	
	10 ~~09~~	03	135.2	
		15	80.8	
		26	134.0	
		37	85.8	
		49	134.2	
	11	03	83.3	
		13	137.0	
		27	83.4	
		42	132.2	
		55	85.8	
	12	07	132.0	
		19	88.0	
		30	130.0	

Aug 2nd 1914

7	12	44	90.6
		56	128.4
	13	09	92.2
		28	128.0
		42	91.8
		52	127.7
	14	03	90.8
		13	122.3
		22	92.4
		34	120.6
		45	96.9
		54	121.2
	15	03	98.2
		13	116.4
		24	109.8
		33	119.8
		44	98.0
		53	116.2
	16	05	100.0
		12	118.4
		21	108.0
		29	116.3
		42	102.0
		52	115.0
	17	03	106.2
		065	gone

Aug 2nd 1914

7	17	26	98.8	L. ✓
		40	118.8	
		53	102.0	
	18	02	113.3	
		41	235.3 ~~57.3~~	Meas of Sats II with I
	19	04	152.2	
		20	235.2	Sat II made to dis,
		35	157.3	
		48	232.8	
	20	00	155.0	
		11	233.0	
		21	149.8	
		32	238.4	
		48	153.0	
		59	233.2	
	21	11	151.0	
		24	236.8	
		33	153.0	
		47	233.8	
	22	07	154.8	

Sat I = nearer to planet
Sat II = more dist from planet on same side as I.

Sat III is on opposite side

Aug 2nd 1914

LC Obs HB Rec 13" Boyden

Dis Sat I comp with II on same side:

11 45	15	152.2	
	30	232.2	
	46	168.8	Sat II Dis.
46	01	231.8	
	19	267.6	
	38	231.4	
	52	164.2	
47	08	228.6	
	23	164.9	
	37	232.5	
	50	166.9	
48	05	229.2	
	20	170.4	
49	27	224.8	
	30	168.4	
	44	230.2	
	57	169.8	
50	12	229.8	
	27	170.8	
	52	226.4	
51	02	169.2	
	14	227.2	
	25	169.8	
	34	229.1	
	45	170.3	
	56	224.6	
52	08	170.8	
	18	226.2	
	29	170.4	

Aug 2nd 1914

11	52	39	224.8
		53	168.4
	53	03	224.6
		15	133.4
		25	223.6
		36	174.8
		48	225.2
		59	173.0
	54	11	222.2
		26	176.0
		39	224.3
		51	171.8
	55	02	224.0
		13	172.3
		28	227.0
		42	174.8
		53	226.2
	56	03	173.9
		15	224.0
		26	175.8
		38	2$\overset{2}{7}$3.0
		47	178.0
		58	223.8
	57	14	175.2
		27	228.0
		45	179.3
	58	04	228.0
		17	178.4

Aug 2nd 1914

11 5~~8~~9 19 221.8
37 185.8
49 210.8
12 00 07.0 gone

~~12 00 11.0 — 190.8~~
01 ~~22~~27 189.6
02 01.0 206.6
17 188.4

---

33 204.0

Sat I dis Very close to limb of Jup. making Obs very diff. & somewhat uncertain. Distance between I & III very great.

Sat. Aug. 8, 1914.

D.S. Phot on 13" (2" eyepiece) A.C.C.

−26°9905 # 133926

Var comp with star σ of sequence.

~~71.~~ Index Right & Below

8 14 08 203.9 < Var dis.
251.8
20.6
78.4

47.9
57.8
105.7 − 1.52

200.4
254.4
20.8
74.2

56.0
53.4
107.4 − 1.48

−1.50

Index left & above

111.6
163.0
291.4
345.8

57.4
54.4
105.8 − 1.52

Mean = −1.515

114.2
8 20 20 163.7
8 17 10 290.0
345.4

49.5
55.4
104.9 − 1.54

−1.53

Aug 8, 1914

Same again.

Index above

260
8 35 70.5 44.5
204.8 42.6
247.4 87.1 – 1.99

27.4 2.045
69.8 42.4
205.7 41.0
246.7 83.4 – 2.10

Index Below mean = –1.985

294.0
339.0 45.0
112.2 49.5
161.7 94.5 1.80

296.2 1.925
8 44 335.0 38.8
111.8 46.2
8 39.5 158.0 85.0 2.05

Ch. bothered, stars would not remain in center of field.

Aug 8, 1914

Same again

Index Below

~~3490~~

288.4

344.2 55.8

54.1

9 06 110.4 109.9 – 1.42

164.5

1.39

291.1

346.1 55.0

108.8 57.5

166.3 112.5 – 1.36

Reversed. mean = – 1.442

Index above

18.4

70.8 52.4

199.4 56.6

256.0 109.0 – 1.44

23.3 1.495

74.4 51.1

9 11 200.8 53.4

9 08.5 254.2 104.5 – 1.55

Aug 8, 1914

Index above   Same again.
HP. Rec.

9 20
21.7
68.4   46.7
~~200.59~~
205.9   44.0
249.9   90.7 −1.90

23.8
72.4   48.6 −1.73
200.3   55.2
255.5   103.8 −1.56

Reversed Index below   Mean = −1.745

111.5
~~9 26~~
160.0   48.5
289.5   50.0
339.5   98.5 −1.69

117.0
9 26
162.2   45.2   −1.76
294.3   47.9
342.2   93.1 −1.83

Above 4 groups ~~setting~~ only approximated.
Meas. difference between var & * σ
appear too little, var is surely
more than 1.7 mags. brighter than
star σ, which star is = to mag 11.3±

Aug 8, 1914

Meas. of * O with l
Index.

Too low
& bright moon

Revised
Index

Fri Aug. 14, 1914

13" Boyden L.C. Obs.
D.S. Pilot. W.P. Rec.

Reap. Jup. II. comp with Sat I on
opposite side.

10 37 44 345.8
32 50 351.2
10 346.3
24 357.7
} L.V.

Bo C

10 36 08 susp.
13 sem
25 05.6

Sat II reap very close to Jup
with comparison sat. so
far off & on opposite side
of Jup. it is impossible
to make satisfactory setting
Also Jup. near Zenith.
L.C.

Tues. Aug 18, 1914.

13" Boyden D.S. Pilot. L.E. Cells
Reaf. Ref. I W.O. Rec
Comp. ~~North~~ South III on same side.

ROC used = fast

~~12~~	~~28~~	~~31.0~~	~~193.4~~	
	29	30 04	191.3	L.V.
		41	193.4	
		56	190.0	
12	30	11	194.6	
12	33	49	seen	
12	33	54	165.4	
	34	10	201.6	
		24	162.6	
		36	206.6	
		52.	160.8	
	35	06	212.9	
		21	155.9	
		31.	207.4	
		57	155.6	
	36	01	212.5	
		15	155.2	
		30.	212.4	
		43	157.6	

Aug 18 1914

12	37	01	208.4
		17	156.6
		30	210.0
		46	153.0
		59	213.6
	38	27	166.0
		42	213.8
	39	04	151.2
		22	212.0
		43	150.0
	40	00	216.2
		23	149.6
	41	50	217.5
	42	09	145.1
		29	221.8
		48	142.2
	43	05	224.8
		21	142.2
		35	221.3
		50	142.2
	44	07	224.6
		24	141.1
		39	223.1
		55	140.0
	45	12	220.8
		28	142.3
		45	220.7
	46	02	142.0

Aug 18 1914

12	46	20	222.4
		36	144.2
		51	220.0
	47	07	142.6
	47	33	223.1

Sats I & III very close together making obs. very difficult especially at start of reappearance.

Wed Aug 19 1914

13" Boyden D S Phot.

LC Obs
WP Rec

Reap. of Jupt. IV
Compared with Satt. II on same side & nearer
B+C

6	12	01.0	seen
6	12	30	341.4
		45	24.2
		56	345.2
	13	07	28.4
		19	342.0
		30	27.6
		42	341.5
		55	31.2
	14	05	345.0
		18	27.2
		28	339.6
		41	29.8
		53	338.8
	15	06	32.0
6	15	18	340.0
		28	30.2
		39	333.8
		56	32.0
	16	08	334.0
		21	26.8
		33	337.9
		48	29.8

C

Sat II dis.

6	31	34	349.8
		46	16.2
	32	03	351.2
		18	12.5

L.V.

Aug 19 1914

6	17	00	337.8
		16	32.6
		28	338.0
		39	34.7
		56	333.6
	18	14	34.4
		29	329.8
		~~48~~	37.4
	19	04	333.0
		20	38.4
		31	331.0
		44	32.6
	20	03	330.7
		16	34.2
		41	334.4
		52	35.2
	21	04	330.6
		15	35.8
		30	325.8
		41	41.6
		50	330.4
	22	03	39.2
		12	334.8
		24	35.6
		~~43~~	~~36.4~~
		53	327.5
	23	07	38.6
		50	330.5

Aug 19 1914

6	24	00	38.4
		10	328.7
		20	40.6
		32	328.4
		41	38.2
		51	328.3
	25	03	38.4
		15	327.3
		29	40.0
		39	329.6
		53	40.0
	26	02	328.2
		12	35.6
		23	333.0
		36	40.2
		46	332.3
	27	00	37.5
		13	326.4
		23	37.2
	28	01	335.6
		14	36.6

Ob. very diff. at first as Jup IV reap. very close to Jup II.

Thurs Aug 20 1914

Reag. WP Rec. LL Obs

~~Disap.~~ I compared with ~~IV on~~ same side

7 02 7 02' oo ~~suspected~~

05 seen

17 350.8 A.S. Phot.

29 26.3 (Sat. IV disag

39 352.7

53 31.2

03 ~~12~~ 25 351.1

39 38.4

52 340.6

04 03 47.6

20 338.4

34 46.4

44 330.2

58 54.6

05 12 331.3

32 57.0

7 06 02 336.4

18 50.8

31 334.6

42 49.6

57 336.6

07 11 46.2

24 332.6

36 51.0

47 333.0

08 02 50.8

14 334.6

25 50.1

Aug 20 1914

7	08	36	335.5	
		50	55.1	
	09	01	334.8	
		14	55.4	
		28	334.6	
		41	56.3	
		53	335.4	
	10	04	54.2	
		16	334.3	
		25	54.4	
		36	335.1	
		47	57.9	
		58	337.2	
	11	10	57.8	
		23	334.3	
		33	52.2	
	12	02	332.4	
		17	56.2	
		28	336.1	
		39	55.6	
		~~01~~		
	13	01	02.6	
		10	25.2	L.V
		19	05.4	
		26	20.8	

Distance apart very great making observations very difficult

Sat. Aug 22nd, 1914

S. Phot. 13" Boyden

LC ~~Rec~~ Obs ~~HP~~ Rec.

Reap. of Sat III Compared with Sat I on same side & nearer.

7	43	30.0	98.6	L. V.
		44.	110.0	
		54	99.8	
	44	07	112.1	
7	53	33	[illegible]	
7.	53	38.5	[illegible]	
		49	113.6	
	54	07	90.4	
		20	116.4	
		28	95.2	
		38	118.4	
		48	91.3	
		57	122.4	
	55	05	84.6	
		15	127.4	
		22	82.2	
		32	129.8	
		41	80.0	
		51	130.2	
	56	02	79.6	
		12	133.0	
		21	76.6	
		31	136.9	
		41.	68.6	
		53	138.2	
	57	04	68.0.	
		15	144.7	

V C used =

Aug 22, 1914.

7	57	25	68.2
		37	140.6
		49	58.0
	58	00	141.3
		11	66.2
		25	141.5
		34	67.4
		48	145.2
	59	16	60.4
		27	145.0
		36	64.3
		48	141.7
		57	63.7
8	00	10	143.4
		21	60.2
		32	146.3
	01	02	60.4
		15	146.2
		35	~~239.4~~ 59.4
		44	329.0
	02	02	50.0
		14	151.2
		24	238.4
		38	333.0
		48	56.0
		58	153.0
	03	12	239.8
		24	331.0

Aug 22 1914

8	03	35	55.0
		48	156.2
		59	237.3
	04	11	334.2
		22	59 2
		33	155.0
		43	237.8
		57	332.0
	05	07	56.2
		19	147.3
		28	237.0
		40	331.2
		50	08.4
	06	02	150 0
		18	237.9
		31	333.6
		~~44~~	~~55.9~~

Thur. Aug. 27, 1914

13" Boyden D.S. Plot. L.C. Obs.
W.P. Rec.

Reoff. Jup. I. comp ~~with~~ Sat II the nearer on opposite side

Sat C

~~8~~	~~53~~	~~08~~	~~17.4~~	
8	53	22	4.3	S.V.
		39	14.9	
		47	4.8	
		56	14.7	
8	56	29	Clam	
		34.5	173.7	Sat II Dis.
		52	208.3	
	57	03	171.2	
		14	208.0	
		25	165.2	
		36	215.3	
		48	161.8	
		58	213.9	
	58	07	159.6	
		18	216.6	
		29	161.4	
		39	216.8	
		51	152.7	
	59	04	220.9	
		17	156.2	
		30	226.3	

Aug 27 1914

8	59	45	153.7
		59	228.8
9	00	10	149.6
		21	230.4
		34	151.7
		52	224.6
	01	06	151.7
		19	229.6
		28	149.8
		43	228.9
		54	152.2
	02	06	227.2
		18	156.0
		32	228.0
		47	153.0
		56	231.0
	03	07	151.4
		20	230.8
		33	152.2
		41	228.2
		53	157.2
	04	05	230.4
		17	154.8
		28	232.1
		36	153.7
		46	232.4
		55	154.0
	05	06	233.2

Aug 27 1914

9	05	15	154.4
		26	133.3
		37	154.8
		45	231.4

Obs. difficult on account of large separation of Satt's.

Sat Aug 29 1914

13'' Boyden D. S. Phot.

L C Clk
K Pee

Obs. of Satt III compared with I the nearer of two on same side

B&C

11	55	13	sec
		31	289.2
		47	257.8
		58	292.4
	56	08	257.2
		18	297.4
		26	254.2
		36	299.8
		48	256.0
	57	01	300.0
		10	251.0
		20	303.7
		29	250.0
		41	303.6
		50	242.9
	58	01	307.2
		12	246.4
		23	307.2
		33	240.6
		43	309.8
		53	242.1
	59	04	310.4
		17	238.2
		27	309.7
		36	238.8
		45	310.4

Aug 29 1914

11	59	56	237.7
12	00	08	314.8
		19	236.4
		30	313.2
		45	239.7
		59	314.2
	01	11	237.2
		26	313.2
		39	238.4
	02	01	311.3
		17	237.4
		29	311.4
		43	233.2
		59	315.6
	03	11	238.8
		23	312.4
		37	241.6
		55	314.8
	04	37	240.4
		53	315.6
	05	10	61.8
		22	136.4
		37	245.2
		49	319.6
	06	02	60.3
		14	137.8

Aug 29 1914

12	06	28	240.2
		41	318.0
		57	56 9
	07	12	1352
		28	238.4
		41	320.0
		54	57.8
	08	10	136.4
		22	242.2
		33	322.2
		48	64.0
	09	00	139.0
		14	244.0
		23	320.2
		36	63.3
		48	136.6
	10	02	242.4
		12	3205
		26	58.2
		37	136.2
		50	243.6
	11	03	324.0
		19	62.7
		31	139.2
		~~[illegible]~~	~~107.3~~
12	12	19	92.4
		30	109.2
		42	93.5
12	12	53	108.0

L.V.

Sat. ~~Au~~ Sept 12th 1914

D.S. Phot. A.C.Obs 1/6 Rec

13" Boyden.

Reap Sat I compared with Sat IV, nearer of ~~two~~ Sats on same scale.

7	11	31	211.0	L.V
		47	235.2	
		57	210.6	
		07	232.6	
7	14	27.0	seen	
		37.0	-234.2	< Sat IV dis.
		50	204.0	
	15	02	247.6	
		12	197.3	
		23	252.2	
		32	191.6	
		44	260.7	
		55	189.4	
	16	06	263.6	
		17	182.6	
		29	263.0	
		38	181.2	
		48	267.4	
		57	176.3	
	17	08	268.3	
		19	179.2	
		29	272.2	
		40	175.6	
		50	273.2	
	18	00	173.6	

Sept 12 1914

7	18	11	273.8
		21	180.6
		32	274.2
		44	173.3
		54	276.8
7	19	08	172.4
		23	278.2
		33	174.0
		47	272.4
		57	175.8
	20 ~~18~~	09	259.8
		18	171.6
		28	272.6
		37	175.0
		47	275.3
		57	169.8
	21 ~~19~~	10	271.4
		21	174.8
		30	275.2
		39	173.8
		48	279.2
	22	02	170.6
		13	277.0
		24	171.6
		34	273.2

Sept 12 . 1914

7	22	46	176.0
	~~23~~	58	276.2
	23	08	174.3
		19	272.2
		30	174.8
		45	272.0
		55	173.6
	24	06	272.4
		19	175.8
		29	275.0
		39	176.0
		51	277.2

C

Tuesday Sept 15 1914

J.S. Phot. 13" Boyden LCBk WP Rec
Reap. of Satt. II compared with Satt III on same side

BTC	10	13	57	306.3	L.V
			04	317.4	
			15	307.6	
			26	319.1	

10	18	35.0	seen
	18	40.7	312.4
		53.0	309.2
	19	07.	321.8
		19.	304.4
		29	322.8
		39	299.4
		50	327.8
		58	297.7
	20	18	329.6
		30	297.0
		44	328.6
		59	292.0
	21	.11	341.2
		22	288.6
		36	338.0
		48	288.2
		59	339.8

Sept 15 1914

10	22	14.	290.2
		32	340.8
	23	04	287.4
		31	340.0
	24	27	288.2
		39	340.0
		52	290.0
	25	37	337.4
		49	288.6
		59	343.3
	26	12	288.0
		26	240.8
		37	292.0
		47	338.0
	27	02	293.0
		54	339.0
	28	12	295.2
		35	339.8
	29	06	112.2
	30	45	160.0
	31	02	289.2
		17	339.8
		37	110.8
		50	156.0
	32	06	288.2
		18	342.0
		32	108.8
		42	160.2

Sept 15 1914

10	33	58	289.4
	34	09	338.3
		26	110.4
		37	157.8
		55	291.2
	35	08	337.8
		22	111.6
		37	160.2

C

~~Saturday~~ Sept 26th 1914

D.S. Phot 13" Boyden L.C. Obs W.C. Rec

B+C used Reap. of Jup I compared with sat II the nearer on same side

~~10~~	~~57~~	~~33~~	~~138.6~~	
10	57	47	129.2	L.V.
		58	140.0	
	58	07	131.2	
		15	139.8	
11	04	16	132.8	
		33	125.0	
		40	143.2	
		48	122.2	
		57	145.8	
	05	65	119.8	
		13	147.9	
		21	116.0	
		29	151.4	
		38	113.3	
		47	166.9	
		58	104.8	
	06	08	157.3	
		20	105.2	
		29	160.4	
		37	103.0	
		45	160.8	
		54	100.2	
	07	06	162.9	
		21	97.4	

Sat Sept 26 1914

11	07	31	164.3
		39	101.8
		53	165.2
	08	04	98.3
		17	163.8
		29	99.4
		38	164.3
		48	100.0
		57	165.2
	09	08	98.4
		27	164.8
		39	96.2
		49	163.3
	10	02	98.2
		15	163.4
		26	97.5
		40	163.6
		50	98.3
	11	04	164.2
		13	100.1
		26	165.2
		35	107.4
		58	165.2
	12	06	101.1
		19	164.4
		44	99.3
	13	00	163.3
		45	97.7
		56	161.2

Sat. Sept 26th 1914

11	14	05	101.1
		16	162.2
		27	101.0
		43	163.3
		54	101.3
	15	07	163.3
		27	102.0
		38	163.0

Thurs Oct 8, 1914

Dis Jup IV. 13" Boyden
Plat H.
B or C used. L.C. Obs.
A.B. Rec.

). ~~44~~2	~~8~~ 8.	259.6	< Sat II dis.
4 5	48	12.6	
	6	261.5	
	29	10.5	
46.	24	263.8	
47	49	55 c	
48	8	261. 5.	
	31.	3.3.	
49	4	275.7	
	25	357.8	
	48	264.8	
50	2	3. .6	
	19	270.4.	
	40	359.5	
	59	278.2	
51.	24	1. 6	

Obs. very difficult

54	1	345.6
	12	338.8
	29	341.2
	54	291.4

Oct 8, 1914.

7 55 11 - 338.2
25 302.4
39 332.6
56 . 303.6

---

7 56 18 . 321 . 6
35. 306. 3
7 56 50. 323. 8

Sat disappeared very quickly near close, & high~~er~~ altitude of region, made observations particularly difficult, prob obs. not worth much

~~LC~~
LV.

~~7.44~~ 7 59 50 309.0
~~8 0~~ 4 323.3
8.0 18 324.8
8 0 30 325.2

Comp with Sat II close to Jupiter and on same side.

Oct 8, 1914

Reap Jup IV LCCdk
aB Roe

13" Boyden Phot H.
Compared with ~~Sat.~~ II on off side
BoC used

LV.

~~10 32~~	
12 - 32.	23. 39. 6
	42. 56. 8
~~33~~	12. 48. 6.
	39. 62 4
12 34	32 seen
~~35~~	40 ~~42~~ 56. 4
36	3. 28. 6
	22. 64. 8
	41 25. 2
	59 67. 8
	17. 24. 3
37	30. 72. 4
	46. 18. 8
	58. 68. 2
38	12. 22. 2
	25. 60. 8
~~39~~	43. 10. 8
39	17. 73 2.
	31. 14. 6.
	45. 76. 2.
	60. 11. 6

Oct 8, 1914

12. 40 19. 76. 6
43. 11. 4

---

12. 41 2. 78. 8
19. 358. 0
41 81. 6

---

42. 32. 4. 8.
45 86 8
~~58~~ 11 6

4~~3~~ 40 86. 3
50 2. 2

---

44 2. 86. 8
13. 13. 3
31. 88. 0
46. 9. 2.

4
~~5~~5 1. 86. 0
20. 195. 2.
37. 272. 6
52. 1. 6

4
~~5~~6 10. 89. 3
24 187. 5
40 272. 9
~~58~~. 2. 2

4
~~5~~7 13 90. 5
28. 191. 6
44. 274. 2.

4
~~58~~ 57. 105. 6.
48 28 96. 6
36 196. 6
57 280. 6

4
~~5~~9. 12. 8. 8
30. 87. 2
45 191. 2.
59. 236. 8

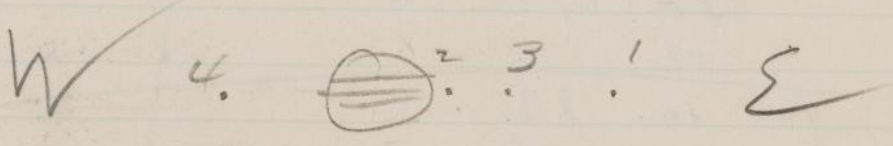
~~60~~ 50 15. 10. 2
29. 92. 2

see next page

Oct 8, 1914

12.	58	59.	182.2
12.	59	20.	275 2
		31.	359.8
		55	92.4.
13	0.	28	185.8
		45.	278.2
		1	15.2
	1	18	96.2
		31.	188.8
		45	277.4
	~~2~~.		

Obs diff due to low altitude. Satellites on opposite sides of Jupiter and rather ~~distant~~!



Sun Oct 1 1911

Dis Jup III Comp with Sat close to Jup #

on same side = Jup I

8 24	2.	78,6
	24	1~~79.2~~ 170.2
	51	78. 8
25	13	166. 3
	33.	82. 8
26	8.	167 .8
	29	83. 5
	46.	162. 3
27	5	89. 2
	25.	157. 8
	43.	89. 8
	58	149. 4
28	12.	101. 5
	35	147. 3
	52	99. 8
29	12.	143. 3.
	22	112. 8
	35	142. 8
	48	111. 8.
8 29	50	gone

L.V.

8x 31		
	40.	110. 4
	59	141. 6
32	16	110. 0
	32	142. 0

L.C. Ob

a.B. Rec

13" Boyden

Plot H.

B & C used

Did not begin Ob early enough observer thought the eclipse was to be a reap instead of a Dis.

Some clouds & haze near Jupiter but obs. thought to be good.

Sat. Oct 17. 1914

R. II

13" Boyden
Phot H.

B & C used.

L.C. Ob
A.P. Rec

10	06	36	seen
10	06	38	219.6 ∠ II Dis
		54	197.7
	07	09	222.2
		18	193.9
		33	234.4
		48	187.0
	08	05	242.6
		17	177.3
		31	248.3
		45	169.8
	09	09	204.6
		23	171.8
		40	257.7
		57	164.2
	10	16	264.3
		48	353.6
	11	09	81.5
		26	165.8
		40	261.3
		52	356.4
	12	05	77.2
		17	171.7
		30	260.8

Comp with nearest satellite on opp side = Sat I.

Oct. 17th 1914

10	12	41	349.7
	-	52	76.2
	13	03	165.8
		15	260.2
		25	350.8
		34	75.4
		43	160.0
		53	259.3
	14	05	354.8
		28	81.8
		42	174.3
		52	261.4
	15	05	354.0
		18	80.2
		28	167.4
		43	253.0
	16	10	353.2
		28	84.0
		41	166.5
		53	260.6
	17	10	350.8
		24	81.7
		35	165.2
		47	254.8
	~~18~~	~~00~~	~~224.2~~
	18	27	208.8
		37	221.4
		47	201.3
		58	220.8

L. V.

Sun Oct 18 1914

Dis Jup III.
Obs 13" Boyd
Rec. ~~Phot H.~~
BOC used.

12 13 02
~~12~~.2 340.6 to < Sat II Dis.
20 276.3
12 14 43 337.2 Compared with
15 03 267.4 ~~sa~~ sat on same
24 339.4 side & more dist
38 266.3 = Sat II
53 346.2
16 05 269.0
20 338.6
35 268.2
49 332.7
17 05 274.0
20 334.6
32 269.4
45 334.2
57 272.8
18 14 336.7
27 271.4
36 333.3
46 270.8
58 340.4
19 09 267.3
20 338.7
33 273.7
44 336.0
20 01 265.4
17 336.8

Oct 18, 1914

12	20	37	340.8
		49	266.6
	21	01	336.6
		16	266.4
		33	339.3
	22	04	268.2
		19	342.3
		30	272.7
		41	337.2
		52	273.3
	23	03	338.4
		12	265.8
		26	342.8
		40	272.4
		51	336.6
	24	01	269.8
		15	337.2
		25	267.3
		37	340.4
		49	274.3
	25	10	334.2
		33	268.2
		51	332.8
	26	13	275.4
		26	332.4
		39	278.4
	~~26~~	50	325.8
		59	282.8

Oct 18, 1914

12	27	09	331.3
		19	281.4
		30	330.4
		38	284.7
		47	328.0
		57	284.0
	28	07	326.3
		16	287.4
		25	323.7
		33	284.2
		42	321.4
		50	292.1
	29	01	322.6
		10	286.4
		22	321.6
		30	283.3
		41	320.3
		57	291.4
	30	04	314.2
		16	298.3
12	30	29	gone
		46	296.3
	~~31~~	~~03~~	
	31	20	321.4
		28	288.0
		37	319.8

L. V

Monday Oct. 19th 1914

LC Qts. JS Rec

Reap. of Jup. I compared with Sat III on same side

Bt C used = L.V

10" Boyden Phot. K.

Sky clear
Obs. easily made

11	07	44	116.8
	08	00	126.4
		11	118.5
		19	125.3
11	18	18.0	Reap.
		21.5	~~a~~ ap. sum
		29	128.3
		40	118.4
		47	130.3
		55	117.5
	19	05	133.0
		14	114.0
		21	132.8
		34	114.5
		46	138.2
		54	110.6
	20	04	140.0
		14	108.5
		24	141.3
		35	114.0
		45	143.0
	21	15	152.2
		28	106.8
		37	141.8
		49	100.3
		59	142.0
	22	08	101.2

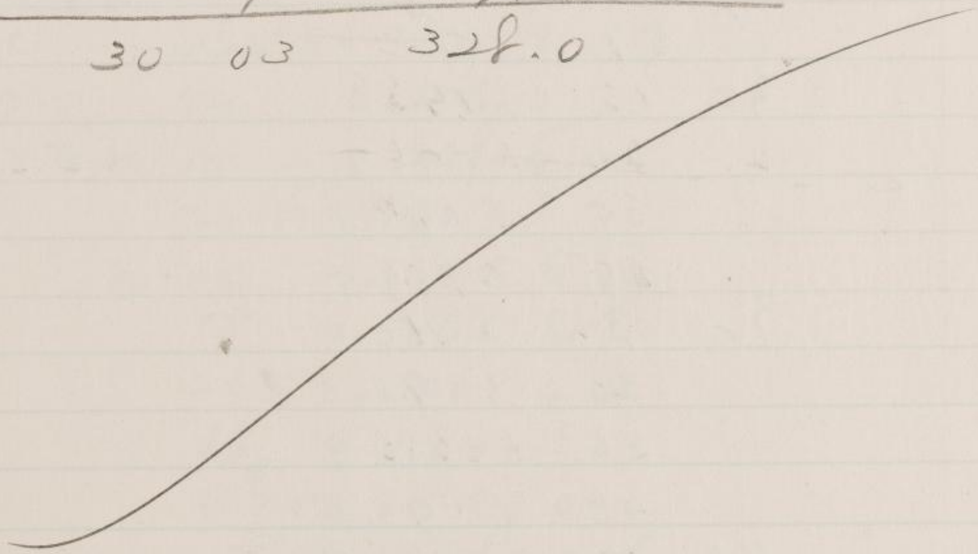
Sat III disap.

Oct 19th 1914

11	22	17	138.4
		34	279.6
		44	323.6
		57	100.0
	23	07	146.0
		18	280.3
		27	326.0
		42	107.0
		57	146.8
	24	06	280.0
		14	327.4
		27	107.5
		39	145.4
		55	283.0
	25	07	326.3
		20	97.3
		44	150.0
	26	04	278.4
		12	226.5
		26	98.7
		34	1~~2~~40.0
		47	280.4
		59	227.2
	27	13	98.0
		23	148.3
		37	279.8

Oct 19th 1914

11	27	47	325.2
		59	100.0
	28	11	147.5
		25	275.7
		39	326.5
		52	38.4
	29	03	147.8
		14	278.4
11	30	03	328.0



Wed Nov. 4 1914

Reap. Jup I compared with Jup II on ~~the~~ same side + nearer of the 2 sats.
L. C. Obsvr
J H Recdr

13" teles D. S. Pl 01

BFC

9 4. 37.10 ~~128.5~~ seen
37.15. 128.5
37.41 135.5. 1
57. 1~~00.28.~~ 28
38 12. 143.0
24. 96.9
35. 148.1
48.5 89.5.
39 2. 150.0
20. 90.8 1
36. 156.9
48. 90.0
40 00. 156.8.
10.5. 88.9
24.5. 151.8.
34.5 87.4
44. 162.0
54.5. 86.8
41. 05. 158.6
~~19.5~~ 20 88.0
~~34.5~~
52.5 154.3
42. 05 84.3
24.5 164.8.
42.36. 82.7.
57.5. 157.2
43.08. 83.4
21.5. 162.1
32. 83.4
45.03.5. 157.8

Nov. 4, 1914

Cont.

9.45.23.	2620
36	344.1
52.5	85.8
46.02.	159.8
15.	262.8
26.5	346.2
4~~3~~4.5	89.8.
59.	156.0
47.14.	266.4
24.5.	342.3
8.06.	81.5
15	161.8
26.5	268.4
36	342.3
4~~7.5~~8.	87.0
57.	161.2
9.08.5	266.3
17.	345.2
29.	85.4
~~39.5.~~ 40	158.8
0.03.	260.6
1~~3~~4.5	346.3
52	81.8
1.06.	163.0

Over

Nov 4, 1914

L✓.

9.51.26	131.2.
4~~5~~6 ~~5~~.	111.4
2.04.	130.0
17.	112.6

Considerable amount of haze & cloud near Jup. Rest of sky practically cloudy but obs. considered good.

H.F.M. = Mr H. Mumford.

✓

Wed. Nov. 11, 1914

Reap Jup II Comp with nearer of two Sats on same side = Sat IV.

13" Boyden Phot H. L.C. Obs
A.B. Rec

BOC

7.	20	01	115.0 < Sat IV dis.
	20	25	108.6
	20	52	143.3
	21	11	96.7
		27	152.3
		40	95.5
		53	156.2
	22	7	97.3
		24	158.3
		40	86.3
		56	163.4
	23	11	81.2
		26	163.4
		41	86.3
		55	163.4
	24	10	83.3
		22	164.2
		37	85.4
		50	160.8
	25	8	88.3
		28	168.6
		38	90.3

Nov. 11, 1914

7.26	10	26.0 0
	24	352.2
	39.	85.8
7 ~~27~~	52	161.6
27	7	268,3
	20	343.8
	36	85.2
	51.	165,6
28	4	264 8
	18	345,5
7 32	14	76.0
	30	163.3
	48	256.6
33	03	338.6
	22	86.3
	37	165.6
	54	261.3
34	5	348.8
	25	81.4
	38	160.0
	51	264.8
35	4	350.0
	21	82.2
	37	160.2
	55	264.8
3~~4~~6	6	342.2

LV

~~37~~	~~11~~	~~175.5~~
37	28	294.8
	53	316.6
7 38	11	292.2
	23	317.5

Nov. 11, 1914

~~23 . 3175~~

Sky fairly clear obs. diff due to high altitude of Jupiter.

Mon. Nov. 16, 1914

Reap. Jup. III. comp. with nearer of the ~~two~~ sats. on same side = Sat. II.

L. C. Obs.

Mr. Bumstead Rec'd

B & C

13" Boyden
Plot H.

8 04	49	✓ seen	
		2 42.8	< ~~Σ~~ Sat II dis
5	2		
		1 83.2	
~~15~~	15		
		2 45.6	
	27		
		180.2	
	39		
		248.3	
	52		
		173.4	
6	3		
		257.2	
	13		
		175.3	
	25		
		265.3	
	36		
		167.4	
	49		
		263.6	
7	0		
		169.0	
	10		
		260.4	
	23		
		169.8	
	34		
		271.7	
	47		
		167.3	
	58		
		265.2	← Brought images closer.
8	10		
		161.6	
	28		
		274.2	
	57		

C

9	24	162.8
	38	268.4

Nov. 16, 1914

8	9	52	157.3
	10	7	273.3
	~~20~~	20	157.4
		34	258.4
		45	337.1
	11	00	91.6
		11	156.4
		24	270.2
		34	334.8
		47	97.2
		56	157.3
	12	6	271.4
		16	338.1
		27	87.5
		37	160.8
		50	269.0
	13	1	336.4
		14	94.6
		25	157.4
		37	273.6
		48	338.6
		59	91.4
	14	9	158.2
		20	273.4
		31	335.0
		43	94.3
		53	157.2
	15	5	272.6
	16	59	335.4
	17	20	94.6

Nov. 16, 1914

8	17	31	157.1
		44	272.2
		54	3$\overset{3}{\cancel{5}}$2.4
	18	12	87.5
	~~18~~	~~43~~	~~45.2~~ ~~42.2~~
	19	4	45.2
	19	31	19.4
		45	43.2
	20	00	21.8

L. V.

Sky somewhat cloudy near
Jup. but image well seen.

C

Fri. Nov 20th 1914

Reap. Jup I. 13" Boyden

B&C 1 seen at $7^h 56^m 40$

Impossible to meas. as the Sat. is alone & others on oppos. side too far off to make suitable measures.

Mon. Nov. 23, 1914

Dis. Jup. ~~III~~ III   13" Boyden
Phot. H.

L.C. Obs   H.P. Rec

BoC   Comp with Sat II on same side

8	14	53	22.6 (Sat II dis.
	15	18	~~302~~ 302.8
		35	26.6
		45	301.6
		59	25.3
	16.	20	303.0
		36	28.2
		46	305.6
	17	01	31.3
		15	306.3
		28	27.7
		43	305.0
		57	29.8
	18	11	303.3
		21	27.4
		33	302.0
		44	27.1
		56	304.3
	19	05	28.4
		19	302.0
		34	27.7
		46	300.6
		59	29.8

Nov 23d 1914

8-20	08	305.2	
	19	25.7	
	31	307.4	
	44	20.8	
21	01	303.9	
	14	.28.4	
	27	305.3	
	41	28.3	
	58	309.0	
22	10	32.2	9
	21	304.8	
	33	26.4	
	46	305.6	
~~23~~	~~04~~	~~26.6~~	
	51	124.2	
24	06	204.3	
	19	126.2	
	30	204.4	
	44	126.6	
	57	204.6	
25	12	131.0	
	31	205.6	
	47	131.4	
26	04	203.5	
	20	128.6	
	40	207.4	
	59	132.4	
27	28	207.5	
	43	134.8	

Nov. 23d 1914

8	28	15	132.4
		31	206.8
		50	128.5
	29	03	205.8
		18	128.3
		35	205.2
		49	128.0
	30	05	203.8
		24	131.6
		37	205.8
		50	127.8
	31	04	204.6
		16	132.2
		28	206.6
		41	128.8
		52	207.0
	32	05	130.6
		19	204.4
		34	133.2
		48	206.0
	33	02	133.0
		12	200.4
		23	132.2
		32	196.3
		43	133.0
		54	197.7
	34	07	140.6
		19	196.3

✓

Nov 23d 1914

8	34	31	1408
		42	194.8
	35	02	142.6
		14	194.6
		26	148.7
		36	189.6
		48	148.8
	36	00	188.4
		11	149.8
		20	187.6
		34	150.3
		46	184.7
		58	154.4
	37	09	156.6
		34	181.3
		47	157.0
	38	00	175.2
		16	174.8
		30	gone
		56	355.3
	39	09	338.0
		20	356.1
		30	338.4

LV

Mon Dec 14th 1914

JM Rec
~~JM~~ Rec

Reap. of Jup ~~III~~ compared with
Sat. IV had disappeared by time obs commenced.

	8 5	859.14.	59.0
	3218	38.	320.0
	61.5	859.58.5.	65.0
	3218	9.0.20	321.
	645.	31	53.5
	3225.	40.5	317.
8.58.8	66.0	57.	66.0
	322.5.	9.1.5	325
	60.0.	25.	670
	323.0	32	3200
	56.0	41	60.0
		47	325.0
		9.2.1	660.
		29	3240
		2.12	58.5
		25	318.5
		41.	640
		54.	323.5.
		58.	65.0

Sun. Jan 31, 1915

021403 o Ceti Phot X
3 59 Obs. by N.E. = 3.4±
2 405 - 3.6

L. C. Obs.
a. B. Rec.

Tel. Points W. I
Index ~~D~~ L + a.

~~8 15~~ 253.3 ∠ Var Dis
8 17 266.6 13.3
~~" 17~~ 073.8 14.4
~~" 18~~ 088.2 27.7 4.58

~~8 19~~ 253.2 4.52
" 19 267.1 13.9
" 20 072.2 15.4
~~" 20~~ 087.6 29.3 4.45

R & B Mean = 4.33
~~001.3~~
343.1
000.8 17.7
164.5 16.9
181.4 34.6 4.09

346.8 4.14
8. 27 000.6 13.8
~~8 22~~ 165.2 19.4
184.6 33.2 4.18

Jan. 31, 1915.

II

R O B

8 34 ~~180.0~~

8

165.2 < Var dis.

8, 34 180.5 15.3

346.6 14.9

1.5 30.2 4.39

163.3 4.22

183.6 20.3

345.8 148

000.6 35.1 4.06

< Earthquake felt.

~~165.3~~ < L O A. mean — 4.26

254.4

269.2 14.8

076.4 13.2

090.6 28.0 4.55

254.3 4.30

8, 48 272.7 18.4

8 41 076.6 16.7

093.3 351 4.06

Final Mean = 4.30

These obs. rejected. Something wrong with photometer. — L.C.

1913phae.proj...76BC

See pages 140, 141, 147, 148, 149, 150, 151, 152
153, 154, 155, 169, 170, 171, 172, 173.
of Var star est. records
for interesting obs with plot.

Sat. Mar. 27, 1915

Photometric Ob.

ℓ Carinae 102957

752
2 37 ~~8~~ = 5.80

10 29
8 02
2 27 8

10 29
7 57
2 32

Comp ✱ = ✱d of sequence therefore comp.

Above

48.2 < comp ✱ dis
7 37 143.2
224.8
324.2

95.0
99.4
194.4
165.6 — 0.27

49.2
7 39 144.8
226.3
324.6

95.6 —0.265
98.3
193.9
166.1 —0.26

Below

~~146.9~~ 226.2
7 42 ~~327.2~~ 321.6
54.2
147.8

mean = —0.220

95.4
93.6
189.0
171.0 — 0.17

227.5 —0.175
~~7 44~~ 321.9
52.8
7 40.$\overset{2}{5}$ 147.9

94.4
95.1
189.5
170.5 — 0.18

Mar 27, 1915

Same Again

Below

224.4
> 46 325.2 1008
50.4 96.6
147.0 197.4
162.6 −0.33

227.2 −0.235
> 48 323.2 96.0
55.5 91.3
146.8 187.3
172.7 − 0.14

Above mean = −0.172
~~318.2~~
52.4
> 51 143.6 91.2
223.6 97.4
321.0 188.6
171.4 − 0.16

53.8
> 53 139.8 86.0 − 0.11
38 226.2 97.0
323.2 183.0
> 49.5 177.0 − 0.06

Final mean = −0.146

Jan. 27, 1915.

W Crucis 12065 f

8 30

3 36 ε −58.2

Above
172.6 < Vandis.

8 04 200.2 27.6
350.6 28.6
19.2 56.2 − 3.01

169.2 − 2.975
8 06 198.6 29.4
351.6 28.6
20.2 58.0 − 2.94

Below Mean = − 2.875

263.2
8 08 293.6 30.4
81.2 31.0
112.2 61.4 − 2.81

262.3 − 2.775
8 10 292.8 30.5
82.2 32.6
8 07 114.8 63.1 − 2.74

Mar 27, 1915

Same again

Below

263.2
8 12 293.6 30.4
82.1 29.4
111.5 59.8 — 2.87

263.3 2.89
8 14 292.8 29.5
82.9 29.2
112.1 58.7 — 2.91

Above Mean = — 2.838

166.6
8 16 200.2 33.6
351.6 28.5
20.1 62.1 — 2.78

168.2 — 2.785
8 18 199.3 31.1
349.8 30.8
8 15 20.6 61.9 — 2.79

Final Mean = -2.856

Mar. 27, 1915.

−26.9905 ∗ 1339.26 comp with o'
8 53
4 46 E − 26.2

Star rather dist, but will try a set.
Right. Stopped to retain light.

252.3 ∠ var dis.
8:59 298 8 46.5
69.5 52 8
122.3 99.3 − 1.67

251.9 −1.685
9:01 301.8 49.9
−73.3 48 3
121.6 98.2 −1.70
Left
Mean = −1.645
339.2
9:03 −28.1 48.9
162.8 48 7
211.5 97.6 − 1.72

336.2 −1.605
9:04 29.8 53.6
157.9 53.3
9:02 211.2 106.9 −1.49

Mar 27 1915

Same again

~~Left~~

334.3
9:07 -30.2 55.9
158.7 56.8
215.5 1127 - 136

333.3 60.5 - 1.36
9:09 33.8 Clds
161.2 52.1
213.3 112.6 - 1.36

Right Mean = 1.355

-70.8
9:11 126.4 55.6
245.8 58.5
304.3 114.1 - 1.32

69.6 1.35
9:13 125.3 55.7
~~252.2~~ repeated. 246.8 56.0
9:10 302.8 111.7 - 1.38

Troubled by clds.
Did this cause diff. between
groups? Will take ~~another~~

Mar. 27, 1915

Same again.

Right.

68.0
9:21 126.3 58.3
247.2 59.3
306.5 117.6 — 1.255

—1.325

67.2
9:23 121.6 54.4
248.5 56.3
304.8 110.7 — 1.40

Left
Mean = ~~1.38~~ 1.378

~~252~~
158.2
9:26 214.2 56.0
338.3 55.0
33.3 111.0 — 1.39

160.3 —1.443
9:28 209.2 48.9
18
9:24.5 335.6 59.0
—34.6 107.9 —1.47

Last two groups agree well, can't understand why first should be so much brighter.

Mar. 27, 1915

R Triang Aust. 151066

Comp ✱ = ✱ prec Var. 1025

55 ε − 66.1

Right. 445 ε

350.2 ∠ var dis

10 03 16.8 26.6

176.6 19.6

196.2 46.2 — 3.415

351.3 — 3.447

10:04 15.5 24.2

177.2 21.1

198.3 45.3 — 3.49

~~Left~~ mean = — 3.505

−87.3

10:06 109.2 21.9

264.2 22.0

286.2 43.9 — 3.56

86.6 — 3.54

10:08 108.5 21.9

264.6 22.8

4 286.4 44.7 — 3.52

10:05

March 27. 1915

~~Left~~ Same again

84.3
10:09 110.3 26.0
263.8 22.5
286.3 48.5 — 3.34

85.8
10:11 108.5 22.7 — 3.38
263.5 24.1
287.6 46.8 — 3.42

~~Right~~
192.5 Mean = 3.310
10:13 200.6 28.1
356.6 25.6
-16.2 53.7 — 3.11

175.5
10:15 199.3 23.8 -3.24
351.6 24.0
15.6 47.8 — 3.37

10:12

Final Mean = 3.40

Mar. 27. 1915

Same again.

Right

352.2
10:21 15.7 23.5
174.8 22.8 — 3.44
197.6 46.3

— 3.4~~2~~15

353.0
10:23 16.6 23.6
175.6 23.9
199.5 47.5 — 3.39

Mean = — 33~~6~~8

Left
−183.3
10:25 110.3 27.0
263.6 24.9 — 3.20
288.5 51.9

— 3.32

−86.6
10:26 109.7 23.1
264.1 23.3
10 24 287.5 46.4 — 3.44

Final mean 3 groups — 3.39

Mar. 27 1915

175149 S Arae

11 02
6 49 — 49.4

Too low

R Centauri 140959

10 09
11 17
2 52

11 09
3 0 - 59.4

above

146.5 < Vandis.
10:55. 219.6 73.1
332.3 68.9
-41.2 142.0 — 073

152.5 — 0805
1058 215.5 63.0
328.6 72.0
40.6 135.0 — 088

Below mean = -0.852

150.2 68.0
11:01 218.2 67.0
335.2 135.0 — 088
42.2

CfaC

149.3 67.3 — 0.90
11:04 216.6
10:59.5 334.3 65.3
39.6 — 092

Tues. April 6, 1915

Photom. Obs. L.C.Obs.
A.B. Rec

X Centauri 114441

Comp ✱ = star g (adjacent ✱) 833

3 11 2 - 41.2

~~282.2~~ Above

7:33 78.6 < Nardis.
100.8 22.2
257.7 23.4
281.1 45.6 - 3.48

- 77.0 - 3.43
99.6 22.6
258.1 25.0
283.1 47.6 - 3.38

Below mean = - 3.498

170.4
~~7:36~~ 191.2 20.8
350.8 24.4
15.2 45.2 - 3.50

169.9 - 3.565
7:38 191.1 21.2
357.5 21.3
7 35.5 13.8 42.5 - 3.63

April 6. 1915

~~Shining~~
Below   Same again
169.2
7:40   191.6   22.4
352.8   20.5
13.3   42.9 — 3.61

171.7   — 3.69
190.1   18.4
352.2   21.6
13.8   40.0 — 3.77

Above   mean = 3.635
257.8
282.3   24.5
82.8   22.2
105.0   46.7 — 3.42

257.2   3.58
7.47   279.3   22.1
82.8   18.5
7 43.5   101.3   40.6 — 3.74
Final mean = 3.57

April 6. 1915.

W Crucis

120658

906

3002 −58.2

above

345.6 <Var dis.

8:00 15.2 29.6

164.9 28.6

193.5 58.2 − 2.93

345.2

8:02 16.3 31.1 − 2.87

164.5 303

194.8 61.4 — 281

mean = − 2.840

−76.6

8:05 108.2 31.6

254.3 31.2

285.5 62.8 − 2.76

−

2.81

−77.4

8:06 107.8 31.4

13 − 256.6 29.6

8:03 286.2 600 — 286

April 6, 1915

Below Same again

081.6

~~7~~ 8:09 108.2 26.6

255.6 29.4

285.0 56.0 −3.06

15

−76.2 − 2.9~~2~~

8:10 106.2 30.0

255.2 32.3

287.5 62.3 − 2.77

mean — 2.805

above

164.2

8:12 197.3 33.1

345.2 31.2

164.~~4~~ 64.3 − 2.70

164.1

196.0 31.9 ~~2.70~~ 2.695

8:14 343.8 32.8

5 −16.5 64.7 — 2.69

8:11 Final mean = 2.82

Apr. 6, 1915

~~R~~ −26.9905 133926

above 931

155.6 4~~5~~08 −26.4

8:30 202.6 < Vardes Comp. with star x

335.6 47.0

19.2 436

90.6 — 1.90

156.6 1.845

8:32 201.8 45.2

335.8 49.4

25.2 94.6 — 1.79

Below

245.6 mean = −1.932

8:34 291.4 45.8

69.8 42.4

112.2 88.2 — 1.86

247.3 — 2.02

8:36 288.4 41.1

−72.4 39.4

8:33 111.8 80.5 — 2.18

April 6, 1915

Same again
Below
251.0
8:38 295.2 44.2
-69.2 45.6
114.8 89.8 — 1.92

344.8 — 1.83
8:39 294.6 49.8
-69.2 46.7
115.9 96.5 — 1.74

above Mean = ~~2.00~~ 1.995
337.7
8:41 16.2 38.5
162.2 39.1
201.3 77.6 — 227

338.3
8:43 -22.2 43.9 — 2.16
161.2 41.0
8 40 202.2 84.9 — 205

Final Mean = -1.96

The star x used tonight, altho yet some distance off is a better one than star o'' used the last time. Obs. diff. on account of distance apart.

1913pnae.proj..768C

april 6, 1915

RT Cent. 134236
1002
340 - 36.4

Comp with star h (adjacent star) above

148.7 ∠ ~~Var. dis~~ Comp * dis.
8:51 211.3 62.6
328.5 61.5
-30.0 124.1 + 1.10

145.6
213.3 67.7 +1.01
326.8 65.2
-32.0 132.9 +0.92

238.3 mean = +0.922
307.7 69.4
-56.3 65.0
121.3 134.4 +0.89

237.3 +0.835
9:01 305.~~8~~ 8 68.5
55.2 71.4
8:56 126.6 139.9 +0.78

Omitted by

1913pnae.proj..768C

mistake

April 6, 915

Same again

238.8
9:03 303.3 64.5
-58.5 65.8
124.3 130.3 + 0.97

236.7
304.2 67.5 + 0.91
-57.8 68.8
126.6 136.3 + 0.85

above
327.2 mean = +0.9~~2~~18
-34.2 67.0
147.8 67.5
215.3 134.5 + 0.89

327.3
9:09 32 8 65.5 + 0.925
148:2 65.6
9 06 213.8 131.1 + 0.96
.587

Final Mean + 0.92

april 6, 1915

L^2 Puppis 071044

1028

3 18 W -44.5

Comp ✶ = star X on Cord. chart.

R & a <Var dis

26~~8~~5.8

9:23 276.6 10.8

~~95.0~~ 7.5

~~90.5~~ 18.3 — 5.48

98.0

— 5.5~~4~~35

265.8

274.2 8.4

-89.3 9.0

-98.3 17.4 — 5.59

L & B mean = — 5.615

353.8

--3.8 10.0

177.7 8.5

186.2 18.5 — 5.46

355.3

9:28 — 4.2 8.9 — 5.~~70~~695

9 26 179.2 6.0

185.2 14.9 — 5.93

April 6, 1915

Same again

L o B

355.3

9.31 5.2 9.9

176.8 8.5

185.3 18.4 — 5.47

354.8 — 5.29

— 6.2 11.4

176.1 10.3

186.3 21.7 — 5.11

R o A

87.4 mean = — 5.340

96.9 9.5

266.3 9.0

275.3 18.5 — 5.46

9.36 86.2 — 5.39

97.3 11.1

9.34 267.3 8.6

.607 275.9 19.7 — 5.32

Final Mean = 5.40

Obs. diff on acct of great diff in brightness ~~by storm state~~

april 6. 1915

C° Susp Var near Z Puppis.

7 27 -20.6
10 54
3 27 W

Above

245.9 < comp * dis.
9:55 288.4
66.8 42.5
111.2 44.4
86.9 + 2.00

250.2 + 2.185
290.2 46.0
-71.2 34.1
105.3 74.1 + 2.37

mean = + 2.342

Below

337.8
-21.2 43.4
164.3 33.5
197.8 76.9 + 2.29

345.6
10:03 -20.2 34.6 + 2.50
168.6 29.4
9 59 198.0 64.0 + 2.71
.624

Obs. very diff. Stars close, & susp var. appears to eye to be fainter. Not possible to observe a second group ~~tonight~~.

April 6, 1915

δ' Volantis 073173 Comp ★ = Star C of the sequence
R+a 1141
-47.6 410 -73?
10:38 136.0 < Vandis
226.8 88.4
312.2 85.4
173.8 - 0.12

46.6
133.6 87.0 -0.105
224.6 88.0
312.6 175.0 - 0.09

mean -0.180

147.3
223.3 76.0
314.8 91.5
46.3 167.5 - 0.24

140.8
10:43 226.2 85.4 -0.26 55
321.2 80.4
10 48 41.6 165.8 -0.27
.653

April 6, 1915

Same again

R T B

138.3
10:46 221.3 83.0
317.5 85.7
43.2 168.7 −0.21

144.3 −0.25
222.2 77.9
318.9 86.9
45.8 164.8 −0.29

R t a Mean = −0.210
231.0
307.2 76.2
44.3 89.9
134.2 166.1 −0.26

227.7 −0.17
10:53 316.1 88.4
47.2 87.3
10 50 134.5 175.7 −0.08
-660

Final mean = −0.20

April 6, 1915

y Carinae 10295
1212
143

Right.

	49.2 < Var dis		
	137.3	88.1	
11:06	224.5	93.3	
	317.8	181.4	
		178.6	+ 0.03
	45.8		
	135.6	89.8	+ 0.03
	229.2	92.1	
	321.3	181.9	
		178.1	+ 0.03
	Left		
	~~45.2~~	mean = − 0.125	
	~~4~~317.2		
	42.8	85.6	
	141.3	82.0	
	223.3	167.6	− 0.24
	320.8		− 0.28
11:12	42.2	81.4	
	139.8	82.0	
11:09	221.8	163.4	− 0.32
.673			

April 6, 1915

~~Left~~ Same again

315.8

11:14 38.5   82.7

137.1   83.5

220.6   166.2 — 0.26

322.8

46.6   83.8   — 0.245

138.2   84.0

222.2   167.8 — 0.23

Right   Mean = — 0.178

45.8

134.3   88.5

233.3   82.5

315.8   171.0 — 0.17

47.7

11:20 134.5   86.8   — 0.11

223.2   90.4

11 17 313.6   177.2 — 0.05

.678

Final Mean = — 0.15

C for C.

C's W=9s fast

Thurs. April 8, 1915

Phot. 13-inch Boyd. aβ Rec

133926 Algol Var (Wood's)

7 26 Clds over region

comp with star "x"

L f a.

230.8 < comp. + dis

8:45 50 317.7 869

<52.3 823

~~134.6~~ 1692 + 0.20

226.2 + 0.16

8:47 50 316.2 900

51.6 837

135.3 1737 + 0.12

R f B

mean = + 0.138

315.6

8:51 50 42.8 872

138.3 830

221.3 1702 + 0.19

+ 0.1~~2~~5

130.5

8:54 20 226.2 957

0 50 320.0 822 + 0.08

8 50 12 42.2 1779

8 50 03

Troubled by thin clouds over region especially so at last part.

April 8, 1915

Same again

RTB

II

320.0

9:18 20 ~~0~~ 42.2   82.2
135.8   89.6
225.4   171.8 + 0.16

323.1   +0.15
9:21 40 45.8   82.7
137.2   89.6
226.8   172.3 + 0.14

LTA

43.3   mean = +0.095
9:23 50 134.8   91.5
227.6   86.6
314.2   178.1 + 0.03

9:26 50 47.8   +0.04
138.8   91.0
9 50 228.9   86.4
9 22 28 315.3   177.4 + 0.05
9 22 19

Star very diff. to observe due to faintness and hazy conditions

April 8, 1915

III

L+a

46.3
9 52 00   138.9   92.6
228.2   88.0
316.2   180.6
179.4   — 0.01

45.8
9 54 20   140.5   94.7
223.2   97.0   — 0.105
320.2   191.7
~~170.3~~
169.3   — 0.20

R+B

mean = — 0.208

128.2
9 56 30   230.2   102.0
312.6   95.0
—117.6   197.0
163.0   — 0.32

133.5
9 58 20   228.16   95.1   — 0.295
21 10   311.5   99.0
9 55 18   50.5   194.1
9 55 9   165.9   — 0.27

April 8, 1915

R&B

IV

132.6

10:05 50 236.6 104.0

310.5 101.7

52.2 205.7

154.3 — 0.49

129.2

10.07 40 238.6 109.4 — 0.57

313.0 98.6

51.6 208.0

152.0 — 0.53

L&A.

223.6 Mean — 0.558

10:10 00 324.6 101.0

37.8 106.0

143.8 207.0 — 0.52

153.0

219.6 — 0.605

10:12 10 323.4 103.8

35 40 -35.2 112.0

10 08 55 147.2 215.8

10 08 46 144.2 — 0.69

April 8, 1915

V

ft a

147.8 ∠ Vardis

10:20 10 216.3 18.5

325.6 67.0

326 135.5 — 0.87

146.2 — 0.735

10:22 20 222.7 76.5

328.8 72.0

34.8 148.5 — 0.60

RT B Mean = — 0.778

240.8

10:24 30 302.3 61.5

56.2 70.1

126.3 131.6 — 0.95

240.2 — 0.82

10:26 20 310.0 69.8

13 20 56.3 74.2

10 23 20 130.5 144.0 — 0.69

10 23 11

April 8, 1915

VI

Below

240.0
10.33 40 306.8 66.8
62.2 60.4
126.6 127.2 − 1.04

240.5 − 0.97
10.35 40 310.0 69.5
58.8 64.3
123.1 133.8 − 0.90

above Mean = − 1.055

329.2
10.37 30 24.8 55.6
150.3 63.5
213.8 119.1 − 1.21

324.8
10.39 30 29.8 65.0 − 1.14
26 20 154.3 60.9
10 36 35 215.2 125.9 − 1.07
10 36 46

April 8, 1915

VIII

Above

10:49 00 327.2
26.1 58.9
151.3 67.7
219.0 126.6 — 1.05

328.2 — 1.005
10:51 00 31.6 63.4
150.3 67.5
217.8 130.9 — 0.96

Mean = — 1.012

Below

61.6
10:53 50 123.6 62.0
242.2 65.1
307.3 127.1 * — 1.04

58.2
10:56 00 123.3 65.1 — 1.02
9 50 238.6 63.7
10 52 28 302.3 128.8 * — 1.00
10 52 19

Increasingly difficult as star near the zenith.

April 8, 1915

VIII

Below

58.0

11 06 30 126.9 68.9

239.8 62.5

302.3 131.4 — 0.95

60.4 — 1.27

11: 08 30 115.5 55.1

244.8 56.2

301.0 111.3 — 1.39

above mean = — ~~1.30~~ 1,250

156.2

11:10 30 209.6 53.4

328.6 63.0

31.6 116.4 — 1.27

151.8 — 1.33

~~11:13 00~~ 210.6 58.8

38 30 330.6 52.2

11 09 38 22.8 111.0 — 1.39

11 09 29

Impossible to continue with photometer.

C.W. = 10s slow

Sun. April 11, 1915

L. C. Ob.
A. B. Rec

8 :01 133926 . algol Var Est. Vol 2 # 50
925
~~4~~ 142

I

above

8:03.50 220.5 ∠ comp ✱ dis
8 04 20 - 330.6 110.1
53 - 31.8 1154
8:05 14 147.2 225.5
34 218.8 134.5 — 0.89
8:06 04 - 326.3 107.5 — 0.95
24 27.3 1240
47 157.3 231.5
8:07 00 Below ~~128.5~~ — 1.01
21 125.6 mean = — 0.902
8 08 15 - 232.3 1067
~~8 c~~ 37 303.3 1193
8 09 08 62.6 226.0
1340 — 0.90

8:09.38 128.2
8:10.11 = 234.3 1061 — 0.85~~6~~1
34 303.3 1155
8:11 04 - 58.8 2216
129 54 1?8.4 — 0.81

8 08 10
8 08-20
.547
.474
+.073

April 11 1915

II

Below

57.2 ∠ Var. dis.

8:16.58 119.8

244.4

301.6

62.6
57.2
119.8 — 1.20

58.8

8:18 34 119.3

242.2

300.2

15

60.5 — 1.22
58.0
118.5 — 1.23

Mean = — 1.228

above

327.8

8:20 30 21.8

152.2

216.6

54.0
64.4
118.4 — 1.23

326.3

8:22 05 —23.8

78 07 153.8

213.8

— 1.24

57.5
60.0
117.5 — 1.25

8 19 32
8 19 42
55
47 4
+ .082

April 11, 1915

III

above

8
8:2~~3~~.04 328.2
−28.3 60.1
149.8 634
213.2 123.5 — 1.12

9
8:2~~4~~.39 327.6
−28.6 61.0 — 1.045
149.3 664
215.7 127.4 — 1.03

Below mean = 1.262

31
8:~~26~~.46 231.6
292.6 610
−61.6 537
115.3 114.7 — 1.31

245.2 — 1.45
8:33.5~~3~~9 294.8 49.6
−67.4 530
3 28 120.4 102.6 — 1.59

8 30 52
8 31.563 022
474
+0.089

april 11, 1915

IV

Below
242.2
8.39.04 295.3 — 531
59.8 — 620
1218 — 1151 — 1.30

238.3
35
8:41.31 298.3 — 600 — 1.3~~4~~
67.8 — 522
120.0 — 1122 — 1.37

above — mean = 1.305

155.5
8:42 56 208.8 — 533
330.8 — 580
28.8 — 1113 — 1.39

155.3
8:44 30 214.3 — 590 — 1.395
331.6 — 517
8 01 — 23.3
1107 — 1.40

8 42 00
8 42 10
571
474
+0.097

April 11, 1915

V

above

1 57.3
8:52.48 212.6 55.3
332.8 47.4
20.2 102.7 −1.59

150.8
8:54, 15 211.8 61.0 −1.44
331.2 54.4
25.6 115.4 −1.29

Below mean −1.425

65.6
8:55.46 121.3 55.7
244.8 51.0
295.8 106.7 −1.49

65.4 −1.41
8:57.32 128.8 63.4
245.7 50.5
20 21 296.2 113.9 −1.33

8 55 05
13
8 55 .580
474
+.106

April 11, 1915

VI

Below

67.0
9:18.16 117.8 50.8
246.6 49.2
295.8 100.0 — 1.66

64.6 — 1.56
9:20.05 121.5 51.9
243.8 51.4
295.2 108 3 — 1.66

above Mean = — 1.530

334.2
9:22.01 - 23.8 496
155.2 570
212.2 10.6.6 — 1.49

333.3
9:23.24 24.3 51.0 — 1.50
3 46 156.6 552
211.8 10 6.2 — 1.51

9 20 56
9 21 06
598
474
+0.124

April 11, 1915

VIII

Above

330.3
9:28, 40 −23.6 533
150.4 612
211.6 1145 −1.31

330.3 −1.27
9:30 10 − 27.4 571
151.2 61.0
212.2 118.1 −1.23

Below. Mean = −1.548

245.2
9:31 49 290.2 450
−68.2 476
115.8 926 − 1.84

247.8 −1.825
9.33 22 294.8 470
4 01 −70.1 471
117.2 941 −181

9 31 08
9 31 10
.605
.474
+0.131

April 11. 1915

VIII

Below

245.2

9:42 30 288.2 43.0

−68.8 43.0

111.8 86.0 − 2.02

245.3 − 1.965

9:44 04 292.2 46.9

−71.1 43.1

114.2 90.0 − 1.91

above Mean = − 1.742

157.2

9:45 07 209.9 52.7

330.8 52.5

23.3 105.2 − 1.53

157.0 − 1.52

9:47 17 215.2 58.2

335.3 48.0

18 58 −23.3 106.2 − 1.51

9:44 45

9 44 53

615

474

+0.141

April 11, 1915

IX

Above

335.3
9:59 33 -22.2 469
160.2 453
205.5 92.2 - 1.86

337.7
10:01 22 23.3 456 - 1.81
157.2 50.1
207.3 95.7 - 1.76

Below

Mean = -1.85

246.6
10:02 55 293.2 466
-69.6 436
113.2 90.2 — 1.91

247.2
10:04 41 291.6 444 - 1.96
-68.2 421
7 31 110.3 86.5 - 2.01

10 01 38
10 01 48
.626
.474
+0.152

April 11, 1915

X

Below

244.3
10:26.37 296.3 — 520
68.8 — 460
114.8 — 98.0 — 1.71

246.2 — 1.70
10:31 11 297.6 — 51.4
68.2 — 474
115.6 — 98.8 — 1.69

Above — Mean = 1.560

158.2
10:33 06 213.8 — 55.6
335.2 — 511
-26.3 — 106.7 — 1.49

155.3 — 1.42
10:34.45 212.3 — 57.0
5 39 332.2 — 560
10 31 25 -28.2 — 113.6 — 1.35
10 31 35
667
474
+0.173

Obs quite difficult.

April 11. 1915

XI

Above

160.0
10:40.08 205.8 45.8
334.3 50.0
-24.3 95.8 — 1.76

158.8
10:41 06 202.2 434 — 1.785
338.2 504
-28.6 93.8 — 1.81

Mean = 1.812

Below

69.6
10:43.36 116.6 470
247.8 438
291.6 90.8 — 1.89

67.2
10:45 24 116.3 491 — 1.84
10 14 247.6 457
10 42 34 293.3 94.8 — 1.79
10 42 44
655
474
0.181

Tues April 13, 1915

Photometric Obs. L.C.Obs
A.B. Roe

20601

C.W. = 7 fast X Centauri 11441
9 30
2142 -41.2

Below
347.5 ∠ Var. dis
8:04 04 12.3 24.8
169.2 / 241
193.3 48.9 — 3.32

348.3
-11.8 23.5 — 3.33
168.3 250
195.3 48.5 — 3.34

Above mean = -3.325

259.4
283.6 242
-77.7 256
103.3 49.8 — 3.28

257.2
8:09 05 283.6 26.4 — 3.14
13 09 -77.3 300
8 06 34 107.3 56.4 — 3.00
8 06 27

April 13, 1915

Same again

above — II

256.4
8:10 55 284.3 — 27.9
-74.3 — 29.9
104.2 — 57.8 — 294.

258.6 — 3.005
284.8 — 26.2
-75.8 — 28.4
104.2 — 54.6 — 307

Below — Mean -2.925
169.3
197.8 — 28.5
343.6 — 30.2
13.8 — 57.7 — 2.91

168.3 — 2.845
8.15 35 198.6 — 30.3
6 30 344.5 — 31.8
8 13 15 16.3 — 62.1 — 278
8 13 8

april 13, 1915

Same again III

Below

170.0
8:20.57 197.2 27.2
345.8 29.0
14.8 56.2 — 3.01

169.8 — 3.05
198.2 28.4
347.8 25.8
13.6 54.2 — 3.09

above Mean = — 3.0~~4~~32

77.6
105.6 28.0
256.0 28.8
284.8 56.8 — 2.99

080.0
8:26 50 105.6 25.6 — 3.0~~2~~15
253.8 29.8
8 23 54 283.6 55.4 — 3.04
8 23 47

Final Mean = — 3.07

April 13.1915

W Crucis · 12065 f

1009

1:57 E - sf. 2

above

345.6 ∠Var. dis

835 36 16.6 31.0

166.3 27.9

194.2 58.9 — 290

345.6

16.2 30.6 — 2.905

167.2 28.1

195.3 58.7 — 2.91

Below Mean = - 2935

256.8

~~8.39 01~~ 287.3 30.5

-77.5 27.3

104.8 57.8 — 294

258.6

8.40.28 285.2 26.6 — 2.965

76 04 75.2 30.1

8 38 02 105.3. 56.7 — 2.99

8 37 59

April 13. 1915

Same again II

Below

257.2

8:42 03 284.2 27.0

77.3 31.0

108.3 580 — 2.94

257.0

286.6 29.6 — 2.90

-76.2 304

106.6 600 — 286

above Mean = 2.885

166.3

5 193.8 27.5

165.6 29.6

195.2 57.1 — 297

344.2 — 2.87

8:47 30 16.6 324

9 33 166.3 29.9

8 44 ~~4~~6 196.2 623 — 277

8 44 39

Final Mean = 2.90

April 13 1915

133926   Miss Woods algol

1029

3102 − 26.2

Above

341.6   ∠ Var dis

8.57   04   17.3   357

162.8   414

204.2   771 − 2.28

2.365

342.2

16.2   340

165.2   384

203.6   72.4 − 2.43

Below   Mean = 2.238

249.8

289.6   398

−71.2   360

107.2   758 − 2.32

246.3

9.02 45   292.8   46.5 − 2.12

119 49   68.8   43.4

8 59 54   112.2   899 − 1.92

8 59 47

April 13, 1915

Same again II

Below

250.2
9:04 39 296.6 46.4
-65.8 51.5
117.3 97.9 — 1.71 —

244.3
9:07.36 293.4 49.1 — 1.785 — X
69.8 43.0
112.8 92.1 — 1.86 —

above Mean = 1.995 ~~2.00~~

164.2
9:09 00 197.2 33.0
340.5 42.1
22.6 75.1 — 2.34 —

158.8 — 2.2 X 05 X
9:10 23 200.8 42.0
31 38 340.0 42.2 — 2.07 —
9 07 54 22.2 84.2
9 07 47

April 13, 1913

III

Above

158.3
9:16 32 204.2 45.9
337.3 44.8
22.1 90.7 − 1.90

161.2
9:18 28 202.2 41.0 − 2.07
342.6 37.4
−20.0 78.4 − 2.24

Below Mean = −1.958

245.6
9:20 16 291.8 46.2
−66.3 48.9
155.2 95.1 − 1.78

247.6
9:22 28 291.2 43.6 − 1.845
77 44 −68.6 46.6
9 19 26 115.2 90.2 − 1.91
9 19 19

Final Mean = 2.07

April 13, 1915

-41° 3911 Rec. Var.

08 10 45
11 07
2 57 W
-41 f

10 00 Clds over region.

L.

C for C

Wed. Apr. 14, 1915

133926 Algol Var F.C.L.
A.B. Rec
852 Phot. Ob.
4472

I

C's W fast
= ~~7.15~~ 14

Below
252.3 ∠ Var. dis
7:15 10 292.6 403
60.5 517
112.2 920 − 1.86

249.2 15
7:16 33 295.6 464 −1.8~~2~~
65.0 49.0
~~1,1,4,.0~~ 95.4 − 1.77

Above mean = −1.758
152.8
7:17 54 207.8 550
337.2 433
20.5 98.3 − 1.70

158.0 − 1.70
7.19 08 206.3 48.3
336.3 503
~~28~~ 45 26.6 98.3 −1.70
7 17 ~~26~~

7 16 11 57 Sky somewhat hazy & thinly cldy in this general part. F

20602.512
602.370
0.142

Apr. 14. 1915

~~CW~~ above II

159.3
7:23 00 203.4 441
334.3 480
- 22.3 92.1

−1.86

161.2
7:24. 08 203.3 421 − 1.9~~8~~ ~~2~~ 4 −1935
339.0 443
23.3 86.4 − 2.01

Below Mean = −1.9~~8~~0 4

70.8
7:25.25 110.6 398
248.3 46.7
295.0 86.5 − 2.01

67.3 − 1.945
7:26 49 1110.1 438
~~82~~ 247.8 474
· 19 22 295.2 91.2 − 1.88
7 24 50
7 24 36

20602. 517
602. 370
0.147

April 14, 1915

Below III

66.2

7:31 45 110.6 444

248.2 428

291.0 97.2 − 1.73

$2\overset{4}{\cancel{6}}7.2$

7:3~~4~~ ~~00~~ 08 294.3 47.1 − 1.82 5

68.6 436

112.2 90.7 − 1.90

Above mean = ~~1.79~~ 1.808

158.5

7:37 20 207.3 488

333.4 512

−24.6 100.0 − 1.66

160.6 − 1.79

7:38 42 205.6 450

21 55 336.3 449

23.2 89.9 − 1.92

7 35 29

7 35 15

20602.524

602.370

+0.154

April 14. 1915 —

IV

above

161.8
7:52 02 205.8 440
337.8 455
23.3 89.5 — 1.93

159.8 — 1.855
7:53 24 207.2 47.4
337.5 476
25.1 95.0 — 1.78

Below Mean = — 1.765

68.7
7:54 51 117.2 48.5
248.8 494
298.2 97.9 — 1.71

65.8 — 1.655
7:56 24 117.5 51.7
16 41 247.8 508
7 54 10 298.6 102.5 — 1.60
7 53 56
-537
370
.167

April 14, 1915 —

V

Below

64.8
8:00 50 113.3 48.5
246.6 50 2
296.8 98.7 — 1.69

64.3.
8:02 3~~7~~ 115.8 51.5 — 1.675
247.8 49.5
297.3 100 0 — 166

Above Mean = -1.732
334.3
8:04.36 22.2 47.9
157.3 47 2
204.5 95.1 — 1.78

337.3
8:05 45 23.6 51.3 — 1.79
164.2 43.1
13 ~~4~~8 207.3 94.4 — 1.80

8 03 27
8 03 13
1544
1370
174

April 14 1915

VI

above

336.5
8 25 30 25.2 48.7
156.8 524
209.2 101.1 — 1.63

337.2
8:27 04 24.8 47.6 — 1.6$\overset{15}{2}$
155.2 548
210.0 102.4 — 1.60

Below

Mean = 1.510

65.4
~~65.4~~
7.28 20 117.2 518
244.8 540
298.8 1058 — 1.52

63.4 — 1.405
8.29.46 122.3 589
241.6 56.6
298.2 115.5 — 1.29

Rejected see note below.

Troubled by clds

1/2 weight only

prob best to reject above group

April 14, 1915.

VII

Below

64.8

~~8.35 21 114.2~~ Too cldy

Below Clearer

246.4

9:29 26 293.3 469

-67.8 468

114.6 93.7 - 1.82

251.2

9:30 44 293.1 41.9 - 1.87

62.2 480

110.2 89.9 - 1.92

Above mean = 2.025

165.2

9:32.18 202.2 370

341.2 390

76.0 - 232

20.2

- 218

161.6

9:33 27 201.8 40.2

333.6 45.3

85.5 - 2.04

5 55 18.9

9 31 29

9 31 15

605

370

235

April 14 1915

VIII

Above

158.2
9:38 20 206.3 — 481
336.8 — 430
19.8 — 91.1 — 1.88

163.2 — −2.05
9:39 32 203.6 — 404
337.8 — 388 — 2.22
16.6 — 792

Below — Mean = −2.018

249.8
9:40 57 295.3 — 45.5
69.8 — 430
112 8 — 88.5 — 1.95

249.8
9:42 18 294.8 — 450 — 1.985
1 07 698 — 410
110.8 — 860 — 202

9 40 ~~18~~ 17
9 40 03
611
370
.241

April 14, 1915

RT Cent. 134236

11 31

2 11 ε -364

Below

302.2 ∠ Var. dis

9:52 04 56.3 1141

130.8 1044

235.2 2185

1415 +074

302.8

9:54 08 57.2 1144 +0805

125.2 1101

235.3 2245

1355 +087

above mean = +0.775

328.8 ∠ comp. star dis

9:57 01 037.6 68.8

144.2 71.8

216.0 140.6 +076

326.1

9:58 57 37.2 71.1 +0745

22 10 144.5 71.1

214.6 142.2 +073

9 54 32

9 54 18

April 14, 1915 —

R Centauri 140959
1147

Above 2 22 E -59.4

10:25 Clds prevent observations

Thurs. April 15, 1915

Clw — 18" fort

Photom. Obs

L.C. Obs
A.B. Rec

R Triang Aust. 15066
850
620 E - 66.1

Too low at this time.

Y Corinae 10295
853
136 E - 580

Above

~~7.13 28~~ 133.2 Var. dis

7:13 28 231.2 98.0
316.8 975
-54.3 195.5
131.3 164.5 + 0.29

7:14 51 230.5 992 + 0.31
313.6 980
-54.6 197.2
162.8 + 0.33

Below

mean = + 0.250

223.5

7:16 33 318.2 947
43.1 96.7
139.8 191.4
222.5 168.6 + 0.22

7.17. 40 313.5 910 + 0.19
22 32 44.2 974
15 38 141.6 188.4
7 15 20
20603.511 171.6 + 0.16

April 15 1915

~~Below~~ Same again

223.3

7:20 32 316.6 933

42.6 977

140.3 191.0

169.0 + 0.21

223.3

7:21 39 318.2 949 + 0.205

42.4 959

138.3 190.8

~~Above~~ 169.2 + 0.20

315.8 mean = + 0.170

7:23 03 50.6 948

138.3 892

227.5 184.0

176.0 + 0.08

311.3

7:24 16 − 52.2 100.9 ~~90.9~~

9 30 134.5 889 + 0.1~~4~~ 35

223.4 189.8

) 22 22

7 22 04 170.2 + 0.19

.515

Final mean = 0.21

April 15, 1915

-26.9905 133926
917
4222 -26.2

I

Above < Var dis.

340.2
7:36 32 19.4 39.2
164.2 37.4
201.6 76.6 — 2.30

341.3
7:37 42 18.8 37.5 — 2.225
159.8 44.0
203.8 81.5 — 2.15

Below mean = — 2.248

250.2
7:39 30/10 288.6 38.4
-72.3 38.3
110.6 76.7 — 2.29

251.0 — 2.27
7:40.216 290.3 39.3
34 20 69.8 38.8
7 38 35 108.6 78.1 — 2.25
7 38 17
20603.527
2.376
1.157

April 15th 1915

II

Below

248.0
7:46 29 292.2 442
68.8 38.8
107.6 83.0 — 2.11

250.2
7:47 50 290.3 401 — 2.15
-70.6 402
110.8 80.3 — 2.19

Above Mean = —2.042

156.5
7:49 17 204.8 483
340.0 40.5
20.5 ~~88.8~~ — 1.95

161.2 — 1.9~~4~~ 35
7:50 24 206.3 451
34 00 336.8 445
7 48 30 21.3 89.6 — 1.92
7 48 12
2060 3.533
2.370
1.163

April 15, 1915

III

above
162.2
7:55 42 202.8 40.6
342.2 37.4
19.6 78.0 — 225

165.2
7:57 12 201.2 36.0 − 2.33
342.8 37.0
19.8 73.0 — 2.41

Below mean = −2.188
67.2
7:58 27 111.3 44.1
250.2 41.3
291.5 85.4 — 204

70.2
7:59 45 111.6 41.4 — 2.045
31 06 248.6 43.6
7 57 46 292.2 85.0 — 205
28
3.540
2.370
1.170

April 15, 1915

IV

Below

68.2
8:03 45 113.2
~~8:0~~ 252.2
291.8

45.0
39.6
84.6 — 2.06

71.8
8:05 16 110.2
252.8
293.0

38.4 — 2.15
40.2
78.6 — 2.24

Above

335.8
8:06 48 20.6
158.8
203.6

mean = — 2.098

44.8
44.8
89.6 — 1.93

341.3
8:08 08 20.2
23 57 159.6
204.6

38.9 — 2.005
45.0
83.9 — 2.08

8 05 59
8 05 41
3.546
2.370
1.176

see new book

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