1954phae.proj..220B

KG
11365
220

K.10

EE. No. 10

Jones

Sept. 27, 1854 to Dec 8th/54

1854

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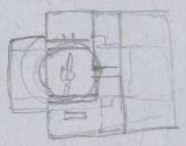
Zones 64 —— Zone 84 [illegible] book 10

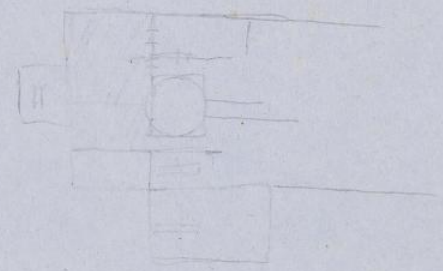
Corrections should be entered in red ink and not in pencil, I not know whether the remarks were made at the time or afterwards.
Every [illegible] lines there should be a line scrapped.

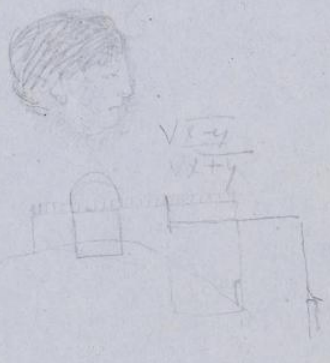
$2x+y-2x-y$

$4x=y$

Zones [illegible] this [illegible] 1854 [illegible]







$V\frac{x-y}{x+y}$



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First Series

Zones observed in 1852-3.
Declinations + 0° to 10°

No of Zone	Page	RR	
		h m	h m
22 to 23	106-113	23.. 00 to	0.. 43
26 to 27	122-131	0.. 40 to	2.. 27
30 - 32	140-151	2.. 21 to	4.. 08
31 - 33	152-163	4.. 08 to	6.. 12
38 - 39	190-203	5.. 58 to	7.. 50
42 - 43	226-229	7.. 47 to	8.. 13
44 - 45	230-241	8.. 15 to	10.. 18
1 - 2	1-7	10.. 14 to	11.. 35
2 - 3	8-17	10.. 14 to	11.. 53
49 - 50	262-269	11.. 52 to	13.. 52
51 - 52	270-277	13.. 47 to	15.. 55
59 - 60		15.. 51 to	18.. 14
8 - 9	38-47	18.. 06 to	19.. 55
13 - 14	58-69	19.. 48 to	21.. 39
14 - 16	70-79	19.. 48 to	21.. 39
18 - 19	90-97	21.. 33 to	23.. 07
22 - 23	106-113	23.. 00 to	0.. 43

Zones observed in 1852-3
Declination from + 10° to 20°

No of Zone	Page	RR.	
		h m	h m
24 - 25	114-121	23.. 24 to	1.. 08
28 - 29	132-139	1.. 04 to	2.. 49
34 - 35	164-175	2.. 42 to	4.. 39
36 - 37	176-189	4.. 29 to	6.. 16
40 - 41	206-225	6.. 15 to	8.. 20
46 - 47	242-251	8.. 08 to	10.. 20
47 - 48	252-261	8.. 14 to	10.. 20
4 - 5	18-27	10.. 17 to	12.. 00
6 - 7	28-37	11.. 13 to	13.. 05
53 - 54	278-287	12.. 58 to	15.. 03
55 - 56	288-	15.. 01 to	16.. 58
57 - 58		16.. 53 to	18.. 25
10 - 11	48-57	18.. 06 to	19.. 45
15 - 17	80-89	19.. 39 to	21.. 25
61 - 62		21.. 23 to	21.. 49
20 - 21	98-105	21.. 39 to	23.. 31
24 - 25	114-121	23.. 24 to	1.. 08

No of Zone — Second ~~New~~ Series observed in 1854.

Dec from + 20° to 30°

12 - 63 - 64	18.. 01 to	19.. 45
67 - 68	19.. 43 to	21.. 38
73 - 74	21.. 36 "	22.. 45
75 - 76	22.. 45 "	0.. 50
83 - 84 ~~83 - 84a 84b 84c~~	0.. 42 "	2.. 48
89 - 90	2.. 42	4.. 54
93 - 94	4.. 51	7.. 02
97 - 98	6.. 58	8.. 30
99 - 100	8.. 23	9.. 48
103 - 104	9.. 44	11.. 49
109 - 110	11.. 46	13.. 50
111 - 112	13.. 49	15.. 55
117 -	15.. 54	18.. 02

Declination from + 30° to 40°

65 - 66	17.. 52 to	19.. 50
69 - 70	19.. 45 to	20.. 48
71 - 72	20.. 48 to	22.. 25
77 - 78	22.. 17 to	23.. 29
79 - 80	23.. 27 to	0.. 21
81 - 82a 82b	0.. 19 to	2.. 24
85 - 86 - 87	2.. 23 to	4.. 30
88 - 91 - 92	4.. 28 to	6.. 34
95 - 96	6 33 to	8 40
101 - 102	8.. 22 to	10.. 24
105 - 107	10.. 19 to	12.. 25
106 - 108	12.. 25 to	14.. 32
113 - 114	14.. 19 "	16.. 08
115 - 116	16.. 07 "	17.. 57

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1854

Sept. 27 Eph. Th. 69°3 at Com 68 at Ena-

Zones 65 & 66

Sept. 28

Zone 63 is Zone 12 & Zone 64 is on same page with Zone 12

N.B. Hind's ~~first~~ estimates of magnitude in Zone 65 were mag. too bright.

17h 51m 54.9	58.9	17 57 58.90	17h 51m 55.3	59.3	17 51 59.30
52 44.8	48.6	48.70	52 45.1	49.3	52 49.20
B			D		
54 47.1	51.3	51.20	54 47.6	51.7	54 51.65
56 9.3	13.3	13.30	56 9.6	13.6	56 13.60
17 58 38.9	42.9	42.90	17 58 39.0	43.0	17 58 43.00
D			B D		
18 00 18.2	22.2	22.20	18 00 18.6	22.6	18 00 22.60
1 1.3	5.4	5.35	1 01.8	5.8	1 5.80
2 38.9	42.8	42.85	2 38.2	43.0	2 43.10
2 53.0	57.0	57.00	2 53.4	57.4	2 57.40
3 8.8	12.7	12.75	3 09.0	13.0	3 13.00
3 28.9	32.9	32.90	3 29.2	33.2	3 33.20
B D			D B		
5 19.3	23.2	23.25	5 19.7	23.7	5 23.70
37.3	41.3	41.30	5 37.5	41.5	5 41.50
50.3	54.3	54.30	5 50.6	—	5 54.60
6 13.1	17.0	17.05	6 break	17.5	6 17.50
B			D		
6 42.0	46.0	6 46.00	6 42.3	46.0	6 46.15
6 44.2	48.0	6 48.10	break		
? 7 6.7	10.7	8 10.70	8 06.9	10.9 cent.	8 10.90
9 47.0	50.9	9 50.95	9 47.1	51.2	9 51.15
D			B		
10 47.5	51.7	10 51.60	10 47.7	51.7	10 51.70
11 54.7	56.8	11 58.75	11 55.0	59.1	11 59.05
13 33.5	37.3	13 37.40	13	37.7	13 37.70
D B			B		
14 56.6	0.6	15 00.60	14 56.8	00.8	15 00.80
16 19.7	23.8	16 23.75			
17 27.3	31.3	17 31.30			
18 43.9	48.4	18 48.15	18 44.6	48.6	18 48.60
B			D		
20 07.4	11.3	18 20 11.35	20 07.8	11.8	20 11.80

Weight henceforth always applied to secure the damping in R.

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1854

Sept. 27

Moonlight Clear - good def.

W. by S. obs. Strong wind from west.

Yrc B obs.

10 ? 5..21

7-8 ? 8..37

B

Very few stars greater than 13 mag.

13 N 1..22

12 ~~9.10~~ 10..27

12 N 5..02

D

12 N 4..18

12 N 9..55

11 N 3..37

8 1..17 double 4" m.p.

9 2..20

10 0..45

B D

10 7..14

9 3..35

9 1..21

7 9..05

B

10 5..40 ns } Reverse 5:47

10 6..47 ns } 5:40

10.11 2..13

12 2..10

D

12 0..27

9.10 10..22

9 10..00

D B

12 6..40

12 2..28

11.12 9..22

Starless field

12 3..32

B

9 10..33

Zone 65 & 66

Dec. from +0°.30' to +0°.40' } Dr. Zero. Res. 9° 15'

Zone 66 Ert Zn. 57-

h w +2h 2m

Clouds very troublesome during Zone 66-

I.

II.

G P. B obs. D

10 5 22

7/8 8 38

D.

13 1 17

12 10 32

12 5 03

B. D.

12 8 21 } something lost here

12 9 58 }

11 3 37

8 8/9 1 17

9 11/9 2 22

12 0 46

D B

No stars larger than 14

~~11~~ 12 7 16

11 3 36

10 1 22

7.8 7 D. 9 6

11 5 47 }

11 5 42 } no cir D. Other Reps

11/~~12 Aug~~ 12 2 15 (Is N. right asc 2.65?)

12 2 10

B.

12 0 27 Images of stars tremulous

11 10 26

10 10 00 ~~11~~ wire lost

B Thin clouds.

12 6 41

12 2 31 N. lost Clouds

[8 22 ½) N lost

12 3 34

9

11 10 ~~26~~

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18. ~~21. 58.0~~ ~~3.2~~		.10 *			
22..57.2	1.2	18 . 23 . 01 . 20	18..22..57.4	1.4	18..23 .. 1.40
23..33.7	37.7	23 .. 37 . 70	23..33.9	—	23,.37.90
24..44.2	48.2	24 .. 48 . 20			
25.. 1.8	5.8	25 .. 5,80	25.. —	5.9	25 .. 5.90
25. 24.2	28.8	25 .. 28 . 50			
25..36.7	40.8	25 .. 40 . 75			
26 02.8	6.8	26 .. 06 . 80			
D B			B		
27..31.1	35.0	27 .. 35,05	27..31.4	35.4	27 .. 35.40
28..44.9	49.3	28 .. 49. 10	28..45.2	49.2	28 49.20
28..55.0	59.0	28 .. 59.00	28..55.8	57.3	28..59.30
B			D.		
30..08.0	—	30 .. 12.00			
31.. 1.3.	5.6	31 .. 5.45	31..02.1	6.1	31 .. 6.10
31..53.1	56.9	31 .. 57.00	31..53.1	57.0	31 .. 57.05
31..54.7	58.5	31 .. 58.60	31..54.9	58.9	31 .. 58.90
D			B		
33..10.8	14.8	33 .. 14.80	33..10.9	14.9	33 .. 14.90
34..21.7	25.6	34 .. 25.65	34..21.9	25.9	34 .. 25.90
4.. 32.7	36.5	34 .. 36.60	34..32.7	36.7	34 .. 36.70
34..54.9	~~58.8~~ 23.3	34 .. 58.85	34..54.8	58.8	34 .. 58.80
35..19.3	~~23.3~~	35 .. 23.30	35..19.6	23.5	35 .. 23.55
D B.			B D		
36..14.0	18.0	36 .. 18.00	36..14.3	18.3	36 .. 18.30
39.3	43.3	36 .. 43.30	36..39.6	43.6	36 .. 43.60
37..10.3	14.4	37 .. 14.35	37..10.7		37 .. 14.70
37..40.4	44.3	37 .. 44.35	37..40.7	44.4	37 .. 44.55
B			D		
38..33.1	37.0	38 .. 37.05	38..33.2	37.2	38 .. 37.20
39.4	43.3	38 .. 43.35	39.5	43.4	38 .. 43.45
40 10.4	14.5	40 .. 14.45	40..10.7	14.7	40 .. 14.70
41..10.5	14.5	41 .. 14.50	41..10.5	14.5	41 .. 14.50
42.. 7.2	11.0	42 .. 11 .10	42.. 7.2	11.3	42 .. 11.25
B. B.			D		
42..55.3	59.2	18 . 42 .. 59 . 25	42..55.3	59.5	18.42 .. 59 . 40

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65 a 66

Starless field

13 9.30
9 7.15 double comp 12 m s.p 5" 1
10.11 1.50
9 10.40
9 0.07
9 −0.52 erroneous reduction
10 2.20
9.10 7.49
D B Starless field
9 4.10
10 6.50
9 7.07
B
11 8.13 2 min lost
11 7.15 n.s.
10 1.47
10 2.50 n.s
D
9.10 −0.20
9.10 10.10 n.s
10 42
9 2.10 n.s
9 1.22
D B
12 5.35
10.11 5.07
9 5.03
10 9.46
B
10 6.42
10 7.48
11 6.49
~~11 8.25~~
9 −0.33 n.s.
6.7 10.40
B B
9.10 7.47

9 10 7 16 double c. 12 m s.p 5.
11 1 51 2 Last 17 W.
not read
9 0 08 no R. T 2.
9 − 0 20 no R Date right in Z. 66

B. Uhr und RWB vor anfangen
10 4 11
11 8 50
11 7 08
Nεφελαι
Blick zu suchen
11 7 16
10 1 47
11 2 50 Keine Zeigerbr
Spring.
10/11 − 0 17
11 10 12
11 4 45
9 2 12 comp. 11. 9" sp.
9 1 23
+2 B30
12 5 36
11/12 5 7
10 5 3 2 L.
11 9 49
D. Mg. 2 from
11 6 42
12 8 48 W.S. Rise this 66.
11 6 49
50 − 0 33
7 10 43
7 D.
10 7 48 Lilac rd.

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18 43..45.9	49.9	18 „43„49.90
44..44.2	49.9	44„48.05
44..44.9	49.0	44„48.95
D		
46..20.0	24.0	46 „24.00
47..23.7	27.7	47 „27.70
47..46.0	49.9	47 „49.95
48„ 2.3	6.3	48 „06.30
DB		
50..28.8	32.8	50 „32.80
51„ 1.0	5.0	51 „05.00
52..37.7	41.8	52 „41.75
52„46.1	50.0	52 „50.05
53..34.0	38.0	53 „38.00
D		
54„31.0	35.0	54 „35.00
50.1	54.2	54 „54.15
56..15.0	19.0	56 „19.00
56..29.6	33.8	56 „33.70
B		
57..47.8	51.7	57 „51.75
58„29.6	33.8	58 „33.70
58„44.9	48.9	58 „48.90
59„21.3	25.3	59 „25.30
18 59„28.7	32.7	18 „59 „32.70
19„00..19.2	23.2	19 „00 „23.20
19„00„35.2	39.2	00 „39.20
D B		
19„ 1„16.6	20.4	01 „20.50
1„ 53.7	57.6	1 „57.65
2„38.7	42.7	2 „42.70
2„53.8	58.1	2 „57.95
3„23.3	27.3	3 „27.30
3„ 54.6	58.7	3 „58.65
4„22.9	26.9	4 „26.90
4„ 35.0	38.9	4 „38.95
B		
5„58.0	2.0	19 „6 „02.00

18„43„46.2	50.1	18„48„50„15
44„44.3	48.2	44 „48.25
B D		
46„20.3	24.3	46 „24.30
47„23.9	27.8	47 „27.85
47„46.1	50.1	47 „50.10
48„ 2.5	6.4	48 „06.45
B		
50„29.0	33.0	50 „33.00
51„ 1.1	5.1	51 „05.10
52„37.9	41.8	52 „41.85
52„46.3	50.3	52 „50.30
53„34.3	38.3	53„38.30
B		
54„31.1	35.1	54 „35.10
54„50.2	54.3	25
56„15.2	19.2	18 „56 „19.20
D		
19„04„35.2	39.2	19 „4 „39.20
D		
5„		

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Dec +0..30 to 0..40

7 10..09
10 – 0..28
11 4..57 n.s.
D
11 4..32
9.10 0..41
10.11 4..05
8.9 7..43
D B
9.10 – 0..33
10 7..10
12 7. 10
8.9 8..28
10 9..17
D
8.9 – 0..15
9 6..23
9 2..50
10 6..05
B
9.10 8..55
11 8..40 ns
10 1..12
9.10 – 0..05 ns
10 8..30
9.10 10..20
12 3..20
D B
10 3..29
13 9..13
9.10 6..25
12.13 3..41
10 7..06
9.10 – 0..20
10 2..07
8 10..40
B
9.10 7..38 ns

8.9 8 10. 11
11 – 0 25
12 3 56 NB. [illegible] Right D.
B D
12 4 33
10/11 0 45
11/12 4 6
10 7 45
B. 7
10 – 0 32
11 7 12
12 7 16
9/10 8 27
12 9 19
B.
9/2 – 0 14
1 6 24
8.9 11 2 52
not to be seen
D.

Cloud prevents.

9

9 10 43 Neg. mü.
D
7 40

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h m s			h m s		h m s
19 06 00.9	5.0	19 06 04.95	19 06 01.2	5.2	19 06 05.20
6 17.2		? 1 m 2 mm			
6 55.9	59.9	6 59.90	6 56.2	0.2	07 00.20
D			BD		
7 50.8	54.7	7 54.75	7 51.	—	7 55.00
9 4.9	8.8	9 8.85	9 —	9.0	9 9.00
B					
9 36.4	40.3	9 40.35	9 36.5	40.4	9 40.45
10 38.0	41.9	10 41.95	10 38.4	42.3	10 42.35
10 44.4	48.6	10 48.50			
11 01.0	5.0	11 05.00	11 01.1	5.1	11 05.10
11 30.8	34.8	11 34.80	11 30.9	34.9	11 34.90
12 14.7	18.7	12 18.70	12 14.8	18.8	12 18.80
12 43.1	47.2	12 47.15	12 43.3	47.2	12 47.25
12 48.0	52.9	12 52.95	12 49.0	53.1	12 53.05
13 17.1	21.2	13 21.15	13 17.0	21.2	13 21.10
13 26.6	30.3	13 30.45	13 26.5	30.6	19 13 30.55
D B			B		
16 51.0	55.0	16 55.00			
16 53.3	57.2	16 57.25			
17 31.5	35.5	17 35.50			
18 1.9	5.9	18 05.90			
18 8.9	12.8	18 12.85			
39.8	43.8	18 43.80			
18 42.8	46.8	18 46.80			
B					
21 00.4	4.4	21 4.40			
21 8.9	12.9	21 12.90			
22 00.1	4.2	22 04.15			
22 53.6	57.6	22 57.60			
23 6.6	10.6	28 10.60			
23 29.5	33.3	23 33.40			
B					
24 25.9	29.9	24 29.90			
45.8	49.9	24 49.85			
26 24.8	28.9	26 28.85			
26 58.4	3.2	27 03.30			
19 27 24.7	28.5	19 27 28.60			

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65-66

30' to 40'

10.11 10..40
10.11 4..18
8 8..40
D

8.9.10 4..58
10 0..56
B

9 -0..40
12 0..48 ns
12? 5..58
9 -0..38
10 1..07
10 -0..30
12 3..10 double comp n/p d 20"
10..33
10.11 1..23 ns
7 9..00
D B

10.11 9..20
10.11 9..48
10 0..18 ns
12 3..12
12 4..00
10 8..32 n.s?
9 8..23
B

10 8..10 ns
9 3..48 ns
10 2..33
10 6..47
10 3..32
10 2..43
B

12 7..57
9.10 7..25
12. 4..50
12 3..35
11 7..10

9 — 8 41 #
BD
— 5 m IS. TO
— 0 57 TS

7.8 9 -0 38
12 0 49
— 5 59 n SS
10 -0 34
11 1 08
10 -0 30
12 3 12
10 10 35 double comp. 11 — 11" n/p.
1 25 1.W.2 too early
8 9 9 01
B

clouds

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19 27 53.1	57.2	19 27 57.15
28 28.7	32.6	28 32.65
28 29.2	33.2	28 33.20
DB		
29 31.7	35.7	29 35.70
30 27.9	31.6	30 31.75
30 27.9	31.6	30 31.75
B		
31 53.2	57.2	31 57.20
32 35.3	39.2	32 39.25
32 51.9	56.6	32 56.75
D		
33 52.5	56.6	33 56.55
34 17.8	21.8	34 21.80
35 46.2	50.0	35 50.10
57.5	1.6	36 01.55
36 17.3	21.3	36 21.30
36 38.8	42.8	36 42.80
BB		
37 25.5	29.4	37 29.45
37.6	41.5	37 41.55
38 16.7	19.6	38 19.65
39 8.5	12.4	39 12.45
39 47.4	51.4	39 51.40
40 16.1	20.1	40 20.10
40 37.0	41.2	40 41.10
40 42.7	46.7	40 46.70
40 58.9	2.9	41 02.90
B		
41 35.0	38.9	
42 52.2	56.1	42 56.15
42 56.1	0.0	43 00.05
44 15.3		44 ~~19.30~~
44 18.0	21.9	44 21.95
44 49.9	53.9	44 53.90
44 58.9	2.8	45 02.85
D		

19 33 52.8	56.8	19 33 56.80
35 46.5	50.3	35 50.40
57.6	1.6	36 01.60
D		
37 25.7	29.7	37 29.70
D		
40 37.3	41.3	40 41.30
D		
42 52.3	56.6	42 56.45
42 56.6	0.0	43 00.30
44 50.1	——	44 52.10 Star x
44 59.0	2.9	19 45 02.95
B		

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1854phae.proj..220B

65 266

8.07
5 27
8, 43

12·13 3..57
12 9..17 ms
12 10..10 ms
D B

cloudy.

10,11 0..21
12 3..11 ms
12 8..52 ms
B

12·13 0..00
12·13 8..56 suspected
10..11–0..10
D

12·13 1..08 — 1 08
12 9..29
Many 12 meas pass unobserved
9.10 9..47 — 9.48
12 8..01 — 8 03
13 ~~7..25~~ — 7 16 no. AR.
12 2..30 ms
B B

Dbl.
10 5..18 — 5 19
12 6..27 ms
12·13 1..31
12 4..05
13 1..07 ~~1.06~~
12 2..08 1
9 4..06 9 ~~1 6~~ 07
12·13 2..30 ms
12·13 8..28
B

D
8.8 8..05 9 8 06 no AR
10 3..05 } 4 dist. 3 06
10 2..30 ms } 2 31 no sig. Pec bnd
12 3..03 ? 1st mm bat.
12 7..28 1st mm bat
8.9 5..37 5 39 D L.
8.9 8..18 ms? 5 9 8 19 Star ~~x~~
B
Star x
measures for one.
5 T agree

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1854phae.proj..220B

65

19ʰ46ᵐ01.0	5.2	19ʰ46ᵐ05.10
46ᵐ40.9	44.9	46ᵐ44.90
46ᵐ53.9	57.9	46ᵐ57.90
47ᵐ18.1	22.1	47ᵐ22.10
47ᵐ37.0	41.0	47ᵐ41.00
DB		
48ᵐ22.0	26.0	48ᵐ26.00
36.8	40.8	48ᵐ40.80
56.0	59.9	48ᵐ59.95
49ᵐ2.1	6.0	49ᵐ06.05
49ᵐ59.2	3.2	19ʰ49ᵐ03.20

66

19ʰ46ᵐ01.5 — 19ʰ46ᵐ05.50

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1854phae.proj..220B

3 12 2d.

10 3..10 m
10 2..18
13 9..28 m.s
12 0..31
10 6..17
D B
12 3..07
10 6..50
9.10 6..57
11 6..40
10 9..08
12 9..00

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1854phae.proj..22DB

1854
Sept. 29

Zone 67

Ext. Th. +52°

First star is a of Zones 63-64

Second star is in Catalogue

8ᵗ 1854.0 α 19ʰ 43ᵐ 28ˢ.03
δ 0° 28′ 40″.3

T.C.B. Obs.

19ʰ 43ᵐ 05ˢ.5	9.3	19ʰ 43ᵐ 09ˢ.40
43 23.9	27.8	43 27.85
44 51.1	54.9	44 55.00
45 20.0	24.0	45 24.00
B		
46 18.6	22.8	46 22.70
44.9	48.8	46 48.85
47 17.1	20.9	47 21.00
D		
48 20.0	24.0	48 24.00
49 00.7	4.4	49 04.55
49 20.7	24.7	49 24.70
50 04.6	8.5	50 08.55
50 56.3	0.3	51 00.30
51 20.3	24.0	51 24.15
51 25.8	29.8	51 29.80
B		
52 12.2	16.0	52 16.10
52 49.8	53.8	52 53.80
B D B		
54 07.3	11.3	54 11.30
55 20.2	24.2	55 24.20
55 29.4	33.6	55 33.50
56 16.5	20.5	56 20.50
56 33.6	37.5	56 37.55
56 43.6	47.3	56 47.45
57 1.5	5.5	57 05.50
B		
57 44.2	48.0	57 48.10
58 13.1	16.9	58 17.00
59 20.2		59 20.20
19 59 26.3	30.1	19 59 30.20
D		
20 00 46.1	50.2	20 00 50.15

Zone 68

T.C.B. Obs.

19ʰ 43ᵐ 05ˢ.6	9.6	19ʰ 43ᵐ 05ˢ.60
43 24.1	28.1	43 28.10
44 51.0	55.2	44 55.10
45 20.3	24.1	45 24.20
D		
46 18.8	22.8	46 22.80
44.9	48.9	46 48.90
47 17.6	21.3	47 21.45
B		
48 20.3	24.3	48 24.30
49 00.9	4.9	49 04.90
49 20.8	24.8	49 24.80
50 4.8	8.8	50 08.80
50 56.6	0.4	51 00.50
51 20.1	24.2	51 24.15
51 26.6	29.7	51 29.60
D		
52 12.3	16.3	52 16.30
52 50.0	53.9	52 53.95
D B		
54 07.6	11.6	54 11.60
55 20.2	24.3	55 24.25
55 29.6	33.6	55 33.60
56 16.8	20.8	56 20.80
56 33.8	37.8	56 37.80
56 43.7	48.0	56 47.85
57 01.7	5.7	57 05.70
D		
57 44.3	48.3	57 48.30
58 13.1	17.0	58 17.05
59 16.4	20.4	59 20.40
19 59 26.3	30.4	19 59 30.35
B		
20 00 46.1	50.1	20 00 50.10

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1854phae.proj..22OB

1854
Sept. 28

67

+0°.20′ to +0°.30′
Strong wind from N.W.

9	1..29
7.8	8..40
11.	8..01
11	10..04
	B
12	1..07
12	2..02
12.13	10..22
	D
12	0..45
10.11	6..09
11	5..49
10	7..25
10	2..33
	7..39
9	10..33 ms
	B
10.11	8..30
11.12	10..23
	B D B
11.12	4..08
12	1..30
12	1..31
9.10	8..28
11	0..40
12	1..00
10	8..05
	B
11	8..27
12.13	10.. ms
10	10..10
9	8..03
	D
12	6..32

68

Oct. 5 Dec + 0° to +0°.0′.30″
Calm & clear
Ext. Th. + 46°.3 End 41°.0

9	1..30
8 7.8	8..41
11	8..00
11	10..03
	D
12	1..08
12	2..02
12	10..21
	B
11	0..45
10	6..09
11	5..47
10	7..25
10	2..34
12	7..38
8	10..33 ms
	D
10	8..30
11	10..23
	D B
11	4..08
11	1..30
11	1..33 ms
10	8..28
11	0..41
10	0..59
10	9..03 cent.
	D
10.11	8..27
11	10..07
12	10..10
9.10	8..02
	B
12	6..32

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1854phae.proj..22MB

67

20.01.27.0 31.0 20.01.31.00

DB.

20.03.05.2 9.2 3.09.20
3.13.9 17.9 3.17.90
3.28.3 32.6 3.32.55
4.9.8 13.8 4.13.80

B

5.3.8 7.8 5.07.80
~~3.8 7.8~~
5.41.3 45.3 5.45.30

D

6.39.8 43.8 6.43.80
6.57.5 1.5 7.01.50
7.40.0 44.0 7.44.00
7 40.3 44.3 7.46.30

BB

8.22.5 26.4 8.26.45
48.8 52.8 8.52.80
9.7.1 11.0 9.11.05
10.04.3 8.1 10.08.20

D

10.25.3 29.3 10.29.30
12. 8.2 12.2 12.12.20

B

12.54.8 58.8 12.58.80
13.41.6 45.6 13.45.60
13.54.9 59.0 13.58.95
14.04.2 8.4 14.08.30
14.32.0 36.0 14.36.00

D

16.23.8 27.7 16.27.75
16.57.7 1.7 16.01.70
18.15.4 19.4 18.19.40
18.18.7 22.7 18.22.70

BD.

19 54.9 58.7 19.58.80
20 3.7 7.7 20.07.70
20.20 49.1 53.1 ~~20.53.1~~

68

20.01. 26.9 30.9 20.01.30.90

D

20.03.05.7 10.1 3.9.90
3.13.9 18.0 3.17.95

4.09.9 13.9 4.13.90

B

6.04.3 8.3 5.08.30
4.3 8.3 5.08.30
5.41.3 45.7 5.45.50

DB

6.39.9 43.9 6.43.90
6.57.8 1.8 7.01.80
7.40.2 44.9 7.44.55
7.

B

8.22.6 26.7 8.26.65
8.48.9 B 53.0 8.52.95
9.7.7 11.6 9.11.65
10. 4.3 ~~8.~~ regret 2nd mm 10.08.30

10.25.7 29.8 10.29.75
12. 8.3 12.3 12.12.30

D

12.54.9 58.9 12.58.90
13.41.5 45.5 13.45.50
13.55.1 59.1 13.59.10
14.04.7 8.5 14.08.60
14.32.1 36.1 14.36.10

BD

16.23.9 27.8 16.27.85
16.57.8 1.9 16.01.85
18.16.7 19 18.19.70
18.19.0 23.2 18.23.10

B

19.54.9 59.0 19.58.95
20.3.9 7.9 .90
20.13.0 17.1 ~~20.17.05~~

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67

12 9..40
10.11 8..18
D B
12 3..10
13 3..28 ns
12.13 8..22
12 7..28
B
8 6..02 double comp s.p dist 5" may 8th
8 6..08 mark
12 1..40
D
12.13 5..48
11 8..18
11.12 9..13 ns
11.12 9..33 ns
B B
12 3..01
9 2..38
11 9..50
11.12 9..42
D
12 8..50 ns
10 4..57
B
12 2..03
12 6..59
12 5..00
13 8..35 ns
10 3..33
D
10.11 8..48
12 6..55
12.13 9..07
10 9..58 ns
B D +
10 2..24
12 6..45
12 6..58

68

12 9..40
10 8..
D
12 3..10
12 3..28 ns
11 7..17 cent
B
8 6..03 double
6..08
12 1..40
D B
12 5..48
10 9..18 cent
11 9..12
11 9..32 cent
B
12 3..02
9 9 B 2..38
10 9..50 ns
11 10..40 ns cent
11 9..50 cent
9 11 4..57
D
12 2..03
12 6..59
12 5..00
12.13 8..34 ns
10 3..32
B D
11 8..47
11 6..55
12 9..07
10 9..57
B
10 2..24
11 6..45
11.12 6..38

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1854phae.proj..22MB

20 21 05.0 9.0	20 21 09.00
D	
23 53.0 57.0	23 57.00
25 02.0 6.1	25 06.05
25 55.3 59.6	25 59.45
26 18.9 22.9	26 22.90
26 19.9 23.9	26 23.90
B	
29 00.3 4.3	29 04.30
29 6.7 10.7	29 10.70
23.2 27.4	29 27.30
30 39.7 43.7	30 43.70
30 46.5 49.7	30 49.60
BD	
31 26.6 30.5	31 30.55
43.7 47.7	31 47.70
32 16.0 19.9	32 19.95
33 2.7 6.7	33 06.70
33 14.4 18.4	33 18.40
33 27.8 31.5	33 31.65
D	
36 41.4 45.0	36 45.20
38 41.6 45.6	38 45.60
39 14.8 18.8	39 18.80
~~39 27.1 31.7~~	
40 18.5 22.4	40 22.45
B	
41 25.8 29.8	41 29.80
32.6 36.7	41 36.65
42 09.8 13.7	42 13.75
43 24.0 28.2	43 28.10
47.8 51.8	43 51.80
44 07.9 12.0	44 11.95
44 26.1 30.0	20 44 30.05
BB	

20 29.7 33.4	20 20 33.55
20 21 05.2 9.1	21 09.15
D	
~~23 01.5 1.3~~	
24 53.2 57.1	24 57.15
25 2.4 6.4	25 06.40
25 55.9 59.8	25 59.85
26 19.0 22.9	26 22.95
DB	
29 00.6 4.6	29 04.60
29 6.8 11.1	29 10.95
29 23.4 27.9	29 27.40
30 39.9 43.5	30 43.90
30 45.7 50.0	30 49.85
D	
31 26.8 30.8	31 30.80
31 44.0 47.9	31 47.95
32 16.2 20.2	32 20.20
33 3.7 6.7	33 06.70
33 14.8 18.8	33 18.80
33 28.0 31.9	33 31.95
B	
36 41.4 45.5	36 45.45
38 41.9 45.8	38 45.85
39 15.0 18.9	39 18.95
39 27.4 31.4	39 31.40
40 0.5 4.4	40 04.45
40 18.8 22.5	40 22.65
DB	
41 26.1 30.0	41 30.05
41 32.8 36.9	41 36.85
42 10.1 14.3	42 14.20
43 24.3 28.6	43 28.45
43 48.0 52.3	43 52.15
44 08.0 11.9	44 11.95
44 25.9 30.2	20 44 30.05
B	

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1854phae.proj..2208

12 10..40
9 4..16
D No stars greater than 13 mag
10 9..33
12 1..57
11.12 9..20
12 0..09
12 1..58 m s
B
12.13 2..27
12.13 1..40
9.10 6..30
10.11 5..57 m s
9 10..37 m s
B D
11.12 1..20
11.12 3..50
13 0..38
12 7..45
10 5..34
12 no 8 read off
D
10 4..03
Great many stars of 13 mag - none greater
10.. 7..48
12 3..18
13 1..57
12 ~~8..00~~
12 5..44
B
12 8..50
12 7..47 m s
12.13 9..40
10 9..20
9.10 5..51
12 1..38
12 8..00
B B

12 10..40
8 10 4..14
D 9..00 star inserted
12.13 ~~9..32~~
10 ~~9..32~~
12 0..57 cent
12 9..20
12 0..09 suspect sam &
12 1..58 S
D B
12.13 2..27
12.13 1..38 m s
10 6..31
11 5..57
10 10 m s
D
12 1..21
12 3..51
12 0..39
12 7..45
9 10 5..35
12 0..58
12 7..30
B
10 4..03
10 7..47
12 3..18
12 1..50 cent
12 8..00
11.12 5..43
D B
12 8..49
12 7..48
13 9..38
10.11 9..19
10 5..50 Blud & wife
12 1..38
12 8..00
B

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1854phae.proj..22[illegible]B

67

20..46..[illegible]	33.3	20 ..46 ..33.30
47..12.7	16.7	47 ..16 .70
D		
47..45.8	49.8	47..49.80
48..37.1	41.2	48 ..41.15
49..16.7	20.5	49 ..20 .60
50..6.4	10.4	50 ..10 .40
51..27.1 ?	1 minute 2 min	51 .. 27 .10
51..59.9	3.8	52 .03.85
52..11.8	15.8	52 ..15.80
53..33.0	37.0	53 ..37.00
53 37.0	40.9	53 ..40 .95
53..51.0	56.2	53 ..55.10
55..31.6	35.4	55 ..35.50
56..20.5	24.3	56 ..24 .40
56..58.8	2.9	57 ..02 .85
57.. 4.8	8.8	57 ..08 .80
57.. 25.8	29. 3	57 ..29 .55
B		
20..59..16.0	20.2 ?	20 ..59 ..20 .10
21.. 1..03.0	7.0 ?	21 .. 1 ..07 .00
D		
03..00.9	16.0	3 ..15 .95
3.. 31.0	35.0	3 ..35 .00
B		
6..00.6	4.5	6 .. 4 .55
6.. 16.8	21.5	6 ..21 .15
7..46.9	50.6	7 ..50 .75
8..10.9	14.8	8 ..14 .85
D		
9..26.9	30.9	9 .. 30 .90
10..59.1	3.2	11 ..03 .15
11..21.8	25.8	11 ..25 .80
11 52.8	56.8	21 .. 11 .. 56 .80

68

20..46..29.0	33.8	20 ..46 ..33.40
47..12.8	16.9	47 ..16 .85
D		
47..45.9	49.9	47 ..49 .90
48.. 37.4	41.5	48 .. 41 .45
49.. 16.8	20.8	49 .. 20 .80
50..6.6	10.6	50 .. 10 .60
51..23.3	27.4	51 .. 27 .35
52..00.0	4.0	52 .. 4 .00
52..12.0	16.0	52 .. 16 .00
53.. 33.3 B	37.3	53 .. 37 .30
53.. 37.3	41.3	53 .. 41 .30
53..51.6	55.6	53 .. 55 .60
55.. 32.0	36.1	55 .. 36 .05
56..20.4	24.7	56 .. 24 .55
57.. 05.0	8.9	57 .. 8 .95
D		
20..59..16.3	20.1	.59 .. 20 .20
59.. 42.8	46.9	20 .. 59 .. 46 .85
21..01.. 2.9	6.9	21 .. 01 .. 06 .90
B		
2..50.0	[illegible]	2 .. 52 .0
3.. 12.2	16.1	3 .. 16 .15
3.. 31.2	35.0	3 .. 35 .10
DB		
6..00.9	4.9	6 .. 04 .90
6.. 17.0	21.0	6 .. 21 .00
7..46.9	51.1	7 .. 57 .00
8.. 11.0	16.0	8 .. 15 .00
B		
9.. 27.2	31.0	9 .. 31 .10
10.. 59.5	2.7	
11..21.9	25.9	11 .. 25 .90
11..53.0	56.9	21 .. 11 .. 56 .95

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12/13 2..58 1st min lost
12 0..53
D
9.10 10..25
12 5..03
11 7..57
9/10 5 58
13 3 28
9 9 55
11/12 7 50
9 8 5 } Rec. on sec = first min or following sec.
11 9 15 } No. sig.
9 10 15
11 4 33
10 5 59
11/12 7 15
10 10 32 No. sig.
12 3 30
B. +
10 0 52 }
11/12 4 27 }
12 9 25
12 4..18
D
~~12 9..10~~
~~12 9..40~~
11.12 6..05
10 6..22
B
11.12 10..00
13 7..05
10 8..28
11 7..41
D
9 5..15
12.13 9..20
12 0..00
12 3..10

12.13 2..58
12 0..54
D
10 10..23
12 5..04
10.11 7..56
9.10 5..58
12.13 3..28
9 9.10 9..55
11 7..49 4s interval
8 9 8..03
9 10.11 9..13
8 9 10..13
12.13 4..32 ns
10 5..58 nebular star
10 10..32
~~3..12~~
D Starless field
10 0..52 ns
12 4..18 cent ns
12 9..27 ns
11 4..16
B
12 9..50 ns cent
11 6..07
10.11 6..22
D B
12 10..01
12.13 7..39 cent
10 8..28
11.12 7..41
B
8.9 9.10 5..15
12.13 9..20
12 0..00
12.13 3..10

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1854phae.proj..22MB

21 12 18.9	22.9	21 12 22.90
20.4	24.1	12 24.25
12 41.3	45.3	12 45.30
B		
13 32.6	36.6	13 36.60
14 12.7	15.9	14 15.80
14 38.7	42.9	14 42.80
15 13.3	17.3	15 17.30
15 16.4	20.7	15 20.55
DB		
16 55.7	59.2	16 59.45
17 18.9	23.2	17 23.05
B		
18 56.1	00.0	18 56.05
19 7.2	11.2	19 11.15
19 54.7	58.6	19 58.65
20 41.7	45.7	20 45.70
21 51.6	55.6	21 55.60
22 38.0	42.0	22 42.00
D		
23 25.3	29.3	23 29.30
24 28.2	32.3	24 32.285
25 00.0	4.2	25 04.10
25 23.9	27.9	25 27.90
25 49.8	53.7	25 53.75
BD		
27 52.9	56.9	27 56.90
no stars		
32 39.4	43.4	32 43.40
33 33.3	37.5	33 37.40
34 32.9	36.9	34 36.90
B		
36 25.1	29.0	36 29.05
37 38.7	43.0	37 42.85
38 7.0	11.0	38 11.00
D		
38 44.9	48.8	21 38 48.85

21 12 19.2	23.4	21 12 23.30
12 20.6	24.8	12 24.70
12 41.7	45.6	12 45.65
DB		
13 33.0	36.8	13 36.90
14 12.8	16.8	14 16.80
14 39.1	43.1	14 43.10
15 13.6	17.6	15 17.60
15 16.9	20.8	15 20.85
B		
16 55.9	00.0	16 59.95
17 19.3	23.3	17 23.30
D		
18 56.4	00.1	19 00.25
19 7.4	11.5	19 11.45
19 54.8	58.7	19 58.75
20 41.8	45.8	20 45.80
21 16.0	19.3	21 19.20
21 51.8	56.1	21 55.95
21 55.1	59.2	21 59.15
22 38.1	42.1	22 42.10
B		
23 25.5	29.5	23 29.50
24 28.8	32.9	24 32.85
25 00.3	4.2	25 04.25
25 24.1	28.2	25 28.15
25 49.9	53.8	25 53.85
DB		
27 52.9	56.9	27 56.90
No stars in field		
32 39.7	43.7	32 43.70
33 33.5	37.5	33 37.50
34 33.2	37.2	34 37.20
D		
36 25.1	29.0	36 29.05
37 39.0	42.9	37 42.95
38 7.1	11.1	38 11.10
B		
38 44.8	48.9	21 38 48.85

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1854phae.proj..220B

12 9..55
12 9..22 ns
11 1..33 ns
B
11.12 8..24
12 7..35
12 3..30
12 4..10
12 6..28 ns
D B
12 8..20
12 9..33
2.. ♀ ♂
B
7 8..58
12 5..32
10 4..34
12.13 3..38
9.10 10..13
12 8..20
D
10 3..12
12.13 9..55
10 3..06
12 1..40
9.10 6..40 W
B D
8.9 −0..08 var
No stars greater than 13 mag passing
11.12 5..09
12 7..48
12 4..59
B
11.12 7..09 ☿ = 1st star of Gem 73
12.13 3..10
12.13 3..33
D
12 1..30

12 9..50
12 9..40
10 1..35
D B
12 8..24
12 7..35
12.13 3..30
12 4..14 cent
12 6..20 ns
B
12.13 8..20
12 9..33
8
D
7.8 7.8 8..58
12 5..82 ns
9 10 4..34
12 3..38
12 13 3..40
9 10 10..13
12 8..30 cent
12 8..18
B
9 10 3..12
12 9..53
10 3..05
12 1..40
8.9 9.10 6..41
D B
8 9 −0..08
No stars in field
11.12 5..09
12 7..49
11.12 4..58
D Full moon near by
11.12 7..09
12.13 3..10
12 3..32
B
12 1..32

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1854phae.proj..22GB

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1854phae.proj..2

67

68

Starless field Moonlight

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1854phae.proj..22mB

Zone 69 | Zone 70

Oct. 6

EC 20h 52m 30s Thr 66.4

22 16 00 63.2

First Star in α = 8h 9m 2s of Zone 65-66

Ent Thr - Telescope E. of pier

" " Reading of Pos. Circle 270° 14'

Mean 270° 13'

Telescope W. of pier

Zero 90° 11'

FRCB Stars

19	44	50.1	54.1	19	44	54.10	19	44	49.6	53.5	19 44 53.55
19	44	58.8	2.8	19	45	2.80		44	58.3	2.2	44 02.25
19	46	0.0	4.0	19	46	4.00		45	59.6	3.4	46 03.45
19	46	1.3	5.3					46	00.9	4.8	46 04.85
	46	40.9	44.9		46	44.90		46	40.4	44.4	46 44.40
	47	37.2	41.0		47	41.10		47	36.5	40.4	47 40.45
	47	39.0	43.0		47	43.00		47	38.6	42.5	47 42.55
	48	50.3	54.0		48	54.15		48	49.9	53.9	48 53.90
	48	56.2	0.1		48	00.15		48	55.7	59.6	48 59.65
	49	2.2	6.0		49	06.10		49	01.6	5.7	49 05.65
	49	51.2	55.2		49	55.20		49	50.7	54.8	49 54.75
	49	59.2	3.1		50	03.15		49	58.8	2.8	49 02.80
	50	51.2	57.2		50	57.20		50	52.9	56.9	50 56.90
	51	4.4	8.3		51	08.35		51	3.9	7.9	51 07.90
	51	26.8	30.7		51	30.75		51	26.2	30.2	51 30.20
	51	45.5	49.1		51	49.30		51	44.7	48.7	51 48.70
	52	45.8	49.8	8th wire	52	49.80		52	45.3	49.3	52 49.30
X	52	~~54.8~~	~~0.1~~ 54.8			54.80		52	55.8	59.8	
	52	56.1	0.1		53	00.10		~~53~~	~~44.9~~	~~48.9~~	52 59.80
								~~54~~	~~34.2~~	~~38.2~~	
	53	45.3	49.3		53	49.30		53	44.9	48.9	53 48.90
	54	34.8	38.4		54	38.60		54	34.2	38.2	54 38.20
	55	3.9	7.8		55	07.85		55	3.7	~~7.9~~	55 07.70
	55	3.9	7.8		55	07.85		55		7.9	55 07.90
	56	10.2	14.0		56	14.10					
	56	56.0	0.0		57	00.00		56	55.6	59.6	56 59.60
19	57	20.9	24.9	19	57	24.90		57	20.4	24.5	19 57 24.45

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1854phae.proj..2208

69

Oct. 6

D + 0° 30′ to

19h 44m 50.76 — 0° 35′ 14.9

+3.06 — +8.9

R 19h 44m 53.82 — Dec 0° 35′ 23″.8 of star x

70

Dec. +0° 30′ to +0° 40′

4 star of 5th mag - follows in 9s Δ R

& is 2′ 40″ north of x

9 5h 26 . Clear - bad vision

4 8h 07 . (10″ has been taken from record)

11 8h 00

10 3h 02 ns

B

12.13 2h 08

12.13 6h 05

12.13 8h 11 ns

D

12.12 10h 04

11 6h 45 ns

13 6h 30

12 8h 57

12 6h 50 ns

BD

12 4h 15

12 6h 56

10 0h 31

B

12 6h 57

11.12 8h 53

12 0h 22 ns

11 8h 57 ns

BD

11 2h 00

12.13 3h 41

11 2h 40 ns? } Same R

11 8h 10 }

B

13 8h 50

12 4h 43

12.13 1h 24

10 5h 26 Calm -

5 8 07 [tier] Definition not good

11/12 7 58

10/11 3 02 ns.

D

12 2 07

12 6 06

13 8 11 ns.

B.

11/12 10 04

11 6 46 ns.

11/12 6 28

12/13 8 56

13 8 50

D.

12 4 16

12 6 56

10/11 0 32

D.

12 6 57

12 8 52

12 —

11 9 52 (cirr.)

11 2 01

12/13 3 42

11 2 41 2 obs.

11/12 8 9 at mer. pass.

DBDB.

12 4 43

13 1 25

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1854phae.proj..220

69

19	57	42.2	46.2	19	57	46.20	19	57	41.7	46.	19	57	45.75
19	58	31.5	35.5		58	35.50		58	31.0	35.1		58	35.05
							D	B					
19	59	9.3	13.3		59	13.30		59	8.9	12.9		59	12.90
	59	36.4	40.0		59	40.20		59	35.8	39.8		59	39.80
19	59	44.6	48.5	19	59	48.55	19	59	44.2	48.2	19	59	48.20
20	0	21.0	25.0	20	00	25.00	20	00	20.5	24.5	20	00	24.50
	1	14.4	18.3		1	18.40		1	13.8	17.9		1	17.85
?	1		19.0		1	19.00		1	14.2	18.1		1	18.15
20	1	44.8	48.7		1	48.75		1	44.2	48.2		1	48.20
							B	D	B				
20	2	48.5	52.4		2	52.45		2	48.0	52.0		2	52.00
	3	13.3	17.3		3	17.30		3	13.0	16.9		3	16.95
	3	40.5	44.4		3	44.45		3	40.0	43.9		3	43.95
	4	0.4	4.4		4	04.40		4	00.1	4.1		4	04.10
	4	28.3	32.0		4	32.15		4	27.8	31.8		4	31.80
								D					
	5	45.8	49.8		5	49.80		5	45.4	49.4		5	49.40
	5	56.9	0.9		6	00.90		5	56.3	0.3		6	00.30
	7	25.8	29.8		7	29.80		7	25.2	29.1		7	29.15
	7	41.8	45.8		7	45.80		7	41.4	45.4		7	45.40
3	8	24.3	28.3		8	28.30		8	23.9	27.9		8	27.90
	8	29.8	33.6		8	33.70		8	29.2	33.2		8	33.20
	B	D						B	D				
	9	8.2	12.2		9	12.20		9	7.8	11.8		9	11.80
	10	5.3	9.3		10	09.30		10	4.9	8.9		10	08.90
	10	30.6	34.8		10	34.70		10	26.0	30.0		10	30.00
								D					
	12	58.7	2.6		13	02.65		12	58.1	2.1		13	02.10
	14	7.9	11.9		14	11.90		14	7.4	11.3		14	11.35
	14	36.5	40.5		14	40.50		14	36.0	40.1		14	40.05
	14	55.6	59.4		14	59.50		14	55.0	58.9		14	58.95
								B					
	15	35.0	39.0		15	39.00		15	34.7	38.6		15	38.65
	17	7.9	11.9		17	11.90		17	7.6	11.6		17	11.60
	17	9.1	13.0		17	13.05		17	8.6	12.6		17	12.60
								D					
	17	54.5	58.1		17	58.25		17	53.8	57.7		17	57.75
20	17	57.2	1.2	20	18	01.20		17	56.7	0.7	20	18	00.70

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1854phae.proj..2208

12 5.50
11.12 7.42
D
11.12 9.33
12 5.40
12 2.10
13 6.15
12 9.07
13 9.40 ns
10 3.45
BD
12 2.20
12 5.59
13 3.10
8.9 8.24
12.13 3.29 ns
B
10 5.29
12 6.40
12 8.40
12 0.32
11 2.39
10.11 9.40 ns
BB
10 −0.12
11.12 0.39
12 8.12 ns
B
11.12 5.34
12 4.33
10.11 3.40
9.10 2.04
D
12 9.03
8 6.03 ns
12 6.33 ns
B
12 7.20
12 8.50 ns

12/13 5 47
11/12 3 40
B.
12 9 30
12 5 38
12 2 9
13 6 13
12 9 07
9 3 42
BDB.
12 2 17
12/13 5 55
12 3 7
8/9 8 22

12/13 5 52
11/13 3 43
DB
11 9 33
13 5 40
12 2 09
13 6 15
12 9 08
13 9 34 ns. (cor)
10 3 46
BDB.
12 2 21
12 5 56
13 3 09
8/9 8 23
13 3 28
D.

9/10 5 29
11/12 6 39
12 8 39
12 0 30
11 2 38
11 9 38 ns.
BB.
10 −0 12
11/12 0 38
12 −0 11
D. no data above 16th mag.
12 5 34
12 4 33
11 3 40
10 2 3
B.
12 9 02
8 6 03
12 6 32 ns.
D.
12. 7 20
12 8 49 ns.

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1854phae.proj..22[illegible]B

20	18	19.9	23.9	20	18	23.90	20 18 19.3	23.4	20 18 23.35
	18	35.4	39.4		18	39.40	18 35.0	39.0	18 39.00
	19	9.3	13.3		19	13.30	19 8.7	—	19 12.70
	19	13.3	17.0		19	17.15	19 —	16.4	19 16.40
	19	36.5	40.5		19	40.50	19 36.0	40.0	19 40.00
							B		
	20	0.7	4.7	20	04	04.70	20 00.0	4.1	20 04.05
	20	30.4	34.4	20		34.40	20 30.0	34.0	20 34.00
	20	50.5	54.2	20		54.35	20 49.8	53.8	20 53.80
	21	55.9	59.9	21		59.90	21 55.4	59.4	21 59.40
							D		
	22	27.1	31.2	22		31.15	22 26.7	30.7	22 30.70
	23	6.7	10.7	23		10.70	23 6.1	10.1	23 10.10
	23	16.1	20.0	23		20.05	23 15.5	19.4	23 19.45
	24	15.9	19.9	24		19.90	24 15.3	19.6	24 19.45
	24	30.9	34.9	24		34.90	24 30.4	34.3	24 34.35
	24	46.3	50.3	24		50.30	24 46.8	49.7	24 49.75
	24	54.1	58.3	24		58.20	24 53.3	57.4	24 57.35
	25	9.5	13.8	25		13.65	25 9.2	13.3	25 13.25
							D		
	25	52.0	56.2	25		56.10	25 —	55.2	25 55.20
	26	14.4	18.3	26		18.35	26 14.0	18.0	26 18.00
	27	5.0	9.1	27	09	09.05	27 4.7	8.7	27 08.70
	27	13.2	17.2	27		17.20	27 12.7	16.7	27 16.70
							B		
	28	3.7	7.8	28		07.65	28 3.2	7.2	28 07.20
	28	16.1	20.0	28		20.05	28 15.6	19.7	28 19.65
	28	36.1	40.2	28		40.15	28 35.7	39.6	28 39.65
	29	11.8	15.7	29		15.75	29 11.3	15.2	29 15.25
	29	34.8	38.8	29		38.80	29 34.1	38.0	29 38.05
	29	34.8	38.8	29		38.80	29 34.4	38.3	29 38.35
	29	41.7	45.7	29		45.70	29 41.5	45.1	29 45.30
							D		
	30		18.0	30		18.00	30 13.6	17.5 V	30 17.55
	30	33.7	37.7	30		37.70	30 33.0	36.9	30 36.95
	30	46.9	50.9	30		50.90	30 46.2	50.1 W	30 50.15
	31	39.0	43.0	31		43.00	31 38.4	42.5	31 42.60
	31	39.8	43.8	31		43.80	31 39.3	43.1	31 43.20
20	32	16.0	19.9	20	32	19.95	32 15.4	19.4 W	20 32 19.40

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1854phae.proj..2208

10	−0..03	
11.12	6..00	
12	9..52 ns?	
10	4..20 ns	
12	6..25	
	D	
12.t	6..50	
12	0..14	
11.12	0..40	
12	3.46	
	D B	
12.13	7..30 ns	
10.11	1..11 ns	
10	7..25	
12.13	9..43	
12.13	6..42	
	7..13	
10	−0..28 ns	
12	2..33 ns	
	B	
12	0..30	
11.12	5..00	
12	9..28	
12	5..09 ns	
	D	
11.12	5..03	
12	4..35	
10	1..46	
12	6..10	
12	2..23 ns } sim B	
12	4..42 }	
12	5..40	
	B	
10.11	5..16	
10	3..26	
8.9	0..36	
12.13	4..22 a	
12.13	4..45 a	
10	3..09	

	′ ″	
10	− 0 04	
12	5 59	
11	9 50	2 wire lost.
10/11	4 18	1st wire lost.
12	6 24	
	B.	
12	6 52	comp. 14. 4 in fo.
12	0 14	
11/12	0 39	
12	3 46	
	D.	
13	7 29	
11	1 11	
10	7 24	
12	9 43	
12	6 42	12 w. dout
12	7 12	
10	−0 28	
12	2 34	auch die 12 nicht übersetzt —
	DBA	
13	0 20.	1st wire lost.
12	5 00	
12	9 27	
12	5 09	
	B.	
12	5 03	
12	4 36	
10	1 46	
12	6 9	
12	2 23	
12	4 42	ns.
11/12	5 41	
	D.	
11	5 15	
11	3 26	
9	0 36	nebelich
13	4 19	
13	4 44	ns.
9	3 07	

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1854phae.proj..22MB

20	32	23.7	27.5		20	32	27.60	20 32 23.0	27.1	20	32 27.05
								B			
	33	25.0	29.9		33		28.95	33 24.3	28.3		33 28.30
	33	54.7	58.6		33		58.65	33 53.9	58.0		33 58.95
	33	56.3	0.3		34		00.30	33 55.9	59.8		33 59.85
?	34	29.1	~~33.0~~	32.9	34		33.10	34 28.6	32.6		34 32.60
	34	36.3	40.3		34		40.30	34 35.8	39.9		34 39.85
								D			
	35	7.6	11.6		35		11.60	~~35 35.4~~	~~35.6~~		
	35	36.0	40.0		35		40.00	36 35.5	39.6		35 39.55
	36	26.8	30.9		36		30.85	36 26.4	30.3		36 30.35
	37	6.8	10.8		37		10.80	37 6.2	10.1		37 10.15
	37	31.7	35.6		37		35.65	37 31.0	35.0		37 35.60
	37	45.1	49.2		37		49.15	37 44.7	48.7		37 48.70
	37	52.3	56.4		37		56.35	37 51.7	55.7		37 55.70
	38	20.5	24.5		38		24.50	38 19.9	23.9		38 23.90
								D			
	38	54.3	58.4		38		58.35	38 53.6	57.8		38 57.70
	40	2.1	6.0		40		06.05	40 1.7	5.7		40 05.70
?	40	37.8	41.8		40		41.80	40 37.0	41.1		40 41.05
	42	10.8	14.9		42		14.85	42 10.3	14.3		42 14.30
	43	20.8	24.8		43		24.80	43 20.2	24.2		43 24.20
	44	12.7	16.6		44		16.65	B			
	44	58.1	2.0		45		02.05	44 12.1	16.1		44 16.10
	45	28.0	32.2		45		32.10	44 57.7	1.7		44 01.70
	45	38.2	42.3		45		42.25	45 27.6	31.5		45 31.55
	46	6.7	10.5		46		10.60	45 37.7	41.7		45 41.70
	46	28.3	32.2		46		32.~~50~~25	46 6.0	10.0		46 10.00
	46	49.2	53.3		46		53.50	46 27.7	31.7		46 31.70
?	47	11.6	15.6		47		15.60	46 48.6	52.6		46 52.60
	47	20.8	24.8		47		24.80	47 11.0	15.0		47 15.00
	47	46.8	50.7		47		50.75	47 20.2	24.3		47 24.25
	47	57.0	1.0		47		57.00	47 46.1	60.1		47 50.10
	48	14.8	19.0		48		18.90	47 56.4	0.4		47 56.40
	48	35.5	39.5		48		39.50	48 14.5	18.7		48 18.60
20	49	0.1	4.0		49		04.05	48 34.8	39.0		48 38.90
								48 59.7	3.8	20	49 03.75
								D			

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1854phae.proj..2208

10	3..29 m
	D
12	10..27
11.12	3..55
11.12	2..02 ms
12.13	8..20 ms
11.	5..22
	B B
12.13	3..49
12	4..13
12.13	10..02
11.12	3..15
12	3..51
10.11	10..10
11.12	2..18 ms
12.13	7..34
	B
12.13	5..40
10.11	8..20
12	5..45
12	−0..23
11.	4..18
11	3..29
	D
10	6..17
12.13	3..06
12	2..45
11	0..55
10	3..46
10.11	6..31
12.13	1..21
12	4..10
	8..40
10	0..23
12	0..21
10	3..13 ms
12	4..55
10,11	8..37
	B

10/11	3 29
	B.
12/13	10 26
11/12	3 56
10/11	2 02
12	8 19
11	5 21
	D.
12	4 13
12	10 02
11/12	3 15
12	3 51
11	10 11
11/12	2 17
13	7 33
	D
12	5 39
11	8 20
12	5 46
12	− 0 23
~~11~~	~~11~~ no star noticed.
11	3 28
	B.
9/10	6 17
13	3 05
11	2 45
11	0 51 (certain)
10	3 46
~~11~~	6 31
12	1 20
12	4 11
12	8 40
10	0 22
11	0 20
11	3 11
12	4 55
10	8 36
	D.

Few stars present. Comp 2 ms.
Bright Moonlight Double ?

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1854phae.proj..220B

20.50. 00.5 4.5
50 .24.7 28.8

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1854phae.proj..2208

10 1..41
12 3..07

D

Report of the arrival of Mr. G. Dickenson with Sir E. W. Head Gov. Gen. of Canada - Observations suspended

Observations resumed, the private secretary only having arrived and announced the approach of the Gov. General

8 4..22
12 8..13
11 10..26
10 2..01
10 3..05

~~B~~

12 0..02
12 8..46
11.12 0..00
12.13 7..19

D

10 1..25
12 9..10
10 3..41
11.12 1..32
8 5..15

B

Mr. Dickenson & Lady Sir Edl. Head & Lady arrive - observations suspended entirely

10 1·41
12 3 17 (cirt.)

Haze & moonlight render observations of the small stars difficult

For the Zone which next follows 69-70 begin with Star 2 of 69-70 -

Star 2
1854.0 R 20h..45m..18s.65
Dec 0°..33'..10".0

Corrected places

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1854phae.proj..22MB

71 Dec. +0°.30' to +0°.40' 72

Oct. 9 Ext. Sh. +69.9 by W.C.B. observes
At the beginning of this zone the sky was tolerably clear particularly in the region of the zone, but it soon became hazy and continued so throughout the zone

20.48.13.9	17.9	20..48..17.90	
48.39.2	38.2	48..38.20	
48.59.0	2.9	48..02.95	
B			
49.59.8	3.8	50..03.80	
50..24.1	28.0	50..28.05	
51.. 6.9	10.9	52..00.90	
51..36.9	0.9	52..00.90	
51..59.7	3.7	52..3.70	
DB			
52..40.7	45.0	52..44.85	
53..14.3	18.2	53..18.25	
53..51.2	55.1	53..55.15	
54..50.4	54.4	54..54.40	
55..21.3	25.2	55..25.25	
55.44.3 B	48.2	55..48.25	
55. 11.2 B	48.2		
56..22.6	26.4	56..26.50	
		57..04.10	
57..00.1	4.1	57..08.90	
57.. 4.9	8.9	20..58..49.95	
57..46.0	49.7	21..00..22.45	
21..00..18.6	22.3	..00..35.30	
00..31.2	35.4		
QBD			
1..31.7	35.7	01..35.70	
2..15.0	19.0	2..19.00	
3.. 6.0	9.0	3..09.00	
4..44.7	48.9	4..48.80	
B			
6..00.7	4.7	6..04.70	
24.2	28.2	6..28.20	
7.. 8.4	12.2	7..12.30	
8.. 3.1	7.1	8..07.10	
9..19.9	23.9	9..23.90	
Q			
9..59.7	3.7	21..10..03.70	

20..48..13.9	17.9	20..48..17.90	
18..34.1	38.2	48..38.15	
48..59.1	3.0	18..03.05	
D			
50.00.0	4.0	50..04.00	
24.1	28.1	50..28.10	
51..7.2	11.1	51..11.15	
51.57.0	1.0	51.53.9 00.0	52..01.00
00.00.0	4.0		52..4..00
B			
52..40.9	45.1		52..45.00
53..14.4	18.3		53..18.35
53..51.3	55.3		53..55.30
54..50.7	54.6		54..54.65
55..21.4	25.4		55..25.40
55.44.5	48.4		20..55..48.45
QB			
56..22.8	26.7		56..26.75
57..05.0	9.0	58.32.8 36.6	20..57..09.00
20 58..46.0	50.0	00..7.4 11.6	58..50.00
21..00..18.6	22.6		21..00..22.60
00..31.3	35.4		21..00..35.35
B			
1..31.9	35.9		..01..35.90
2..15.1	19.2	2..34.1 43.1	2..19.15
3 5.1	9.2		3..09.15
4..44.8	49.0		4..48.90
QB			
6..0.7	4.8		6..04.75
24.6	28.4		6..28.50
7.. 8.5	12.4		7..12.45
8 2.9	7.0		8..06.95
9..20.2	24.0		9..24.10
QBQ			
9..59.9	3.9		21..10..03.90

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71 Dec. +0..30 to +0..40 72

Oct 9 Oct. 10

~~11 3..11~~

11 3..11

12 4..53.

10 8..35~

B

10 1..39

12 3..06

12 2..01

10 2..22

9 −0..08 ns

D B

12.13 7..40 2d wire bad

9.10 2..01

9.10 0..12

12 4..52

11 4..04

11 6..37

B

10 1..35~ double

12 2..33

10 0..28 ns

11 9..30

8.9 4..20

10 8..12

D B D

10 10..28

10.11 2..00

10 3..03

12 8..44

B

11 −0..02

12 7..17

10.11 1..25~

12 9..10

9 3..38

D

10 1..31

10 3..09

12 4..51

10 8..33

D

11 1..36

11.12 3..12 cent

12 2..01

10 2..20 ns (10 0..50)

10 −0..10

B

12 7..38

10 1..59

9.10 0..10

12 4..49

11 4..02

11 6..33

D B

11 1..31 comp. s.f. close-2" dist

10.11 0..25~ (12/13 3..40 ns)

9..29 ns (13 5..42)

8 4..18

12 8..10 ns

B

10 10..21

10.11 1..57 (13 1..59)

10 3..01

12 8..42

D B

12 −0..03

12 7..15~

11 1..23

11.12 9..07

9.10 3..34

D B D

11 1..29

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1854phae.proj..22MB

71

21..10..21.0	24.9	21 .. 10 .. 24.95
10..46.7	49.5	10 .. 49.60
12..18.8	22.8	12 .. 22.80
12 —	26.2	12 .. 26.20
13..01.0	4.9	13 .. 04.95
13..02.9	6.9	13 .. 06.90
B		
14..05.6	9.5	14 .. 09.55
10.7	14.9	14 .. 14.80
14..52.2	56.1	14 .. 56.15
16..13.8	17.7	16 .. 17.75
26.3	30.2	16 .. 30.25
16 30.8	34.2	16 .. 34.20
D		
17..18.9	22.9	17 .. 22.90
18..15.4	19.5	18 .. 19.45
18..46.6	49.6	18 .. 49.60
19..46.8	51.0	19 .. 50.90
19	57.1	19 .. 57.16
BD		
21..06.7	10.9	21 .. 10.80
21..51.7	55.6	21 .. 55.60
23..27.9	~~32.5~~	23 .. 31.90
24..5.3	9.3	24 .. 09.30
24..17.2	20.3 2 21.3	24 .. 20.25
B		
24..47.3	51.4	24 .. 51.35
25..2.7	6.7	25 .. 06.70
26.. 16.4	19.2	25 .. 19.30
26..31.0	—	26 .. 35.00
26..59.0	3.0	26 .. 03.00
D		
30..07.9	11.8	30 .. 11.85
30..52.4	56.4	30 .. 56.40
31..28.1	32.1	31 .. 32.10
32..36.3	40.0	32 .. 40.15
33 6.0	9.9	33 .. 9.95
B		
21..33..31.8	35.9	21 .. 33 .. 35.85

72

21..10..21.2	25.1	21 .. 10 .. 25.15
10..45.9	49.7	11..13.2 17.7 — 10 .. 49.80
12..19.1	23.1	12 .. 23.10
22.4	26.7	12 .. 26.65
13..00.9	4.9	13 .. 04.90
B		
14..06.9	9.8	14 .. 9.85
10.9	14.5	14 .. 14.90
14..52.4	56.3	13..54.8 57.1 — 14 .. 56.35
16..13.9	17.9	16 .. 17.90
16..26.6	30.7	16 .. 30.65
BD		
17..19.1	23.0	17 .. 23.05
18..15.6	19.6	18 .. 19.60
18..45.8	49.7	18 .. 49.75
19..47.1	51.0	19 .. 51.05
19 ~~53.9~~	57.1	19 .. 57.10
D		
21..06.5	10.6	21 .. 10.55
21..51.6	55.7	21..58.7 2.5 — 21 .. 55.65
23..28.0	32.1	23 .. 32.05
24.. 5.6	9.8	24 .. 09.70
24..17.1	21.3	24 .. 21.20
B		
24..47.7	51.5	24 .. 51.60
25..15.3	19.3	25 .. 19.30
26..31.1	35.2	26..32.9 37.0 — 26 .. 35.15
26..59.1	2.9	27 .. 03.00
BD		
30..07.7	11.7	27..53.6 57.6 29..07.7 12.0 — 30 .. 11.70 — 30 .. 56.90
30..53.0	56.8	
31..28.0	32.0	31 .. 32.00
32 36.2	40.3	32 .. 40.25
33..6.2	10.2	33 .. 10.20
D		
21..33..31.9	36.2	21 .. 33 .. 35.95

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1854phae.proj..2208

71

10 0..20
8 5..23
11 −0..20
12 3..58 1st w lost
9.10 7..16
10 4..33 ms
B
10 6..40
11.12 3..33
12 8..52
10 6..42
12 5..52
12 4..52 m.s
D
10 −0..28
12 8..40
10.11 7..46
12 9..07
12 10..08 1st w lost
BD
12.13 9..40 uncertain ABD
9 0..10
12 2..38 2d w doubt
11 6..20
12 7..09
B
10 5..14
12 9..04
11 0..53
12 9..25 2 w lost
11 5..07
D Hazy
10 6..48
12 4..05
11 10..28
9 1..08
10 5..06
B
10 7..38

72

10 0..17
8.9 5..09 cent 11th − 10..30
11 −0..22
11 3..56 ms
9 7..17 cent
10 4..30
B
11 6..37
10 3..31
11.12 8..49 12 7..
11 6..38
12 5..50 ms
BD
11 −0..30
12 8..38
11 7..45
12 9..03
12 10..01
D
12 9
9 0..07 11th 11.12 1..37
18 2..33
10 6..15
12 8..03
B
10 5..10 12th − 0..50
12 Improved
12 9..22 12th − 8..59 ms
11 5..05
BD 12th 3..30 ms 13th − 4..07
10 6..45
12 4..02 1st w/in two late
11 10..22
9 1..06
10 5..03
D
11 7..35

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1854phae.proj..22[illegible]B

21 33 35.9 40.0	21 33 39.95	21 33 36[illegible] 40.3	21 33 40.30
34 39.6 43.5	34 43.55	34 39.8 43.7	34 43.75
BD		DB	
35 43.5 47.5	35 47.50	35 43.7 47.5	37 08.9 12.9 35 47.60
37 26.0 30.0	37 30.00	37 2[illegible] 30.0	~~38 31.7 35.9~~ 37 30.00
38 1.8 6.3	38 06.05	38 2.0 6.0	38 31.7 35.9 38 6.00
38 35.9 39.9	38 39.90	38 34.95 38 36.0 39.9	39 7.3 11.3 39 53.0 56.9
40 47.0 51.0	40 51.00	40 47.1 51.3	40 51.20
BB		B	
41 26.2 30.1	41 30.15	41 26.3 30.3	41 30.30
41 56.6 00.6	41 00.60	41 57.0 0.9	42 00.95
42 59.6 3.0	42 3.30	42 59.3 3.3	43 03.30
43 08.8 12.6	43 12.70	43 8.9 12.9	43 12.90
43 43.4 47.2	43 47.30	43 43.9 47.6	43 47.75
44 1.7 5.6	44 5.65	44 2.0 5.9	44 05.95
44 06.7 10.6	44 10.65		
B	B	D	
46 17.4 21.0	46 21.20	45 17.6 21.4	45 21.50
45 19.0 23.0	45 23.00	45 19.2 23.2	45 23.20
47 9.1 13.0	47 13.05	47 9.2 13.2	47 25.0 29.0 47 13.20
48 3.7 7.7	48 07.70	48 19.1 23.2	
48 18.8 22.7	48 22.75		48 23.15
D		B	
50 08.4 12.5	50 12.45	50 08.7 12.6	50 16.8 20.8 50 12.65
51 36.8 40.5	51 40.65	51 36.9 40.8	51 40.85
52 26.0 30.0	52 30.00	52 26.0 29.9	52 29.95
52 35.8 39.9	52 39.85	52 35.9 40.0	52 40.95
52 57.3 —	53 01.30	52 57.2 1.3	53 01.35
53 — 3.0	53 03.00	52 59.2 3.2	53 03.20
B		D	
55 54.7 58.7	55 58.70	55 54.8 58.7	55 58.75
55 19.6 —	55 23.60		
56 44.8 49.4	56 49.60	56 45.0 49.8	
57 11.8 15.9	57 15.85	57 12.3 16.1	57 16.20
57 50.6 54.4	57 54.50	57 50.3 54.6	57 54.45
58 31.9 35.9	21 58 35.90	21h 58 31.8 35.8	58 31.0, 34.8 21 58 35.80
BB		B	59 6.7 10.5
22 00 11.8 15.9	22 00 15.85	22h 00 12.0 16.0	22 00 16.00

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1854phae.proj..22GB

71		72	
9	8.58	10	8..52
7	7..32	8	7..27 cent
	B D		D B
12.13	4..10	12	4..05
12.13	8..45	12	8..42
12	7..43	12.13	7..40
9.10	5..03	10	5..00
12	1..12	12.13	1..10
	B B Hazy		B
11.12	0..40	11	0..38
12	6..40	12	6..38
12	3..40 ns	12	3..38 ns
11	9..36	10,11	9..32
11.12	4..25	12	4..21
12	1..50	12	1..50
12	3..10		
	B		D
11	10..30 ns	11	10..30
11	4..31 ns	11	4..29
9	4..32	10	4..29
12.13	5..33		5..32 ~~5..33 ~~ bad
11.12	3..33	12	3..31
	D		B
11.12	7..51	11	7..48
11	4..42 double comp s.p 8"d	12	4..44 X comp s.p
11	4..48 comes		4..38
9.10	7..33	10	7..30
12	0..13 ns	12	1..10 cent
9	1..20 2d nn last	10	1..17 ns
9	7..33 1st nn last	10	7..29 ns
	B		D
10	9..23 double dist-20"	11	9..19 double comp 14-8 15 any
12.13	6..50 2d nn last		
12	6..47 ns	12.13	6..40
12.13	4..53	13	4..51
12	-0..20 ns	12	-0..30 cent
9	3..09	9	3..07
	B B		B
11	10..27	11	10..26 ns

12 -3..50

10..11 10..18

12 1..38 12 9..57

12 -0..17

5..32

9.10 10..30 ns

12 4 09

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Zone 71			Zone 72		
22..00..34.7	38.7	22..00..38.70	22..00..35.0	38.9	22..00..38.95 Clouding up
2..29.8	33.9		2..29.8	34.0	2.33.90
DD			B		
3..23.2	27.8	3..27.50	----	--	
3..46.7	50.7	3..50.70	3..46.8	50.8	3..50.80
4..19.1	23.1	4..23.10	4..19.2	23.0	4..23.10
6..9.2	13.6	6..13.40	6..9.7	13.7	6..13.75
6..25.0	28.8	6..28.90	6..25.0	29.0	6..29.00
6..46.7	50.6	6..50.65	6..46.7	50.8	6..50.75
B			D		
7..38.9	42.9	7..42.90	7..39.2	43.2	7..43.20
8..64.0	58.0	8..58.00	8..54.2	58.1	8..58.15
9..48.1	52.9	9..52.00	9..48.1	52.2	9..52.15
10..10.6	14.7	10..14.65	10..10.8	14.8	10..14.80
10..43.4	47.4	10..47.40	10..43.5	47.7	10..47.60
12..22.6	26.7	12..26.65	-----	--	
D			B		
13..33.9	37.9	13..37.90	13..34.0	38.1	13..38.05
13..43.2	47.2	13..47.20	13..43.3	47.2	13..47.25
14..3.0	7.0	14..07.00	14..3.0	7.2	14..07.10
14..31.9	35.9	14..35.90	14..32.0	36.1	14..36.05
15..19.0	22.8	15..22.90	15..19.0	23.1	15..23.05
15..44.1	48.0	15..48.05	15..44.3	48.2	15..48.25
DB			D		
16..35.6	39.7	16..39.65	16..35.3	39.5	16..39.40
16..49.2	53.2	16..53.20	16..49.6	53.5 *	16..53.55
17..21.8	25.9	17..25.85	17..22.0	25.9	17..25.95
17..45.5	49.4	17..49.45	17..45.7	49.5	17..49.60
B			D.B		
~~18..39.1~~	~~43.0~~				
19..1.6	5.6	19..05.60	19..01.9	05.8	19..05.85
20..38.5	42.5	20..42.50	20..38.8	----	20..42.80
20..50.8	54.7	20..54.75	20..51.0	55.0	20..55.00
21..21.9	26.4	21..26.15 X	21..21.9	25.9	21..25.90 21..25.9 25.8
21..30.1	34.1	21..34.10	21..30.3	34.0	21..34.15
22..8.0	12.0	22..12.00	22..8.1	12.1	22..12.10
D					
24..50.4	54.5	24..54.45			
24 59.3	3.1	22..25..03.20			

* Zu rechnen für Zone 71 (folgende Tage)

For reckoning of Zone 72 see above

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1854phae.proj.2208

71

10 5h.24
13 4h.32 ns
D D
13 6h.30
11 8h.57
12 1h.05
12 3h.00
11 4h.46
12 0h.20
B
11 5h.32
10 10h.30
12 8h.58
12 0h.13
10 8h.27
13 2h.13
D
11 0h.09
11.12 −0h.32 ns
12 1h.50
12 5h.00
12 7h.40
11.12 3h.58
D B
12 0h.55
11 8h.13
10 1h.22
3.4 8h.28 (from 4. for repetition of Zone 72)
B
~~13 h.43~~
11 6h.56
13 9h.23
11 6h.56
10 5h.13 another 10 mag last
10 2h.52 double 3rd dist comp n.p
10 3h.10
D
12 6h.30
11 10h.30 ns.

72

10.11 5h.22 no stars gt. than 13 mag
13 4h.30
B
11 8h.54
12 1h.00 no stars gt. than 13 mag.
13 2h.58
12 4h.41
12 0h.20
D Few stars
11.12 5h.30
10 10h.29
12.13 8h.58
12 0h.10
10 8h.26 no stars gt than 13 mag passing
~~13 2h.10~~
B
11 0h.05 ns
11 −0h.40 ns
12 1h.48
12 4h.57
12 7h.38
12 3h.57
D
12 0h.53
10 8h.10
10 1h.21
6 8h.27 4 = 1st Star of 77 Tau
D B ~~12h.13m −0h.10~~
11 6h.57
12.13 9h.20 2 min last
11 6h.56
10 5h.10 10h 4h.50 ns 11. 2h.20
10 3h.08 12. 4h.18 ns
B Small stars passing
12 6h.28 ns
1 10h.28 1st min last

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1854phae.proj..22B

71

22. 25: 18.9 22.0

BB

B

22.

Ed. M. +66.1

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1854phae.proj.. 2208

71

10 9..32
12.13 2..03
11 6..44
B 03
12 2..13
10 4..17 ns
11 0..57
11 2..01
D
11 0..30 double close
12 4..10
11 1..20
12 3..52
10 0..52
11 3..23
10 4..47
B
12.13 2..27
11 4..23 ns
12 9..03 ns
11 6..15
10 5..18

11.12 9..30

10.11 6..42
D

10.11 4..13
11.12 0..53
11 1..57
B
12 0..26 ns
12 4..07 Very few stars
12 1..18
12 3..49
10 0..49
12 3..20 Moon lost
10 4..46
D
12.13 2..22
11 4..22
12 9..02 ns very few stars
11 6..12 10th 10..40
11 5..16
12 9..29 suspect data
11 -0..33
11 4..30
12 3..50 ns
12 0..37 ns

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1854phae.proj..220B

Zone 73

1854 First star in ℵ of Zone 67

Beg. E.C. 21h 51m 15s Ext. Dm = ~~40°.8~~ 39.5
End " 23h 11m 00s " = 39.5

Oct = 18th

21h 36m 25.9	29.7	21h 36m 29.80
37m 37.3	43.3	37m 43.30
38m 7.8	11.7	38m 11.75
38 45.6	49.5	38m 49.55
39m 5.1	9.2	39m 09.15
B		B
4		
D		
41m 37.8	41.8	41m 41.80
55.8	59.8	41m 59.80
44m 12.2	15.7	44m 15.95
44m 13.6	16.8	44m 16.70
44m 50.4	54.7	44m 54.55
BD		
45m 36.6	40.4	45m 40.50
45m 39.2	43.1	45m 43.15
46m 25.1	29.1	46m 29.10
B		
48m 16.0	20.0	48m 20.00
48m 24.6	28.4	48m 28.50
49m 8.9	12.8	49m 12.85
49m 40.7	44.5	49m 44.60
50m 45.8	49.9	50m 49.85
D		
Stars		
53m 20.4	24.5	53m 24.45
53m 49.1	53.4	53m 53.25

Zone 74.

R 21h 36m 29s.3 = 11½, 12th mag
Dn 0° 27' 04"

Beg. E C = 20h 57m Ext Dm = +39°.0
End E C = 22h 07m " = +35.5

21h 36m 25.5	29.2	21h 36m 29.35
37m 39.0	43.0	37m 43.00
38m 7.3	11.2	38m 11.26
38m 45.0	48.9	38m 48.95
39m 4.6	8.8	39m 8.70
D		
40m 50.8	54.9	40m 54.85
41m 07.6 B	11.7	41m 11.65
41m 37.5	41.5	41m 41.50
41m 55.3	59.2	41m 59.25
43m 37.6	41.5	43m 41.55
44m 11.3	15.3	44m 15.30
44m 12.7	16.5	44m 16.40
44m —	54.1	44m 54.10
D		
45m 36.2	40.2	45m 40.20
45m		
46m 24.9	28.9	46m 28.90
D. B.		
48m 15.6	19.4	48m 19.50
16.1	19.9	48m 20.00
49m 08.5	12.4	49m 12.45
49m 40.1	44.1	49m 44.10
50m 17.3	21.2	50m 21.25
50m 45.6	49.6	50m 49.60
B		
53m 20.2	24.2	53m 24.20
28.1	31.4	

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Dec 20' & 30'

Oct. 18

The weight has always been applied to secure the clamps of the R arcs.

Oct. 19.

Posit. Cir. 180° 12'.

Oct. 19th

10.11	7..07	11	6..57	Clear calm & fine
12.13	3..10	12-13	3..02	
10,11	3..30	10-11	3..21	
10..11	1..31	11	1..23	
12	0..10	12	-0..18	
	B		Dots	
12	7..28 No R	12	7..17	
	D		B →	12 - 9..25
12	6..36	11.12	6..27	
9.10	1..33	10	1..24	13 - 5..47
11	7..18 Ao Ao	11	7..7	
11	3..56 ns	12	2..48	Dr. centum n.s. 1st Coal
12	8..28	12	8..18	
	B D		D	
12	6..50 ns	12	7..40	
12	7..22	12	6..12	
10	4..26			
12	8..07	12	7..58	
	B		D. B.	
9.10	8..54	9-10	8..45	
12	3..36 ns	12	1..33	lost ?
10	5..17	10	5..7	
12 11	0..08	11	0..1	
12	10..20	12	10..10	
13	4..26 double comp s.f. distro" 14 may	13	4..15	Poss of two
	D No stars greater than 14 mag.		B	Stars nearly left from 13
Stars				
11	8..36	11	8..25	
12	1..58	12-13	1..50	

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1854phae.proj..220B

21.. 55.. 14.4	18.3	
55.. 19.5	23.6	
B		
56.. 25.2	29.3	
57.. 9.2	13.2	
57.. 16.2	20.1	
57 36.3	40.3	
57.. 38.2	42.4	
57.. 51.1	55.2	
D		
59.. 48.1	52.1	
22.. 1.. 13.5	17.2	
2.. 4.3	8.1	
2.. 55.4	59.4	
3.. 29.3	33.4	
B		
4.. 14.9	19.0	
5.. 14.9	18.7	
5.. 57.6	1.6	
6.. 20.9	24.8	
6.. 44.2	48.1	
D		
8.. 08.0	12.2	
9.. 31.9	35.9	
9.. 32.5	36.6	
9.. 58.9	3.9	
11.. 5.2	9.1	
11 .. 40.3	44.5	
11.. 48.8		
D B		
12.. 33.8	37.9	
13.. 34.8	38.7	
13.. 43.9	47.9	
14.. 49.6	53.4	
15.. 34.7	38.5	
15.. 39.7	43.8	
B		
16.. 54.0	57.8	
16.. 58.2	2.2	

21.. 55.. 18.35		
55.. 23.55		
56.. 29.25		
57.. 13.20		
57.. 20.15		
57.. 40.30		
57.. 42.30		
57.. 55.15		
21.. 59.. 52.10		
22.. 1.. 17.35		
2.. 8.20		
2.. 59.40		
3.. 33.35		
4.. 18.95		
5.. 18.80		
5.. 1.55		
6.. 24.85		
6.. 43.15		
8.. 12.10		
9.. 35.90		
9.. 36.55		
10.. 3.90		
11.. 9.15		
11.. 44.40		
11.. 52.80		
12.. 37.85		
13.. 38.75		
13.. 47.90		
14.. 53.50		
15.. 38.60		
15.. 43.75		
16.. 57.90		
17.. 2.20		

21.. 55.. 14.0	18.3	
55.. 19.1	23.4	
D		
56.. 24.8	28.9	
57.. 8.8	12.9	
57.. 15.9	19.9	
57.. 36.0	40.0	
57 —	41.8	
21.. 58.. 30.0	34.0	
BD		
22.. 01.. 12.8	17.1	
2 4.0	7.9	
2.. 55.0	59.1	
3.. 28.8	32.8	
D		
4.. 14.8	18.8	
5.. 14.4	18.4	
5.. 57.1	1.0	
6..		
6.. 43.9	47.9	
B		
8.. 07.9	11.9	
9.. 31.6	35.4	
9.. 32.2	36.2	
9.. 58.6	2.6	
11.. 4.8	8.9	
11.. 39.9	44.7	
11.. 48.2		
B D B		
12.. 33.3	37.3	
12.. 43.0	46.9	
13 —	38.3	
13.. 43.4	47.6	
14.. 49.2	53.2	
15.. 34.1	38.1	
15.. 39.6	43.4	
D		
16.. 53.7	57.7	
16.. 58.1	1.8	

21.. 55.. 18.15		
55.. 23.25		
56.. 28.85		
57.. 12.85		
57.. 19.90		
57.. 40.00		
57.. 41.80		
58.. 34.00		
1.. 16.95		
2.. 7.95		
2.. 59.05		
3.. 32.80		
~~4.. 18.80~~		
4.. 18.80		
5.. 18.40		
5.. 1.05		
6.. 47.90		
8.. 11.90		
9.. 35.50		
9.. 36.20		
9.. 2.60		
11.. 8.85		
11.. 44.~~80~~ 30		
12.. 37.30		
12.. 46.95 13.. 38.30		
13.. 47.50		
14.. 53.20		
15.. 38.10		
15.. 43.50		
16.. 57.70		
16.. 1.95		

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11.12	7.13 ns	
10.11	4.07 ns	
	B	
12.13	1.26	
11	4.58	
12	4.59	
12	5.60	
12.13	4.40	
11.12	9.40	
	D	
12.13	2.30	
12.13	−0.18	
12	3.57	
12.13	4.11	
12	2.45	
	B	
12	3.56	
9.[illegible]	8.08	
12	2.10	
13	4.28	
13	1.13	
	D	
12.13	4.42	
12.13	4.00	
11	4.54	ns ?
12	4.59	
12.13	3.00	
12.13	3.53	
12.13	1.59	
	D B	
12.13	2.10	
12	10.10	ns
10	9.18	
13.[illegible]	4.38	
10	6.20	
11	5.37	
	B	
11	7.18	
12.13	5.42	ns

11-12	7.03	
10-11	3.59	
	D	
12-13	1.16	
11	4.46	
12	4.46	
12	5.40	
13	4.35	1st last ns
		11 = 10.40 cert.
	B D	
	— — —	
12-13	−0.27	1st bad.
11-12	3.46	
12-13	4.02	
12	2.37	
	D	
12	3.45	
9	7.58	
12	2.01	
	— — —	
12	1.08	
	B	
12	4.36	
12	3.50	
11	4.43	ns
12	4.48	
12	2.50	
12	3.47	
12	1.48	
	B B D	
12	2.02	13 = 2.58
12	10 10	" cert 1st last
10	9 08	
13	4.30	
10	6.10	
11	5.28	
	B	
11	7.07	
12	5.33	ns

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1854phae.proj..220B

22..18..48.6	52.4	
19..17.9	15.9	
19..39.4	43.7	
20..02.5	6.5	
20..21.1	25.4	
21..17.1	21.2	
BD		
22..49.9	53.9	
24..2.5	6.4	
24..14.6	18.5	
24..59.1	3.1	
25..10.5	14.5	
B		
26..10.3	14.4	
23.7	27.7	
28..46.3	50.1	
30..14.7	18.7	
31..5.2	9.3	
31..5.6	9.6	
D		
32..29.4	33.3	
Starless field		
35..27.8	31.8	
36..49.8	53.8	
37..49.2	53.5	
BB		
38..37.1	41.1	
38..49.6	53.7	
39..2.7	6.6	
B		
39..54.1	58.1	
40..26.0	29.8	
42..35.4	38.9	
42..50.5	54.5	
44..30.8	34.8	
Clouds		
22..45..40.3	44.5	

22..18..52.50	
19..15.90	
19..43.55	
20..6.50	
20..25.25	
21..21.15	
22..53.90	
24..6.45	
24..18.55	
24..3.10	
25..14.50	
26..14.35	
27.70	
28..50.20	
30..18.70	
31..9.25	
31..9.60	
32..33.35	
35..31.80	
36..53.80	
37..53.35	
38..41.10	
38..53.65	
39..0.05	
39..58.10	
40..29.90	
42 39.15	
42..54.50	
44..34.80	
22..45..44.40	

22..18..48.0	52.1	
19..11.2	15.4	
19..39.2	43.2	
20..2.2	6.0	
20..21.2	25.2	
21..16.9	20.8	
DB		
22..49.7	53.7	
24..2.1	6.0	
24..14.1	18.1	
24..58.9	2.9	
25..10.1	14.0	
D		
26..10.2	14.1	
28..46.0	49.8	
30..14.3	18.3	
31..4.8		
31..	9.1	
B		
31..46.1	52.0	
32..29.0	32.9	
33..54.9	59.5	
34..38.4	42.4	
35..27.3	31.3	
36..20.7	24.7	
36..49.4	53.9	
37..48.9	52.9	
37..54.4	54.6	
DD		
38..36.7	40.7	
38..49.3	53.5	
39..2.2	6.2	
D		
39..53.8	57.7	
40..25.5	29.5	
42..34.6	38.5	
42..50.1	53.9	
44..30.3	34.2	
~~45..40.1~~	~~44.0~~	
22..45..40.1	44.0	

22..18..52.05
19..15.30
19..43.20
20..6.10
20..25.20
21..20.85
22..53.70
24..6.05
24..18.10
24..2.90
25..14.05
26..14.15
28..49.90
30..18.30
31..08.8
9.1
31..52.05
32..32.95
33..59.20
34..42.40
35..31.30
36..24.70
36..53.40
37..52.90
37..58.50
38..40.70
38..53.40
39..6.20
39..57.75
40..29.50
42..38.50
42..54.00
44..34.25
45..44.05

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73

12	9.58	
13	2.31	
11	9.00	
9	6.59	
12.13	8.57	
12	2.41	
	B D	
10	4.23	
11.12	0.18 (-0.18?)	
11	7.32	
12	6.26	
8	1.24	
	B	
9	6 52	
12/13	9 27	
10	0.60	
12	4.12	
10	2.54	
11	6.17 ns	
	D	
10	7.03	
	~~Field without star~~ Clouds?	
10	7.28	
12	3.53	
12.13	2.48 ns	Cloudy?
	B D	
12	2.48	
12.13	~~4.18~~ ns (5.18)	
12.13	8.00	
	B	
10.11	3.34	
11	1.48	double comp s.f. dist-5" 14 mag
12	6.59	Clouds
12.13	6.04	
12.13	7.18	
	Clouds	Clouds
12	8.28	

74

Stars left from 13th mag.

11-12	9.44	13th 1.28
11	8.50	
9	6.48	
12.13	8.42	D. cert
12	2.35	
	D. B	
10	4.12	
11	-0.23	~~Cloud~~
11	7.25	
12	6.18	
8	1.17	
	D	
9	6.32	D. cert
	Stars left from 13th	
11	-0.07	
12	4.04	
10	2.42	
11	6.10	
	B	12 5.04
10	6 53	12 4.31
		12.13 Cert
		12 4.36
9	7.19	
11	3.45	double comp n/f 5"=13th
11-12	2.40	11th 10.50
	D. D	it 9.09
12	2.40	
12	5.10	Cert
12	7.53	
	D	
10	3.26	y
11	1.40	
12	~~6.45~~	
11-12	5.57	
~~11~~	7.07	
10-11	8.18	

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1854phae.proj..22dB

Zone 75 — 76 Dec 20' to 30'

Beg EC 22.. 07 Fair 35.5
End " 0.. 10 " 35.2
Oct 19th Obd by
Z.H.S. Telescope
removed from
74-

1 star of Zone 76 is 7 of Zone 74

				22.. 39.. 52.8	36.8	22.. 39.. 56.80	
				40.. 24.4	28.4	40.. 28.40	
				22.. 42.. 33.7	37.6	42.. 37.65	
				42.. 49.2	53.0	42.. 53.10	
				44.. 29.2	33.3	44.. 33.25	
				45.. 38.9	43.0	45.. 42.95	
				46.. 10.8	14.4	46.. 14.60	
				47.. 34.8	38.7	47.. 38.75	
				48.. 45.2	49.0	48.. 49.10	
22	48	55.7	59.7	22.. 48.. 59.70	48.. 54.7	58.7	48.. 58.70
	49	29.2	33.1	49.. 33.15	49 28.2	32.2	49.. 32.20
	50	6.6	10.3	50.. 10.45	50.. 5.4	9.4	50.. 9.40
					B		
					52.. 16.7	20.8	52.. 20.75
	52		49.9	52.. 49.90	44.7	48.8	52.. 48.75
	53	18.7	22.9	53.. 22.80	53.. 17.8	21.8	53.. 21.80
	53	24.1		53.. 28.10	D		
	54	24.8	48.9	54.. 48.85	54.. 44.0	48.0	54.. 48.00
	54	47.0	51.0	54.. 51.00	4 46.1	50.1	54.. 50.10
	57	20.1	24.0	57.. 24.05	57.. 18.9	23.0	57.. 22.95
	57	35.6	39.7	57.. 39.65	57.. 34.5	38.3	57.. 38.40
	57	56.6	0.5	57.. 0.55	57.. 55.5	59.4	57.. 59.45
22	58	27.1	30.7	22.. 58.. 30.90	22.. 58.. 26.8	29.8	58.. 29.80
					B		
23	0	55.4	59.3	23 00.. 59.35	23.. 0.. 54.3	58.1	0.. 58.20
	2	19.7	23.7	2.. 23.70	2.. 18.7	22.7	2.. 22.70
	~~2~~	~~50.6~~	~~54.6~~		2.. 23.4	27.0	2.. 27.20
	2	50.6	54.6	2.. 54.60	2.. 49.5	53.3	2.. 53.40
	3	1.7	~~5.1~~	2d wire rejected. Oct 20th	3.. 00.9	4.9	3.. 4.90
					D		
	4	6.3	10.1	4.. 10.20	4.. 06.3	9.3	4.. 9.30
	4	13.0		4.. 17.00	4.. 39.4	43.4	4.. 43.40
	4	45.7	49.3	4.. 49.50	4 —	48.3	48.30
					B		
	6	49.4	53.4	6.. 53.40	6.. 48.2	52.2	6.. 52.20
	7	14.0	18.0	7.. 18.00	7.. 12.9	17.0	7.. 16.95
23	8	13.0	16.9	23.. 8.. 16.95	8.. 12.0	16.2	8.. 16.10

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75

Zone 75 observed by J. H. S. experimentally - he having had no previous experience in Zone observing - The magnitudes are doubtful.

Zone 75 is a continuation of Zone 74 - Personal Equation between Jr. C B. & J H S exceptile -

Obsd by J H S.

D B D B D

~~10~~ 1

~~10~~ 11 8.. 56

10 6.. 28

~~11~~ 1.. 28

~~12~~ ~~8.. 37~~ Work

D. B. B.

10 8.. 55 1st wire lost

10.11 8.. 35

12 8.. 37 ns 1st doubt 2 lost

B

10.11 7.. 31

~~7~~10 9.. 29 ns - 10" ?

12 5.. 10

11.12 3.. 03

9.10 0.. 27

12 3.. 18

D D DDD

~~#~~11 6.. 15

11 6.. 27

12.13 6.. 08 R lost

11.12 2.. 45

12 9.. 47 ns 8 doubt. Dec?

B

11.12 6.. 28

12 8.. 03 ns 2 wire lost

12 9.. 06

D B

~~8~~11 5.. 58

~~#~~12 8.. 12

12.13 8.. 13 8 doubt

76

Oct. 21

Obsr WC B

9.10 3.. 26

10 1.. 41 does not appear double

11 6.. 45

10 5.. 57

11 7.. 06

10.11 8.. 15

11 8.. 54

11 [illegible]

D

10.11 9.. 27 cent.

10 10.. 33

8.. 50

12 6.. 25

12 1.. 28

13 B 8.. 55

10-11 8.. 50

10 8.. 30 cent

D

10 7.. 29

9 11 9.. 20 ns cent

12 5.. 10

11 3.. 03

9 0.. 27

11 3.. 18

B B Stars less than 13 mag

11 6.. 15

11 6.. 27

13 6.. 08 ns

11 2.. 47

10.11 9.. 47 ns

D

12 6.. 29

10-11 3.. 42 (Stars?)

11 9.. 07 ns. 1st Cent

B

9.10 5.. 57

12 8.. 09

12 8.. 09

3.. 26
1.. 41
6.. 45
5.. 57
7.. 06
8.. 15
8.. 54
D
9.. 27
10.. 33
8.. 50

2420
2254
1.. 26

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1854phae.proj...220B

			Mean		
23	8 59.9	4.2	23.. 09 04.05	23.. 08.. 58.9 2.9	8.. 02.90
+	9 35.3	39.2	9.. 39.25	9.. 34.4 38.1	9.. 38.25
	9 55.7	59.4	9.. 59.55	9..	
				B B	
	11 22.0	25.7	11.. 25.85	11.. 21.0 24.9	11.. 24.95
	12 19.0	23.0	12.. 23.00	12.. 18.9? 21.6	12.. 21.75
	12 39.9	43.9	12.. 43.90	12.. 38.9 42.9	12.. 42.90
	13 32.9	—	13.. 36.90	13.. 32.0 35.8	13.. 35.90
	14 44.2	47.9	14.. 48.05	14.. 43.1 46.8	14.. 46.95
				D	
	16 47.8	51.4	16.. 51.60	16.. 46.2 50.1	16.. 50.30
	17 59.7	3.6	17.. 3.65	17.. 58.9 2.8	17.. 2.85
	18 5.9	9.9	18.. 9.90	18.. 5.0 8.9	18.. 8.95
	18 21.7	25.8	18.. 25.75	18.. 20.9 24.9	18.. 24.90
				B	
	19 3.7	8 7.7	19.. 07.75	19.. 02.8 6.7	19.. 6.75
+	19. 23.8	27.7	19.. 27.75	19.. 22.9 26.9	19.. 26.90
	19 42.9	46.9	19.. 46.90		
	20 37.6	41.6	20.. 41.60	20 36.5 40.4	20.. 40.45
	20 49.5	53.6	20.. 53.55	20 — 52.1	20.. 52.10
				B	
+	21.. 26.4 27.0	30.9 31.0	21.. 31.00	21.. 26.0 29.9	21.. 29.96
+	22.. 24.3	28.3	22.. 28.30	22.. 23.1 27.1	22.. 27.10
	23 7.6	11.4	23.. 11.50	23.. 6.6 10.4	23.. 10.50
+	24 14.1	17.7	24.. 17.90	24.. 12.9 18.0	24.. 16.95
	24 53.8	57.9	24.. 57.85	24.. 52.9 56.9	24.. 56.90
	25 5.4	—	25.. 9.40	25.. 3.6 7.8	25.. 7.70
	25 12.6	16.7	25.. 16.65	25 — 15.2	25.. 15.20
				D	
	26 19.0	23.0	26.. 23.00	26.. 17.8 21.9	26.. 21.85
+	27 1.2	5.0	27.. 5.10	26.. 59.8 3.8	26.. 3.80
	27 7.0	10.8	27.. 10.90	27.. 3.8 6.8 27.. 9.9	27 .. 06.80 27.. 9.90
+	27 57.6	1.7	28.. 1.65	27.. 56.8 0.8	28.. 00.80
	28 35.3	39.2	28.. 39.25	28.. 34.0 38.1	28.. 38.05
	28 46.7	50.6	28.. 50.65	28.. 45.7 49.7	28.. 49.70
				B B	
23	29 45.2	49.0	23.. 29.. 49.10	29.. 44.2 48.1	23.. 29.. 48.15

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1854phae.proj..2208

75 J H S.

Observer J H S.

12 7..42 2d wire doubtful
10 6..10
12 1..02 ns
D
11.12 7..08
12 7..20
11.12 2..10
9..45 ns 2d wire bar
12 8..58
B
12 4..26
11.12 8..28
11.12 9..18 ns
10..11 5..37
D B
10.11 5..30
9 7..28
9.10 8..40 ns doubtful
11.12 1..48
12.13 2..00
B
11 8..28
10 1..37
11 4..24
10. 5..02
12 5..37
12 6..38 2d wire last
11.12 2..40 ns 2d wire last
D B
11.12 4..28
11 5..04
11 0..28 ns
9.10 10..21
10.11 7..59
12 6..28 ns
B
11.12 5..36

Observer W C B

12 7..41
8-9 6..10
12 1..
B B
10.11 7..08
13 7..18 1st wire bad
12 2..10
12 9..42
12.13 8..58
D No star gauges 13 may
13 4..27
10.11 7..26 cent
12 8..22 cent
10 5..38
B
9 5..27
6 7..30
D
10 1..51
11.12 1..00 cent ns 1st wire last
B
9 8..27
9 1..38
11.12 4..25
9.10 5..02
12 5..50 cent ns
12 6..33
12 2..40 1st wire last ns
D
11.12 4..29
9 5..3
9 4..58
9.0 0..28
8 10..28 cent
11 7..59
12 6..28
B B
12 4..35 cent

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1854phae.proj..220B

			Mean		
23	31 15.1	19.0	23.. 31.. 19.05	23.. 31.. 14.1 18.1	23.. 31.. 18.10
	33 4.8	8.6	33.. 8.70	33.. 3.8 7.7	33.. 7.75
	33 56.1	0.0	33.. 0.05	33.. 55.2 59.2	33.. 59.20
				D	
	34 52.7	56.7	34.. 56.70	34.. 51.5 56.5	34.. 55.50
	36 43.6	47.5	36.. 47.55	36.. 42.7 46.6	36.. 46.65
	37 3.6	—	37.. 00.60		
	38 39.7	43.5	38.. 43.60	38.. 38.5 42.5	38.. 42.50
	38 49.4	53.3	38.. 53.35	38 — 48.0?	
	39 17.4	21.2	39.. 21.30	39.. 16.4 20.2	39.. 20.30
	39 43.6	47.4	39.. 47.50	39.. 42.2 46.4	39.. 46.30
1	39 57.0	0.9	40.. 00.95	39.. 55.8 59.8	39.. 59.80
				BB	
	41 4.1	8.0	41.. 08.05	41.. 03.1 7.0	41.. 7.05
	41 29.6	—	41.. 33.60	41.. 28.4 32.9	41.. 32.65
	42 51.8	55.8	42.. 56.80	42.. 51.1 56.1	42.. 56.10
	*			43.. 18.2 23.1	43.. 23.15
	44 6.6	10.3	44.. 10.45	44.. 5.4 9.4	44.. 9.40
	44 45.3	49.2	44.. 49.25	44.. 44.2 48.3	44.. 48.25
	45 6.5	10.2	45.. 10.35	45.. 5.7 9.6	45.. 9.65
	46 45.3	49.0	46.. 49.15	BD 46.. 44.0 48.0	46.. 48.00
				BD	
	48 3.9		48.. 7.90	48 2.9 7.0	48.. 06.95
1	49 0.8	4.5	49.. 4.65	48 59.6 3.5	49.. 3.65
	49 7.3	11.2	49.. 11.25	49.. 6.2 10.2	49.. 10.20
	49 48.2	52.2	49.. 52.20	49.. 47.2 51.1	49.. 51.15
	50 29.1	33.1	50.. 33.10	50.. 28.0 32.0	50.. 32.00
	51 12.7	16.7	51.. 16.70	51.. 11.8 15.9	51.. 15.85
	51 54.2	58.1	51.. 58.15	51.. 53.3 57.2	51.. 57.25
	52 29.2	33.1	52.. 33.15	52.. 28.0 32.0	52.. 32.00
	52 37.8	41.6	52.. 41.70	52.. 36.7 40.9	52.. 40.80
	52 43.5	47.5	52.. 47.50		
				B	
	54 21.6	25.3	54.. 25.45	54.. 20.6 24.6	54.. 24.60
	54 51.0	55.0	54.. 55.00	54.. 49.9 53.9	54.. 53.90
	55 56.2	0.2	56.. 00.20	55.. 55.1 59.1	55.. 59.10
	56 22.9	26.7	56.. 26.80	56.. 21.9 25.7	56.. 25.80
				D	
23	58 38.2	42.1	23.. 58.. 42.15	23.. 58.. 37.1 40.9	23.. 58.. 41.00

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75 J. H. S.

11 7..23
11.12 5..20
11 1..40
Os D

12.13 5..15 ns
11.12 6..21
12 3..40 2d win lost
11.12 1..10
12.13 2..02
12 0..36
11.12 0..54
11 1..47
Os

12 1..23
13 5..19 2d win lost
12 5..03
12.13 1..20 R lost
12 1..07
11.12 2..11
11 5..19
12.13 4..30
D

12 4..58 2d win lost
10.11 6..18
11 5..17
11 8..37
12 4..41
12.13 5..15
11.12 6..51
12 6..13
11 8..45 ns
12 3..47 ns
Os D

11.12 6..08
11.12 4..54
11.12 5..21
11 10..11
B Starless field
11 5..28

76 2 to 30

Obs. W C B.

10 7..23
11.12 5..20
10 1..42
D

13 5..15
11 5..40 cent

10 1..13
12 2..02 ~~R~~ 1st win lost
11 0..40
10 0..57
9 1..50
Os Os

11 1..25
13 5..19 ns?
12 5..03
13 0..31 cir
11 1..09
10 2..12
11.12 5..19
12 BD 4..30
B D

12 4..59
9 6..20
11 5..17 ns
12 8..33 cent
12 4..40
13 5..14
10.11 6..50
12 6..10 ns
10 8..41 ns
3..57 No R 8 cent
B.

10.11 6..06
11 4..55
11 5..20
11 10..10
D 0..40
10.11 5..27

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			Mean			
0	0 17.0	20.8	00.. 00.. 20.90	00.. 00.. 16.0	19.9	00.. 00.. 19.95
						1.. 20.40
	1 17.4	21.2	1.. 21.30	1.. 16.4	20.4	1.. 20.40
+	1 55.8	59.6	1.. 59.70	1.. 58.0	58.6	1.. 58.80
	3 34.2	38.1	3.. 38.10	3.. 3	39.3	3.. 39.30
	3 38.4	42.3	3.. 42.35	3	41.1	3.. 41.10
	3 40.4	44.4	3.. 44.40	3..	43.5	3.. 43.50
	3 47.8	51.6	3.. 51.70	3.. 46.5	50.3	3.. 50.40
				B		
	4 46.0	50.1	4.. 50.05	4.. 45.2	48.2	4.. 49.20
	4 52.8	57.3	4.. 57.05	4.. 52.2	56.1	4.. 56.15
	5 3.0	6.9	6.. 6.95	5.. 1.9	5.8	5.. 5.85
	6 20.4	24.4	6.. 24.40	5.. 42.3	46.3	5.. 46.30
				6.. 19.6	23.6	6.. 23.60
				B D		
	7 4.6	8.6	7.. 8.60	7.. 3.8	7.7	7.. 7.75
	7 32.9	37.0	7.. 36.95	7.. 32.1	36.2	7.. 36.15
	8 10.6	14.5	8.. 14.55	8.. 9.3	13.7	8.. 13.50
	8 18.9	22.8	8.. 22.85	8.. 17.9	22.0	8.. 21.95
	8 26.4	30.5	8.. 30.45	8.. 25.5	29.5	8.. 29.50
				B B		
	11 0.9	4.5	11.. 4.70	10.. 59.7	3.6	11.. 3.65
L	12 29.7	33.5	12.. 33.60	12.. 28.5	32.6	12.. 32.55
	12 49.9	53.5	12.. 53.70	12.. 48.7	52.4	12.. 52.55
+	13 25.7	29.4	13.. 29.55	13.. 24.8	28.8	13.. 28.80
				D		
	15 4.6	8.6	15.. 8.60	15.. 3.8	7.7	15.. 7.75
	16 2.9	7.7	16.. 7.80	16.. 3.0	7.0	16.. 7.00
	16 12.6	18.3	16.. 18.45	16.. 13.4	17.7	16.. 17.55
				B		
	18 40.2	44.2	18.. 44.20	18.. 1.3	5.0	18.. 5.15
L	19 0.0	3.9	19.. 3.95	18.. 39.2	43.2	18.. 43.20
L	19 10.4	14.4	19.. 14.40	18.. 58.8	3.4	19.. 3.10
L	19 59.5	3.5	20.. 3.50	19.. 9.6	13.5	19.. 13.55
L	20 23.7	27.6	20.. 27.65	19.. 58.4	2.6	20.. 2.50
L	20 47.9	51.8	20.. 31.85	20.. 22.8	26.7	20.. 26.75
L				20.. 46.8	50.9	20.. 50.85
				D		
0	23 48.4	51.9	0.. 23.. 52.15	23.. 47.1	51.2	00.. 23.. 51.15

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75 J H S

J H

11 9..59

No stars greater than 13 mag

10.11 6..37
9.10 5..57
12.13 5..55 2 wire lost
12 9..18 ns
12 7..20 ns
11.12 3..40 ns

B D

11.12 1..17
11.12 7..29 ns
11.12 3..01 ns
11 10..28 ns

B

10 9..11
11.12 1..36
12 6..33
12 3..26 ns
12 1..12 ns

D

11 9..28
11 1..22
12 3..32
11 3..02

B

11 0..16
11 10..29
11 4..49

B D

12 3..03 No R
11 1..25
12 2..29
11.12 2..30
11.12 1..14
11.12 4..26
11.12 5..27

B

11.12 3..53

76

Observers W C B

10.11 10..00

10 6..37
7.8 5..56
12 4..57 cent ns
11.12 8..09 ns
10 7..12
10 3..40

B

10 1..18
11 7..30 ns
10 3..01 ns
9 − 0..32
9 10..18 ns Dec. in center

D

7.8 9..10
11 1..38
11 5..36 cent
11 3..28
11 1..10 ns

B B

10 9..25
9 1..22
12 3..32
10 3..03

D

10.11 0..17
10 10..25
10 4..52

B

12 4..03 ns cent double
9.10 1..25
12 2..29
10 2..32
11 1..16
12 4..44 ns
12 5..27

D

12 3..57 double n p. 20" dist 12"

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1854phae.proj..22[illegible]B

75 76

			Mean			
0	22	40.0 43.9	0.. 24.. 43.95	0.. 24.. 39.0 43.0		0.. 24.. 43.00
	24	59.2 3.1	25.. 3.15	24.. 58.0 2.1		25.. 2.05
				B		
	26	58.8 2.6	27.. 2.70	26.. 58.9 1.9		27.. 1.90
	27	46.4 50.2	27.. 50.30	27.. 45.2 49.1		27.. 49.15
	28	17.4 21.2	28.. 21.30	28.. 16.8 20.8		28.. 20.80
	28	38.9 42.9	28.. 42.90	28.. 37.8 41.9		28.. 41.85
	28	49.1	28.. 53.10	28 48.2 52.2		28.. 52.20
				D		
	29	23.7 27.5	29.. 27.60	29.. 22.7 26.8		29.. 26.75
	30	26.0 30.0	30.. 30.00	30.. 25.0 29.1		30.. 29.05
	30	32.3 36.2	30.. 36.25	30.. 31.5 35.3		30.. 35.40
⊥	30	53.1 57.2	30.. 57.15	30.. 52.1 56.1		30.. 56.10
				31.. 16.9 20.9		
				~~37.. 16.9~~ B ~~20.9~~		31.. 20.90
	32	13.9 17.9	32.. 17.90	32.. 12.9 16.9		32.. 16.90
	32	51.4 55.3	32.. 55.35	32.. 50.5 54.4		32.. 54.85
—	33	18.6 22.4	33.. 22.50	33.. 17.5 21.5		33.. 21.50
	34	20.1 23.8	34.. 23.95	34.. 19.1 23.0		34.. 23.05
	34	46.9 50.8	34.. 50.85	34.. 45.9 49.9		34.. 49.90
+	35	25.1 29.1	35.. 29.10	35.. 24.1 28.2		35.. 28.15
				B B		
	37	27.1 30.9	37.. 31.00	37.. 26.2 30.4		37.. 30.30
	37	39.7 43.5	37.. 43.60	37.. 38.1 42.1		37.. 42.10
	38	3.1 6.7	38.. 6.90	38.. 2.0 6.0		38.. 6.00
				40.. 41.6 45.9		40 45.95
	41	59.2 3.1	41.. 3.15	41.. 58.0 2.1		41.. 02.05
	42	33.2 37.2	42.. 37.20	42.. 32.4 36.6		42.. 36.50
	42	39.2 43.3	42.. 43.25	42.. 38.4 42.3		42.. 42.35
	~~43~~	~~1~~		D		
	43	— 10.3	43.. 10.30	~~43.. 1.7~~ ~~6.7~~		~~43.. 5.70~~
	43	54.7 —	43.. 58.70	00.. 43 53.7 57.7		43.. 57.70
	45	57.8 —	46.. 1.80	45.. 56.8 0.6		46.. 00.70
	46	— 1.9	46.. 1.90			
	48	43.0 46.9	48.. 46.95			
	49	35.9 39.7	49.. 39.80			
0	50	30.9 34.8	50.. 34.85			

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FHJ.

11 3..00
11.12 6..27

BD

11 5..27 ms
11.12 0..33 dec. 10" doubt.
11 7..51
11 3..31
11..12 8..03 ms 2 wire lost

B3

11.12 3..11
~~12 3..31~~
11.12 7..52
11.12 1..21 ms
10.11 8..37

D

11 10..08
10.11 +0..00
10 2..21
11 7..09
11.12 4..29
10.17 9..39

BB

11.12 9..03 ms
11 7..59
11.12 7..16
~~12 8..00~~
12 5..50
11 4..51 ms Star X

B

12 7 11 1st wire lost
11.12 9..40 2 wire lost
11.12 4..09 2 wire lost
11 6..31 1 wire lost ms

D

10.11 5..06
11 −0..22
10.11 3..01

Observer W C B

10 3..00
12 6..28

B3

10.11 5..27
11 0..37
11 7..51
11 3..32
12 8..03 ms

D

12 3..11

11 7..52 ms
11 1..21 ms
9 8..34
9.11 6..10

B3

10 10..06 ms
9 0..00
10 2..23
7..09
11.12 4..29 ← A 10th mag. passed
9.10 9..35 ms

12 9..02
12 7..58
11 7..14 ← No stars greater than 13 mag
11 4..57
11 4..58
12 5..49
9 4..50 ms X

D

11 9..35 ext
11 10..40 } same ?
10 4..00 }

B

10 5..09
10 −0..18 ext
10 2..57

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1854phae.proj..220B

Zone 77. WCB 54

Zone 78. Dec. 30' to 40'

This Zone commences near with the end of Zone 71-72 a portion of which was reobserved 1st Star in Zone of 71-72

~~6m~~ 7th mag.

H. 6th mag.

R 22h 17m 49s.33

Dec. +0° 38' 15".3

Nov 14th 1854 —

EC 22h 28m Thr 29.2 Rej
34.6 Ent

EC 23 15 Ent 38.9
0h 40m Ext 34.3

Zero of Position 270° 04'
well determined

Pos. 270° 00

1st Wire	2d Wire	Mean.
22h 17m 45s.7	49.5	22h 17m
19 1 7	5.6	

22 17 45.7 49.7
19 1.9 5.8
20 38.7 42.5
20 50.8 54.9
B
21 22.0 26.0
21 29.5 33.6
21 30.3 34.3
22 8.0 12.0
D
24 50.7 54.7
24 59.2 3.2
25 18.0 21.9
25 55.0 58.9
B.D.
26 57.9 1.9
28 18.6 22.7
28 55.6 59.5
29 37.8 41.8
B

21 9 27.2
29 9 34 1
22 8 0 12.1

24 50.5 54.5
59 3 63 2
25 17.9 21 9
... ... 58.8

26 57.7 61.7
28 18 4 22.4
55.4 59.4
29 37.8 41.8

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1854phae.proj..2208

Zone 77 WCB Sh

	Stars in Catalogue 1853.0		Stars in Cat		
+14m					
g	22h 37m 52s	0° 34′ 37″	0h 06m 16s	0° 34′ 20″	7g
g	40 35	34 11			
54 g	48 20	34 11			
g	49 11	40 23	236	22 31 30	
	R	Rümker			
20th 7 8	57 46	31 15			
6-8-8	23 8 07	30 49			
7 8 2 7	27 57	30 24			
7	0 06 16	34 20			

Clear with light wind.

5	8 15		5	8 16	Exceedingly fine definition – tres rare
10-11	6 42	Meteor	10.11	6 43	
12-13	9 08	R lost	12.13	9 09	
12	6 44	R lost	12	6 42	
	~~D~~			B	
10	5 02		10	5 02	
10-11	2 08		10	2 07	
10	3 42	Double 4″ – 11th sp	10	3 43 ans	Double 4″ 5.p 11 mag
10-11	2 58		10	2 58	
	D			D	
11-12	6 12		12	6 17 cert	
11	10 13		11	10 13	
11	9 18		11	9 19	
12-13	7 19	1st bad	12.13	7 18	
	B			D D	
11	6 30		11	6 30	lilac red
10	4 04		10	4 04	
11	0 42		11	0 43	
12	1 50		11	1 49	
	D B	A nebulous Object of 15th mag. many stars Gp. June 13th		B Nebulae ? Double	

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1854phae.proj..220B

2ᵏ	31ᵐ 33ˢ.3	37ˢ.2
	32. 13.5	17ˢ.6
	28ˢ.0	31.8
	34 36ˢ.9	40.9
	35ᵐ 45.8	49ˢ.9
	36 01.8	5.8
	20,0 24.1	
	37 37.0	41.2
	51.6	55.5
	39ᵐ 14ˢ.9	18ˢ.8
	40 35.0	39.0
	42.7	46.5
	43ᵐ 17ˢ.8	21ˢ.8
	44 4.8	8.8
	45 36.4	40.1
	46ᵐ 12ˢ 2	16ˢ.4
	21.7	25.8
	47ᵐ 2.0	5.8
	48ᵐ 16ˢ.2	20.3
	20.9	24.6
?	21.6	26.4
	49ᵐ 10ˢ.9	14ˢ.8
	50ᵐ 44ˢ.3	48ˢ.4
	52ᵐ 4ˢ.7	8ˢ.7
	36.0	39.8
	53ᵐ 13ˢ.7	17ˢ.8
	54ᵐ 20.9	25ˢ.0
	56ᵐ 16ˢ.4	20ˢ.5
	57ᵐ 25ˢ.5	29.6
	45.9	49.8
	58ᵐ 53ˢ.9	58ˢ.0
	59ˢ.1	3ˢ.0
	59ᵐ 7ˢ.2	

22	31 33.3	37.4
	32 13.7	17.8
	3	
	34 37.0	41.1
	D	
	35 46.0	50.1
	36 1.7	5.7
	36 20.1	24.1
	37 37.4	41.4
	37 51.8	55.7
	B D B	
	39 15.0	19.0
	40 35.2	39.1
	42.7	46.9
	43 18.0	22.0
	44 4.8	8.9
	45 36.5	40.6
	B	
	46 12.5	16.5
	47 2.1	6.2
	48 16.1	~~20.6~~
	48 20.6	24.7
	48 21.5	25.4
	D	
	49 10.8	14.7
	50 44.3	48.3
	52 4.9	8.8
	4	
	53 13.6	17.7
	B	
	54 21.1	25.2
	B D	
	56 16.7	20.6
	57 25.8	29.7
	57 46.0	49.9
	58 54.0	58.0
	58 58.9	3.0
	59 7.6	11.5
	B	

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12 0..17
11 3..58
12 10..30
10 1..08
B. B
11-12 3..40
11-12 2..32
8..9 0..39 Brighter than (a)
10-11 3..10
a 9 4..37
long D
12 2..10
9-10 4..10
10 VM 8..53
9-10 6..01
9-10 10..28
10 6..06
B D B
10 9..15
12 4..27
12 7..25
10 4..17
10 4..08 n s
11 3..40
D
9 10..23 n s
10 9..32
11 5..18
13 8..30
D. B
12 7..32
9 5..30
B Starless field
9-10 7..34
10 D 5..20
7 1..14
10 8..05
10 7..33 n s
11 6..05 ns
B D

12 0..16 Double comp 13 n.f. 4"
11.12 3..58
Not seen
10.11 1..08
D
11,12 3..38
12 2..31
9 0..41
10.11 3..10
9 4..36
B D B
12 2..13
9 4..11 reddish-orange
11 8..51
10 6..02
9.10 10..25
10 5..06 cert
B
11 9..16
4..27 R lost
12 7..26
10.11 4..19 2 win last
9.10 4..09 ns
10.11 3..40 ns
D
9 10..25
10 9..32 two 11 mag stars same R one and two min. south
11 5..18
12 7..33 cert
B
pr 9-10 7..33
9.10 5..31
B D
9-10 7..36
10 5..21 comp 13 mag n.f. 5"
7 1..16 yellowish
10 8..06 2 win last
10 7..34
11 6..09 cert
B

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1854phae.proj..220B

	1st Wire	2d Wire
23h	0m 17s.1	21s.2
	2m 9s.0	12s.7
	18s.4	22.6
	28s.0	32.3
	3m 31s.0	35.1
	4m 1s.0	5s.0
	11.9	15.9
	5m 18s.6	22.9
	56.9	0.9
	6m 54.1	57.9
	7m 40s.6	44s.7
	8m 6s.9	10s.9
	8m 57s.6	1s.6
	9m 38s.8	43s.1
	10m 0s.7	4.7
	49s.1	53.1
	11m 11s.6	15.9
	27.4	31.6
	13m 1.0	5.2
	13.1	17.1
R?	16m 27	
R?		
A?		
	16m 51s.6	55.7
	17m 14s.6	18.6
	19m 10s.4	14.3
	20.9	24.8
	4s.5	8.6
	20m 29s.9	34s.0
	44.9	49s.5
	21m 8.3	12s.7
	22m 1.8	5.3
	22 36.1	40s.0
	24 57.9	61s.9
	25m 15.8	

23	00 17.4	21.4
	2 8.9	12.9
	2 18.7	22.6
	2 28.3	32.4
	3 1.4	5.5
	3 31.2	35.3
	4 1.4	5.3
	4 11.8	15.8
	5 18.7	22.9
	5 57.0	1.0
	6 54.2	58.3
	7 40.7	44.6
	7 42.9	46.9
	8 7.0	11.0
	8 57.6	1.7
	9 39.0	43.0
	10 0.8	4.9
	10 49.3	53.2
	11 11.5	15.5
	11 27.6	31.6
	13 1.4	5.2
	13 13.1	17.1
	13 19.9	23.9
	14 29.3 D	33.4
	16 22.5	31.4
	16 29.7	33.7
	16 51.7	55.7
	17 14.6	18.7
	18 56.2	0.4
	19 10.4	14.5
	19 20.9	24.9
	20 4.7 B B	8.7
	20 30.1	34.1
	45.2	49.3
	21 8.6	12.7
	22 1.8	5.8
	22 36.1	40.1
	24 57.8	1.9
	~~25 15.9~~	~~20.0~~

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1854phae.proj--2208

77

10	2..37	
10	9..00	
12	8..30	
10-11	8..00	ns
9-10	1..22	
	B	
12	8..59	
12	6..20	
12-13	1..40	2nd 0.2 later
11	4..10	
12	4..10	
12	6..10	
7	0..52	
	D B	
12	8..50	
11	1..40	
12	0..13	
11-12	5..15	
12	2..30	
9-10	3..32	
10	2..40	
10	6..20	
	D	* of 13th nebulous
10	4..20	
12	1..18	ns
11	3..00	
11	3..58	
10	6..30	
9?	—..47	no minute given
9?	-0..07	
11-12	1..10	
	B	
10	6..32	
	4..53	
9/10	3..24	1st bad
12	4..28	
	B D	
10	8 0[illegible]	
12	1..59	

78

10.11	2..39	
11	9..02	
12	8..31 ns	
10.11	8..03	
10	-0..21 cent	
9.10	1 D 2 ns	
12	8..59	
12	6..19	
12.13	1..41	
11	4..11	
12	4..15	12th 4..46 m
12	6..17 cent	
7	0..52	
	B	
13	8..44 cent.	
11.12	1..40	
12	0..15	
11.12	5..16	
12	2..27	
10	3..35	
10.11	2..40	
11	6..15	11m 4..32 m; 12th 3..25
D		Double star 13 mag. scale 2' dist 10"
10.11	4..23	
12	1..20 ns	
12	2..58	
11.12	3..53 cent	
10	6..30	10th -0..07
9.0		
9	B3 -0..09	
11	1..10	
	B	
11	6..38	
9.10	4..50	
12	3..24	
12	4..28	
	D	
10	8..03	
12	2..00	

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1854phae.proj..220B

77 & 79

78 & 80

3h 25m 15s. 8 19s.3?
26m 32s 1 .....

35s.5 39s.4

27m.57s. 26 1s.3
28m. 43 0 46.9
43. 9 47.8
29 " 10.3 14.3
30.3 34.1 End of Zone 77

Zone 79 30 " 15 0 18.8
21 4 25 5

32m " 39s. 1 43.0
33m " 55s.9 60.0
33m " 59s.0 3.2
34m " 26.4 30s 3

35m " 51s. 8 55.8
36m " 24s. 1 28s.0
37m " 7.5 11.3
13.9 17.8
48.9 52.9
38m " 32s. 7 36s.7
39m " 18s. 2 22s.3
24.7 28.6

42m " 28s.0 32s.0
43m " 33s.7 37s.7
44m " 16s. 4 20.4
45m " 12s. 5 16.6
46m " 23s.0 27.1

48m " 38s.1 .....
48m " 42s.3
49m " 52s.5 56s.4
50m " 46s.2 50s.1

51m " 38s.

25 15.9 20.0

26 " 35.6 39.7

27 " 57.5 1.5
28 " 43.8 47.8

29 " 30.5 34.6

23h 30 " 14.3 18.1
30 " 21.0 25.0
B
32 " 38.7 42.7
33 " 55.3 59.3
33 " 58.6 2.6
34 " 26.0 30.0
BB
35 " 51.1 55.2
36 " 23.2 27.7
37 " 6.8 10.8
37 " 13.3 17.3
37 " 48.2 52.3
38 " 32.2 36.2
39 " 17.8 21.9
39 " 24.0 27.9
B
42 " 27.4 31.3
43 " 33.0 36.9
44 " 15.9 19.9
45 " 12.0 16.0
46 " 22.5 26.5
DD
48 " 37.7 ~~41.9~~
48 " ~~47.9~~ 41.9
49 " 51.9 56.9
50 " 45.6 49.5
B
51 " 36.9 40.9

h
23 " 27 " 56.8 0.8
28 " 42.4 46.4
28 " 43.2 47.2
29 9.7 13.7
29 29.9 33.9 End of 78

Zone 80
Dec 30' & 40'
EC 34.0
EC 23h 21m & 33.0

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1854phae.proj - 2208

10	7.. 28	Dense R	12	7.. 25	11.12 4.. 34
10	10.. 30	ns			
12	6 .. 58	No R			
10	4 .. 32				
	D				
6.7	0 .. 25		11.12	4..34	Zone 80 Cloudy!
			6.7	0..25	6 0..24
11	2 .. 18 }	ns	7	0..25	
11	4 .. 33 } clouds	ns	11	2..19	11 4..34 } cent
					11 2..19
12	8 .. 5				12 8..05 End of Zone 78
9	7 .. 2	End of Zone 77	9	7..05	9 7..03 Sky suddenly
					became overcast
12	2 33	Zone 79	12	2..32	
12	0 58	Nov 14th 1854.	12	0..53	Zone 80 Cirro
	B. 13	No stars visible		B	Clear - calm - fine definit
		perfectly clear		G	
10-11	6..06		11	6..08	
10	5 .. 04		10	5..07	
10	7 .. 57		10.11	7.. 55 ns	
9 ✕✕✕	2 .. 41		9	2..43	
	D. 13 D			B B	
11	3 .. 17	comp 14m 3 of 30"	11	3..18	
12-13	9 .. 02	Too faint	12.13	9..03 R?	
9-10	4 .. 28		11	4..28	
9 D	2 .. 59		12	2..58	
12	2 .. 03		12	2..05	
10	6 .. 30		9	6..31	
12	5 .. 00		12	5..00	
10	8 .. 00		10	8..03 ns	
	D			B	
9-10	9 .. 04		9.10	9..04	
12	9 .. 08		12	9..10	
12	8 .. 10		12	8..13	
12	9 .. 35		11.12	8..37 cent	
10-11	5 .. 00		10	5..02	
				D D	
12 R	9 .. 38	2nd lost	12	9..39	2 min lost
12	5 .. 02	ns - 1st lost	12	5..05	1 min lost — ns
12	2 - 43		12	2..48	cent
11 ✕✕	1 .. 10	double 13m = 12" n	11	1..11	
	B			B	
12	2 .. 29	1st ? 2nd lost	12.13	2..24	cent

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1854phae.proj..220B

Zone 79

52m " 34,7 38,5
56m " 22,5 26,6
23h " 58m " 42,1 46,4
0h " 0m " 7,4 11,2
" 16,7 21,1
0h " 0m " 47,0 51,0

0h " 1m " 34,5 38,4
3m " 0,2 [illegible]
3m " [illegible] 4,2
3 45,2 49,3

4m " 7,7 11,5
5 " 20,9 24,8
56,0 60,4
6m " 11,5 15,7
15,7 19,8

8m " 2,1 6,3
22,7 26,7
9m " 12,2 16,3
" 40 4 44,2

10m 8,7 12,8
22,8 27,0
32,0 36,1
11m " 00,3 04,6
30.8 34,4
48,3 52,2
13m " 40,3 44,2
46,1 50,0
14m " 25,1 29,2

16m " 3,8 7,7
17m " 54,0 58,0
18m " 44,9 49,0
19m " 6,8 10,8
19m 53,4 57,3
21m 21,3 25,1
22m 22,2 26,1

Zone 80 Dr. 30' & 40'

23..52..34.2 38.1 56.6.4 10.4
56..26.9 30.9
58.. 41.8 45.8
0..00.. 6.8 11.0
0..16.1 20.1
0.46.4 50.4
D
1..34.0 38.0
2..57.1 1.0
2..59.5 3.5
3..44.8 48.7
B
4.. 6.9 10.9
5..20.4 24.3
5..55.8 59.7
6..10.7 14.8
6..15.3 19.2 ~~23.4~~
B
8.. 1.1 6.2
22.3 26.3
9..11.8 15.8
9..40.0 44.1
BD
10..8.3 12.3
10..22.4 26.5
10.. — 35.4
10..59.9 3.8
11..29.9 33.9
11..47.9 51.9
13..39.5 43.5
13..45.3 49.3 13 — 49.7 45.3
14..24.5 28.5
B
16.. 3.1 7.1
17..53.6 57.5
18..44.4 48.4
19.. 6.3 10.2
19..52.9 56.8
21..00.7 4.5
21..21.8 25.7 21..22.8 26.7

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1854phae.proj - 2208

9 1..7 The region following
10-11 5 47 is very sparsely
10 0..05 scattered with *1
12 8..33
12 2..03
11 — 0..03
12 1..23
B.D.B
12 5..22
12 7..23 2nd last
12 6..29 ns
12 2..10
~~12 8..30~~
12 8..02
10 5..25
12 10..18
10 4..55
7 4..22
B
12 4..10
11-12 6..48 another of 12th mag
~~10~~ 6..38
10 2..08
D
9 0..45
10 10..30 ns
12 0..22
12-13 1..29
12 6..45
11 8..29
12 8..07
9-10 3..34 ns double 13th..10"s
11 0..55
BDBD
10 ~~12 13~~ 0..21
9 ~~10~~ 3..39
10 3..26
10 6..10
9-10 5..26
12 2..15
10 4..40
10 4..55

9 1..08
10.11 5..46 ~~10.11 6..06~~
10.11 0..06
11.12 8..36
9 2..04
10 — 0..05 —
12 1..22
D
11 5..24 in 2nd quarter
12 7..20 Moon within 5° dec. of
11.12 6.32 m of zone
12 2..10
BS
12 8..09 east
10 5..28
12 10..18
10 4..49 east
9 4..21 yellow
BS
12 4..20 east
11.12 6..48
10 6..37
11 2..10
BSD
9 0..45
10.11 10..30
12 0..18 1 min last sig
12 1..30
12 6..46
11 8..32
12 8..08 1 min last of sig
9.10 3..37 12h 3..22
11 0..51 east
BS
10 0..22
9 3..40
12 3..28
11 6..11
9 5..29
12 2..16
10 4..39
12 8..00 ns

(* = 1° of zone 81

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1854phae.proj..220B

N.B Zone 78 the repetition of 77 was interrupted at R 23h.. 29m.. 30s by clouds. leaving 0h.. 52m of 77 unrevised. For convenience in printing 77 has been divided into two 77 & 79 with 78 & 80 for repetitions of them respectively

Zone 81 ~~Dec~~ Dec +0°.. 30' to 40' Zone 82
Joins on with end of Zone 80.

Nov 28 EC Thr EC 0h.. 41 Thr 23°.5
EC " 2.. 46 " 23.0
G.P.B. observed

First Star in A of Zone 80 9m mag
A = 9m R 0h.. 19m.. 57s Dec 0°.. 35'.. 30"

81

h		
0..	19.. 52.2	56.3
	21.. 0.1	4.1
	21.. 21.2	25.1
	21.. 22.3	26.2
	B	
	21.. 53.1	57.0
	22.. 18.5	22.5
	23.. 25.6	~~29.8~~
	23.. 29.8	33.8
	25 17.4	21.3
	(2)	
	26.. 24.0	28.0
	27.. 0.8	4.8
	27.. 23.4	27.5
	28.. 24.0	28.0
	28.. 42.2	46.2
	B D	

82a

0	21.. 01.0	4.9
	21.. 22.0	25.9
	21.. 23.2	27.2
	D	
	21.. 54.2	58.0
	23.. 26.4	30.4
	23.. —	34.8
	25.. 18.1	22.1
	B	
	26.. 24.7	28.7
	27.. 1.6	5.5
	27.. 24.2	28.3
	28.. 24.9	28.8
	28.. 43.6	46.9
	D B.	

82b

9m	52.0	55.9
21h	21.2	—
	23h 30.2	—
	25h 17.7	21.8
	B B	
	24.5	—
	1.1	5.0
	24.4	28.4
	24.5	28.3
	42.7	46.7
	B. D. B	

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1854phae.proj..220B

Cat. Stars Zones 81 & 82
1854.0

	R	Dec
9	0h 35m 28s.4	0° 29' 30"8
8-9	49 .. 45	34 .. 23
3-6-5-6-7	56 .. 18.4	34 .. 59
9	0 .. 59 .. 42	34 .. 26
9	1 .. 23 .. 01	36 .. 18
8	41 .. 30	37 .. 17
9	45 .. 07	32 .. 11
8-9	54 .. 08	38 .. 08
9	1 .. 55 .. 37	39 .. 31
8	2 .. 27 .. 23	36 .. 9

2

81

December 1, 1854 82 Dec 30' to 40'

(236) 0h 50m Ext. Zh + 31°

9	5..30	8.9	5..19 5,21
12	2..16	12	2..05 2,08
10	4..41	9	4..30 4,31
12	8..01 ms		7..51 —
B			D
12	9..42	12	9..31 ~~9.5~~ ~~9.9~~
12	0..23		
12	4..53 2 wine lost	11	4..40 4,42 1st lost
12	0..02 ms	11.12	0..10 1st wine lost
11	6..11	11	6..00 6,02
D		B	
12	8..42	11	8..31 8,33 2 lost
10.11	5..39	11	5..28 5,30
12	2..40	12	2..30 2,33
10.11	2..53	11	2..42 2,44
9.10	5..08	10	4..57 5,00
B D		D B	B L B

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1854phae.proj..220B

81

0.. 29.. 40.6 44.5
30.. 00.2 4.1
32.. 12.9 16.7
32.. 23.9 28.0
B
34.. 23.9 28.0
34.. 30.6 34.6
35.. 14.8 18.8
35.. 20.3 —
35.. 24.0 28.0
DB
36.. 1.0 5.0
40.. 39.5 43.6
41.. 27.0 31.0
42.. 4.0 7.9
DD
43.. 53.3 57.3
45.. 48.3 52.3
46.. 29.9 34.0
46.. 37.3 41.3
B
48.. 42.3 46.3
48.. 56.8 0.9
49.. 40.7 44.5
51.. 13.0 17.0
51.. 19.6 23.7
D
52.. 23.2 27.1
52.. 47.9 61.8
53.. 58.2 2.0
54.. 3.3 7.2
54.. 30.4 34.4
BD
55.. 9.2 13.2
56.. 13.2 17.1
56.. 14.2 18.2
57 3.0 7.0
57 — 11.0
B

82a

0.. 29.. 41.3 45.2
30 1.1 5.1
32.. 13.7 17.7
32.. 25.1 28.9
D
33.. 34.3 38.2
34.. 31.6 35.3
35.. 15.6 19.3
35.. 24.8 28.6
B
36 — 5.8
40.. 40.3 44.3
41.. 28.0 31.7
42.. 4.8 8.8
BB
43.. 54.1 58.1
45.. 48.5 53.3
46.. 30.8 33.5 exmd
46.. 38.1 42.1
D
48.. 43.0 47.2
48.. 57.9 2.1
49.. 41.4 45.2
51.. 13.9 18.0
DB
52.. 24.0 28.0
52.. 48.9 52.7
53.. 59.0 2.9
54 — 8.0
54.. 31.2 35.1
B
55.. 10.0 14.0
56.. 13 17.9
56.. 15.1 18.9
57.. 3.8 7.7

82b

41.1 – 45.0
0.8 – 5.0
13.1 – 17.6
24.3 – 28.5
BB.
24.5 – 28.3
31.0 – 35.1
15.2 – —
24.8 –
40.0 44.1
27.3 31.1
4.9 —
53.7 57.3
49.0 52.9
30.6 —
42.8 – 47.6
41.2 – 45.1
13.5 – 17.4
56.00.4 5.0

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1854phae.proj . 22OB

11 2..37
12 3..05 Clear & calm - Bright moonlight
11 − 0..02
12 6..59
B

11 10..42
11 0..01
10.11 5..54
12 0..21 2 min lost ns
9 − 0..25 ns
D B

12 5..37
11 5..18
12 10..27
11 7..56
D D

11 − 0..26
12 0..00
12 3..52
10 10..16
B

12 8..41
12.13 7..47
9 4..28
12 6..18
12.13 6..29 ns
D

12 6..24
9.10 − 0..06
9.10 10..39
12 6..29 ns
12 4..44
B D

12.13 5..64 comparison
10 5..02 Double comp 10 m dist: 12" s.p.
6.7 5..06 ns
10.11 0..10
12 2..09 1 min lost
B

11 2..35 2,29
12 2..53 2,56
11 − 0..13 − 0,11
12 6..49 ns? 6,51 n.s.
D
star by mistake at 10,40
12 10..32 10,37 ns
12 − 0..10 − 0.10 ns
11 5..42 5,44 2d lost
8.9 ~~0..28~~ —
8.9 0..22 − ~~0,01~~ 0,32 which was?
B
12 5..28 1st min lost —
11 5..07 5,09
12 10..16 10,20
11 7..44 7,44 2d lost
B B
12 − 0..38 − 0.40 R Double star
12 − 0..12 − 0.10
11.12 3..40 3,41
10 10..06 —
D B
12 8..30 8,32
13 7..37 ns —
8 4..18 4,21
12 6..07 + 6,09
seen, but lost 6,19 1st lost
D B D
12 6..11 6,14
9 − 0..17 − 0.5
9 10..28 10,29
12 6..08 n.l 1st min lost 6,18
12 4..33 4,34 ns
B B
13 5..42 5,41
12 5..40 5,39
7 4..54 4,55 n.l
10 − 0..00 + 01

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1854phae.proj..22GB

h m s

0 57 54.6 58.8
58 43.7 47.6
59 16.0 20.0
0 59 38.9 42.9
1 00 10.3 14.1
0 29.2 33.1
D
1 27.7 31.6
2 5.7 9.7
2 6.9 10.9
2 56.0 —
2 58.7 2.4
B D B
5 41.1 45.0
5 48.0 51.9
5 52.6 56.6
6 19.6 23.5
6 24.2 28.2
B
8 37.9 41.9
9 14.7 18.7
9 48.1 52.1
9 53.9 58.0
10 2.7 6.9
11 15.9 19.9
11 21.4 25.4
11 48.4 52.4
D B D
14 15.2 19.1
15 8.6 12.5
15 48.6 52.5
15 49.7 53.6
16 7.8 11.7
16 18.7 22.7
B
17 59.4 3.3
18 42.8 46.8
18 57.7 1.7

0 57 55.2 59.1
58 44.3 48.2
59 17.0 21.2
0 59 39.7 43.9
1 00 10.9 15.0
0 29.9 34.0
B D
1 28.2 32.3
2 6.5 10.5
2 7.8 11.8
2 56.8 0.7
2 3.3
B
5 42.3 45.9
5 48.3 52.7
6 53.8 57.8
6
6 25.0 29.2
B D B
8 00.9 4.7
8 38.3 42.8
9 16.7 19.6
- - - - - - -
9 54.9 58.9
. . . . . .
B
11 16.9 20.7
. . . . . .
11 49.3 53.1
B D
14 16.0 19.9
15 9.6 13.6
15 49.3 53.9
15 50.7 55.3
- - - - - - -
16 19.3 23.9
D
18 00.7 4.5
18 43.7 47.7

11.4 15.3
7.1 – 11.0
25.9
39.2 – 43.0
16.0 – 20.0
55.4 – 59.5
17.4 – 21.1
49.8 – 53.8
16.6 – 20.5
10.0 – 13.9
50.2 – 54.0
51.1 – 55.1
20.4 – 24.0
0.7 – 4.6
44.1 – 48.2

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1854phae.proj..220B

12 7..59
9 10..04
12 0..53
9 4..28 This x is fainter than prec. & streaky
9.10 8..03 reddish
12 3..26
D
11 6..51
12 7..44
12 6..32 ns
12 5..07 2 wire lost
12 10..30 ns
B D B
12 2..32
10.11 7..34 ns
12 13 7..52 ns
12.13 6..22
12 8..31 ns
B
12 9..46
10.11 2..07
12.13 3..16
12 1..44 ns
12.13 — 0..36
Many stars of 13 may, passing
11.12 3..11
12 5..28 ns Another 12.13 1' n./p
12 9..21
D B D
11 2..46
10 1..07
12 4..57
12 6..20 ns
12.13 9..10
12 5..05
B
12 10..46
8.10 — 0..12
13 1..54

12 7..48 7,50
9 9..53 9,51
12 0..40 2 wire bad —
8.9 4..18 4,20
9.10 7..53 7,52
12 3..14 3,16
B D B
11.12 6..40 6,40
12 7..30 7,33
12 6..22 ns 6,21
12 4..57 double 4,59 2nd lost
12 10..20 10,24 1st lost
B B
12 2..20 ns 2,20
10 7..22 ns 7,24
12 7..40 7,42 ns
6..10 No R —
12 8..20 8,23 1 lost
B D B 12 9 10..40 10,40
12 9..15 — cent — 9,18
11 1..57 1,59
3..0 3,07 no R
11.12 1..30 1,53
B D B
3..00 3,03
5,10 2 lost
12 9..10 9,11
B D B
10.11 2..35 2,37
10.11 0..56 0,57
12 4..47 4,46
12 6..10 6,9 ns
11 4..52 4,55 ns
D
12.13 10..35 ns 10,38
10 — 0..25 — 0,21
1..

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1854phae.proj..22[illegible]B

81		82		
1.. 19.. 19.1	23.1	1.. 19.. 20.1	24.0	20.5 – 24.2
19.. 51.0	55.1			52.7 – 56.2
19.. 57.6	1.5			
DB				
21.. 46.5	50.4	21.. 47.1	51.1	48.4 51.8
22.. 57.8	1.7	22.. 58.5	2.5	59.2 – 3.0
23.. 28.9	32.9	23.. 29.6	33.8	30.7 – 34.0
24.. 12.4	16.4	- - - -	- - - -	— 18.0
24.. 34.8	38.2	24.. 35.0	39.0	35.7 – 39.8
B		D		- - - - —
27.. 19.3	23.3	27.. 20.1	24.1	21.1 —
27.. 46.5	50.7	27.. 47.1	51.2	48.0 – 52.0
28.. 21.3	25.3	28.. 22.0	26.0	22.8 – 26.8
29.. 28.8	32.5	29 29.3	33.3	30.0 – 34.0
29.. 40.7	44.8	- - -	- -	42.1 – 46.2
30.. 3.8	7.7	30. 4.6	8.7	5.2 – 9.1
30.. 47.9	51.9	30.. 48.5	51.7	49.3 – 53.3
30.. 56.0	0.1	30.. 57.0	1.0	57.2 – 1.4
D		B		- - - - - - - -
31.. 28.0	32.0	31.. 28.9	32.9	29.7 – 33.5
32.. 11.6	15.6	32.. 12.7	16.3	13.1 – 17.1
32.. 33.1	37.1	32.. 33.9	38.0	34.7 – 38.5
33.. 27.7	31.5	33.. 28.3	32.2	29.0 —
- - - - —		. . .	. .	
34.. 46.3	50.3			
B		D		- - - - - - - - - -
35.. 23.0	27.0	35.. 24.0	27.8	24.4 – 28.2
36.. 40.3	44.3	36.. 41.1	45.0	41.7 – 45.9
36.. 50.9	54.8	36.. 51.8	55.8	52.1 – 56.2
37.. 11.2	15.1	37.. 12.3	16.3	
37.. 25.4	29.5	37.. 26.2	30.3	
38.. 3.0	7.0			22.1 —
38.. 21.4	—			22.1 —
38.. 25.3	29.3	38.. 26.8	30.0	
DB		DB		. . . . .
39.. 33.7	37.5	39 34.7	38.2	35.2 – 39.1
39.. 41.1	45.1	39.. 52.8	56.8	42.7 46.3
39.. 52.0	56.0	- - - -	. . .	53.5 – 57.3
40.. 8.1	12.1			
DB				
		40.. 9.0	13.1	

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1854phae.proj..2208

81

10 2..21
12 4..34
12.13 2..03

DB

11.12 0..52
Bx 9 6..23
10 3..57
12 2..10
10 5..39

B

12.13 2..09
9.10 2..02 Blueish
9 1..36
12 1..18
12.13 1..44
10 8..36
12 3..58
10 7..07 Beetlish

D

12 7..50
12 6..12
12 5..21
12 0..00
~~13 0..~~ Double distrib" s.p
12 0..

D

12.13 4..50
10 9..22
9 9..28
12 2..16
11.12 0..07
12 2..10
12 1..22 2 win lost
11.12 7..29 ns

D.B.

12 1..50
12 10..19
10 7..26
12 10..09

D B

82

10 2..10 ns 2..11
4.24 Moon approaching
~~2~~ lost

B

12 0..40 0.42
9 6..09 6.11 ns
10.11 4..44 cent 3.47
2.40 11" last
10 5..18 cent 5.21

D DB

12.13 1..59 2.0 2½ ns
10 1..49 1.51
9 1..23 1 25
~~10~~.11 1..06 1.7
1.91
11 8..23 8.27
12 3..47 faint 3.45 ns
10 6..56 6.59

B 38

12 7..40 ——— Rm last
12 6..00 6.1
12 5..10 1 5.10
12 −0..10 1 wine back 20 cent

D ~~15 B~~

12.13 4..39 4 39
10 9..10 9.12
9 9..17 9.20
12 2..05 ——
12 −0..05 −0.02

12 7..18 1 win back

D B

12 1..39 1.40
10 10..13 10 15
~~12 7..58~~ 7.14
12 9..58

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1854phae.proj..22MB

81

1..	40.. 52.0	56.0
	41.. 1.3	5.3
	41.. 26.1	30.0
	41.. 48.3	52.3
	44.. 6.0	———
	44.. 9.0	13.0
	44.. 30.9	34.9
	45.. 3.8	7.9
	45.. 7.4	11.4
	BDB	
	46.. 53.4	———
	46.. 57.3	1.2
	47.. 46.7	50.7
	48.. 28.5	31.6
	48.. 37.4	41.4
	48.. 46.0	50.1
	49.. 25.3	29.3
	49.. 33.9	3.8
	BDB	
	50.. 47.6	51.6
	51.. 41.7	45.7
	- - - - - - - - -	
	52.. 36.2	40.1
	53.. 14.7	18.7
	53.. 36.1	40.1
	53.. 45.9	49.9
	54.. 4.8	8.8
	54.. 40.2	44.4
	55.. 4.7	8.7
	55.. 6.0	10.0
	55.. 33.0 B	37.0
	5	
	56.. 13.7	17.8
	56.. 37.4	41.4
	57 5.5	9.5
	BDBB 10.0	
	58.. 06.4 BDB	
1..	59.. 30.4	34.4
2..	00 29.2	33.2

58.. 10.05

82

	41.. 2.2	6.1
	41.. 27.0	30.9
	- - - - -	...
	.....	...
	44.. 9.9	13.9
	44.. 31.5	35.3
	45 4.7	8.5
	- - - - -	...
	BD	
	46.. 54.1	58.3
	46..	2.1
	47	
	48.. 28.3	32.3
	- - - - -	...
	.....	...
	.....	...
	50.. 00.8	4.5
	B	
	50.. 48.4	52.3
	51.. 42.3	46.2
	52.. 37.2	41.0
	53 15.8	20.8
	- - - - -	...
	.....	...
	54.. 05.7	9.5
	- - - - -	...
	55.. 6.7	9.6
	55.. 7.0	10.9
	55.. 33.9	37.9
	- - - -	...
	56 ———	18.7
	56.. 38.0	42.9
	- - - -	...
	B	
	58.. 06.8	10.9
1..	59.. 31.5	35.5
2..	00.. 30.9	34.0

53.3 – 57.2
59.0 – 6.9
27.7 – 31.8

5.3 – 9.1

55.0 – 58.8
58.8 – 2.8
48.3 – 52.1
28.7 – 32.9
39.0 – 42.8
47.5 – 51.3
27.2 – 31.1
1.3 5.2

cor −0.63

49.0 – 53.0
42.8 – 47.0

37.8 – 41.7
16.1 – 20.0

6.4 – 10.1

6.2 – 10.2
7.3 – 10.2
34.4 – 38.3

15.4 – 19.0
39.9 42.9

7.5 – 11.4
32.0 – 36.0

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81

12 9..55
12 2..54
8 6..18 east
12 4..53
12 7..31 2 wire lost
9.10 —0..09 n.s.
12 7..05
9 2..12
11 —0..33 n s
BD ~~BD~~ DS
11 3..05 2 wire lost
10 —0..12 n s
12.13 4..24
11 ~~DS~~ 7..40
12 4..12
12 3..02
12.13 2..36
11.12 1..17
BD DS
12 2..56
10.11 7..16
~~12~~
11 3..03 companion 12 myst. dist 12"
12 5..54
12 8..27
12 0..50
8.9 8..16
12 7..39
10.11 4..42
11.12 10..09 ns
DS
9 9..41
B
12 5..37
12 0..07
12 0.06
DS D DS D
11 5..56
12 8..47
12 3..40

82

12 9..41 9,45
6
7,8 6..06 2,44
6.0,9
4.45 ns

9 —0..20 —
12 6..55 —
9 2..00 2 03
1 wire lost

BD
11 2..54 1st wire had 2 2 lost 5-6
10 —0..20 ns —0 32
Moonlight interferes 4.12 very wide
11.12 7..29 7,30
4,01 ns
2 56
2.30 ns
11 1..06 2 1.08 ns
DS BD
12 2..42 2,43
10 7..03 7,09
Comp.
11.12 2..51 215" double comp n.p. dist 10"
5..53 very bad
8,7 Moonlight prevents seeing the small stars
8 8..04

11 4..29 4.30
10..00 10.0 ns
9 9..28 9,30
12 5..25 1 wire lost 5,26
12 0..01 ns 2 wire bad 0.0
DS D
11 5..47 5.50
12 8..36 8,39
12 3..30 ns star absent

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1854phae.proj..22MB

81

2.. 03.. 57.0 1.0

B

11.. 2.1 6.0
16.. 12.1 16.1

D

12.. 4.9 9.0
12.. 24.4 28.3
15.. 13.9 17.5
15.. 48.4 ~~52.~~
15.. 52.4 56.4
16.. 12.2 16.1
16.. 18.1 22.1

BB

17.. 20.7 24.4
17.. 31.8 35.8
18.. 3.6 7.6
18.. 10.7 14.8
19. 50.3 54.2
19.. 51.2 55.3
20.. 37.3 41.5
22.. 18.0 22.0
22.. 27.3 31.3
22.. 37.7 1.7

BBB

23.. 31.0 35.0
23.. 43.3 47.3
24.. 4.3 8.3
24.. 28.7 32.7

82

4m 49.4 — 53.6
5m 56.4 — 0.4
6m 4.8 — 47.7

7m 0.4 — 4.5
8m 26.4 — —
8 56.7 — 9.—
10 2.8 — 6.9
10 9.8 — 13.7
11m 3.5 — 7.4
13.7 — 17.5

(C2 − 0.60)

6.4 — 10.3
26.0 — 30.0

2.. 12.. 25.4 29.4
15.. 49.3 53.3
16.. 13.0 16.9

13.9 — 17.5

22.3 — 26.6
33.3 — 37.1
5.0 — 8.1
12.2 — 16.—

17.. 32.8 36.9
18 4.3 8.3
16.9

19.. 56.5

52.4 — 56.5

28.8 — 33.0

59.3 3.2

44.5 — 48.5

5.5 — 9.4
24m — 34.2
25m 40.1 — 44.1

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1854phae.proj..2208

81

12.13 9..22
11 4..48
11 1..23
11.12 0..16
β
12 6..35
12 3..14
12 4..57
0..58
9.10 5..52
10 0..03
10 4..54
D
12 8..31
12 5..10
12 5..41
12 3..33 2 vis lost
12 0..20 ns
11 7..17
12 0..00
β β
12 0..00
12 9..52
9.10 3..58
12 6..03
12 8..15
12 6..11 n.s.
7..47
12 7..48
10 0..31
12.13 3..18
β β β
12 0..26 (A = 1st of Leone 85)
11.12 3..53 comp 12 very 3 S.p.
10.11 9..56
10 1..40

82

Moon
star misty Moon! Moonlight!!
11 4..34 4,38
11.12 1..10 1,15 Nebb.
12 0..06
D BD no signal
12 6..23 6,26
Mondschein und 3 Wolken
12 4..42 star marks 8-348
21,418 2W lost/1 0449
9.10 5..39 5.41
11 0..50 east 0.51
10 4..43 4 41
β
12 8..20 8,23
12 5..00 1st vis had 5 vis
moonlight
11.12 3..21 long break
11 7..05 7 08
12 0..10 1st vis lost 012
long break No Signal
11 9..40 9 38
9 3..46 3 47
12 5..57 5,50
6.. Clouds!!
12 5..58 1st vis lost
60 where does it go
Moonlight
long break 3 8
0.21
3.8 Thunder Storm
3.48
9 50
1,30
9 6..03 9.0

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1854phae.proj..22

Zone 83. Ll.

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1954phae.proj..2208

9	7	09	
	star	small	nebs.
10	0	58	
12	5	58	
9/10	6	30	~~clear~~ } + Mist
10	8	48	2 wire hot }
	B.		
10	0	52	
12/13	5	45	
9/10	7	28	2 wire hot
11	10	48	hot
11	5	00	
11	1	58	misty.
10/11	5	15	
11/12	3	2	2 wire hot.
	B. D.		
11	2	44	2 wire hot.
11/12	5	35	misty 2 wire doubtful.

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1854phae.proj..22MB

Zone 83 20' to 30'

1st Star is X of Zone 75-76

R 0h 42m 42s.3
Dn 0° 24' 45"

Dec 8th 1854
Beg Eq = 1h 31m Ther 13°.2
End " = 3 38 " 11.7

Clear but cold. images unsteadily.
D. H. S. Obs.

Zone 84a 20' to 30'

Obsd Dec 12th
by P. S. Coolidge
Recorded by D. H. S.

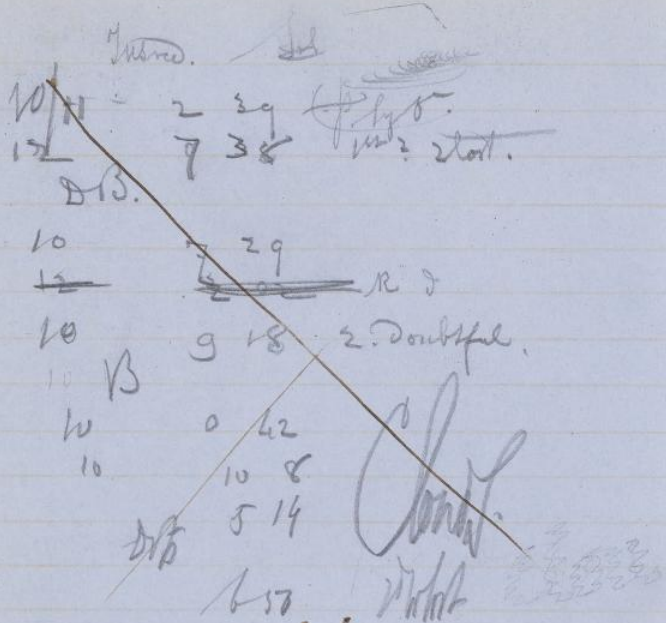
D

54 56

			R. Asst.
0h	42m	32s.6	
"	38s.4	— 42s.1	2 0h 42m 38.7 = 42.7
45m	16s.6	— 20s.4	5 45m 16.2
"	57s.0 very poor.	— 57s.0 very poor.	7 " 57s.2 = 1s.3
46m	0s.9	— 0.9	8 1.3
48	42.3	— 46.2	48 42s.7 — 46s.7
49	18.0	— 22.0	18.6 — 22s.2
"	35.1	— 39.0	35s.5 — 39s.5
50	30.0	— 34.0	50m = — 34.5
51	0.8	— 4.5	51 0s.8 — =
"	23s.0	— 27.1	23.8 — 27.7
52	29.3	— 33.2	52 30.1 — 33.8
53	58.2	— 62.3	53 58.6 — 62.5
			54m 17s.4 =
55	31s.7	— 35.7	55 32s.3 — 36.3
56	42s.3	— 46.2	56 42s.8 — 46s.5
"	49s.2	— —	
57	3s.0	— 6.8	57m 3s.1 — 6.9
58	4.4	— 8.6	58 5s.3 — 9s.1
"	—	— 18.6	

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1854phae.proj...2208



84a

20' to 30'

83

22.23
0.50
2.27

11	5 51	
10	4 51	
10	4 51	2d lost
11 - 12	3.42	
11	4.11	1st lost
10 - 11	7.36	2d lost
10	5.9	
11	2..15	
10	- 0.13	
9 - 10	3, 0	
11	0, 54	slightly
11, 12	5.3	
10 - 11	0, 28	
10	3.20	
10 - 11	5.40	R lost.
10 - 11	0. 22	
10 - 11	5.23	
10 - 11	7. 24	ns. 2d lost
10	10. 20	
9 - 10	5. 15	
10 - 11	9.37	1st lost

long Br.

	5 51	R. lost
	4 52	
(10)	3 40	R. lost large for (11. 12) 2d lost
	4 10	2d wire lost
	6 38	1st wire lost
10/11	5 10	
10/11	2 14	Instrument moved ?
	0 15	
9/10	3 30	1st wire lost
	0 58	2d wire lost
10	5 4	
	0 28	
10	3 19	
10/11	5 42	2d wire lost.
	0 23	
	5 21	
	7 28	1st wire lost
9/10	5 16	

Star there ? No

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1854phae.proj..22mB

1 m 55.9 – 59.7
2 11.1 – 15.1

4 53.7 – 57.1
" 59.6 – 63.1
5 19.2 – 22.8

6 32.7 – 36.8
" 59.5 – 64.2
7 5.6 – 8.9
" 29.4 – 33.0
" 30.6 – 34.5

8 41.2 – 45.2
9 3.0 – —
10 2.8 – —
" 9.2 – 13.2
11 6.7 – 10.3
11 12.12 15.9
11 43.8 47.8
13 25.2 29.0

15 18.5
" 29.0 33.0
" 43.6 46.7
16 37.0 40.8
18 10.5 14.3
18 30.2 34.2

18 42.8 46.5
" 53.0
" 57.8
19 30.8 35.3
" 32.3 36.4
" 55.7 59.7

20 20.6 24.8
" 58.2 62.1

1 h 2 m 11.6 – 15.9
4 m 12.3
4 m — 57.9

7 m 5.7 – 9.9
" 27.3 – 33.4
30.8 – 34.9

10 m 9.5 – 13.5
11 m 7.1 – 10.9
12.2 – 16.5

13 m 25.6

15 18.9 – 23.1

16 37.3 – 41.0

19 m 31.3 – 35.5

19 m 56.2 – 60.1

20 21.0 – 25.0
20 58.3 —

20 m 49.1

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1854phae.proj..2208

star lost – too small.

11 8.3 a circle of stars

10–11 6.5 9

star not observed

11–12 3.10

11–22 2.20

81 3.52

D

11 4.10

11 6.30

10 8.0 ns

10 3.41

9.10 7.52 ns

D. B.

10 8.30

~~11~~ 11 4 5 ns 2° lost

10 9.35 2° lost

9 3.2

~~11~~ 11 5.10

~~10~~ 10 8.9 ns

10–11 declination lost (2.54)

10 6 44

B. D. no stars possible passing

10 4.38 is 2° lost? it is

10 7.6

10–11 5.8

10 0.6

10 2.1

10 2.10

B

10 10.0 n.s

11 4.36 2° lost

10 2.1 1st lost

10 6.28

10–11 1.54 n s

10 3.14

D

10–11 1.54 ~~ns~~

10–11 6.0 vosij

faint stars passing

8 8 Nl lost

7 02

12 5 06 Vt wire bit vosij.

12 2 2.20

---

3 40

7 50 the minute right

D.

11 8 30 D wire lost.

not seen

10 3 3 minute right?

12 5 10 comp. same sij

12 8 9 no sij Vt?

12 2 51 Nl. lost

10 6 43 2° wire lost

D. B.

10/11 4 38

10/11 } 7 Nl lost

11/12 }

–0 4 certain.

10 2 0 Nl lost

10 ---

~~10 4~~ } wire like three photos each

10/11 6 23

5 4

1 54 2d lost

6 08 2 lost

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1854phae.proj..22GB

23 58.8 63.0
24 „ 37.5 41.3

26 6.4
„ 29.2 33.0
27 „ 37.0 41.7
„ 52.8 56.7
28 „ 26.6 30.8

„ 47.5 51.5
„ 54.3 58.2
30 37.0 40.8
„ 38.4 42.3
„ 45.3 49.3
31 14.4 17.9
„ 22.6 26.8

32 52.8 56.4
33 12.0 16.0
34 27.7 31.2
34 16.3 20.4
„ 35.3 39.6
„ 58.4 2.2
35 07.9 11.9

36 28.4 32.4
37 25.3 29.3
„ „ 35.4 39.1
39 12.9 16.8

41 56.0 59.8
42 1.5 5.1
„ 50.0 54.2
44 7.2 11.4
„ 8.9 13.0

45 7.4 11.6
46 57.1 61.1

48 11.2 15.7

23.59.3 – 63.2

27.37.8 – =
27, 52.8 – =
28, 27.3 – =

28, 47.9 – 51.9
„ 54.7 – 58.4
30, 37.2 – =
„ 38.8 – 42.3
„ 45.9 – 49.9

32.53.2 – 57.0
„ 12.1 – 16.2

34. 16.9 – 20.9
36.2 – 40.2

35.8.2 – 12.3

39.13.0 – 17.2

41, 56.7 – 60.3
42, 01.9 – 6.0
44. 7.8 – 11.4
9.6 – 13.3

50.9 – 54.8

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1854phae.proj.-2208

10.11	1.40	
11	7.2	
	D. B	
11	7.5	
10–11	6,59	
11	3.31	
11	9.40	
11	0.43	
	B	
11	1.14	
10	8.48	
9–10	7.51	handsome right angle triangle
10–11	u.s 3.14	
10	4.54	
10–11	4.32	
11	4.35	
	B. D. B	
9–10	2.5	
10–11	5.6	
10–11	10.14	
10	1.29	
9–10	3.6	
10–10	0.36	
10	8.35 unsig.	
	BD	
10	2.20	
10	10.18	
10–11	3.21	
11	4.52	
	B	
10–11	2.22	
10	9.18 nosig	
10.	6.00	
10–11	9.10	
9–10	10,9	
	star not observed	
	D	
10	9.45 is there any D wire	
10?	10.1	
	star not observed	
10	3.24	

84a

Cloudy

11/12	1 40	
12	6 56	Imag. through cube
	3 32	2d wire
	9 40	no sig 2d wire
12	0 44	2d wire
	D	
	1 12	no sig
9/10	8 48	no sig
10	7 49	2d wire bet
1	3 10	1st wire bet 2d wire bet
	4 57	no sig
	invisible	no sig
	B.	
	2 3	
	5 4	nosig
10	1 26	
	4 6 ?	
	8 39	2d bet.
11/12	10 2	
12	4 48	
12	2 14	no sig very unc?
11	9 10	no sig very unc?
11	5 54	1st.
12	9 9	unsig.
10/11	10 1	nosig
	B	
10/11	9 34	
10/11	9 50	no sig
10/11	3 23	

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Lee Book

No 11

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1854phae.proj.. 2/0B

11. 7,10 ~~7.10~~
11 – 7.42 2' lost
10=11 9.1
2.B
10. – 0.21
11 – 3.6 wavy
11 – 3.11
10 11. – 0.16 wavy
9.34 1' lost wavy
10 8.1 wavy
10 . 029 1' lost
11 . 10 2B wavy
10 5.28

B
10 – 11 0.15
10 – 11 6.33
9 – 10 7.25
10 4.45 wavy
11 8.10 wavy
10 – 11 1.45
10 6.46
11 7.18
11 6.58
10 – 11 6,4
11 3.20
10 – 11 11.32
10 3.42 2' wave ½" too low
11 too much obs.
10 – 11 8.31
9 – 10 6.37
10 11 2.20
10 10.2 6 wavy
10 – 11 4.40
10 6,38
10 1.7
10 – 11 7.40
10 – 11 0.26
10 – 0.29

9B
10 7.8
10 9.40
11 7.59
10 B 10.45
10 7.25
10 5.13
10 2.4
11 6.49
10 – 11 not observed
10 – 11 + 0.8
10 8.58
10 10.00

D

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1854phae.proj..22B

3h. 18m 57

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1854phae.proj..220B

10 10.27
10-11 9.29 wavy
10 4.26
10-11 5.21 or 4.21
10-11 3.18
B &

11 1.50
11 1.42 2d wave doubtful
10-11 9.44
11 9.14
no stars in the field
10-11 12 4.41
♀ B

9-10 7.24
9 7.34
9-10 2.42
8-9 4.1
9-10 10-14
10 9.52
9-10 8.23
10 1.57
9-20 10.39
B

10 0.40
10 8.48
10 10.7
9-10 8.28 wavy
10-11 0.31
10 5.22
10 0.32
10-11 0.45 wavy
♂

10 5-9
10 8+5
9.10 -020
10.11 3.32
10 4.20 wavy
B ♀

11 1.40
10-11 5.31
11 5.41
10-11 6.25 wavy
10-11 0.25
♂ B

10 9.0
11 6.7-1 wavy
10 4.5-1 wavy
10-11 9.5-9 wavy
11 4.48
9.10 8.33

See Book No 11

B

10 -0.33 wavy
10 5.1-0 wavy
10-11 B 1.8
11 9.38
9 0.41
8-9 2.30 2d last
9-10 7.27 1st last

7.30
3.32

45 35.2
99
7 17.2
1.42

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1854phae.proj...24GB



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