1852phae.proj..2458

KG
11365
245

L. 7

Reduction A_2
of
Zone Observations
$0^h.20'$ to $0^h.40^m$ — $17^h.50^m$ to $6^h.41^m$
Zones 63 – 92

Harv. Coll. – Petrow Obs

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Index.

Declinations from 0° 20′ to 0° 30′

AR	Page	No. of Zone
h m h m		
22.39 to 0.51	From 37 to 45	75 & 76
0.42 — 2.49	" 61 " 67	83 & 84
2.42 — 4.54	" 73 " 79	89 & 90
4.51 — 7.01	" 89 " 97	91 & 92
6.58 — 8.31	" 107 " 115	95 & 96
8.23 — 9.49	" 115 " 121	97 & 98
9.44 — 11.50	" 127 " 133	101 & 102
11.46 — 13.50	" 145 " 151	107 & 108
13.49 — 15.56	" 151 " 159	109 & 110
15.54 — 18.03	" 171 " 174	115 & 116
18.01 — 19.46	" 1 " 9	63 & 64
19.43 — 21.39	" 15 " 23	67 & 68
21.36 — 22.46	" 33 " 37	73 & 74

Declinations from 0° 30′ to 0° 40′

AR	Page	No. of Zone
h m h m		
23.27 to 0.22	From 51 to 55	79 & 80
0.19 " 2.24	" 55 " 61	81 & 82
2.23 " 4.30	" 67 " 73	85 & 86
4.28 — 6.37	" 79 " 89	89 & 90
6.33 — 8.41	" 97 " 107	93 & 94
8.22 — 10.25	" 121 " 127	99 & 100
10.19 — 12.25	" 133 " 139	103 & 105
12.25 — 14.32	" 139 " 145	104 & 106
14.19 — 16.09	" 159 " 165	111 & 112
16.07 — 17.57	" 165 " 171	113 & 114
17.51 — 19.50	" 9 " 15	65 & 66
19.44 — 20.51	" 23 " 27	69 & 70
20.48 — 22.26	" 27 " 33	71 & 72
22.17 — 23.30	" 45 " 51	77 & 78

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1852phae.proj - 2455

for zone 63 1852.0 for zone 62 1854.0

Zones 63 & 64

0°.20′ to 0°.30″ — 18h.01m to 19h.46m

(846) − 1853.0 − α = 18h.2m.0.13 (3) − δ = +0°.22′.19.4 (3)

	stn. pr.		+ 3.06		+ 0.2
3.20	1854.0	α = 18h.02m. ~~3.19~~ 03.25 (10)		δ = +0°.22′.19.6	
57.07	1852.0	α = 18h.01m. ~~57.07~~ 57.13 (10)		δ = +0°.22′.19.2	
	t_{63}	01m.57.95	s_{63}	22″.24.	
	t_{64}	02m.03.35	s_{64}	22″.23.	
	$\alpha - t_{63}$	−.82	$\delta - s_{63}$	−4.8	
	$\alpha - t_{64}$	−.10	$\delta - s_{64}$	−3.4	
			$s\alpha'_{63}$	0.0	
			$s\alpha'_{64}$	0.0	
				−4.8	
				−3.4	

852 − 1853.0 − α = 18h.3m.26.62 (1) − δ = +0°.28′.15.4 (1)

	stn. pr.		+3.06		+0.3
	1854.0	α = 18h.03m.29.68		δ = +0°.28′.15.7	
	1852.0	α = 18h.03m.23.56		δ = +0°.28′.15.1	
	t_{63}	24.20	s_{63}	28″.28.	
	t_{64}	29.85	s_{64}	28″.25.	
	$\alpha - t_{63}$	−.64	$\delta - s_{63}$	−12.9	
	$\alpha - t_{64}$	−.17	$\delta - s_{64}$	−9.3	
			$s\alpha'_{63}$	0.0	
			$s\alpha'_{64}$	−0.1	
				−12.9	
				−9.2	

848 − 1853.0 − α = 18h.2m.16.37 (1) − δ = +0°.23′.35″.4 (1)

	stn. pr.		+ 3.06		+ 0.2
	1854.0	α = 18h.02m.19.43		δ = +0°.23′.35″.6	
	1852.0	α = 18h.02m.13.31		δ = +0°.23′.35″.2	
	t_{63}	02m.13.80	s_{63}	23″.42.	
	t_{64}	02m.19.55	s_{64}	23″.40	
	$\alpha - t_{63}$	−.49	$\delta - s_{63}$	−6.8	
	$\alpha - t_{64}$	−.12	$\delta - s_{64}$	−4.4	
			$s\alpha'_{63}$	0.0	
			$s\alpha'_{64}$	0.0	
				−6.8	
				−4.4	

858 − 1853.0 − α = 18h.01m.55.36 (1) − δ = +0°.22′.10.9 (1)

	stn. pr.		+ 3.06		+ 0.6
	1854.0	α = 18h.06m.58.42		δ = +0°.22′.11.5	
	1852.0	α = 18h.06m.52.30		δ = +0°.22′.10.3	
	t_{63}	52.65	s_{63}	22″.16.	
	t_{64}	58.55	s_{64}	22″.13.	
	$\alpha - t_{63}$	−.55	$\delta - s_{63}$	−5.7	
	$\alpha - t_{64}$	−.13	$\delta - s_{64}$	−1.5	
			$s\alpha'_{63}$	0.0	
			$s\alpha'_{64}$	−0.0	
				−5.7	
				−1.5	

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Zones 63 & 64

869 - -1853.0 $\alpha = 18^h 16^m 46^s.46$ (2) $\delta = +0^\circ 22' 59''.5$ (2)

chr. pr. + 3.06 + 1.5

1854.0 $\alpha = 18^h 16^m 49^s.52$ $\delta = +0^\circ 23' 01''.0$

1852.0 $\alpha = 18^h 16^m 43^s.40$ $\delta = +0^\circ 22' 58''.0$

ζ_{63}	44.55	s_{63}	23.07.
ζ_{64}	50.20	s_{64}	23.07.
$\alpha - \zeta_{63}$	-1.15	$\delta - s_{63}$	-9.0
$\alpha - \zeta_{64}$	-.64	$\delta - s_{64}$	-6.0
		$s\alpha'_{63}$	0.0
		$s\alpha'_{64}$	0.0
			-9.0
			-6.0

881 - -1853.0 $\alpha = 18^h 25^m 10^s.83$ (2) $\delta = +0^\circ 28' 27''.5$ (2)

chr. pr. + 3.06 + 2.2

1854.0 $\alpha = 18^h 25^m 13^s.89$ $\delta = +0^\circ 28' 29''.7$

1852.0 $\alpha = 18^h 25^m 07^s.77$ $\delta = +0^\circ 28' 25''.3$

ζ_{63}	06.70	s_{63}	28.34
ζ_{64}	14.25	s_{64}	28.38
$\alpha - \zeta_{63}$	-.93	$\delta - s_{63}$	-6.7
$\alpha - \zeta_{64}$	-.36	$\delta - s_{64}$	-8.3
		$s\alpha'_{63}$	0.0
		$s\alpha'_{64}$	-0.1
			-8.7
			-8.2

874 - 9 -1853.0 $\alpha = 18^h 21^m 34^s.50$ (1) $\delta = +0^\circ 20' 59''.5$ (1)

chr. pr. + 3.06 + 1.9

1854.0 $\alpha = 18^h 21^m 37^s.56$ $\delta = +0^\circ 21' 01''.4$

1852.0 $\alpha = 18^h 21^m 31^s.44$ $\delta = +0^\circ 20' 57''.6$

ζ_{63}	32.25	s_{63}	21.04.
ζ_{64}	37.55	s_{64}	21.05.
$\alpha - \zeta_{63}$	-.81	$\delta - s_{63}$	-06.4
$\alpha - \zeta_{64}$	+.01	$\delta - s_{64}$	-3.6
		$s\alpha'_{63}$	0.0
		$s\alpha'_{64}$	0.0
			-06.4
			-3.6

(888) 7 -1853.0 $\alpha = 18^h 33^m 56^s.74$ (4) $\delta = +0^\circ 25' 53''.1$ (4)

chr. pr. + 3.06 + 3.0

1854.0 $\alpha = 18^h 33^m$ ~~59.80~~ 59.65 (10) $\delta = +0^\circ 25' 56''.1$

1852.0 $\alpha = 18^h 33^m$ ~~57.68~~ 53.53 (10) $\delta = +0^\circ 25' 50''.1$

ζ_{63}	33.54.35	s_{63}	25.59.
ζ_{64}	34.00.10	s_{64}	26.03
$\alpha - \zeta_{63}$	-.82	$\delta - s_{63}$	-8.9
$\alpha - \zeta_{64}$	-.45	$\delta - s_{64}$	-6.9
		$s\alpha'_{63}$	0.0
		$s\alpha'_{64}$	-0.1
			-8.9
			-6.8

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Zones 63 & 64

897 - 8-9 - 1853.0 - α = 18h 49m 20.42(1) δ = +0° 23' 12.3" (1)

Am. pr.		+ 3.06		+ 2.3
1854.0	α = 18h 49m 23.48		δ = +0° 23' 16.6	
1852.0	α = 18h 49m 17.36		δ = +0° 23' 8.0	
t_{63}		18.05	s_{63}	23" 19.
t_{64}			s_{64}	23" 23
$\alpha - t_{63}$		− .69	$\delta - s_{63}$	− 11.0
$\alpha - t_{64}$			$\delta - s_{64}$	−6.4
			$s\alpha'_{63}$	0.0
			$s\alpha'_{64}$	0.0
				−11.0
				−6.4

903 - 9 - 1853.0 - α = 18h 59m 22.03(1) δ = +0° 29' 40.2" (1)

Am. pr.		+ 3.06		+ 5.1
1854.0	α = 18h 59m 25.09		δ = +0° 29' 45.3	
1852.0	α = 18h 59m 18.97		δ = +0° 29' 35.1	
t_{63}		19.55	s_{63}	29" 46,
t_{64}			s_{64}	
$\alpha - t_{63}$		− .58	$\delta - s_{63}$	− 10.9
$\alpha - t_{64}$			$\delta - s_{64}$	
			$s\alpha'_{63}$	0.0
			$s\alpha'_{64}$	
				−10.9

(900) - 7 - 1853.0 α = 18h 55m 49.11(3) δ = +0° 21' 58.4 (3)

Am. pr.		+ 3.06		+ 4.8
1854.0	α = 18h 55m ~~52.17~~ 52.32(10)		δ = +0° 22' 03.2	
1852.0	α = 18h 55m ~~46.05~~ 46.20(10)		δ = +0° 21' 53.6	
t_{63}		47.10	s_{63}	22" 02.
t_{64}		52.70	s_{64}	22.08
$\alpha - t_{63}$		− .90	$\delta - s_{63}$	− 8.4
$\alpha - t_{64}$		− .38	$\delta - s_{64}$	−4.6
			$s\alpha'_{63}$	0.0
			$s\alpha'_{64}$	0.0
				−8.4
				−4.6

904 - 7 - 1853.0 α = 18h 59m 39.28(1) δ = +0° 25' 02.3 (1)

Am. pr.		+ 3.06		+ 5.2
1854.0	α = 18h 59m ~~42.34~~ 42.13(10)		δ = +0° 25' 07.5	
1852.0	α = 18h 59m ~~36.22~~ 36.01(10)		δ = +0° 24' 57.1	
t_{63}		36.90	s_{63}	25" 04 (?)
t_{64}		42.75	s_{64}	25" 18
$\alpha - t_{63}$		− .65	$\delta - s_{63}$	− 10.9 (?)
$\alpha - t_{64}$		− .62	$\delta - s_{64}$	−10.5
			$s\alpha'_{63}$	0.0
			$s\alpha'_{64}$	−0.1
				−10.9
				−10.4

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Zones 63 & 64

911-9-1853.0 $\alpha = 19^h 03^m 50^s.74$ (1) $\delta = +0°28'39''.9$ (1)

cta. pr.	+3.06		+5.5
1854.0	$\alpha = 19^h 08^m 53^s.80$	$\delta = +0°28'25''.4$	
1852.0	$\alpha = 19^h 03^m 47^s.68$	$\delta = +0°28'34''.4$	
t_{63}	48.05	s_{63}	28.17
t_{64}	53.75	s_{64}	28.55
$\alpha - t_{63}$	−.87	$\delta - s_{63}$	−12.6
$\alpha - t_{64}$	+.05	$\delta - s_{64}$	−9.6
		sd'_{63}	0.0
		sd'_{64}	−0.1
			−12.6
			−9.5

920-9-1853.0 $\alpha = 19^h 10^m 15^s.87$ (2) $\delta = +0°21'08''.4$ (2)

cta. pr.	+3.06		+6.1
1854.0	$\alpha = 19^h 10^m 18^s.93$	$\delta = +0°21'09''.5$	
1852.0	$\alpha = 19^h 10^m 12^s.81$	$\delta = +0°20'57''.3$	
t_{63}	13.80	s_{63}	21.06
t_{64}	19.40	s_{64}	21.15
$\alpha - t_{63}$	−.99	$\delta - s_{63}$	−8.7
$\alpha - t_{64}$	−.47	$\delta - s_{64}$	−5.5
		sd'_{63}	0.0
		sd'_{64}	0.0
			−8.7
			−5.5

916-8-1853.0 $\alpha = 19^h 09^m 37^s.11$ (2) $\delta = +0°29'.1.7$ (2)

cta. pr.	+ 3.06		+6.0
1854.0	$\alpha = 19^h 09^m$ ~~40.17~~ 40.04 (10)	$\delta = +0°29'07''.7$	
1852.0	$\alpha = 19^h 09^m$ ~~34.05~~ 33.92 (10)	$\delta = +0°28'55''.7$	
t_{63}	32.80	s_{63}	29.10
t_{64}	40.30	s_{64}	29.20
$\alpha - t_{63}$	−.84	$\delta - s_{63}$	−14.3
$\alpha - t_{64}$	−.26	$\delta - s_{64}$	−12.3
		sd'_{63}	0.0
		sd'_{64}	−0.1
			−14.3
			−12.2

938-8-9-1853.0 $\alpha = 19^h 37^m 34^s.97$ (1) $\delta = +0°24'02''.8$ (1)

cta. pr.	+3.06		+8.3
1854.0	$\alpha = 19^h 37^m$ ~~37.03~~ 37.61 (5)	$\delta = +0°24'10''.6$	
1852.0	$\alpha = 19^h 37^m$ ~~31.91~~ 31.49 (5)	$\delta = +0°23'54''.0$	
t_{63}	32.50	s_{63}	24.05
t_{64}	38.10	s_{64}	24.20
$\alpha - t_{63}$	−1.01	$\delta - s_{63}$	−11.0
$\alpha - t_{64}$	−.49	$\delta - s_{64}$	−9.4
		sd'_{63}	0.0
		sd'_{64}	0.0
			−11.0
			−9.4

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Zones 68 & 64

Belongs page 2

941 - 9 - 1853.0 $\alpha = 19^h 43^m 06^s.63$ (11) $\delta = +0^\circ 21' 20''.8$ (11)

cat. pos.		+3.06		+8.6
1854.0	$\alpha = 19^h 43^m 09^s.69$		$\delta = +0^\circ 21' 29''.4$	
1852.0	$\alpha = 19^h 43^m 03^s.57$		$\delta = +0^\circ 21' 12''.2$	
	L_{63}	04.70	S_{63}	21.23.
	L_{64}	10.35	S_{64}	21.41.
	$\alpha - L_{63}$	−1.13	$\delta - S_{63}$	−10.8
	$\alpha - L_{64}$	−.66	$\delta - S_{64}$	−11.6
			$S\alpha'_{63}$	0.0
			$S\delta'_{64}$	0.0
				−10.8
				−11.6

(880) - 8-9 - 1853.0 $\alpha = 18^h 23^m 24^s.1$ (13) $\delta = +0^\circ 19' 55''.3$ (13)

cat. pos.		+3.06		+2.0
1854.0	$\alpha = 18^h 23^m$ ~~27.77~~		$\delta = +0^\circ 19' 57''.3$	
	27.86(10)			
1852.0	$\alpha = 18^h 23^m$ ~~21.65~~		$\delta = +0^\circ 19' 53''.3$	
	21.74(10)			
	L_{63}	22.50	S_{63}	20.01.
	L_{64}	28.15	S_{64}	20.02.
	$\alpha - L_{63}$	−.76	$\delta - S_{63}$	−7.7
	$\alpha - L_{64}$	−.29	$\delta - S_{64}$	−4.7
			$S\alpha'_{63}$	0.0
			$S\delta'_{64}$	0.0
				−7.7
				−4.7

943

19 43	24.58	+0 28	34.6
	3.06		8.7
19 43	28.04	0 28	40.1
	~~21.92~~		22.7
	28.34		0.0
	22.22		0.0

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Reduction of Zone 63

1852 Aug. 18th Sid. Time 18..20 Ext. Th. 64.3
" 21..00 " 61.6

$k' = 0.00$ $\quad d' = +0.005$

	$t_0 = 18^h..00^m$	s		"		wt.	
−0.77	02	−0.69	0.03	−7.4	0.03	2	
.77	02	−0.82 = x	+0.03 x'	−4.8 = y	+ 0.03 y'	3 & 2	7.0
.77	02	−0.29 =	+0.04	−6.8 =	0.04	1	7.0
.78	03	−0.64 =	0.06	−12.9 =	0.06	1	7.0
.78	07	−0.55 =	0.11	−6.7 =	0.11	1	7.2
.80	17	−1.15 =	0.28	−9.0 =	0.28	2	7.7
.80	22	−0.81 =	0.36	−6.4 =	0.36		8.0
.81	23	−0.76 =	0.39	−7.7 =	0.39	1 & 3 & 2	8.1
.81	25	−0.93 =	0.42	−8.7 =	0.42	2	8.1
.83	34	−0.82 =	0.57	−8.9 =	0.57	3	8.6
.85	49	−0.69 =	0.82	−11.0 =	0.82	1	9.3
.86	56	−0.90 =	0.93	−8.4 =	0.93	1 & 3 & 2	9.7
.87	59	−0.56 =	0.99	−10.9 =	0.99	1	9.8
.87	19..00	−0.89 =	0.99	−10.9 =	0.99	1 & 3 & 2	9.9
.88	04	−0.37 =	1.06	−12.6 =	1.06	1	10.1
.89	10	−0.86 =	1.16	−14.3 =	1.16	1 & 3 & 2	10.3
.89	10	−0.99 =	1.17	−8.7 =	1.17	2	10.4
.94	38	−1.01 =	1.63	−11.0 =	1.63	1 & 3 & 2	11.7
.94	43	−1.13 = x	1.72 x'	−10.8 = z	1.72 z'	1	12.0
.94	43	~~−0.83~~	~~1.72~~	~~−11.3~~	~~1.72~~	3 & 2	12.0
−.94	44	−0.93	1.73	−10.5	1.73	3	

Normal Equations

−0.78 =	x + 0.11 x'	−7.4 =	y + 0.12 y'
−0.84	0.64	8.9	0.95
−0.91	1.43	11.2	1.39

Note ~~Zone 63 has~~ The values of k and d for Zone 63, ~~reduce it~~ to the epoch 1854.0

(include the reductions)

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1852phae.proj.:2455

Reduction of Zone 64

1854 Sept. Aug. 23 Sid time 19h 30m 21 18 Excl. 5". 60.

$k' = 0^s.000$ $d' = -0''.012$

					wt.
$t_0 = 18^h\ 00^m$					
02	$+0^s.20$	0.03	$-7''.4$	0.03	3
02	$-0.10 = x + 0.03x'$		$-3.4 = y + 0.03y'$		392
02	$-0.12 =$	$+0.04$	$-4.4 =$	0.04	1
03	$-0.17 =$	0.06	$-9.2 =$	0.06	1
07	$-0.13 =$	0.12	$-1.6 =$	0.12	1
17	$-0.68 =$	0.28	$-6.0 =$	0.28	2
22	$+0.01 =$	0.36	$-3.6 =$	0.36	1
23	$-0.24 =$	0.39	$-2.2 =$	0.39	3
25	$-0.36 =$	0.42	$-6.2 =$	0.42	2
34	$-0.45 =$	0.57	$-6.8 =$	0.57	3
49			$-6.4 =$	0.62	1
56	$-0.38 =$	0.93	$-2.6 =$	0.93	382
18^h 00	$-0.62 =$	1.00	$-10.4 =$	1.00	*391
04	$+0.05 =$	1.06	$-9.6 =$	1.06	1
10	$-0.26 =$	1.16	$-12.2 =$	1.16	382
10	$-0.47 =$	1.17	$-5.5 =$	1.17	2
38	$-0.29 =$	1.63	$-9.4 =$	1.63	*391
43	$-0.66 = x + 1.72x'$		$-11.6 = y + 1.72y'$		1
	-0.61	1.72	-10.9	1.72	382
44	-0.48	1.73	8.9	1.73	3

Nov. Ep.

$-0.22 = x + 0.11x'$		$-5.4 = y + 0.12y'$	
-0.34	0.59	-6.1	0.58
-0.44	1.36	-9.4	1.39

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1852phae.proj...2458

λ	324°.34′		
α	283.30		
~~λ_0~~	(370) 248.04	$\sin$	9.96737
~~φ_0~~	+9°.38	g	0.97220
		Bouth.	5.28764
h'	0.000		6.22721

~~φ φ_0~~

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1852phae.proj..245

Zones 65 & 66

$0^\circ.30'$ to $0^\circ.40'$ $17^h.51^m$ to $19^h.50^m$

838 − −1853.0 $\alpha = 17^h.51^m.56^s.23(2)$ $\delta = +0^\circ.35'.19''.0(2)$

obs. pr.		+3.06		−0.7
1854.0	$\alpha =$	17..51..59.29	$\delta =$	+0..35..18.3
t_{65}		58.90	s_{65}	35..21.
t_{66}		59.30	s_{66}	35..22.
$\alpha - t_{65}$		+.39	$\delta - s_{65}$	−2.7
$\alpha - t_{66}$		−.01	$\delta - s_{66}$	−3.7
				+0.2
				−0.1
				−2.9
				−3.6

851 − −1853.0 $\alpha = 18^h.03^m.09^s.56(1)$ $\delta = +0^\circ.32'.12''.5(1)$

obs. pr.		+3.06		+0.3
1854.0	$\alpha =$	18..03..12.62	$\delta =$	+0..32..12.8
t_{65}		03..12.75	s_{65}	32..20.
t_{66}		13.00	s_{66}	32..22.
$\alpha - t_{65}$		−.13	$\delta - s_{65}$	−7.2
$\alpha - t_{66}$		−.38	$\delta - s_{66}$	−9.2
				+0.1
				0.0
				−7.3
				−9.2

849 − −1853.0 $\alpha = 18^h.02^m.54.01(9)$ $\delta = +0..31..11.7(9)$

obs. pr.		+3.06		+0.3
1854.0	$\alpha =$	18..02..57.07	$\delta =$	+0..31..12.0
t_{65}		02..57.00	s_{65}	31..17.
t_{66}		57.40	s_{66}	31..17.
$\alpha - t_{65}$		+.07	$\delta - s_{65}$	−5.0
$\alpha - t_{66}$		−.33	$\delta - s_{66}$	−5.0
				+0.1
				0.0
				−5.1
				−5.0

854 − −1853.0 $\alpha = 18^h.05^m.38.05(2)$ $\delta = +0..33..23.9(2)$

obs. pr.		+3.06		+0.5
1854.0	$\alpha =$	18..05..41.11	$\delta =$	+0..33..24.4
t_{65}		41.30	s_{65}	33..35.
t_{66}		41.50	s_{66}	33..36.
$\alpha - t_{65}$		−.19	$\delta - s_{65}$	−10.6
$\alpha - t_{66}$		−.39	$\delta - s_{66}$	−11.6
				+0.1
				0.0
				−10.7
				−11.6

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1852phae.proj...2455

Zones 65 & 66

(855)-7-8- 1853.0 $\alpha = 18^h 06^m 14^s.06$ (9) $\delta = +0° 38' 56''.1$ (8)

	Stn. pr.	+3.06		+0.5
1854.0	$\alpha = 18^h 06^m 17^s.12$		$\delta = +0° 38' 56''.6$	
t_{65}	17.05	s_{65}	39.05	
t_{66}	17.50	s_{66}	39.06	
$\alpha - t_{65}$	+.07	$\delta - s_{65}$	−8.4	
$\alpha - t_{66}$	−.38	$\delta - s_{66}$	−9.4	
			+0.4	
			−0.1	
			−8.6	
			−9.3	

893-8-9- 1853.0 $\alpha = 18^h 43^m 46^s.28$ (1) $\delta = +0° 39' 51''.5$ (1)

	Stn. pr.	+3.06		+3.8
1854.0	$\alpha = 18^h 43^m 49^s.34$		$\delta = +0° 39' 55''.3$	
t_{65}	49.90	s_{65}	40.09	
t_{66}	50.15	s_{66}	40.11	
$\alpha - t_{65}$	−.56	$\delta - s_{65}$	−13.7	
$\alpha - t_{66}$	−.81	$\delta - s_{66}$	−15.7	
			+0.4	
			−0.1	
			−14.1	
			−15.6	

878-9-1853.0 $\alpha = 18^h 22^m 58^s.57$ (1) $\delta = +0° 37' 04''.3$ (1)

	Stn. pr.	+3.06		+2.0
1854.0	$\alpha = 18^h 23^m 01^s.57$		$\delta = +0° 37' 06''.3$	
t_{65}	01.20	s_{65}	37.15	
t_{66}	01.40	s_{66}	37.16	
$\alpha - t_{65}$	+.37	$\delta - s_{65}$	−8.7	
$\alpha - t_{66}$	+.17	$\delta - s_{66}$	−9.7	
			+0.3	
			−0.1	
			−9.0	
			−9.6	

901-8-9-1853.0 $\alpha = 18^h 56^m 15^s.61$ (1) $\delta = +0° 32' 34''.1$ (1)

	Stn. pr.	+3.06		+4.9
1854.0	$\alpha = 18^h 56^m 18^s.67$		$\delta = +0° 32' 39''.0$	
t_{65}	19.00	s_{65}	32.50	
t_{66}	19.20	s_{66}	32.52	
$\alpha - t_{65}$	−.33	$\delta - s_{65}$	−11.0	
$\alpha - t_{66}$	−.53	$\delta - s_{66}$	−13.0	
			+0.1	
			0.0	
			−11.1	
			−13.0	

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Zones 65 & 66

915 – 9 – 1853.0 – $\alpha = 19^h 06^m 57^s.05$ (1) $\delta = +0^\circ 38' 20''.1$ (11)

Stn. pr.	+ 3.06		+ 5.8
1852.0	$\alpha = 19^h 07^m 00^s.11$	$\delta = +0^\circ 38' 25''.9$	
t_{65}	$06^h 59^m.90$	S_{65}	38".40.
t_{66}	$07^h 00^m.20$	S_{66}	38".41.
$\alpha - t_{65}$	+ .21	$\delta - S_{65}$	− 14.1
$\alpha - t_{66}$	− .09	$\delta - S_{66}$	− 15.1
			+ 0.3
			− 0.1
			− 14.4
			− 15.0

940 – 9 – 1853.0 $\alpha = 19^h 41^m 35^s.20$ (2) $\delta = +0^\circ 37' 41''.2$ (2)

Stn. pr.	+ 3.06		+ 8.6
1854.0	$\alpha = 19^h 41^m 38^s.26$	$\delta = +0^\circ 37' 50''.0$	
t_{65}	38".95	S_{65}	38".05.
t_{66}	———	S_{66}	38".06.
$\alpha - t_{65}$	− .69	$\delta - S_{65}$	− 15.0
$\alpha - t_{66}$	———	$\delta - S_{66}$	− 16.0
			+ 0.3
			− 0.1
			− 15.3
			− 15.9

944 19 44 50.76 (2) 0 35 14.9 (2)

	3.06	8.8
19 44	53.82	0 35 23.7
	− 0.08	− 13.3
	− 0.28	− 15.3
		− 13.5
		− 15.2

926 – 8 – 1853.0 $\alpha = 19^h 13^m 26^s.69$ (2) $\delta = +0^\circ 38' 37''.2$ (2)

Stn. pr.	+ 3.06		+ 6.3
1852.0	$\alpha = 19^h 13^m$ ~~29^s.75~~ 29.88 (10)	$\delta = +0^\circ 38' 43''.5$	
t_{65}	30.45	S_{65}	39".00.
t_{66}	30.55	S_{66}	39".01.
$\alpha - t_{65}$	− .56	$\delta - S_{65}$	− 16.5
$\alpha - t_{66}$	− .66	$\delta - S_{66}$	− 17.5
			+ 0.4
			− 0.1
			− 16.9
			− 17.4

945 – 5 – 1853.0 $\alpha = 19^h 44^m 59^s.24$ (7) $\delta = +0^\circ 37' 53''.5$ (6)

Stn. pr. & p.	+ 3.06		+ 8.8
1854.0	$\alpha = 19^h 45^m 02^s.30$	$\delta = +0^\circ 38' 02''.3$	
t_{65}	02.85	S_{65}	38".14.
t_{66}	02.95	S_{66}	38".19
$\alpha - t_{65}$	− .55	$\delta - S_{65}$	− 15.)
$\alpha - t_{66}$	− .65	$\delta - S_{66}$	− 16.)
			+ 0.3
			− 0.1
			− 16.0
			− 16.6

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Zones 65 & 66

Reduction of Zone 65

1854 Sept. 27 Sid Time 19h.40 Ext. Th. 69°.3
21h.40 68°.0

$k' = 0.^s000$ $d' = +0''.04$

$t_0 = 17^h.5\cancel{2}^m$	s		"		wt.
52	0.25	0.04	−6.4	0.04	3
52	+0.39 = x +	0.08 x'	−2.9 = y +	0.03 y'	2
18h.03	+0.07 =	0.22	−5.1 =	0.22	3
03	−0.13 =	0.22	−7.3 =	0.22	1
06	−0.19 =	0.26	−10.7 =	0.26	2
06	+0.07 =	0.27	−8.6 =	0.27	3
23	+0.37 =	0.55	−9.0 =	0.55	1
44	−0.56 =	0.90	−14.1 =	0.90	1
56	−0.33 =	1.10	−11.1 =	1.10	1
19h.07	+0.21 =	1.28	−14.4 =	1.28	1
14	−0.56 =	1.39	−16.9 =	1.39	1 #392
42	−0.69 =	1.86	−13.3 =	1.86	2
44	−0.08	1.92	−2.7	1.92	2
45	−0.55 = x +	1.92 x'	−16.0 = y +	1.92 y'	3
45	−0.48	1.92	−14.5	1.92	3

Nor. Eq.				
	+0.18 = x +	0.12 x'	−5.3 = y +	0.12 y'
	−0.05	0.57	−10.7	0.57
	−0.56	1.80	−15.8	1.80

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1852phae.proj.2455

Reduction of Zone 66

1854 Sept. 24th Sid Time 19.55 Erd. Th. ~~5.50~~ 61.0
21.55 " 59.0

$k' = 0^s.000$ $d' = -0''.01$

$t_0 = 17^h.$ ~~50~~ ^{m}	s		"			Obs.
52	−0.20	0.04	−7.4	0.04		3
52	−0.01 = x +	0.03 x'	−3.6 = y +	0.03 y'		2
18.03	−0.33 =	0.22	−5.0 =	0.22		3
03	−0.38 =	0.22	−9.2 =	0.22		1
06	−0.39 =	0.26	−11.6 =	0.26		2
06	−0.34 =	0.27	−9.8 =	0.27		3
23	+0.17 =	0.56	−9.6 =	0.55		1
44	−0.81 =	0.90	−16.6 =	0.90		1
56	−0.53 =	1.10	−18.0 =	1.10		1
19.07	−0.09 =	1.28	−16.0 =	1.28		1
19.14	−0.66 =	1.39	−17.4 =	1.39		2 342
19.42	~~+0.14~~ −0.28	~~1.86~~ 1.92	−15.9 =	1.86		2
19.45	−0.65 = x +	1.92 x'	−16.6 = y +	1.92 y'		3
45	−0.63	1.92	−16.0	1.92		3

Nor. Eq.				
	−0.22 = x +	0.12 x'	−6.0 = y +	0.12 y'
	−0.35	0.58	11.8	0.58
	−0.65	1.78	16.4	1.80

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1852phac.proj.4245S

for Zone 65

g	$327^\circ.08'$		
α	282.30		
$(g+\alpha)$	249.38	$2\ln(g+\alpha)$	5.97196
	$+10''.93$	g	1.03812
		Const.	5.28764
$k' = 0^s.000$			6.29822

for Zone 66

	$327^\circ.14'$		
	282.30		
	249.44	$2\ln(g+\alpha)$	
	$+10''.97$	g	
		Const	
$k' = 0^s.000$			

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1852phae.proj . 2458

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Zones 67 & 68

0°.20′ to 0°.30′ 19ʰ43ᵐ to 21ʰ39ᵐ

943 -8- 1853.0 $\alpha = 19^h 43^m 24^s.98(2)$ $\delta = +0°28'31''.4(2)$

Stn. pr.		+3.06		+8.7
1852.0	$\alpha = 19^h 43^m$	~~28.04~~ 28.35(10)	$\delta = +0°28'$	40.1
t_{67}		27.85	s_{67}	28.40.
t_{68}		28.10	s_{68}	28.41.
$\alpha - t_{67}$		+.50	$\delta - s_{67}$	+00.1
$\alpha - t_{68}$		+.25	$\delta - s_{68}$	−0.9
				−0.5
				−1.0
				+0.6
				+0.1

964 -9- 1853.0 $\alpha = 20^h 04^m 49^s.71(1)$ $\delta = +0°22'28''.6(1)$

Stn. pr.		+3.06		+10.7
1854	$\alpha = 20^h 04^m$	52.77	$\delta = +0°22'$	39.3
t_{67}		52.80	s_{67}	22.38.
t_{68}		52.95	s_{68}	22.38.
$\alpha - t_{67}$		−.03	$\delta - s_{67}$	+1.3
$\alpha - t_{68}$		−.18	$\delta - s_{68}$	+1.3
				−0.2
				−0.3
				+1.5
				+1.6

941

19 42	6.63	0 21 20.8
	+3.06	+ 8.6
42	9.69	21 29.4
	+25	+ 0.4
	+09	− 0.6
		− 0.1
		− 0.2
		+0.5
		−0.4

(961)-7-8-1853.0 $\alpha = 20^h 05^m 05^s.15(9)$ $\delta = +0°25'52''.9(8)$

Stn. pr.		+3.06		+10.4
1854.0	$\alpha = 20^h 05^m$	~~08.21~~ 08.20(10)	$\delta = +0°26'$	03.3
t_{67}		07.80	s_{67}	26.02.
t_{68}		08.30	s_{68}	26.03.
$\alpha - t_{67}$		+.40	$\delta - s_{67}$	+0.3
$\alpha - t_{68}$		−.10	$\delta - s_{68}$	+0.3
				−0.4
				−0.7
				+1.7
				+1.0

971 -9- 1853.0 $\alpha = 20^h 12^m 09^s.43(2)$ $\delta = +0°24'44''.9(2)$

Stn. pr.		+3.06		+10.9
1854.0	$\alpha = 20^h 12^m$	12.49	$\delta = +0°24'$	55.8
t_{67}		12.20	s_{67}	24.57.
t_{68}		12.30	s_{68}	24.57.
$\alpha - t_{67}$		+.29	$\delta - s_{67}$	−1.2
$\alpha - t_{68}$		+.19	$\delta - s_{68}$	−1.2
				−0.3
				−0.5
				−0.9
				−0.7

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1852phae.proj..2458

Zones 67 & 68

(977) - 7-8 - 1853.0 $\alpha = 20^h 21^m 06^s.25$ (4) $\delta = +0°24'00''.7$ (4)

Atm pr. & p. + 3.06 + 11.6

1854.0 $\alpha = 20^h 21^m$ ~~09.31~~ 09.30(10) $\delta = +0°24'12''.8$

t_{67}	09.00	S_{67}	24.16.
t_{68}	09.15	S_{68}	24.14.
$\alpha - t_{67}$	+.30	$\delta - S_{67}$	−3.4
$\alpha - t_{68}$	+.15	$\delta - S_{68}$	−1.8
			−0.3
			−0.5
			−3.5
			−1.3

987 - 9 - 1853.0 $\alpha = 20^h 33^m 15^s.66$ (1) $\delta = +0°25'21''.0$ (1)

Atm. pr. +3.06 + 12.4

1854.0 $\alpha = 20^h 33^m$ ~~16.72~~ 16.75(10) $\delta = +0°25'33''.4$

t_{67}	14.40	S_{67}	25.34.
t_{68}	14.50	S_{68}	25.35.
$\alpha - t_{67}$	+.35	$\delta - S_{67}$	−0.6
$\alpha - t_{68}$	−.05	$\delta - S_{68}$	−1.6
			−0.3
			−0.6
			−0.3
			−1.0

978 - 9 - 1853.0 $\alpha = 20^h 24^m 53^s.94$ (1) $\delta = +0°29'16''.1$ (1)

Atm. pr. +3.06 +11.9

1854.0 $\alpha = 20^h 24^m 57^s.00$ $\delta = +0°29'28''.0$

t_{67}	57.00	S_{67}	29.33.
t_{68}	57.15	S_{68}	29.32.
$\alpha - t_{67}$	.00	$\delta - S_{67}$	−5.0
$\alpha - t_{68}$	−.15	$\delta - S_{68}$	−4.0
			−0.6
			−1.9
			−4.4
			−2.9

993 - 9 - 1853.0 $\alpha = 20^h 52^m 0^s.62$ (1) $\delta = +0°29'36''.5$ (1)

Atm. pr. +3.06 + 13.7

1854.0 $\alpha = 20^h 52^m 3^s.68$ $\delta = +0°29'50''.2$

t_{67}	3.85	S_{67}	29.55.
t_{68}	4.00	S_{68}	29.55.
$\alpha - t_{67}$	−.17	$\delta - S_{67}$	−4.8
$\alpha - t_{68}$	−.32	$\delta - S_{68}$	−4.8
			−0.6
			−1.1
			−4.2
			−3.7

981 1853.0 2. 20 30 46.87 0 30 20.0

3.06 12.3

49.93 32.3

+ 0.37 −4.7

+ 0.68 −0.6

−4.1

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1852phae.proj..2458

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Zones 678 ~~678~~

994-9-1853.0 $\alpha = 20^h 53^m 15^s.59(1)$ $\delta = +0^\circ 23' 42''.1(1)$

Am. pr.		+3.06	+13.8
1854.0	$\alpha = 20^h 53^m 18^s.65$	$\delta = +0^\circ 23' 57''.9$	

Not observed

997-9-1853.0 $\alpha = 20^h 53^m 38^s.00(1)$ $\delta = +0^\circ 24' 57''.2(1)$ (10

Am. pr.		+3.06	+13.8
1854	$\alpha = 20^h 53^m 41^s.06$	$\delta = +0^\circ 29' 11''.0$	
t_{67}	40.95	s_{67}	29'.15''
t_{68}	41.30	s_{68}	29'.13''
$\alpha - t_{67}$	+.11	$\delta - s_{67}$	−4.0
$\alpha - t_{68}$	−.24	$\delta - s_{68}$	−2.0
			−0.6
			−1.0
			−3.4
			−1.0

996-8-1853.0 $\alpha = 20^h 53^m 34.26(2)$ $\delta = +0^\circ 27' 45''.7(2)$

Am. pr.		+3.06	+13.8
1854.0	$\alpha = 20^h 53^m$ ~~37.82~~ 37.26(10)	$\delta = +0^\circ 27' 59''.5$	
t_{67}	37.00	s_{67}	28.05
t_{68}	37.30	s_{68}	28.03
$\alpha - t_{67}$	+.26	$\delta - s_{67}$	−5.5
$\alpha - t_{68}$	−.04	$\delta - s_{68}$	−3.5
			−0.5
			−0.9
			−5.0
			−2.6

998-8-1853.0 $\alpha = 20^h 53^m 52.39(2)$ $\delta = +0^\circ 29' 58''.4(2)$ (10

Am. pr.		+3.06	+13.8
1854	$\alpha = 20^h 53^m 55.45$	$\delta = +0^\circ 30' 12''.2$	
t_{67}	55.10	s_{67}	30'.15''
t_{68}	55.60	s_{68}	30'.13''
$\alpha - t_{67}$	+.35	$\delta - s_{67}$	−2.8
$\alpha - t_{68}$	−.15	$\delta - s_{68}$	−0.8
			−0.6
			−1.1
			−2.2
			+0.3

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1852phae.proj...2468

Zones 67 & 68

(1011) -8-g- 1853.0 α = 21h 09m 27.86(5) δ = +0° 24′ 55.8″(5)

Stn. pr.	+3.06		+14.8	
1854	α = 21h 09m 30.92		δ = +0° 25′ 10.6	
t_{67}	30.90	s_{67}	25″ 15.	
t_{68}	31.10	s_{68}	25″ 15.	
$\alpha - t_{67}$	+.02	$\delta - s_{67}$	−4.4	
$\alpha - t_{68}$	−.18	$\delta - s_{68}$	−4.4	
			−0.3	
			−0.6	
			−4.1	
			−3.8	

1019-g- 1853.0 α = 21h 19m 56.00(2) δ = +0° 24′ 13.9(2)

Stn. pr.	+3.06		+15.4	
1854.0	α = 21h 19m 59.06		δ = +0° 24′ 29.3	
t_{67}	58.65	s_{67}	24″ 34.	
t_{68}	58.75	s_{68}	24″ 34.	
$\alpha - t_{67}$	+.41	$\delta - s_{67}$	−4.7	
$\alpha - t_{68}$	+.31	$\delta - s_{68}$	−4.7	
			−0.3	
			−0.5	
			−4.4	
			−4.2	

(1018) *-7- 1853.0 α 21h 18m 56.97(5) δ = + 0° 28′ 38.7(5)

Stn. pr.	+3.06		+15.3	
1854.0	α = 21h 19m ~~00.03~~ 00.11 (10)		δ = +0° 28′ 54.0	
t_{67}	00.05	s_{67}	28″ 58.	
t_{68}	00.25	s_{68}	28″ 58.	
$\alpha - t_{67}$	+0.06	$\delta - s_{67}$	−4.0	
$\alpha - t_{68}$	−0.14	$\delta - s_{68}$	−4.0	
			−0.5	
			−1.0	
			−3.5	
			−3.0	

1020-g- 1853.0 α = 21h 21m 52.57(2) δ = +0° 29′ 47.8(2)

Stn. pr.	+3.06		+15.5	
1854.0	α = 21h 21m 55.63		δ = +0° 30′ 03.3	
t_{67}	55.60	s_{67}	30″ 18.	
t_{68}	55.95	s_{68}	30″ 18.	
$\alpha - t_{67}$	+.03	$\delta - s_{67}$	+0.3	
$\alpha - t_{68}$	−.32	$\delta - s_{68}$	+0.3	
			−0.6	
			−1.1	
			+0.9	
			+1.4	

* 5.″7 variation in δ

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19

Zones 67 & 68

(1024) -8-9 -1853.0 α = 21h 25m 50.44(5) δ = 0° 26′ 18.5″(5)

chr hr. +3.06 +15.7

1854.0 α = 21h 25m ~~53.50~~ 53.57(10) δ = +0° 26′ 34.2

t_{67}	53.75	s_{67}	26′ 40.
t_{68}	53.85	s_{68}	26′ 41.
$\alpha - t_{67}$	−.18	$\delta - s_{67}$	−5.4
$\alpha - t_{68}$	−.28	$\delta - s_{68}$	−6.4
			−0.4
			−0.7
			−5.4
			−6.1

(1025) -8- 1853.0 α = 21h 27m 54.00(2) δ = +0° 19′ 31.5(3)

chr. mer. pl. +3.07 +15.4

1854.0 α = 21h 27m 57.07 δ = +0° 19′ 47.2

t_{67}	56.90	s_{67}	19′ 52.
t_{68}	56.90	s_{68}	19′ 52.
$\alpha - t_{67}$	+.17	$\delta - s_{67}$	−4.8
$\alpha - t_{68}$	+.17	$\delta - s_{68}$	−4.8
			0.0
			0.0
			−4.8
			−4.8

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Zones 67 & 68

Reduction of Zone 67

1854 Sept. 29th Sid. Time 19h.40 Ext. 5h. 02.4
21.20

$h' = 0^s.000$ $d' = -0.06$

$t_0 = 19^h.40^m$

		s		"		Hours	wt
0.45	44	0.41	0.07	−1.0	0.07	+ 1.0	3
.46	43	0.39	0.03	+0.5	0.03	1.1	
46	43	+0.60 = x +	0.06 x'	+0.6 = y +	0.06 y'	1.0	3 92
.36	20.. 05	+0.40 =	0.42	+1.7 =	0.42	−0.1	3
.34	09	−0.03 =	0.48	+1.5 =	0.48	0.3	1
.32	12	+0.29 =	0.54	−0.9 =	0.54	0.5	2
.28	21	+0.30 =	0.69	−3.5 =	0.69	1.0	3
.26	25	0.00 =	0.75	−4.4 =	0.75	1.2	1
.24	30	+0.37	0.85	−5.5	0.85	1.5	3.2
.22	33	+0.35 =	0.89	−0.3 =	0.89	1.6	3 91
.14	52	−0.17 =	1.20	−2.2 =	1.20	2.6	1
13	54	+0.26 =	1.23	−5.0 =	1.23	2.7	3 92
13	54	+0.11 =	1.23	−3.4 =	1.23	2.7	1
13	54	+0.35 =	1.23	−2.2 =	1.23	2.7	2
05	21.. 10	+0.02 =	1.29	−4.1 =	1.49	3.6	3
01	19	+0.06 =	1.65	−3.5 =	1.65	4.0	3
01	20	+0.21 =	1.67	−4.4 =	1.67	4.1	2
00	22	+0.03 =	1.70	+0.5 =	1.70	4.2	2
−02	26	−0.18 =	1.77	−5.4 =	1.77	4.4	3
03	24	+0.17 = x +	1.80 x'	−4.8 = y +	1.80 y'	4.5	2
07	38	−0.48	1.96	−9.1	1.96	5.1	3

Mer. Eq.

+0.36 = x +	0.35 x'	−0.7 = y + 0.38 y'
+0.18	1.18	3.6 1.21
−0.04	1.77	47 1.77

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1852phae.proj..2455

Reduction of Lone 68

1854 Oct. 5th Sid. Time 19h.50 Exc. Th. 46.3
21h.50 " 41.6

$h' = 0^s.000$ $d' = -0''.11$

$t_0 = 19^h\ 40^m\ 0^s$

44	+0.21	0.07	−0.14	0.07	3,
23	+0.25 = x +	0.06 x'	+0.1 = y +	0.06 y'	3 92
20h.05	−0.10 =	0.42	+1.0 =	0.42	3
09	−0.16 =	0.48	+1.6 =	0.48	1
12	+0.19 =	0.54	−0.7 =	0.54	2
21	+0.15 =	0.69	−1.3 =	0.69	3
25	−0.15 =	0.75	−2.9 =	0.75	1
30 33	+0.12 −0.05 =	0.69	−1.0 =	0.69	3 91
52	−0.32 =	1.20	−3.7 =	1.20	1
54	−0.04 =	1.23	−2.6 =	1.23	3 92
54	−0.24 =	1.23	−1.0 =	1.23	1
54	−0.15 =	1.23	+0.3 =	1.23	2
21h.10	−0.18 =	1.49	−3.8 =	1.49	3
19	−0.14 =	1.65	−3.0 =	1.65	3
20	+0.31 =	1.67	−4.2 =	1.67	2
22	−0.32 =	1.70	+1.4 =	1.70	2
23 26	−0.13 −0.28 =	1.76	−4.3 −6.1 =	1.76	3
26	+0.17 = x +	1.80 x'	−4.8 = y +	1.80 y'	2
38	−0.53	1.96	−9.3	1.96	3
	18				

Nov. 6

	+0.12 = x +	0.35 x'	−0.2 = y + 0.38 y'
	−0.13	1.18	2.2 = 1.21
	−0.17 09	1.77	4.7 1.77

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1852phae.proj.2455

23

Zones 69 to 70

0°.30' to 0°.40' 19h.44m to 20h.51m

(945)-5-1853.0 α = 19h.44m.59s.24(7) δ = +0°.37'.53".5(6)
Stn. pr. 9 h. +3.06 +8.8
1854.0 α = 19h.45m.02.30 δ = +0°.38'.02".3

t_{69}	02.80	s_{69}	38.07.
t_{70}	02.25	s_{70}	38.07.
$\alpha - t_{69}$	-.50	$\delta - s_{69}$	-4.7
$\alpha - t_{70}$	+.05	$\delta - s_{70}$	-4.7
			-0.4
			+0.2
			-4.3
			-4.9

(975)-7-1853 α = 20h.17m.08s.24 (6) δ = +0°.35'.44".0 (6)
Stn. pr. 9h. +3.07 +11.2
1854.0 α = 20h.17m.11s.31 δ = +0°.35'.55".2

t_{69}	11.90	s_{69}	36.03.
t_{70}	11.60	s_{70}	36.03.
$\alpha - t_{69}$	-.59	$\delta - s_{69}$	-7.8
$\alpha - t_{70}$	-.29	$\delta - s_{70}$	-7.8
			-0.3
			+0.1
			-7.5
			-7.9

962-9-1853.0 α = 20h.05m.46.07(2) δ = +0°.35'.15".4(2)
Stn. pr. +3.06 +10.5
1854.α = 20h.05m.49.13 δ = +0°.35'.25".9

t_{69}	49.80	s_{69}	35.29.
t_{70}	49.40	s_{70}	35.29.
$\alpha - t_{69}$	-.67	$\delta - s_{69}$	-3.1
$\alpha - t_{70}$	-.27	$\delta - s_{70}$	-3.1
			-0.3
			+0.1
			-2.8
			-3.2

(981) -8-9-1853 α = 20h.30m.46.87(2) δ = +0°.30'.20".0 (2)
Stn. pr. + 3.06 +12.3
1854.0 α = 20h.30m.~~49.93~~ 49.97(10) δ = +0°.30'.32".3

t_{69}	50.90	s_{69}	30.36.
t_{70}	50.15	s_{70}	30.36.
$\alpha - t_{69}$	-.93	$\delta - s_{69}$	-3.7
$\alpha - t_{70}$	-.14	$\delta - s_{70}$	-3.7
			0.0
			0.0
			-3.7
			-3.7

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1852phae.proj.c.2458

Zones 69 & 70

984-9-1853.0 $\alpha = 20^h 32^m 16^s.35$ (2) $\delta = +0^\circ 32' 50''.6$ (1)

Chron. hr.	+ 3.06	+ 12.2
1852.0 α	$= 20^h 32^m 19^s.41$	$\delta = +0^\circ 33' 03''.0$
t_{69}	19.95 s_{69}	33.09.
t_{70}	19.40 s_{70}	33.07.
$\alpha - t_{69}$	−.54 $\delta - s_{69}$	− 6.0
$\alpha - t_{70}$	+.01 $\delta - s_{70}$	−2.0
		−0.2
		+0.1
		−5.8
		−4.1

990-9-1853.0 $\alpha = 20^h 44^m 12^s.55$ (1) $\delta = +0^\circ 36' 00''.5$ (1)

Chron. hr.	+3.06	+ 13.2
1852.0 α	$= 20^h 44^m 15^s.61$	$\delta = +0^\circ 36' 13''.7$
t_{69}	16.65 s_{69}	36.17.
t_{70}	16.10 s_{70}	36.17.
$\alpha - t_{69}$	−1.04 $\delta - s_{69}$	−3.3
$\alpha - t_{70}$	−.49 $\delta - s_{70}$	−3.3
		−0.3
		+0.1
		−3.0
		−3.4

985-9-1853.0 $\alpha = 20^h 32^m 23^s.87$ (2) $\delta = +0^\circ 33' 13''.8$ (1)

Chron. hr.	+3.06	+12.4
1852.0 α	$= 20^h 32^m 26^s.93$	$\delta = +0^\circ 33' 26''.7$
t_{69}	27.60 s_{69}	33.29.
t_{70}	27.05 s_{70}	33.29.
$\alpha - t_{69}$	−.67 $\delta - s_{69}$	−3.3
$\alpha - t_{70}$	−.12 $\delta - s_{70}$	−3.3
		−0.2
		+0.1
		−3.1
		−3.4

992-9-1853.0 $\alpha = 20^h 51^m 59^s.02$ (1) $\delta = +0^\circ 32' 12''.4$ (1)

Chron. hr.	+ 3.06	+ 13.7
1852.0 α	$= 20^h 52^m 02^s.08$	$\delta = +0^\circ 32' 25''.8$
t_{69}		s_{69}
t_{70}		s_{70}

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245

Reduction of Zone 69

1854 Oct. 6th Sid. Time 19.54
21.35

Brit. Th. 54.°0

$k' = 0^s.000$ $d' = -0.''05$

$t_0 = 19^h.40^m$

		s			"		wt.
-.60	45	-0.~~67~~ 69	0.09		-6.5	0.09	3
6.60	45	-0.50 = x +	0.08x'		-4.3 = y +	0.08y'	8
~~8~~ 67	20.06	-0.67 =	0.43		-2.8 =	0.43	2
11 72	17	-0.59 =	0.62		-7.5 =	0.62	3
14 13 77	31	-0.93 =	0.85		-3.7 =	0.85	3 + 2
16 14 78	32	-0.54 =	0.87		-5.6 =	0.87	2 + 1
18 15 78	32	-0.67 =	0.87		-3.1 =	0.87	2 + 1
19 16 82	44	-1.04 = x +	1.07x'		-3.0 = y +	1.07y'	1
22 18 84	49	-0.~~97~~ 96	94		-2.0	.14	3
	62.	-0.59 = x +	0.08x		-5.4 = y +	0.08y'	
Nor. Eq.		0.74	0.63		5.1	0.63	
		0.79	1.~~00~~		3.0	1.04	

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1852phae.proj..2455

Reduction of Zone 70

1854 Oct. 7th Sid. Time $20^h 5^m 2^s$ Syst. Th. 66.4
$22^h 16^m$ 68.2

$k' = 0^s.000$ $d' = +0''.02$

			wt			wt
$t_0 = 19^h 40^m$	s			"		
45	−0.17	0.09	3	−6.5	0.09	3
45	+0.05 = x	+0.08 x′	3	−2.9 = y	+ 0.08 y′	3
20.06	−0.27 =	0.43	2	−3.2 =	0.43	2
17	−0.29 =	0.62	3	−7.9 =	0.62	3
31	−0.14 =	0.85	3	−3.7 =	0.85	2
32	+0.01 =	0.87	2	−4.1 =	0.87	1
32	−0.12 =	0.87	2	−3.4 =	0.87	1
44	−0.49 = x	+ 1.07 x′	1	−3.4 = y	+ 1.07 y′	1
49	−0.53	1.14	3	−1.0	1.14	3

Nor. Eq.				
	−0.06	= x + 0.08 x′	−5.7	= y + 0.08 y′
	0.25	1.63	5.4	0.63
	0.29	1.00	2.3	1.00

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1852phae.proj..245

247

Zones 71 & 72

0°.80' to 0°.40'

20h.48m to 22h.26m

992-g-1853.0 α = 20h.51m.59s.02 (1) δ = +0°.32'.12".1 (11)

stn. pr.	+3.06		+13.7
1854.0	α = 20h.52m.02s.08		δ = +0°.32'.25".8
t_{71}	00.90	s_{71}	32".22
t_{72}	1.00	s_{72}	32".20
$\alpha - t_{71}$	+1.18	$\delta - s_{71}$	+3.8
$\alpha - t_{72}$	+1.08	$\delta - s_{72}$	+5.8
			∓0.2
			0.0
			+4.0
			+5.8

998-g-1853.0 α 20h.53m.52s.39 (2) δ = +0°.29'.58".4 (2)

stn. pr.	+3.06		+13.8
1854.0	α = 20h.53m.55s.45		δ = +0°.30'.12".2
t_{71}	55.15	s_{71}	30".12
t_{72}	55.30	s_{72}	30".10
$\alpha - t_{71}$	+.30	$\delta - s_{71}$	+0.2
$\alpha - t_{72}$	+1.15	$\delta - s_{72}$	+2.2
			0.0
			0.0
			+0.2
			+2.2

* 995-g-1853.0 α = 20h.53m.19.66 (1) δ = +0°.31'.47".9 (1)

stn. pr.	+3.06		+13.8
1854.0	α = 20h.53m.22.72		δ = +0°.32'.01".7
t_{71}	18.25	s_{71}	32".01
t_{72}	18.35	s_{72}	31".59
$\alpha - t_{71}$	+4.47	$\delta - s_{71}$	+0.7
$\alpha - t_{72}$	+4.37	$\delta - s_{72}$	+2.7
			−0.2
			0.0
			+0.9
			+2.7

1003-g-1853.0 α = 21h.00m.19.57 (1) δ = +0°.34'.02".9 (1)

~~1854.0~~ stn. pr.	+3.06		+14.2
1854.0	α = 21h.00m.~~22.63~~ 22.58 (10)		δ = +0°.34'.17".1
t_{71}	22.45	s_{71}	34".20
t_{72}	22.60	s_{72}	34".18
$\alpha - t_{71}$	+.13		−2.9
$\alpha - t_{72}$	−.02		−0.9
			−0.4
			+0.1
			−2.5
			−1.0

* These stars differ greatly in α.

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Zones 71872

1010 – 8 – 9 – 1853.0 α = 21h 09m 21.28s (2) δ = +0° 33' 16.7" (2)

	Stn. pr.	+3.06		+14.8
1854.0	α = 21h 09m ~~24.34~~ 24.21 (10)		δ = +0° 33' 33.5	
t_{71}	23.90	s_{71}	33.38.	
t_{72}	24.10	s_{72}	33.34.	
$\alpha - t_{71}$	+.31	$\delta - s_{71}$	−4.5	
$\alpha - t_{72}$	+.11	$\delta - s_{72}$	−0.5	
			−0.4	
			+0.1	
			−4.1	
			−0.6	

1020 – 9 – 1853.0 α = 21h 21m 52.37 (2) δ = +0° 29' 47.8 (3)

	Stn. pr.	+3.06		+15.5
1854.0	α = 21h 21m 55.63		δ = +0° 30' 03.3	
t_{71}	55.60	s_{71}	30.10	
t_{72}	55.65	s_{72}	30.07	
$\alpha - t_{71}$	+.03	$\delta - s_{71}$	−6.7	
$\alpha - t_{72}$	−.02	$\delta - s_{72}$	−3.7	
			0.0	
			0.0	
			−6.7	
			−3.7	

1012 – 8 – 1853.0 α = 21h 10m 46.79 (2) δ = +0° 34' 53.6 (2)

	Stn. pr.	+3.06		+14.8
1854.0	α = 21h 10m 49.85		δ = +0° 35' 08.4	
t_{71}	49.60	s_{71}	35.13.	
t_{72}	49.80	s_{72}	35.08.	
$\alpha - t_{71}$	+.25	$\delta - s_{71}$	−4.6	
$\alpha - t_{72}$	+.05	$\delta - s_{72}$	−0.4	
			−0.5	
			+0.1	
			−4.1	
			−0.5	

1026 – 9 – 1853.0 α = 21h 32m 37.14 (2) δ = +0° 30' 46.5 (2)

	Stn. pr.	+3.06		+16.1
1854.0	α = 21h 32m 40.20		δ = +0° 31' 01.6	
t_{71}	40.15	s_{71}	31.08.	
t_{72}	40.25	s_{72}	31.06.	
$\alpha - t_{71}$	+0.05	$\delta - s_{71}$	−06.4	
$\alpha - t_{72}$	−0.05	$\delta - s_{72}$	−4.4	
			−0.1	
			0.0	
			−6.3	
			−4.4	

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Zones 7 18 72

(1027)-9-1853.0 α = 21h 33m 7.07 (2) δ = +0° 34′ 41.3 (2)

stn. pr.	+3.06		+16.1
1854.0	α = 21h 33m 10.13	δ = +0° 34′ 57.4	
$t_{>1}$	09.95	$s_{>1}$	35″.06.
$t_{>2}$	10.20	$s_{>2}$	35″.03.
$\alpha - t_{>1}$	+ .18	$\delta - s_{>1}$	−06.6
$\alpha - t_{>2}$	−.07	$\delta - s_{>2}$	− 5.6
			− 0.5
			+0.1
			−8.1
			− 5.7

(1029)-8-1853.0 α 21h 33m 37.00 (4) δ +0° 38′ 25.9 (4)

stn. pr. & p.	+ 3.07		+ 15.9
1854.0	α = 21h 33m ~~40.07~~ 40.11 (10)	δ = +0° 38′ 41.8	
$t_{>1}$	39.95	$s_{>1}$	38″.58
$t_{>2}$	40.30	$s_{>2}$	38″.52
$\alpha - t_{>1}$	+ .16	$\delta - s_{>1}$	−16.2
$\alpha - t_{>2}$	−.19	$\delta - s_{>2}$	−10.2
			− 0.9
			+ 0.2
			−15.3
			−10.4

(1028)-9-10-1853.0 α = 21h 33m 32.56 (1) δ = +0° 37′ 14.3 (1)

stn. pr.	+3.06		+16.1
1854.0	α = 21h 33m 35.62	δ = +0° 37′ 30.4	
$t_{>1}$	35.65	$s_{>1}$	37″.38.
$t_{>2}$	36.10	$s_{>2}$	37″.36.
$\alpha - t_{>1}$	− .23	$\delta - s_{>1}$	− 7.6
$\alpha - t_{>2}$	− .48	$\delta - s_{>2}$	− 4.6
			−0.4
			+0.2
			−6.8
			−4.4

(1030)-6.7-1853.0 α = 21h 34m 40.40 (7) δ = +0° 37′ 04.4 (7)

stn. pr. & p.	+ 3.07		+ 16.1
1854.0	α = 21h 34m 43.47	δ = +0° 37′ 20.5	
$t_{>1}$	43.55	$s_{>1}$	37″.32.
$t_{>2}$	43.75	$s_{>2}$	37″.27.
$\alpha - t_{>1}$	−.08	$\delta - s_{>1}$	−11.5
$\alpha - t_{>2}$	−.28	$\delta - s_{>2}$	− 6.5
			−0.8
			+0.1
			−10.7
			−6.6

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1952phae.proj..2458

Zones 71872

1039 – 9 – 1853.0 α = 21h 47m 10.28(2) δ = +0° 34′ 05.5(2)
Stn. pr. +3.06 +16.8
1854.0 α = 21h 47m 13.34 δ = +0° 34′ 22.3
13.01(10)

t_{71}	13.05	s_{71}	34.32
t_{72}	13.20	s_{72}	34.29
$\alpha - t_{71}$	−.04	$\delta - s_{71}$	−9.7
$\alpha - t_{72}$	−.19	$\delta - s_{72}$	−6.7
			−0.5
			+0.1
			−9.2
			−6.8

‡
1045 – 9 – 1853.0 α = 21h 52m 37.84(2) δ = +0° 37′ 04.2(2)
Stn. pr. +3.06 + 17.1
1854.0 α = 21h 53m 00.90 δ = +0° 37′ 21.3

t_{71}	3.00	s_{71}	37.33.
t_{72}	3.20	s_{72}	37.29.
$\alpha - t_{71}$	−2.10	$\delta - s_{71}$	−11.7
$\alpha - t_{72}$	−2.30	$\delta - s_{72}$	−7.7
			−0.8
			+0.1
			−10.9
			−7.8

‡ Large difference in RR

1044 – 7 – 1853.0 α = 21h 52m 57.74(3) δ = +0° 30′ 54.4(3)
Stn. pr. +3.06 +17.1
1854.0 α = 21h 53m 00.80 δ = +0° 31′ 11.5

t_{71}	01.30	s_{71}	31.20.
t_{72}	01.25	s_{72}	31.17.
$\alpha - t_{71}$	−.50	$\delta - s_{71}$	−8.5
$\alpha - t_{72}$	−.45	$\delta - s_{72}$	−5.5
			−0.1
			0.0
			−8.4
			−5.5

*
(1059) – 5 – 1853.0 α = 22h 17m 46.27(12) δ = +0° 37′ 58.7(11)
Stn. pr. & h. +3.07 +18.1
1854.0 α = 22h 17m 49.34 δ = +0° 38′ 16.8
49.27(10)

t_{71}	49.45	s_{71}	38.28.
t_{72}	49.60	s_{72}	38.27.
$\alpha - t_{71}$	+.18	$\delta - s_{71}$	−11.2
$\alpha - t_{72}$	−.33	$\delta - s_{72}$	−10.2
			−0.8
			+0.2
			−10.4
			−10.4

* T's δ rejected in the mean.

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Belongs page 27

993-Σ -1653.0 $\alpha = 20^h 52^m 00^s.62(1) \quad \delta = +0°29'36''.5(1)$

	etn. pr.		+3.06		+13.7
	1854.0	$\alpha = 20^h 52^m 03^s.68$		$\delta = +0°29'50''.2$	
		t_{71}	03.70	s_{71}	29.52.
IV		t_{72}	04.00	s_{72}	29.50.
	$\alpha - t_{71}$		−.02	$\delta - s_{71}$	−1.8
	$\alpha - t_{72}$		−.32	$\delta - s_{72}$	+0.2
					0.0
					0.0
					−1.8
					+0.2

Reduction of Zone 72

1854 Oct. 10 d of Sid Time Syt Th. 46.8 45.0

$h' = 0^s.00 \quad d' = -0''.10$

$t_0 = 20^h 40^m$	s		wt	"		wt
	49	+0.44	0.14	3	−0.4	0.44 3
?	52	+1.08 = x +	0.20 x'	1	+5.8 = y +	0.20 y' 1
	52	−0.32 =	0.20	1	+0.2 =	0.20 1
?	53	+4.37 =	0.22	1	+2.7 =	0.22 1
	54	+0.15 =	0.23	2	+2.2 =	0.23 2
21	00	−0.02 =	0.32	3	−1.0 =	0.32 1
—	09	+0.11 =	0.49	3	−0.6 =	0.49 2
	11	+0.05 =	0.51	2	−0.5 =	0.51 2
	22	−0.02 =	0.53	2	−3.7 =	0.89 2
	33	−0.05 =	0.88	2	−4.4 =	0.88 2
	33	−0.07 =	0.88	2	−6.7 =	0.88 2
	34	−0.44 =	0.89	1	−4.8 =	0.89 1
	34	−0.19 =	0.89	3	−10.4 =	0.89 3
—	35	−0.28 =	0.91	3	−6.6 =	0.91 3
	47	−0.19 =	1.12	3	−6.8 =	1.12 2
	53	−0.45 =	1.22	2	−5.5 =	1.22 2
?	53	−2.30 =	1.22	2	−7.4 =	1.22 2
22	16	−0.33 = x +	1.63 x'	3	−10.4 = y +	1.63 y' 3
	21	−0.42	1.68	3	−6.5	1.68 3

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1852phae..proj..2468

Reduction of Zone 71

1854 Oct. 9th Sid. Time 20h 07m Ext. T. 69.9

22 " 10 " 66.1

h' = 0.000 d' = +0.02

$t_0 = 20^h 40^m$ s

				wt.	"		wt.
0.44		49	+0.46	0.15	3	−2.5	0.15	3
	?	52	+1.18 = x + 0.20x'		1	+4.0 = y + 0.20 y'		1
+0.41		52	−0.02 =	+0.20	1	−1.6 =	0.20	1
+0.41	?	53	+2.47 =	0.22	1	+0.9 =	0.22	1
+0.39		54	+0.30 =	0.23	2	+0.2 =	0.23	2
−0.34	21	00	+0.13 =	0.34	3	−2.5 =	0.34	1
0.26		09	+0.31 =	0.49	3	−4.1 =	0.49	2
0.24		11	+0.25 =	0.51	2	−4.1 =	0.51	2
0.15		22	+0.03 =	0.70	2	−6.7 =	0.70	2
0.06		33	+0.05 =	0.88	2	−6.3 =	0.88	2
0.06		33	+0.18 =	0.88	2	−8.1 =	0.88	2
0.04		34	−0.23 =	0.89	1	−6.8 =	0.89	1
0.04		34	+0.16 =	0.89	3	−15.3 =	0.89	3
0.04		35	−0.04 =	0.91	3	−10.7 =	0.91	3
−0.07		47	−0.04 =	1.12	3	−9.2 =	1.12	2
.13		53	−0.50 =	1.22	2	−6.4 =	1.22	2
?.13		53	−2.10 =	1.22	2	−10.9 =	1.22	2
.34	22	18	−0.14 = x + 1.63x'		3	−10.4 = y + 1.63 y'		3
.37		21	−0.29	1.69	3	−6.5	1.69	3

Nor. Eq.
Zone 71.

+0.39	= x + 0.26x'	−1.3 = y + 0.28 y'
+0.07	0.81	9.0 0.83
−0.21	1.40	9.0 1.42

Nor. Eq.
Zone 72.

+0.27	= x + 0.26x'	+0.9 = y + 0.28 y'
−0.14	0.81	−5.6 0.83
−0.34	1.40	7.6 1.42

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1852phae.proj.:245

Zones 7 8 9 74

$0^h.20^m$ to $0^h.30^m$ $21^h.36^m$ to $22^h.46^m$

1040 - 9 - 1853.0 $\alpha = 21^h.48^m.16^s.43$ (1) $\delta = +0°.26'.23''.6$ (1)

Stn. pr.	+3.06		+16.8
1854.0	$\alpha = 21^h.48^m.19^s.49$	$\delta = +0°.26'.40''.4$	
t_{73}	20.00	s_{73}	28.82.
t_{74}	19.50	s_{74}	26.45.
$\alpha - t_{73}$	−.51	$\delta - s_{73}$	−13.6
$\alpha - t_{74}$	−.01	$\delta - s_{74}$	−4.6
			−1.3
			−1.3
			−12.3
			−3.3

1063 - 9 - 1853.0 $\alpha = 22^h.26^m.10^s.52$ (1) $\delta = +0°.26'.10''.7$ (1)

Stn. pr.	+3.07		+18.4
1854.0	$\alpha = 22^h.26^m.13^s.59$	$\delta = +0°.26'.29''.1$	
t_{73}	14.35	s_{73}	26.42.
t_{74}	14.15	s_{74}	26.32
$\alpha - t_{73}$	−.76	$\delta - s_{73}$	−12.9
$\alpha - t_{74}$	−.56	$\delta - s_{74}$	−02.9
			−0.9
			−1.0
			−12.0
			−1.9

(1051) - 9 - 1853.0 $\alpha = 22^h.05^m.14^s.54$ (4) $\delta = +0°.27'.41''.2$ (4)

Stn. pr.	+3.06		+17.6
1854.0	$\alpha = 22^h.05^m.17^s.60$	$\delta = +0°.27'.58''.8$	
t_{73}	18.80	s_{73}	28.08.
t_{74}	18.40	s_{74}	27.58.
$\alpha - t_{73}$	−1.20	$\delta - s_{73}$	−9.2
$\alpha - t_{74}$	−.40	$\delta - s_{74}$	+0.8
			−1.1
			−1.2
			−8.1
			+2.0

1065 - 9 - 1853.0 $\alpha = 22^h.31^m.5^s.70$ (1) $\delta = +0°.22'.23''.3$ (1)

Stn. pr.	+3.07		+18.6
1854.0	$\alpha = 22^h.31^m.8^s.77$	$\delta = +0°.22'.41''.9$	
t_{73}	9.25	s_{73}	22.52.
t_{74}	8.80	s_{74}	22.41.
$\alpha - t_{73}$	−.44	$\delta - s_{73}$	−12.1
$\alpha - t_{74}$	−.03	$\delta - s_{74}$	+0.9
			−0.4
			−0.4
			−11.7
			+1.3

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Zones 7807–74

(1067)–8–9–1853.0 $\alpha = 22^h 32^m 29^s.35(4)$ $\delta = +0° 26' 31''.1(4)$

Obs. pr. & pl. +3.07 +18.6

1854.0 $\alpha = 22^h 32^m$ ~~32.48~~ 32.25(10) $\delta = +0° 26' 49''.7$

t_{73}	33.35	s_{73}	27.03.
t_{74}	32.95	s_{74}	26.53.
$\alpha - t_{73}$	−1.10	$\delta - s_{73}$	−13.3
$\alpha - t_{74}$	−.70	$\delta - s_{74}$	− 3.3
			−1.0
			−1.0
			−12.3
			− 2.3

1073–9–1858.0 $\alpha = 22^h 39^m 53.83(1)$ $\delta = +0° 23' 8.0(1)$

Obs. pr. +3.07 +18.9

1854.0 $\alpha = 22^h 39^m 56.90$ $\delta = +0° 23' 26''.9$

t_{71}	58.10	s_{71}	23.34.
t_{72}	57.75	s_{72}	23.26.
$\alpha - t_{71}$	−1.20	$\delta - s_{71}$	−7.8
$\alpha - t_{72}$	−.85	$\delta - s_{72}$	+ 0.9
			−9.5
			−0.5
			−6.6
			+1.4

1068–7–1853.0 $\alpha = 22.35.27.82(4)$ $\delta = +0°27'00''.3(4)$

Obs. pr. +3.07 +18.7

1854.0 $\alpha = 22^h 35^m$ ~~30.57~~ 30.64(10) $\delta = +0° 27' 19''.0$

t_{73}	31.80	s_{73}	27.28.
t_{74}	31.30	s_{74}	27.19.
$\alpha - t_{73}$	−1.16	$\delta - s_{73}$	− 9.0
$\alpha - t_{74}$	−.66	$\delta - s_{74}$	0.0
			−1.0
			−1.1
			− 8.0
			+1.1

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1852phae.proj..2458

Reduction of Zone 73

1854 Oct. 18th Sid. Time 21.51 Sid. Th. 40.8
23.11 38.5

$h' = 0.^s000$ $d' = -0.''14$

	$t_0 = 21^h 30^m$	Δ		wt.	$''$		wt.
-0.62	36	−0.70	+0.13	3	−3.4	0.13	3
86	26	−0.51 = x +	0.31 x′	1	−12.8 = z +	0.31 z′	1
92	22.05	−1.20 =	0.59	3	−6.1 =	0.59	3
99	26	−0.76 =	0.94	1	−12.0 =	0.94	1
1.01	31	−0.48 =	1.02	1	−11.7 =	1.02	1
02	33	−1.10 =	1.04	3	−12.3 =	1.04	3
03	36	−1.16 =	1.09	3	−8.0 =	1.09	3
04	40	−1.20 = x +	1.17 x′	1	−6.6 = z +	1.17 z′	1
06	44	+1.07	1.24	3	−13.8	1.24	3

Nor. Eq.

= 0.89	= x +	0.35 x′	−6.7 = x + 0.35 x′
0.91		1.02	12.0 1.02
1.13		1.17	10.5 1.17

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1952phae.proj..2468

Reduction of Zone 74

1854 Oct. 19th Sid. Time 20..55 Ext. Th. 89.0
22..07 35.5
$h' = 20^s.000$ $d' = -0''.15$

$t_0 = 21^h..30^m$

	s		wt			wt
38	−0.23	0.13	3	+5.4	+0.13	3
48	−0.01 = x	+0.31x'	1	−8.3 = y	+0.31y'	1
22..05	−0.80 =	0.59	3	+2.0 =	0.59	3
26	−0.56 =	0.94	1	−1.9 =	0.94	1
31	−0.03 =	1.02	1	+1.3 =	1.02	1
33	−0..70 =	1.04	3	−2.3 =	1.04	3
36	−0.66 =	1.09	3	+1.1 =	1.09	3
40	−0.68 = x	+1.17x'	1	+1.4 = y	+1.17y'	1
44	−0.60	1.24	3	+3.8	1.24	3

−0.44	= x +	0.35x'	+ 2.7 = y + 0.35y'
0.54		1.02	− 1.5 1.02
0.66		1.17	+ 2.3 1.17

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1852phae.proj..2455

Zones 75 & 76

0h 20m to 0h 32m

22h 39m to 0h 51m

1073-g-1853.0 α = 22h 39m 53.88 (1) δ = +0° 23′ 08.0 (1)

chr. pr. +3.07 +18.9

1854.0 α = 22h 39m 56.90 δ = +0° 23′ 26.9

t_{75}	~~56.11~~	s_{75}	~~23′ 04.1~~
t_{76}	~~56.80~~	s_{76}	23′ 26.
$\alpha - t_{75}$	——	$\delta - s_{75}$	——
$\alpha - t_{76}$	+.10	$\delta - s_{76}$	+0.9
			~~-0.6~~
			~~-0.5~~
			——
			+1.21

(1092)-g-1853.0 α = 23h 09m 35.45 (3) δ = +0° 25′ 45.4 (3)

chr. pr. +3.07 +19.6

1854.0 α = 23h 09m ~~36.52~~ 38.53 (10) δ = +0° 26′ 05.6

t_{75}	39.25	s_{75}	26′ 10.
t_{76}	38.25	s_{76}	26′ 10.
$\alpha - t_{75}$	-.72	$\delta - s_{75}$	-5.0
$\alpha - t_{76}$	+.28	$\delta - s_{76}$	-5.0
			-1.0
			-0.9
			-2.10
			-2.1

1085-g-1853.0 α = 22h 54m 47.33 (1) δ = +0° 28′ 55.9 (1)

chr. pr. +3.07 +19.2

1854.0 α = 22h 54m 50.40 δ = +0° 29′ ~~27~~ 19.1

t_{75}	51.00	s_{75}	29′ ~~27~~ 19.
t_{76}	50.10	s_{76}	29′ 20.
$\alpha - t_{75}$	-.60	$\delta - s_{75}$	~~-03.9~~
$\alpha - t_{76}$	+.30	$\delta - s_{76}$	-4.9
			-1.6
			~~-1.4~~
			-2.3
			-3.5

(1094)-b-1853.0 α = 23h 19m 24.01 (22) δ = +0° 27′ 05.0 (21)

chr. pr. & p. +3.08 +19.6

1854.0 α = 23h 19m ~~27.09~~ 27.03 (10) δ = +0° 27′ 24.6

t_{75}	27.75	s_{75}	27′ 28.
t_{76}	26.90	s_{76}	27′ 30.
$\alpha - t_{75}$	-.72	$\delta - s_{75}$	-3.4
$\alpha - t_{76}$	+.13	$\delta - s_{76}$	-5.4
			-1.3
			-1.1
			-2.1
			-4.3

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1852phae.proj.:2455

Zones. 75876

1097-g-1853.0 $\alpha = 23^h 21^m 27^s.04$ (1) $\delta = +0° 28' 8''.0$ (1)

Stn. pr. +3.07 +19.8

1854.0 $\alpha = 23^h 21^m 30^s.11$ $\delta = +0° 28' 27''.8$

t_{75}	31.00	s_{75}	28.28.
t_{76}	29.95	s_{76}	28.27.
$\alpha - t_{75}$	−.89	$\delta - s_{75}$	−0.2
$\alpha - t_{76}$	+1.16	$\delta - s_{76}$	+0.8
			−1.4
			−1.3
			+1.2
			+2.1

(1102)-g-1853.0 $\alpha = 23^h 24^m 14^s.08$ (3) $\delta = +0° 24' 39''.0$ (3)

Stn. pr. + 3.07 +19.8

1854.0 $\alpha = 23^h 24^m 17^s.15$ $\delta = +0° 24' 58''.8$

t_{75}	17.90	s_{75}	25.02.
t_{76}	16.95	s_{76}	25.02.
$\alpha - t_{75}$	−.75	$\delta - s_{75}$	−3.2
$\alpha - t_{76}$	+.20	$\delta - s_{76}$	−3.2
			−0.9
			−0.8
			−2.3
			−2.4

1099-g-1853.0 $\alpha = 23^h 22^m 24^s.68$ (1) $\delta = +0° 21' 12''.3$ (1)

Stn. pr. +3.07 +19.8

1854.0 $\alpha = 23^h 22^m$ ~~27.75~~ 27.62 (10) $\delta = +0° 21' 34''.1$

t_{75}	28.30	s_{75}	21.37.
t_{76}	27.10	s_{76}	21.36.
$\alpha - t_{75}$	−1.68	$\delta - s_{75}$	−2.9
$\alpha - t_{76}$	+.52	$\delta - s_{76}$	−3.9
			−0.3
			−0.2
			−2.6
			−3.7

1.1

* 1103-g-1853 $\alpha = 23^h 27^m 01^s.75$ (1) $\delta = +0° 24' 34''.1$ (1)

Stn. pr. + 3.07 +19.8

1854.0 $\alpha = 23^h 27^m 04^s.82$ $\delta = +0° 24' 58''.9$

t_{75}	05.10	s_{75}	25.04.
t_{76}	03.80	s_{76}	25.03.
$\alpha - t_{75}$	−.28	$\delta - s_{75}$	−10.1
$\alpha - t_{76}$	+1.02	$\delta - s_{76}$	−09.1
			−0.9
			−0.8
			−9.2
			−8.3

* $\Delta\alpha$ 1s too large

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Zones 75 & 76

1110 − −1853.0 α = 23h 39m 43.33(2) δ = +0° 20′ 29.0(2)

Obs. pr.		+3.07		+20.0
1854.0	α = 23h 39m 46.40		δ = +0° 20′ 49.0	
	t_{75}	47.50	s_{75}	20″.52.
	t_{76}	46.30	s_{76}	20″.57.
	$\alpha - t_{75}$	−1.10	$\delta - s_{75}$	−5.0
	$\alpha - t_{76}$	~~+.50~~ +.10	$\delta - s_{76}$	−8.0
				−0.2
				−0.1
				~~−5.8~~
				−7.9

1118-9 −1853.0 α = 23h 49m 00.83(1) δ = +0° 25′ 58.1 (1)

Obs. pr.		+3.07		+20.0
1854.0	α = 23h 49m 03.90		δ = +0° 26′ 13.1	
	t_{75}	04.65	s_{75}	26″.18.
	t_{76}	03.55	s_{76}	26″.20.
	$\alpha - t_{75}$	−.75	$\delta - s_{75}$	−4.9
	$\alpha - t_{76}$	+.35	$\delta - s_{76}$	−6.9
				−1.1
				−1.0
				−3.8
				−5.9

(1111)-9 −1853.0 α = 23h 39m 56.62(3) δ = +0° 21′ 26.1(1)

Obs. pr.		+3.07		+20.0
1854	α = 23h 39m 59.69		δ = +0° 21′ 46.1	
	t_{75}	~~40~~ 00.95	s_{75}	21″.47.
	t_{76}	39.59.80	s_{76}	21″.50.
	$\alpha - t_{75}$	−1.26	$\delta - s_{75}$	−0.9
	$\alpha - t_{76}$	−.19	$\delta - s_{76}$	−3.9
				−0.3
				−0.3
				−0.6
				−3.6

2-8 −1853.0 α = 0h 01m 55.86(1) δ = +0° 25′ 31.5 (1)

Obs. pr.		+3.07		+20.0
1853.0	α = 0h 01m ~~56.93~~ 59.13(10)		δ = +0° 25′ 51.5	
	t_{75}	59.70	s_{75}	25″.37.
	t_{76}	58.80	s_{76}	25″.56.
	$\alpha - t_{75}$	−.57	$\delta - s_{75}$	−5.5
	$\alpha - t_{76}$	+.33	$\delta - s_{76}$	−4.5
				−1.0
				−0.9
				−4.5
				−3.6

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Jones 75 to 96

See page 41

7-G-9-1853.0 $\alpha = 0^h 12^m 29^s.53$ (1) $\delta = +0^\circ 21' 02''.4$ (1)

stn. pr. +3.07 +20.0

1854.0 $\alpha = 0^h 12^m$ ~~32.60~~ 32.93(10) $\delta = +0^\circ 21' 22''.4$

t_{75}	33.60	s_{75}	21".22.
t_{76}	32.55	s_{76}	21".22.
$\alpha - t_{75}$	−.67	$\delta - s_{75}$	+0.4
$\alpha - t_{76}$	+.38	$\delta - s_{76}$	+0.4
			−0.2
			−0.2
			+0.6
			+0.6

13-9-1853.0 $\alpha = 0^h 30^m 53^s.11$ (1) $\delta = +0^\circ 28' 13''.7$ (1)

stn. pr. +3.07 +19.9

1854.0 $\alpha = 0^h 30^m 56^s.18$ $\delta = +0^\circ 28' 33''.6$

t_{75}	57.15	s_{75}	28".37.
t_{76}	56.10	s_{76}	28".34.
$\alpha - t_{75}$	−.97	$\delta - s_{75}$	−3.4
$\alpha - t_{76}$	+.08	$\delta - s_{76}$	−0.4
			−1.5
			−1.3
			−1.9
			+0.9

8-9-1853.0 $\alpha = 0^h 13^m 25^s.60$ (1) $\delta = +0^\circ 22' 38''.8$ (1)

stn. pr. +3.07 +20.0

1854.0 $\alpha = 0^h 18^m 28^s.67$ $\delta = +0^\circ 22' 58''.8$

t_{75}	29.55	s_{75}	23".02.
t_{76}	28.80	s_{76}	23".03
$\alpha - t_{75}$	−.188	$\delta - s_{75}$	−3.2
$\alpha - t_{76}$	−.13	$\delta - s_{76}$	−4.2
			−0.5
			−0.5
			*−2.7
			−3.7

17-9-1853.0 $\alpha = 0^h 33^m 16^s.24$ (1) $\delta = +0^\circ 21' 56''.4$ (1)

stn. pr. +3.07 +19.8

1854.0 $\alpha = 0^h 33^m 21^s.31$ $\delta = +0^\circ 22' 16''.2$

t_{75}	22.50	s_{75}	22".21.
t_{76}	21.50	s_{76}	22".23.
$\alpha - t_{75}$	−1.19	$\delta - s_{75}$	−4.8
$\alpha - t_{76}$	−.19	$\delta - s_{76}$	−6.8
			−0.4
			−0.4
			−4.4
			−6.4

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1852phae.proj..2455

Zones 7576

20-9-1853.0 $\alpha = 0^h 35^m 25^s.33 (1)$ $\delta = +0^\circ 29' 11''.0 (1)$

chr. pos.		+3.07		+19.8
1854.0	$\alpha =$	0h 35m 28s.40	$\delta =$	+0° 29' 30".8
	t_{75}	29.10	s_{75}	29' 39".
	t_{76}	26.15	s_{76}	29' 85".
	$\alpha - t_{75}$	−.70	$\delta - s_{75}$	−4.2
	$\alpha - t_{76}$	+1.25	$\delta - s_{76}$	−4.2
				−1.6
				−1.4
				−6.6
				−2.8

Belongs. p. 40

16-8-1853.0 $\alpha = 0^h 32^m 51^s.28 (1)$ $\delta = +0^\circ 19' 34".8 (1)$

chr. pos.		+3.07		+19.8
1854.0	$\alpha =$	0h 32m 54s.35	$\delta =$	+0° 19' 54".6
		54s.52 (10)		
	t_{75}	55.35	s_{75}	20". 00.
	t_{76}	54.45	s_{76}	20".00.
	$\alpha - t_{75}$	−1.78	$\delta - s_{75}$	−5.4
	$\alpha - t_{76}$	+1.12	$\delta - s_{76}$	−5.4
				0.0
				0.0
				−5.4
				−5.4

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1852phae.proj...2458

Zones 75 & 76

Reduction of Zone 75

1854 Oct. 19th. Sid. Time 22.09 Ext. Th. 85.5
0.10 32.7

$k' = 0^s.000$ $d' = -0''.17$

$t_0 = 22^h 30^m$ s		wt		wt
~~55~~	$-0.60 = x + 0.41x'$	1	$-2.3 = y + 0.41y'$	1
23.10	$-0.72 = 0.66$	3	$-2.0 = 0.66$	2
23.19	$-0.72 = 0.82$	3	$-2.1 = 0.82$	3
22	$-0.89 = 0.86$	1	$+1.2 = 0.86$	1
22	$-0.64 = 0.87$	3	$-2.6 = 0.87$	1
24	$-0.75 = 0.90$	2	$-2.3 = 0.90$	2
27	$-0.28 = 0.95$	1	$-9.2 = 0.95$	1
? 40	$-1.10 = 1.16$	2	$-4.8 = 1.16$	2
210	$-1.26 = 1.17$	2	$-0.6 = 1.17$	1
219	$-0.75 = 1.32$	1	$-3.8 = 1.32$	1
0.02	$-0.57 = 1.53$	3	$-4.5 = 1.53$	1
13	$-0.67 = 1.71$	3	$+0.6 = 1.71$	1
13	$-0.88 = 1.72$	1	$-2.7 = 1.72$	1
31	$-0.97 = 2.02$	1	$-1.9 = 2.02$	1
33	$-0.78 = 2.05$	1	$-5.4 = 2.05$	1
33	$-1.19 = 2.06$	1	$-2.4 = 2.06$	1
~~35~~	$-0.70 = x + 2.09x'$	1	$-6.6 = y + 2.09y'$	1
~~44~~	-1.05 2.23	3	-6.8 2.23	3

	$-0.71 = x + 0.75x'$	$-2.2 = y + 0.74y'$
	0.86 1.21	4.1 1.14
Nor. Eq.	0.86 2.00	4.5 2.04

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1852phae.proj.12493

43

Reduction of Zone 76

1854 Oct. 21st Sid. Time 22.05 Eq. Sh. 89.1
0.12 86.4

$h' = 0^s.000$ $d' = -0''.15$

$t_0 = 22^h\ 80^m$ s

		wt		wt
44.4	+0.26 0.24	3	+ 3.2 0.24	3
40	+0.10 = x + 0.17 x'	1	+ 1.4 = y + 0.17 y'	1
55	+0.30 = 0.41	1	−3.5 = 0.41	1
23h 10	+0.28 = 0.66	3	−4.1 = 0.66	2
19	+0.18 = 0.82	3	−4.3 = 0.82	3
22	+0.16 = 0.86	1	+2.1 = 0.86	1
22	+0.52 = 0.87	3	−3.7 = 0.87	1
24	+0.20 = 0.89	2	−2.4 = 0.96	2
27	+1.02 = 0.95	1	−8.3 = 0.95	1
2 40	+0.10 = 1.16	2	−7.9 = 1.16	2
40	−0.19 = 1.17	2	−3.6 = 1.17	1
49	+0.35 = 1.32	1	−5.9 = 1.32	1
0h 02	+0.33 = 1.53	3	−3.6 = 1.53	1
13	+0.38 = 1.71	3	+0.6 = 1.71	1
13	−0.13 = 1.72	1	−3.7 = 1.72	1
31	+0.08 = 2.02	1	+0.9 = 2.02	1
33	+0.12 = 2.05	3	−5.4 = 2.05	1
33	−0.19 = 2.06	1	−6.4 = 2.06	1
35	+0.25 = x + 2.09 x'	1	−2.8 = y + 2.09 y'	1
44	−0.05 2.23	3	−5.2 2.23	3

+0.21 = x + 0.54 x'	−0.9 = y + 0.55 y'
0.28 1.14	5.1 1.19
0.11 1.99	4.1 2.06

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1852phae.proj.2415

Jones 77D78

$0^{\circ}.30'$ to $0^{\circ}.40'$ — $22^{h}.17^{m}$ to $23^{h}.30^{m}$

(1059) -5 -1853.0 $\alpha = 22^{h}.17^{m}.46^{s}.27$ (12) $\delta = +0^{\circ}.37'.54''.7$ (11)

Am. pr. & p.	+3.07		+18.1
1854.0	$\alpha = 22^{h}.17^{m}.49^{s}.34$ / 17m49.27	$\delta =$	+0°.38'.16".6
t_{77}	49.60	s_{77}	38.15.
t_{78}	49.70	s_{78}	38.16.
$\alpha - t_{77}$	-.33	$\delta - s_{77}$	+1.8
$\alpha - t_{78}$	-.43	$\delta - s_{78}$	+0.8
			-1.2
			-1.3
			+3.0
			+2.1

1074 -9 -1853.0 $\alpha = 22^{h}.40^{m}.35^{s}.93$ (1) $\delta = +0^{\circ}.33'.52''.9$ (1)

Am. pr.	+ 3.07		+18.9
1854.0	$\alpha = 22^{h}.40^{m}.39^{s}.00$	$\delta =$	+0°.34'.11".8
t_{77}	39.00	s_{77}	34.10.
t_{78}	39.15	s_{78}	34.11.
$\alpha - t_{77}$	.00	$\delta - s_{77}$	+1.8
$\alpha - t_{78}$	-.15	$\delta - s_{78}$	+0.8
			-0.6
			-0.7
			+2.4
			+1.5

1070 -9 -1853.0 $\alpha = 22^{h}.37^{m}.52^{s}.44$ (1) $\delta = +0^{\circ}.34'.19".5$ (1)

Am. pr.	+3.07		+18.8
1854.0	$\alpha = 22^{h}.37^{m}.55^{s}.51$	$\delta =$	+0°.34'.38".3
t_{77}	55.57	s_{77}	34.37.
s_{78}	55.75	s_{78}	34.36.
$\alpha - t_{77}$	-0.04	$\delta - s_{77}$	+1.3
$\alpha - t_{78}$	-.24	$\delta - s_{78}$	+2.3
			-0.7
			-0.7
			+2.0
			+3.0

1079 -9.2 -1853.0 $\alpha = 22^{h}.48^{m}.20^{s}.67$ (4) $\delta_2 = +0^{\circ}.33'.52".4$ (4)

Am. pr.	+3.07		+19.1
1854.0	$\alpha = 22^{h}.48^{m}.23^{s}.94$	$\delta =$	+0°.34'.11".5
t_{77}	24.75	s_{77}	34.08.
t_{78}	24.65	s_{78}	34.09.
$\alpha - t_{77}$	-.81	$\delta - s_{77}$	+3.5
$\alpha - t_{78}$	-.71	$\delta - s_{78}$	+2.5
			-0.6
			-0.7
			+4.7
			+3.2

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Zones 77 & 78

1084- -1853.0 $\alpha = 22^h 54^m 21^s.30$ (1) $\delta = +0^\circ 35' 11''.5$ (1)

Obs. pr. +3.07 +19.2

1854.0 $\alpha = 22^h 54^m 24^s.37$ $\delta = +0^\circ 35' 30''.7$

t_{77}	24.95	s_{77}	35'30".
t_{78}	25.15	s_{78}	35'31".
$\alpha - t_{77}$	-.54	$\delta - s_{77}$	+0.7
$\alpha - t_{78}$	-.78	$\delta - s_{78}$	-0.3
			-0.8
			-0.9
			+1.5
			+1.2

1089- -1853.0 $\alpha = 23^h 03^m 30^s.01$ (2) $\delta = +0^\circ 31' 08''.2$ (2)

Obs. pr. +3.07 +19.5

1854 $\alpha = 23^h 03^m 33^s.08$ $\delta = +0^\circ 31' 27''.7$

t_{77}	35.05	s_{77}	31'22".
t_{78}	35.25	s_{78}	31'22".
$\alpha - t_{77}$	-1.97	$\delta - s_{77}$	+5.7
$\alpha - t_{78}$	-2.	$\delta - s_{78}$	+5.7
			-0.2
			-0.2
			+5.9
			+5.9

(1086)- Z-8 -1853.0 $\alpha = 22^h 57^m 46^s.61$ (4) $\delta = +0^\circ 30' 54''.8$ (4)

Obs. pr. +3.07 +19.3

1854.0 $\alpha = 22^h 57^m$ ~~49.68~~ 49.52 (10) $\delta = +0^\circ 31' 14''.1$

t_{77}	49.85	s_{77}	31'14".
t_{78}	49.95	s_{78}	31'16".
$\alpha - t_{77}$	-.33	$\delta - s_{77}$	+0.1
$\alpha - t_{78}$	-.43	$\delta - s_{78}$	-1.9
			-0.2
			-0.2
			+0.3
			-1.7

(1091)- Z-8 -1853.0 $\alpha = 23^h 08^m 07^s.28$ (5) $\delta = +0^\circ 30' 30''.2$ (5)

Obs. pr. m. +3.08 +19.4

1854.0 $\alpha = 23^h 08^m$ ~~11.36~~ 10.42 (5) $\delta = +0^\circ 30' 49''.6$

t_{77}	10.90	s_{77}	30'54".
t_{78}	11.00	s_{78}	30'52".
$\alpha - t_{77}$	-.48	$\delta - s_{77}$	-4.4
$\alpha - t_{78}$	-.58	$\delta - s_{78}$	-2.4
			-0.1
			-0.1
			-4.3
			-2.3

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Zones 77878

(1104) -7- 1853.0 α = 23h 27m 57.84 (6) δ = +0° 30′ 04.″2 (6)

ann. pr. & n.	+3.07		+19.8
1854.0	α = 23h 28m ~~00.94~~ 00.92 (10)	δ =	+0° 30′ 22.″0
ζ_{77}	01.25	S_{77}	30.″25
ζ_{74}	01.50	S_{74}	30.″25
$\alpha - \zeta_{77}$	−.33	$\delta - S_{77}$	−1.0
$\alpha - \zeta_{74}$	−.58	$\delta - S_{74}$	−1.0
			−0.1
			−0.1
			−0.9
			−0.9

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Zones 77 & 78

Reduction of Zone 77

1854 Nov. 14th Sid. Time 22ᵘ.28 8×L: Tr. 39.2
23.40 36.5

$h' = 0^s.000$ $d' = -0''.15$

$t_0 = 22^h.10^m$	s		wt	"		wt
21	−0.01	0.18	3	+3.8	0.18	3
18	−0.33 = x +	0.13 x′	3	+3.0 = y +	0.13 y′	3
38	−0.04 =	0.47	1	+2.0 =	0.47	1
41	0.00 =	0.51	1	+2.4 =	0.51	1
48	−0.81 =	0.64	3	+4.1 =	0.64	3
54	−0.84 =	0.74	1	~~+1.5~~ =	0.74	1
56	−0.33 =	0.80	3	+0.3 =	0.80	3
2 23.04	−1.98 =	0.89	2	+5.9 =	0.89	2
06	−0.48 =	0.97	3	−4.3 =	0.97	3
28	−0.33 = x +	1.30 x′	3	−0.9 = y +	1.30 y′	3
29	−0.47	1.31	3	−1.0	1.31	3

−0.14 =	x +	0.24 x′	+3.1 = y +	0.24 y′
0.57		0.74	+2.9	+0.74
0.43		1.19	−2.1	+1.19

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1852phae.proj.2455

Reduction of Zone 78

1854 Nov. 23 Sid. Time 23ʰ.15 Eq. Th. 36.9
−0ʰ.40 34.3

$k' = 0^s.000$ $d' = -0''.16$

$t_0 = 22^h..10^m$	s		wt			wt.
21	−0.16	0.18	3	+3.8	0.18	3
16	−0.43 = x + 0.13x′		3	+2.1 = y + 0.13y′		3
36	−0.24 =	0.47	1	+3.0 =	0.47	1
41	−0.15 =	0.51	1	+1.5 =	0.51	1
46	−0.71 =	0.64	3	+3.2 =	0.64	3
54	−0.76 =	0.74	1	+1.2 =	0.74	1
56	−0.43 =	0.80	3	−1.7 =	0.80	3
? 23..04	−2.19 =	0.89	2	+5.9 =	0.89	2
08	−0.56 =	0.97	3	−2.3 =	0.97	3
28	−0.56 = x + 1.30x′		3	−0.9 = y + 1.30y′		3
29	−0.69	1.31	3	−0.3		3

M. Eq.				
	−0.27 = x + 0.24x′		+2.8 = y + 0.24y′	
	0.50	0.76	+1.9	.76
	0.61	1.19	−1.2	1.19

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1852phae.proj..245

Zones 1980

0°.80′ to 0°.40′ 23h.27m to 0h.22m

(1104) −7 − 1853.0 α = 23h.27m.57s.84 (6) δ = +0°.30′.04″.2 (6)

Chn. prop. +3.07 +19.8

1854.0 α = 23h.28m. ~~00s.91~~ 00s.82 (80) δ = +0°.30′.24″.0

t_{79}		s_{79}	
t_{80}	00s.80	s_{80}	20″.2
$\alpha - t_{79}$		$\delta - s_{79}$	
$\alpha - t_{80}$	+.12	$\delta - s_{80}$	00″.0

−0.1

−0.1

+0.1

(3) −7 − 1853.0 α = 0h.06m.16s.09 (4) δ = +0°.33′.59″.9 (4)

Chn. pr. +3.07 +20.0

1854.0 α = 0h.06m.19s.16 δ = +0°.34′.19″.9

t_{79}	19s.75	s_{79}	34″.22.
t_{80}	19s.25	s_{80}	34″.21.
$\alpha - t_{79}$	−.59	$\delta - s_{79}$	−2.1
$\alpha - t_{80}$	−.09	$\delta - s_{80}$	−1.1
			−0.7
			−0.8
			−1.4
			−0.3

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Zones 79 & 80

Reduction of Zone 79

1854 Nov. 14 th Sidereal Time 23.40 Extl. Th. 3.5
0.30 3.6
$k' = 0.^s000$ $d' = -0''.16$

$t_0 = 23^h.20^m$ s		wt		wt
0.06	$-0.59 = x + 0.77\,x'$	8	$-1.4 = y + 0.77\,y'$	8
0 21	-0.63 1.02	3	-4.0 1.02	3

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1852phae.proj.52415

5.3

Reduction of Zone 80

1854 Nov. 28th Sid. Time 22h 21m

~~23h 21m~~ 23h 21m

Ext. Th. 34.0°

Ext. Th. 33.0

$h' = 0^s.000$ $d' = -0''.18$

$t_0 = 23^h 20^m$	Δ		wt	"		wt
29	+0.12	− +0.13 ,	3	−0.1	+0.13	3
28	+0.12 = x + 0.13 x'		3	+0.1 = y + 0.13 y'		3
0.06	−0.09 = x + 0.77 x'		3	−0.3 = y + 0.77 y'		3
21	−0.18	1.02	3	−5.2	1.02	3

Normal Equations

+0.12	= x + 0.13 x'	~~0.11~~	= y + 0.13 y'
+ 0.01	.45	−0.1	.45
− 0.16	.96	−4.0	.96

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1852phae.proj.1245

Zones 81 & 82

$0^h.30^m$ to $0^h.40^m$ $\quad$ $0^h.19^m$ to $2^h.24^m$

26-8-9-1853.0 $\alpha = 0^h.49^m.41^s.73 (2)$ $\delta = +0°.34'.03''.3 (2)$ (31)-6-1853.0 $\alpha = 0^h.56^m.15^s.32 (16)$ $\delta = +0°.34'.39''.6 (15)$

Stn. pr.		+3.07		+19.6	Stn. pr.	+3.08	+19.6
1854.0	$\alpha = 0^h.49^m.46^s.80$		$\delta = +0°.34'.22''.9$		1854.0	$\alpha = 0^h.56^m.$ ~~15.40~~ 16.40 (10)	$\delta = +0°.34'.59''.0$
t_{81}	42.60	s_{81}	34.28.		t_{81}	14.20	s_{81} 35.06.
t_{82}	45.30	s_{82}	34.14.		t_{82}	19.00	s_{82} 34.56.
$\alpha - t_{81}$	+.20	$\delta - s_{81}$	−5.1		$\alpha - t_{81}$	+.20	$\delta - s_{81}$ −7.0
$\alpha - t_{82}$	−.60	$\delta - s_{82}$	+4.9		$\alpha - t_{82}$	−.60	$\delta - s_{82}$ +5.0
			−0.9				−1.0
			−1.0				−1.1
			−4.2				−6.0
			+5.9				+6.1

20.9 1853.0 $\quad$ 0 35 25.33 $\quad$ 0 29 11.0

3.07 $\quad$ 19.8

0 35 28.40 $\quad$ 0 29 30.8

+0.40 $\quad$ −4.2

−0.30 $\quad$ +2.8

+0.1

+0.1

~~−4.3~~

+2.7

30-9-1853.0 $\alpha = 0^h.56^m.14^s.24 (1)$ $\delta = +0°.34'.38''.7 (1)$ 33-9-1853.0 $\alpha = 0^h.59^m.39^s.85 (1)$ $\delta = +0°.34'.06''.4 (1)$

Stn. pr.		+3.07		+19.5	Stn. pr.	+3.07	+19.4
1854.0	$\alpha = 0^h.56^m.17^s.31$		$\delta = +0°.34'.58''.2$		1854.0	$\alpha = 0^h.59^m.$ ~~42.92~~ 43.05 (10)	$\delta = +0°.34'.25''.8$
t_{81}	17.15	s_{81}	35.02.		t_{81}	42.90	s_{81} 34.28.
t_{82}	17.90	s_{82}			t_{82}	43.80	s_{82} 34.18.
$\alpha - t_{81}$	+.16	$\delta - s_{81}$	−8.8		$\alpha - t_{81}$	+.15	$\delta - s_{81}$ −2.2
$\alpha - t_{82}$	−.59	$\delta - s_{82}$			$\alpha - t_{82}$	−.75	$\delta - s_{82}$ +7.8
			−1.0				−0.9
			−2.8				−1.0
							−1.3
							+8.8

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Zones 81 & 82

43-9-1853.0 $\alpha = 1^h 22^m 58^s.58$ (1) $\delta = +0^\circ 35' 58''.2$ (1)
Am. pr. +3.08 +18.8
1854.0 $\alpha = 1^h 23^m 01^s.66$ $\delta = +0^\circ 36' 17''.0$

t_{81}	01.75	s_{81}	36.23.
t_{82}	02.50	s_{82}	36.09.
$\alpha - t_{81}$	−.09	$\delta - s_{81}$	−6.0
$\alpha - t_{82}$	−.84	$\delta - s_{82}$	+8.0
			−1.3
			−1.4
			−4.7
			+9.4

52-9-1853.0 $\alpha = 1^h 45^m 04^s.72$ (1) $\delta = +0^\circ 31' 52''.6$ (1)
Am. pr. +3.08 +18.0
1854.0 $\alpha = 1^h 45^m 07^s.80$ $\delta = +0^\circ 32' 12''.6$

t_{81}	07.85	s_{81}	32.12.
t_{82}	08.60	s_{82}	32.00.
$\alpha - t_{81}$	−.05	$\delta - s_{81}$	+0.6
$\alpha - t_{82}$	−.80	$\delta - s_{82}$	+12.0
			−0.4
			−0.5
			+1.0
			+12.5

* 50-8-1853.0 $\alpha = 1^h 41^m 27^s.44$ (1) $\delta = +0^\circ 36' 56''.6$ (1)
Am. pr. +3.08 +18.1
1854.0 $\alpha = 1^h 41^m$ ~~30.52~~ 30.09(10) $\delta = +0^\circ 37' 14''.7$

t_{81}	30.05	s_{81}	36.18.
t_{82}	30.95	s_{82}	36.06.
$\alpha - t_{81}$	+.04	$\delta - s_{81}$	−3.3
$\alpha - t_{82}$	−.86	$\delta - s_{82}$	+8.7
			−1.3
			−1.4
			−2.0
			+10.1

55-8-9-1853.0 $\alpha = 1^h 54^m 05^s.56$ (1) $\delta = +0^\circ 37' 51''.7$ (1)
Am. pr. +3.08 +17.6
1854.0 $\alpha = 1^h 54^m$ ~~05.64~~ 08.67(10) $\delta = +0^\circ 38' 09''.3$

t_{81}	08.40	s_{81}	38.16.
t_{82}	09.60	s_{82}	38.04.
$\alpha - t_{81}$	−.13	$\delta - s_{81}$	−6.7
$\alpha - t_{82}$	−1.93	$\delta - s_{82}$	+5.3
			−1.7
			−1.9
			−5.0
			+7.2

Declination one minute out.

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1852phae.proj..245

Lonely 81 Vir 82

5-6 9 -1853.0 $\alpha = 1^h 55^m 33^s.93$ (1) $\delta = +0° 39' 14''.7$ (1)

ctn. pr. +3.08 +17.6

1854.0 $\alpha = 1^h 55^m 37^s.01$ $\delta = +0° 39' 32''.3$

t_{81}	37.00	s_{81}	39.41
t_{82}	37.90	s_{82}	39.28
$\alpha - t_{81}$	+.01	$\delta - s_{81}$	−6.7
$\alpha - t_{82}$	−.89	$\delta - s_{82}$	+4.3
			−1.9
			−2.2
			−6.8
			+6.5

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1852phae.proj.:2458

Zones 81 to 82

Reduction of Zone 81

1854 Nov. 28th Sid. Time 0ʰ 5ᵐ 0ˢ 31° 0′
2ʰ 55ᵐ 28° 0′

$k' = 0^s.000$ $d' = -0''.20$

$t_0 = 0^h\ 10^m$	s		wt			wt.
~~35~~	0.40	$x + 0.42 x'$	1	−4.3	0.42	1
50	$+0.20 = x$	$+0.66 x'$	2	$-4.2 = y$	$+0.66 y'$	2
56	+0.16 =	0.77	1	−2.8 =	0.77	1
56	+0.20 =	0.77	3	−6.0 =	0.77	3
1ʰ 00	+0.15 =	0.83	3	−1.3 =	0.83	1
23	−0.09 =	1.22	1	−4.7 =	1.22	1
42	+0.04 =	1.52	3	−2.0 =	1.52	1
45	−0.05 =	1.58	1	+1.0 =	1.58	1
54	−0.13 =	1.73	3	−6.0 =	1.73	1
56	$+0.01 = x$	$+1.76 x'$	1	$-6.8 = y$	$+1.76 y'$	1
2ʰ 24	−0.36	2.24	3	−5.4	2.24	3

Nov.				
	$+0.19 = x$	$+0.73 x'$	$-4.9 = y$	$+0.73 y'$
	+0.05	1.23	4.7	1.29
	−0.22	1.95	5.6	1.95

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1852phae.proj.2465

Reduction of Zone 8 R

1854 Dec. 1st Sid Time 0.41 Gr. Tk. 23.5
2.46 23.0

$k' = 0.^s000$ $d' = -0''.23$

$t_0 = 0^h.10^m$

	s		wt			wt
	−0.30	0.42	1	+ 2.7	0.42	1
50	−0.50 = x +	0.66 x′	2	+ 5.9 = z +	0.66 z′	2
56	−0.54 =	0.77	1			
56	−0.60 =	0.77	3	+ 6.1 =	0.77	3
1.00	−0.75 =	0.83	3	+ 8.8 =	0.83	1
23	−0.64 =	1.22	1	+ 9.4 =	1.22	1
42	−0.86 =	1.52	3	+ 10.1 =	1.52	1
45	−0.60 =	1.58	1	+ 12.5 =	1.58	1
54	−0.93 =	1.73	3	+ 7.2 =	1.73	1
56	−0.89 = x +	1.76 x′	1	+ 6.5 = z +	1.76 z′	1
2.24	−1.04	2.64	3	+ 2.3	2.24	3
	s					
	−0.56 = x +	0.73 x′		+ 6.″0 = y +	0.73 y′	
	−0.81	1.23		10.2	1.29	
	−0.97	1.95		4.1	2.04	

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1852phae.proj.2455

6

Zones 680 84 m
0°.20' to 8°.36' 0h.42m to 2h.69

32-g-1853.0 $\alpha = 0^h.58^m.56^s.11$ (1) $\delta = +0°.24'.47''.9$ (1)
Am. pr. +3.07 +19.4
1854.0 $\alpha = 0^h.58^m.59^s.18$ $\delta = +0°.25'.07''.3$
t_{63} s_{63}
t_{64} s_{64}

not observed

*40-g-1853.0 $\alpha = 1^h.10^m.09^s.73$ (1) $\delta = +0°.22'.33''.4$ (1)
Am. pr. +3.07 +19.1
1854.0 $\alpha = 1^h.10^m.12^s.80$ $\delta = +0°.22'.52''.5$
t_{63} 13.35 s_{63} 23.02
t_{64} 12.85 s_{64} 22.68
$\alpha - t_{63}$ −.65 $\delta - s_{63}$ −9.5
$\alpha - t_{64}$ −.05 $\delta - s_{64}$ −5.5

* Lalandes δ is 11".6 less

36-g-1853.0 $\alpha = 1^h.07^m.31^s.44$ (1) $\delta = +0°.28'.20''.3$ (1)
Am. pr. +3.07 +19.2
1854.0 $\alpha = 1^h.07^m.34^s.51$ $\delta = +0°.28'.39''.5$
t_{63} 34.80 s_{63} 27.50
t_{64} 34.20 s_{64} 27.47
$\alpha - t_{63}$ −.29 $\delta - s_{63}$ −10.5
$\alpha - t_{64}$ +.31 $\delta - s_{64}$ −7.5

48-g-1853.0 $\alpha = 1^h.34^m.17^s.35$ (1) $\delta = +0°.21'.01''.3$ (1)
Am. pr. +3.07 +18.4
1854.0 $\alpha = 1^h.34^m.20^s.42$ $\delta = +0°.21'.19''.7$
t_{63} 20.70 s_{63} 21.26
t_{64} 20.16 s_{64} 21.22
$\alpha - t_{63}$ −.28 $\delta - s_{63}$ −8.3
$\alpha - t_{64}$ +.27 $\delta - s_{64}$ −4.3

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1852phae.proj..2455

Lowell 8384

(76) * 8 − 1853.0 $\alpha = 2^h 23^m 57^s.19$ (4) $\delta = +0°26'29''.8$ (4)
Atm. pr. +3.08 +16.2
1854.0 $\alpha = 2^h 24^m$ ~~00.27~~ 00.01 (10) $\delta = +0°26'26''.0$

t_{83}	24m 00.55	s_{83}	26" 37.
t_{84}	23m 59.95	s_{84}	26" 51.
$\alpha - t_{83}$	−.54	$\delta - s_{83}$	−11.0
$\alpha - t_{84}$	+.06	$\delta - s_{84}$	− 5.0

80 − 9 − 1853.0 $\alpha = 2^h 27^m 37^s.90$ (1) $\delta = +0°29'29''.6$ (1)
Atm. pr. +3.06 +16.0
1854.0 $\alpha = 2^h 27^m 40.98$ $\delta = +0°29'45.6$

t_{83}	41.10	s_{83}	30" 07.
t_{84}	41.25	s_{84}	29" 56.
$\alpha - t_{83}$	−	$\delta - s_{83}$	
$\alpha - t_{84}$		$\delta - s_{84}$	

756.

3	23 56.73 (1)	0	26 19.5 (1)
	3.08		16.2
2	23 59.81	0	26 35.7
	−0.19		− 11.3
	+0.31		− 5.3

* one obs. 10" less in δ — not included in "Mean."

77 − 8 − 1853.0 $\alpha = 2^h 25^m 09.53$ (1) $\delta = +0°22'57.6$ (1)
Atm. pr. +3.08 +16.2
1854.0 $\alpha = 2^h 25^m 12.61$ $\delta = +0°23'13.8$

t_{83}	12.55	s_{83}	23" 24.
t_{84}	12.50	s_{84}	23" 20
$\alpha - t_{83}$	−.34	$\delta - s_{83}$	− 10.2
$\alpha - t_{84}$	+.11	$\delta - s_{84}$	−6.2

81 − 7.7 − 1853.0 $\alpha = 2^h 27^m 56.97$ (4) $\delta = +0°26'28.1$ (4)
Atm. pr. +3.08 +16.0
1854.0 $\alpha = 2^h 28^m 00.05$ $\delta = +0°26'44.1$

t_{83}		s_{83}	
t_{84}		s_{84}	

not observed.

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Zones 83 D 84

83 – 8 – 1853.0 α = 2h 39m 53.78 (1) δ = +0° 26′ 19.″9 (1)

obs. pr. + 3.08 + 15.4

165410 α = 2h 39m ~~56.66~~ 57.04 (10) δ = +0° 26′ 35.″3

t_{83}	57.40	s_{83}	26.″50.
t_{84}	57.40	s_{84}	26.″46.
$\alpha - t_{83}$	−.76	$\delta - s_{83}$	−14.″7
$\alpha - t_{84}$	−.36	$\delta - s_{84}$	−10.″7

85 – 8 – 1853.0 α = 2h 42m 47.30 (1) δ = +0° 21′ 17.″1 (1)

obs. pr. + 3.08 + 15.2

165410 α = 2h 42m 50.38 δ = +0° 21′ 32.″3

t_{83}	—	s_{83}	—
t_{84}	50.80	s_{84}	21.″39.
$\alpha - t_{83}$	—	$\delta - s_{83}$	—
$\alpha - t_{84}$	−.42	$\delta - s_{84}$	−6.″7

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(—0— 30

Zones 83 to 84

Reduction of Zone 83 to 84

1852 Dec. 8d 4h Sid. Time [illegible] Zone 8 3 Sid. Tm. 18h 2m

b = 0 42					
1 0 44	+ 0.26	.03	— 2.6 3.4	.03	3
1 8	− 0.29	.43	— 10.5	.43	1
10	− 0.60	.47	9.5	.47	1
24	− 0.28	.87	2.3	.87	1
2 24	− 0.19	1.30	— 11.3	1.36	1
24	− 0.54	1.70	11.0	1.70	4
25	− 0.24	1.72	10.2	1.72	1
50	− 0.76	1.97	14.7	1.97	1
44	− 0.96	2.03	14.3 14.0	2.08	3

	− 0.01 = x + 0.20 x′	− 6.9 = x + 0.20 x′	
	− 0.47	1.53	10.5 1.53
	− 0.29	1.96	14.2 1.96

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Reduction of Zone 84

0.42		
a 44	+0.67	0.03
1 8	+0.31	0.43
1 10	−0.05	0.47
1 34	+0.27	0.87
2 27	+0.31	1.30
2 29	+0.06	1.32
2 29	+0.11	1.37
2 40	−0.36	1.97
2 43	−0.42	2.02
2 44	−0.42	2.07

−4.8 3.5	0.03	3
−7.5	+0.43	1
5.5	.47	1
4.33	.90	1
5.0	1.32	4
6.2	.77	1
10.7	.97	1
6.7	2.02	1
−7.8 6.6	2.07	3

$+0.45 = x + 0.20\,x'$

+0.15	1.45
−0.41	2.04

$-5.5 = x + 0.20\,x'$

5.1	1.45
8.2	2.04

Jan. 23 1855

Zone 84-d

3..43..15

3..47..00 follows

Break, Break

Refitted the pen

4..8..30

4..9..00

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Zones 85 & 86

$0^\circ.80$ to $0^\circ.40$ — $2^h.23^m$ to $4^h.30^m$

* See page 70

79-8-1853.0 $\alpha = 2^h.27^m.19^s.83(1)$ $\delta = +0^\circ.35'.53''.5(1)$

Pr. +6.16 +32.1

1855.0 $\alpha = 2^h.27^m.~~25^s.99~~$ $\delta = +0^\circ.36'.25''.6$

25.58(10)

t_{85}	25.40	s_{85}	36.28.
t_{86}	24.95	s_{86}	36.23.
$\alpha - t_{85}$	+.18	$\delta - s_{85}$	−22.4
$\alpha - t_{86}$	+.63	$\delta - s_{86}$	+ 2.6
			−1.4
			−1.7
			−21.0
			+ 4.3

+3.079 +16.06
2 2
+6.158 +32.12

91-8-1853.0 $\alpha = 2^h.53^m.51^s.45(1)$ $\delta = +0^\circ.34'.16''.4(1)$

Pr. +6.16 +29.1

1855.0 $\alpha = 2^h.53^m.57^s.61$ $\delta = +0^\circ.34'.45''.5$

t_{85}	57.75	s_{85}	35.13.
t_{86}	57.20	s_{86}	34.50
$\alpha - t_{85}$	−.14	$\delta - s_{85}$	−27.5
$\alpha - t_{86}$	+.41	$\delta - s_{86}$	−4.5
			−1.1
			−1.3
			−26.4
			−3.2

+3.078 +14.56
2 2
+6.156 +29.12

88-9-10-1853.0 $\alpha = 2^h.51^m.42.66(1)$ $\delta = +0^\circ.39'.16''.3(1)$

Pr. +6.16 +29.4

1855.0 $\alpha = 2^h.51^m.48.82$ $\delta = +0^\circ.39'.45''.7$

t_{85}	48.70	s_{85}	40.12.
t_{86}	48.25	s_{86}	39.50.
$\alpha - t_{85}$	+.12	$\delta - s_{85}$	−26.3
$\alpha - t_{86}$	+.57	$\delta - s_{86}$	− 4.3
			−2.1
			−2.6
			−24.2
			−1.7

+3.081 +14.68
2 2
+6.162 +29.36

95-8-9-1853.0 $\alpha = 2^h.58^m.23.06(1)$ $\delta = +0^\circ.38'.00''.8(1)$

Pr. +6.16 +28.6

1855.0 $\alpha = 2^h.58^m.29.22$ $\delta = +0^\circ.38'.29''.4$

t_{85}	29.20	s_{85}	38.58.
t_{86}	28.80	s_{86}	38.35
$\alpha - t_{85}$	+.02	$\delta - s_{85}$	−28.6
$\alpha - t_{86}$	+.42	$\delta - s_{86}$	−5.6
			−1.9
			−2.2
			−26.7
			−3.4

+3.081 +14.29
2 2
+6.162 +28.58

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Jones 85 & 86

98-8-9-1853.0 $\alpha = 3^h 01^m 24^s.12$ (1) $\delta = +0^\circ 32' 59''.7$ (1)

Pr. +6.16 +28.2

1855.0 $\alpha = 3^h 01^m 30^s.28$ $\delta = +0^\circ 33' 27''.9$

t_{85}	29.95	s_{85}	33.57
t_{86}	29.65	s_{86}	33.32
$\alpha - t_{85}$	+.33	$\delta - s_{85}$	−29.1
$\alpha - t_{86}$	+.63	$\delta - s_{86}$	− 4.1
			−0.8
			−0.9
			−28.3
			− 3.2

+3.080 +12.10
2 2
+6.16 +24.2

109-9-1853.0 $\alpha = 3^h 13^m 17^s.56$ (1) $\delta = +0^\circ 37' 57''.0$ (1)

Pr. +6.16 +26.7

1855.0 $\alpha = 3^h 13^m 23^s.72$ $\delta = +0^\circ 38' 23''.7$

t_{85}	24.00	s_{85}	38.54
t_{86}	23.75	s_{86}	34.82
$\alpha - t_{85}$	−.28	$\delta - s_{85}$	−30.3
$\alpha - t_{86}$	−.03	$\delta - s_{86}$	− 8.3
			− 1.9
			− 2.2
			−28.4
			− 6.1

+3.081 +13.33
2 2
+6.162 +26.66

106-7-8-1853.0 $\alpha = 3^h 12^m 10^s.39$ (1) $\delta = +0^\circ 39' 40''.4$ (1)

Pr. +6.16 +26.8

1855.0 $\alpha = 3^h 12^m 16^s.55$ $\delta = +0^\circ 40' 07''.2$

t_{85}	16.50	s_{85}	20.35
t_{86}	16.05	s_{86}	40.14
$\alpha - t_{85}$	+.05	$\delta - s_{85}$	−27.4
$\alpha - t_{86}$	+.50	$\delta - s_{86}$	− 6.8
			− 2.2
			− 2.7
			−25.6
			− 2.1

+3.082 +13.41
2 2
+6.164 +26.82

110-9-1853.0 $\alpha = 3^h 13^m 27^s.43$ (1) $\delta = +0^\circ 33' 05''.1$ (1)

Pr. + 6.16 +26.7

1855.0 $\alpha = 3^h 13^m 33^s.59$ $\delta = +0^\circ 33' 31''.8$

t_{85}	33.20	s_{85}	34.00
t_{86}	32.95	s_{86}	33.40
$\alpha - t_{85}$	+.39	$\delta - s_{85}$	−26.2
$\alpha - t_{86}$	+.64	$\delta - s_{86}$	− 4.2
			− 0.4
			− 1.0
			−27.4
			− 7.2

+3.080 +13.33
2 2
+6.160 +26.66

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Zones 85-86

112-9-1853.0 α = 3h 15m 12.28(1) δ = +0° 37' 57.5"(1

Pr.		+6.16	+26.4
1855.0	α =	+3h 15m 18.44	δ = +0° 38' ~~27.7~~ 23.9
t_{85}	~~15.00~~		S_{85}
t_{86}			S_{86}

Not Obsd.

+3.081 +13.21
2 2
+6.162 +26.42

128-9-1853.0 α = 3h 51m 39.23(1) δ = +0° 32' 03.8"(1)

Pr.		+6.16	+21.3
1855.0	α =	3h 51m 45.39	δ = +0° 32" 25.1
t_{85}		45.50	S_{85} 32.55.
t_{86}		45.45	S_{86} 32.35.
$\alpha - t_{85}$		-.11	$\delta - S_{85}$ -29.9
$\alpha - t_{86}$		-.06	$\delta - S_{86}$ -9.9
			-0.6
			-0.7
			-29.3
			-9.2

+3.081 +10.67
2 2
+6.162 +21.34

122-9-10-1853.0 α = 3h 43m 15.01(1) δ = +0° 33' 40.6 (1)

Pr.		+6.16	+22.6
1855.0	α =	3h 43m 21.17	δ = +0° 34' 03.2
t_{85}		21.25	S_{85} 34.34.
t_{86}		21.15	S_{86} 34.09.
$\alpha - t_{85}$		-.10	$\delta - S_{85}$ -30.8
$\alpha - t_{86}$		+.02	$\delta - S_{86}$ -5.8
			-1.0
			-1.1
			-29.8
			-4.7

+3.082 +11.28
2 2
+6.164 +22.56

137-9-1853.0 α = 4h 09m 38.16(1) δ = +0° 33' 06.7(1)

Pr.		+6.16	+20.6
1855.0	α =	4h 09m 44.32	δ = +0° 33' 27.3
t_{85}		44.65	S_{85} 33.56.
t_{86}		44.30	S_{86} 33.31.
$\alpha - t_{85}$		-.35	$\delta - S_{85}$ -26.7
$\alpha - t_{86}$		+.02	$\delta - S_{86}$ -3.7
			-0.8
			-0.9
			-27.9
			-2.8

+3.081 +10.29
2 2
+6.162 +20.58

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Zones 85 & 86

140-ℓ-1853.0 $\alpha = 4^h 13^m 38^s.97$ (1) $\delta = +0^\circ 30' 32''.2$ (1)

Pr. +6.16 +17.9

1855.0 $\alpha = 4^h 13^m 45^s.13$ $\delta = +0^\circ 30' 50''.1$

ℓ_{85}	45.10	s_{85}	81.22
ℓ_{86}	44.95	s_{86}	80.59
$\alpha - \ell_{85}$	+.03	$\delta - s_{85}$	−31.9
$\alpha - \ell_{86}$	+.18	$\delta - s_{86}$	−8.9
			−0.3
			−0.3
			−31.6
			−8.6

+3.062 +8.97
2 2
+6.164 +17.94

153-ℓ-1853.0 $\alpha = 4^h 29^m 07^s.45$ (1) $\delta = +0^\circ 35' 58''.6$ (1)

Pr. +6.17 +15.5

1855.0 $\alpha = 4^h 29^m 13^s.62$ $\delta = +0^\circ 36' 14''.1$

ℓ_{85}	13.85	s_{85}	36.48
ℓ_{86}	13.85	s_{86}	
$\alpha - \ell_{85}$	−.23	$\delta - s_{85}$	−33.9
$\alpha - \ell_{86}$	−.23	$\delta - s_{86}$	
			−1.4
			−32.5

+3.084 +7.75
2 2
+6.168 +15.50

* belongs page 68

146-ℓ-1853.0 $\alpha = 4^h 24^m 50^s.00$ (1) $\delta = +0^\circ 39' 46''.1$ (1)

Pr. +6.17 +16.2

1855.0 $\alpha = 4^h 24^m$ ~~56.17~~ 56.23 (10) $\delta = +0^\circ 40' 02''.3$

ℓ_{85}	56.40	s_{85}	40.31
ℓ_{86}	56.05	s_{86}	40.07
$\alpha - \ell_{85}$	−.17	$\delta - s_{85}$	−23.7
$\alpha - \ell_{86}$	+.18	$\delta - s_{86}$	−4.7
			−2.2
			−2.6
			−26.5
			−2.1

+3.065 +8.10
2 2
+6.170 +16.2

80-ℓ+1853.0 $\alpha = 2^h 27^m 37^s.90$ (1) $\delta = +0^\circ 29' 29''.6$ (1)

Pr. +6.15 +32.1

1855.0 $\alpha = 2^h 27^m 44^s.05$ $\delta = +0^\circ 30' 01''.7$

ℓ_{85}	43.65	s_{85}	30.28
ℓ_{86}	43.45	s_{86}	30.04
$\alpha - \ell_{85}$	+.40	$\delta - s_{85}$	−26.3
$\alpha - \ell_{86}$	+.60	$\delta - s_{86}$	−02.3
			−0.1
			0.0
			−26.2
			−2.3

+3.077 +16.04
2 2
+6.154 +32.08

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1852phae.proj..2455

Reduction of Zone 85

1855 Jan 8th Sid Time Ext Th. 29.0° 27.0?

$k' = 0.^s000$ $d' = -0''.21$

$t_0 = 2^h.20^m$

	s	wt	"	wt.
24	+0.42	.07	3	-19.2 +0.07	3
27	+0.16 = x + 0.12 x'	3	-21.0 = y + 0.12 y'	1
28	+0.40 = 0.13		-26.2 = 0.13	
52	+0.12 = 0.53	1	-24.2 = 0.53	1
54	-0.14 = 0.57	1	-26.4 = 0.57	1
56	+0.02 = 0.64	1	-26.7 = 0.64	1
3.01	+0.33 = 0.69	1	-28.3 = 0.69	1
12	+0.05 = 0.87	1	-25.6 = 0.87	1
13	-0.28 = 0.89	1	-28.4 = 0.89	1
14	+0.39 = 0.89	1	-27.4 = 0.89	1
43	-0.04 = 1.39	1	-29.8 = 1.39	1
52	-0.11 = 1.53	1	-29.3 = 1.53	1
4.10	-0.35 = 1.63	1	-27.9 = 1.63	1
14	+0.03 = 1.90	1	-31.6 = 1.90	1
25	-0.17 = 2.08	8	-26.5 = 2.08	1
29	-0.23 = x + 2.15 x'	1	-32.5 = y + 2.15 y'	1
	~~+0.40~~		~~-26.2~~	
29	-0.10 2.14	3	-29.6 2.14	3

+0.24 = x + 0.20 x'	-22.2 = y + 0.22 y'
0.00 1.09	27.9 1.09
-0.13 2.09	29.9 2.09

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1852phae.proj..2455

Reduction of Zone 56

1855 Jan. 10th Sid. Time Br. St. 17.0
16.0

$h' = 0^s.000$ $d' = -0''.26$

$t_0 = 2^h 11^m.20^s$

	s		wt	"		wt.
24	+0.49	0.07	3	+1.5	0.07	3
27	+0.63 = x + 0.12 x'		3	+4.3 = z + 0.12 z'		1
28	+0.60	0.13	1	−2.3	0.13	1
52	+0.57	0.53	1	−1.7	0.53	1
54	+0.41	0.57	1	−3.2	0.57	1
58	+0.42	0.64	1	−3.4	0.64	1
3 11.01	+0.63	0.69	1	−3.2	0.69	1
12	+0.60	0.87	1	−4.1	0.87	1
13	−0.03	0.89	1	−6.1	0.89	1
14	+0.64	0.89	1	−7.2	0.89	1
43	+0.02	1.39	1	−4.7	1.39	1
52	−0.06	1.53	1	−9.2	1.53	1
4.10	+0.02	1.83	1	−2.8	1.83	1
14	+0.18	1.90	1	−6.6	1.90	1
25	+0.18	2.06	3	−2.1 = z + 2.06 z'		1
29	−0.23 = x + 2.15 x'		1			
29	−0.10	2.14	3	−5.8	2.14	3

+0.55	= x + 0.28 x'	+0.9	= y + 0.22 y'
0.27	1.09	−5.1	1.09
0.02	2.09	−5.0	2.08

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1852phae.proj.2455

Zones 8788

0° .. 20' to 0° .. 30' 2h 42m to 4h 5m.4

85 = 8 − 1853.0 α = 2h 42m 47s.30 (1) δ = +0° .. 21' .. 17".1 (11)

Pr. +6.15 +30.4

1855.0 α = 2h 42m 53s.45 δ = +0° .. 21' .. 47".5

t_{87}	53.60	s_{87}	21 .. 47.
t_{88}	53.30	s_{88}	21 .. 47.
$\alpha - t_{87}$	−.15	$\delta - s_{87}$	+0.5
$\alpha - t_{88}$	+.15	$\delta - s_{88}$	+0.5
			−0.3
			−0.5
			+0.8
			+1.0

+3.076 / 2 = +6.152 +15.20 / 2 = +30.4

(113) 7 − 1853.0 α = 3h 16m 02s.83 (8) δ = +0° .. 22' .. 59".1 (3)

Pr. 07 p. +6.16 +25.2

1855.0 α = 3h 16m ~~02s.99~~ 02s.02 (10) δ = +0° .. 23' .. 24".3

t_{87}	09.20	s_{87}	23 .. 42.
t_{88}	09.20	s_{88}	23 .. 41.
$\alpha - t_{87}$	−.18	$\delta - s_{87}$	−17.7
$\alpha - t_{88}$	−.18	$\delta - s_{88}$	−16.7
			−0.6
			−1.0
			−17.1
			−15.7

+3.078 / 2 = +6.158 +13.15 / 2 = +26.30 −0.53 / 2 = −1.06

p = −1.06

+25.24

* in Dec. p = −0".53 — If no proper motion were applied, δ − s would be −1".8 — Is not the prop. motion too large?

90 − 8 − 1853.0 α = 2h 52m 43s.91 (1) δ = +0° .. 23' .. 14".3 (1)

Pr. +6.15 +29.2

1855.0 α = 2h 52m 50s.06 δ = +0° .. 23' .. 43".5

t_{87}	50.10	s_{87}	23 .. 41.
t_{88}	50.00	s_{88}	23 .. 41.
$\alpha - t_{87}$	−.04	$\delta - s_{87}$	+2.5
$\alpha - t_{88}$	+.06	$\delta - s_{88}$	+2.5
			−0.6
			−1.0
			+3.1
			+3.5

+3.077 / 2 = +6.154 +14.62 / 2 = +29.24

123 − 8 − 1853.0 α = 3h 43m 36s.46 (1) δ = +0° .. 29' .. 08".1 (1)

Pr. +6.15 +22.5

1855.0 α = 3h 43m ~~42s.61~~ 42s.73 (10) δ = +0° .. 29' .. 30".6

t_{87}	43.05	s_{87}	29 .. 36.
t_{88}	43.05	s_{88}	29 .. 36.
$\alpha - t_{87}$	−.32	$\delta - s_{87}$	−5.4
$\alpha - t_{88}$	−.32	$\delta - s_{88}$	−5.4
			−1.4
			−2.5
			−4.0
			−2.9

+3.077 / 2 = +6.154 +11.25 / 2 = +22.50

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Zones 87 88

127-9-1853.0 $\alpha = 3^h 51^m 21^s.34(1)$ $\delta = +0° 19' 50''.5(1)$

Ref. +6.15 +21.4

1855.0 $\alpha = 3^h 51^m 27^s.49$ $\delta = +0° 20' 11''.9$

t_{87}	28.10	s_{87}	20.12
t_{88}	28.10	s_{88}	20.11
$\alpha - t_{87}$	−.61	$\delta - s_{87}$	−0.1
$\alpha - t_{88}$	−.61	$\delta - s_{88}$	+0.9
			0.0
			0.0
			−0.1
			+0.9

+3.077 +10.69

+6.154 +21.38

(13?)6-7-1853.0 $\alpha = 4^h 04^m 36^s.05(5)$ $\delta = +0° 21' 08''.6(5)$

Ref. +6.16 +19.4

1855.0 $\alpha = 4^h 04^m$ ~~42.21~~ 42.10(10) $\delta = +0° 21' 28''.0$

t_{87}	42.00	s_{87}	21.32.
t_{88}	42.00	s_{88}	21.34.
$\alpha - t_{87}$	+.10	$\delta - s_{87}$	−6.0
$\alpha - t_{88}$	+.10	$\delta - s_{88}$	−6.0
			−0.2
			−0.4
			−5.8
			−5.6

+3.078 +9.68

+6.156 +19.36

131-8-9-1853.0 $\alpha = 4^h 01^m 08^s.64(1)$ $\delta = +0° 23' 32''.2(1)$

Ref. +6.16 +20.0

1855.0 $\alpha = 4^h 01^m$ ~~14.60~~ 14.51(10) $\delta = +0° 23' 52''.2$

t_{87}	15.10	s_{87}	23.53.
t_{88}	15.05	s_{88}	23.52.
$\alpha - t_{87}$	−.59	$\delta - s_{87}$	−0.8
$\alpha - t_{88}$	−.54	$\delta - s_{88}$	+0.2
			−0.6
			−1.0
			−0.2
			+1.2

+3.078 +10.02

+6.156 +20.04

133-9-10-1853 $\alpha = 4^h 05^m 02^s.01(1)$ $\delta = +0° 23' 12''.5(1)$

Ref. +6.16 +19.3

1855.0 $\alpha = 4^h 05^m 08^s.1$ $\delta = +0° 23' 31''.8$

t_{87}	09.10	s_{87}	23.33.
t_{88}	09.10	s_{88}	23.33
$\alpha - t_{87}$	−.93	$\delta - s_{87}$	−1.2
$\alpha - t_{88}$	−.93	$\delta - s_{88}$	−1.2
			−0.5
			−0.9
			−0.7
			−0.3

+3.078 +9.65

+6.156 +19.30

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1852phae.proj.2455

Zones 87 D 88

143 - 9 - 1853.0 $\alpha = 4^h 18^m 29^s.51$ (11) $\delta = +0°20'32''.4$ (11)

Pz, +6.16 +17.2

1855.0 $\alpha = 4^h 18^m 35^s.67$ $\delta = +0°20'49''.6$

t_{87}	36.20	s_{87}	20.55
t_{88}	36.00	s_{88}	20.55
$\alpha - t_{87}$	−.53	$\delta - s_{87}$	−5.4
$\alpha - t_{88}$	−.33	$\delta - s_{88}$	−5.4
			−0.1
			−0.2
			−5.3
			−5.2

+3.078 +8.59 (2)

+6.156 +17.18

166 - 8 - 9 - 1853.0 $\alpha = 4^h 39^m 20^s.19$ (11) $\delta = +0°21'01''.1$ (1)

Pz, +6.16 +13.9

1855.0 $\alpha = 4^h 39^m 26^s.35$ $\delta = +0°21'15''.0$

t_{87}	27.20	s_{87}	21.16
t_{88}	27.10	s_{88}	21.16
$\alpha - t_{87}$	~~.185~~	$\delta - s_{87}$	−1.0
$\alpha - t_{88}$	~~.275~~ −.175	$\delta - s_{88}$	−1.0
			−0.2
			−0.3
			−0.8
			−0.7

+3.079 +6.94 (2)

+6.158 +13.88

145 - 9 - 10 - 1853.0 $\alpha = 4^h 21^m 01^s.36$ (11) $\delta = +0°26'09''.0$ (11)

Pz, +6.16 +16.8

1855.0 $\alpha = 4^h 21^m 07^s.52$ $\delta = +0°26'25''.8$

t_{87}	08.20	s_{87}	26.25
t_{88}	08.15	s_{88}	26.25
$\alpha - t_{87}$	−.68	$\delta - s_{87}$	+0.8
$\alpha - t_{88}$	−.63	$\delta - s_{88}$	+0.8
			−1.0
			−1.7
			+1.8
			+2.5

+3.080 +8.40 (2)

+6.160 +16.8

169 - 5 - 1853.0 $\alpha = 4^h 40^m 33^s.16$ (1) $\delta = +0°24'39''.1$ (1)

Pz, +6.16 +13.7

1855.0 $\alpha = 4^h 40^m$ ~~39.32~~ 38.98 (01) $\delta = +0°24'52''.8$

t_{87}	39.50	s_{87}	24.57
t_{88}	39.55	s_{88}	24.57
$\alpha - t_{87}$	+.48	$\delta - s_{87}$	−4.2
$\alpha - t_{88}$	+.43	$\delta - s_{88}$	−4.2
			−0.7
			−1.3
			−3.5
			−2.9

+3.080 +6.83 (2)

+6.16 +13.66

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1852phae.proj..2458

Zones 87 88

171-9 -18530 $\alpha = 4^h 41^m 14^s.41$ (1) $\delta = +0^\circ 28' 48''.7$ (1)

Pg. +6.16 +13.5

1855.0 $\alpha = 4^h 41^m 20^s.57$ $\delta = +0^\circ 29' 02''.2$

87	21.00	87	29.06
88	20.95	88	29.06
α-87	-.43	δ-87	-3.8
α-88	-.38	δ-88	-3.8
			-1.4
			-2.4
			-2.4
			-1.4

$\frac{+3.082}{2}$ $\frac{+6.77}{2}$

+6.164 +13.54

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1852phae.proj..24fS

Reduction of Lone 87

1855 Jan. 29th. Sid. Time

Ext. Th. 39.0
37.0
36.1

$h' = 0.000$ $d' = -0''.15$

$t_0 = 2^h 20^m$

	s			"		
44	−0.14	+0.07	3	−0.3	+0.07	3
23	−0.15 = x	+0.05 x′	1	+0.8 = y	+0.05 y′	1
53	−0.04 =	0.21	1	+3.1 =	0.21	1
3.16	−0.16 =	0.60	3	−17.1 =	0.60	2
44	−0.82 =	1.06	3	−4.0 =	1.06	1
51	−0.61 =	1.19	1	−0.1 =	1.19	1
2.01	−0.54 =	1.35	3	−0.2 =	1.35	1
2.05	+0.10 =	1.41	3	−5.4 =	1.41	3
05	−0.93 =	1.42	1	−0.7 =	1.42	1
19	−0.53 =	1.64	1	−5.3 =	1.64	1
21	−0.66 =	1.68	1	+1.8 =	1.68	1
39	−0.65 =	1.99	1	−0.8 =	1.99	1
41	+0.48 =	2.01	3	−3.5 =	2.01	1
41	−0.23 = x	+2.02 x′	1	−2.4 = y	+2.02 y′	1
52	+0.20	2.20	3	−31	2.20	3

−0.19 = x	+0.49 x′	−0.2 = y	+0.26 y′
−0.39	1.39	−3.4	1.40
+0.04	2.03	−2.0	2.04

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1956phacr.proj...2468

Reduction of Zone 88

1855 Feb. 8^d Sid. Time $3^h.40^m$ δ & T. $18^\circ.0$
$5^h.42$ 16.0

$h' = 0.000 d' = -0''.26$

$t_0 = 2^h.40^m$

	s		wt	"		wt
44	+0.01	+0.07	3	+0.2	0.07	3
43	+0.15 = x	+0.05 x'	1	+1.0 = y	+0.05 y'	1
53	+0.06 =	0.21	1	+8.5 =	0.21	1
3.16	−0.14 =	0.60	3	−16.7 =	0.60	2
44	−0.32 =	1.06	3	−2.9 =	1.06	1
51	−0.61 =	1.19	1	+0.9 =	1.19	1
2.01	−0.54 =	1.35	3	+1.2 =	1.35	1
06	+0.10 =	1.41	3	−5.6 =	1.41	3
05	−0.93 =	1.42	1	−0.3 =	1.42	1
19	−0.33 =	1.64	1	−5.2 =	1.64	1
21	−0.68 =	1.68	1	+2.5 =	1.68	1
39	−0.75 =	1.99	1	−0.7 =	1.99	1
41	+0.43 =	2.01	3	−2.9 =	2.01	1
41	−0.38 = x	+2.02 x'	1	−1.4 = y	+ 2.02 y'	1
52	−0.06	2.20	3	−3.5	2.20	3

−0.11	= x +	0.49 x'	+0.4 = y + 0.26 y'
−0.35		1.39	−2.9 1.40
−0.05		2.03	−1.9 2.04

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1852phae.proj..245

79

Zones of 89 & 90 Hm

0°.30 to 0°.40 — 4h.28m to 6h.37m

153-9 — 1853.0 α = 4h.29m.07s.25(1) δ = 0°.35'.58".6(1)

Obs. +6.17 +15.5

1855.0 α = 4h.29m.13s.62 δ = +0°.36'.14".1

t_{89}	13.30	s_{89}	36.17.
t_{90}	13.00	s_{90}	36.19.
$\alpha - t_{89}$	+.32	$\delta - s_{89}$	−2.9
$\alpha - t_{90}$	+.62	$\delta - s_{90}$	−4.9
			−1.6
			−1.7
			−1.3
			−3.2

+3.084 / 2 = +6.168 ; +7.75 / 2 = +15.50

170-8-9 — 1853.0 α = 4h.40m.59s.65(1) δ = +0°.33'.04".1(1)

Obs. +6.17 +13.6

1855.0 α = 4h.41m.05s.82 δ = +0°.33'.17".7

t_{89}	05.30	s_{89}	33.20.
t_{90}	04.90	s_{90}	33.21.
$\alpha - t_{89}$	+.52	$\delta - s_{89}$	−2.3
$\alpha - t_{90}$	+.92	$\delta - s_{90}$	−3.3
			−0.9
			−0.9
			−1.4
			−2.4

+3.083 / 2 = +6.166 ; +6.79 / 2 = +13.58

160-9 — 1853.0 α = 4h.33m.54s.07(1) δ = +0°.32'.12".0(1)

Obs. +6.17 +14.7

1855.0 α = 4h.34m.00s.24 δ = +0°.32'.26".7

t_{89}	33.59.50	s_{89}	32.21.
t_{90}	33.59.20	s_{90}	32.22.
$\alpha - t_{89}$	+.74	$\delta - s_{89}$	+5.7
$\alpha - t_{90}$	+1.04	$\delta - s_{90}$	+4.7
			−0.6
			−0.6
			−5.1
			−4.1

+3.083 / 2 = +6.166 ; +7.37 / 2 = +14.74

172-9 — 1853.0 α = 4h.42m.59s.17(1) δ = +0°.36'.29".1(1)

Obs. +6.17 +13.2

1855.0 α = 4h.43m.05s.34 δ = +0°.36'.42".3

t_{89}	05.00	s_{89}	36.46.
t_{90}	04.55	s_{90}	36.46.
$\alpha - t_{89}$	+.34	$\delta - s_{89}$	−3.7
$\alpha - t_{90}$	+.79	$\delta - s_{90}$	−3.7
			−1.8
			−1.8
			−1.9
			−1.9

+3.084 / 2 = +6.168 ; +6.62 / 2 = +13.24

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1852phae..proj..2455

Zones 89 & 90.

181-S-9 - 1853.0 $\alpha = 4^h 50^m 33^s.58(2)$ $\delta = +0^\circ 38' 03''.6(2)$

Pr. +6.17 +12.0

1855.0 $\alpha = 4^h 50^m 39^s.75$ $\delta = +0^\circ 38' 15''.6$

t_{89}	39.30	s_{89}	36.23.
t_{90}	38.90	s_{90}	36.23.
$\alpha - t_{89}$	+.45	$\delta - s_{89}$	−7.4
$\alpha - t_{90}$	−.15	$\delta - s_{90}$	−7.4
			−2.2
			−2.3
			−5.2
			−5.1

+3.084 +5.98
2 2
+6.168 +11.96

(186)-7 - 1853.0 $\alpha = 4^h 54^m 16^s.59(4)$ $\delta = +0^\circ 30' 12''.4(4)$

Pr. Wh. +6.16 +11.2

1855.0 $\alpha = 4^h 54^m$ ~~22.75~~ 22.85(10) $\delta = +0^\circ 30' 25''.6$

t_{89}	22.50	s_{89}	30.27.
t_{90}	22.00	s_{90}	30.30.
$\alpha - t_{89}$	+.35	$\delta - s_{89}$	−1.4
$\alpha - t_{90}$	+.85	$\delta - s_{90}$	−4.4
			−0.1
			−0.1
			−1.3
			−4.3

+3.082 −.004 +5.68 −.07
2 2 2 2
+6.164 −.008 +11.36 −.14
−.008 −.14
+6.156 +11.22

185-9 - 1853.0 $\alpha = 4^h 53^m 34^s.39(2)$ $\delta = +0^\circ 34' 33''.0(2)$

Pr. +6.17 +11.5

1855.0 $\alpha = 4^h 53^m 40^s.56$ $\delta = +0^\circ 34' 44''.5$

t_{89}	40.25	s_{89}	34.45.
t_{90}	39.95	s_{90}	34.46.
$\alpha - t_{89}$	+.31	$\delta - s_{89}$	−0.5
$\alpha - t_{90}$	+.61	$\delta - s_{90}$	−1.5
			−1.2
			−1.3
			+0.7
			−0.2

+3.084 +5.73
2 2
+6.168 +11.46

192-9 - 1853.0 $\alpha = 5^h 00^m 48^s.36(2)$ $\delta = +0^\circ 34' 11''.4(2)$

Pr. +6.17 +10.3

1855.0 $\alpha = 5^h 00^m 54^s.53$ $\delta = +0^\circ 34' 21''.7$

t_{89}	54.15	s_{89}	84.23.
t_{90}	53.70	s_{90}	84.24
$\alpha - t_{89}$	+.38	$\delta - s_{89}$	−1.7
$\alpha - t_{90}$	+.83	$\delta - s_{90}$	−2.3
			−1.1
			−1.2
			−0.2
			−1.1

+3.083 +5.13
2 2
+6.166 +10.26

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Zones 89 to 90

211-9-1853.0 $\alpha = 5^h 19^m 21^s.44$ (1) $\delta = +0^\circ 30' 46''.9$ (1)

Dy. +6.17 +7.1

1855.0 $\alpha = 5^h 19^m 27^s.61$ $\delta = +0^\circ 30' 54''.0$

t_{89}	27.45	S_{89}	30.57,
t_{90}	27.00	S_{90}	30.97.
$\alpha - t_{89}$	+.16	$\delta - S_{89}$	−3.0
$\alpha - t_{90}$	+.61	$\delta - S_{90}$	−3.0
			−0.2
			−0.3
			−2.8
			−2.7

+3.083 +3.54
2 2
+6.166 +7.08

212-9-1853.0 $\alpha = 5^h 20^m 36^s.03$ (1) $\delta = +0^\circ 39' 42''.3$ (1)

Dy. +6.17 +6.9

1855.0 $\alpha = 5^h 20^m 42^s.20$ $\delta = +0^\circ 39' 49''.2$

t_{89}	42.15	S_{89}	39.50,
t_{90}	41.70	S_{90}	39.51,
$\alpha - t_{89}$	+.105	$\delta - S_{89}$	−0.8
$\alpha - t_{90}$	+.150	$\delta - S_{90}$	−1.8
			−2.6
			−2.7
			+1.8
			+0.9

+3.086 +3.43
2 2
+6.172 +6.86

212-8-9-1853.0 $\alpha = 5^h 20^m 01^s.88$ (1) $\delta = +0^\circ 34' 25''.5$ (1)

Dy. +6.17 +7.0

1855.0 $\alpha = 5^h 20^m 08^s.05$ $\delta = +0^\circ 34' 32''.5$

t_{89}	08.05	S_{89}	34.31,
t_{90}	07.55	S_{90}	34.33
$\alpha - t_{89}$	.00	$\delta - S_{89}$	+1.5
$\alpha - t_{90}$	+.50	$\delta - S_{90}$	−0.5
			−1.2
			−1.2
			+2.7
			+0.7

+3.084 +3.48
2 2
+6.168 +6.96

217-9-1853.0 $\alpha = 5^h 25^m 52^s.42$ (1) $\delta = +0^\circ 30' 51''.1$ (1)

Dy. +6.16 +5.9

1855.0 $\alpha = 5^h 25^m 58^s.58$ $\delta = +0^\circ 30' 57''.0$

t_{89}	58.55	S_{89}	30.57,
t_{90}	58.15	S_{90}	30.56.
$\alpha - t_{89}$	+.103	$\delta - S_{89}$	±0.0
$\alpha - t_{90}$	+.43	$\delta - S_{90}$	−1.0
			−0.2
			−0.3
			+0.2
			−0.7

+3.082 +2.97
2 2
+6.164 +5.94

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Zones 89 & 90

233-9 −1853.0 $\alpha = 5^h 47^m 23^s.55$ (1) $\delta = +0°32'49''.9$ (1)

Ph. +6.17 +2.2

1855.0 $\alpha = 5^h 47^m 29^s.72$ $\delta = +0°32'52''.1$

L_{89}	29.55	S_{89}	32.56,
L_{90}	29.35	S_{90}	32.57.
$\alpha - L_{89}$	−.23	$\delta - S_{89}$	−3.9
$\alpha - L_{90}$	+.37	$\delta - S_{90}$	−4.9
			−0.8
			−0.8
			−3.1
			−4.1

+3.083 +1.10

2 2

+6.166 +2.20

238-8 −1853.0 $\alpha = 5^h 57^m 49^s.02$ (1) $\delta = +0°37'10''.5$ (1)

Ph. +6.17 +0.4

1855.0 $\alpha = 5^h 57^m 55^s.19$ $\delta = +0°37''10''.9$

L_{89}	55.25	S_{89}	37.14,
L_{90}	54.40	S_{90}	37.16.
$\alpha - L_{89}$	−.06	$\delta - S_{89}$	−3.1
$\alpha - L_{90}$	+.39	$\delta - S_{90}$	−5.1
			−1.9
			−2.0
			−1.2
			−3.1

+3.085 +0.19

2 2

+6.170 +0.38

(230-6 −1853.0 $5^h 51^m 16^s.26$ (6) $\delta = +0°32'05''.9$ (6)

Ph. +6.18 +1.5

1855.0 $\alpha = 5^h 51^m$ ~~22.44~~ 22.40(10) $\delta = +0°32'07''.4$

L_{89}	22.40	S_{89}	32.13.
L_{90}	22.00	S_{90}	32.12.
$\alpha - L_{89}$	.00	$\delta - S_{89}$	−5.6
$\alpha - L_{90}$	+.40	$\delta - S_{90}$	−4.6
			−0.6
			−0.6
			−5.0
			−4.0

+3.083 +.005 +0.11 −.04

2 2 2 2

+6.166 +.01 +1.54 −.08

+.01 −.08

+6.18 +1.46

243-9 −1853.0 $\alpha = 6^h 05^m 40^s.67$ (1) $\delta = +0°37'26''.9$ (1)

Ph. +6.17 −1.0

1855.0 $\alpha = 6^h 05^m 46^s.64$ $\delta = +0°37''25''.9$

L_{89}	47.00	S_{89}	37.28.
L_{90}	46.65	S_{90}	37.29.
$\alpha - L_{89}$	−.16	$\delta - S_{89}$	−2.1
$\alpha - L_{90}$	+.19	$\delta - S_{90}$	−3.1
			−1.9
			−2.0
			−0.2
			−1.1

+3.084 −0.50

2 2

+6.168 −1.00

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Jones 89&90

246 - 9 - 1853.0 α = 6h 10m 33.39 (1) δ = +0° 32′ 18.3″ (1)

Obs. +6.17 − 1.9

1855.0 α = 6h 10m 39.56 δ = +0° 32′ 16.4

t_{69}	40.15	s_{69}	32.″17
t_{90}	39.70	s_{90}	32.″18
$\alpha - t_{69}$	−.59	$\delta - s_{69}$	−0.6
$\alpha - t_{90}$	−.14	$\delta - s_{90}$	−1.6
			−0.6
			−0.6
			0.0
			−1.0

+3.083 (2) −0.93 (2)

+6.166 −1.466

(252) − 9 − 1853.0h m s − 6h 19m 12.86 (6) δ = +0° 31′ 13.2 (6)

Obs. +6.20 − 3.5

1855.0 α = 6h 19m 19.06 δ = +0° 31′ 09.7

t_{69}	18.65	s_{69}	31.″14
t_{90}	18.25	s_{90}	31.″15
$\alpha - t_{69}$	+.21	$\delta - s_{69}$	−4.3
$\alpha - t_{90}$	+.81	$\delta - s_{90}$	−5.3
			−0.3
			−0.3
			−4.0
			−5.0

+3.083 (2) +.019 (2) −1.69 (2) −.08 (2)

+6.166 +.038 −3.38 −.16

+.038 −.16

+6.204 −3.54

(251) − 9 − 1853.0 α = 6h 19m 10.26 (3) δ = +0° 32′ 11.9 (5)

Obs. +6.17 − 3.5

1855.0 α = 6h 19m 16.43 δ = +0° 32′ 08.4

t_{69}	16.60	s_{69}	32.″13
t_{90}	16.05	s_{90}	32.″14
$\alpha - t_{69}$	−.17	$\delta - s_{69}$	−4.6
$\alpha - t_{90}$	+.38	$\delta - s_{90}$	−5.6
			−0.6
			−0.6
			−4.0
			−5.0

+3.083 (2) +.002 (2) −1.69 (2) −.05 (2)

+6.166 +.004 −3.38 −.10

+.004 −.10

+6.17 −3.48

260 − 9 − 1853.0 α = 6h 25m 10.40 (1) δ = +0° 32′ 13.0 (1)

Obs. +6.17 − 4.6

1855.0 α = 6h 25m 16.57 δ = +0° 32′ 08.6

t_{69}	17.25	s_{69}	32.″04
t_{90}	16.90	s_{90}	32.″05
$\alpha - t_{69}$	−.68	$\delta - s_{69}$	+4.6
$\alpha - t_{90}$	−.33	$\delta - s_{90}$	+3.6
			−0.5
			−0.5
			+5.1
			+4.1

+3.084 (2) −2.21 (2)

+6.168 −4.42

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Louds 89 & 90

262 - 8 - 9 - 1853.0 $\alpha = 6^h 27^m 25^s.06(1)$ $\delta = +0^\circ 36' 59''.0(1)$

Dr. +6.17 −4.8

1855.0 $\alpha = 6..27..$ ~~31.23~~ 30.87 (5) $\delta = +0..$ ~~36.59.2~~ 36..54.2

L_{89}	~~31.210~~	S_{89}	36..58.
L_{90}	~~30.95~~	S_{90}	36..57
$\alpha - L_{89}$	−.38	$\delta - S_{89}$	−1.8
$\alpha - L_{90}$	−.08	$\delta - S_{90}$	−2.8
			−1.8
			−1.9
			0.0
			−0.9

+3.085 (2) −2.40 (2)

+6.170 −4.80

264 - 9 - 1853.0 $\alpha = 6^h 25^m 07^s.24(2)$ $\delta = +0^\circ 39' 29''.3(2)$

Dr. +6.17 −5.1

1855.0 $\alpha = 6..25..13.41$ $\delta = +0..39..24.2$

L_{89}	14.00	S_{89}	39..29.
L_{90}	13.35	S_{90}	39..30
$\alpha - L_{89}$	−.59	$\delta - S_{89}$	−4.8
$\alpha - L_{90}$	+.06	$\delta - S_{90}$	−5.8
			−2.5
			−2.6
			−2.3
			−3.2

+3.086 (2) −2.55 (2)

+6.172 −5.10

263 - 8 - 9 - 1853.0 $\alpha = 6^h 27^m 57.08(1)$ $\delta = +0..37..12.7(1)$

Dr. +6.17 −4.9

1855.0 $\alpha = 6..28..03.25$ $\delta = +0..37..07.8$

L_{89}	03.55	S_{89}	37..11.
L_{90}	03.02	S_{90}	37..12
$\alpha - L_{89}$	−.30	$\delta - S_{89}$	−3.2
$\alpha - L_{90}$	+.25	$\delta - S_{90}$	−4.2
			−1.9
			−1.9
			−1.3
			−2.3

+3.085 (2) −2.45 (2)

+6.170 −4.90

265 - 8 - 1853.0 $\alpha = 6^h 30^m 17.00(1)$ $\delta = +0..38..54.1(1)$

Dr. +6.17 −5.3

1855.0 $\alpha = 6..30..$ ~~23.17~~ 23.27 (5) $\delta = +0..38..48.8$

L_{89}	23.75	S_{89}	38..56
L_{90}	23.15	S_{90}	38..56
$\alpha - L_{89}$	−.48	$\delta - S_{89}$	−7.2
$\alpha - L_{90}$	+.12	$\delta - S_{90}$	−7.2
			−2.3
			−2.4
			−4.9
			−4.8

+3.086 (2) −2.66 (2)

+6.172 −5.32

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Zones 89 & 90

269-G-1853.0 α = 6h 31m 37.18 (1) δ = +0° 31' 40.1 (1)
Obs. +6.17 −5.5
1855.0 α = 6h 31m 43.35 δ = +0° 31' 34.6

t_{89}	43.80	S_{89}	37".42
t_{90}	43.35	S_{90}	31".42
$\alpha - t_{89}$	−.45	$\delta - S_{89}$	−7.4
$\alpha - t_{90}$	.00	$\delta - S_{90}$	−7.4
			−0.4
			−0.5
			−7.0
			−6.9

+3.083 −2.75
2 2
+6.166 −5.50

Zone 89.
Jan. 29th 1855
Zone.
B.g. Ther = 39°.
~~pale blue~~ blue mark
3h 27m
blue mark
3h 29m.
blue mark Th 37°.0
4h 27
End Th = +36°.1
ξ C. 5.34.30

(273)-67-1853.0 α = 6.33.31.62 (3) δ = +0.37.40.1 (3)
Obs. +6.16 − 6.0
1855.0 α = 6.33.37.78 δ = +0.37.34.1

t_{89}	38.40	S_{89}	37".42
t_{90}	38.05	S_{90}	37".43
$\alpha - t_{89}$	−.62	$\delta - S_{89}$	−7.9
$\alpha - t_{90}$	−.27	$\delta - S_{90}$	−8.9
			− 2.0
			−2.1
			−5.9
			−6.8

+3.085 −.007 −2.92 −.07
2 2 2 2
+6.170 −.014 −5.84 −.14
−.014 −.14
+6.156 −5.98

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1852phae..proj..2458

Zones 89-90

Reduction of Zone 89

1855 Feb. 23 Sid. Time Ext. Tk. 15°.5
12.0

$k' = 0^s.000$ $d' = -0''.26$

$t_0 = 2^h\ 20^m$

	s		wt.	"		wt.
29	+0.36	0.14	3	+2.2	0.14	3
29	+0.32 = x + 0.16 x'		1	−1.3 = y + 0.15 y'		1
34	+0.74 =	0.23	1	−5.1 =	0.23	1
41	+0.52 =	0.35	1	−1.4 =	0.35	1
43	+0.34 =	0.38	1	−1.9 =	0.38	1
51	+0.45 =	0.51	2	−5.2 =	0.51	2
54	+0.31 =	0.56	2	+0.7 =	0.56	2
54	+0.35 =	0.57	3	−1.3 =	0.57	3
5h 01	+0.38 =	0.66	2	−0.2 =	0.66	2
19	+0.16 =	0.99	1	−2.8 =	0.99	1
20	0.00 =	1.00	1	+2.7 =	1.00	1
21	+0.05 =	1.01	1	+1.8 =	1.01	1
26	+0.08 =	1.10	1	+0.2 =	1.10	1
27	−0.23 =	1.26	1	−3.1 =	1.46	1
51	0.00 =	1.52	3	−5.0 =	1.52	3
56	−0.06 =	1.63	1	−1.2 =	1.63	1
6h 06	−0.16 =	1.76	1	−0.2 =	1.76	1
11	−0.59 =	1.84	1	0.0 =	1.84	1
19	−0.17 =	1.99	2	−4.0 =	1.99	3
19	+0.21 =	1.99	3	−4.0 =	1.99	3
25	−0.68 =	2.08	1	+5.1 =	2.08	1
26	−0.38 =	2.12	3	0.0 =	2.12	1
26	−0.30 =	2.13	1	−1.3 =	2.13	1
29	−0.59 =	2.15	2	−2.3 =	2.15	2
30	−0.46 =	2.17	3	−4.9 =	2.17	1
32	−0.45 =	2.20	1	−7.0 =	2.20	1
34	−0.62 = x + 2.23 x'		2	−5.9 = y + 2.23 y'		2
35	−0.48	2.25	3	−5.2	2.25	3

+0.40 =	x + 0.42 x'	−1.0 =	y + 0.42 y'
−0.03	1.56	−2.5	1.60
−0.49	2.17	−3.3	2.18

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Reduction of Zone 50

1855 Feb. 24th Sid. Time Ext. Th. 11.0°

h' = 0.s000 d' = −0.″27

$t_0 = 2^h 20^m$

	s		wt	"		wt
0.82	29	+0.64	0.14	3	+3.5	0.14	3
0.82	29	+0.62 = x +	0.15x'	1	−3.2 = y +	0.15y'	1
0.79	34	+1.04 =	0.23	1	−4.1 =	0.23	1
0.74	41	+0.92 =	0.35	1	−2.4 =	0.35	1
0.73	43	+0.79 =	0.38	1	−1.9 =	0.38	1
0.68	51	−0.15 =	0.51	2	−5.1 =	0.51	2
0.66	54	+0.61 =	0.56	2	−0.2 =	0.56	2
0.65	54	+0.65 =	0.57	3	−4.3 =	0.57	3
0.64	5h 01	+0.63 =	0.68	2	−1.1 =	0.68	2
0.49	19	+0.61 =	0.99	1	−2.7 =	0.99	1
0.48	20	+0.50 =	1.00	1	+0.7 =	1.00	1
0.48	21	+0.50 =	1.01	1	+0.9 =	1.01	1
0.44	26	+0.23 =	1.10	1	−0.7 =	1.10	1
	47	+0.31 =	1.46	1	−4.1 =	1.46	1
	51	+0.40 =	1.52	3	−4.0 =	1.52	3
	58	+0.39 =	1.63	1	−3.1 =	1.63	1
	6h 06	+0.19 =	1.76	1	−1.1 =	1.76	1
	11	−0.14 =	1.84	1	−1.0 =	1.84	1
	19	+0.38 =	1.99	2	−5.0 =	1.99	3
	19	+0.81 =	1.99	3	−5.0 =	1.99	3
	25	−0.33 =	2.09	1	+4.1 =	2.09	1
	26	−0.06 =	2.12	3	−0.9 =	2.12	1
	28	+0.25 =	2.13	1	−2.3 =	2.13	1
	29	+0.06 =	2.15	2	−3.2 =	2.15	2
	30	+0.12 =	2.17	3	−4.8 =	2.17	1
	32	0.00 =	2.20	1	−6.9 =	2.20	1
	34	−0.27 = x +	2.23x'	2	−6.8 = y +	2.23y'	2
	35	−0.48	2.25	3	−6.0	2.25	3

+0.65 = x +	0.42x'	−1.6 = y +	0.42y'
+0.40	1.58	3.1	1.60
−0.11	2.17	4.2	2.18

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1852phae.proj.s2415

Jones 9 1852

0h.20 to 0h.30 — 4h.51 to 7h.01

195-8-1853.0 α = 5h.04m.08s.56 (1) δ = +0°.19'.49".9 (1)

Pr.	+6.16		+9.7
1855.0	α = 5h.04m.14s.72	δ = +0°.19'.59".6	
t_{g1}	14.50	s_{g1}	19".54
t_{g2}	14.75	s_{g2}	19".57
	+.22		
α − t_{g1}	~~−.28~~	δ − s_{g1}	+5.6
α − t_{g2}	−.03	δ − s_{g2}	+2.6
		$s\alpha'_{g1}$	0.0
		$s\alpha'_{g2}$	0.0
			+5.6
			+2.6

+3.078 (2) +4.84 (2)

+6.156 +9.68

200-9-1853.0 α = 5h.05m.49s.74 (1) δ = +0°.20'.43".3 (1)

Pr.	+6.16		+9.4
1855.0	α = 5h.05m.55s.90	δ = +0°.20'.52".7	
t_{g1}	56.00	s_{g1}	20".51
t_{g2}	56.20	s_{g2}	20".53
α − t_{g1}	−.10	δ − s_{g1}	+1.7
α − t_{g2}	−.30	δ − s_{g2}	−0.3
		$s\alpha'_{g1}$	−0.2
		$s\alpha'_{g2}$	−0.2
			+1.9
			−0.1

+3.078 (2) +4.71 (2)

+6.156 +9.42

197-9-1853.0 α = 5h.4m.32s.02 (1) δ = +0°.25'.18".7 (1)

Pr.	+6.16		+9.6
1855.0	α = 5h.4m.38s.18	δ = +0°.25'.26".3	
t_{g1}	38.35	s_{g1}	25".23
t_{g2}	38.65	s_{g2}	25".26
α − t_{g1}	−.17	δ − s_{g1}	+5.3
α − t_{g2}	−.47	δ − s_{g2}	+2.3
		$s\alpha'_{g1}$	−1.3
		$s\alpha'_{g2}$	−1.3
			+6.6
			+3.6

+3.080 (2) +4.61 (2)

+6.16 +9.62

201-7-1853.0 α = 5h.06m.13s.65 (1) δ = +0°.23'.04".6 (1)

Pr.	+6.16		+9.3
1855.0	α = 5h.06m.20s.01	δ = +0°.23'.13".9	
t_{g1}	20.25	s_{g1}	23".09
t_{g2}	20.55	s_{g2}	23".11
α − t_{g1}	−.24	δ − s_{g1}	+4.9
α − t_{g2}	−.54	δ − s_{g2}	+2.9
		$s\alpha'_{g1}$	−0.8
		$s\alpha'_{g2}$	−0.8
			+5.7
			+3.7

+3.080 (2) +4.67 (2)

+6.160 +9.34

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Zones 91892

208-8-9 -1853.0 α = 5h 10m 48s.87 (1) δ = +0° 25' 54".6 (11)

Pr. +6.16 +8.6

1855.0 α = 5..10..~~55.08~~ 55.26(10) δ = +0..26..03.2

t_{91} 55.20 s_{91} 25..59,

t_{92} 55.50 s_{92} 26..02.

$\alpha - t_{91}$ +.06 $\delta - s_{91}$ +4.2

$\alpha - t_{92}$ -.24 $\delta - s_{92}$ +1.2

sd'_{91} −1.5

sd'_{92} −1.5

+5.7

+2.7

+3.080 +4.28

2 2

+6.160 +8.56

208-7 -1853.0 α = 5h 18m 13s.71 (1) δ = +0° 23' 05".9 (1)

Pr. +6.16 +7.3

1855.0 α = 5..18..~~19.87~~ 20.10(10) δ = +0..23..13.2

t_{91} 20.10 s_{91} 23..12,

t_{92} 20.45 s_{92} 23..13.

$\alpha - t_{91}$ .00 $\delta - s_{91}$ +1.2

$\alpha - t_{92}$ -.35 $\delta - s_{92}$ +0.2

sd'_{91} −0.8

sd'_{92} −0.8

+2.0

+1.0

+3.079 +3.63

2 2

+6.158 +7.26

205-9 -1853.0 α = 5h 13m 06.08 (1) δ = +0..26..26.6(11)

Pr. +6.16 +8.1

1855.0 α = 5..13..12.24 δ = +0..26..34.7

t_{91} 12.35 s_{91} 26..34,

t_{92} 12.80 s_{92} 26.36

$\alpha - t_{91}$ +.11 $\delta - s_{91}$ +0.7

$\alpha - t_{92}$ -.56 $\delta - s_{92}$ −1.3

sd'_{91} −1.6

sd'_{92} −1.6

+2.3

+0.3

+3.081 +4.07

2 2

+6.162 +8.14

210-9 -1853.0 α = 5h 18m 59.46 (1) δ = +0..23..44.2(1)

Pr. +6.16 +7.1

1855.0 α = 5..19..05.62 δ = +0..23..51.3

t_{91} 05.50 s_{91} 23..45.

t_{92} 06.30 s_{92} 23..47,

$\alpha - t_{91}$ -.28 $\delta - s_{91}$ +6.3.

$\alpha - t_{92}$ -.68 $\delta - s_{92}$ +4.3

sd'_{91} −0.9

sd'_{92} −0.9

+7.2

+5.2

+3.080 +3.56

2 2

+6.160 +7.12

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Zones 91 to 92

226-9 -1853.0 $\alpha = 5^h 37^m 21^s.33$ (1) $\delta = +0^\circ 29' 52''.7$ (1)

Dr. +6.16 +4.0

1855.0 $\alpha = 5^h 37^m 27^s.49$ $\delta = +0^\circ 29' 56''.7$

t_{g1}	27.65	s_{g1}	29.50
t_{g2}	27.90	s_{g2}	29.52
$\alpha - t_{g1}$	-.16	$\delta - s_{g1}$	+6.7
$\alpha - t_{g2}$	-.41	$\delta - s_{g2}$	+4.7
		$s\,d'_{g1}$	-2.5
		$s\,d'_{g2}$	-2.5
			+5.2
			+7.2

+3.082 (2) +2.00 (2)

+6.164 +4.00

(256)-6 -1853.0 $\alpha = 6^h 19^m 40^s.63$ (3) $\delta = +0^\circ 23' 00''.3$ (3)

Dr. +6.15 -3.6

1855.0 $\alpha = 6^h 19^m 46.98$ $\delta = +0^\circ 22' 56.7$

t_{g1}	47.70	s_{g1}	22.54
t_{g2}	47.50	s_{g2}	22.56
$\alpha - t_{g1}$	-.72	$\delta - s_{g1}$	+2.7
$\alpha - t_{g2}$	-.52	$\delta - s_{g2}$	+0.7
		$s\,d'_{g1}$	-0.7
		$s\,d'_{g2}$	-0.7
			+3.4
			+1.4

+3.080 (2) -1.73 (2)

+6.160 -3.46

h = -.010 -0.10

+6.15 -3.56

241-8.7 -1853.0 $\alpha = 5^h 59^m 37^s.11$ (4) $\delta = +0^\circ 20' 25''.1$ (4)

Dr. +6.16 +0.1

1855.0 $\alpha = 5^h 59^m 43.27$ $\delta = +0^\circ 20' 25''.2$

t_{g1}	43.70	s_{g1}	20.20
t_{g2}	44.15	s_{g2}	20.23
$\alpha - t_{g1}$	-.43	$\delta - s_{g1}$	+5.2
$\alpha - t_{g2}$	-.88	$\delta - s_{g2}$	+2.2
		$s\,d'_{g1}$	-0.1
		$s\,d'_{g2}$	-0.1
			+5.3
			+2.3

+3.079 (2) +0.03 (2)

+6.158 +0.06

258-9 -1853.0 $\alpha = 6^h 22^m 27^s.52$ (1) $\delta = +0^\circ 26' 24''.4$ (1)

Dr. +6.16 -3.9

1855.0 $\alpha = 6^h 22^m 33^s.68$ $\delta = +0^\circ 26' 20''.5$

t_{g1}	34.60	s_{g1}	26.17
t_{g2}	35.00	s_{g2}	26.21
$\alpha - t_{g1}$	~~-1.08~~ -.92	$\delta - s_{g1}$	+3.5
$\alpha - t_{g2}$	-1.32	$\delta - s_{g2}$	-0.5
		$s\,d'_{g1}$	-1.6
		$s\,d'_{g2}$	-1.6
			+5.1
			+1.1

+3.080 (2) -1.97 (2)

+6.160 -3.94

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Zones 91 & 92

267-9-1853.0 $\alpha = 6^h 31^m 12^s.17(1)$ $\delta = +0°22'31''.4(1)$

Pr. +6.16 −5.4

1855.0 $\alpha = 6^h 31^m 20^s.33$ $\delta = +0°22'26''.0$

t_{91}	20.80	s_{91}	22.26,
t_{92}	21.20	s_{92}	22.28.
$\alpha - t_{91}$	−.47	$\delta - s_{91}$	0.0
$\alpha - t_{92}$	−.87	$\delta - s_{92}$	−2.0
		$s\alpha'_{91}$	−0.6
		$s\alpha'_{92}$	−0.6
			+0.6
			−1.4

+3.079 −2.72
2 2
+6.158 −5.44

284-9-1853.0 $\alpha = 6^h 40^m 14^s.70(1)$ $\delta = +0°29'46''.0(1)$

Pr. +6.16 −7.0

1855.0 $\alpha = 6^h 40^m$ ~~20.46~~ 20.68(5) $\delta = +0°29'39''.0$

t_{91}	21.50	s_{91}	29.24.
t_{92}	21.70	s_{92}	29.41
$\alpha - t_{91}$	−.82	$\delta - s_{91}$	+1.0
$\alpha - t_{92}$	−1.02	$\delta - s_{92}$	−2.0
		$s\delta'_{91}$	−2.4
		$s\delta'_{92}$	−2.4
			+3.4
			+0.4

+3.082 −3.50
2 2
+6.164 −7.00

275-9-1853.0 $\alpha = 6^h 34^m 22^s.81(1)$ $\delta = +0°24'09''.6(1)$

Pr. +6.16 −6.0

1855.0 $\alpha = 6^h 34^m 28^s.97$ $\delta = +0°24'03''.6$

t_{91}	25.50	s_{91}	24.03
t_{92}	30.20	s_{92}	24.04
$\alpha - t_{91}$	−.93	$\delta - s_{91}$	+0.6
$\alpha - t_{92}$	−1.23	$\delta - s_{92}$	−0.4
		$s\delta'_{91}$	−1.0
		$s\delta'_{92}$	−1.0
			+1.6
			+0.6

+3.080 −3.00
2 2
+6.160 −6.00

286-8-9-1853.0 $\alpha = 6^h 40^m 26^s.80(1)$ $\delta = +0°28'44''.8(1)$

Pr. +6.16 −7.0

1855.0 $\alpha = 6^h 40^m 32^s.96$ $\delta = +0°28'37''.8$

t_{91}	33.50	s_{91}	28.37.
t_{92}	34.30	s_{92}	28.37.
$\alpha - t_{91}$	−.94	$\delta - s_{91}$	+0.8
$\alpha - t_{92}$	−1.34	$\delta - s_{92}$	+0.8
		$s\delta'_{91}$	−2.2
		$s\delta'_{92}$	−2.2
			+3.0
			+3.0

+3.082 −3.51
2 2
+6.164 −7.02

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