

KG
11366
v.424^e

Polaris —
Observations.

From Sept. 20, 1881 to Jan. 10 1882

137

Ka

Sept. 20, 1881

C =

Polaris L. C.

	B	R	R	R
	B	B	B	B
55 0	37.0	21.6	19.1	17.0
	59.4	43.9	42.0	39.1
	53.6	38.2	36.9	34.2
	37.2	23.7	21.2	19.2
	1872	1274	1192	1095
55	4680	3185	2980	2738

A-234-

-1

Sept. 20, 1881 $c=17$ 67.0
Polaris U. C. B. C. lbo.

		B	B	B	B	B	B	B	B	B	B	
30	2	22.4	28.9	33.1	43.2	47.0	50.5	54.9	3	19.2	23.9	24.9
		46.2	51.5	57.2	7.0	11.1	14.2	18.8		44.0	48.7	48.5
		39.6	45.1	49.8	59.5	3.8	7.2	11.0		36.5	41.3	41.5
		24.5	30.1	35.0	45.7	48.3	52.3	56.3		20.9	25.0	25.4
		1326	1556	1751	2154	2302	42	210		1206	1389	1403
32		33.15	38.90	43.78	53.85	57.55	1.05	5.25		30.15	34.72	35.08

A_{10} to 4_2 + b_2 to 9_0

Sept. 21 1881

C = 17 65.6

Polaris L. C.

	R	R	R	R	R	R	R	
	R	R	R	B	B	B	B	
650	62	18	582	4	53.9	49.6	272	26.8
	293	240	220	17.3	13.0	50.1	49.8	
	23.6	187	15.7	11.9	7.0	44.9	43.5	
	88	4'8	0.7	55.8	51.9	29.2	28.4	
	679	493	366	189	15	131.4	148.5	
55	1698	1232	9.15	4.72	0.38	32.85	37.12	

B	B	B	B	B
B	B	B	B	B
25.0	23.0	23.1	22.0	22.3
47.7	45.2	46.1	45.0	45.5
41.4	39.4	39.3	38.5	38.9
26.5	24.1	24.1	23.5	23.3
1406	1317	1326	1290	1300
35.15	32.92	33.15	32.25	32.50

Sept 22 1881 C = 17 65.6
 Delais LL

R	R	R	R	R	R	B	B	B	B	B
B	B	B	B	B	B	B	B	B	B	B
55 0420	366	340	312	290	260	216	192	162	120	8.5
44	586	562	532	513	476	440	408	379	342	30.4
58.3	520	496	463	440	412	371	343	316	272	23.1
442	375	355	329	301	271	228	204	178	133	9.7
2089	1847	1753	1636	1544	1419	1255	1150	1035	867	717
55 5222	4618	4382	4090	3860	3548	3138	2875	2588	2168	17.92

A₉ 8₂ 8₁ 8₀ 7₂ (7.?) 4₁ 4₀ 3₂ 3₁ 3₀ 2₂ 2₁ 2₀ 1₂

Sept 23 1881

C = 17 67.2

Orlais Lb

R	R	R	R	R	R	B	B
B	B	B	B	B	B	B	B
55 0 58	15	4 58.0	551	57.9	499	4 257.2	20.3
289	240	210	184	152	127	48.7	42.6
245	196	164	133	107	80	42.8	37.3
88	46	597	572	535	510	26.9	21.2
680	497	351	240	113	16	1436	1214
55 1700	1242	878	600	282	040 54	3590	3035

A-1 3 4 5

A₉ to 3₂

Sept 25-
Palanis L.C.

R R R R R R R R R R

55-0	13.6	76	28	10	4	182	543	510	253	245
	~~36.6~~	~~298~~	~~251~~			~~207~~	170	137	472	418
	~~330~~	~~283~~	~~217~~			~~173~~	132	598	425	418
	167	102	60			07	570	530	265	258
Chf			556			369	215	1775	1418	1379
		55	1390	15		922	538	4438	3545	3448

Sept. 26, 1881

Sept. 27 - C = 17 67.2

Dalaig R. R. R. R. R. R. R. B

B B B B B B B

550 374 338 301 251 231 192 7.0

599 558 525 443 449 410 28.1

579 531 500 446 426 389 26.8

393 355 320 270 249 203 9.0

1943 1782 1646 1440 1355 1194

5 4858 4455 4165 3600 3388 29.85

B B
B B

10.1 7.0

317 28.1

296 26.8

120 9.0

834 709

2085 1772

R R
B B

4 26.0 24.8

48.2 49.0

45.7 43.9

274 26.2

1473 1439

4 3682 3598

 A_7 to A_{10}

Sept. 27, 1881

C=17 70.8

Polaris L. C.

B	B	B	R	R	R	R	R	R
B	B	B	B	B	B	B	B	B

55-0	24.9	11.5	71	32	08	56.1	55.1	52.0	51.2
	47.6	34.4	29.9	26.1	24.1	20.0	19.0	17.0	15.4
	45.4	32.5	27.5	23.1	21.1	17.0	16.4	13.7	12.0
	28.1	15.5	10.4	6.4	4.0	59.0	58.3	56.9	53.7
	1460	939	749	588	500	321	288	196	123
55	36.50	23.48	18.72	14.70	12.50	8.02	7.20	4.90	3.08

A₉ to A₄₀ probably

Sept. 28, 1881 $c = 17$ 70.8
 Polaris L. C.

	B	B
	B	B
55-0	15.9	8.8
	37.9	31.1
	35.2	28.8
	18.8	11.9
	107.8	80.6
55	26.95	20.15

$A_{-1,4}$ $A_{7,1}$

Sept 29 1881
 Le

	R	R	R	R	R	R
	B	B	B	B	B	B
550	401	451	409	398	355	330
	123	92	50	89	593	573
	81	54	07	595	552	526
	519	488	447	431	393	363
	2324	2285	2113	2063	1893	1792
55	58.10	57.12	52.82	51.58	47.32	44.80

Failed to get any wires in R. A.

Sept. 30, 1881
Polaris L. C.

B R R R R R
B * B B B B B

50	4	22.2	20.3	19.2	19.8	20.0	21.0
		47.0	44.6	44.1	44.6	44.0	45.5
		41.3	39.5	38.2	38.1	38.3	39.7
		25.5	23.3	22.5	22.9	22.7	24.0
		1360	1277	1240	1254	1250	1302
54		34.00	31.92	31.00	31.35	31.25	32.55

For δ 's $C = 17$ 70.3; but for R.A. the
~~The~~ collimation screw was moved to meet
 $C = 22$ 31.9 for 1st w. the wire
 $C = 23$ 43.9 " 2nd w.

* Rej 2nd δ .

Sept. 30, 1881

 $\odot = 17 \quad 70.3$

Polaris U.C.

B. Obs.

		B	B	B	B	B	B	B	B	B	B
30	2	5.1	10.4	15.8	22.4	27.5	33.2	37.7	41.6	3	13.4 16.8
		28.5	34.0	38.9	45.5	50.5	56.1	0.9	5.0	37.4	40.2
		22.4	28.1	32.9	39.3	44.3	50.4	55.0	59.0	31.0	34.0
		8.1	13.3	18.9	25.2	30.2	35.9	40.5	44.4	16.2	19.0
		641	858	1065	1326	1525	1756	1941	2100	982	1100
32		16.02	21.45	26.62	33.15	38.12	43.90	48.52	52.50	24.55	27.50

 $A_{+1} 5 \quad A_{1_0} \text{ to } 4_1 + 7_2 \text{ to } 9_0$

Oct. 1. 1881

$\odot = 17 \quad 70.3$

Polaris L. C. B. Obs.

	B	B	B	B	B	B	B	B		B	B
55 0	37.9	33.0	27.9	24.0	19.0	13.7	9.4	0.6	4	29.1	26.8
	0.2	55.6	50.1	45.6	41.0	25.0	32.3	22.4		52.0	49.9
	56.1	51.2	45.3	41.6	37.1	31.5	27.2	18.2		47.4	45.2
	40.4	35.5	30.0	25.9	21.1	16.0	12.2	2.8		31.3	29.1
	1946	1753	1533	1371	1182	862	811	440		1598	1510
55	48.65	43.82	38.32	34.28	29.55	21.55	20.28	11.00		39.95	37.75

Oct. 4, 1881

C = 17 70.3

Polaris U.C. B. Obs.

	B	B	B	B *	B	B
30	2	18.0	25.0	30.6	43.9	3 15.9 19.9
		42.5	49.1	54.8	8.0	39.6 43.2
		34.1	39.9	45.9	58.5	30.2 34.2
		18.8	25.4	31.0	45.0	15.8 20.1
		1134	1394	1723	2154	1015 1174
32		28.35	34.85	43.08	53.85	25.38 29.35

 A_{+1} 1 - 2nd + 3rd tapes of t_{20} t_{21} t_{22} t_0 to t_9

* By mistake, had Waltham clock on till this point.

Oct. ⁴/₅ 1881

C = 17 58.3

Polaris L.C.

	R	R	R	R	R	R	R
	B	B	B	B	B	B	B
55 0	3.0	19.2	17.0	15.3	13.9	11.4	9.0
	41.8	36.8	35.0	33.3	31.7	29.7	26.8
	29.1	25.2	22.4	20.8	19.2	17.2	15.1
	16.1	13.0	11.7	9.2	8.2	6.5	3.3
	9.20	9.42	8.58	7.86	7.30	6.48	5.42
55	23.00	23.55	21.45	19.65	18.25	16.20	13.55
							11.82

	R	R	R	B	B	B	B	B
	B	B	B	B	B	B	B	B
4	40.2	39.4	38.2	36.9	36.9	35.1	34.0	32.7
	0.7	59.6	57.5	56.0	56.9	54.5	54.3	53.0
	48.1	47.0	45.2	44.1	44.3	42.1	42.0	40.9
	34.8	33.9	32.2	31.2	31.0	29.9	29.0	27.5
	18.38	17.98	17.31	16.82	16.91	16.16	15.93	15.41
4	45.95	44.95	43.28	42.05	42.28	40.40	39.82	38.52

5^-
 Oct-6 1881

 $C = 17$ 59.8
~~Seeing very bad~~

17

 * Polaris L.C.

	R	R	R	R	R	R	B	B	B	B
	B	B	B	B	B	B	B	B	B	B
55 0	40.0	39.9	33.1	31.9	29.0	25.9	22.7	18.7	15.2	12.4
	588	57.5	51.2	49.3	46.3	44.1	39.8	36.7	32.4	29.9
	45.7	44.0	37.5	36.4	33.3	30.4	26.8	23.2	19.2	16.8
	33.7	32.3	25.8	25.1	21.9	19.4	16.3	12.1	8.6	6.1
	178.2	173.7	147.6	142.7	130.5	119.8	105.6	90.7	75.4	65.2
55	44.55	43.42	36.90	35.68	32.62	29.95	26.40	22.68	18.85	16.30

	R	R	R	B	B	B
	B	B	B	B	B	B
50 4	42.9	42.1	40.0	40.0	38.5	36.4
	1.8	1.0	58.5	59.1	57.4	55.0
	47.9	47.0	45.3	45.3	43.5	41.2
	35.3	35.3	33.1	33.0	31.6	29.9
	187.9	185.4	176.9	177.4	171.0	162.5
54	46.98	46.35	44.22	44.35	42.75	40.62

* Seeing very bad.

0056, 1881

C = 17 59.8

	Polaris	R	R	R	R	B	B	B	B
	R	B	B	B	B	B	B	B	B
55 0	30.2	28.1	24.0	22.1	18.5	13.0	9.4	7.4	6.3
	49.9	47.9	43.4	41.9	38.0	32.9	28.1	26.3	25.1
	40.0	37.6	33.1	31.5	27.8	24.7	18.0	16.2	15.0
	27.9	26.1	22.5	19.1	16.9	10.3	16.9	5.7	3.8
	1480	1397	1230	1146	1012	779	724	556	502
55	3700	3492	3075	2865	2530	1948	1810	1390	1255

	R	R	R	B	B	B
	B	B	B	B	B	B
4	409	390	380	436.1	35.1	34.6
	06	59.8	58.1	55.1	54.8	53.2
	49.7	47.8	46.6	44.9	43.9	42.2
	39.9	35.5	35.0	33.1	31.9	30.1
	1291	1821	1777	1692	1657	1595
4	3228	4552	4442	4230	4142	3988

Polaris Ib, Oct-9⁵ 1181

	R	R
55-0	49	14
	268	226
	212	164
	80	34
	609	441
55	1522	1102

A₉₀ to 60

Oct $\frac{9}{10}$, 1881

c = 17 66.6

Polaris L.C.

B	B	B	R	R	R	R	R	*
B	B	B	B	B	B	B	B	

55-0	42.7	37.1	33.1	55.0	9.7	8.3	5.0	4	38.2	36.2
	4.2	57.3	57.7		32.1	29.7	26.9		0.2	58.8
	55.8	50.0	45.3		23.5	20.4	18.5		51.1	49.5
	42.9	37.0	33.2		10.9	8.4	6.2		37.9	36.2
	2056	1814	1663		762	668	566		1874	1807
55	5140	4535	4158		1905	1670	1415		5446	4518

B	B	B
R	R	R
35.8	33.3	32.3
58.3	55.0	54.2
48.7	46.8	45.4
35.4	33.8	32.2
1782	1689	1641
4455	4222	4102

$\frac{9}{10}$ to
 * Perhaps a rejected S here.

Oct. $\frac{10}{11}$, 1881

C=17

62.1

Polaris L.C.

	B	B	B	R	R	R	R
	B	B	B	B	B	B	B
55-0	49.8	44.3	37.0	28.2	26.0	24.4	22.9
	8.1	3.0	55.9	46.9	44.8	42.9	41.3
	55.3	50.6	44.0	34.4	32.4	30.8	9.3
	44.6	38.6	32.4	23.1	21.0	19.6	18.2
	2178	1965	1693	1326	1242	1177	917
55	54.45	49.12	42.32	33.15	31.05	29.42	22.92

	R	R	R	B	B	B
	B	B	B	B	B	B
4	44.2	44.0	42.0	41.2	40.8	40.0
	4.0	3.9	2.9	1.5	0.5	59.8
	57.2	57.3	49.1	48.6	48.2	47.1
	39.9	40.0	37.6	37.0	36.0	35.3
	1993	1992	1916	1883	1855	1822
4	49.82	49.80	47.90	47.08	46.38	45.55

A₈₀ to 10

Oct. $\frac{12}{13}$, 1881 $c=17$ 64.0

Polaris L.C.

	B	B	B	B	B	R	R	R	R	R
	B	B	B	B	B	B	B	B	B	B
55 0	36.5	31.2	26.7	22.1	17.9	13.5	10.0	9.4	7.2	5.0
	55.0	49.9	45.0	41.0	36.6	13.1	29.1	28.2	26.1	24.3
	47.1	41.2	36.3	32.3	28.6	23.7	20.3	19.6	17.6	15.9
	34.8	29.1	24.5	20.3	16.4	11.2	9.2	17.8	5.9	3.8
	1734	1514	1325	1157	995	615	686	650	568	490
55	4335	3785	3312	2892	2488	1538	1715	1625	1420	1225

	R	R	R	B	B	B
	B	B	R	B	B	B
4	39.6	39.4	39.7	38.5	36.0	33.9
	59.5	60	63	58.8	56.3	53.7
	50.7	51.0	51.0	49.3	47.1	44.5
	37.6	38.1	38.3	36.5	34.6	32.0
	1874	1884	1893	1831	1740	1641
4	4685	4710	4732	4578	4350	4102

A₉₀ to b₂ + $\frac{3_1 2_2 2_1 2_0 1_2 1_1 1_0}{\cancel{2_1 1_2 1_1 1_0}}$

Oct. 13, 1881

C = 17 64.0

14

Polaris L. C.

B	B	B	R	R	R	R	R
B	B	B	B	B	B	B	B

53	0	38.0	33.5	28.3	288	176	16.4	115	101
		57.1	52.5	46.8	354	361	35.1	304	288
		47.0	42.8	37.5	302	266	26.0	21.0	19.1
		35.0	30.9	26.0	18.6	152	14.4	10.0	7.4
		1771	1597	1386	1170	957	919	729	754
55		4428	3992	3465	2925	2392	2298	1822	1885

A₉₀ to 4₀

Oct. 15, 1881

c = 17 83.2

Polaris U.C. B. Obs,

B	B	B	B	B
B	B	B	B	B

30	3	21.0	23.3	26.0	26.4	29.0
		43.4	45.7	48.0	48.3	50.4
		33.3	35.0	37.3	38.0	40.4
		19.8	22.4	24.3	25.3	28.0
		1175	1264	1356	1380	1478

33		29.38	31.60	33.90	34.50	36.95
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A₋₁

001-15-
16 D C = 1.7 B₂
Polair, L₆

	2	R	R	R	R	R
50	4	93	404	408	400	390
		9.3	30	22	10	12
		0.2	56.0	55.2	54.0	53.4
		46.3	42.7	41.8	40.0	40.0
		51	2021	2000	1950	1936
54	1.28		50.52	50.00	48.75	48.40

A₆₂ to 1₀

Plains Oct. 18 1881

		R	R	R	R	R
51	4	525	502	482	477	460
		137	114	88	83	68
		64	594	569	558	548
		456	46.6	446	43.7	42.2
		2352	2276	2185	2155	2098
54		5880	5890	5462	5388	5245

A 22 510

A₇₁

OCT-20 U 1881

Plan's L Co.

	R	R		R	R	R
55 0	338	260	50	455.5	520	534
	52.3	443		170	157	137
	389	310		14	598	587
	39.1	207		50.8	490	48.8
	1641	1220		4.5	2385	2346
55	4102	3050	55	112	5459.62	5865

Oct 22 1881

Polani's Lb

		R	R	R	R	R	R	R
50	4	533	493	486	464	460	445	449
		148	116	102	90	82	72	63
		24	595	582	564	556	547	546
		507	480	461	450	443	431	438
		12	2274	2231	2168	2141	2095	2096
55	0.30	5685	5578	5420	5352	5238	5240	

A₆, to 10

Oct 25-1887

Paris Lc.

	R	R	R		R	R	R
55 0	400	335	318	4	599	570	554
	585	512	498		202	172	156
	442	373	360		47	18	06
	456	282	261		550	513	506
	1883	1503	1437		198	73	22
55	4708	3758	3592		495	182	0.55

Oct 26 1881
 Polaris Lb

	R	R	R		R	R	R
5-5 0	406	361	322	4	41	35	15
	564	532	490		227	221	198
	398	361	321		46	37	12
	307	271	230		549	528	57.8
	167.5	152.5	136.3		206.3	204.1	194.3
	41.88	38.12	34.08		51.58	51.02	48.58

Oct 27 1881
Polaris Lc.

	R	R	R	R	R	R
55 0	850	~~857~~	287	58	2.3	00
	54.2	~~940~~	453	234	202	176
	37.8		30.8	52	3.0	0.7
	29.7		22.2	559	56.0	52.8
	1567		1270	339	221	111
55	39.18		31.75	848	552	278

Nov 5- 1881

Dolan's LC.

	R	R	R	R	R
55-	4.1	12	45.8	58.3	57.0
	20.3	18.6	15.8	16.0	14.1
	8.1	4.5	3.0	2.1	0.5
	0.3	5.7	54.0	53.0	52.2
	3.28	2.20	1.06	.94	.38
55	8.20	5.50	2.65	2.35	0.95

Nov. 9 1881
Pearis Lb.

	~~R~~	R	R	R	R	R
JSO	39/40	74	4.1	37	02	00
	508	24.3	204	200	172	168
	464	127	88	92	50	47
	351	37	08	07	56.1	55.9
		481	341	336	35	174
	55	1202	852	840	0.88	435

At the line under He is God. The
measurements are to be taken at the end
of the line. This ~~is~~ not here.

Nov 10 1881
Polaris L.L.

	R	R	R	R	R
55	91	11	561	536	497
	243	153	113	88	52
	82	590	535	516	471
	57.7	494	450	420	387
	493	2348	2259	2160	2007
56	1232	5870	5648	5400	5018

R	R	R	R	R
145	135	133	111	108
30.3	292	290	260	256
132	113	108	109	87
46	26	24	12	0.8
629	566	555	472	459
1572	1415	1388	1180	1148

Nov. 12 1881 $e = 17(87.3)^\circ (85.3)^\circ ?$

Polaris Lb

	R	R	R	R	R
550	37	28	16	11	16
	175	171	157	164	164
	1.0	598	590	587	587
	538	527	515	518	520
	160	124	78	80	87
55	400	310	195	200	218

A₁₁ 2 1

Nov 31/81 C-17 892
 Oceanic Lb.

	R	R	R	R	R
550	109	80	72	62	54
	228	238	234	222	208
	113	89	82	71	60
	38	10	07	598	00
	538	417	395	353	312
55	1345	1042	988	882	780

Nov. 14 1851 C = 17 + 9.2

Plain Mo.

		R	R	R	R	R	R
30	2	168	226	268	307	362	460
		342	402	443	482	533	44
		168	227	273	310	370	463
		97	152	196	237	281	352
		775	1007	1180	1336	1546	1759
32		1938	2518	2950	3340	3865	4398

A + 1

10215-1881
 Polaris Mo.

		R	R	R	R	R
30	2	431	472	578	22	181
		557	30	149	183	349
		410	447	547	593	149
		323	36.3	470	514	73
		1761	1907	2344	112	752
32		44.02	47.68	58.60	280	18.80

A_{+1} A_{10} 554

Nov 15 - 1881
 Delain's Lc.

550	482	—	0	128	111	99	102	97
	32	—		261	260	240	241	242
	433	—		74	66	59	48	47
	357	—		10	04	04	00	00
	1904			473	444	405	391	386
55	4760			1182	1110	1012	978	965

Nov 16 1881 C-17 89.2

Adair's Pl.

	R	R	R	R	R	R
5-5 1	225	153	97	61	35	589
	377	301	255	206	188	142
	188	108	57	17	593	541
	12.7	4.7	593	548	530	484
	917	609	402	232	146	2356
56	2292	1522	1005	580	365	5890

R R R R R

184	157	110	123	120
327	307	297	278	267
136	122	107	93	73
78	60	50	28	19
725	646	604	522	479
1812	1615	1510	1305	1198

Nov 19 UH C 17 49.5

Solair Lb

	R	R	R	R	R
55-1	6.0	588	547	500	463
	21.0	13.7	9.2	5.0	2.6
	3.2	55.3	51.5	45.4	43.7
	5.6	48.1	44.0	39.2	35.2
	35.8	23.59	21.94	20.46	18.78
56	8.95	58.98	54.85	51.15	46.95

R	R	R
16.5	15.7	14.9
32.8	30.5	29.1
18.5	12.9	11.3
6.3	6.0	3.8
6.91	6.55	5.91
17.28	16.38	14.78

Nov 1948 / Nov 20 1951 $C = 17.19, 2$

① ~~11-45-19~~
-1951 Polaris Pub.

					R	R	R	R	R	
15	3	169	30	2	120	124	200	272	313	359
		57			276	200	360	429	477	514
		48.3			80	120	160	229	281	317
		51.3			0.2	80	80	150	199	242
					478		80.0	1080	1270	1432
					11.95		20.00	27.00	31.75	35.80

~~Lower limit~~

Low-A, 15th limit
+1
during fair

R	R	R	R
40.7	491	587	36
561	57	147	118
358	457	547	590
284	368	463	509
1610	1467	2344	123
40.25	49.18	58.60	3.08

Nov. 20 1881 $\odot = 17^{\circ} 59.2'$

Palais L. C.

	R	R
55 0	134	115
	270	256
	78	617
	6.3	11
	545	443
55	1362	1108

A $\begin{matrix} 5 & 5 & 5 & 4 & 4 \\ 2 & 1 & 0 & 2 & 1 \end{matrix}$

Mr. 21 1887

① - 17 192

Galun, L.

	R	R	R	R	R
55	32.6	268	189	163	14.5
	47.6	41.8	339	306	29.2
	29.1	23.2	150	12.3	16
	23.0	16.4	87	68	5.0
	132.3	108.2	768	660	507
55	33.08	27.05	19.20	16.50	12.68

A, 9, 8, 5, 6, 50 32 30 21 12 11 10

Nov 22 1881 @ = 17 49 2
 Polaris U.C.

	R	R	R
30	2 250	297	326
	433	444	462
	204	205	232
	106	113	140
	1030	1059	1160
32	2575	26.48	29.00

A to 40
 10

Nov 24/88 C=17 89.2

Palanis Mo.

		R	R	R	R	R	R	R
30	2	92	28.3	341	383	462	545	19
		236	43.2	478	532	62	92	157
		588	19.4	248	294	376	52	522
		528	12.7	188	228	306	387	460
		244	1036	1255	1437	1746	2276	2358
32		6.10	2590	3138	3592	4365	5690	5895

A₊₁ A₁₀ 60

Dec. 7, 1881 $C = 17$ 90.9

Polaris L. C. B. Obs.

		B	B	B	B	B	B	B	B	B	B
55	1	8.9	4.80	59.2	56.4	25.9	23.0	22.1	19.6	17.2	17.5
		22.8	19.2	13.1	9.3	40.2	35.8	35.8	33.3	31.3	31.3
		2.2	58.0	53.0	49.1	19.0	16.0	14.9	13.2	11.1	10.3
		55.8	51.4	45.7	42.0	11.2	8.6	8.5	5.9	3.2	3.6
		297	134	2310	2158	963	834	813	720	628	627
56		742	335	5775	5395	2408	2085	2032	1800	1570	1568

Lost 1st stroke of A_9 , also $A_{42} 4_1$

Dec. 8, 1881 $\phi = 17$ 90.9

Polaris U.C. B. Ubb.

		<u>B</u>	B	B	B	B	B	B	B	B	
30	1	57.8	6.0	11.5	16.8	22.6	35.8	40.3	22.0	25.9	27.9
		13.0	21.9	26.9	33.3	38.0	51.3	55.9	38.5	42.0	42.8
		53.0	1.2	6.4	12.9	18.1	31.0	35.8	17.1	21.4	22.2
		45.1	54.1	59.1	5.5	10.4	23.4	28.3	9.3	13.1	14.9
		2289	232	439	685	891	1415	1603	869	1024	1078
31		57.22	580	1098	17.12	2228	3538	4008	2172	2560	2695

A_{10} to 4_1 + 7_2 to 9_0

Dec. 9, 1881 C=17 90.9

Polaris U.C. B, Uls.

3													
19			B	B	B	B	B	B	B	B	B	B	
2.8	30	2	2.2	11.8	16.5	21.0	24.4	28.7	51.0	3	20.2	22.0	23.2
3.2			16.9	26.4	31.7	35.9	39.1	43.2	6.1	35.0	36.8	38.6	
2.9			53.3	57.8	10.8	14.3	18.8	23.1	45.0	14.8	15.8	17.5	
2.8			48.1	58.4	3.1	7.2	11.7	15.1	37.0	6.4	8.2	10.0	
2.5			122.5	162.4	72.1	78.4	94.0	110.1	199.1	76.4	82.8	89.3	
		32	30.62	40.60	18.02	19.60	23.50	27.52	49.78	19.10	20.70	22.32	

A₊₁ A₁₀ to 4.

Dec. 10, 1881

 $\phi = 17 \quad 90.9$

Polaris U.C. B. Obs.

		B	B	B	B	B	B	B	B	B	B	B	B
30	2	25.2	35.4	38.9	43.9	55.8	0.0	3	26.3	30.0	32.6	33.0	34.2
		40.0	50.0	53.1	58.2	9.9	14.9		42.7	44.5	46.9	47.3	49.0
		18.0	28.0	30.4	36.1	48.2	52.2		20.6	22.1	24.6	25.9	27.5
		9.2	19.7	22.2	27.5	40.8	43.6		12.8	14.2	16.1	17.1	18.4
		924	1331	1446	chf.	2147	2307		1044	1108	1202	1233	1291
32		2310	3328	3615		5368	5768		2610	2770	3005	3082	3228

 A_{10} to 4, + 80 to 90

22010 1481 $C = 17.80, 8$

Dolans II.

	R_R	R_R	R_R	R_R	R_R	R_R
55	406	353	311	247	183	98
	518	471	428	361	299	210
	292	248	193	136	66	596
	222	171	123	58	598	510
	1438	1243	1055	802	546	214
56	3595	3108	2638	2005	1365	535

A₁ A₁ to 5₀

Dec. 11 1881

C = 17 50.9

Polaris L. C.

B	B	B	~~B~~	~~B~~	~~B~~
B	B	B	B	B	B

55	1	22.3	17.5	10.0	7.9	4.9	1.8
		33.8	29.0	21.6	19.1	16.1	12.2
		10.2	6.4	5.1	5.0	5.2	4.6
		3.2	5.8	51.2	49.2	46.1	43.3
		69.5	50.9	20.9	12.2	23.9	22.6
56		17.38	12.72	5.22	3.05	5.99	56.72

	R	R	R	R	R	
	R	R	R	R	R	
55	0	35.7	35.4	32.1	31.2	31.8
		48.4	46.5	44.5	42.2	42.1
		25.3	23.2	20.2	19.7	19.3
		18.5	17.7	15.2	12.2	12.4
		12.79	12.28	11.20	10.53	10.56
55		31.98	30.70	28.00	26.32	26.40

A₉ to 3₀

$$C = 17 \quad \begin{array}{r} 90.9 \\ \underline{60.9} \\ 30 \end{array}$$

Polaris No.







~~$$\begin{array}{r} 13 \\ 13 \\ 30212.7 \\ 28.5 \\ 67.2 \\ 57.4 \end{array}$$~~

2	292	340	369	392	418
	45-3	496	525-	545-	565-
	23,1	27,1	299	318	342
	15,8	19,1-	23,1	245-	27,5
	1134,	1302	1424	1500	1600
32	2835	3255	3560	3750	4000

57.4
Rij' 1510

B	B	B	B	B	B ¹	B	B	R	R	R
45.0	48.5	51.9	57.4	59.3	3	25.0	26.5	28.0	29.0	29.6
04	3.7	7.0	12.4	15.2		40.9	42.3	42.5	44.5	44.7
38.4	41.5	45.0	50.4	52.0		18.1	20.0	20.9	22.2	22.7
31.1	34.2	37.7	43.2	45.3		11.7	12.3	13.4	14.9	15.5
1749	1879	2016	2234	2318		957	1011	1048	1106	1125
43.72	46.98	50.40	55.85	57.95	33	2392	2528	26.20	27.65	28.12

A_1 to 5_0 & 7_0 to 9_0

Plot Dye 15-157-1 C-1790.9
 Plain L

	R B	R B	R B	R B	R B	R B
55-1	29.9					
	40.5					
	116.4	272	25.2	236	20.1	156
	10.5	38.5	36.0	33.8	31.2	26.2
		14.9	11.9	9.7	6.5	2.4
		7.5	6.0	3.4	1.2	56.4
		881	791	705	590	406
56	2202	19.78	17.62	14.75	10.15	7.78

R B	R B
11.3	99
22.1	20.8
57.6	56.4
52.2	51.0
23.2	17.6
5.80	4.40

A₋₁

Dec. 16, 1881 $C=17$ 90.9

Polaris U. C. B. Obs.

B B B B B B B B B B

30	2	16.9	35.0	39.8	45.2	50.7	54.8	57.7	3	29.9	32.1	36.1
		29.8	46.9	53.0	57.7	2.9	7.0	10.9		42.4	44.1	48.6
		31.9	22.2	27.2	32.9	37.3	42.0	44.5		17.2	19.5	24.4
		57.8	15.3	19.8	26.0	30.7	35.0	37.2		10.2	11.4	16.5
		484	1194	1398	1618	1816	1988	2103		997	1071	1256
32		1210	2985	3495	4045	4540	4970	5258		2492	2678	3140

 A_1 to 4_1 + 8_0 to 9_0

Dec. 16, 1881

C = 17 90.9

Polaris L. C.

B. Obs.

	B	B	B	B	B	B	B	B	B	B	
55-1	20.0	15.9	10.1	8.6	5.0	0	37.8	33.8	33.1	30.5	28.4
	31.0	26.8	21.5	19.1	16.6		48.0	44.4	44.0	40.6	38.9
	6.3	2.3	57.8	55.0	51.5		23.4	19.6	19.2	17.0	14.9
	0.3	55.7	50.8	47.9	45.7		18.4	13.8	11.9	10.4	8.2
	576	407	202	106	2388		1273	1116	1082	985	904
56	14.40	10.18	5.05	2.65	559.70		31.82	27.90	27.05	24.62	22.60

 $A_{90} \text{ to } u_1 + \cancel{2} \cancel{2} 2, \star 10$

Dec 17 1871 C=17 90.9
Plain Mo.

		R	R	R	B	B	B	R	R	R
		B	B	B	B	B	B	B	B	B
(30)										
20	2	111	170	210	242	278	31.1	348	40.2	419
		264	309	351	380	418	44.8	488	546	65.7
		03	60	100	133	170	20.5	240	295	343
		53.9	59.3	35	58	9.7	13.6	17.1	23.1	24.4
		307	532	696	813	963	1100	1247	1474	1533
	22	768	1330	1740	2032	2408	2750	3118	3685	3832

R	R	R	R	R	R	B	B	B	
B	B	B	B	B	B	B	B	B	
44.5	44.5	53.3	3	241	26.3	27.0	28.4	28.4	30.0
38.9	2.2	63		38.2	40.2	41.1	41.8	42.4	43.0
33.9	37.5	42.0		13.9	15.9	16.8	17.1	17.9	18.9
27.0	30.8	35.0		6.2	7.9	8.9	10.0	10.4	12.0
1646	1790	1966		824	903	938	993	991	1039
41.15	44.75	49.15		2060	2258	23.45	24.32	24.78	25.98

A_{+1} A_{10} to 5_0 + 7_2 to 9_0

Dec 17 1881
Palmer's S.C.

C = 17 90.9

R
R R R R

55	1 228	116	72	39
	360	227	197	164
	120	000	561	528
	67	550	507	471
	781	293	137	02
56	19.52	7.32	342	0.05

R
R R R R

55	0339	322	310	293
	474	443	433	417
	234	204	197	180
	178	152	128	120
	1225	1121	1063	1010
55	30.62	28.02	26.58	25.25

D 2018 1851 @ = 17 590

Pulvis RCR L & R D R R

	R	R	R	R	R	R	
30	2	178	242	287	334	389	430
		332	397	438	482	541	582
		106	166	207	254	327	362
		3.3	11.1	14.0	18.3	25.2	29.0
		649	916	1072	1253	1509	1664
32		16.22	2290	2680	3132	3772	4160

R R R R R

R	R	R	R	R
198	216	232	237	249
353	373	394	393	403
11.2	14.0	15.2	15.3	16.7
5.3	7.6	9.3	9.6	11.6
716	805	871	879	935
1790	20.12	2178	2198	2338

A₊ A₁₀ 5.50 & 8.2 to 9.0

Dec 18 1881 No C = 17 & 90
 Planis Lb

	R B	R B	R B	R B	R B	R B	R B
55	1257	210	186	133	100	17.6	6.0
	39.1	34.9	32.8	27.4	24.3	22.1	20.3
	158	120	97	4.4	1.8	58.3	57.5
	93	5.8	31	58.2	55.2	52.9	~~56.2~~
	893	737	639	433	313	309	81.2 150
56	2232	1840	1598	1082	782	7.72	3.75

R B	R B	R B
16	590	591
15.9	129	125
52.3	493	490
216.2	434	430
2360	2246	2236
5900	5615	5590

A₋₁ A₉₀ to 4₀

Dec 19 1881 C = 17 49.0

Palauin U.C.

$\begin{matrix} B & B & B & B & B & R & R & R & R & R \\ B & B & B & B & B & B & B & B & B & B \end{matrix}$

30	2	4.0	90	138	19.0	935	28.2	320	349	380	401
		190	241	291	339	381	434	470	502	528	559
		54.9	2.0	7.3	12.9	17.2	21.2	25.0	27.8	30.6	33.2
		57.7	56.1	1.2	5.8	10.1	15.7	18.3	21.0	23.6	26.4
		126	222	524	716	892	1085	1223	1339	1450	1560
32	315	5.55	13.10	17.90	22.30	27.12	30.58	33.48	36.25	39.00	

$\begin{matrix} R & R & R & R & R & B & B & B & B & B \\ B & B & B & B & B & B & B & B & B & B \end{matrix}$

30	3	22.3	23.1	24.7	250	269	27.3	28.0	28.0	29.1	29.9
		38.2	38.8	39.6	40.3	42.3	42.0	42.8	43.1	44.4	45.9
		15.2	15.9	17.3	18.0	19.9	20.5	21.2	21.0	23.2	22.8
		17.7	8.7	10.2	11.0	12.6	12.8	13.9	13.0	14.9	15.4
		834	865	918	943	1017	1026	1059	1051	1116	1140
8	20.85	21.62	22.95	23.58	25.42	25.65	26.48	26.28	27.90	28.50	

$A_+, A_0, A_5, +, x_0, x_9$

Dec. 19, 1881

C = 17 89.0

Polaris L.C. B. Obs.

	B	B	B	B	B	B	B	B	B	B	
55 /	20.2	13.2	7.1	2.9	0	31.5	29.0	26.8	25.9	24.4	24.1
	33.0	26.8	21.1	16.6		45.2	42.4	39.9	39.3	37.3	37.0
	10.0	4.2	57.8	54.1		22.2	20.0	16.9	16.4	14.9	14.1
	4.5	57.9	52.2	47.9		17.1	14.3	13.2	11.3	9.2	8.4
	677	421	182	2315		1160	1057	968	929	858	836
56	16,92	10,52	4,55	57,88		29,00	26,42	24,20	23,22	21,45	20,90

A₉₀ to 5₀

Dec. 20, 1881 $c=17$ 89.0
 Polaris U.C. B. Obs.

		B	B	B	B
30	2	9.2	19.2	23.5	50.2
		23.7	34.1	38.3	57.4
		1.8	12.0	16.0	43.2
		54.9	67.5	9.0	35.9
		296	708	868	1947
32		7.40	17.70	21.70	48.68

A_{+1} 1 (2nd + 3rd taps) 2 3 5 Clouds.

Dec. 20, 1881

C=17 89.0

Polaris L.C.

B. Obs.

	B	B	B	B	B	B	B	B	B*	B	B
55	14.5	10.2	4.9	1.8	58.1	0	30.2	28.2	27.0	25.0	23.3
	20.2	25.3	20.0	15.9	11.8		44.2	42.3	40.7	39.0	37.9
	7.1	3.2	57.7	53.2	49.5		22.2	19.9	18.1	16.2	15.1
	0.3	56.8	50.9	46.8	43.9		15.9	14.6	12.1	10.3	9.2
	421	355	135	2377	2233		1125	1050	979	905	855
56	1052	888	338	5942	5582	55	28.12	26.25	24.98	22.62	21.38

A₉₀ to 5₀* 2 rattles in here. Rej. the 1st

Dec. 21, 1881

C=17 89.0

Polaris U.C. B. Obs.

	B	B	B	B	B	B	B	B	B	B		
30	2	30.3	39.3	43.0	49.1	50.0	55.8	3	23.0	26.9	27.5	29.9
		45.7	54.8	57.8	4.9	5.6	10.2		38.8	42.4	43.0	45.9
		23.1	32.2	35.4	42.1	42.9	48.2		16.0	19.9	20.6	23.2
		16.3	25.6	29.0	35.4	36.2	41.1		8.7	12.4	13.8	15.4
		1154	1519	1652	1915	1947	2153		865	1016	1049	1144
32	2885	37.98	41.30	47.88	48.68	53.82	33	21.62	25.40	26.22	28.60	

 A_{10} to 4_2 + 8_0 to 9_0

Dec. 23, 1881

C = 17 89.0

Polaris L.C. B. Obs.

	B	B	B	B	B	B	B	B	B	B	B	
55	18.8	5.9	0	35.1	33.2	32.2	31.9	30.0	29.1	28.4	27.8	30
	23.9	19.5		48.3	46.9	46.2	44.9	43.8	42.4	41.8	40.7	
	1.0	56.8		25.0	23.9	21.8	21.1	19.8	18.9	18.2	17.0	
	63.8	49.6		18.0	17.1	16.2	14.4	13.1	12.0	11.8	10.2	
	275	11.8		1264	1211	1164	1123	1067	1024	1002	957	
56	6.88	2.95	55	3160	3028	2910	2808	2668	2560	25.05	23.92	

A₉₀ to 4₂

Dec. 24, 1881

C = 17 89.0

Polaris U. C. B. Abs.

		B	B	B	B	B	B	B	B	B	B
30	2	18.7	26.3	32.5	38.5	46.0	51.3	2.0	29.8	30.3	32.5
		33.2	41.6	47.3	54.0	59.9	5.4	15.5	45.2	44.3	46.6
		7.4	15.3	21.4	27.8	34.8	40.0	49.8	18.9	18.9	21.3
		0.4	8.2	14.6	20.4	27.5	33.1	44.0	10.7	11.4	13.8
		597	914	1158	1407	1682	1898	1113	1046	1049	1142
32		1492	2285	2895	3518	4205	4745	2782	26.15	26.22	28.55

A₁₀ to 5₀ + 8₁ to 9₀

Dec. 25, 1881

c = 17 89.0

Polaris L.C.

B. Obs.

	B	B	B	B	B	B	B	B	B	B
55 1	12.1	5.7	3.3	36.1	34.0	30.8	30.0	28.3	27.9	26.0
	25.0	19.0	16.2	47.8	46.1	42.9	42.3	41.3	40.4	38.6
	1.5	55.6	53.0	24.4	23.2	19.4	19.0	16.8	16.8	14.6
	56.3	50.0	47.7	20.9	18.7	15.6	14.6	11.9	12.2	9.9
	349	103	12.02	1292	1220	1087	1059	983	973	891
56	872	258	0.05	3230	3050	2718	2648	2458	2432	2228

A_9 A_{10} Lost perhaps A_{12}

Dec. ³⁰~~25~~, 1881

C = 17 89.0

Polaris U.C. B. Obs.

		B	B	B	B	B	B	B	B	B	B
30	2	17.2	23.3	27.9	31.9	36.9	43.5	16.8	19.9	20.0	22.0
		34.0	40.0	44.6	48.2	52.4	59.8	32.9	36.5	36.5	39.0
		13.8	19.9	23.8	28.2	32.4	39.1	12.4	15.8	15.6	18.1
		6.7	13.2	17.2	21.1	25.7	32.8	4.8	8.2	8.4	10.9
		717	964	1135	1294	1474	1752	669	804	805	900
32		1792	2410	2838	3235	3685	4380	1672	2010	2012	2250

 $A_{10} \text{ to } 5, + 7_2 \text{ to } 9_0$

Dec. 30, 1881

C = 17.89.0

Polaris L. C. B. Obs.

B B B B B B B B

55 1 13.2 4.5 2.1 59.1 0 31.0 27.9 26.5 22.6

27.4 19.0 16.5 13.4 46.0 41.8 41.0 37.9

7.0 57.8 55.3 52.8 24.4 21.0 19.6 16.2

55.6 51.7 49.9 46.2 18.8 15.8 13.7 9.6

432 130 38 2315 1212 1065 1008 863

56 1080 325 095 57.88 55 3030 2662 2520 2158

A₉ to 4, + 10

Dec. 31, 1881

C=17 89.0

Polaris U.C. B. Obs.

		B	B	B	B	B	B	B	B	B	B
30	B	18.4	21.4	22.9	22.5	25.0	25.6	25.0	25.9	25.1	25.4
		34.2	37.2	38.5	38.0	40.5	40.9	41.5	41.5	40.8	41.6
		12.0	14.0	16.3	16.2	18.6	18.3	18.6	18.7	19.0	19.0
		4.9	7.1	9.2	8.6	10.4	10.7	11.3	11.1	11.0	11.5
		695	797	869	853	945	955	964	972	959	975
33		1738	1992	2172	2132	2362	2388	2410	2430	2398	2438

 A_1 to 5_0 + 7_2 to 9_0

Jan. 2, 1882

C=17 89.0

Polaris U. C. B. Obs.

B B B B B B B B B B

30	2	59.1	3.9	27.9	28.8	31.4	30.9	32.9	34.4	34.2	35.0
		12.0	17.5	40.3	41.8	44.2	45.0	46.7	47.5	47.1	47.7
		46.1	52.0	15.0	15.2	18.0	17.3	18.8	21.4	21.0	21.0
		39.0	43.7	6.4	8.2	10.4	9.9	12.1	13.2	12.6	13.9
		27.6	23.7	89.6	94.0	104.0	103.1	110.5	116.5	114.9	117.6
32		54.18	59.32	22.40	23.50	26.00	25.78	27.62	29.12	28.72	29.40

A₁₀ to 5₀ + 8₀ to 9₀

2 rattles precede + follow middle wire.

Jan. 4, 1882 $\alpha = 17^h 89.0$
 Polaris U.C. B. Obs.

B B B B B B B B B B

30	2	58.7	2.4	28.0	31.3	33.1	33.3	34.2	34.9	35.2	37.1
7		10.0	13.4	41.0	43.3	44.1	44.8	45.9	46.1	47.3	49.2
2		43.4	47.3	13.8	16.8	17.8	18.0	19.7	20.0	20.8	23.0
9		36.1	40.1	5.4	7.2	10.6	11.4	12.1	12.7	13.2	15.0
6		882	1032	882	1006	1056	1075	1119	1137	1165	1243
0	33	2205	2580	2205	2515	2640	2688	2798	2842	2912	3108

$A_{10} \rightarrow 5_0 + 7 \rightarrow 9_0$

74

Jan. 7, 1882

C=17 89.0

Polaris u.c. B. Uls.

		B	B	B	B	B	B	B	B	B	B
30	2	7.4	15.2	18.1	22.1	26.2	43.4	48.2	51.4	19.9	22.2
		22.0	29.8	33.1	36.3	40.1	57.5	2.5	5.5	34.1	36.1
		56.5	4.4	8.0	11.1	15.3	32.7	37.3	40.2	8.2	10.0
		50.2	57.9	1.4	4.0	8.9	25.8	30.7	33.0	1.4	4.1
		161	473	606	735	905	1594	1787	1901	636	724
32		4.02	11.82	15.15	18.38	22.62	39.85	44.68	47.52	15.90	18.10

 $A_{10} \star 5_0 + 8_1 \star 9_0$

Jan. 9, 1882

C = 17 89.0

Polaris U. C. B, C₀₀

B B B B B B B B B B

30 2 11.0 17.3 21.5 26.2 — 40.2 45.8 49.3 52.0 17.0

26.2 32.9 36.6 41.8 44.9 55.9 0.9 4.2 6.9 32.2

2.1 8.7 12.5 17.9 21.3 32.0 36.5 40.0 42.5 7.7

57.0 3.2 7.0 11.9 14.0 25.6 30.5 34.0 36.5 1.0

363 621 776 978 1537 1737 1875 1979 579

32 908 1552 1940 2445 3842 4342 4688 4948 1448

A₁₀ to 5₀ & 8, to 9₀

Jan. 10, 1882 C=17 83.9
Polaris U.C. B. Obs.

B B B B B B B B

30	2	12.0	18.1	22.4	26.9	31.5	50.0	19.4	21.2
		26.9	32.5	37.1	40.9	47.1	~~50.0~~ 4.9	33.8	35.3
		2.2	8.8	12.8	17.2	22.9	40.0	9.6	11.8
		56.3	2.2	6.4	10.8	16.1	33.8	2.8	4.5
		394	616	787	958	1176	1887	656	728
32		9.35	15.40	19.68	23.95	29.40	47.18	16.40	18.20

A₁ 135 A₁₀ to 50

M.S.S. of Polaris
For Prof. Searle
with - Nicora Burns B. & G.

1891phase.proj.14288