

To Compute Precession.

Declination.

Use tables in the margin of the Leaps Photographie
Durchmusterung, Volume III, which give the total precession for 25
years. If precession for 45 years is desired, multiply the given
quantity by 2, and subtract $\frac{1}{10}$ of the result.

Right Ascension.

Stars south of the Equator.

- (A) If south of -19° , use the precession tables in the margin
of the Leaps Photographie, Durchmusterung, Volume III.
- (B) If between the equator and -19° , use Table I in the Jones
Catalogue, Volume I. To find precession for 25 years, divide the
annual precession by 4 and multiply the result by 100.
To find precession for 45 years, divide the annual
precession by 2, multiply by 100 and subtract $\frac{1}{10}$ of the
result.

Stars north of the equator.

Change the right ascension by 12 hours and
proceed as for stars south of the equator.

Correction to final scale.

I. B. and Ma. Plates +0.2 scale from I 32811

A. X, H. C. " -0.3 " " C 15350

A.C. AM Plates with usual aperture, Scale ~~Across~~

Scale I correction = -0.2

2 " = -0.4

3 " = 0.0

A.C. Am Plates with reduced aperture
A I Plates Scale 8796

Scale I cor. 0.0

" 2 " -0.3

" 3 " 0.0

18^h - 30^o

AM 3599. my fresh variables
in region marked

ax 793 Nova marked

ax 1805 Contact D 19883 mark

ax 488 { parallax
770 }

Circular 129

Map 31 18^h 0^m

Map 62 1 + 45

New Variables Stars

Circ 129. Maps 31 & 62

Ref. Co.	Forma	Constell.	DM	R.A. 1800	Dec. 1800
2	SL	Andromedae	..	1 27	33.8 + 46.04
8	ST	Ophiuchi	..	17 28	50.3 - 1 0.4
16	SL	Ophiuchi	..	17 34	22.2 + 1 39.8
7	SV	Ophiuchi	..	17 51	25.3 + 3 24.1
4	W	Serpentis	-15° 48 42	18 4	6.8 - 15 32.8
12	W	Scuti	-13° 49 65	18 18	53.7 - 13 42.6
6	X	Scuti	-13° 50 14	18 25	41.1 - 13 10.9
11	Y	Scuti	-8° 46 63	18 22	36.4 - 8 27.3
15		Ophiuchi	..	18 36	49.3 + 6 19.6
14	Z	Scuti	-4° 45 53	18 36	39.6 - 4 12.6
10	Z	Scuti	-5° 47 34	18 37	35.7 - 5 55.9
13		Scuti	-10° 48 14	18 43	40.5 - 10 21.0
5	SZ	Aquilae	+1° 38 77	18 59	34.9 + 1 9.1
9	TI	Aquilae	+1° 38 99	19 3	10 + 1 8.6
3	SW	Boarisprins	..	23 28	53 29 + 58 1.0

Circular 134

Map 37 6^h 30^mMap 46 0^h 60^m

Circ. 134. Maps 37 and 46.

Ref. Co.	Forma	DM	R.A. 1800	Dec. 1800
25	Boarium	-33° 20 18	4 53	12 - 33 18.4
19	Columba	-30° 28 53	6 25	30 43.2
18	leavis Major	-26° 29 12	6 14	49 - 26 7.9
23			6 24	35 - 40 2.2
22	Columba	-35° 29 72	6 29	44 - 35 14.0
24	Puppis	-42° 26 52	6 39	21 - 42 16.6
21			6 39	44 - 31 41.2
17	leavis Major	-23° 46 28	6 52	36 - 23 50.4
20	leavis Major	-25° 39 86	7 0	3 - 25 38.9
33		-70° 28 60	21 27	41 - 70 46.6
29	Phoenix	-46 14 688	23 27	1 - 46 32.2
26	Phoenix	-52° 12 32	23 51	53 - 52 46.9
30	Phoenix	-50° 11 62	0 30	19 - 50 45.4
28	Tucana	-72 69	0 48	10 - 72 32.6
31		1	0 54	9 - 63 55.9
32		..	0 10	17 - 60 46.8

Sp. 71.6.111
1818355, 01267

New Variable Stars

No.	Found on	Mag.	C.D.M. 1875	C.P.D. by 1875	B.D. 1875	R.L. 1875	Dec. 1875
1/C							
34	Am 4311	-23° 14' 9.22	9.1	18 52 6.7	-23 52.1		
35	Am 4311	-25° 13' 05.4	8.9	18 14 24.1	-25 17.6		
36	Am 4311	-29° 58' 3.16	18.2	18 59 41.5	-29 3.4		
37	Am 4311	-34° 13' 35	9.5	18 41 23.2	-34 49.0		
38	Am 4311	-19° 49' 45	18 8 28.2	-19 7.2			
39	Am 4311	-23° 14' 07.2	7.4	18 5 27.4	-23 8.7		
40	Am 4311	-23° 14' 02.6	9.6	18 3 16.0	-23 42.3		
41	Am 4311	-16° 45' 9	8.7	18 16 20.8	-16 52.4		
42	Am 4954	-29° 14' 6.36	9.0	18 4 13.9	-29 5.1		
43	Am 4954	..	..	17 45 48.0	-34 19.2		
44	Am 4954	-40° 8' 47.9	10.2	18 0 27.8	-40 13.1		
45	Am 4954	-42° 13' 49.8	9.9	18 31 50.4	-42° 21.0		
46	Am 4954	-32° 12' 42.9	7.5	17 3 10.7	-32 10.2		
47	Am 2916	-23° 13' 7.3	9.4	17 5 24.0	-23 0.9		
48	Am 2916	-33° 12' 6.28	9.4	17 48 3.3	-33 47.6		
49	Am 2916	-37° 12' 04.5	9.3	17 50 45.7	-37 52.0		
50	Am 2916	-20° 52' 5.3	9.1	18 42 6.6	-20 26.2		
51	Am 2085	-18° 51' 48	9.4	18 36 3.4	-18 32.2		
52	Am 2085	-18° 47' 29	7.4	17 57 55.6	-18 34.0		
53	Am 2085	-18° 9' 7.4	13 6.7				
54				17 45 30.0	-34 22.1		

New variables mailed in Am 3589

R.L. 1900	Dec. 1900	Br.	F.L.	Constellation	
18 53 37.9	-23 50.2			Sagittarius	B 14088
18 15 56.7	-25 17.1	8.6	10.8	Sagittarius	
19 1 16.1	-28 57.5	9:	11.2	Sagittarius	
18 43 2.9	-34 47.5			Sagittarius	
18 17 7.3	-19 6.6			Sagittarius	B 13596
18 6 58.5	-23 8.7	7.5	10.2	Sagittarius	B 17440
18 4 47.5	-23 42.3	9.6	10.2	Sagittarius	
18 18 57.2	-16 52.4			Sagittarius	B 19243
18 5 47.5	-29 5.1	7.6	10.7	Sagittarius	
17 4 16.1	-34 19.2	9.6	10.2	Sagittarius	
18 2 12.9	-40 13.1	10.2	10.7	Corona Australis	B 19770
18 33 37.4	-42 21.0			Corona Australis	B 4990
18 19 54.5	-12 45.2	2.1	10.1	Sagittarius	B 25391
17 54 55.0	-23 0.9	8.6	10.1	Sagittarius	
17 49 42.5	-33 47.6	9.5	11.0	Sagittarius	B 34491
17 52 28.5	-37 52.0			Corona Australis	B 50001
18 44 47.9	-20 26.2			Sagittarius	B 9850
18 4 47.5	-16 52.4	9.7	11.3	Sagittarius	
18 38 42.9	-17 32.2			Sagittarius	B 20371
18 2 34.0	-18 34.0			Sagittarius	B 16414
18 11 39.6	-13 6.1			Sagittarius	
17 47 9.6	-34 22.6			Sagittarius	B 16448

Circular 137

Map No. 31

New Variable Stars. (also see circ. 128)

Regin 18^h 0^m

From

C.D.M.

C.D.M.

R.A.

Dec.

R.A.

Dec.

R.A.

Dec.

R.A.

Dec.

Class.

Hercules

Scutum

Sagittarius

Sextans

24.6

25.6

26.6

27.6

17

8.7 + 16° 33.1

17 47 42.3

+ 16 57.9

8.5 - 7° 45.3

18 35 52.7

- 7 52.2

7.5 - 9° 47.6

18 18 37.3

- 9 16.4

17 49 42.2

+ 16 57.9

18 38 17.2

- 7 49.8

18 21 5.3

- 9 15.2

8.2

9.3

Alph

Short per.

Alph

- 12

13

14

Circular 140

Map. No. 13

New Variable Stars.

Requ. $6^m + 30^s$

No.	Function	Am	mg	Nov. 1883	Dec. 1883
59	Ac 7998	..	mg	5 31 55.3	+38 57.3
60	Ac 5776	+28° 921	9.4	5 42 57.2	+28 4.1
61	Ac 5776	+24° 1056	9.5	5 51 47.1	+24 27.6
62	Ac 5776	+22° 1187	9.0	5 57 48.4	+22 37.9
63	Ac 2399	+39° 1446	9.5	5 44 17.0	+39 28.1
64	Ac 2399	+39° 1225	8.8	5 6 6.3	+39 57.4
65	Ac 2399	+22° 1146	9.3	5 53 52.3	+22 14.3
66	Ac 2399	..	..	5 40 33.2	+19 0.7
67	Ac 2399	+13° 1034	9.3	5 47 37.7	+13 32.4
68	Ac 2399	..	..	5 54 40.5	+16 22.0
69	Ac 2399	+13° 971	8.4	5 36 50.4	+13 30.4
70	Ac 7498	+45° 1202	8.5	5 46 23.0	+45 28.2
71	Ac 7498	+20° 1432	9.5	6 19 36.9	+20 37.7

Requ. $6^m + 30^s$	Nov. 1883	Dec. 1883	Per.	Fl.	Class	Range
5 35 2	+38 57.3	53.2	9.5	12	<u>II</u>	2.6
5 45 49	+28 4.1	5.2	9.4	11.0		1.6
5 54 33	+24 27.6	28.1	9.3	10.3	<u>II</u>	1.0
6 2 37	+22 37.9	37.9	9.0	10.0		1.0
5 47 25	+39 28.1	29.1	9.5	10.1		0.6
5 8 14	+39 57.4	1.0	9.3	10.1		0.8
5 56 35	+22 14.3	14.7	9.5	11.0	<u>IV</u>	1.5
5 43 12	+19 0.7	2.0	10.0	11.5	<u>II</u>	7.5
5 50 11	+13 32.4	40.3	9.7	10.7	<u>V</u>	1.0
5 57 16	+16 22.0	22.3	9.5	11.2	<u>II</u>	7.25
5 37 23	+13 30.4	31.9	8.5	9.4	<u>IV?</u>	0.9
5 49 42	+45 28.2	29.1	9.3	10.3		1.0
6 22 18	+20 37.7	38.4				

Circulus 140.

Map No. 4

New Variable Stars

6^h + 60°

No. Found on	DM	mp	R.A. 1855	Dec. 1855
70 Ac 540	+65° 6.13	9.11	7 57 28	+65 39.0
71 Ac 7206	..	..	6 58 34	+73 33.6
72 Ac 7206	+61° 8.87	9.3	6 16 16	+61 38.2
73 Ac 7209	..	..	6 18 57	+67 7.2

R.A. 1900	Dec. 1900	Pr.	Fl.	Class	Range
8 1 41	+65 31.6	9.2	10.1		0.9
7 4 9	+73 29.7	9.8	10.9		1.1
6 19 34	+61 37.1	9.2	9.9		0.7
6 23 40	+67 8.7	10.6	11.6		7x1.0

Map No. 49 Region 2°-60°

New Variable Stars

No. Found on	DM	Mg	RA 1875	Dec. 1875
~~76~~ Ann 1897				
75				
76 Ann 1897	CDM-43°44'44"	7.8	8 32 43.0	-43 40.8
77 " "	CDM-48°46'13"	9.9	9 16 1.0	-48 59.9
78 " "	CDM-48°23'47"	9.0	9 16 0.8	-48 59.9
78 " "	CDM-46°44'58"	9.0	8 39 31.8	-46 57.2
79 " "	CDM-49°44'69"	9.6	9 27 15.7	-49 6.2
80 " "	CDM-50°41'68"	9.6	9 23 16.2	-50 31.5
81 " "	CDM-50°35'33"	9.7	8 41 3.7	-50 6.5
82 " "	CPD-52°32'45"	8.8	10 2 55.5	-52 38.9
83 " "	CPD-56°39'77"	9.4	10 41 7.4	-56 53.4
84 " "	CPD-57°32'24"	9.8	10 22 21.7	-57 38.3
85 " "	CPD-60°18'56"	9.1	10 17 7.0	-60 26.6
86 " "	CPD-66°07'56"	10.2	7 38 1.5	-69 11.4
87 " "	CDM-48°42'37"	10	9 10 7.5	-49 15.3
88 Ann 5357	CDM-50°40'12"	9.7	9 14 48.1	-50 2.3
89 " "	CDM-50°38'70"	8.2	9 4 14.9	-50 56.0
90 " "	CPD-54°34'77"	8.3	10 15 59.9	-54 41.6
91 " "	"	"	10 9 21.5	-60 15.9
92 Ann 4193	CPD-54°03'07"	9.9	10 0 50.3	-54 35.4
93 Ann 4194	CDM-45°04'49.0	8.4	8 40 41.4	-45 53.2
94 " "	CPD-71°08'73"	9.4	9 44 19.0	-71 37.9
95 " 1897	"	"	9 44 31.0	-58 57.3

Class 1897
4m 50.1
1m 41.9
2m 41.6

RA 1900	Dec. 1900	Pro.	Fl.	Mag.	Const.
				A10490	Vela
8 33 34.7	-43 46.0			B10480	Vela 76
9 16 52.6	-49 6.2			B31155	Vela 77
8 40 21.1	-47 2.8			B20879	Vela 78
9 28 51.5	-49 12.8			B31155	Vela 79
9 24 7.4	-50 37.4			B31155	Vela 80
8 41 50.0	-50 11.9			B20879	Vela 81
10 3 50.9	-52 46.2			B36008	Vela 82
10 42 7.4	-57 1.3			A12743	Carnia 83
10 23 16.7	-57 45.9	13861	7492	B12743	Carnia 84
10 17 58.0	-60 34.1			B12741	Carnia 85
7 37 57.5	-69 18.9	18014	10777	B19108	Carnia 86
9 10 58.1	-49 21.5	18418	21112	B31155	Vela 87
9 15 38.6	-50 8.6	22622	18618	B18418	Vela 88
9 5 3.1	-51 2.9	18418	18618	B18418	Vela 89
10 16 56.0	-54 49.1	22622	22622	B33094	Vela 90
10 10 11.1	-60 23.5	38789	21112	38789	Carnia 91
10 0 46.6	-54 43.0	27134	31162	B27136	Vela 92
8 41 31.9	-45 58.6	15446	12855	B24864	Vela 93
9 44 40.8	-57 44.4	12540	36029	B12540	Carnia 94
9 45 20.8	-59 4.4			B12784	Vela 95
				A4256	" Ann

Map No. 7 Region

Circular 159. $15^h + 60^0$

No.	Location	Dec. 1855	Dec. 1855	R.A. 1900
96	AC 6322 +75° 51' 2" 7.7	13 36 7	+75 2.8	13 36 54
97	AC 10415 +64° 10' 77" 8.0	15 31 45	+64 23.4	15 32 23
98	AC 10469 +56° 17' 56" 8.8	14 39 46.4	+56 43.7	14 41 56
99	AC 10445 +60° 18' 88" 7.0	16 32 56.8	+60 45.8	16 33 36.4

96 Constellation
Herc Minor
97 Draco
98 Draco
99 Draco

Dec. 1900	Ident.	Alt.	Br.	Mag.	Min.	Class	Sp.
4 49.9		ac 10375	6331	9.0	9.8	IV?	mb-n 33034
+75 23.4	I 9242	ac 6322					
+64 23.0	I 19071	ac 10445	9447	7.8	9.8	V	B9
+56 43.2	I 17879	ac 10469	9475	9.8	10.6		mb
+60 40.2	I 34988	ac 10271	10415	8.6	9.3		ma

Estimate magnitude
as stars are
on edge

These estimates of magnitude were made on 7" plate AC 10312, on which Miss Leland marked the polar sequence. The estimates of nos. 97 and 98 are considered fair, but those of 96 and 99 are uncertain due to the distance of these stars from the centre of the plate, where the polar sequence is photographed. No. 99 comes off plate AC 10312, so I had to compare stars near no. 99 with stars on edge of plate which had been estimated by comparison with the polar sequence.

Map No. 10.

Circular 159.

Regulus $\alpha^k + 30^\circ$

No.	Form	Dim.	Mag.	R.A. 1855	Dec. 1855
100	AC 631	$+26^\circ 47' 46''$	(R)	23 59 2.8	$+26^\circ 15.2'$

R.A. 1800		
0	1	21.0

Dec. 1900	Lat.	LT.	Par.	Magn.	Max.	Class	Sp.
$+26^\circ 30.3'$	1972	I 28066	I 5662	10.5	9.6		

Max. magn. estimated by
comparing with polar rep.
in AC 9646, which is
very poor for faint stars.
The var. is not clearly seen.
so the estimate of min.
magn. is a mere approx-
imation.

No.	Constellation
100	Pegasus

Map No. 18⁶

Circulus 157

Regin 12^h + 30°

No.	London	R.A. 1855	Dec. 1855	Mag.	D.M.
101	Ac 6177	13 13 7.2	+46° 17.6	7.3	+46° 18.6 ²
102	Ac 6250	12 32 5.8	+28° 17.5	..	..
103	Ac 2589	11 48 45.0	+16° 33.2	8.5	+16° 23.2 ⁸
104	Ac 11172	12 25 32.1	+27° 49.4	..	..

No. Constellation
 101 Canes Venatici
 102 Coma Berenices
 103 Leo
 104 Coma Berenices

B1263

Ac 7471 Ac 420

Dec. 1850	Ident.	R.A.	Dec.	Mag.	mi.	Class	Sp. Me.
+46 3.4 ²	I 401	Ac 7557	Ac 2589	8.3 ⁵	9.4		Double T=1515
+28 2.6	I 3068	Ac 3060	7.00	10.2	11.1		
+16 4.8 ²				8.9	9.7		
+27 34.5	I 24515	Ac 2022	Ac 2500	10.5	11.5		

No. 101 estimated
 on Ac 11387, 7th place
 taken for B. Can. Ven.
 Images very much
 elongated.

No. 103 estimated
 on Ac 10318
 7th
 but ^{again} too far away.

No. 102 estimated
 on Ac 10318,
 rather different
 in account of
 families of the stars.

No. 104 estimated
 on Ac 10318.
 This mag. very
 uncertain as the
 plate does
 not show such
 faint stars.

Circular 159.

Regin $18^h + 20^m$

No.	From	DM.	by	R.A. 1855	Dec. 1855
105	Ac 3785	..	f	18 9 15.1	+31 46.6
106	Ac 3785	..		17 48 59.3	+30 26.5
107	Ac 3785	+20° 35' 19"	9.2	17 28 17.4	+20° 47.9
108	Ac 3763	+42° 28' 23"	8.0	17 14 2.6	+42° 27
109	Ac 6387	+47° 26' 25"	9.0	18 18 18.2	+47° 27.6
110	Ac 6387	+36° 28' 43"	7.8	17 9 17.7	+36° 32.5

R.A. 1900

18 10 56.6

17 50 42.1

17 31 13.3 ✓

17 15 26.8 ✓

18 19 28.1 ✓

17 10 52.7

Dec. 1900

+31 47.3

+30 25.8

+20 45.7

+41 59.6

+47 32.7

+36 29.9

Ident. in

I 22893

I 6658

I 6547

I 15885

From

I 15339 I 22893

I 6658 I 6547

I 6658 I 6547

I 6658 I 6547

I 6658 I 6547

I 6658 I 6547

Mag.

10.5

9.5

9.1

8.1

9.0

8.6

Min.

<13

11.0

9.8

9.0

9.6

9.4

Class.

II

V

V

V

V

V

Sp.

..

..

..

..

..

..

Ink I 22888

71' plate
Ac 9683
used for
determining
magnitudes.
Some of them
are very uncertain
due to distance
from center of
the plate.

Map No. 52

Circular 162

18° - 60°

No.	Foundn	Dec	Mag	R.A. 1875	Dec 1875	R.A. 1900
111	Am 2806	-57° 17.8	8.4	18 35 44.9	-51 44.6	Telescopii 18 35 48.7
112	Am 2806	-50° 11.9	9.3	17 11 18.0	-50 57.6	Arctae 17 13 15.2
113	Am 2806	..	..	17 58 27	-58 58.0	Paronis 17 58 32
114	Am 2806	-57° 52.9	9.5	16 55 54.8	-57 32.1	Arctae 16 58 1.8
115	Am 2806	-57° 76.3	9.0	16 37 16.5	-57 3.0	Arctae 16 33 13.5
116	Am 3586	-43° 12.4	9.7	18 9 46.6	-43 23.9	Coron. Aust. 18 11 35.0
117	Am 3586	..	..	17 53 0.8	-52 43.0	Arctae 17 55 1.2
118	Am 6069	-46° 12.8	9.2	18 57 47.2	-46 9.2	Telescopii 18 59 37.7
119	Am 6069	-45° 12.6	9.1	18 34 8.6	-45 53.8	Telescopii 18 35 59.5
120	Am 6069	-60° 6.9	9.0	17 53 48.1	-60 27.0	Paronis 17 56 3.1
121	Am 6069	-60° 6.8	9.8	17 17 46.8	-60 47.3	Arctae 17 20 1.8
122	Am 6069	-63° 4.9	8.6	17 45 58.6	-63 36.5	Paronis 17 48 22.6
123	Am 6069	-69° 2.9	9.2	18 22 32.8	-69 58.4	Paronis 18 24 1.8
124	Am 3586	..	..	16 47 27	-64 43.6	Arctae 16 49 26.7
125	Am 3586	-62° 5.2	9.5	16 7 16.0	-62 25.3	Triang. Aust. 16 9 24.0
126	Am 3586	-59° 6.7	10.2	16 13 42.2	-59 3.0	Triang. Aust. 16 15 49.2
127	Am 3586	-55° 8.1	9.8	17 15 58.0	-55 76.8	Arctae 17 18 3.0
128	Am 3586	-60° 6.9	9.1	17 23 51.0	-60 27.0	Paronis 17 23 17.0
129	Am 3544	..	..	16 11.07	-61 8.2	Triang. Aust. 16 13 11.7
130	Am 3544	-62° 5.3	9.7	16 23 3.5	-62 52.0	Triang. Aust. 16 25 18.5
131	Am 3544	-77° 12.9	2	18 1 6.0	-77 42.4	Orion 18 4 45.0
132	..	-57° 8.6	13.4	17 15 58.0	-57 7.2	Arctae 17 26 17.4

Dec 1900	Identn	Stn	Born	Mag.	Min	Class	Sp.
-51 43.4	B36876	B37912	B36876	9.0	10.2	V	Telescopii
-51 1.4	B35810	Am 2806	Am 2806	8.9	10.3		
-57 58.2	B30112	2888	787	9.6	10.8	IV?	
-57 34.2	B40175	4246	5669	9.5	10.3		
-58 6.2	B44375	Am 2806	Am 2806	8.9	9.6	IV?	
-43 23.5	B33585	5669	4246	9.4	10.2	V	Orion
-52 43.2	B25342	3586	4246	10.4	11.2	IV?	
-46 7.1	B40499	Am 2806	Am 2806	8.9	9.9	..	mb
-45 52.6	B40499	Am 6069	Am 6069	9.0	10.2	Sub 80° 75	mb
-60 27.9	B27496	Am 6069	Am 6069	8.5	9.3		mb
-60 48.9	B9314	B32024	B22222	9.0	12.5		
-63 37.0	B27496	Am 2806	Am 6069	8.0	8.7		mb
-69 57.2	B25367	Am 2806	Am 6069	9.7	9.8		
-64 16.9		Am 2806	Am 2806	10.5	11.4		
2.62 29.3	B27411	Am 2806	Am 2806	9.2	10.5		10.5
-59 6.8	B11121	Am 3586	Am 2806	10.0	11.0		
-58 8.6	B11111	B24018	B22581	9.6	11.0		
-64 12.3	B11408	B40210	Am 2806	10.5	11.4		
-61 12.1	B27411	Am 2806	Am 2806	10.1	11.5		
-62 57.4	B27411	Am 6069	Am 6069	9.1	10.1		
-77 42.4	B22890	Am 421	Am 2219	9.4	10.0		Ma Pa
-57 4.6	B19118	Am 2806	Am 6069	7.6	10.6	V	Orion

Map No. 22
 Circular 165
 0° 0' S.

No.	Found on	DM.	mg.	R.A. 1855	Dec. 1855
133	8825	+12° 49' 7"	9.2	23 22 37.5	+12 44.8
134	6517	-19° 7'	8.0	0 3 34.1	-19 22.7
135	6517	+7° 50' 56"	8.8	23 27 2.4	+7 7.0

R.A. 1900

23	24	53.5
0	5	32.0
23	29	19.6

Dec. 1900

+12° 59' 6"
-19° 7' 7"
+7° 21' 9"

Macfar
 Ident. on

Ident. on	Dec. on	max	min.	class	sp.
Dec 11030	Jan 6638				1st type
Jan 6502	Jan 3016				mb
Jan 6517	Jan 2760	8.7	8.5		H. 1000
Dec 11099	Dec 517				

Range of No. 134
 estimated from
 photom. magn.
 in H.R. 577 actual
 to photom. magn.
 by means
 of photom.
 correction from
 in Table 21 H.R. 577

Miscellaneous Regimens

Circular 164.

Found on	DM	mag	P.A.	Dec	P.A. 1900
136	Am 6454	-17°49'8"	9.1	17 50 57.0	-17 23.0
137	Am 6454	-26°11'80"	7.2	16 58 20.8	-26 24.6 ✓
138	Am 137	..	18	12 15.0	-25 14.0 ✓
139	Am 137	..	17	58 53.1	-27 26.8 ✓
140	Ac 12157	+33°12'90"	9.1	6 7 42.2	+33 15.1 ✓
141	Ac 11254	+50°7'2"	8.2	0 18 31.9	+50 28.7 ✓
142	Ac 12341	..	7	27 40.6	+17 13.5

* Measured by A.D.W.

Dec. 1900	Ident. on	Found on	Br. on Mar	Min. class	Sp.
-17 23.6	B#027	Am 2147			2nd type
-26 26.8	B19720	Am 6338			Nova Sag. No. 3.
-25 13.5					Nova Sag. No. 4
-27 26.8					Inc
+33 14.6	20267	Ac 9166	Ac 9181		Inc 1, 14, 15
+50 43.6	12035	Ac 12157			1st m. 1935
+17 7.8	22103	Ac 12238	Ac 11254		
		Ac 12026			
		Ac 12106			
		Ac 12106	22103		
		Ac 12340	Ac 12167		
		Ac 12341			

Nov. 141 m
 Ac. 11254,
 compared with
 +52°7'2", photo
 magn. 5.69. $\frac{5.69}{0.91}$ $\frac{1}{2}$ 3.8
 6.60
 This is perhaps $\frac{1}{2}$ mag.
 fainter than +52°7'2"

Map No. 25

H.C. 218

Im	mg.	1855	1855	1907
+6°1208	88	6°13'38.0	+6°31.9	6 16 3.1
+6°971	9.1	6°28'40.9	+6°44.7	5 31 6.1
+4°1476	7.9	6°44'16.0	+4°55.6	6 46 39.09
..		6 19.2	+5°28	6 21 40.6
				+5°26.1

143 - monocrotis
 144 - monocrotis
 145 - monocrotis
 146 - monocrotis

144 very fl. in AL 19607

	1907	Selected and marked	Bm.	Fl.	May.	min	1.0	
	+6 31.0	B 28721, J 17831	AL 1525	B 55332	8.6	9.5	6.9	95
	+6 48.8	J 23526			9.5	10.3	0.8	12?
	+4 53.0	J 17358			8.7	9.4	0.7	sp. Mc
	AL 15279	J 28721	I	B 26579	B 35332	10.2	11.4	71.2
	AL 1, 14	B 26579						..

Miscellaneous Variables
Found from spectra.

Annularis C. 167.

(1853)

(1855)

1900

147	+38°	^{mi} 525.94	2 29	20.8	+38	32.2	2 02	88+38	^{44.2} ~~38.5~~
148	12 Reg.	..	21 2	7.8	+15	27.1	21 4	14.4+15	37.8

Marked on I 10080 Bright ^{dynable} faint on I 9731 Sp R on I 26324
Marked on I 18815 ind

12^h 0^o
Map no. 28 H.C. 218

Alt. 1891	From	DM	Mag.	R.A. 1855	Dec. 1855	R.A. 1900	Dec. 1900
149	Dec 11 435	+0 2900	9.3	12 1.1	+0 19.7		
150	"	"	"	11 26.5	+0 46	11 28 46.4	+0 31.3
151	"	"	"	11 34.0	+11 21	11 33 23.2	+11 6.7
152	"	+30 2893	9.0	11 57.1	+3 2.578	11 59 24.8	+3 10.6
153.	8 188	-40 3155		11 44.4	-4 57.0	11 41 23	-5 12.3
154	6 117	"		12 13.7	+3 11	12 16.1	+3 5.6
155	"	"		12 16.1	+3 11	12 16.1	+3 5.6
156	"	"		12 16.1	+3 11	12 16.1	+3 5.6
157	"	"		12 16.1	+3 11	12 16.1	+3 5.6
158	"	"		12 16.1	+3 11	12 16.1	+3 5.6
159	"	"		12 16.1	+3 11	12 16.1	+3 5.6
160	"	"		12 16.1	+3 11	12 16.1	+3 5.6
161	"	"		12 16.1	+3 11	12 16.1	+3 5.6
162	"	"		12 16.1	+3 11	12 16.1	+3 5.6
163	"	"		12 16.1	+3 11	12 16.1	+3 5.6
164	"	"		12 16.1	+3 11	12 16.1	+3 5.6
165	"	"		12 16.1	+3 11	12 16.1	+3 5.6
166	"	"		12 16.1	+3 11	12 16.1	+3 5.6
167	"	"		12 16.1	+3 11	12 16.1	+3 5.6
168	"	"		12 16.1	+3 11	12 16.1	+3 5.6
169	"	"		12 16.1	+3 11	12 16.1	+3 5.6
170	"	"		12 16.1	+3 11	12 16.1	+3 5.6
171	"	"		12 16.1	+3 11	12 16.1	+3 5.6
172	"	"		12 16.1	+3 11	12 16.1	+3 5.6
173	"	"		12 16.1	+3 11	12 16.1	+3 5.6
174	"	"		12 16.1	+3 11	12 16.1	+3 5.6
175	"	"		12 16.1	+3 11	12 16.1	+3 5.6
176	"	"		12 16.1	+3 11	12 16.1	+3 5.6
177	"	"		12 16.1	+3 11	12 16.1	+3 5.6
178	"	"		12 16.1	+3 11	12 16.1	+3 5.6
179	"	"		12 16.1	+3 11	12 16.1	+3 5.6
180	"	"		12 16.1	+3 11	12 16.1	+3 5.6
181	"	"		12 16.1	+3 11	12 16.1	+3 5.6
182	"	"		12 16.1	+3 11	12 16.1	+3 5.6
183	"	"		12 16.1	+3 11	12 16.1	+3 5.6
184	"	"		12 16.1	+3 11	12 16.1	+3 5.6
185	"	"		12 16.1	+3 11	12 16.1	+3 5.6
186	"	"		12 16.1	+3 11	12 16.1	+3 5.6
187	"	"		12 16.1	+3 11	12 16.1	+3 5.6
188	"	"		12 16.1	+3 11	12 16.1	+3 5.6
189	"	"		12 16.1	+3 11	12 16.1	+3 5.6
190	"	"		12 16.1	+3 11	12 16.1	+3 5.6
191	"	"		12 16.1	+3 11	12 16.1	+3 5.6
192	"	"		12 16.1	+3 11	12 16.1	+3 5.6
193	"	"		12 16.1	+3 11	12 16.1	+3 5.6
194	"	"		12 16.1	+3 11	12 16.1	+3 5.6
195	"	"		12 16.1	+3 11	12 16.1	+3 5.6
196	"	"		12 16.1	+3 11	12 16.1	+3 5.6
197	"	"		12 16.1	+3 11	12 16.1	+3 5.6
198	"	"		12 16.1	+3 11	12 16.1	+3 5.6
199	"	"		12 16.1	+3 11	12 16.1	+3 5.6
200	"	"		12 16.1	+3 11	12 16.1	+3 5.6

150 Film B10928, very bright as B31752

Measured

Marked	St. on	Brn	Max	Min	Class	Sp.
17917	224575-	ac6117 3361	11435	ac5249 3361		
25016	243727 223334	ac10520	221507	ac51037 33102		
	232648	31518 31554		332648		
	232825-	ac9335		224017		
	226418					

15-3

Circ. 184

Miscellaneous. (found from spectra)

London	Dec	Jan	R.A. 1855	Dec. 1855	R.A. 1900	Dec. 1900
158	..	..	..	..	6 31.1	+44 14
1586	..	..	..	..	7 7.2	+14 46
1587	..	..	..	..	7 42.5	-26 6
1588	..	..	..	..	11 27.6	-64 52
1600	..	..	..	..	12 18.9	-36 5
1680	..	..	..	..	12 57.9	-28 34

sp.
md
R
md -
P
me
md

H.C. 186.

Miscellaneous.

27C	H.C.	Dec	R.A. 1900	Dec. 1900
161	3400	-10° 9' 3"	4 39.0	-10 53
162	3401	..	10 30.5	-58 44
163	3402	-31° 10' 6"	15 50.1	-37 32
164	3403	-9° 43' 29"	16 7.8	-10 5
165	3404	-44° 10' 23"	16 8.3	-44 32
166	3405	..	16 28.2	-61 20
167	3406	..	17 17.2	-38 47
168	3407	..	17 40.3	-52 37
169	3408	-44° 12' 59"	18 19.1	-44 20
170	3409	..	18 19.3	-50 54
171	3410	-36° 13' 6"	19 31.9	-36 37
172	3411	+76° 19'	20 12.9	+76 52
173	3412	+4° 45' 34"	20 52.2	+4 42

sp.

A.5

R

Pac.

mc

md

md

md

md

md

md

md

md

A.0

1329153

already known

Miscellaneous

H.C. 126. Dec. 14.

16 ~~2~~						
16 ~~2~~ 161	Bz 685.4	-10° 993	4 ⁽¹⁹⁰²⁾ 39.0	-10 ⁽¹⁹⁰²⁾ 5-3	8.0	
	Bz 1296p					
174	-10° 2171	7 ¹⁹⁰² 37.5	-10 ¹⁹⁰² 38			
175	+22° 1109	5 ¹⁹⁰² 57.0	+22 50	8.2		
176		19 43.7	+3 27		19 41.4 + 321	
177 mcs.		20 9.6	+4 30		20 7.4 + 428	
178	-32° 13142	17 34.4	-32 10			

178.

Found white pupuring spectrum plates.
 Sequences marked in Am 12235.
 Measured by D.M.B. See ledger
 Feb. on Am 4311
 Br. on Am 13434, Am 13440

Pl.

Sp.

Bz 6124	Inf					
Bz 37570	Inf	Bz 21418, FL 15725, MK 3170				
Bz 7589	Inf	Bz 39078, FL 4314208, MK 3171				10.2 < 12.0 J.S.

Algol. Fungus

Bz 135, 18.

Miscellaneous.

H.C. 196. 224.

Found from Spectra Pl. 143

dm

179	-46° 13014	19 20.3 - 46 4
180	-47° 10298	15 39.4 - 47 45
181	-23 12286	15 29.5 - 23 47
182	-42 13918	19 1.6 - 42 31
183	..	17 56.4 - 47 14
184	..	13 42.1 - 37 38
185	..	15 2.4 - 15 7
Apparent 186	..	10 46.1 - 48 9
Apparent 187	-50 5170	10 24.2 - 50 40
Winds 188	-41 9373	14 54.3 - 42 5
189	..	17 1.9 - 61 50
190	-49 12412	18 48.6 - 49 36
191	-52 6741	13 46.9 - 52 52
192	..	18 14.6 - 44 57

(186 not found in Pl. 143, only in Pl. 144)

186	..	13 57 58 - 66 31.9	12.2 - 13.4
187	..	15 23 38 - 62 12.9	12.0 - 13.2
188	..	19 34 30 - 44 50.4	12.5 - 15.0
189	..	18 37.3 + 22 52 (136075)	

226
mll

In Sagittarius
H.C. 265

212

213

14

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In Sagittarius
H.C. 265

241
242
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68
69

In Sagittarius
H.C. 265 - H.B. 825

R.A. 1900

270

271

H.B.
3884

272

16 49 47 - 30 9.5

H.B. 825

273

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294

295

H.B.
3908

296

19 21 51 - 12 21.9

H.B. 825

H.B.
3989

297

10 4.9 - 59 31

H.B. 837

Q.P.C.
No.
298

18 11 12 23 40.3

hms Sgr

Feb 1, 1847
H. B. 843

<i>L. Es.</i>	<i>Design.</i>	<i>Lists</i>	<i>Measured</i>	<i>Elements</i>	<i>Class Sp.</i>
1.	001828	Early B, I	Measured	$2410000.10 + 0.47932 E$	IV
2.	012746	ac, B, I	Measured	$2412486 + 337 E$	II
3.	230258	^{int.} B, I (Litt. mode)			IV
4.	180415	B, I, AM, ac	Measured		V
5.	185901	B, I, ac, am	Measured	$2412685.63 + 17.132 E$	IV
6.	182513	B, I, Litt. mode			IV
7.	175103	B, I, ac, am, a	Measured		II
8.	× 172801	B, I			IV
9.	190301	B, I, ac, am	Measured	$2411873.865 + 13.75 E$	IV
10.	183705	B, I, Litt. mode			IV
11.	183208	B, I			IV
12.	181813	B, I	" "		V
13.	184310	B, I	" "		IV
14.	183604	B, I	" "		IV
15.	183606	B, I	" "		IV
16.	173401	B, I	" "		IV
17.	065223	B, I	" "		IV
18.	061426	B	" "	$2414981 + 127^d E$	II
19.	060630	B	" "	$2414980 + 300^d E$	II
20.	070025	B	" "		IV
21.	063931	B	" "	$2414753 + 230^d E$	II
22.	062935	B, am, a	" "		V
23.	062440	B	" "	$2415411 + 227^d E$	II
24.	063942	B	" "	$2413153 + 180^d E$	II
25.	045333	B	" "		IV
26.	235152	B	" "		IV
27.	012571			Omitted until further confirmation	

17.2 to 17.8 + 5° to - 5.5

Orig. Lists

28.	004872	B, am. a. <i>Liloma</i>	V.
29.	232746	B, " "	II.
30.	003050	B, " "	II.
31.	005463	B, " "	IV.
32.	~~001060~~ ~~212770~~	B, " "	IV.
33.	212770	B, " "	IV.
34.	185323	B, " "	
35.	181525	B, " "	
36.	190729	B, " "	
37.	184334	B, " "	
38.	181119	B, l. " "	
39.	180623	B, l. " "	
40.	180423	B, l. " "	
41.	181816	B, l. " "	
42.	180529	B, " "	
43.	174734	B, <i>Liloma</i>	
44.	180240	B, " "	
45.	183342	B, " "	
46.	181912	B, l. " "	
47.	175423	B, l. " "	
48.	174933	B, " "	
49.	175237	B, " "	
50.	184420	B, l. " "	
51.	180516	B, l. " "	
52.	183819	B, l. " "	
53.	180218	B, l. " "	
54.	181113	B, l. " "	

Limits.

 0.0 to 2.0 - 68° to -78°
 23.8 to 0.9 - 54° to -64°
 18.6 to 19.4 - 25° to -36°
 18.3 to 19.1 - 29° to -40°
 17.9 to 18.5 - 17° to -27°
 17.8 to 18.5 - 19° to -29°
 17.7 to 18.4 - 18° to -28°
 18.0 to 18.6 - 11° to -23°
 17.7 to 18.5 - 25° to -35°
 17.3 to 18.1 - -29° to -45°
 17.8 to 18.3 - 34° to -44°
 18.0 to 18.9 - 39° to -48°
 18.0 to 18.7 - 7° to -19°
 17.6 to 18.2 - 18° to -29°
 17.4 to 18.1 - 26° to -39°
 17.5 to 18.8 - 32° to -44°
 18.4 to 19.8 - 15° to -25°
 17.8 to 18.4 - 11° to -23°
 18.3 to 19.0 - 44° to -25°
 17.8 to 18.4 - 13° to -24°
 17.4 to 18.5 - 7° to -20°

55.	174916	J	<i>Lithonia</i>
56.	183807	D, Q	"
57	182109		
58.	174734	B.	<i>Lithonia</i>
59	053538	J	
60.	054528		
61	055424		
62.	060222		
63	054739		
64.	050840		
65.	055622		
66.	054319	J, B	<i>Lithonia</i> measured with AL & complete. Like R. C. B. on
67.	055013	J, B.	" "
68.	055716	J	" "
69.	053913		
70.	080165		
71.	070473		
72.	062061		
73.	062367		
74.	~~062367~~		
75.	062220		

Dinits

17.5^h to 18.2^h	$+11^m$ to $+22^m$
18.3^h to 19.0^h	-2.5^m to -13.5^m
8.0^h to 18.7^h	-3.8^m to -14.5^m
5.2^h to 6.0^h	$+33^m$ to $+43^m$
5.3^h to 6.1^h	$+23^m$ to $+33^m$

New objects the announced
Feb. 1884.

New var. lat. No. 230 on B23764.
Sp. Md. Period long.

New class R

23 6.1 + 45- 45- (1900)
on J23300.

New H β high near Pegasus cluster

RK Lupin
155037

No. 74 on B337631. Conf. by J. C. M.
Sp. very peculiar. Remembers Class J.
J.C. on B336316. ^{B336316} _{B336316} ^{19642 mod. 2397} _{on 27433, 19446}
Brighter B33445. July 22, 1912

18 48.2 + 11 34
+113649 18 46.1 + 11 31 9.5 (1855)

New variable discovered while identifying "102"
on B40333; ft. on chart plate B30072, Br. on
B19525.

See not in my book 4 page 34.

J. C. Mackie
February 23, 1915.

June 1, 1915

Max. New var. No. 61 on B33343 July 22, 1908
July 22, 1908 Sp. Md.

Affix. 1895 16 25.5 - 68 17

Lunis. on 32597 < 13 Sept. 2, 1903

Very ft. on B38890 about 13 May 8, 1908
B341780 " Aug. 14, 1910

Median on B25421 about 12 May 23, 1900
on B26013 " " Sept. 5, 1900

Max. Very br. on B25665 " 9.5 July 2, 1900
July 2, 1900 = -68° 2769, mag. 9.8

Best image for measuring on B26013.

See J. C. his book 3, 15-4.

Max. ~~max~~ ^{max} mesh.
July 2, 1900 May 8, 1908 May 23, 1900
July 22, 1908 Aug. 4, 1910 Sept. 5, 1900

June 8, 1915

Var. no. 74 on B37631

very peculiar sp. H₂, H₂, & S together

also H and K.

Best seen on B23017.

Other sp. flatter & amorphous

B3141 Apr. 29, 1895 — base of high H₂, & S
H + K seen.

B41234 May 3, 1895 "

B4367 Aug. 14, 1895 "

B39277

39296

41407

} base of high sp. H₂, S.

