

THE RADIAL VELOCITIES OF 741 STARS¹

By W. S. ADAMS, A. H. JOY, R. F. SANFORD, AND G. STRÖMBERG

ABSTRACT

This catalogue contains the *radial velocities* and *spectral types* of 741 stars observed at Mount Wilson with spectrographs of one-prism dispersion. The visual magnitudes range from 3.0 to 10.8, many faint dwarf stars being included.

The following *corrections* have been applied to the directly measured values: F, +0.5 km/sec.; G, 0.0; K, -0.9; M, -0.8.

Comparisons are made with 142 stars observed in common with the Lick Observatory, and 96 stars observed at the Dominion Astrophysical Observatory.

The *asymmetry* of stellar motions is shown in a striking way by the numerous stars of high radial velocity.

This catalogue of radial velocities contains the results for 741 stars observed at Mount Wilson during recent years with the spectrographs at the Cassegrain focus of the 60-inch and 100-inch reflectors. In all cases a dispersion of one prism has been used, but the prism employed in the spectrograph of the 60-inch telescope is of somewhat denser glass than the other and affords a larger scale. Cameras of 18-inch focal length are used in both instruments, supplemented in the case of the spectrograph of the 100-inch telescope by a 10-inch camera for observations on the fainter stars. The linear scale of the spectrograms ranges from 37 Å to the millimeter at $H\gamma$ for the spectrograph on the 60-inch telescope with the 18-inch camera, to 76 Å for the spectrograph on the 100-inch with the 10-inch camera.

Table I gives the results found for the radial velocities. The arrangement is the same as that in *Mt. Wilson Contribution*, No. 258.² The list contains stars ranging in visual magnitude from 3.0 to 10.8. The photographic magnitudes of many of the fainter stars reach 11.0. The brighter stars were observed for the double purpose of providing spectra suitable for determinations of absolute magnitude and parallax and of furnishing a comparison with the values for such stars measured at the Lick Observatory. The number of stars

¹ *Contributions from the Mount Wilson Observatory, Carnegie Institution of Washington*, No. 387.

² *Astrophysical Journal*, 57, 149, 1923.

TABLE I
RADIAL VELOCITIES OF 741 STARS

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
.....	Cin.	α^h α^{m4}	$+45^\circ 15'$	8.5	M0	0".88	4	km/sec.	km/sec.	km/sec.	
87.....	Boss	0 0.6	$+12 50$	5.7	G5	.035	3	$+ 1$	± 1	$+ 2.6$	V
603.....		0 6.2	$-16 1$	5.0	F4s	.280	4	$- 2.1$	1.4	$+15.0$	L
787.....		0 7.1	$-18 30$	5.5	K5	.040	3	$+13.7$	1.5	$- 8.0$	L
1014.....		0 9.4	$- 8 20$	5.4	M4	.060	2	$- 8.2$	3.1	$- 2.4$	L
1228.....		0 11.5	$+ 1 18$	7.3	M5	.022	4	$- 6.0$	0.5		
1317.....	40	0 12.3	$+ 8 19$	6.6	G1	.078	3	$- 7.9$	1.6	$+36.6$	V
1671.....	45Br	0 15.9	$+37 25$	5.2	F2s	.040	3	$+32.0$	1.2	$+ 9.5$	L
1779.....	35	0 17.0	$-27 16$	9.0	G1	.440	3	$+ 8.9$	1.4		
1879.....	64	0 18.0	$-16 30$	6.6	M3	.041	3	$- 5$	2		
.....	Cin.	0 19.3	$-27 35$	8.0	K4	.669	3	$- 22.3$	2.3		
2806.....	98	0 26.4	$+15 28$	7.1	G9	.049	3	$+ 6$	1		
2910.....	104	0 27.3	$+19 45$	5.5	K0	.138	3	$- 5.7$	1.0		
3125.....	112	0 29.4	$- 5 6$	7.0	G1	.082	3	-11.5	1.1		
3266A.....	322A	0 30.6	$+29 27$	7.9	G4	.449	5	$+ 9.1$	3.0		
3266B.....	322B	0 30.6	$+29 27$	8.7	G6	.449	3	$- 49.5$	1.5		
3821.....	368Br	0 35.7	$- 7 46$	7.0	G3	.022	3	$- 59$	1		
.....	90	0 38.2	$+33 18$	8.5	K6	.427	3	$+ 4.7$	0.8		
4397.....	157	0 40.5	$-13 25$	6.1	F9	.200	3	$- 33$	1		
4568.....	167	0 42.6	$+20 23$	6.6	F8	.162	3	-12.8	0.6	$- 1.0$	V
4730.....	177	0 44.4	$-14 6$	5.8	K5	.135	3	$+ 3.4$	1.4		
5351.....	122	0 50.4	$+68 31$	9.4	K6	.739	3	$+ 3.1$	1.6		
6314.....	231	0 59.0	$+39 27$	6.7	A3n	.088	3	$- 46$	3	$+12.4$	V
6734.....	251	1 2.9	$+ 1 28$	6.7	G5	.446	3	$+ 5$	1		
6920.....	262	1 4.6	$+41 33$	5.7	F8	0.145	4	$- 94.9$	0.3	-13.1	V

	Boss	I ^h 7 ^m .4	+ I° 57'	6.8	F5	o".208		km/sec.	km/sec. ± 1.4	km/sec.
7218.....	275	I 11.5	- 3 2	5.5	G4	.126	4	+ 3.2	± 1.4	
7672.....	290	I 11.9	- 2 48	6.8	Go	.206	3	+ 19.8	2.3	
7727.....	301	I 15.6	+28 13	5.6	K5	.080	3	- 35.5	1.0	
8126.....	303	I 17.5	+ 1 12	6.5	M0	.069	4	- 15.7	2.3	
8334.....	306									L
8491.....	310	I 18.9	+67 36	5.0	G9	.086	3	- 7.8	0.3	-12.0
8627.....	749Br	I 20.0	- 6 28	6.8	F0	.....	3	+ 15.5	0.9	L
8705.....	317	I 20.7	-15 7	5.2	K3	.043	3	- 20.8	1.2	-21.0
B.D. +59°	251	I 20.9	+59 46	8.5	B3	.....	3	- 42	3	
Boss	319	I 21.3	+18 43	5.6	G9	.076	4	- 41.2	1.2	
8763.....										
8779.....	320	I 21.3	- 0 55	6.5	G9	.049	3	- 6.6	1.3	
9352-3.....	B.D. +57°	I 27.0	+57 49	6.0	Kop	.....	3	- 1.0	1.4	
9640.....	Boss	I 29.4	+17 57	6.0	M2	.088	4	- 26.4	1.7	
9670.....	344	I 29.7	+ 0 26	7.0	F8	.323	3	- 18.1	2.1	
Cin.	216	I 31.0	-18 2	7.1	Gr	.353	5	+ 7.5	1.4	
10113.....	Boss	I 33.9	+16 7	6.9	G5	.031	3	+ 4.5	1.4	V
10164.....	367	I 34.3	+15 54	6.1	K1	.073	3	+ 18.7	1.5	+17.1
12292.....	455	I 55.5	- 9 0	5.7	M5	.086	3	+ 6.8	1.9	V
12800.....	475	2 0.5	+71 5	6.7	F8	.389	3	+ 0.8	1.1	- 2.1
13137.....	481	2 3.4	+53 22	6.4	G5	.060	5	+ 10.5	0.8	
13174.....	483	2 3.7	+25 28	5.1	A7	.086	3	- 6	1	L
13325.....	491	2 5.1	+19 2	5.9	M3	.092	3	+ 60.3	2.6	
βG.C.	1136Br	2 6.4	+53 46	8.1	As	.010	4	+ 9	4	V
Boss	495	2 6.1	+ 8 6	5.7	F9	.174	3	- 16.7	1.3	-19.2
13421.....	496	2 6.5	- 2 18	6.0	G8	.026	3	+ 32.1	0.4	
13468.....										
13596.....	502	2 7.6	+14 49	6.0	M1	.100	4	+ 26.2	1.7	
13612.....	503	2 7.7	- 2 52	8.7	G3	.374	3	- 5	1	
13872.....	509	2 10.0	+24 35	5.6	F4	.120	3	- 44.3	0.4	
14411.....	B.D. - 3°	2 14.5	- 3 25	9.1	K5	.010	4	+ 39	1	L
15089.....	Boss	2 20.8	+66 57	4.6	cA4	0.015	2	+ 3	± 1	+ 3.3

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	OTHER DETERMINATIONS	
									v	Auth.
.....	Boss	2 ^h 20 ^m 8	+66° 57'	8.1	G4	0".03	3	+ 10	km/sec.	
15176.....	550C	2 21.5	+31 21	5.8	G9	.046	4	— 38.0	—40.3	V
15596.....	555	2 25.4	+17 16	6.4	G5	.103	3	—116.0	1.7	
15652.....	508	2 26.0	—22 59	6.4	M2	.044	3	— 18.9	2.8	
16082-3.....	570	2 29.9	+51 31	7.3	G1	.014	3	— 16.0	1.0	
16141.....	585	2 30.3	— 3 59	6.8	G1	.452	3	— 53.8	0.8	
16396.....	586	2 32.9	+32 59	7.0	K2	.....	3	— 3.8	2.2	
16480.....	β G.C.	2 33.5	+14 25	7.3	Ko	.....	4	+ 0.8	1.4	
16647.....	Boss	2 35.0	+ 5 41	6.2	F2s	.050	5	+18.5	1.6	V
16735.....	β G.C.	2 35.9	+53 6	6.0	G8	.079	4	— 11.0	1.1	
17206.....	Boss	2 40.4	—19 0	4.6	F5s	.327	6	+ 23.6	1.1	L
17245-6.....	B.D. +43°	2 41.0	+43 50	6.7	Fos	.....	3	— 13.7	0.5	
17459.....	Boss	2 42.9	+17 52	6.0	G8	.051	3	+ 47.8	1.4	V
17660.....	Cin.	2 45.0	+15 19	9.2	K6	.510	5	— 26	2	
17785.....	β G.C.	2 46.1	+72 29	7.7	Go	.082	3	— 3.0	1.3	
18200.....	Cin.	2 50.3	+52 5	8.0	G6	.49	3	+ 32.8	1.8	
18449.....	Boss	2 52.9	+34 47	5.0	K2	.063	3	— 36.1	0.8	L
18537.....	678	2 53.7	+51 57	5.4	B5	.043	3	— 2	3	L
18633.....	682	2 54.6	— 2 52	5.5	B9	.017	5	+ 17	3	L
18692.....	684	2 55.2	—25 40	5.6	Agn	.204	3	+ 21	1	
18803.....	689	2 56.5	+26 13	6.7	G5	.295	3	+ 15.6	1.2	V
18907.....	693	2 57.3	—28 28	5.9	G5	.493	3	+ 31.7	2.5	
18975.....	β G.C.	2 58.0	— 2 29	7.7	F7	.....	3	+ 34.8	2.2	
20418.....	Boss	3 12.0	+49 44	5.1	B3	.041	6	+ 1	5	L
21017.....	775	3 18.4	+24 22	5.7	K3	0.059	4	+ 13.1	±1.4	V

[illegible]

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
28424.....	B.D. +13° 688	4 ^h 23 ^m 9	+13° 41'	7.8	G9	.....	3	km/sec.	km/sec.		
28595.....	Boss 1057	4 25.4	+14 53	6.6	M3	0".074	3	+94.4	±2.0		
28704.....	1061	4 26.4	+42 51	6.1	Agn	.007	6	+38.0	0.2		
28749.....	1063	4 26.8	- 0 16	5.0	K4	.003	3	-24	3		L
.....	B.D. +55° 900	4 27.9	+55 13	8.6	K4	.64	3	+18.2	0.8		
.....	+14° 721	4 28.3	+14 57	8.5	K1	.....	3	+37	1		
.....	+14° 722	4 28.6	+14 46	8.7	K4	.....	3	-24	1		
29009.....	Boss 1070	4 29.0	- 6 57	5.7	B9	.012	3	+2	2		
29064.....	1071	4 29.4	- 8 26	5.4	M3	.035	6	-10.3	1.3		L
29065.....	1072	4 29.4	- 9 11	5.5	K5	.119	3	-25.0	2.3		L
29235.....	β G.C. 2274Br	4 31.1	+41 57	7.2	K2	.026	3	+16.7	0.9		
29364.....	2284N	4 32.4	+26 45	6.5	F2s	.....	4	+3.9	2.8		
29775.....	Boss 1105	4 36.1	-19 52	4.5	M3	.094	3	-32.3	2.1		L
30020.....	1112	4 38.8	- 8 59	6.8	F1s	.044	3	+40.0	1.3		V
30454.....	1129	4 42.8	+31 16	5.8	K1	.115	3	+22.0	0.4		
30504.....	1133	4 43.2	+37 19	5.1	K3	.046	2	-22.7	0.2		L
30834.....	1148	4 45.9	+36 32	5.0	K2	.026	2	-15.9	0.2		L
31805.....	β G.C. 2451S	4 54.2	+62 57	8.6	G4	.336	3	-24	1		
32070.....	Cin. 646	4 55.5	+24 30	8.5	G2	.322	3	+29	1		
33664.....	Boss 1237	5 6.7	-11 58	5.9	M6	.051	3	+45.8	0.9		
33735.....	Cin. 674	5 7.1	- 9 13	8.0	Ko	.57	4	+5.4	1.5		
.....	Comp. α Aurigae	5 10.0	+45 44	9.8	M2	.437	3	+36	5		
.....	B.D. +41° 1154	5 13.0	+41 8	8.7	Ko	.....	3	+39	2		
35186.....	Boss 1292	5 17.9	+37 18	5.2	K5	.027	3	-16.8	2.4		L
35410.....	1300	5 19.4	- 0 59	5.2	G6	0.125	4	+22.3	±0.8		L

[illegible]

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
45416.....	Boss	6 ^h 22 ^m 1	+ 0°22'	5.3	G8	0".011	3	km/sec.	km/sec.	+33.3	L, V
.....	Cin.	6 22.9	+27 5	8.7	K5	.50	3	+ 29.8	$\pm$ 2.3		
45951.....	β G.C.	6 25.4	+17 0	6.2	K1	.089	4	+ 47	1		
46136.....	Boss	6 26.5	+17 51	7.8	F6	.042	3	+ 26.5	1.0		
46374.....	1063	6 27.9	+14 14	5.6	K1	.097	3	+ 0.2	0.7	— 0.5	V
.....								— 12.5	1.4		
.....	B.D. +17°1320	6 31.4	+17 38	9.5	M1	.88	3	— 59	2		
47127.....	Cin.	6 32.0	+12 16	7.6	G5	.292	6	+ 52.4	1.9		
47914.....	Boss	6 35.8	+44 37	5.2	K5	.055	3	— 72.1	0.3	—75.8	L
48217.....		6 37.2	— 9 4	5.3	Mo	.037	2	+ 1.6	2.0	+ 0.3	L
48250.....	1716	6 37.4	+59 33	4.9	A3n	.015	4	— 6	3	+ 7	L
.....											
49520.....	1748	6 43.7	+41 54	5.0	K3	.136	3	+ 60.8	1.3	+60.6	L, V
49618-9.....	1753	6 44.3	+59 34	5.4	Go	.047	3	+ 11.7	1.4	+13.1	
49968.....	1760	6 45.9	+23 43	5.8	K5	.043	3	+ 39.7	2.0		
50635.....	1778Ft	6 49.0	+13 18	7.7	G5	.112	3	+ 25.4	1.8		
50692.....	1780	6 49.2	+25 30	5.8	Go	.042	3	— 11.8	0.7	.....	
.....											
50806.....	1784	6 49.6	—28 24	6.0	G3	.524	4	+ 71.7	1.1		
51067.....	Cin.	6 50.8	+75 22	6.8	F8s	.265	3	+ 22.9	0.7		
52005.....	Boss	6 54.5	+16 13	5.9	cK4	.018	3	+ 21.8	0.6	+21.4	V
52666.....		6 57.0	— 5 35	5.4	M2	.009	3	— 0.8	2.5	+ 1.6	L
54046.....	Cin.	7 2.3	+15 41	7.5	F9	.231	4	— 12.7	2.3		
.....											
54100.....	856	7 2.5	+15 41	7.4	F8	.213	3	— 11.1	2.1		
55458.....	867	7 7.8	+25 11	8.4	K1	.451	3	— 51.8	0.9		
55751.....	Boss	7 9.1	+ 3 17	5.6	K1	.030	3	+ 36.7	0.8		
56160.....		7 10.8	—26 52	5.8	K5	.047	3	+ 14.2	2.1		
56618.....	1889	7 12.6	—27 42	4.8	M3	0.045	3	+ 43.4	$\pm$ 1.1	+40.6	L

	B.D.	+33°	1595 Boss	7 ^h 13 ^m 0 7 17.0 7 20.6 7 22.3 7 22.3	+33° 2' -23 42 -13 33 +50 11 +50 11	9.3 6.1 5.8 8.2 8.7	M1 M5 A8n G2 G2	o"57 .031 .204	3 3 3 3 3	km/sec. - 61 + 23.1 + 7 - 77 - 2	km/sec. ± 2 0.9 2 1 1	km/sec.
	B.D.	+37°	1748 Boss	7 22.7 7 25.6 7 27.7 7 29.3 7 31.6	+50 12 + 8 46 +15 51 +46 24 +36 57	8.0 7.2 6.7 5.8 9.5	F4n F1s G9 M1 K5	008 .047 0.87	4 4 3 3 3	+ 14.7 + 23.8 + 55.8 + 28.9 - 8	2.9 1.6 1.0 0.2 1	
	Boss	2008 2028		7 34.1 7 38.0 7 40.8 7 41.1 7 43.2	+ 5 29 +26 1 +53 55 - 6 32 +54 23	0.5 5.4 8.6 5.7 6.0	F4 Mo K6 K5 F6	1.242 0.034 .56 .110 .052	7 3 3 5 4	- 1.7 + 3.7 + 2 - 32.8 - 2.4	0.6 0.4 2 1.3 1.5	L L, V
	Boss	2057		7 43.3 7 45.1 7 45.4 8 2.9 8 3.2	-11 57 -24 37 - 8 56 -29 6 +32 31	5.5 3.5 5.8 6.9 6.7	F5 Gop K3 Go F6	.125 .007 .014 .546	5 3 3 3 3	+ 26.0 - 3.8 - 7.4 - 19.2 + 11.4	1.4 1.7 1.7 1.8 0.4	L
	Cin.	961		8 6.0 8 8.1 8 8.7 8 8.8 8 9.7	-13 30 +57 24 +73 39 +73 44 +72 43	5.6 7.8 8.6 8.6 6.2	F8 G5 Go K1 Mo	.235 .394 .271 .559 .027	3 3 3 3 3	+ 37.7 + 17.7 + 52 - 4 + 11.2	0.4 1.3 1 2 0.6	
	Boss	2163 971		8 18.9 8 20.7 8 22.0 8 22.5	+32 58 +28 13 +24 52 -12 12 +46 15	9.2 5.8 7.6 5.7 9.4	K6 K2 F5 K2 K6	.69 .134 .093 .095 0.571	4 4 3 3 4	- 78 + 23.8 + 18.3 + 65.0 - 23	1 1.4 0.5 2.7 ± 1	V V
	B.D.	+33°	1604 Boss	7 1003 7 1153 7 1377	+33 58 +28 13 +24 52 -12 12 +46 15	9.2 5.8 7.6 5.7 9.4	K6 K2 F5 K2 K6	.69 .134 .093 .095 0.571	4 4 3 3 4	- 78 + 23.8 + 18.3 + 65.0 - 23	1 1.4 0.5 2.7 ± 1	V V

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
								km/sec.	km/sec.		
71881.....	Cin. 996	8 ^h 24 ^m 6	+50° 58'	7.4	Go	0".376	4	+16.7	±0.9		
71932.....	Boss 2260	8 25.1	+53 27	6.5	G8	.088	3	+44.1	1.7		
72004.....	2265	8 25.9	+18 26	5.6	M1	.087	3	+44.2	1.5		
72202.....	2271	8 26.0	+20 47	5.5	K5	.065	3	+25.3	0.4		V
72626.....	β G.C. 4668m	8 28.8	-24 16	6.2	A5n	.....	4	-8	2		
73668.....	Cin. 1016	8 34.4	+6 8	7.8	G4	.326	3	-22.2	1.5		
73840.....	Boss 2315	8 35.3	-12 7	5.2	K5	.087	2	-12.5	0.5		L
74000.....	B.D. -15°25'46	8 36.2	-15 59	9.4	A9	.558	3	+200	5		
74137.....	Boss 2321	8 37.1	-15 35	5.0	G8	.099	4	-3.4	2.1		L
75332.....	2364	8 44.3	+33 40	6.2	F7	.113	3	+4.6	1.2		V
75700.....	B.D. +12°10'27	8 46.3	+12 16	7.8	Ko	.....	3	-4.9	1.9		
76219.....	Boss 2391	8 49.7	+28 19	5.2	G5	.041	3	+17.3	1.4		L
76644.....	B.D. +21°19'47	8 52.1	+20 50	9.0	F3	.73	4	+36	1		
77175.....	Boss 2404	8 52.4	+48 26	3.1	A2n	.502	5	+9	3		L
	β G.C. 4890N	8 55.8	+15 41	8.7	K6	.328	3	-13	1		
77353.....	Boss 2425	8 56.9	-0 6	5.8	G9	.091	3	+73.7	1.7		
77408.....	Cin. 1070	8 57.2	+33 16	7.1	F5s	.40	3	+70.5	2.0		
77800.....	Boss 2434	8 59.6	+67 16	5.3	Mo	.050	3	+18.7	0.4		L
77938.....	C.D. -31°68'77	9 0.3	-32 3	7.7	M5	.....	3	-3	1		
78235.....	Boss 2444	9 2.0	+30 3	5.4	G5	.028	3	-14.2	1.5		L
78732.....	2456	9 4.7	-8 23	5.7	G7	.036	3	+26.5	1.5		L, V
79354.....	2474	9 8.4	+57 9	5.5	Mo	.036	3	-31.2	1.9		V
80024.....	2494Br	9 12.3	+35 47	5.8	A5	.058	5	+17	3		
80441N.....	β G.C. 5030N	9 14.8	+38 37	7.0	F4s	.047	3	+0.6	1.2		
80441S.....	5030S	9 14.8	+38 37	7.2	F2s	0.047	4	-1.9	±1.1		

[illegible]

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
88742.....	Boss 2718	10 ^h 9 ^m 0	-32° 32'	6.4	Go	0".356	3	+40.8	km/sec. ±0.4	km/sec.	
88986.....	2727	10 10.8	+29 11	6.5	F9	.108	3	+31.5	.7	+28.8	V
89056.....	2731	10 11.3	+14 14	5.7	M2	.035	3	+2.2	0.4	+12.6	L
89254.....	2735	10 12.7	-7 34	5.4	F2s	.101	3	+20.7	2.3	-6.9	V
89269.....	2736	10 12.8	+44 33	6.7	G4	.311	3	-10.5	1.1		
89668.....	Cin. 1246	10 15.7	-0 58	8.9	Mo	.679	4	+35	2		
89777.....	B.D. -16° 3030	10 16.5	-16 33	9.1	K1	.54	3	+44	3		
90254.....	Boss 2766	10 20.0	+9 18	5.9	M3	.045	5	-20.3	1.3	+13.7	L
90277.....	2768	10 20.2	+34 18	4.8	F2	.107	3	+12.4	2.1		
90362.....	2770	10 20.7	-6 33	5.8	M2	.189	3	+31.9	0.8		
.....	B.D. +46° 1635	10 25.5	+46 3	9.3	Mo	.837	3	+25	3		
91550.....	Boss 2815	10 20.3	-23 14	5.3	K5	.009	2	-3.9	0.5	-5.3	L
91881.....	β G.C. 5491Br	10 31.6	-26 11	6.2	F2s	.....	3	-20.8	2.2		
92523.....	Boss 2844	10 35.9	+69 36	5.2	K4	.023	2	+1.7	1.7	-0.6	L
.....	B.D. +47° 1806	10 38.1	+46 49	9.1	Go	.....	3	-15	2		
92940.....	+33° 2022	10 38.8	+33 9	7.3	A9	.033	6	-6	2		
92841.....	Boss 2858Br	10 38.2	+5 16	6.0	K2	.045	5	-9.1	1.5	-3.2	V
93257.....	2869	10 41.0	+19 25	5.6	K2	.099	3	-6.3	0.7		
93201.....	2870	10 41.1	+14 43	5.6	G5	.152	3	+34.2	1.8		
94388.....	2902	10 48.6	-19 36	5.3	F5	.253	3	+0.8	1.9	-4.5	L
94402.....	2903	10 48.6	-1 36	5.7	G6	.094	3	+15.8	1.7		
94469.....	β G.C. 5599	10 49.2	+21 19	8.4	F1s	.....	4	-44	3		
94481.....	Boss 2906	10 49.3	-13 14	5.8	G4	.029	3	+4.9	0.9		
95241.....	2924	10 54.7	+43 27	6.1	F7	0.178	3	-8.4	1.0	-6.4	V
96074.....	B.D. +66° 697	10 59.8	+66 25	7.7	G5	.....	4	-10.5	±2.6		

	β G.C. Cin.	5679Br	11 ^h 2 ^m 1	+53° 21'	7.1	F7	α'' .044	3	km/sec. — 36.6 + 10.7 — 2 — 2 + 44.9	km/sec. ± 2.3 0.8 2 1 1.7	km/sec. +44.2	V
96700.....	1356	11 3.2	+29 38	6.5	Go	.546	3	3	— 36.6	± 2.3		
97033.....	1359	11 5.3	+66 34	9.0	G6	.356	4	4	+ 10.7	0.8		
97233.....	1304	11 6.5	—14 26	9.3	K6	.92	3	3	— 2	2		
97561.....	2967	11 8.4	+20 41	6.9	G3	.408	3	3	+ 44.9	1.7	+44.2	V
97605.....	2973	11 8.8	+ 8 36	5.9	K3	.130	3	3	+ 18.6	2.0	+15.8	V
1375	1375	11 12.2	— 1 26	9.0	Mo	.53	3	3	+ 4	3		
99167.....	3002	11 19.6	—10 19	5.1	M1	.043	2	2	+ 5.1	0.2	+ 1.8	L
99196.....	3004	11 19.8	+11 59	6.0	K4	.116	4	4	+ 37.7	1.0		
99651.....	3020	11 22.8	— 1 9	6.3	G8	0.042	3	3	— 9.1	0.3		
1412	Cin.	11 23.3	+ 8 6	9.7	G8	1.16	3	3	+ 1	2		
99984.....	3028	11 25.1	+43 43	5.9	F2s	0.088	3	3	— 29.6	0.5	+18.5	L
99998.....	3029	11 25.2	— 2 27	5.1	K5	.026	3	3	+ 19.8	1.7		
100180.....	3032Ft	11 26.6	+14 55	8.4	Mo	.387	4	4	— 10	1		
100563.....	3044	11 29.2	+ 3 37	5.8	F6	.215	3	3	+ 7.3	0.5		
101853.....	3083	11 38.3	+42 17	6.8	G8	.031	5	5	+ 3.9	0.8	+ 1.8	V
1019133.....	3086	11 38.8	— 6 7	6.2	G9	.083	5	5	— 2.5	0.8		
102590.....	5926	11 43.5	+14 50	5.9	A6n	.12	3	3	+ 6	3		
102942-3.....	B.D. +34° 2264	11 46.0	+33 56	6.1	Fos	.....	3	3	+ 1.8	0.8	— 0.6	V
103026.....	Boss 3110	11 46.6	—30 16	6.0	F6	.310	3	3	+ 33.4	1.0		
103246.....	β G.C.	11 48.3	+74 19	6.8	F7s	.090	3	3	— 35.3	1.3		
103484.....	Boss 3121	11 49.9	+ 9 0	5.6	G6	.030	3	3	— 9.1	0.5		
103596.....	3124	11 50.6	—27 55	6.1	K5	.032	3	3	+ 7.7	0.1		
103945.....	3128	11 53.1	+ 4 2	6.9	M4	.009	3	3	— 22.4	2.2		
104055.....	3132	11 53.9	+ 1 5	6.5	K3	.070	3	3	+ 11.4	1.6		
104216.....	3136	11 55.1	+81 25	6.4	M4	.068	3	3	+ 31.2	1.9		
104731.....	3148	11 58.5	—41 52	5.3	F5	.344	3	3	+ 38.1	0.0	+37.4	L
104755.....	3149	11 58.6	+ 6 7	6.5	F3s	.171	3	3	+ 1.6	0.9	+ 7.6	V
104800.....	1492	11 59.0	+ 3 55	9.3	F9	.567	3	3	+ 11	3		
104985.....	Boss 3156	12 0.2	+77 28	6.0	G9	0.169	3	3	— 19.0	± 0.8	—18.7	V

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v km/sec.	P.E. km/sec. $\pm$	OTHER DETERMINATIONS	
										v km/sec.	Auth.
.....	B.D. +28°2078	12 ^h 1 ^m 1	+28° 3'	9.1	F6	0".41	3	— 3	$\pm$ 1	km/sec.	
105390.....	+ 0°2897	12 3.0	+ 0 11	8.9	F6	.....	4	— 19.4	1.4		
105702.....	Boss 3171	12 5.0	+ 6 22	5.7	cF4	.166	4	— 10.3	1.3		V
105791.....	Cin. 1515	12 5.6	+66 13	8.7	F2	.31	3	+ 66	2		
105963N.....	β G.C. 6064N	12 6.5	+53 59	7.5	K2	.221	4	— 9.5	0.8		
105963S.....	6064S	12 6.5	+53 59	7.7	G9	.221	3	+ 4.0	2.2		
106057.....	Boss 3181	12 7.1	+21 6	5.7	G7	.033	3	— 24.4	2.1		V
106365.....	β G.C. 6082Br	12 9.1	+33 20	6.8	K2	.128	3	— 10.3	1.5		
107054-5.....	Cin. 1541	12 13.5	+30 49	6.1	A5n	.148	4	— 31	1		
107113.....	Boss 3204	12 13.9	+86 59	6.3	A8s	.210	3	— 6	1		
.....	B.D. +29°2279	12 14.5	+28 56	9.5	M2	.64	4	— 26	2		
107341.....	Boss 3212	12 15.2	+38 27	6.7	G6	.056	3	+ 4.9	0.4		
107325.....	3214	12 15.3	+27 11	5.7	K2	.138	3	— 9.7	0.9		
107465.....	3219	12 16.0	+58 25	5.7	K4	.083	3	— 41.3	1.0		V
107612.....	B.D. +17°2469	12 17.0	+17 17	6.6	A3s	.....	4	+ 3	2		
107966.....	Boss 3231	12 19.3	+26 39	5.1	A2	.033	3	+ 3	2		L
108153.....	Cin. 1566	12 20.4	+32 26	9.3	K4	.468	3	— 20	3		
108225.....	Boss 3235	12 20.9	+39 34	5.2	G6	.086	4	— 4.1	1.1		L, V
108506.....	3247	12 22.7	— 4 4	6.0	Fon	.081	4	— 14.0	4.3		
108574.....	β G.C. 6179Br	12 23.3	+45 21	7.4	F8	.....	3	— 0.1	0.4		
108575.....	6179Ft	12 23.3	+45 21	8.0	G2	.....	3	+ 0.8	0.3		
108680.....	Boss 3252	12 24.0	— 1 53	7.6	M4	.049	3	— 35.7	0.7		
108767.....	3256	12 24.7	—15 58	3.1	Ao	.251	3	+ 1	4		L
108821.....	3259	12 25.1	—23 9	5.9	Mo	.030	3	— 11.6	1.8		
108910.....	3264	12 25.7	— 3 31	7.1	K3	0.078	3	+ 83.9	$\pm$ 0.4		

B.D. + $\theta^{\circ} 2636$	$12^h 26^m 3$	+ $\theta^{\circ} 22'$	Mr	$\theta'' 96$	3	km/sec. + 21	km/sec. ± 2	km/sec.
Boss 3273	12 27.4	-13 18	9.1	.154	3	-	1	
β G.C. 6216p	12 31.0	+11 57	5.7	.300	5	+ 23	2	
Boss 6216f	12 31.0	+11 57	8.5	.300	3	+ 17	1	
Boss 3291	12 32.0	+17 38	5.8	.050	3	-	0.8	
Cin. 1661	12 55.2	- 2 10	9.1	.73	3	- 13	1	
1667	12 56.2	- 7 54	8.7	.493	7	- 31	3	
Boss 3387	12 58.4	-20 3	5.7	.141	3	+ 33.5	1.5	
B.D. + $29^{\circ} 2305$	13 1.4	+29 34	6.4	.....	4	+ 2	1	
Boss 3397	13 1.5	+21 41	6.0	.089	3	+ 1.9	0.8	- 1.1
β G.C. 6393Br	13 2.9	+24 32	7.6	.27	7	- 4.1	1.4	
6393Ft	13 2.9	+24 32	8.0	.27	3	+ 0.5	1.5	
B.D. + $4^{\circ} 2696$	13 3.2	+ 4 19	9.5	.54	3	- 57	3	
+ $18^{\circ} 2696$	13 4.6	+18 0	8.7	.120	3	- 25	2	
Boss 3421	13 6.5	-37 16	4.9	.390	3	- 12.8	1.8	-15.8
Cin. 1693	13 7.0	+68 2	8.8	.75	4	- 13	2	
C.D. - $34^{\circ} 8720$	13 7.0	-34 13	7.6	.509	4	+ 1.3	1.6	
Boss 3425	13 7.2	-31 20	6.7	.380	4	+ 63.3	2.5	
3430	13 8.8	-19 24	5.6	.198	3	- 44.5	2.1	
3435	13 9.7	-10 50	7.8	.383	4	+ 7.1	1.3	
3445	13 12.3	+14 12	5.4	.027	3	- 27.2	0.9	-25.6
3466	13 17.7	+44 26	6.4	.075	3	- 2	1	
3477	13 20.3	-39 14	5.2	.203	3	+ 64.2	1.6	+69.4
3481	13 21.4	-12 11	5.6	.137	3	- 29.0	1.6	
3482	13 22.1	-15 27	4.9	.127	3	- 16.2	2.2	-13.7
B.D. - $7^{\circ} 3631$	13 25.0	- 8 5	9.6	.....	3	- 33	3	
+ $70^{\circ} 741$	13 25.3	+70 39	7.5	.039	5	- 28.5	2.1	
+ $9^{\circ} 2773$	13 27.0	+ 9 30	7.9	.019	4	+ 8.6	1.7	
C.D. - $38^{\circ} 8635$	13 28.7	-38 23	7.1	.500	4	+ 86.8	2.2	
β G.C. 6530Br	13 29.2	+ 0 12	7.4	0.234	3	- 2.6	± 0.7	

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
118054.....	Boss 3507m	13 ^h 29 ^m 4	−12°42′	5.8	A2s	0.067	4	−20	km/sec. ±3	km/sec.	
119126.....	3533	13 36.3	+23 0	5.8	G5	.041	3	+5.5	1.1	+3.8	V
119217.....	B.D. + 0°3900	13 30.8	+0 24	9.3	M1	.545	3	+48	2		
119756.....	Boss 3544	13 40.0	−32 32	4.4	F1s	0.489	3	−17.1	1.1	−14.9	L
.....	Cin. 1784	13 40.2	+18 20	9.0	M1	1.86	4	+27	1		
120052.....	Boss 3553	13 42.0	−17 21	5.8	M2	0.065	3	+63.4	0.4		
120198.....	3561	13 42.9	+54 56	5.5	A2s	.015	5	−5	2	−5.3	V
120237.....	Cin. 1796	13 43.2	−35 12	6.5	F8	.57	3	+6.3	1.1		
120348.....	Boss 3568	13 43.9	+42 33	6.8	K2	.075	3	−1.2	0.2		
120420.....	3570	13 44.1	+31 41	5.8	G7	0.043	3	+12.5	0.1	+10.5	V
120467.....	B.D. −21°3781	13 44.4	−21 36	7.9	K6	1.77	3	−35.3	0.2		
120539.....	Boss 3573	13 45.0	+21 46	5.1	K4	0.017	2	−1.7	0.5	−3.1	L
121849.....	Cin. 1826	13 52.8	−33 30	8.4	G2	.59	3	+64	3		
121953.....	1828	13 53.7	+65 51	7.6	G2	.291	4	−28.4	0.8		
122066.....	Boss 3607	13 54.4	−24 31	5.8	F2	.235	3	−17.3	2.7		
.....	B.D. +34°2476	13 54.8	+34 22	9.3	A5sp	.54	3	−164	2		
122408.....	Boss 3612	13 56.6	+2 2	4.3	A2	.032	5	−4	4	−5	L
123453.....	β G.C. 6725Br	14 2.6	−12 27	7.4	F4	.141	3	+14.1	1.0		
123934.....	Boss 3632	14 5.4	−15 50	5.1	M3	.027	3	+19.5	1.9	+17.6	L
124640Br.....	β G.C. 6776Br	14 9.7	+55 48	8.2	K6	.341	3	−16	1		
124640Ft.....	6776Ft	14 9.7	+55°48′	8.5	K6	.341	3	−18	2	+17.0	L
124679.....	Boss 3655	14 10.0	+10 34	5.4	G6	.172	3	+15.7	2.1		
124757.....	β G.C. 6780m	14 10.3	+3 35	7.0	F8	.104	5	−44.8	1.2		
125040Br.....	6795Br	14 11.9	+20 35	6.4	F6	.181	3	−10.1	1.3		
125140Br.....	6801Br	14 12.2	+57 7	8.5	G1	0.044	4	−1	±1		

[illegible]

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
13488.....	Cin. 2010	15 ^h 2 ^m 9	— 7° 31'	8.1	F8	0".484	5	— 59.2	km/sec. ±2.1	km/sec.	
13490.....	Boss 2012	15 3.1	+25 18	9.2	Mo	.061	3	— 65	4		
13490.....	Boss 3856	15 3.4	+54 56	5.2	G5	.044	3	+ 15.7	1.3	+16.4	L, V
13485Br.....	B.D. +32°2547	15 3.6	+32 47	9.5	Go	.59	4	— 63	3		
13485Br.....	β G.C. 7136Br	15 3.9	+ 2 4	7.8	F3s	.....	3	+ 10.6	0.5		
13439.....	Boss 3858	15 4.0	—23 36	6.8	K5	.046	3	— 14.1	3.2		
13439.....	Boss 3859	15 4.1	+26 41	5.7	K2	.029	3	+ 24.2	1.8	+18.3	V
13435.....	Boss 3860	15 4.2	+25 29	5.9	K1	.017	3	— 17.6	1.3	—16.2	V
13487.....	Boss 3869	15 7.6	—24 56	6.4	G3	.401	3	+ 2.4	1.0		
13487.....	B.D. — 3°3746	15 8.8	— 3 26	9.2	Mo	.69	3	—107	1		
13563.....	+76° 552	15 9.6	+76 34	9.2	K2	.211	3	— 1	1		
13542.....	Boss 3881	15 9.8	+38 38	6.4	K1	.048	3	— 62.5	2.4		
136136N.....	β G.C. 7212N	15 13.9	+44 10	8.5	G7	.034	3	— 45	2		
136136S.....	Boss 7212S	15 13.9	+44 10	8.5	G5	.034	4	— 17	2		
136138.....	Boss 3894	15 13.9	+20 56	5.7	G3	.045	3	— 7.6	1.3		
136160Br.....	β G.C. 7210Br	15 13.9	+10 48	6.7	F5	.....	3	— 45.5	1.9		
136176.....	7214m	15 14.1	+27 12	6.6	F7s	0.117	3	— 19.6	0.9		
136526p.....	B.D. — 7°4003	15 14.2	— 7 21	9.8	M5	1.33	4	— 30	2		
137443.....	β G.C. 7226p	15 16.1	+31 3	8.7	F3	.....	3	— 43	1		
137443.....	Boss 3930	15 21.0	+63 42	5.8	K5	0.114	3	— 47.3	1.7	—45.7	V
137704.....	Cin. 3933	15 22.4	+34 41	5.9	K5	.120	3	— 49.1	0.6	—47.9	V
137826.....	Boss 2067	15 23.1	+66 54	9.0	G5	.28	4	— 34	3		
138481.....	Boss 3945	15 27.3	+41 10	5.2	Mo	.018	3	— 7.6	1.1	—10.0	L
139153.....	Boss 3967	15 31.6	+39 21	5.4	M2	.029	4	— 19.0	1.4	—19.2	L
139216.....	Boss 3969	15 31.8	+15 26	6.8	M6	0.011	5	— 26.2	±2.1		

		$12^h 32^m.2$	$+50^\circ 2'$		$\alpha'' .021$		km/sec.	km/sec.	km/sec.
Boss	3972	15 34.4	$+77 41$	7.5	K5	3	- 11.1	± 0.8	
	3982	15 36.4	$+16 21$	5.3	K5	3	- 26.5	1.9	L, V
	3992	15 37.1	$+13 10$	6.0	G5	4	$+ 3.4$	1.7	$+ 3.2$
	3993	15 40.0	$+32 50$	5.3	Aop	4	$+ 6$	1	V
	4003			5.6	G9	3	- 4.3	1.6	- 3.8
Cin.	2109	15 41.0	- 37 36	6.1	G5	3	- 3.5	0.9	
Boss	4009	15 41.6	$+15 44$	3.7	Ain	5	$+ 1.0$	3	- 7
	4016	15 44.4	- 3 7	3.6	Ao	5	- 9	2	- 11
	4021	15 45.1	$+02 54$	5.1	A2	7	- 4	2	- 5
	4023	15 45.2	$+ 2 30$	5.3	G6	5	- 2.5	1.0	- 3.7
	4060	15 52.6	$+14 42$	5.7	K3	3	- 67.4	0.7	- 69.4
	4069	15 55.3	$+36 56$	5.7	K5	4	$+ 10.4$	1.1	
	4074	15 55.9	$+ 4 42$	5.9	G7	3	- 3.6	0.6	
	4078	15 57.3	- 25 35	5.1	K3	3	- 38.5	0.8	- 38.8
β G.C.	7488Br	15 59.0	- 11 10	7.4	G5	3	- 33.3	1.4	
Boss	4085	15 59.5	$+53 12$	6.2	K5	3	- 6.8	1.1	
	4102	16 3.6	$+17 19$	6.5	K1	6	$+ 38.0$	1.2	
	4124	16 7.2	$+44 5$	6.5	G9	3	- 5.0	1.2	
	4132S	16 8.6	$+13 48$	7.8	Ko	6	$+ 17.7$	1.5	
B.D. +19 3077		16 12.5	$+19 5$	7.6	K5	3	$+ 9.4$	0.7	
Boss	4150	16 13.3	- 19 58	6.4	G6	8	$+ 8.5$	1.2	- 8.4
	4154	16 14.2	$+26 8$	6.6	G4	4	- 10.7	1.1	- 8
	4181	16 20.4	$+75 59$	5.0	A8n	4	- 10	1	V, V
Cin.	2193	16 21.3	- 21 54	7.6	F8	4	- 19.1	0.9	
β G.C.	7636Br	16 23.4	$+21 3$	8.3	F9	3	$+ 8.9$	0.5	
Boss	4197	16 24.1	- 14 20	5.8	G2	3	- 31.9	0.7	- 5
	4198	16 24.1	- 24 54	4.9	B3	3	- 2	4	L
Cin.	2200	16 24.8	- 38 48	7.5	Ko	3	- 59.1	0.6	
Boss	4201	16 25.3	$+42 6$	5.0	M6	3	$+ 3.5$	1.0	$+ 3.3$
β G.C.	7655Br	16 26.7	$+ 5 39$	7.6	A9	3	- 14	± 2	

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
149303Br.....	Boss 4214Br	16 ^h 28 ^m 8	+45° 49'	5.6	Ain	0".028	5	km/sec.	km/sec.	km/sec.	V
149303Ft.....	4214Ft	16 28.8	+45 49	8.2	F5	.028	4	— 13	±3	—18.5	
149937.....	2217	16 32.9	+31 19	9.5	K6	.59	3	— 16.9	1.6		
.....	B.D. +31°2877	16 33.4	+31 25	9.2	K5	.....	3	— 7	0		
150379.....	Boss 4237	16 33.4	+4 24	6.9	A5n	.023	4	— 20	1		
.....		16 35.6						— 30	1		
151188.....	β G.C. 7748m	16 40.8	+43 41	8.3	K5	.....	3	— 7	0		
151216.....	B.D. +33°2775	16 41.0	+33 30	8.1	K1	.059	5	— 16	2		
151482.....	+34°2839	16 42.5	+33 59	8.1	A3n	.02	6	— 1	2		
151937.....	Boss 4279	16 45.3	+30 8	6.7	G7	.102	4	— 42.7	2.0		
152107.....	4284	16 46.3	+46 9	4.9	A4s	.076	3	— 4	1	+ 0.8	L
152334.....	4292	16 47.6	—42 11	3.8	K5	.266	2	— 15.3	0.4	—18.8	L
152336.....	4294	16 47.6	+24 49	5.2	K2	.016	3	— 15.5	1.1	—15.9	L
153301.....	β G.C. 7814Br	16 53.5	+15 18	7.8	G5	.....	3	— 11.0	2.0		
153344.....	Boss 4317	16 53.8	+62 16	7.0	G2	.321	4	— 82.6	2.0		
.....	B.D. +25°3173	16 54.1	+25 55	9.4	M2	.52	3	+ 11	4		
153834.....	Boss 4329	16 56.7	+22 47	5.7	K2	.030	3	+ 10.4	0.5	+11.0	V
153956.....	4330	16 57.5	+56 59	6.1	K2	.054	3	— 15.4	1.1		
154088.....	4333	16 58.1	—28 26	6.7	G8	.291	3	+ 17.2	1.8		
154228.....	4340	16 59.0	+13 45	5.9	A2s	.054	5	— 37	1		
154278.....	4341	16 59.3	+13 43	6.1	G7	0.135	4	+ 47.0	1.1		
154363.....	4342	16 59.8	— 4 54	7.9	M0	1.464	3	+ 28.2	0.5		
.....	B.D. — 4°4226	17 0.0	— 4 55	9.3	M3	1.465	3	+ 30	4		
154733.....	Boss 4350	17 2.1	+22 13	5.7	K5	0.122	4	— 95.4	0.9	— 97.2	V
154759.....	β G.C. 7873Br	17 2.4	+47 6	8.1	K2	.046	3	— 52.9	0.4		
155644.....	Boss 4366	17 7.7	+10 42	5.6	M2	0.036	3	+ 25.3	±1.9		

	B.D. +45°2505	1 ^h 9 ^m 2	+45° 50'	9.6	M4	1 ^h 590	4	km/sec.	km/sec.	km/sec.
155876.....	Cin. 2297	17 9.9	+42 28	9.4	M1	1.061	6	— 19	± 3	
156681.....	Boss 4380	17 13.9	+10 58	5.3	K5	0.099	2	+ 42.7	3	+39.0
156890.....	βG.C. 7902Br	17 14.9	+60 49	6.7	A7 ⁿ	.041	3	— 26	1	L
157049.....	Boss 4400	17 15.9	+18 10	5.2	M2	.051	4	— 47.0	1.3	L, V
157325.....	4408	17 17.5	+46° 20'	5.8	Mo	.050	4	— 57.2	0.9	
157370.....	4409	17 17.8	+71 54	6.8	K2	.018	3	— 3.9	0.9	
157906Br.....	βG.C. 8009Br	17 21.0	+47 22	7.8	F6s	.....	4	— 26.9	1.4	
157910.....	Boss 4422	17 21.0	+37 2	6.5	G5	.053	3	— 14.8	1.5	V
158116Br.....	βG.C. 8017Br	17 22.4	+29 33	7.0	A8	.....	4	— 25	1	
.....	Cin. 2326	17 22.9	+31 8	9.1	G7	.421	4	— 73	2	
.....	B.D. +31°3026	17 23.0	+31 21	7.0	F4	.....	4	+ 0.1	0.8	
158225.....	Cin. 2328	17 23.0	+31 10	8.1	Go	.32	4	— 71	1	
158226.....	Boss 4446	17 29.0	+19 20	5.6	F5	.095	4	— 61.0	2.1	
159332.....	Boss 4451	17 29.8	+13 14	6.7	G4	.036	3	— 60.1	0.7	
159466.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
161074.....	4486	17 38.4	+24 37	5.6	K5	.131	3	— 27.5	0.8	V
161471.....	4492	17 40.6	—40 5	3.1	F6	.004	6	— 21.9	1.7	L
161848.....	2366	17 42.8	+ 4 59	9.0	K3	.70	3	— 93	2	
162076.....	Boss 4506	17 44.1	+20 36	5.8	G5	.022	3	— 28.6	1.1	V
162555.....	4510	17 46.5	+29 21	5.6	G7	.049	3	— 13.7	0.4	V
163608.....	B.D. +45°2621	17 51.8	+45 14	8.0	A0	.023	3	— 23	3	
163609.....	βG.C. 8242Br	17 51.8	+21 30	7.5	G3	.....	3	— 32.5	1.7	
165625.....	Boss 4578	18 1.8	+22 13	5.3	M2	.023	5	— 19.8	1.1	L, V
165945.....	B.D. —15°4832	18 3.3	—15 33	9.2	A4	.....	4	— 16	2	
167618.....	Boss 4617	18 10.8	—36 48	3.2	M4	.216	3	+ 5.2	1.3	L
168322.....	4624	18 13.9	+40 54	6.1	G3	.180	3	— 73.7	0.9	
168387.....	4626	18 14.3	+ 7 13	5.6	K2	.063	3	— 7.3	.9	V
168415.....	4627	18 14.4	—15 52	5.7	K5	.047	3	+ 30.1	.9	
168653.....	4634	18 15.9	+68 43	6.1	K0	.062	4	— 10.7	.8	
169110.....	4649	18 18.0	+23 14	5.7	Mo	0.076	3	— 57.4	± 0.8	

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v km/sec.	P.E. km/sec. $\pm$ 0.6	OTHER DETERMINATIONS	
										v km/sec.	Auth.
169746.....	B.D. + 43° 2970	18 ^h 21 ^m 1	+43° 51'	7.0	M2	.....	3	— 46.7	± 0.6		
170397.....	Boss	18 24.1	—14 39	6.0	A2	0.022	4	— 16	2		
170740.....	4687	18 25.9	—10 52	5.8	B3	.031	3	— 13	1		
171115.....	4698	18 27.8	—24 6	5.7	K5	.018	3	— 14.6	1.3		
171586.....	β G.C. 8654	18 30.7	+ 4 51	6.7	A4p	.05	3	— 11	1		
171745.....	Boss	18 31.3	+23 31	5.8	G7	.021	3	+ 16.4	1.6		
172546.....	4726	18 35.8	—23 56	6.1	A8	.043	3	+ 1	2		
172586Br.....	β G.C. 8721Br	18 35.8	+24 37	8.0	G5	.....	3	— 32.0	2.1		
172713.....	Boss	18 36.6	+52 15	7.4	Go	.012	4	+ 17.8	1.9		
173460.....	4743	18 40.3	—22 30	5.8	K5	.036	4	— 3.1	1.1		
174224.....	β G.C. 8830	18 44.4	+16 8	8.1	F5s	.076	3	— 61.3	2.1		
.....	Cin. 2463	18 44.5	+17 20	9.0	Mo	.579	4	— 17	2		
174580.....	Boss	18 46.1	— 3 26	6.0	Asn	.037	3	+ 12	2		
174980.....	4782	18 48.3	+73 58	5.4	G8	.081	3	+ 4.0	0.9		L, V
175518.....	Cin. 2471	18 50.6	— 5 52	8.2	G8	.415	6	— 76.9	2.6	+ 2.8	
176485.....	β G.C. 8954Br	18 55.3	+12 45	7.1	K5	.035	3	— 2.6	1.4		
176682.....	8986Br	18 57.6	— 0 51	7.9	G5	.131	3	— 11.2	1.2		
177095.....	2487	18 58.0	—20 35	0.4	G2	.71	3	+ 78	.2		
177483.....	Boss	18 59.8	+52 7	6.4	G8	.029	3	+ 4.7	0.3		
177758.....	Cin. 2490	19 0.9	—12 2	7.1	F8	.422	3	— 2.5	1.3		
177749Br.....	β G.C. 9021Br	19 0.9	+ 6 24	6.9	F4	.....	3	— 17.8	1.8		
178496.....	Cin. 2497	19 3.7	—21 37	8.7	G3	.468	4	— 42	1		
178770.....	Boss	19 4.8	+39 0	7.6	M6	.007	3	— 17.2	0.4		
178911.....	β G.C. 9078Br	19 5.3	+34 26	6.5	Go	.191	3	— 41.7	1.3		
179406.....	Boss	19 7.2	— 8 6	5.4	B3	0.017	3	— 15	± 5	— 19:	L

© American Astronomical Society • Provided by the NASA Astrophysics Data System

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
190147.....	Boss	19 ^h 58 ^m 5	+49° 50'	5.3	G9	0".018	3	km/sec. + 2.3	km/sec. ±0.9	km/sec. + 0.8	L, V
190608.....		20 0 7	+19 42	5.3	K0	.083	4	— 40.1	1.1	—40.5	L, V
190713.....		20 1 2	+64 21	6.6	G5	.047	3	+ 9.3	1.5		
190918.....		20 2 2	+35 31	7.7	O9	.51	4	— 4	1		
190960.....	β G.C. Boss	20 2 4	+76 12	6.3	M3	.059	3	— 67.4	2.6	—69.9	V
191174.....	β G.C. Boss	20 3 5	+63 36	6.2	A2s	.048	3	— 19	2		
191499.....		20 5 0	+16 30	7.7	G9	.173	3	— 34.6	0.9		
192439.....		20 9 7	+51 10	6.4	K1	.025	3	+ 12.6	.5		
192679Ft.....		20 11 0	+52 49	9.1	K2	.179	3	— 35	0		
192787.....	β G.C. Boss	20 11.5	+33 26	5.8	G6	.132	3	— 10.6	1.0		
192913.....	B.D.+27° Cin.	20 12.3	+27 29	6.7	A2s	.....	5	— 15	2		
193202.....		20 13.9	+76 55	9.3	Mo	.46	3	— 2	5		
194258.....		20 19.7	+68 34	6.0	M5	.042	5	— 43.6	1.2		
194640.....		20 21.5	—31 11	6.7	G6	.55	3	— 2.4	1.0		
195006.....	β G.C. Boss	20 23.7	—22 43	6.2	M1	.029	3	+ 55.2	1.1		
195068-9.....	Cin. Boss	20 24.0	+49 3	5.7	Fos	.093	4	— 20.3	2.2	—66.0	V
195774.....		20 28.2	+48 53	5.6	M2	.037	3	— 62.2	1.5		
196124.....		20 30.2	+ 5 47	8.7	K5	.44	4	— 32	1		
196180.....		20 30.6	+14 20	4.7	A2	.038	3	— 28	2	—24	L
196758.....	β G.C. Boss	20 34.3	+ 0 8	5.4	G8	.094	3	— 45.4	1.9	—41.8	L
196852.....	β G.C. Cin.	20 34.9	+29 59	5.9	G7	.090	3	+ 13.2	1.1	+12.4	V
196882.....		20 35.1	+21 22	8.2	K3	.....	5	—111	3		
196892.....		20 35.1	—19 8	8.6	F5	.440	4	— 30	3		
197684.....		20 40.1	+11 57	6.7	A6n	.....	3	— 11	2		
198542.....	β G.C. Boss	20 45.9	—27 18	4.2	M1	0.017	3	+ 4.5	±1.4	+11.4	L

		$20^h 50^m.4$	$+44^\circ \text{ } 0'$			$\alpha'' .021$		km/sec.	km/sec.	km/sec.
Boss	5380	20 51.5	-10 5	7.6	G4		3	-22.0	± 1.0	
	5386	20 51.5	-10 5	5.7	K5	.021	3	-33.1	1.6	
	5407	20 55.6	-13 55	6.6	G3	.005	3	+22.3	1.1	
Luyten	639	20 56.2	+39 41	9.7	M3e	.671	3	-57	3	
Boss	5414	20 57.7	+45 46	5.2	B3	.004	4	-20	4	-20.1
	5418Br	20 58.8	-6 13	5.9	G2	.018	3	+0.6	1.0	
	5430	21 1.3	-25 24	4.6	Mo	.059	6	+29.4	1.5	+32.4
β G.C.	10727	21 1.6	-14 19	7.2	K0	.373	4	-37.2	2.5	
Boss	5448	21 7.4	-28 2	5.6	K5	.107	4	-42.7	2.2	
Cin.	2750	21 7.5	+23 45	8.0	F9	.460	3	-102.5	0.2	
	5458	21 10.2	+59 41	7.1	M2	.012	3	-14.8	1.5	
Boss	5462	21 10.9	-9 38	6.8	M4	.012	3	+7.7	1.3	
Cin.	2763	21 12.9	-0 15	8.5	K6	.476	5	-28	2	
	2770	21 14.6	-20 15	9.2	K6	.764	3	+21	1	
Boss	5479	21 16.1	+6 56	6.0	M3	.044	3	-22.8	0.6	-18.8
	5487	21 17.3	-23 6	5.7	Mo	.041	3	-7.3	2.4	
	5504	21 20.1	+25 45	5.7	F1s	.039	3	+3.0	0.9	-6.8
	5508Br	21 21.5	+79 55	8.1	F5s	.185	3	+28	2	
	5510	21 21.6	-21 38	6.0	K5	.037	3	+23.0	2.5	
	5513	21 23.0	-22 15	4.6	G5	.132	3	-27.2	2.1	-22.0
	5532Pt	21 27.4	+70 7	8.0	A3n	.012	4	-18	3	
B.D.+51°	3079	21 28.1	+52 11	6.2	K0	.....	3	-26.3	0.2	
Cin.	2808	21 33.0	-2 45	8.8	K5	.566	3	+7	2	
Boss	5567	21 36.3	+42 49	5.4	M1	.054	4	-26.8	0.8	-27.7
	5572	21 37.3	+5 13	5.6	M2	.022	4	-4.0	1.1	
	5588	21 39.7	+28 17	6.1	F8	.370	3	+16.5	1.1	
Cin.	2833	21 44.1	+5 15	8.6	K6	.54	3	-11	0	
β G.C.	11302Br	21 46.9	+8 37	7.9	A8	.....	3	+17	4	
Boss	5627	21 48.5	+25 27	5.0	B3	.001	2	-16	4	-21.1
	5628	21 48.6	+55 19	7.3	A1s	0.045	4	-6	± 2	

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v km/sec.	P.E. km/sec.	OTHER DETERMINATIONS	
										v km/sec.	Auth.
208074.....	B.D.+66° 1446	21 ^h 48 ^m 7	+66° 22'	8.3	F4s	0".014	6	— 16	± 2		
.....	Luyten	21 50.8	+32 10	10.8	G1	.73	3	— 178	0		
208552Br.....	β G.C. 11372Br	21 51.9	+15 41	8.3	F5	.039	3	— 21.9	0.6		
208742.....	Boss	21 53.3	+79 5	6.8	M2	.020	3	— 15.8	1.6		
209761.....	5673	22 0.6	+26 11	5.9	Ko	.048	4	— 21.0	1.5		V
209772.....	5678	22 0.9	+62 38	5.5	M5	.052	3	— 3.8	0.8		L, V
209900.....	5685	22 2.0	+62 18	5.4	K5	.065	2	— 21.2	1.9		L
209945.....	5686	22 2.0	+44 32	5.3	Mo	.017	3	— 20.3	0.8		L
210277.....	5697	22 4.2	— 8 2	6.6	Go	.458	4	— 23.6	1.4		
210302.....	5698	22 4.3	— 33 2	5.1	F6	.447	3	— 14.2	0.5		L
210354.....	5701	22 4.8	+32 41	5.6	G6	.092	3	— 6.2	1.8		V
210404.....	5708	22 5.5	— 21 43	6.1	F6	.111	3	— 13.2	1.9		
.....	Cin.	22 5.9	+22 19	8.8	K3	.592	4	— 25	4		
210918.....	Boss	22 8.5	— 41 51	6.4	Go	.955	3	— 18.9	2.2		
211076.....	5731	22 9.5	+16 42	6.6	K4	.132	7	— 35.8	1.2		
.....	β G.C.	22 11.4	+30 55	9.3	F4s	.....	3	— 9	3		V
211833.....	Boss	22 14.9	+62 18	6.0	K2	.051	3	+ 0.4	0.8		L
212010.....	5759	22 16.1	— 22 6	5.4	K2	.089	3	+ 47.1	0.9		
212005Br.....	β G.C. 11057Br	22 16.1	+24 26	8.3	G6	.057	5	+ 2	1		V
212391Br.....	Boss	22 18.8	+66 12	6.7	G5	.042	4	— 3.2	2.1		
213013Br.....	β G.C. 11741Br	22 23.4	+23 1	8.3	G7	.....	3	— 19	1		V
213013Ft.....	11741Ft	22 23.4	+23 1	8.8	K2	.....	3	— 23	3		
213119.....	Boss	22 24.1	+8 37	5.8	Mo	0.062	3	— 34.1	0.4		
.....	B.D. +53°2011	22 28.7	+53 16	9.5	M1	1.482	3	— 2	3		
213803.....	Boss	22 29.5	+ 0 5	7.0	M1	0.089	4	— 88.7	± 2.3		

Star	Right Ascension	Declination	Distance (pc)	Parallax (mas)	Proper Motion (mas/yr)	Radial Velocity (km/sec)	Transverse Velocity (km/sec)	Mass (M _☉)	Notes
Boss 5825	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.D. +60° 24'12"	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
+68° 13'19"	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5843	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
5855	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5857	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
5866	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.G.C. 11030	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5869	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.G.C. 11043	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.D. +43° 43'05"	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.G.C. 11097p	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
11097f	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5897	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.D. +79° 7'58"	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5934	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Cin. 3014	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5943	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Cin. 3023	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5957	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.G.C. 12200Br	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5971	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.G.C. 12229Br	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5981BC	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
Boss 5986	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
6003	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
6004	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
6008	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L
B.G.C. 12317Br	22 30 42.8	+68° 17'	22 30 42.8	0.057	0.034	0.9	0.9	0.9	L

TABLE I—Continued

H.D.	STAR	α 1900	δ 1900	m	Sp.	μ	No.	v	P.E.	OTHER DETERMINATIONS	
										v	Auth.
220140Ft.....	β G.C. 12317Ft	23 ^h 16 ^m 4	+34° 53'	9.0	K2	.....	4	— 35	km/sec. ± 3		
220436.....	Boss 6017Br	23 18.6	— 9 1	7.0	G6	0".016	3	— 8.0	0.9		
220636-7.....	B.D.+76° 915	23 20.3	+76 58	7.9	F6	.....	3	— 21.5	1.6		
220704.....	Boss 6026	23 20.8	— 21 11	4.5	K5	.083	3	+ 13.0	1.3	+15.4	L
221615.....	Boss 6058	23 28.5	+21 57	5.5	M5	.036	3	+ 2.0	1.1	+ 2.1	V
221673.....	6059	23 29.0	+30 46	5.2	K4	.053	2	— 22.7	2.4	— 24.2	L
221950.....	6067	23 31.3	+ 1 33	5.6	F2n	.125	4	+ 39.4	1.5		
222493.....	6081	23 36.0	— 12 14	6.1	G7	.062	4	— 10.1	1.6		
222641.....	6086	23 37.3	+44 26	6.7	K5	.024	3	— 11.6	1.9		
222683.....	6088	23 37.7	+15 47	6.5	G7	.084	3	— 1.2	0.5		
222766.....	B.D.—8° 6177	23 38.3	— 8 27	9.7	G2	.64	3	— 98	.2		
223047.....	Boss 6101	23 41.1	+45 52	5.1	Kop	.022	3	— 26.3	0.3	— 24.5	L
223552.....	6117	23 45.4	+51 4	6.5	A9	.123	3	— 22	1		
223637.....	6121	23 46.2	+ 8 46	6.1	M2	.063	3	— 7.8	1.0	— 9.7	V
223718p.....	β G.C. 12601p	23 46.8	+37 21	7.0	F5s	.....	3	— 19.9	2.0		
223718f.....	12601f	23 46.8	+37 21	7.0	F5s	.....	3	— 17.8	2.5		
224062.....	Boss 6137	23 49.7	— 0 27	6.0	M5	.057	3	— 2.7	0.8		
224225.....	6143	23 51.0	— 22 33	7.4	M2	.050	3	— 5.2	1.5		
224618.....	B.D.—17° 6856	23 54.2	— 17 30	8.5	G5	.....	3	— 44	2		
224758.....	Boss 6162	23 55.3	+26 22	6.4	F5s	.064	5	0.0	1.2		
224873.....	β G.C. 12606m	23 56.3	+39 4	8.6	K1	.....	3	0	1		
224995.....	Boss 6174	23 57.3	+ 8 24	6.3	A3n	.004	7	+ 14	2		
225216.....	6184	23 59.5	+66 37	5.8	G8	0.102	3	+ 26.6	0.3		
225213.....	Cin. 3161	23 59.5	— 37 51	8.3	M3	6.112	4	+ 23	3		
225291Br.....	β G.C. 12736Br	23 59.8	+45 7	7.9	F8	0.031	4	— 17.5	1.4		
6.....	Boss 6188	23 59.9	— 1 3	6.3	G8	0.061	3	+ 14.2	± 0.8		

in each spectral type based on our own classification is as follows: O, 1; B, 19; A, 71; F, 132; G, 193; K, 189; M, 136; total, 741.

A large proportion of the fainter stars are dwarfs with large proper motions. They were photographed with the 10-inch camera. The radial velocities of all such stars have been rounded off to even kilometers. The same procedure has been followed for stars of types B and A, observed with the 18-inch camera; but for other types the fractional part of the kilometer has been retained.

Soon after the publication of the *Catalogue of Stellar Radial Velocities* by the Lick Observatory a comparison was made between the results for all stars observed in common at the Lick and Mount Wilson observatories. The systematic differences and average deviations for a single star in a total of 534 stars are as follows:

Type	No.	Mt. W.-Lick	Aver. Dev.
		km/sec.	km/sec.
B.....	86	+0.51	4.9 (Good lines, 2.4)
A.....	81	— .24	3.7 (Good lines, 3.0)
F.....	73	— .52	2.08
G.....	74	— .05	1.85
K.....	162	+ .91	2.01
M.....	58	+0.84	2.04

The greater dispersion used for the Lick spectrograms and the high order of accuracy attained in their measurement have led us to apply these values as corrections to the results derived from the low-dispersion Mount Wilson spectrograms for all stars of advanced spectral type. The differences are especially significant in types K and M, where they seem to be due mainly to the wave-lengths of some of the blended lines used on the plates of smaller scale. In the present list no correction has been applied to stars of types B and A, but for the remaining types the following values have been used throughout: F, +0.5; G, 0.0; K, -0.9; M, -0.8.

Our list contains 142 stars in common with the Lick Observatory *Catalogue*, some of which were used in the previous comparison, but many of which are new. There are also 96 stars in common with published lists from the Dominion Astrophysical Observatory at Victoria. The results of a comparison with these stars are shown in the table on page 236.

The average deviation for a single star for types F–M is 2.2 km/sec. when compared with the Lick values, and 2.3 km/sec. when compared with Victoria. In a few cases, especially among stars of type F, the size of the differences suggests the probability of variable velocity, but all values have been included in the comparison.

An interesting feature of the results, but one which would naturally be expected in a list containing so many stars of large proper motion, is the exceptional number of stars with high radial velocities. Corrected for the solar motion, twenty-six velocities exceed 70 km/sec., and seven exceed 100 km/sec. Two of the latter are for stars previously observed by Luyten. No exact count has been made of the number of velocities greater than 50 km/sec., but there are

Type	No.	Mt. W.–Lick	Type	No.	Mt. W.–Victoria
		km/sec.			km/sec.
B.....	15	+1.2	A.....	8	–0.6
A.....	20	–0.7	F.....	17	+1.6
F.....	12	+ .7	G.....	30	+0.3
G.....	28	– .7	K.....	26	+1.1
K.....	36	+ .5	M.....	15	+0.8
M.....	31	+0.1			

at least seventy. These stars show in a very marked way the asymmetry of stellar motions studied by Strömberg, the result being an almost complete absence of stars of large positive velocity in the northern sky between fifteen hours and two hours of right ascension.

Six stars, two of which are fainter than the ninth magnitude, are shown by the radial velocities and proper motions to be members of the Taurus group. The mean value of their radial velocities is +39.1 km/sec. The faintest star photographically in the entire list is the distant companion of Capella, a dwarf star of type M2. In view of the low dispersion employed, its radial velocity, +36 km/sec., is in satisfactory agreement with the motion of the principal star, +30.2 km/sec. The components of seven Struve double stars show considerable disagreement in radial velocity. As they are mostly wide pairs it is probable that they are optical doubles. They appear in the *Catalogue* as β G.C. 3319, 4062, 6064, 7212, 12317, Boss 4101–2 and 4340–1.

CARNEGIE INSTITUTION OF WASHINGTON
MOUNT WILSON OBSERVATORY
October 1929