

THE ASTROPHYSICAL JOURNAL

AN INTERNATIONAL REVIEW OF SPECTROSCOPY
AND ASTRONOMICAL PHYSICS

VOLUME L

OCTOBER 1919

NUMBER 3

THE RADIAL VELOCITIES OF 185 STARS OBSERVED AT THE CAPE

By JOSEPH LUNT

In continuation of a paper on "The Radial Velocities of 119 Stars Observed at the Cape"¹ the radial velocities are here given for a further 185 stars of magnitudes 3.7 to 4.6 observed with a wider slit than was used for the brighter stars in the former list.

As before, the stars are divided into two lists, the first giving the results for those stars which appear to have fairly constant velocities and the second for those stars which are either known or suspected to be variable in velocity. The two lists, given in Tables I and II, contain 122 and 63 stars, respectively.

Owing to the more diffuse character of the spectra taken with the wider slit, a somewhat larger latitude for error has been allowed in assigning the stars to one list or the other. The dividing line has been drawn in an arbitrary manner, and it is probable that stars may have to be removed from one list to the other when further observations are available.

The first list includes all stars showing a range up to 7.7 km per second, or a difference, Lick *minus* Cape, of not more than

¹ *Astrophysical Journal*, 48, 261, 1918.

TABLE I

CAPE LIST NO.	H.R. NO.	STAR	α (1900)	δ (1900)	MAG.	TYPE	STANDARD PLATES USED	NO. OF PLATES	MEAN EPOCH	RADIAL VELOCITIES KM		RANGE KM	DIFF. (1)-(2) KM	D. O. MILLS EXPEDITION† KM
1....	25	ϵ Phoenixis....	$\alpha^h 4^m 3$	$-46^\circ 18'$	3.94	K	ae	5	1911.62	Lick* (1)	Cape (2)	3.6	-0.1	-9.1
7....	127	β^a Toucani....	27.0	-63 31	4.48	A2	c	1	1908.69	-9.1	-9.0	.....	-0.7	.....
14....	402	θ Ceti....	1 10.0	-8 42	3.83	K	ae	8	1910.67	-12.7	-12.7	.....	-0.7	.....
17....	440	δ Phoenixis....	27.0	-49 35	3.96	K	ae	7	1911.78	-17.9	-16.9	.....	+1.0	.....
21....	585	ν Ceti....	55.3	-21 34	4.18	Ma	b	4	1910.63	-6.0	-7.1	.....	+0.1	.....
27....	794	ϵ Eridani....	2 36.7	-40 17	4.06	K	ae	6	1909.07	+18.4	+18.3	.....	0.0	.....
29....	841	β Fornacis....	44.9	-32 50	4.50	K	ade	4	1913.63	-9.2	-9.2	.....	+1.3	-9.0
30....	874	η Eridani....	51.5	-9 18	4.05	K	ae	4	1910.76	+17.5	+16.2	.....	+0.2	+17.3
33....	963	α Fornacis....	3 7.8	-20 23	3.95	F8	ce	7	1911.83	-20.6	-19.8	.....	+0.9	-20.8
34....	1003	γ^4 Eridani....	15.1	-22 7	3.95	Mb	bd	3	1912.23	+43.0	+30.7	.....	+3.3	+42.7
35....	1008	ϵ Eridani....	15.9	-43 27	4.30	G5	ae	3	1912.02	+87.6	+87.2	.....	+0.4	.....
38....	1100	γ Eridani....	33.5	-40 36	4.58	K5	ae	3	1912.02	+10.8	+13.0	.....	-2.8	.....
39....	1173	γ^6 Eridani....	42.5	-23 33	4.33	F8	c	4	1911.15	+7.3	+3.8	.....	+3.5	.....
41....	1195	δ Eridani....	45.7	-36 30	4.24	K	ade	3	1912.72	+3.6	+1.1	.....	+2.5	.....
44....	1247	δ Reticuli....	57.2	-61 41	4.41	Ma	bd	2	1913.79	+1.0	-3.1	.....	+4.1	.....
47....	1326	α Horologii....	4 10.7	-42 32	3.83	K	ade	4	1911.47	+21.7	+22.6	.....	-0.9	+21.4
49....	1338	γ Doradus....	13.4	-51 44	4.36	F5	c	4	1912.49	+27.0	+26.5	.....	+0.5	.....
50....	1355	ϵ Reticuli....	14.7	-59 32	4.42	K2	d	2	1914.12	+31.3	+31.3	.....	-1.6	.....
51....	1373	δ Tauri....	17.2	+17 18	3.93	K	ade	4	1914.21	+38.6	+37.1	.....	+1.5	.....
52....	1393	δ Eridani....	20.3	-34 15	4.06	K5	ab	4	1913.55	+23.6	+20.2	.....	+0.8	+22.8
55....	1453	ν^6 Eridani....	29.6	-29 57	4.59	K	e	3	1913.96	+21.6	+20.8	.....	+1.2	.....
57....	1464	ν^6 Eridani....	31.7	-30 46	3.88	K	ae	4	1911.58	-3.2	-4.4	.....	+1.2	-3.2
58....	1481	53 Eridani....	33.6	-14 30	3.08	K	ae	5	1911.20	.....	+42.3	.....	.....	.....
59....	1496	54 Eridani....	36.1	-19 52	4.54	Ma	b	3	1914.32	-33.7	-34.3	.....	+0.6	.....
63....	1652	γ Caeli....	5 0.8	-35 37	4.62	K	ae	3	1911.06	+12.4	+8.2	.....	+4.2	.....
69....	1907	ϕ^4 Orionis....	31.4	+9 15	4.39	K	ae	4	1911.02	+99.4	+98.4	.....	+1.0	.....
71....	1983	γ Leporis....	40.3	-22 29	3.80	F8	ce	5	1911.13	-9.1	-11.4	.....	+2.3	-8.9
75....	2035	δ Leporis....	47.0	-20 53	3.90	K	ae	6	1910.65	+99.3	+99.0	.....	+0.3	.....
77....	2042	γ Pictoris....	48.0	-56 12	4.38	K	ae	6	1910.45	+18.0	+14.4	.....	+4.5	.....
79....	2085	η Leporis....	51.9	-14 11	3.77	F5	c	6	1910.13	+0.3	+3.5	.....	+3.8	.....
80....	2102	η Doradus....	53.4	-63 8	4.53	K	de	3	1914.73	+25.6	+25.8	.....	-0.2	.....
81....	2120	κ Columbae....	50.1	-42 49	4.03	K	ae	5	1910.70	+17.9	+15.7	.....	+2.2	+18.7
83....	2256	σ Columbae....	6 13.0	-35 6	4.51	K	ae	3	1912.08	+25.6	+24.0	.....	+1.6	.....
93....	2580	σ^4 Can. Maj....	6 49.9	-24 4	4.12	K2	b	4	1911.26	+37.9	+36.0	.....	+1.9	+21.9
95....	2646	σ Can. Maj....	57.7	-27 47	3.68	K5	b	7	1911.04	+23.1	+21.1	.....	+1.9	.....
99....	2740	ι Puppis....	7 9.7	-46 35	4.47	F	c	3	1914.50	-2.3	-0.4	.....	-1.0	.....
103....	2803	δ Volantis....	16.9	-67 46	4.02	F5	c	3	1912.13	+22.7	+21.7	.....	+1.0	.....
104....	2821	ϵ Geminorum....	19.3	+28 0	3.89	K	de	3	1914.83	+7.8	+11.2	.....	-3.4	.....
106....	2906	ν Puppis....	29.8	-22 5	4.52	F8	c	3	1911.82	+60.8	+61.2	.....	.....	.....
107....	2905	ν Geminorum....	29.8	+27 7	4.22	K5	d	2	1916.16	-20.1	-19.3	.....	-0.7	.....
109....	2970	α Monocerotis....	36.5	-9 19	4.07	K	ade	3	1912.79	+11.6	+9.4	.....	+2.2	.....
114....	3017	ν Puppis....	41.7	-37 44	3.72	K5	b	4	1910.84	+18.3	+14.8	.....	+3.5	.....
115....	3024	ζ Volantis....	43.0	-72 22	3.80	K	de	3	1911.78	+40.2	+46.7	.....	+2.5	.....
118....	3102	ι Puppis....	52.6	-22 37	4.35	F8	c	3	1910.41	+14.7	+12.2	.....	+2.5	.....
122....	3249	β Cancri....	8 11.1	+9 30	3.70	K2	ae	3	1912.09	+22.4	+23.3	.....	-0.9	.....
126....	3340	θ Chamaeleontis....	23.6	-77 10	4.26	K	ae	3	1912.22	+23.7	+21.3	.....	+2.4	.....
128....	3426	ϵ Velorum....	34.2	-42 38	4.13	A5	c	3	1913.10	+17.1	+17.1	.....	+4.1	.....

* *Lick Observatory Bulletin*, 7, 19-113.
† *Publications of the Lick Observatory*, 9, 329-332.
‡ Ore plate, October 21, 1908, gives +3.1 km, not included.

TABLE I—Continued

CAPE LIST NO.	H.R. No.	STAR	α (1900)	δ (1900)	MAG.	TYPE	STANDARD PLATES USED	NO. OF PLATES	MEAN EPOCH	RADIAL VELOCITIES KM		RANGE KM	DIFF. (1)-(2) KM	D. O. MILLS EXPEDITION† KM
										Lick* (1)	Cape (2)			
285....	6805	109 Herculis.	18 ^h 10 ^m 4	+21° 43'	3.92	K	d	3	1916.72	-58.0	-56.3	1.9	-1.7	.....
286....	6905	f Telescopii.	21.1	-49 7	4.14	K	e	3	1913.89	-39.1	-36.3	2.3	+0.5	-39.1
289....	6982	Pavonis.	31.4	-71 31	4.10	K	e	3	1914.17	-17.0	-16.9	3.0	-0.1	-17.0
290....	7061	110 Herculis.	48.4	+20 27	4.26	F5	ce	3	1916.03	+22.6	+20.2	1.7	-3.6	.....
293....	7217	39 Sagittarii.	58.7	-21 53	3.90	K	ae	4	1910.74	+20.2	+24.7	6.5	+1.5	.....
294....	7226	γ Coron. Aust.	59.7	-37 12	5.01	F8	c	3	1915.02	-51.0	-53.7	1.2	+2.7	.....
308....	7581	i Sagittarii.	19 48.4	-42 8	4.21	K	e	4	1913.09	+36.2	+36.3	5.5	-0.1	+35.4
309....	7602	β Aquilae.	50.4	+6 9	3.00	K	ae	3	1912.37	-39.6	-39.4	2.7	-0.2	.....
312....	7747	α^1 Capricorni.	20 12.1	-12 49	4.55	G	ae	3	1913.28	-25.5	-20.9	3.0	+1.4	.....
319....	7948	γ Delphini.	42.0	+15 40	4.49	G5	de	3	1916.12	-6.1	-4.7	3.8	-1.4	.....
324....	8181	γ Pavonis.	21 18.2	-65 49	4.30	F8	c	3	1913.41	-31.1	-31.5	3.4	+0.4	-39.0
326....	8213	b Capricorni.	23.0	-22 15	4.59	G5	ae	4	1910.65	-21.7	-20.9	3.9	-0.8	.....
334....	8411	λ Gruis.	22 0.1	-40 2	4.60	K2	d	3	1916.85	+49.8	+37.5	0.8	+3.3	.....
338....	8556	δ^1 Gruis.	23.3	-44 0	4.02	G5	e	3	1914.36	+5.7	+4.6	5.2	+1.1	+5.8
341....	8630	β Octantis.	35.8	-81 54	4.34	F	c	2	1913.81	.....	+19.6	6.7	.....	.....
344....	8665	ξ Pegasi.	41.0	+11 40	4.31	F5	cd	3	1911.64	-4.0	-4.2	4.6	-0.4	.....
345....	8667	λ Pegasi.	41.7	+23 2	4.14	K	d	3	1916.50	+3.6	-4.3	4.3	+0.7	.....
347....	8679	τ Aquarii.	44.3	-14 7	4.21	K5	ad	3	1914.06	+1.4	+0.5	6.0	+0.9	.....
348....	8684	μ Pegasi.	45.2	+24 4	3.67	K	de	3	1914.81	+14.2	+15.7	4.0	-1.5	.....
349....	8698	λ Aquarii.	47.4	-8 7	3.84	Ma	bd	3	1915.52	-8.8	-7.0	2.4	-1.8	.....
351....	8720	δ Piscis Aust.	50.4	-33 4	4.33	K	ade	3	1913.41	-12.0	-11.0	2.8	-1.0	-12.0
359....	8852	γ Piscium.	23 12.0	+2 44	3.85	K	ae	6	1910.82	+13.6	-12.9	5.7	-0.7	.....
360....	8863	γ Sculptoris.	13.4	-33 5	4.51	K	ae	3	1910.52	+18.5	+14.3	4.2	+4.2	.....
361....	8892	b ¹ Aquarii.	17.7	-20 39	4.20	K	e	3	1912.70	-5.3	-6.4	2.9	+1.1	.....
362....	8906	b ² Aquarii.	20.8	-21 12	4.52	K5	bd	3	1914.85	+10.2	+17.2	5.0	-1.0	.....
		122 stars						422		Means...		3.8 Range	+0.7 Lick—Cape	+0.5 Chile—Cape

* Lick Observatory Bulletin, 7, 19-113.

† Publications of the Lick Observatory, 9, 329-332.

STANDARD PLATES USED

a=solar (daylight) plates

b=a Tauri plate 2885. Adopted shift { +50.28±0.13 km Simpson.
+49.81±0.15 km Jackson.c=a Can. Min. plate 2914. Adopted shift { -21.49±0.14 km Simpson.
-21.40±0.11 km Jackson.d=a Tauri plate 3408. Adopted shift +75.06 Halm.
e=a₂ Centauri plate 4005. Adopted shift -47.73±0.14 km Jackson.
f=a Can. Min. plate 2147. Adopted shift -1.22±0.14 km Lunt.

VELOCITIES OF 185 STARS

165

TABLE II

CAPE LIST No.	H.R. No.	STAR	α (1900)	δ (1900)	MAG.	TYPE	STAND- ARD PLATES USED	NO. OF PLATES	RADIAL VELOCITIES KM		RANGE KM		DIFF. (1)-(2) KM	Lick Observatory Bulletin REFERENCE
									Lick* (1)	Cape (2)	Cape	Pub- lished		
3....	77	ζ Toucani f.	$\alpha^{14} 28^m 9$	$-65^{\circ} 28'$	4.34	F8	ce	4	+9.3	+9.7	8.0	.....	-0.4	.....
10....	215	δ Andromedae	42.0	+23 43	4.30	K	e	4	var.	var.	47.1	35.6	.....	6, 141
11....	224	δ Piscium f.	43.5	+7 2	4.55	K5	ad	3	+32.6	+32.2	8.4	.....	+0.4	.....
15....	420	γ Phoenicis	1 24.0	-43 50	3.40	K5	b	6	var.	var.	23.2	34.5	.....	9, 116
18....	555	ψ Phoenicis	49.6	-46 48	4.41	Mb	bd	3	+8.9	+3.8	4.2	.....	+5.1	.....
28....	813	μ Ceti f.	2 39.5	+9 42	4.30	A5	c	3	+26.0	+30.2	9.0	.....	-4.2	.....
36....	1030	σ Tauri	3 19.4	+8 41	3.80	G5	ae	6	$V_0 - 20.0$	var.	9.4	10.0	.....	4, 101
40....	1175	β Reticuli	4 22.8	-65 7	3.80	K	ae	6	$V_0 + 50.0$	var.	9.4	7.4	.....	4, 97
53....	1411	θ^1 Tauri f.	4 22.8	+15 44	4.04	K	de	3	+37.5	+46.2	8.0	.....	-8.7	.....
60....	1502	α Caeli	37.3	-42 3	4.52	F2	ce	3	$V_0 \pm 0.0$	var.	10.5	14.5	.....	6, 143
67....	1862	ϵ Columbae	5 27.7	-35 33	3.92	K	ae	5	$V_0 - 4.0$	var.	5.1	7.0	.....	6, 153
70....	1922	β Doradus	32.8	-62 33	3.81	F5	c	4	$V_0 + 12.0$	var.	20.5	27.1	.....	3, 158
82....	2216	η Geminorum	6 8.8	+22 32	var.	Ma	b	4	var.	var.	20.5	11.0	.....	3, 110
85....	2296	δ Columbae	18.4	-33 23	3.98	G5	ae	8	var.	var.	13.3	16.0	.....	3, 111
92....	2554	A Carinae	47.6	-53 31	4.38	G5	ae	4	var.	var.	23.9	45.4	.....	[13.91 Ap.J.]
96....	2650	ζ Geminorum	58.2	+20 43	var.	G	de	3	$V_0 + 6.8$	var.	19.6	30.9	.....	[5, 201 J.R.A.S.C.]
110....	2973	σ Geminorum	7 37.0	+20 7	4.26	K	ae	4	$V_0 + 45.8$	var.	60.7	75.8	.....	6, 145
113....	2906	1 Puppis	39.8	-28 43	4.10	A2p	c	5	var.	+25.4	17.4	10.6	.....	6, 55
120....	3225	h ¹ Puppis	8 7.8	-39 19	4.43	K5	bd	4	var.	+13.7	4.7	13.2	.....	6, 55
121....	3243	h ² Puppis	10.5	-40 2	4.43	K	ade	6	var.	var.	22.1	16.5	.....	6, 55
136....	3591	w Velorum	56.3	-40 52	4.42	F8	ce	5	$V_0 + 9.0$	var.	34.2	10.7	.....	3, 3
138....	3615	α Volantis	9 0.9	-66 0	4.18	A5	cf	4	$V_0 + 6.0$	var.	24.7	10.8	.....	3, 111
140....	3643	G Carinae f.	4.9	-72 12	4.50	F5	c	3	+21.0	+22.4	8.7	.....	-1.4	.....
148....	3852	14 Leonist	35.8	+10 21	3.76	F5p	c	3	$V_0 + 27.1$	var.	36.2	113.2	.....	5, 21
152....	3912	m Velorum	47.9	-46 5	4.56	G5	ade	4	var.	var.	23.8	120.8	.....	4, 97
153....	3994	λ Hydrae	10 5.7	-11 52	3.83	K	ade	9	$V_0 + 20.0$	+18.8	6.4	10.4	.....	4, 98
160....	4102	f Carinae f.	22.4	-73 32	4.08	F5	c	3	+3.0	-2.6	4.1	9.0	.....	+5.6
161....	4104	α Anthia f.	22.6	-30 34	4.42	K5	b	3	+16.0	+10.7	8.1	.....	+5.3	.....
164....	4167	p Velorum	33.1	-47 42	4.06	F2	ce	6	$V_0 + 17.0$	var.	67.0	50.0	.....	3, 111
167....	4200	w Carinae f.	39.7	-60 3	4.40	K5	bd	6	+12.8	+7.9	8.4	.....	+4.9	.....
172....	4337	x Carinae	11 4.4	-58 26	4.02	F8p	c	5	$V_0 + 8.0$	+6.1	4.8	14.1	.....	4, 161
175....	4382	δ Craterist	14.3	-14 14	3.82	K	ade	6	-4.7	-7.4	10.8	.....	+2.7	.....
183....	4599	θ^1 Crucis	58.0	-62 45	4.48	A3	c	3	var.	-7.2	3.5	24.6	.....	6, 56
185....	4616	η Crucis	12 1.7	-64 3	4.30	F	c	3	+12.0	+11.3	12.5	.....	+0.7	.....
188....	4671	ϵ Muscae	12.1	-67 24	4.16	Mb	b	3	+6.0	+7.2	8.4	12.3	.....	6, 145
191....	4775	η Corvi	12 26.9	-15 38	4.42	F	c	4	var.	var.	13.2	30.8	.....	5, 175

TABLE II—Continued

CAPE LIST No.	H.R. No.	STAR	α (1900)	δ (1900)	MAG.	TYPE	STANDARD PLATES USED	NO. OF PLATES	RADIAL VELOCITIES KM		RANGE KM		DIFF. (1)-(2) KM	Lick Observatory Bulletin REFERENCE
									Lick* (1)	Cape (2)	Cape	Published		
195....	4888	e Centauri†	12 ^h 47 ^m 5	-48°24'	4.35	K2	b	3	+0.9	-4.9	6.0	.....	+5.8	.....
198....	4923	δ Muscae†	55.4	-71 1	3.03	K2	b	3	+34.7	var.	17.2	.....	.....	.....
206....	5168	i Centauri†	13 40.0	-32 33	4.36	F5	ce	3	-14.6	var.	28.0	.....	.....	.....
210....	5260	v ² Centauri	55.4	-45 7	4.30	F5	c	4	var.	var.	12.2	13.2	.....	4, 97
215....	5396	r ² Lupi†	14 19.8	-44 56	4.40	F5	c	3	+7.6	var.	22.5	.....	.....	.....
227....	5747	β Coronae Bor.	15 23.7	+29 27	3.72	Fp	c	3	V ₀ -21.3	var.	10.8	6.3	.....	[6, 343 J.R.A.S.C.]
231....	5797	ω Lupi†	31.3	-42 14	4.27	K5	bd	3	-3.4	-9.1	10.1	.....	+5.7	.....
238....	5933	γ Serpentis†	51.8	+15 59	3.86	F8	ae	3	+7.3	+4.4	10.1	.....	+2.9	.....
246....	6102	γ Apodis	16 18.1	-78 40	3.90	K	ae	3	V ₀ +5.	+6.0	3.9	6.3	.....	5, 177
265....	6546	χ Scorpii	17 20.6	-38 34	4.34	K	de	3	V ₀ -47.	-51.3	4.8	10.5	.....	7, 97
278....	6752	η Ophiuchi	18 0.4	+2 31	4.27	K	ae	3	V ₀ -7.4	-6.9	1.9	4.0	.....	5, 63
282....	6855	ξ Pavonis	14.0	-61 33	4.25	K2	d	3	var.	+35.0	5.6	36.6	.....	6, 152
286....	6951	θ Coron. Aust.†	20.4	-42 23	4.09	G5	e	3	+3.3	-5.7	3.5	.....	+0.9	.....
296....	7242	δ Coron. Aust.†	19 1.3	-40 39	4.06	K	ade	3	+23.2	+17.0	2.1	.....	+5.6	.....
298....	7259	β Coron. Aust.†	3.1	-39 30	4.16	G5	ae	3	+3.3	+2.8	8.6	.....	+0.5	.....
305....	7536	δ Sagittae	42.0	+18 17	3.78	Map	bd	3	V ₀ +3.	-2.2	2.0	15.0	.....	.....
307....	7570	η Aquilae	47.4	+0 45	var.	G	ae	3	V ₀ -14.2	-17.4	6.8	42.0	.....	[9, 66 Ap.J.]
318....	7936	ψ Capricorni†	20 40.2	-25 38	4.26	F8	c	4	+26.5	var.	12.3	.....	+6.9	.....
320....	7980	ω Capricorni†	45.0	-27 18	4.24	Ma	bd	3	+12.	+5.1	6.2	.....	.....	.....
323....	8131	α Equule†	21 10.8	+4 50	4.14	A8p	ae	3	var.	-12.0	6.9	24.0	.....	1, 159
328....	8254	ν Octantis	30.4	-77 50	3.74	K	ae	4	V ₀ +31.	+37.0	11.5	12.0	.....	5, 61
331....	8315	κ Pegasi	40.1	+25 11	4.27	F5	ce	3	V ₀ -5.	var.	57.1	95.1	.....	9, 120
336....	8430	ι Pegasi	22 2.4	+24 15	3.96	F5	ce	3	V ₀ -4.1	var.	73.9	95.4	.....	2, 109
340....	8560	δ^2 Gruis†	23.8	-44 15	4.31	Mb	bd	4	V ₀ +5.	+0.7	8.1	.....	+4.3	.....
353....	8747	ζ Gruis	55.0	-53 17	4.18	G5	ae	3	V ₀ -4.	-4.4	8.9	.....	.....	.....
357....	8820	ϵ Gruis	23 4.7	-45 47	4.10	K	ae	3	var.	var.	13.2	16.5	.....	4, 161
363....	9072	ω Piscium†	54.2	+0 19	4.03	F5	c	3	-2.4	+9.9	10.1	.....	-12.3	.....
		63 stars						244						

* Lick Observatory Bulletin, 7, 10, 113.

† Either obviously variable in velocity or suspected.

‡ Measures refer to first component.

V₀ = velocity of the center of mass of the system (estimated or determined).

4.5 km per second. The stars in this list are divided as shown in the following table:

Range		Stars	Diff. Lick <i>minus</i> Cape		Stars
km	km		km	km	
0.0 to 3.0		47	0.0 to 1.0		49
3.1 to 5.0		35	1.1 to 2.0		32
5.1 to 7.0		31	2.1 to 3.0		21
7.1 to 7.7		7	3.1 to 4.0		11
1 plate only		2	4.1 to 4.5		7
		122			120
Mean range, 3.8 km			Mean difference, +0.7 km		

Two-thirds of the stars therefore differ 2.0 km or less from the Lick values, and 85 per cent differ 3.0 km or less; the mean difference, Lick *minus* Cape, is +0.7 km per second.

Forty-one stars common to this list and that published by the D. O. Mills Expedition to Chile¹ show a systematic difference, Chile *minus* Cape, +0.5 km per second. In the previous paper the difference Chile *minus* Cape for 33 stars was -0.3 km per second.

Of the 63 stars in Table II, 39 have already been recorded as variable in velocity; the remaining 24, marked with a dagger, are either obviously variable or belong to the suspected list. For 11 of these latter stars the difference, Lick *minus* Cape, is between 4.9 and 12.3 km, and for the remaining 13 stars the observed range is between 8.0 and 28.0 km.

The results for the individual plates of the stars in Table II are given in Table III.

In some cases in which orbits have been published the measures have been compared with the theoretical velocities by a rough calculation and found to agree satisfactorily.

Twenty-eight stars of types A to F5 were rejected, the lines in their spectra being too diffuse or too few to yield satisfactory results with the dispersion employed, and these are given in Table IV.

The measures were made on the Hartmann spectrocomparator by Mr. J. W. Jackson, who measured more than half; the earlier

¹ *Publications of the Lick Observatory*, 9, 329-332.

TABLE III

H.R. No.	Plate No.	Star and Date	Sid. Time and R.A.	Rad. Vel. km	Meas-ured by	H.R. No.	Plate No.	Star and Date	Sid. Time and R.A.	Rad. Vel. km	Meas-ured by
77	2470	ζ <i>Toucani</i>	0 ^h 14 ^m 9	.....	.....	1030	2513	1909 Sept. 22.....	3 ^h 6 ^m	-23.1	S
	4151	1909 Sept. 1.....	1 9	+12.5	S		3824	1912 Sept. 29.....	3 33	-18.2	J
	4152	1913 Oct. 21.....	23 5	+5.2	J		3834	Oct. 4.....	3 48	-17.4	J
	4439	1914 Nov. 7.....	22 36	+13.2	J		3923	Dec. 18.....	2 40	-19.5	J
	4439	ζ <i>Antromedae</i>	1 35	+7.9	J		4179	1913 Dec. 19.....	2 29	-26.8	J
215	4165	1913 Dec. 1.....	0 ^h 42 ^m 0	.....	.....	1175	2541	β <i>Retculi</i>	3 ^h 42 ^m 9	.....	.....
	4437	1914 Nov. 4.....	1 45	+6.2	J		2816	1909 Oct. 20.....	4 38	+47.5	S
	4440	1914 Nov. 11.....	23 27	-2.2	J		3338	1910 Sept. 13.....	2 48	+49.6	S
	4446	Nov. 18.....	0 46	-40.9	J		3360	1911 Oct. 31.....	4 32	+47.1	J
	.....	δ <i>Piscium</i>	0 ^h 43 ^m 5	-28.4	J		3364	Nov. 17.....	4 30	+51.4	J
224	1929	1908 Oct. 3.....	1 52	+36.0	S	1411	3804	Nov. 29.....	1 35	+53.7	J
	2013	Nov. 16.....	1 5	+27.7	H		4169	1912 Sept. 10.....	4 30	+52.8	J
	4665	1915 Dec. 4.....	2 22	+33.1	H		4184	θ^1 <i>Tauri</i>	4 ^h 22 ^m 8	.....	.....
	.....	γ <i>Phoenicis</i>	1 ^h 24 ^m 0	.....	.....		4693	1913 Dec. 8.....	4 6	+41.5	J
	2034	1908 Nov. 27.....	2 1	+8.3	S	1502	2052	Dec. 27.....	3 52	+49.5	J
429	2592	1909 Nov. 25.....	2 46	+18.6	S		4460	1916 Jan. 28.....	5 34	+47.7	J
	3390	1911 Dec. 11.....	2 16	+31.6	J		4690	α <i>Caeli</i>	4 ^h 37 ^m 3	.....	.....
	3396	Dec. 18.....	2 57	+29.5	J		.....	1908 Dec. 2.....	5 20	-3.8	S
	3800	1912 Sept. 12.....	2 28	+12.7	J		.....	1914 Dec. 14.....	2 45	+6.7	J
	4448	1914 Nov. 19.....	2 8	+20.3	J	1862	.....	1916 Jan. 25.....	5 32	-0.9	H
555	4464	ψ <i>Phoenicis</i>	1 ^h 49 ^m 6	.....	.....		2218	ϵ <i>Columbae</i>	5 ^h 27 ^m 7	.....	.....
	4670	1914 Dec. 22.....	3 35	+6.2	J		2222	1909 Feb. 11.....	7 34	-8.1	S
	4672	1915 Dec. 18.....	3 24	+1.9	H		3320	Feb. 12.....	6 4	-9.1	S
	.....	Dec. 22.....	3 20	+3.3	H		3330	Oct. 24.....	6 10	-4.0	J
	3929	μ <i>Celi</i>	2 ^h 39 ^m 5	.....	.....		3392	Dec. 14.....	4 29	-5.5	J
813	3932	1912 Dec. 19.....	3 0	+31.6	J	1922	2136	β <i>Doradus</i>	4 6	.....	.....
	3935	Dec. 21.....	3 3	+34.0	J		2254	1909 Jan. 18.....	5 ^h 32 ^m 8	+0.9	S
	.....	Dec. 23.....	3 26	+25.0	J		3859	Mar. 1.....	6 44	-8.5	S
	1921	θ <i>Tauri</i>	3 ^h 19 ^m 4	.....	.....		4183	1912 Oct. 22.....	4 0	+0.7	J
	.....	1908 Sept. 30.....	2 58	-21.2	S		.....	1913 Dec. 23.....	4 1	+11.7	J

[illegible]

**** Very poor plate.**

TABLE III—Continued

H.R. No.	Plate No.	Star and Date	Sid. Time and R.A.	Rad. Vel. km	Meas-ured by	R.H. No.	Plate No.	Star and Date	Sid. Time and R.A.	Rad. Vel. km	Meas-ured by
3994	2155	1909 Jan. 22.....	0 ^h 52 ^m	+17.7	S	4337	4302	1914 May 2.....	11 ^h 50 ^m	+8.6	J
	2902	1910 Dec. 2.....	8 10	+20.9	S		4307	May 8.....	12 49	+4.6	J
	3036	1911 Mar. 2.....	9 1	+20.5	S		4759	May 1.....	12 32	+3.8	H
	3531	1912 Mar. 11.....	9 24	+21.8	J		4764	May 8.....	12 6	+5.2	H
	3926	Dec. 18.....	8 34	+15.8	J			δ Crateris.....	11 ^h 14 ^m 3		
	4766	1916 May 10.....	10 57	+19.7	H		2156	1909 Jan. 22.....	11 11	-9.9	S
	4770	May 15.....	10 34	+20.0	H		2286	Mar. 21.....	12 5	-7.1	S
4102		<i>I Carinae</i>	10 ^h 22 ^m 4				3467	1912 Feb. 9.....	12 3	-0.1	J
	2351	1909 May 14.....	11 21	-4.0	S		4765	May 9.....	11 51	-10.8	H
	4265	1914 Mar. 23.....	8 17	+0.2	J		4773	May 17.....	12 8	-8.3	H
	4267	Mar. 26.....	8 36	-3.8	J		4775	May 20.....	12 43	-8.2	H
4104		<i>a Antliae</i>	10 ^h 22 ^m 6			4599		θ Crucis.....	11 ^h 58 ^m 0		
	2357	1909 May 17.....	11 52	+14.9	S		4198	1914 Jan. 11.....	10 52	-7.3	J
	4269	1914 Mar. 27.....	8 34	+10.4	J		4266	Mar. 23.....	10 4	-5.4	J
	4304	May 5.....	11 35	+6.8	J		4268	Mar. 26.....	10 15	-8.9	J
4167		<i>p Velorum</i>	10 ^h 33 ^m 1			4616		η Crucis.....	12 ^h 1 ^m 7		
	2239	1909 Feb. 22.....	11 31	+16.6	S		3117	1911 Apr. 28.....	13 30	+16.1	J
	4510	1915 Mar. 5.....	8 1	+39.8	J		4019	1913 Mar. 26.....	10 38	+14.3	J
	4527	Mar. 25.....	9 37	+39.9	J		4270	1914 Mar. 27.....	10 51	+3.6	J
	4537	Mar. 31.....	11 16	+32.5	J	4671		ϵ Muscae.....	12 ^h 12 ^m 1		
	4758	1916 May 1.....	11 2	+2.5	H		4063	1913 June 20.....	14 45	+4.2	J
	4774	May 20.....	11 14	-27.1	H		4345	1914 June 30.....	14 28	+4.7	J
4200		<i>w Carinae</i>	10 ^h 39 ^m 7			4775	4544	1915 Apr. 7.....	10 17	+12.6	J
	4545	1915 Apr. 8.....	9 33	+9.0	J		2383	η Corvi.....	12 ^h 26 ^m 9		
	4568	May 29.....	12 54	+2.9	J		4276	1909 June 14.....	13 21	-1.3	S
	4729	1916 Mar. 20.....	9 8	+10.7	H		4570	1914 Apr. 2.....	11 0	-2.3	J
	4731	Mar. 23.....	8 43	+11.3	H		4763	1915 June 3.....	14 2	+0.9	J
	4733	Mar. 25.....	8 52	+3.3	H			1916 May 6.....	11 54	-12.3	H
4337		<i>x Carinae</i>	11 ^h 4 ^m 4			4888		e Centauri.....	12 ^h 47 ^m 5		
	2270	1909 Mar. 8.....	12 43	+8.2	S		4078	1913 July 9.....	14 12	-8.2	J
							4343	1914 June 29.....	14 13	-4.4	J

VELOCITIES OF 185 STARS

171

4888	4347	1914 July 1.	14 ^h 38 ^m	- 2.2	J	6546	4798	1916 Aug. 3.	16 ^h 25 ^m	-52.1	H
4923	2277	δ Muscae.	12 ^h 45 ^m 4	+47.6	S	6752	2469	70 Ophiuchi.	18 ^h 0 ^m 4	6.1	S
	4075	1909 Mar. 14.	11 32	+30.4	J		4388	1909 Aug. 27.	18 31	- 8.0	J
	4248	1913 June 30.	14 12	+37.8	J		4392	1914 Aug. 12.	19 3	- 6.7	J
5168		1914 Mar. 8.	14 3			6855		ξ Pavonis.	18 12		
		ι Centauri.	13 ^h 40 ^m 0					1916 Aug. 8.	18 ^h 14 ^m 0		
	3147	1911 May 22.	12 37	- 4.2	J		4800	Aug. 10.	16 29	+22.6	H
	4080	1913 July 10.	14 44	- 9.8	J		4805	Aug. 15.	16 54	+24.3	H
5260	4549	1915 Apr. 10.	11 17	-32.2	H	6951	4806	θ Coron. Aust.	16 36	+28.2	H
		ν^2 Centauri.	13 ^h 55 ^m 4					1914 Sept. 14.	18 ^h 26 ^m 4		
	4022	1913 Mar. 30.	15 36	- 5.8	J		4404	1915 Sept. 11.	19 26	- 7.7	J
	4067	June 21.	15 44	- 9.7	J		4609	Sept. 17.	19 58	- 5.3	J
	4351	1914 July 3.	15 2	+ 0.8	J		4613	δ Coron. Aust.	20 12	- 4.2	J
	4360	July 14.	15 35	+ 2.5	J	7242		1910 Aug. 19.	19 ^h 1 ^m 3		
5396		τ^2 Lupi.	14 ^h 19 ^m 8				2794	1915 Sept. 18.	20 2	+18.0	S
	2311	1909 Apr. 9.	13 3	+ 9.9	S		4616	1916 Sept. 27.	20 43	+18.5	J
	3709	1912 July 15.	15 13	-12.6	J	7259	4830	β Coron. Aust.	20 23	+16.4	H
	4086	1913 July 17.	15 23	- 2.8	J			1910 Sept. 22.	19 ^h 3 ^m 1		
5747		β Coronae.	15 ^h 23 ^m 7				2828	1914 Aug. 19.	20 13	+ 7.6	S
	3980	1913 Feb. 19.	14 33	-15.7	J	7536	4393	1915 Sept. 3.	20 7	+ 1.6	J
	4015	Mar. 19.	14 46	-22.3	J		4604	1915 Sept. 25.	21 7	- 0.9	J
5797	4785	1916 June 16.	14 7	-26.5	H		4617	δ Sagittae.	19 ^h 42 ^m 9		
		ω Lupi.	15 ^h 31 ^m 3				4826	1915 Sept. 22.	20 21	- 1.0	J
	2279	1909 Mar. 15.	13 58	- 3.1	S		4831	Sept. 29.	21 7	- 3.1	H
	4387	1914 Aug. 12.	17 9	-13.2	J	7570		η Aquilae.	19 ^h 47 ^m 4	- 2.5	H
	4788	1916 June 30.	14 2	-11.0	H		2801	1910 Aug. 22.	21 6	-13.9	S
5933		γ Serpentis.	15 ^h 51 ^m 8				3269	1911 Sept. 6.	19 5	-20.7	J
	2424	1909 July 17.	16 25	+ 4.8	S		3775	1912 Aug. 23.	19 58	-17.5	J
	3684	1912 July 2.	16 13	+ 9.2	J	7936		ψ Capricorni.	20 ^h 40 ^m 2		
	4374	1914 July 23.	14 52	- 0.9	J		2403	1909 July 5.	22 32	+31.2	S
6102		γ Apodis.	16 ^h 18 ^m 1				2820	1910 Sept. 16.	20 7	+23.4	S
	2441	1909 July 30.	17 15	+ 6.1	S		3135	1911 May 11.	20 8	+18.9	J
	4259	1914 Mar. 15.	16 31	+ 7.9	J		3197	June 26.	21 36	+25.6	J
	4600	1915 Aug. 21.	18 13	+ 3.9	J	7980		ω Capricorni.	20 ^h 45 ^m 9		
6546		Q Scorpii.	17 ^h 29 ^m 6				4625	1915 Oct. 8.	22 22	+ 8.4	J
	4102	1913 Aug. 6.	19 2	-48.5	J		4628	Oct. 15.	22 18	+ 2.2	H
	4352	1914 July 4.	16 5	-53.3	J						

TABLE III—Continued

H.R. No.	Plate No.	Star and Date	Sid. Time and R.A.	Rad. Vel. km	Meas-ured by	H.R. No.	Plate No.	Star and Date	Sid. Time and R.A.	Rad. Vel. km	Meas-ured by
7980	4632	1915 Oct. 19.....	21 ^h 48 ^m	+ 4.6	H	8560	4451	1914 Nov. 24.....	1 ^h 15 ^m	- 1.8.	J
8131	.....	α Equulei.....	21 ^h 10 ^m 8	.....	.....	.....	4645	1915 Nov. 3.....	0 32	- 0.5	H
	2552	1909 Oct. 20.....	22 36	- 8.1	S		4850	1916 Nov. 14.....	1 28	+ 6.3	H
	2819	1910 Sept. 15.....	20 5	-15.0	S		4851	Nov. 16.....	0 43	- 1.1	H
	3840	1912 Oct. 5.....	22 34	-13.0	J		.....	ζ Gruis.....	22 ^h 55 ^m 0	.....	.....
8254	.....	ν Octantis.....	21 ^h 30 ^m 4	.....	.....		2463	1909 Aug. 25.....	0 27	- 9.7	S
	2410	1909 July 12.....	22 39	+39.7	S		4434	1914 Oct. 28.....	23 54	- 2.6	J
	2827	1910 Sept. 21.....	22 18	+30.3	S		4447	Nov. 19.....	0 35	- 0.9	J
	3301	1911 Oct. 7.....	22 36	+41.8	J		.....	ι Gruis.....	23 ^h 4 ^m 7	.....	.....
	4411	1914 Sept. 18.....	22 46	+38.7	J		1991	1908 Nov. 6.....	0 1	+ 2.3	S
8315	.....	κ Pegasi.....	21 ^h 40 ^m 1	.....	.....		3902	1912 Nov. 19.....	0 28	-10.9	J
	4635	1915 Oct. 25.....	23 5	-36.6	H		4175	1913 Dec. 12.....	1 48	- 7.3	J
	4640	Oct. 28.....	22 57	+16.8	H		.....	ω Piscium.....	23 ^h 54 ^m 2	.....	.....
	4838	1916 Oct. 19.....	22 17	+20.5	H		1965	1908 Oct. 21.....	1 8	+13.3	S
8430	.....	ι Pegasi.....	22 ^h 2 ^m 4	.....	.....		2872	1910 Nov. 14.....	23 52	+ 3.3	S
	4608	1915 Sept. 8.....	22 14	+14.8	J		3912	1912 Dec. 2.....	1 17	+ 6.3	J
	4626	Oct. 11.....	23 4	-43.0	J		4435	1914 Oct. 29.....	1 42	+13.2	J
	4636	Oct. 26.....	22 50	+30.9	H		4436	Oct. 31.....	23 57	+13.4	J
8560	.....	δ^2 Gruis.....	22 ^h 23 ^m 8	.....	.....		.....	.....	.....	.....	.....

VELOCITIES OF 185 STARS

173

TABLE IV

Cape List No.	H. R. No.	Star	R. A.	Dec.	Mag.	Type
6.....	100	κ Phoenicis.....	0 ^h 21 ^m 3	-44°14'	3.90	A ₃
23.....	596	α Piscium.....	1 56.9	+ 2 17	4.33	A _{2p}
26.....	705	δ Hydri.....	2 20.0	-69 7	4.26	A ₂
32.....	919	τ^3 Eridani.....	2 58.0	-24 1	4.16	A ₃
46.....	1298	σ^1 Eridani.....	4 7.0	- 7 6	4.14	F ₅
62.....	1560	ω Eridani.....	4 48.0	- 5 37	4.45	A ₅
73.....	2015	δ Doradus.....	5 44.6	-65 46	4.52	A ₅
74.....	2020	β Pictoris.....	5 44.9	-51 6	3.94	A ₃
94.....	2590	π Can. Maj.....	6 51.3	-20 1	4.62	F ₅
123.....	3270	η Puppis.....	8 14.8	-36 21	4.43	A ₅
125.....	3318	α Chamaeleontis...	8 21.1	-76 36	4.08	F ₅
146.....	3836	M Velorum.....	9 33.3	-48 55	4.49	A ₅
154.....	4023	η Velorum.....	10 10.5	-41 38	4.09	A ₂
173.....	4343	β Crateris.....	11 6.7	-22 17	4.52	A ₂
177.....	4405	γ Crateris.....	11 19.9	-17 8	4.14	A ₂
179.....	4520	λ Muscae.....	11 40.9	-66 10	3.80	A ₅
193.....	4802	τ Centauri.....	12 32.3	-47 59	4.02	A ₂
196.....	4889	η Centauri.....	12 47.9	-39 38	4.34	A ₅
225.....	5670	β Circini.....	15 9.6	-58 26	4.16	A ₃
233.....	5825	γ Lupi.....	15 34.3	-44 20	4.69	F
235.....	5867	β Serpentis.....	15 41.6	+15 44	3.74	A ₂
263.....	6486	δ Ophiuchi.....	17 20.3	-24 5	4.28	F
279.....	6771	γ^2 Ophiuchi.....	18 2.6	+ 9 33	3.73	A ₂
297.....	7254	α Coron. Aust.....	19 2.7	-38 4	4.12	A ₂
300.....	7340	ρ^1 Sagittarii.....	19 15.9	-18 2	3.95	F
301.....	7343	β^2 Sagittarii.....	19 16.0	-44 59	4.51	F
333.....	8368	δ Indi.....	21 51.1	-55 28	4.56	F
358.....	8848	γ Toucani.....	23 11.6	-58 47	4.10	F ₂

plates were measured by Mr. J. A. Simpson, and the later ones by Dr. Halm. In Table III the names of the measurers are indicated by their initials.

Miss M. K. Stephens assisted in compiling the tabular matter.

ROYAL OBSERVATORY, CAPE OF GOOD HOPE
June 20, 1918