

MULTICOLOR PHOTOMETRY OF METALLIC-LINE STARS

III. A PHOTOMETRIC CATALOGUE

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RESUMEN

Se han seleccionado más de ochocientas estrellas clasificadas como estrellas con líneas metálicas (Am) o sospechosas de serlo. También se da la fotometría UBVRIJHKL de una parte de ellas.

Resultados preliminares indican que los índices de color B-V, V-R y R-I concuerdan satisfactoriamente con los tipos espectrales obtenidos a partir exclusivamente de las líneas del Hidrógeno.

ABSTRACT

We have compiled over 800 metallic-line stars (Am) and suspected Am. We also have presented the UBVRIJHKL photometry of a number of them.

Preliminary results indicate that the B-V, V-R and R-I color indices are satisfactorily correlated with the spectral type derived solely from the hydrogen lines.

Key words: METALLIC-LINE STARS — PHOTOMETRY — SPECTROSCOPY.

I. INTRODUCTION

Among the A-type stars are two groups which depart from the normal, namely, the "peculiar" stars (Ap) and the "metallic-line" stars.

A classic Am with a given intensity of its hydrogen lines can be described as having the K-line of CaII weak, sharp and deep and the metallic lines strong, particularly those of ionized metals and rare earths. Roman *et al.* (1948) found no explanation in terms of one or more normal stars. Some luminosity effects and other peculiarities could be confused with the features of metallic-line stars. The result is that borderline metallic-line stars are more difficult to define.

In the following sections we give a finding list of Am and suspected Am stars and the UBVRIJHK photometry for a number of them.

In subsequent papers we are going to give more multicolor photometry, narrow band photometry and MK spectra.

II. A CATALOGUE OF Am STARS

In Table 1 we have compiled stars classified as metallic-line stars. It includes mild Am and borderline metallic-line stars, as well as suspected ones. The main sources of the data are:

1. Cowley *et al.* (1969)
2. La Plata MK-Spectra Catalogue (Jaschek *et al.* 1964)
3. The Bright Star Catalogue (Hoffleit 1964)
4. Bertaud and Floquet (1974)
5. La Plata Photometric Catalogue (Jaschek *et al.* 1972).

Table 1 is arranged in order of 1900 right ascension. The first column contains the name of the star. In order of preference this column gives:

1. The constellation name.
2. BS, Bright Star Catalogue number.
3. HD and HDE, Henry Draper number.

TABLE 1
A CATALOGUE OF METALLIC-LINE STARS

Name	R.A.	Decl.	V	B-V	U-B	R
<i>HD</i> 416	0 ^h 03 ^m .7	+36° 38'	8.89	0.31	0.07	9,10
<i>HD</i> 434	0 03.8	+27 41				
<i>HD</i> 861	0 07.9	+61 29	6.64	0.19		10
<i>HD</i> 923	0 08.5	-30 08	8.61	0.18	0.13	10
<i>HD</i> 1086	0 10.0	-17 49	9.85	0.19	0.12	10
<i>HD</i> 1263	0 11.8	+75 35				
<i>HD</i> 1541	0 14.5	-38 19	9.76	0.27	0.13	10
<i>HD</i> 1619	0 15.3	-25 16	8.64	0.35	0.14	10
<i>HD</i> 1677	0 16.0	+35 19	7.37	0.24	0.09	10
<i>HD</i> 1714	0 16.3	+35 42	8.50	0.35	0.13	10
<i>BD</i> +75°12	0 19.1	+75 56				
<i>HD</i> 2026	0 19.4	-29 33	8.12	0.14	0.16	10
<i>HD</i> 2044	0 19.6	+45 52				6
28 And	0 24.8	+29 12	5.20	0.25	0.08	10
<i>HD</i> 3036	0 28.6	+76 57				
θ Tuc	0 29.2	-71 49	6.12	0.24	0.18	3,6,10
<i>HD</i> 3212	0 30.3	+33 54	8.09	0.30	0.06	10
<i>HD</i> 3311	0 31.0	-19 19	9.03	0.15	0.11	10
<i>HD</i> 3448	0 32.3	+21 21				
<i>HD</i> 3777	0 35.4	+56 36				
<i>BS</i> 178	0 36.3	+24 05	6.04	0.26	0.20	11
<i>HD</i> 3959	0 37.1	+86 24	8.65	0.17	0.08	6,10
<i>YZ</i> Cas	0 39.0	+74 26	5.66	0.05	0.07	10
<i>HD</i> 4329	0 40.6	-29 14	10.09	0.18	0.09	4,6,10
<i>BS</i> 240	0 45.5	+83 10				10
<i>BD</i> +60°121	0 45.8	+61 05	9.70	0.31		10
<i>BS</i> 250	0 48.0	+52 09				
<i>HD</i> 5207	0 48.7	-60 13	9.61	0.36	0.06	4,6,10
<i>BS</i> 281	0 54.2	-61 14	6.22	0.10	0.13	4,6,13
<i>BS</i> 283	0 54.4	+44 10	5.70	-0.01	-0.05	6,13
<i>HD</i> 5797	0 54.5	+59 55	8.47	0.26	0.15	10
39 And	0 57.3	+40 48	5.98	0.16	0.09	12
<i>HD</i> 6451	1 00.3	-20 23	8.59	0.24	0.16	10
<i>HD</i> 6492	1 00.8	-39 21	9.21	0.29	0.11	10
<i>BS</i> 323	1 01.8	-36 12	6.61	0.14	0.08	12

TABLE 1—Continued

Name		R.A.	Decl.	V	B-V	U-B	R
41 And	1 ^h	02 ^m .3	+43° 25'	5.04	0.12	0.14	10
HD 7119	1	06.3	+22 11				
BS 379	1	13.1	+36 52				
HD 7875	1	13.3	-24 16	9.75	0.30	0.13	10
HD 7876	1	13.3	-25 04	10.06	0.20	0.07	10
47 And	1	17.9	+37 12	5.5	0.26	0.17	13
HD 8457	1	18.6	-13 34				6
BS 418	1	21.6	+40 35				
BS 428	1	23.9	+65 35	6.14	0.08	0.05	3,4,13
HD 9487	1	28.0	-22 55	8.65	0.26	0.08	10
HDE 236789	1	28.3	+59 52				2
HD 9645	1	29.5	+46 23				
HD 9659	1	29.5	-18 14				4
BD +60° 286	1	30.6	+60 31				2
BD +59° 289	1	30.9	+60 06				2
HD 9862	1	31.2	+30 16	8.64	0.30	0.16	4,6,10
HD 9918	1	31.7	-37 47				
π Psc	1	31.8	+11 38	5.55	0.34	0.11	4,6,10
HD 10038	1	33.0	-40 41	8.11	0.27		10
HD 10059	1	33.2	-07 10				
HD 10088	1	33.5	+21 26				
CB 483	1	33.8	+59 45				2
HD 10779	1	40.3	-50 35				
BD +58° 304	1	42.1	+58 28				2
HD 11360	1	46.6	+60 06	9.17	0.32		2,10
HD 11378	1	46.7	-19 47				
BS 540	1	47.2	+55 06				
HD 11425	1	47.3	+59 30	9.22	0.74		2,10
BS 547	1	48.1	-17 25	5.79	0.28	0.09	3,10
HD 11543	1	48.3	+59 01	8.14	0.23		2,3,10
β Ari	1	49.1	+20 19	2.65	0.13	0.10	12
HD 11659	1	49.3	+45 38				
BD +60° 387	1	49.9	+60 45	9.91	0.33		2,10
HD 12037	1	53.1	-04 47	8.74	0.33	0.12	4,6,10
HD 12158	1	54.2	-43 24				4
α Psc ft	1	56.9	+02 17	3.82	0.03	-0.09	9,12
BS 606	1	58.0	-30 09	6.41	0.14		3,10
60 Cet	1	58.1	-00 21	5.43	0.15	0.12	3,10
κ Ari	2	01.0	+22 10	5.02	0.12	0.13	10
HD 12881	2	01.1	+79 13	7.17	0.30	0.08	10

TABLE 1—Continued

Name		R.A.	Decl.	V	B-V	U-B	R
HD 13107	2 ^h 03 ^m 11 ^s	-48° 31'					
HD 13157	2 03.5	-30 59					
HD 13232	2 04.1	-26 13	8.87	0.31		10	
5 Tri	2 05.6	+31 03	6.29	0.10	0.15	10	
HD 13412	2 06.0	+58 20	7.95	0.26	0.10	10,13	
HD 13588	2 07.5	-47 03					
HD 13776	2 09.1	-24 27					
HD 13929	2 10.5	+57 34	7.45	0.25		10	
HD 14111	2 11.8	-38 55					
HD 14549	2 15.9	-39 59					
BS 701	2 19.4	-51 33	5.91	0.22		3,10	
BS 723	2 23.5	+23 02					
BS 730	2 25.3	-23 08	6.76	0.19		3,9,10	
BS 732	2 25.6	-00 11	5.99	0.17	0.15		
BD +45° 630	2 29.8	+46 09					
HD 16641	2 35.0	+56 08					
HD 16723	2 35.7	-14 53				6	
BS 791	2 36.2	+67 24	5.95	0.10		10	
HD 16932	2 37.8	+56 43					
HD 16956	2 38.0	+20 44	7.82			10	
HD 17317	2 41.7	+20 56	8.62			10	
HD 17568	2 44.1	+43 56					
BS 839	2 44.2	+57 54	6.45	0.10		13	
HD 17775	2 46.1	+61 28	9	0.15	0.00	4,8,10	
HD 18460	2 53.0	+55 55					
BS 895	2 53.9	-10 11	6.14	0.23		10	
HD 18597	2 54.3	+03 07					
49 Ari	2 56.0	+26 04	5.9	0.14	0.15	10,13	
BS 906	2 56.2	+81 05	5.95	0.15	0.09	12	
HD 19342	3 01.6	+58 22					
HD 19653	3 04.8	+60 26	8.90	0.27	0.18	4,13	
HD 19963	3 07.4	+10 46	7.98	0.33		6,10	
HD 20095	3 08.7	+59 37				2	
HD 20099	3 08.7	+32 17	7.97	0.96	0.55	6,10	
BS 976	3 09.8	+34 19	6.24	0.27	0.12	10	
ζ Eri	3 11.0	-09 11	4.80	0.23	0.08	12	
HD 21584	3 23.9	+50 09					
BS 1068	3 25.5	+58 26	6.40	0.14	0.15	10	
BD +49° 967	3 26.8	+49 58					
IW Per	3 27.0	+39 34	5.80	0.12	0.12	10	

TABLE 1—Continued

Name		R.A.	Decl.	V	B-V	U-B	R
HD 22538	3 ^h	32 ^m .4	+19°01'				
BD +44°765	3	33.0	+45 04				
BS 1103	3	33.2	+20 35	6.50	0.15	0.18	10,12
BS 1104	3	33.3	-66 06	6.74	0.17	0.13	3,6,10
BS 1133	3	38.1	+36 09	5.57	0.06	0.15	10
BS 1138	3	38.8	+70 34	5.43	0.10	0.10	12
BS 1139	3	38.8	-10 48	5.62	0.19	0.11	12,13
HD 23325	3	39.2	+23 57	8.58	0.34	0.16	12
HD 23631	3	41.5	+23 48	7.24	0.07	0.04	12
BS 1192	3	45.6	+57 41				
BS 1196	3	45.7	+71 31	6.4			13
HD 24368	3	47.5	+25 23				
HD 25021	3	53.4	+55 45				
HD 25305	3	56.2	+51 37	8.88	0.27		10
BS 1248	3	57.3	+65 14				
BD +57°773	3	57.7	+58 08				2
HD 25515	3	58.1	+50 30				
HD 26039	4	02.3	+16 16				2
BS 1300	4	07.2	-20 37	5.78	0.18		10
BS 1308	4	08.1	+08 38	6.50	0.16	0.11	10
ω Tau	4	11.4	+20 20	4.94	0.25	0.10	12
51 Tau	4	12.5	+21 20	5.65	0.28	0.07	12
BS 1353	4	14.4	-23 13	6.06	0.31	0.20	12
HD 27623	4	16.4	+75 07				
60 Tau	4	16.4	+13 50	5.72	0.32	0.10	12
63 Tau	4	17.7	+16 33	5.64	0.30	0.13	12
68 Tau	4	19.7	+17 42	4.28	0.04	0.08	12
BS 1401	4	21.9	+72 19	5.92	0.30	0.18	13
BS 1403	4	22.1	+21 24	5.72	0.27	0.10	12
79 Tau	4	23.2	+12 50	5.03	0.23	0.12	12
81 Tau	4	24.9	+15 28	5.48	0.26	0.10	12
HD 28617	4	25.6	+56 30				
ν Men	4	29.8	-81 48	5.78	0.36	0.02	3,10
88 Tau	4	30.2	+09 57	4.26	0.18	0.12	12
BS 1460	4	30.5	-09 57	6.36	0.11	0.09	9,10
σ ¹ Tau	4	33.4	+15 36	5.07	0.14	0.16	10
BS 1480	4	33.6	+07 40	5.39	0.25	0.12	12
BS 1483	4	34.2	-12 19	5.00	0.08	0.11	12
HD 30050	4	39.0	-10 53	7.79	0.65		2,10
HD 30110	4	39.6	+59 03				

TABLE 1—Continued

Name		R.A.	Decl.	V	B-V	U-B	R
4 Cam	4 ^h	39 ^m .7	+56° 35'	5.26	0.25	0.12	10
BS 1519	4	40.5	+11 31	5.37	0.19	0.12	12
BS 1528	4	42.8	+32 25				
BS 1616	4	56.3	+85 50				
BS 1627	4	58.1	+32 11				
HD 32448	4	58.2	+15 30				2
BS 1642	4	59.6	+19 40	6.4	0.20	0.26	9,13
BS 1645	4	59.7	-24 32	5.60	0.10		3,10
14 Ori	5	02.4	+08 22	5.34	0.23	0.09	12
BS 1670	5	03.5	+27 54	6.00	0.24	0.14	12
16 Ori	5	03.8	+09 42	5.43	0.24	0.15	12
μ Aur	5	06.6	+38 22	4.87	0.18	0.09	12
14 Aur	5	08.8	+32 35	4.96	0.21	0.13	10
HD 34384	5	11.9	+28 41				
BS 1730	5	12.2	-35 02	6.66	0.16	0.16	12
HD 34492	5	12.7	+41 06				
HD 34740	5	14.6	+74 27	7	0.16	0.08	8,10
HD 35035	5	16.7	+28 22				
BD +60° 883	5	19.8	+61 01				
HD 36026	5	23.7	+61 11				
BS 1827	5	23.9	-41 02	5.86	0.24	0.18	12
HD 36360	5	26.1	+36 15				
BS 1850	5	26.9	+32 44	6.48	0.09	0.18	10
HD 36811	5	29.2	-01 59	7.08	0.17	0.11	10
BS 1915	5	32.3	-28 46	6.26	0.16		3,10
BD +44° 1261	5	33.1	+44 18				
BS 1940	5	34.5	-03 37	5.98	0.28	-0.02	10
BD +57° 911	5	38.7	+57 46				
HDE 237421	5	38.9	+57 50				
BS 1974	5	38.9	+40 28				
HD 38817	5	43.4	+43 59				
HD 39390	5	47.3	+59 01				
BS 2079	5	51.4	+55 19				
59 Ori	5	53.2	+01 49	5.88	0.22	0.14	10
2 Mon	5	54.3	-09 34	5.03	0.19	0.16	12
HD 40602	5	54.8	+08 57				
μ Ori	5	56.9	+09 39	4.13	0.19	0.08	12
40 Aur	5	59.7	+38 29	5.35	0.23	0.11	10
BS 2163	6	02.3	-23 06	5.46	0.08		10
π ¹ Col	6	03.6	-42 17	6.15	0.25	0.13	12

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
<i>BS</i> 2172	6 ^h 03. ^m 7	+52°40'				
<i>BS</i> 2214	6 08.6	+17 56				
<i>HD</i> 43478	6 11.3	+32 32	8	0.42	0.17	8,10
<i>HD</i> 43508	6 11.5	+56 56				
<i>HD</i> 43682	6 12.4	+15 59				
6 Mon	6 12.9	-10 41	6.74	0.38		10
<i>BS</i> 2272	6 14.8	+29 35	6.3	0.06	0.01	13
<i>RR</i> Lyn	6 18.0	+56 20	5.64	0.24	0.12	12
υ Pic	6 21.1	-56 19	5.60	0.25	0.14	12
<i>HDE</i> 258184	6 23.8	+29 37	9.39			10
<i>HD</i> 45733	6 24.0	-12 59	7.56			10
<i>HD</i> 45798	6 24.5	+55 41				
<i>WW</i> Aur	6 25.9	+32 32	5.8	0.19	0.13	10
<i>HD</i> 46283	6 27.4	-07 20				
<i>BS</i> 2386	6 27.5	-05 48	5.59	0.26	0.05	3,10
<i>HD</i> 46825	6 30.4	+13 47				
<i>HD</i> 47072	6 31.7	+05 36				
<i>HD</i> 47290	6 32.8	+44 57				
<i>HD</i> 47483	6 33.8	+04 02				
<i>HD</i> 47606	6 34.4	+56 47				
<i>HD</i> 48051	6 36.4	+44 37				
<i>BD</i> -3°1565	6 38.6	-03 18				2
<i>HD</i> 48754	6 39.8	-04 17				
<i>CB</i> 132	6 40.8	-00 24				2
<i>HD</i> 49401	6 43.2	+43 50				
<i>HD</i> 49581	6 44.0	+44 10				
<i>CPD</i> -60°704	6 45.8	-60 37				2
<i>HD</i> 50130	6 46.7	+56 04				
<i>CB</i> 136	6 46.9	-03 23				2
<i>HD</i> 50186	6 47.0	+25 25	7.41			10
<i>BS</i> 2557	6 48.1	+44 02	6.11	0.28	0.18	10
<i>HD</i> 50462	6 48.3	-12 02				
<i>HD</i> 50485	6 48.4	-01 06				
<i>BS</i> 2566	6 49.0	-18 48	6.12	0.16		10
<i>HD</i> 50729	6 49.3	-04 47				
<i>BS</i> 2572	6 49.3	-01 00	5.44	0.18	0.15	10
<i>BD</i> -7°1629	6 50.4	-07 18				
<i>HD</i> 51106	6 50.9	-01 27				
<i>HD</i> 53227	6 59.2	+58 40				
<i>BS</i> 2666	7 00.9	-42 11	5.20	0.21		10

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
<i>BS</i> 2672	7 ^h 01. ^m 3	-49° 26'	4.92	0.14		3,10
<i>BS</i> 2720	7 08.2	-30 39	6.09	0.28		3,10
<i>HD</i> 56324	7 11.5	+58 47				
<i>HD</i> 56495	7 12.1	-07 21	7.58	0.34	0.06	10
<i>BS</i> 2768	7 13.1	-30 43	6.31	0.23	0.21	12
47 Cam	7 13.5	+60 05				
<i>BD</i> -19°1829	7 15.9	-19 57				
<i>BD</i> -17°1952	7 19.0	-18 01				
α Gem ft	7 28.2	+32 06	2.85	0.04	0.00	10
α Gem br	7 28.2	+32 06	1.99			2,10
<i>BS</i> 2904	7 29.6	+02 56	6.55	0.23	0.13	10
<i>BS</i> 2914	7 30.5	+48 59	5.90	0.24	0.19	10
<i>HD</i> 61010	7 32.1	+76 02				
<i>BD</i> -20°2077	7 33.8	-20 31				
<i>HD</i> 61659	7 35.3	+46 44				
<i>HD</i> 62257	7 38.0	+55 54				
<i>CD</i> -24°5863	7 39.8	-24 45				
<i>CD</i> -25°5052	7 42.9	-25 42				
<i>HD</i> 63312	7 43.2	+46 03				
<i>HD</i> 63486	7 44.0	-25 11				
<i>BS</i> 3040	7 44.6	+33 30	6.02	0.15	0.13	10
<i>HD</i> 63813	7 45.7	+44 05				
<i>CD</i> -34°4172	7 55.2	-34 06				
<i>HD</i> 66068,9	7 56.8	+53 57				
<i>HD</i> 66297	7 57.8	+58 27				
<i>HD</i> 67201	8 01.8	+76 09				
<i>HD</i> 67317	8 02.3	+56 06				
<i>BS</i> 3183	8 02.9	-20 16	5.37	0.10		10
<i>HD</i> 67736	8 04.2	-34 55				
<i>BS</i> 3218	8 07.2	-55 47	5.66	0.21		3,10
<i>BS</i> 3228	8 08.5	+17 58				
<i>CD</i> -37°4473	8 12.2	-37 29				
<i>HD</i> 70486	8 17.1	-38 50				
<i>BS</i> 3320	8 21.3	-14 36	5.97	0.17		10
2 Hya	8 21.5	-03 40	5.58	0.22	0.07	10
<i>CD</i> -35°4625	8 22.7	-35 39				
<i>BS</i> 3337	8 23.4	-02 11	6.38	0.34	0.05	13
<i>HD</i> 71671	8 23.5	-39 36				
<i>BS</i> 3352	8 25.2	+75 04				
2 UMa	8 25.6	+65 29	5.46	0.18	0.09	10

TABLE 1—Continued

Name		R.A.	Decl.	V	B-V	U-B	R
<i>HD</i> 72459	8 ^h 27 ^m .9	+50°44'					
<i>HD</i> 72792	8 29.7	+56 20					
<i>HD</i> 72825	8 29.9	+20 40					
3 <i>Hya</i>	8 30.6	-07 38		5.71	-0.02	-0.03	13
<i>HD</i> 73045	8 31.1	+19 15		8.68	0.32	0.15	12
<i>HD</i> 73135	8 31.6	+19 13					
<i>HD</i> 73174	8 31.9	+20 06		7.84	0.21	0.16	12
<i>HD</i> 73618	8 34.2	+19 55		7.32	0.19	0.14	12
<i>HD</i> 73619	8 34.2	+19 54		7.54	0.25	0.12	12
<i>HD</i> 73709	8 34.6	+20 03		7.70	0.19	0.15	12
<i>BS</i> 3428	8 34.6	+20 01		6.44	1.02	0.90	2,12
<i>HD</i> 73711	8 34.6	+19 53		7.54	0.15	0.13	12
<i>HD</i> 73730	8 34.7	+20 12		8.01	0.19	0.13	12
ε <i>Cnc</i>	8 34.7	+19 54		6.30	0.17	0.16	12
<i>HD</i> 73818	8 35.2	+20 18		8.70	0.32	0.11	12
<i>HD</i> 74044	8 36.4	-51 58		8.53	0.22	0.09	13
<i>HD</i> 74169	8 37.2	-52 54		7.26	-0.04	-0.10	13
<i>BS</i> 3446	8 37.6	-11 36		6.44	0.16	0.12	10
<i>CD</i> -45°44'24	8 39.0	-45 35					
<i>HD</i> 74502	8 39.3	+53 26					
<i>HD</i> 74656	8 40.1	+19 24					
<i>HD</i> 74665	8 40.1	-53 23		8.17	0.21	0.00	10
<i>HD</i> 75202	8 43.5	-52 28		7.75	0.19	0.12	13
<i>FJS</i> 153	8 46.0	+12 06		11.31	0.13	0.11	7,12
σ ¹ <i>Cnc</i>	8 46.4	+32 51					
15 <i>Hya</i>	8 46.7	-06 48		5.53	0.15	0.13	10
<i>CD</i> -45°46'05	8 46.8	-45 15					
<i>HD</i> 76310	8 50.2	+22 04					
<i>BS</i> 3551	8 50.5	-47 08		5.31	0.27		10
<i>HD</i> 76364	8 50.6	+22 15					
17 <i>Hya</i> ft	8 50.6	-07 35		6.07	0.22	0.11	8,10
17 <i>Hya</i> br	8 50.6	-07 35		6.07	0.22	0.11	8,10
α <i>Cnc</i>	8 53.0	+12 15		4.26	0.13	0.15	12
<i>BS</i> 3588	8 55.5	-46 51		5.17	0.25	0.17	10
<i>HD</i> 77730	8 59.2	+23 16					2,6
α <i>Vol</i>	9 00.9	-66 00		4.01	0.14	0.13	2,12
<i>HD</i> 78124	9 01.4	+60 57					
15 <i>UMa</i>	9 01.8	+52 00		4.48	0.27	0.12	12
τ <i>UMa</i>	9 02.7	+63 55		4.67	0.35	0.15	9,12
<i>HD</i> 78388	9 02.9	+50 14					

TABLE 1—Continued

Name		R.A.	Decl.	V	B-V	U-B	R
BS 3637	9 ^h 04 ^m .4	-26° 22'	6.14	0.17		3,10	
ε Pyx	9 05.7	-29 57	5.58	0.19		3,10	
BS 3645	9 05.8	+73 22	5.95	0.19	0.16	10	
21 Hya	9 07.5	-06 42	6.10	0.23	0.10	10	
HD 79798	9 11.0	+61 18					
BS 3732	9 18.8	-55 05	5.63	0.19		3,10	
BS 3737	9 20.3	-39 00	6.05	0.21		3,10	
HD 81772	9 22.6	+58 34					
ζ ² Ant	9 27.3	-31 26	5.92	0.27		10	
BS 3796	9 27.7	-18 58	5.74	0.14		3,10	
HD 82861	9 29.6	+57 25					
BS 3855	9 36.2	+54 49	6.3			13	
HD 83920	9 36.5	+43 31					
HD 85931	9 50.1	+21 27	9	0.16	0.14	8,12	
BS 3966	9 59.8	-59 42	6.18	0.17		3,10	
BS 3988	10 05.0	-11 36	6.24	0.18	0.13	10	
HD 88271	10 05.6	-17 46				4	
BS 4021	10 09.8	+71 34	6.66	0.32	0.20	10	
HD 88850	10 09.8	+71 34	7.36	0.30	0.19	10	
BS 4025	10 10.7	-65 53	5.15	0.22	0.16	10	
BS 4043	10 12.6	-59 24	6.21	0.21		3,10	
BD +42° 2113	10 14.9	+42 08					
BD +45° 1827	10 17.7	+45 34				4	
BS 4138	10 27.8	-71 29	4.74	0.04	0.07	12	
HD 92572	10 36.2	+50 06	9.51	0.29	0.11	13	
HD 92764	10 37.6	+45 28				2	
HD 93075	10 39.8	+57 26					
BD +47° 1812	10 40.8	+47 01					
BS 4214	10 42.0	-16 46	5.43	0.12	0.16	3,6,10	
41 Sex	10 45.3	-08 22	5.78	0.17	0.12	10	
HD 94479	10 49.3	+40 21					
48 LMi	10 49.3	+26 01	6.25	0.29	0.10	3,10	
HD 94763	10 51.3	+37 43					
HD 94779	10 51.4	+47 26					
BD +41° 2143	10 52.3	+40 47	10.64	0.16	0.11	2,6,10	
BS 4286	10 54.8	+63 58					
49 UMa	10 55.2	+39 45	5.08	0.24	0.17	11	
60 Leo	10 57.0	+20 43	4.42	0.05	0.05	12	
HD 95658	10 57.4	+36 14					
HD 95768 ft	10 58.1	+44 52	9.60	0.27	0.13	10	

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
64 <i>Leo</i>	11 ^h 02 ^m .3	+23° 52'	6.39	0.17	0.12	10
<i>HD</i> 97333	11 07.1	+41 05	8.46	0.08	0.06	2,13
<i>BS</i> 4350	11 08.0	-48 33	5.35	0.18		3,10
<i>HD</i> 97689	11 09.3	-52 18				
<i>HD</i> 97811	11 10.1	+59 40	7.93	0.19		10
<i>HD</i> 98710	11 16.4	+35 25				
<i>HD</i> 98946	11 18.1	+35 21				2
<i>HD</i> 99302	11 20.5	+27 19				
<i>HD</i> 99620	11 22.6	+56 13				
<i>HD</i> 99632	11 22.7	+48 00	8.12	0.13	0.10	10
<i>HD</i> 99831	11 24.0	+42 38	8.91	0.30	0.10	10
<i>BS</i> 4424	11 24.1	+57 17	6.29	0.16	0.11	10,13
<i>HD</i> 99914	11 24.6	+45 13				
<i>BS</i> 4429	11 24.8	+81 41				
<i>HD</i> 100215	11 26.8	+39 28				2
<i>BS</i> 4454	11 29.0	+11 35	6.46	0.18	0.10	10
<i>HD</i> 100679	11 30.1	+35 04	9.02	0.17	0.13	13
<i>BD</i> +47° 1888	11 31.0	+47 12	11.08	0.08	0.24	6,10
<i>HD</i> 100809	11 31.0	+15 15	8.28	0.20	0.10	13
<i>HD</i> 100992	11 32.3	+59 21				
<i>HD</i> 101393	11 35.0	+48 47				
<i>BD</i> +41° 2224	11 36.3	+41 11				2
<i>HD</i> 101953	11 38.9	+30 08				
<i>HD</i> 102056	11 39.6	+29 13	7.01	0.01	0.02	10
<i>BD</i> +34° 2259	11 43.7	+34 15				2
<i>BS</i> 4535	11 44.1	+16 48	5.95	0.26	0.14	10
<i>BS</i> 4543	11 45.8	+12 50	6.42	0.28	0.08	10
<i>BS</i> 4545	11 46.0	+33 56	6.27	0.32	0.11	9,10
<i>BD</i> +31° 2314	11 51.5	+31 22	10.89	0.20	0.11	6
<i>HD</i> 103877	11 52.6	+18 02				
<i>AC</i> +43° 503-22	11 52.8	+42 10				6
<i>HD</i> 103966	11 53.3	+27 24	8.42	0.09	0.08	10
<i>HD</i> 104204	11 55.0	+37 17	7.48	0.11	0.11	10
<i>HD</i> 104241	11 55.2	+45 11	7.55	0.06	0.04	13
67 <i>UMa</i>	11 57.0	+43 36	5.24	0.28	0.09	10
θ ¹ <i>Cru</i>	11 57.9	-62 45	4.33	0.27	0.04	12
<i>HD</i> 104817	11 59.1	+02 02	7.68	0.22	0.08	10
2 <i>Com</i>	11 59.2	+22 01				
<i>BD</i> +32° 2217	11 59.9	+31 53				2
<i>HD</i> 104957	12 00.0	+31 23	8.92	0.26	0.04	10

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
<i>HD</i> 105281	12 ^h 02 ^m 2	-10° 11'				
<i>AC</i> +13° 1307-143	12 03.4	+12 54	10.78	0.29	0.15	6,10
<i>HD</i> 105601	12 04.4	+39 11	7.38	0.29	0.10	10
<i>HD</i> 105680	12 04.9	+23 12	8.08	0.31	0.08	10
11 <i>Vir</i>	12 05.0	+06 22	5.72	0.36	0.15	10
<i>BS</i> 4646	12 07.5	+78 10	5.12	0.32	0.10	10
12 <i>Vir</i>	12 08.3	+10 49	5.81	0.27	0.09	10
<i>BS</i> 4673	12 12.5	+29 30	5.69	0.16	0.13	10
<i>HD</i> 106999	12 13.2	+27 52	7.46	0.16	0.11	10
<i>BS</i> 4684	12 14.0	+26 34	6.48	0.18	0.09	12
8 <i>Com</i>	12 14.3	+23 35	6.27	0.17	0.14	12
<i>HD</i> 107276	12 14.9	+29 01	6.70	0.18	0.09	12
<i>HD</i> 107513	12 16.4	+25 34	7.44	0.28	0.02	12
ζ ² <i>Mus</i>	12 16.6	-66 58	5.14	0.19	0.14	10
<i>BS</i> 4705	12 17.2	+25 19	6.20	0.00	-0.05	12
<i>HD</i> 107935	12 19.1	+26 23	6.72	0.24	0.05	12
13 <i>Com</i>	12 19.3	+26 39	5.18	0.08	0.10	12
<i>HD</i> 108101	12 20.1	+35 19	9.12	0.23	0.12	10
14 <i>Com</i>	12 21.4	+27 49	4.95	0.27	0.18	12
<i>HD</i> 108346	12 21.8	+55 43				
16 <i>Com</i>	12 22.0	+27 23	5.00	0.08	0.13	
<i>HD</i> 108408	12 22.2	+36 55	7.68	0.15	0.13	10
<i>HD</i> 108452	12 22.5	+11 50				
<i>HD</i> 108486	12 22.7	+26 27	6.69	0.17	0.09	12
<i>BS</i> 4750	12 23.7	+26 47	6.54	0.18	0.11	12
<i>BS</i> 4751	12 23.8	+26 27	6.65	0.22	0.08	12
74 <i>UMa</i>	12 25.3	+58 57	5.32	0.20	0.14	10
<i>BD</i> +37° 2284	12 25.6	+37 37	9.76	0.21	0.08	10
<i>AC</i> +39° 34980	12 28.4	+39 43				6
22 <i>Com</i>	12 28.6	+24 50	6.29	0.11	0.09	12
<i>HD</i> 109495	12 30.0	+58 48				
24 <i>Com</i>	12 30.1	+18 56	6.59	0.25	0.11	10
<i>BS</i> 4794	12 30.4	-40 28	5.11	0.23		10
<i>HD</i> 109762	12 32.1	+33 35	8.59	0.27	0.11	10
<i>HD</i> 110026	12 34.2	+14 54				
<i>BD</i> +49° 2153	12 35.4	+49 22	9.64	0.29	0.12	10
<i>HD</i> 110248	12 35.7	+30 56	7.66	0.30	0.16	10
<i>HD</i> 110326	12 36.2	+30 59	6.96	0.27	0.05	10
<i>HD</i> 110500	12 37.5	+46 25	7.04	0.24	0.09	10
<i>BS</i> 4836	12 38.0	-39 38	6.43	0.26		10

TABLE 1—Continued

Name	R.A.		Decl.		V	B-V	U-B	R
<i>BD</i> +38°2361	12 ^h	38 ^m .5	+38°	36'	9.78	0.29	0.07	10
<i>HD</i> 110787	12	39.4	+36	19	7.11	0.30	0.09	10
<i>d</i> ² <i>Vir</i>	12	40.6	+08	13	5.20	0.33	0.12	10
<i>BS</i> 4852	12	41.9	+81	10				
11 <i>Cvn</i>	12	44.1	+49	01	6.26	0.18	0.18	10
<i>HD</i> 111542	12	44.9	+22	12	8.48	0.24	0.14	10
<i>BS</i> 4872	12	45.2	-52	15	5.72	0.13		3,10
<i>HD</i> 111844	12	47.0	+19	42	7.34	0.32	0.09	10
41 <i>Vir</i>	12	48.8	+12	58	6.25	0.27	0.05	12
<i>HD</i> 112152	12	49.3	+28	12	9.10	0.20	0.09	10
<i>HD</i> 112310	12	50.7	+75	11				
<i>HD</i> 112431	12	51.5	+40	17	8.92	0.21	0.10	10
<i>BS</i> 4917	12	51.9	+54	38	5.82	0.19		13
<i>HD</i> 112501	12	52.1	+44	06	6.98	0.10	0.12	10
<i>HD</i> 112515	12	52.2	+46	09	8.51	0.34	0.10	10
<i>HD</i> 112940	12	55.2	+46	59	9.04	0.31	0.09	10
<i>BS</i> 4936	12	58.6	+60	16				4
<i>HD</i> 113730	13	00.6	+37	36	9.15	0.20	0.13	10
<i>HD</i> 114556	13	06.2	+28	54	8.81	0.27	0.19	10
<i>BS</i> 5008	13	11.4	-43	27	5.84	0.20		10
64 <i>Vir</i>	13	17.1	+05	41	5.86	0.12	0.09	10
<i>BS</i> 5045	13	17.7	+44	26				
ζ <i>UMa</i> br	13	19.9	+55	27	2.27	0.02	-0.01	2,10,12
ζ <i>UMa</i> ft	13	19.9	+55	27	3.95	0.13	0.09	10,12
<i>BS</i> 5069	13	22.3	-64	09	6.09	0.12	0.04	10
<i>BD</i> +6°2746	13	23.0	+06	44	11.05	0.11	0.13	6,10
<i>HD</i> 117624	13	26.5	+18	05	8.39	0.28	0.14	10
<i>BS</i> 5093	13	26.6	-65	07	6.36	-0.02	-0.08	10
73 <i>Vir</i>	13	26.7	-18	13	5.99	0.20		13
<i>BS</i> 5158	13	38.0	-50	31	6.46	-0.14		10
<i>HD</i> 119674	13	39.5	-35	54	9.00			13
<i>BS</i> 5175	13	41.2	-49	45	5.90	0.29		3,6,10
<i>HD</i> 120025	13	41.8	-18	46				
<i>HD</i> 120049	13	42.0	+28	26	8.34	0.26	0.09	10
4 <i>Cen</i> ft	13	47.5	-31	26	4.73	-0.14	-0.56	9,12
<i>BD</i> +46°1913	13	51.4	+46	16				
<i>BS</i> 5269	13	57.4	-40	56	6.10	-0.13		10
η <i>Aps</i>	14	05.7	-80	32	4.90	0.26	0.09	10
<i>BS</i> 5343	14	11.4	+19	23	5.98	0.26	0.05	12
<i>BS</i> 5349	14	12.5	-60	49	5.23	0.29		10

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
HD 125335	14 ^h 13 ^m .7	+10° 58'	7.23			10
λ Vir	14 13.7	-12 55	4.52	0.13	0.09	12
BS 5374	14 15.8	+30 53	6.34	0.15	0.10	10
HD 126270	14 19.4	+15 50	6.90	0.65	0.39	4, 13
BS 5401	14 20.8	-45 41	5.82	0.31	0.13	10
22 Boo	14 21.8	+19 41	5.40	0.24	0.26	10
HD 127263	14 25.3	+47 35	8.12	0.24	0.08	13
HD 128197	14 30.5	+38 26	8.10	0.20	0.13	13
α Cir	14 34.4	-64 32	3.19	0.24	0.12	12
π ¹ Boo	14 36.0	+16 51	5.00	-0.11	-0.41	2, 10, 12
π ² Boo	14 36.0	+16 51				12
α ² Lib	14 45.3	-15 38	2.75	0.15	0.11	12
59 Hya	14 52.7	-27 15	5.65	0.27		13
HD 132295	14 53.2	+45 51				
BS 5587	14 55.8	-33 58				
60 Hya	14 56.2	-27 40	5.85	0.16		11
BS 5599	14 57.7	-02 38	6.60	0.20	0.17	10
BS 5663	15 08.9	-47 42				3
BS 5682	15 11.6	-40 42	6.27	0.18		10
HD 135774, 5	15 11.8	+10 04				
BS 5702	15 15.5	+32 53	6.14	0.24	0.09	10
BD +62° 1409	15 21.0	+61 54				
BS 5749	15 24.8	-20 23	6.20	0.18		13
BS 5752	15 25.5	+47 33				
BS 5760	15 26.3	+31 38	6.35	0.19	0.14	10
BS 5759	15 26.4	+55 32	6.2			13
BS 5762	15 26.9	-19 20	5.50	0.17	0.10	10
HD 140122	15 36.9	+00 46	7.30	0.20	0.15	6, 10
τ ⁷ Ser	15 37.4	+18 47	5.81	0.20	0.12	13
η Lib	15 38.4	-15 21	5.40	0.24		10
BS 5872	15 43.3	-45 06	6.10	0.31		3, 10
BS 5875	15 43.7	-03 31	5.53	0.12	0.11	10
BS 5887	15 45.2	+55 41	5.86	0.25	0.16	9, 13
ε Ser	15 45.8	+04 47	3.70	0.16	0.09	12
HD 141988	15 46.9	+62 40	8	0.32	0.05	8, 10
BS 5900	15 47.2	-59 53	5.76	0.35		10
HD 142394	15 49.3	+42 51				
Nor	15 55.4	-57 30	4.63	0.24	0.08	10
Nor	15 59.4	-44 54	4.72	0.23	0.15	12
BS 5992	16 00.8	+08 22	6.29	0.08	0.10	10

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
ψ Sco	16 ^h 06 ^m .5	-09°48'	4.93	0.09	0.10	2,12
υ CrB	16 12.7	+29 24	5.78	0.07	0.10	2,13
HD 148321	16 22.1	-25 14	7.01	0.18	0.11	10
HD 148361	16 22.4	+73 32				
υ Oph	16 22.4	-08 09	4.63	0.16	0.06	12
HD 149420	16 29.6	+30 43				
HD 149748	16 31.7	+63 02	7.36	0.33	0.14	10
BS 6193	16 35.5	-24 16	6.07	0.22		3,10
BS 6201	16 36.0	-00 48	6.23	0.31	0.04	10
HD 151235	16 41.1	+46 31				
47 Her	16 45.5	+07 25	5.49	0.10	0.11	11
HD 152192	16 46.8	-30 16				
BS 6273	16 48.2	-30 25	6.34	0.22		10
HD 152861	16 50.9	+44 33				
HD 153286	16 53.4	+47 32	7.02			10
HD 154392	17 00.1	+42 38				
BS 6366	17 02.4	-30 16	5.94	0.27		10
BS 6377	17 04.5	+36 04	5.41	0.31	0.03	10
BS 6385	17 06.1	+12 35	6.46	0.09	0.09	10
HD 158116	17 22.3	+29 33	7.70	0.29	0.19	10
HD 159340	17 29.1	-38 02				
ν^1 Dra	17 30.2	+55 15	4.89	0.25	0.03	12
ν^2 Dra	17 30.3	+55 14	4.86	0.28	0.07	12
BD +60°1767	17 35.1	+60 21				
BD +46°2352	17 38.8	+46 22				
BS 6611	17 39.7	+14 27	6.21	0.22	0.23	10
BD +45°2590	17 41.7	+45 14				
BD +28°2829	17 42.8	+28 01				
HD 161884	17 43.0	+28 07				
BS 6641	17 44.5	+47 39	6.28			10
BD +46°2371	17 46.5	+46 42				
BD +45°2607	17 47.8	+45 00				
HD 162818	17 47.8	-34 39				
HDE 320856	17 47.9	-34 47				
HD 162950	17 48.6	+27 11				
HD 163214	17 50.0	+68 42				
BD +47°2555	17 51.4	+47 03				
γ Sgr	17 56.7	-24 17	5.38	0.51	0.26	2,10
π Pav	17 58.9	-63 40	4.34	0.23	0.16	2,10
HD 165830	18 02.8	-10 34				

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
<i>BS</i> 6784	18 ^h 04 ^m .0	+14° 16'	6.30	0.17	0.21	10
41 <i>Dra</i>	18 07.6	+79 59	5.68	0.50	-0.01	2,6,11
24 <i>UMi</i>	18 07.8	+87 00	5.79	0.25	0.07	11
<i>BS</i> 6813	18 07.9	-04 03	6.58	0.28	0.11	10
108 <i>Her</i>	18 17.1	+29 49	5.62	0.20	0.02	13
<i>BS</i> 6910	18 21.5	-39 03				3
<i>BS</i> 6911	18 21.7	+53 15	6.2			13
<i>BS</i> 6936	18 24.5	-33 03	5.34	0.16	0.04	3,6,10
61 <i>Ser</i>	18 26.8	-01 04	5.93	0.16	0.15	10
<i>HD</i> 171388	18 29.5	+03 04				
<i>BS</i> 6979	18 31.0	+65 22				
<i>BS</i> 6986	18 31.7	-48 00	5.86	0.23		10
<i>BS</i> 6988	18 31.9	-21 29				
<i>BS</i> 6993	18 32.5	-00 24	5.74	0.06	0.06	13
26 <i>Sgr</i>	18 35.8	-23 56	6.23	0.23		13
<i>HD</i> 172714	18 36.6	+45 16				
<i>BS</i> 7019	18 36.8	+38 16	6.45			13
<i>HD</i> 172743	18 36.8	+24 43				
<i>HD</i> 172976	18 38.0	+44 10				
ζ ¹ <i>Lyr</i>	18 41.3	+37 30	4.36	0.19	0.16	12
5 <i>Aql</i> br	18 41.3	-01 04	5.90	0.14	0.09	10,12
5 <i>Aql</i> ft	18 41.3	-01 04	7.51	0.31	0.08	3,10,11
111 <i>Her</i>	18 42.6	+18 04	4.36	0.12	0.08	12
<i>HD</i> 174095	18 43.7	-45 08				2
<i>BS</i> 7077	18 43.7	-19 15	6.74	0.20	0.13	13
<i>HD</i> 174293	18 44.7	-44 48				2
<i>HD</i> 174704	18 46.7	-09 12	7.72			10
<i>HD</i> 174916	18 47.9	-04 51				
<i>HD</i> 175922	18 52.6	+13 14	7.21	0.34	0.26	10
<i>HD</i> 176843	18 57.1	+45 28				
<i>HD</i> 176942	18 57.5	+10 50				
<i>BS</i> 7219	18 59.2	+03 11	6.72	0.13	0.13	10
<i>HD</i> 177983	19 01.8	+15 42				
<i>HD</i> 178001	19 01.9	+57 19				
τ <i>Pav</i>	19 05.7	-69 22	6.26	0.17	0.12	3,6,10
<i>HD</i> 179143,4	19 06.3	+37 38	6.82			9,10
<i>HDE</i> 230855	19 07.3	+19 15				
<i>HD</i> 179458	19 07.6	+45 34				2
<i>HD</i> 179461	19 07.6	+26 05				
<i>HD</i> 179892	19 09.2	+07 20				

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R ₁
HD 180638	19 ^h 12 ^m .2	+28° 07'				
HD 180778	19 12.8	+59 31				
HD 181099	19 14.0	+16 31	7.46	0.24		10
HDE 231126	19 14.4	+17 54				
HD 181206	19 14.5	+46 24				2
HD 182080	19 17.9	+07 44				
BD +44° 3115	19 19.1	+44 22				2
2 Sge	19 19.9	+16 45	6.27	0.07	0.04	10
HD 182718	19 20.9	+19 28	8.30	0.24		2, 6, 10
HD 182829	19 21.4	+22 13				
HDE 231473	19 23.0	+14 21				
HD 183262	19 23.6	+17 38	6.85	0.33		10
BS 7411	19 25.0	-53 24				
BS 7416	19 26.2	-45 29				
HD 183831	19 26.3	+22 46				
HD 183971	19 27.0	+30 14				
HD 184360 br	19 29.0	+20 12	7.53	0.24	0.15	10
HD 184537	19 29.9	+25 51				
51 Sgr	19 29.9	-24 56	5.65	0.19	0.20	11, 13
HD 184907	19 31.5	+29 50				
HD 184965	19 31.8	-00 06	9	0.43	0.25	8, 10
CB 356	19 32.1	+29 09				2
BS 7461	19 32.5	-45 30	6.24	0.29		10
BD +28° 3421	19 34.7	+28 18				2
BD +31° 3701	19 34.9	+31 20				
HD 185983	19 36.7	+26 54				
BS 7498	19 37.9	-72 45	5.40	0.23	0.10	10
HDE 353446	19 38.1	+16 12				
HD 186343	19 38.7	+22 04				
CB 361	19 39.8	+28 46				2
v Tel	19 39.9	-56 36	5.34	0.20		2, 3, 10
HDE 225575	19 40.5	+33 06				
HDE 338782	19 40.6	+26 59				
HD 186761	19 41.3	+52 22				
BS 7532	19 42.4	-13 57	6.12	0.20		10
HD 187254	19 44.0	+44 36				
HD 187258	19 44.0	+18 24				
HD 187583	19 45.6	+29 37				
HDE 225997	19 45.8	+33 31				
HD 187751	19 46.5	+19 47				

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
<i>BS</i> 7562	19 ^h 46 ^m .5	+09°23'	6.25	0.10	0.08	10
<i>HD</i> 187959	19 47.6	+15 05				
<i>BS</i> 7579	19 48.4	-69 26	5.74	0.22	0.15	10
<i>HD</i> 188212	19 49.0	+20 05	7.32	0.31	0.05	10
<i>HDE</i> 350800	19 49.1	+18 05				
<i>BD</i> +74°841	19 49.2	+75 03				
<i>HDE</i> 226530	19 51.4	+37 27				2
<i>HDE</i> 226574	19 51.9	+38 00				2
<i>HD</i> 188854	19 52.1	+46 24	7.62			10
<i>HD</i> 188911	19 52.4	+43 58				
<i>HD</i> 189085	19 53.2	+35 16				
θ^2 <i>Sgr</i>	19 53.4	-34 58	5.30	0.17		3,6,10
<i>HDE</i> 226768	19 53.7	+37 15				2
<i>BD</i> +9°4351	19 54.3	+09 44				
<i>HD</i> 189492	19 55.2	+37 28				2
<i>HD</i> 189574	19 55.6	+38 36				
<i>HDE</i> 226958	19 55.6	+35 36				2
15 <i>Vul</i>	19 57.0	+27 29	4.65	0.18	0.16	12
<i>HD</i> 190131	19 58.4	+38 23				2
<i>HD</i> 190145	19 58.5	+67 11				
<i>HDE</i> 227244	19 58.6	+36 09				2
<i>HD</i> 190165	19 58.6	+45 11				
<i>HDE</i> 227257	19 58.7	+38 41				2
<i>HD</i> 190275	19 59.1	+32 32	6.92			10
<i>HDE</i> 227330	19 59.3	+37 44				2
<i>HDE</i> 227344	19 59.4	+36 45				2
<i>HD</i> 190401	19 59.7	+41 11	7.01			2
<i>HD</i> 190468	20 00.0	+34 35	8.26	0.24		10
<i>HD</i> 190537	20 00.3	+30 57	6.82	0.26	0.14	13
<i>HD</i> 190663	20 00.9	+01 29				
<i>HDE</i> 227544	20 01.5	+38 25				2
<i>HDE</i> 227657	20 02.5	+35 58				2
<i>HDE</i> 351497	20 03.0	+17 44	9	0.25	0.05	
<i>HD</i> 191158	20 03.4	+36 33				
<i>HDE</i> 227780	20 03.8	+38 37				
<i>HDE</i> 339589	20 03.9	+25 38				
<i>HDE</i> 354944	20 04.0	+15 35				
<i>HD</i> 191420	20 04.7	+45 42	8.15			10
<i>HD</i> 191472	20 05.0	+37 39				
<i>HD</i> 191528	20 05.3	+46 05				

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
<i>BS</i> 7723	20 ^h 09 ^m .4	+23° 56'	6.57	0.32	0.10	9.13
<i>HDE</i> 228445	20 10.2	+40 55				
<i>HD</i> 192536	20 10.3	+38 51				
<i>HD</i> 192541	20 10.3	+12 48				
<i>HD</i> 192559	20 10.4	+31 11				
<i>HD</i> 192680	20 11.0	+50 56				
<i>HD</i> 192893	20 12.2	+25 34				
<i>HD</i> 193096	20 13.4	+20 48				
<i>HD</i> 193161	20 13.7	+18 01				
<i>HD</i> 193248	20 14.2	+21 12				
<i>HD</i> 193292	20 14.4	+31 48				
<i>BS</i> 7774	20 15.3	+13 14	5.92	0.32	0.14	10
<i>HD</i> 193637	20 16.2	+33 37	8.7			10
<i>HD</i> 193646	20 16.3	+51 39				
<i>HD</i> 193857	20 17.4	+30 16				
<i>BD</i> +45°3150	20 18.1	+45 28				
<i>HD</i> 194822	20 22.7	+16 23				
<i>HD</i> 194989	20 23.5	+25 49				
<i>HD</i> 195020	20 23.7	+11 23				
<i>BS</i> 7833	20 24.9	+19 45	6.57	0.24	0.09	13
<i>BD</i> +40°4190	20 25.2	+40 19				
<i>BS</i> 7839	20 26.5	+20 16	6.21	0.14	0.11	13
<i>HD</i> 195490	20 26.6	+08 35				
<i>BS</i> 7849	20 27.7	+25 28				
θ Cep	20 27.9	+62 39	4.22	0.20	0.16	12
<i>HD</i> 195726	20 27.9	+56 34				
<i>BD</i> +38°4134 br	20 28.2	+39 00	11.00	0.39	0.05	6,10
<i>BD</i> +38°4134 ft	20 28.2	+39 00	10.14	0.30	0.12	10
<i>BD</i> +39°4224	20 28.4	+39 42				
<i>HD</i> 195942	20 29.2	+15 26				
<i>HD</i> 195991	20 29.4	+35 39				
<i>HD</i> 196022	20 29.6	+27 32				
<i>HD</i> 196240	20 31.0	+41 39	7.95	0.19		13
<i>HD</i> 196542	20 33.0	+69 20				
<i>HD</i> 196631	20 33.5	+10 23				
<i>BD</i> +32°3882	20 33.7	+32 36				
<i>HD</i> 197122	20 36.5	+12 08	8.95	0.32		10
<i>HD</i> 197169	20 36.9	+13 27				
δ Del	20 38.8	+14 43	4.44	0.32	0.10	12
<i>BS</i> 7930	20 39.1	+83 17				

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
HD 198110	20 ^h 43 ^m .0	+10° 06'				
HD 198501	20 45.6	-28 22				
56 Cyg	20 46.5	+43 41	5.05	0.20	0.12	10
HD 198741	20 47.3	+05 34				
μ Aqr	20 47.3	-09 22	4.73	0.32	0.10	12
BD +46° 3076	20 47.9	+46 15				
HD 198896	20 48.4	+43 23				
BD +44° 3607	20 48.4	+44 54				4
HD 199043	20 49.4	+24 14				
BD +41° 3920	20 49.6	+41 59				
HD 199290	20 51.2	+48 33	7.98	0.27		10
HD 199311	20 51.3	+45 51	6.66	0.08	0.09	13
HD 199343	20 51.5	+21 01				
HD 199360	20 51.6	+21 03				
BS 8018	20 52.1	-16 25	5.86	0.18		10
HD 199627	20 53.4	+45 56	8.55	0.18		10
BD +44° 3648	20 54.3	+45 07				
BS 8045	20 55.8	-27 16				
HD 200223	20 57.1	+26 20				
HD 200405	20 58.2	+47 31	8.92	0.09	0.05	10
HD 200407	20 58.2	+43 47				
η Cap	20 58.7	-20 15	4.84	0.18	0.05	3, 12
BD +44° 3684	21 00.0	+44 35				
HD 200739	21 00.2	+50 25				
BD +46° 3168	21 01.5	+47 06				
HD 201033	21 02.0	+55 11				
HD 201665	21 06.0	+46 24				
BS 8102	21 06.2	-14 53	6.45	0.30	0.18	1, 4, 10
HD 201870	21 07.3	+45 42	8.50			10
HD 202236	21 09.4	+53 29				
BD +60° 2218	21 16.6	+60 26				
20 Aqr	21 19.7	-03 50	6.35	0.34	0.10	4, 10
BS 8202	21 20.6	-42 59	5.52	0.39	0.15	12
HD 204038	21 20.8	+33 16				
BS 8210	21 21.8	+18 57	6.08	0.24	0.03	13
HD 204262	21 22.3	+43 58				
HD 204443	21 23.5	+18 21				
HD 204541	21 24.2	+24 14				
HD 205073	21 27.8	+47 55				2
HD 205117	21 28.1	+48 03				2

TABLE 1—Continued

name		R.A.	Decl.	V	B-V	U-B	R
3D +47°3452	21 ^h 28 ^m .2	+48°03'					
4D 205285	21 29.2	+61 18					
3D +47°3472	21 30.3	+48 06					2
8 <i>Psa</i>	21 30.4	-26 37	5.72	0.22			10
HD 205510	21 30.7	+57 45					
HD 205599	21 31.2	+61 21					
HD 206079	21 34.6	+60 38					
γ <i>Cap</i>	21 34.6	-17 07	3.67	0.32	0.21		12
HD 206155	21 35.1	+08 44	6.9				10
BS 8293	21 37.6	-20 05	6.23	0.27	0.18		12
44 <i>Cap</i>	21 37.6	-14 51					
45 <i>Cap</i>	21 38.5	-15 12	5.96	0.22			13
BD +45°3645	21 40.3	+45 24					
δ <i>Cap</i>	21 41.5	-16 35	2.83	0.29	0.10		12
BS 8337	21 44.3	-13 11	6.31	0.22			10
HD 207561	21 44.8	+53 55					
HD 207886	21 47.2	+46 43					
BS 8361	21 49.1	+65 17					
HD 208133	21 49.1	+65 17					
BS 8362	21 49.2	-58 22	6.18	0.21			10
HD 208718	21 53.1	+05 29					
32 <i>Aqr</i>	21 59.7	-01 23	5.31	0.23	0.15		12
BD +46°3560	22 00.1	+46 23					
ξ <i>Cep</i>	22 00.9	+64 08	4.29	0.34	0.09		9,12
LE 487	22 11.0	+49 21	11.24	0.17	-0.02		4,13
HD 211643	22 13.4	+55 40	7.08	0.11			2,10
CB 654	22 17.8	+55 36					2
HD 212385	22 18.7	-39 38					
HD 212595	22 20.4	+26 06					
HD 212623	22 20.6	-01 20					
BD +51°3377	22 22.9	+51 43					2
HD 213143	22 24.3	+20 52					
37 <i>Peg</i>	22 24.9	+03 55	5.48	0.39	0.07		10
28 <i>Cep</i>	22 26.0	+78 17					
58 <i>Aqr</i>	22 26.4	-11 25					3
HD 213634	22 27.8	+22 53					
BS 8616	22 33.2	-33 36	5.66	0.04			10
BS 8662	22 40.8	-47 28	6.55	0.31	0.08		10
HD 215606	22 41.3	+56 37					
HD 216140	22 45.3	+28 45					

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
HD 216158	22 ^h 45 ^m .5	+44° 53'				
HD 216572	22 48.9	+60 22	7.50	0.52		6,10
BS 8708 br	22 49.2	+44 13	5.77			10
τ^3 Gru	22 51.0	-48 30	5.69	0.22	0.21	12
BD +45°4103	22 54.1	+45 34				4
HD 218067	23 00.0	+59 09	8.60	0.32	0.09	13
HD 218574	23 04.0	+21 56				
HD 218725	23 05.2	+38 55				
HD 219391	23 10.3	-27 44				
HD 219545	23 11.4	-20 30				
HD 219794	23 13.5	-29 18				
AN And	23 13.7	+41 14				
HD 219871	23 14.1	-33 35				
HD 219995	23 15.2	-17 46				6
HD 219998	23 15.2	-26 23				4
HD 220002	23 15.2	-50 51	8.89	0.61	0.09	10
BS 8877	23 15.2	-50 51	6.05	0.43	0.16	12
HD 220317	23 17.7	+24 24				
HD 220917	23 22.5	-44 15				
HD 221098	23 23.9	-48 57	8.33	0.35		10
HD 221335	23 26.2	+57 51	8.24	0.26		4,6,1
14 Psc	23 29.0	-01 48	5.86	0.31	0.13	10
HD 221782,3	23 30.0	+51 28	9.37			9,10
BS 8970	23 34.8	+09 07	5.96	0.21	0.11	10
HD 222514	23 36.2	+57 17	7.24	0.17		10
HD 222770	23 38.4	+51 41				
HD 222838	23 38.9	-43 35				
HD 223099	23 41.5	-36 34				
HD 223184	23 42.2	-32 01				4
HD 223247	23 42.8	+27 50				
21 Psc	23 44.3	+00 31	5.75	0.21	0.11	10
79 Peg	23 44.6	+28 17				
HD 223531	23 45.2	+24 18				
HD 223543	23 45.3	-15 32				
HD 223676	23 46.5	-37 39				
BD +44°4512	23 48.2	+44 30				
BS 9044	23 49.2	-27 36	6.34	0.20	0.00	10
HD 224002	23 49.3	+24 35				
HD 224514	23 53.4	-24 44	7.97	0.27	0.07	10
HD 224595	23 54.0	-12 55	10.23	0.29	0.14	4,13

TABLE 1—Continued

Name	R.A.	Decl.	V	B-V	U-B	R
HD 224610	23 ^h 54 ^m .2	+74°15'				
BD +46°4233	23 55.3	+46 50				
HD 224890	23 56.5	+73 03				
HD 225137	23 58.7	+56 50				

NOTES TO TABLE 1

1. Am type from Cowley *et al.* (1969).
2. Am type from Jaschek *et al.* (1964).
3. Am type from Hoffleit (1964).
4. Am type from Kennedy and Buscombe (1974).
5. Am type from Hill and Barnes (1971).
6. Am type from Jaschek *et al.* (1972).
7. Am type from Mendoza (1967).
8. No V magnitude available.
9. Photometry corresponds to a pair of stars.
10. Photometry from Blanco *et al.* 1968, and Jaschek *et al.* (1972).
11. Photometry from Johnson *et al.* (1966).
12. Star also listed in Table 2.
13. Photometry from Kennedy and Buscombe (1974).

The Am type from Bertaud and Floquet (1974) is not indicated in Table 1.

4. BD, Bonner Durchmusterung designation.
5. CD, Cordoba Durchmusterung designation.
6. CPD, Cape Photographic Durchmusterung designation.
7. AC, Astrographic Catalogue designation.
8. ADS, Index Catalogue of Visual Double Stars number.
9. CB, Bertaud (1959, 1960) number.
10. FJS, Fagerholm (1906) number.
11. LE, Lengauer (1937) number.

The second and third columns list the 1900 coordinates; fourth through sixth, the V-magnitude and the B-V and U-B colors, respectively. New and old UBV photometric data is given in these columns. Data from the U.S. Naval Observatory Photometric Catalogue (Blanco *et al.* 1968) and La Plata Photometric Catalogue (Jaschek *et al.* 1972) are also included in Table 1. The last column gives remarks.

The total number of stars is 839, altogether. Among them probably 25% are unqualified metallic-line stars or borderline Am stars.

In this paper we are not discussing the veracity of the spectral types. Subsequent papers will deal with this problem.

III. INFRARED PHOTOMETRY

Table 2 lists the UBVRJHKL photometry. The columns in these tables are self explanatory.

The photometry given in Table 2 has been obtained by us at Tonantzintla, Lunar and Planetary, Tololo and San Pedro Mártir observatories between 1963 and 1974. Almost the whole of it has been published already (Mendoza 1963, 1965, 1967a, 1967b, 1969b; Mendoza and González 1974, and González *et al.* 1974).

IV. FINAL WORDS

The analysis of the UBVRJHKL-photometry contained in Tables 1 and 2 will be done later, when we have obtained more infrared observations of the stars given in Table 1.

We may mention here that the unreddened stars listed in Table 2, in particular those belonging to the Hyades, Praesepe, Coma Berenices and Ursa Major stellar aggregates, indicate that the B-V, V-R and R-I color indices are satisfactorily correlated with the spectral type derived solely from the hydrogen lines. These types have been obtained from Roman *et al.* (1948), Osawa (1959, 1965), Mendoza (1963) and Sletteback (1963).

The catalogue given above in Tables 1 and 2 has benefitted from the addition of 151 Am (or suspected) stars not listed in Bertaud and Floquet (1974) Catalogue, and the inclusion of the infrared photometry.

TABLE 2
INFRARED PHOTOMETRY OF Am STARS

Name	V	B-V	U-B	V-R	R-I	K	J-K	n	R
39 And	5.98	0.16	0.09	0.18	0.05			6	1
BS 323	6.61	0.14	0.08	0.12	0.07			3	8
β Ari	2.65	0.13	0.10	0.14	0.08	2.37	0.10	6,3	
α Psc	3.82	0.03	-0.09	0.08	0.01			4	9
BS 906	5.95	0.15	0.09	0.13	0.07			4	1
ζ Eri	4.80	0.23	0.08	0.22	0.11			4	
BS 1103	6.50	0.15	0.18	0.17	0.07			3	2
BS 1138	5.43	0.10	0.10	0.10	0.03			3	
BS 1139	5.62	0.19	0.11	0.26	0.13			3	8
HD 23325	8.58	0.34	0.16	0.33	0.21	7.80	0.15	4,2	2,10
HD 23631	7.24	0.07	0.04	0.12	0.05			4	2
ω Tau	4.94	0.25	0.10	0.27	0.13			5	
51 Tau	5.65	0.28	0.07	0.28	0.16			4	3
BS 1353	6.06	0.31	0.20	0.23	0.14			3	8
60 Tau	5.72	0.32	0.10	0.31	0.17			4	3
63 Tau	5.64	0.30	0.13	0.27	0.16			4	3
68 Tau	4.28	0.04	0.08	0.09	0.01			6	3
BS 1403	5.72	0.27	0.10	0.25	0.14			4	3
79 Tau	5.03	0.23	0.12	0.20	0.08			4	3
81 Tau	5.48	0.26	0.10	0.24	0.12			4	3
88 Tau	4.26	0.18	0.12	0.19	0.10			3	
BS 1480	5.39	0.25	0.12	0.23	0.12			4	3
BS 1483	5.00	0.08	0.11	0.13	0.05			4	
BS 1519	5.37	0.19	0.12	0.18	0.08			4	3
14 Ori	5.34	0.33	0.09	0.33	0.17			2	8
BS 1670	6.00	0.24	0.14	0.27	0.08			5	
16 Ori	5.43	0.24	0.15	0.20	0.12			4	3
μ Aur	4.87	0.18	0.09	0.18	0.10			3	
BS 1730	6.66	0.16	0.16	0.16	0.08			2	8
BS 1827	5.86	0.24	0.18	0.21	0.11			2	8
2 Mon	5.03	0.19	0.16	0.17	0.09			2	8
μ Ori	4.13	0.19	0.08	0.16	0.11			5	3
π^1 Col	6.15	0.25	0.13	0.21	0.14			2	8
RR Lyn	5.64	0.24	0.12	0.22	0.09			3	1
ν Pic	5.60	0.25	0.14	0.20	0.15			2	8

TABLE 2—Continued

Name	V	B - V	U - B	V - R	R - I	K	J - K	n	R
<i>BS</i> 2768	6.31	0.23	0.21	0.20	0.15			2	8
α Gem	1.58	0.04	0.01	0.06	-0.01	1.53	0.01	4	9, 11
<i>HD</i> 73045	8.68	0.32	0.15	0.27	0.14			4	4
<i>HD</i> 73174	7.84	0.21	0.16	0.19	0.07			4	4
<i>HD</i> 73618	7.32	0.19	0.14	0.20	0.08			4	4
<i>HD</i> 73619	7.54	0.25	0.12	0.22	0.11			4	4
<i>HD</i> 73709	7.70	0.19	0.15	0.19	0.07			4	4
<i>BS</i> 3428	6.44	1.02	0.90	0.74	0.49	4.19	0.61	4, 2	4, 9, 12
<i>HD</i> 73711	7.54	0.15	0.13	0.16	0.05			4	4
<i>HD</i> 73730	8.01	0.19	0.13	0.18	0.08			4	4
ϵ Cnc	6.30	0.17	0.16	0.17	0.06			4	4
<i>HD</i> 73818	8.70	0.32	0.11	0.31	0.14			3	4
<i>FJS</i> 153	11.31	0.13	0.11	0.17	0.05			3	5
α Cnc	4.26	0.13	0.15	0.14	0.04			3	
α Vol	4.01	0.14	0.13	0.16	0.06			3	
15 UMa	4.48	0.27	0.12	0.27	0.11			4	
τ UMa	4.67	0.35	0.15	0.32	0.13			3	
<i>BS</i> 4138	4.74	0.04	0.07	0.10	0.02			3	
60 Leo	4.42	0.05	0.05	0.06	-0.02			4	
θ^1 Cru	4.33	0.27	0.04	0.32	0.17			4	
<i>BS</i> 4684	6.48	0.18	0.09	0.17	0.07			4	6
8 Com	6.27	0.17	0.14	0.13	0.02			4	6
<i>HD</i> 107276	6.70	0.18	0.09	0.17	0.07			4	6
<i>HD</i> 107513	7.44	0.28	0.02	0.24	0.14			4	6
<i>BS</i> 4705	6.20	0.00	-0.05	0.00	-0.03			4	6
<i>HD</i> 107935	6.72	0.24	0.05	0.20	0.12			4	6
13 Com	5.18	0.08	0.10	0.07	0.02			4	6
14 Com	4.95	0.27	0.18	0.25	0.15			4	6
16 Com	5.00	0.08	0.13	0.09	0.02			4	6
<i>HD</i> 108486	6.69	0.17	0.09	0.14	0.05			4	6
<i>BS</i> 4750	6.54	0.18	0.11	0.15	0.09			4	6
<i>BS</i> 4751	6.65	0.22	0.08	0.15	0.08			14	6
22 Com	6.29	0.11	0.09	0.09	0.03			5	6
41 Vir	6.25	0.27	0.05	0.25	0.15			4	1
ζ UMa	2.06	0.02	0.03	-0.04	-0.02	2.10	-0.01	12, 3	1, 9
4 Cen	4.73	-0.14	-0.56	-0.04	-0.03			4	7, 9, 13
<i>BS</i> 5343	5.98	0.26	0.05	0.23	0.12			4	1
λ Vir	4.52	0.13	0.09	0.10	0.04			5	
α Cir	3.19	0.24	0.12	0.23	0.10			3	
- 500	4.54	0.04	0.04	0.07	-0.02			2	9

TABLE 2—Continued

Name	V	B-V	U-B	V-R	R-I	K	J-K	n	R
α^2 Lib	2.75	0.15	0.11	0.14	0.04	2.52	0.08	3,2	
ϵ Ser	3.70	0.16	0.09	0.08	0.05			3	
δ Nor	4.72	0.23	0.15	0.20	0.13			1	
ψ Sco	4.93	0.09	0.10	0.12	0.12			3	
υ CrB	5.78	0.07	0.10	0.07	0.00			4	1
υ Oph	4.63	0.16	0.06	0.16	0.07			5	
ν^1 Dra	4.89	0.25	0.03	0.23	0.13	4.37:	0.12:	99,1	14
ν^2 Dra	4.86	0.28	0.07	0.25	0.13	4.23:	0.20:	99,1	15
ζ^1 Lyr	4.36	0.19	0.16	0.15	0.08			4	
5 Aql	5.64	0.14	0.08	0.18	0.08			4	9
111 Her	4.36	0.12	0.08	0.09	0.01			3	
15 Vul	4.65	0.18	0.16	0.16	0.09			3	
θ Cep	4.22	0.20	0.16	0.17	0.09			3	
δ Del	4.44	0.32	0.10	0.28	0.17			3	
μ Aqr	4.73	0.32	0.10	0.28	0.14			3	
η Cap	4.84	0.18	0.05	0.16	0.07			3	
BS 8202	5.52	0.39	0.15	0.31	0.19			2	8
γ Cap	3.67	0.32	0.21	0.23	0.13	3.16	0.14	2,2	
BS 8293	6.23	0.27	0.18	0.22	0.12			1	
δ Cap	2.83	0.29	0.10	0.24	0.16	2.34	0.20	2,3	
32 Aqr	5.31	0.23	0.15	0.18	0.10			4	1
ξ Cep	4.29	0.34	0.09	0.32	0.13			3	
τ^3 Gru	5.69	0.22	0.21	0.16	0.12			2	
BS 8877	6.05	0.43	0.16	0.33	0.22			2	8

NOTES TO TABLE 2

1. In Ursa Major Stream.
2. In Pleiades (TS 25a, HzII 531 and HzII 1397).
3. In Hyades (Bu 24, 38, 45, 56, 67, 74, 83, 107, 112, 130 and 169).
4. In Praesepe (VL 321, 467, 921, 925, 997, 1003, 1009, 1012, 1031 and 1113).
5. In M67.
6. In Coma Berenices (Tr 60, 62, 68, 82, 89, 104, 107, 125, 130, 139, 144, 145 and 183)
7. In Scorpio-Centaurus.
8. R, I photometry from Feinstein (1967).
9. Photometry corresponds to a pair of stars.
10. JHKL by Iriarte (1969): $H - K = 0.01$; $K - L = 0.20$.
11. JHKL St. $H - K = -0.01$; $K - L = 0.03$.
12. Photometry probably corresponds to the KO III star. $K - L = 0.08$.
13. Photometry probably corresponds to the B5 III.
14. $H - K = 0.04$:
15. $H - K = 0.05$:

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