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CLASSIFICATION OF 1,477 STARS BY MEANS OF THEIR PHOTOGRAPHIC SPECTRA.

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THE detailed study of the spectra of the bright stars forms an important part of the Henry Draper Memorial. Volume 28 of the Harvard Annals contains a a classification of 1,803 of these stars, from the North to the South Pole, by means of their photographic spectra. Part I of this volume, published in 1897, contains a classification and detailed description of the spectra of 681 stars north of declination $-30°$. This classification was made by Miss A. C. Maury, from a study of 4,800 photographs taken in Cambridge, with the 11-inch Draper Telescope. Part II, published in 1901, contains a similar classification of 1,122 stars, and was made by the writer, from a study of 5,961 photographs, taken at Arequipa with the 13-inch Boyden Telescope. Part II includes the spectra of all stars, south of declination $-30°$, whose photometric magnitude is 5.00, or brighter. In Part I, however, many stars between the magnitudes, 4.00 and 5.00, and some stars brighter than 4.00, are omitted. Accordingly, since May 12, 1904, 1,726 photographs of the spectra of the fainter northern stars have been secured with one prism attached to the 11-inch Draper Telescope.

These spectra are classified in Table I, which includes all stars north of declination $-20°$, not contained in H. A. 28, whose photometric magnitude is 5.00, or brighter. Many stars fainter than 5.00 are also included. These spectra measure 1.8 cm. from $H\varepsilon$ to $H\beta$, and are similar to the spectra taken with one prism, and classified in H. A. 28, Part I. In many cases, the spectra of several stars appear on a single plate. These were identified by Miss L. D. Wells, and checked by the writer. The classification is identical with that of H. A. 28, Part II, which is an extension of that of the Draper Catalogue. This classification is described in general on pages 140 to 142 of H. A. 28, and in detail on pages 146 to 161 of that volume. For convenience of reference, a brief

description of each class is given below, extracted in an abridged form from H. A. 28, pages 146 to 161. In the following description, the well-known lines, Hζ, Hε, Hδ, Hγ, and Hβ, are designated as hydrogen lines. The lines of the second series of hydrogen, first identified in the spectrum of ζ Puppis, are called additional hydrogen lines. Three of these last lines appear in the spectra of several stars discussed in this volume. The line at wave length 4026.0 is called Hε′, that at wave length 4200.7, Hδ′, and that at wave length 4542.4, Hγ′. The numerous lines occurring in the solar spectrum and in stellar spectra of the second type are often referred to as solar or metallic lines.

Nearly all the spectra can be arranged in a sequence of which the typical classes are O, B, A, F, G, K, and M. Spectra which are intermediate between these types are expressed in tenths of the interval. Thus B 2 denotes a spectrum two tenths of the way from B to A. The second letter, A, is omitted, since it is superfluous.

Class O. Stars of the fifth type, whose spectra consist mainly of bright lines or bands, are divided into five sub-classes.

Class Oa. Typical star, − Carinae, A. G. C. 15305.

A broad bright band whose centre is at wave length 4633 is the most conspicuous feature of this spectrum. Hδ and Hγ are also bright.

Class Ob. Typical star, − Canis Majoris, A. G. C. 8631.

This spectrum is especially characterized by an intensely bright band whose centre is at wave length 4688, approximately. The hydrogen lines, Hε, Hδ, Hγ, and Hβ, are bright. The additional hydrogen lines, Hε′, Hδ′, and Hγ′, are also bright. All the bands are very wide.

Class Oc. Typical star, − Scorpii, A.G.C. 22763.

The bright bands are narrower than in Class Ob, and those at 4633 and 4688 are the most conspicuous.

Class Od. Typical star, ζ Puppis.

All lines are dark except the bands 4633 and 4688, which are bright. The additional series of hydrogen lines is well marked, and only four lines not due to hydrogen are present.

Class Oe. Typical star, 29 Canis Majoris, A. G. C. 9311.

All lines are dark except the two bands 4633 and 4688, which are bright, as in ζ Puppis. Helium lines are present, as in Class B. Line 4096.9, due to argon, reaches its maximum intensity in this Class, and 4089.2, due also to argon, is well marked.

Class Oe5. Typical star, τ Canis Majoris, A. G. C. 9313.

All lines are dark. Both series of hydrogen lines are present. Dark lines, having wave lengths 4649.2 and 4685.4, are present near the positions of the two bright bands, 4633 and 4688. This spectrum appears to be a connecting link between spectra of the fifth type and the Orion type.

Class B. Typical star, ε Orionis.

The additional series of hydrogen lines is present, but very faint. Lines due to helium are numerous, but not generally so intense as the line 4649.2. Lines 4089.2 and 4096.9, due to argon, and line 4116.2, are well marked.

Class B1. Typical stars, β Canis Majoris and β Centauri.

The additional series of hydrogen lines is not seen in this or any following class of spectrum. The lines of helium are more intense and the argon lines are fainter than in Class B. 4116.2 and 4649.2 are also fainter than in Class B.

Class B2. Typical stars γ Orionis and α Lupi.

The lines of helium are at their maximum intensity in spectra of this Class. Line 4116.2 is absent, and lines 4089.2 and 4649.2 are faint.

Class B3. Typical stars, π^4 Orionis and α Pavonis.

This spectrum shows few lines except those of hydrogen and helium. These have nearly the same intensity as in Class B2.

Class B5. Typical stars, η Tauri and ϕ Velorum.

The lines of hydrogen show an increase in intensity, and the lines of helium, a decrease. Increased intensity of the lines K, 4128.5, 4131.4, and 4481.4, show an advance towards the first type.

Class B8. Typical star, β Persei.

The helium lines, 4026.4 and 4471.8, are present, and also several solar lines. Lines 4471.8 and 4481.4 form an approximately equal pair. Line K is less intense than the helium line, 4026.4.

Class B9. Typical star, λ Centauri.

The spectrum resembles that of α Canis Majoris, except that the helium lines, 4026.4 and 4471.8, are present.

Class A. Typical star, α Canis Majoris.

The hydrogen lines have their maximum intensity in spectra of this Class. The line K is about 0.1 as intense as Hδ. Line 4481.4 is generally well marked, and numerous other lines, usually called metallic or solar lines, are faintly seen.

Class A2. Typical stars, δ Ursae Majoris and ι Centauri.

The line K is from 0.3 to 0.5 as intense as Hδ. Solar lines are more numerous and of greater intensity than in Class A.

Class A3. Typical star, τ^8 Eridani.

The line K is more than 0.5 as intense as the compound line H and Hϵ, and 0.8 as intense as Hδ. The metallic lines show increased intensity.

Class A5. Typical stars, β Trianguli and α Pictoris.

The line K is 0.9 as intense as the compound line H and Hϵ, and from 1.1 to 1.5 as intense as Hδ. Metallic lines are well marked.

Class F. Typical star, α Carinae.

The lines of hydrogen are about 0.5 as intense as in α Canis Majoris. The line K is equal to the compound line H and Hϵ, and nearly 3.0 as intense as Hδ. Lines 4305.8, 4308.0, and 4309.5, are faint, and do not form a continuous band, as they do in the solar spectrum. This absorption band, often called the Fraunhofer band G, is conspicuous in spectra from Class F5 to K2, inclusive.

Class F2. Typical star, π Sagittarii.

This spectrum resembles Class F, except that there is a slight appearance of continuity in the band G.

Class F5. Typical star, α Canis Minoris.

The lines of hydrogen are about 0.4 as intense as in α Canis Majoris, and 2.0 as intense as in the solar spectrum. On plates taken with one prism, the band G appears to be nearly continuous, from 4299.2 to 4315.2. Line 4227.0 is 0.8 as intense as in α Aurigae, and 3.0 as intense as in α Carinae.

Class F8. Typical star, α Fornacis.

This spectrum resembles Class G, except that the lines of hydrogen are slightly more intense than in that Class.

Class G. Typical star, α Aurigae.

This spectrum closely resembles that of the Sun. The hydrogen lines are 0.1 or 0.2 as intense as in the spectrum of α Canis Majoris. Hγ is about 1.5 as intense as the adjacent line, 4326.0. Line 4227.0, due to calcium, is about as intense as Hδ. The band G is conspicuous. There is no marked change in light, from the line K to Hβ.

Class G5. Typical stars, κ Geminorium and α Reticuli.

The hydrogen lines are a little fainter, and the region of shorter wave length than Hδ is also slightly fainter, than in Class G. Hγ is approximately equal in intensity to 4326.0.

Class K. Typical stars, α Bootis and α Phoenicis.

The lines of hydrogen are of diminished intensity, and Hγ is decidedly fainter than 4326.0. The band K, which is at its maximum intensity, Hϵ, 4227.0, and the band G form the most conspicuous features of the spectrum. The end of shorter wave length is generally faint. Several portions of the spectrum are

brighter than adjacent parts, as from 4077.9 to Hδ, from 4215.7 to 4227.0, and especially from 4470 to 4525, and from 4614 to 4648, approximately.

Class K2. Typical stars, β Cancri and υ Librae.

An increase in intensity of line 4227.0, and a general faintness of the image towards the end of shorter wave length, shows an approach towards spectra of Classes Ma and Mb.

Class K5. Typical star, α Tauri.

Bands K and H, and line 4227.0, are the most conspicuous absorption lines of the spectrum. The band G is no longer continuous. Faint breaks in the spectrum are seen at wave lengths, 4762, 4954, and 5168, and also at the line Hβ. These breaks give a trace of the banded appearance of spectra of the third type.

Class Ma. Typical stars, α Orionis and γ Hydri.

The spectrum is banded. The two bands, faintly seen in Class K5, extending from wave lengths 4762 to 4954, and from 5168 to 5445, are now well marked. The limiting wave lengths of the second band are erroneously given in H. A. 28, 160. The lines which formed the band G, so conspicuous in Classes G and K, are well separated. 4227.0 is very strong.

Class Mb. Typical star, γ Crucis.

The edges of the four absorption bands at wave lengths, 4762, 4954, 5168, and 5445, are bright and well marked. Numerous bands brighter than adjacent portions of the spectrum are present. The most conspicuous of these extends from 4556 to 4586. Line 4227.0 is very wide, and apparently as intense as Hδ in the spectrum of α Canis Majoris.

Class N. Typical star, U Hydrae.

A wide absorption band near wave length 4738 is the characteristic feature of this spectrum on photographs having this dispersion.

A catalogue of all the stars is given in Table I in the order of right ascension. The explanation of the successive columns is given below.

H. R. The number of the star in the Revised Harvard Photometry, for all stars contained in that work.

Constellation. The constellation, taken from the Revised Harvard Photometry, if the star occurs in that catalogue. For other stars, the constellation is given according to the Atlas of Heis, when the star is north of the Equator, and from the Uranometria Argentina, when south of the Equator.

B. Fl. The designations, according to Bayer and Flamsteed, taken from the Revised Harvard Photometry.

DM. The number of the star in the Bonn Durchmusterung, for stars north of declination −23°, and from the Cordoba Durchmusterung for stars south of −23°. When the degree of declination differs from the Durchmusterung Zone, on account of precession, the number is printed in Italics.

R. A. 1900. The approximate right ascension of the star, for 1900.

Dec. 1900. The approximate declination of the star, for 1900.

Magn. The magnitude taken from the Revised Harvard Photometry, for stars contained in that catalogue, and from H. A. 45, for other stars. When the star is not contained in either of these catalogues, the letter R is inserted, and the magnitude according to the Bonn Durchmusterung is given in the Remarks following the Table.

Class. The class of spectrum according to the notation of H. A. 28, Part II, described above.

Rem. A number referring to the Remarks following the Table.

No. Plates. The number of plates on which each spectrum has been examined.

Plate Nos. The first three numbers designating the plates in the series taken with the 11-inch Draper Telescope. When the number of plates exceeds three, the additional numbers will be found in Table II.

The stars H. R. 3552,3 and 4259,60 are double. The class of spectrum and other facts relating to their combined light are given in Table I, under the brighter component.

TABLE I.

GENERAL CATALOGUE.

H. R.	Constellation.	B.Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
				h. m.	° ′					
3	Pisces	33	6357	0 0.2	− 6 16	4.68	K	—	1	17007
7	Cassiopeia	10	2107	1.2	+63 37	5.49	B 8	—	1	16018
10	Cetus	—	*6428*	2.2	−17 57	6.18	A 3	—	1	16125
26	Pisces	34	8	4.9	+10 36	5.51	B 8	—	1	16113
38	Andromeda	—	*12*	7.6	+37 9	6.57	B 3	—	1	16210
41	Andromeda	23	29	8.3	+40 29	5.73	A 5	—	1	16209
45	Pegasus	χ 89	27	9.4	+19 39	4.94	Ma	—	2	16991, 17020
63	Andromeda	θ 24	*34*	11.9	+38 8	4.44	A 2	—	3	15120, 15123, 16210
68	Andromeda	σ 25	*44*	13.1	+36 14	4.51	A 2	—	2	15129, 16148
..	Andromeda	—	42	14.8	+37 41	7.07	G	—	1	16715
82	Andromeda	ρ 27	45	15.9	+37 25	5.20	F 5	—	6	15120, 15123, 15152,
..	Andromeda	—	48	16.4	+37 38	7.00	K	—	1	16715
..	Andromeda	—	*54*	17.7	+38 12	7.05	Ma	—	1	16715
..	Cassiopeia	—	45	18.4	+60 23	6.69	A 5	—	1	15266
..	Andromeda	—	72	18.7	+43 43	6.59	A 5	—	1	15324
91	Cassiopeia	—	62	18.9	+51 28	5.36	B 3	—	2	15085, 15190
93	Cassiopeia	12	69	19.3	+61 17	5.39	B 9	—	1	15266
104	Andromeda	—	92	22.9	+43 51	5.16	A 2	—	1	15324
..	Cassiopeia	—	94	24.0	+61 31	R	K	1	1	15266
114	Andromeda	28	*75*	24.8	+29 12	5.26	F	—	1	15327
..	Cassiopeia	—	101	25.1	+61 48	7.31	B 3	—	1	15266
..	Andromeda	—	97	25.8	+43 24	6.68	B 8	—	1	15324
128	Andromeda	—	99	27.1	+42 57	6.43	A	—	1	15324
154	Andromeda	π 29	*101*	31.5	+33 10	4.44	B 3	—	1	15058
155	Pisces	53	76	31.6	+14 41	5.86	B 3	—	1	14996
163	Andromeda	ϵ 30	103	33.3	+28 46	4.52	G 5	—	2	15976, 16158
179	Cassiopeia	ξ 19	164	36.5	+49 58	4.85	B 3	—	2	15142, 16202
184	Cassiopeia	π 20	146	37.9	+46 29	5.02	A 5	—	1	16004
189	Cassiopeia	—	181	38.8	+47 19	5.55	B 3	—	1	16004
192	Cassiopeia	21	27	39.0	+74 26	5.59	A 2	—	2	16017, 16300
194	Cetus	ϕ^1 17	128	39.2	−11 9	4.93	K	—	2	17040, 17100
196	Cassiopeia	—	143	39.6	+54 40	5.47	A	—	1	16021
197	Cetus	—	127	39.8	−22 34	5.30	A 5	—	2	16253, 16699
204	Cassiopeia	—	148	40.6	+54 45	6.52	A 2	—	1	16021
208	Cassiopeia	23	29	41.1	+74 18	5.39	B 8	—	2	16017, 16300
210	Cetus	—	293	41.2	−23 4	5.62	K	—	1	16699
..	Cassiopeia	—	143	42.3	+50 54	6.76	A	—	1	15196
220	Cetus	—	134	43.0	−22 16	5.45	B 9	—	1	16699
223	Cassiopeia	υ 25	147	43.2	+50 25	5.03	B 9	—	2	15196, 15969
226	Andromeda	ν 35	171	44.3	+40 32	4.42	B 3	—	1	15183
238	Cassiopeia	—	161	45.2	+50 58	6.46	A 5	—	1	15196

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
				h. *m.*	° ′					
240	Cepheus	—	*20*	0 45.5	+83 10	5.55	A 2	—	1	16036
241	Cassiopeia	—	*164*	45.8	+51 2	6.24	A	—	1	15196
..	Andromeda	—	198	47.4	+39 43	7.02	G	—	1	15183
248	Cetus	20	114	47.9	− 1 41	4.92	K	—	1	16993
253	Cassiopeia	υ^1 26	134	49.0	+58 26	4.95	K	—	3	16997, 17076, 17101
258	Andromeda	36	*146*	49.6	+23 5	5.60	K	—	1	15000
265	Cassiopeia	υ^2 28	138	50.7	+58 38	4.83	K	—	3	16997, 17076, 17101
271	Andromeda	η 38	153	51.9	+22 52	4.62	G 5	—	1	15000
291	Pisces	σ 69	168	57.3	+31 16	5.46	B 9	—	2	16205, 16219
294	Pisces	ε 71	153	57.8	+ 7 21	4.45	K	—	2	14922, 17068
310	Pisces	ψ^1 74	156	1 0.4	+20 56	5.55	A 2	2	3	15235, 16675, 16701
311	Pisces		157	0.4	+20 56	5.82	A			
321	Cassiopeia	μ 30	223	1.6	+54 26	5.26	G 5	—	2	15267, 16203
324	Andromeda	41	234	2.2	+43 24	5.16	A 2	—	2	15124, 16254
328	Pisces	ψ^2 79	*185*	2.6	+20 12	5.63	A 2	—	2	16022, 16701
335	Andromeda	ϕ 42	275	3.7	+46 42	4.28	B 8	—	1	15950
336	Cassiopeia	31	77	3.9	+68 15	5.34	A	—	2	15136, 16114
..	Cassiopeia	–	98	4.0	+67 15	6.65	G	—	1	16114
..	Cassiopeia	—	147	4.0	+63 39	R	A 3	3	1	15251
342	Cassiopeia	—	149	5.0	+63 40	5.46	B 9	—	1	15251
343	Cassiopeia	θ 33	236	5.0	+54 37	4.52	A 5	—	2	15267, 16203
345	Cassiopeia	32	127	5.1	+64 29	5.49	B 8	—	1	15251
349	Pisces	g 82	181	5.6	+30 53	5.04	A 5	—	1	15280
351	Pisces	χ 84	172	6.1	+20 30	4.89	K	—	2	16022, 16268
352	Pisces	τ 83	190	6.2	+29 34	4.70	K	—	1	16998
..	Pisces	—	197	7.4	+31 32	6.57	A	—	1	15280
356	Pisces	—	195	7.5	+29 33	6.40	K	—	1	16998
..	Pisces	—	*204*	8.1	+29 12	6.85	K	—	1	16998
360	Pisces	ϕ 85	*158*	8.3	+24 3	4.64	K	—	3	16999, 17004, 17102
361	Pisces	ζ 86	*174*	8.5	+ 7 3	5.57	A 5	4	3	16105, 16257, 16645
362	Pisces		*175*	8.5	+ 7 3	6.49	G 5		1	16105
..	Pisces	—	*200*	8.9	+30 1	7.36	A	—	1	15280
366	Cetus	37	216	9.4	− 8 28	5.21	F	—	2	15117, 17069
367	Pisces	88	181	9.5	+ 6 28	6.21	K	—	2	16105, 16645
..	Cassiopeia	—	108	11.5	+67 17	6.70	A	—	1	16114
378	Pisces	f 89	*185*	12.6	+ 3 5	5.28	A 2	—	1	15035
383	Pisces	υ 90	220	14.0	+26 44	4.67	A 2	—	3	15143, 16154, 16227
390	Andromeda	ξ 46	*287*	16.4	+45 0	4.99	K	—	1	16244
399	Cassiopeia	ψ 36	123	18.9	+67 36	4.96	K	—	2	17001, 17024
417	Andromeda	ω 48	307	21.7	+44 53	4.96	F 5	—	1	16244
421	Cetus	47	262	21.9	−13 34	5.68	F	—	2	15065, 16246
442	Cassiopeia	χ 39	260	27.4	+58 44	4.88	K	—	2	17002, 17064
451	Cetus	49	265	29.7	−16 11	5.64	A 2	—	1	15991
456	Cassiopeia	40	86	30.5	+72 32	5.50	K	—	1	16355
458	Andromeda	υ 50	332	30.9	+40 54	4.18	G	—	3	15092, 16166, 16664

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
				h. m.	° ′					
459	Cetus	50	*270*	1 31.1	−15 54	5.48	K	—	1	15991
477	Andromeda	τ 53	*378*	34.7	+40 4	4.90	B 8	—	3	15092, 16166, 16664
478	Cassiopeia	43	149	34.9	+67 32	5.54	Ap	5	2	16159, 16656
480	Cassiopeia	42	*114*	35.2	+70 7	5.26	A	—	1	15960
489	Pisces	ν 106	293	36.2	+ 4 59	4.68	K	—	1	16994
490	Triangulum	—	297	36.3	+34 44	5.45	B 8	—	5	15086, 16258, 16662,
509	Cetus	τ 52	295	39.4	−16 28	3.65	K	—	1	16106
510	Pisces	o 110	273	40.1	+ 8 39	4.50	K	—	2	15052, 16143
..	Pisces	—	*275*	40.4	+ 8 4	6.58	Ap	6	1	16143
531	Cetus	χ 53	352	44.7	−11 11	4.77	F	—	1	16280
..	Perseus	—	393	44.9	+54 25	7.08	Ap	7	1	15125
533	Perseus	1	396	45.4	+54 39	5.49	B 3	—	1	15125
539	Cetus	ζ 55	*359*	46.5	−10 50	3.92	K	—	1	16280
540	Perseus	—	*408*	47.1	+55 7	6.49	A 2	—	1	15125
548	Cassiopeia	ω 46	*169*	48.2	+68 12	5.03	B 8	—	2	15104, 16206
549	Pisces	ξ 111	290	48.4	+ 2 42	4.84	K	—	1	16001
567	Cassiopeia	—	*265*	52.2	+64 8	5.18	A	—	1	15197
569	Aries	λ 9	*288*	52.4	+23 7	4.83	A 5	—	1	15977
586	Cassiopeia	52	282	55.4	+64 25	5.92	A 2	—	1	15197
589	Cassiopeia	53	274	55.6	+63 54	5.62	B 5	—	1	15197
590	Perseus	g 4	*439*	55.6	+54 1	4.99	B 8	—	1	15253
598	Cassiopeia	—	285	57.1	+64 37	6.48	A	—	1	15197
599	Triangulum	ε 3	369	57.1	+32 49	5.44	A 2	—	1	15970
607	Cetus	60	307	58.1	− 0 21	5.56	A 5	—	1	16037
610	Cetus	61	*285*	58.7	− 0 49	6.01	G 5	—	1	16037
615	Aries	11	349	2 1.1	+25 13	6.00	B 8	—	1	16115
616	Cetus	—	318	1.4	− 0 27	6.33	K	—	1	16037
620	Andromeda	58	486	2.5	+37 23	4.77	A 2	—	5	15191, 15328, 16160,
..	Andromeda	—	416	2.8	+38 53	7.70	A 2	—	1	15328
623	Aries	14	355	3.7	+25 28	5.07	F	—	2	15269, 16115
628	Andromeda	59	425	4.8	+38 34	6.05	A	8	1	15328
629	Andromeda			4.8	+38 34	6.71	A 2			
635	Cetus	64	*347*	6.1	+ 8 6	5.74	G	—	3	15180, 16144, 16676
646	Aries	η 17	348	7.2	+20 44	5.35	F 5	—	1	16197
647	Andromeda	—	*536*	7.6	+47 2	6.03	F	—	1	15131
649	Cetus	ξ^1 65	345	7.7	+ 8 23	4.54	G 5	—	3	15180, 16144, 16676
653	Andromeda	—	590	9.5	+47 21	6.44	K	—	1	15131
669	Aries	θ 22	340	12.6	+19 26	5.69	A	—	4	15281, 16173, 16197,
670	Andromeda	c 62	552	12.8	+46 55	5.12	A	—	1	15131
671	Andromeda	—	*589*	12.8	+46 1	6.12	A 3	—	1	15131
675	Triangulum	10	*360*	13.2	+28 11	5.28	A 2	—	1	16002
..	Aries	—	342	13.6	+19 14	6.88	G 5	—	2	15281, 16689
679	Andromeda	—	557	14.2	+46 51	6.08	B 5	—	1	15131
681	Cetus	o 68	353	14.3	− 3 26	var.	Md	9	18	15376, 15380, 15403,
682	Andromeda	63	640	14.4	+49 42	5.56	Ap	10	2	17008, 17026

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
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685	Perseus	i 9	598	2 15.3	+55 23	5.22	A 2	11	1	16683
690	Perseus	—	535	16.9	+54 55	6.46	F 5	—	2	16174, 16211
691	Cetus	70	322	17.1	− 1 20	5.62	A 5	—	1	15951
692	Cetus	—	448	17.1	−11 14	5.57	F	—	2	15059, 16247
694	Andromeda	64	649	17.8	+49 33	5.49	G 5	—	2	17008, 17025
699	Andromeda	65	656	18.9	+49 50	4.86	K 5	—	2	17008, 17025
702	Aries	ξ 24	*316*	19.5	+10 9	5.53	B 5	—	1	15029
707	Cassiopeia	ϵ	213	20.8	+66 57	4.59	A 5 p	12	1	15325
708	Cetus	ρ 72	451	21.1	−12 44	4.90	A	—	1	16116
709	Andromeda	66	*666*	21.2	+50 7	6.27	F	—	1	17008
..	Aries	—	*321*	21.4	+10 7	6.75	A 3	—	1	15029
..	Cetus	—	323	22.1	+ 9 46	6.54	G	—	1	15029
717	Triangulum	12	417	22.3	+29 14	5.38	F	—	3	15319, 16228, 16236
718	Cetus	ξ^2 73	*388*	22.8	+ 8 1	4.34	A	—	1	15036
720	Triangulum	13	423	23.0	+29 29	5.90	G	—	2	16222, 16236
..	Cetus	—	386	24.3	+ 8 33	R	A 5	13	1	15036
740	Cetus	σ 76	449	27.3	−15 41	4.82	F 5	—	1	16274
..	Cetus	—	458	30.9	−15 22	6.89	K	—	1	16689
..	Cetus	—	461	31.8	−15 5	6.92	K	—	1	16689
781	Cetus	ϵ 83	501	34.7	−12 18	5.01	F 5	—	1	16118
782	Aries	33	443	34.8	+26 38	5.38	A 2	—	1	16270
..	Cetus	—	*473*	35.7	−14 53	6.58	A 5	—	1	15066
788	Perseus	12	610	35.9	+39 46	4.99	G	—	1	15285
793	Aries	μ 34	403	36.7	+19 35	5.72	A	—	2	15320, 16684
795	Cetus	—	421	36.8	− 3 39	6.11	K	—	1	16681
796	Cetus	—	*478*	36.8	−14 59	6.05	F 5	—	1	15066
801	Aries	35	424	37.6	+27 17	4.58	B 3	—	2	16270, 17095
..	Cetus	—	*426*	38.5	− 2 58	6.64	K	—	1	16681
811	Cetus	π 89	519	39.4	−14 17	4.39	B 5	—	1	15066
818	Eridanus	τ^1 1	518	40.5	−19 0	4.61	F 5	—	1	16107
824	Aries	39	462	42.0	+28 50	4.62	K	—	1	17065
828	Aries	40	442	42.9	+17 52	6.04	K	—	1	16685
836	Aries	π 42	*355*	43.7	+17 3	5.30	B 5	—	3	15965, 16264, 16685
840	Perseus	16	646	44.2	+37 55	4.27	F	—	1	15170
843	Perseus	17	527	45.4	+34 39	4.67	K 5	—	2	17031, 17220
845	Fornax	γ^2	903	45.6	−28 22	5.39	A	—	1	16135
847	Aries	σ 43	480	46.0	+14 40	5.46	B 5	—	1	15030
855	Perseus	20	655	47.4	+37 56	5.32	F	—	1	15170
865	Perseus	—	658	49.8	+46 45	6.13	K	—	1	17009
873	Perseus	21	509	51.2	+31 32	5.18	Ap	14	1	15252
875	Eridanus	—	502	51.6	− 4 7	5.27	A 2	—	1	15159
878	Aries	47	480	52.3	+20 16	5.85	F	—	1	15245
879	Perseus	π 22	681	52.4	+39 16	4.62	A 2	—	2	15087, 16140
882	Perseus	24	550	52.9	+34 47	4.97	K	—	1	17032
883	Eridanus	4	1336	52.9	−24 16	5.41	A 5	—	2	16286, 16686

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
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885	Perseus	—	669	2 53.1	+46 49	5.61	G 5 p	15	3	17009, 17026, 17067
..	Aries	—	397	53.2	+21 13	6.68	A 3	—	1	15245
..	Cassiopeia	—	131	53.4	+74 45	7.06	B 9	—	1	15333
887	Aries	ε 48	484	53.5	+20 56	5.55	A 2	—	1	15245
888	Aries			53.5	+20 56	5.25				
889	Eridanus	6	1343	53.6	−24 1	5.96	K	—	1	16686
892	Eridanus	—	470	53.7	− 3 11	5.20	A 2	—	2	16038, 16128
896	Cetus	λ 91	455	54.4	+ 8 31	4.69	B 5	—	1	15001
899	Eridanus	5	*475*	54.7	− 2 52	5.48	B 9	—	2	16038, 16128
917	Eridanus	ρ^2 9	568	57.8	− 8 5	5.52	G 5	—	1	15312
925	Eridanus	ρ^3 10	*572*	59.3	− 7 59	5.43	A 3	—	1	15312
927	Aries	52	431	59.6	+24 52	6.11	B 8	—	2	15093, 17108
928	Aries			59.6	+24 52	6.11				
932	Cassiopeia	—	*1683*	3 1.0	+74 1	4.89	A 2	—	2	15333, 15362
937	Perseus	ι	857	1.8	+49 14	4.17	G	—	1	15132
947	Perseus	ω 28	724	4.8	+39 14	4.82	K	—	2	17005, 17070
951	Aries	δ 57	477	5.9	+19 21	4.53	K	—	2	16023, 16170
971	Perseus	—	512	9.2	+30 11	5.53	A	—	1	15971
972	Aries	ζ 58	527	9.2	+20 40	4.95	A	—	1	15254
982	Perseus	30	674	11.0	+43 39	5.38	B 5	—	2	15198, 17109
984	Eridanus	ζ 13	624	11.0	− 9 11	4.90	A 3	—	1	15147
..	Perseus	—	520	11.5	+30 46	6.55	G	—	1	15971
988	Eridanus	14	627	11.7	− 9 31	6.16	F	—	1	15147
991	Perseus	—	619	12.5	+33 51	4.92	K	—	1	17012
996	Cetus	κ 96	*518*	14.1	+ 3 0	4.96	G 5	—	1	16995
999	Aries	—	516	14.3	+28 41	4.72	K 5	—	1	17041
1002	Perseus	l 32	750	14.7	+42 58	4.98	A 2	—	2	15198, 17109
..	Perseus	—	672	15.5	+54 52	7.56	A 5	—	1	15126
1005	Aries	τ 61	543	15.5	+20 47	5.17	B 3	—	2	16034, 16212
1011	Perseus	—	899	16.1	+48 51	5.30	B 3	—	1	17010
1015	Aries	63	551	17.0	+20 23	5.25	K	—	1	16212
1019	Perseus	—	636	18.2	+33 11	5.64	A	—	2	16119, 16120
1029	Perseus	—	913	18.9	+48 45	5.91	B 5	—	1	17010
1034	Perseus	—	920	20.9	+48 43	4.94	B 5	—	1	17010
1039	Taurus	—	477	21.8	+12 23	6.20	A	—	1	15037
1040	Camelopardus	—	607	21.9	+58 32	4.76	Ap	16	1	17034
1044	Perseus	34	945	22.2	+49 10	4.67	B 5	—	1	17010
1046	Camelopardus	—	*684*	22.4	+55 7	4.98	A 2	—	2	16019, 16356
1061	Taurus	s 4	*452*	24.9	+11 0	5.12	A	—	1	16677
1066	Taurus	f 5	486	25.4	+12 36	4.28	K	—	1	15037
1070	Eridanus	v17	674	25.6	− 5 25	4.80	B 9	—	2	16690, 17113
1071	Camelopardus	—	730	25.7	+57 32	6.41	F 5	—	1	17034
1084	Eridanus	ε 18	697	28.2	− 9 48	3.81	K	17	1	15153
1091	Eridanus	—	704	29.8	−10 12	6.27	A	—	1	15153
1100	Eridanus	20	699	31.7	−17 48	5.32	Ap	18	2	15221, 17114

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				h. m.	° ′					
1101	Taurus	10	*572*	3 31.8	+ 0 5	4.40	G 5	—	1	16121
1105	Camelopardus	—	597	33.5	+62 54	5.32	Ma	—	3	17183, 17250, 17252
..	Perseus	—	690	33.8	+33 48	6.85	F 5	—	1	15277
..	Eridanus	—	707	35.0	−17 41	7.06	K	—	1	15221
1121	Eridanus	22	715	35.7	− 5 32	5.52	B 8	—	2	16003, 17115
1123	Perseus	o 40	698	36.0	+33 39	5.04	B 2	—	1	15277
1126	Taurus	13	578	36.6	+19 23	5.50	B 8	—	2	16031, 16182
..	Perseus	—	704	37.0	+33 48	R	B 3	19	1	15277
1129	Camelopardus	—	*604*	37.3	+63 2	4.96	Comp.	20	4	17035, 17183, 17250,
1133	Perseus	—	742	38.1	+36 9	5.57	A 2	21	1	16005
1136	Eridanus	δ 23	728	38.5	−10 6	3.72	K	—	1	16117
1138	Camelopardus	—	257	38.8	+70 34	5.40	A	—	2	16271, 16275
1146	Eridanus	24	526	39.5	− 1 29	5.09	B 8	—	1	15329
1148	Camelopardus	—	*259*	39.8	+71 1	4.67	A	—	2	16271, 16275
1153	Taurus	u 29	539	40.3	+ 5 44	5.36	B 3	—	1	15034
..	Perseus	—	*649*	40.4	+32 0	6.51	B 3	22	1	15282
1158	Camelopardus	—	*612*	40.8	+63 0	5.96	A 3	—	3	16189, 17183, 17252
1159	Taurus	—	583	40.8	+ 6 30	6.12	K	—	1	15034
1162	Eridanus	π 26	707	41.4	−12 25	4.64	Ma	—	4	17197, 17238, 17250,
1163	Perseus	—	717	41.5	+33 18	6.36	B 3	—	1	15282
1164	Perseus	—	650	41.5	+31 54	6.23	G	—	1	15282
..	Aries	—	734	42.8	+18 32	6.79	G 5	—	1	17234
1174	Taurus	e 30	486	42.8	+10 50	5.03	B 3	—	1	16051
1177	Perseus	n 42	667	43.2	+32 48	5.10	A 2	—	1	15282
1188	Taurus	—	624	44.3	+25 17	5.38	A 3	—	1	16011
..	Taurus	—	583	45.4	+24 52	6.86	A 2	—	1	16011
1191	Perseus	—	*728*	45.5	+34 3	5.73	B 3	—	1	16016
..	Taurus	—	587	46.2	+24 53	6.76	G	—	1	16011
..	Perseus	—	*662*	46.3	+32 6	6.70	K	—	1	15282
..	Taurus	—	641	47.5	+25 23	7.16	A	—	1	16011
1202	Eridanus	30	769	47.7	− 5 39	5.49	B 8	—	1	16183
1204	Camelopardus	—	628	48.6	+62 47	4.87	B 9	—	2	16057, 16189
1207	Perseus	—	912	48.8	+47 35	5.34	B 5	—	2	16058, 16220
1211	Eridanus	w 32	631	49.2	− 3 14	6.33	Comp.	23	2	15160, 15985
1212	Eridanus			49.2	− 3 14	4.95				
1215	Perseus	—	768	50.0	+34 47	5.48	B 3	22	1	16016
1244	Eridanus	35	572	56.5	− 1 50	5.25	B 5	—	2	16129, 16136
1252	Taurus	36	609	58.4	+23 50	5.67	Comp.	24	1	17192
1256	Taurus	A^1 37	585	58.8	+21 49	4.50	K	—	1	16043
1261	Perseus	λ 47	*1101*	59.1	+50 5	4.33	A	—	1	15111
1262	Taurus	A^2 39	587	59.4	+21 44	5.96	G 5	—	1	16043
1268	Taurus	41	633	4 0.5	+27 21	5.27	Ap	25	2	15470, 17137
1269	Taurus	ψ 42	619	0.8	+28 44	5.29	F	—	1	16030
..	Perseus	—	1108	1.3	+49 56	6.98	A	26	1	15111
1273	Perseus	c 48	939	1.4	+47 27	4.03	*B 3*	27	1	16052

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1288	Eridanus	—	796	4 4.7	−16 39	5.45	B 3	—	1	16238
1289	Cepheus	—	104	5.0	+83 34	5.39	B 3	—	1	16065
1304	Cepheus	—	*113*	8.0	+83 6	5.70	G 5	—	1	16065
1305	Camelopardus	—	687	8.1	+61 36	5.64	B 8	—	1	16750
1306	Perseus	f 52	912	8.1	+40 14	4.89	Comp.	28	2	17011, 17295
1308	Taurus	—	651	8.1	+ 8 38	6.45	A 3	—	2	16039, 16091
1311	Taurus	47	*652*	8.5	+ 9 1	4.98	G 5	—	3	16039, 16091, 17033
1314	Camelopardus	—	750	8.9	+53 22	5.12	A 2	—	1	16064
1315	Taurus	—	550	9.2	+ 9 46	5.15	B 8	—	2	16039, 17033
1320	Taurus	μ 49	657	10.1	+ 8 39	4.32	B 3	—	3	16039, 16091, 17033
1324	Perseus	b	*1150*	10.7	+50 3	4.57	A 2	—	5	16343, 17198, 17212,
1325	Eridanus	o^2 40	780	10.7	− 7 49	4.48	G 5	—	1	15148
1329	Taurus	ω 50	724	11.4	+20 20	4.80	A 3	—	3	16024, 16276, 17138
1330	Perseus	—	1155	11.7	+49 48	5.54	A 5	—	2	17198, 17212
1331	Taurus	51	618	12.4	+21 20	5.56	A 5	—	1	16276
1333	Perseus	—	973	12.6	+50 41	5.54	B 3	—	4	17198, 17212, 17237,
1339	Taurus	53	733	13.5	+20 55	5.39	B 8	—	2	16276, 17138
1341	Taurus	56	623	13.6	+21 32	5.32	Ap	14	1	16276
1346	Taurus	γ 54	612	14.1	+15 23	3.86	K	—	4	16749, 17213, 17217,
1350	Perseus	d 53	872	14.3	+46 16	4.89	B 3	—	1	15125
1356	Taurus	58	682	14.9	+14 52	5.27	F	—	4	16749, 17213, 17217,
1361	Taurus	—	672	15.4	+ 8 59	6.45	A 3	—	1	17221
..	Taurus	—	687	15.9	+14 11	6.71	F	—	1	16749
1363	Eridanus	—	798	15.9	− 7 50	5.72	B 8	—	1	17218
1367	Eridanus	—	831	16.3	−20 52	5.31	A	—	1	15340
1369	Taurus	χ 59	707	16.5	+25 23	5.38	B 9	—	2	15094, 16161
..	Taurus	—	690	17.1	+14 51	R	G	29	3	16749, 17213, 17217
1381	Taurus	r 66	570	18.4	+ 9 14	5.06	A 2	—	1	17221
1383	Eridanus	ξ 42	*818*	18.7	− 3 58	5.23	A 2	—	1	16141
1387	Taurus	κ 65	*642*	19.4	+22 4	4.36	A 3	—	1	16282
1388	Taurus	67	643	19.5	+21 58	5.42	A 2	—	1	16282
1392	Taurus	υ 69	696	20.3	+22 35	4.40	A 5	—	2	16080, 16282
1394	Taurus	71	625	20.6	+15 23	4.60	A 5	—	1	17016
1396	Taurus	π 73	697	20.9	+14 29	4.94	K	—	1	17016
1397	Taurus	—	687	21.0	+ 8 22	5.99	B 5	—	1	17221
1399	Taurus	72	699	21.3	+22 46	5.41	B 5	—	1	16080
1400	Taurus	—	753	21.8	+ 1 52	6.37	K	—	1	17239
1409	Taurus	ϵ 74	640	22.8	+18 58	3.63	K	—	2	16759, 17141
1411	Taurus	θ^1 77	631	22.8	+15 44	4.04	K	—	1	16221
1412	Taurus	θ^2 78	632	22.9	+15 39	3.62	A 5	—	1	16221
1413	Eridanus	—	755	22.9	+ 1 38	6.12	K	—	1	17239
1414	Taurus	b 79	598	23.2	+12 49	5.12	A 5	—	1	16053
1415	Eridanus	44	757	23.4	+ 1 9	5.50	B 8	—	1	17239
1417	Camelopardus	1	779	24.1	+53 42	5.42	B 1	30	2	16079, 17142
1422	Taurus	80	636	24.4	+15 25	5.70	F	—	1	16221

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				h. m.	° ′					
1423	Eridanus	—	893	4 24.5	−13 17	5.50	*B 3*	31	1	16175
1427	Taurus	—	637	24.8	+15 59	4.84	A 5	—	1	16221
1428	Taurus	81	639	24.9	+15 29	5.49	A 5	—	1	16221
..	Taurus	—	711	25.4	+14 53	6.64	Ma	—	1	16067
1432	Taurus	85	645	26.2	+15 38	6.04	F	—	1	16221
1437	Eridanus	45	713	26.8	− 0 16	4.97	K	—	1	17116
1444	Taurus	ρ 86	720	28.2	+14 38	4.75	A 5	—	2	16067, 16221
1446	Taurus	—	600	28.4	+ 9 12	6.20	K	—	1	16137
1454	Perseus	e 58	*1000*	29.7	+41 4	4.46	G	—	1	16835
1458	Taurus	d 88	607	30.2	+ 9 57	4.38	A 3	—	1	16137
1469	Eridanus	49	798	32.1	+ 0 48	5.32	B 5	—	1	15322
1473	Taurus	c 90	618	32.6	+12 19	4.30	A 3	—	2	16092, 16260
1478	Taurus	σ^1 91	665	33.4	+15 36	5.15	A 2	—	3	17227, 17233, 17317
1479	Taurus	σ^2 92	666	33.5	+15 43	4.85	A 3	—	2	17233, 17317
1482	Perseus	—	1128	33.9	+48 7	5.70	A	—	1	16086
1483	Eridanus	—	955	34.3	−12 19	5.02	A 2	—	1	15067
1484	Taurus	93	*639*	34.5	+12 0	5.37	B 9	—	2	16092, 16260
1490	Taurus	—	680	35.0	+28 25	5.68	A	—	1	16096
1497	Taurus	τ 94	739	36.2	+22 46	4.33	B 5	—	2	15337, 17337
..	Eridanus	—	969	37.1	−12 40	6.62	A 2	—	1	15067
1520	Eridanus	μ 57	876	40.5	− 3 26	4.18	B 5	—	1	15334
..	Eridanus	—	881	40.9	− 3 6	R	A 5	32	1	15334
1522	Eridanus	—	884	41.4	− 3 8	6.29	A 2	—	1	15334
..	Taurus	—	734	42.8	+18 32	6.79	G 5	—	1	17234
1542	Camelopardus	9	358	44.1	+66 10	4.38	B	33	1	15171
1544	Orion	π^2 2	777	45.1	+ 8 44	4.35	A	—	1	15386
1546	Camelopardus	—	891	45.2	+52 39	6.34	A 2	—	1	16311
1547	Taurus	i 97	743	45.5	+18 40	5.12	F	—	2	17228, 17234
1553	Orion	—	668	46.2	+ 9 49	6.08	B 5	—	1	16377
1555	Camelopardus	5	941	46.9	+55 6	5.58	A	—	1	15112
1561	Camelopardus	—	898	48.2	+52 42	5.75	A 2	—	1	16311
1568	Camelopardus	7	829	49.3	+53 35	4.44	A 2	—	1	16311
1569	Orion	g 6	675	49.3	+11 16	5.15	A 3	—	1	17335
1570	Orion	π^1 7	*683*	49.4	+10 0	4.74	A	—	1	16377
1572	Camelopardus	—	229	49.6	+74 7	6.23	K	—	1	16308
1576	Orion	—	787	50.2	+14 54	5.74	B 8	—	1	16040
1580	Orion	o^2 9	740	50.7	+13 21	4.28	K	34	1	R
..	Auriga	—	1002	51.7	+37 11	6.72	A 5	—	1	16324
1589	Camelopardus	—	265	52.0	+73 55	6.00	A 2	—	1	17253
1592	Auriga	4	1005	52.5	+37 44	4.99	A	—	2	16059, 16324
1600	Orion	—	796	53.4	+14 24	5.98	B 8	35	1	16040
1601	Orion	π^6 10	872	53.4	+ 1 33	4.73	K	—	1	17013
1611	Eridanus	δ 64	1047	55.3	−12 41	4.85	F	—	1	15154
1617	Eridanus	ψ 65	948	56.6	− 7 20	4.81	B 8	—	1	17326
1620	Taurus	ι 102	751	57.1	+21 27	4.70	A 5	—	1	16751

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
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1621	Lepus	—	990	4 57.1	−20 12	4.99	B 9	—	2	17268, 17320
1622	Camelopardus	11	804	57.4	+58 50	5.31	*B 3*	36	4	15335, 15361, 15374,
1623	Camelopardus	12	805	57.5	+58 53	6.38	K	37	1	15377
1637	Auriga	9	1024	58.8	+51 29	4.99	F	—	1	16775
1638	Orion	11	732	58.9	+15 16	4.65	B 9	—	2	16060, 17235
1643	Camelopardus	—	274	59.7	+73 49	5.38	Ap	14	1	17253
1645	Lepus	—	2795	59.7	−24 32	5.55	A 2	—	1	16763
1658	Taurus	l 106	885	5 1.9	+20 17	5.29	A 3	—	1	16044
1659	Taurus	103	755	2.0	+24 8	5.50	B 3	—	1	16764
1662	Orion	13	736	2.2	+ 9 21	6.26	G	—	1	17248
1664	Orion	i 14	866	2.5	+ 8 22	5.47	F	—	1	16239
..	Eridanus	—	1035	2.7	− 8 47	6.88	B 8	—	1	15161
..	Taurus	—	853	2.9	+19 45	6.55	K	—	1	16044
1671	Eridanus	—	1037	3.6	− 8 47	5.67	B 8	—	1	15161
1672	Orion	h 16	743	3.8	+ 9 42	5.42	A 2	—	1	17248
1676	Orion	15	752	4.0	+15 28	4.86	F	—	1	16094
1679	Eridanus	λ 69	1040	4.4	− 8 53	4.34	B 2	—	1	15161
1683	Camelopardus	—	280	5.9	+73 9	5.76	A	—	1	17253
1684	Orion	—	759	6.0	+15 55	5.36	K	—	1	16094
1689	Auriga	μ 11	1063	6.6	+38 22	4.78	A 3	—	2	16081, 16406
1693	Lepus	—	*1092*	6.7	−11 58	5.91	Mb	—	1	17222
1696	Lepus	ι 3	*1095*	7.7	−11 59	4.54	B 8	38	3	17222, 17274, 17332
1698	Orion	ρ 17	888	8.1	+ 2 45	4.64	K	—	2	17229, 17321
1705	Lepus	κ 4	1092	8.7	−13 3	4.46	B 8	—	1	16190
1706	Auriga	14	922	8.8	+32 35	5.14	A 2	—	1	16277
1712	Auriga	—	980	9.7	+34 12	5.81	Bp	39	1	16327
1719	Camelopardus	15	*874*	10.8	+58 1	6.23	B 3	—	1	15454
1723	Lepus	—	2161	11.4	−27 3	5.04	B 9	—	1	16381
1726	Auriga	16	1000	11.6	+33 17	4.81	K	—	1	16327
..	Camelopardus	—	828	11.8	+58 14	R	A 2	40	1	15454
1728	Auriga	17	1002	11.8	+33 39	6.11	B 9	—	1	16327
1729	Auriga	λ 15	*1248*	12.1	+40 1	4.85	G	—	2	16082, 16765
1732	Auriga	—	1008	12.4	+33 39	5.39	Ap	41	1	16327
1737	Lepus	—	1116	13.1	−13 37	5.66	K	—	1	16394
1738	Auriga	—	1253	13.3	+40 59	5.46	A 3	—	1	16082
1740	Auriga	19	1013	13.4	+33 52	5.16	A 5	42	2	16214, 16327
1749	Auriga	ρ 20	1162	14.7	+41 43	5.12	B 3	—	2	16066, 16082
1751	Camelopardus	16	879	14.9	+57 27	5.25	A	—	1	15454
1756	Lepus	λ 6	1127	15.0	−13 17	4.29	B 1	—	1	16394
1758	Columba	—	2204	15.4	−27 28	5.75	A	—	1	16381
1760	Auriga	—	1268	15.7	+40 56	5.57	A 3	—	2	16066, 16082
1761	Orion	—	857	16.1	+ 3 54	6.41	B 3	—	1	16331
1764	Orion	—	929	16.5	− 0 31	5.65	B 3	—	1	16184
1765	Orion	o 22	930	16.7	− 0 29	4.65	B 3	—	1	16184
..	Orion	—	936	17.5	+ 2 42	R	A	43	1	16331

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1770	Orion	m 23	871	5 17.6	+ 3 27	4.99	B 3	44	1	16331
1774	Taurus	110	765	17.9	+16 36	6.09	A 2	—	1	16736
1780	Taurus	111	920	18.6	+17 17	5.14	G	—	1	16736
1781	Orion	—	936	18.6	− 0 15	5.64	B 3	—	1	16184
1783	Lepus	8	1119	18.9	−14 1	5.17	B 3	—	1	15222
1784	Orion	e 29	1064	19.1	− 7 53	4.21	K	—	1	15149
1786	Orion	—	947	19.4	+ 2 15	6.32	B 3	—	2	15527, 16130
1789	Orion	25	1005	19.6	+ 1 45	4.73	*B 3*	45	1	16130
1792	Lepus	—	1117	20.0	−17 3	5.68	A	—	1	16369
1798	Taurus	113	775	20.3	+16 36	6.18	B 3	—	2	16093, 16736
1808	Taurus	115	928	21.3	+17 53	5.31	B 3	—	1	16736
..	Orion	—	961	21.3	+ 2 51	R	B 9	46	2	15527, 16332
1809	Taurus	—	822	21.5	+15 11	6.13	A 2	—	1	16093
1810	Taurus	o 114	847	21.6	+21 51	4.83	B 3	—	1	16076
..	Orion	—	901	21.6	+ 3 32	R	B 3	47	1	15527
1811	Orion	ϕ 30	*962*	21.6	+ 3 0	4.66	B 2	—	2	15527, 16332
..	Orion	—	903	21.9	+ 3 45	6.61	B 3	—	1	15527
1814	Taurus	116	826	22.0	+15 48	5.51	A	—	1	16093
..	Orion	—	965	22.0	+ 2 16	6.53	K	—	1	15527
..	Lepus	—	1152	22.1	−13 56	7.09	A	—	1	15222
1816	Taurus	117	931	22.2	+17 10	6.04	K 5	—	2	16333, 16736
..	Orion	—	910	22.9	+ 3 27	R	B 5	48	1	15527
1820	Orion	—	1021	22.9	+ 1 13	6.37	B 3	—	1	16130
1821	Taurus	118	839	23.1	+25 4	5.44	A	—	1	16046
..	Taurus	—	862	23.4	+18 18	6.58	A 2	—	2	17247, 17267
1832	Taurus	—	837	24.7	+15 17	5.78	A 2	—	1	16093
1834	Orion	31	913	24.7	− 1 11	4.97	K 5	—	1	15341
..	Orion	—	928	24.9	+ 3 3	R	B 3	49	1	16332
1839	Orion	A 32	939	25.4	+ 5 52	4.32	B 3	—	1	16145
1840	Orion	—	1099	25.5	− 7 31	6.24	B 3	—	1	17283
1842	Orion	n^1 33	948	26.0	+ 3 13	5.52	B 3	—	2	16222, 16332
1845	Taurus	119	875	26.3	+18 32	4.73	Ma	—	5	17247, 17262, 17264,
1847	Taurus	—	794	26.4	+16 59	5.49	B 9	—	1	16333
1855	Orion	υ 36	1106	27.1	− 7 23	4.64	B 3	—	1	17283
1858	Taurus	120	877	27.6	+18 29	5.50	*B 3*	50	5	17247, 17262, 17264,
1861	Orion	—	935	27.7	− 1 40	5.30	B 2	—	1	15341
1863	Orion	—	939	28.1	− 1 48	6.46	B 3	—	1	15341
1868	Orion	—	943	28.5	− 1 14	5.37	B 2	—	1	15341
1872	Orion	n^2 38	964	29.0	+ 3 42	5.32	A 2	—	1	16222
1873	Orion	—	949	29.0	− 1 6	6.18	B 3	—	1	15341
1874	Orion	—	950	29.0	− 1 32	6.22	K	—	1	15341
1875	Taurus	121	954	29.3	+23 58	5.28	B 3	—	1	16097
..	Orion	—	1009	30.1	− 0 48	R	B 3	51	1	15341
1905	Taurus	122	822	31.3	+16 59	5.39	A 5	—	1	16352
1910	Taurus	ζ 123	908	31.7	+21 5	3.00	B 3	—	1	15492

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				h. m.	° ′					
1928	Taurus	125	902	5 33.5	+25 50	5.00	B 3	—	1	15095
1929	Taurus	—	918	33.5	+21 42	6.32	A 2	—	1	15492
1933	Orion	—	1275	33.8	− 6 38	5.92	B 3	—	1	16754
1934	Orion	ω 47	1002	33.9	+ 4 4	4.54	B 3	—	1	16345
1937	Orion	d 49	1142	34.0	− 7 16	4.88	A 3	—	1	16754
1946	Taurus	126	841	35.5	+16 29	4.87	B 3	—	1	16352
1971	Auriga	o 27	1398	38.2	+49 47	5.52	A	—	2	16378, 17363
1995	Auriga	τ 29	1418	42.3	+39 9	4.64	K	—	1	15534
..	Taurus	—	902	42.4	+12 23	6.57	B 5	—	1	15489
2001	Orion	—	1281	42.8	−10 34	6.00	A 3	—	1	15155
..	Orion	—	945	43.2	+11 57	6.90	B 8	—	1	15489
..	Taurus	—	880	43.3	+27 31	7.29	K	—	1	15553
2010	Taurus	134	912	43.9	+12 37	4.92	B 9	—	1	15489
..	Taurus	—	886	44.4	+27 28	7.14	F 5	—	1	15553
2012	Auriga	ν 32	1429	44.6	+39 7	4.18	K	—	1	15534
2013	Auriga	—	888	44.6	+27 56	5.65	K	—	1	15553
2016	Taurus	135	1041	44.7	+14 16	5.71	K	—	1	15536
..	Taurus	—	1047	45.2	+14 25	6.61	B 9	—	1	15536
2025	Auriga	—	1435	45.7	+39 33	6.46	A 2	—	1	15534
2027	Camelopardus	31	920	46.0	+59 52	5.26	A	—	1	15172
2029	Auriga	ξ 30	1027	46.5	+55 41	4.92	A 2	—	1	16354
2031	Orion	55	1187	46.5	− 7 33	5.32	B 3	—	1	15283
2033	Taurus	137	1060	46.7	+14 9	5.57	B 9	52	1	15536
2034	Taurus	136	899	47.0	+27 35	4.54	A	—	1	15553
..	Taurus	—	1074	49.3	+14 12	6.84	K	—	1	15536
..	Auriga	—	914	49.4	+27 42	R	B 2	53	1	15553
..	Camelopardus	—	915	49.8	+60 22	7.01	F	—	1	15172
2067	Orion	—	1036	50.3	+13 56	6.48	G 5	—	1	15536
2084	Taurus	139	1052	51.8	+25 57	4.90	B 2	—	2	15482, 16320
..	Taurus	—	1058	52.7	+25 46	6.61	K	—	2	15482, 16320
2103	Orion	60	1239	53.7	+ 0 32	5.25	A	—	1	16373
2107	Monoceros	1	1284	54.3	− 9 24	6.28	A 5	—	1	15157
2108	Monoceros	2	1285	54.3	− 9 34	5.10	A 5	—	1	15157
2113	Orion	—	1256	55.1	− 3 5	4.68	K	—	1	17258
2124	Orion	μ 61	1064	56.9	+ 9 39	4.19	A 2	—	1	16389
2128	Monoceros	3	1349	57.1	−10 36	4.97	B 8	—	1	16760
2134	Gemini	1	1170	58.0	+23 16	4.30	G 5	—	1	16045
2148	Lepus	17	1349	6 0.5	−16 29	5.04	A	—	1	15511
2154	Monoceros	—	1362	1.6	− 4 11	5.37	B 3	—	1	15184
2155	Lepus	θ 18	1331	1.6	−14 56	4.67	A	54	1	16240
2163	Lepus	—	3431	2.3	−23 6	5.50	A 2	—	2	16755, 16769
2166	Lepus	—	1353	2.8	−21 48	6.12	Mb	—	1	16755
2180	Lepus	—	1327	4.8	−22 24	5.46	A	—	1	16755
..	Auriga	—	1036	4.9	+28 56	7.63	B 8	—	1	15554
2186	Lepus	—	1330	5.6	−22 45	5.71	F 5	—	1	16755

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2191	Orion	—	1151	6 5.8	+13 40	5.86	A 2	—	1	16396
..	Camelopardus	—	368	6.0	+69 30	7.56	A	—	1	15458
2198	Orion	f¹ 69	1035	6.2	+16 9	4.92	B 3	—	3	16191, 16265, 16411
2199	Orion	ξ 70	1187	6.3	+14 14	4.35	B 3	—	1	16396
2205	Monoceros	—	1446	7.0	− 6 31	5.09	B 3	—	1	16407
2209	Camelopardus	—	371	7.8	+69 21	4.73	A	—	1	15458
..	Camelopardus	—	373	8.5	+69 36	6.72	A 5	—	1	15458
..	Camelopardus	—	436	8.8	+68 43	6.93	G	—	1	15458
2219	Auriga	κ 44	1154	9.0	+29 33	4.45	K	—	1	15554
2222	Orion	—	1173	9.4	+13 53	5.81	B 2	—	1	16396
2223	Orion	f² 72	1060	9.6	+16 11	5.28	B 9	—	2	16191, 16265
2224	Monoceros	—	1421	9.6	+ 4 32	5.76	A	—	1	16761
..	Auriga	—	1172	10.0	+30 9	6.78	B 9	—	1	15554
2227	Monoceros	γ 5	1469	10.0	− 6 14	4.09	K	—	1	16407
..	Auriga	—	1062	10.1	+28 54	7.31	A 2 p	55	1	15554
2229	Orion	73	1081	10.1	+12 35	5.36	B 9	—	1	16737
2234	Monoceros	—	1431	10.5	− 4 53	6.00	A 2	—	1	16761
2238	Lynx	2	959	10.8	+59 3	4.42	A	—	2	15113, 16465
2241	Orion	k 74	1084	10.8	+12 18	5.11	F 5	—	1	16737
2244	Canis Major	—	1411	11.1	−13 41	4.99	B 9	—	4	16752, 17223, 17269,
..	Auriga	—	1165	11.4	+29 15	R	A	56	1	15554
2247	Orion	l 75	1173	11.6	+ 9 59	5.29	A 2	—	1	17249
2249	Canis Major	—	1415	11.7	−16 35	5.88	B 5	—	1	16773
..	Auriga	—	1170	12.2	+29 49	6.86	A	—	1	15554
2257	Lynx	4	964	13.2	+59 24	6.02	A 2	—	1	16465
2260	Canis Major	—	1426	13.2	−16 46	5.28	K	—	1	16773
2266	Canis Major	—	1407	13.9	−19 56	5.31	B 3	—	1	17240
2270	Monoceros	—	1386	14.4	− 8 32	6.07	B 9	—	1	16757
2271	Canis Major	—	1355	14.7	−20 53	5.66	B 5	—	1	17240
2273	Monoceros	7	1373	14.9	− 7 47	5.13	B 3	—	1	16757
..	Monoceros	—	1378	15.3	− 7 49	6.91	A 5	—	1	16757
..	Canis Major	—	1459	16.5	−11 47	6.65	K 5	—	1	15069
2284	Canis Major	—	1460	16.8	−11 44	5.49	*B 2*	57	1	15069
2292	Monoceros	—	1221	18.0	+ 3 49	6.25	B 3	—	1	16503
2298	Monoceros	18	1236	18.5	+ 4 39	4.48	A 5	—	1	16503
2299	Monoceros			18.5	+ 4 39	6.54				
2305	Canis Major	3	1478	19.5	−11 28	5.39	K	—	1	15069
2325	Monoceros	—	1510	21.6	− 4 32	6.07	B 3	—	1	15162
2330	Gemini	16	1428	22.0	+20 34	6.11	A	—	1	16514
..	Monoceros	—	1514	22.0	− 4 18	6.88	B 5	—	1	15162
2332	Auriga	RT 48	1238	22.1	+30 34	var.	G	—	1	16515
2343	Gemini	ν 18	1441	23.0	+20 17	4.06	B 5	—	1	16514
2344	Monoceros	10	1526	23.0	− 4 42	4.98	B 3	—	1	15162
2385	Monoceros	13	1337	27.5	+ 7 24	4.50	Ap	58	1	16176
2395	Monoceros	—	1274	28.6	− 1 9	5.02	B 3	—	1	15498

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2398	Auriga	49	1168	6 29.0	+28 6	5.05	A	—	1	16692
2404	Monoceros	—	1357	29.4	+ 7 39	6.42	A	—	1	16176
2414	Canis Major	ξ^2 5	1458	30.9	−22 53	4.54	A	—	1	16337
2418	Monoceros	—	1710	31.6	− 5 8	5.48	B 9	—	1	15273
2420	Auriga	ψ^3 52	*1665*	31.9	+39 59	5.28	B 8	—	1	16185
2429	Canis Major	ν^2 7	1502	32.3	−19 10	4.14	K	—	1	16742
2443	Canis Major	ν^3 8	1492	33.5	−18 9	4.65	K	—	2	16770, 17286
2450	Canis Major	—	1525	34.7	−14 3	4.97	K	—	1	17291
2466	Gemini	26	1357	36.6	+17 45	5.14	A	—	1	15512
2470	Lynx	12	1015	37.4	+59 33	4.89	A 2	—	1	15593
2490	Camelopardus	42	454	40.5	+67 41	5.04	B 3	—	2	15459, 16295
2498	Canis Major	—	1573	41.4	−14 42	5.30	A 2	—	1	15223
2502	Monoceros	—	*1644*	41.9	−10 1	5.54	A	—	1	15293
..	Canis Major	—	1579	41.9	−14 26	6.54	A 3	—	1	15223
2504	Canis Major	11	1584	42.3	−14 20	5.19	B 8	—	1	15223
2506	Monoceros	18	1397	42.6	+ 2 31	4.70	K	—	1	15505
2511	Camelopardus	43	394	42.9	+69 0	5.13	B 5	—	1	16314
2519	Gemini	33	1298	44.1	+16 19	5.69	B 8	—	1	15535
2522	Canis Major	—	*1599*	44.4	−15 2	5.29	B 5	—	2	15223, 15256
2529	Gemini	d 36	1405	45.6	+21 53	5.22	A	—	1	15483
2532	Auriga	—	*1359*	45.8	+44 58	6.10	A 5	—	1	15570
2544	Canis Major	—	3691	46.5	−25 40	6.24	B 3	—	1	15528
2556	Auriga	—	*1202*	47.9	+45 57	6.48	K	—	1	15570
2564	Gemini	e 38	1462	49.0	+13 18	4.70	F	—	1	15537
2574	Canis Major	θ 14	1681	49.5	−11 55	4.25	K 2	—	1	15323
2585	Auriga	ψ^{10}16	1367	50.4	+45 14	4.80	A 2	—	1	15570
2589	Monoceros	—	1335	50.9	+10 5	5.88	B 8	—	1	15278
2596	Canis Major	ι 20	1661	51.7	−16 55	4.39	B 5	—	1	16401
2616	Canis Major	—	3864	54.5	−25 17	5.66	B 3	—	1	15519
2640	Canis Major	—	3911	57.0	−25 4	5.80	B 3	—	1	15519
2648	Monoceros	19	1788	57.9	− 4 6	4.89	B 3	—	1	15185
2655	Monoceros	—	1943	59.1	− 5 10	5.88	K	—	1	15185
2678	Canis Major	—	1790	7 2.0	−11 8	5.28	B 3	—	1	16774
2684	Gemini	45	1397	2.6	+16 5	5.58	K	—	1	16410
2697	Gemini	τ 46	1439	4.8	+30 25	4.48	K	—	2	16771, 17361
2699	Canis Major	—	1802	5.0	−16 4	6.03	B 3	—	1	16704
2704	Canis Major	—	4120	5.6	−25 4	5.76	B 3	—	1	16756
2717	Gemini	51	1417	7.6	+16 20	5.31	Mb	—	1	16410
2718	Canis Major	26	4191	8.1	−25 46	5.86	B 8	—	1	16756
2739	Monoceros	—	1933	9.7	−10 8	5.99	B 1	—	1	15284
2751	Lynx	—	1612	10.9	+49 38	4.80	A 2	—	1	16318
..	Canis Major	—	*1732*	11.4	−16 3	6.79	B 3	—	1	15499
2758	Canis Major	—	1734	11.7	−15 24	5.39	A 2	—	1	15499
2783	Lynx	19	1192	14.7	+55 28	6.53	R	59	1	16418
2784	Lynx			14.7	+55 28	5.61	B 8			

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
				h. m.	° ′					
2785	Canis Major	—	1813	7 14.7	−19 6	6.18	F	—	1	15330
2788	Canis Major	R	1898	14.9	−16 12	var.	F	60	1	15499
..	Monoceros	—	2080	16.6	− 5 43	6.59	B 3	—	1	15163
2801	Monoceros	—	1915	16.9	+ 0 22	6.00	B 8	—	1	16474
2811	Monoceros	—	2089	17.5	− 5 48	5.83	F	—	1	15163
2812	Canis Major	—	1806	17.8	−18 50	4.87	B 8	—	1	15330
2818	Lynx	21	1623	19.2	+49 25	4.45	A	—	1	16429
..	Gemini	—	1798	19.7	+20 43	6.89	A 5	—	1	16458
2825	Canis Major	—	*1810*	20.1	−16 0	5.20	B 8	—	1	16390
2826	Canis Major	—	1855	20.1	−22 43	6.10	B 9	—	1	15655
2828	Canis Minor	ϵ 2	1643	20.2	+ 9 28	5.07	G 5	—	1	16481
2832	Canis Major	—	2001	20.6	−13 33	5.82	F	—	1	17259
2833	Monoceros	—	2112	20.9	− 5 35	6.08	G	—	1	15163
2835	Gemini	—	1596	21.0	+21 45	6.45	F 5	—	1	16458
2837	Gemini	61	1805	21.1	+20 27	5.88	F	—	1	16458
2844	Lynx	—	1538	21.5	+48 24	5.57	B 9 p	61	2	16417, 16466
2845	Canis Minor	β 3	1774	21.7	+ 8 29	3.09	B 8	—	1	16481
2846	Gemini	63	1602	21.8	+21 39	5.27	F 5	—	1	16458
2849	Lynx	22	1630	22.3	+49 53	5.36	F 5	—	1	16429
2851	Canis Minor	η 5	1729	22.6	+ 7 9	5.34	A 5	—	1	16467
2854	Canis Minor	γ 4	1660	22.8	+ 9 8	4.60	K	—	1	16481
2855	Canis Major	—	1874	22.8	−22 53	5.48	*B 2*	62	2	15655, 17314
2860	Puppis	—	1878	23.5	−22 39	5.69	B 8	—	1	15655
2864	Canis Minor	6	1567	24.2	+12 13	4.85	K	—	1	16792
..	Canis Minor	—	1598	25.6	+11 25	6.58	K	—	1	16792
2874	Puppis	—	1897	25.6	−22 49	4.80	A 3	63	2	15655, 17314
2880	Canis Minor	δ^1 7	1691	26.9	+ 2 8	5.26	A 5	—	1	16510
2886	Gemini	68	1510	27.9	+16 3	5.07	A 2	—	1	16508
2887	Canis Minor	δ^2 8	1715	27.9	+ 3 30	5.66	A 5	—	1	16494
2899	Puppis	—	1944	28.9	−19 12	5.76	K	—	2	15342, 16743
2901	Canis Minor	δ^3 9	1719	29.0	+ 3 35	5.82	A	—	1	16494
..	Puppis	—	1950	29.9	−19 55	6.81	B 3	—	1	15342
2922	Puppis	p	4566	31.4	−28 9	4.55	B 8	—	1	16422
..	Lynx	—	1452	31.7	+50 44	6.84	F 5	—	1	15460
2924	Gemini	70	1662	32.0	+35 17	5.61	G 5	—	1	16459
2927	Monoceros	25	1979	32.3	− 3 53	5.17	F 5	—	1	15186
2928	Puppis	—	1967	32.3	−19 29	5.66	B 3	—	1	15342
2930	Gemini	*o* 71	1649	32.6	+34 49	4.92	F	—	1	16459
..	Monoceros	—	2207	33.0	− 6 44	6.72	B 9	—	1	15257, 15294
2944	Puppis	m	4828	34.1	−25 8	4.64	B 8	—	1	17299
2946	Lynx	24	*1103*	34.5	+58 57	4.96	A 2	—	1	16522
2950	Canis Minor	—	1742	34.8	+ 5 28	5.81	A	—	1	15490
2962	Gemini	—	1657	36.2	+34 14	6.00	F	—	1	16459
2969	Lynx	*50*	1460	36.5	+50 40	5.28	A	—	1	15460
2997	Camelopard.	—	238	39.9	+80 31	6.47	G 5	—	1	17257

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
				h. m.	° ′					
3008	Canis Minor	11	1670	7 40.8	+11 0	5.30	A	—	1	15338
3059	Canis Minor	ζ 13	1808	46.5	+ 2 1	5.11	B 8	—	1	17241, 17242
3067	Gemini	φ 83	1499	47.4	+27 1	4.99	A 2	—	1	15484
3082	Camelopard.	—	265	49.1	+79 45	5.33	A	—	3	17251, 17257, 17318
3086	Gemini	85	1946	49.8	+20 9	5.36	A	—	2	16273, 17254
3131	Puppis	—	2118	55.4	−18 7	4.64	A 2	—	1	15611
3136	Canis Minor	—	1857	55.9	+ 5 9	5.66	A	—	1	16445
3141	Monoceros	28	*1882*	56.2	− 1 7	4.88	K	—	1	16766
3145	Canis Minor	*13*	1854	57.1	+ 2 36	4.52	K	—	1	16767
..	Cancer	—	*1817*	58.5	+13 58	R	K	64	1	15538
3163	Cancer	8	1831	59.5	+13 24	5.11	A	—	1	15538
..	Cancer	—	1832	8 0.0	+13 48	R	K	65	1	15538
3165	Puppis	ζ	3939	0.1	−39 43	2.27	Od	66	2	15605, 15618
3173	Lynx	27	1391	0.9	+51 48	4.87	A 2	—	2	15477, 16313
3183	Puppis	—	2395	2.9	−20 16	5.25	A 3	—	1	15326
3184	Cancer	12	*1831*	3.1	+13 56	6.26	F 5	—	1	15538
3188	Monoceros	ζ 29	2450	3.6	− 2 41	4.41	G	—	1	15331
3194	Puppis	—	2280	4.9	−15 57	5.54	B 3	—	1	15668
3202	Puppis	18	2420	6.1	−13 30	5.64	G	—	1	15313
3208	Cancer			6.5	+17 56	5.56		—		
3209	Cancer	ζ 16	*1867*	6.5	+17 57	6.26	G	—	2	16804, 17200
3210	Cancer			6.5	+17 57	6.02		—		
3211	Puppis	*19*	2385	6.6	−12 37	4.68	K	—	1	15313
3215	Gemini	*φ 15*	*1664*	6.9	+29 57	5.59	Ap	14	1	15173
3228	Cancer	—	*1882*	8.5	+17 58	6.43	F	—	2	16804, 17200
3275	Lynx	31	1815	16.0	+43 31	4.43	K 5	—	1	16844
3367	Pyxis	—	2438	27.0	−19 14	5.38	A	—	1	16402
3398	Hydra	3	2540	30.6	− 7 38	5.61	A 2 p	67	1	16446
3402	Pyxis	—	6225	31.2	−26 30	5.88	A 2	—	3	15581, 15619, 15621
3418	Hydra	σ 5	2026	33.5	+ 3 42	4.54	K	—	2	17266, 17297
3420	Pyxis	η	6356	33.6	−25 54	5.20	A	—	7	15520, 15562, 15572,
..	Cancer	—	2178	35.5	+20 50	6.60	A 2	—	1	15648
3441	Hydra	9	2554	37.1	−15 35	4.98	K	—	1	16811
3449	Cancer	γ 43	1895	37.5	+21 50	4.73	A	—	1	15648
3459	Hydra	F *31*	2708	38.7	− 6 52	4.70	G	68	1	15352
3461	Cancer	δ 47	2027	39.0	+18 31	4.17	K	—	2	15696, 16338
3465	Cancer	b 49	1864	39.4	+10 27	5.58	Ap	69	1	16409
..	Cancer	—	2095	39.8	+19 11	6.83	A 5	—	1	16338
..	Cancer	—	*1909*	40.6	+20 58	6.92	A 2	—	1	15648
3484	Hydra	D 12	2673	41.7	−13 11	4.44	G 5	—	1	15500
3486	Hydra	—	2130	42.2	− 1 31	5.22	A	—	1	17307
3500	Hydra	14	*2699*	44.3	− 3 4	5.19	B 9	—	1	15656
3519	Cancer	σ^1 51	*1770*	46.4	+32 51	5.75	A 3	—	1	16482
3523	Hydra	15	2743	46.6	− 6 49	5.60	A 2	—	1	16440
3552	Hydra	—	R	50.6	− 7 36	6.91	R	—	1	15563

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				h. m.	° ′					
3553	Hydra	17	2661	8 50.6	− 7 36	6.67	A 3	—	1	15563
3555	Cancer	σ^2 59	1785	50.8	+33 18	5.48	A 3	—	3	15598, 16482, 16495
..	Cancer	—	1811	51.2	+32 50	6.86	A 5	—	1	15598
3556	Pyxis	δ	6072	51.3	−27 18	4.87	A 2	—	2	17322, 17333
3561	Cancer	o 62	1945	51.7	+15 43	5.16	A 3	—	1	15691
3565	Cancer	63	*1864*	52.0	+15 58	5.64	A 5	—	1	15691
3572	Cancer	α 65	1948	53.0	+12 15	4.27	A 3	—	1	15491
3575	Cancer	σ^3 64	1821	53.4	+32 49	5.64	G 5	—	3	15598, 16482, 16495
3592	Ursa Major	—	1272	56.7	+54 41	5.68	A 2	—	1	15555
3595	Cancer	ν 69	*2029*	56.9	+24 51	5.45	A	—	1	15174
..	Ursa Major	—	2193	57.4	+39 8	6.70	Mb	—	2	16836, 17279
3612	Ursa Major	—	*2200*	9 0.2	+38 51	4.71	G 5	—	2	16836, 17279
..	Ursa Major	—	1999	0.5	+38 40	6.59	F	—	2	16836, 17279
3619	Ursa Major	f 15	1365	1.9	+52 0	4.54	Comp.	70	1	15521
3623	Cancer	κ 76	1984	2.4	+11 4	5.14	B 8	—	1	15539
3630	Hydra	19	2588	3.8	− 8 11	5.50	B 8	—	1	15258
3641	Hydra	20	2593	4.7	− 8 23	5.66	G 5	—	1	15258
3652	Lynx	36	1893	7.3	+43 38	5.30	B 8	—	1	15607
3662	Ursa Major	e 18	1285	9.0	+54 26	4.89	A 5	—	3	15485, 16349, 16450
3683	Hydra	24	2623	11.8	− 8 19	5.54	B 9	—	2	15314, 17338
3702	Hydra	—	2804	14.7	−10 53	6.53	A 2	—	1	15622
3706	Hydra	26	2609	15.0	−11 33	4.94	G 5	—	1	15622
3709	Hydra	P 27	*2643*	15.6	− 9 8	4.97	G 5	—	2	17300, 17330
3731	Leo	κ 1	1939	18.8	+26 37	4.61	K	—	3	17245, 17280, 17331
3733	Pyxis	λ	7196	18.9	−28 24	4.90	K	—	2	16839, 17293
3759	Hydra	τ^1 31	2901	24.1	− 2 19	4.78	F 5	—	1	15688
3760	Hydra	—	2268	24.4	− 1 46	6.04	A 3	—	1	15688
3769	Leo Minor	8	2015	25.5	+35 33	5.52	K 5	—	1	16339
3771	Ursa Major	d 24	565	25.6	+70 16	4.57	G	—	2	15573, 15715
3773	Leo	λ 4	2107	26.1	+23 25	4.48	K 5	—	1	16837
3787	Hydra	τ^2 32	2211	26.9	− 0 44	4.50	A 3	—	1	15501
3791	Leo Minor	9	*1998*	27.4	+36 56	6.41	K 2	—	1	16339
3800	Leo Minor	10	*2004*	28.1	+36 51	4.62	G 5	—	3	15642, 16339, 16361
3809	Lynx	—	2224	28.8	+40 4	4.99	K	—	1	16817
3815	Leo Minor	11	1979	29.7	+36 16	5.48	K	—	3	15642, 16339, 16361
3829	Lynx	42	2232	32.2	+40 42	5.24	A 5	—	1	15679
3834	Sextans	2	2207	33.2	+ 5 6	4.78	K	—	1	16851
3838	Ursa Major	—	531	33.7	+69 42	5.74	K	—	1	15715
3849	Hydra	κ 38	2917	35.5	−13 53	4.96	B 3	—	1	15663
3851	Lynx	43	2241	35.8	+40 13	5.50	K	—	1	15679
3858	Hydra	I	*2684*	36.7	−23 8	4.74	*B 2*	71	1	15613
..	Leo	—	1898	37.0	+30 35	6.68	A 5	—	2	15175, 16397
3861	Leo	f 15	1901	37.7	+30 27	5.73	A 2	—	3	15175, 16328, 16397
3862	Hydra	—	8646	37.7	−23 28	5.04	G	—	1	15613
3871	Antlia	θ	6881	39.7	−27 19	4.98	F 5	—	2	15522, 15730

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				h. m.	° ′					
3894	Ursa Major	ϕ 30	1331	9 45.4	+54 32	4.54	A 2	—	1	15686
3903	Hydra	υ^1 39	2963	46.7	−14 23	4.29	K	—	2	17308, 17336
3909	Sextans	γ 8	2909	47.5	− 7 38	5.16	A 2	—	1	15315
3917	Ursa Major	31	1698	49.2	+50 17	5.34	A 2	—	1	15585
3919	Hydra	—	7585	49.6	−25 28	5.00	K	—	1	16831
..	Ursa Major	—	1702	52.3	+50 37	6.59	A	—	1	15585
3937	Leo	ν 27	*2183*	52.8	+12 55	5.18	A	—	1	15685
3970	Hydra	υ^2 40	3073	10 0.3	−12 35	4.72	B 8	—	2	17324, 17334
3974	Leo Minor	21	2110	1.6	+35 44	4.47	A 5	—	3	15689, 16439, 16472
3980	Leo	A 31	2112	2.6	+10 30	4.58	K 2	—	2	16768, 16832
3981	Sextans	15	2615	2.9	+ 0 7	4.50	A	—	1	15564
3991	Hydra	—	3101	5.2	−12 19	5.42	F	—	1	15513
3994	Hydra	λ 41	2820	5.7	−11 52	3.83	K	—	1	15513
4024	Leo Minor	23	*1981*	10.6	+29 48	5.35	A	—	1	15670
4026	Ursa Major	32	767	10.8	+65 36	5.74	A 3	—	1	15599
4072	Ursa Major	—	664	16.9	+66 4	4.92	A	—	1	15599
4075	Leo Minor	27	2120	17.4	+34 25	5.83	A 3	—	1	15623
4081	Leo Minor	28	2123	18.4	+34 13	5.78	K	—	1	15623
4090	Leo Minor	30	2128	20.2	+34 18	4.83	F	—	1	15623
4100	Leo Minor	31	2080	22.1	+37 13	4.41	K	—	1	15669
4106	Ursa Major	35	671	22.8	+66 8	6.39	K	—	1	15599
4109	Sextans	—	2929	23.7	− 3 14	6.11	A	—	1	15620
4112	Ursa Major	36	1459	24.2	+56 30	4.84	F 5	—	1	17242
4116	Sextans	δ 29	*2395*	24.4	− 2 14	5.24	B 9	—	1	15620
..	Leo Minor	—	*2088*	24.8	+36 46	6.77	F	—	1	15669
4119	Sextans	30	*2663*	25.2	− 0 8	4.95	B 5	—	1	15502
4123	Hydra	—	*3181*	26.1	−13 5	5.51	B 9	72	2	15259, 15303
4132	Ursa Major	—	*2101*	27.5	+40 57	4.84	A 5	—	1	15608
4137	Leo Minor	34	2154	27.8	+35 31	5.58	A 2	—	2	15649, 15709
..	Hydra	—	3194	28.3	−12 54	6.85	K	—	2	15303, 15353
..	Hydra	—	3205	30.4	−12 21	6.78	A 5	—	1	15303
..	Hydra	—	3165	30.8	−13 26	R	F 5	73	2	15353, 15437
4163	Hydra	U	3218	32.6	−12 52	var.	N	74	15	15248, 15279, 15353,
4166	Leo Minor	37	2061	33.1	+32 30	4.77	G	—	2	16786, 16787
..	Hydra	—	3228	34.7	−12 28	7.27	A 2	—	1	15437
4191	Ursa Major	—	1657	37.7	+46 44	5.28	F	—	1	15556
4192	Leo Minor	41	2253	38.0	+23 43	5.05	A 2	—	1	15176
..	Ursa Major	—	1658	38.2	+46 44	R	G 5	75	1	15556
..	Ursa Major	—	1659	39.5	+46 5	6.87	B 8	—	1	15556
4203	Leo Minor	42	2180	40.3	+31 13	5.37	B 9	—	5	15609, 15705, 16322,
..	Leo	—	2208	43.9	+10 42	R	A	76	1	15540
4227	Leo	1 53	2283	44.0	+11 4	5.27	A	—	1	15540
4248	Ursa Major	ω 45	2058	48.2	+43 43	4.84	A	—	1	15600
4254	Leo Minor	48	2147	49.3	+26 1	6.18	F	77	1	15624
4259	Leo	54	2314	50.2	+25 17	4.51	A	—	1	15624

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				h. m.	° ′					
4260	Leo	R	R	10 50.2	+25 17	6.30	R	—	1	15624
4270	Leo Minor	50	2152	51.2	+26 2	6.40	K	—	1	15624
4288	Ursa Major	49	2400	55.2	+39 45	5.12	F	—	1	15586
4294	Leo	c 59	2384	55.6	+ 6 38	5.08	A 5	—	2	15576, 15697
4299	Leo	p^2 61	2471	56.8	− 1 57	4.97	Ma	—	3	16781, 16795, 16806
..	Ursa Major	—	2413	58.7	+39 24	7.22	A 3	—	1	15586
4309	Ursa Major	51	*2414*	59.0	+38 47	6.08	A 2	—	1	15586
4310	Leo	χ 63	*2455*	59.9	+ 7 53	4.66	F	—	3	15565, 16329, 16379
4356	Leo	p^5 69	2761	11 8.7	+ 0 29	5.40	A	—	1	15523
..	Leo	—	3312	11.1	− 2 55	7.28	B 3	—	1	15343
..	Leo	—	3085	11.5	− 3 25	6.80	A 3	—	1	15343
4368	Leo	ϕ 74	*3315*	11.6	− 3 6	4.58	A 5	—	1	15343
4380	Ursa Major	55	2225	13.7	+38 44	4.78	A 2	—	3	15479, 15682, 15721
4414	Leo	83	2502	21.7	+ 3 33	6.19	K	—	1	15545
4418	Leo	τ 84	2504	22.8	+ 3 24	5.18	K	—	2	15545, 16840
4422	Ursa Major	57	*2433*	23.7	+39 54	5.26	A 2	—	1	15495
..	Ursa Major	—	2450	26.8	+39 28	R	A 5	78	1	15495
..	Ursa Major	—	2452	27.5	+39 25	R	A 3	79	1	15495
..	Ursa Major	—	2453	27.8	+39 25	R	K	80	1	15495
4456	Leo	90	2374	29.5	+17 21	5.76	B 3	—	1	15601
4468	Crater	θ 21	*3202*	31.6	− 9 15	4.81	B 9	—	1	15692
4471	Leo	υ 91	2458	31.8	− 0 16	4.47	K	—	1	15388
4514	Crater	ζ 27	3460	39.7	−17 48	4.90	G 5	—	1	15503
4515	Virgo	ξ 2	*2545*	40.1	+ 8 49	5.06	A 3	—	2	15541, 16483
..	Leo	—	2650	42.4	+20 36	R	F 5	81	1	15557
4527	Leo	93	*2358*	42.8	+20 46	4.54	F 8	—	1	15557
4528	Virgo	A^1 4	*2549*	42.8	+ 8 48	5.22	A	—	2	15541, 16483
..	Leo	—	2307	47.6	+16 0	6.73	A 2	—	1	15587
4564	Leo	o 95	2319	50.5	+16 12	5.49	A 2	—	1	15587
4567	Crater	η 30	3358	50.9	−16 35	5.16	A	—	1	15514
4585	Virgo	b 7	2556	54.8	+ 4 13	5.24	A	—	1	15577
4589	Virgo	π 8	2502	55.7	+ 7 10	4.57	A 3	—	2	15558, 16405
4590	Corvus	31	*3295*	55.8	−19 6	5.28	B 3	—	4	15427, 16380, 16431,
4594	Ursa Major	67	2179	57.1	+43 36	5.07	A 3	—	1	14852
4627	Draco	—	469	12 4.9	+75 13	6.36	F 5	—	1	16442
4663	Coma Beren.	6	2436	10.9	+15 28	5.08	A 2	—	2	15665, 16460
4676	Coma Beren.	—	2442	12.7	+15 42	6.53	K	—	2	15665, 16460
4687	Draco	—	470	14.4	+75 43	5.41	A 2	—	2	14862, 16442
4691	Corvus	—	3511	15.0	−21 37	6.11	G 5	—	1	15515
4696	Corvus	ζ 5	3514	15.4	−21 39	5.30	B 8	—	1	15515
4697	Coma Beren.	11	2592	15.6	+18 21	4.91	K	—	1	16796
..	Coma Beren.	—	2469	17.0	+17 17	6.56	A 2 p	82	1	16796
4707	Coma Beren.	12	2337	17.5	+26 24	4.78	Comp.	83	1	14867
..	Coma Beren.	—	2343	19.1	+26 23	6.65	A 3	—	2	14823, 14824
4716	Canes Venat.	5	1626	19.2	+52 7	4.97	K	—	1	16797

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4717	Coma Beren.	13	2344	12 19.3	+26 39	5.10	A 2	—	3	14823, 14824, 14867
4719	Coma Beren.	—	2345	19.5	+26 9	6.31	A 5	—	2	14823, 14824
4733	Coma Beren.	14	*2115*	21.4	+27 49	5.15	A 5	—	2	16788, 16849
4737	Coma Beren.	15	*2288*	22.0	+28 49	4.56	K	—	2	16788, 16849
4738	Coma Beren.	16	2134	22.0	+27 22	5.04	A 2	—	2	14823, 14824
..	Coma Beren.	—	2352	22.7	+26 27	6.57	A 3	—	2	14823, 14824
4750	Coma Beren.	—	*2138*	23.7	+26 47	6.48	A 3	—	2	14823, 14824
4751	Coma Beren.	—	2353	23.8	+26 27	6.69	A 3	—	2	14823, 14824
4752	Coma Beren.	17	2354	23.9	+26 28	5.38	Ap	84	3	14822, 14823, 14824
4753	Coma Beren.	18	2464	24.4	+24 39	5.49	F 5	—	4	15480, 15698, 17260,
4760	Ursa Major	74	*1444*	25.3	+58 57	5.44	A 5	—	3	14895, 16386, 16432
4762	Ursa Major	75	1446	25.4	+59 19	6.22	K	—	2	14895, 16432
4766	Coma Beren.	21	2517	26.0	+25 7	5.39	A 3 p	85	4	15480, 15698, 17260,
4778	Corvus	—	*3416*	28.1	−19 14	6.15	A 5	—	4	15448, 15726, 16424,
4780	Coma Beren.	22	*2523*	28.6	+24 50	6.14	A 2	—	2	15480, 15698
4781	Virgo	q 21	3372	28.6	− 8 54	5.41	A	—	1	15345
4785	Canes Venat.	8	*2321*	29.0	+41 54	4.32	G	86	1	15379
4789	Coma Beren.	23	2475	29.9	+23 11	4.78	A	—	2	15496, 16516
4791	Coma Beren.	24	*2584*	30.1	+18 56	6.72	A 3	87	1	16777
4792	Coma Beren.			30.1	+18 56	5.18	K			
4793	Coma Beren.	—	2490	30.2	+22 26	6.06	K	—	2	15496, 16516
4797	Corvus	—	3521	30.7	−19 58	6.12	A 5	—	1	15448
4812	Coma Beren.	—	2479	34.0	+23 12	6.47	K	—	1	15496
4813	Virgo	χ 26	3452	34.1	− 7 27	4.78	K	—	1	16803
4821	Corvus	—	3676	36.1	−12 28	6.08	F 5	—	1	15438
4822	Corvus			36.1	−12 28	5.98				
4824	Virgo	27	*2484*	36.6	+10 58	6.33	A 5	—	2	15524, 15542
4828	Virgo	ρ 30	*2485*	36.8	+10 47	4.95	A	—	2	15524, 15542
..	Virgo	—	2459	36.8	+10 25	R	F	88	2	15524, 15542
..	Corvus	—	3586	38.3	−13 18	6.86	A	—	1	15438
..	Corvus	—	3685	38.7	−12 35	7.00	A 5	—	1	15438
4849	Virgo	33	2468	41.3	+10 6	5.86	K	—	1	15524
4892	Camelopardus	—	*289*	48.3	+83 58	5.81	A	89	1	15664
4893	Camelopardus	—	*290*	48.4	+83 57	5.28	A 2			
4902	Virgo	ψ 40	*3449*	49.2	− 9 0	4.91	Mb	—	1	16807
4916	Draco	8	*778*	51.5	+65 59	5.27	F	—	3	15546, 16419, 16463
..	Draco	—	913	54.4	+65 27	6.56	K	—	2	15546, 16419
4928	Draco	9	773	56.2	+67 8	5.50	K	—	1	16463
4943	Canes Venat.	14	2337	13 1.1	+36 20	5.11	B 9	—	3	15650, 16443, 16451
4954	Coma Beren.	41	2185	2.4	+28 10	4.90	K	—	1	16782
4956	Coma Beren.	—	2187	3.2	+28 4	6.40	K	—	1	16782
4962	Coma Beren.	—	2595	4.8	+17 22	6.18	K	—	1	15625
4963	Virgo	θ 51	*3430*	4.8	− 5 0	4.44	A	—	1	15428
4968	Coma Beren.	42	2697	5.1	+18 4	5.22	F 5	—	1	15625
4969	Coma Beren.			5.1	+18 4					

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..	Virgo	—	3432	13 5.5	− 4 24	R	A 5	90	1	15428
4997	Canes Venat.	—	2633	9.2	+40 41	5.05	K	—	1	15595
5004	Canes Venat.	19	2374	11.0	+41 23	5.68	A 5	—	1	15595
5017	Canes Venat.	20	2380	13.1	+41 6	4.66	F	—	2	15595, 16497
5019	Virgo	61	3813	13.2	−17 45	4.80	G 5	—	1	16850
5023	Canes Venat.	21	1994	14.0	+50 12	5.13	A	—	2	15481, 16461
5032	Canes Venat.	23	2647	15.8	+40 41	5.69	K	—	1	15595
5054	Ursa Major	ζ 79	1598	19.9	+55 27	2.31	Ap	91	16	15447, 15457, 15461,
5055	Ursa Major	ζ —		19.9	+55 26	3.85	A			
5062	Ursa Major	g 80	1603	21.2	+55 30	4.02	A 5	—	1	15588
5068	Virgo	69	3668	22.1	−15 27	4.89	K	—	1	16821
5080	Hydra	R	3601	24.2	−22 46	var.	Md	92	5	15385, 15396, 15666,
5085	Ursa Major	—	1461	24.8	+60 28	5.41	A	—	2	16420, 16425
5088	Virgo	72	3706	25.2	− 5 57	6.07	A 5	—	1	16812
5095	Virgo	l 74	3714	26.8	− 5 45	4.83	Ma	—	1	16812
..	Canes Venat.	—	2421	27.9	+37 19	6.90	G 5	—	1	16809
5105	Virgo	o 78	2764	29.1	+ 4 10	4.93	A 2 p	93	3	15531, 16340, 16476
5110	Canes Venat.	—	2426	30.3	+37 42	4.96	F	—	1	16809
5111	Virgo	80	3515	30.3	− 4 53	5.75	K	—	1	16812
5112	Canes Venat.	24	2227	30.4	+49 32	4.63	A 3	—	1	15547
5120	Hydra	—	9900	31.3	−25 59	5.49	A 2	94	1	15463
5126	Canes Venat.	—	2014	32.5	+50 0	6.60	K	—	1	15547
5127	Canes Venat.	25	*2433*	33.0	+36 48	4.92	F	—	1	15658
5142	Ursa Major	82	1640	35.7	+53 26	5.28	A 2	—	1	15487
5144	Bootes	1	2858	35.9	+20 28	5.65	A 2	—	1	15722
5154	Ursa Major	83	1625	36.9	+55 12	4.75	Ma	—	2	14865, 16822
5169	Ursa Major	—	1733	40.1	+52 32	5.82	A	—	1	15487
5185	Bootes	τ 4	*2782*	42.5	+17 57	4.51	F 5	—	1	15543
5187	Ursa Major	84	*1634*	42.9	+54 56	5.53	Ap	95	1	14865
5219	Canes Venat.	—	*2496*	47.4	+34 57	4.96	Ma	—	1	16818
5238	Ursa Major	86	1630	50.1	+54 13	5.65	A	—	1	15701
5250	Hydra	47	11202	52.9	−24 29	5.17	B 8	—	1	15516
5257	Hydra	48	11215	54.4	−24 31	5.80	F	—	1	15516
..	Ursa Major	—	1676	55.3	+53 35	6.70	A 2	—	1	15701
5264	Virgo	τ 93	2761	56.6	+ 2 2	4.34	A 2	—	1	15525
5304	Bootes	d 12	2737	14 5.8	+25 34	4.82	F 5	—	2	15755, 16433
5313	Virgo	—	*2867*	7.2	+ 2 53	4.90	Ap	96	1	15734
5315	Virgo	κ 98	3878	7.6	− 9 48	4.31	K	—	1	15368
5321	Ursa Minor	4	478	9.2	+78 1	5.00	K	—	1	16823
5328	Bootes	κ 17	1782	9.9	+52 16	6.51	R	97	3	15488, 15615, 16484
5329	Bootes			9.9	+52 16	4.61	A 5			
5332	Virgo	—	4046	9.9	−17 44	5.58	B 9	—	1	15727
..	Bootes	—	1944	10.0	+46 47	7.10	G	—	1	15596
5338	Virgo	ι 99	3843	10.8	− 5 31	4.16	F 5	—	1	15748
..	Bootes	—	1948	12.1	+46 1	6.85	K	—	1	15596

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5350	Bootes	ι 21	*1784*	14 12.6	+51 50	4.78	A 5	—	4	15488, 15615, 16484,
5351	Bootes	λ 19	1949	12.6	+46 33	4.26	A	—	1	15596
5359	Virgo	λ 100	4018	13.7	−12 55	4.60	A 2	—	1	15429
5360	Bootes	—	1908	13.8	+51 46	6.09	A	—	3	15615, 16484, 16542
5361	Bootes	A	*2468*	13.8	+35 58	4.83	K	—	1	16825
..	Virgo	—	3873	14.1	−13 16	R	G	98	1	15429
5365	Bootes	18	2782	14.4	+13 28	5.31	F	—	2	15739, 16577
5370	Bootes	20	2637	15.1	+16 46	4.97	K	—	1	16813
5385	Bootes	—	*2882*	18.5	+ 8 54	6.64	A	—	1	15759
5386	Bootes			18.5	+ 8 54	5.11				
5388	Bootes	—	2857	19.0	+ 8 42	5.74	A	—	1	15759
5392	Bootes	—	2875	19.3	+ 6 16	5.08	A 3	—	1	15532
5405	Bootes	f 22	2810	21.8	+19 41	5.36	A 5	—	3	15736, 16490, 16583
5409	Virgo	φ 105	2957	23.0	− 1 47	4.97	K	—	2	15818, 16485
5468	Bootes	33	*2204*	35.1	+44 50	5.39	A	—	1	14870
5473	Bootes	—	*2769*	35.9	+13 57	5.98	A 5	—	1	15544
5475	Bootes	π 29	*2768*	36.0	+16 51	4.94	A	—	1	15718
5476	Bootes			36.0	+16 51	5.81				
5477	Bootes	ζ 30	2770	36.4	+14 9	4.83	A 2	—	1	15544
5478	Bootes			36.4	+14 9	4.43				
5490	Bootes	W 34	*2413*	39.0	+26 57	4.93	Ma	—	1	16826
5502	Bootes	o 35	2780	40.5	+17 23	4.69	K	—	2	16814, 16855
5505	Bootes	ε 36	2417	40.6	+27 30	5.12	Comp.	99	1	16826
5506	Bootes			40.6	+27 30	2.70				
5523	Libra	μ 7	3986	43.8	−13 44	5.38	A	—	1	15439
..	Bootes	—	*3026*	44.9	+19 56	6.94	B 9	—	1	15743
5544	Bootes	ξ 37	2870	46.8	+19 31	4.64	G 5	—	1	15743
5553	Bootes	—	2881	48.9	+19 34	5.98	K	—	1	15743
5567	Bootes	—	*2796*	51.5	+14 51	5.77	A	—	3	15792, 16500, 16581
5570	Libra	16	3696	52.0	− 3 56	4.59	F	—	1	15464
..	Libra	—	3698	52.4	− 3 38	R	F 5	100	1	15464
5583	Libra	—	3783	53.7	− 4 35	6.00	F 5	—	1	15464
5597	Bootes	—	2192	57.2	+47 40	6.16	Ap	101	1	15548
5600	Bootes	ω 41	2861	57.7	+25 24	4.93	K 5	102	1	16827
5601	Virgo	110	2905	57.9	+ 2 28	4.62	K	—	1	15797
5616	Bootes	ψ 43	2447	15 0.2	+27 20	4.67	K	—	1	16828
5618	Bootes	i 44	2259	0.5	+48 3	4.86	G	—	1	15548
5627	Bootes	k 47	2262	2.2	+48 32	5.59	A	—	1	15548
5634	Bootes	c 45	2873	2.9	+25 16	5.03	F	—	3	15740, 17367, 17369
..	Libra	—	*4036*	4.1	−20 9	7.18	F	—	3	15578, 15589, 15603
..	Libra	—	3997	6.5	−18 44	6.77	K	—	3	15578, 15589, 15603
5652	Libra	ι 24	4047	6.5	−19 25	4.66	Ap	103	13	15517, 15561, 15567,
5656	Libra	25	4055	7.6	−19 17	6.05	A 2	104	9	15517, 15561, 15567,
5672	Ursa Minor	—	823	9.7	+68 10	6.15	A 2	—	2	15604, 16512
5676	Bootes	χ 48	2640	10.3	+29 32	5.26	A	—	1	16434

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5679	Serpens	4	3327	15 10.7	+ 0 44	5.63	A 3	—	1	15579
..	Serpens	—	3052	10.9	+ 1 10	7.10	K	—	1	15579
..	Serpens	—	3059	13.3	+ 1 18	6.72	K	—	1	15579
5690	Serpens	—	*3337*	13.3	− 0 6	6.04	K	—	1	15579
5691	Ursa Minor	—	876	13.5	+67 44	5.23	G	—	2	15604, 16512
5694	Serpens	5	2944	14.2	+ 2 9	5.18	G	—	1	15533
5709	Corona Bor.	*o* 1	*2647*	16.0	+29 59	5.57	K	—	1	16513
5710	Serpens	6	3067	16.0	+ 1 4	5.48	K	—	1	15533
5715	Draco	—	1869	17.2	+52 17	5.52	A 3	—	1	16491
5718	Bootes	50	2581	17.8	+33 17	5.36	B 9	—	1	16447
5723	Libra	ϵ 31	4138	18.8	− 9 57	5.08	F	—	1	15449
5727	Corona Bor.	η 2	2653	19.1	+30 39	5.58	G	—	1	16513
5728	Corona Bor.			19.1	+30 39	6.08				
5733	Bootes	μ 51	2636	20.7	+37 44	4.49	F	105	1	16501
5734	Bootes		2637	20.7	+37 42	6.47	K			
5760	Corona Bor.	—	2742	26.4	+31 39	6.35	A 2	—	1	16543
5762	Libra	—	4135	26.8	−19 20	5.46	A 2	—	1	15823
5763	Bootes	ν 52	2609	27.3	+41 10	5.15	K 5	—	1	15597
5764	Libra	ζ 35	4110	27.3	−16 31	5.59	B 3	—	1	15824
5774	Bootes	53	2611	28.2	+41 14	4.98	A 2	—	1	15597
5778	Corona Bor.	θ 4	2750	28.9	+31 42	4.17	B 5	—	1	16543
5788	Serpens	13	*2821*	30.0	+10 53	5.16	F	—	3	15812, 16520, 16587
5789	Serpens			30.0	+10 53	4.23				
5801	Libra	—	11000	31.5	−25 57	6.03	B 9	—	2	16561, 16578
5802	Serpens	16	2884	31.7	+10 21	5.40	K	—	3	15812, 16520, 16587
5814	Libra	41	4118	33.1	−18 58	5.53	G 5	—	1	16833
5826	Ursa Minor	θ 15	592	34.4	+77 41	5.33	K 5	—	1	15832
5833	Corona Bor.	ζ 7	*2665*	35.6	+36 58	6.00	B 8	—	1	15841
5834	Corona Bor.			35.6	+36 58	5.07				
5838	Libra	κ 43	4188	36.2	−19 21	4.96	K 5	—	1	16833
5842	Serpens	ι 21	3138	37.1	+20 0	4.49	A 2	—	1	16505
5843	Serpens	χ 20	2982	37.1	+13 10	5.26	Ap	106	2	16502, 16562
5845	Serpens	τ^7 22	3059	37.4	+18 47	5.80	A 3	—	1	16505
5848	Libra	η 44	4171	38.4	−15 21	5.55	A 5	—	1	15674
5857	Draco	—	1898	40.2	+52 40	5.48	Ap	107	1	15560
5859	Serpens	—	3072	40.4	+ 5 45	5.56	A	—	1	16544
5863	Serpens	A^2 25	3092	40.9	− 1 30	5.37	B 8	—	1	15774
5868	Serpens	λ 27	3023	41.6	+ 7 40	4.42	G	—	1	15855
5875	Libra	*30*	3829	43.7	− 3 31	5.61	A 3	—	1	16558
5880	Corona Bor.	R	2477	44.4	+28 28	var.	Pec.	108	1	16634
5886	Draco	—	*1225*	45.1	+62 55	5.13	A 2	—	1	15831
5889	Corona Bor.	δ 10	2737	45.4	+26 23	4.73	K	—	1	16829
5895	Serpens	b 36	4058	46.1	+ 2 48	5.16	A 2	—	1	16558
5899	Serpens	ρ 38	2829	46.9	+21 17	4.88	K	—	1	17384
5901	Corona Bor.	κ 11	*2652*	47.5	+35 59	4.77	K	—	2	16830, 16838

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5902	Libra	λ 45	4249	15 47.5	−19 52	5.06	B 3	—	1	17370
5903	Ursa Minor	ζ 16	527	47.6	+78 6	4.34	A 2	—	1	15832
5908	Libra	θ 46	4174	48.1	−16 27	4.34	K	—	1	16589
5914	Hercules	χ 1	2648	49.2	+42 44	4.61	G	—	1	16888
5917	Scorpius	4	11190	49.5	−25 59	5.61	A 2	—	2	16612, 16857
5930	Libra	—	4314	50.9	−14 32	6.17	A	—	1	16595
5938	Hercules	4	2652	52.2	+42 51	5.61	B 8	—	1	16888
5941	Libra	48	4302	52.6	−13 59	4.68	B 3	109	1	16575
5942	Scorpius	—	12427	52.6	−24 32	5.41	B 8	—	1	16588
5959	Libra	50	*4162*	55.3	− 8 7	5.55	A	—	1	16590
5960	Draco	—	1793	55.4	+55 2	4.96	A 5	—	2	16566, 15616
5971	Corona Bor.	ι 14	2738	57.4	+30 7	4.91	A	—	1	16552
5972	Serpens	π 44	2886	57.9	+23 4	4.82	A 2	—	1	14861
5982	Hercules	υ 6	2142	59.6	+46 19	4.64	B 9	—	1	15837
6002	Scorpius	11	4425	16 2.1	−12 28	5.64	A	—	1	16597
6008	Hercules	κ 7	2964	3.6	+17 19	5.34	G 5	—	1	16815
6009	Hercules		2965	3.6	+17 20	6.52				
6013	Hercules	8	2967	4.2	+17 30	6.07	A	—	1	16815
6018	Corona Bor.	τ 16	2699	5.3	+36 45	4.94	K	—	1	16841
6025	Draco	—	864	6.0	+68 4	5.40	A	—	2	16529, 16651
6026	Scorpius	ν 14	4332	6.2	−19 12	6.49	R	110	1	16584
6027	Scorpius		4333	6.2	−19 12	4.29	B 3			
6028	Scorpius	c^2 13	10841	6.1	−27 40	4.70	B 3	—	1	16906
6031	Scorpius	ψ 15	4324	6.6	− 9 48	4.91	A 2	—	1	15798
6033	Scorpius	16	4180	6.8	− 8 17	5.49	A 3	—	2	16601, 16907
6035	Hercules	q 48	*2982*	7.0	+16 56	5.90	A	—	1	16815
6069	Draco	—	930	12.0	+67 24	6.28	K	—	1	16529
6070	Scorpius	d	12037	12.1	−28 22	4.87	A	—	1	16890
6079	Ursa Minor	19	594	13.7	+76 8	5.51	B 8	—	1	16596
6093	Serpens	σ 50	3215	17.0	+ 1 16	4.80	F	—	1	16869
6103	Corona Bor.	ξ 19	2845	18.2	+31 7	4.72	K	—	3	16842, 16908, 16979
6104	Ophiuchus	ψ 4	4365	18.3	−19 49	4.59	K	—	2	16616, 16902
6112	Ophiuchus	ρ 5	12861	19.6	−23 13	5.22	B 5	111	1	16598
6113	Ophiuchus			19.6	−23 14	5.92				
6116	Ursa Minor	η 21	*596*	20.4	+75 59	5.04	F	—	1	16596
6117	Hercules	ω 24	3049	20.8	+14 16	4.53	Ap	112	2	16553, 16579
6118	Ophiuchus	χ 7	4282	21.2	−18 14	4.85	*B 3*	113	1	15590
6126	Draco	—	845	22.0	+69 20	5.44	K	—	1	14914
6128	Ophiuchus	—	4292	22.3	− 7 23	5.45	Ma	—	1	15863
6129	Ophiuchus	υ 3	4243	22.4	− 8 9	4.68	A 2	—	1	15863
6130	Draco	—	*1478*	22.5	+61 56	5.64	G 5	—	1	14913
6132	Draco	η 14	1591	22.6	+61 44	2.89	G 5	—	1	14913
6137	Ophiuchus	—	4299	23.5	− 7 55	6.41	A 5	—	1	15863
6141	Scorpius	i 22	12695	24.1	−24 54	4.87	B 3	114	1	16604
6144	Ophiuchus	—	4305	25.1	− 7 17	6.39	A 5	—	1	15863

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
				h. *m.*	° ′					
6147	Ophiuchus	ϕ 8	4298	16 25.4	−16 23	4.40	K	—	2	15591, 16967
6159	Hercules	h 29	3008	27.9	+11 42	4.92	K 5	—	2	16843, 16955
6161	Draco	A 15	*850*	28.2	+68 59	4.98	B 8 p	115	1	14914
6173	Ursa Minor	—	498	31.3	+79 11	5.54	A 3	—	2	16563, 16642
6184	Draco	16	1875	33.8	+53 6	5.64	A	—	1	15695
6185	Draco	17	1876	33.9	+53 8	5.56	A 2	—	1	15695
6186	Draco			33.9	+53 8	6.58				
6223	Draco	g 18	1145	40.2	+64 47	5.00	K	—	1	16846
6226	Draco	—	1872	40.9	+55 53	6.18	A 2 p	116	1	16606
6234	Hercules	l 45	3272	42.8	+ 5 25	5.28	A	117	1	15707
6237	Draco	—	*1702*	43.4	+56 58	4.88	F	—	2	15667, 16606
6243	Ophiuchus	20	4394	44.3	−10 36	4.73	F 5	—	2	15889, 16605
6250	Hercules	k 47	3256	45.5	+ 7 25	5.46	A	—	2	16559, 16895
6254	Hercules	52	2220	46.3	+46 10	4.86	A 2 p	118	1	15676
6281	Ophiuchus	ι 25	3092	49.3	+10 20	4.29	B 8	—	2	15827, 16640
6299	Ophiuchus	κ 27	3298	52.9	+ 9 32	3.42	K	—	1	15827
6315	Draco	h 19	1157	55.4	+65 17	4.82	F 5	—	3	15894, 16580, 16641
6318	Ophiuchus	30	4215	55.8	− 4 4	5.00	K	—	2	16834, 16976
6332	Hercules	d 59	2817	57.9	+33 43	5.27	A 2	—	1	16576
6355	Hercules	60	3142	17 0.7	+12 53	4.91	A 3	—	2	16545, 16629
6369	Draco	μ 21	1857	3.2	+54 36	5.83	F 5	—	1	15838
6370	Draco			3.2	+54 36	5.80				
6401	Ophiuchus	A 36	12026	9.2	−26 27	5.33	K	—	1	15754
6402	Ophiuchus			9.2	−26 27	5.29				
6415	Ophiuchus	41	3255	11.5	− 0 20	4.82	K	—	2	16857, 16956
6446	Serpens	ν 53	4722	15.2	-12 45	4.35	A	—	1	15807
6455	Hercules	—	3246	16.1	+25 37	5.32	A 2	—	2	15708, 16646
6457	Hercules	70	3167	16.8	+24 36	5.12	A	—	2	15708, 16646
6493	Ophiuchus	—	*4275*	21.3	− 5 0	4.61	F	—	1	15882
6498	Ophiuchus	σ 49	3422	21.6	+ 4 14	4.44	K	—	2	16858, 16960
6502	Hercules	—	3481	22.5	+20 10	5.42	B 5	—	1	16530
6511	Draco	—	1754	24.4	+60 7	5.66	A 2	—	2	14998, 16628
6526	Hercules	λ 76	3034	26.7	+26 11	4.48	K	—	1	16860
..	Hercules	—	3038	28.4	+26 31	6.85	A 5	—	1	16860
6548	Ophiuchus	f 53	3424	29.9	+ 9 39	5.77	A 2	—	1	14857
6554	Draco	ν 24	1944	30.2	+55 15	4.98	A 5	119	1	14903
6555	Draco	ν 25	1945	30.3	+55 14	4.95	A 5			
6566	Draco	f 27	938	32.4	+68 12	5.21	K	—	2	15906, 16550
6567	Ophiuchus	μ 57	4472	32.4	− 8 3	4.65	B 8	—	1	15804
6581	Serpens	o 56	4808	35.8	−12 49	4.39	A 2	—	1	15864
6595	Ophiuchus	58	4712	37.4	−21 38	4.89	F 5	—	1	16971
6596	Draco	ω 28	949	37.5	+68 48	4.87	F 5	—	2	15906, 16550
6606	Draco	—	800	39.0	+72 31	5.96	K	—	1	15793
6636	Draco	ψ 31	804	43.7	+72 12	4.90	F 5	—	1	15793
6637	Draco		805	43.7	+72 12	6.07				

H. R.	Constellation.	B.Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.	No. Plate.	Plate Nos.
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6656	Draco	30	2468	46.7	+50 48	5.19	A 2	—	1	15836
6695	Hercules	θ 91	2982	52.8	+37 16	3.99	K	—	2	16861, 16864
6700	Sagittarius	4	13731	53.7	−23 48	4.76	A	—	2	15873, 16591
6701	Draco	35	667	53.9	+76 59	5.04	F 5	—	1	15833
6710	Serpens	ζ 57	4217	55.2	− 3 41	4.60	F	—	1	15729
6712	Ophiuchus	66	3570	55.3	+ 4 23	4.81	B 3	120	1	15846
6713	Hercules	93	3335	55.6	+16 46	4.71	K	—	2	16862, 16879
6716	Sagittarius	—	4503	55.8	−22 46	5.73	B	—	1	16591
6724	Sagittarius	7	13793	56.7	−24 17	5.49	A 5	—	1	15873
6729	Hercules	95	3280	57.2	+21 36	5.21	Comp.	121	1	14907
6730	Hercules			57.2	+21 36	5.13				
6733	Ophiuchus	τ 69	4549	57.6	− 8 11	6.04	F		3	15911, 16531, 16564
6734	Ophiuchus			57.6	− 8 11	5.34				
6736	Sagittarius	9	13814	57.7	−24 22	5.86	O e 5	122	2	15873, 16585
6738	Hercules	96	3649	58.1	+20 50	5.09	B 3	—	1	14907
6755	Serpens	—	4558	18 0.7	− 8 20	5.79	B 8	—	2	15911, 16531
6770	Ophiuchus	71	3582	2.5	+ 8 43	4.73	G 5	—	1	15750
6781	Hercules	100	3178	3.8	+26 5	5.92	A 3	123	1	15815
6782	Hercules	—		3.8	+26 5	6.00	A 3			
6789	Ursa Minor	δ 23	269	4.5	+86 37	4.44	A	—	1	15368
6811	Ursa Minor	24	*272*	7.8	+87 0	5.86	A 3	124	1	15868
6845	Lyra	—	3035	12.5	+42 8	5.42	B 5	—	1	14977
6850	Draco	36	1252	13.3	+64 22	5.03	F 5	—	1	15910
6866	Ophiuchus	74	3680	15.8	+ 3 20	4.92	G 5	—	1	16863
6868	Hercules	106	3390	16.1	+21 55	4.98	K 5	125	2	16872, 17374
6872	Lyra	κ 1	3094	16.4	+36 1	4.34	K	—	2	16865, 16944
..	Hercules	—	2980	16.6	+28 56	6.54	B 8	—	1	15895
6877	Hercules	t 107	2981	17.1	+28 49	5.05	A 5	—	1	15895
6884	Scutum	ζ	*4712*	18.2	− 8 59	4.83	G 5	—	1	14951
6903	Lyra	μ 2	3410	20.9	+39 27	5.04	A 2	—	1	15794
6918	Serpens	d 59	3936	22.1	+ 0 8	5.33	Comp.	126	1	15890
6923	Draco	b 39	1809	22.5	+58 45	4.85	A 2	—	1	15848
6930	Scutum	γ	5071	23.5	−14 38	4.73	A 3	—	1	15862
6932	Scutum	—	5077	24.1	−14 39	5.99	Ap	127	1	15862
6933	Sagittarius	—	4982	24.3	−18 47	5.76	K	—	1	16613
6944	Sagittarius	—	4988	25.6	−18 28	5.17	A	—	1	16613
6945	Draco	42	1271	25.7	+65 30	4.99	K	—	1	16847
6968	Lyra	—	3223	29.0	+30 29	5.37	B 8	—	1	16592
6971	Lyra	—	3227	29.6	+30 49	6.43	B 3	—	1	16592
6973	Scutum	*a 1*	4638	29.8	− 8 19	4.06	K	—	2	16586, 16674
6979	Draco	—	1276	31.0	+65 22	6.31	A 3	—	1	16847
6990	Sagittarius	—	14572	32.4	−23 36	5.75	B 9	—	2	14971, 16655
6997	Lyra	—	3154	32.9	+33 23	5.46	B 8	—	1	15828
7020	Scutum	δ 2	4796	36.8	− 9 9	4.74	F	—	1	16025
7040	Aquila	4	3766	39.8	+ 1 57	5.04	B 5	—	1	16015

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				h. m.	° ′					
7048	Serpens	—	3941	40.5	+ 5 23	5.72	A	—	1	14923
7049	Draco	c 46	2107	40.7	+55 26	5.08	A	128	1	15849
..	Hercules	—	3713	40.9	+17 38	7.26	A 5	—	1	16061
7051	Lyra	4	3509	41.0	+39 34	5.06	A 3		2	14918, 16122
7052	Lyra			41.0	+39 34	6.02		129		
7053	Lyra	ε 5	3510	41.1	+39 30	5.14	A 5		2	14918, 16122
7054	Lyra			41.1	+39 30	5.37				
7056	Lyra	ζ 6	3222	41.3	+37 30	4.29	A 3	130	2	15018, 17190
7057	Lyra	7	3223	41.3	+37 30	5.87	A 3	131		
7059	Aquila	5	3559	41.3	− 1 3	5.68	A	—	2	15892, 16614
..	Hercules	—	3814	41.7	+18 23	6.75	A	—	1	16061
7063	Scutum	β 6	4582	41.9	− 4 51	4.47	G	—	2	14948, 16868
7064	Lyra	—	3349	42.0	+26 34	4.92	K	—	3	17226, 17231, 17232
7067	Hercules	—	3817	42.3	+18 36	6.27	Ma	—	1	16061
7069	Hercules	111	3823	42.6	+18 4	4.37	A 3	—	1	16061
7071	Draco	—	2034	42.9	+54 47	6.26	G 5	—	1	15849
..	Hercules	—	3613	42.9	+16 48	6.66	B 8	—	1	16061
7113	Hercules	112	3582	48.0	+21 18	5.33	B 9	—	1	15788
7119	Scutum	—	5143	49.0	−15 43	5.04	B 5	—	1	15865
7123	Draco	—	2294	49.3	+52 50	5.62	G 5	—	1	15839
7124	Draco	50	682	49.6	+75 19	5.37	A	—	1	15834
7125	Draco	o 47	1925	18 49.7	+59 16	4.78	K	—	4	17201, 17246, 17261,
7126	Sagittarius	—	5078	49.7	−16 30	5.58	F 5	—	1	15865
7133	Hercules	113	3524	50.5	+22 32	4.56	G 5	—	5	15819, 16063, 16573,
7137	Draco	—	2686	50.7	+50 35	4.97	G 5	—	1	16873
7141	Serpens	θ 63	3916	51.2	+ 4 4	4.50	A 5	132	1	15847
7142	Serpens		3917	51.2	+ 4 4	5.37	A 5			
7144	Serpens	—	3730	51.4	+ 2 21	6.28	K	—	1	15785
..	Serpens	—	3919	51.6	+ 4 7	6.66	G 5	—	1	15847
7158	Serpens	64	3738	52.3	+ 2 26	5.65	B 8	—	1	15785
7166	Sagittarius	—	*5172*	53.8	−12 58	5.36	B 5	—	1	15874
7167	Aquila	10	3838	54.2	+13 46	5.94	A 3 p	133	1	16610
7176	Aquila	ε 13	3736	55.1	+14 56	4.21	K	—	5	15782, 16571, 16610,
7180	Draco	υ 52	915	55.6	+71 10	4.91	K	—	3	16946, 17202, 17250
7187	Draco	—	1309	56.0	+65 8	5.78	K	—	1	16636
7193	Aquila	i 12	4840	56.3	− 5 53	4.15	K	—	1	15883
7196	Draco	—	2705	56.5	+50 41	6.37	G 5	—	1	14993
..	Aquila	—	..	56.8	− 4 35	nov.	Pec.	134	1	15907
7199	Draco	—	683	56.9	+75 39	6.18	A	—	1	15834
7209	Aquila	g 14	4460	57.6	− 3 51	5.55	A	—	1	15907
7210	Draco	—	2708	57.7	+50 24	5.24	B 3	—	1	14993
7215	Lyra	16	2602	58.6	+46 47	5.06	A 5	—	3	15912, 16593, 16653
7225	Aquila	h 15	4684	59.7	− 4 11	5.53	K	—	1	15907
7247	Draco	—	712	19 2.2	+76 55	6.49	F	—	2	16698, 16709
7248	Aquila	Y 18	3787	2.3	+10 55	5.10	B 8	—	1	14858

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				h. m.	° ′					
7249	Sagittarius	—	5312	19 2.4	−19 27	5.41	B 3	—	1	14904
7251	Draco	51	2178	2.6	+53 14	5.35	A	—	2	15920, 15946
7261	Lyra	17	3326	3.6	+32 21	5.04	F	—	2	15821, 16668
7262	Lyra	ι 18	3485	3.7	+35 57	5.13	B 5	—	2	16109, 16648
7279	Aquila	20	4887	7.3	− 8 7	5.37	B 3	—	1	16095
7287	Aquila	21	3824	8.7	+ 2 7	5.10	B 8	—	2	15786, 16910
7292	Sagittarius	ϕ 42	13866	9.4	−25 26	4.93	F 5	—	1	16635
7301	Sagittarius	1	*4088*	11.0	+21 3	5.62	A 3	—	1	15789
7306	Vulpecula	1	3713	11.9	+21 13	4.60	B 5	—	1	15789
7312	Draco	59	717	12.8	+76 24	5.06	F	—	3	15835, 16698, 16709
7314	Lyra	θ 21	3398	12.9	+37 57	4.46	K	—	2	16939, 17014
..	Vulpecula	—	3647	13.4	+22 16	6.87	B 8	—	1	16193
7318	Vulpecula	2	3648	13.5	+22 51	5.40	B	—	1	16193
7319	Aquila	23	4168	13.5	+ 0 55	5.32	K	—	1	16870
7327	Sagittarius	—	5063	14.6	−22 36	5.55	A 5	—	3	14959, 16669, 17071
7338	Lyra	—	3413	15.5	+37 16	6.19	A	—	1	17014
7340	Sagittarius	ρ^1 44	5322	15.9	−18 2	3.95	A 5	—	1	15881
7342	Sagittarius	υ 46	5283	16.0	−16 8	4.58	Pec.	135	39	15006, 15012, 15019,
7344	Sagittarius	ρ^2 45	5325	16.1	−18 29	6.02	K	—	1	15881
7358	Vulpecula	3	*3811*	18.7	+26 4	4.92	B 5	—	1	15816
7362	Sagittarius	χ^1 47	15303	19.2	−24 42	5.01	A 5	—	1	16621
7371	Draco	π 58	1345	20.2	+65 31	4.63	A 2	—	1	14978
7378	Sagittarius	—	5348	20.5	−15 15	5.68	B 8	—	1	16622
7387	Aquila	ν 32	4206	21.4	+ 0 9	4.86	F	—	1	16943
7395	Cygnus	4	3557	22.6	+36 7	5.15	Ap	136	1	15992
7410	Sagittarius	—	5410	25.0	−21 31	6.01	A 2	—	1	16630
..	Draco	—	734	25.1	+76 23	var.	Na	—	3	15835, 16698, 16709
..	Lyra	—	3480	26.6	+33 31	6.64	K	—	1	15188
7419	Cygnus	—	*3658*	27.1	+36 1	6.04	A	—	1	15992
..	Cygnus	—	3487	27.5	+33 16	6.63	A 2	—	1	15188
7426	Cygnus	8	3590	28.1	+34 14	4.85	B 3	—	1	15188
7429	Aquila	μ 38	4132	29.2	+ 7 10	4.65	K	—	1	16937
..	Cygnus	—	3474	29.7	+32 59	6.61	G	—	1	15188
7437	Vulpecula	9	4063	30.2	+19 33	4.88	B 8	—	1	16087
..	Cygnus	—	3398	31.0	+41 42	6.54	A	—	1	15869
..	Cygnus	—	3507	31.2	+33 35	6.73	Ma	—	1	15188
7444	Cygnus	—	3386	31.4	+42 11	5.29	A 2	—	1	15869
7446	Aquila	κ 39	5006	31.5	− 7 15	5.04	B	137	3	16032, 16625, 17117
7447	Aquila	ι 41	3782	31.6	− 1 31	4.28	B 5	—	1	16006
..	Cygnus	—	3620	31.7	+34 28	6.98	B 8	—	1	15188
7462	Draco	σ 61	1053	32.6	+69 29	4.78	K	—	1	14952
7470	Sagittarius	53	15618	33.8	−23 40	6.24	A	—	2	15809, 16631
7474	Aquila	σ 44	4225	34.3	+ 5 10	5.17	B 3	—	1	14908
7478	Cygnus	ϕ 12	3684	35.5	+29 56	4.79	K	—	1	16876
7479	Sagitta	α 5	4042	35.6	+17 47	4.37	G	—	2	15775, 16083

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				h. m.	° ′					
7483	Cygnus	14	3413	19 36.2	+42 35	5.39	B 8	—	1	15962
7486	Aquila	—	4098	36.5	+13 35	5.84	B 3	—	1	16049
7488	Sagitta	β 6	4048	36.6	+17 15	4.45	K	—	2	15775, 16083
7492	Cygnus	—	3419	37.5	+42 50	6.39	Ma	—	1	15962
7511	Aquila	ψ 48	*4059*	40.0	+13 3	6.12	B 8	138	1	16049
7554	Aquila	—	4252	45.5	+ 7 39	6.39	B 3	—	1	16915
7565	Vulpecula	12	3833	46.8	+22 21	4.91	B 3	—	1	15820
7576	Cygnus	d 20	2547	48.2	+52 45	5.17	K	—	1	16131
7592	Vulpecula	13	3820	49.2	+23 50	4.50	A	139	1	16033
7593	Aquila	57	5154	49.3	− 8 29	5.78	B 3	140	2	14972, 14985
7594	Aquila		5155	49.3	− 8 29	6.53	R			
7595	Aquila	ξ 59	4261	49.4	+ 8 12	4.86	K	—	2	16880, 16915
7601	Vulpecula	—	*3829*	50.3	+24 4	5.47	A	—	1	16033
7608	Cygnus	23	2084	51.2	+57 16	5.04	B 5	—	1	15850
7610	Aquila	ϕ 61	4055	51.5	+11 9	5.29	A 2	—	1	14871
7613	Cygnus	22	3817	52.3	+38 13	4.87	B 3	—	1	16026
7614	Sagittarius	g 61	5516	52.3	−15 45	5.05	A	—	1	15866
7619	Cygnus	ψ 24	2572	53.0	+52 10	4.80	A 3	—	2	15896, 16131
7620	Cygnus	—	3878	53.1	+35 59	6.04	B 3	—	1	15915
7626	Cygnus	—	2092	53.4	+57 59	6.19	K	—	1	15850
7628	Cygnus	—	*3968*	53.7	+40 6	5.43	B 3	—	1	15921
..	Cygnus	—	3832	53.9	+38 11	6.71	A 2	—	1	16026
7632	Cygnus	—	2930	54.0	+50 38	6.27	A	—	1	15840
7634	Cygnus	—	2331	54.2	+56 25	6.10	A 2	—	1	15850
7640	Cygnus	—	3837	54.7	+30 42	5.44	B 8	—	1	16027
7642	Cygnus	—	3703	54.9	+37 50	6.28	B 5	—	1	16026
7647	Cygnus	25	3806	56.2	+36 46	5.15	B 3	—	1	15915
7651	Cygnus	—	2728	56.6	+51 47	6.02	B 5	—	2	15896, 16131
..	Cygnus	—	3853	57.0	+30 57	6.76	B 8	—	1	16027
7653	Vulpecula	15	3587	57.0	+27 29	4.74	A 5	—	1	16007
..	Cygnus	—	3862	58.0	+30 50	6.60	B 8	—	1	16027
7660	Cygnus	e 26	3158	58.5	+49 49	5.28	K	—	1	15840
7685	Draco	ρ 67	1222	20 2.3	+67 35	4.66	K	—	2	16877, 16916
7688	Vulpecula	17	3896	2.5	+23 19	5.08	B 3	—	2	15800, 16068
7689	Cygnus	b^1 27	3959	2.7	+35 42	5.52	K	—	2	16163, 16177
7708	Cygnus	b^2 28	3907	5.7	+36 33	4.82	*B 2*	141	5	15822, 15877, 15878,
7724	Aquila	ρ 67	4227	9.7	+14 54	4.96	A	—	2	14869, 15987
7731	Vulpecula	21	3675	10.2	+28 24	5.20	A 3	—	1	16919
7734	Cygnus	—	3949	10.3	+36 18	6.41	A 2	—	1	15879
7736	Cygnus	b^3 29	3955	10.8	+36 30	4.98	A	—	3	15822, 15878, 15879
7740	Cygnus	33	2376	11.1	+56 16	4.32	A 3	—	2	14999, 15913
7744	Vulpecula	23	3666	11.7	+27 30	4.73	K 5	—	2	16919, 17058
7750	Cepheus	κ 1	764	12.3	+77 25	4.40	B 9	—	1	15167
..	Vulpecula	—	3668	12.3	+27 29	6.69	Ap	142	1	17058
7806	Cygnus	39	4062	19.9	+31 52	4.60	K	—	2	16925, 16948

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7814	Capricornus	π 10	5685	20 21.6	−18 32	5.20	B 8	—	1	15884
7822	Capricornus	ρ 11	5689	23.2	−18 9	4.96	F	—	1	15884
7828	Cygnus	43	*3128*	24.0	+49 3	5.72	F	—	1	15242
7829	Capricornus	—	*5831*	24.1	−18 55	6.64	R	143	1	15884
7830	Capricornus	o 12		24.1	−18 55	6.10	A 2			
7844	Cygnus	ω^1 45	3142	27.0	+48 37	4.89	B 3	—	1	15242
..	Cygnus	—	3148	27.8	+48 52	6.54	A 2	—	1	15242
7850	Cepheus	θ 2	1821	27.9	+62 39	4.28	A 5	—	1	14994
7851	Cygnus	ω^2 46	3154	28.2	+48 53	5.57	Ma	—	1	15242
7858	Delphini	η 3	4378	29.2	+12 41	5.23	A 2	—	1	14855
..	Cygnus	—	3136	29.3	+47 53	6.82	B 2	—	1	15242
7866	Cygnus	47	4079	30.0	+34 54	4.85	Comp.	144	3	17006, 17049, 17072
..	Cygnus	—	4081	30.2	+34 20	6.62	B 8	—	3	17006, 17049, 17072
7879	Draco	73	872	32.8	+74 37	5.18	A 2 p	145	1	15947
7883	Delphinus	ι 5	*4339*	33.0	+11 2	5.43	A 2	—	1	14859
7884	Aquila	l 71	4016	33.2	− 1 27	4.51	K	—	4	16054, 16554, 16603,
7889	Capricornus	τ 14	5743	33.7	−15 18	5.30	B 5	—	2	15810, 16232
7891	Vulpecula	29	4658	34.1	+20 51	4.78	A	—	1	15917
7894	Vulpecula	28	4084	34.2	+23 46	5.04	B 5	—	1	15814
7895	Vulpecula	—	4085	34.3	+23 19	6.13	G	—	1	15814
7901	Draco	75	*659*	34.5	+81 5	5.62	K	—	1	15975
7929	Cygnus	51	3353	39.1	+49 59	5.41	B 3	—	1	16055
..	Cepheus	—	*2474*	39.8	+57 2	6.87	A 3	—	1	16104
7940	Cepheus	—	2477	40.7	+56 46	6.36	B 3	—	1	16104
7942	Cygnus	52	4167	41.6	+30 21	4.34	K	—	4	16927, 16975, 17046,
..	Cygnus	—	*3258*	42.0	+46 0	6.64	A	—	1	16958
7953	Delphinus	13	4613	42.8	+ 5 38	5.59	A	—	2	14872, 16132
7955	Cepheus	—	2240	42.9	+57 13	4.63	G	—	1	16104
7958	Cygnus	—	*3270*	43.3	+46 10	6.26	A 2	—	1	16958
7963	Cygnus	λ 54	*4267*	43.5	+36 7	4.47	B 5	—	2	16155, 16241
7975	Delphinus	—	4626	45.0	+ 5 11	6.30	K	—	1	16132
7977	Cygnus	55	3291	45.5	+45 45	4.89	B 2	—	2	16928, 16958
7982	Aquarius	4	5604	46.1	− 6 0	5.99	F	—	1	16178
7983	Cygnus	—	3067	46.5	+46 17	6.48	B 3	—	1	16958
7984	Cygnus	56	3739	46.6	+43 41	5.07	A 5	—	2	15870, 15908
7985	Aquarius	5	*5606*	46.8	− 5 52	5.50	B 8	—	2	16070, 16178
7990	Aquarius	μ 6	5598	47.3	− 9 22	4.80	A 3	—	1	16050
7995	Vulpecula	31	4017	47.8	+26 43	4.76	G 5	—	2	17053, 17081
8001	Cygnus	57	*3755*	49.7	+44 0	4.68	B 3	—	3	15870, 15908, 15980
8002	Draco	76	*718*	49.8	+82 10	5.69	A	—	2	15975, 16028
8003	Cygnus	—	3617	49.8	+44 48	5.59	K	—	1	15980
8009	Cygnus	—	4354	50.7	+40 20	6.48	B 8	—	1	14986
8020	Cygnus	—	*3111*	52.4	+47 2	5.76	B 8 p	146	5	15177, 15208, 15215,
..	Cygnus	—	*3911*	52.6	+43 2	6.79	B 8	—	1	15908
8022	Cygnus	—	3232	53.1	+50 41	6.35	B 8	—	1	16186

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				h. m.	° ′					
8023	Cygnus	—	3639	20 53.1	+44 33	6.01	Oe 5	147	2	15908, 15980
8025	Cygnus	—	3233	53.3	+50 20	5.80	A 5	—	1	16186
8028	Cygnus	ν 58	4364	53.4	+40 47	4.04	A	—	1	14986
8035	Cygnus	—	*3777*	54.8	+44 4	5.76	K	—	2	15908, 15980
..	Cygnus	—	3240	54.9	+47 13	7.25	B 8	—	2	15215, 15232
8040	Cygnus	—	*3426*	55.3	+50 4	5.48	B 8	—	1	16186
8047	Cygnus	f^1 59	*3133*	56.4	+47 8	4.86	*B*p	148	4	15177, 15208, 15227,
..	Cygnus	—	3141	57.4	+46 11	R	B 8	149	3	15177, 15215, 15232
8053	Cygnus	60	3364	57.6	+45 46	5.24	B 3	—	2	15177, 16179
8064	Cygnus	—	3374	59.3	+45 27	6.23	B 8	—	1	16179
8074	Cygnus	—	3159	21 0.3	+46 29	6.30	A 5	—	5	15177, 15208, 15215,
8075	Capricornus	θ 23	6174	0.3	−17 38	4.19	A	—	1	15885
8083	Capricornus	—	*5862*	2.1	−17 51	6.03	A	—	1	15885
8089	Cygnus	f^2 63	3292	3.2	+47 15	4.88	K 5	—	3	16938, 17017, 17054
8093	Aquarius	ν 13	5538	4.1	−11 47	4.52	K	—	1	16903
8097	Equuleus	γ 5	4732	5.5	+ 9 44	4.76	Fp	150	1	14909
8098	Equuleus	6	4735	5.6	+ 9 38	5.99	A 2	—	1	14909
8107	Cygnus	—	3322	7.1	+47 17	6.36	B 5	—	1	17054
8123	Equuleus	δ 7	4746	9.6	+9 36	4.61	F 5	—	1	16020
8133	Cepheus	—	1708	11.7	+63 59	6.41	G	—	1	16252
8137	Capricornus	30	5903	12.3	−18 24	5.39	B 8	—	2	15042, 16632
8143	Cygnus	σ 67	4431	13.5	+38 59	4.28	Ap	151	1	15957
8167	Capricornus	ι 32	6245	16.7	−17 16	4.30	K	—	1	16077
8171	Cepheus	6	1527	17.3	+64 27	5.18	*B 3*	152	3	15079, 16078, 16252
8173	Pegasus	1	4691	17.5	+19 23	4.24	K	—	2	16071, 16084
8178	Equuleus	β 10	4811	17.9	+ 6 23	5.14	A	—	1	17216
8187	Aquarius	18	5923	18.8	−13 19	5.54	A 5	—	3	14902, 15942, 16089
8209	Cygnus	69	4557	21.7	+36 14	5.84	B	—	1	15165
8215	Cygnus	70	4568	23.2	+36 41	5.20	B 3	—	1	15165
8217	Vulpecula	35	*4164*	23.3	+27 11	5.38	A	—	1	15918
8227	Cepheus	7	1405	25.8	+66 22	5.42	B 5	—	1	15956
..	Cepheus	—	1407	27.4	+66 37	6.90	A 2	—	1	15956
8255	Cygnus	72	*4359*	30.7	+38 5	4.98	K	—	1	16905
8264	Aquarius	ξ 23	5701	32.4	− 8 18	4.78	A 5	—	1	14905
8266	Cygnus	74	4612	32.9	+39 58	5.09	A 5	—	2	15916, 16198
8279	Cepheus	9	2169	35.2	+61 38	4.87	B 2	—	3	15903, 16187, 16224
8288	Capricornus	κ 43	6152	37.1	−19 19	4.82	K	—	1	15988
8289	Pegasus	7	4850	37.3	+ 5 14	5.63	Ma	—	7	14856, 14875, 15194,
8301	Cygnus	π^1 80	3410	38.6	+50 44	4.78	B 3	—	2	15194, 16261
8309	Cygnus	μ 78	4169	39.6	+28 18	4.73	F 5	—	2	15909, 16627
8310	Cygnus			39.6	+28 18	6.08				
8311	Capricornus	c 46	5829	39.6	− 9 32	5.28	K	—	3	14866, 16233, 16647
8313	Pegasus	9	4582	39.8	+16 54	4.52	K	—	1	15867
8317	Cepheus	11	1193	40.5	+70 51	4.85	K	—	2	16929, 16953
8318	Capricornus	47	5833	40.9	− 9 44	6.20	Ma	—	2	14866, 16647

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				h. m.	° ′					
8328	Pegasus	11	4414	21 42.2	+ 2 14	5.50	A	–	1	14910
8330	Pegasus	–	4598	42.3	+16 44	6.24	F	–	1	15867
8332	Aquarius	—	5827	42.4	– 6 23	6.20	A 3	–	1	16008
8334	Cepheus	ν 10	2288	42.6	+60 40	4.46	A 2 p	153	2	15899, 16229
8335	Cygnus	π^2 81	3504	43.1	+48 51	4.26	B 3	–	1	15871
8339	Cepheus	12	2294	44.5	+60 14	5.64	Ma	–	2	15899, 16229
8343	Pegasus	14	4525	45.4	+29 43	5.00	A	–	1	16090
8351	Capricornus	μ 51	6149	47.8	–14 1	5.18	F	–	1	16216
8356	Pegasus	16	4635	48.5	+25 27	5.05	B 3	–	1	15249
8357	Cygnus	–	2639	48.8	+55 20	5.54	B 3	154	1	15216
..	Cygnus	–	2640	49.1	+54 35	7.27	B 8	–	1	15216
..	Cepheus	–	2641	49.7	+55 44	6.86	K	–	1	15216
8373	Pegasus	17	4696	52.0	+11 36	5.59	A 2	–	1	15265
8383	Cepheus	–	*2007*	53.8	+63 9	5.35	Md	155	3	17181, 17277, 17278
8388	Cepheus	–	2010	55.9	+62 13	6.16	Mb	–	1	15063
..	Cepheus	–	*2323*	56.0	+61 10	R	A 3	156	1	15063
8399	Cepheus	–	*2233*	57.6	+62 0	6.48	B	–	1	15063
8402	Aquarius	o 31	5681	58.1	– 2 38	4.66	B 5	157	3	15231, 17118, 17178
8413	Pegasus	ν 22	4800	22 0.6	+ 4 34	4.90	K	–	1	16957
8416	Cepheus	18	2028	0.8	+62 38	5.46	Mb	–	2	15063, 17277
8417	Cepheus	ξ 17	*1802*	0.9	+64 8	4.40	Comp.	158	2	15115, 17181
8418	Aquarius	ι 33	6209	1.0	–14 21	4.35	B 8	–	1	14987
8426	Cepheus	10	2029	2.0	+62 18	5.39	K 5	–	1	15063
8428	Cepheus	29	2246	2.1	+61 48	5.17	Oe 5	159	2	15063, 17368
8439	Aquarius	35	6227	3.5	–19 1	5.74	B 3	–	2	15122, 16637
8442	Cepheus	–	2393	3.8	+58 21	6.31	G 5	–	2	15071, 15145
8446	Piscis Aust.	–	17622	4.3	–28 47	6.46	A 3	–	2	15127, 16638
8449	Pegasus	27	4349	4.8	+32 41	5.65	K	–	2	14974, 15040
8452	Aquarius	e 38	6196	5.2	–12 4	5.40	B 5	–	1	15948
..	Cepheus	–	2395	5.3	+58 48	6.56	A	160	2	15071, 15145
..	Cepheus			5.3	+58 48		A			
8454	Pegasus	π 29	4352	5.5	+32 41	4.38	F 5	–	2	14974, 15040
..	Cepheus	–	1815	6.7	+63 38	7.07	A 2	–	1	15115
8465	Cepheus	ζ 21	2475	7.4	+57 42	3.62	K	–	4	15071, 15130, 15135,
8468	Cepheus	24	1111	7.9	+71 51	4.99	G 5	–	1	17075
..	Cepheus	–	2482	8.1	+59 11	R	K	161	1	15145
8469	Cepheus	λ 22	2402	8.1	+58 56	5.19	Od	162	4	15071, 15130, 15135,
8476	Cepheus	–	2403	8.5	+58 34	6.52	K	–	2	15071, 15145
8478	Piscis Aust.	λ 16	17653	8.6	–28 16	5.40	B 9	–	3	16195, 16697, 16702
8485	Lacerta	–	*4711*	9.6	+39 13	4.64	K 2	–	1	17050
..	Cepheus	–	2409	9.7	+58 48	7.23	A 5	–	2	15071, 15145
8487	Lacerta	–	4073	9.7	+44 57	5.51	A	–	2	15102, 15168
8498	Lacerta	1	4526	11.6	+37 15	4.22	K	–	1	16969
8499	Aquarius	θ 43	5845	11.6	– 8 17	4.32	K	–	1	16147
..	Cepheus	–	2413	11.7	+58 36	7.08	A 2	–	2	15071, 15145

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..	Lacerta	—	4083	22 11.9	+44 35	7.12	A 3	—	1	15102
8512	Aquarius	ρ 46	5855	14.9	− 8 19	5.36	B 8	—	1	16147
8513	Pegasus	30	4998	15.5	+ 5 17	5.35	B 5	—	2	14919, 16133
8520	Pegasus	31	4784	16.6	+11 42	4.93	*B 3*	163	1	16150
8522	Pegasus	32	4299	16.7	+27 50	4.88	B 8	—	2	15904, 16156
8523	Lacerta	2	*3894*	16.9	+46 2	4.66	B 5	—	1	14995
8538	Lacerta	3	3358	19.6	+51 44	4.58	K	—	1	15158
..	Lacerta	—	3695	19.7	+50 42	7.22	A 3	—	1	15158
8546	Cepheus	—	383	21.3	+85 36	5.38	A	—	3	15897, 16164, 16719
8548	Pegasus	34	4705	21.5	+ 3 53	5.85	G	—	2	16973, 17097
..	Pegasus	—	4730	21.4	+25 24	7.11	A	—	3	15872, 16146, 16201
8551	Pegasus	35	*4710*	22.8	+ 4 12	4.93	K	—	2	16973, 17097
8566	Pegasus	37	4713	24.9	+ 3 56	5.47	F 5	—	2	16973, 17097
8571	Cepheus	δ 27	2548	25.4	+57 54	var.	G	164	11	17057, 17060, 17063,
8572	Lacerta	5	*3719*	25.4	+47 11	4.61	K 5	—	1	16904
8573	Aquarius	σ 57	5850	25.4	−11 11	4.89	A	—	1	15943
8574	Pegasus	38	*4708*	25.5	+32 4	5.51	A	—	1	16124
8579	Lacerta	6	4420	26.1	+42 36	4.54	B 3	—	2	15156, 16165
8603	Lacerta	8	4808	31.4	+39 7	5.36	*B 3*	165	5	15043, 16056, 16250,
..	Cepheus	—	1872	34.2	+63 14	7.06	K	—	1	15151
8622	Lacerta	10	4826	34.8	+38 32	4.91	Oe 5	166	3	15043, 16056, 16346
8627	Cepheus	30	*2102*	35.1	+63 4	5.21	A 2	—	5	15151, 16231, 16285,
8632	Lacerta	11	4266	36.1	+43 46	4.64	K	—	3	16978, 17062, 17073
8640	Lacerta	12	4912	37.0	+39 43	5.18	B 2	—	2	14981, 16250
8649	Aquarius	g 66	6324	38.2	−19 21	4.88	K 5	—	2	16990, 17098
8673	Aquarius	69	6346	42.4	−14 35	5.70	B 9	—	2	15128, 16242
8679	Aquarius	τ 71	6354	44.3	−14 7	4.21	K 5	—	2	15128, 16242
8702	Cepheus	—	703	47.9	+82 37	4.97	K	—	1	16981
8704	Aquarius	74	6371	48.2	−12 9	5.89	B 9	—	2	15999, 16200
8717	Pegasus	ρ 50	4961	50.2	+ 8 17	4.95	A	—	3	14915, 16172, 16217
8725	Lacerta	16	*4949*	51.9	+41 4	5.54	B 3	—	2	14975, 16157
8726	Lacerta	—	*3887*	52.1	+49 12	5.10	K	—	1	15141
8731	Lacerta	—	*3985*	52.7	+48 9	5.20	B 3	—	4	15141, 16139, 16196,
8748	Cepheus	—	640	55.2	+83 49	4.96	K	—	1	16982
8762	Andromeda	o 1	4664	57.3	+41 47	3.63	B 3	—	1	14975
8773	Piscis	β 4	4818	58.8	+ 3 17	4.58	*B 5*	167	1	14911
8780	Andromeda	3	4028	59.7	+49 30	4.91	K	—	1	16984
8795	Pegasus	55	4997	23 2.0	+ 8 52	4.69	Ma	—	1	16985
8796	Pegasus	56	4716	2.2	+24 56	4.98	K	—	1	16986
8805	Andromeda	5	3944	3.2	+48 45	5.83	F	—	1	16984
8815	Pegasus	57	*4981*	4.5	+ 8 8	5.41	Mb	—	2	15110, 16985
8819	Cepheus	π 33	1006	4.7	+74 51	4.56	G 5	—	2	15119, 16035
..	Andromeda	—	*3950*	4.8	+49 7	6.53	B 3	—	1	16984
8821	Pegasus	58	5170	5.0	+ 9 17	5.34	B 8	—	2	15110, 16985
8826	Pegasus	59	*4991*	6.7	+ 8 11	5.15	A 3	—	1	15110

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..	Pegasus	—	5020	23 8.0	+ 8 25	R	Mb	168	1	15110
8834	Aquarius	φ 90	6170	9.1	− 6 35	4.40	Ma	—	2	16987, 17047
8840	Aquarius	—	5852	10.4	− 4 3	5.55	A 2	—	1	15989
8841	Aquarius	ψ^1 91	6156	10.7	− 9 38	4.46	K	—	1	15048
8858	Aquarius	ψ^2 93	6160	12.7	− 9 44	4.56	B 5	—	2	15048, 16000
8865	Aquarius	ψ^3 95	6094	13.8	−10 9	5.16	A	—	2	15048, 16000
8867	Cepheus	—	1016	13.9	+74 46	6.44	A 2	—	1	15119
8872	Cepheus	o 34	1514	14.5	+67 34	4.90	G 5	—	1	16963
8880	Pegasus	τ 62	*4810*	15.7	+23 12	4.65	A 5	—	1	15189
8890	Aquarius	97	6406	17.4	−15 35	5.30	A 3	—	1	16009
8905	Pegasus	υ 68	4833	20.4	+22 51	4.57	G	—	1	15178
8911	Pisces	κ 8	4998	21.8	+ 0 42	4.94	A 2 p	169	3	15958, 17135, 17186
8916	Pisces	θ 10	5173	22.9	+ 5 50	4.45	G 5	—	1	14970
8922	Pegasus	—	4844	24.1	+22 31	6.45	K	—	1	15178
8923	Pegasus	70	*5009*	24.1	+12 13	4.67	K	—	3	16989, 17056, 17099
8939	Aquarius	b^3 101	6437	28.0	−21 28	4.76	A	—	1	15116
8963	Pegasus	75	4952	32.9	+17 51	5.42	A	—	2	15919, 16134
8965	Andromeda	ι 17	4720	33.2	+42 43	4.28	B 8	—	2	14982, 17256
8967	Andromeda	18	4180	34.3	+49 55	5.32	B 9	—	1	15072
8968	Aquarius	ω^1 102	*6471*	34.6	−14 47	5.16	A 5	—	2	15990, 17136
8969	Pisces	ι 17	*5035*	34.8	+ 5 5	4.28	G	—	1	15924
8976	Andromeda	κ 19	4522	35.5	+43 47	4.33	A	—	2	17180 17256
8980	Aquarius	$A^1$103	6357	36.4	−18 35	5.60	K	—	1	16151
8981	Andromeda	—	4127	36.6	+48 58	6.31	A 3	—	1	15072
8982	Aquarius	$A^2$104	6358	36.6	−18 23	4.95	G	—	1	16151
8984	Pisces	λ 18	*5037*	36.9	+ 1 14	4.61	A 5	—	1	15944
8988	Aquarius	ω^2 105	6476	37.5	−15 6	4.62	A	—	2	14906, 15990
8997	Pegasus	78	4627	39.0	+28 49	4.98	K	—	1	16983
8998	Aquarius	i^1 106	*6500*	39.0	−18 50	5.26	B 8	—	1	16151
9002	Aquarius	i^2 107	6506	40.8	−19 14	5.45	A 5	—	1	16151
9005	Cepheus	—	*1943*	41.8	+66 13	5.94	B 3	—	1	15103
9013	Cepheus	—	1562	43.1	+67 15	5.02	A	—	1	15103
9031	Aquarius	i^3 108	6522	46.2	−19 28	5.32	Ap	18	1	15949
..	Cassiopeia	—	3055	51.8	+55 17	7.01	K	—	1	15064
9059	Cassiopeia	—	*3076*	52.1	+55 9	5.69	F 5	—	2	15064, 16226
9064	Pegasus	ψ 84	4865	52.7	+24 35	4.75	Mb	—	2	16988, 17055
9071	Cassiopeia	σ 8	*3082*	53.9	+55 12	4.93	B 2	—	2	15064, 16226
9087	Pisces	29	5749	56.7	− 3 35	5.15	B 8	—	1	14912
9089	Pisces	30	6345	56.8	− 6 35	4.66	Mb	—	1	17007
..	Cassiopeia	—	*3103*	58.3	+55 0	R	*B 5*	170	1	15064
9098	Cetus	2	*6417*	58.6	−17 54	4.62	A	—	2	16125, 16245

REMARKS.

1. +61° 94, magn. 7.7.
2. ψ^1 Piscium. The spectra of the two components of this double star are partly superposed, and appear to be alike, except that the line K is a little stronger in the preceding and northern component.
3. +63° 147, magn. 7.8.
4. ζ Piscium. The spectra of the two components of this double star are superposed, but the spectrum of the fainter component only is seen on the following side of the image.
5. H. R. 478. This spectrum resembles that of ν Fornacis and τ^9 Eridani, which are described in H. A. **28**, 186, Remarks 143, 144. These stars may be called silicon stars, since the double line 4128.5, 4131.4, due to silicon, is the strongest line except those of hydrogen. Line 4077.9 is fairly well marked. The line K and the metallic lines are very faint. A list of these stars is given in Table VI.
6. +7° 275, magn. 7.3. This spectrum is like that of H. R. 478. See Remark 5.
7. +54° 393, magn. 7.4. This spectrum appears to resemble that of H. R. 478. See Remark 5.
8. H. R. 628,9. The spectra of the components of this double star are superposed, but owing to the difference in declination, the lines K, Hϵ, Hδ, Hγ and Hβ of the two spectra are separated. In the fainter and northern component, the line K is stronger than in the brighter component.
9. o Ceti. Photographs have been taken, with the 11-inch Draper Telescope, of the spectrum of this variable star at the time of nearly all the maxima occurring since November, 1886. A discussion of all these photographs will be made in another publication of this Observatory. A few remarks concerning the time of appearance of the bright lines at the maxima of February, 1905, and December, 1906, may, however, be of interest here. At the maximum occurring about February 18, 1905, the photometric magnitude of the star was 3.50. On January 26, 1905, 21 days before maximum, the magnitude was about 3.95, and the spectrum showed Hδ and Hγ to be well marked bright lines. On January 28, Hζ had begun to increase in brightness, and consisted of a narrow dark line with a bright line seen faintly on the edge of greater wave length. This combination of a bright and dark line is similar to that seen in the spectrum of Nova Persei, No. 2, and several other new stars. On February 7, when the magnitude was about 3.65, the bright portion of Hζ had become much stronger and the dark portion was barely visible. On February 11, Hι was distinctly bright, and on February 16, Hη was faintly seen as a bright line. On February 25 and March 1, when the star had passed maximum, a faint trace of Hθ, as a bright line, is seen. Therefore, the order in which the hydrogen lines become bright is not that of decreasing wave length. During this maximum, the dark line 4227.0 was broad and of strong intensity, as in spectra of Class Ma. The star, at the maximum which occurred on December 10, 1906, was unusually bright, the photometric magnitude being about 2.00. On November 16, 1906, 24 days before maximum, when the magnitude was 3.30, the spectrum showed the lines Hι, Hζ, Hδ, Hγ and Hβ, to be bright. The order of brightness was Hδ, Hγ, Hζ, Hβ and Hι. Hζ did not appear to be wholly bright, but had a well marked dark line on the edge of shorter wave length, similar to that already described as being present on January 28, 1905. On December 1 and 2, when the magnitude was about 2.00, Hθ and Hη were bright, but less intense than Hι. On December 18 and 19, Hη had become somewhat more intense than Hι or Hθ. During this maximum, the dark line 4227.0 was only about 0.5 as intense as during the maximum of February, 1905.
10. H. R. 682. This spectrum resembles that of H. R. 478. See Remark 5.
11. i Persei. The hydrogen lines, and the line K, are narrow and sharply defined, as in the spectrum of α Cygni, but the fainter lines are not seen with sufficient distinctness to determine whether, in wave length and intensity, they resemble those of that star.
12. ι Cassiopeiae. This spectrum is peculiar, in the intensity of several metallic lines, especially 4077.9, which may include 4076.8. This line is 2.0 as intense as any other line in the spectrum, except the hydrogen lines and the line K. A list of the stars in which this line is stronger than normal, is given in Table VII. This line was also found to be abnormally intense in the spectra of θ^1 Microscopii, ι Phoenicis, δ Normae, ξ Phoenicis and ζ Capricorni, classified in H. A. **28**, Part II. Remarks describing the peculiar spectra of these five stars may be found in H. A. **28**, 186 to 188.
13. +8° 386, magn. 8.0.
14. The spectrum resembles that of H. R. 478. See Remark 5.
15. H. R. 885. This spectrum is peculiar in having the band G separated into two or more distinct lines, instead of being continuous. In this respect it resembles spectra of Classes K 5 or Ma, but other features of these classes, such as increased intensity of line 4227.0, and sudden breaks at the end of greater wave length, are not seen. The spectrum may be composite. The star is not a known double.

16. H. R. 1040. This spectrum resembles that of η Leonis, which is described in detail in H. A. **28**, 24. It appears to be intermediate between the spectra of β Orionis and α Cygni. Several helium lines, such as 4026.4, 4387.8, and 4471.8, are well marked, as are also the silicon lines, 4128.5 and 4131.4. Several metallic lines are present.
17. ϵ Eridani. The end of shorter wave length is more intense than in typical stars of Class K.
18. H. R. 1100. The strongest lines except those of hydrogen are 4128.5 and 4131.4, and the spectrum is probably like that of H. R. 478.
19. +33° 704, magn. 7.8.
20. H. R. 1129. This star is not a known double, but the spectrum is a good example of the composite type. The portion from Hϵ to Hβ resembles that of Class F 5, but the band K, instead of being equal in width and intensity to Hϵ, as it is in typical stars of Class F 5, is no wider than in spectra of Class A 2, and the hydrogen lines Hλ, Hκ, Hι, Hθ, Hη and Hζ are as intense as in Class A, or A 2. The spectrum of the brighter component is probably of Class G, and the fainter component, probably of Class A.
21. H. R. 1133. In the intensity of several metallic lines, this spectrum resembles that of α Cygni.
22. +31° 649, magn. 6.8. The line Hβ is off the edge of the plate.
23. w Eridani. The spectrum of this double star is composite. From Hδ to Hβ, the spectrum appears to be of Class G. Hδ is double in both photographs of this spectrum, and the components, which are of nearly equal intensity, are not any stronger than in Class G. The band K is only about 0.4 as wide as in Class G, and is much fainter than the band H. The lines Hθ, Hη, and Hζ are present as in spectra of Classes B and A. The significance of the double line, Hδ, is not quite clear, unless, perhaps, the spectrum of the fainter component is of the Orion type, having narrow hydrogen lines. No lines of helium or argon are certainly seen in the composite spectrum, but they may be obliterated by the lines of the brighter component. This star is Burnham 1939, the magnitudes of the components being 4.95 and 6.33, respectively.
24. H. R. 1252. The spectrum is composite, having the lines of the spectrum of the first type stronger than those of the second. The spectrum of the brighter component thus appears to be Class A, with a fainter but very distinct spectrum of the second type superposed. The absorption band G, near Hγ, is clearly seen, but there is only a trace of the calcium band, K. Hη and Hζ are seen, as in spectra of the first type. This star is Burnham 2013, and the magnitudes of the components are given as 6 and 12.5. It is evident that the star of magnitude 6, must itself be double, since the star of magnitude 12.5, unless variable, is too faint for its spectrum to be photographed with this dispersion.
25. H. R. 1268. The spectrum shows no lines distinctly, except those of hydrogen and the lines 4128.5 and 4131.4.
26. +49° 1108, magn. 7.3. This spectrum may belong to Class A 2.
27. c Persei. Hβ consists of a fine bright line superposed on a faint dark band. Hδ and Hγ are very wide and apparently double. This is probably due to the superposition of a narrow bright line. The Orion lines are very faint.
28. f Persei. The spectrum is clearly composite, and appears to consist of a principal spectrum of Class G, or K, with a fainter spectrum of Class A superposed. The line K is only about 0.3 as wide and intense as Hϵ. This star is not in Burnham's Catalogue of Double Stars.
29. +14° 690, magn. 7.8.
30. H. R. 1417. This spectrum resembles those having the line Hβ bright, in the width and haziness of the hydrogen lines, Hδ and Hγ, and also several helium lines.
31. H. R. 1423. The line Hβ consists of a very narrow bright line superposed on a hazy dark band. The other hydrogen lines are dark and hazy.
32. −3° 881, magn. 8.0.
33. H. R. 1542. The additional hydrogen line Hδ', wave length 4200.7, is slightly stronger, and line 4089.2 is fainter, than in ϵ Orionis, the typical star of Class B. The spectrum is probably intermediate between Classes Oe 5 and B.
34. o^2 Orionis. This spectrum was classified from Plate B 983, taken with the 8-inch Draper Telescope.
35. H. R. 1600. The faint spectrum of +14° 795, magn. 8.2, which is of the first type, is seen only on the preceding side of H. R. 1600.
36. H. R. 1622. The lines Hϵ, Hδ, Hγ, and Hβ are bright and superposed on wide dark bands.
37. H. R. 1623. This spectrum is superposed on that of H. R. 1622, and is seen only on the following side of H. R. 1622.
38. ι Leporis. This may belong to Class B 9. The density of the image renders the exact relations of the fainter lines somewhat uncertain.
39. H. R. 1712. Line 4685.4 is as strong as in Class Oe 5. This line, which is much less intense than line 4649.2 in typical stars of Class B, is in this spectrum slightly more intense than 4649.2. Line Hγ', wave length 4542.4, is a little more intense than in Class B. In these respects, this spectrum is intermediate between Classes Oe 5 and B.
40. +58° 828, magn. 8.3.
41. H. R. 1732. This spectrum resembles that of H. R. 478. See Remark 5. Lines 4128.5 and 4131.5, which are clearly separated, are the strongest lines except those of hydrogen, but they have not more than 0.1 of the intensity of Hδ.
42. H. R. 1740. The intensities of the metallic lines resemble those in the spectrum of ϵ Aurigae, of which a detailed description is given in H. A. **28**, 31.
43. +2° 936, magn. 7.6.

44. m Orionis. The lines are hazy. This may be due to the superposition of the spectrum of +3° 872, magn. 7.5, which follows 1ˢ.2, north 0′.7.
45. H. R. 1789. The line Hβ is a well marked bright line superposed on a faint dark band. Hδ and Hγ are dark, and unusually faint, with only a trace of a bright line centrally superposed. The helium lines are well marked.
46. +2° 961, magn. 7.6.
47. +3° 901, magn. 8.0.
48. +3° 910, magn 8.0.
49. +3° 928, magn. 7.8.
50. H. R. 1858. The line Hβ is bright. The dark lines are indistinct.
51. −0° 1009, magn. 8.3.
52. H. R. 2033. Lines 4128.5 and 4131.4 are stronger than in typical stars of Class B 9.
53. +27° 914, magn. 7.7.
54. θ Leporis. The lines appear to be hazy on the only plate obtained of this spectrum.
55. + 28° 1062, magn. 7.5. The spectrum is faint, but appears to be peculiar in the intensity of several metallic lines, especially 4077.9, which is about equal to the line K.
56. +29° 1165, magn. 7.7.
57. H. R. 2284. The line Hβ is bright, with a faint trace of dark edges. Hγ is an extremely faint and wide dark band, with no brightness perceptible. Other hydrogen lines and also the helium lines are dark and of the same intensity as in other stars of Class B 2.
58. H. R. 2385. The lines are very sharp, and the spectrum resembles that of η Leonis, classified and described in H. A. **28**, 24.
59. H. R. 2783,4. The spectra of the components of this double star are superposed. The spectrum of the preceding and fainter component, which is only faintly visible on the preceding edge of the brighter image, is of the first type, but is not sufficiently distinct for the exact class to be determined.
60. R Canis Majoris. This is a variable star of the Algol type, maximum magnitude 5.79. The spectrum is on the edge of the plate.
61. H. R. 2844. The spectrum is slightly peculiar in the increased intensity of several lines, especially a line near Hϵ, which appears to be the Orion line 3982.8.
62. H. R. 2855. The line Hβ is a very narrow bright line. Other lines are dark.
63. H. R. 2874. This spectrum is near the edge of the plate, but appears to be peculiar in the intensity of the metallic lines, and to resemble the spectrum of α Cygni, except that the lines are broader.
64. +14° 1817, magn. 7.7.
65. +13° 1832, magn. 7.7.
66. ζ Puppis. For a detailed description of this spectrum, see H . A. **28**, 148. Although this star is very low in Cambridge, two photographs have been secured with the 11-inch Draper Telescope, which show the peculiar character of the spectrum. The two bright bands at 4633 and 4688 are well seen, also the additional hydrogen lines Hϵ', Hδ', and Hγ'.
67. H. R. 3398. Line 4077.9 is slightly more intense than the double line, 4128.5 and 4131.4, which is about equal, to the line K. This spectrum probably resembles θ Microscopii, described in H. A. **28**, 186, Remark 158.
68. F Hydrae. The faint spectrum of −6° 2707, magn. 8.7, appears on the preceding side of the spectrum of H. R. 3459, and is of the first type.
69. b Cancri. This spectrum resembles that of α Doradus, and differs from τ^9 Eridani in having the line K well marked. The double line, 4128.5 and 4131.4, is a little stronger than K.
70. f Ursae Majoris. This spectrum is peculiar and appears to be composite. The hydrogen lines are as intense as in Class A 3, while the metallic lines resemble those of Class F 5. The spectrum is similar to that of δ Normae. See H. A. **28**, 187, Remark 163. Line 4077.9, however, is less intense in this spectrum than in that of δ Normae.
71. I Hydrae. The line Hβ consists of a very narrow bright line superposed on a faint dark band. The other hydrogen lines are dark and ill-defined. The Orion lines are faint.
72. H. R. 4123. The line Hβ appears double on a photograph taken December 16, 1904.
73. −13° 3165, magn. 7.7.
74. U Hydrae. This star varies irregularly, from magnitude 4.5 to 6.3. The characteristic feature of this typical spectrum of the fourth type, seen on photographs of this dispersion, is a wide absorption band whose edge of shorter wave length is at 4738 approximately. Another wide band appears having still greater wave length. The violet end of the spectrum is almost completely cut off by absorption.
75. +46° 1658, magn. 8.0.
76. +10° 2208, magn. 7.6.
77. H. R. 4254. This may belong to the preceding class.
78. +39° 2450, magn. 7.8.
79. +39° 2452, magn. 7.8.
80. +39° 2453, magn. 8.0.
81. +20° 2650, magn. 7.8.
82. +17° 2469, magn. 6.8. The line 4077.9 is approximately as intense as the line K. The image is very narrow, but the spectrum appears to resemble that of θ^1 Microscopii, described in H. A. **28**, 186, Remark 158.
83. H. R. 4707. This is No. 6148 in Burnham's Catalogue of Double Stars. The photometric magnitudes of the components are 4.82 and 8.31. The spectrum is photographed from Hζ to a somewhat greater wave length than Hβ. From Hϵ to Hβ, it appears to be of Class F 5. From Hζ to Hϵ, it appears to be of Class A 3. The line K is not more than 0.5 as broad as in normal spectra of the second type.
84. H. R. 4752. This spectrum is like that of τ^9 Eridani, described in H. A. **28**, 186, Remark 144.

85. H. R. 4766. The line 4077.9 is nearly as intense as K. The lines 4128.5, 4131.4, and 4215.7 are well marked.
86. H. R. 4785. The portion of the spectrum of shorter wave length than line K is very strong, and the spectrum extends farther into the violet than in typical stars of this magnitude belonging to Class G.
87 H. R. 4791, 2. Two spectra in same declination but slightly different right ascension are partly superposed. The two classes of spectra are well defined.
88. +10° 2459, magn. 7.7.
89. H. R. 4892, 3. These two spectra are partly superposed.
90. −4° 3432, magn. 7.6.
91. ζ Ursae Majoris. The spectrum of this star and that of its companion, 14″ distant, are similar, and are partly superposed. ζ Ursae Majoris was found to be a spectroscopic binary by Pickering in 1889. In November, 1907, the companion was found to be a spectroscopic binary, by Ludendorff and, a little later, by Frost. In ζ Ursae Majoris, the two stars which form the system must be of nearly equal brightness, for lines of nearly equal intensity are periodically double. In the companion, one of the two stars must be considerably fainter than the other, as its lines have not yet been photographed.
92. R Hydrae. The spectrum of this variable star, taken on April 22, 1905, when the magnitude of the star was 4.4, shows Hη, Hζ, Hδ, Hγ and Hβ as bright lines. The spectrum is similar to that of o Ceti, on February 25, 1905, except that Hβ was not bright in o Ceti on that date.
93. o Virginis. This spectrum is similar to that of θ^1 Microscopii. Line 4077.9, which is stronger than 4128.5 and 4131.4, is about equal to the line K.
94. H. R. 5120. The hydrogen lines, Hδ, Hγ and Hβ, of A. G. C. 18511, magnitude 7.2, are superposed on this spectrum, and are slightly south of the corresponding lines of H. R. 5120.
95. H. R. 5187. This spectrum closely resembles that of o Virginis, but the line K is less intense.
96. H. R. 5313. The double line, 4128.5 and 4131.4, is much more intense than any other line except those of hydrogen. The line K is very faint.
97. κ Bootis. The spectra of the two components of this double star are superposed. The spectrum of the fainter component only is seen on the preceding side of the image, and is of the first type, probably like that of the brighter star.
98. −13° 3873, magn. 8.0.
99. ε Bootis. The spectra of the components of this double star are Class K and Class A. In the combined spectrum, the band K is about 0.3 as intense as band H, and the ultra violet hydrogen lines are as intense as in spectra of the first type.
100. −3° 3698, magn. 7.6.
101. H. R. 5597. The double line, 4128.5 and 4131.4, is the strongest line in the spectrum, except those of hydrogen.
102. ω Bootis. The image is very dense.
103. ι Librae. The double line, 4128.5 and 4131.4, is more intense than any line in the spectrum, except those of hydrogen.
104. H. R. 5656. This star was suspected by Mrs. Fleming to be a spectroscopic binary, because the line K appears double on a plate taken March 8, 1905. Additional photographs were secured but the doubling has not been confirmed.
105. μ Bootis. The spectra of the components of this double star are superposed. The spectrum of H. R. 5734 is seen faintly on the following side of H. R. 5733.
106. χ Serpentis. The line 4077.9 is approximately equal to the line K. Other metallic lines are faint.
107. H. R. 5857. The double line, 4128.5 and 4131.4 is the strongest line in the spectrum, except those of hydrogen. Numerous metallic lines are present, but they are very faint.
108. R Coronae Borealis. A photograph of the spectrum of this variable star, secured on August 16, 1906, when the photometric magnitude was 6.00, shows it to be of a peculiar class. The calcium bands K and H are present, as in spectra of Classes G and K. Numerous faint dark lines are seen, and appear to be identical with those in spectra of Class K, but other lines seem to be anomalous. There is very little absorption in the region of the band G, so that the light is nearly continuous throughout the spectrum. No distinctly bright lines are seen. Two dark lines having the approximate wave lengths 4754 and 4762 are especially well marked.
109. H. R. 5941. This spectrum is peculiar in combining sharply defined hydrogen lines and very wide and ill defined helium lines. This same peculiarity appears on Plate X 11666, a photograph of this spectrum, taken in Peru on June 15, 1907, with the 13-inch Boyden telescope. In this respect the spectrum resembles that of ε Capricorni, which, in addition, has the line Hβ bright, and variable.
110. ν Scorpii. The spectra of the two components of this double star are superposed, and that of H. R. 6026 is seen faintly on the preceding edge of the spectrum of H. R. 6027. The only lines seen in the spectrum of H. R. 6026 are the strong hydrogen lines Hε, Hδ, Hγ, and Hβ.
111. ρ Ophiuchi. The lines are hazy and ill defined.
112. ω Herculis. The faintness of all lines except those of hydrogen renders this spectrum peculiar. The line K is very faint, and only a few faint metallic lines are present.
113. χ Ophiuchi. Hε, Hδ, Hγ, and Hβ are bright, and are superposed on wide dark bands.
114. i Scorpii. The lines in this spectrum are wide.
115. A Draconis. This spectrum resembles that of β Orionis in the presence of strong helium lines. The line K is as strong as in Class A 2. The hydrogen lines are wider, however, than in β Orionis. This may be due to atmospheric conditions.

116. H. R. 6226. The line 4077.9 is nearly as intense as the line K, and the spectrum resembles θ^1 Microscopii. See Remark 12.
117. l Herculis. This spectrum shows the double line 4128.5, 4131.4 to be somewhat stronger than normal, and slight peculiarities appear in the intensity of several metallic lines.
118. H. R. 6254. This spectrum resembles that of θ^1 Microscopii. See Remark 12.
119. ν Draconis. The spectra of the two components of this double star are partly superposed. They are very nearly, if not exactly, alike.
120. H. R. 6712. The lines in this spectrum appear to be hazy.
121. H. R. 6729,30. The two components of this double star are nearly equal in brightness. The spectrum is composite. The following star, which is magnitude 5.13, has a spectrum of an earlier class than that of the preceding star, magnitude 5.21. As a whole, the system resembles Class A 3, with the absorption band G as clearly seen as in stars of the second type. The spectrum of the fainter component only is seen on the preceding side of the image and is of Class G 5, or K.
122. H. R. 6736. The additional lines Hε', Hδ', and Hγ' are seen, as in ζ Puppis. No other dark lines are present, except 4685.2, which is dark also in τ Canis Majoris.
123. H. R. 6781. Owing to a difference in declination, the lines of the two components of this double star are well separated. The spectra are alike.
124. H. R. 6811. This spectrum probably resembles δ Normae, in the marked intensity of some of the metallic lines.
125. H. R. 6868. The image is very dense, and the exact class is somewhat uncertain.
126. d Serpentis. This star is No. 8562 in Burnham's Catalogue of Double Stars, where the magnitudes of the components are given as 5.5 and 7.8, respectively. It has been suspected of variability by Müller and Kempf, but Pickering and Wendell have found the light constant during numerous photometric observations. See H. A. **55**, page 51, Remark on 182200. The spectrum is clearly composite, the brighter component is Class A, the fainter, probably having a spectrum of Class G. The line K is faint and hazy, the hydrogen lines, Hδ, Hγ, and Hβ, are as intense as in Class A 5, while numerous metallic lines and the band G are seen, as in spectra of Class G. This spectrum differs from many of those of the composite class, in that the brighter component has the earlier type of spectrum.
127. H. R. 6932. The double line, 4128.5, 4131.4, is the strongest line in this spectrum, except those of hydrogen. The line 4077.9 is fairly well marked, but less intense than the double line, 4128.5, 4131.4.
128. c Draconis. The double line, 4128.5, 4131.4, is a little stronger than in the typical star of Class A, but it is less intense than the line K.
129. ε Lyrae. These spectra are partly superposed.
130. ζ Lyrae. The line K is sharply defined, while the hydrogen lines, Hε, Hδ, Hγ, and Hβ, are hazy. This is probably due to the superposition of H. R. 7057.
131. H. R. 7057. This spectrum is faintly seen on the following side of H. R. 7056.
132. θ Serpentis. The spectra of the two components of this double star appear to be exactly alike.
133. H. R. 7167. The spectrum is faint, but probably resembles that of θ^1 Microscopii. See Remark 12. The line 4077.9, is well marked.
134. Nova Aquilae, No. 2. The spectrum of this new star appears on the edge of a plate taken for g Aquilae on August 18, 1905. The examination of this plate by Mrs. Fleming, led to the discovery of the Nova. The broad bright hydrogen bands, Hδ, Hγ and Hβ, are seen, and faint dark bands accompany Hγ and Hβ on the edge of greater wave length. Traces of two very narrow bright bands are also seen between Hγ and Hβ. See H. C. 106, for description of the appearance and spectrum of this Nova.
135. υ Sagittarii. This is one of the most interesting of the stars which have been found from the Harvard photographs to have a variable spectrum in which the line Hβ is sometimes dark and sometimes bright. The other stars are η Centauri, J Velorum, ε Capricorni, 27 Canis Majoris, and κ^1 Apodis. A description of the changes in the spectrum of η Centauri, from 1892 to 1899, may be found in H. A. **28**, 180 to 182. Later photographs show even more marked changes. It should be noted that υ Sagittarii and ε Capricorni have been found to be spectroscopic binaries, by Campbell and Slipher, respectively. The line Hβ was found by Mrs. Fleming to be bright in the spectrum of υ Sagittarii, on a photograph taken September 5, 1888, and Hα was seen visually as a bright line by Campbell, in 1894. In 1899, Campbell announced his discovery of the varying velocity of υ Sagittarii in the line of sight, and gave measures showing a change of radial velocity from -31 km. to $+12$ km., in 30 days. So far as known, no other measures have ever been published, nor has any period been given for this spectroscopic binary. The Harvard photographs show remarkable changes in the spectrum of this star, and that we have another difficult spectroscopic problem, perhaps of the order of β Lyrae, although no variation in the light of υ Sagittarii has ever been observed. A number of photographs of this spectrum have been taken, both in Cambridge and in Arequipa, for the purpose of determining the nature and period of the changes, if these are regular. A detailed study of all the photographs has not yet been made, and therefore, only a general outline of the changes will be given here. The system of υ Sagittarii is apparently multiple, composed of at least three bright bodies. The spectrum always appears to be com-

posite, the principal lines being due to two bodies, one of which has a spectrum like β Orionis, and the other resembles that of α Cygni or ϵ Aurigae. All of the strong lines of α Cygni appear to be present, in addition to numerous others which are characteristic of ϵ Aurigae, but the line K is never as wide as in ϵ Aurigae. The spectrum of the β Orionis type was predominant on the following dates, September 11, 17, and 26, 1892, July 26, 1894, October 1, 3, 5, 1901, and July 12, 1902. On these dates, the spectrum is very much like that of β Orionis, except that the line K is wider, and numerous faint lines are seen which are not present in the spectrum of β Orionis. Hϵ, Hδ, Hγ, and also Hβ are strong lines of absorption, Hδ and Hγ frequently being clearly double. Lines 4026.4, 4120.5, 4128.5, 4131.4, 4144.0, 4387.8, 4471.8 and 4481.4, are all well marked, as in β Orionis. Numerous other lines, fainter than those named above, are visible, and apparently belong to a body having a spectrum resembling that of ϵ Aurigae. No trace of the spectrum of a third body is seen. On 90 photographs, taken between July 24, 1892 and September 13, 1907, the spectrum is markedly different from that described above. The line Hβ is either wholly invisible or appears as a very narrow bright or dark line. Hδ and Hγ are very faint dark lines, being fainter respectively than lines 4144.0, or 4387.8. The lines characteristic of ϵ Aurigae, described above as being faintly seen, are now well marked, and the lines characteristic of β Orionis are not readily distinguishable amid the many strong lines. Numerous lines appear slightly bright on the edge of greater wave length, and on several photographs, when this type of spectrum predominates, fine dark lines are seen having greater wave length than the dark bands K and H. These fine lines resemble the lines of reversal superposed on the bright bands K and H, in the spectrum of Nova Persei, No. 2, in March, 1901. See H. A. **56**, No. 3. The faintness or invisibility of Hβ can not be due to the quality of the film at the end of greater wave length, for on these photographs, the helium line 4922.1 is well marked. It seems possible that the appearance may be explained by assuming that a third body, having a spectrum resembling δ Centauri, that is of the Orion type with bright hydrogen lines, has come into view. The bright line of the third body, being superposed upon the dark Hβ of the other star, obliterates that line, or makes it very faint, while Hγ and Hδ, although still dark, are weakened by a similar superposition. No photograph has been obtained in which the spectrum of the assumed bright line star appears to predominate. Although the spectrum characteristic of β Orionis, and showing strong dark hydrogen lines, appears to be predominant on only a small proportion of the plates, yet it has been photographed both in Cambridge and in Arequipa. If there is any regularity in the change from one type of spectrum to the other, the period is probably not very short. Photographs taken on successive nights show only slight changes, and the shortest interval between photographs showing the two types of spectra has been 27 days. Thus, photographs taken on July 17, 18, 19, 20, 1901, and September 4, 1901, show the faint phase of the hydrogen lines and numerous fine lines resembling those in ϵ Aurigae. But on October 1, 3, and 5, 1901, the hydrogen lines were strong lines of absorption, and the spectrum resembled β Orionis. Again on June 2, 3, 4, 5, 6, 7, 9, 10, and 11, 1902, the hydrogen lines were faint, and Hβ was either invisible, or barely visible as a bright line, but on July 12, 1902, Hβ was a strong dark line, and the spectrum again resembled that of β Orionis.

136. H. R. 7395. The double line, 4128.5, 4131.4, is the strongest line, except those of hydrogen. The line K is fainter than 4128.5, 4131.4. This spectrum is probably like that of α Doradus. See H. A. **28**, 186, Remark 145.
137. κ Aquilae. The lines are wide and hazy in this spectrum.
138. ψ Aquilae. This spectrum is near the edge of the plate.
139. H. R. 7592. This spectrum is slightly peculiar. Line 4026.4 is clearly seen. Line 4481.4 is very narrow and sharply defined.
140. H. R. 7593. The spectrum of H. R. 7593 is of the Orion type, and is probably Class B 3, but the exact class is somewhat uncertain owing to the superposition of H. R. 7594. Only the broad hydrogen lines, Hζ, Hϵ, Hδ, Hγ, and Hβ, of the latter star are seen, and the class of spectrum cannot be determined.
141. b^2 Cygni. The line Hβ is bright, and is superposed on a dark band. The other hydrogen lines are dark and hazy.
142. +27° 3668, magn. 7.1. The double line, 4128.5, 4131.4, is well marked, but not quite so strong as the line K.
143. o Capricorni. The spectra of the components of this double star are partly superposed. The spectrum of H. R. 7829 is visible only on the preceding side of the image. It is of the first type and probably similar to that of H. R. 7830, but owing to faintness, the exact class can not be determined.
144. H. R. 7866. This star is not given in Burnham's Catalogue of Double Stars, but the spectrum is clearly composite. The principal spectrum is K 5, but Hδ, Hγ, and Hβ are a little stronger than in typical stars of this class, and the wide band K of normal spectra of Class K 5 is represented by a hazy band, having not more than 0.4 of the intensity of Hϵ. The secondary spectrum is probably of Class B 9 or A.
145. H. R. 7879. This spectrum resembles that of θ^1 Microscopii. Line 4077.9 is the strongest line, except K and the hydrogen lines.
146. H. R. 8020. This spectrum is like that of β Orionis.

A list of the lines in the spectrum of that star is given in H. A. **28**, 238.

147. H. R. 8023. This spectrum contains the additional hydrogen lines, first found in ζ Puppis, and resembles that of H. R. 6736, except that line 4471.8 is present, and of well marked intensity.

148. f^1 Cygni. Hζ, Hε, Hδ, Hγ, and Hβ are bright, and are superposed on wide, hazy, dark bands. The Orion lines are very faint and indistinct, and several narrow bright lines are present. In the general faintness of the dark lines, the spectrum resembles that of γ Cassiopeiae. The bright lines, Hζ and Hε, are not centrally superposed, but lie towards the end of shorter wave length of the dark band.

149. +46° 3141, magn. 7.6.

150. γ Equulei. This spectrum resembles that of α Circini. Line 4077.9 is strong. The spectrum of α Circini is described in H. A. **28**, 187, Remark 166.

151. σ Cygni. This spectrum is like that of η Leonis. See Remark 16.

152. H. R. 8171. The line Hβ is bright and superposed on a hazy dark band. Hδ and Hγ are hazy and ill defined. Hγ shows a trace of a bright central line.

153. ν Cephei. This spectrum is like that of α Cygni, which is described in detail in H. A. **28**, 26.

154. H. R. 8357. The dark hydrogen lines, Hζ, Hε, Hδ, Hγ, and Hβ, of +55° 2638, magn. 7.5, are superposed on this spectrum.

155. H. R. 8383. The spectrum of this star is of the third type, and on November 27, 1907, the line Hβ was bright. An excellent photograph taken on January 31, 1908, shows six bright hydrogen lines, Hη, Hζ, Hε, Hδ, Hγ, and Hβ. Hη and Hζ are very faint. Hβ is the strongest bright line. Although this spectrum has Hε bright, and therefore differs from the spectra of the third type with bright hydrogen lines which are generally characteristic of variable stars of long period, yet it seemed best to examine chart plates for variability of this object. This star was accordingly examined on 68 chart plates which show a small but distinct variation of about 0.5 magnitude. To confirm this variation 11 photometric observations have been made by Professor Wendell on eight nights between January 30 and April 4, 1908. These observations show that the star is variable, but the range so far observed by him is only about 0.25 magnitude.

156. +60° 2323, magn. 7.8.

157. H. R. 8402. The line Hβ is suspected to be bright.

158. ξ Cephei. This spectrum is composite. Many of the metallic lines are as strong as in spectra of Class F, but the line K is narrow, and not more than 0.5 as intense as Hε. The spectrum of the fainter component only is seen on the preceding side of the image. This star is Burnham 11483. The photometric magnitudes of the components are 4.57 and 6.47.

159. H. R. 8428. This spectrum may be considered intermediate between Class Oe 5 and Class B, as the additional hydrogen lines at wave lengths 4026.4, 4200.7, and 4542.4, are fainter than in τ Canis Majoris, the typical star of Class Oe 5, and are stronger than in ε Orionis, the typical star of Class B.

160. +58° 2395, magn. 6.5. The image consists of two similar spectra, partly superposed. This star is Burnham, 11542, magn. 7.2, 8.0, 8.0.

161. +59° 2482, magn. 7.6.

162. λ Cephei. The spectrum of this star is more nearly like that of ζ Puppis than any other so far photographed. It differs slightly from ζ Puppis, especially in the portion between Hγ and Hβ. The bright band 4688 is less intense, and line 4471.8 is more intense than in ζ Puppis. Lines 4514.5 and a faint trace of the double line 4415.1, 4417.5, are seen in λ Cephei, but not in ζ Puppis.

163. H. R. 8520. Hγ and Hβ are bright, and are superposed on dark bands. All dark lines are very wide.

164. δ Cephei. This star varies from magnitude 3.7 to 4.6, in a period of $5^d.366+$. In 1894, Belopolsky found that it is also a spectroscopic binary with a period agreeing with that of the variation in light. Eleven excellent photographs of the spectrum of δ Cephei, taken between October 1 and December 7, 1907, have been studied, to determine whether there are any changes sufficiently marked to be seen by the method of superposition and direct examination. The spectrum of the companion star, +57° 3749, which precedes 2^s and is south 1'.5, is seen faintly on the preceding side of the spectrum of δ Cephei, and is of the first type. Slight changes in the intensity of the hydrogen lines, Hδ, Hγ, and Hβ, are seen on some of these photographs, and all the hydrogen lines, especially the ultra-violet lines Hθ, Hη, and Hζ, are certainly more intense on the photograph taken October 12, 1907, than on the other photographs. This increased intensity can not be traced to the superposition of any lines in the spectrum of the companion. On this plate, the spectrum of δ Cephei appears to be composite, and to consist of a spectrum of Class G, with a fainter spectrum of Class A superposed. The line K is not narrow, however, as is usual in this class of composite spectra, and the change is so slight that it can not be accepted as real without further confirmation.

165. 8 Lacertae. The image consists of two spectra in the same right ascension, but different declinations, so that the lines are well separated. The lines of the northern component are stronger than those of the southern. Both spectra are of the Orion type, and Hβ is a very narrow bright line in the spectrum of the brighter and northern component. The spectrum of the southern component is apparently of Class B 5 or B 8.

166. 10 Lacertae. This spectrum contains the additional lines of hydrogen at wave lengths 4026.4, 4200.7,

and 4542.4, and is like that of τ Canis Majoris, which is described in detail in H. A. **28**, 150.

167. β Piscium. Hδ, Hγ, and Hβ are bright lines superposed on dark bands.

168. +8° 5020, magn. 7.7.

169. κ Piscium. This spectrum resembles that of θ^1 Microscopii, but line 4077.9 is not quite so strong as in that star.

170. +54° 3103, magn. 7.9. Hβ is a very narrow bright line. The spectrum is faint and may belong to Class B 3.

Table II gives the additional plate numbers for all stars whose spectra were examined on more than three photographs.

TABLE II.

ADDITIONAL PLATE NUMBERS

H. R.	Plate Numbers.	H. R.	Plate Numbers.	H. R.	Plate Numbers.
82	16650, 16705, 16715	4203	16393, 16478		15813, 15856, 15881,
490	17087, 17182	4590	16496		15905, 16617, 16914,
620	17003, 17059	4753	17312		16922, 16931, 16935,
669	16728	4766	17312		16936, 16942, 16945,
681	15433, 15453, 15467,	4778	16519		16949, 16954, 16959,
	15469, 15473, 15497,	5054	15588, 16199, 16441,		16968, 16972, 16977,
	15518, 16708, 16717,		16444, 16449, 16457,		16980, 16996, 17000
	16718, 16720, 16722,		16462, 16464, 16468,	7708	15879, 16163
	16723, 16724, 16725		16471, 16473, 16475	7884	16649
1229	17252	5080	15683, 15690	7942	17061
1162	17273	5350	16542	8020	15227, 15232
1324	17219, 17281	5652	15578, 15584, 15589,	8047	15232
1333	17281		15603, 15626, 15632,	8074	15232, 17054
1346	17257		15651, 15659, 15673,	8289	16110, 16261, 16644,
1356	17257		15693		16700
1622	15377	5656	15578, 15584, 15589,	8465	15145
1845	17267, 17271		15603, 15626, 15632	8469	15145
1858	17217, 17271	7125	17325	8571	17066, 17074, 17080,
2244	17298	7133	16609, 16652		17090, 17105, 17111,
3420	15581, 15612, 15619,	7176	16610, 16909		17179, 17188
	15621	7342	15026, 15039, 15041,	8603	17130, 17143
4163	15364, 15367, 15378,		15045, 15056, 15070,	8627	16639, 16694
	15384, 15395, 15408,		15078, 15099, 15108,	8731	16204
	15418, 15419, 15426,		15114, 15118, 15134,		
	15437, 15446, 15462		15144, 15150, 15769,		

For the sake of convenience, the following five tables are appended, in which peculiar stars, taken from Table I, are grouped together in separate lists. Table III gives a list of those stars in which the additional hydrogen lines at wave

TABLE III.

STARS SHOWING THE ADDITIONAL LINES OF HYDROGEN.

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Rem.
				h. m.	° ′			
1542	Camelopardus	9	358	4 44.1	+66 10	4.38	B	33
1712	Auriga	–	980	5 9.7	+34 12	5.81	B	39
3165	Puppis	ζ	3939	8 0.1	−39 43	2.27	Od	66
6376	Sagittarius	9	13814	17 57.7	−24 22	5.86	Oe 5	122
8023	Cygnus	–	3639	20 53.1	+44 33	6.01	Oe 5	147
8428	Cepheus	19	2246	22 2.1	+61 48	5.17	Oe 5	159
8469	Cepheus	λ 22	2402	22 8.1	+58 56	5.19	Od	161
8622	Lacerta	10	4826	22 34.8	+38 32	4.91	Oe 5	166

lengths 4026.4, 4200.0, and 4524.4 are present and well marked. The form of the table is identical with that of Table I.

A list of all the stars in Table I, whose spectra are of the Orion type with one or more bright hydrogen lines, is given in Table IV. The first seven columns of this table are the same as the corresponding columns of Table I. The eighth column gives the class to which the spectrum would belong if all the lines

TABLE IV.

STARS OF THE ORION TYPE HAVING BRIGHT HYDROGEN LINES.

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class.	Hζ	Hε	Hδ	Hγ	Hβ	Rem.
				h. m.	° ′								
1273	Perseus	c 48	939	4 1.4	+47 27	4.03	B 3	0	0	0	*1*	*4*	27
1423	Eridanus	–	893	4 24.5	−13 17	5.50	B 3	0	0	0	0	*1*	31
1622	Camelopard.	11	804	4 57.4	+58 50	5.31	B 3	*1?*	*2*	*2*	*3*	*6*	35
1789	Orion	25	1005	5 19.6	+ 1 45	4.73	B 3	0	0	0	*1*	*5*	45
1858	Taurus	120	877	5 27.6	+18 29	5.50	B 3	0	0	0	*1*	*5*	50
2284	Canis Major	–	1460	6 16.8	−11 44	5.49	B 2	0	0	0	0	*3*	57
2855	Canis Major	–	1874	7 22.8	−22 53	5.48	B 2	0	0	0	0	*1*	62
3858	Hydra	I	*2684*	9 36.7	−23 8	4.74	B 2	0	0	0	0	*1*	71
6118	Ophiuchus	χ 7	4282	16 21.2	−18 14	4.85	B 3	0	*1*	*1*	*2*	*7*	113
7708	Cygnus	b^2 28	3907	20 5.7	+36 33	4.82	B 2	0	0	0	0	*3*	141
8047	Cygnus	f^1 59	*3133*	20 56.4	+47 8	4.86	Bp	*1*	*3*	*3*	*4*	*8*	148
8171	Cepheus	6	1527	21 17.3	+64 27	5.18	B 3	0	0	0	*1?*	*3*	152
8520	Pegasus	31	4784	22 16.6	+11 42	4.93	B 3	0	0	0	*1*	*2*	163
8603	Lacerta	8	*4808*	22 31.4	+39 7	5.36	B 3	0	0	0	0	*1*	165
8773	Pisces	β 4	4818	22 58.8	+ 3 17	4.58	B 5	0	0	*1*	*2*	*4*	167
..	Cassiopeia	–	*3103*	23 58.3	+55 0	R	B 5	0	0	0	*1?*	*2*	170

were dark. The ninth column gives the brightness of the hydrogen lines, assuming bright Hβ in the spectrum of μ Centauri to be 10. The tenth column refers to the remarks following Table I.

TABLE V.

STARS WHOSE SPECTRA ARE OF THE COMPOSITE TYPE.

H. R.	Constellation.	B. Fl.	DM.	R. A. 1900.	Dec. 1900.	Magn.	Class of Bright Sp.	Class of Faint Sp.	Remarks.
				h. m.	° ′				
1129	Camelopardus	—	*604*	3 37.3	+63 2	4.96	G	A	20
1211	Eridanus	w 32	631	3 49.2	− 3 14	6.33	G 5	B?	23
1212				3 49.2	− 3 14	4.95			
1252	Taurus	36	609	3 58.4	+23 50	5.67	A	G	24
1306	Perseus	f 52	912	4 8.1	+40 14	4.89	K	A	28
3619	Ursa Major	f 15	1365	9 1.9	+52 0	4.54	A 3	F 5	70
4707	Coma Beren.	12	2337	12 17.5	+26 24	4.78	G	A	83
5505	Bootes	ε 36	2417	14 40.6	+27 30	5.12	K	A	99
5506	Bootes			14 40.6	+27 30	2.70			
6729	Hercules	95	3280	17 57.2	+21 36	5.21	A 3	G 5	121
6730	Hercules			17 57.2	+21 36	5.13			
6918	Serpens	d 59	3936	18 22.1	+ 0 8	5.33	A	G	126
7866	Cygnus	47	4079	20 30.0	+34 54	4.85	K 5	B?	144
8417	Cepheus	ξ 17	*1802*	22 0.9	+64 8	4.40	A 3	G	158

A description of the general characteristics of spectra of the Orion type, having bright hydrogen lines, may be found on page 228 of H. A. 28.

TABLE VI.

STARS IN WHOSE SPECTRA LINES 4128.5 AND 4131.4 ARE STRONG.

H. R.	R. A. 1900.	Dec. 1900.	Magn.	Rem.	H. R.	R. A. 1900.	Dec. 1900.	Magn.	Rem.
	h. m.	° ′				h. m.	° ′		
478	1 34.9	+67 32	5.54	5	3465	8 39.4	+10 27	5.58	69
..	1 40.4	+ 8 4	6.58	6	4752	12 23.9	+26 28	5.38	84
..	1 44.9	+54 25	7.08	7	5313	14 7.2	+ 2 53	4.90	96
682	2 14.4	+49 42	5.56	10	5597	14 57.2	+47 40	6.16	101
873	2 51.2	+31 32	5.18	14	5652	15 6.5	−19 25	4.66	103
1100	3 31.7	−17 48	5.32	18	5587	15 40.2	+52 40	5.48	107
1268	4 0.5	+27 21	5.27	25	6932	18 24.1	−14 39	5.99	127
1341	4 13.6	+21 32	5.32	14	7395	19 22.6	+36 7	5.15	136
1643	4 59.7	+73 49	5.38	14	..	20 12.3	+27 29	6.69	142
1732	5 12.4	+33 39	5.39	41	9031	23 46.2	−19 28	5.32	18
3215	8 6.9	+29 57	5.59	14					

A list of the stars in Table I whose spectra are of the composite type is given in Table V. The first seven columns and the tenth column are taken from Table I. The eighth and ninth columns give the probable class of spectrum of both components.

Table VI gives a list of those stars which have the double silicon lines 4128.5 to 4131.4, stronger than in typical spectra.

The line 4077.9, which may include 4076.8, is stronger than normal in some spectra from Class A to Class F. The star ζ Capricorni, which is classified in H. A. 28, is a striking example of a spectrum having this line strong. A list of the stars classified in Table I, and having line 4077.9 stronger than normal, is given in Table VII.

TABLE VII.

STARS IN WHOSE SPECTRA LINE 4077.9 IS STRONG.

H. R.	R. A. 1900.	Dec. 1900.	Magn.	Rem.	H. R.	R. A. 1900.	Dec. 1900.	Magn.	Rem.
707	2 20.8	+66 57	4.59	12	5843	15 37.1	+13 10	5.26	106
..	6 10.1	+28 54	7.31	55	6226	16 40.9	+55 53	6.18	116
3398	8 30.6	− 7 38	5.61	67	7167	18 54.2	+13 46	5.94	133
..	12 17.0	+17 17	6.56	82	7879	20 32.8	+74 37	5.18	145
4766	12 26.0	+25 7	5.39	85	8097	21 5.5	+ 9 44	4.76	150
5105	13 29.1	+ 4 10	4.93	93	8911	23 21.8	+ 0 42	4.94	169
5187	13 42.9	+54 56	5.53	95					