PUBLICATIONS
DE
L'OBSERVATOIRE ASTRONOMIQUE DE L'UNIVERSITÉ DE TARTU
(DORPAT)
TOME XXVII № 1

On the Relation of Absolute Magnitude to Colour, Spectrum and Proper Motion

By

E. Öpik

Tartu 1929

Abbreviations and notations:

T. P. = Publications de l'Observatoire Astronomique de l'Université de Tartu (Dorpat)
H. A. = Harvard Annals
H. R. = Harvard Revised Photometry
H. D. = Henry Draper Catalogue
P. D. = Potsdam Photometric Durchmusterung
G. A. = Göttingen Aktinometrie; *A*: Astronomische Mitteilungen der Sternwarte zu Göttingen, XIV; *B*: Königl. Gesellschaft der Wissenschaften zu Göttingen, Math. Phys. Kl., Neue Folge Band VIII Nr. 4
B. A. N. = Bulletin of the Astronomical Institutes of the Netherlands
M. N. = Monthly Notices of the Royal Astronomical Society
Mt. W'. = Mt. Wilson Contributions 319 (spectra and absolute magnitudes of M stars)
H. S. = Harvard Scale
g. = giant
d. = dwarf
m_H = Harvard visual magnitude
m_P = Potsdam visual magnitude
m_L = Leiden photographic magnitude (*B. A. N.* **I.** Nr. 35 pp. 201—208).
m_K = King's photographic magnitude (*H. A.* **76.**$_6$)
m_G = Photographic magnitude of *G. A.*

C = colour-index in the system here adopted, $C = m_L - \frac{m_H + m_P}{2}$ for $m_H = 3.8$

The system of absolute magnitudes refers to parallax 0.″1

K. Mattiesen, Tartus.

1. Introduction and Summary.

In *T. P.* $26._3$ it has been shown that the known fact of the dependence of colour upon absolute magnitude within a given spectral type may be used for the purpose of determining the absolute magnitude, especially for late-type stars.

Bottlinger [1]), from a discussion of highly accurate colour-equivalents determined with the aid of the photoelectric cell, finds that it is possible to determine from colour absolute magnitudes of red giant stars, and that for red supergiants the colour may prove to be an especially valuable criterium of absolute magnitude.

Much earlier Lindblad has considered the possibility of using certain kinds of colour-equivalents for the determination of absolute magnitudes.

The present investigation has for its main object the derivation of the dependence of absolute magnitude upon colour for different spectral classes, taking as basis the observational material at present available, consisting of colour-indices of about 4500 stars; the purpose in view is the determination of absolute magnitudes from colour and spectrum. As will be shown later on, the problem gives a much promising solution for giant stars of classes K and M; generally, it appears possible to determine from colour and spectrum the absolute magnitudes of stars later than F_8 and earlier than B_8. Between B_8 and F_8, however, the colour shows either no, or too small a variation with absolute magnitude, and cannot be used alone for the determination of the latter. For these classes of spectrum it appeared possible to derive the absolute magnitude from the proper motion, together with the colour, or without it. For classes from G_0 to K_0 the proper motion proved to be useful as an additional criterium of absolute magnitude, especially of dwarf stars; for these it is advisable to determine the absolute magnitudes from all three data — the colour, the spectrum, and the proper motion, whereas

1) Veröff. Berlin-Babelsberg, III.$_4$ (1923).

for giants of the same spectral classes the taking into account of the proper motion means hardly an improvement against the use of colour and spectrum alone.

As a by-product of our investigation the colour-indices of about 4500 stars, reduced to a certain uniform system, are obtained. The reduced colours, and the absolute magnitudes derived with the aid of the different methods from colour and spectrum, with, or without using the proper motion, are given in tables I—V at the end of the present paper.

In preparing the tables I was aided by Miss A. Piiri and Miss H. Johannson; to both I wish to express my sincerest thanks.

2. Sources and System of Colour-Indices.

For the colour-indices the following sources were used: Bottlinger, Lichtelektrische Farbenindizes von 459 Sternen, *loc. cit.*; the results for 104 selected stars in *T. P.* **26.**$_3$; the difference of photographic and visual magnitude. The photometric calalogues used were: the Harvard visual magnitudes given in *H. A.* **50** and **54**; the Potsdam visual magnitudes in *P. D.*; photographic magnitudes given by K. Schwarzschild in *G. A.*; photographic magnitudes by E. Hertzsprung in *B. A. N.* **I.** 35; photographic magnitudes by E. King in *H. A.* **76.**$_6$. The adopted colour of a star is the weighted mean of the colour-indices derived from the different sources, after applying to them systematic corrections to reduce the data to a uniform scale. In deriving the systematic corrections it was found that the relation between colour-indices derived from two different sources is generally non-linear; the systematic corrections of the colour-indices were therefore found from smooth curves drawn by hand, without making a hypothesis concerning the form of the curves. The most complicated seems to be the relation between the photoelectric and the ordinary colour-index of early-type stars. The complications are to be attributed probably to selective absorption in different spectral regions which make the intensity distribution in the spectrum to deviate from a black-body distribution. For this reason simple linear relations between different colour-equivalents, if used for data derived by different methods, cannot lead to good results. Generally, it is permissible to join together only data derived by similar methods,

and only after a thorough discussion of the systematic differences; if very differently determined colour-equivalents are used, the data become non-homogeneous, and the accidental error of the colour-index in a general catalogue compiled in this way may prove to be greater than the accidental errors in the original catalogues. Therefore certain data relating to colour-equivalents, like effective wave-lengths, or effective temperatures, were not used in the present investigation.

The *system* of colour-indices adopted here is defined by

$$C = m_L - \frac{m_P + m_H}{2} \quad \ldots . \text{ (1), for } m_H = 3.8.$$

Here m_L denotes the Leiden photographic magnitude (*B. A. N.* 35), m_P — the Potsdam visual magnitude, m_H — the Harvard visual magnitude. As the great majority of stars used in the present discussion have visual magnitudes determined both at Potsdam and at Harvard, it appears to be reasonable to use both. The simple arithmetical mean of the two visual catalogues was adopted, though the Potsdam magnitude has theoretically a somewhat greater weight in determining the colour-index, thanks to its larger effective wave-length. The use of the average of two visual catalogues has the advantage of approaching the accuracy of the visual magnitudes to the more accurate photographic magnitudes.

The simplicity of computation impelled to use here colour-indices on a system differing from the ordinarily adopted Harvard Scale. The transition from the *H. S.*, defined as the difference of King's photographic and the Harvard visual magnitudes, to the system defined by equation (1) may be effectuated with the aid of table 1.

Table 1.

Convertion of H. S. Colour-Indices into C defined by equation (1).

H. S.	−0.40	−0.20	0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80
C	−0.44	−0.32	−0.17	0.04	0.25	0.47	0.69	0.93	1.18	1.42	1.71	2.04

From this table it may be seen that the *H. S.* colour-index is more sensitive for colours of blue stars and *C* more sensitive for red stars. The correlation is definitely curvilinear.

3. Systematic Corrections and Relative Weights.

The systematic corrections required to reduce the colour-indices to the scale defined by equation (1) were derived graphically. The correction of colour depending upon apparent magnitude was determined partly on the assumption of the constancy of the average colour-index of stars of the dwarf branch having spectra from B_8 to Go; the dispersion of colours of these stars being small, our assumption seems quite legitimate but for a possible systematic error in spectral classification, especially of the *H. D.*; for the spectral classes mentioned above such an error appears to be small, at least for the range of magnitudes covered by the observational data that reach practically only up to magnitude 7.5. For the brighter stars the magnitude equation was derived from a comparison with Bottlinger's colour-equivalents that seem to be free of any sensible magnitude effect. Generally it may be remarked that the source of the considerable magnitude equation must be sought chiefly in the visual magnitudes, whereas in the different systems of photographic magnitude this kind of systematic error appears to be small.

In the following the systematic corrections for the different sets of data are tabulated.

1. *Bottlinger's photoelectric colour-equivalents.* The original measures give the difference of the intensity of radiation between two regions of the spectrum with effective wave-lengths near $\lambda_1=440$ $\mu\mu$ and $\lambda_2=460$ $\mu\mu$; the first falls very near to the photographical maximum of sensitiveness. With the aid of a linear formula Bottlinger converts his colour-equivalents into colour-indices on the supposed *H. S.*, denoted by K'. Notwithstanding the small range in wave-length these quantities K' are considerably more accurate than ordinary photometric data. On the other hand, the influence of absorption lines upon the measured effective colour-index may be expected to be more strong when the range in wave-length is small; this may explain the real complicateness of the transition from Bottlinger's colour-equivalents to ordinary colour-indices: for early-type stars from B_8 to F_0 the correlation depends upon spectral type.

Table 2.

Convertion of Bottlinger's K' into C (equation 1). All spectra.

K'	−0.30	−0.20	−0.10	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80
C	−0.44	−0.34	−0.24	−0.15	−0.05	0.09	0.22	0.35	0.48	0.59	0.71	0.82
K'	0.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
C	0.91	1.00	1.09	1.18	1.28	1.39	1.51	1.64	1.76	1.89	2.03	2.17

Table 3.

Additional corrections of C, to be added to those of table 2; stars of early type.

C / Spectrum	−0.40	−0.30	−0.25	−0.20	−0.15	−0.10	−0.05	0.00	0.05	0.10	0.15	0.20	0.25	0.30
(*H. D.*)	Correction													
O; B_0—B_2	−0.04	+0.08	+0.14	+0.20	+0.26	+0.32	+0.38	+0.44	. . .	. . .	. . .	. . .	. . .	. . .
B_3, B_5	−0.17	−0.06	0.00	+0.05	+0.11	+0.16	+0.22	+0.27	. . .	. . .	. . .	. . .	. . .	. . .
B_8, B_9	. . .	−0.12	−0.07	−0.02	+0.03	+0.08	+0.13	+0.18	+0.23	+028	. . .	. . .	. . .	. . .
A_0, A_2	. . .	. . .	−0.03	−0.01	−0.01	−0.03	−0.05	−0.01	+0.04	+0.09	+0.14	+0.19	. . .	. . .
A_3, A_5	. . .	. . .	. . .	. . .	. . .	+0.09	+0.06	+0.03	0.00	−0.04	−0.06	−0.07	−0.07	−0.06
F_0	. . .	. . .	. . .	. . .	. . .	. . .	. . .	+0.08	+0.07	+0.05	+0.04	+0.02	+0.01	−0.01

2. *Colour-equivalents of T. P.* **26.**$_3$. These are given in table 6 of *T. P.* **26.**$_3$, under the heading *J concluded.* The convertion of these into the system here adopted is made with the aid of table 4; this table resembles to some extent table 2, as might have been expected, because both quantities to be converted, J and K', are thought to be on the same *H. S.* system.

Table 4.

Convertion of J of T. P. **26.** *3. into C (equation 1).*

J	−0.30	−0.20	−0.10	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70
C	−0.45	−0.35	−0.25	−0.15	−0.05	0.06	0.17	0.28	0.38	0.50	0.61
J	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80
C	0.72	0.84	0.95	1.06	1.17	1.28	1.39	1.51	1.63	1.75	1.86

3. *The Leiden colour-indices* $C_L = m_L - \frac{m_P + m_H}{2}$. The following correction for magnitude equation was added:

Table 5.

Magnitude correction of C_L .

m_H	0.1	1.2	2.3	3.2	3.8	4.3	4.9
Correction	+ 0.13	+ 0.09	+ 0.05	+ 0.02	0.00	− 0.02	− 0.04

4. King's colour-indices $C_K = m_K - \frac{m_P + m_H}{2}$.

Table 6.

Convertion of C_K *into* C *(equation 1).*

C_K	-- 0.60	— 0.40	— 0.20	0.00	0.20	0.40	0.60
C	— 0.46	— 0.35	— 0.23	— 0.06	0.14	0.35	0.55
C_K	0.80	1.00	1.20	1.40	1.60	1.80	
C	0.75	0.96	1.18	1.41	1.67	1.97	

Magnitude equation given by table 5.

5. Kings colour-indices $C'_K = m_K - m_H$. These are available for southern stars, which were not measured at Potsdam. Table 1 gives the convertion. No magnitude equation was added.

6. Coulour-indices of Göttingen Aktinometrie

$$C_G = m_G - \frac{m_P + m_H}{2}.$$

Table 7.

Convertion of C_G *into* C *(equation 1).*

C_G	— 0.60	— 0.40	— 0.20	0.00	0.20	0.40	0.60
C	— 0.48	-- 0.29	— 0.15	0.04	0.23	0.42	0.62
C_G	0.80	1.00	1.20	1.40	1.60	1.80	1.90
C	0.82	1.05	1.26	1.48	1.69	1.91	2.02

Table 8.

Magnitude correction of C_G.

m_H	2.0	3.5	4.5	5.5	6.5	7.5	8.2
Correction	+ 0.10	+ 0.05	+ 0.03	+ 0.01	0.00	— 0.04	— 0.06

The *G. A.* colour-indices showed a well-marked systematic error depending upon right ascension, which evidently is to be attributed to the imperfect linking of the plates with one another; Schwarzschild tried to eliminate this systematic error by using the spectra given in *H. R.*, *H. A.* **50**, and assuming the colour-index of a given spectrum to be constant. His failure to eliminate the said error may, perhaps, be ascribed to the inaccuracy of the spectra of *H. A.* **50**, together with the

variation of the proportion of different spectra in different regions of the sky. In any case, the residual systematic error of *G. A.* is clearly shown by the behaviour of all spectral types; an analysis of the data indicated that a possible variability of the relative proportion of giant and dwarf stars with galactic latitude has no influence upon the results, represented by table 9.

Table 9.

Systematic corrections of G. A. colour-indices, depending upon right ascension (α).

Points of a smooth curve are given.

α	Corr.	α	Corr.	α	Corr.	α	Corr.	α	Corr.	α	Corr.
h m		h m		h m		h m		h m		h m	
0 5	+ 0.19	3 54	— 0.01	9 19	+ 0.05	13 27	0.00	16 54	— 0.11	21 10	— 0.10
0 15	+ 0.16	4 19	— 0.06	9 40	+ 0.08	13 36	+ 0.05	17 7	— 0.07	21 38	— 0.04
0 24	+ 0.10	4 36	— 0.10	10 4	+ 0.05	13 49	0.00	17 16	0.00	21 47	0.00
0 35	+ 0.04	5 0	— 0.03	10 14	+ 0.08	14 3	— 0.03	17 33	+ 0.02	22 0	+ 0.03
1 0	+ 0.09	5 16	+ 0.05	10 38	+ 0.10	14 16	0.00	18 1	— 0.03	22 20	0.00
1 16	+ 0.08	5 29	0.00	10 52	+ 0.06	14 33	+ 0.05	18 24	— 0.08	22 45	— 0.03
1 31	+ 0.12	5 37	— 0.03	11 4	+ 0.04	14 46	+ 0.09	18 38	— 0.06	23 4	0.00
1 39	+ 0.18	5 47	0.00	11 32	+ 0.05	15 0	+ 0.03	18 48	— 0.09	23 18	+ 0.04
1 45	+ 0.21	6 0	+ 0.04	11 55	+ 0.04	15 6	0.00	18 57	— 0.13	23 32	+ 0.10
1 55	+ 0.17	6 21	0.00	12 17	+ 0.09	15 14	— 0.03	19 11	— 0.10	23 47	+ 0.15
2 13	+ 0.09	6 46	— 0.05	12 31	+ 0.05	15 42	— 0.09	19 35	— 0.04	23 59	+ 0.18
2 30	0.00	7 19	— 0.05	12 44	+ 0.01	15 56	— 0.05	19 46	— 0.02		
2 48	— 0.05	7 52	— 0.01	12 54	+ 0.03	16 10	— 0.01	20 23	— 0.10		
3 18	0.00	8 18	+ 0.05	13 5	0.00	16 27	— 0.05	20 37	— 0.13		
3 31	+ 0.01	8 30	+ 0.03	13 17	— 0.04	16 41	— 0.09	20 53	— 0.16		

The table was derived from the deviations of the colours of stars from the average colour of a given spectral type; all stars of spectrum B_0 — F_8, and those of G_0 — M for which the absolute magnitude could be roughly estimated from their proper motion or other data, were used; the estimate of absolute magnitude consisted only in a classification into "giants" and "dwarfs"; the giants and the dwarfs of a given spectral type were treated separately. After a preliminary derivation of the systematic correction, stars which gave residuals from the mean colour-index greater than 0.3 magn. were excluded, and the final result was obtained. To exclude inaccurate data, and possible systematic errors in the *H. D.* spectra, only stars brighter than

visual magnitude 7.5 were used; for K_2 and M stars the limit of reliability was assumed at magnitude 6.5.

From a discussion of the probable errors, the relative weights as given in table 10 were adopted.

Table 10.

Relative weights of colour-indices. Unit of weight corresponds approximately to a probable error of ± 0.06 magnitudes.

Source	Bottlinger's colour-indices for *H. D.* Spectrum			*T. P.* 26.3 according to p. e.	Difference of		
					one photographic and one visual catalogue	one photographic and two visual catalogues	two or more photog. and two visual catalogues
	0—A_2	A_3, A_5	F_0 and later	from			
Weight	2	3	5	2 to 5	1	2	3

4. Double Stars and Stars with Composite Spectra.

In many cases the combined colour, or the combined magnitude of a pair of stars was measured. For our purposes, however, the individual colours of the components are wanted; with some degree of accuracy only the colour of the brighter component can be obtained, by adding to the combined colour a correction depending upon the difference in magnitude and in colour of the two components. Table 11 gives these corrections.

This table may be used for the reduction of colour-indices derived from measures of the intensity of radiation in two certain regions of the spectrum, whatever the effective wave-lengths of these regions are, provided the colour-indices represent the difference of the directly measured magnitudes in the two regions of the spectrum. Our table may be used therefore with sufficient approximation for all our sources of colour-indices except for Bottlinger's data, because his measures refer to effective wave-lengths considerably differing from the effective wave-lengths of the here adopted system of colour-indices. It may be shown that for colour-indices on our standard scale, derived from Bottlinger's data, the corrections are almost the double of the corrections of table 11, if the *visual* difference of magnitude is used as argument. The comparison of Bottlinger's results with the other sources confirms this conclusion for stars of composite spectra. For this reason Bottlinger's data were not used

Table 11.

Correction to be added to the combined colour-index of a double star to obtain the colour-index of the brighter component.

Δm denotes the difference of magnitudes of the components, measured in the radiation of greater wave-length; C_1 and C_2 are the colour-indices of the brighter and the fainter component respectively.

	Δm																	
	0.0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.5	4.0
C_2-C_1	Correction of colour-index																	
− 2.2	+1.58	+1.50	+1.42	+1.33	+1.24	+1.15	+1.05	+0.96	+0.88	+0.79	+0.70	+0.62	+0.55	+0.48	+0.42	+0.36	+0.25	+0.16
− 2.0	+1.41	+1.33	+1.25	+1.17	+1.09	+1.00	+0.91	+0.83	+0.75	+0.67	+0.59	+0.53	+0.46	+0.41	+0.34	+0.30	+0.20	+0.13
− 1.8	+1.24	+1.16	+1.09	+1.01	+0.94	+0.86	+0.79	+0.71	+0.64	+0.57	+0.50	+0.44	+0.39	+0.33	+0.28	+0.25	+0.16	+0.10
− 1.6	+1.07	+1.01	+0.94	+0.86	+0.80	+0.74	+0.66	+0.59	+0.53	+0.47	+0.41	+0.37	+0.31	+0.27	+0.23	+0.21	+0.14	+0.08
− 1.4	+0.92	+0.85	+0.79	+0.72	+0.67	+0.61	+0.55	+0.49	+0.44	+0.38	+0.34	+0.29	+0.25	+0.22	+0.19	+0.16	+0.10	+0.06
− 1.2	+0.76	+0.70	+0.65	+0.60	+0.55	+0.50	+0.44	+0.39	+0.35	+0.31	+0.26	+0.23	+0.20	+0.18	+0.15	+0.13	+0.08	+0.05
− 1.0	+0.61	+0.56	+0.52	+0.47	+0.44	+0.39	+0.35	+0.30	+0.27	+0.23	+0.20	+0.18	+0.16	+0.13	+0.11	+0.10	+0.06	+0.03
− 0.8	+0.47	+0.44	+0.40	+0.36	+0.33	+0.30	+0.26	+0.23	+0.20	+0.17	+0.15	+0.13	+0.11	+0.10	+0.08	+0.07	+0.04	+0.02
− 0.6	+0.35	+0.32	+0.29	+0.26	+0.24	+0.21	+0.19	+0.16	+0.14	+0.12	+0.11	+0.09	+0.08	+0.07	+0.06	+0.05	+0.03	+0.01
− 0.4	+0.22	+0.20	+0.18	+0.16	+0.15	+0.13	+0.11	+0.10	+0.09	+0.08	+0.07	+0.06	+0.05	+0.04	+0.03	+0.03	+0.02	+0.01
− 0.2	+0.11	+0.10	+0.09	+0.08	+0.07	+0.06	+0.05	+0.05	+0.04	+0.03	+0.03	+0.03	+0.02	+0.02	+0.02	+0.01	+0.01	0.00
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
+ 0.2	−0.09	−0.09	−0.08	−0.07	−0.06	−0.05	−0.04	−0.04	−0.03	−0.03	−0.03	−0.02	−0.02	−0.02	−0.02	−0.01	0.00	0.00
+ 0.4	−0.18	−0.16	−0.15	−0.14	−0.12	−0.10	−0.09	−0.08	−0.07	−0.06	−0.05	−0.04	−0.03	−0.03	−0.03	−0.02	−0.01	−0.01
+ 0.6	−0.25	−0.23	−0.21	−0.19	−0.16	−0.14	−0.12	−0.11	−0.09	−0.08	−0.07	−0.05	−0.05	−0.04	−0.04	−0.02	−0.01	−0.01
+ 0.8	−0.33	−0.30	−0.26	−0.23	−0.20	−0.17	−0.15	−0.13	−0.11	−0.10	−0.08	−0.07	−0.06	−0.05	−0.04	−0.03	−0.02	−0.02
+ 1.0	−0.39	−0.35	−0.30	−0.27	−0.23	−0.20	−0.18	−0.16	−0.13	−0.11	−0.10	−0.08	−0.07	−0.06	−0.05	−0.03	−0.02	−0.02
+ 1.2	−0.44	−0.39	−0.35	−0.31	−0.26	−0.23	−0.20	−0.17	−0.14	−0.13	−0.11	−0.09	−0.07	−0.06	−0.05	−0.03	−0.02	−0.02
+ 1.4	−0.48	−0.43	−0.38	−0.34	−0.29	−0.25	−0.22	−0.19	−0.16	−0.14	−0.12	−0.09	−0.08	−0.06	−0.05	−0.04	−0.03	−0.02
+ 1.6	−0.53	−0.47	−0.41	−0.36	−0.31	−0.27	−0.23	−0.20	−0.17	−0.15	−0.12	−0.10	−0.08	−0.06	−0.06	−0.04	−0.03	−0.02
+ 1.8	−0.56	−0.50	−0.44	−0.39	−0.33	−0.28	−0.25	−0.22	−0.18	−0.15	−0.13	−0.10	−0.08	−0.07	−0.06	−0.05	−0.03	−0.03
+ 2.0	−0.59	−0.52	−0.46	−0.40	−0.34	−0.30	−0.26	−0.22	−0.18	−0.16	−0.13	−0.10	−0.09	−0.07	−0.07	−0.05	−0.03	−0.03
+ 2.2	−0.62	−0.55	−0.48	−0.42	−0.36	−0.31	−0.27	−0.23	−0.19	−0.16	−0.13	−0.11	−0.09	−0.08	−0.07	−0.05	−0.04	−0.03
	Reduction of combined magnitude to magnitude of the brighter component; radiation of greater wave-length.																	
	+0.75	+0.66	+0.57	+0.50	+0.42	+0.36	+0.31	+0.27	+0.22	+0.19	+0.16	+0.13	+0.11	+0.09	+0.08	+0.06	+0.04	+0.03

in deriving the final colour-index of double or composite stars the combined light of which was observed, and where the spectra of the components differed considerably.

In using table 11 the difference of colour-indices may be estimated from the known spectra of the components. In the case of double stars the difference of magnitude is known; for stars with composite spectra it is difficult to estimate this difference, but generally it may be assumed that the difference of photographic magnitude of the components lies between 0.0 and 1.0 magnitudes, whence the probable limits of the visual difference of magnitude may be estimated. For double stars forming physical pairs and with a considerable difference of magnitude, where the spectrum of the fainter component is unknown, the difference in colour may be estimated from the probable absolute magnitudes of the components, the fainter component being assumed to be a typical dwarf star of the absolute magnitude adopted. As uncertain as these estimates are, they may give a reliable value of the correction of colour if this correction is not too large; large corrections are, of course, quite uncertain except when both, the spectra and the difference of magnitude of the components are known; frequently the colour of the fainter component, of spectrum B, A, or F, may be estimated quite accurately, whereas the colour of the brighter giant component is uncertain, colours of giant stars varying considerably with absolute magnitude; in this case it is advisable to use the method of successive approximations.

In the tables I—V at the end of this paper the colour-indices of the composite stars are given combined if they were measured so; in such cases the probable colour-index of the brighter component is given in the remarks, being derived with the aid of table 11, on the basis of a more or less probable hypothesis regarding the relative magnitudes and colours of the components. Though inaccurate, these corrected colour-indices are to be preferred to the combined colour-indices in deriving the absolute magnitudes. It may be remarked that in the majority of cases the correction of colour has been probably underestimated; for composite giant stars this means that their absolute magnitudes derived from the colour are on the average also underestimated.

5. Proper Motions as a Means of Fixing the Scale of Absolute Magnitudes.

In the following the *total* proper motions of the stars were used to calibrate the scale of absolute magnitudes; this method has the advantage of permitting individual application, a circumstance that is of especial value in treating some categories of highly luminous stars, represented by a very limited number of individuals.

Let M denote the absolute magnitude, m — the apparent magnitude, μ — the annual proper motion, t — the tangential velocity, π — the parallax of a star; then we have

$$\pi = \frac{4.74\,\mu}{t} \ldots . \quad (2),$$

$$M = m + 5 + 5 \log \pi \ldots . \quad (3),$$

whence

$$M = m + 5 \log \mu + 8.4 - 5 \log t \ldots . \quad (4).$$

Putting $H = m + 5 \log \mu \ldots . \quad (5),$

we have

$$M = H + 8.4 - 5 \log t \ldots . \quad (6).$$

For a sample of stars chosen *independently of the proper motion* equation (6) may be used to compute the mean absolute magnitude, if the mean values of H and $\log t$ are substituted. For an individual star the tangential velocity is generally unknown. Substituting in equation (6) instead of this a certain average quantity, we define a special quantity E by

$$E = H + 8.4 - 5\overline{\log t} \ldots . \quad (7),$$

where $\overline{\log t}$ is the average logarithm of the tangential velocity of the type of stars to which the given individual belongs.

To attain the nearest possible approximation to the real circumstances, the variation of the average tangential velocity with the *distance from the solar apex* may be taken into account; in this way the dispersion of E for a given absolute magnitude may be rendered smaller.

In the following, $\overline{\log t}$ was computed from the formula

$$\overline{\log t} = \frac{\int_0^\infty \log t \cdot F(t)\, dt}{\int_0^\infty F(t)dt} \quad \ldots . \quad (8),$$

where F(t) is the frequency-function of tangential velocities. The frequency-function F(t) for a given distance from the apex was found on the assumption of a Maxwellian distribution of the peculiar velocities of the stars, an assumption that is not strictly fulfilled, but which may serve as a fair approximation in computing *average* quantities. Equation (9) in this case determines F(t) as follows:

$$F(t)dt = \text{Const.} \times te^{-\frac{t^2}{r^2}} dt \cdot \int_0^{2\pi} e^{\frac{2t\, V\odot \sin \lambda}{r^2} \cos x} dx \quad \ldots . \quad (9),$$

where $V\odot$ is the velocity of solar motion, λ — the distance from the apex (or antapex) of the solar motion, $\frac{r}{\sqrt{2}}$ — the dispersion of one component of the peculiar velocities.

In the computations was assumed $V\odot = 20$ $\frac{\text{km}}{\text{sec}}$, and the position of the solar apex according to Smart's charts [1]), whence the λ were read. The constant of dispersion was chosen in conformance with the "probable value of the cosmical error" as derived by Van de Kamp [2]) from radial velocities of *naked-eye* stars for different spectral classes. In fact the following values of the constant $\frac{V\odot}{r}$, determining the character of the function (9), were assumed:

H. D. Spectrum	B_0—B_5	B_8—A_3	A_5—F_2	F_5—G_0	G_5—M_b
$V\odot : r$	1.6	1.2	0.87	0.72	0.70

The grouping of the spectra is according to Van de Kamp; there may be some objections to the spectral limits used, as in

1) *M. N.*, June 1923, p. 465.
2) *L. O. B.* 374 (1926).

some cases they appear artificial; e. g., A_3 in *H. D.* is almost identical with A_5 as may be judged from the average colour and other characteristics. This circumstance, however, is not essential for our purposes. The computations were originally made for the spectral limits given above, and with the aid of a smooth curve were interpoled for the more detailed spectral subdivisions. In this way table 12 was constructed.

Table 12.

Values of $E-H = 8.4-5\ \overline{log\ t}$.

Sp. *H. D.*	λ (Distance from apex) 0° 180°	10° 170°	20° 160°	30° 150°	40° 140°	50° 130°	60° 120°	70° 110°	80° 100°	90°	$\overline{\varrho_0}$ *km : s*
B_0	+ 3.8	+ 3.7	+ 3.2	+ 3.0	+ 2.7	+ 2.3	+ 2.1	+ 2.0	+ 1.9	+ 1.8	
B_1	3.7	3.6	3.2	3.0	2.7	2.3	2.1	2.0	1.9	1.8	
B_2	3.6	3.5	3.1	2.9	2.6	2.3	2.1	2.0	1.9	1.8	13.4
B_3	3.5	3.4	3.1	2.9	2.6	2.3	2.1	2.0	1.9	1.8	
B_5	3.4	3.3	3.1	2.9	2.6	2.3	2.1	2.0	1.9	1.8	
B_8	3.2	3.1	3.0	2.8	2.5	2.3	2.1	2.0	1.9	1.8	
B_9	3.1	3.0	2.9	2.7	2.5	2.2	2.1	2.0	1.9	1.8	
A_0	3.0	2.9	2.8	2.6	2.4	2.2	2.1	2.0	1.9	1.8	15.0
A_2	2.9	2.8	2.7	2.5	2.3	2.2	2.1	2.0	1.9	1.8	
A_3	2.7	2.6	2.5	2.3	2.2	2.1	2.0	1.9	1.8	1.7	
A_5	2.6	2.5	2.4	2.2	2.1	2.0	1.9	1.8	1.7	1.7	
F_0	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.6	17.3
F_2	2.3	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.6	1.6	
F_5, F_8	2.1	2.0	2.0	1.9	1.8	1.7	1.6	1.5	1.5	1.5	
G_0	2.0	1.9	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.4	20
G_5—Mb	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.3	20

According to J. S. Plaskett[1]), the space-velocities of O-type stars are considerably higher than those of stars of other types, which leds to high absolute magnitudes; the sample of O-stars from the present material confirms this, giving $\overline{\varrho} = 28$ km/sec ($n = 8$). According to the Victoria data, for these stars it was assumed:

$$E = \overline{M}_H = -1.0 + 0.7\ H \quad . \quad . \quad . \quad (10),$$

without regard to the distance from the solar apex.

With the aid of table 12 and equations (7) and (5), E may be computed. This quantity may be used directly to determine the absolute magnitude of a certain group of stars: the average E equals the average absolute magnitude, provided the stars

1) *Victoria Publ.* II. Nr. 16.

are chosen independently of their elements of motion, and their average space-velocity equals the space-velocity adopted in constructing table 12. The last condition is likely not to be fulfilled, systematic deviations arising in the first place from the known fact of variation of the space-velocity with absolute magnitude. To take into account this circumstance, the average absolute magnitude may be found from the average E by adding a correction for average space-velocity, according to the following formula:

$$\overline{M} = \overline{E} - 5 \log \frac{\overline{\varrho}}{\overline{\varrho_0}} \quad \ldots . \quad (11),$$

where $\overline{\varrho}$ denotes the average radial velocity of the stars of the given group, $\overline{\varrho_0}$ — the average radial velocity as given in the last column of table 12, both radial velocities representing the arithmetical mean of the data uncorrected for the sun's motion. Formula (11) is applicable to the case when the stars of the given group are distributed at random over the whole sky; the formula may be also applied to any group the members of which are not chosen on the basis of their position in the sky, the error of the formula being in this case of an accidental character, although the stars may be distributed unevenly. Galactic concentration will not produce too great an error in formula (11) except when the influence of galactic longitude is very pronounced.

The curves determining the average absolute magnitude as a function of colour and spectrum were constructed in the following way. For a certain spectral subdivision two diagrams were constructed; the first, with the colour-indices as abscissae and the E as ordinates, gave the average $\overline{E}$ as a function of colour; the second diagram, representing $\overline{\varrho}$ as a function of colour, gave the correction needed to reduce $\overline{E}$ to the average absolute magnitude, according to formula (11).

6. Comparison of Systems of Spectral Classification.

For the purpose of determining absolute magnitudes of stars from their colour and spectrum, the spectral data must answer the following conditions: 1) the accidental error of the spectral classification must be small enough; 2) the colour, i. e.

the intensity distribution in the continuous spectrum must not be used as spectral criterium; 3) the spectral classification must be free from systematic errors, depending upon absolute luminosity, or apparent magnitude. These requirements are of especial significance for the later types, from G to M.

The spectral systems here used were: the *Mount Wilson* classification, the *Victoria* classification, the Harvard classification as given in the *Henry Draper* Catalogue. The Mt. Wilson and the Victoria systems are excellent and seem to fulfil all three requirements. The *H. D.* spectra, however, as far as stars from G to M are concerned, are not free from systematic errors of the above mentioned kind, and their accidental error is considerable enough to impair the accuracy of the absolute magnitudes derived from them and the colour, though for less delicate purposes the *H. D.* spectra may be good enough. The accidental errors of *H. D.* have been considered by Young and Harper [1]; they conclude that this accidental error is much more considerable than the accidental error of the Victoria or the Mt. Wilson classification, and that the chief cause of the errors is not some lack of sensitiveness of the eye to spectral differences, but „the indefinite nature of the Harvard definitions of spectral types" and "the multiple nature of the Harvard criteria which are often contradictory". A comparison of the spectral data for common stars indicates that the probable error of *H. D.*, measured in units of spectral subdivision, is about 4 times greater than the probable error of Mt. Wilson or Victoria.

A comparison of the spectra given in *Mt. Wilson Contr.* **199** with *H. D.* led to results expressed in table 13. The probable error of *H. D.* is computed on the assumption of the ratio of probable errors *H. D.*: *Mt. W.* = 4 : 1.

An inspection of the table indicates that systematic errors depending upon absolute magnitude appear in *H. D.* from visual magnitude 7.0 and fainter; brighter stars are free from this systematic error. The error is of such a character that the spectra of *giants* are estimated in *H. D. too late*, the spectra of dwarfs — *too early*, the difference increasing with decreasing apparent brightness of the stars. A similar error, and in the same direction, would appear if instead of the spectra the colours

1) *Victoria Publications*, Vol. III.$_1$ (1921), p. 14 foll.

Table 13.

Comparison of H. D. spectra with Mt. W. Contr. **199.**

Mt. W. denotes the mean Mt. Wilson spectrum corresponding to a given *H. D.* subdivision; in parentheses is given the number of stars; *p. e.* denotes the probable error of *H. D.* spectra, the unit equalling one spectral class. For M stars assumed conventionally: $M_a = M_0$; $M_b = M_5$; $M_c = M_8$; $M_d = M_{10}$. The data for F_0 are unreliable, because this is near the spectral limit of *Mt. W. Contr.* **199**, and selection may have influenced the result.

	Visual magnitude					
	⩽ 6.9		7.0 .... 8.2		⩾ 8.3	
	giants	dwarfs	giants	dwarfs	giants	dwarfs
H. D.	*Mt. W. p. e.*	*Mt. W. p. e.*	*Mt. W. p. e.*	*Mt. W. p. e.*	*Mt. W. p. e.*	*Mt. W. p. e.*
Mb	Mb (31)±0.14	... ...	... ...	(Ma) (1)...	... ...	... ...
Ma	Ma (88)±0.17	... ...	Ma (4)±0.35	(K_4) (1) ...	... ...	... ...
K_5	K_5 (69)±0.13	K_5 (6)±0.13	K_5(16)±0.26	K_5 (4)±0.00	(G_7) (1) ...	K_9(10)±0.30
K_2	K_4 (53)±0.09	K_4 (4)±0.07	K_2(18)±0.09	K_5 (7)±0.07	K_1 (3)±0.16	K_7(10)±0.23
K_0	K_0(374)±0.17	K_0(32)±0.16	K_0(11)±0.13	K_1(38)±0.19	K_0 (2) ...	K_3(17)±0.21
G_5	G_5(102)±0.20	G_6(50)±0.23	G_5(14)±0.32	G_6(36)±0.24	K_0 (2) ...	G_7(26)±0.29
G_0	G_1 (32)±0.19	G_1(75)±0.18	(F_8) (1) ...	G_1(40)±0.23	... ...	G_2(10)±0.26
F_8	G_0 (11)±0.12	F_7(47)±0.14	... ...	F_7(22)±0.13	(F_1) (1) ...	F_8 (5)±0.36
F_5	F_5 (16)±0.18	F_5(80)±0.15	F_1 (2) ...	F_5(18)±0.16	... ...	... ...
F_2	F_2 (9)±0.19	F_2(11)±0.12	... ...	... ...	... ...	... ...
[F_0]	[F_2(21)±0.14]	[F_1(40)±0.15]	... ...	... ...	... ...	... ...

of the stars are estimated, because giants are redder than dwarfs of the same spectrum. It appears probable that really the *H. D.* spectra of many faint stars were not estimated from the intensity of their absorption lines, but from the apparent energy distribution in the continuous spectrum; at least, in the description of the spectral types in the *H. D.* the extent of the continuous spectrum at the violet end occurs as one of the various spectral characteristics, and the whole work seems to have been directed under the assumption of the identity of spectrum and colour; under such circumstances it is not surprising if this criterium has been used in some cases when the spectral lines were not distinct enough. In any case, the systematic errors of *H. D.* are such, that we are led to the following conclusion: the *H. D.* spectra of late-type stars fainter than magnitude 7.0 represent partly estimates of spectrum, partly — estimates of colour, the percentage of the latter increasing with decreasing apparent

brightness; for stars fainter than 8.2 in the majority of cases the *H. D.* spectrum is only a symbol for the estimated colour. The systematic error is especially pronounced for *H. D.* spectra K_0, K_2 and K_5. For G_5 there appears to exist a very slight constant difference of 0.1 spectral class between giants and dwarfs.

Table 14 gives the systematic and accidental errors of *H. D.*, expressed in *effective deviations of the colour-index* from the mean, the spectral units being changed into units of colour-index on the assumption of a certain typical correlation between colour and spectral type, corresponding to a constant absolute magnitude of about 0.5. These data facilitate the comparison of the errors for different spectral subdivisions.

Table 14.

H. D.	Average *Mt. W.* sp.	magn. ⩽ 6.9 giants deviation	p. e.	dwarfs deviation	p. e.	7.0 ... 8.2 giants deviation	p. e.	dwarfs deviation	p. e.	⩾ 8.3 giants deviation	p. e.	dwarfs deviation	p. e.
		st. mg.		st. mg.		st. mg.		st. mg.		st. mg.		st. mg.	
Mb	Mb	0.00	±0.07	...	...	...	...	(+0.06)	...	...	...	...	...
Ma	Ma	0.00	±0.02	...	...	0.00	±0.04	(—0.25)	...	...	...	...	...
K_5	K_5	0.00	±0.10	0.00	±0.10	0.00	±0.21	0.00	±0.00	(—0.60)	...	+0.17	±0.24
K_2	K_4	0.00	±0.07	0.00	±0.06	—0.16	±0.07	+0.10	±0.06	-- 0.27	±0.13	+0.24	±0.18
K_0	K_0	0.00	±0.12	0.00	±0.11	0.00	±0.09	+0.08	±0.13	(0.00)	...	+0.27	±0.15
G_5	G_6	—0.04	±0.08	0.00	±0.09	—0.04	±0.13	0.00	±0.10	(+0.18)	...	+0.03	±0.12
G_0	G_1	0.00	±0.07	0.00	±0.07	(— 0.15)	...	0.00	±0.08	...	...	+0.03	±0.09
F_8	F_7	+0.12	±0.06	0.00	±0.07	...	...	0.00	±0.07	(—0.30)	...	+0.06	±0.18
F_5	F_5	0.00	±0.11	0.00	±0.09	(—0.11)	...	0.00	±0.10	...	...	...	...

This table renders possible to compare the accuracy of the spectral data with the accuracy of the colour-indices, the probable error of which may be assumed equal to ±0.04 on the average. We see that *H. D.* involves accidental errors that are considerably greater than the errors of the colour-indices, and that the accidental errors increase with the decreasing brightness of the stars.

Taking into consideration the systematic errors of *H. D.*, the limit of reliability of *H. D.* spectra may be assumed as follows: for K_2, K_5 and M at magnitude 7.0; for K_0 at magnitude 7.5; for G_5, G_0 and F_8 at magnitude 8.2. Earlier spectra are probably reliable even up to a fainter apparent magnitude.

It may be remarked that the M class in *H. D.* may be assumed reliable up to a magnitude fainter than assumed above:

practically all stars classified in *H. D.* as M belong really to this class; the slow change of colour with spectrum in the M class makes the effective error of colour in table 14 small; thus *H. D.* M-spectra are relatively good also from the standpoint of accidental errors, as far as the determination of absolute magnitudes from spectrum and colour is pursued. It must be remembered, however, that many stars of class *M* according to *Mt. W.*, chiefly faint dwarfs, are classified in *H. D.* too early. Generally, the spectral classification of giant stars in *H. D.* is less subject to systematic errors than the classification of dwarfs.

Early type spectra of *H. D.* seem to be considerably more accurate and free from systematic errors than late type spectra; from the data (naked eye stars) contained in *H. A.* **56**, p. 261, the following probable errors were found assuming the *p. e.* of *H. D.* to equal the double *p. e.* of *Mt. W.*:

H. D. $B_0 - B_9$, *p. e.* $= \pm 0.09$ spectral units $= \pm 0.03$ magnitudes of effective colour-index;

H. D. $A_0 - A_5$, *p. e.* $= \pm 0.12$ spectral units $= \pm 0.04$ magn. of effective colour-index.

Between the classification of *Mt. W. Contr.* **199** and *Victoria Publ.* Vol. **III.**$_1$ there exists a very slight systematical difference for the F and the K stars as follows:

Vict.	Spectr.	A_9	— F_7	K_5	K_6	K_7	K_8	K_9
Mt. W.	„	A_8	— F_6	K_5	K_5	K_5	K_6	K_7.

Otherwise the systems are identical and exhibit a very small accidental error; in the following they were assumed to be of equal weight.

The classification of M stars needs special consideration. From common stars the following data were found:

Table 15.

Classification of M stars.

H. D.	Ma =	*Victoria*	$M_0 - M_4$ =	*Mt. W. Contr.* **319**	$M_0 - M_3$
H. D.	Mb =	„	$M_5 - M_8$ =	„ „ „	$M_4 - M_6$
Mt. W. Contr. **199**,	Ma =	„	$M_0 - M_2$	. . . . .	
„	„, Mb =	„	$M_3 - M_6$	. . . . .	
„	„, Mc =	„	$M_7 - M_8$	. . . . .	

7. Absolute Magnitudes Derived from Colour-Index and Harvard Spectrum, *M(C,D)*.

According to the method described in section **5** the average absolute magnitude as a function of colour-index for a given *H. D.* spectrum was derived. For *H. D.* K_2, K_5, Ma and Mb, to obtain better results, the curves were constructed for giant stars only, the proper motion through a limiting value of *E* being used to decide whether the star is a giant or not; as the difference of absolute magnitude between giants and dwarfs is very large for these spectra, there may be hardly found a case where the proper motion leaves some ambiguity regarding the giant or dwarf character of a star. For reasons discussed in the preceding chapter, *H. D.* spectra cannot be used to determine the absolute magnitudes of dwarfs of spectra K_2 — Mb.

Table 16 contains a summary of the curves.

T a b l e 16.

M(C,D) = average absolute magnitude for a given colour-index (system determined by equation (1)) and Harvard spectrum.

H. D.	*C* 0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
1) Mb,c	. .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	—1.4	—1.3	—1.2
1) Ma	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
1) K_5	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2.4	2.2	1.9	1.5
1) K_2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2.9	2.6	2.3	2.0
K_0	. . .	. . .	. . .	2)((3.9))	2)((4.1))	2)((3.6))	2)((2.5))	1.2	0.8	0.7	0.4
G_5	(3.1)	(3.6)	(3.9)	(4.1)	(3.2)	((1.7))	0.9	0.5	0.0	—0.3	—0.6
G_0	2.5	3.8	4.2	4.8	(3.5)	(0.0)	(—1.5)	(—2.0)	(— 2.2)	(—2.0)	(—1.2)

H. D.	*C.* 1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
1) Mb,c	—1.2	—1.1	—1.0	—0.9	—0.8	—0.7	(—0.6)	(—0.6)	(—0.5)	(—0.4)	(—0.3)	(—0.2)	(—0.1)
1) Ma	. . .	—1.3	0.3	1.1	0.2	—0.9	—2.0	—3.6	— 4.5	—5.3	—6.0	— 6.8	—7.4
1) K_5	1.1	0.7	0.4	0.1	—0.3	—0.6	—1.0	—1.2	—1.4	—1.7	. . .	. . .	. . .
1) K_2	1.6	0.7	—0.3	—1.1	—1.5	—1.7	—2.0	—2.2	—2.5	—2.7	. . .	. . .	. . .
K_0	—0.3	—0.8	—1.4	—2.1	—2.3	—2.5	—2.7	—3.0	—3.2	. . .	. . .	. . .	. . .
G_5	—1.0	—1.7	—2.3	—2.9	—3.5	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
G_0	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

1) Only giants, $E \leqslant 4.0$. If no proper motion available, assumed to be giant.

2) Average magnitudes of a mixture of giants and dwarfs, the accidental error of *H. D.* spectra being too large to permit of a distinct separation of these extreme luminosity classes.

Table 16. Continued.

H. D.	*C* −0.7	−0.6	−0.5	−0.4	−0.3	−0.2	−0.1	0.0	0.1	0.2	0.3	0.4	0.5
Od—Oe_5	. . .	. . .	−6.4	−5.6	−4.7	−3.9	−3.0	−2.2	−1.4	. . .	. . .	. . .	. . .
B_0	. . .	(−3.7)	−4.3	−4.3	−3.6	−2.7	−2.4	−2.3	−2.2	−2.2	−2.1	−2.0	(−1.5)
B_1	(−0.6)	(−1.4)	−2.2	−3.0	−2.4	−2.0	−2.1	−2.1	−2.2	−2.2	−2.1	−2.0	−1.5
B_2	−0.6	−1.4	−2.1	−2.6	−2.7	−2.1	−1.7	−2.1	−2.2	−2.2	−2.1	−2.0	−1.5
B_3	. . .	(−4.2)	−3.6	−2.5	−1.7	−1.4	−1.0	−1.0	−1.1	. . .	. . .	. . .	. . .
B_5	. . .	. . .	−0.9	−1.4	−1.4	−0.9	−0.8	(−0.8)	. . .	. . .	. . .	. . .	. . .
[1]) B_8	. . .	. . .	. . .	1.4	−0.1	−0.8	0.0	0.0	. . .	. . .	. . .	. . .	. . .
[1]) B_9	. . .	. . .	. . .	1.4	0.8	−0.6	−0.6	0.0	. . .	. . .	. . .	. . .	. . .
[1]) A_0	. . .	. . .	. . .	1.4	0.8	0.1	0.0	1.0	1.6	(1.0)	. . .	. . .	. . .
[1]) A_2	. . .	. . .	. . .	1.4	1.3	0.6	0.1	0.6	1.1	1.2	(1.2)	. . .	. . .

Uncertain values of the absolute magnitude are given in parentheses; figures of very low weight are given in double parentheses.

8. Absolute Magnitudes Derived from Colour-Index and Mt. Wilson or Victoria Spectrum, *M(C, W)*.

The spectra were reduced to the *Mt. Wilson* system, except *M*-stars, and the average of *Mt. Wilson* and *Victoria* was assumed. Spectra of *M*-stars were reduced to the *H. D.* system

Table 17.

Reductions of the Colour-Index to Median Spectrum for Different Intervals of Mt. Wilson Spectrum.

a) Spectrum K_2—K_9; median sp. K_4 (giant stars).

Spectrum	K_2	K_3	K_4	K_5	K_6	K_7	K_8	K_9
Reduction of C. I. to K_4	+0.16	+0.08	0.00	−0.10	−0.18	−0.24	−0.27	−0.27

b) Spectrum K_2—M_b; median sp. K_4 (dwarf stars); same corrections as in a) and additionally: M_a, corr. − 0.25; M_b, corr. − 0.19.

c) Sp. G_7—K_1; median sp. G_9.

Sp.	G_7	G_8	G_9	K_0	K_1
Red. to G_9	+0.10	+0.05	0.00	−0.05	−0.13

d) Sp. G_4—G_6; median sp. G_5.

Sp.	G_4	G_5	G_6
Red. to G_5	+0.05	0.00	−0.04

e) Sp. F_9—G_3; median sp. G_1.

Sp.	F_9	G_0	G_1	G_2	G_3
Red. to G_1	+0.05	+0.03	0.00	−0.04	−0.08

1) *c*-stars excluded.

according to table 15; i. e., *Mt. W.* M_0—M_3, and *Victoria* M_0—M_4 were called M_a; later *M*-stars were counted as M_b. This subdivision of *M*-stars was adopted because between these two groups there is a considerable difference in the character of the relation of absolute magnitude to colour.

Neighbouring spectral subdivisions were joined together and their colours were reduced to the median spectrum with the aid of small corrections derived from preliminary data regarding the variation of colour with spectral type. The spectral groups used, and the reductions of colour-index are given in table 17.

Table 18 contains the results. The results for giant *M*-stars are identical with the data of table 16.

T a b l e 18.

M(C, W) = average absolute magnitude for a given colour-index (equation (1)) and Mt. Wilson or Victoria spectrum.

The Mt. Wilson system of spectra is here adopted, except for M stars, for which the Mt. Wilson or Victoria estimates are expressed in the *H. D.* system.

Median Sp. *W.—V.*	*C.* 0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
1) Mb, c	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	—1.4	—1.3	—1.2	—1.2
1) Ma	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
1) K_4	. . .	. . .	. . .	. . .	. . .	. . .	3.3	3.1	2.9	2.6	2.0	1.3
2) K_4	. . .	. . .	. . .	. . .	. . .	. . .	(5.8)	(6.8)	(7.7)	(8.7)	(9.6)	(10.6)
G_9	. . .	. . .	(6.8)	(6 3)	(5.8)	(5.4)	(2.5)	1.7	0.9	0.0	—0.8	— 1.7
G_5	. . .	(6.1)	(6.0)	(5.6)	(5.0)	(2.4)	(1.5)	0 8	- 1.3	—2.0	—2.6	— 3.2
G_1	2.8	3.7	4.6	5.0	2.9	—0.4	—1.8	—2.5	—2.8	—2.6	—2.0	— 1.3

Median Sp. *W.—V.*	*C* 1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
1) Mb, c	— 1.1	—1.0	—0.9	— 0.8	—0.7	(—0.6)	(—0.6)	(—0.5)	(—0.4)	(—0.3)	(— 0.2)	(—0.1)
1) Ma	— 1.3	0.3	1.1	0.2	—0.9	—2.0	—3.6	—4.5	—5.3	—6.0	— 6.8	—7.4
1) K_4	0.5	— 0.4	—1.3	—1.9	—2.2	—2.4	—2.6	—2.8	—3.0	— 3.2	—3.4	. . .
2) K_4	(11.6)	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
G_9	— 2.7	—3.7	(—4.7)	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
G_5	— 3.8	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
G_1	— 0.6	0.2	0.9	. . .	. . .	. . .	. . .	. . .				

Less reliable figures are given in parentheses.

1) Giants, $E \leqslant 4.0$.

2) Dwarfs K_2—Mb, $E > 4.0$.

9. Absolute Magnitudes of G_0—K_0 Stars and K_2—M Dwarfs, Derived from Colour-Index, Proper Motion and Harvard Spectrum, $M(\mu,C,D)$.

The absolute magnitudes of dwarf stars derived from colour and spectrum are of a relatively low weight, especially if *H. D.* spectrum is used; a much higher accuracy may be obtained if the proper motion is used as an additional criterium of absolute magnitude; on the contrary, for giant stars the proper motion introduces no improvement, the absolute magnitudes derived from colour and spectrum being of high accuracy.

The scale was determined with the aid of spectroscopic absolute magnitudes. The magnitudes of *Mt. W. Contr.* **199** and of *Victoria Publ. III.*$_1$ were used in the following way: for spectrum F_0 to F_9 the magnitudes of both sources were taken with equal weight; for spectrum G_0—G_9 a correction of —0.7

Table 19.

$M(\mu,C,D)$ for H. D. spectrum G_0.

$M=-3.0$	$C=$	1.09	1.00	0.85	0.68					
	E =	—5.0	—5.8	—5.4	—6.4					
$M=-2.0$	$C=$	1.07	1.05	1.05	0.98	0.84	0.58			
	$E=$	2.4	1.0	—2.0	—4.4	—3.6	—5.0			
$M=-1.0$	$C=$	1.00	0.95	0.90	0.80	0.60				
	$E=$	2.9	0.2	—2.1	—2.6	—3.2				
$M=0.0$	$C=$	1.00	0.93	0.85	0.75	0.60				
	$E=$	4.3	3.6	1.1	—0.9	—1.8				
$M=1.0$	$C=$	0.98	0.90	0.80	0.70	0.59				
	$E=$	4.8	3.9	1.1	—0.5	—1.0				
$M=2.0$	$C=$	0.98	0.85	0.70	0.50	0.37	0.15			
	$E=$	5.5	4.1	1.5	0.5	0.3	—1.2			
$M=3.0$	$C=$	0.96	0.88	0.75	0.65	0.57	0.42	0.30	0.20	0.15
	$E=$	6.0	5.7	3.9	2.5	2.1	3.0	1.9	0.8	0.7
$M=4.0$	$C=$	0.74	0.60	0.56	0.50	0.45	0.38	0.30	0.25	0.15
	$E=$	5.6	3.9	3.5	4.0	4.6	3.8	5.1	5.9	6.9
$M=4.5$	$C=$	0.74	0.55	0.48	0.38	0.30	0.20	0.15		
	$E=$	6.2	5.7	6.6	5.2	6.3	7.6	8.0		
$M=5.0$	$C=$	0.72	0.48	0.29	0.12					
	$E=$	6.6	7.4	8.2	9.3					
$M=5.5$	$C=$	0.78	0.60	0.39	0.20	0.05				
	$E=$	7.5	8.0	8.6	9.7	11.0				
$M=6.0$	$C=$	0.97	0.70	0.50	0.23					
	$E=$	7.9	9.0	9.9	11.8					

Table 20.

M(μ,C,D) for H. D. spectrum G_5.

$M = -2.0$	$C =$	1.63	1.62	1.50							
	$E =$	4.0	−1.5	−5.4							
$M = -1.0$	$C =$	1.40	1.38	1.25	0.97						
	$E =$	4.0	1.8	−1.4	−6.1						
$M = 0.0$	$C =$	1.19	1.16	1.00	0.87	0.75	0.64	0.55			
	$E =$	3.0	2.0	0.0	−2.0	−4.0	−6.0	−7.4			
$M = 0.2$	$C =$	0.83	0.76	0.69	0.61	0.51	0.49	0.54	0.64	0.75	0.83
	$E =$	−1.2	−3.0	−4.0	−5.6	−4.0	−2.4	−0.1	0.8	0.0	−1.2
$M = 0.5$	$C =$	1.10	1.00	0.88	0.81	0.79	0.78	0.88	1.00	1.10	
	$E =$	2.4	0.5	−0.6	−0.1	1.8	2.7	4.2	3.8	2.4	
$M = 0.5$	$C =$	0.81	0.70	0,64	0.53						
	$E =$	−0.1	0.5	1.6	1.6						
$M = 1.0$	$C =$	1.07	0.90	0.80	0.77	0.80	0.77	0.70	0.62	0.54	
	$E =$	4.1	4.4	3.9	2.0	0.5	0.3	1.3	2.2	2.0	
$M = 2.0$	$C =$	1.04	0.80	0.75	0.73	0.60	0.50				
	$E =$	5.2	4.3	2.8	2.3	2.6	2.5				
$M = 3.0$	$C =$	1.03	0.80	0.70	0.50	0.33					
	$E =$	6.4	4.8	3.5	3.1	3.2					
$M = 4.0$	$C =$	1.00	0.80	0.60	0.50	0.36					
	$E =$	7.4	5.2	3.8	3.8	4.0					
$M = 5.0$	$C =$	0.97	0.80	0.65	0.50	0.33					
	$E =$	8.0	6.6	6.8	6.2	6.4					
$M = 6.0$	$C =$	0.97	0.80	0.60	0.31						
	$E =$	8.3	7.4	8.8	9.6						
$M = 7.0$	$C =$	0.98	0.80	0.68	0.50						
	$E =$	9.4	11.1	12.9	14.2						

magn. was added to *Victoria* absolute magnitudes ranging from + 1.5 to — 1.0, otherwise the magnitudes were assumed of equal weight; for spectrum K_0 and later *Mt. Wilson* absolute magnitudes of giant stars, i. e. luminosities exceeding 3.0, were not used at all, whereas absolute magnitudes of dwarf stars were used with the same weight as the Victoria magnitudes. The rejection of the absolute magnitudes of *Mt. W. Contr.* **199** of late-type giants has its reason in the circumstance that for spectrum about K_3 and later the giant magnitudes of *Mt. W. Contr.* **199** show almost no dispersion, whereas other data — the Victoria absolute magnitudes, the absolute magnitudes of the present investigation, the analysis of the proper motions of these stars — indicates that a wide range is covered by the absolute magnitudes of late-type giants, a range that equals approximately the range between a normal giant and an average

dwarf of the same spectral type; it appears that the *Mt. Wilson* spectroscopic criteria were not sensible enough for the differences in absolute magnitude of giant stars later than K_2, and that practically in this case the *Mt. Wilson* magnitudes are median values for giants of the corresponding spectrum.

In a diagram with the colour-indices as abscissae, and E (*see* section 5) as ordinates, curves of equal absolute magnitude were traced with the aid of the spectroscopic absolute magni-

Table 21.

$M(\mu,C,D)$ for H. D. spectrum K_0.

$M=-$	1.4	$C=$	1.68								
		$E=$	<4.0								
$M=-$	1.0	$C=$	1.57								
		$E=$	<4.0								
$M=$	0.0	$C=$	1.40	1.40	1.38	1.31	1.31	1.20	1.00	0.90	
		$E=$	4.0	2.0	0.0	−1.0	−4.0	−5.9	−4.3	−3.5	
$M=$	0.0	$C=$	0.80	0.74	0.71	0.71					
		$E=$	−2.7	−2.2	−3.8	−6.0					
$M=$	0.5	$C=$	1.31	1.31	1.28	1.20	1.10	1.00	0.87	0.74	0.68	0.66
		$E=$	4.0	2.2	0.0	−1.8	−1.5	−0.2	−2.2	−0.3	−2.0	−5.0
$M=$	1.0	$C=$	1.23	1.20	1.13	1.00	0.97	0.87	0.75	0.65	0.63	
		$E=$	4.0	1.2	−0.2	1.7	2.3	1.5	1.3	−0.5	−4.0	
$M=$	1.3	$C=$	1.19	1.10	1.03	1.14						
		$E=$	2.0	0.4	2.0	3.2						
$M=$	2.0	$C=$	1.20	1.00	0.90	0.80	0.77	0.70	0.65	0.62	0.61	
		$E=$	4.5	3.4	2.9	4.1	4.3	3.1	2.0	−0.4	−3.0	
$M=$	3.0	$C=$	1.15	1.00	0.90	0.75	0.70	0.61	0.61	0.60		
		$E=$	4.7	4.5	4.7	5.7	5.3	2.0	0.0	−1.0		
$M=$	5.0	$C=$	1.04	1.00	0.95	0.90	0.80	0.74	0.65	0.60	0.51	
		$E=$	6.0	5.8	5.6	5.8	6.5	6.6	6.0	5.1	3.4	
$M=$	5.5	$C=$	1.02	0.95	0.80	0.60	0.48					
		$E=$	6.2	5.8	6.7	6.6	5.8					
$M=$	6.0	$C=$	1.03	0.90	0.80	0.70	0.55					
		$E=$	6.7	6.8	7.5	9.2	9.3					
$M=$	7.0	$C=$	1.30	1.10	0.90							
		$E=$	7.4	8.4	10.4							
$M=$	8.0	$C=$	1.40	1.20	1.05							
		$E=$	8.4	9.7	11.9							
$M=$	9.0	$C=$	1.55	1.36	1.15							
		$E=$	8.9	10.0	12.0							
$M=$	10.0	$C=$	1.55	1.40	1.26							
		$E=$	11.2	11.4	12.0							
$M=$	11.0	$C=$	1.70	1.50	1.30							
		$E=$	11.7	12.2	13.1							

tudes available, separately for *H. D.* spectra G_0, G_5 and K_0. *Dwarfs* of *H. D.* spectrum K_2, K_5, Ma and Mb were treated together with *H. D.* spectrum K_0, because a large proportion of faint dwarfs really belonging to these later spectra are in *H. D.* classified as K_0. Tables 19, 20 and 21 give the points of the lines of equal absolute magnitude. It may by remarked that, contrarily to *M(C,W)* or *M(C,D)*, *M(μ,C,D)* is more accurate for dwarfs, and less reliable for giants; both methods supplement thus to some extent one another. In the case there is no proper motion available, an upper limit to the proper motion may be assigned. It may be remarked that proper motions are lacking only among *G. A.* stars, of apparent magnitude below 5.5. From a comparison of the frequency of observed proper motions in *G. A.* with the tables of *Gromingen Publications* **36** it was found, that for magnitudes from $m = 5.5$ to 7.5 (effective limiting magnitude of *G. A.)* the proper motions are effectively complete up to 0".07 annually. This gives for $H = m + 5 \log \mu$ the upper limit $H \leqslant m - 5.8$; the probable value of H for stars without proper motion may be assumed some 2 magnitudes smaller than the upper limit.

The character of the curves represented by tables 19—21 is such that by assigning to H its upper limiting value and by estimating the corresponding probable value of E, an estimate of the probable absolute magnitude may be obtained.

10. Absolute Magnitudes Derived from Proper Motion and Spectrum, without using the Colour-Index.

Certain classes of stars, as A_3—F_5, show no definite relation of absolute magnitude to colour-index; other classes, as B_8—A_2, show a relation (table 16) that is more of a statistical than of an individual character. To make our list of absolute magnitudes as complete as possible, the absolute magnitudes of stars belonging to these classes were determined from *H. D.* spectrum and proper motion, through the quantity E — which, of course, contains *implicite* the apparent magnitude. The average parallaxes given in *Groningen Publications* **34** (1923) were not used, because the spectral subdivisions are there not detailed enough. A special method was used, consisting as explained below in the analysis of the observed dispersion of the quanti-

ties E, without taking into account the change of space-velocity with absolute magnitude.

On the hypothesis of a Maxwellian distribution of peculiar velocities, according to the outlines explained in section 5, the frequency-function of $E-M$, i. e. of the deviation of E from the absolute magnitude, was computed for different spectral classes, assuming a uniform distribution of the stars over the sky. The result of the computation is given in table 22.

Let $\varphi(M)$ denote the frequency-function of absolute magnitudes, $\psi(E-M)$ — the frequency-function represented by table 22, $\chi(E)$ — the observed distribution of E. We have, substituting $E-M=x$:

$$\chi(E) = \int_{-\infty}^{+\infty} \varphi(E-x)\,\psi(x)\,dx \ldots . \quad (12) .$$

Table 22.

Relative Frequency of $E-M$ for Different Spectral Classes, Computed on the Assumption of a Maxwellian Distribution of Peculiar Velocities, with the Values of the Dispersion Derived from Radial Velocities of Naked-Eye Stars.

$E-M$	Spectrum B_0-B_5	B_8-A_3	A_5-F_2	F_5-K_2	K_5-M_b
	Frequency, $\psi(E-M)$				
−7.0...−6.0	0.000	0.001	0.001	0.001	0 001
−6.0...−5.0	0.002	0.003	0.003	0.004	0.004
−5.0...−4.0	0.004	0.007	0.008	0.009	0.009
−4.0...−3.0	0.012	0.016	0.018	0.019	0.019
−3.0...−2.0	0.035	0.041	0.044	0.045	0.045
−2.0...−1.0	0.099	0.107	0.109	0.110	0.110
−1.0...−0.0	0.280	0.248	0.239	0.236	0.235
0.0... 1.0	0.380	0.352	0.329	0.317	0.316
1.0... 2.0	0.180	0.210	0.227	0.233	0.234
2.0... 3.0	0.008	0.015	0.022	0.026	0.027
Sum	1.000	1.000	1.000	1.000	1.000
Effective probable deviation of $E-M$	± 0.80 magn.	± 0.89 magn.	± 0.92 magn.	± 0.95 magn.	± 0.95 magn.

This integral equation may be solved, if certain assumptions are made regarding the function ψ. Eddingon has given a general solution for the case ψ is a Gaussian. In the present case this does not hold even as a first approximation. The distribution φ of absolute magnitudes may be found from (12) by a purely numerical process, using trial and error. The numerical method gives better results than the analytical method, because all improbable hypotheses that lead to impossible results like negative values of the frequency-functions may be excluded at once.

After the distribution $\varphi\ (M)$ is determined the average absolute magnitude corresponding to a given value of E may be computed from the formula:

$$\overline{M} = \frac{\int_{-\infty}^{+\infty} M\varphi(M)\psi(E-M)\,dM}{\int_{-\infty}^{+\infty} \varphi(M)\psi(E-M)\,dM} \quad \ldots\ (13)\ .$$

Deviations of the distribution of peculiar velocities from a Maxwellian distribution will introduce into $\overline{M}$ computed from equation (13) with the aid of table 22 a certain error which, however, cannot be great; it is a known fact that the real distribution of peculiar velocities is of such a character that whereas the frequency of small and moderate velocities may be satisfactorily represented by a Gaussian, large velocities exhibit a certain excess; the effect of this circumstance is that the apparent distribution of absolute magnitudes, $\varphi(M)$, will show a somewhat greater dispersion than the real dispersion of absolute magnitudes, and $\overline{M}$ according to (13) will give a correlation factor with E that is slightly too large. The effect cannot, however, be great for the sample of early type stars discussed here, with an effective limiting magnitude not below 6.5, as among these stars high velocities are rare. More serious is the effect of the neglected variation of space velocity with absolute magnitude; a rough estimate indicates that the error in $\overline{M}$ from both sources does not exceed 0.5 magnitudes in extreme cases.

In what a degree the distribution of velocities of early type stars approaches the chance distribution, may be judged from

the example of B_5 stars. The range of absolute magnitudes of *H. D.* B_5 stars as indicated by table 16 appears to be small, the average magnitude equalling $\overline{M} = -1.1$. Probably the real dispersion of absolute magnitudes is also small for this class. The deviations of E from the average absolute magnitude are tabulated below and are compared with the theoretical distribution of table 22.

Table 23.

Observed and theoretical distribution of E,

H. D. B_5 . $\overline{M} = -1.1$.

Limits of E	−7.0...−6.1	−6.0...−5.1	−5.0...−4.1	−4.0...−3.1	−3.0...−2.1
Observed number	0	0	2	1	9
Theoretical number	0.1	0.2	0.6	1.7	5

Limits of E	−2.0...−1.1	−1.0...−0.1	0.0 ... 0.9	1.0...1.9
Observed number	14	13	9	1
Theoretical number	14	19	9	0.4

The observed distribution agrees with the theoretical as satisfactorily as may be expected from so small a sample; the slight possible positive excess in the observed distribution may be attributed to a small dispersion in absolute magnitudes that doubtlessly exists.

The absolute magnitudes derived in the way described above are of a statistical character, and may be applied only up to a certain limiting apparent magnitude — first, because the values of E become less accurate the fainter the stars are, as the consequence of the decrease of the absolute proper motions, and then, because for faint stars located at greater distances from us the law of the distribution of stellar velocities, especially their dispersion will probably differ from the conditions prevailing among the naked eye stars which give a basis to our numerical data.

The following results were obtained for the different spectral subdivisions.

a) *H. D.* B_8, B_9, A_0; c-stars and stars of large colour-excess being excluded[1]). All three spectra exhibit a similar behaviour,

1) There were only two A_0 stars of excessivelly large colour ($C+0.32$ and $+0.79$).

as may be already seen from table 16; with regard to the distribution of proper motions the similarity also persists. For each spectral subdivision the values of E were plotted against the colour-indices as abscissae; for all three spectra the following peculiarity was shown by the diagrams: the dispersion of E was large for certain limits of the colour-index near its median value, and perceptibly smaller for the extremities of colour. The median colour-index and the limits of colour where the dispersion of E is large were for the investigated sample of stars found as follows:

Table 24.

Spectrum	B_8	B_9	A_0
Median Colour, $\overline{C}$	—0.21	—0.18	—0.14
Limits of C with large dispersion of E (*critical colour*)	—0.28 to —0.18	—0.21 to —0.11	—0.20 to —0.10

The triple occurrence of the same phenomenon in these three neighbouring spectral subdivisions seems to point on its reality, though the observational errors of the colour-indices

Table 25.

Distribution of $E-\overline{M}$ within limits of critical colour (table 24). $\overline{M}=\overline{E}$ = average absolute magnitude of B_8-A_0 stars within the limits of critical colour, adopted according to table 16.

Limiting apparent magnitude = 6.1.

$E-\overline{M}$ =	$\leqslant$ —5.0	—4.9...—4.0	—3.9...—3.0	—2.9...—2.0	—1.9...—1.0
Observed number =	2	2	5	10	12
Computed number, I =	0.5	0.9	2.2	5.6	15
Computed number, II =	2.2	3.5	5.8	7.9	15

$E-\overline{M}$ =	—0.9...00	0.1...1.0	1.1...2.0	2.1...3.0	$\geqslant$ 3.1
Observed number =	26	43	29	5	2
Computed number, I =	34	48	29	2.0	0.0
Computed number, II =	30	40	28	7.9	0.5

Computed number, I denotes the distribution found on the assumption that there exists no dispersion of absolute magnitudes around $\overline{M}$, the average value. *Computed number, II* denotes the distribution corresponding to the following rough distribution of absolute magnitudes:

deviation of abs. magn., $M-\overline{M}$ =	— 4	— 3	— 2	— 1	0	+ 1	+ 2	Sum
percentage =	7	0	0	14	56	23	0	100

may have enlarged the limits of the *critical colour*. In any case, it seemed advisable to treat separately the stars falling within and without the critical limits of colour-index. The results of the analysis of the distribution of E is given in table 25.

Hypothesis II in table 25 fits best the observed distribution. We are led to the conclusion that B_8-A_0 stars brighter than magnitude 6.2, having the colour-index within the critical limits, consist of a bulk of stars feebly dispersed around the average absolute magnitude, and of a small group of stars of high luminosity, by about 4 magnitudes brighter than the average stars of the corresponding spectrum.

Table 26.

Distribution of $E-\overline{M}$ for B_8-A_0 stars without the limits of critical colour. $\overline{M}$ adopted according to table 16.

Limiting apparent magnitude = 6.1.

$E-\overline{M}$	$=\leqslant -5.0$	$-4.9...-4.0$	$-3.9...-3.0$	$-2.9...-2.0$	$-1.9...-1.0$
Observed number	= 0	0	1	7	14
Computed number, I[1]	= 0.4	0.8	1.8	4.6	12
$E-\overline{M}$	$=-0.9...0.0$	$0.1...1.0$	$1.1...2.0$	$2.1...3.0$	$\geqslant 3.1$
Observed number	= 29	40	16	4	1
Computed number, I[1]	= 28	39	24	2	0

In table 26 the distribution is accounted for the best by the assumption that the dispersion of absolute magnitudes around $\overline{M}$ of table 16 is zero. Thus the absolute magnitudes of table 16 for *H. D.* B_8-A_0 and for the extremities of colour-index may be regarded as individual, and may be assumed unaltered without taking into account the proper motion. For the critical limits of colour-index the average absolute magnitude is a function of the proper motion, and may be computed from formula (13), where $\varphi(E-M)$ is given at the foot of table 25, and $\psi(E-M)$ is represented by table 22. Table 27 contains the results. The data of this table were actually used for B_8-A_0, instead of the data of table 16.

1) See table 25.

Table 27.

Average Absolute Magnitudes ($\overline{M}$) of H. D. B_8—A_0 stars, determined partly from colour and spectrum, partly by using also the proper motion.

In italics are printed values that are used only when no proper motion is given.

1. *H. D.* B_8

C	—0.40	—0.35	—0.32	—0.29	—0.28	—0.25	—0.23	—0.20	—0.18
$\overline{M}$	1.4	1.0	0.3	—0.3	*—0.5*	*—1.0*	*—1.0*	*—0.8*	*—0.5*

C	—0.17	—0.15	—0.10	0.00
$\overline{M}$	—0.4	—0.2	0.0	0.0

Within the critical limits, $C = -0.28$ to -0.18, $\overline{M}$ depends upon E as follows:

E	3	2	1	0	—1	—2	—3	—4	—5	—6	—7	—8	—9
M	0.2	0.1	—0.3	—0.6	—0.8	—1.0	—1.7	—2.9	—3.6	—4.0	—4.3	—4.6	—4.8

2. *H. D.* B_9

C	—0.40	—0.30	—0.25	—0.22	—0.21	—0.17	—0.12	—0.11
$\overline{M}$	1.4	0.8	0.2	—0.2	*—0.4*	*—1.0*	*—1.0*	*—0.8*

C	—0.10	—0.07	0.00
$\overline{M}$	—0.6	0.0	0.0

and within the critical limits, $C = -0.21$ to -0.11:

E	2	1	0	—1	—2	—3	—4	—5	—6	—7	—8	—9
$\overline{M}$	0.0	—0.4	—0.8	—1.0	—1.2	—1.7	—2.9	—3.7	—4.1	—4.4	—4.7	—5.0

3. *H. D.* A_0

C	—0.40	—0.30	—0.25	—0.21	—0.20	—0.18	—0.10
$\overline{M}$	1.4	0.8	0.4	0.2	*0.1*	*0.0*	*0.0*

C	—0.09	—0.05	—0.02	0.00	0.05	0.10	(0.20)
$\overline{M}$	0.0	0.3	0.6	1.0	1.6	1.6	(1.0),

and whithin the critical limits, $C = -0.20$ to -0.10:

E	3	2	1	0	—1	—2	—3	—4	—5	—6	—7	—8
$\overline{M}$	1.0	0.6	0.2	0.0	—0.2	—0.7	—1.9	—2.7	—3.1	—3.4	—3.7	—4.0

b) *H. D.* A_2; *c*-stars excluded. The diagram of E with C as abscissae does not show with certainty any special region of large dispersion of E. Thus all colour-indices were treated together. Table 28 gives the distribution of E—M .

Hypothesis II in table 28 represents the observed number satisfactorily; the distribution of absolute luminosities corresponding to this hypothesis is one-sided, the number increasing with decreasing luminosity; the contrast of luminosity is much small-

er than for *H. D.* B_8—A_0. Table 29 gives the average luminosities of A_2 stars for a given colour-index and E, computed according to formula (13), on the assumption of hypothesis II of table 28, with the data of table 16.

Table 28.

Distribution of $E-\overline{M}$ *for H. D.* A_2, *limiting magnitude 6.1.* $\overline{M}$ *is found from the colour-index according to table 16.*

$E-\overline{M}$	$\leqslant -5.0$	$-4.9...-4.0$	$-3.9...-3.0$	$-2.9...-2.0$	$-1.9...-1.0$
Observed number	0	3	3	3	17
Computed number, I[1])	0.4	0.7	1.6	4.1	11
Computed number, II[2])	0.6	0.9	2.5	6.2	13

$E-\overline{M}$	$-0.9...0.0$	$0.1...1.0$	$1.1...2.0$	$2.1...3.0$	$\geqslant 3.1$
Observed number	19	28	20	8	0
Computed number, I[1])	25	35	21	1.5	0.0
Computed number, II[2])	22	25	21	8	0.5

Table 29.

Average Absolute Magnitudes of H. D. A_2 *stars for a Given Colour-Index and E.*

E	C				
	$-0.40...-0.25$	$-0.24...-0.19$	$-0.18...-0.05$	$-0.04...0.02$	$0.03...0.20$
—7	—0.8	—1.3	—1.8	—1.5	—1.0
—6	—0.8	—1.1	—1.3	—1.2	—1.0
—5	—0.3	—0.6	—0.8	—0.7	—0.4
—4	0.2	—0.1	—0.6	—0.3	0.0
—3	0.4	—0.1	—0.6	—0.3	0.2
—2	0.4	—0.1	—0.6	—0.3	0.2
—1	0.4	0.0	—0.4	—0.2	0.2
0	0.6	0.3	0.1	0.2	0.5
1	1.1	0.8	0.5	0.7	1.0
2	1.5	1.2	0.9	1.1	1.4
3	1.9	1.6	1.2	1.4	1.8
4	2.2	1.7	1.2	1.5	2.0

If there is given no proper motion, the average absolute magnitude is given as follows:

C	—0.40	—0.30	—0.25	—0.20	—0.18	—0.15	—0.10	—0.05	0.00	0.05	0.10	0.20	(0.30)
$\overline{M}$	1.4	1.3	1.1	0.6	0.3	0.1	0.1	0.3	0.6	1.0	1.1	1.2	(1.2)

1) See table 25.

2) The following rough distribution of absolute magnitudes assumed:

$M-\overline{M}$	—2	—1	0	1	Sum
percentage	6	26	32	36	100

c) *H. D.* A_3, A_5, F_0, F_2, F_5; *c*-stars in F_0 counted, in F_5 excluded, as well as stars of very large colour excess. The stars of these spectra show no certain correlation of colour and absolute magnitude; the average absolute magnitudes are thus to be found from the proper motion, through the quantity *E*, and the spectrum, without using the colour-index. The result of the analysis of the distribution of proper motions of these stars is given below. Only stars up to visual magnitude 6.1 were used.

Table 30.

Rough Distribution of Absolute Magnitudes that fits best the Distribution of E.

Limiting apparent magnitude 6.1.

a) *H. D.* A_3+A_5. $\overline{M} = 1.1$ for A_3, and 1.2 for A_5.

$M-\overline{M}$	−3	−2	−1	0	1	2	Sum
Percentage	1	1	23	49	24	2	100

b) *H. D.* F_0. $\overline{M} = 1.5$.

$M-\overline{M}$	−9	−8	−7	−6	−5	−4	−3	−2	−1	0	1	Sum
Percentage	1	1	0	6	7	0	0	0	0	23	62	100

c) *H. D.* F_2. $\overline{M} = 2.2$.

Practically no dispersion of absolute magnitudes can be found.

d) *H. D.* F_5. $\overline{M} = 2.8$.

$M-\overline{M}$	−4	−3	−2	−1	0	1	2	Sum
Percentage	6	0	6	9	53	19	7	100

d) *c, ac stars of H. D. B_8—F_8, and stars of large colour excess of H. D. B_8—F_5.* Stars with narrow linns, *c* or *ac* according to Miss Maury, are on the average of exceptionally high luminosity, as indicated by their proper motions, though a few dwarfs occur among them. For the analysis all stars of the list of *H. A.* **56,** p. 162 with reliable proper motions were used. The stars were divided into 2 groups: 1) *c*-stars of Miss Maury, with lines called in *H. D.* "very narrow", or "narrow"; 2) *ac*-stars of Miss Maury, with lines called in *H. D.* "narrow", or "somewhat narrow". The average absolute magnitude of stars of the first group is about — 5, and of those of the second about — 2. Taking into account the relative accuracy of proper motions for such absolute magnitudes, the data appeared to be reliable: for *c* stars up to visual magnitude 4.9 and a probable error in one component of the proper motion (from Boss)

$\leqslant \pm 0.''5$ per century; for *ac* stars up to visual magnitude 5.9 and an error in one component of p. m. $\pm 0.''9$ per century. The lists of these stars, together with the results regarding their probable absolute magnitudes, are given in tables 33 and 34.

Table 31.

Representation of the distribution of E by the frequency-functions of absolute magnitudes given in table 30.

a) *H. D.* A_3+A_5.

$E-\overline{M}$	$\leqslant -5.0$	$-4.9...-4.0$	$-3.9...-3.0$	$-2.9...-2.0$	$-1.9...-1.0$	$-0.9...0.0$
n obs.	0	1	5	4	12	23
n comp.	0.6	0.9	2.4	5.5	12	23

$E-\overline{M}$	$0.1...1.0$	$1.1...2.0$	$2.1...3.0$	$\geqslant 3.1$
n obs.	26	20	7	1
n comp.	27	20	7.2	1.0

b) *H. D.* F_0.

$E-\overline{M}$	$\leqslant -9.0$	$-8.9...-8.0$	$-7.9...-7.0$	$-6.9...-6.0$	$-5.9...-5.0$	$-4.9...-4.0$	$-3.9...-3.0$	$-2.9...-2.0$
n obs.	1	1	1	3	1	6	0	1
n comp.	0.9	0.8	1.3	2.1	3.2	3.5	2.3	1.9

$E-\overline{M}$	$-1.9...-1.0$	$-0.9...0.0$	$0.1...1.0$	$1.1...2.0$	$2.1...3.0$	$\geqslant 3.1$
n obs.	3	7	27	28	6	1
n comp.	4.5	11	19	23	12	1.2

c) *H. D.* F_2 (no dispersion of M).

$E-\overline{M}$	$\leqslant -3.0$	$-2.9...-2.0$	$-1.9...-1.0$	$-0.9...0.0$	$0.1...1.0$
n obs.	0	1	3	6	5
n comp.	0.5	0.8	2.0	4.3	5.9

$E-\overline{M}$	$1.1...2.0$	$2.1...3.0$	$\geqslant 3.1$
n obs.	2	1	0
n comp.	4.1	0.4	0.0

d) *H. D.* F_5.

$E-\overline{M}$	$\leqslant -4.0$	$-3.9...-3.0$	$-2.9...-2.0$	$-1.9...-1.0$	$-0.9...0.0$
n obs.	3	1	5	4	11
n comp.	2.0	2.2	3.3	5.9	9.3

$E-\overline{M}$	$0.1...1.0$	$1.1...2.0$	$2.1...3.0$	$\geqslant 3.1$
n obs.	12	12	4	1
n comp.	13.1	10.8	4.4	1.3

Table 32.

Average Absolute Magnitudes of H. D. A_3—F_5, as a function of E.

H. D.	E −10	−9	−8	−7	−6	−5	−4	−3	−2	−1
	$\overline{M}$									
A_3	. . .	. . .	. . .	. . .	0.1	0.2	0.3	0.3	0.4	0.5
A_5	. . .	. . .	. . .	. . .	0.2	0.3	0.3	0.4	0.5	0.6
F_0	—7.0	—6.8	—6.4	—5.9	—5.2	—4.5	—3.7	—3.1	—1.5	1.7
F_2	(—7.0)	(—6.8)	(—6.4)	(—5.9)	(—5.2)	(—4.5)	(—3.7)	(—3.1)	(—1.5)	(2.2)
F_5	. . .	. . .	. . .	. . .	. . .	. . .	—1.2	—0.7	—0.2	0.5

H. D.	E 0	1	2	3	4	5	6	7		
	$\overline{M}$									
A_3	0.7	1.0	1.3	1.7	2.3	3.0	3.1	. . .		
A_5	0.8	1.1	1.4	1.8	2.4	3.0	3.2	. . .		
F_0	1.9	2.0	2.2	2.4	2.5	. . .	. . .	. . .		
F_2	2.2	2.2	2.2	2.2	2.2	. . .	. . .	. . .		
F_5	1.2	2.1	2.5	2.8	3.2	3.8	4.4	4.8		

If there is given no proper motion, the following values may be adopted:

A_3, $\overline{M} = 1.1$; A_5, $\overline{M} = 1.2$; F_2, $\overline{M} = 2.2$; $F_0 = (1.5)$; $F_5 = (2.8)$.

F_0 and F_5 are in this case uncertain, because of the marked division into giants and dwarfs.

Table 33.

c-stars, $m \leqslant 4.9$ and p. e. of $100\,\mu_\alpha$ or $100\,\mu_\delta \leqslant \pm 0.''5$. $\overline{M} = -5.5$

H. R.	m	H. D. Sp.	100 μ	p. e.[1])	E	M(E)
1035	4.4	B_9	0.″4	±0.″25	— 5.7	— 5.4
1040	4.8	A_0	1.1	0.4	— 3.1	— 4.0
1605	3.2	F_5	1.4	0.15	— 4.6	— 4.6
1713	0.3	B_8	0.3	0.1	—10.6	—10.2
2385	4.5	A_0	1.0	0.4	— 3.1	— 4.0
2693	2.0	F_8	0.6	0.2	— 7.1	— 6.5
2996	4.1	A_2	1.0	0.4	— 3.2	— 4.1
3445	4.1	F_5	1.5	0.5	— 3.1	— 4.0
3975	3.6	A_0	1.2	0.2	— 4.1	— 4.4
6615	3.1	F_5	0.4	0.4	— 7.4	— 6.8
6812	4.0	B_8	0.6	0.2	— 4.9	— 4.8
7796	2.3	F_8	0.3	0.15	— 8.4	— 8.0
7924	1.3	A_2	0.1	0.1	—11.2	—10.6
8143	4.3	A_0	0.8	0.2	— 3.8	— 4.2
8334	4.5	A_2	0.2	0.2	— 6.7	— 6.2
8541	4.6	B_8	1.4	0.3	— 2.3	— 3.8
9045	4.8	F_8	0.7	0.3	— 4.3	— 4.5

The rough distribution of absolute magnitudes was found as follows:

M—$\overline{M}$	Percentage (φ(M))
—5	12
—4	0
—3	0
—2	12
—1	12
0	0
1	0
2	64
Sum	100

The average magnitude, *M(E)*, computed according to formula (13), was found as follows:

E	—11	—10	—9	—8	—7	—6	—5	—4	—3	—2
M(E)	—10.5	—9.8	—8.7	—7.5	—6.4	—5.6	—4.8	—4.3	—4.0	—3.7

Representation of the distribution of *E* with the aid of $\varphi(M)$ assumed above:

E—$\overline{M}$	⩽ —4.0	—3.9...—2.0	—1.9...0.0	0.1...2.0	⩾ 2.1
n obs.	2	1	4	5	5
n comp.	1.6	1.5	3.0	4.6	6.4

1) This is the average probable error of $100\,\mu_\alpha$ and $100\,\mu_\delta$.

Table 34.

ac-stars, H. D. B_8—F_8, $m \leqslant 5.9$. $\overline{M} = -1.8$ *(dwarfs included).*

H. R.	*m*	*H. D.* Sp.	100 μ	p. e.[1])	*E*	*M(E)*	Remarks
27	5.1	F_0	0.″4	±0.″3	—5.3	—3.9	
127	4.5	A_2	10.6	0.5	1.6	(2.0)	*dwarf*
424	2.1	F_8	4.4	0.1	—3.1	—2.7	
685	5.2	A_2	0.6	0.4	—4.2	—3.3	
1017	1.9	F_5	4.0	0.1	—3.6	—3.0	
1135	3.9	F_5	0.9	0.25	—4.8	—3.7	
1865	2.7	F_2	0.3	0.2	—7.8	—4.6	
1922	3.8	F_5	1.6	0.5	—3.3	—2.8	
2803	4.0	F_5	2.0	0.5	—2.7	—2.4	
2957	5.6	F_5	1.7	0.9	—1.4	—2.0	
3102	4.4	F_8	4.2	0.3	—0.6	—1.7	
3291	5.9	F_0	1.7	0.5	—0.8	—1.8	
3487	4.1	A_0	2.1	0.6	—1.7	—2.0	
3712	5.4	F_2	13.0	0.9	2.9	(2.2)	*dwarf*
3795	5.4	F_2	20.	0.6	4.7	(2.2)	*dwarf*
3888	3.9	F_0	32.	0.2	3.1	(2.2)	*dwarf*
4169	5.6	A_2	1.9	0.9	—0.8	—1.8	
4511	5.2	F_8	1.4	0.7	—2.5	—2.4	
4541	5.6	A_2	1.8	0.8	—0.9	—1.9	
4578	5.7	A_2	1.0	0.9	—2.2	—2.2	
4768	5.4	F_8	3.7	0.8	—0.2	—1.3	
5260	4.4	F_5	4.1	0.7	—1.0	—1.9	
5379	5.7	A_2	2.6	0.7	—0.2	—1.3	
6058	5.0	F_8	1.0	0.8	—3.5	—2.9	
6161	5.0	B_8	4.2	0.2	0.7	(1.1)	*dwarf*
6616	(5)	F_8	2.3	0.3	—1.6	—2.0	
6707	4.5	F_0	0.4	0.3	—5.1	—3.8	
6742	5.3	F_5	1.5	0.4	—2.2	—2.2	
7107	4.8	F_5	1.6	0.6	—2.7	—2.4	
7264	3.0	F_2	4.0	0.2	—2.3	—2.3	
7834	4.1	F_5	1.0	0.3	—4.0	—3.2	

The rough distribution of absolute magnitudes was found as follows:

$M-\overline{M}$	Percentage $(\varphi(M))$
—3	13
—2	0
—1	26
0	45
1	0
2	0
3	0
4	16
Sum	100

Thus 16 % of *ac*-stars are dwarfs.

Average absolute magnitude, *M(E)*:

E	—8	—7	—6	—5	—4	—3	—2	—1	0	1 ⩾ 2
M(E)	—4.6	—4.4	—4.1	—3.8	—3.2	—2.6	—2.1	—1.9	—1.0	1.6 2.2

Representation of the distribution of *E* with the aid of $\varphi(M)$ assumed above:

$E-\overline{M}$	$\leqslant$ —5.0	—4.9...—4.0	—3.9...—3.0	—2.9...—2.0	—1.9...—1.0	—0.9...0.0
n obs.	1	0	3	2	4	6
n comp.	0.5	0.6	1.5	2.8	4.3	6.5

$E-\overline{M}$	0.1...1.0	1.1...2.0	2.1...3.0	3.1...4.0	$\geqslant$ 4.1
n obs.	7	3	1	1	3
n comp.	6.7	3.2	0.7	1.2	2.9

1) See table 33.

From these tables we may conclude, that the *c*-characteristic seems to indicate high luminosity with certainty, whereas among *ac*-stars about $^1/_6$ are dwarfs; the latter circumstance does not diminish the significance of the *c*-characteristic for the purpose of selecting stars of high luminosity.

If the radial velocities are taken into account, we find a correction of about 0.2 magn. to *M(E)* of *c* and *ac*-stars; the correction is, however, uncertain and was not used.

The average absolute magnitudes of the supergiant stars of spectrum B_8 to F_8 come out as follows: *c*-stars, $m \leqslant 4.9$, $\overline{M} = -5.6$; *ac*-stars (dwarfs rejected), $\overline{M} = -2.5$.

e) H. D. F_8. This spectrum shows a decided dependence of colour upon absolute magnitude, in the same sense as for the later types, giants being redder than dwarfs. The change of average absolute magnitude with colour is, however, so rapid, almost abrupt at the line of separation of giants and dwarfs, that it is not advisable to determine the absolute magnitude from colour-index only. Thus the proper motion is necessarily used as an auxiliary quantity. The material is thus to be treated like the B_8—A_0 stars. Moreover, there are few giant stars of spectrum F_8 in our lists, whence it becomes impossible to investigate in a more detailed manner the dependence of absolute magnitude upon colour. The analysis of the distribution of *E* and *C* led to the following conclusions.

1) $C \geqslant 0.50$: all stars appear to be giants. The majority are *c*-stars and their absolute magnitudes are taken from the preceding tables. Only one, ε Hydrae with $E = 1.8$ (brighter component), is not among them; this star appears to be of intermediate character between giants and dwarfs.

2) $C = 0.40 \ldots 0.49$: majority are dwarfs with $\overline{M} = \overline{E} = 4.0$, without perceptible dispersion in absolute magnitudes, and one giant, *H. R.* 6978, with $E = -2.8$ (not *c*-star).

3) $C = 0.25 \ldots 0.39$: mixture of dwarfs with giants of moderate luminosity. The following rough distribution of absolute magnitudes represents satisfactorily the distribution of *E* ($\overline{M} = 3.9$):

$M-\overline{M}$	−3	−2	−1	0	1	Sum
Percentage	13	0	22	43	22	100

4) $C \leqslant 0.24$: no dispersion of absolute magnitudes is revealed by the distribution of *E*; purely dwarf stars, $\overline{M} = 4.0$ ($E \geqslant 1.0$).

Table 35 contains a summary of the absolute magnitudes of *H. D.* F_8 stars, adopted according to the data mentioned above.

Table 35.

Absolute Magnitudes of *H. D.* F_8, *c and ac-stars excluded* (see tables 33 and 34).

C ⩽ 0.24		0.25 ... 0.39		0.40 ... 0.49		⩾ 0.50	
E	$\overline{\quad}$	*E*	$\overline{M}$ [1]	*E*	$\overline{M}$	$\overline{M}=E$	
⩾ 1.0	4.0	— 1	1.7	⩾0.0	4.0	...	...
...	...	0	1.8	<0.0	$\overline{M}=E$	...	...
...	...	1	2.2	...	...	...	...
...	...	2	2.7	...	...	...	...
...	...	3	3.4	...	...	...	...
...	...	4	3.8	...	...	...	...
...	...	5	4.2	...	...	...	...
...	...	6	4.6	...	...	...	...
...	...	7	5.0	...	...	...	...

11. Accuracy of the Absolute Magnitudes.

An idea of the probable error of the absolute magnitudes may be obtained through comparison with other sources, e. g. with the spectroscopic data. However, one must be cautions in drawing conclusions from such a comparison. The absolute magnitudes are average values found for a certain criterium of absolute magnitude; it may be shown that the more rough the criterium, the better may in certain cases become the agreement of results of two independent determinations; e. g., let us consider absolute magnitudes determined from the spectral type alone: the average absolute magnitudes of different spectral classes will be determined by two investigators almost identically, and by ascribing to all stars of a given spectrum the same average absolute magnitude, we obtain two lists of absolute magnitudes in excellent internal agreement with one another; the differences, being due only to the errors in spectral classification, will be small because the average absolute magnitude changes but slowly with spectral type (except for spectra G_0—G_5); and, nevertheless, such determinations will be of low value, because the real dispersion of absolute magnitudes within one spectral class will be neglected.

1) Smoothed curve.

The methods of determining absolute magnitudes of stars may by divided into the following categories: 1) *geometrical methods* (trigonometric parallaxes, moving clusters); 2) *physical methods* (spectroscopic parallaxes and colour-parallaxes of late-type stars); 3) *statistical methods* (parallaxes determined from proper motion and other data; probably the spectroscopic parallaxes of early type stars). The physical methods use criteria that are intrinsically connected with the constitution of the stars; by increasing the accuracy of measurement of the criteria the accuracy of the absolute magnitudes may be increased indefinitely, at least theoretically. The statistical methods use criteria which depend upon the structure of our universe, e. g. upon the distribution of stellar velocities; the accuracy of the absolute magnitudes determined statistically cannot be increased above a certain limit, which, in the methods hitherto applied has been already reached. In practice no method is purely physical: the statistical properties of our universe tend to influence the results, except when the accuracy of the physical method considerably exceeds the accuracy of a statistically determined absolute magnitude. Thus the special features of our universe may set an upper limit to the probable error of a physical method, however inaccurate it may be. Hence, in some cases the apparent accuracy of a physical method may be simply due to the fact that the real dispersion of absolute magnitudes of stars of the special category is small; as a *crucial test to decide upon the accuracy of the method only the extremities of luminosity are to be used, the bulk of stars near the median magnitude being of no value;* an inaccurate method will not find out these extremities, attributing to them an absolute magnitude approaching the average; a more accurate method will attribute to the exceptional stars their right magnitudes, and, nevertheless, its probable error may come out but little smaller than in the inferior method if the relative number of exceptional stars is small. Such is the case, e. g. for the M-stars of *Mt. W. Contr.* **199,** where the method evidently failed for the giant and supergiant stars.

Generally, in the case of a group of stars with a frequency of absolute magnitudes decreasing on both sides of a maximum, the scale of estimated absolute magnitudes will be shortened in a proportion increasing with the observational (or cosmical)

error, the estimated magnitudes approaching more closely the median magnitude. In the typical case of Gaussian distribution the rate of shortening is easily determined. Let r denote the true dispersion of the absolute magnitudes M around the median value M_0, x — a criterion of absolute magnitude,

$$x = f(M) \quad \ldots\ (14).$$

When x is given, we may compute M from (14), by inverting the equation: $M = \varphi(x)$ ... (14′).

On account of the observational errors, we obtain from (14′) not the true magnitude M, but an apparent value M′; let the dispersion of $M' - M$ for $M = \text{const.}$ be equal to q; the average true absolute magnitude $\overline{M}$, corresponding to the apparent value M', is then determined as follows:

$$(\overline{M} - M_0) = \frac{r^2}{r^2 + q^2}\,(M' - M_0) \quad \ldots\ (15), \text{ or}$$

$$\overline{M} = \frac{r^2}{r^2 + q^2}\,M' + \frac{q^2}{r^2 + q^2}\,M_0 = \psi(x) \quad \ldots\ (15');$$

hence

$$M_0 \gtrless \overline{M} \gtrless M' ;$$

$$\text{for } \frac{q}{r} = 0 \text{ , we have } \overline{M} = M' ,$$

$$\text{for } \frac{q}{r} = \infty \text{ , } \overline{M} = M_0 = const.$$

In the methods of determining absolute magnitude from a certain criterium, the empirical relation is always found in the form $\overline{M} = \psi(x)$, *i. e.* in the form corresponding to equation (15′); thus, the absolute magnitudes determined in this way show a dispersion around the median value that *decreases with the increasing error-dispersion;* from this standpoint it must be pointed out that a small dispersion of determined absolute magnitudes of a certain class of stars must never be regarded as a test of the accuracy of the method; on the contrary, it may point either at a very large observational error, or, at least, may indicate that the real dispersion of absolute magnitudes is small, whereas the value of the method itself remains uncontrolled. Such appears to be the case for the spectroscopic parallaxes of early type stars; the failure of the method in the case

of c-stars seems to indicate that the method is rather of a statistical, than of a physical character.

When both the distribution of absolute magnitudes, and the frequency-function of the observational errors are Gaussians, the following relations between the different quantities involved may be found.

Let M, M', $\overline{M}$, M_0, r and q have the same meaning as above.

Let ϱ denote the dispersion of M for $\overline{M}$ = const. (dispersion of true magnitudes around a given observed magnitude). We may call: q the *intrinsic error* of the method; ϱ — the *apparent* error.

Let further

s denote the dispersion of $\overline{M}$ around M_0;

p „ the dispersion of M' around M_0.

We have then:

$$r^2 = s^2 + \varrho^2 \quad \ldots\ (16)$$

$$r^2 = p^2 - q^2 \quad \ldots\ (17) \ .$$

Let Q denote the mean square difference of two independent observational series, i. e. the quadratic mean of $\overline{M_1} - \overline{M_2}$ [1]); then

$$Q^2 = \varrho_1^2 \left(1 - \frac{\varrho_2^2}{r^2}\right) + \varrho_2^2 \left(1 - \frac{\varrho_1^2}{r^2}\right) \ldots\ (18) \ .$$

Further,

$$\varrho^2 = \frac{q^2}{1 + \frac{q^2}{r^2}} \quad \ldots\ (19) \ ,$$

$$q^2 = \frac{\varrho^2}{1 - \frac{\varrho^2}{r^2}} \quad \ldots\ (19_a) \ .$$

Let R_1 denote the dispersion of $\overline{M_1}$ for $\overline{M_2}$ = const., and R_2 — the dispersion of $\overline{M_2}$ for $\overline{M_1}$ = const. We have

$$R_1^2 = \left(\frac{\Delta \overline{M_1}}{\Delta M'_1}\right)^2 \left(\varrho_2^2 + q_1^2\right) \quad \ldots\ (20) \ , \text{ or}$$

$$R_1^2 = \left(1 - \frac{\varrho_1^2}{r^2}\right)^2 \left(\varrho_2^2 + \frac{\varrho_1^2}{1 - \frac{\varrho_1^2}{r^2}}\right) \quad \ldots\ (20_a); \text{ and}$$

$$R_2^2 = \left(1 - \frac{\varrho_2^2}{r^2}\right)^2 \left(\varrho_1^2 + \frac{\varrho_2^2}{1 - \frac{\varrho_2^2}{r^2}}\right) \quad \ldots\ (20') \ .$$

1) Provided the median magnitude M_0 in both observational series is the same.

Formulae (16), (17) and (20) are valid for non-Gaussian distribution of the magnitudes if the error-function is symmetrical; in this case $\frac{\Delta \overline{M}}{\Delta M'}$, or the rate of shortening of the apparent scale, must be regarded as a variable function of M' (or $\overline{M}$); near the maxima of the frequency-function $\frac{\Delta \overline{M}}{\Delta M'} < 1$, near the minima $\frac{\Delta \overline{M}}{\Delta M'} > 1$. All the above formulae may be also used for any form of the frequency function of absolute magnitudes, if for every point of the curve, i. e. for every $\overline{M}$ an effective value of $r^2 = \xi(\overline{M})$ is derived from

$$\frac{\Delta \overline{M}}{\Delta M'} = 1 - \frac{\varrho^2}{r^2} = \chi(\overline{M}) \ldots (21);$$

the ratio $\frac{\Delta \overline{M}}{\Delta M'}$ is computed numerically for different values of ϱ approaching the dispersion to be really expected, and the effective value of r^2 that represents best $\frac{\Delta \overline{M}}{\Delta M'}$ is found. Generally r^2 is positive near the maxima, and negative near the minima of the frequency-function.

In dealing with a certain observational material, before applying the above formulae one must be sure that the data give $\overline{M}$, otherwise formulae (18) and (20) cannot be used. Absolute magnitudes computed from trigonometrical parallaxes correspond to $\overline{M'}$, and, according to (17), their spread p will be greater than the true spread of absolute magnitudes. Likewise, the characteristic E used in the present investigation, computed from the proper motion, corresponds to M', with a very considerable error q. On the other hand, spectroscopic absolute magnitudes, and the absolute magnitudes derived in the present investigation, are those denoted above by $\overline{M}$; their dispersion, s, according to (16), will be smaller than the dispersion of the true absolute magnitudes.

The following interesting conclusions may be drawn from the formulae:

1) *Internal agreement* of two independent series of $\overline{M}$; from (18) and (19) we find $Q = 0$ for

$$q_1 = 0, \quad q_2 = 0$$
$$q_1 = \infty, \quad q_2 = \infty, \quad \text{and for}$$
$$r = 0.$$

Thus both a very good and a very bad accuracy of the observations tends to make the internal agreement perfect. In the actual data nowhere the ratio $\frac{q^2}{r^2}$ may be assumed to be small; if therefore, for a detached group of stars, e. g. the giants of a certain spectral class the internal agreement of two observational series is found to be small, it would most probably mean that the intrinsic accuracy of both methods is low.

2) *Dispersion s of the observed magnitudes* ($\overline{M}$). Provided there is no systematic error in the adopted scale of magnitudes, the method which gives the larger dispersion is the more accurate.

3) *The apparent error* ϱ. From (19) we find $0 < \varrho < q$, and $0 < \varrho < r$. The apparent error depends not only upon the method, but also upon the character of the observational material. The upper limit of ϱ is set by the intrinsic error, as well as by the real dispersion of the material. The apparent error may be different for differently selected data, e. g. for different apparent magnitudes, though the method and its accuracy remains the same. To judge of the relative value of two methods the apparent errors may be used only if they refer exactly to the same groups of stars.

4) *The individual value* of the derived magnitudes is the greater, the smaller the difference $M' - \overline{M}$ is; according to (15) the individual weight increases with decreasing $q^2 : r^2$. With this ratio approaching zero $\varrho^2 : r^2$ tends also to zero, ϱ approaches q and the apparent dispersion s approches r — the true dispersion. The same method may be of high individual value, e. g., in dealing with a mixture of giants and dwarfs, where the effective dispersion of r is large, and be of no value in distinguishing between the individual luminosities of giants, for which the dispersion though not negligible is smaller than the intrinsic error-dispersion of the method. Such appears to be the case

of the absolute magnitudes of late type K and M giants in *Mt. W. Contr.* **199.**

5) *The relative accuracy* of two methods may be estimated from equations (20ª) and (20′). It may be shown that for

$$q_1 < q_2, \text{ or } \varrho_1 < \varrho_2,$$
$$R_1 > R_2.$$

Theoretically these equations, in combination with (16) permit of determining ϱ_1, ϱ_2 and r. Practically, however, the solution is reliable only when $\frac{\varrho_1^2}{r^2}$ and $\frac{\varrho_2^2}{r^2}$ are small, otherwise the solution may become illusory.

The probable errors of the different methods given below were derived chiefly from the comparison of the dispersion of $E—\overline{M}$ with the theoretical dispersion as represented by table 22, for the spectra B_0 to F_8, and for later types assuming the dispersion to be slightly greater, according to the observed dispersion of $E—\overline{M}$, and a provisional value of ϱ for the spectroscopic magnitudes. The estimate of the provisional value of ϱ was made in different ways, according to equations 16—20. From equations (17) and (16) we have

$$\varrho = \pm \sqrt{p^2 - q^2 - s^2} \ ,$$

where p may be put equal to the dispersion of E around $E_0 \cong M_0$, q — equal to the expected dispersion of E for $M = const.$, and s — equal to the dispersion of the observed magnitudes, $\overline{M}$.

Table 36 contains a summary of the apparent probable errors of the absolute magnitudes derived by different methods.

The systematic differences given in the table are at least partly only apparent, due to the effect of error-dispersion which tends to reduce the extreme values. From this table the following conclusions may be drawn.

1) The absolute magnitudes of stars earlier than *H. D.* B_8 and of *giants* later than *H. D.* K_0 may be determined from the colour and spectrum with an accuracy equal, or greater than the accuracy of the best spectroscopic methods;

2) superiority of the spectroscopic method stands without question for *dwarf* stars from F_0 and later; the spectroscopic magnitudes of giant stars are less accurate; the spectroscopic

Table 36.

Probable Errors and Systematic Differences.

The probable deviation of the true absolute magnitude from the estimated magnitude is given.

$M(C,W)$ = absolute magnitude derived from colour and *Mt. Wilson* or *Victoria* spectrum;
$M(C,D)$ = absolute magnitude derived from colour and Harvard spectrum;
$M(Sp.)$ = spectroscopic absolute magnitude of *Mt. Wilson*, or *Victoria* reduced to *Mt. Wilson* scale, or mean of both;
$M(E)$ = spectroscopic magnitude by Edwards (N. Lockyer observatory);
$M(\mu,C,D)$ = absolute magnitude derived from proper motion, apparent magnitude, colour and Harvard spectrum;
$M(\mu,D)$ = same as preceding, but without using colour;
$M(V)$ = *Victoria* absolute magnitude;
$M(W)$ = *Mt. Wilson* „ „ ;
$M(W')$ = absolute magnitude of *Mt. Wilson Contr.* **319**.

Class of Spectrum and Luminosity	Probable Error				Systematic Difference		
	$M(C,D)$	$M(W)$	$M(E)$		$M(W)-M(C,D)$	$M(E)-M(C,D)$	
H. D. O.	(±0.5)	±0.9	. . .		+1.7	. . .	
H. D. B_0—B_2	±0.80	±0.76	±0.93		+1.0	+0.1	
H. D. B_3	±0.68	±0.55	±0.49		+0.8	+0.3	
H. D. B_5	±0.35						
	$M(\mu,C,D)$	$M(Sp.)$			$M(Sp.)-M(\mu,C,D)$		
H. D. B_5—A_0 [1]	±0.47	±0.66			+0.8		
H. D. A_2 [1]	±0.53	±0.59			+0.9		
	$M(\mu,D)$	$M(Sp.)$			$M(Sp.)-M(\mu,D)$		
H. D. A_3, A_5	±0.53	±0.50			+0.6		
dwarfs, H.D. F_0, F_2 ($M>1.0$)	±0.39	±0.25			−0.1		
„ H. D. F_5 ($M>1.0$)	±0.67	±0.44			+0.7		
c and ac stars, H.D. B_8—F_8	±0.98	. . .			. . .		
giants [2]), H. D. F_0—F_8	±0.98	±1.72			+1.8		
	$M(\mu,C,D)$	$M(Sp.)$			$M(Sp.)-M(\mu,C,D)$		
dwarfs, H. D. F_8	±0.45	±0.36			−0.2		
H. D. G_0—Mb, $M \geqslant 3.0$	±0.30	±0.31			. . . [3])		
„ G_0—K_0, $M = 2.0...2.9$	±0.80	±0.45			. . . [3])		
„ G_0—K_0, $M = 1.9...0.0$	±0.50				. . . [3])		
„ G_0—K_0, $M = -0.1...$		±0.68					
...—1.0	±0.70				. . . [3])		
„ G_0—K_0, $M <$ −1.1	±1.50				. . . [3])		
	$M(C,W)$	$M(C,D)$	$M(Sp.)$		$M(Sp.)-M(C,W)$	$M(Sp.)-M(C,D)$	
„ G_0, dwarfs ($M \geqslant 4.0$)	±0.60	±0.60	±0.34		+0.1	+0.5	
„ G_0, giants ($M < 4.0$)	±0.75	±1.70	±0.56		+0.3	0.0	
„ G_5, dwarfs ($M \geqslant 4.0$)	±1.10	±2.00	±0.29		+0.1	+2.5	
„ G_5, $M = 3.9...2.0$	±1.50	±2.00	±0.29		+0.5	+1.3	
„ G_5, $M < 2.0$ . .	±1.00	±1.30	±0.71		−0.9	−0.5	
„ K_0, dwarfs $M \geqslant 4.0$	±0.62	±2.40	±0.29		+0.1	+2.9	
„ K_0, $M = 3.9...2.0$	±1.50	±2.40	±0.50		+0.1		
„ K_0, $M < 2.0$ . .	±0.74	±0.82	±0.65			+0.1	
Dwarfs, *Mt. W.* K_2—Mb	±0.76	. . .	±0.25		. . .	. . .	
	$M(C,W)$	$M(C,D)$	$M(V)$	$M(W')$	$M(V)-M(C,W)$	$M(V)-M(C,D)$	$M(W')-M(C,W)$
Giants, H. D. K_2, K_5 . .	±0.68	±0.80	±0.92	. . .	+0.4	−0.1	. . .
„ „ Ma, b, c .	±0.49	±0.49	±0.41	±0.71	−0.6	−0.6	+0.2

1) *c*-stars excluded. 2) Including *c*-stars. 3) System of $M(\mu,C,D)$ adapted to the system of spectroscopic absolute magnitudes.

luminosities of giants of spectrum F_0 to F_8 are of a very low weight; they are considerably less accurate than the luminosities derived from proper motion and apparent magnitude, and are largely underestimated; this latter circumstance is probably at least partly a consequence of the large error-dispersion;

3) $M(C,D) \geqslant 2.0$ for *H. D.* G_5 and K_0 is of extremely low value, on account of the great accidental error of the Harvard spectral classification; by taking into account as additional criterium the proper motion together with the apparent magnitude the accuracy may be increased almost up to the standard of the spectroscopic magnitudes.

4) Generally, the colour and spectrum, supplemented where useful by the proper motion (and apparent magnitude), permit of estimating the absolute magnitudes of stars of all spectral classes from O to M with an accuracy that is not inferior, on the average, to the best spectroscopic magnitudes; of course, it must be remembered that for purposes of studying stellar motions it is not advisable to use parallaxes derived from the proper motion as one of the criteria.

12. Average Colour-Indices.

The results found above indicate that the colour-index of a star of a given spectrum is a quantity generally varying with the absolute magnitude; thus average colour-indices have only statistical significance, and depend to a considerable extent upon the character of selection of the material, even in the more detailed proceeding of treating separately giants and dwarfs. Selection according to apparent magnitude may influence the average colour, because the average absolute magnitude is supposed to vary with the apparent magnitude.

Table 37 gives the variation of colour-index with spectral type for F_2 to M as derived from the stars of the present investigation, the spectra of which have been determined accurately (at *Mt. Wilson* and *Victoria*); the effective limiting magnitude of these stars may lie between 5.5 and 6.0 vis., except late-type dwarfs that are much fainter. The data of table 37 are slightly smoothed, though the original figures fall already very near the smooth curve. The number of stars upon which table 37 is based is: 478 giants and 176 dwarfs.

Table 37.

Average colour-index (C) of stars grouped according to Mt. Wilson (Victoria) spectrum.

System of C defined by equation (1) and table 1.

Mt. W. Sp.		F_2	F_3	F_4	F_5	F_6	F_7	F_8	F_9	G_0
C	*giants*	0.27	0.30	0.33	0.39	0.47	0.55	0.63	0.69	0.73
	dwarfs	0.26	0.27	0.29	0.30	0.33	0.38	0.41	0.44	0.45
giants—dwarfs		+0.01	+0.03	+0.04	+0.09	+0.14	+0.17	+0.22	+0.25	+0.28

Mt. W. Sp.		G_1	G_2	G_3	G_4	G_5	G_6	G_7	G_8	G_9
C	*giants*	0.77	0.80	0.82	0.84	0.87	0.90	0.93	0.96	0.99
	dwarfs	0.47	0.49	0.50	0.53	0.55	0.57	0.59	0.62	0.65
giants—dwarfs		+0.30	+0.31	+0.32	+0.31	+0.32	+0.33	+0.34	+0.34	+0.34

Mt. W. Sp.		K_0	K_1	K_2	K_3	K_4	K_5	K_6	K_7	K_8
C	*giants*	1.03	1.10	1.23	1.35	1.44	1.53	1.60	1.67	1.71
	dwarfs	0.69	0.74	0.80	0.88	0.94	1.03	1.12	1.21	1.27
giants—dwarfs		+0.34	+0.36	+0.43	+0.47	+0.50	+0.50	+0.48	+0.46	+0.44

Mt. W. Sp.		K_9	$M_0—M_3$	$M_4—M_6$
C	*giants*	1.74	1.72	1.48
	dwarfs	1.30	1.34	. . .
giants—dwarfs		+0.44	+0.38	. . .

Table 38 gives the average colour-index for different *Harvard* spectra, derived from the entire material of the present investigation.

Table 38.

Average Colour-Index (C) and H. D. Spectrum.

System of C defined by equation (1).

H. D. Spectrum		O	B_0	B_1	B_2	B_3	B_5	B_8	B_9
C		−0.27	−0.22	−0.22	−0.24	−0.27	−0.24	−0.20	−0.17

H. D. Spectrum		A_0	A_2	A_3	A_5	F_0	F_2	F_5	
C		−0.11	−0.03	0.05	0.06	0.16	0.19	0.28	

H. D. Spectrum		F_8	G_0	G_5	K_0	K_2	K_5	Ma	Mb
C	*giants*	0.64	0.77	0.84	1.05	1.37	1.56	1.69	1.52
	dwarfs	0.32	0.43	0.55	0.70	1.18	1.26	. . .	1.45
giants—dwarfs		+0.32	+0.34	+0.29	+0.35	+0.19	(+0.30)	. . .	(+0.07)

Table 39.

H. D. Sp.	Average Colour-Index and number of stars (in parentheses)			Probable Deviation of Colour-Index					
	Tables I—III	Table IV	C_2-C_1	Tables I—III			Table IV		
	C_1	C_2		Observed	Photometric	True	Observed	Photometric	True
O	−0.266(12)		. . .	± 0.120 [1]	± 0.035 [1]	± 0.115 [1]	. . .	. . .	. . .
B_0	−0.219(21)		. . .	± 0.121 [1]	± 0.038 [1]	± 0.115 [1]	. . .	. . .	. . .
B_1	−0.220(19)		. . .	± 0.158 [1]	± 0.040 [1]	± 0.153 [1]	. . .	. . .	. . .
B_2	−0.244(31)		. . .	± 0.122 [1]	± 0.040 [1]	± 0.115	. . .	. . .	. . .
B_3	−0.299(60)	− 0.244(44)	+ 0.055±0.016	± 0.073	± 0.038	± 0.062	± 0.076	± 0.043	± 0.063
B_5	−0.247(38)	−0.225(34)	+ 0.022±0.014	± 0.051	± 0.038	± 0.034	± 0.064	± 0.043	± 0.047
B_8	−0.245(30)	−0.182(82)	+ 0.063±0.010	± 0.040	± 0.034	± 0.021	± 0.059	± 0.043	± 0.040
B_9	−0.177(12)	−0.170(146)	+ 0.007±0.018	± 0.068	± 0.034	± 0.059	± 0.045	± 0.043	± 0.013
A_0	−0.139(87)	−0.105(372)	+ 0.034±0.010	± 0.078	± 0.034	± 0.070	± 0.065	± 0.043	± 0.049
A_2	−0.067(66)	−0.015(188)	+ 0.052±0.009	± 0.061	± 0.034	± 0.051	± 0.068	± 0.043	± 0.053
A_3	+ 0.029(25)	+ 0.053(104)	+ 0.024±0.014	± 0.059	± 0.033	± 0.049	± 0.068	± 0.043	± 0.053
A_5	+ 0.043(35)	+ 0.071(82)	+ 0.028±0.010	± 0.040	± 0.030	± 0.026	± 0.064	± 0.043	± 0.047
F_0	+ 0.192(45)	+ 0.156(167)	−0.036±0.009	± 0.055	± 0.034	± 0.043	± 0.051	± 0.043	± 0.027
F_2	+ 0.188(4)	+ 0.188(115)	0.000±0.035	(± 0.069)	± 0.028	(± 0.063)	± 0.048	± 0.043	± 0.021
F_5	+ 0.301(37)	+ 0.272(201)	−0.029±0.011	± 0.061	± 0.026	± 0.055	± 0.067	± 0.043	± 0.051
d F_8	+ 0.386(14)	+ 0.317(111) [2]	−0.069±0.013	± 0.044	± 0.022	± 0.038	± 0.069 [2]	± 0.043 [2]	± 0.054 [2]
g F_8	+ 0.645(6)	. . .	. . . . .	(± 0.144)	± 0.026	(± 0.142)	. . .	. . .	. . .
d G_0	+ 0.483(22)	+ 0.420(102)	−0.063±0.013	± 0.048	± 0.025	± 0.041	± 0.171	± 0.043	± 0.056
g G_0	+ 0.777(15)	+ 0.755(11)	−0.022±0.035	± 0.079	± 0.025	± 0.075	± 0.086	± 0.043	± 0.074
d G_5	+ 0.550(9)	+ 0.548(50)	−0.002±0.033	± 0.088	± 0.026	± 0.084	± 0.086	± 0.043	± 0.074
g G_5	+ 0.882(28)	+ 0.839(203)	−0.043±0.016	± 0.082	± 0.027	± 0.077	± 0.094	± 0.043	± 0.084
d K_0	+ 0.811(8)	+ 0.672(26)	−0.139±0.065	± 0.156	± 0.026	± 0.154	± 0.086	± 0.043	± 0.074
g K_0	+ 1.115(149)	+ 1.031(529)	−0.084±0.014	± 0.139	± 0.027	± 0.136	± 0.142	± 0.043	± 0.135
d K_2	+ 1.180(2)	. . .	. . . . .	(± 0.166:)	± 0.027	(± 0.164)	. . .	. . .	. . .
g K_2	+ 1.585(16)	+ 1.330(77)	−0.225±0.048	± 0.148	± 0.027	± 0.146	± 0.137	± 0.043	± 0.130
d K_5	+ 1.260(2)	. . .	. . . . .	(± 0.119:)	± 0.032	(± 0.115:)	. . .	. . .	. . .
g K_5	+ 1.649(28)	+ 1.531(77)	−0.118±0.019	± 0.084	± 0.026	± 0.080	± 0.101	± 0.043	± 0.091
g Ma	+ 1.788(32)	+ 1.626(52)	−0.162±0.024	± 0.122	± 0.026	± 0.119	± 0.074	± 0.043	± 0.060
g Mb,c	+ 1.524(10)	+ 1.517(29)	−0.007±0.068	± 0.169	± 0.028	± 0.167	± 0.140	± 0.043	± 0.133
d Mb	+ 1.450(1)	. . .	. . . . .	. . .	. . .	. . .	. . .	. . .	. . .

1) Including table IV. 2) All F_8 stars, without subdividing into giants and dwarfs; the majority are doubtlessly dwarfs.

In the later types table 38 exhibits a smaller contrast of colour between giants and dwarfs, than table 37; this is to be explained by the systematical error of *H. D.*, discussed in section 6.

To what extent the selection of the material may influence the average values of the colour-index, may be seen from table 39, where average colour-indices of *H. D.* types are given separately as derived from tables I, II and III (bright stars, except a few late dwarfs), and table IV (*Göttingen Aktinometrie*, limiting magnitude about 7.5); the systematic difference is especially great for late-type giants, the fainter giants having on the average smaller colour-indices than the apparently brighter ones, in conformance with the general trend of variation of colour with absolute magnitude.

The same table gives the probable deviation of a single colour-index from the mean of the given type; the "true" dispersion is computed from

$$\text{true} = \sqrt{(\text{observed})^2 - (\text{photometric})^2};$$ it represents the combined effect of the real dispersion in colour and the error-dispersion of the *H. D.* spectra. As one of the most interesting features of the table it may be pointed out that the dispersion in colour is large for O—B_2 stars, and for giants of spectrum K_0, and later; these are exactly the categories which exhibit the most pronounced dependence of colour upon absolute magnitude, and *vice versa*.

Table 40 gives the dispersion of colour-indices for the *Mount-Wilson* spectral subdivisions.

Table 40.

Mt. W. Spectrum	Number of stars	Probable deviation of colour-index from the mean curve		
		Observed	Photometric	True
d. F_2—F_8	88	±0.055	±0.030	±0.046
g. F_2—F_8	18	±0.106	±0.027	±0.103
d. F_9—G_3	43	±0.063	±0.030	±0.055
g. F_9—G_3	18	±0.075	±0.027	±0.070
d. G_4—G_6	10	±0.101	±0.033	±0.095
g. G_4—G_6	48	±0.078	±0.028	±0.073
d. G_7—K_1	23	±0.083	±0.032	±0.077
g. G_7—K_1	146	±0.091	±0.032	±0.085
d. K_2—M_3	11	±0.072	±0.030	±0.065
g. K_2—K_9	153	±0.119	±0.032	±0.115
g. M_0—M_3	64	±0.091	±0.032	±0.085
g. M_4—M_6	21	±0.144	±0.033	±0.140

Appendix.

Catalogues of colour-indices and absolute magnitudes.

Table I contains northern (1900.0) stars up to Harvard visual magnitude 4.99; the list is complete though a few have no determined colour-indices.

Table II contains miscellaneous northern stars fainter than 4.99.

Table III contains southern stars.

Table IV contains the material of Göttingen Aktinometrie, declination 0^0 to $+ 20^0$, critically discussed and revised. A number of stars having no determined colours in *G. A.* are omitted from the list. Omitted were also stars the photometric magnitudes of which were not observed at Harvard.

Table V contains the polar stars of *G. A.*

The different columns give:

1. column . . . the number, either in *H. R.* (Tables I—III), or in *G. A.* (IV, V).
2. „ . . . the Harvard visual magnitude.
3. and 4. „ . . . the position.
5. „ . . . the quantity E, as defined in section 5; for a few exceptional stars instead of this is given $H = m + 5 \log \mu$.
6. „ . . . the colour-index, and the weight (in parentheses); unit of weight corresponds to probable error ± 0.06; in tables IV and V the weight is 2 throughout.
7. „ . . . the Harvard spectrum.
8. „ . . . the spectrum from Mount-Wilson and Victoria; as to M-stars of this column, compare table 15.
9. „ . . . spectroscopic absolute magnitude from Mount-Wilson and Victoria; the absolute magnitudes of Mt. Wilson Contr. 319 are given in the remarks *(Mt. W'.)*;
10. „ . . . the absolute magnitude derived from colour and Harvard spectrum.
11. „ . . . the absolute magnitude derived from colour, proper motion and Harvard spectrum, and in italics — from proper motion and Harvard spectrum.
12. „ . . . the absolute magnitude derived from colour and Mt. Wilson-Victoria spectrum.

The remarks refer to elements and corrected colours of double stars, to errata or discrepancies in the sources used etc.

The letter *c* put behind a figure means, that the figure refers to the combined light of a double star. The letter *c* before a spectrum is the commonly adopted symbol for narrow lines (*c*-characteristic). The letters *b* and *f* denote, that the data refer to the brighter, or to the fainter component, *a* — to the average of a double star respectively.

Data of low weight, or doubtful, are given in parentheses.

Table I.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
15	2.2	0 3.2	28 32	0.8	—0.23(5)	A_{0p}	A_{0n}	1.1	. . .	—0.1c	. . .	*
21	2.4	3.8	58 36	2.8	0.27(8)	F_5	F_2	1.6	. . .	*2.7*	. . .	
39	2.9	8.1	14 38	—4.8	—0.39(5)	B_2	. . .	—2.9	—2.6	. . .	. . .	
45	4.9	9.4	19 39	1.1	1.69(3)	Ma	Ma	—0.1	0.3	. . .	0.3	*
63	4.4	11.9	38 8	0.0	0.12(3)	A_2	A_{2n}	1.5	. . .	0.5	. . .	
68	4.5	13.1	36 14	1.0	—0.05(2)	A_2	A_{0n}	1.1	. . .	—0.2c	. . .	*
123	4.9	26.3	53 58	0.4	—0.28(2)	B_8	. . .	. . .	. . .	—1.0c	. . .	*
130	4.2	27.3	62 23	—3.6	0.06(4)	B_0	. . .	—3.0	—2.2	. . .	. . .	
153	3.7	31.4	53 21	—2.6	—0.43(5)	B_3	. . .	—2.8	—2.8	. . .	. . .	
154	4.4	31.5	33 10	—2.0	—0.33(4)	B_3	. . .	—1.2	—1.9	. . .	. . .	
163	4.5	33.3	28 46	3.5	0.79(7)	G_5	G_3	0.5	0.9	0.9	—0.6	
165	3.5	34.0	30 19	0.8	1.32(7)	K_2	K_3	1.2	1.4	. . .	0.4	
168	2.5	34.8	55 59	—2.3	1.16(7)	K_0	G_8	—0.8	0.5	0.4	—0.9	
179	4.8	36.5	49 58	—1.6	—0.30(4)	B_3	. . .	—1.5	—1.7	. . .	. . .	
193	4.7	39.1	47 44	—1.7	—0.15(2)	B_2	. . .	—1.8	—1.5	. . .	. . .	
215	4.3	42 0	23 43	1.1	1.06(2)	K_0	G_7	0.6	0.7	1.3	—0.5	
219	3.6	43.0	57 17	5.6	0.42(8)c	F_8	F_8	4.8	*d*	4.0	. . .	*
224	4.6	43.5	7 2	0.7	1.68(8)	K_5	K_5	—0.4	—0.2	. . .	—1.1	
226	4.4	44.3	40 32	—1.5	—0.31(2)	B_3	. . .	—1.4	—2.5c	. . .	. . .	*
244	4.9	47.1	60 35	2.8	0.48(2)	F_8	F_8	3.6	*d*	4.0	. . .	
253	5.0	49.1	58 26	—0.1	1.30(2)	K_0	K_2	(0.5)	—0.3	0.3	0.0	
264	2.2	50.7	60 11	—3.4	—0.23(5)	B_{0p}	. . .	. . .	—2.9	. . .	. . .	
265	4.8	50.7	58 38	1.1	0.96(2)	K_0	G_5	0.2	0.8	0.8	—0.7	
269	3.9	51.2	37 57	1.8	0.00(4)	A_2	. . .	. . .	. . .	0.9	. . .	
271	4.6	51.9	22 53	—0.2	0.88(2)	G_5	G_6	0.6	—0.1c	—0.2c	(0.7c)	*
285	4.5	55.0	85 43	0.6	1.18(2)	K_0	K_3	(0.5)	0.5	1.0	1.6	
294	4.4	57.8	7 21	0.4	0.80(3)	K_0	G_6	0.0	((2.5))	0.8	(1.6)	
335	4.3	1 3.7	46 42	—3.7	—0.27(2)	B_8	B_{8s}	0.6	. . .	—2.5	. . .	*
337	2.4	4.1	35 5	0.3	1.74(8)	Ma	Ma	0.0	—0.2	. . .	—0.2	*
343	4.5	5.0	54 37	3.1	0.02(5)	A_5	. . .	. . .	. . .	*1.9*	. . .	
351	4.9	6.1	20 30	—2.2	1.04(2)	K_0	G_5	0.0	0.8	0.3	—1.6	
352	4.7	6.2	29 34	0.5	1.13(7)	K_0	K_1	1.0	0.6	1.3	0.9	
360	4.6	8.3	24 3	—0.7	1.15(2)	K_0	G_9	0.3	0.5	0.8	—0.4	
383	4.7	14.0	26 44	—1.4	—0.16(2)	A_2	. . .	. . .	. . .	—0.5	. . .	
390	5.0	16.4	45 0	—0.7	1.04(2)	K_0	K_0	1.4	0.8	0.5	1.0	
399	5.0	18.9	67 36	0.9	1.03(2)	K_0	K_1	(0.8)	0.8	1.1	1.7	
403	2.8	19.3	59 43	1.4	0.04(6)	A_5	A_{3n}	2.0	. . .	*1.2*	. . .	
417	5.0	21.7	44 53	4.2	0.23(2)	F_5	F_2	2.9	. . .	*3.3*	. . .	
424	2.1	22.6	88 46	—3.1	0.52(7)	cF_8	F_8	—2.6	*g*	—2.7	. . .	*
437	3.7	26.1	14 50	—2.5	0.92(8)	G_5	G_5	—0.6	0.4	—0.3	0.2	

*15. Sp. binary, 2 spectra suspected. *45. *Mt. W'* 0.7. *68. Sp. binary, 2 spectra. *123. Double, $d = 0.''5$, $\Delta m = 0.3$. *219. η Cassiopejae; double, $d = 9''$, $\Delta m = 3.7$. Colour of brighter compon. $C = 0.41$ assumed. *226. Spectroscopic binary, 2 spectra; assumed equal components. *271. Spectroscopic binary, two spectra; assumed equal components. *335. Double, $d = 0.''5$, $\Delta m = 1.3$. *337. *Mt. W.'* 0.3. *424. α Ursae minoris.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H.D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
442	4.9	1 27.4	58 43	—0.9	1.04(2)	K_0	G_5	—0.2	0.8	0.5	—1.6	
458	4.2	30.9	40 54	3.7	0.47(2)	G_0	F_8	3.8	4.7	3.6	. . .	
464	3.8	31.9	48 7	0.6	1.33(7)	K_0	K_4	1.4	—0.5	0.3	1.1	
477	4.9	34.7	40 4	—0.9	—0.25(2)	B_8	. . .	. . .	. . .	—1.5c	. . .	*
489	4.7	36.2	4 59	—2.4	1.35(3)	K_0	K_4	0.2	—0.6	—0.2	0.9	
496	4.2	37.4	50 11	—1.4	—0.18(2)	Bop	. . .	. . .	—2.6	. . .	. . .	
510	4.5	40.1	8 39	0.5	0.82(3)	K_0	G_6	0.2	((2.1))	0.8	(1.5)	
542	3.4	47.2	63 11	—1.5	—0.28(5)	B_3	B_{5n}	—0.5	—1.6	. . .	. . .	*
544	3.6	47.4	29 6	1.9	0.35(8)	F_5	F_2	1.4	. . .	*2.5*	. . .	
545/6	4.0c	48.0	18 48	1.6c	—0.39(2)c	Aop	. . .	. . .	. . .	1.3	. . .	*
549	4.8	48.4	2 42	—1.3	0.80(3)	K_0	G_7	0.9	((2.5))	0.5	1.7	
553	2.7	49.1	20 19	0.3	0.02(6)	A_5	. . .	. . .	. . .	*0.9*	. . .	
569	4.8	52.4	23 7	1.4	0.14(2)	A_5	. . .	. . .	. . .	*1.2*	. . .	
575	4.6	53.7	70 25	0.4	0.11(2)	A_3	A_{4s}	2.0	. . .	*0.8*	. . .	*
580	4.1	54.9	71 56	—0.7	—0.07(4)	A_2	A_{0n}	1.1	. . .	—0.3	. . .	
590	5.0	55.6	54 0	—0.1	—0.22(4)	B_8	. . .	0.0	. . .	—0.6	. . .	
595/6	3.9c	56.9	2 17	—0.9c	. . .	A_{2p}	A_{2n}	1.8	. . .	(—0.4)	. . .	*
603/4	2.2c	57.8	41 51	—2.3c	1.33(1)c	K_0+B_9	K_1	—0.3	—1.9c	(—1.1c)	—3.1c	*
617	2.2	2 1.5	22 59	0.4	1.18(8)	K_2	K_2	1.2	2.1	. . .	0.9	
620	4.8	2.4	37 23	2.6	0.01(2)	A_2	. . .	. . .	. . .	1.3	. . .	
622	3.1	3.6	34 31	0.8	0.01(6)	A_5	. . .	. . .	. . .	*0.3*c	. . .	*
649	4.5	7.7	8 23	—2.1	0.74(3)	G_5	G_4	—1.4	((1.2))	0.2	(1.5)	
664	4.1	11.4	33 23	0.0	—0.15(5)	A_0	. . .	. . .	. . .	0.0	. . .	
699	4.9	19.0	49 50	—1.4	1.87(7)	K_5	K_8	0.4	—0.9	. . .	—2.1	
707	4.6	20.8	66 57	—2.7	0.01(2)	A_{5p}	A_{4s}	1.4	. . .	*0.4*	. . .	*
718	4.3	22.8	8 1	—0.7	—0.14(3)	A_0	. . .	. . .	. . .	—0.1	. . .	
788	5.0	35.9	39 46	2.8	0.42(2)	G_0	. . .	. . .	(3.6c)	(2.7c)	. . .	*
799	4.2	37.4	48 48	3.5	0.39(7)	F_8	F_7	4.0	*d*	3.6	. . .	
801	4.6	37.6	27 17	—2.9	—0.34(4)	B_3	. . .	—2.1	—2.0	. . .	. . .	
804	3.6	38.1	2 49	2.3	—0.13(2)	A_2	A_{0n}+F_3	0.9	. . .	1.0	. . .	*
813	4.4	39.5	9 42	3.4	0.18(8)	F_0	. . .	. . .	. . .	*2.4*	. . .	
824	4.6	42.0	28 50	2.4	1.07(2)	K_0	K_1	1.3	0.7	1.3	1.4	
834	3.9	43.4	55 29	—2.4	1.72(7)	K_0	K_4	—1.8	—2.3	(—1.4)	—2.0	
838	3.7	44.1	26 51	1.2	—0.19(5)	B_8	. . .	. . .	. . .	—0.2	. . .	
840	4.3	44.3	37 54	2.5	0.18(2)	F_0	A_{4n}	2.2	. . .	*2.3*	. . .	
843	4.7	45.4	34 39	0.4	1.77(2)	K_5	K_8	—1.1	—0.5	. . .	—0.4	*
854	4.1	47.2	52 21	—4.8	0.70(2)	G_0+A_5	G_1	1.1	(—2.3c)	((-2.4c))	—2.8c	*

*477. Sp. binary, 2 spectra. *542. $M = -1.8$ (Edwards). *545/6. Double, $d = 8''.6$, $\Delta m = 0.1$. Spectra Aop: B_9 (Leonard). Much more blue than the average for this class. *575. Double, $d = 1''.0$, $\Delta m = 2.1$. *595/6. Double, $d = 3''.6$, $\Delta m = 0.9$. *603/4. γ Andromedae, triple; $d = 10''.3 + 0''.3$; magn. 2. 3 (K_0); 5.4 + 6.8 (B_9). The photoelectric $C = 1.07$ (comb.) not used. The corrected colour of the brighter component is assumed $C = 1.56$. *622. Sp. binary, 2 spectra. *707. Visual triple; $d = 1''.8$; $7''.6$. $\Delta m = 2.3$; 3.4. *788. Spectroscopic binary, 2 spectra; assumed equal components. *804. Double, $d = 2''.6$, $\Delta m = 2.5$. *843. *Mt. W'* 0.3. *854. Sp. composite; ass. reduction to combined magnitude = —0.1. Photoelectric $C = 0.65$ (comb.) not used. The corrected colour of the brighter component is assumed $C = 0.95$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
879	4.6	2 52.4	39 16	0.4	—0.06(2)	A_2	. . .	. . .	. . .	0.3	. . .	
882	5.0	52.9	34 47	0.3	1.32(2)	K_0	K_4	—0.1	—0.4	0.2	1.1	
887/8	4.6	53.5	20 56	—2.2	—0.04(2)	A_2	A2s	1.0	. . .	—0.9c	. . .	*
896	4.7	54.4	8 31	—3.0	—0.21(3)	B_5	. . .	—0.3	—0.9	. . .	. . .	
911	2.8	57.1	3 42	—1.3	1.80(8)	Ma	Ma	—0.3	—0.9	. . .	—0.9	*
915	3.1	57.6	53 7	—4.2	0.63(3)	F_5+A_3	F_8+A	0.5	. . .	(*—1.0c*)	. . .	*
921	(3.4)	58.8	38 27	0.9	1.45(5)	Mb	Mb	—2.0	—1.0	. . .	—1.0	*
932	4.9	3 1.1	74 1	1.6	—0.08(2)	A_2	. . .	. . .	. . .	0.7	. . .	
936	(2.1)	1.7	40 34	—6.3	—0.22(2)	B_8	. . .	0.4	. . .	—4.1	. . .	*
937	4.2	1.8	49 14	6.1	0.49(8)	G_0	G_1	4.4	4.8	4.4	5.0	
941	4.0	2.7	44 29	2.2	0.92(2)	K_0	G_9	1.1	1.1	1.2	1.5	
947	4.8	4.8	39 14	—2.2	1.16(2)	K_0	K_1	(0.5)	0.5	0.5	0.6	
951	4.5	5.9	19 21	1.7	1.03(8)	K_0	K_0	(0.7)	0.8	1.3	1.1	
972	5.0	9.2	20 40	1.4	—0.18(2)	A_0	. . .	. . .	. . .	0.4	. . .	
985	4.8	11.2	65 17	—3.0	—0.24(2)	B3p	. . .	. . .	—1.5	. . .	. . .	
991	4.9	12.5	33 51	—3.2	1.71(2)	K_0	K_2	—0.8	—2.3	(—1.4)	—2.3	
996	5.0	14.1	3 0	3.7	0.51(3)	G_5	G_5	4.9	(4.1)	4.0	(5.5)	
999	4.7	14.3	28 41	—1.8	1.66(2)	K_5	K_6	0.2	—0.1	. . .	—0.2	
1002	5.0	14.7	42 58	0.6	—0.09(2)	A_2	Aon	1.1	. . .	0.3	. . .	
1017	1.9	17.2	49 30	—3.6	0.39(8)	cF_5	F_4	—1.0	. . .	*—3.0*	. . .	
1030	3.8	19.4	8 41	0.3	0.83(8)	G_5	G_6	0.0	0.8	0.5	(1.5)	
1034	4.9	20.9	48 43	—0.7	—0.20(4)	B_5	B4s	—1.0	—0.9	. . .	. . .	*
1035	4.4	21.0	59 36	—5.7	0.17(5)	cB_9	. . .	(—0.2)	. . .	—5.4	. . .	*
1038	3.8	21.7	9 23	0.2	—0.18(5)	B_8	. . .	. . .	. . .	—0.5	. . .	
1040	4.8	21.9	58 32	—3.1	0.32(3)	cA_0	. . .	. . .	. . .	—4.0	. . .	*
1044	4.7	22.2	49 10	—0.3	—0.22(4)	B_5	B3n	—0.8	—1.0	. . .	. . .	*
1046	5.0	22.4	55 6	—0.6	—0.08(4)	A_2	Aon	0.9	. . .	—0.2	. . .	
1052	4.6	23.5	47 39	—2.3	1.46(7)	K_0	K_4	—0.3	—1.2	—0.6	0.0	
1066	4.3	25.4	12 36	—3.0	1.12(3)	K_0	G_8	0.4	0.6	0.3	—0.6	
1087	4.3	29.4	47 52	—0.7	—0.24(4)	B5p	. . .	. . .	—1.1	. . .	. . .	
1101	4.4	31.8	0 5	4.5	. . .	G_5	F_9	3.8	. . .	. . .	. . .	
1122	3.1	35.8	47 28	—1.8	—0.22(4)	B_5	B5n	—0.4	—1.0	. . .	. . .	*
1129	5.0	37.3	63 2	—2.6	0.73(2)	F_5+A	. . .	. . .	. . .	(*—1.0c*)	. . .	*
1131	3.9	38.0	31 58	—2.6	0.01(4)	B_1	. . .	—2.5	—2.9c	. . .	. . .	*
1135	3.9	38.4	42 16	—4.8	0.34(7)	cF_5	F_4	0.3	. . .	*—3.7*	. . .	

*887/8. Double, $d = 0.''5$, $\Delta m = 0.4$. *911. *Mt. W′* 0.1. *915. Sp. composite. Photoelectric $C = 0.71$ (comb.) not used. The corrected colour of the brighter component is assumed $C = 0.77$. *921. ρ Persei, var. Photoelectric colour alone used. *Mt. W′* —0.7. *936. β Persei (Algol). Colour from photoelectric measures alone. *1034. $M = -0.9$ (Edwards). *1035. Supergiant with colour excess. The absolute magnitude by Edwards, —0.2, is contradicted by the c-characteristic and the smallness of proper motion. Average absolute magnitude of stars of this class $M = -6.8$. *1040. Large colour excess, and probably high luminosity. Narrow lines. *1044. $M = -1.0$ (Edwards). *1122. $M = -0.5$ (Edwards). *1129. Sp. composite. The corrected colour of the brighter component is assumed $C = 0.91$. *1131. Spectroscopic binary, 2 spectra; assumed equal components.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1142	3.8	3 38.9	23 48	—0.6	—0.24(4)	B_{5p}	B_{8n}	0.2	—1.1	. . .	. . .	*
1145	4.4	39.3	24 9	—0.2	—0.25(2)	B_5	B_{7n}	—0.1	—1.2	. . .	. . .	*
1148	4.7	39.8	71 1	0.0	—0.04(4)	A_0	. . .	. . .	. . .	0.4	. . .	
1149	4.0	39.9	24 3	—0.3	—0.23(2)	B_5	B_{9s}	—0.2	—1.0	. . .	. . .	*
1155	4.7	40.4	65 13	—6.0	2.10(7)	Ma	Ma	. . .	—4.5	. . .	—4.5	*
1156	4.2	40.4	23 38	0.1	—0.12(2)	B_5	B_{5n}	—0.4	—0.8	. . .	. . .	*
1165	3.0	41.5	23 48	—1.5	—0.16(4)	B_{5p}	B_{8n}	0.3	—0.9	. . .	. . .	*
1178	3.8	43.2	23 45	—0.6	—0.23(4)	B_8	B_{9n}	0.5	. . .	—0.7	. . .	
1203	2.9	47.8	31 35	—3.6	0.05(5)	B_1	. . .	—2.8	—2.2	. . .	. . .	
1204	4.9	48.6	62 47	—4.7	—0.14(2)	B_9	B_{9n}	0.6	. . .	—3.5	. . .	
1220	3.0	51.1	39 43	—2.3	—0.25(5)	B_1	B_{1n}	—2.0	—2.7c	. . .	. . .	*
1228	4.0	52.5	35 30	[—4.3]	—0.09(5)	O_{e5}	O_{8n}	—2.4	—3.0	. . .	. . .	
1239	(3.3)	55.1	12 12	—3.6	—0.25(2)	B_3	. . .	—2.5	—1.6	. . .	. . .	*
1251	3.9	57.8	5 43	—4.6	—0.12(4)	A_0	. . .	. . .	. . .	—2.9	. . .	
1256	4.5	58.8	21 48	1.2	1.22(2)	K_0	K_0	1.4	0.3	0.9	—0.6	
1261	4.3	59.1	50 5	—1.0	—0.03(2)	A_0	. . .	. . .	. . .	0.5	. . .	
1273	4.0	4 1.4	47 27	—1.0	—0.12(4)	B_{3p}	. . .	. . .	—1.1	. . .	. . .	
1303	4.3	7.6	48 9	—1.9	1.01(2)	G_0	. . .	. . .	(—2.2)	(—1.7)	. . .	
1306	4.9	8.1	40 14	—0.9	1.02(2)	G_0+A_5	cF_9	. . .	(—1.1c)	((—2.8c))	—1.6c	*
1311	5.0c	8.5	9 1	—0.7b	0.74(3)c	G_5	G_4	0.2	0.8c	0.1c	(1.3c)	*
1320	4.3	10.1	8 39	—0.7	—0.17(3)	B_3	. . .	—0.9	—1.3	. . .	. . .	
1324	4.6	10.7	50 3	0.8	—0.07(2)	A_2	. . .	. . .	. . .	—0.3c	. . .	*
1329	4.8	11.4	20 20	0.9	0.24(2)	A_3	A_{5s}	1.8	. . .	*1.0*	. . .	
1346	3.9	14.1	15 23	0.7	0.97(8)	K_0	G_7	0.7	0.9	0.7	0.3	
1350	4.9	14.3	46 16	0.0	—0.16(4)	B_3	. . .	—1.6	—1.2	. . .	. . .	
1373	3.9	17.2	17 18	0.6	0.97(8)	K_0	G_9	0.8	0.9	0.7	1.1	
1380	4.8	18.3	17 13	2.2	0.04(3)	A_5	A_{7ns}	2.4	. . .	*1.5*	. . .	
1387	4.4	19.4	22 4	1.6	—0.06(3)	A_3	A_{4sn}	1.8	. . .	*1.2*	. . .	
1389	4.2	19.7	17 42	1.5	0.01(3)	A_2	A_{4s}	1.4	. . .	0.9	. . .	
1392	4.4	20.3	22 35	1.7	0.13(2)	A_5	A_{2n}	1.8	. . .	*0.6*c	. . .	*
1394	4.6	20.6	15 23	2.0	0.11(3)	A_5	A_{1n}	1.3	. . .	*1.0*c	. . .	*
1396	4.9	21.0	14 29	—0.8	0.87(2)	K_0	. . .	. . .	1.4	0.6	. . .	
1409	3.6	22.8	18 58	0.4	1.01(8)	K_0	G_9	1.5	0.8	0.8	0.8	
1411	4.0	22.9	15 44	0.6	0.99(8)	K_0	G_8	1.6	0.8	0.8	0.5	
1412	3.6	23.0	15 39	0.6	0.06(7)	F_0	A_{4s}	1.6	. . .	*1.3*c	. . .	*

*1142. $M = -0.3$ (Edwards). *1145. $M = -0.5$ (Edwards). *1149. $M = -0.3$ (Edwards). *1155. *Mt. W'* —1.1. The colour indicates that this is one of the most luminous stars known, and the proper motion supports this conclusion. The *Mt. W.* absolute magnitude seems to be too low. *1156. $M = -0.4$ (Edwards). *1165. $M = -0.1$ (Edwards). η Tauri. *1220. Spectroscopic binary, 2 spectra; assumed equal components. $M = -3.3$ (Edwards). *1239. Eclipsing variable λ Tauri. *1306. Sp. composite. Reduction to comb. magn. assumed = —0.1. The corrected colour of the brighter component assumed $C = 1.22$. *1311. Double, $d = 0.''8$, $\Delta m = 2.5$. Colour of brighter component assumed $C = 0.79$. *1324. Sp. binary, 2 spectra. *1392. Sp. binary, 2 spectra. *1394. Sp. binary, 2 spectra suspected. *1412. Spectroscopic binary, two spectra.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1427	4.8	4 24.8	15 59	2.2	0.04(3)	A_5	A6s	2.0	. . .	*1.1*c	. . .	*
1444	4.8	28.2	14 38	1.8	0.14(3)	A_5	A4n	2.0	. . .	*0.6*c	. . .	*
1454	4.5	29.8	41 4	—2.6	1.35(2)	K_0+A_3	G_2	—2.8	—2.3c	(—1.4c)	0.6c	*
1457	1.1	30.2	16 18	—0.9	1.79(8)	K_5	K_5	0.5	—0.6	. . .	—1.8	*
1458	4.4	30.2	9 57	0.6	0.06(3)	A_3	A2s	0.8	. . .	*0.2*c	. . .	*
1473	4.3	32.6	12 19	1.5	—0.06(3)	A_3	A4n	2.1	. . .	*0.8*c	. . .	*
1479	4.8	33.6	15 43	1.6	—0.02(3)	A_3	A4n	2.2	. . .	*1.2*	. . .	
1497	4.3	36.2	22 46	—1.8	—0.28(4)	B_5	B4n	—0.8	—1.3	. . .	. . .	*
1542	4.4	44.1	66 10	—4.0	—0.12(4)	B_0	Bos	—3.0	—2.5	. . .	. . .	
1543	3.3	44.4	6 47	3.5	0.27(6)	F_8	F_5	3.8	*d*	3.6	. . .	
1544	4.4	45.2	8 44	—0.8	—0.10(3)	A_0	. . .	. . .	. . .	—0.2	. . .	
1552	3.8	45.9	5 26	—4.3	—0.37(1)	B_3	B1s	—2.3	—2.3	. . .	. . .	*
1567	3.9	49.0	2 17	—5.5	. . .	B_3	B3s	—1.5	. . .	. . .	. . .	*
1568	4.4	49.3	53 36	—3.4	—0.13(4)	A_2	A2s	0.9	. . .	—0.6	. . .	*
1570	4.7	49.4	10 0	2.9	—0.10(3)	A_0	A0n	0.9	. . .	1.0	. . .	
1577	2.9	50.5	33 0	—3.6	1.70(8)	K_2	K_3	—0.5	—1.5	. . .	—2.1	
1580	4.3	50.7	13 21	0.8	1.24(3)	K_0	K_2	0.8	0.2	0.7	0.5	
1592	5.0	52.5	37 44	2.3	—0.04(2)	A_0	. . .	. . .	. . .	0.4	. . .	*
1601	4.7	53.4	1 34	—4.9	1.34(2)	K_0	K_2	(0.2)	—0.5	—0.2	—0.4	
1603	4.2	54.5	60 18	—3.8	0.78(7)	cG_0	F_8	—3.0	(—1.3)	(—2.0)	. . .	
1605	(3.2)	54.8	43 41	—4.6	0.30(6)	cF_5	F_3	—2.4	. . .	*—4.6*	. . .	*
1612	3.9	55.5	40 56	—2.3	1.38(2)	K_0+B_1	K_1+B	0.6	—2.4c	(—1.5c)	—4.2c	*
1620	4.7	57.1	21 27	1.2	0.02(5)	A_5	A4n	2.1	. . .	*1.2*	. . .	
1637	5.0	58.8	51 28	2.8	0.32(2)	F_0	F_4	2.3	. . .	*2.4*	. . .	
1638	4.6	58.9	15 16	—0.1	—0.20(3)	B_9	. . .	. . .	. . .	—0.8	. . .	
1641	3.3	59.5	41 6	—0.4	—0.33(5)	B_3	B3s	—1.5	—1.9	. . .	. . .	*
1676	4.9	5 4.0	15 28	—3.0	0.16(3)	F_0	. . .	. . .	. . .	*—3.1*	. . .	
1689	4.8	6.6	38 22	1.1	0.09(5)	A_3	. . .	. . .	. . .	*1.0*	. . .	
1698	4.6	8.1	2 45	—3.0	1.20(2)	K_0	K_2	1.4	0.2	0.3	0.8	*
1708	0.2	9.3	45 54	—0.2c	0.75(8)	G_0	G_1	0.2	(—1.7c)	0.5c	—1.9c	*
1726	4.8	11.6	33 16	2.5	1.32(2)	K_0	K_3	0.4	—0.4	0.4	0.5	
1729	4.8	12.1	40 1	5.9	0.55(7)	G_0	G_1	4.4	4.5	4.6	4.6	
1770	5.0	17.6	3 27	—3.2	—0.24(2)	B_3	. . .	—1.7	—1.5	. . .	. . .	*
1789	4.7	19.6	1 45	—1.2	—0.33(2)	B_{3p}	. . .	. . .	—1.9	. . .	. . .	
1790	1.7	19.8	6 16	—4.2	—0.31(4)	B_2	B2s	—2.0	—3.4c	. . .	. . .	*

*1427. Sp. binary, 2 spectra suspected. *1444. Sp. binary, 2 spectra. *1454. Sp. composite. Reduction to combined magnitude assumed = —0.2. Photoelectric $C = 1.04$ not used. The corrected colour of the brighter component assumed $C = 1.62$. *1457. α Tauri. *1458. Spectroscopic binary, two spectra. *1473. Sp. binary, 2 spectra suspected. *1497. $M = -1.3$ (Edwards). *1552. $M = -3.7$ (Edwards). *1567. $M = -2.1$ (Edwards). *1568. Double, $d = 1.''2$, $\Delta m = 3.1$. *1592. Double, $d = 6.''4$, $\Delta m = 2.7$. *1605. ε Aurigae. *1612. Sp. composite. Reduction to comb. magn. assumed = —0.2. Photoelectric $C = 1.03$ not used. The corrected colour of the brighter component assumed $C = 1.66$. *1641. $M = -1.7$ (Edwards). *1698. Visual double; $d = 7''$; $\Delta m = 3.8$. The corrected colour of the brighter component assumed $C = 1.24$. *1708. α Aurigae; double (interferometer), equal components. *1770. Sp. absolute magnitude by Edwards. Double, $d = 32''$, $\Delta m = 2.1$. *1790. Spectroscopic binary, 2 spectra, assumed equal components. $M = -2.5$ (Edwards).

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1791	1.8	5 20.0	28 31	0.2	—0.23(5)	B_8	B_{9s}	—0.2	. . .	—0.5	. . .	
1810	4.8	21.6	21 51	—1.8	—0.26(2)	B_3	. . .	. . .	—1.6	. . .	. . .	
1811	4.7	21.6	3 1	—4.0	—0.25(4)	B_2	B_{3n}	—0.9	—3.4c	. . .	. . .	*
1839	4.3	25.4	5 52	—0.2	—0.23(2)	B_3	. . .	—0.5	—1.8c	. . .	. . .	*
1843	4.9	26.2	32 7	—2.0	0.12(2)	B_1	. . .	. . .	—2.2	. . .	. . .	
1845	4.7	26.3	18 31	—3.2	2.21(8)	Ma	Ma	—3.1	—5.4	. . .	—5.4	*
1876	4.5	29.3	9 25	—3.5	—0.34(5)	B_0	. . .	—1.7	—3.9	. . .	. . .	
1879	3.5	29.6	9 52	[—5.5]	—0.38(4)	O_{e5}	O_{8n}	—2.1	—5.4	. . .	. . .	
1907	4.4	31.4	9 14	3.4	0.89(8)	K_0	G_7	1.7	1.4	(2.3)	1.0	
1910	3.0	31.7	21 5	—2.6	—0.35(5)	B_{3p}	B_{4n}	—0.6	—2.1	. . .	. . .	*
1934	4.5	33.9	4 4	—4.0	—0.22(2)	B_{3p}	. . .	—2.3	—1.5	. . .	. . .	
1946	4.9	35.5	16 29	—0.4	—0.30(3)	B_3	. . .	—1.8	—2.4c	. . .	. . .	*
1995	4.6	42.3	39 9	—1.3	0.78(2)	K_0	G_5	0.2	((2.8))	0.4	(1.5)	
2010	4.9	43.9	12 37	—0.4	—0.20(3)	B_9	. . .	. . .	. . .	—0.9	. . .	
2011	5.0	44.2	37 17	—0.1	1.71(2)	Ma	Ma	—0.1	0.1	. . .	0.1	*
2012	4.2	44.6	39 7	—5.0	1.13(7)	K_0	K_0	1.4	0.6	0.1	0.2	
2029	4.9	46.5	55 41	—2.6	—0.08(4)	A_2	A_{2sn}	1.4	. . .	—0.6	. . .	
2034	4.5	47.0	27 35	—1.7	—0.10(2)	A_0	. . .	. . .	. . .	—1.2c	. . .	*
2047	4.6	48.5	20 16	2.9	0.46(7)	F_8	G_1	4.5	*d*	4.0	4.9	
2061	0.9	49.8	7 23	—5.3	1.98(6)	Ma	Ma	—4.2	—3.3	. . .	—3.3	*
2077	3.9	51.3	54 17	1.1	1.00(7)	K_0	G_7	1.2	0.8	1.0	0.0	
2084	4.9	51.8	25 57	—5.0	—0.26(2)	B_2	. . .	—2.2	—3.3c	. . .	. . .	*
2088	2.1	52.2	44 56	—2.7	—0.09(5)	A_{0p}	A_{1np}	1.5	. . .	—0.7c	. . .	*
2091	4.6	52.5	45 56	—3.9	1.75(7)	Ma	Ma	—2.2	—0.4	. . .	—0.4	*
2095	2.7	52.9	37 12	—0.2	—0.15(5)	A_{0p}	A_{1s}	0.6	. . .	0.0	. . .	
2124	4.2	56.9	9 39	—0.9	0.13(3)	A_2	. . .	. . .	. . .	0.0c	. . .	*
2134	4.3	58.0	23 16	0.9	0.76(7)	G_5	G_4	2.0	((1.1))	1.2	(1.5)	
2135	4.7	58.0	20 8	—2.2	0.18(4)	cB_2	. . .	. . .	—2.2	. . .	. . .	
2159	4.4	6 1.9	14 47	—0.5	—0.22(5)	B_2	. . .	—2.4	—2.3	. . .	. . .	
2198	4.9	6.3	16 9	—0.9	—0.24(3)	B_3	. . .	—1.2	—1.5	. . .	. . .	
2199	4.4	6.3	14 14	—0.6	—0.16(3)	B_3	. . .	—1.5	—1.2	. . .	. . .	
2209	4.7	7.8	69 21	1.8	—0.17(4)	A_0	. . .	. . .	. . .	—0.2c	. . .	*
2216	(3.2)	8.8	22 32	—1.3	1.70(5)	Ma	Ma	—1.8	—0.1	. . .	—0.1	*
2219	4.4	9.0	29 32	3.0	0.94(2)	K_0	G_8	0.1	1.0	(2.0)	1.0	
2238	4.4	10.8	59 3	—2.1	—0.15(4)	A_0	A_{3s}	1.2	. . .	—0.8	. . .	
2286	3.2	16.9	22 34	0.1	1.73(8)	Ma	Ma	—0.8	—0.1	. . .	—0.1	*
2298/9	4.3c	18.5	4 39	—3.2c	0.07(5)c	A_5	. . .	. . .	. . .	*0.4*	. . .	*

*1811. Spectroscopic binary, 2 spectra, assumed equal components; visual double, $d = 2.''7$, $\Delta m = 3.7$; $M = -2.7$ (Edwards). *1839. Double, $d = 1.''0$, $\Delta m = 1.1$. *1845. *Mt. W.'* —3.0. *1910. $M = -1.9$ (Edwards). *1946. Double, $d = 0.''2$, $\Delta m = 0.3$. *2011. *Mt. W.'* 0.3. *2034. Sp. binary, 2 spectra. *2061. *Mt. W'* —4.3. α Orionis. *2084. Spectroscopic binary, 2 spectra suspected. *2088. β Aurigae. Sp. binary, 2 spectra. *2091. *Mt. W'* —1.0. *2124. Double, $d = 0.''3$, $\Delta m = 1.8$. *2209. Sp. binary, 2 spectra. *2216. Var. η Geminorum. *Mt. W'* —0.4. Double, dist. $0.''9$, $\Delta m = 4.9$. Corrected colour of the brighter component assumed $C = 1.73$. *2286. *Mt. W'*. —0.4. *2298/9. Double, $d = 13.''8$, $\Delta m = 2.1$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2343	4.1	6 23.0	20 17	—2.0	—0.27(4)	B_{5p}	. . .	—0.9	—1.2	. . .	. . .	
2385	4.5	27.5	7 24	—3.1	—0.10(2)	cA_0	. . .	. . .	. . .	—4.0	. . .	*
2421	1.9	31.9	16 29	—1.8	—0.09(5)	A_0	A_{2s}	0.9	. . .	0.0	. . .	
2456	4.7	35.5	9 59	[—5.1]	—0.39(3)	O_{e5}	O_{8n}	—2.4	—5.5	. . .	. . .	
2470	4.9	37.4	59 33	—1.4	—0.10(2)	A_2	A_{0n}	1.1	. . .	—1.0c	. . .	*
2473	3.2	37.8	25 14	—3.9	1.52(8)	G_5p	G_8	—1.6	—2.4	(—1.9)	—4.4	
2478	4.6	38.3	13 20	0.5	1.28(3)	K_0	K_2	(1.0)	—0.1	0.5	0.1	
2484	3.4	39.7	13 0	1.9	0.34(8)	F_5	F_3	1.4	. .	*2.5*	. . .	
2506	4.7	42.6	2 31	—1.7	1.07(2)	K_0	K_0	(0.2)	· 0.7	0.4	0.7	*
2527	4.8	45.5	77 6	0.7	1.46(7)	K_5	K_5	. . .	0.5	. . .	0.8	
2540	3.6	46.2	34 5	—0.7	—0.06(4)	A_2	. . .	. . .	. . .	—0.3	. . .	
2560	4.5	48.6	58 33	1.8b	0.80(7)	G_0	G_4	1.2	(—2.2c)	0.6c	0.7c	*
2564	4.7	49.0	13 18	2.0	0.26(3)	F_0	A_{4n}	2.2	. . .	*2.2*	. . .	*
2585	4.8	50.3	45 13	—1.3	—0.09(2)	A_2	. . .	. . .	. . .	—0.5	. . .	
2650	(3.7)	58.2	20 43	—4.9	max. 0.64(5) min. 0.96(5)	G_{0p}	G_0	—3.3	. . .	. . .	. . .	*
2697	4.5	7 4.8	30 25	—0.5	1.37(2)	K_0	K_3	1.1	—0.7	—0.1	0.0	
2751	4.8	10.9	49 39	—3.6	0.08(2)	A_2	. . .	. . .	. . .	0.1	. . .	
2763	3.6	12.3	16 43	0.0	0.00(4)	A_2	A_{2n}	1.5	. . .	0.2	. . .	
2777	3.5	14.2	22 10	—2.7	0.23(8)	F_0	A_7	2.2	. . .	*—2.7*	. . .	
2818	4.4	19.2	49 25	—0.3	—0.06(2)	A_0	. . .	. . .	. . .	0.2	. . .	
2821	3.9	19.5	28 0	1.1	0.98(7)	K_0	G_8	0.5	0.8	0.8	0.6	
2845	3.1	21.7	8 29	—0.4	—0.26(5)	B_8	B_{9n}	0.5	. . .	—0.7	. . .	
2852	4.2	22.7	31 59	2.7	0.20(8)	F_0	A_9	1.7	. . .	*2.3*	. . .	
2854	4.6	22.7	9 8	0.2	1.52(3)	K_0	K_5	—0.6	—1.5	—0.8	0.3	
2864	4.8	24.2	12 13	2.3	1.18(3)	K_0	K_3	—0.2	0.4	1.3	1.6	
2890	1.6c	28.2	32 6	0.1c	—0.08(2)c	A_0	A_{2s}	1.1	. . .	0.1	. . .	*
2905	4.2	29.8	27 7	1.0	1.64(2)	K_5	K_8	0.5	—0.1	. . .	0.7	*
2930	4.9	32.6	34 49	2.1	0.25(7)	F_0	F_0	0.8	. . .	*2.2*	. . .	
2943	0.5	34.1	5 29	2.8	0.28(7)	F_5	F_3	3.1	. . .	*2.7*	. . .	
2946	5.0	34.5	58 57	0.9	—0.12(4)	A_2	. . .	. . .	. . .	0.5	. . .	
2973	4.3	37.1	29 8	2.5	1.09(7)	K_0	K_1	2.0	0.7	1.3	1.2	
2985	3.7	38.4	24 38	—4.0	0.93(8)	G_5	G_7	0.7	0.4	—0.6	0.6	
2990	1.2	39.2	28 16	1.5	1.01(8)	K_0	G_9	2.0	0.8	1.1	0.8	*
3067	5.0	47.4	27 1	0.4	—0.16(2)	A_2	A_{0n}	1.1	. . .	—0.4c	. . .	*
3145	4.5	57.1	2 37	1.1	1.29(2)	K_0	K_2	0.4	—0.2	0.5	0.0	
3173	4.9	8 0.9	51 48	0.4	—0.18(4)	A_2	. . .	. . .	. . .	0.3	. . .	
3208	4.7c	6.5	17 57	2.2c	0.52(2)c	G_0	F_9	2.9c	3.5c	2.7c	2.7c	*
3249	3.8	11.1	9 30	—0.4	1.63(8)	K_2	K_4	—0.4	—1.2	. . .	—1.5	
3275	4.4	16.0	43 31	0.9	1.65(8)	K_5	K_5	0.2	—0.1	. . .	—0.8	

*2385. Supergiant without colour excess. *2470. Visual triple, $d = 1.''5$; $8.''6$. $\Delta m = 0.6$; 2.1. *2506. $= B.\ D. + 2^{0}1337$; in *H. D.* misprinted $2^{0}1397$. *2560. Double, $d = 0.''5$, $\Delta m = 1.6$. Colour of br. comp. assumed $C = 0.80$. *2564. Double, $d = 5.''7$, $\Delta m = 2.7$. *2650. Variable ζ Geminorum. *2890. α Geminorum; double, $d = 4.''4$, $\Delta m = 0.8$. *2905. *Mt. W.'* 0.1. *2990. β Geminorum. *3067. Sp. binary, 2 spectra. *3208. ζ Cancri, triple, $d = 1.''1 + 5.''3$; magn. 5.6 : 6.2 : 6.1. Difference between combined and average luminosity = 1.2 magnitudes.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3323	3.5	8 22.0	61 3	1.0	0.87(10)	G_0	G_2	−0.8	(−1.9)	−0.1	−2.0	
3403	4.8	31.5	64 41	−0.4	1.20(2)	K_0	K_1	1.6	0.4	0.8	0.3	
3410	4.2	32.4	6 3	0.7	−0.10(4)	A_0	A_{0n}	0.8	. . .	0.1	. . .	
3418	4.5	33.5	3 42	−1.8	1.31(7)	K_0	K_2	0.9	−0.3	0.0	−0.1	
3449	4.7	37.5	21 50	2.0	−0.21(4)	A_0	. . .	. . .	. . .	−0.2c	. . .	*
3454	4.3	38.0	3 45	−1.8	−0.34(4)	B_3	. . .	−1.5	−2.0	. . .	. . .	
3461	4.2	39.0	18 31	2.5	1.10(10)	K_0	K_0	1.0	0.7	1.3	0.4	
3475	4.2b	40.6	29 8	−0.8b	−0.38(2)f 0.92(5)b	G_5+A_5	G_5	−1.0b	0.1c	0.0c	0.3c	*
3482	3.5c	41.5	6 47	1.5c	0.61(8)	F_8	F_{9b}	2.1b	*g*	1.1c	−1.6c	*
3492	4.4	43.1	6 12	−0.5	−0.13(4)	A_0	. . .	. . .	. . .	−0.5c	. . .	*
3547	3.3	50.1	6 20	−0.2	1.04(10)	K_0	G_6	−0.6	0.8	0.7	−1.3	
3569	3.1	52.4	48 26	3.3	0.06(8)	A_5	A_{4n}	2.2	. . .	*1.9*	. . .	
3572	4.3	53.0	12 15	−0.1	0.03(6)	A_3	A_{4s}	1.7	. . .	*0.7*	. . .	
3576	5.0	53.5	68 1	−2.1	1.64(7)	Ma	Ma	−0.5	0.8	. . .	0.8	*
3579	4.1	54.2	42 11	4.1	0.27(7)	F_5	F_3	3.3	. . .	*3.3*	. . .	
3594	3.7	56.8	47 33	−0.2	−0.14(4)	A_0	A_{0n}	0.8	. . .	−0.6c	. . .	*
3612	4.7	9 0.2	38 51	−0.8	1.05(2)	G_5	G_3	−2.0	−0.2	−0.4	−2.7	
3616	4.9	1.6	67 32	0.6	0.35(7)c	F_8	F_5	3.8	*d*	2.0	. . .	*
3619	4.5	1.8	52 0	1.9	0.14(5)	A_{3p}	A_{9s}	2.6	. . .	*1.3*	. . .	
3624	4.7	2.7	63 55	1.9	0.29(2)	F_5+A_5	. . .	. . .	. . .	(*0.4*c)	. . .	*
3662	4.9	9.0	54 26	1.3	0.04(5)	A_5	A_{0n}	1.1	. . .	*1.2*	. . .	
3665	3.8	9.2	2 44	3.6	−0.20(2)	A_0	A_{1n}	1.3	. . .	0.6c	. . .	*
3690	3.8	12.6	37 14	1.4	−0.04(7)	A_2	B_{9n}	0.6	. . .	0.9	. . .	*
3705	3.3	15.0	34 49	1.3	1.74(10)	K_5	K_7	0.8	−0.4	. . .	−0.4	*
3731	4.6	18.8	26 37	−0.2	1.28(7)	K_0	K_2	0.8	−0.2	0.4	0.1	*
3751	4.6	22.9	81 46	−1.9	1.60(8)	K_2	K_4	. . .	−1.1	. . .	−1.3	
3757	3.8	23.7	63 30	0.7	0.21(7)	F_0	A_{5n}	2.3	. . .	*2.0*	. . .	
3771	4.6	25.6	70 16	0.7	0.75(7)	G_0	G_3	2.7	(−1.0)	1.3	0.4	
3773	4.5	26.0	23 25	−0.5	1.70(7)	K_5	K_6	0.0	−0.3	. . .	−0.6	
3775	3.3	26.2	52 8	4.9	0.34(10)	F_{8p}	F_5	2.7	*d*	4.2	. . .	
3799	4.6	28.0	52 30	0.9	−0.25(2)	A_0	B_{9n}	0.6	. . .	0.4	. . .	
3800	4.6	28.1	36 51	−1.7	0.87(7)	G_5	G_5	1.2	0.6	0.0	(1.2)	
3809	5.0	28.8	40 4	−1.3	1.02(2)	K_0	. . .	. . .	0.8	0.4	. . .	
3834	4.8	33.2	5 6	2.4	1.36(3)	K_0	K_2	1.0	−0.6	0.2	−0.6	
3852	3.8	35.8	10 21	1.2	0.73(5)	F_5+A_3	F_4	−0.6	. . .	(*0.0*c)	. . .	*
3873	3.1	40.2	24 14	−2.1	0.77(10)	G_{0p}	G_0	−0.9	(−1.2)	−0.7	−1.8	

*3449. Sp. binary, 2 spectra suspected. *3475. *i* Cancri; double, $d = 30''$; magn. 4.2 : 6.6. *3482. ε Hydrae; triple, $d = 0.''2 + 3.''2$; $\Delta m = 1.5$; 3.0. Corrected colour of the brighter component is assumed $C = 0.71$. *3492. Sp. binary, more than one spectrum suspected. *3576. *Mt. W'.* 0.1. *3594. Double, $d = 0.''2$, $\Delta m = 0.3$. *3616. Double, $d = 4.''5$, $\Delta m = 3.3$. *3624. Corrected colour of the brighter component assumed $C = 0.35$. Spectrum composite. *3665. Sp. binary, 2 spectra suspected. *3690. Double, $d = 2.''7$, $\Delta m = 1.8$. *3705. *Mt. W.'* −0.3. *3731. Double, $d = 3''$; $\Delta m = 4.9$. Corrected colour of the brighter component assumed $C = 1.29$. *3852. Sp. composite. Photoelectric $C = 0.80$ not used. The corrected colour of the brighter component assumed $C = 0.82$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3888	3.9	9 43.9	59 31	3.1	0.16(7)	F_0	A6n	2.4	. . .	*2.4*	. . .	
3894	4.5	45.3	54 32	—3.8	—0.09(2)	A_2	A2s	0.9	. . .	—1.3c	. . .	*
3905	4.1	47.1	26 29	2.2	1.30(10)	K_0	K_3	2.0	—0.3	0.5	0.7	
3950	4.9	54.9	S 31	—0.6	1.82(8)	Ma	Ma	—0.5	—1.1	. . .	—1.1	*
3974	4.5	10 1.5	35 44	—0.2	0.06(2)	A_5	A2n	1.8	. . .	*0.8*	. . .	
3975	3.6	1.9	17 15	—4.1	—0.04(7)	cA_0	. . .	. . .	. . .	—*4.4*	. . .	
3980	4.6	2.6	10 29	1.2	1.58(3)	K_2	K_5	. . .	—1.0	. . .	—0.2	
3981	4.5	2.8	0 7	—1.1	—0.12(2)	A_0	. . .	. . .	. . .	—0.2	. . .	
3982	1.3	3.0	12 27	0.3	—0.29(7)	B_8	B8n	0.4	. . .	—0.3	. . .	
4031	3.6	11.1	23 55	—2.6	0.16(10)	F_0	F_0	0.2	. . .	—*2.6*	. . .	
4033	3.5	11.1	43 25	1.5	—0.08(4)	A_2	. . .	. . .	. . .	0.7	. . .	
4054	5.0	14.3	19 59	4.1	0.38(7)	F_5	F_5	3.3	. . .	*3.3*	. . .	
4057	2.3c	14.5	20 21	1.8a	1.12(7)c	K_0	G_5+G_7	0.2a	0.0c	0.7c	—2.6c	*
4069	3.2	16.4	42 0	—0.9	1.73(10)	K_5	K_5	0.6	—0.4	. . .	—1.5	
4072	4.9	16.9	66 4	—1.1	—0.20(4)	A_0	. . .	. . .	. . .	—0.2	. . .	
4090	4.8	20.2	34 18	1.6	0.06(2)	F_0	F0s	2.6	. . .	*2.1*	. . .	
4100	4.4	22.1	37 13	1.9b	0.87(7)	K_0	G_6	1.5	0.7c	0.7c	0.3c	*
4112	4.8	24.2	56 30	2.6	0.41(7)	F_5	F_8	4.0	. . .	*2.7*	. . .	
4132	4.8	27.4	40 56	2.3	—0.01(2)	A_5	A4n	2.2	. . .	*1.5*	. . .	
4133	3.8	27.5	9 49	—3.9	—0.15(3)	Bop	B1s	—2.3	—2.6	. . .	. . .	*
4166	4.8	33.1	32 30	—4.6	0.68(2)	G_0	F_9	—0.7	(0.6)	((—2.1))	—0.9	
4247	3.9	47.7	34 45	2.6	1.03(7)	K_0	K_1	1.8	0.8	1.3	1.7	
4248	4.8	48.2	43 43	0.5	—0.38(2)	A_0	. . .	. . .	. . .	0.6c	. . .	*
4259/60	4.3	50.2	25 17	0.6	—0.12(2)	A_0	A0n	0.8	. . .	0.1	. . .	*
4295	2.4	55.8	56 55	—0.8	—0.14(7)	A_0	A2s	1.0	. . .	—0.2	. . .	
4300	4.4	57.0	20 43	—1.5	—0.16(2)	A_0	. . .	. . .	. . .	—0.4	. . .	
4301	2.0	57.6	62 17	—1.0	1.09(8)	K_0	G_6	0.6	0.7	0.6	—1.7	
4310	4.7	59.9	7 53	4.0	0.22(8)	F_0	F_5	0.5	. . .	*2.5*	. . .	
4335	3.2	11 4.0	45 2	—1.4	1.16(10)	K_0	K_0	1.6	0.5	0.6	—0.1	
4357	2.6	8.8	21 4	0.9	0.03(8)	A_3	A2n	1.7	. . .	*1.0*	. . .	
4359	3.4	9.0	15 59	0.3	—0.10(7)	A_0	A2s	0.9	. . .	0.1	. . .	
4362	4.9	9.9	23 38	—2.5	1.73(2)	Ma	Ma	. . .	—0.1	. . .	—0.1	*
4374	3.9c	12.9	32 6	4.6c	0.44(10)	G_0	G_0	5.0a	3.8c	3.6c	4.2c	*
4377	3.7	13.1	33 38	—2.8	1.52(10)	K_0	K_4	(0.4)	—1.5	—0.7	—0.6	
4380	4.8	13.7	38 44	1.7	—0.08(3)	A_2	A0sn	0.7	. . .	0.1c	. . .	*
4386	4.1	16.0	6 35	0.8	—0.21(2)	A_0	B9s	—0.2	. . .	0.2	. . .	
4399	4.0	18.7	11 5	1.8	0.22(3)	F_5	F_4	2.6	. . .	*2.4*	. . .	*
4434	4.1	25.5	69 53	—1.3	1.85(7)	Ma	K_8	—0.8	—1.4	. . .	—1.1	*
4517	4.2	40.7	7 5	1.9	1.66(5)	Ma	Ma	0.0	0.6	. . .	0.6	*

*3894. Double, $d = 0.''4$, $\Delta m = 0.2$. *3950. *Mt. W.'* 0.0. *4057. γ Leonis, double; $d = 2.''5$; $\Delta m = 1.2$. *4100. Double, $d = 0.''4$, $\Delta m = 2.0$. Corrected colour of the brighter component ass. $C = 0.97$. *4133. $M = -2.9$ (Edwards). *4248. Sp. binary, 2 spectrå. *4259/60. Double, $d = 6.''1$, $\Delta m = 1.8$. *4362. *Mt. W.'* —0.8. *4374. ξ Ursae majoris; double, $d = 1.''7$, $\Delta m = 0.5$. *4380. Sp. binary, 2 spectra. *4399. Double, $d = 2.''1$, $\Delta m = 2.7$. *4434, *Mt. W.'* —0.2. *4517. *Mt. W.'* —0.2.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
4518	3.8	11 40.8	48 20	0.8	1.22(7)	K_0	K_0	0.2	0.3	0.8	—0.6	
4527	4.5	42.8	20 46	2.0	0.41(10)	F_8	F_4	3.0	*d*	4.0	. . .	
4534	2.2	44.0	15 8	2.6	0.04(7)	A_2	A2n	1.7	. . .	1.6	. . .	
4540	3.8	45.5	2 20	4.8	0.38(10)	F_8	F_7	3.6	*d*	4.1	. . .	
4554	2.5	48.6	54 15	—0.6	—0.19(7)	A_0	A0n	0.9	. . .	—0.1	. . .	
4589	4.6	55.7	7 10	—1.1	0.02(3)	A_3	. . .	. . .	. . .	*0.5*	. . .	
4608	4.2	12 0.1	9 17	2.3	0.96(8)	G_5	G_6	—0.4	0.2	0.5	0.2	
4660	3.4	10.5	57 35	0.7	—0.06(7)	A_2	A0n	0.9	. . .	0.4	. . .	
4697	4.9	15.7	18 21	1.9	0.93(3)	K_0	G_7	1.2	1.0	1.0	0.6	
4707	4.8c	17.5	26 24	—2.3	0.35(2)	F_5+A_3	F+A	3.1	. . .	(*—1.1c*)	. . .	*
4716	5.0	19.2	52 7	—3.4	0.76(2)	K_0	G_6	—0.2	((3.1))	—0.2	(1.9)	
4737	4.6	22.0	28 49	1.3	1.07(2)	K_0	K_2	1.3	0.8	1.3	1.8	
4785	4.3	29.0	41 54	5.2	0.46(10)	G_0	G_0	4.5	4.6	4.2	5.0	
4787	3.9	29.2	70 20	0.0	—0.28(4)	B5p	. . .	—0.6	—1.3	. . .	. . .	
4789	4.8	29.9	23 11	1.1	—0.21(2)	A_0	. . .	. . .	. . .	—0.5c	. . .	*
4791/2	4.8c	30.1	18 56	—2.1b	1.25(5)b	K_0+A_3	K1+A4s	(0.3)	—0.2c	0.0c	—0.5c	*
4828	5.0	36.8	10 47	2.5	—0.13(3)	A_0	B9n	0.6	. . .	0.8	. . .	
4905	1.7	49.6	56 30	—0.9	—0.14(7)	A0p	A2s	0.9	. . .	—0.2	. . .	
4910	3.7	50.6	3 56	3.4	1.59(10)	Ma	Ma	—0.1	1.1	. . .	1.1	*
4914/5	2.8c	51.4	38 52	1.8c	—0.29(5)b	A0p	A1s	0.6	. . .	0.6c	. . .	*
4920	5.0	54.0	17 57	—1.0	1.68(3)	Ma	Ma	—0.6	0.4	. . .	0.4	*
4931	4.9	56.4	56 54	1.7	0.25(7)	F_0	A4n	2.2	. . .	*2.1*	. . .	
4932	3.0	57.2	11 30	1.4	0.91(10)	K_0	G_6	0.4	1.2	0.9	(1.2)	
4954	4.9	13 2.4	28 10	1.0	1.60(2)	K_5	K_5	0.2	0.1	. . .	—0.4	
4968/9	4.5	5.1	18 4	4.2	0.15(2)c	F_5	F_4	3.8	. . .	*3.0*c	. . .	*
4983	4.3	7.2	28 23	6.2	0.46(10)	G_0	G_1	4.4	4.6	4.5	4.9	
5017	4.7	13.1	41 6	1.9	0.23(7)	F_0	F_3	—0.3	. . .	*2.2*	. . .	
5054/5	2.2c	19.9	55 27	—0.1c	—0.26(5)b	A2p	A2s	1.1	. . .	0.1c	. . .	*
5062	4.0	21.2	55 31	1.5	0.06(6)	A_5	A0n	1.1	. . .	*0.5*c	. . .	*
5105	4.9	29.1	4 10	0.5	—0.12(4)	A2p	A4s	1.5	. . .	0.3	. . .	
5110	5.0	30.3	37 42	1.5	0.30(2)	F_0	F_3	2.3	. . .	*2.1*	. . .	
5112	4.6	30.4	49 32	2.1	0.01(2)	A_3	. . .	. . .	. . .	*0.6*c	. . .	*
5127	4.9	33.0	36 48	1.9	0.04(2)	F_0	A2n	1.5	. . .	*2.2*	. . .	*
5154	4.8	36.9	55 11	—1.5	1.84(2)	Ma	Ma	—0.5	—1.3	. . .	—1.3	*
5185	4.5	42.5	17 57	4.6	0.34(10)	F_5	F_7	3.6	. . .	*3.6*	. . .	
5191	1.9	43.6	49 49	—0.4	—0.38(7)	B_3	. . .	—0.8	—2.3	. . .	. . .	*
5200	4.3	44.6	16 18	0.8	1.63(5)	K_5	K_8	0.2	0.0	. . .	0.8	*
5219	5.0	47.4	34 56	—0.5	1.65(2)	Ma	Ma	—1.0	0.7	. . .	0.7	*

*4707. Sp. composite. The corrected colour of the brighter component assumed $C = 0.44$. *4789. Sp. binary, 2 spectra. *4791/2. Double, $d = 20''$, magn. 5.2 : 6.7, spectra $K_0 : A_3$ (*HD*). Fainter component (A_3) spectroscopic binary, two spectra. *4910. *Mt. W'* 0.0. *4914/5. α Canum Venaticorum. Double, $d = 19.''9$, $\Delta m = 2.5$. *4920. *Mt. W'* 0.1. *4968/9. Double, $d = 0.''5$, $\Delta m = 0.1$. *5054/5. ζ Ursae Majoris; multiple: double, $d = 14''$, $\Delta m = 1.5$; brighter component sp. binary, two spectra. *5062. Sp. binary, 2 spectra. *5112. Sp. binary, 2 spectra. *5127. Double, $d = 1.''0$, $\Delta m = 2.0$. *5154. *Mt. W.'* 0.1. *5191. η Ursae Majoris. *5200. *Mt. W.'* 0.6. *5219. *Mt. W.'* —0.3.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
5226	4.8	13 48.5	65 13	—5.7	1.56(7)	Ma	Ma	—1.2	1.0	. . .	1.0	*
5235	2.8	49.9	18 54	2.2	0.44(10)	G_0	G_0	3.1	4.5	(2.7)	4.9	
5264	4.3	56.6	2 2	—1.1	—0.15(4)	A_2	A0n	1.1	. . .	—0.4	. . .	
5291	3.6	14 1.7	64 51	—0.4	—0.16(4)	A0p	. . .	. . .	. . .	—0.1	. . .	
5304	4.8	5.8	25 34	0.9	0.31(2)	F_5	F_6	2.6	. . .	*1.3*c	. . .	*
5313	4.9	7.2	2 53	0.9	—0.25(2)	A0p	. . .	. . .	. . .	0.4	. . .	
5328/9	4.4c	9.9	52 15	0.5c	0.01(1)b 0.35(1)f	A_5	F0s	2.6	. . .	*1.0*	. . .	*
5340	0.2	11.1	19 42	3.5	1.19(10)	K_0	K_0	0.2	0.4	1.4	—0.3	*
5350	4.8	12.6	51 50	2.9	0.06(5)	A_5	. . .	. . .	. . .	*1.8*	. . .	
5351	4.3	12.6	46 33	3.5	—0.09(4)	A_0	A0n	1.1	. . .	0.0	. . .	
5361	4.8	13.8	35 58	—2.7	1.10(2)	K_0	K_0	0.8	0.7	0.3	0.4	
5370	5.0	15.0	16 46	2.4	1.17(3)	K_0	K_5	1.6	0.5	1.3	2.7	
5385/6	4.9c	18.5	8 54	1.3	—0.15(2)c	A_0+F_1	A0n	0.8b 2.8f	. . .	0.3	. . .	*
5404	4.1	21.8	52 19	3.9	0.32(10)	F_8	F_6	3.3	*d*	3.8	. . .	
5429	3.8	27.5	30 49	1.1	1.26(10)	K_0	K_3	0.3	0.0	0.7	1.0	
5430	4.4	27.7	76 8	—2.5	1.55(2)	K_2	K_4	. . .	—0.7	. . .	—0.8	
5435	3.0	28.1	38 45	1.3	0.10(10)	F_0	A3n	2.0	. . .	*2.1*	. . .	
5447	4.5	30.3	30 11	3.3	0.12(2)	F_0	F_0	2.8	. . .	*2.4*	. . .	
5475/6	4.5	36.0	16 51	—2.2	—0.26(2)c	A_0	. . .	. . .	. . .	0.5	. . .	*
5477/8	3.9	36.4	14 9	0.0	—0.08(7)c	A_2	A0n	0.9	. . .	—0.5c	. . .	*
5490	4.9	39.0	26 57	—1.7	1.71(2)	Ma	Ma	—1.6	0.1	. . .	0.1	*
5502	4.7	40.6	17 23	0.8	0.85(3)	K_0	. . .	. . .	1.5	0.8	. . .	
5505/6	2.6c	40.6	27 30	—2.4c	0.90(5)c	K_0+A_0	G_6+A_1	—0.4	0.6c	0.2c	—1.7c	*
5511	3.8	41.2	2 19	1.3	—0.14(7)	A_0	. . .	. . .	. . .	0.3	. . .	
5544	4.6	46.8	19 31	2.9b	0.68(8)c	G_5	G_8	5.5b 6.2f	((1.5c))	(2.1c)	(4.4c)	*
5563	2.2	51.0	74 34	—3.9	1.62(8)	K_5	K_4	—0.2	0.0	. . .	—1.4	
5589	4.9	56.0	66 20	0.9c	1.55(2)	Mb	Mb	—1.9	—1.6c	. . .	—1.6c	*
5600	4.9	57.7	25 24	0.3	1.42(2)	K_5	. . .	. . .	0.6	. . .	. . .	
5601	4.6	57.9	2 29	—0.4	1.04(2)	K_0	. . .	. . .	0.8	0.5	. . .	
5602	3.6	58.2	40 47	—0.9	0.94(10)	G_5	G_4	—0.3	0.3	0.0	—1.2	
5616	4.7	15 0.2	27 20	2.4	1.25(2)	K_0	K_2	(0.9)	0.0	0.8	0.4	
5618	4.9	0.5	48 3	4.6b	0.50(2)	G_0	G_0	4.9	4.1c	3.6c	4.1c	*
5681	3.5	11.5	33 41	1.0	0.89(8)	K_0	G_5	0.0	1.3	0.9	0.9	
5733/4	4.3c	20.7	37 44	2.5c	0.04(2)b 0.51(2)ff	F_0+K_0	A_9+G_0	2.2b 4.9f	((4.1f))	2.3b 4.4f	(1.5f)	*
5735	3.1	20.9	72 11	—3.4	—0.12(7)	A_2	. . .	. . .	. . .	—0.6	. . .	
5744	3.5	22.7	59 19	—4.9	1.19(7)	K_0	K_2	1.6	0.4	0.1	0.9	
5747	3.7	23.7	29 27	2.1	0.14(10)	Fop	F_1	1.2	. . .	*2.2*	. . .	
5774	5.0	28.2	41 14	—0.4	—0.14(2)	A_2	. . .	. . .	. . .	—0.8c	. . .	*

*5226. *Mt. W.'* —0.4. *5304. Sp. binary, 2 spectra. *5328/9. Double, $d = 12.''6$, $\Delta m = 2.0$. *5340. α Bootis. *5385/6. Triple, $d = 6.''0$ (AB) and $0.''1$ (BC); magn. 5.1; 7.3; 7.4. *5475/6. Double, $d = 6''$, $\Delta m = 0.9$. *5477/8. Double, $d = 1.''1$, $\Delta m = 0.3$. *5490. *Mt. W.'* —0.5. 5505/6. ε Bootis, visual double, $d = 2.''6$, $\Delta m = 2.4$. The corrected colour of the brighter component $C = 1.08$. *5544. ξ Bootis; double, $d = 7''$, $\Delta m = 2.0$. *5589. *Mt.' W.* 0.0. Spectroscopic binary, two spectra, the components are here assumed to be of equal brightness. *5618. Double, $d = 2.''8$, $\Delta m = 0.7$. 5733/4. Triple system, $d = 108''$ (AB); $1.''3$ (BC). Magn. 4.5; 7.2; 7.7. *5774. Double, $d = 0.''1$, $\Delta m = 0.0$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
5778	4.2	15 28.9	31 42	—0.1	—0.32(5)	B_5	. . .	. . .	—1.4	. . .	. . .	
5788/9	3.8	30.0	10 52	0.0	. . .	F_0	A6n	2.4	. . .	*1.9*	. . .	*
5793	2.3	30.5	27 3	0.8	—0.27(7)	A_0	A0n	0.9	. . .	0.6	. . .	
5833	4.7c	35.6	36 58	—1.8	. . .	B_8	. . .	. . .	. . .	(—1.0)	. . .	
5842	4.5	37.1	20 0	1.7	—0.27(2)	A_2	. . .	. . .	. . .	0.7c	. . .	*
5849	3.9	38.5	26 37	1.6	—0.19(7)	A_0	A0n	1.1	. . .	—0.3c	. . .	*
5854	2.8	39.3	6 44	0.0	1.20(8)	K_0	K_2	1.8	0.4	0.8	0.8	
5867	3.7	41.6	15 44	0.9	—0.14(7)	A_2	A0n	1.1	. . .	0.5	. . .	
5868	4.4	41.6	7 40	3.1	0.55(3)	G_0	G_0	4.5	4.5	3.7	3.6	
5879	4.3	44.2	18 27	1.1	1.85(10)	K_5	K_9	0.0	—0.8	. . .	—1.1	*
5889	4.7	45.4	26 22	1.5	0.65(2)	G_5	G_4	1.8	((2.4))	0.5	(2.1)	
5892	3.8	45.8	4 47	1.7	0.09(2)	A_2	A5s	1.8	. . .	1.3	. . .	
5899	4.9	46.9	21 17	—0.1	1.46(2)	K_5	K_5	0.2	0.5	. . .	0.8	
5901	4.8	47.5	35 58	4.2	1.01(2)	K_0	K_1	2.7	0.8	(2.8)	1.9	
5903	4.3	47.6	78 6	—1.5	—0.10(4)	A_2	. . .	. . .	. . .	—0.5	. . .	
5914	4.6	49.2	42 44	5.8	0.51(2)	G_0	F_7	4.4	4.7	4.5	. . .	
5933	3.9	51.8	15 59	6.4	0.27(10)	F_5	F_5	4.2	. . .	*4.6*	. . .	
5947	4.2	53.4	27 10	1.0	1.28(7)	K_0	K_2	1.0	—0.2	0.6	0.1	
5960	5.0	55.4	55 2	3.6	0.09(5)	A_5	A6n	2.5	. . .	*2.2*	. . .	
5971	4.9	57.4	30 8	0.9	—0.33(2)	A_0	A1sn	1.0	. . .	1.0	. . .	
5972	4.8	58.0	23 5	—1.5	—0.31(2)	A_2	. . .	. . .	. . .	—0.3c	. . .	*
5982	4.6	59.7	46 19	2.2	—0.21(3)	B_9	. . .	. . .	. . .	0.0	. . .	
5986	4.1	16 0.0	58 50	4.3	0.43(8)	F_8	F_7	3.0	*d*	4.0	. . .	
6018	4.9	5.3	36 45	4.2	0.85(2)	K_0	K_0	2.2	((2.5))	(2.5)	(2.5)	
6023	4.3	5.6	45 12	—0.4	—0.24(4)	B9p	. . .	. . .	. . .	0.1	. . .	
6092	3.9	16.7	46 33	—0.6	—0.32(5)	B_5	. . .	—0.5	—1.4	. . .	. . .	
6093	4.8	17.0	1 16	3.0	0.22(3)	F_0	A6n	2.4	. . .	*2.4*	. . .	
6095	3.8	17.5	19 23	—0.1	0.11(10)	F_0	A2n	1.4	. . .	*1.9*	. . .	
6103	4.7	18.2	31 7	2.0	1.03(2)	K_0	G_9	1.2	0.8	1.3	0.6	
6117	4.5	20.8	14 16	1.6	—0.16(3)	A0p	A2s	0.9	. . .	0.4	. . .	
6132	2.9	22.6	61 44	—1.6	0.87(8)	G_5	G_6	1.3	0.6	0.1	(1.4)	
6148	2.8	25.9	21 42	—0.3	0.89(8)	K_0	G_5	—0.4	1.3	0.7	0.9	
6149	3.8	25.9	2 12	1.2	—0.08(7)	A_0	A1n	1.3	. . .	—0.2c	. . .	*
6159	4.9	27.9	11 42	3.1	1.66(3)	K_5	K_8	. . .	—0.1	. . .	0.6	*
6161	5.0	28.2	68 59	0.7	—0.16(4)	cB_8	A0n	0.8	. . .	—1.0c	. . .	*
6168	4.2	30.9	42 39	—0.8	—0.20(4)	A_0	. . .	. . .	. . .	—0.2	. . .	
6212	3.0	37.5	31 47	3.8	0.48(8)	G_0	G_1	2.8	4.7	3.7	5.0	*
6220	3.6	39.5	39 7	0.3	0.84(10)	K_0	G_5	0.6	1.7	0.8	1.4	
6223	5.0	40.2	64 47	—2.2	1.20(2)	K_0	K_1	(1.4)	0.4	0.4	0.3	
6237	4.9	43.4	56 58	0.9	0.21(2)	F_0	F_0	2.3	. . .	*2.0*	. . .	

*5788/9. Double, $d = 2.''6$, $\Delta m = 0.9$. *5842. Double, $d = 0.''2$, $\Delta m = 0.0$. *5849. Double, $d = 0.''7$, $\Delta m = 2.5$; brighter component sp. binary, two spectra. *5879. *Mt. W.'* 0.0. *5972. Sp. binary, 2 spectra. *6149. Double, $d = 0.''8$, $\Delta m = 1.4$. *6159. *Mt. W.'* 0.1. *6161. A Draconis. Sp. binary, 2 spectra. The *c*-characteristic in *H. D.* appears to be doubtful. The star belongs doubtlessly to the main (dwarf) series. *6212. Double, $d = 0.''9$, $\Delta m = 3.1$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
6254	4.9	16 46.3	46 9	2.0	—0.09(2)	A_{2p}	. . .	. . .	. . .	0.9	. . .	
6281	4.3	49.3	10 20	1.4	—0.22(2)	B_8	. . .	. . .	. . .	—0.8c	. . .	*
6299	3.4	52.9	9 32	2.4	1.14(8)	K_0	K_2	2.2	0.6	1.3	1.3	
6315	4.8	55.5	65 17	3.7	0.48(2)	F_5	F_7	4.0	. . .	*3.1*	. . .	
6322	4.4	56.2	82 12	—3.2	0.85(7)	G_5	G_2	—1.4	0.7	—0.2	1.9	
6324	3.9	56.5	31 4	0.4	—0.18(4)	A_0	. . .	. . .	. . .	—0.6c	. . .	*
6355	4.9	17 0.7	12 53	1.0	0.00(3)	A_3	. . .	. . .	. . .	*1.0*	. . .	
6396	3.2	8.5	65 50	—2.1	—0.25(5)	B_5	B_{5s}	—1.1	—1.2	. . .	. . .	*
6406	3.3c	10.1	14 30	—2.6b	1.38(1)c	Mb	Mb+F_9	$\begin{matrix}-3.0\\1.7\end{matrix}\}$	—1.3c	. . .	—1.3c	*
6410	3.2	10.9	24 57	2.0	—0.13(5)	A_2	A0n	0.9	. . .	0.9	. . .	
6418	3.4	11.6	36 55	—2.9	1.50(8)	K_5	K_4	0.2	0.4	. . .	—0.4	
6431	(4.6)	13.6	33 12	—0.1	—0.32(2)	B_3	. . .	—1.8	—1.9	. . .	. . .	*
6436	4.8	14.2	37 24	1.7	—0.30(4)	A_2	A0n	0.9	. . .	1.4	. . .	
6484/5	4.1	20.2	37 14	—0.1	. . .	A_0	B9ns	0.2	. . .	(0.3)	. . .	*
6498	4.4	21.6	4 14	—6.0	1.61(2)	K_0	K_1	(0.7)	—2.1	(—1.2)	—3.5	
6526	4.5	26.7	26 11	—2.2	1.33(2)	K_0	K_3	1.4	—0.5	—0.1	0.4	
6536	3.0	28.2	52 23	—4.1	0.85(8)	cG_0	G_0	—2.8	(—1.8)	((—2.2))	—2.4	
6554	5.0	30.2	55 15	3.4	—0.02(2)	A_5	A_4	2.6	. . .	*2.0*	. . .	
6555	5.0	30.3	55 14	3.4	0.00(2)	A_5	A_4	2.6	. . .	*2.0*	. . .	
6556	2.1	30.3	12 38	1.6	0.00(6)	A_5	A0n	0.7	. . .	*0.6*c	. . .	*
6588	3.8	36.6	46 4	—3.5	—0.36(4)	B_3	. . .	—2.6	—2.2	. . .	. . .	
6596	4.9	37.5	68 48	4.2	0.20(2)	F_5	F_2	2.7	. . .	*3.3*	. . .	
6603	2.9	38.5	4 37	0.5	1.17(7)	K_0	K_2	1.7	0.5	1.0	1.1	
6623	3.5	42.5	27 47	4.7	0.69(8)	G_5	G_5	3.6	((1.8))	4.1	(2.1)	
6629	3.7	42.9	2 45	0.9	. . .	A_0	. . .	. . .	. . .	(0.2)	. . .	*
6636/7	4.6c	43.7	72 12	3.5	0.07(2)b 0.22(2)f	F_5	F_3+F_6	3.1 4.2	. . .	*3.0*	. . .	*
6688	3.9	51.8	56 53	1.1	1.14(7)	K_0	K_3	1.8	0.6	1.3	1.9	
6695	4.0	52.8	37 16	—5.3	1.39(7)	K_0	K_0	—1.0	—0.8	—0.4	—2.1	
6703	3.8	53.9	29 16	0.4	0.88(7)	K_0	G_7	0.8	1.3	0.8	1.1	
6705	2.4	54.3	51 30	—3.7	1.70(8)	K_5	K_5	0.3	—0.3	. . .	—1.3	
6707	4.5	54.7	30 12	—5.1	0.18(7)	cF_0	F_2	0.6	. . .	*—4.6*	. . .	
6712	4.8	55.3	4 22	—0.9	—0.21(2)	B_3	. . .	—0.7	—1.4	. . .	. . .	
6713	4.7	55.6	16 45	—3.2	1.24(3)	K_0	K_2	0.0	0.1	—0.3	0.5	
6714	3.9	55.6	2 56	—2.5	. . .	B_{5p}	B_{2s}	—2.0	. . .	. . .	. . .	*
6723	4.4	56.7	1 18	—1.1	—0.12(2)	A_2	A0n B9n	$\begin{matrix}0.8\\0.5\end{matrix}\}$	. . .	—0.4	. . .	
6729/30	4.4c	57.2	21 36	$\begin{matrix}0.1\\0\,2\end{matrix}\}$	0.17(5)c	A_3+G_5	. . .	. . .	. . .	(*—0.1*c)	. . .	*
6752	4.1	18 0.4	2 31	6.5a	0.85(8)c	K_0	K_1	5.3c	1.5	5.0c	(4.6c)	*

*6281. Sp. binary, 2 spectra. *6324. Sp. binary, 2 spectra. *6396. $M = -0.7$ (Edwards). *6406. α Herculis, visual double, magn. 3.5 + 5.4. Photoelectric $C = 0.94$ (comb.) not used. The corrected colour of the brighter component is assumed $C = 1.57$. *6431. Variable *u Herculis*. *6484/5. Double, $d = 3.''6$, $\Delta m = 1.0$. *6556. Sp. binary, 2 spectra. *6629. Sp. binary, 2 spectra. *6636/7. Double, $d = 31''$, $\Delta m = 1.2$. *6714. $M = -2.2$ (Edwards). *6729/30. Visual double, $d = 6''$, $\Delta m = 0.1$. Corrected colour of the brighter (white) component $C = -0.17$. *6752. 70 Ophiuchi, double, $d = 3.''9$, $\Delta m = 1.7$. The colour-index is somewhat large for a dwarf of this spectrum.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
6770	4.7	18 2.5	8 43	—1.6	0.92(3)	G_5	G_6	—0.1	0.4	—0.1	(1.0)	
6771	3.7	2.6	9 33	1.2	0.06(2)	A_3	A_{5s}	1.8	. . .	*0.4*c	. . .	*
6779	3.8	3.6	28 45	—5.2	—0.20(4)	A_0	. . .	. . .	. . .	—3.2	. . .	
6787	4.3	4.5	20 48	—1.3	—0.42(2)	B_3	. . .	—2.3	—2.7	. . .	. . .	
6789	4.4	4.5	86 37	0.2	—0.11(2)	A_0	. . .	. . .	. . .	0.0	. . .	
6866	4.9	15.9	3 20	—2.6	0.88(2)	G_5	G_5	—0.5	0.6	—0.2	(1.0)	
6868	5.0	16.1	21 55	0.6	1.66(2)	K_5	K_8	. . .	—0.1	. . .	0.6	*
6872	4.3	16.4	36 1	—1.0	1.16(2)	K_0	K_2	2.4	0.5	0.7	1.1	
6895	3.9	19.4	21 43	3.2	1.16(2)	K_0	K_1	1.6	0.5	1.3	0.6	
6920	4.2c	22.2	71 17	—0.8	—0.22(2)	A_{0p}	. . .	. . .	. . .	—0.6c	. . .	*
6923	4.8	22.5	58 45	1.4	—0.02(2)	A_2	. . .	. . .	. . .	0.2c	. . .	*
6927	3.7	22.9	72 41	4.5	0.36(8)	F_8	F_5	4.2	*d*	4.0	. . .	
6945	5.0	25.7	65 30	1.7	1.20(2)	K_0	K_1	(1.3)	0.4	1.0	0.3	
6978	5.0	30.9	56 58	—2.8	0.42(2)	F_{8p}	. . .	. . .	*g*	—2.8	. . .	
7001	0.1	33.6	38 41	0.7	—0.13(5)	A_0	A_{1s}	0.6	. . .	0.1	. . .	
7051/2	4.7c	41.0	39 34	0.9c	—0.02(2)c	A_3	. . .	. . .	. . .	*0.6*c	. . .	*
7053/4	4.5c	41.1	39 30	1.0c	0.00(2)c	A_5	. . .	. . .	. . .	*0.5*c	. . .	*
7056/7	4.1c	41.3	37 30	—0.9c	$^{0.05b}_{-0.06f}$ (2)	A_3	A_{6s}	2.2	. . .	*0.3*c	. . .	*
7061	4.3	41.4	20 27	4.0	0.28(7)	F_5	F_4	3.6	. . .	*3.2*	. . .	
7064	4.9	42.0	26 33	—1.1	1.11(2)	K_0	K_1	(1.5)	0.7	0.7	1.1	
7069	4.4	42.6	18 4	2.3	0.03(3)	A_3	A_{4n}	2.0	. . .	*1.4*	. . .	
7106	(3.4)	46.4	33 15	—3.6	—0.01(2)	$_cB_8+B_2$	. . .	. . .	. . .	—*3.2*c	. . .	*
7125	4.8	49.7	59 16	1.0	1.24(2)	K_0	G_8	—0.3	0.1	0.7	—*1.6*	
7133	4.6	50.5	22 31	—5.0	0.73(2)c	G_0+A_3	G_0	0.9	(—2.1c)	((—2.8c))	—2.7c	*
7137	5.0	50.7	50 35	—0.7	0.80(2)	G_5	. . .	. . .	0.9	0.2	. . .	
7139	4.5	51.0	36 46	—3.8	1.53(7)	Mb	Mb	. . .	—0.9	. . .	—0.9	*
7141/2	4.1c	51.2	4 4	—0.1c	—0.05(5)c	A_5	. . .	. . .	. . .	*0.8*	. . .	*
7157	4.3	52.3	43 49	0.5	1.22(6)	Mb	Mb	—2.0	—1.2	. . .	—1.2	*
7176	4.2	55.1	14 56	0.9	0.88(3)	K_0	K_1	(1.0)	1.3	0.8	(3.9)	
7178	3.3	55.2	32 33	—4.3	—0.21(5)	A_{0p}	B_{9sp}	—0.2	. . .	0.2	. . .	
7180	4.9	55.6	71 10	0.5	1.07(2)	K_0	. . .	. . .	0.7	1.3	0.7	
7235	3.0	19 0.8	13 43	0.8	—0.17(5)	A_0	A_{0n}	0.8	. . .	0.2	. . .	
7298	4.5	10.4	38 58	—4.9	—0.62(2)	B_3	. . .	—2.2	—4.3	. . .	. . .	
7306	4.6	11.9	21 13	—4.3	—0.24(2)	B_5	. . .	—1.2	—1.1	. . .	. . .	
7310	3.2	12.5	67 29	0.4	0.94(7)	K_0	G_8	0.6	1.0	0.6	1.0	
7314	4.5	12.9	37 57	—3.8	1.26(7)	K_0	K_1	—1.0	0.0	0.2	—0.2	
7328	4.0	14.8	53 11	1.3	0.90(7)	K_0	G_6	1.6	1.2	0.9	(1.3)	
7352	4.6	17.5	73 10	4.5	1.29(7)	K_0	K_4	(0.5)	—0.2	0.6	1.4	

*6771. Sp. binary, 2 spectra. *6868. *Mt. W.'* 0.0. *6920. Double, $d = 0.''5$, $\Delta m = 1.8$. Brighter component sp. binary, 2 spectra. *6923. Double, $d = 3.''1$, $\Delta m = 2.7$; brighter component spectroscopic binary, two spectra. *7051/2. ε Lyrae; double, $d = 3.''0$, $\Delta m = 0.9$. *7053/4. 5 Lyrae; double, $d = 2.''5$, $\Delta m = 0.3$. *7056/7. ζ Lyrae; double, $d = 44''$, $\Delta m = 1.4$. *7106. β Lyrae, variable, spectroscopic binary, two spectra; assumed equal components. Photoelectric colour alone used. *7133. Spectrum composite. Corrected colour of the brighter component assumed $C = 0.90$. *7139. *Mt. W.* —1.4. *7141/2. Double, $d = 22''$, $\Delta m = 0.9$. *7157. *Mt. W.'* —0.6. *R Lyrae.*

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
7358	4.9	19 18.7	26 4	—1.1	—0.30(2)	B_5	B_{8s}	—0.4	—1.4	. . .	. . .	*
7371	4.6	20.2	65 31	0.3	—0.11(2)	A_2	. . .	. . .	. . .	0.2	. . .	
7372	4.9	20.2	29 26	—1.3	—0.29(2)	B_3	. . .	—2.0	—1.7	. . .	. . .	
7377	3.4	20.5	2 55	2.6	0.18(6)	F_0	A_{4n}	2.2	. . .	*2.3*	. . .	
7387	4.9	21.4	0 8	—2.9	0.35(2)	F_0	. . .	. . .	. . .	*—3.0*	. . .	
7405	4.6	24.5	24 28	2.5	1.55(2)	Ma	Ma	—0.2	0.9	. . .	0.9	*
7417/8	3.1c	26.7	27 45	—5.1c	1.13(3)b, —0.57(2)f	(K0+A5)b, B8f	K_0	—0.3	—1.1c	—0.7c	—2.6c	*
7420	3.9	27.2	51 31	2.0	—0.04(4)	A_2	A_{0n}	1.1	. . .	1.1	. . .	
7426	4.8	28.1	34 14	—4.0	—0.48(2)	B_3	. . .	—1.7	—3.4	. . .	. . .	
7429	4.6	29.2	7 10	3.3	1.19(2)	K_0	K_3	1.6	0.4	1.3	1.5	
7437	4.9	30.2	19 33	—4.2	—0.28(3)	B_8	B_{8n}	0.3	. . .	—3.0	. . .	
7462	4.8	32.6	69 29	7.6	0.74(7)	K_0	G_9	5.8	((3.3))	5.8	(4.3)	
7469	4.6	33.8	49 59	3.6	0.22(8)	F_5	F_2	3.4	. . .	*3.0*	. . .	
7478	4.8	35.4	29 55	—0.8c	0.88(2)	K_0	G_9	0.2	0.6c	0.0c	1.2c	*
7479	4.4	35.6	17 47	—1.0	0.66(3)	G_0	F_8	—0.4	(1.2)	0.7	. . .	
7488	4.4	36.6	17 15	—1.0	0.94(3)	K_0	G_8	0.0	1.0	0.4	1.0	
7525	2.8	41.5	10 22	—4.9	1.66(8)	K_2	K_3	—0.5	—1.4	. . .	—2.0	
7528	3.0	41.9	44 53	—0.2	—0.21(5)	A_0	A_{0n}	1.1	. . .	0.2	. . .	
7536	3.8	42.9	18 17	—5.3	1.58(3)	Ma+A_0	Ma+G	—1.2	—1.7c	. . .	—1.7c	*
7546	5.0	44.5	18 53	—0.1	—0.12(3)	A_2	. . .	. . .	. . .	—0.5c	. . .	*
7557	0.9	45.9	8 36	2.2	0.10(6)	A_5	A_{2n}	1.7	. . .	*1.5*	. . .	
7565	4.9	46.8	22 21	0.2	—0.40(2)	B_3	. . .	—1.3	—2.5	. . .	. . .	
7570	(3.7)	47.4	0 45	(—4.2)	. . .	G0p	(F_7)	—2.4	. . .	. . .	. . .	*
7582	4.0	48.5	70 1	0.2	0.85(7)	K_0	G_2	0.7	1.0c	0.6c	—2.4c	*
7592	4.5	49.2	23 49	0.2	—0.17(3)	A_0	. . .	. . .	. . .	0.0	. . .	
7595	4.9	49.4	8 12	1.9	1.00(3)	K_0	G_9	0.6	0.8	1.0	0.9	
7602	3.9	50.4	6 9	3.8	0.77(7)	K_0	G_8	3.6	2.9	1.9	2.3	
7613	4.9	52.3	38 13	—1.7	—0.39(2)	B_3	B_{5s}	—1.1	—2.4	. . .	. . .	
7615	4.0	52.6	34 49	—0.7	0.94(7)	K_0	K_0	2.7	1.0	0.5	1.8	
7619	4.8	53.0	52 10	0.7	0.01(5)	A_3	A_{0n}	0.8	. . .	*0.9*	. . .	*
7635	3.7	54.3	19 13	—0.7	1.64(8)	K_5	K_8	0.7	—0.1	. . .	0.3	*
7653	4.7	57.0	27 29	0.5	—0.09(2)	A_5	. . .	. . .	. . .	*1.0*	. . .	
7685	4.7	20 2.4	67 35	—0.3	1.41(2)	K_0	K_2	(0.7)	—0.9	—0.2	—1.0	
7708	4.8	5.7	36 33	—2.2	—0.24(2)	B_{2p}	. . .	. . .	—2.5	. . .	. . .	
7724	5.0	9.7	14 54	1.7	—0.11(3)	A_0	. . .	. . .	. . .	0.5	. . .	
7730	5.0	10.2	46 31	—1.4	—0.10(2)	A_2	A_{0n}	0.9	. . .	—0.5	. . .	
7735	4.0	10.5	46 26	—7.9	1.29(2)	cK0+B8	G_9	—1.8	—1.9c	—0.9c	—4.3c	*

*7358. $M = -0.7$ (Edwards). *7405. *Mt. W.'* 0.3. *7417/8. β Cygni; visual double, $\Delta m = 2.1$; brighter component has composite spectrum. The photoelectric $C = 0.67$ (comb.) not used. The corrected colour of the K_0 giant, the brightest member in this triple system, is assumed $C = 1.42$. *7478. Spectroscopic binary, two spectra; assumed equal components. *7536. Spectrum composite. The photoelectric $C = 1.20$ (comb.) not used. The corrected colour of the brighter component is assumed $C = 1.86$. *7546. Double, $d = 0.''2$, $\Delta m = 0.6$. *7570. Variable η Aquilae. *7582. Double, $d = 2.''7$, $\Delta m = 3.0$. Corrected colour of the brighter compon. ass. $C = 0.93$. *7619. Double, $d = 3.''3$, $\Delta m = 2.5$. *7635. *Mt. W.'* —0.2. *7735. Spectrum composite. Photoelectric $C = 1.07$ not used. The corrected colour of the brighter component is assumed $C = 1.55$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
7736	5.0	20 10.8	36 30	2.4	0.00(2)	A_0	A_{2n}	1.5	. . .	1.0	. . .	
7739	4.8	11.0	25 17	—4.3	—0.45(4)	B_3	. . .	—1.3	—3.7c	. . .	. . .	*
7740	4.3	11.1	56 16	1.7	0.00(6)	A_3	. . .	. . .	. . .	*1.2*	. . .	
7744	4.7	11.6	27 30	—0.5	1.27(2)	K_5	. . .	. . .	1.2	. . .	. . .	
7750	4.4	12.3	77 25	—1.0	—0.20(2)	B_9	. . .	. . .	. . .	—1.0	. . .	
7751	4.2	12.4	47 24	—5.8	1.70(2)	cK_0+A_3	cK_4	—0.7	—3.0c	(—1.5c)	—2.7c	*
7763	4.9	14.1	37 43	—1.1	0.35(2)	B_{1p}	. . .	. . .	—2.0	. . .	. . .	*
7796	2.3	18.6	39 56	—8.4	0.64(8)	cF_8	F_8	—3.1	*g*	—8.0	. . .	
7806	4.6	19.9	31 52	—0.7	1.41(2)	K_2	K_5	0.3	0.6	. . .	1.2	
7834	4.1	25.3	30 2	—4.0	0.17(7)	cF_5	F_5	—1.0	. . .	*—3.2*	. . .	
7844	4.9	27.0	48 37	—2.2	—0.19(4)	B_3	. . .	—1.3	—1.4	. . .	. . .	
7850	4.3	27.9	62 39	—0.2	0.08(5)	A_5	. . .	. . .	. . .	*0.1*c	. . .	*
7852	4.0	28.4	10 58	—1.2	—0.19(2)	B_5	. . .	—1.1	—0.9	. . .	. . .	
7866	4.8	30.0	34 54	—3.0	1.67(2)	K_5+A_3	. . .	. . .	—1.2c	. . .	. . .	*
7871	4.7	30.6	14 20	—0.1	0.04(3)	A_2	A_{2n}	1.8	. . .	0.4	. . .	
7882	3.7	32.9	14 15	0.8	0.31(8)	F_5	F_3	2.1	. . .	*1.6*c	. . .	*
7891	4.8	34.1	20 51	1.0	—0.15(2)	A_0	A_{0n}	0.6	. . .	0.2	. . .	
7906	3.9	35.0	15 34	0.4	—0.16(4)	B_8	. . .	. . .	. . .	—0.5	. . .	
7924	1.3	38.0	44 55	—11.2	—0.07(5)	cA_2	. . .	. . .	. . .	(*—10.6*)	. . .	*
7928	4.5	38.8	14 43	0.4	0.17(6)	A_5	. . .	. . .	. . .	*0.9*	. . .	
7942	4.3	41.5	30 21	—1.9	1.05(2)	K_0	G_8	1.6	0.8	0.3	0.0	
7947	4.1c	42.0	15 46	2.4c	1.08(2)b 0.29(2)f	G_5	K_1b F_6f	2.8 3.0	—0.6c	0.1c	0.9c	*
7949	2.6	42.2	33 36	2.7	1.02(8)	K_0	G_7	0.8	0.8	1.4	—0.2	
7955	4.6	42.9	57 13	3.2	0.44(7)	G_0	F_7	3.6	4.5	3.2	. . .	
7957	3.6	43.3	61 27	4.7	0.90(8)	K_0	G_7	3.6	1.2	3.2	0.9	
7963	4.5	43.5	36 7	—2.3	—0.28(4)	B_5	. . .	—0.1	—1.7c	. . .	. . .	*
7977	4.9	45.5	45 45	—3.8	0.40(2)	B_2	. . .	—2.4	—2.0	. . .	. . .	*
7995	4.8	47.8	26 43	1.3	0.72(2)	G_5	G_3	—0.7	((1.5))	1.2	1.4	
8001	4.7	49.7	44 0	—1.2	—0.17(2)	B_3	. . .	—0.9	—2.0c	. . .	. . .	*
8028	4.0	53.4	40 57	—1.4	—0.11(5)	A_0	B_{9n}	0.6	. . .	—0.4	. . .	
8047	4.9	56.4	47 8	—2.8	0.00(2)	B_{0p}	. . .	—2.5	—2.3	. . .	. . .	
8079	3.9	21 1.3	43 32	—5.3	1.90(7)	cK_5	K_3	—1.5	—1.0	. . .	—2.6	
8089	4.9	3.2	47 15	—2.9	1.70(2)	K_5	K_6	—0.6	—0.3	. . .	—0.6	
8097	4.8	5.5	9 44	2.8	0.32(3)	F_{0p}	A_{8s}	2.4	. . .	*2.4*	. . .	
8115	3.4	8.7	29 49	—1.3	1.00(7)	K_0	G_6	—1.0	0.8	0.3	—0.7	
8123	4.6	9.6	9 36	3.7	0.42(3)	F_5	F_6	4.0	. . .	*2.6*c	. . .	*

*7739. Spectroscopic binary, 2 spectra; assumed equal components. *7751. Spectrum composite. Photoelectric $C = 1.40$ not used. The corrected colour of the brighter component is assumed $C = 1.98$. *7763. P Cygni. Considerable excess in colour. *7850. Sp. binary, 2 spectra. *7866. Spectrum composite. Reduction to combined magn. ass. = —0.2. The corrected colour of the brighter component is assumed $C = 1.90$. *7882. Double, $d = 0.''6$, $\Delta m = 1.3$. *7924. α Cygni. *7947. γ Delphini, visual double; $d = 12''$, $\Delta m = 1.0$ magn. The colours of the individual components are from *L*; *G. A.* gives the combined colour $C = 0.58(2)$. *7963. Double, $d = 0.''6$, $\Delta m = 1.1$. *7977. Large excess in colour. *8001. Spectroscopic binary, 2 spectra; assumed equal components. *8123. Double, $d = 0.''4$, $\Delta m = 0.5$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
8130	3.8	21 10.8	37 37	4.1	0.29(8)	F_0	F_1	2.0	. . .	*2.5*	. . .	*
8131	4.1	10.8	4 50	0.9	0.34(2)	F_8+A_3	F_5	1.4	. . .	(*0.0*c)	. . .	*
8143	4.3	13.5	38 59	—3.8	—0.10(4)	cA_0	. . .	. . .	. . .	—*4.2*	. . .	
8146	4.4	13.8	34 29	—0.7	—0.20(2)	B_{3p}	. . .	. . .	—1.4	. . .	. . .	
8162	2.6	16.2	62 10	0.7	0.09(6)	A_5	A_{1n}	1.3	. . .	*1.0*	. . .	
8173	4.2	17.5	19 23	1.1	1.11(8)	K_0	K_0	2.1	0.7	1.3	0.4	
8225	4.8	25.4	23 12	—2.6	1.69(7)	K_5	K_9	0.2	—0.3	. . .	0.3	*
8238	3.3	27.4	70 7	—3.8	—0.34(5)	B_1	B_{1s}+$A_{2[n}$	−2.9 / 1.7	—3.0	. . .	. . .	*
8252	4.2	30.2	45 9	0.7	0.81(3)	K_0	G_5	1.6	((2.3))	0.9	(1.5)	
8255	5.0	30.7	38 5	2.3	1.20(2)	K_0	G_9	1.1	0.4	1.1	—0.8	
8279	4.9	35.2	61 38	—4.1	0.14(4)	B_2	. . .	—2.3	—2.2	. . .	. . .	
8301	4.8	38.5	50 44	—3.7	—0.27(2)	B_3	. . .	—1.2	—2.3c	. . .	. . .	*
8308	2.5	39.3	9 25	—4.1	1.69(8)	K_0	K_1	—1.6	—2.3	(—1.4)	—4.3	
8309/10	4.4	39.7	28 17	3.8	0.42(2)c	F_5	F_5	**3.4**	. . .	*3.1*	. . .	*
8313	4.5	39.8	16 53	—1.7	1.18(3)	K_0	G_6	—0.9	0.5	0.5	—2.2	
8315	4.3	40.1	25 11	—1.4	0.23(7)	F_5	F_2	2.6	. . .	—*0.4*c	. . .	*
8316	(4.5)	40.4	58 19	—7.5	2.42(5)	Ma	Ma	—4.9	—6.9	. . .	—6.9	*
8317	4.8	40.5	70 51	2.3	1.13(7)	K_0	K_1	(0.6)	0.6	1.3	0.9	
8334	4.5	42.6	60 40	—6.7	0.42(4)	cA_2	. . .	. . .	. . .	—*6.2*	. . .	*
8335	4.3	43.1	48 51	—4.7	—0.34(4)	B_3	. . .	—2.3	—2.6c	. . .	. . .	*
8343	5.0	45.4	29 43	0.2	—0.24(2)	A_0	. . .	. . .	. . .	—0.3c	. . .	*
8413	4.9	22 0.6	4 34	2.1	1.60(3)	K_5	K_6	0.4	0.1	. . .	0.3	
8417	4.4c	0.9	64 8	3.3c	0.20(4)c	A_3+G	A_4	2.2	. . .	*1.9*	. . .	*
8430	4.0	2.4	24 51	3.0	0.22(7)	F_5	F_4	3.5	. . .	*2.8*	. . .	
8450	3.7	5.2	5 42	3.0	—0.18(4)	A_2	. . .	. . .	. . .	0.5c	. . .	*
8454	4.4	5.5	32 41	—1.8	0.34(7)	F_5	A_{8n}	2.6	. . .	—*0.1*	. . .	
8465	3.6	7.4	57 42	—4.5	1.70(7)	K_0	K_2	—2.0	—2.3	(—1.4)	—2.3	
8468	5.0	7.9	71 51	—1.3	0.86(7)	G_5	G_4	—1.0	0.7	0.1	0.5	
8485	4.6	9.6	39 13	—0.4	1.49(2)	K_2	K_5	0.3	—0.2	. . .	0.6	
8494	4.2	11.3	56 33	4.4	0.18(8)	F_0	A_{6n}	2.4	. . .	*2.5*	. . .	
8498	4.2	11.6	37 15	—2.8	1.52(7)	K_0	K_3	—0.6	—1.5	—0.8	—1.3	
8520	4.9	16.6	11 42	—4.1	—0.20(3)	B_{3p}	. . .	. . .	—1.4	. . .	. . .	
8522	4.9	16.7	27 50	—4.4	—0.20(4)	B_8	. . .	. . .	. . .	—3.2	. . .	
8523	4.7	16.9	46 2	—1.5	—0.30(2)	B_5	. . .	—0.2	—2.1c	. . .	. . .	*
8538	4.6	19.6	51 44	2.5	0.98(7)	K_0	G_8	1.4	0.8	1.4	0.6	
8539	4.6	20.2	0 52	—3.5	—0.12(3)	B_{1p}	. . .	. . .	—2.1	. . .	. . .	
8541	4.6	20.5	48 58	—2.3	—0.12(5)	cB_8	. . .	. . .	. . .	—*3.8*	. . .	

*8130. Double, $d = 1.''2$, $\Delta m = 3.2$. *8131. Photoelectric $C = 0.33$ not used. Spectrum composite. The corrected colour of the brighter component is assumed $C = 0.44$. *8225. *Mt. W.'* 0.0. *8238. $M = -3.0$ (Edwards). *8301. Spectroscopic binary, two spectra suspected. *8309/10. Double, $d = 5.''5$, $\Delta m = 1.4$. *8315. Double, $d = 0.''2$, $\Delta m = 0.4$. *8316. *μ Cephei.* One of the most luminous supergiants. The photoelectric determination of colour only used. *Mt. W.'* —3.0. *8334. Supergiant of large colour excess. *8335. Spectroscopic binary, two spectra suspected. *8343. Sp. binary, 2 spectra. *8417. Double, $d = 5.''6$, $\Delta m = 1.9$. *8450. Sp. binary, 2 spectra. *8523. Spectroscopic binary, 2 spectra; assumed equal components.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
8551	4.9	22 22.8	4 12	3.8	1.04(3)	K_0	K_0	1.3	0.8	(2.1)	1.0	*
8571	(3.7)	25.4	57 54	—2.5	. . .	G0p+B8	G_0	—2.7	. . .	. . .	. . .	*
8572	4.6	25.4	47 12	—2.4	1.73(2)	cK0+A	K_2	—3.2	—3.1c	(—1.5c)	—3.0c	*
8579	4.5	26.2	42 37	—2.6	—0.25(2)	B_3	B3s	—1.2	—1.6	. . .	. . .	*
8585	3.8	27.2	49 46	1.8	—0.11(4)	A_0	. . .	. . .	. . .	0.5	. . .	
8613	4.8	33.3	51 2	2.2	—0.02(2)	A_5	. . .	. . .	. . .	*1.5*	. . .	
8622	4.9	34.8	38 32	[—4.8]	—0.41(5)	Oe5	O9n	. . .	—5.7	. . .	. . .	
8632	4.6	36.1	43 45	1.1	1.38(2)	K_0	K_2	0.6	—0.7	0.1	—0.8	
8634	3.6	36.5	10 19	0.1	—0.29(5)	B_8	. . .	. . .	. . .	—0.3	. . .	
8641	4.8	37.1	28 47	—0.3	—0.28(2)	A_0	A2s	1.1	. . .	0.6	. . .	
8650	3.1	38.3	29 42	—2.6	0.80(8)	G_0	G_1	—0.2	(—1.5)	—1.0	—1.8	
8665	4.3	41.7	11 40	4.5	0.41(3)	F_5	F_5	3.5	. . .	*3.5*	. . .	
8667	4.1	41.7	23 2	—0.6	1.04(7)	K_0	G_7	—0.2	0.8	0.5	—0.3	
8684	3.7	45.2	24 4	1.0	0.85(7)	K_0	G_7	0.9	1.5	0.9	1.3	
8694	3.7	46.1	65 40	0.9	1.02(7)	K_0	K_0	1.6	0.8	1.0	1.1	
8702	5.0	47.9	82 37	0.5	1.31(2)	K_0	K_2	(1.6)	—0.4	0.3	—0.1	
8717	5.0	50.2	8 17	1.2	—0.08(3)	A_0	. . .	. . .	. . .	0.1	. . .	
8748	5.0	55.2	83 49	1.5	1.58(2)	K_5	K_5	. . .	0.2	. . .	—0.2	
8762	3.6	57.3	41 47	—1.6	—0.25(4)	B5+A2p	B7n	0.0	—1.7c	. . .	. . .	*
8773	4.6	58.8	3 17	—3.0	—0.26(3)	B5p	. . .	. . .	—1.2	. . .	. . .	
8775	2.6	58.9	27 32	0.9	1.80(6)	Ma	Ma	—1.6	—0.9	. . .	—0.9	*
8780	4.9	59.7	49 30	3.1	1.02(2)	K_0	G_9	1.4	0.8	1.8	0.7	
8781	2.6	59.8	14 40	—1.1	—0.27(5)	A_0	. . .	. . .	. . .	—0.1c	. . .	*
8795	4.7	23 2.0	8 52	—3.0	1.74(8)	Ma	Ma	—0.2	—0.2	. . .	—0.2	*
8796	5.0	2.2	24 56	—0.7	1.36(2)	K_0	K_1	—1.4	—0.6	—0.1	—1.1	
8797	4.9	2.4	58 53	—2.5	—0.22(4)	B_1	. . .	—2.7	—2.0	. . .	. . .	
8819	4.6	4.7	74 51	—1.7	0.72(7)	G_5	G_2	0.8	((1.5))	0.2	—0.7	*
8830	4.6	8.0	48 52	2.1	0.18(2)	F_0	F_0	2.3	. . .	*2.2*	. . .	
8852	3.8	12.0	2 44	4.5	0.77(8)	K_0	G_5	0.4	((2.9))	(2.2)	(1.6)	
8860	5.0	13.1	48 28	—0.7	1.75(7)	Ma	Ma	—0.6	—0.4	. . .	—0.4	*
8872	4.9	14.5	67 34	0.5b	0.83(2)c	G_5	G_7	1.2	0.6c	0.4c	1.2c	*
8880	4.6	15.7	23 12	—0.8	0.08(5)	A_5	. . .	. . .	. . .	*0.6*	. . .	
8905	4.6	20.4	22 51	2.4	0.47(7)	G_0	F_6	0.9	4.7	(2.8)	. . .	
8911	4.9	21.8	0 42	2.3	—0.14(3)	A2p	A3s	1.2	. . .	1.0	. . .	
8916	4.4	22.9	5 50	1.5	1.00(3)	G_5	G_8	—0.3	0.1	0.5	0.4	
8923	4.7	24.1	12 13	—0.1	0.88(8)	K_0	G_8	0.5	1.3	0.7	1.5	
8926	4.9	25.4	58 0	—0.7	—0.32(4)	B_3	. . .	—1.8	—1.9	. . .	. . .	
8961	4.0	32.7	45 55	3.7	0.89(7)	K_0	G_7	2.4	1.3	(2.4)	1.0	
8965	4.3	33.2	42 43	—1.5	—0.24(4)	B_8	. . .	. . .	. . .	—0.9	. . .	

*8571. Variable δ *Cephei*. Photoelectric $C = 0.41$. *8572. Spectrum composite. Reduction to combined magn. ass. = − 0.1. Photoelectric $C = 1.64$ not used. Corrected colour of the brighter component assumed $C = 2.01$. *8579. $M = -1.7$ (Edwards). *8762. Spectrum composite. $M = -0.9$ (B_5, Edwards). *8775. *Mt. W.* —0.4. *β Pegasi*. *8781. Sp. binary, 2 spectra. *8795. *Mt. W.* 0.6. *8819. Double, $d = 1.''1$, $\Delta m = 3.1$. Colour of br. compon. ass. $C = 0.72$. *8860. *Mt. W.* 0.0. *8872. Double, $d = 2.3$, $\Delta m = 2.5$. Colour of br. comp. ass. $C = 0.85$.

Table I. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
8969	4.3	23 34.8	5 5	4.6	0.33(8)	F_8	F_5	3.6	*d*	4.0	. . .	
8974	3.4	35.2	77 4	1.0	1.06(7)	K_0	K_1	3.2	0.7	1.3	1.5	
8976	4.3	35.5	43 47	1.0	—0.35(2)	A_0	. . .	. . .	. . .	1.1	. . .	
8984	4.6	36.9	1 14	2.8	—0.04(3)	A_5	. . .	. . .	. . .	*1.3*c	. . .	*
8997	5.0	39.0	28 48	0.8	0.94(2)	K_0	G_8	0.8	0.7c	0.8c	0.4c	*
9045	4.8	49.4	56 57	—4.3	1.12(7)	cF_8	G_5	—3.6	*g*	—4.5	—2.1	
9064	4.8	52.7	24 35	—0.2	1.69(7)	Ma	Ma	. . .	0.3	. . .	0.3	*
9071	4.9	53.9	55 12	—2.6	—0.18(4)	B_2	. . .	—2.2	—2.1c	. . .	. . .	*
9072	4.0	54.2	6 19	1.9	0.28(8)	F_5	F_3	1.7	. . .	*2.5*	. . .	

*8984. Sp. binary, 2 spectra suspected. *8997. Double, $d = 1.''4$, $\Delta m = 2.8$. Corrected colour of the brighter compon. assumed $C = 0.99$. *9064. *Mt. W.* —0.1. *9071. Visual double, $d = 3.''0$, $\Delta m = 1.9$.

Table II.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
27	5.1	0 5.1	45 31	—5.3	0.25(2)	cF_0	F_2	1.3	. . .	*—4.7*	. . .	*
65	6.1	12.5	50 53	—1.7	—0.30(2)	B_0	. . .	. . .	—3.6	. . .	. . .	
144	5.1	30.5	53 38	—1.4	—0.27(2)	B_5	. . .	. . .	—1.2	. . .	. . .	
184	5.0	37.9	46 29	—0.4	0.03(3)	A_5	. . .	. . .	. . .	*0.7*	. . .	
321	5.3	1 1.6	54 26	9.5	0.56(5)	G_5	G_5	5.8	(3.8)	6.1	(5.2)	
434	5.1	24.9	5 38	4.0	1.42(7)	K_2	K_5	—0.2	0.5	. . .	1.1	
533	5.5	45.4	54 39	0.0	—0.32(2)	B_3	. . .	. . .	—1.9	. . .	. . .	*
660	5.1	2 10.9	33 46	6.8	0.47(5)	G_0	G_0	4.5	4.7	4.7	5.0	
685	5.2	15.3	55 23	—4.2	0.09(2)	cA_2	. . .	. . .	. . .	*—3.3*	. . .	
753	5.9	30.6	6 25	9.2	0.94(7)	K_0	K_4	6.6	[1.0]	6.8	7.2	
855	5.3	47.4	37 56	1.9	0.33(2)	F_0	F_0	2.3	. . .	*1.7*c	. . .	*
890/1	5.2c	53.7	51 57	0.6	—0.17(2)	B_5	. . .	. . .	—1.2c	. . .	. . .	*
982	5.4	3 11.1	43 39	0.2	—0.19(2)	B_5	. . .	. . .	—0.9	. . .	. . .	
987	5.3	11.5	49 51	0.4	—0.15(2)	B_3	B_{4n}	—0.8	—1.2	. . .	. . .	*
989	5.1	12.0	49 43	0.0	—0.15(2)	B_3	B_{4n}	—0.6	—1.2	. . .	. . .	*
1011	5.3	16.1	48 51	—0.2	—0.25(2)	B_3	B_{5n}	—0.4	—1.6	. . .	. . .	*
1037	5.6	21.7	49 30	0.9	—0.25(2)	B_5	. . .	. . .	—1.2	. . .	. . .	
1051	6.0	23.5	47 46	1.2	—0.24(4)	B_9	. . .	. . .	. . .	0.1	. . .	
1140	5.4	38.9	23 59	1.2	—0.20(2)	B_5	. . .	. . .	—0.9	. . .	. . .	
1144	5.6	39.2	24 32	1.4	—0.30(2)	B_8	. . .	. . .	. . .	—0.1	. . .	

*27. There is little doubt that the spectroscopic magnitude is considerably underestimated. *533. $M = -1.9$ (Edwards). *855. Double, $d = 0.''2$, $\Delta m = 0.6$. *890. Double, $d = 12''$, $\Delta m = 1.4$. *987. $M = -1.6$ (Edwards). *989. $M = -1.0$ (Edwards). *1011. $M = -1.3$ (Edwards).

Table II. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1151	5.8	3 40.0	24 15	1.1	—0.32(2)	B_8	. . .	. . .	. . .	0.3	. . .	
1152	6.4	40.1	24 13	. . .	—0.20(2)	B_9	. . .	. . .	. . .	—0.6	. . .	
1172	5.5	42.5	23 8	1.4	—0.31(2)	B_8	. . .	. . .	. . .	0.1	. . .	
1180	5.2	43.3	23 51	0.8	—0.26(2)	B_{8p}	. . .	. . .	. . .	—0.4	. . .	
1207	5.3	48.8	47 35	0.1	—0.15(2)	B_5	. . .	. . .	—0.8	. . .	. . .	
1388	5.4	4 19.5	21 58	2.8	0.12(2)	F_0	A_{4n}	2.1	. . .	*2.3*	. . .	
1478	5.2	33.4	15 36	1.7	0.06(4)	A_2	A_{5s}	1.8	. . .	1.3	. . .	
1511	5.4	39.7	56 35	3.0	0.22(2)	F_0	A_3	0.8	. . .	*2.4*	. . .	
1719	6.2	5 10.8	58 1	0.8	—0.09(2)	B_3	. . .	. . .	—1.0	. . .	. . .	
1749	5.1	14.7	41 42	0.2	—0.37(2)	B_3	B_{5n}	—0.4	—2.3	. . .	. . .	
2215	5.3	6 8.7	61 33	—4.8	2.06(5)	M_{ap}	M_a	. . .	—4.1	. . .	—4.1	*
2289	5.1	17.2	49 20	—2.9	2.14(5)	cK_2	K_5	—4.4	—2.6	. . .	—2.7	*
2394	6.0	28.6	61 34	5.1	0.90(5)	G_0	G_8	2.3	(2.0)	(2.2)	1.3	
2401	5.6	29.2	79 40	6.1	0.46(5)	F_8	F_7	4.2	*d*	4.0	. . .	
2511	5.1	42.9	69 0	—2.7	—0.11(2)	B_5	. . .	. . .	—0.8	. . .	. . .	
2516	5.0	43.7	41 54	2.0	1.28(5)	K_0	. . .	. . .	—0.2	0.6	. . .	
2609	5.3	53.7	87 12	0.1	1.67(7)	M_a	M_a	. . .	0.5	. . .	0.5	*
2783/4	5.2	7 14.7	55 28	0.0	—0.20(2)	B_8	. . .	. . .	. . .	—1.3c	. . .	*
3149	5.0	57.4	28 4	0.0	1.16(5)	K_0	K_3	(0.3)	0.5	1.0	1.7	
3565	5.6	8 52.0	15 58	1.3	0.06(3)	A_5	A_4	2.4	. . .	*1.2*	. . .	
3623	5.1	9 2.3	11 4	—1.1	—0.18(4)	B_8	. . .	. . .	. . .	—0.8	. . .	
3627	5.2	3.6	22 27	—3.9	0.94(5)	G_5	K_0	(0.8)	0.4	—0.6	1.8	
3652	5.3	7.3	43 38	0.7	—0.38(2)	B_8	A_{2s}	0.7	. . .	1.2	. . .	
3815	5.5	29.7	36 16	6.2	0.75(10)	K_0	K_0	5.6	((3.2))	4.0	(5.4)	
3928	5.2	51.6	41 32	2.1	0.33(5)	F_5	F_3	3.9	. . .	*2.5*	. . .	
3951	5.6	55.2	32 25	6.0	0.38(5)	G_5	G_7	5.1	(3.9)	4.8	(6.4)	
. . .	7.2	10 4.0	50 0	3.8	0.04(3)	F_2	. . .	. . .	. . .	*2.2*	. . .	
. . .	6.7	5.2	49 58	8.8	1.36(3)	K_5	K_8	8.1	. . .	8.2	8.6	
4030	6.0	11.0	24 0	4.0	0.43(5)	G_0	G_2	3.2	4.4	3.8	4.5	
4039	5.9	11.7	23 36	5.7	0.34(5)	F_5	F_7	3.8	. . .	*4.2*	. . .	
4067	5.8	16.2	41 44	3.7	0.37(5)	F_5	F_9	3.4	. . .	*3.1*	4.8	
4084	5.3	18.9	83 4	1.7	0.16(7)	F_2	F_0	2.3	. . .	*2.2*	. . .	
4098	6.5	21.9	49 19	7.6	0.41(3)	G_0	G_2	5.2	4.3	5.0	4.3	
4126	5.0	26.6	76 14	—1.1	0.91(5)	G_5	G_7	0.2	0.5	0.0	0.8	
4141	5.2	28.7	57 36	1.0	0.22(5)	F_2	A_{8s}	2.4	. . .	*2.2*	. .	
4168	5.9	33.4	38 26	4.0	0.59(5)	G_{5p}	F_9	2.6	(3.4)	4.0	1.4	
4192	5.0	38.0	23 43	2.2	—0.19(2)	A_2	. . .	. . .	. . .	1.3	. . .	
4203	5.4	40.3	31 13	0.2	—0.26(4)	B_9	A_{0n}	0.8	. . .	0.4	. . .	
. . .	7.6	57.9	36 38	12.2	1.45(3)	M_b	M_a	10.5	. . .	10.6	9.6	
4456	5.8	11 29.5	17 21	—2.0	—0.13(3)	B_3	B_{3n}	—0.8	—1.4c	. . .	. . .	*
4501	5.8	36.4	32 18	5.0	0.21(5)	F_5	F_2	3.4	. . .	*3.8*	. . .	

*2215. *Mt. W.'* M_3 —0.6. *2289. *Mt. W.'* M_0 —2.7. *2609. *Mt. W.'* M_2 0.0. 2783/4. Double, $d = 15''$, $\Delta m = 0.9$. *4456. $M = -1.8$ (Edwards). Double, $d = 3''$, $\Delta m = 1.1$.

Table II. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
4550	6.5	11 47.2	38 26	12.0	0.64(5)	G_5	G_8	6.3	((2.5))	6.7	(5.4)	
4594	5.1	57.0	43 36	4.5	0.08(3)	A_3	A_4	2.3	. . .	*2.6*	. . .	
. . .	9.7	12 16.9	42 42	9.8	1.23(2)	K_0	Ma	8.5	. . .	8.2	7.5	
. . .	9.8	17.1	42 47	8.5	0.32(1)	G_5	. . .	. . .	. . .	5.7	. . .	
4791/2	5.2\ 6.7/	30.1	18 56	—2.1	1.25(5)b	K0\ A3/	K_1	(0.3)	—0.1c	0.1c	—0.4c	*
4807	5.9	33.3	2 24	1.9	1.62(5)	Ma	Ma	. . .	0.9	. . .	0.9	*
4846	5.5	40.4	45 59	H=—5.2	>3.90	Nb	. . .	. . .	. . .	. . .	. . .	
4851	5.3	41.7	17 7	—3.9	1.44(7)	K_2	K_3	(0.4)	0.4	. . .	—0.6	
4943	5.1	13 1.1	36 20	—0.5	—0.16(4)	B_9	B9n	0.6	. . .	—0.9	. . .	
4949	5.9	1.5	23 9	1.4	1.60(5)	Mb	Mb	—2.2	—0.9	. . .	—0.9	*
. . .	6.7	1.5	22 48	. . .	0.10(3)	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
. . .	6.5	11.9	17 33	7.1	0.95(5)	K_0	K_3	6.4	[0.9]	6.2	8.0	
5040	5.9	17.1	5 41	2.4	0.06(3)	A_0	A5s	1.8	. . .	1.6	. . .	
5072	5.2	23.5	14 19	5.6	0.58(10)	G_0	G_3	3.8	4.2	4.5	5.0	
. . .	8.5	40.7	15 26	11.7	1.32(2)	K_2	Ma	10.2	. . .	10.1	8.4	
5321	5.0	14 9.2	78 1	—0.7	1.40(2)	K_0	K_3	0.2	—0.8	—0.2	—0.2	
5360	6.1	13.8	51 46	0.4	—0.11(2)	A_0	. . .	. . .	. . .	0.1	. . .	
. . .	8.6	17.7	30 6	9.4	1.26(2)	. . .	K_8	8.3	. . .	8.2	7.6	
5654	6.0	15 7.5	19 21	—4.0	1.48(5)	Mb	Mb	. . .	—1.0	. . .	—1.0	*
. . .	7.4	8.2	19 28	3.4	1.72(2)	K_2	. . .	. . .	(—1.5)	. . .	. . .	
5718	5.4	17.8	33 17	1.4	—0.24(2)	B_9	A0n	0.7	. . .	0.1	. . .	*
5727/8	5.1c	19.1	30 39	3.8c	0.38(2)	G_0	G_0	4.6	3.4c	3.5c	4.0c	
5843	5.2	37.1	13 10	0.9	0.06(3)	A0p	A2sn	1.4	. . .	1.6	. . .	
. . .	7.2	59.9	25 31	8.7	0.67(3)	G_0	K_0	5.7	(0.8)	5.8	(5.7)	
6130	5.6	16 22.5	61 56	0.6c	0.91(2)	G_5	G_9	—0.3	0.1c	0.1c	1.2c	*
6146	5.0	25.4	42 6	—1.0	1.24(2)	Mb	Mb	. . .	—1.2	. . .	—1.2	*
6319	6.4	55.9	65 11	2.2	0.18(2)	F_0	. . .	. . .	. . .	*1.6*c	. . .	*
7040	5.0	18 39.8	1 57	—0.4	—0.36(3)	B_5	. . .	. . .	—1.4	. . .	. . .	
7131	5.5	50.2	36 51	—0.7	—0.41(2)	B_3	. . .	. . .	—2.6	. . .	. . .	*
7162	5.2	53.3	32 46	4.0	0.37(5)	G_0	G_0	5.4	4.1	4.1	4.6	
7301	5.6	19 11.0	21 3	1.0	—0.22(2)	A_3	A0n	1.1	. . .	*1.0*	. . .	
7879	5.2	20 32.8	74 37	—1.5	—0.10(2)	A2p	. . .	. . .	. . .	—0.5	. . .	
7899	5.9	34.4	15 29	0.5	—0.27(3)	B_2	B4n	—0.7	—2.7	. . .	. . .	
8085/6	5.6\ 6.3/	21 2.4	38 15	11 0\ 11 7/	1.16(2)\ 1.52(2)/	K_5	K7 K8	8.2 8.5	. . .	8.4 10.5	7.0 10.1	*
8098	6.0	5.6	9 38	—0.5	—0.04(3)	A_2	. . .	. . .	. . .	0.0	. . .	
8154	5.1	14.8	43 31	—3.0	—0.16(4)	Oe5	O9n	—2.4	—3.5	. . .	. . .	
8266	5.1	32.9	39 58	—2.5	0.03(3)	A_5	. . .	. . .	. . .	*0.4*	. . .	
8356	5.0	48.5	25 27	—6.5	—0.37(2)	B_3	B3n	—0.8	—2.3	. . .	. . .	*
8371	6.0	51.5	56 8	—2.1	0.79(2)	Ap	B_8	—0.4	. . .	—2.2	. . .	
8383	5.4	53.8	63 9	H=—4.0	1.27(5)	Mdp	Mae	. . .	. . .	. . .	(—1.9)	*

*4791/2. Double, $d = 20''$, $\Delta m = 1.5$. *4807. *Mt. W.'* M_3 0.2. *4949. *Mt. W.'* M_5 —0.2. *5654. *Mt. W.'* M_4 —0.2. *5727/8. Double, $d = 1.''0$, $\Delta m = 0.5$. *6130. Double, $d = 0.''9$, $\Delta m = 1.0$. *6146. *Mt. W.'* M_6 0.0. *6319. Double, $d = 0.''8$, $\Delta m = 0.3$. *7131. $M = -1.7$ (Edwards). 8085/6. 61 Cygni. *8356. $M = -1.5$ (Edwards). 8383. *Mt. W.'* M_{2e} —2.0.

Table II. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
8406	5.5	21 58.7	57 31	—2.7	0.01(2)	B_0	B_{8n}	0.4	—2.3	. . .	. . .	
8428	5.2	22 2.1	61 48	—4.1	—0.17(2)	O_{e5}	O_{9n}	—2.8	—3.6	. . .	. . .	
8449	5.6	4.8	32 41	1.9	1.01(2)	K_0	. . .	. . .	0.8	1.2	. . .	
8469	5.2	8.1	58 56	—3.1	0.02(4)	O_d	. . .	. . .	—2.0	. . .	. . .	
8603	5.1c	31.4	39 7	—1.3	—0.45(2)	B_3+B_5	. . .	. . .	—3.5c	. . .	. . .	*
8606	6.2	31.8	49 33	—0.2	—0.16(2)	B_3	. . .	. . .	—1.2	. . .	. . .	
8615	5.2	33.3	73 7	3.3	0.30(2)	F_0	F_2	0.3	. . .	*2.4*	. . .	
8621	5.5	34.7	56 17	0.7	1.52(5)	Mb	Mb	—1.7	—1.0	. . .	—1.0	*
8627	5.2	35.1	63 4	—1.2	—0.08(2)	A_2	A_{1n}	1.3	. . .	—0.4	. . .	
8815	5.4	23 4.5	8 8	—5.2	1.28(7)	Mbp	Mb	. . .	—1.2	. . .	—1.2	*
8832	5.6	8.5	56 37	8.6	1.04(5)	K_2	K_5	6.9	. . .	6.9	7.2	
9003	5.1	41.1	45 52	—1.7	1.05(5)	cK_0+A_5	G_5	—3.8	—0.4c	—0.1c	—3.3c	*
9004	5.3	41.3	2 56	H=—0.7	2.90(7)	Na	. . .	. . .	. . .	. . .	. . .	
9013	5.0	43.1	67 15	—2.7	—0.15(2)	A_0	. . .	. . .	. . .	—1.5	. . .	
9052	6.0	50.5	56 53	—3.0	0.04(2)	Bop	Bon	—3.0	—2.3	. . .	. . .	
9059	5.7	52.1	55 9	—1.5	0.44(2)	F_5	F_4	2.8	. . .	*0.2*	. . .	
9088	5.8	56.9	26 33	7.8	0.59(5)	G_0	G_4	5.4	(3.9)	5.5	(4.0)	

*8603. Double, $d = 22''$, $\Delta m = 0.7$. *8621. *Mt. W.* M_4 —0.3. *8815. *Mt. W.* M_4 —0.9. *9003. Colour of the K_0 component assumed $C = 1.30\pm$.

Table III.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
188	2.2	0 38.6	—18 32	0.3	0.98(1)	K_0	G_6	0.3	0.8	0.7	—0.3	
402	3.7	1 19.0	—8 42	1.8	1.12(1)	K_0	K_0	1.4	0.6	1.3	0.3	
472	0.6	34.0	—57 45	—2.3	—0.41(1)	B_5	. . .	. . .	—1.4	. . .	. . .	
509	3.6	39.4	—16 28	6.4	0.65(1)	K_0	G_7	6.0	((4.0))	5.2	(3.9)	
681	(3.5)	2 14.3	—3 26	(1.6)	1.17	Md	. . .	. . .	. . .	. . .	. . .	*
779	4.0	34.4	—0 6	—3.9	—0.28(1)	B_2	. . .	. . .	—2.7	. . .	. . .	*
1666	2.9	5 2.9	—5 13	0.9	0.05(1)	A_2	A_{2n}	1.5	. . .	1.0	. . .	
1713	0.3	9.7	—8 19	—10.6	—0.34(3)	cB_8	. . .	. . .	. . .	*(—10.2)*	. . .	*
1788	3.4	19.4	—2 29	—4.8c	—0.37(3)	B_1	B_{1s}	—2.3	—4.0c	. . .	. . .	*
1852	2.5	26.9	—0 22	—6.7	—0.46(3)	B_0	B_{1n}	—2.4	—4.4c	. . .	. . .	*

*681. *o Ceti* = Mira. Variable. Measured by Bottlinger near maximum light. *779. $M = -3.4$ (Edwards). *1713. *β Orionis*. *1788. Spectroscopic binary, 2 spectra, assumed equal components. Visual double, $d = 0.''9$, $\Delta m = 1.4$, $M = -2.7$ (Edwards). *1852. *δ Orionis*. $M = -3.1$ (Edwards). Visual companion. *H. R.* 1851, $d = 53''$, magn. 6.9, relatively fixed, probably physical pair; spectrum B_5 (*Mt. W.*).

Table III. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1865	2.7	5 28.3	—17 54	—7.7	0.15(1)	cF_0	F_{4p}	—0.7	. . .	*—6.2*	. . .	*
1899	2.9	30.5	—5 59	[—7.1]	—0.45(1)	O_{e5}	O_8	. . .	—6.0	. . .	. . .	*
1903	1.8	31.1	—1 16	—9.0	—0.44(3)	B_0	B_{1n}	—2.4	—4.4	. . .	. . .	*
1948/9	1.9c	35.7	—2 0	—4.9	—0.45(3)	B_0	B_{0n}	—2.8	—4.5c	. . .	. . .	*
1956	2.8	36.0	—34 8	—1.1	—0.31(1)	B_{5p}	. . .	. . .	—1.4	. . .	. . .	
2004	2.2	43.0	—9 42	—7.3	—0.38(1)	B_0	B_{1n}	—2.4	—4.2	. . .	. . .	
2282	3.1	6 16.5	—30 0	—3.1	—0.35(1)	B_3	. . .	. . .	—2.1	. . .	. . .	
2294	2.0	18.3	—17 54	—5.1	—0.35(1)	B_1	B_{1s}	—2.3	—3.0	. . .	. . .	
2326	—0.9	21.7	—52 38	—7.3	0.21(1)	cF_0	. . .	(—3.0)	. . .	*—6.1*	. . .	
2491	—1.6	40.7	—16 35	1.5	0.05(1)	A_0	A_{2s}	0.9	. . .	1.6	. . .	
2618	1.6	54.7	—28 50	—5.8	—0.37(1)	B_1	. . .	. . .	—3.0	. . .	. . .	
2653	3.1	58.8	—23 41	—3.9	—0.23(1)	B_{5p}	. . .	. . .	—1.0	. . .	. . .	
2693	2.0	7 4.3	—26 14	—7.1	0.56(1)	cF_8	G_{2p}	—2.9	*g*	—6.5	(4.8)	
2827	2.4	20.1	—29 6	—4.5	—0.17(1)	B_{5p}	. . .	. . .	—0.9	. . .	. . .	
3165	2.4	8 0.1	—39 43	[—4.4]	—0.34(1)	O_d	. . .	. . .	—5.1	. . .	. . .	
3185	2.9	3.3	—24 1	—0.2	0.34(1)	F_5	F_{7p}	—2.1	. . .	*1.1*	. . .	
3207/6	2.2) 4.8)	6.5	—47 3	[—7.6b]	—0.44(1)	O_a+B_3	. . .	. . .	—5.9b	. . .	. . .	*
3307	1.7	20.5	—59 11	—4.2	1.65(1)	K_0+B	. . .	. . .	—3.1c	(—1.4)	. . .	*
3314	4.0	20.7	— 3 35	0.4	—0.16(1)	A_0	A_{0n}	0.9	. . .	—0.1	. . .	
3485	2.0	41.9	—54 21	—0.5	—0.14(1)	A_0	. . .	. . .	. . .	—0.1	. . .	
3685	1.8	9 12.1	—69 18	0.6	—0.21(1)	A_0	. . .	. . .	. . .	0.2	. . .	
3699	2.2	14.4	—58 51	—3.7	0.11(1)	F_0	. . .	. . .	. . .	*—3.5*	. . .	
3734	2.6	19.0	—54 35	—3.1	—0.34(1)	B_3	. . .	. . .	—2.0	. . .	. . .	
3748	2.2	22.7	— 8 14	—3.6	1.51(1)	K_2	K_5	—0.2	—0.4	. . .	0.4	
3787	4.5	26.9	—0 45	—1.4	0.10(1)	A_3	. . .	. . .	. . .	*0.5*	. . .	
3890/1	3.1	44.6	—64 36	—3.3	0.04(1)	F_0	. . .	. . .	. . .	*—3.3*	. . .	
4199	3.0	39.4	—63 52	—2.8	—0.47(1)	B_0	. . .	. . .	—4.4	. . .	. . .	
. . .	8.4	12 0.2	—0 57	8.3	0.58(5)	G_5	G_8	6.4	. . .	5.7	5.7	
4621	2.9	3.2	—50 10	—1.9	—0.34(1)	B_{3p}	. . .	. . .	—2.0	. . .	. . .	
4662	2.8	10.7	—16 59	0.7	—0.21(1)	B_8	. . .	. . .	. . .	—0.4	. . .	
4730/1	1.0c	21.0	—62 32	—3.5	—0.49(1)	B_1	. . .	. . .	—2.8c	. . .	. . .	*
4763/4	1.6	25.6	—56 33	0.2	2.37(1)	M_b	. . .	. . .	(—0.2)	. . .	. . .	*
4819	2.4	36.0	—48 25	0.9	—0.26(1)	A_0	. . .	. . .	. . .	0.5	. . .	
4825/6	2.9c	36.6	— 0 54	3.3c	0.22(5)c	F_0	F_0	2.6	. . .	*1.7*c	. . .	*
4853	1.5	41.9	—59 9	—2.8	—0.44(1)	B_1	. . .	. . .	—2.7	. . .	. . .	
5028	2.9	13 15.0	—36 11	2.4	—0.10(1)	A_2	. . .	. . .	. . .	1.0	. . .	
5056	1.2	19.9	—10 38	—3.3	—0.50(1)	B_2	B_{3n}	—0.9	—2.1	. . .	. . .	
5107	3.4	29.6	—0 5	2.7	—0.02(7)	A_2	. . .	. . .	. . .	1.3	. . .	
5132	2.6	33.5	—52 57	—2.6	—0.43(1)	B_1	. . .	. . .	—2.8	. . .	. . .	

*1865. *α Leporis.* *1899. Double, $d = 11''$, $\Delta m = 4.4$. The companion is of spectrum B_9 and shows no relative motion. *1903. ε Orionis. $M = -3.1$ (Edwards). *1948/9. ζ Orionis. $M = -3.2$ (Edwards). Visual double, $d = 2.''5$, magn. 2.0 : 4.2, spectra $B_0 : B_0$. *3207/6. Double, $d = 42''$. *3307. Spectrum composite. Colour of the K_0 star assumed $C = 2.06\pm$. *4730/1. Double, $d = 5''$, $\Delta m = 0.5$. *4763/4. *γ Crucis.* *4825/6. Double, $d = 2.''3$, $\Delta m = 0.0$.

Table III. Continued.

H. R.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
5231	3.1	13 49.3	—46 48	—0.6	—0.59(1)	B_{2p}	. . .	. . .	—1.5	. . .	. . .	
5267	0.9	56.8	—59 53	—4.3	—0.45(1)	B_1	. . .	. . .	—2.6	. . .	. . .	
5288	2.3	14 0.8	—35 53	3.0	1.09(1)	K_0	K_1	(1.0)	0.7	1.3	1.5	
5440	2.6	29.2	—41 43	—2.2	—0.46(1)	B_3	B_{3n}	—1.0	—3.2	. . .	. . .	
5459/60	0.1c	32.8	—60 25	4.3c	0.44(1)	G_0+K_5	G_6+K_4	4.8b	4.3c	3.7c	(5.3c)	*
5469	2.9	35.3	—46 58	—2.6	—0.66(1)	B_2	. . .	. . .	—0.9	. . .	. . .	
5531	2.9	45.3	—15 38	0.4	—0.04(1)	A_2	F_{1n}	2.9	. . .	0.4	. . .	
5571	2.8	52.0	—42 44	—1.2	—0.37(1)	B_{2p}	. . .	. . .	—2.6	. . .	. . .	
. . .	6.7c	15 8.8	—0 58	8.9	0.69(5)	K_0	K_0	5.8	((3.0c))	5.3c	(5.0c)	
5685	2.7	11.6	—9 1	—0.1	—0.26(1)	B_8	. . .	. . .	. . .	—0.6	. . .	
5881	3.6	44.4	—3 7	0.6	—0.15(2)	A_0	A_{0n}	0.4	. . .	0.1	. . .	
5897	3.0	46.3	—63 7	2.8	0.10(1)	F_0	. . .	. . .	. . .	*2.4*	. . .	
5944	3.0	52.8	—25 50	—2.1	—0.33(1)	B_{2p}	. . .	. . .	—2.7	. . .	. . .	
5953	2.5	54.4	—22 20	—2.5	—0.34(1)	B_{1p}	. . .	. . .	—2.9	. . .	. . .	
5984/5	2.8c	59.6	—19 32	—2.6c	—0.31(1)	B_1	$B_{0n}+B_{3n}$	—2.8b	—2.5	. . .	. . .	*
6056	3.0	16 9.1	—3 26	0.6	1.73(6)	Ma	K_9	0.0	—0.1	. . .	0.0	*
6084	3.1	15.1	—25 21	—2.3	—0.12(1)	B_1	. . .	. . .	—2.1	. . .	. . .	
6134	1.2	23.3	—26 13	—3.7	2.06(1)	$Ma+A_3$	Ma	—3.4	—4.6	. . .	. . .	*
6165	2.9	29.7	—28 1	—2.0	—0.35(1)	B_0	. . .	. . .	—4.0	. . .	. . .	
6171	5.9	31.1	—2 7	6.0	0.54(5)	K_0	K_0	5.5	((4.0))	5.5	(6.4)	
6175	2.7	31.7	—10 22	—3.4	—0.20(1)	B_0	. . .	. . .	—2.7	. . .	. . .	
6217	1.9	38.1	—68 51	—4.3	2.01(1)	K_2	. . .	. . .	—2.2	. . .	. . .	
6241	2.4	43.7	—34 7	2.8	1.33(1)	K_0	. .	. . .	—0.4	0.4	. . .	
6378	2.6	17 4.6	—15 36	—0.4	—0.10(1)	A_0	A_{2s}	0.9	. . .	—0.1	. . .	
6508	2.8	24.0	—37 13	—2.2	—0.34(1)	B_3	. . .	. . .	—2.0	. . .	. . .	
6527	1.7	26.8	—37 2	—3.6	—0.34(1)	B_2	. . .	. . .	—2.7	. . .	. . .	
6553	2.1	30.1	—42 56	—5.8	0.27(1)	F_0	. . .	. . .	. . .	*—5.1*	. . .	
6580	2.5	35.6	—38 59	—3.4	—0.32(1)	B_2	. . .	. . .	—2.7	. . .	. . .	
6869	3.4	18 16.1	—2 55	4.7	0.92(5)	K_0	G_8	2.2	1.1	3.3	1.1	
6879	2.0	17.5	—34 26	—0.3	—0.18(1)	A_0	. . .	. . .	. . .	—0.1	. . .	
7121	2.1	49.1	—26 25	—1.7	—0.28(1)	B_3	. . .	. . .	—1.6	. . .	. . .	
7194	2.7	56.3	—30 1	—3.7	—0.01(1)	A_2	. . .	. . .	. . .	—0.3	. . .	
7710	3.4	20 6.1	—1 7	—1.9	—0.26(1)	A_0	B_{9s}	—0.2	. . .	0.5	. . .	
7790	2.1	17.7	—57 3	—1.4	—0.40(1)	B_3	. . .	. . .	—2.5	. . .	. . .	
8232	3.1	21 26.3	—6 1	—4.2	0.68(1)	G_0	F_9	—2.4	0.6	—1.9	—0.9	
8402	4.7	58.1	—2 38	—2.2	—0.22(1)	B_{5p}	. . .	. . .	—1.0	. . .	. . .	
8414	3.2	22 0.6	—0 48	—4.5	0.88(6)	cG_0	G_0	—2.3	(—1.9)	((—2.4))	—2.5	
8425	2.2	1.9	—47 27	0.5	—0.49(1)	B_5	. . .	. . .	—0.9	. . .	. . .	
8518	4.0	16.5	—1 53	1.4	—0.25(3)	A_0	. . .	. . .	. . .	0.4	. . .	
8558/9	3.8	23.7	—0 32	1.8	0.33(1)	F_2	F_2	1.6	. . .	*1.6c*	. . .	*
8597	4.1	30.2	—0 38	1.2	—0.31(3)	B_8	. . .	. . .	. . .	0.1	. . .	
8728	1.3	52.1	—30 9	0.8	—0.10(1)	A_3	. . .	. . .	. . .	*0.9*	. . .	

*5459/60. α Centauri. *5984/5. Double, $d = 14''$, $\Delta m = 2.2$. *6056. *Mt. W.* M_0 0.0 *6134. α *Scorpii*. *Mt. W.* M_1 —3.5. Colour of the *Ma* star assumed $C = 2.11$. *8558/9. Double, $d = 3.''6$, $\Delta m = 0.2$.

Table IV [1]).

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1	5.7	0 0.6	12 50	—0.4	0.85	K_0	G_7	0.5	1.5	0.7	0.4	
2	7.7	1.0	9 10	. . .	0.16	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
3	7.3	3.7	7 28	. . .	0.06	F_0	. . .	. . .	. . .	. . .	. . .	
4	5.7	3.9	17 41	2.7	1.10	G_5	. . .	. . .	—0.3	0.5	. . .	
5	7.2	3.9	19 22	1.2	0.23	F_5	. . .	. . .	. . .	*2.2*	. . .	
6	7.2	4.2	16 59	4.3	0.37	G_0	. . .	. . .	4.1	4.1	. . .	
7	5.5	4.9	10 36	0.0	—0.08	B_8	B_{9n}	0.5	. . .	0.0	. . .	
8	7.9	6.1	7 24	1.7	(0.80)	K_2	. . .	. . .	(3.2)	. . .	. . .	
9	6.6	8.0	16 22	. . .	0.98	G_5	. . .	. . .	0.1	(0.5)	. . .	
11	6.9	8.7	0 50	2.3	1.03	K_0	. . .	. . .	0.8	1.3	. . .	
12	4.9	9.4	19 40	0.8	1.67	Ma		See	table	I.		
13	6.9	9.5	0 45	0.1	0.27	F_5	. . .	. . .	. . .	*1.3*	. . .	
14	5.9c	9.8	8 16	2.0	0.25c	F_0	. . .	. . .	. . .	*2.0c*	. . .	*
15	7.0	10.8	3 42	0.3	—0.10	A_0	. . .	. . .	. . .	0.1	. . .	
16	6.2	11.4	7 41	0.3	0.82	G_5	. . .	. . .	0.8	0.5	. . .	
17	7.3	11.5	1 18	—0.1	(1.25)	Ma	. . .	. . .	(—1.4)	. . .	. . .	
18	7.5	11.6	13 22	0.5	—0.09	A_3	. . .	. . .	. . .	*0.8*	. . .	
19	6.8	11.7	9 42	. . .	1.77	Ma	. . .	. . .	—0.6	. . .	. . .	
20	7.7	11.9	9 49	. . .	1.06	K_2	. . .	. . .	(2.4)	. . .	. . .	
21	6.6	12.2	8 19	3.4	0.51c	F_5	F_8	4.1	. . .	*2.7c*	. . .	*
22	7.4	12.6	15 47	5.7	0.21	F_5	. . .	. . .	. . .	*4.2*	. . .	
23	6.4	12.6	1 8	2.0	0.72	G_5	G_8	1.7	((1.4))	1.8	(3.5)	
24	7.3	12.7	19 41	. . .	1.57	Mb	. . .	. . .	(—0.9)	. . .	. . .	
25	7.4	12.8	7 19	. . .	0.13	A_5	. . .	. . .	. . .	*1.2*	. . .	
26	6.6	12.8	12 13	—0.1	0.85	G_5	. . .	. . .	0.7	0.5	. . .	
27	7.1	13.0	3 14	1.9	0.08	F_0	. . .	. . .	. . .	*2.2*	. . .	
28	6.2	13.2	10 39	1.2	0.97	K_0	. . .	. . .	0.9	0.8	. . .	
29	6.8	14.8	15 42	—0.7	0.81	K_0	G_9	1.8	((2.3))	0.7	(2.4)	
30	7.2	15.4	10 22	1.4	0.78	K_0	. . .	. . .	((2.8))	1.0	. . .	
31	5.6	15.4	7 38	—2.2	1.35	K_0	K_3	(0.7)	—0.6	—0.2	0.2	
32	7.7	15.7	17 56	. . .	0.80	G_5	. . .	. . .	(0.9)	. . .	. . .	
33	6.6c	15.8	10 26	. . .	—0.08	A_0	. . .	. . .	. . .	—0.3c	. . .	*
34	7.4	15.8	12 13	(1.1)	—0.11	A_3	. . .	. . .	. . .	*1.0*	. . .	
35	6.4	17.2	12 57	1.7	1.15	K_0	K_2	(0.9)	0.4	1.1	0.8	*
36	6.8	19.5	13 46	—0.6	0.94	K_0	. . .	. . .	1.0	0.5	. . .	
37	6.0	20.3	1 23	—0.7	0.66	G_5	G_4	—0.5	((2.2))	0.2	(2.3)	
38	7.2	20.5	7 8	2.7	1.06	K_0	. . .	. . .	0.7	1.3	. . .	
39	6.6	20.8	19 37	0.6	—0.11	B_8	. . .	. . .	. . .	0.0	. . .	
40	6.9	21.1	3 16	—0.3	—0.27	B_8	. . .	. . .	. . .	—0.7	. . .	
41	6.6	22.3	15 29	2.9	0.05	A_5	. . .	. . .	. . .	*1.8*	. . .	

*14. Double, $d = 12''$, $\Delta m = 1.7$. *21. Double, $d = 5''$, $\Delta m = 1.0$. *33. Double, $d = 0.''3$, $\Delta m = 0.9$. *35. Optical companion, $d = 31''$, $\Delta m = 4.4$. Colour of A assumed $C = 1.20$.

1) Colour-equivalents of low weight are given in parentheses, [ ] corresponding to the lowest weight.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
42	6.6	0 22.8	18 58	—0.9	0.74	K_0	K_2	0.8	((3.4))	0.3	3.1	*
43	5.3	22.8	17 20	1.9	1.77	Mb	Ma	. . .	—0.7	. . .	—1.0	
44	7.6	23.0	20 15	. . .	(1.30)	K_0	. . .	. . .	(—0.3)	. . .	. . .	
45	6.5	23.0	15 53	—0.9	1.43	K_2	K_5	(0.5)	0.4	. . .	1.1	
46	6.0	23.2	9 39	4.2	0.27	F_2	. . .	. . .	. . .	*2.2*	. . .	
47	6.6	25.0	4 18	0.8	0.21	F_5	. . .	. . .	. . .	*1.9*	. . .	
48	6.9	25.6	15 28	1.7	—0.16	A_0	. . .	. . .	. . .	0.5	. . .	
49	7.3	26.3	11 0	2.7	—0.01	A_5	. . .	. . .	. . .	*1.7*	. . .	
50	7.1	26.4	15 28	1.9	1.09	K_0	. . .	. . .	0.7	1.3	. . .	
51	7.3	26.4	8 36	1.3	1.08	K_2	. . .	. . .	(2.4)	. . .	. . .	
52	7.4	26.5	12 22	4.9	0.63	K_0	. . .	. . .	((4.0))	4.3	. . .	
53	7.3	26.7	19 5	—1.0	1.42	K_5	. . .	. . .	(0.6)	. . .	. . .	
54	5.7	27.2	6 24	—0.2	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
55	7.0	27.3	18 14	2.8	1.39	K_5	. . .	. . .	0.7	. . .	. . .	
56	5.5	27.3	19 45	2.5	0.97	G_5	. . .	. . .	0.2	0.5	. . .	
57	6.9	27.7	15 38	0.8	0.22	F_5	. . .	. . .	. . .	*1.9*	. . .	
58	7.7	28.1	13 18	(4.3)	0.19	F_5	. . .	. . .	. . .	*3.4*	. . .	
59	7.6	28.4	19 54	(—2.7)	0.15	A_3	. . .	. . .	. . .	*0.3*	. . .	
60	8.0	29.0	13 58	. . .	0.03	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
61	6.8	29.0	9 45	4.3	0.69	G_5	. . .	. . .	((1.8))	4.0	. . .	
62	6.5	29.7	12 50	3.2	0.97	K_0	. . .	. . .	0.9	(2.0)	. . .	
63	6.4	30.8	12 40	4.7	0.32	F_5	. . .	. . .	. . .	*3.6*	. . .	
64	5.9	31.6	14 42	—0.1	—0.24	B_3	B_{3s}	—1.5	—1.5	. . .	. . .	
65	7.2	32.1	10 52	0.0	—0.02	A_2	. . .	. . .	. . .	0.2	. . .	
66	6.6	32.4	2 35	3.3	1.25	K_0	K_3	(1.1)	0.1	0.8	1.1	
67	7.8	32.9	2 12	—1.4	[0.93]	K_0	. . .	. . .	(1.0)	0.4	. . .	
68	7.4	34.0	2 34	8.4	0.29	G_0	G_4	5.5	(3.7)	5.1	(6.1)	
69	7.5	34.5	10 59	4.6	0.17	F_8	. . .	. . .	*d*	4.0	. . .	
70	6.5	36.0	8 48	4.2	0.32	F_5	. . .	. . .	. . .	*3.3*	. . .	
71	7.6	37.2	3 37	3.1	0.19	F_8	F_7	. . .	*d*	3.8c	. . .	*
72	6.6	37.6	16 7	3.6	1.00	K_0	. . .	. . .	0.8	(2.2)	. . .	
73	7.7	41.3	12 36	. . .	[1.07]	K_0	. . .	. . .	(0.7)	. . .	. . .	
74	5.6	41.4	14 56	0.9	1.58	Ma	Mb	—1.0	0.8	. . .	—0.9	*
75	5.7	41.8	11 26	0.8	0.88	G_5	. . .	. . .	0.6	0.5	. . .	
76	6.1	42.0	19 3	2.7	0.11	A_5	. . .	. . .	. . .	*1.7*	. . .	
77	6.2	42.2	6 12	—1.3	0.74	G_5	G_8	1.4	((1.2))	0.2	(2.8)	
78	7.5	42.3	18 21	—0.5	—0.01	A_2	. . .	. . .	. . .	0.0	. . .	
79	6.1	43.1	6 46	2.5	0.99	K_0	G_9	. . .	0.8	1.2	1.0	
80	5.8	43.2	4 46	7.8	0.77	G_5	K_3	6.8	((1.0))	6.1	6.3	
81	7.6	43.5	18 8	. . .	0.26	G_0	. . .	. . .	(2.7c)	(2.3c)	. . .	*
82	4.6	43.5	7 3	0.7	1.48	K_5		See	table	I.		

*43. *Mt. W.'* —0.6. *71. Double, $d = 2''$, $\Delta m = 2.1$. *74. *Mt. W.'* 0.1. *81. Double, $d = 0.''6$, $\Delta m = 0.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
83	7.6	0 43.5	17 46	2.2	—0.14	B_9	. . .	. . .	. . .	0.0	. . .	
84	5.2	43 8	16 24	3.2	0.30	F_5	F_4	3.5	. . .	*2.9*	. . .	
85	7.1	43 8	14 16	—1.8	1.29	K_5	. . .	. . .	(1.1)	. . .	. . .	
86	7.7	45.9	2 12	4.2	0.35	G_0	. . .	. . .	4.0	4.0	. . .	
87	6.5	46.2	2 50	2.5	0.89	G_5	G_5	0.9	0.5	0.5	0.9	
88	6.8	46.4	12 15	3.0	0.07	F_0	. . .	. . .	. . .	*2.4*	. . .	
89	7.4	47.2	13 6	1.6	— 0.21	A_0	. . .	. . .	. . .	0.2	. . .	
90	7.3	48.0	19 14	4.6	0.15	F_5	. . .	. . .	. . .	*3.6*	. . .	
91	7.0	48.2	3 33	2.6	0.21	F_0	. . .	. . .	. . .	*2.3*	. . .	
92	5.8	49.3	18 39	—0.3	—0.12	A_0	. . .	. . .	. . .	—0.1	. . .	*
93	6.8	50.9	13 25	—3.9	0.71	G_5	. . .	. . .	((1.5))	0.1	. . .	
94	7.3	52.6	1 14	—0.5	0.91	G_5	. . .	. . .	0.5	0.5	. . .	
95	6.4	52.7	13 11	—0.6	0.73	G_5	G_5	0.1	((1.3))	0.2	(1.7)	
96	6.9	53.1	6 18	0.4	0.85	K_0	. . .	. . .	1.5	0.8	. . .	
97	6.3	54.6	5 57	—0.6	1.62	Ma	Ma	. . .	0.9	. . .	0.9	*
98	7.4	55.0	17 40	(3.2)	0.92	G_5	. . .	. . .	0.4	0.5	. . .	*
100	7.3	55.2	18 9	3.6	0.95	G_5	. . .	. . .	0.3	0.5	. . .	
101	6.8	57.3	8 17	2.4	0.14	F_0	. . .	. . .	. . .	*2.3*	. . .	
102	6.7	57.5	8 35	2.3	0.32	F_5	. . .	. . .	. . .	*2.6*	. . .	
103	4.4	57.8	7 21	0.4	0.79	K_0	S e e t a b l e I					
104	7.7	58.5	4 41	3.4	0.04	A_5	. . .	. . .	. . .	*2.0*	. . .	
105	6.9	58.6	6 14	(—0.3)	—0.04	A_0	. . .	. . .	. . .	0.3c	. . .	
106	6.1	58.7	0 49	3.1	0.15	F_0	. . .	. . .	. . .	*2.4*	. . .	
107	7.7	59.5	18 22	3.4	[0.67]	G_5	. . .	. . .	((2.1))	3.1	. . .	
108	7.3	59.6	1 47	2.3	(1.12)	K_0	. . .	. . .	0.6	1.3	. . .	
109	6.2	59.7	5 7	—3.0	1.57	K_2	K_4	(0.8)	—0.9	. . .	—1.0	
110	5.6	59.8	14 24	0.4	0.28	F_2	F_3	1.3	. . .	*2.2*	. . .	
111	7.5	59.9	18 40	1.4	[1.17]	Mb	. . .	. . .	(—1.2)	. . .	. . .	
112	6.8	1 0.7	4 23	4.1	0.10c	F_2	F_2	3.5	. . .	*1.8c*	. . .	*
113	7.6	0.7	4 23	4.9		F_2	. . .	. . .	. . .	. . .	. . .	*
114	6.2	1.3	12 24	0.5	0.93	G_5	G_7	1.8	0.4	0.5	0.6	
115	7.3	1.3	13 21	3.0	0.19	F_2	. . .	. . .	. . .	*2.2*	. . .	
116	6.9	1.4	7 49	3.2	0.15	F_0	. . .	. . .	. . .	*2.4*	. . .	
117	7.7	1.5	8 20	3.0	0.01	A_3	. . .	. . .	. . .	*1.7*	. . .	
118	7.2	1.8	19 37	0.9	0.67	G_5	. . .	. . .	((2.1))	0.4	. . .	
119	5.6	2.6	20 12	3.2	0.02	A_2	. . .	. . .	. . .	1.4	. . .	
120	6.7	2.9	1 29	6.2	0.60	G_5	. . .	. . .	(3.2)	4.8	. . .	
121	6.9	3.1	9 23	—0.6	[1.41]	Ma	. . .	. . .	—1.2	. . .	. . .	
122	5.7	3.2	5 7	4.8	0.14	F_0	F_1	2.5	. . .	*2.5*	. . .	
123	7.2	3.7	9 13	1.8	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
124	5.6	4.5	19 7	—5.1	0.62	G_5	F_2	0.4	((2.9))	0.2	. . .	

*92. Double, $d = 0.''6$, $\Delta m = 0.6$. *97. *Mt. W.'* —0.9. *98. Misprint by 1 magn. in magn. and colour in *G. A.*, *B.* *112/13. Common proper motion pair, $d = 33''$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
125	6.4	1 4.9	15 8	0.5	1.51	K_5	K_5	—0.5	0.4	. . .	0.4	
126	6.2	5.5	1 54	—4.5	1.48	K_0	K_4	(0.7)	—1.3	—0.6	—0.2	
127	7.2	5.6	9 1	5.8	0.42	G_0	. . .	. . .	4.3	4.5	. . .	
128	6.6	6.2	9 47	(0.3)	0.67	G_5	. . .	. . .	((2.1))	0.2	. . .	
129	7.1	7.1	11 46	4.1	0.26	F_5	. . .	. . .	. . .	*3.3*	. . .	
130	6.8	7.4	1 56	4.9	0.11	F_8	. . .	. . .	*d*	4.0	. . .	
131	5.6	8.5	7 4	3.1	0.07c	A_5	. . .	. . .	. . .	*1.5*c	. . .	*
132	6.5	8.5	7 3	4.0	0.07c	F_8	F_6	4.0	. . .	. . .	. . .	*
133	5.8	8.8	15 37	1.6	—0.18	B_8	A0sp	0.4	. . .	—0.1	. . .	
134	6.2	9.5	6 28	—0.3	0.99	K_0	K_0	. . .	0:8	0.5	1.4	
135	7.0	10.1	19 53	. . .	—0.14	A_2	. . .	. . .	. . .	0.1	. . .	
136	6.7	10.5	0 23	0.6	—0.11	A_2	. . .	. . .	. . .	0.3	. . .	
137	7.5	10.5	19 59	3.9	(0.78)	G_5	. . .	. . .	((1.0))	(2.0)	. . .	*
138	7.1	10.6	9 15	3.6	0.26	F_2	. . .	. . .	. . .	*2.2*	. . .	
139	7.4	12.2	13 43	0.2	(0.97)	G_5	. . .	. . .	0.2	0.5	. . .	
140	5.3	12.6	3 6	0.9	—0.18	A_2	A_{2n}	1.5	. . .	0.5	. . .	*
142	7.5	15.4	15 11	1.8	0.60	G_5	. . .	. . .	(3.2)	0.7	. . .	*
143	6.9	16.0	11 1	1.2	0.20	F_0	. . .	. . .	. . .	*1.6*c	. . .	*
144	7.0	16.7	12 5	(0.3)	0.80	K_0	. . .	. . .	((2.5))	0.8	. . .	*
145	7.5	17.5	9 51	4.8	0.47	G_5	. . .	. . .	(4.1)	4.3	. . .	
146	6.5	17.5	1 13	2.0	1.42	K_2	Ma	. . .	0.5	. . .	—1.5	*
147	7.0	17.6	4 13	1.6	0.88	G_5	. . .	. . .	0.6	0.5	. . .	
148	6.9	17.6	10 51	1.7	0.96	K_0	. . .	. . .	0.9	0.9	. . .	
149	6.3	18.0	19 57	—0.4	1.75	K_5	. . .	. . .	—0.4	. . .	. . .	
150	7.8	18.1	10 20	4.6	—0.04	F_0	. . .	. . .	. . .	*2.5*	. . .	
151	6.8	18.5	17 17	2.7	0.14	F_0	. . .	. . .	. . .	*2.3*	. . .	
152	7.0	20.5	2 26	0.7	0.28	F_0	. . .	. . .	. . .	*2.0*	. . .	
153	7.2	20.7	9 53	—0.9	—0.17	A_0	. . .	. . .	. . .	—0.2	. . .	
154	5.3	20.9	18 39	0.0	0.33	F_0	A_9	2.8	. . .	*1.9*	. . .	
155	6.6	21.0	19 33	1.8	0.84	K_0	. . .	. . .	1.7	1.1	. . .	
156	5.6	21.3	18 43	1.3	1.14	K_0	. . .	. . .	0.6	1.3	. . .	
157	6.4	21.7	3 1	—1.0	—0.08c	B_8	. . .	. . .	. . .	—0.1c	. . .	*
158	6.8	23.0	16 34	3.5	0.22	F_5	. . .	. . .	. . .	*3.0*	. . .	
159	6.4	23.1	7 26	2.4	0.70	K_0	. . .	. . .	((3.6))	1.8	. . .	
160	6.7	23.8	6 46	2.2	0.14	F_0	. . .	. . .	. . .	*2.2*	. . .	
161	6.0	24.5	17 51	0.4	0.04	A_2	. . .	. . .	. . .	0.7	. . .	
162	5.1	24.9	5 38	3.7	1.29	K_2		See	table	II		
163	3.7	26.1	14 49	—2.5	0.80	G_5		See	table	I		
164	7.6	26.4	10 24	2.7	0.49	G_5	. . .	. . .	(4.1)	2.4	. . .	
165	6.8	26.6	16 28	5.0	0.80	G_5	. . .	. . .	0.9	3.4	. . .	
166	6.6	28.1	7 42	0.6	0.98	K_0	. . .	. . .	0.8	0.7	. . .	

*131/132. Common proper motion pair, $d = 23''$. *137. Misprint in declination in *H. A.* **54.** *140—144: the colours of these stars are utterly misprinted in *G. A.*, **B.** *143: double, $d = 0.''4$, $\Delta m = 0.5$. *146. *Mt. W.*' 0.0. *157. Double, $d = 6''$, $\Delta m = 2.3$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
167	6.0	1 29.4	17 57	2.0	1.65	Ma	Ma	. . .	0.7	. . .	0.7	*
168 9	7.0c	29.6	12 3	—1.2c	0.01c	A_3	. . .	. . .	. . .	*0.5*	. . .	*
170	7.2	29.6	7 46	0.0	0.93	K_0	. . .	. . .	1.0	0.6	. . .	
171	6.2	30.4	14 9	—1.7	—0.22	B_9	A0n	0.6	. . .	—0.2	. . .	
172	5.9	30.5	16 56	3.6	0.10	A_5	. . .	. . .	. . .	*2.2*	. . .	
173	6.9	30.8	7 8	1.4c	0.18	F_8	. . .	. . .	*d*	3.2c	. . .	*
174	7.1	31.5	6 12	2.0	1.06	K_0	. . .	. . .	0.7	1.3	. . .	
175	6.7	31.5	7 18	—1.5	1.65	Ma	. . .	. . .	0.7	. . .	. . .	
176	5.6	31.8	11 39	1.8	0.15	F_0	. . .	. . .	. . .	*2.2*	. . .	
177	6.9	32.4	11 35	3.7	0.44	G_0	. . .	. . .	4.5	3.5	. . .	
178	6.9	33.9	16 8	0.7c	0.68	G_5	. . .	. . .	0.9c	1.1c	. . .	*
179	6.9	33.9	13 48	3.2	1.00	K_0	. . .	. . .	0.8	1.9	. . .	
180	6.1	34.3	15 56	1.7	1.03	K_0	K_1	0.6	0.8	1.3	1.7	
181	6.7	35.3	8 15	2.4	0.11	F_2	. . .	. . .	. . .	*2.2*	. . .	
182	4.7	36.2	4 59	—2.4	1.35	K_0		See	table	I		
183	5.3	37.1	19 48	6.0	0.79	G_5	K_1	5.9	[0.9]	4.7	(5.6)	
184	7.0	39.4	2 42	0.6	(1.55)	K_0	. . .	. . .	—1.8	—0.9	. . .	
185	6.2	39.5	19 35	3.0	0.66	G_5	G_3	. . .	((2.2))	(2.7)	(3.6)	
186	4.5	40.1	8 39	0.5	0.83	K_0		See	table	I		
187	6.6	40.4	8 3	. . .	—0.16	A0p	. . .	. . .	. . .	0.0	. . .	
188	6.8	40.6	3 11	1.3	0.11	A_3	. . .	. . .	. . .	*1.1*	. . .	
189	6.9	40.8	2 54	0.9	0.23	A_5	. . .	. . .	. . .	*1.1*	. . .	
190	6.5	41.2	16 55	1.7	0.20	F_0	. . .	. . .	. . .	*2.1*	. . .	
191	7.0	41.8	10 21	0.2	—0.15	B_9	. . .	. . .	. . .	—0.8	. . .	
192	5.7	42.8	16 28	1.3	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
193	6.0	43.3	3 10	—1.2	1.01	G_5	. . .	. . .	0.0	—0.3	. . .	
194	7.3	43.4	7 11	1.3	1.08	K_0	. . .	. . .	0.7	1.3	. . .	
195	7.6	43.5	15 54	1.6	0.18	F_0	. . .	. . .	. . .	*2.1*	. . .	
196	5.9	45.6	10 34	1.9	0.23	F_0	F_3	2.7	. . .	*2.2*	. . .	
197	6.8	45.7	20 2	. . .	0.19	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
198	6.7	46.4	17 47	3.6	1.12	G_5	. . .	. . .	—0.4	0.5	. . .	
200	7.1	48.2	12 12	2.2	0.27	F_5	. . .	. . .	. . .	*2.6*	. . .	
201	4.8	48.4	2 42	—1.3	0.79	K_0		See	table	I		
202	7.0	48.7	10 8	6.3	0.12	F_5	. . .	. . .	. . .	*4.5*	. . .	
203	7.0	49.1	8 17	—0.4	1.49	Ma	. . .	. . .	0.2	. . .	. . .	
204	7.7	50.3	12 5	2.5	(0.84)	G_5	. . .	. . .	(0.7)	0.5	. . .	
205	6.2	50.7	1 21	4.7c	0.37	G_0	G_0	3.3c	3.3c	3.7c	3.8c	*
206	5.2	51.9	17 20	—0.5	0.92	G_5	. . .	. . .	0.4	0.4	. . .	
207	6.1	54.1	11 49	0.8	0.02	A_2	. . .	. . .	. . .	0.6	. . .	
208	7.1	54.8	5 34	2.0	0.79	G_5	. . .	. . .	0.9	0.5	. . .	
209	5.8	54.9	2 37	4.9	0.54	G_0	G_0	4.0	4.6	4.3	3.9	

* 167. *Mt. W'.* 0.3. *168/9. Double, $d = 16''$, $\Delta m = 1.1$. *173. Double, $d = 1''.5$, $\Delta m = 0.0$. *178. Double, $d = 2''$, $\Delta m = 2.0$. Colour of A assumed $C = 0.76$. *205. Double, $d = 1''$, $\Delta m = 0.2$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
210	7.1	1 55.2	3 56	0.4	0.88	G_5	. . .	. . .	0.6	0.5	. . .	
211	6.8	56.4	14 35	0.6	1.05	K_0	. . .	. . .	0.8	1.2	. . .	
212	7.2	56.6	7 23	3.9	0.24	F_2	. . .	. . .	. . .	*2.2*	. . .	
214	7.1	57.0	12 13	. . .	0.85	K_0	. . .	. . .	1.5	(0.8)	. . .	
215	6.3	57.2	13 0	—3.5	1.54	Mb	. . .	. . .	—1.0	. . .	. . .	
216	6.8	57.6	10 33	—1.2	1.19	K_0	. . .	. . .	0.4	0.6	. . .	
217	6.4	58.2	17 46	—0.4	1 51	K_5	K_4	(0.9)	0.4	. . .	—0.5	
218	7.4	58.7	7 37	3.2	0.19	F_5	. . .	. . .	. . .	*2.9*	. . .	
219	6.6	59.6	7 15	0.9	0.97	K_0	. . .	. . .	0.9	0.7	. . .	
220	7.2	59.7	9 38	. . .	0.80	K_0	. . .	. . .	((2.5))	(0.8)	. . .	
221	7.2	2 0.1	9 35	. . .	1.36	K_5	. . .	. . .	(0.9)	. . .	. . .	
222	6.9	0.6	6 34	(>2.7)	0.17	F_0	. . .	. . .	. . .	*2.3*	. . .	
223	6.7	1.0	7 46	(1.0)	1.69	Mb	. . .	. . .	—0.8	. . .	. . .	
224	7.2	1.1	13 0	. . .	1.05	K_0	. . .	. . .	0.8	(1.3)	. . .	
225	6.5	2.3	17 33	—1.0	0.09	A_3	. . .	. . .	. . .	*0.5*	. . .	
226	7.5	2.6	5 31	—0.8	1.42	K_5	. . .	. . .	(0.6)	. . .	. . .	
227	7.5	2.6	15 20	1.9	[1.62]	K_0	. . .	. . .	-2.2	(—1.2)	. . .	
228	6.4	3.9	16 46	4.8	0.34	F_5	. . .	. . .	. . .	*3.7*	. . .	
229	8.0	4.2	19 52	—0 3	0.16	A_3	. . .	. . .	. . .	*0.6*	. . .	
230	7.6	4.4	12 42	(2.1)	0.09	B_9	. . .	. . .	. . .	0.7	. . .	
231	7.5	4 4	3 46	2.5	0.85	G_5	. . .	. . .	0.7	0.5	. . .	
232	6.9	4.7	3 17	0.3	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
233	5.9	5.1	19 2	2.0	1.77	Ma	Ma	. . .	—0.6	. . .	—0.6	*
234	5.7	6 1	8 6	3.3	0.40	G_0	G_0	2.7	4.2	3.4	4.8	
235	6.7	6.6	3 0	—0.3	—0.08	A_5	. . .	. . .	. . .	*0.7*	. . .	
236	6.7	7.1	2 18	—2.8	0.89	G_5	. . .	. . .	0.5	—0.2	. . .	
237	7.4	7.3	13 27	—1.8	1.03	K_0	. . .	. . .	0.8	0.3	. . .	
238	6.0	7.6	14 48	2.3	1.63	K_5	Ma	. . .	0.0	. . .	0.6	*
239	4.5	7.7	8 23	—2.1	0.81	G_5		See	table	I		
240	6.6	8.3	4 33	2.8	0.11	F_0	. . .	. . .	. . .	*2.4*	. . .	
241	7.1	8.3	19 9	1.4	0.93	K_0	. . .	. . .	1.0	0.9	. . .	
242	7.5	9.5	1 12	2.0	0.69	K_0	. . .	. . .	((3.7))	1.7	. . .	
243	6.9	10.0	0 16	—3.1	—0.23	A_2	. . .	. . .	. . .	—0.1	. . .	
244	7.4	12.2	17 59	0.7	0.20	F_0	. . .	. . .	. . .	*2.0*	. . .	
245	5.7	12.6	19 26	—1.3	—0.17	A_0	A0n	0.9	. . .	—0.4	. . .	
246	7.8	12.7	13 0	1.4	0.07	A_5	. . .	. . .	. . .	*1.2*	. . .	
247	5.8	12.8	1 17	5.9	0.35	F_8	F_7	3.9	*d*	4.6	. . .	
248	7.1	13.4	7 44	—0.3	1.02	K_0	. . .	. . .	0.8	0.5	. . .	
249	7.1	13.4	12 33	5.0	1.11	G_5	. . .	. . .	—0.3	(2.0)	. . .	
250	6.8	13.6	19 14	3.9	0.40	F_8	F_9	. . .	*d*	4.0	4.9	
251	7.4	16.3	7 18	—1.0	0.06	A_5	. . .	. . .	. . .	*0.6*	. . .	
252	6.8	17.0	16 24	1.3	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	

*233. *Mt. W'.* —0.1. *238. *Mt. W.'* 0.1.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
253	7.3	2 17.5	17 9	0.8	0.11	A_2	. . .	. . .	. . .	0.9	. . .	
254	7.8	19.0	15 4	2.2	0.15	F_0	. . .	. . .	. . .	*2.2*	. . .	
255	5.5	19.4	10 10	—1.2	—0.20	B_5	Bsn	0.3	—0.9	. . .	. . .	
256	7.5	20.2	11 33	6.3	0.18	F_5	. . .	. . .	. . .	*4.5*	. . .	
257	7.5	20.8	10 12	6.1	0.32	G_0	. . .	. . .	3.9	4.5	. . .	
258	6.7	21.0	5 50	3.4	0.30	F_2	. . .	. . .	. . .	*2.2*	. . .	
259	6.8	21.4	10 8	2.2	—0.08	A_3	. . .	. . .	. . .	*1.4*	. . .	
260	7.3	22.0	16 13	2.5	0.15	F_0	. . .	. . .	. . .	*2.3*	. . .	
261	6.5	22.1	9 46	5.6	0.23	G_0	F_5	3.8	(3.0)	3.9	. . .	
262	4.3	22.8	8 1	—0.7	—0.08	A_0		See	table	I		
263	6.5	22.8	1 31	—1.8	0.85	K_0	. . .	. . .	1.5	0.6	. . .	
264	6.3	24.2	9 8	—2.2	0.93	K_0	. . .	. . .	1.0	0.4	. . .	
265	6.1	25.0	19 25	2.3	0.14	F_0	. . .	. . .	. . .	*2.3*	. . .	
266	6.4	25.4	17 16	2.8	0.76	G_5	. . .	. . .	((1.1))	1.5	. . .	
267 8	6.8c	26.3	0 40	2.6c	—0.14c	A_2	. . .	. . .	. . .	0.7c	. . .	*
269	5.4	26.3	1 50	—2.7	1.26	K_0	K_3	(1.0)	0.0	0.2	1.0	
270	6.1	27.4	14 36	0.3	0.33	F_5	. . .	. . .	. . .	*1.5*	. . .	
271	7.5	27.6	0 35	0.4	0.49	G_5	. . .	. . .	(4.1)	(0.5)	. . .	
272	6.8	28.0	18 28	2.9	0 11	A_5	. . .	. . .	. . .	*1.8*	. . .	
273	7.6	28.6	11 45	4.7	0.47	G_0	. . .	. . .	4.7	4.0	. . .	
274	7.0	29.0	11 10	2.5	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
275	6.2	29.8	7 2	2.6	1.11	K_0	G_9	. . .	0.7	1.3	—0.1	
276	5.9	30 6	6 25	9.2	0.83	K_0		See	table	II		
277	7.4	30.6	13 20	0.9	0.29	F_5	. . .	. . .	. . .	*2.0*	. . .	
278	5.0	30.6	5 9	- 0.5	0.79	G_5	G_3	—0.7	0.9	0.2	—0.6	
279	5.7	31.2	12 2	4.5	0.33	F_5	F_4	3.9	. . .	*3.5*	. . .	
280	6.0	31.3	7 17	0.4	0.83	K_0	K_0	0.9	1.9	0.8	(3.0)	
281	7.7	32.4	11 50	2.5	0.86	G_5	. . .	. . .	(0.7)	0.5	. . .	
282	6.5	32.7	7 16	3.3	0.20	F_5	. . .	. . .	. . .	*2.9*	. . .	
283	7.5	33.0	19 18	0.5	[1.16]	K_0	. . .	. . .	0.5	1.1	. . .	
284	6.4	33.4	3 0	—0.2	0.81	G_5	. . .	. . .	0.9	0.5	. . .	
285	7.3	33.5	14 26	0.1c	1.06	K_0	. . .	. . .	0.3c	0.7c	. . .	*
286	6.8	33.7	10 13	2.6	0.94	K_0	. . .	. . .	1.0	1.5	. . .	
287	6.2	35.0	5 42	1.3	0.19	F_2	F_3	3.5	. . .	*2.2*	. . .	
288	6.9	35.5	18 23	1.6	—0.14c	B_9	. . .	. . .	. . .	—0.8c	. . .	*
289	7.3	35.9	5 39	—1.2	(1.65)	K_2	. . .	. . .	(—1.3)	. . .	. . .	
290	6 9	36.1	3 59	2.6	0.10	A_0	. . .	. . .	. . .	1.6	. . .	
291	6.7	36.6	10 7	1.5	1.20	K_0	. . .	. . .	0.4	1.0	. . .	
292	5.7	36.7	19 35	1.5	—0.14	A_0	. . .	. . .	. . .	0.4	. . .	
293	6.3	37.1	10 20	1.3	—0.13	A_0	A_{2s}	1.1	. . .	0.3	. . .	
295	8.1	38.3	12 52	1.0	(0.74)	K_0	. . .	. . .	((3 3))	1.3	. . .	

*267/8. Double, $d = 13''$, $\Delta m = 0.2$. *285. Double, $d = 7''$, $\Delta m = 2.3$. Colour of A assumed $C = 1.20\pm$. *288. Double, $d = 3''$, $\Delta m = 0.3$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
296	6.5	2 38.7	17 20	2.0	1.04	K_0	K_0	0.3	0.8	1.3	1.0	
297	5.8	39.0	14 54	0.5	—0.21	B_8	. . .	. . .	. . .	—0.4	. . .	
298	5.2	39.5	12 3	2.9	0.15	A_3	. . .	. . .	. . .	*1.7*	. . .	
299	4.4	39.5	9 42	3.4	0.23	F_0		See	table	I		
300	6.0	40.1	4 17	1.9	0.02	F_0	. . .	. . .	. . .	*2.2*	. . .	
301	7.0	41.8	18 58	4.7	0.54	G_0	G_1	. . .	3.9c	3.7c	4.0c	*
302	7.7	42.0	8 54	3.6	[1.26]	K_0	. . .	. . .	(0.0)	0.8	. . .	
303	6.8	42.5	15 5	0.7	1.35	K_0	. . .	. . .	—0.6	0.2	. . .	
304	6.0	42.9	17 53	—0.9	1.13	K_0	K_2	—0.2	0.6	0.7	1.4	
305	5.3	43.7	17 3	—1.1	—0.30	B_5	B_{6n}	—0.6	—1.4	. . .	. . .	*
306	7.1	44.5	0 31	1.9	0.68	G_5	. . .	. . .	((1.9))	1.3	. . .	
307	6.6	45.0	18 45	4.6	0.41	F_8	. . .	. . .	*d*	4.0	. . .	
308	5.5	46.0	14 40	0.7	—0.30	B_5	B_{5n}	—0.4	—1.4	. . .	. . .	*
309	7.1	46.2	1 47	1.0	[1.61]	K_5	. . .	. . .	(0.1)	. . .	. . .	
310	6.4	47.6	16 5	2.5	0.19	F_2	. . .	. . .	. . .	*2.2*	. . .	
311	6.8	48.4	8 56	1.3	1.51	Mb	. . .	. . .	—1.0	. . .	. . .	
312	6.7	48.5	1 35	4.1	0.70	G_5	. . .	. . .	((1.7))	3.6	. . .	
313	7.0	48.6	20 9	0.9	1.16	K_0	. . .	. . .	0.5	1.3	. . .	
314	7.3	49.1	19 58	1.3	1.06	K_0	. . .	. . .	0.7	1.3	. . .	
315	6.9	49.3	17 20	2.5	0.08	A_3	. . .	. . .	. . .	*1.5*	. . .	
316	6.7	49.9	3 6	—1.3	0.14	F_0	. . .	. . .	. . .	*0.9*	. . .	
317	7.7	50.2	14 18	3.5	—0.06	A_0	. . .	. . .	. . .	0.2	. . .	
318	5.9	50.2	17 56	—1.4	1.07	Mb	Mb	—2.0	—1.3	. . .	—1.3	*
319	5.6	50.8	17 38	4.9	0.23	F_5	F_5	3.5	. . .	*3.7*	. . .	
320	7.5	50.8	5 47	—0.2	0.91	K_0	. . .	. . .	1.1	0.6	. . .	
321	6.1	50.9	7 59	3.0	0.20	F_8	F_6	4.0	*d*	4.0	. . .	
322	6.3	51.8	4 6	2.0	1.64	Ma	. . .	. . .	0.8	. . .	. . .	
323	6.9	51.9	15 53	2.0	1.05	K_0	. . .	. . .	0.8	1.3	. . .	
324	7.2	52.3	17 25	0.7	1.08	K_0	. . .	. . .	0.7	1.3	. . .	
325	7.4	53.3	13 12	3.8	0.90	G_5	. . .	. . .	0.5	0.5	. . .	
326	7.6	53.4	1 44	—0.1	[1.57]	K_0	. . .	. . .	(—1.9)	—1.0	. . .	
327	4.7	54.4	8 31	—3.0	—0.22	B_5		See	table	I	. . .	
328	6.9	54.9	17 36	2.0	—0.28	A_0	. . .	. . .	. . .	0.5	. . .	
329	6.2	55.3	10 29	2.0	1.64	K_5	. . .	. . .	—0.1	. . .	. . .	
330	7.3	55.4	14 38	4.3	0.38	F_8	. . .	. . .	*d*	3.9	. . .	
331	6.4	56.6	4 57	—1.6	0.89	K_0	. . .	. . .	1.2	0.5	. . .	
332	2.8	57.1	3 42	—1.7	1.68	Ma		See	table	I	. . .	
333	5.6	57.2	3 57	—1.4	—0.30	B_5	B_{8s}	—0.6	—1.4	. . .	. . .	
334	6.6	58.2	5 50	2.1	0.09	F_0	. . .	. . .	. . .	*2.2*	. . .	
335	6.6	59.1	15 28	3.4	1.27	K_0	. . .	. . .	—0.1	0.7	. . .	
336	7.5	59.3	13 25	1.3	0.72	G_5	. . .	. . .	((1.4))	1.1	. . .	

*301. Double, $d = 1''.6$, $\Delta m = 0.9$. *305. $M = -1.2$ (Edwards). *308. $M = -0.5$ (Edwards) *318. *Mt. W'.* 0.0.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
337	6.0	2 59.5	1 30	—1.0	0.98	K_0	. . .	. . .	0.8	0.4	. . .	
338	7.3	3 0.8	11 17	—1.3	[1.60]	K_5	. . .	. . .	(0.1)	. . .	. . .	
339	5 8	0.9	12 48	1.4	0.99	G_5	G_6	1.7	0.1	0.5	—0.6	
340	6.1	1.8	17 29	0.9	—0.33	B_3	. . .	. . .	—1.9	. . .	. . .	
341	7.7	2.4	9 33	. . .	0.05	A_0	. . .	. . .	. . .	1.6	. . .	
342	6.5	2.7	18 26	0.9	1.63	K_5	K_8	(0.5)	0.0	. . .	0.8	*
343	7.4	3.0	10 25	. . .	0.09	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
344	6.4	3.3	8 5	2.3	0.86	G_5	. . .	. . .	0.7	0.5	. . .	
345	7.1	3.5	12 29	. . .	0.84	G_5	. . .	. . .	0.7	(0.5)	. . .	
346	7.0	3.9	19 0	1.9	—0.17	A_0	. . .	. . .	. . .	0.6	. . .	
347	5.9	5.2	11 30	. . .	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
348	7.2	5.4	9 38	. . .	1.66	K_2	. . .	. . .	(—1.3)	. . .	. . .	
349	6.8	5.8	1 56	. . .	0.77	K_0	. . .	. . .	((2.9))	(0.8)	. . .	
350	6.4	5.8	12 40	0.3	0.85	G_5	. . .	. . .	0.7	0.5	. . .	
351	4.5	5.9	19 21	1.7	1.01	K_0		See	table	I		
352	7.6	6.4	15 46	. . .	1.46	K_5	. . .	. . .	(0.5)	. . .	. . .	
353	7.3	6.8	16 8	. . .	—0.12	A_2	. . .	. . .	. . .	0.1	. . .	
354	5.8	7.2	6 17	0.0c	0.81	G_5+A_5	. . .	. . .	—0.3c	—0.2c	. . .	*
355	6.7	8.2	18 37	(0.8)	1.49	K_5	. . .	. . .	0.4	. . .	. . .	
356	7.3	8.6	15 13	. . .	—0.26	A_0	. . .	. . .	. . .	0.5	. . .	
357	7.0	11.8	6 27	. . .	—0.02	A_3	. . .	. . .	. . .	*1.1*	. . .	
358	7.4	12.1	7 18	5.6	0.34	F_0	. . .	. . .	. . .	*2.5*	. . .	
359	7.4	12.4	13 29	3.5	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
360	7.5	12.7	17 48	5.2	0.47	G_0	. . .	. . .	4.7	4.2	. . .	
361	7.6	12.8	12 28	0.6	0.05	B_8	. . .	. . .	. . .	0.5	. . .	
362	7.7	12.9	14 49	6.5	0.53	G_5	. . .	. . .	(4.0)	5 0	. . .	
363	7.3	14.1	18 43	1.7	—0.16	A_0	. . .	. . .	. . .	0.5	. . .	
364	5.0	14.1	3 1	3.7	0.48	G_5		See	table	I		
365	7.2	14.4	13 1	. . .	0.59	F_8	. . .	. . .	*g*	(—0.5)	. . .	
366	7.1	14.6	19 30	. . .	(1.27)	K_0	. . .	. . .	—0.1	(0.5)	. . .	
367	7.3	15.1	11 59	4.8	0.25	F_5	. . .	. . .	. . .	*3.7*	. . .	
368	6.7	15.1	20 9	—2.1	1.31	K_2	. . .	. . .	1.5	. . .	. . .	
369	5.8	15.9	3 19	1.1	0.83	G_5	. . .	. . .	0.8	0.5	. . .	
370	7.2	18.3	19 33	. . .	(1.50)	K_5	. . .	. . .	(0.4)	. . .	. . .	
371	6.6	18.5	0 34	2.1	1.02	K_0	. . .	. . .	0.8	1.3	. . .	
372	6.2	18.7	12 17	0.3	1.21	G_5	. . .	. . .	—0.6	—0.6	. . .	
373	3.8	19.4	8 41	0.3	0.84	G_5		See	table	I		
374	6.4	21.4	18 25	2.2	0.01	A_2	. . .	. . .	. . .	1.2	. . .	
376	6.2	21.8	12 24	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
377	7.4	22.1	1 56	. . .	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
378	7.3	22.2	5 31	. . .	1.07	K_0	. . .	. . .	0.7	(1.3)	. . .	

*342. *Mt. W.* 0.5. *354. Spectrum composite. Colour of the G_5 component assumed $C = 1.04$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
379/80	6.7c	3 22.2	20 7	−0.6c	0.34c	A_3	. . .	. . .	. . .	*0.3*c	. . .	*
381	6.8	23.1	11 3	(2.0)	0.83	G_5	. . .	. . .	0.8	0.5	. . .	
382	7.3	23.4	14 39	. . .	−0.18	A_0	. . .	. . .	. . .	0.0	. . .	
383	6.5	23.9	2 55	. . .	0.59	G_5	. . .	. . .	(3.3)	(0.2)	. . .	
384	7.0	24.1	16 25	(0.3)	−0.24	A_{0p}	. . .	. . .	. . .	0.4	. . .	
385	5.1	24.9	11 0	−1.2	−0.18	A_0	Bsn	0.4	. . .	−0.3	. . .	
386	7.2	25.0	10 7	. . .	1.48	K_0	. . .	. . .	−1.3	(−0.5)	. . .	
387	4.3	25.4	12 37	−3.0	1.17	K_0		See	table	I		
388	6.1	25.4	5 50	. . .	0.82	G_5	. . .	. . .	0.8	(0.5)	. . .	
389	7.2	25.7	17 36	3.4	1.44	K_2	. . .	. . .	(0.3)	. . .	. . .	
390	6.7	26.7	11 13	. . .	−0.02c	A_0	. . .	. . .	. . .	0.6	. . .	*
391	5.6	27.2	9 2	1.1	−0.15	B_8	. . .	. . .	. . .	−0.2	. . .	
392	7.0	27.3	16 16	3.6	0.32	F_5	. . .	. . .	. . .	*3.0*	. . .	
393	7.3	27.8	13 27	. . .	0.81	G_5	. . .	. . .	0.9	(0.5)	. . .	
394	6.4	28.4	17 31	5.3	0.69	K_0	G_6	. . .	((3.7))	3.2	(3.8)	
395	6.5	29.5	6 5	. . .	0.46	G_0	. . .	. . .	4.6	(2.0)	. . .	
396	7.9	29.6	18 35	−0.7	[1.04]	K_5	. . .	. . .	(2.1)	. . .	. . .	*
397	7.6	30.6	19 44	4.4	0.25	F_5	. . .	. . .	. . .	*3.4*	. . .	
398	6.1c	31.7	0 16	4.0c	0.56c	G_0	G_8p	4.6c	3.6c	3.5c	(5.0c)	*
399	6.5	32.2	15 6	0.2	−0.01	A_3	. . .	. . .	. . .	*0.8*	. . .	
400	7.7	32.4	19 2	. . .	0.19	A_0	. . .	. . .	. . .	(1.1)	. . .	
401	7.0	32.6	3 50	. . .	0.10	A_5	. . .	. . .	. . .	*1.2*	. . .	
402	6.9	33.7	13 35	3.1	0.64	G_5	. . .	. . .	((2.5))	(2.8)	. . .	
403	7.7	33.7	8 50	. . .	−0.12	A_3	. . .	. . .	. . .	*1.1*	. . .	
404	6.3	33.8	16 13	1.5	0.86	G_5	G_6	. . .	0.7	0.5	(1.5)	
405	5.8	34.6	2 46	−0.1	0.69	G_5	G_5	1.6	((1.8))	0.2	(2.7)	
406	6.7	35.2	4 49	. . .	1.03	G_5	. . .	. . .	−0.6	(−0.5)	. . .	*
407	7.3	36.1	9 46	. . .	(0.97)	G_5	. . .	. . .	0.2	(0.5)	. . .	
408	5.5	36.6	19 23	−1.0	−0.10	B_8	Bsn	0.3	. . .	0.0	. . .	
409	7.2	37.0	16 58	4.1	0.44	G_0	. . .	. . .	4.5	3.8	. . .	
410	7.1	37.2	8 20	. . .	0.04	A_2	. . .	. . .	. . .	0.9	. . .	
411	6.3	38.0	19 21	3.4	0.93	G_5	G_8	−0.2	0.4	0.5	1.1	
412	6.7	39.8	2 18	. . .	0.19	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
413	5.4	40.4	5 44	0.1	−0.24	B_3	. . .	. . .	−1.5	. . .	. . .	*
414	7.2	40.4	6 53	. . .	−0.12	A_2	. . .	. . .	. . .	0.1	. . .	
415	7.7	40.6	10 15	. . .	(0.75)	G_5	. . .	. . .	((1.1))	. . .	. . .	
416	6.1	40.8	6 29	. . .	0.85	K_0	K_1	1.1	1.5	(0.8)	(5.2)	
417	6.8	40.9	13 12	. . .	−0.12	A_0	. . .	. . .	. . .	0.0	. . .	
418	7.4	41.7	9 39	. . .	0.91	G_5	. . .	. . .	0.5	(0.5)	. . .	
419	5.0	42.8	10 50	0.2	−0.23	B_3	. . .	. . .	−1.9	. . .	. . .	*

*379/80. Double, $d = 7''$, $\Delta m = 1.7$. *390. Double, $d = 18''$, $\Delta m = 2.0$. *396. *Mt. W.* Sp. (old) Mb 0.1. *398. Double, $d = 6''$, $\Delta m = 2.7$. Brighter component = spectroscopic binary, two spectra visible. *406. There are two companions: at $d = 27''$, $\Delta m = 3.0$, and at $d = 39''$, $\Delta m = 3.8$. Colour of A assumed $C = 1.19\pm$. *413. $M = -1.3$ (Edwards). *419. $M = -2.9$ (Edwards).

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
420	7.0	3 43.1	9 20	. . .	0.93	G_5	. . .	. . .	0.4	(0.5)	. . .	
421	6.8	44.4	9 7	. . .	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
422	7.7	44.8	6 19	. . .	0.30	G_0	. . .	. . .	3.8	. . .	. . .	
423	6.7	45.6	1 16	. . .	0.27	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
424	6.2	45.7	12 45	2.6	—0.17	B_9	. . .	. . .	. . .	0.0	. . .	
425	5.6	46.7	6 14	—3.0	—0.15	B_9	. . .	. . .	. . .	—1.7	. . .	
427	6.0	47.4	17 2	3.8	0.20	F_0	F_1	2.4	. . .	*2.5*	. . .	
428	7.6	47.8	7 29	2.9	0.16	F_5	. . .	. . .	. . .	(*3.5*)	. . .	*
429	6.7	48.3	1 49	. . .	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
430	6.9	48.8	16 20	5.8	0.53	G_0	. . .	. . .	4.6	4.5	. . .	
431	7.8	49.0	13 28	3.2	[0.86]	G_5	. . .	. . .	(0.7)	0.5	. . .	
432	7.3	49.4	8 54	3.5	—0.16	A_0	. . .	. . .	. . .	1.0	. . .	
433	7.0	49.6	1 47	. . .	0.87	G_5	. . .	. . .	0.6	(0.5)	. . .	
434	7.4	51.4	2 46	1.4	0.92	K_0	. . .	. . .	1.1	0.9	. . .	
435	6.0	51.7	5 44	. . .	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
437	7.3	53.7	13 44	2.6	0.90	G_5	. . .	. . .	0.5	0.5	. . .	
438	6.4	54.2	10 3	4.3	0.14	F_2	. . .	. . .	. . .	*2.2*	. . .	
439	6.3	54.9	17 0	2.4	—0.16	B_9	. . .	. . .	. . .	0.0	. . .	
440	7.5	55.0	13 37	. . .	[1.22]	K_0	. . .	. . .	(0.4)	. . .	. . .	
441	5.8	55.0	17 55	3.4	0.24	F_0	A_8	2.2	. . .	*2.4*	. . .	
442	6.8	55.3	19 56	2.9	0.98	G_5	. . .	. . .	0.1	0.5	. . .	
443	5.7	56.3	9 43	—3.1	—0.12	B_8	. . .	. . .	. . .	—0.1	. . .	
444	7.0	57.8	8 37	. . .	1.52	K_0	. . .	. . .	—1.5	(—0.8)	. . .	
445	3.9	57.8	5 43	—4.6	—0.02	A_0		See	table	I		
446	5.3	58.4	5 9	—1.1	—0.25	B_3	. . .	. . .	—1.6	. . .	. . .	
447	5.5	58.5	7 55	3.4	0.21	F_0	F_{0n}	2.9	. . .	*2.4*	. . .	
448	5.4	58.9	2 33	3.5	0.39	F_5	F_6	3.5	. . .	*3.0*	. . .	
449	6.8	59.0	17 14	2.1	0.90	G_5	. . .	. . .	0.5	0.5	. . .	
450	6.8	4 0.2	9 46	. . .	0.86	G_5	. . .	. . .	0.7	(0.5)	. . .	
451	7.6	0.8	18 53	. . .	0.04	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
452	5.9	2.0	14 53	3.5	0.24c	F_0	. . .	. . .	. . .	*2.4*c	. . .	*
453	7.5	2.2	16 16	. . .	—0.16	B_9	. . .	. . .	. . .	—1.0	. . .	
454	6.1	2 3	17 5	—0.5	1.55	K_0	K_5	(0.4)	—2.1	(—1.2)	—0.5	*
455	7.1	3.2	9 50	1.1	(1.51)	Ma	. . .	. . .	(0.0)	. . .	. . .	
456	5.7	3.3	19 22	2.5	1.07	G_5	K_1	1.0	—0.2	0.5	1.4	
457	6.0	3.4	13 8	0.5	—0.18	B_9	. . .	. . .	. . .	—0.6	. . .	
458	6.7	4.1	6 28	. . .	—0.16	B_9	. . .	. . .	. . .	—1.0	. . .	
459	6.5	4.5	3 4	3.4	0.20	F_2	. . .	. . .	. . .	*2.2*	. . .	
460	6.6	4.9	18 10	3.7	0.21	F_8	. . .	. . .	*d*	4.0	. . .	
461	7.2	5.2	15 42	. . .	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
462	7.0	5.4	16 22	1.1	0.11	B_8	. . .	. . .	. . .	0.8	. . .	

*428. Irreg. variable 6.6—7.2. *452. Double, $d = 4''$, $\Delta m = 2.5$. *454. Double, $d = 4''$, $\Delta m = 3.7$. Colour of A assumed $C = 1.61$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
463	5.7	4 6.0	5 16	3.6	0.18	F_0	F_4	2.8	. . .	*2.5*	. . .	
464	6.3	6.8	17 2	0.9	0.99	G_5	K_0	0.8	0.1	0.5	1.4	
465	6.8	7.0	0 29	. . .	0.58	G_5	. . .	. . .	(3.5)	(0.2)	. . .	
466	6.2	8.1	9 58	. . .	—0.21	B_8	. . .	. . .	. . .	—0.9	. . .	
467	6.4	8.1	8 40	(3.8)	—0.06	A_3	. . .	. . .	. . .	*2.2*	. . .	
468	5.4	8.2	7 28	—4.6	0.24	F_0	A_9	3.0	. . .	*—4.3c*	. . .	*
469	6.5	8.3	12 31	. . .	1.07	K_0	. . .	. . .	0.7	(1.3)	. . .	
470	5.0	8.5	9 1	—0.7	0.73	G_5		See	table	I		
472	6.9	8.7	12 6	6.2	0.38	G_0	. . .	. . .	4.1	4.7	. . .	
473	5.2	9.2	9 45	0.6	—0.15	B_8	. . .	. . .	. . .	—0.2	. . .	
474	6.4	10.1	15 9	3.6	0.23	F_5	F_1	1.9	. . .	*3.0*	. . .	
475	4.3	10.1	8 40	—0.7	—0.16	B_3		See	table	I		
476	7.2	10.1	5 57	4.9	0.27	G_0	. . .	. . .	(3.5)	3.9	. . .	*
477	6.5	10.2	5 56	4.1	0.34	G_0	. . .	. . .	4.0	3.9	. . .	*
478	7.2	10.9	0 12	. . .	—0.20c	A_0	. . .	. . .	. . .	—0.1c	. . .	*
479	6.8	11.1	15 58	(2.5)	0.90	G_5	. . .	. . .	0.5	0.5	. . .	
480	7.0	12.1	13 36	(2.0)	0.83	G_5	. . .	. . .	0.8	0.5	. . .	
481	6.5	13.0	9 15	. . .	0.01	A_2	. . .	. . .	. . .	0.7	. . .	
482	7.7	13.6	13 28	. . .	0.29	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
483	7.6	14.0	11 43	. . .	0.22	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
484	3.9	14.1	15 24	0.7	1.01	K_0		See	table	I		
485	6.6	14.2	9 53	. . .	1.34	K_0	. . .	. . .	—0.6	(0.1)	. . .	
486	6.9	14.2	16 17	4.2	0.40	G_0	F_7	3.9	3.8c	3.7c	. . .	*
487	5.6	14.3	13 47	2.9	0.20	F_0	A_9n	1.8	. . .	*2.4*	. . .	
488	6.0	14.6	18 29	(>2.5)	0.30	F_0	. . .	. . .	. . .	*2.3*	. . .	
489	5.3	15.0	14 51	2.5	0.16	F_0	A_8n	2.8	. . .	*2.3*	. . .	
490	6.1	15.3	13 38	3.4	0.30	F_2	. . .	. . .	. . .	*2.2*	. . .	
491	6.4	15.4	8 59	. . .	0.03	A_3	. . .	. . .	. . .	*1.1*	. . .	
492	5.9	15.4	5 54	1.0	0.78	G_5	. . .	. . .	((1.0))	1.0	. . .	
493	6.7	15.7	18 11	3.8	0.24	F_5	. . .	. . .	. . .	*3.1*	. . .	
494	6.7	16.0	14 11	. . .	0.14	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
495	7.3	16.2	13 21	. . .	—0.10	A_5	. . .	. . .	. . .	*1.2*	. . .	
496	5.8	16.4	13 50	3.3	0.18	A_3	A_8	2.0	. . .	*1.9*	. . .	
497	6.9	16.6	2 10	4.3	0.26	F_5	. . .	. . .	. . .	*3.4*	. . .	
498	3.9	17.2	17 19	0.6	0.97	K_0		See	table	I		
499	5.7	17.7	16 34	3.2	0.17	A_2	F_2s	2.8	. . .	1.8	. . .	
500	6.9	17.8	11 9	. . .	—0.14	A_2	. . .	. . .	. . .	—0.1c	. . .	*
501	4.8	18.3	17 14	2.2	0.08	A_5		See	table	I		
502	5.1	18.4	9 14	—0.4	—0.03	A_2	A_3n	2.0	. . .	—0.3c	. . .	*
503	7.7	18.5	12 45	. . .	0.74	K_0	. . .	. . .	((3.3))	. . .	. . .	

*468. Double, $d = 0''.1$, $\Delta m = 0.4$. The smallness of *p. m.* forces the conclusion that this is a supergiant star, in contradiction with the spectroscopic absolute magnitude. *476/77. Common proper motion pair, $d = 62''$. *478. Double, $d = 4''$, $\Delta m = 1.7$. *486. Double, $d = 0''.8$, $\Delta m = 1.8$. *500. Double, $d = 2''$, $\Delta m = 1.5$. *502. Double, $d = 0''.2$, $\Delta m = 0.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
504	6.7	4 18.7	11 56	. . .	1.21	K_0	. . .	. . .	0.3	(0.8)	. . .	
505	7.4	18.9	18 40	. . .	0.11	B_9	. . .	. . .	. . .	0.8	. . .	
506	6.0	19.1	18 49	3.4	0.21	F_0	A_9	2.0	. . .	*2.4*	. . .	
508	4.2	19.7	17 42	1.5	0.06	A_2		See	table	I		
509	6.4	19.9	15 43	3.4	0.34	F_8	. . .	. . .	*d*	3.6	. . .	
510	7.7	20.0	18 38	. . .	0.36	G_0	G_4	. . .	4.0	. . .	(6.0)	
511	7.3	20.3	5 26	. . .	1.04	K_0	. . .	. . .	0.7	(1.3)	. . .	
512	4.6	20.6	15 23	2.0	0.16	A_5	. . .	See	table	I		
513	6.5	20.8	4 9	. . .	1.52	K_0	. . .	. . .	—1.5	(—0.8)	. . .	
514	6.0	20.9	8 22	—1.9	—0.19	B_5	. . .	. . .	—0.9	. . .	. . .	
515	4.9	21.0	14 31	—0.8	0.88	K_0		See	table	I		
516	7.1	21.1	16 49	(3.0)	(1.39)	K_0	. . .	. . .	—0.8	0.0	. . .	
517	7.7	21.2	18 52	5.4	0.36	G_0	. . .	. . .	4.0	4.5	. . .	
518	6.7	21.3	17 59	. . .	—0.04c	A_0	. . .	. . .	. . .	0.4	. . .	*
519	7.2	21.5	6 52	(2.9)	0.78	G_5	. . .	. . .	1.0	0.7	. . .	
520	6.4	21.8	1 52	2.6	0.90	K_0	. . .	. . .	1.2	1.7	. . .	
521	5.8	22.0	10 59	. . .	—0.12	B_8	. . .	. . .	. . .	—0.2c	. . .	*
522	7.6	22.0	6 51	. . .	0.12	F_5	. . .	. . .	. . .	(2.8)	. . .	
523	7.4	22.2	11 32	. . .	0.38	F_8	. . .	. . .	*d*	(3.0)	. . .	
524	7.0	22.7	7 56	. . .	—0.21	B_8	. . .	. . .	. . .	—0.9	. . .	
525	5.3	22.7	16 9	—1.6	1.02	G_5	K_1	1.6	0.0	—0.5	1.8	
526	6.0	22.7	14 30	3.1	0.19	F_0	Fon	2.3	. . .	*2.4*	. . .	
527	3.6	22.8	18 58	0.4	1.10	K_0		See	table	I	. . .	
528	4.0	22.8	15 45	0.6	1.05	K_0		See	table	I	. . .	
529	6.1	22.9	1 39	. . .	0.86	K_0	. . .	. . .	1.4	(0.8)	. . .	
531	5.1	23.2	12 50	2.3	0.06	A_5	A_{3n}	2.0	. . .	*1.5*	. . .	
532	6.6	23.3	15 57	3.9	0.37	F_8	. . .	. . .	*d*	3.8	. . .	
533	5.5	23.4	1 9	0.5	—0.21	B_8	. . .	. . .	. . .	—0.4	. . .	
534	7.1	23.6	17 19	. . .	0.34	G_0	. . .	. . .	4.0	(2.5)	. . .	
535	7.1	23.7	17 39	. . .	0.18	F_8	. . .	. . .	*d*	(4.0)	. . .	
537	6.6	24.2	10 18	. . .	—0.06	B_9	. . .	. . .	. . .	0.0	. . .	
539	5.7	24.4	15 25	2.7	0.08	F_0	A_{4n}	2.1	. . .	*2.3*	. . .	*
540	6.6	24.5	10 2	2.9	0.94	G_5	. . .	. . .	0.4	0.5	. . .	
541	4.8	24.8	15 59	2.2	0.08	A_5		See	table	I	. . .	
542	5.5	25.0	15 29	2.7	0.22	A_5	A_8	1.7	. . .	*1.7*	. . .	
543	5.5	25.0	13 31	2.6	0.13	F_0	A_9	2.4	. . .	*2.3*	. . .	
544	6.7	25.0	15 55	4.6	0.12	F_2	. . .	. . .	. . .	*2.2*	. . .	
545	6.6	25.4	14 53	2.5	1.65	Ma	Ma	. . .	0.7	. . .	0.7	*
546	7.8	25.8	7 7	. . .	0.09	A_3	. . .	. . .	. . .	*1.1*	. . .	
547/8	6.9c	25.8	6 35	2.9c	0.79c	G_5	. . .	. . .	0.3c	0.2c	. . .	*
549	6.0	26.1	15 38	3.1	0.15	F_0	F_0	2.5	. . .	*2.4*	. . .	

*518. Double, $d = 19''$, $\Delta m = 1.8$. *521. Double, $d = 0''.5$, $\Delta m = 2.8$. *539. Double, $d = 2''$, $\Delta m = 2.3$. *545. *Mt. W.* —0.1. *547/8. Double, $d = 10''$, $\Delta m = 1.4$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
550	6.7	4 26.5	5 33	. . .	—0.21	B_9	. . .	. . .	. . .	—0.4	. . .	
551	6.4	26.8	5 12	(2.7)	0.19	F_2	. . .	. . .	. . .	*2.2*	. . .	
552	7.5	27.2	19 8	. . .	(0.97)	K_0	. . .	. . .	0.9	(0.8)	. . .	
553	6.2	27.8	17 48	1.9	—0.10c	B_8	. . .	. . .	. . .	—0.7c	. . .	*
554	6.5	27.9	16 7	0.3	0.05	F_0	. . .	. . .	. . .	*1.8*	. . .	
555	6.7	28.2	13 2	. . .	0.22	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
556	4.8	28.2	14 38	1.8	0.13	A_5		See	table	I		
557	6.2	28.4	9 12	. . .	0.89	K_0	. . .	. . .	1.3	(0.8)	. . .	
558	5.8	28.8	5 21	0.2	—0.18	A_0	A_{4s}	1.4	. . .	0.0	. . .	
559	7.4	29.2	16 47	4.1	(1.09)	K_0	K_3	(1.0)	0.7	(2.2)	2.2	
560	7.1	29.3	16 59	—0.4	[1.84]	K_5	. . .	. . .	(—0.8)	. . .	. . .	
561	7.5	29.3	0 13	(3.6)	0.19	G_5	. . .	. . .	(3.0)	(3.5)	. . .	
562	7.2	29.8	19 46	1.5	0.30	F_8	F_8	3.2	*d*	2.4	. . .	
563	6.6	29.8	19 41	1.5	0.49	F_8	. . .	. . .	*d*	4.0	. . .	
565	4.4	30.2	9 59	0.6	0.06	A_3		See	table	I		
566	6.8	30.8	11 13	. . .	0.03	A_0	. . .	. . .	. . .	1.5	. . .	
567	6.7	31.0	15 40	. . .	0.23	F_8	. . .	. . .	*d*	(4.0)	. . .	
568	7.3	31.2	15 4	. . .	0.38	G_0	. . .	. . .	4.1	(2.2)	. . .	
569	6.6	31.4	18 20	. . .	0.58	G_0	F_{8p}	—2.1	. . .	. . .	. . .	*
570	5.3	32.1	0 48	—0.8	—0.32	B_5	. . .	. . .	—1.4	. . .	. . .	*
571	5.8	32.4	15 50	2.6	0.16	F_0	A_8	2.1	. . .	*2.3*	. . .	
572	6.9	32.5	7 7	. . .	—0.27	B_5	. . .	. . .	—1.2	. . .	. . .	
573	4.3	32.6	12 19	1.5	—0.05	A_3		See	table	I		
574	5.2	33.4	15 36	1.7	0.03	A_2		See	table	II		
575	4.8	33.6	15 44	1.6	—0.04	A_3		See	table	I		
576	7.3	33.6	12 49	3.3	0.15	F_5	. . .	. . .	. . .	*2.9*	. . .	
577	5.6	33.7	7 40	2.1	0.05	F_0	A_{6s}	2.2	. . .	*2.2*	. . .	
578	5.4	34.5	12 1	—0.2	—0.32	B_9	B_{9sn}	0.0	. . .	0.9	. . .	
579	6.8	36.8	9 28	2.5	0.09	F_2	. . .	. . .	. . .	*2.2*	. . .	
580	7.1	37.0	18 32	3.6	0.47	G_5	. . .	. . .	(4.1)	3.9	. . .	
581	8.1	37.3	15 18	2.5	0.17	A_5	. . .	. . .	. . .	*1.6*	. . .	
582	6.8	37.3	14 38	. . .	0.73	G_5	. . .	. . .	1.3	(0.5)	. . .	
583	5.4	38.9	10 58	2.5	0.17	A_3	A_5	2.3	. . .	*1.5*	. . .	
584	7.3	39.6	0 23	4.4	—0.53	B_3	. . .	. . .	—3.8	. . .	. . .	*
585	6.1	40.4	18 34	2.4	1.18	K_0	K_3	(0.5)	0.5	1.3	1.7	
586	5.4	40.5	11 32	1.7	0.05	A_0	A_2	1.5	. . .	1.6	. . .	
587	7.2	41.3	8 50	. . .	0.38	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
588	7.3	41.6	9 52	. . .	—0.08	A_2	. . .	. . .	. . .	0.2	. . .	

*553. Double, $d = 3''$, $\Delta m = 0.1$. *569. Variable *SZ Tauri*. *570. $M = -0.6$ (Edwards). *584. This is *Lalande* 8934. The proper motion of 0″.08 annually seems to be real, as the recent photographic position by Schlesinger compared with *A. G.* Nicolajeff gives approximately the same amount and direction. The absolute magnitude here adopted leds to an enormous tangential velocity of 650 km/sec. With absolute magnitude —1.0 the velocity is reduced to 150 km/sec. A tangential velocity of 30 km/sec would require an improbably low luminosity of about + 3 of this early type star.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	Ms	M C, D	M μ, C, D	M C, W	
		h m	° ′									
589	6.6	4 42.0	5 37	. . .	−0.12	A_0	. . .	. . .	. . .	0.0	. . .	
590	7.9	42.8	17 38	. . .	0.21c	F_2	. . .	. . .	. . .	(2.0c)	. . .	*
591	6.8	42.8	18 32	6.5	0.51	G_5	G_0	5.0	(4.1)	5.0	4.7	
592	7.5	42.9	16 28	. . .	0.22	F_5	. . .	. . .	. . .	(2.8)	. . .	
593	6.7	43.2	2 33	(3.5)	0.54	G_5	. . .	. . .	(4.0)	3.6	. . .	
594	6.2	43.5	3 25	. . .	1.08	K_0	. . .	. . .	0.7	(1.0)	. . .	
595	6.3	44.0	15 43	−1.0	1.61	G_5	K_2	(0.9)	−3.0	(−2.0)	−2.1	
596	7.8	44.2	15 21	. . .	−0.04	A_3	. . .	. . .	. . .	*1.1*	. . .	
598	7.2	44.6	17 2	4.1	0.28	F_8	. . .	. . .	*d*	3.8	. . .	
599	7.3	45.0	16 3	. . .	0.22	F_8	. . .	. . .	*d*	(4.0)	. . .	
600	4.4	45.2	8 45	−0.8	−0.13	A_0		See	table	I		
601	7.3	45.4	7 50	. . .	0.31	F_5	. . .	. . .	. . .	(2.8)	. . .	
602	5.1	45.5	18 41	1.8	0.08	F_0	A_{2n}	1.7	. . .	*2.2*	. . .	
603	6.6	45.6	0 59	. . .	−0.21	A_2	. . .	. . .	. . .	0.7	. . .	
604	7.0	45.7	10 54	. . .	0.30	F_5	G_0	4.6	. . .	(2.1c)	3.3c	*
606	6.7	46.2	13 29	. . .	0.12	F_5	F_9	4.0	. . .	(2.8)	2.5	
607	6.1	46.2	9 49	−0.1	−0.10	B_5	. . .	. . .	−0.8	. . .	. . .	
608	6.8	46.4	9 42	. . .	0.19	F_2	. . .	. . .	. . .	(2.2)	. . .	
609	5.2	46.9	14 5	0.6	1.87	M_a	Mb	. . .	−1.7	. . .	−0.7	*
611	7.2	47.1	12 14	. . .	−0.11	B_8	. . .	. . .	. . .	0.0	. . .	
612	5.7	48.2	2 21	0.0	1.52	M_a	M_a	. . .	0.5	. . .	0.5	*
613	7.1	48.3	16 53	(3.1)	0.42	F_8	. . .	. . .	*d*	4.0	. . .	
614	6.4	48.8	1 24	. . .	−0.19	A_2	. . .	. . .	. . .	0.4	. . .	
616	6.2	49.1	19 20	3.5	0.16	F_0	. . .	. . .	. . .	*2.4*	. . .	
617	7.4	49.1	11 53	. . .	−0.04	A_0	. . .	. . .	. . .	0.4	. . .	
618	7.1	49.1	12 12	2.3	0.44	F_8	. . .	. . .	*d*	4.0	. . .	
619	7.1	49.2	16 13	(1.6)	0.03	A_0	. . .	. . .	. . .	1.5	. . .	
620	5.2	49.3	11 16	−0.6	−0.05	A_3	. . .	. . .	. . .	*0.6*	. . .	
621	4.7	49.4	10 1	2.9	−0.07	A_0		See	table	I		
622	5.5	49.4	7 38	−0.5	1.11	K_0	. . .	. . .	0.7	0.9	. . .	
623	6.8	49.5	8 26	. . .	−0.09	A_0	. . .	. . .	. . .	−0.2c	. . .	*
624	7.1	49.6	16 28	(2.0)	−0.06	A_0	. . .	. . .	. . .	0.2	. . .	
625	5.9	49.7	0 18	. . .	−0.32	B_5	. . .	. . .	−1.4	. . .	. . .	
626	5.7	50.2	14 53	0.0	−0.21	B_8	B_9ns	0.4	. . .	−0.6	. . .	
627	6.6	50.6	5 14	. . .	−0.32	A_0	. . .	. . .	. . .	0.9	. . .	
628	6.5	50.8	7 45	. . .	0.14	F_5	. . .	. . .	. . .	(2.8)	. . .	
629	4.3	50.8	13 22	0.8	1.25	K_0		See	table	I		
630	6.9	50.8	1 28	. . .	−0.11	A_5	. . .	. . .	. . .	*1.2*	. . .	
631	7.5	51.0	16 35	. . .	(1.13)	K_0	. . .	. . .	0.6	(1.3)	. . .	
632	5.7	51.6	17 0	−1.3	1.32	K_0	. . .	. . .	−0.4	0.0	. . .	
633	6.0	53.3	14 24	−0.7	−0.25	B_8	. . .	. . .	. . .	−0.7	. . .	

*590. Double, $d = 10''$, $\Delta m = 1.5$. *604. Double, $d = 0''.4$, $\Delta m = 0.0$. *609. *Mt. W.'* −0.4. *612. *Mt. W.'* 0.5. *623. Double, $d = 2''$, $\Delta m = 2.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
634	4.7	4 53.4	1 35	−4.9	1.34	K_0		See	table	I		
635	6.7	54.0	15 46	3.5	0.30	F_5	. . .	. . .	. . .	*3.0*	. . .	
636	6.7	54.9	14 15	. . .	0.54	G_0	. . .	. . .	4.6	(2.0)	. . .	
637	6.6	55.2	10 46	. . .	−0.07	B_9	. . .	. . .	. . .	0.0	. . .	
638/9	6.0c	55.3	3 28	. . .	−0.25c	A_0	. . .	. . .	. . .	0.4	. . .	*
640	7.1	55.5	4 26	3.6	0.66	K_0	. . .	. . .	((4.0))	(2.8)	. . .	
641	6.9	56.3	11 15	. . .	−0.09	B_8	. . .	. . .	. . .	0.0	. . .	
642	6.2	56.7	0 36	. . .	1.09	K_0	. . .	. . .	0.7	(1.0)	. . .	
643/4	6.2c	56.8	1 28	−3.5	−0.23c	B_8	. . .	. . .	. . .	−2.2c	. . .	*
645	7.0	57.1	7 17	. . .	0.71	G_5	. . .	. . .	((1.5))	(0.5)	. . .	
646	7.1	57.4	11 54	. . .	0.19	F_2	. . .	. . .	. . .	*(2.2)*	. . .	
647	7.6	58.4	6 30	. . .	0.74	K_0	. . .	. . .	((3.3))	. . .	. . .	
648	4.6	58.9	15 16	−0.1	−0.17	B_9		See	table	I		
649	6.7	59.0	14 44	. . .	−0.02	A_2	. . .	. . .	. . .	0.5	. . .	
650	7.1	59.0	7 42	. . .	0.95	K_0	. . .	. . .	0.9	(0.8)	. . .	
651	6.5	59.6	19 40	2.4	0.09	A_2	. . .	. . .	. . .	1.3c	. . .	*
652	7.4	59.8	8 49	. . .	−0.22	B_9	. . .	. . .	. . .	−0.2	. . .	
654	7.4	5 1.1	13 57	. . .	0.33	F_8	. . .	. . .	*d*	(3.0)	. . .	
655	5.0	1.5	18 31	5.2	0.50	G_0	G_1	3.7	4.8	4.3	5.0	
656	8.1	2.1	12 25	. . .	0.59	F_5	. . .	. . .	. . .	. . .	. . .	
657	6.3	2.2	9 22	5.9	0.48	G_0	G_0	5.1	4.8	4.4	4.9	
658	7.0	2.2	10 46	. . .	−0.12	A_0	. . .	. . .	. . .	0.0	. . .	
659	5.5	2.4	8 23	1.5	0.19	F_{0p}	F_1	1.9	. . .	*1.7*c	. . .	*
660	6.8	2.7	7 46	4.4	0.90	K_0	. . .	. . .	1.2	(2.9)	. . .	
661	6.6	2.9	19 45	−0.5	0.75	G_5	G_5	0.6	((1.1))	0.2	(1.6)	
662	7.4	3.2	11 38	. . .	(1.28)	K_0	. . .	. . .	−0.1	(0.6)	. . .	
663	6.5	3.7	3 6	(2.9)	−0.14	A_0	. . .	. . .	. . .	1.0	. . .	
664	5.4	3.8	9 42	2.0	0.16	A_2	A_8	2.5	. . .	1.4	. . .	
665	4.9	4.0	15 29	−3.0	0.19	F_0		See	table	I		
666	6.7	4.6	13 26	. . .	0.19	F_2	. . .	. . .	. . .	*(2.2)*	. . .	
667	5.4	6.0	15 55	−5.1	1.67	K_0	K_6	(0.5)	−2.2	(−1.4)	−0.3	
668	6.1	6.6	0 54	. . .	0.40	F_5	. . .	. . .	. . .	*(2.6c)*	. . .	*
669	7.7	6.6	6 42	. . .	(0.83)	K_0	. . .	. . .	(1.9)	. . .	. . .	
670	7.9	6.8	6 44	. . .	[0.69]	K_0	. . .	. . .	((3.7))	. . .	. . .	
671	4.6	8.0	2 44	−3.0	1.20	K_0		See	table	I		
672	6.2	8.4	1 51	. . .	0.16	A_2+G	. . .	. . .	. . .	−0.7c	. . .	*
673	6.5	8.7	0 27	. . .	1.36	K_2	. . .	. . .	1.1	. . .	. . .	
674	7.7	9.3	19 56	. . .	0.50	G_0	. . .	. . .	4.8	. . .	. . .	
675	5.8	9.4	5 3	−1.5	1.34	K_0	K_3	(0.7)	−0.5	−0.1	0.3	

*638/9. Double, $d = 21''$, $\Delta m = 0.3$. *643/4. Double, $d = 14''$, $\Delta m = 1.4$. In *H. R.*, Remark, the combined magnitude is given = 4.96, obviously a misprint. *651. Double, $d = 0''.5$, $\Delta m = 0.6$. *659. Double, $d = 0''.9$, $\Delta m = 0.6$; spectrum of fainter component A_2—A_3 (*H. D.*). *668. Double, $d = 2''$, $\Delta m = 1.6$. *672. Spectrum composite; visual double, $d = 0''.6$, $\Delta m = 0.4$, the components of which are probably identical with the spectral components; colour of the A_2 star assumed $C = -0.10$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
676	7.2c	5 9.8	8 19	. . .	0.19c	F_0	. . .	. . .	. . .	(2.2)	. . .	*
677	5.5	10.5	11 14	—1.6	—0.13	A_3	. . .	. . .	. . .	—0.5	. . .	
678	7.6	10.9	20 1	. . .	0.12	A_3	. . .	. . .	. . .	*1.1*	. . .	
679	7.2	11.5	12 28	. . .	0.93	K_0	. . .	. . .	1.1	(0.8)	. . .	
680	6.4	11.5	1 51	3.8	—0.21	B_9	. . .	. . .	. . .	0.0	. . .	
681	6.8	11.6	20 2	2.9	0.22	F_5	. . .	. . .	. . .	*2.8*	. . .	
682	6.2	13.3	20 1	1.1	0.94	K_0	K_0	(1.4)	0.8	0.8	1.8	*
683	5.4	14.0	2 30	1.0	0.23	F_5	. . .	. . .	. . .	*2.1*	. . .	
684	6.8	14.4	19 30	—0.8	—0.27	A0p	. . .	. . .	. . .	0.6	. . .	
686	7.4	14.8	10 48	1.5	0.03	A_0	. . .	. . .	. . .	1.5	. . .	
687	6.4	15.0	19 43	—0.2	1.14	K_0	. . .	. . .	0.6	1.0	. . .	
688	6.5	15 4	9 38	. . .	0.11	A_2	. . .	. . .	. . .	1.1	. . .	*
689	6.7	15.5	2 27	. . .	0.85	G_5	. . .	. . .	0.7	(0.5)	. . .	
690	6.7	15.6	2 50	. . .	0.08	A_5	. . .	. . .	. . .	*1.2*	. . .	
691	7.5	15.6	11 0	. . .	0.15	F_0	. . .	. . .	. . .	(2.2)	. . .	
692	6.4	16.0	3 54	—0.4	—0.22	B_3	. . .	. . .	—1.5	. . .	. . .	
693	5.7	16.3	8 20	—1.3	—0.21	B_2	. . .	. . .	—2.2	. . .	. . .	
694	7.4	16.6	16 1	. . .	0.17	A_0	. . .	. . .	. . .	(1.2)	. . .	
696	7.2	16.8	5 18	. . .	0.26	F_5	. . .	. . .	. . .	(2.8)	. . .	
697	5.0	17.6	3 27	. . .	—0.24c	B_3		See	table	I		*
698	7.1	17.6	3 28	. . .	. . .	A	. . .	. . .	. . .	. . .	. . .	
699	6.1	17 9	16 36	1.3	0.06	A_2	. . .	. . .	. . .	1.0	. . .	
700	6.4	18.2	5 13	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
701	7.4	18.4	10 59	. . .	0.34	F_5	. . .	. . .	. . .	(2.8)	. . .	
702	5.1	18.6	17 18	3.7	0.41	G_0	. . .	. . .	4.3	3.8	. . .	
703	7.3	19.2	11 27	3.8	1.09	G_5	. . .	. . .	—0.2	(0.8)	. . .	
704	6.3	19.4	2 16	. . .	—0.32	B_3	. . .	. . .	—1.9	. . .	. . .	
705	4.7	19.6	1 45	—1.2	—0.32	B3p		See	table	I		
707	7.5	20.3	15 35	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
708	6.2	20.4	16 36	—1.7	—0.21	B_3	B3n	—0.8	—1.4	. . .	. . .	
709	6.0	20.7	0 26	—0.2	—0.33	B_3	. . .	. . .	—1.9	. . .	. . .	
710	7.3	20.9	16 8	. . .	0.18	F_2	. . .	. . .	. . .	(2.2)	. . .	
711	6.4	21.3	6 47	. . .	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
712	5.3	21.3	17 53	—1.4	—0.20	B_3	. . .	. . .	—1.4	. . .	. . .	
713	6.1	21.5	15 10	(1.1)	—0.05	A_2	. . .	. . .	. . .	0.5	. . .	
714	4.7	21.6	3 1	—4.0c	—0.32	B_2		See	table	I		
715	6.6	21.8	3 45	1.5	—0.34	B_3	. . .	. . .	—2.0	. . .	. . .	
716	5.5	22.0	15 48	0.4	—0.11	A_0	A0n	0.7	. . .	0.1	. . .	
717	6.5	22.0	2 15	. . .	0.72	K_0	. . .	. . .	((3.4))	(0.6)	. . .	
718	6.0	22.2	17 10	2.0	1.68	K_5	. . .	. . .	—0.2	. . .	. . .	
719	7.1	22.4	16 22	3.3	0.29	G_0	. . .	. . .	3.7	3.4	. . .	

*676. Double, $d = 5''$, $\Delta m = 0.5$; in *G. A.* the Potsdam magnitude refers to the brighter component. *682. Double, $d = 9''$, $\Delta m = 4.0$. Colour of A assumed $C = 0.98$. *688. Misprint by 1 magnitude in photogr. magn. and colour in *G. A.*, **B.** *697. The colour is combined with *G. A.* 698.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
720	6.4	5 22.9	1 13	. . .	—0.41	B_3	. . .	. . .	—2.6	. . .	. . .	
721	6.3	22.9	13 36	. . .	0.01	A_2	. . .	. . .	. . .	0.7	. . .	
722	6.8	23.2	12 29	5.5	0.42	F_8	. . .	. . .	*d*	4.0	. . .	
723	6.6	23.5	18 17	1.6	—0.04	A_2	. . .	. . .	. . .	0.9	. . .	
724	7.0	24.2	12 12	. . .	—0.21	B_8	. . .	. . .	. . .	—0.7	. . .	
725	7.4	24.2	16 5	. . .	(1.61)	Ma	. . .	. . .	(0.7)	. . .	. . .	
726	5.8	24.7	15 17	(0.8)	0.06	A_2	. . .	. . .	. . .	0.9	. . .	
727	5.7	24.7	1 42	—1.1	—0.35	B_3	B_{4n}	—0.8	—2.1	. . .	. . .	
728	6.4	25.1	4 8	. . .	1.17	K_0	. . .	. . .	0.5	(0.9)	. . .	
729	7.3	25.4	10 11	. . .	—0.19	B_9	. . .	. . .	. . .	—1.2c	. . .	*
730	7.1	25.4	10 5	. . .	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
731	4.3	25.4	5 52	—0.2	—0.24	B_3		See	table	I		
732	7.0	25.8	18 10	. . .	1.52	K_5	. . .	. . .	0.3	. . .	. . .	
733	6.6	25.9	14 51	. . .	—0.19	B_5	. . .	. . .	—0.9	. . .	. . .	
734	5.5	26.0	3 13	—2.1	—0.37	B_3	B_{2s}	—2.0	—2.3	. . .	. . .	*
735	7.7	26.2	9 10	. . .	—0.11	B_8	. . .	. . .	. . .	0.0	. . .	
736	4.7	26.4	18 31	—3.2	2.32	Ma		See	table	I		
737/8	5.5c	26.5	16 59	—2.2	—0.23c	B_9	. . .	. . .	. . .	—1.7c	. . .	*
739	5.5	27.7	18 29	—1.8	—0.19	B_{3p}	. . .	. . .	—1.4	. . .	. . .	
740	5.6	28.2	14 14	—3.2	—0.20	B_3	B_{4n}	—0.6	—1.4	. . .	. . .	
741	7.3	28.3	15 31	. . .	0.43	F_8	. . .	. . .	*d*	(4.0)	. . .	
742	6.4	28.8	1 21	. . .	—0.29	B_5	. . .	. . .	—1.4	. . .	. . .	
743	5.3	29.0	3 42	0.3	—0.11	A_2	. . .	. . .	. . .	0.2	. . .	
744	4.5	29.4	9 25	—3.5	—0.29	B_0		See	table	I		
745	6.7	29.4	5 36	. . .	—0.37	B_5	. . .	. . .	—1.4	. . .	. . .	
747	5.6	29.6	10 10	0.2	—0.01	B_8	. . .	. . .	. . .	0.0	. . .	
748	7.2	30.1	19 29	. . .	—0.19	B_9	. . .	. . .	. . .	—0.7	. . .	
749	5.4	31.3	16 58	1.6	0.10	A_5	. . .	. . .	. . .	*1.3*	. . .	
750	4.4	31.4	9 14	3.4	0.88	K_0		See	table	I		
751	6.1	31.5	10 58	0.8	1.63	K_0	. . .	. . .	—2.2	(—1.2)	. . .	
752	6.1	31.9	8 54	. . .	—0.38	B_3	. . .	. . .	—2.3	. . .	. . .	
753	7.5	31.9	4 42	. . .	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
754	5.7	32.6	7 29	0.3	—0.16	B_8	. . .	. . .	. . .	—0.3	. . .	
755	7.5	32.8	5 57	3.5	(1.09)	K_5	. . .	. . .	(1.9)	. . .	. . .	
756	7.0	32.9	8 26	. . .	0.98	G_5	. . .	. . .	0.1	(0.5)	. . .	
757	4.5	33.9	4 4	—4.0	—0.22	B_{3p}		See	table	I		
758	7.2	34.3	12 58	. . .	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
759	6.7	34.6	15 18	—0.4	0.26c	F_0	. . .	. . .	. . .	*1.6*c	. . .	*
760	4.9	35.5	16 30	—0.4	—0.31	B_3		See	table	I		
761	7.4	36.0	9 9	. . .	—0.33	B_8	. . .	. . .	. . .	0.4	. . .	
762	6.0	36.0	0 17	. . .	—0.02	A_5	. . .	. . .	. . .	*1.2*	. . .	

*729. Double, $d = 1''.2$, $\Delta m = 0.5$. *734. Double, $d = 2''$, $\Delta m = 1.1$. *737/8. Double, $d = 10''$, $\Delta m = 0.4$. *759. Double, $d = 10''$, $\Delta m = 1.2$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
763	7.2	5 36.2	3 44	. . .	0.45	G_5	. . .	. . .	(4.0)	(2.0)	. . .	
764	7.5	36.6	18 57	1.7	(1.16)	K_0	. . .	. . .	0.5	1.3	. . .	
765	7.1	37.0	10 29	. . .	0.11	A_5	. . .	. . .	. . .	*1.2*	. . .	
766	6.7	37.0	18 57	—1.6	—0.29	B_9	. . .	. . .	. . .	0.7	. . .	
767	6.9	37.3	14 8	1.4	0.97	G_5	. . .	. . .	0.2	0.5	. . .	
768	5.2	37.3	1 26	0.4	0.95	G_5	. . .	. . .	0.3	0.5	. . .	
769	7.2	38.2	6 51	. . .	—0.26	B_8	. . .	. . .	. . .	—0.8	. . .	
770	6.8	39.1	16 2	0.4	—0.13	A_0	. . .	. . .	. . .	0.1	. . .	
771	6.9	39.4	18 40	(1.5)	1.60	K_5	. . .	. . .	0.1	. . .	. . .	
772	6.6	39.4	12 51	. . .	0.02	A_3	. . .	. . .	. . .	*1.1*	. . .	
773	7.2	39.6	6 18	. . .	—0.28	B_8	. . .	. . .	. . .	—0.5	. . .	
774	6.1	39.8	3 58	. . .	0.02	F_0	. . .	. . .	. . .	*(1.9)*	. . .	
775	7.4	40.0	6 15	. . .	—0.23	A_0	. . .	. . .	. . .	0.3	. . .	
776	5.9	41.0	15 47	—0.9	—0.18	B_8	. . .	. . .	. . .	—0.8	. . .	
777	7.6	41.1	10 54	. . .	0.85	K_2	. . .	. . .	(3.1)	. . .	. . .	
778	5.9	41.4	9 30	(1.6)	0.75	G_5	. . .	. . .	((1.1))	1.5	. . .	
779	6.1	41.4	1 8	3.7	0.42	G_5	. . .	. . .	(3.9)	3.9	. . .	
780	5.7	41.5	14 28	1.8	—0.09	A_2	A_{0n}	0.7	. . .	0.8	. . .	
781	5.5	41.6	17 42	—2.5	0.07	F_0	F_4	2.6	. . .	*—2.5*	. . .	*
782	7.2	41.6	12 19	. . .	1.30	K_0	. . .	. . .	—0.3	(0.4)	. . .	
783	5.2	42.0	13 52	—0.8	—0.26	B_5	. . .	. . .	—1.2	. . .	. . .	
784	7.5	42.2	4 3	. . .	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
785	6.6	42.4	12 24	. . .	—0.22	B_5	. . .	. . .	—1.0	. . .	. . .	
786	5.3	42.6	6 25	—0.7	0.14	A_3	A_{4s}	1.7	. . .	*0.0c*	. . .	*
787	7.2	42.9	18 13	(2.7)	0.11	F_2	. . .	. . .	. . .	*2.2*	. . .	
788	7.7	43.0	3 53	3.6	0.13	F_8	. . .	. . .	*d*	3.9	. . .	
789	7.1	43.1	7 31	. . .	0.15	F_2	. . .	. . .	. . .	*(2.2)*	. . .	*
790	6.9	43.2	11 58	. . .	—0.27	B_8	. . .	. . .	. . .	—0.7	. . .	
791	7.2	43.6	0 42	. . .	—0.46	B_8	. . .	. . .	. . .	1.5	. . .	
792	4.9	43.9	12 37	—0.4	—0.17	B_9		See	table	I		
793	5.9	44.6	9 50	—1.9	0.79	G_5	G_6	0.8	0.9	0.2	(1.6)	
794	5.7	44.8	14 16	—0.1	0.89	K_0	K_0	1.4	1.2	0.7	(2.2)	
795	6.1	44.9	4 24	. . .	1.30	K_0	. . .	. . .	—0.3	(0.4)	. . .	
796	6.6	45.1	14 25	1.3	—0.17	B_9	. . .	. . .	. . .	—0.4c	. . .	*
797	6.8	45.2	14 1	—0.5	0.89	G_5	. . .	. . .	0.5	0.5	. . .	
798	7.0	45.2	18 32	. . .	1.14	K_0	. . .	. . .	0.6	(1.3)	. . .	
799	6.9	45.5	11 28	. . .	0.76	G_5	. . .	. . .	((1.1))	(1.0)	. . .	
800	7.1	45.6	18 23	. . .	0.56	G_5	. . .	. . .	(3.8)	(0.5)	. . .	
801	7.1	46.0	19 30	3.8	—0.20	B_9	. . .	. . .	. . .	0.0	. . .	
802	6.0	46.5	19 50	1.1	0.35	B_9	. . .	. . .	. . .	1.0	. . .	*

*781. The smallness of the proper motion seems to point at the giant character of the star, in contradiction with the spectroscopic absolute magnitude. *786. Double, $d = 2''$, $\Delta m = 0.1$. *789. Photogr. magn. and colour misprinted by 1 mg. in *G. A.*, both **A** and **B**. *796. Double, $d = 0''.9$, $\Delta m = 2.0$. *802. Considerable excess of colour.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
803	7.6	5 46.6	19 43	. . .	(0.85)	K_0	. . .	. . .	(1.5)	. . .	. . .	
804	5.6	46.7	14 8	—0.7	—0.19	B_9	. . .	. . .	. . .	—0.9	. . .	
805	7.0	47.1	6 11	. . .	0.84	G_5	. . .	. . .	0.7	(0.5)	. . .	
806	5.0	47.2	1 50	—3.3	1.30	K_0	. . .	. . .	—0.3	0.0	. . .	
807	7.2	47.6	11 48	. . .	0.26	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
808	7.6	48.4	12 25	6.6	0.48	F_8	. . .	. . .	*d*	4.0	. . .	
809	6.5	48.7	10 34	. . .	1.34	K_0	. . .	. . .	—0.6	(0.0)	. . .	
810	6.5	49.0	11 45	. . .	—0.11	B_9	. . .	. . .	. . .	—0.8	. . .	
811	6.6	49.0	3 13	2.4	1.18	K_0	. . .	. . .	0.5	1.3	. . .	
812	5.9	49.0	19 44	0.2	—0.38	B_2	. . .	. . .	—2.6	. . .	. . .	
813	6.8	49.2	14 12	. . .	0.80	K_0	. . .	. . .	((2.5))	(0.9)	. . .	
814	6.7	49.6	5 51	. . .	—0.14c	B_9	. . .	. . .	. . .	—1.1c	. . .	*
815	6.2	49.6	0 57	. . .	1.21	K_0	. . .	. . .	0.3	(0.8)	. . .	
816	6.5	50.3	13 56	7.0	0.50	G_5	G_5	5.6	(4.1)	5.2	(5.6)	
817	6.0	51.0	9 30	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
818	6.9	51.1	16 21	. . .	—0.28	B_3	. . .	. . .	—1.6	. . .	. . .	
819	6.1	51.2	11 30	. . .	1.11	G_5	. . .	. . .	—0.3	(—0.3)	. . .	
820	7.0	51.8	14 3	. . .	1.72	K_2	. . .	. . .	—1.5	. . .	. . .	
821	6.5	52.8	1 13	. . .	1.42	K_2	. . .	. . .	0.5	. . .	. . .	
822	7.2	52.9	16 35	1.2	—0.12	B_9	. . .	. . .	. . .	—0.3	. . .	
823	7.1	53.0	18 50	. . .	1.28	K_0	. . .	. . .	—0.2	(0.5)	. . .	
824	6.1	53.2	1 50	—1.2	—0.03	A_5	. . .	. . .	. . .	*0.6*	. . .	
825	5.8	53.3	12 48	0.0	0.83	G_5+A_5	. . .	. . .	—0.3c	—0.2c	. . .	*
826	5.2	53.7	0 32	—2.0	—0.12	A_0	. . .	. . .	. . .	—0.7	. . .	
827	6.8	54.6	16 17	. . .	1.50	K_2	. . .	. . .	—0.3	. . .	. . .	
828	6.5	54.7	12 37	. . .	—0.08	B_9	. . .	. . .	. . .	—0.2	. . .	
829	4.2	56.9	9 39	—0.9	0.18	A_2		See	table	I		
830	6.5	57.1	1 41	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
831	5.2	57.5	19 42	—0.1	—0.21	B_8	. . .	. . .	. . .	—0.6	. . .	
832	6.0	57.8	11 41	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
833	7.5	58.0	17 8	. . .	(1.37)	K_2	. . .	. . .	(1.0)	. . .	. . .	
834	6.7	59.3	14 24	5.1	0.31	F_5	. . .	. . .	. . .	*3.9*	. . .	
835	5.8	59.6	5 26	—3.5	1.00	K_0	G_6	0.4	0.8	0.1	—0.7	
836	5.7	59.7	4 10	—2.3	1.00	K_0	G_4	—1.1	0.8	0.2	—1.6	*
837	7.3	6 0.2	0 37	0.7	[1.23]	K_5	. . .	. . .	(1.4)	. . .	. . .	
838	6.5	1.2	16 23	. . .	1.28	K_0	. . .	. . .	—0.2	(0.5)	. . .	
839	7.2	1.4	16 35	4.0	0.45	F_5	. . .	. . .	. . .	*3.2*	. . .	
840	4.4	1.9	14 47	—0.5	—0.16	B_2		See	table	I		
841	6.9	2.1	10 28	. . .	1.10	K_0	. . .	. . .	0.7	(1.3)	. . .	
842	6.4	3.3	8 41	. . .	—0.15	B_9	. . .	. . .	. . .	—1.0	. . .	
843	6.7	3.7	7 32	. . .	0.81	G_0	. . .	. . .	(—1.6)	(—1.0)	. . .	

*814. Double, $d = 4''$, $\Delta m = 2.5$. *825. Double, $d = 0''.5$, $\Delta m = 1.9$. Colour of A (sp. G_5) assumed $C = 1.02$. *836. Misprint in photogr. magn. by 1 magn. in *G. A.*, **B.**

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
844	5.6	6 3.8	2 31	0.1	−0.30	A_0	. . .	. . .	. . .	0.8	. . .	
845	7.2	4.5	15 56	. . .	0.66	G_5	. . .	. . .	((2.2))	(1.0)	. . .	
846	6.7	4.6	2 54	4.2	0.83	K_0	. . .	. . .	1.8	(2.4)	. . .	
847	6.7	5.1	13 40	. . .	−0.11	B_5	. . .	. . .	−0.8	. . .	. . .	
848	6.4	5.2	18 9	−0.9	1.37	K_0	. . .	. . .	−0.7	−0.1	. . .	
849	5.9	5.8	13 40	. . .	−0.04	A_2	. . .	. . .	. . .	0.4	. . .	
850	6.9	5.8	17 24	1.0	−0.12	A_0	. . .	. . .	. . .	0.2	. . .	
851	5.7	6.1	19 49	−0.9	−0.17	B_9	. . .	. . .	. . .	−1.0	. . .	
852	4.4	6.3	14 14	−0.6	−0.13	B_3	}	See	table	I		
853	4.9	6.3	16 9	−0.9	−0.18	B_3	}					
854	6.9	6.6	7 25	. . .	−0.20	B_2	. . .	. . .	−2.1	. . .	. . .	
855	7.1	6.6	6 50	6.2	0.35	G_0	. . .	. . .	4.0	4.6	. . .	
856	7.4	6.8	10 22	. . .	−0.20	B_5	. . .	. . .	−0.9	. . .	. . .	
857	6.6	7.5	10 19	. . .	−0.19	B_9	. . .	. . .	. . .	−0.7	. . .	
858	6.8	7.6	6 2	. . .	1.48	Ma	. . .	. . .	0.1	. . .	. . .	
859	6.5	7.6	10 40	5.3	0.63	G_5	. . .	. . .	((2.7))	4.4	. . .	
860	6.2	7.7	18 43	2.5	−0.09	B_8	. . .	. . .	. . .	0.0	. . .	
861	5.7	8.6	17 56	0.1	0.24	A_5	A_5	1.0	. . .	*0.8*	. . .	
862	6.7	9.0	16 4	2.5	0.87	G_5	. . .	. . .	0.6	0.5	. . .	
863	5.2	9.0	19 12	3.8	0.36	F_5	F_6	3.2	. . .	*3.1*	. . .	
864	7.3	9.4	2 19	. . .	−0.35	B_9	. . .	. . .	. . .	0.9c	. . .	*
865	5.8	9.5	13 53	1.5	−0.31	B_2	B_{2s}	−2.0	−2.7	. . .	. . .	
866	5.3	9.6	16 10	−0.6	−0.13	B_9	B_{8n}	0.2	. . .	−0.9	. . .	
867	6.8	9.8	18 20	. . .	1.65	K_0	. . .	. . .	−2.2	(−1.3)	. . .	
868	5.4	10.1	12 35	−0.9	−0.06	B_9	B_{9s}	−0.2	. . .	0.0	. . .	
869	6.0	10.3	6 6	. . .	−0.22	B_5	. . .	. . .	−1.0	. . .	. . .	
870	6.8	10.4	10 19	. . .	1.28	K_0	. . .	. . .	−0.2	(0.5)	. . .	
871	6.4	10.5	4 19	−0.6	−0.33	B_3	. . .	. . .	−1.9	. . .	. . .	
872	6.5	10.6	17 13	0.7	1.70	K_0	. . .	. . .	−2.3	(−1.4)	. . .	
873	6.3	10.8	1 12	0.8	0.20	F_5	. . .	. . .	. . .	*1.9*	. . .	
874	5.1	10.8	12 18	3.5	0.24	F_5	F_5	3.4	. . .	*3.0*	. . .	
875	7.1	10.9	5 9	. . .	−0.22	B_9	. . .	. . .	. . .	−0.2	. . .	
876	6.4	11.2	1 7	. . .	−0.17	B_8	. . .	. . .	. . .	−0.4	. . .	
877	7.1	11.3	18 57	. . .	1.00	K_0	. . .	. . .	0.8	(0.9)	. . .	
878	7.2	11.4	15 54	. . .	−0.20	B_9	. . .	. . .	. . .	−0.6	. . .	
879	6.4	11.6	7 6	. . .	−0.19	B_8	. . .	. . .	. . .	−0.6	. . .	
880	5.3	11.6	9 59	1.6	0.02	A_2	. . .	. . .	. . .	0.9	. . .	
881	6.5	11.9	14 6	. . .	−0.13	B_9	. . .	. . .	. . .	−1.0	. . .	
882	5.8	12.0	5 8	4.7	0.46	G_0	G_0	3.6	4.7	4.0	5.0	
883	6.0	12.4	14 25	−0.1	−0.04	A_0	. . .	. . .	. . .	0.4	. . .	
884	6.4	13.2	9 6	. . .	0.73	K_0	. . .	. . .	((3.3))	(0.5)	. . .	
885	6.2	13.2	17 22	0.4	−0.17	B_8	. . .	. . .	. . .	−0.4	. . .	

*864. Double, $d = 0''.6$, $\Delta m = 2.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
886	7.0	6 13.8	13 28	. . .	{0.48c	F_5	. . .	. . .	. . .	(2.8)	. . .	*
887	7.8	13.8	13 30	. . .		G_5	. . .	. . .	. . .	. . .	. . .	*
888	6.5	13.9	16 3	. . .	0.49	G_0	. . .	. . .	4.8	(2.0)	. . .	
889	6.0	14.4	14 42	—1.1	1.74	K_5	K_8	(0.6)	—0.4	. . .	—0.1	*
890	6.7	14.9	7 46	. . .	—0.16	B_9	. . .	. . .	. . .	—1.7c	. . .	*
891	6.4	15.3	11 48	. . .	—0.26	B_5	. . .	. . .	—1.2	. . .	. . .	
892	6.5	15.6	17 49	. . .	0.98	K_0	. . .	. . .	0.8	(0.7)	. . .	
893	7.3	15.7	19 56	. . .	0.95	G_5	. . .	. . .	0.3	(0.5)	. . .	
894	6.2	16.2	2 19	1.8	0.10	A_5	. . .	. . .	. . .	*1.0*c	. . .	*
895	6.8	17.0	17 37	—1.0	—0.14	A_0	. . .	. . .	. . .	—0.5c	. . .	*
896	6.0	17.0	12 37	. . .	0.17	F_0	. . .	. . .	. . .	(*1.9*)	. . .	
897	6.9	17.4	4 16	3.6	0.00	A_3	. . .	. . .	. . .	*2.1*	. . .	
898	6.2	18.1	3 49	0.0	—0.22	B_3	. . .	. . .	—1.5	. . .	. . .	
899	4.3c	18.4	4 39	—3.2	0.14c	A_5		See	table	I		
900	7.2	18.6	9 13	. . .	—0.17	B_9	. . .	. . .	. . .	—1.0	. . .	
901	7.1	18.6	2 43	. . .	0.97	K_0	. . .	. . .	0.8	(0.9)	. . .	*
902	6.1	18.6	8 57	0.7	—0.16	A_0	. . .	. . .	. . .	0.1	. . .	
903	7.0	19.0	11 18	. . .	0.84	K_0	. . .	. . .	1.6	(0.8)	. . .	
904	6.4	19.1	16 6	. . .	1.08	G_5	. . .	. . .	—0.2	(—0.2)	. . .	
905	6.8	19.3	17 3	. . .	—0.17	B_9	. . .	. . .	. . .	—1.0	. . .	
906	6.6	19.8	14 48	(H=−1.5)	(2.33)	Nb	. . .	. . .	. . .	. . .	. . .	*
907	7.0	20.3	15 12	0.1	1.19	K_0	. . .	. . .	0.4	0.9	. . .	
908	6.9	20.3	18 49	5.1	0.98	K0	. . .	. . .	0.8	4.0	. . .	
910	6.3	20.6	2 20	. . .	—0.19	B_9	. . .	. . .	. . .	—0.7	. . .	
911	6.8	20.7	0 52	. . .	0.70	G_5	. . .	. . .	((1.7))	(0.6)	. . .	
912	6.7	20.9	15 35	. . .	—0.15	B_9	. . .	. . .	. . .	—1.1c	. . .	*
913	6.6	21.0	13 10	. . .	0.42	F_8	. . .	. . .	. . .	. . .	. . .	
914	7.1	21.6	14 57	[—1.7]	—0.15	Oe5	. . .	. . .	—3.5	. . .	. . .	
915	5.3	22.1	0 22	—3.0	1.19	K_0	K_0	0.2	0.4	0.3	—0.3	
916	5.8	22.1	2 58	0.6	0.94	G_5	G_8	0.1	0.4	0.5	1.0	
917	6.7	22.2	5 14	. . .	0.20	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
918	6.3	22.7	16 19	3.0	0.81	G_5	. . .	. . .	0.9	0.5	. . .	
919	6.2	22.8	10 22	. . .	1.16	K_0	. . .	. . .	0.5	(0.8)	. . .	
920	6.3	23.1	1 59	. . .	—0.14	B_9	. . .	. . .	. . .	—1.0	. . .	
921	7.5	23.3	17 49	6.0	0.39	G_0	. . .	. . .	4.2	4.6	. . .	
922	6.4	23.4	11 5	. . .	0.17	F_0	. . .	. . .	. . .	(*1.9*)	. . .	
923	6.4	24.0	2 43	1.8	1.49	Ma	. . .	. . .	0.2	. . .	. . .	
924	7.3	24.2	17 58	. . .	—0.02	A_0	. . .	. . .	. . .	0.5c	. . .	*
925	6.5	24.6	9 5	. . .	—0.06	Aop	. . .	. . .	. . .	0.2	. . .	
926	6.7	25.2	5 56	. . .	0.04	B_3	. . .	. . .	—1.0	. . .	. . .	

*886/7. Superposed in *G. A.*; distance: 73″. *889. *Mt. W.*′ 0.0. *890. Double, $d = 0''.3$, $\Delta m = 0.0$. *894. Double, $d = 0''.4$, $\Delta m = 0.3$. *895. Double, $d = 2''.4$, $\Delta m = 1.0$. *901. Double, $d = 1''.7$, $\Delta m = 3.7$. Colour of A assumed $C = 1.00$. *906. Variable, range 0.4 mg. ?. *912. Double, $d = 3''$, $\Delta m = 2.5$. *924. Double, $d = 2''$, $\Delta m = 2.1$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
927	6.2	6 25.4	17 1	1.8	1.19	K_0	. . .	. . .	0.3	0.9	. . .	*
928	7.3	25.6	17 29	. . .	1.12	K_0	. . .	. . .	0.6	(1.3)	. . .	
929	5.8	25.6	11 19	. . .	—0.15	B_0	. . .	. . .	—2.6	. . .	. . .	*
930	7.1	25.8	16 54	. . .	1.41	K_2	. . .	. . .	(0.6)	. . .	. . .	
931	6.4	25.9	15 58	0.3	0.12	A_5	. . .	. . .	. . .	*0.9*	. . .	
932	6.5	26.1	11 52	. . .	—0.16	B_8	. . .	. . .	. . .	—0.3	. . .	*
933	5.1	26.2	11 37	0.5	0.19	A_2	. . .	. . .	. . .	0.8	. . .	
934	6.8	26.3	5 51	. . .	0.00c	A_0	. . .	. . .	. . .	0.7c	. . .	*
935/6	6.2c	26.5	17 51	2.7 / 3.3	0.14c	F_8	F_6	2.0	*d*	3.5c	. . .	*
937	7.1	26.6	15 47	. . .	0.52	F_8	. . .	. . .	*g*	(—0.5)	. . .	
938	6.8	26.6	5 1	—0.8	—0.21	B_2	. . .	. . .	—2.2	. . .	. . .	
939	6.2	26.8	11 45	. . .	0.96	K_0	. . .	. . .	0.8	(0.7)	. . .	*
940	6.9	26.8	8 54	. . .	0.12	A_3	. . .	. . .	. . .	*1.1*	. . .	
941	7.2	27.0	15 6	. . .	1.10	G_5	. . .	. . .	—0.3	(—0.1)	. . .	
942	6.0	27.0	4 55	—0.3	0.90	K_0	G_8	0.9	1.2	0.7	1.3	
943	4.5	27.5	7 25	—3.1	—0.10	A_{0p}		See	table	I		
944	5.6	27.9	14 14	2.0	1.15	K_0	. . .	. . .	0.5	1.3	. . .	
945	7.4	28.6	14 50	. . .	0.41	F_5	. . .	. . .	. . .	(*2.1*c)	. . .	*
946	6.9	28.8	19 30	—0.1	—0.11	A_0	. . .	. . .	. . .	0.0	. . .	
947	6.8	28.9	2 59	. . .	0.19	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
948	6.7	29.2	16 17	(1.4)	0.75	G_5	. . .	. . .	((1.1))	1.4	. . .	
949	6.9	29.2	15 25	. .	(1.00)	G_5	G_{0p}	—2.6	. . .	. . .	. . .	*
950	6.4	29.4	7 39	—0.2	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
951	6.1	29.8	10 5	. . .	1.54	K_5	. . .	. . .	0.3	. . .	. . .	
952	5.7	30.1	0 58	—0.4	—0.17	B_5	. . .	. . .	—0.9	. . .	. . .	
953	6.7	30.2	16 53	1.7	0.24	F_5	F_4	4.2	. . .	*2.4*	. . .	
954	7.0	30.4	13 47	. . .	0.16	A_0	. . .	. . .	. . .	(1.2)	. . .	
955	6.5	30.7	4 35	. . .	—0.21	B_9	. . .	. . .	. . .	—0.4	. . .	
956	7.1	30.7	15 50	. . .	0.07	A_0	. . .	. . .	. . .	1.6	. . .	
957	7.4	31.9	18 29	. . .	—0.22	B_8	. . .	. . .	. . .	—0.9	. . .	
959	6.1	32.0	6 14	—0.8	—0.18	B_{0p}	. . .	. . .	—2.6	. . .	. . .	*
960	6.6	32.1	10 56	. . .	1.34	K_0	. . .	. . .	—0.5	(0.0)	. . .	
961	6.4	32.4	2 48	2.4	0.84	K_0	. . .	. . .	1.6	1.5	. . .	
962	6.2	32.6	5 3	. . .	—0.11	B_1	. . .	. . .	—2.1	. . .	. . .	
963	7.2	32.7	2 21	. . .	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	

*927. Double, $d = 8''$, $\Delta m = 3.9$. Colour of A assumed $C = 1.22$. *929. Double, $d = 16''$, $\Delta m = 2.8$. *932. This is BD. + 11°1207; in *G. A.* called erroneously 11°1208. *934. Double, $d = 11''$, $\Delta m = 1.4$. *935/6. Double, $d = 20''$. Difference in magn. 0.54; in *H. D.* magnitudes 7.24 and 7.78, combined 6.72; this is probably a mistake, giving an improbably low value for the colour-index of this F_8 star, and contradicted by the Potsdam-Göttingen value; evidently 6.72 is the magnitude of the brighter component, whence the Harvard combined magnitude becomes 6.20. *939. Double, $d = 33''$, $\Delta m = 4.0$. Colour of A assumed $C = 0.99$. *945. Double, $d = 2''.4$, $\Delta m = 0.1$. *949. Cepheid variable W Geminorum, range 0.8 mg.; the lines are narrow. The colour here given is corrected for variability, the *G. A.* observations being made near minimum light. *959. The lines are narrow (*H. D.*). Nevertheless, as appears from the colour, as well as from the proper motion, the absolute magnitude seems to be of the common value for this class of spectrum.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
964	7.3	6 32.8	7 14	. . .	—0.11	B_8	. . .	. . .	. . .	0.0	. . .	
965	6.1	33.4	1 42	. . .	—0.11	B_0	. . .	. . .	—2.5	. . .	. . .	
966	6.6	33.5	4 48	. . .	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
967	7.4	34.2	19 46	3.6	0.99	K_0	. . .	. . .	0.8	(2.2)	. . .	
968	5.9	34.2	13 4	. . .	—0.03	A_2	. . .	. . .	. . .	0.4	. . .	
969	6.4	35.2	6 28	. . .	—0.27	B_9	. . .	. . .	. . .	0.4	. . .	
970	6.2	35.6	19 30	(1.3)	—0.16	A_0	. . .	. . .	. . .	0.3	. . .	
971/2	6.6c	35.7	9 5	. . .	0.39c	F_5	. . .	. . .	. . .	*(2.8)*	. . .	*
973	6.4	35.8	11 6	—2.1	1.70	M_a	. . .	. . .	0.2	. . .	. . .	
974	5.6	36.0	0 35	—2.4	—0.20	B_9	. . .	. . .	. . .	—1.4	. . .	
975	7.6	36.1	14 30	. . .	0.08	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
976	6.7	36.2	14 19	. . .	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
977	5.1	36.6	17 45	2.2	0.01	A_0	. . .	. . .	. . .	1.0	. . .	
978	6.2	36.6	6 26	1.1	—0.20	B_2	. . .	. . .	—2.1	. . .	. . .	
979	7.0	36.8	3 21	. . .	—0.12	A_2	. . .	. . .	. . .	—0.6c	. . .	*
980	7.1	36.9	7 30	. . .	(1.50)	K_5	. . .	. . .	(0.4)	. . .	. . .	
981	7.6	37.5	18 14	3.4	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
982	6.4	37.9	3 8	. . .	1.26	K_0	. . .	. . .	0.0	(0.6)	. . .	
983	7.2	38.1	5 57	. . .	0.76	K_0	. . .	. . .	((3.1))	(0.5)	. . .	
984	4.6	38.4	13 20	0.5	1.26	K_0		See	table	I		
985	5.8	38.4	4 2	—1.3	—0.19	B_0	. . .	. . .	—2.7	. . .	. . .	
987	6.7	39.9	9 52	. . .	0.06	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
988	6.8	40.5	18 57	. . .	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
989	6.7	41.0	16 53	. . .	0.28	F_5+A_5	. . .	. . .	. . .	*(—0.2c)*	. . .	*
990	5.8	41.1	8 42	—2.1	—0.31	B_3	. . .	. . .	—1.8	. . .	. . .	
991	7.4	41.2	10 51	. . .	—0.21	B_9	. . .	. . .	. . .	—0.4	. . .	
992	7.4	41.3	17 14	(1.5)	—0.20	B_9	. . .	. . .	. . .	—0.2	. . .	
993	6.2	41.6	18 18	2.1	—0.14	A_0	. . .	. . .	. . .	0.3c	. . .	*
994	5.0	41.9	8 9	—1.5	1.55	K_0	. . .	. . .	—1.7	—1.0	. . .	
995	4.7	42.6	2 32	—1.7	1.07	K_0		See	table	I		
996	7.0	43.3	8 58	. . .	0.66	K_0	. . .	. . .	((3.9))	(1.0)	. . .	
997	6.1	43.9	1 7	—0.7	—0.33	B_3	. . .	. . .	—1.9	. . .	. . .	
998	7.6	44.0	18 6	. . .	0.23	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
999	5.7	44.1	16 19	—0.2	—0.22	B_8	B_{9s}	—0.3	. . .	—0.6	. . .	
1000	5.9	44.8	13 32	—2.2	1.34	K_0	K_3	(0.8)	—0.5	—0.2	0.3	
1001	6.7	44.9	5 47	. . .	0.12	A_5	. . .	. . .	. . .	*1.2*	. . .	
1002	7.3	45.5	15 12	. . .	[1.52]	K_5	. . .	. . .	(0.3)	. . .	. . .	
1003	7.0	45.7	5 58	. . .	0.20	F_5	. . .	. . .	. . .	*(2.8)*	. . .	*
1004	7.1	46.4	2 46	. . .	0.23	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
1005	6.2	46.5	3 10	. . .	—0.12	A_0	. . .	. . .	. . .	0.0	. . .	
1006	6.8	46.5	5 13	. . .	—0.20	B_{2p}	. . .	. . .	—2.1	. . .	. . .	*

*971/2. Double, $d = 7''$, $\Delta m = 0.9$. *979. Double, $d = 0''.3$, $\Delta m = 0.0$. *989. Composite spectrum. *993. Double, $d = 0''.4$, $\Delta m = 0.3$. *1003. Misprint in declination in *H. A.* **54**. *1006. Misprint in declination in *H. A.* **54**.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1007	5.8	6 47.4	8 30	1.1	0.02	A_5	. . .	. . .	. . .	*1.1*	. . .	
1008	6.3	47.8	11 7	. . .	0.91	G_5	. . .	. . .	0.5	(0.5)	. . .	
1009	6.6	48.9	15 58	(1.5)	0.88	G_5	. . .	. . .	0.6	0.5	. . .	
1010	4.7	49.0	13 19	2.0	0.25	F_0		See	table	I		
1011	6.1	50.1	8 27	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
1012	6.9	50.5	17 53	1.5	0.95	K_0	. . .	. . .	0.9	0.9	. . .	
1013	7.1	50.8	8 52	. . .	0.99	K_2	. . .	. . .	(2.6)	. . .	. . .	
1014	5.9	50.9	10 5	0.4	—0.20	B_8	. . .	. . .	. . .	—0.5	. . .	
1015	6.2	51.8	12 2	. . .	0.23	F_0	. . .	. . .	. . .	(*1.9*)	. . .	
1016	7.1	51.9	18 2	(2.5)	—0.44	B_2	. . .	. . .	—2.4	. . .	. . .	
1017	7.4	52.6	19 22	. . .	(1.13)	K_2	. . .	. . .	(2.2)	. . .	. . .	
1018	6.1	53.2	7 46	. . .	—0.06	A_2	. . .	. . .	. . .	0.2	. . .	
1019	6.0	53.7	3 44	—1.3	0.98	K_0	. . .	. . .	0.8	0.3	. . .	
1020	6.3	54.0	7 27	. . .	—0.34	B_8	. . .	. . .	. . .	0.8	. . .	
1021	7.0	54.1	16 5	0.0	0.64	G_0	. . .	. . .	(1.8)	1.4	. . .	
1022	5.9	54.5	16 13	—1.3	1.78	K_2	K_2	—2.5	—1.6	. . .	—2.5	
1023	6.7	54.6	15 40	. . .	—0.24	B_8	. . .	. . .	. . .	—1.0	. . .	
1024	6.8	54.7	15 26	. . .	1.30	K_5	. . .	. . .	1.1	. . .	. . .	
1025	7.0	55.4	10 46	. . .	1.52	K_5	. . .	. . .	0.3	. . .	. . .	
1026	6.8	55.6	11 55	. . .	—0.15	A_2	. . .	. . .	. . .	—0.2c	. . .	*
1027	7.3	55.9	18 7	. . .	—0.12	A_2	. . .	. . .	. . .	0.1	. . .	
1028	6.5	56.4	4 58	. . .	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
1029	5.9	56.6	15 29	1.3	1.13	K_0	. . .	. . .	0.6	1.3	. . .	
1030	6.2	56.6	17 54	0.8	1.62	Ma	. . .	. . .	0.9	. . .	. . .	
1031	6.5	56.6	5 42	. . .	—0.19	B_3	. . .	. . .	—1.4	. . .	. . .	
1032	6.0	56.8	16 49	1.1	1.61	K_5	. . .	. . .	0.1	. . .	. . .	
1033	7.0	57.6	14 29	. . .	0.09	A_3	. . .	. . .	. . .	*1.1*	. . .	
1034	7.7	57.6	19 22	. . .	—0.11	A_0	. . .	. . .	. . .	0.0	. . .	
1035	5.9	57.8	9 17	0.6	—0.04	A_2	. . .	. . .	. . .	0.5	. . .	
1036	5.2	58.1	11 6	—0.7	1.52	K_2	K_2	0.0	—0.4	. . .	—1.8	
1037	6.2	58.2	12 45	. . .	1.64	K_5	. . .	. . .	—0.1	. . .	. . .	
1038	7.0	58.3	18 49	. . .	0.05	A_2	. . .	. . .	. . .	1.0	. . .	
1039	7.0	58.4	2 35	. . .	0.69	G_0	. . .	. . .	(0.3)	(1.0)	. . .	
1040	7.1	58.6	15 23	. . .	0.05	A_2	. . .	. . .	. . .	1.0	. . .	
1041	6.5	59.2	1 39	. . .	—0.03	B_9	. . .	. . .	. . .	0.0	. . .	
1042	6.8	59.9	14 37	. . .	—0.20	B_8	. . .	. . .	. . .	—0.8	. . .	
1043	6.0	7 0.2	9 20	. . .	1.54	K_0	. . .	. . .	—1.7	(—0.9)	. . .	
1044	7.0	0.2	15 20	. . .	0.92	K_0	. . .	. . .	1.1	(0.8)	. . .	
1045	7.1	0.5	17 54	1.6	—0.27	B_9	. . .	. . .	. . .	0.4	. . .	
1046	6.0	1.8	5 4	. . .	—0.24	B_8	. . .	. . .	. . .	—1.0	. . .	
1047	5.9	2.4	7 38	—0.4	1.23	K_0	. . .	. . .	0.2	0.6	. . .	
1048	7.0	2.6	16 18	. . .	0.86	G_5	. . .	. . .	0.7	(0.5)	. . .	
1049	5.6	2.6	16 6	2.3	1.06	K_0	K_0	0.6	0.7	1.3	0.8	

*1026. Double $d = 0''.6$, $\Delta m = 1.3$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1050	7.6	7 2.9	17 50	. . .	0.46	F_5	. . .	. . .	. . .	(2.8)	. . .	
1051	7.0	3.0	11 5	. . .	—0.16	A_2	. . .	. . .	. . .	0.2	. . .	
1052	7.3	3.3	19 43	. . .	[1.47]	K_5	. . .	. . .	(0.5)	. . .	. . .	
1053	7.2	4.3	13 18	. . .	1.20	K_0	. . .	. . .	0.4	(0.9)	. . .	
1054	6.9	4.4	9 28	. . .	1.36	K_2	. . .	. . .	1.1	. . .	. . .	
1055	6.8	4.6	7 53	. . .	1.48	K_2	. . .	. . .	—0.1	. . .	. . .	
1056	7.3	5.6	15 30	1.8	0.19	F_0	. . .	. . .	. . .	*2.2*	. . .	
1057	6.8	6.0	3 21	. . .	0.81	G_5	. . .	. . .	0.9	(0.5)	. . .	
1058	6.7	6.0	17 9	. . .	1.39	K_5	. . .	. . .	0.7	. . .	. . .	
1059	6.0	6.5	5 49	. . .	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
1060	6.2	6.8	5 39	. . .	1.06	G_5	. . .	. . .	—0.2	(0.0)	. . .	
1061	7.4	7.1	15 21	3.3	—0.17	A_0	. . .	. . .	. . .	1.0	. . .	
1062	5.3	7.7	16 20	0.3	1.71	Mb	Mb	. . .	—0.8	. . .	—0.8	*
1063	6.7	7.8	13 56	. . .	1.17	K_0	. . .	. . .	0.5	(1.0)	. . .	
1064	7.1	8.3	10 52	. . .	0.86	K_0	. . .	. . .	1.4	(0.8)	. . .	
1065	5.8	9.0	12 17	1.3	0.95	K_0	K_0	0.2	0.9	0.8	1.7	
1066	5.6	9.1	3 17	—0.5	1.09	G_5	. . .	. . .	—0.3	—0.4	. . .	
1067	6.5	10.2	0 1	—0.6	0.74	G_5	G_5	—0.2	((1.2))	0.2	(1.6)	
1068	6.0	10.2	8 9	—0.3	1.61	Mb	. . .	. . .	—0.9	. . .	. . .	
1069	6.8	11.0	16 18	2.3	0.19	F_5	. . .	. . .	. . .	*2.6*	. . .	
1070	6.4	12.0	6 52	. . .	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
1071	7.0	12.2	9 29	3.9c	0.20	G_0	. . .	. . .	(1.8c)	3.0c	. . .	*
1073	7.4	13.6	10 30	. . .	—0.16	A_2	. . .	. . .	. . .	0.2	. . .	
1074	6.1	14.2	2 55	—1.2	0.97	G_5	. . .	. . .	0.2	—0.2	. . .	
1075	6.0	14.4	7 20	. . .	0.38	F_8	. . .	. . .	*d*	(2.2)	. . .	
1076	6.5	14.4	15 21	(—1.3)	—0.16	A_0	. . .	. . .	. . .	—0.4	. . .	
1077	6.8	15.4	0 35	. . .	—0.21	B_9	. . .	. . .	. . .	—1.0c	. . .	*
1078	6.8	15.5	3 46	0.4	—0.41	B_5	. . .	. . .	—1.4	. . .	. . .	
1079	6.0	16.9	0 23	. . .	—0.25	B_8	. . .	. . .	. . .	—1.0	. . .	
1080	6.8	17.3	18 28	2.1	0.22	F_2	. . .	. . .	. . .	*2.2*	. . .	
1081	6.6	17.3	0 54	(2.7)	0.77	G_5	. . .	. . .	((1.0))	1.0	. . .	
1082	6.7	17.3	15 33	. . .	0.78	G_5	. . .	. . .	((1.0))	(1.0)	. . .	
1083	6.4	18.8	15 43	. . .	—0.35	B_3	. . .	. . .	—2.1	. . .	. . .	
1084	6.9	18.9	10 26	. . .	0.83	G_5	. . .	. . .	0.8	(0.5)	. . .	
1085	5.3	19.4	11 52	—0.3	0.08	A_2	A_{2n}	1.6	. . .	0.4	. . .	
1086	6.9	20.1	18 21	. . .	0.83	G_5	. . .	. . .	0.8	(0.5)	. . .	
1087	5.1	20.2	9 29	—1.9	1.05	G_5	. . .	. . .	—0.1	—0.6	. . .	
1088	6.2	21.0	10 48	. . .	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
1089	6.3	21.2	11 12	. . .	—0.28	B_8	. . .	. . .	. . .	—0.5	. . .	
1090	6.7	21.6	12 9	. . .	0.78	K_0	. . .	. . .	((2.8))	(0.6)	. . .	
1092	7.0	21.8	15 30	—1.8	—0.19c	B_8	. . .	. . .	. . .	—1.3c	. . .	*
1093	7.2	22.0	19 15	4.4	0.63	G_5	. . .	. . .	((2.7))	4.1	. . .	

*1062. *Mt. W'.* —0.4. *1071. Double, $d = 1''$, $\Delta m = 0.0$. *1077. Double, $d = 0''.5$, $\Delta m = 0.4$. *1092. Double, $d = 2''.4$, $\Delta m = 1.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1094	5.3	7 22.7	7 9	0.6	0.04	A_5	A_9	1.4	. . .	*1.0*	. . .	
1095	4.6	22.7	9 8	0.2	1.55	K_0		See	table	I		
1096	6.1	23.1	15 20	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
1097	7.0	23.6	14 34	. . .	0.18c	A_3	. . .	. . .	. . .	*1.1*	. . .	*
1098	6.6	23.6	12 58	. . .	—0.03	A_5	. . .	. . .	. . .	*1.2*	. . .	
1099	6.8	23.6	19 50	—0.7	1.17	K_0	. . .	. . .	0.5	0.8	. . .	
1100	7.0	23.7	11 48	. . .	0.97	K_0	. . .	. . .	0.9	(0.8)	. . .	
1101	6.7	24.0	6 47	. . .	0.85	G_5	. . .	. . .	0.7	(0.5)	. . .	
1102	4.8	24.2	12 13	2.3	1.23	K_0		See	table	I		
1103	7.0	25.3	2 28	. . .	(1.31)	K_0	. . .	. . .	—0.4	(0.2)	. . .	
1104	6.6	25.6	11 25	. . .	1.22	K_0	. . .	. . .	0.3	(0.7)	. . .	
1105	5.6	26.0	17 18	1.8	1.00	K_0	K_1	(0.7)	0.8	1.0	1.9	
1106	6.6	26.4	12 53	(2.9)	0.86	G_5	. . .	. . .	0.7	0.5	. . .	
1107	6.7	26.8	2 56	. . .	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
1108	5.3	26.9	2 8	—2.1	0.09	A_5	A_8	1.8	. . .	*0.5*	. . .	
1109	6.7	27.8	15 50	—2.3	0.99	K_0	. . .	. . .	0.8	0.3	. . .	
1110	5.1	27.9	16 3	—0.4	0.01	A_2	A0n	0.9	. . .	0.0	. . .	
1111	5.7	28.0	3 30	0.4	0.15	A_5	. . .	. . .	. . .	*0.9*	. . .	
1112	6.2	28.6	10 47	. . .	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
1113	5.8	29.0	3 35	—1.0	—0.17	A_0	A0n	0.8	. . .	—0.2	. . .	
1114	6.5	29.6	2 56	. . .	0.05	A_3	. . .	. . .	. . .	*1.1*	. . .	
1116	7.0	29.7	4 40	. . .	1.09	K_0	. . .	. . .	0.7	(1.3)	. . .	
1118	6.6	30.0	7 47	3.0	—0.16	A_0	. . .	. . .	. . .	1.0	. . .	
1119	5.9	31.3	6 5	. . .	0.45	F_8	. . .	. . .	. . .	. . .	. . .	
1120	6.8	31.7	19 8	(2.8)	0.12	F_0	. . .	. . .	. . .	*2.4*	. . .	
1121	6.7	32.2	14 34	. . .	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
1122	6.7	32.3	14 17	(3.4)	—0.19	B_9	. . .	. . .	. . .	0.0	. . .	
1123	6.8	32.5	2 9	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
1124	6.9	33.4	0 44	. . .	—0.19	B_9	. . .	. . .	. . .	—0.9c	. . .	*
1125	7.4	33.7	9 9	. . .	0.82	G_5	. . .	. . .	0.8	(0.5)	. . .	
1126	5.2	33.7	17 54	—4.8	1.71	K_5	K_8	(—0.3)	—0.4	. . .	0.1	*
1128	5.8	34.8	5 28	0.4	—0.20	A_0	. . .	. . .	. . .	—0.4c	. . .	*
1129	6.5	35.2	13 59	. . .	1.36	K_0	. . .	. . .	—0.7	(0.0)	. . .	
1130	6.1	36.3	13 44	. . .	1.66	Ma	. . .	. . .	0.6	. . .	. . .	
1131	5.9	36.4	3 52	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
1132	5.8	36.4	14 26	—1.7	1.68	Mb	Ma	—1.3	—0.8	. . .	0.4	*
1133	6.4	38.0	0 26	—4.1	0.82	G_5	. . .	. . .	0.0c	—0.9c	. . .	*
1134	6.7	38.1	5 11	. . .	1.30	K_0	. . .	. . .	—0.3	(0.2)	. . .	
1135	6.5	38.7	13 6	. . .	1.45	K_0	. . .	. . .	—1.1	(—0.3)	. . .	
1136	6.3	38.9	2 39	. . .	0.07	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
1137	5.0	40.4	18 46	1.4	1.57	K_2	K_6	0.2	—0.9	. . .	0.6	

*1097. Wide pair, $d = 56''$, $\Delta m = 1.0$. *1124. Double, $d = 1''.5$, $\Delta m = 2.0$. *1126. *Mt. W'.* —0.3. *1128. Double, $d = 1''.4$, $\Delta m = 0.3$. *1132. *Mt. W.'* —0.8. *1133. Double, $d = 0''.6$, $\Delta m = 1.6$. Colour of A assumed $C = 0.97\pm$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1138	5.3	7 40.8	11 1	—0.3	—0.16	A_0	B_{9n}	0.4	. . .	—0.1	. . .	
1139	7.4	41.4	2 6	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
1140	7.0	42.1	9 13	. . .	0.23	F_0	. . .	. . .	. . .	*(2.1)*	. . .	
1141	7.0	42.8	5 40	1.9	1.40	K_0	. . .	. . .	—1.0	—0.2	. . .	*
1142	6.2	43.4	13 37	. . .	1.38	K_0	. . .	. . .	—0.7	(0.0)	. . .	
1143	6.5	43.7	4 34	. . .	0.64	G_0	. . .	. . .	(1.8)	(1.0)	. . .	
1144	6.5	44.0	13 3	. . .	0.84	K_0	. . .	. . .	1.6	(0.8)	. . .	
1145	7.8	44.0	14 23	. . .	(0.89)	G_5	. . .	. . .	(0.5)	. . .	. . .	
1146	7.6	44.1	14 6	. . .	(0.83)	G_5	. . .	. . .	(0.8)	. . .	. . .	
1147	7.8	44.1	15 22	. . .	[1.06]	G_5	. . .	. . .	(—0.2)	. . .	. . .	
1148	7.2	44.9	15 6	3.2	0.21	F_2	. . .	. . .	. . .	*2.2*	. . .	
1149	6.3	45.6	3 32	. . .	0.95	G_5	. . .	. . .	—0.4c	(—0.2c)	. . .	*
1150	6.6	45.6	4 42	. . .	0.73	G_5	. . .	. . .	((1.3))	(0.8)	. . .	
1151	7.2	45.6	7 42	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
1152	6.6	45.8	0 20	. . .	1.00	K_0	. . .	. . .	0.8	(0.7)	. . .	
1153	6.1	46.2	19 35	1.1	1.18	K_0	. . .	. . .	0.5	1.2	. . .	
1154	5.1	46.6	2 1	—0.6	—0.27	B_8	. . .	. . .	. . .	—0.7	. . .	
1155	6.6	46.9	3 32	3.2	1.54	Ma	. . .	. . .	0.8	. . .	. . .	
1156	7.8	47.4	15 39	. . .	—0.05	A_2	. . .	. . .	. . .	0.3	. . .	
1157	7.5	47.7	17 6	. . .	1.05	K_0	. . .	. . .	(0.8)	. . .	. . .	
1158	7.1	48.3	16 18	. . .	0.00	A_2	. . .	. . .	. . .	0.6	. . .	
1159	7.4	49.1	18 21	. . .	(1.42)	K_2	. . .	. . .	(0.5)	. . .	. . .	
1160	7.1	49.5	12 50	. . .	0.80	K_0	. . .	. . .	((2.5))	(0.8)	. . .	
1161	5.8	50.1	9 8	2.4	0.21	F_0	F_2	3.5	. . .	*2.3*	. . .	
1162	7.6	50.8	11 8	. . .	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
1163	6.3	51.2	4 44	. . .	0.79	K_0	G_9	—0.1	((2.6))	(0.7)	(2.8)	
1164	6.0	51.3	16 3	1.2	1.34	K_0	K_3	(0.8)	—0.5	0.3	0.3	
1165	6.1	51.8	8 55	. . .	0.89	G_5	. . .	. . .	0.5	(0.4)	. . .	
1166	7.3	52.1	7 6	. . .	0.77	G_5	. . .	. . .	((1.0))	(1.0)	. . .	
1167	6.4	52.2	1 25	4.4	0.23	F_8	F_6	. . .	*d*	3.4c	. . .	*
1168	6.3	52.7	7 29	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
1169	6.2	52.8	16 46	—3.4	1.54	K_0	. . .	. . .	—1.7	—0.9	. . .	
1170	5.4	53.2	2 30	3.3	0.82	K_0	. . .	. . .	((2.0))	1.9	. . .	
1171	6.5	53.3	3 13	. . .	0.03	A_3	. . .	. . .	. . .	*1.1*	. . .	
1172	7.4	53.4	8 44	. . .	1.01	G_5	. . .	. . .	0.0	(0.5)	. . .	
1173	6.8	53.4	5 54	. . .	—0.24	B_9	. . .	. . .	. . .	0.1	. . .	
1174	6.2	54.0	13 30	—1.1	1.32	K_5	. . .	. . .	1.0	. . .	. . .	
1175	6.9	54.8	19 7	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
1176	7.1	55.0	18 31	—1.6	0.84	G_5	. . .	. . .	0.7	0.1	. . .	
1177	5.8	55.0	17 36	—1.8	1.43	K_0	K_4	(0.4)	—1.0	—0.4	0.2	
1178	6.7	55.0	12 55	. . .	0.97	K_0	. . .	. . .	0.9	(0.7)	. . .	

*1141. Double, $d = 9''$, $\Delta m = 4.0$. Colour of A assumed $C = 1.43$. *1149. Double, $d = 0''.2$, $\Delta m = 0.0$. *1167. Double, $d = 0''.3$, $\Delta m = 0.3$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1179	6.6	7 55.3	12 57	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
1180	5.9	55.8	16 43	—1.7	—0.10	A_0	. . .	. . .	. . .	—0.5	. . .	
1181	7.4	55.8	8 40	. . .	0.54	G_0	. . .	. . .	4.6	(2.5)	. . .	
1182	5.7	56.0	5 9	—0.1	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
1183	6.1	56.4	9 11	0.6	0.46	F_5	. . .	. . .	. . .	*1.7*	. . .	
1184	7.5	57.0	12 44	. . .	0.91	K_0	. . .	. . .	1.1	. . .	. . .	
1185	4.5	57.1	2 36	1.1	1.29	K_0		See	table	I		
1186	7.1	57.1	15 14	2.4	0.14	A_5	. . .	. . .	. . .	*1.6*	. . .	
1187	7.5	57.8	17 8	. . .	(1.13)	K_0	. . .	. . .	0.6	. . .	. . .	
1188	6.7	58.0	12 28	. . .	0.38	F_8	. . .	. . .	*d*	(2.6)	. . .	
1189	6.1	59.0	19 7	2.0	—0.12	A_0	. . .	. . .	. . .	0.6	. . .	
1190	7.4	59.0	9 34	6.2	0.36	G_0	. . .	. . .	4.0	4.6	. . .	
1191	5.1	59.5	13 25	1.9	—0.10	A_0	. . .	. . .	. . .	0.6	. . .	
1192	6.3	8 3.1	13 57	0.6	0.32	F_5	. . .	. . .	. . .	*1.7*	. . .	
1193	7.4	4.3	17 19	—0.4	1.39	Ma	. . .	. . .	(—1.4)	. . .	. . .	
1194	6.9	4.9	9 28	. . .	0.67	G_5	. . .	. . .	((2.1))	(0.8)	. . .	
1195	6.1	5.4	14 56	0.8	—0.15	A_0	. . .	. . .	. . .	0.2	. . .	
1196	7.1	5.5	3 15	. . .	0.82	G_5	. . .	. . .	0.8	(0.5)	. . .	
1197	6.1	5.8	10 8	—0.4	—0.24	B_9	. . .	. . .	. . .	0.1	. . .	
1198	7.4	5.9	16 29	. . .	(1.01)	K_0	. . .	. . .	0.8	(1.0)	. . .	
1199	7.2	6.2	16 49	6.1	0.57	G_0	. . .	. . .	4.3	4.6	. . .	
1200	4.7c	6.5	17 57	2.9	0.52c	G_0		See	table	I		
1201	6.4	6.8	14 19	0.3	0.10	A_5	. . .	. . .	. . .	*0.9*	. . .	
1202	6.1	7.3	16 49	—1.1	0.78	G_5	. . .	. . .	((1.0))	0.2	. . .	
1203	7.5	7.3	11 29	. . .	—0.36	B_8	. . .	. . .	. . .	1.1	. . .	
1204	7.3	8.1	11 10	(>4.0)	0.24	F_8	. . .	. . .	*d*	4.0	. . .	*
1205	6.4	8.5	17 59	(0.9)	0.15	F_0	. . .	. . .	. . .	*2.0*	. . .	
1206	7.6	8.6	6 36	. . .	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
1207	6.5	8.8	13 22	. . .	0.96	K_0	. . .	. . .	0.9	(0.7)	. . .	
1208	7.2	9.4	16 23	. . .	—0.27	B_8	. . .	. . .	. . .	—0.7	. . .	
1209	7.1	10.6	3 6	. . .	—0.06c	A_0	. . .	. . .	. . .	0.2	. . .	*
1210	3.8	11.1	9 29	—0.4	1.65	K_2		See	table	I		
1211	6.7	12.1	4 31	—0.3	0.44	G_0+A_2	. . .	. . .	(1.7c)	1.1c	. . .	*
1212	6.3	12.1	9 11	(—1.3)	0.91	K_0	. . .	. . .	1.1	0.5	. . .	
1213	7.5	12.3	6 34	. . .	1.01	K_2	. . .	. . .	(2.6)	. . .	. . .	
1215	6.6	12.6	15 59	—0.9	0.89	K_0	. . .	. . .	1.2	0.6	. . .	
1216	7.0	12.7	6 32	. . .	(1.21)	K_0	. . .	. . .	0.3	(0.8)	. . .	
1217	6.8	13.5	16 26	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
1219	6.3	14.6	4 15	. . .	0.71	G_5	. . .	. . .	((1.5))	(0.5)	. . .	
1220	7.6	15.0	8 20	. . .	[1.10]	K_0	. . .	. . .	(0.7)	. . .	. . .	
1221	7.1	16.3	13 57	. . .	0.21	A_2	. . .	. . .	. . .	1.2	. . .	

*1204. Double, $d = 2''.4$, $\Delta m = 2.2$. *1209. Double, $d = 16''$, $\Delta m = 2.3$. *1211. Spectrum composite. Colour of the G_0 component assumed $C = 0.64+$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1222	7.5	8 16.4	15 5	. . .	(1.12)	K_0	. . .	. . .	0.6	(1.3)	. . .	
1223	6.7	16.9	16 29	(1.3)	1.11	K_0	. . .	. . .	0.7	1.3	. . .	
1224	6.9	17.0	2 28	—0.1	(1.41)	K_5	. . .	. . .	0.7	. . .	. . .	
1225	7.5	17.2	5 21	3.6	[1.40]	K_5	. . .	. . .	(0.7)	. . .	. . .	
1226	5.9	17.6	18 40	1.8	0.09	F_0	F_1	1.9	. . .	*2.2*	. . .	
1227	6.3	18.4	10 58	—0.6	1.51c	K_5	Ma	(0.4)	0.2	. . .	1.1	*
1228	7.4	18.6	0 23	. . .	0.13	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
1229	7.0	19.1	17 31	4.0	0.37	F_5	. . .	. . .	. . .	*3.2*	. . .	
1230	6.2	20.2	17 24	4.8	0.22	F_2	F_3	2.5	. . .	*2.2*	. . .	
1231	5.9	20.4	2 27	. . .	1.50	K_0	. . .	. . .	—1.4	(—0.6)	. . .	
1232	5.2	20.6	7 54	—0.2	0.91	K_0	G_5	—0.2	1.1	0.6	0.5	
1233	6.7	20.6	1 53	. . .	1.11	K_0	. . .	. . .	0.7	(1.2)	. . .	
1234	5.8	21.2	12 59	2.5	1.74	Ma	Ma	. . .	—0.2	. . .	—0.2	*
1235	6.8	21.4	7 59	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
1236	7.0	21.7	7 33	. . .	0.07	A_2	. . .	. . .	. . .	1.0	. . .	
1237	5.9	23.1	14 33	—0.3	0.10	A_2	. . .	. . .	. . .	0.4	. . .	
1238	7.4	23.6	1 36	. . .	0.28	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
1239	6.8	24.2	8 45	. . .	1.04	K_0	. . .	. . .	0.8	(1.1)	. . .	
1240	7.6	24.7	0 36	. . .	[0.72]	K_0	. . .	. . .	((3.4))	. . .	. . .	
1241	7.2	24.9	0 21	. . .	0.62	G_0	. . .	. . .	(2.7)	(1.5)	. . .	
1242	5.6	25.9	18 26	1.7	1.62	Ma	Ma	. . .	0.9	. . .	0.9	*
1243	6.7	26.0	19 19	0.6	1.47	K_0	. . .	. . .	—1.2	—0.4	. . .	
1244	6.6	26.5	10 9	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
1245	7.5	27.1	15 36	. . .	[1.41]	K_2	. . .	. . .	(0.6)	. . .	. . .	
1246	6.3	27.2	10 26	—1.4	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
1247	7.4	27.3	6 3	. . .	(0.99)	K_0	. . .	. . .	0.8	(0.9)	. . .	
1248	6.4	28.2	13 36	2.9	1.18	K_0	. . .	. . .	0.5	1.3	. . .	
1249	6.1	28.5	5 6	. . .	0.89	K_0	. . .	. . .	1.2	(0.8)	. . .	
1250	6.0	28.8	8 48	. . .	0.21	F_0	. . .	. . .	. . .	*(1.9)*	. . .	
1251	6.9	29.3	5 51	. . .	(1.39)	K_5	. . .	. . .	0.7	. . .	. . .	
1252	7.4	29.6	11 38	. . .	0.32	F_8	. . .	. . .	*d*	(3.0)	. . .	
1253	7.0	30.0	0 44	. . .	0.60	G_5	. . .	. . .	(3.2)	(0.5)	. . .	
1254	6.5	30.2	3 5	. . .	0.87	K_0	. . .	. . .	1.3	(0.8)	. . .	
1255	6.3	30.5	15 39	0.4	0.22	A_5	. . .	. . .	. . .	*0.9*	. . .	
1256/7	5.7c	30.6	6 58	3.8c	0.37c	F_5	F_8+G_4	4.0 / 5.5	. . .	*3.0*c	4.5c	*
1258	6.0	31.7	10 1	0.8	0.00	A_0	. . .	. . .	. . .	1.0	. . .	
1259	6.7	32.0	19 38	2.9	—0.02	A_5	. . .	. . .	. . .	*1.8*	. . .	
1260	4.2	32.4	6 4	0.7	—0.01	A_0		See	table	I		
1261	6.5	32.7	9 55	1.7	—0.10	A_0	. . .	. . .	. . .	0.4	. . .	
1262	7.7	32.9	15 13	. . .	0.19	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
1263	7.3	33.2	1 2	. . .	(0.81)	K_0	. . .	. . .	((2.3))	(0.8)	. . .	

*1227. Double, $d = 0''.9$, $\Delta m = 3.8$; the colour of the brighter component assumed $C = 1.57$. *Mt. W'.* 0.4. *1234. *Mt. W.'* —0.9. *1242. *Mt. W.'* 0.3. *1256/7. Double, $d = 10''$, $\Delta m = 1.1$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
1264	4.5	8 33.5	3 41	—1.8	1.31	K_0		See	table	I		
1265	6.5	34.1	8 21	. . .	1.03	K_0	. . .	. . .	0.8	(1.0)	. . .	
1266	6.8	34.6	19 42	. . .	—0.04	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
1267	6.9	35.1	11 17	. . .	(1.37)	K_0	. . .	. . .	—0.7	(0.0)	. . .	
1268	6.9	35.1	2 17	. . .	(1.15)	K_2	. . .	. . .	2.2	. . .	. . .	
1269	7.4	35.8	11 24	. . .	—0.01	A_0	. . .	. . .	. . .	0.8	. . .	
1270	5.7	37.7	13 3	—2.1	0.26	A_3+G	A6n	2.2	. . .	*—0.3c*	. . .	*
1271	4.3	38.0	3 46	—1.8	—0.26	B_3		See	table	I		
1272	6.3	38.8	4 42	. . .	—0.21	B_8	. . .	. . .	. . .	—0.7	. . .	
1273	4.2	39.0	18 32	2.5	1.09	K_0		See	table	I		
1274	5.6	39.3	10 27	0.1	—0.12	A_{0p}	. . .	. . .	. . .	0.0	. . .	
1275	6.0	39.8	6 2	—3.4	0.13	A_2	A2n	1.6	. . .	0.1	. . .	
1276	6.8	39.8	19 11	4.1	0.14	F_2	. . .	. . .	. . .	*2.2*	. . .	
1277	6.8	40.3	0 36	. . .	0.66	G_5	. . .	. . .	((2.2))	(0.5)	. . .	
1278	6.5	40.3	5 2	1.6	1.19	K_0	. . .	. . .	0.4	1.2	. . .	
1279	7.0	41.2	8 51	. . .	—0.17	B_9	. . .	. . .	. . .	—1.0	. . .	
1280	6.9	41.2	1 1	. . .	0.04	A_5	. . .	. . .	. . .	*1.2*	. . .	
1281	5.7	41.5	12 29	2.8	0.08	A_0	A0n	0.8	. . .	1.6	. . .	
1282	3.5	41.5	6 48	1.5	0.73	F_8		See	table	I		
1283	7.7	41.7	15 42	. . .	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
1284	7.4	43.0	2 57	. . .	0.19	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
1285	4.4	43.2	6 12	—0.5	—0.13	A_0		See	table	I		
1286	6.8	43.2	12 55	(1.7)	[1.52]	Ma	. . .	. . .	0.5	. . .	. . .	
1287	7.1	43.2	10 48	. . .	[1.42]	Ma	. . .	. . .	(—0.9)	. . .	. . .	
1288	7.1	43.4	2 56	. . .	0.67	K_0	. . .	. . .	((3.9))	(1.0)	. . .	
1289/90	7.2c	44.4	15 13	2.7c	0.21c	F_0	. . .	. . .	. . .	*2.4*	. . .	*
1291	6.9	44.4	1 51	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
1292	6.8	44.5	7 23	. . .	1.04	K_0	. . .	. . .	0.8	(1.0)	. . .	
1293	7.3	44.7	2 44	3.7	(0.62)	G_5	. . .	. . .	((2.8))	3.7	. . .	
1294	6.7	45.0	18 23	1.2	0.63	G_5	. . .	. . .	((1.9c))	0.2c	. . .	*
1295	6.1	45.1	19 13	—0.8	—0.12	A_0	. . .	. . .	. . .	—0.2	. . .	
1296	6.3	45.5	15 44	3.4	0.53	G_0	. . .	. . .	4.6	3.9	. . .	
1297	7.5	46.5	11 30	. . .	[1.13]	K_0	. . .	. . .	(0.6)	. . .	. . .	
1298	6.6	46.9	8 26	5.5	0.51	G_0	. . .	. . .	4.8	4.4	. . .	
1299	7.2	46.9	18 34	. . .	0.04	F_0	. . .	. . .	. . .	*(2.1)*	. . .	
1300	6.2	47.1	5 43	. . .	0.02	A_3	. . .	. . .	. . .	*1.1*	. . .	
1301	7.1	48.2	17 55	(1.5)	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
1302	7.0	48.2	14 14	. . .	—0.04	A_3	. . .	. . .	. . .	*1.1*	. . .	
1304	3.3	50.1	6 19	—0.2	1.10	K_0		See	table	I		
1305	5.7	50.5	12 1	—1.3	1.52	K_0	K_4	(0.6)	—1.5	—0.8	—0.6	
1306	6.4	51.4	4 38	. . .	0.85	G_5	. . .	. . .	0.7	(0.5)	. . .	

*1270. Spectrum composite. *1289/90. Double, $d = 16''$, $\Delta m = 0.8$. *1294. Double, $d = 0''.3$, $\Delta m = 0.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1307	6.3	8 51.5	17 32	1.3	0.79	K_0	. . .	. . .	((2.6))	1.0	. . .	
1308	5.2	51.7	15 42	1.2	0.08	A_3	A4sn	1.8	. . .	*1.1*	. . .	
1309	5.6	52.0	15 57	1.5	0.06	A_5		See	table	II		
1310	6.8	52.0	2 55	. . .	0.19	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1311	7.6	52.1	0 55	. . .	[0.93]	G_5	. . .	. . .	(0.4)	. . .	. . .	
1312	6.3	52.3	9 46	. . .	0.87	K_0	. . .	. . .	1.3	(0.8)	. . .	
1313	6.6	52.6	18 42	. . .	−0.19	A_0	. . .	. . .	. . .	0.0	. . .	
1314	6.5	53.0	1 56	. . .	−0.07	A_0	. . .	. . .	. . .	0.2	. . .	
1315	4.3	53.0	12 16	−0.1	0.05	A_3		See	table	I		
1316	6.6	53.5	18 32	2.7	1.48	Mb	Mb	. . .	−1.0	. . .	−1.0	*
1317	7.5	54.0	9 22	. . .	−0.29	B_9	. . .	. . .	. . .	0.7	. . .	
1318	6.8	54.0	13 29	. . .	1.42	K_2	. . .	. . .	0.5	. . .	. . .	
1319	7.1	56.1	17 30	1.7	−0.17	B_9	. . .	. . .	. . .	−0.1	. . .	
1320	6.3	56.2	6 2	. . .	0.94	K_0	. . .	. . .	1.0	(0.7)	. . .	
1321	7.0	56.8	3 4	. . .	−0.06	A_2	. . .	. . .	. . .	0.2c	. . .	*
1322	5.8	56.8	−0 5	2.0	1.14	K_0	. . .	. . .	0.6	1.3	. . .	
1323	6.1	57.4	7 42	. . .	1.08	K_0	. . .	. . .	0.7	(1.2)	. . .	
1324	6.9	57.9	7 14	. . .	0.74	K_0	. . .	. . .	((3.3))	(0.5)	. . .	
1325	7.2	9 0.1	2 49	. . .	−0.07	A_2	. . .	. . .	. . .	0.2	. . .	
1326	7.3	0.6	16 16	. . .	−0.16	B_9	. . .	. . .	. . .	−1.0	. . .	
1327	7.6	0.6	17 31	3.4	0.78	G_5	. . .	. . .	((1.0))	1.0	. . .	
1328	5.4	0.7	5 30	−1.6	1.07	K_0	K_3	0.2	0.7	0.4	2.3	
1329	6.4	1.8	1 52	−0.7	1.51	Ma	. . .	. . .	0.4	. . .	. . .	
1330	6.6	2.1	2 58	. . .	0.24	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1331	5.1	2.4	11 3	−1.5	−0.17	B_8		See	table	II		
1332	7.5	2.6	15 7	0.6	0.90	K_0	. . .	. . .	1.2	0.8	. . .	
1333	7.4	2.8	12 21	. . .	0.75	K_0	. . .	. . .	((3.2))	(1.0)	. . .	
1334	7.1	3.7	7 55	. . .	0.72	K_0	. . .	. . .	((3.4))	(1.0)	. . .	
1335	6.5	4.4	11 59	2.8	0.16	F_0	. . .	. . .	. . .	*2.4*	. . .	
1336	7.1	6.1	9 23	. . .	(1.44)	K_2	. . .	. . .	(0.3)	. . .	. . .	
1337	6.8	6.4	18 27	2.2	−0.09	A_0	. . .	. . .	. . .	0.0	. . .	
1338	7.0	6.4	0 42	. . .	1.03	K_0	. . .	. . .	0.8	(1.2)	. . .	
1339	6.2	6.7	5 53	. . .	0.18	F_0	. . .	. . .	. . .	(*1.9*)	. . .	
1340	6.4	6.9	15 24	6.6	0.64	G_5	G_9	5.5	((2.5))	4.9	(5.6)	
1341	6.1	7.0	4 18	. . .	−0.18	A_0	. . .	. . .	. . .	0.0	. . .	
1343	5.6	9.7	15 22	0.0	1.24	K_0	. . .	. . .	0.1	0.6	. . .	
1344	7.6	10.0	2 29	. . .	(0.58)	K_0	. . .	. . .	((4.1))	. . .	. . .	
1345	6.9	10.9	19 14	5.1	0.09	A_3	. . .	. . .	. . .	*3.0*	. . .	
1346	6.5	11.6	1 10	2.8	0.25	F_5	. . .	. . .	. . .	*2.7*	. . .	
1347	6.8	12.0	2 22	. . .	−0.04	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
1348	6.9	12.4	0 59	. . .	−0.14	A_0	. . .	. . .	. . .	0.0	. . .	
1349	6.3	12.4	11 55	2.6	0.00	A_0	. . .	. . .	. . .	1.0	. . .	

*1316. *Mt. W.'* 0.0. *1321. Double, $d = 1''.1$, $\Delta m = 2.5$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
1350	7.2	9 12.6	8 22	. . .	0.75	G_5	. . .	. . .	((1.1))	(1.2)	. . .	
1351	6.6	13.4	18 7	4.5	0.24	F_5	F_6	3.5	. . .	*3.5*	. . .	
1352	7.4	14.2	10 13	(2.7)	0.78	K_0	. . .	. . .	((2.8))	1.5	. . .	
1353	6.5	14.6	5 29	. . .	0.14	A_5	. . .	. . .	. . .	*1.2*	. . .	
1354	7.3	15.0	19 33	(1.1)	0.70	G_5	. . .	. . .	((1.7))	0.8	. . .	
1355	6.8	15.5	0 36	—0.5	1.42	Mb	. . .	. . .	—1.1	. . .	. . .	
1356	6.5	15.7	15 48	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
1357	6.8	15.9	17 2	2.8	0.09	A_5	. . .	. . .	. . .	*1.7*	. . .	
1358	6.6	15.9	13 32	2.6	0.40	F_5	. . .	. . .	. . .	*2.7*	. . .	
1359	7.0	16.0	3 23	. . .	0.19	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1360	7.7	16.2	19 10	5.1	0.25	G_0	. . .	. . .	3.3	3.8	. . .	
1361	7.2	18.2	8 9	3.1	(1.53)	Ma	. . .	. . .	(0.7)	. . .	. . .	
1362	6.8	18.4	5 38	. . .	0.02	A_2	. . .	. . .	. . .	0.8	. . .	
1363	7.5	18.5	2 50	. . .	0.69	K_0	. . .	. . .	((3.7))	. . .	. . .	
1364	7.1	18.9	18 35	1.5c	0.56	G_0	. . .	. . .	4.1c	(2.5c)	. . .	*
1365	7.2	19.1	18 7	. . .	(1.36)	K_2	. . .	. . .	(1.1)	. . .	. . .	
1366	6.8	19.2	6 46	4.6	0.36	F_5	. . .	. . .	. . .	*3.3*c	. . .	*
1367	6.3	20.0	17 1	2.2	0.84	K_0	K_0	2.3	1.7	1.4	(2.8)	
1368	7.6	21.0	19 31	3.3	—0.18	A_3	. . .	. . .	. . .	*1.9*	. . .	
1369	7.1	21.5	14 43	. . .	1.08	K_2	. . .	. . .	(2.4)	. . .	. . .	
1370	6.7	22.0	6 40	4.9	0.57	F_5	. . .	. . .	. . .	*3.5*c	. . .	*
1371	7.6	23.0	13 6	5.2	0.41	G_0	. . .	. . .	4.3	4.4	. . .	
1372	5.5	23.1	9 29	0.6c	0.49	G_0	G_0	. . .	4.1c	(1.7c)	4.1c	*
1373	6.9	23.2	12 50	1.7	0.87	G_5	. . .	. . .	0.6	0.5	. . .	
1374	5.9	23.2	8 38	0.3	0.88	K_0	. . .	. . .	1.3	0.8	. . .	
1375	7.7	23.4	13 1	. . .	[1.05]	G_5	. . .	. . .	(—0.2)	. . .	. . .	
1376	7.5	24.0	18 4	. . .	[1.18]	K_0	. . .	. . .	0.5	(1.1)	. . .	
1377	7.0	25.9	13 18	. . .	0.92	K_0	. . .	. . .	1.1	(0.7)	. . .	
1378	7.2	25.9	3 32	. . .	0.23	F_8	. . .	. . .	*d*	(4.0)	. . .	
1379	7.8	26.2	16 14	. . .	[0.92]	K_0	. . .	. . .	(1.1)	. . .	. . .	
1380	7.0	26.4	1 54	(0.0)	0.31	F_8	. . .	. . .	*d*	1.8c	. . .	*
1381	5.1	26,6	11 44	2.0	1.02	G_5	G_9	—0.1	0.0	0.5	0.7	
1382	5.3	26.6	10 9	—1.5	1.31	K_0	K_3	—0.4	—0.7	—0.2	0.0	*
1383	7.5	27.3	7 31	. . .	[1.44]	K_2	. . .	. . .	(0.3)	. . .	. . .	
1384	6.2	27.6	2 19	0.7	0.33	F_5	. . .	. . .	. . .	*1.8*	. . .	
1385	6.7	29.6	13 6	0.3	—0.17	B_9	. . .	. . .	. . .	—0.7	. . .	
1386	6.2	30.4	14 50	1.3	—0.16	A_0	A1n	1.3	. . .	0.3	. . .	
1387	5.9	31.5	16 54	—1.1	1.12	K_0	K_1	(0.6)	0.6	0.6	1.0	
1388	5.1	32.0	7 17	0.5	0.99	K_0	. . .	. . .	0.8	0.7	. . .	
1389	7.0	32.6	2 9	3.9	0.79	G_5	. . .	. . .	0.9	1.5	. . .	
1390	6.6	32.6	14 48	3.6	0.20	F_2	F_1	2.5	. . .	*2.2*	. . .	

*1364. Double, $d = 0''.3$, $\Delta m = 1.5$. *1366. Double, $d = 1''.1$, $\Delta m = 0.1$. *1370. Double, $d = 3''$, $\Delta m = 0.0$. *1372. Double, $d = 0''.9$, $\Delta m = 0.9$. *1380. Double, $d = 3''$, $\Delta m = 1.0$. *1382. Double, $d = 37''$, $\Delta m = 4.1$. Colour of A assumed $C = 1.37$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1391	6.8	9 32.9	13 11	. . .	0.76	G_5	. . .	. . .	((1.1))	(1.0)	. . .	
1392	4.8	33.3	5 6	2.4	1.38	K_0		See	table	I		
1393	6.9	33.9	13 46	(2.7)	0.35	F_5	. . .	. . .	. . .	*2.7*	. . .	
1394	6.8	35.2	13 31	3.8	0.39	F_8	. . .	. . .	*d*	3.7	. . .	
1395	3.8c	35.8	10 20	1.2c	0.50	F_5+A_3		See	table	I		
1396	6.8	36.0	9 28	. . .	0.05	F_0	. . .	. . .	. . .	. . .	. . .	
1397	6.8	37.3	0 10	. . .	0.60	K_0	. . .	. . .	((4.1))	(3.2)	. . .	
1398	7.2	38.2	13 54	3.1	1.13	K_0	. . .	. . .	0.6	1.3	. . .	
1399	7.3	38.3	3 5	. . .	0.23	F_8	. . .	. . .	*d*	(4.0)	. . .	
1400	5.6	38.3	14 28	—2.4	1.68	Ma	Ma	. . .	0.4	. . .	0.4	*
1401	6.6	39.0	19 19	2.5	1.04	K_0	. . .	. . .	0.8	1.3	. . .	
1402	7.2	39.4	3 48	. . .	(1.09)	K_2	. . .	. . .	(2.3)	. . .	. . .	
1403	6.9	40.3	19 9	1.0	1.31	K_0	. . .	. . .	—0.4	0.4	. . .	
1404	6.0	40.9	7 10	0.3	1.71	Ma	Ma	—1.0	0.1	. . .	0.1	*
1405	5.9	41.0	12 17	—1.6	1.53	K_5	K_5	(0.6)	0.3	. . .	0.2	
1406	5.7	41.2	2 15	1.5	0.15	F_2	. . .	. . .	. . .	*2.2*	. . .	
1407	6.7	42.0	9 3	. . .	0.22	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
1408	6.4	42.1	12 3	2.1	0.12	F_0	. . .	. . .	. . .	*2.2*	. . .	
1410	7.4	45.1	0 34	. . .	0.17	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
1411	6.2	45.3	4 49	3.7	0.34	F_5	. . .	. . .	. . .	*3.1*	. . .	
1412	6.7	45.5	12 18	—0.4	—0.16	A_0	. . .	. . .	. . .	—0.1	. . .	
1413	6.7	45.6	13 33	0.8	1.62	K_5	K_8	(0.2)	0.0	. . .	0.9	*
1414	5.9	47.1	2 55	4.6	—0.17	A_0	A_{1s}	0.6	. . .	1.0	. . .	
1415	6.3	47.1	0 33	2.4	0.85	K_0	. . .	. . .	1.5	1.5	. . .	
1416	6.3	48.5	6 26	0.3	1.54	Ma	. . .	. . .	0.8	. . .	. . .	
1417	7.1	48.8	8 33	1.6	0.96	G_5	. . .	. . .	0.3	0.5	. . .	
1418	7.0	48.9	5 25	0.8	1.28	K_5	. . .	. . .	0.1	. . .	. . .	*
1419	7.7	49.4	1 25	. . .	0.22	F_8	. . .	. . .	*d*	(4.0)	. . .	
1420	6.7	50.6	8 10	. . .	1.05	K_0	. . .	. . .	0.8	(1.2)	. . .	
1421	5.9	51.2	9 26	2.1	1.12	K_0	K_1	(0.3)	0.6	1.3	1.0	
1422	6.8	51.6	4 43	4.8	0.17	F_5	. . .	. . .	. . .	*3.7*	. . .	
1423	7.4	52.1	16 56	. . .	[1.06]	K_0	. . .	. . .	0.7	(1.3)	. . .	
1424	6.3	52.8	8 49	0.4	1.28	K_0	K_5	—0.2	—0.1	0.5	2.1	
1425	5.2	52.9	12 54	0.3	—0.17	A_0	. . .	. . .	. . .	0.1	. . .	
1426	7.3	53.3	11 27	. . .	0.13	F_2	. . .	. . .	. . .	*(2.2)*	. . .	
1427	7.3	53.4	10 57	. . .	[1.12]	K_0	. . .	. . .	0.6	(1.3)	. . .	
1428	6.6	54.6	3 52	(2.9)	0.05	A_5	. . .	. . .	. . .	*1.8*	. . .	
1429	4.9	54.9	8 32	—0.9	1.79	Ma		See	table	I		
1430	7.8	55.1	16 20	. . .	[1.10]	K_0	. . .	. . .	(0.7)	. . .	. . .	
1431	7.1	58.2	10 23	(0.7)	0.18	F_2	. . .	. . .	. . .	*2.2*	. . .	
1432	7.4	58.4	4 27	. . .	0.57	K_0	. . .	. . .	((4.0))	(3.8)	. . .	

*1400. *Mt. W.'* —0.1. *1404. *Mt. W.'* 0.0. *1413. *Mt. W.'* —0.3. *1418. Distant companion, $d = 51''$, $\Delta m = 2.0$; colour of A assumed $C = 1.60\pm$ (corrected for superposition).

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1433	7.0	9 58.8	12 7	2.1	—0.13	A_0	. . .	. . .	. . .	0.6	. . .	
1434	6.4	59.0	3 41	3.5	0.17	F_2	. . .	. . .	. . .	*2.2*	. . .	
1435	7.2	59.8	8 29	(1.2)	0.24	F_5	. . .	. . .	. . .	*2.2*	. . .	
1436	6.3	10 0.3	16 14	0.9	0.22	F_0	. . .	. . .	. . .	*2.0*	. . .	
1437	7.4	1.2	13 16	2.7	—0.04	A_5	. . .	. . .	. . .	*1.7*	. . .	
1438	6.3	1.6	6 7	0.4	0.77	G_5	. . .	. . .	((1.0))	1.0	. . .	
1440	7.2	2.3	15 40	4.3	0.37	F_8	. . .	. . .	*d*	3.9	. . .	
1441	7.0	2.4	1 24	. . .	[1.36]	Ma	. . .	. . .	—1.4	. . .	. . .	
1442	4.6	2.6	10 30	1.2	1.56	K_2		See	table	I		
1443	4.5	2.8	0 7	—1.1	—0.11	A_0		See	table	I		
1445	6.6	3.6	1 39	. . .	0.20	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
1446	7.1	3.6	19 1	3.1	0.88	G_5	. . .	. . .	0.6	0.5	. . .	
1447	6.8	4.0	6 40	—0.1	1.21	K_0	. . .	. . .	0.3	0.8	. . .	
1449	6.4	6.3	13 51	2.0	0.31	F_5	F_4	3.6	. . .	*2.1*c	. . .	*
1450	5.9	7.6	5 6	1.1	1.10	K_0	. . .	. . .	0.7	1.3	. . .	
1451	7.3	8.0	3 34	(>4.5)	0.12	F_0	. . .	. . .	. . .	*2.4*	. . .	
1452	7.3	9.1	16 39	—0.7	[1.27]	K_0	. . .	. . .	—0.1	0.4	. . .	*
1453	6.6	10.8	18 15	—1.9	0.10	F_0	. . .	. . .	. . .	*0.3*c	. . .	*
1454	5.7	11.3	14 15	—0.2	1.58	Ma	Ma	. . .	1.1	. . .	1.1	*
1455	7.1	13.1	13 8	5.7	0.28	G_0	. . .	. . .	3.6	4.1	. . .	
1456	6.6	13.6	18 12	. . .	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
1457	6.5	15.9	2 47	—2.1	—0.20	B_3	B_{2n}	—1.2	—1.4	. . .	. . .	
1458	6.1	16.5	15 29	1.5	—0.16	B_9	. . .	. . .	. . .	—0.2	. . .	
1459	7.0	17.0	9 29	. . .	1.46	K_5	. . .	. . .	0.5	. . .	. . .	
1460	7.8	17.0	18 1	3.2	0.14	F_0	. . .	. . .	. . .	*2.4*	. . .	
1461	7.4	17.4	15 52	6.0	0.36	G_5	. . .	. . .	(3.8)	4.8	. . .	
1462	6.3	17.8	7 3	2.9	0.95	K_0	K_2	(0.7)	0.9	(2.0)	2.5	
1463	6.5	18.1	6 12	5.0	0.27	F_2	. . .	. . .	. . .	*2.2*	. . .	
1464	6.8	19.0	11 6	1.4	1.09	K_0	. . .	. . .	0.7	1.3	. . .	
1465	6.4	19.0	2 53	. . .	0.86	K_0	. . .	. . .	1.4	(0.8)	. . .	
1466	6.7	19.2	2 53	. . .	0.78	K_0	. . .	. . .	((2.8))	(0.6)	. . .	
1467	5.9	20.0	9 19	0.5	1.69	Ma	Ma	. . .	0.3	. . .	0.3	*
1468	6.8	20.8	3 25	. . .	—0.06	A_0	. . .	. . .	. . .	—0.5c	. . .	*
1469	6.6	21.0	4 27	1.0	—0.07	A_2	. . .	. . .	. . .	0.5	. . .	
1470	7.4	21.5	17 44	2.0	0.24	F_8	. . .	. . .	*d*	3.5c	. . .	*
1471	6.6	21.9	11 49	. . .	0.78	G_5	. . .	. . .	(1.0))	(1.0)	. . .	
1473	7.2	22.3	4 4	4.3c	0.76	K_0	. . .	. . .	((2.9c))	(2.0c)	. . .	*
1474	5.9	22.4	10 16	—1.5	—0.13	A_0	A_{2s}	1.0	. . .	—0.4	. . .	
1475	7.2	23.1	16 18	4.3	0.27	F_8	. . .	. . .	*d*	3.9	. . .	
1476	7.1	23.3	17 38	. . .	0.63	G_5	. . .	. . .	((2.7))	(0.5)	. . .	

*1449. Double, $d = 0''.2$, $\Delta m = 0.7$. *1452. This is *B. D.* 16° 2098; in *H. D.* erroneously called 16° 2099. *1453. Double, $d = 0''.4$, $\Delta m = 0.3$. *1454. *Mt. W'.* 0.4. *1467. *Mt. W'.* 0.1. *1468. Double, $d = 0''.4$, $\Delta m = 0.0$. *1470. Double, $d = 0''.5$, $\Delta m = 0.5$. *1473. Double, $d = 1''.2$, $\Delta m = 1.9$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1477	7.1	10 23.5	14 52	3.0	0.72	K_0	. . .	. . .	((3.5))	1.8	. . .	
1478	6.8	24.6	2 1	4.8	0.30	F_5	. . .	. . .	. . .	*3.7*	. . .	
1479	5.0	25.2	—0 8	0.5	—0.22	B_5	. . .	. . .	—1.0	. . .	. . .	
1480	7.4	25.3	7 34	1.5	0.72	G_5	. . .	. . .	((1.4))	1.4	. . .	
1481	7.1	25.4	2 40	2.9	0.84	K_0	. . .	. . .	1.7	1.9	. . .	
1482	6.6	26.5	3 22	. . .	1.06	K_0	. . .	. . .	0.7	(1.2)	. . .	
1483	7.9	26.7	18 31	. . .	(0.41)	G_0	. . .	. . .	4.3	. . .	. . .	
1484	5.7	26.9	14 39	0.1	1.76	Ma	Ma	—1.2	—0.5	. . .	—0.5	*
1486	5.2	29.6	7 28	1.9	0.85	K_0	G_5	. . .	1.5	1.2	1.4	
1487	5 7	29.8	9 11	0.9	—0.06	A_0	. . .	. . .	. . .	0.1c	. . .	*
1488	6.7	30.0	2 43	0.1	1.19	K_2	. . .	. . .	2.1	. . .	. . .	
1489	7.5	31.8	13 23	2.9	—0.16	A_0	. . .	. . .	. . .	1.0	. . .	
1490	6.6	33.6	16 39	1.8	0.16	F_2	. . .	. . .	. . .	*2.2*	. . .	
1491	7.9	35.8	17 24	. . .	—0.20	A_2	. . .	. . .	. . .	0.6	. . .	
1493	7.2	37.2	18 46	. . .	0.93	K_0	. . .	. . .	1.0	(0.8)	. . .	
1495	7.5	37.5	18 55	. . .	0.22	F_2	. . .	. . .	. . .	*(2.2)*	. . .	
1496/7	6.0c	38.2	5 17	0.6c	1.10c	K_0	K_5	—0.4	—3.0c	(—1.8c)	—2.5c	*
1498	6.7	38.4	18 51	2.2	1.21	K_0	. . .	. . .	0.3	1.0	. . .	
1499	7.0	39.9	3 50	3.4	0.21	F_5	. . .	. . .	. . .	*3.0*	. . .	
1500	6.6	40.0	3 0	1.6	1.05	K_2	K_2	—0.5	2.5	. . .	1.9	
1501	6.3	40.9	6 54	0.7	1.17	K_0	K_1	(0.8)	0.5	1.3	0.5	
1502	5.6	41.0	19 25	1.8	1.10	K_0	. . .	. . .	0.7	1.3	. . .	
1503	6.8	41.0	13 16	0.8	—0.02	A_2	. . .	. . .	. . .	0.6	. . .	
1504	5.6	41.1	14 44	2.7	0.83	K_0	. . .	. . .	1.8	1.6	. . .	
1505	7.7	41.4	17 3	. . .	[0.82]	K_0	. . .	. . .	(1.9)	. . .	. . .	
1506	5.3	44.0	11 5	—0.2	—0.06	A_0	. . .	. . .	. . .	0.2	. . .	
1507	7.2	44.1	17 41	. . .	0.89	K_0	. . .	. . .	1.3	(0.8)	. . .	
1508	7.1	45.8	4 8	1.4	—0.06	A_2	. . .	. . .	. . .	0.7	. . .	
1509	6.8	45.9	12 7	1.4	1.16	K_0	. . .	. . .	0.5	1.3	. . .	
1510	6.3	47.1	1 33	1.9	—0.05	A_2	. . .	. . .	. . .	0.9	. . .	
1511	8.1	47.4	5 32	7.1	(0.01)	K_0	. . .	. . .	. . .	. . .	. . .	
1512	6.6	47.5	0 20	. . .	1.43	K_5	. . .	. . .	0.6	. . .	. . .	
1513	7.5	49.0	12 54	. . .	(0.73)	K_0	. . .	. . .	((3.3))	(0.8)	. . .	
1514	6.0	50.6	1 15	2.6	0.21	F_2	F_1	2.8	. . .	*2.2*	. . .	
1515	7.3	50.6	18 40	2.7	0.63	G_5	. . .	. . .	((2.7))	(2.2)	. . .	
1516	6.0	50.9	6 43	—0.9	1.22	Mb	Mb	. . .	—1.2	. . .	—1.2	*
1517	6.9	52.0	0 13	3.8	0.19	F_5	. . .	. . .	. . .	*3.1*	. . .	*
1518	7.8	52.4	16 18	4.7	0.13	F_2	. . .	. . .	. . .	*2.2*	. . .	
1519	7.4	53.8	18 22	. . .	(0.84)	K_0	. . .	. . .	1.7	(0.8)	. . .	
1520	7.0	54.3	10 28	2.0	0.12	A_2	. . .	. . .	. . .	1.4	. . .	
1521	6.4	54.5	12 15	4.9	0.34	F_5	. . .	. . .	. . .	*3.7*	. . .	

*1484. *Mt. W'.* —0.2. *1487. Double, $d = 2''$, $\Delta m = 2.1$. *1496/7. Double, $d = 7''$, $\Delta m = 0.9$; colours *yellow : blue.* Colour of A assumed $C = 1.87\pm$. *1516. *Mt. W'.* —0.6. *1517. In *H. A.* **54**, *for* $\delta = -0^0\,14'$, *read* $\delta = 0^0\,14'$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1522	5.0	10 55.4	4 10	—1.9	1.13	K_0	K_1	(0.5)	0.6	0.5	0.9	
1523	5.1	55.6	6 38	0.7	0.02	A_5	. . .	. . .	. . .	*1.0*	. . .	
1524	7.1	57.3	9 43	. . .	—0.12	A_0	. . .	. . .	. . .	0.0	. . .	
1525	6.1	58.2	—0 13	3.1	0.05	A_3	. . .	. . .	. . .	*1.8*	. . .	
1526	6.2	58.5	0 34	1.6	1.12	K_0	K_3	(0.6)	0.6	1.3	2.0	
1527	7.1	58.8	4 11	2.5	0.09	F_0	. . .	. . .	. . .	*1.7*c	. . .	*
1528	6.7	59.3	13 13	2.2	—0.11	A_0	. . .	. . .	. . .	0.7	. . .	
1529	4.7	59.9	7 53	4.0	0.25	F_0		See	table	I		
1530	6.6	11 1.4	18 16	3.0	1.37	K_5	. . .	. . .	0.8	. . .	. . .	
1532	5.7	1.8	2 31	4.8	0.83	G_5	G_9	2.6	0.8	(2.6)	(2.3)	
1533	7.3	2.0	10 44	2.9	0.15	F_8	. . .	. . .	*d*	4.0	. . .	
1534	7.6	2.2	13 34	. . .	[0.87]	K_0	. . .	. . .	(1.4)	. . .	. . .	
1535	8.0	2.4	14 3	. . .	0.09	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
1536	7.4	2.4	14 24	. . .	0.23	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
1537	6.9	3.4	17 45	4.1	0.86	G_5	. . .	. . .	0.7	0.5	. . .	
1538	7.4	4.8	16 27	. . .	0.11	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
1539	7.5	5.4	11 50	2.9	(0.87)	Mb	. . .	. . .	(—1.4)	. . .	. . .	
1540	6.3	6.5	14 57	2.8	—0.06	A_5	. . .	. . .	. . .	*1.7*	. . .	
1541	7.4	8.1	10 59	. . .	[0.97]	K_2	. . .	. . .	(2.7)	. . .	. . .	
1542	5.4	8.6	0 29	0.2	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
1543	6.8	8.8	2 49	3.2	0.11	F_2	. . .	. . .	. . .	*2.2*	. . .	
1544	5.9	8.8	8 36	2.5	1.06	K_0	K_1	0.7	0.7	1.3	1.5	
1546	5.5	10.6	13 51	—1.0	1.15	K_0	K_2	0.5	0.6	0.7	1.2	
1547	6.7	10.7	13 9	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
1548	6.5	10.7	13 24	2.8	0.09	F_0	. . .	. . .	. . .	*2.4*	. . .	
1549	5.4	12.1	2 34	2.5	1.49	K_5	Ma	(0.7)	0.4	. . .	0.2	
1550	6.5	13.2	12 32	. . .	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
1551	6.6	13.8	14 50	4.1c	0.35	G_0	. . .	. . .	3.4c	3.5c	. . .	*
1552	6.0	13.8	2 13	1.7	1.02	K_0	. . .	. . .	0.8	1.2	. . .	
1553	7.1	13.9	13 56	. . .	0.27	F_8	. . .	. . .	*d*	(2.7)	. . .	
1554	6.9	15.2	17 52	2.6	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
1556	6.6	16.4	7 11	5.5	0.41	F_8	. . .	. . .	*d*	4.0	. . .	
1557	6.7	16.7	9 42	. . .	0.12	A_2	. . .	. . .	. . .	1.1	. . .	
1558	7.0	17.3	18 0	4.0	0.94	K_0	. . .	. . .	1.0	(2.8)	. . .	
1559	7.0	18.1	7 8	1.0	0.59	G_5	. . .	. . .	(3.4)	0.3	. . .	
1560	6.3	18.2	0 40	2.0	1.44	K_0	. . .	. . .	—1.1	—0.2	. . .	
1561	7.0	18.4	17 42	3.6	—0.07	A_2	. . .	. . .	. . .	1.2	. . .	
1562	4.0	18.7	11 4	1.8	0.26	F_5		See	table	I		
1563	5.5	18.9	1 57	—0.7	0.80	G_5	G_5	—0.2	0.9	0.2	(1.5)	
1564	7.5	19.2	17 53	3.0	[0.63]	G_5	. . .	. . .	((2.7))	. . .	. . .	
1565	6.0	19.8	11 59	2.6	1.38	K_0	. . .	. . .	—0.7	0.1	. . .	
1566	5.6	20.4	17 1	3.2	0.12	F_2	F_1	2.1	. . .	*2.2*	. . .	
1567	6.7	20.5	3 51	2.2	—0.10	A_2	. . .	. . .	. . .	1.0	. . .	

*1527. Double, $d = 1''.1$, $\Delta m = 0.1$. *1551. Double, $d = 4''$, $\Delta m = 1.2$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1568	6.4	11 20.7	4 24	2.8	0.12	F_0	. . .	. . .	. . .	*2.4*	. . .	
1569	6.8	21.1	9 12	—1.5	1.31	K_0	. . .	. . .	—0.4	0.0	. . .	
1570/1	6.2c	21.7	3 33	6.8c	0.72c	K_0	G_9+K_4	4.5c	((2.8c))	4.9c	(5.1c)	*
1572	5.2	22.8	3 26	—1.3	0.75	K_0	G_7	0.1	((3.2))	0.2	(2.1)	
1573	6.7	22.8	12 32	. . .	1.43	K_2	. . .	. . .	0.4	. . .	. . .	
1574	6.0	24.5	15 58	1.4	1.20	K_0	K_3	(1.1)	0.4	1.0	1.4	
1575	6.7	24.6	8 9	1.8	0.33	F_5	. . .	. . .	. . .	*2.4*	. . .	
1576	5.7	25.3	18 58	1.5	0.85	K_0	K_0	1.0	1.5	1.0	(2.5)	
1577	7.0	26.3	18 19	. . .	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
1578	6.2	26.6	14 56	5.6c	0.47	G_0	F_9	3.6	4.6c	4.2c	4.7c	*
1579	7.3	27.6	18 34	4.8	0.22	F_5	. . .	. . .	. . .	*3.7*	. . .	
1580	6.7	28.5	3 4	. . .	1.28	K_5	. . .	. . .	1.2	. . .	. . .	
1581	6.5	29.0	11 35	. . .	—0.01	A_2	A_2	2.2	. . .	0.5	. . .	
1582	5.8	29.3	3 38	3.9	0.32	F_5	. . .	. . .	. . .	*3.2*	. . .	
1583	5.8	29.5	17 21	—2.2	—0.21	B_3	B_{9n}	—0.8	—1.4	. . .	. . .	*
1584	6.7	30.4	11 44	1.7	0.90	K_0	. . .	. . .	1.2	1.0	. . .	
1585	7.3	30.5	18 26	. . .	[0.99]	K_0	. . .	. . .	0.8	(0.9)	. . .	
1586	6.4	30.6	11 28	. . .	0.02	A_2	. . .	. . .	. . .	0.8	. . .	
1587	7.2	31.1	3 51	. . .	[0.84]	G_5	. . .	. . .	0.7	(0.5)	. . .	
1588	7.0	31.4	6 40	4.2	0.70	K_0	. . .	. . .	((3.6))	(2.5)	. . .	
1589	7.0	32.2	6 49	. . .	0.15	A_2	. . .	. . .	. . .	1.2	. . .	
1591	6.6	33.0	9 26	. . .	0.86	K_0	. . .	. . .	1.4	(0.8)	. . .	
1592	5 5	33.3	8 41	—2.6	1.66	Mb	Mb	. . .	—0.8	. . .	—0.8	*
1593/4	7.0c	34.4	19 33	(3.1c)	0.06c	F_5	. . .	. . .	. . .	*2.7c*	. . .	*
1595	6.8	35.3	1 30	2.0	0.04	A_3	. . .	. . .	. . .	*1.3*	. . .	
1597	7.1	36.9	12 51	4.0	0.18	F_5	. . .	. . .	. . .	*3.2*	. . .	
1598	7.0	37.3	2 55	3.2	0.28	F_5	. . .	. . .	. . .	*2.9*	. . .	
1599	7.3	37.6	18 48	. . .	—0.31	B_9	. . .	. . .	. . .	0.9	. . .	
1600	6.8	40.0	14 49	2.4	0.99	K_0	. . .	. . .	0.8	1.3	. . .	
1601	5.1	40.1	8 48	1.0	—0.11	A_3	A_{2n}	1.5	. . .	*1.0*	. . .	
1602	4.2	40.7	7 5	1.6	1.68	Ma		See	table	I		
1604	5.2	42.8	8 48	0.5	—0.11	A_0	Aons	0.8	. . .	0.1	. . .	
1605	5.9	43.5	14 51	2.9	0.05	A_5	. . .	. . .	. . .	*1.8*	. . .	*
1606	7.0	43.9	16 41	. . .	0.85	K_0	. . .	. . .	1.5	(0.8)	. . .	
1607	6.2	44.0	0 14	4.5	0.24	F_8	. . .	. . .	*d*	4.0	. . .	
1608	6.7	44.0	5 44	4.2	1.03	K_0	. . .	. . .	0.8	(2.7)	. . .	
1610	6.0	44.1	16 48	. . .	0.10	A_2	A_3	1.5	. . .	1.1	. . .	
1611	3.8	45.4	2 21	4.8	0.32	F_8		See	table	I		
1612	6.2	45.8	12 50	. . .	0.11	A_3	. . .	. . .	. . .	*1.1*	. . .	
1613	7.0	46.3	12 22	5.7	0.29	F_2	. . .	. . .	. . .	*2.2*	. . .	
1614	6.7	47.6	16 0	3.9	—0.10	A_2	. . .	. . .	. . .	1.2	. . .	

*1570/1. Double, $d = 30''$, $\Delta m = 1.0$. *1578. Double, $d = 15''$, $\Delta m = 2.2$. *1583. $M = -1.8$ (Edwards); double, $d = 3''$, $\Delta m = 1.1$. *1592. *Mt. W'*. 0.3. *1593/4. Double, $d = 22''$, $\Delta m = 1.0$. *1605. Spectrum suspected to be composite.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1615	6.4	11 48.7	1 6	. . .	0.00	A_5	. . .	. . .	. . .	*1.2*	. . .	
1616	7.8	49.0	18 43	. . .	[0.16]	F_8	. . .	. . .	*d*	(4.0)	. . .	
1617	5.6	50.0	9 0	—0.7	0.91	K_0	. . .	. . .	1.1	0.5	. . .	
1618	5.5	50.5	16 13	—0.6	—0.08	A_2	A3s	1.2	. . .	—0.2	. . .	
1619	6.9	51.3	14 45	1.9	(1.38)	K_0	. . .	. . .	—0.7	0.1	. . .	
1620	6.9	52.6	18 2	3.4	0.05	F_2	. . .	. . .	. . .	*2.2*	. . .	
1621	7.4	53.1	1 26	. . .	[0.47]	K_0	. . .	. . .	((3.8))	(4.5)	. . .	
1622	6.9	53.1	4 3	—2.0	[1.40]	Ma	Mb	. . .	—1.3	. . .	—1.1	*
1623	6.5	54.0	1 5	2.0	1.14	K_0	. . .	. . .	0.6	1.3	. . .	
1624	7.0	54.3	2 23	. . .	[1.24]	K_0	. . .	. . .	0.1	(0.7)	. . .	
1625	5.2	54.8	4 13	—1.1	—0.10	A_0	. . .	. . .	. . .	—0.2	. . .	
1626	4.6	55.8	7 10	—1.1	0.11	A_3		See	table	I		
1627	6.9	56.1	12 56	2.2	—0.11	A_0	. . .	. . .	. . .	0.7	. . .	
1628	6.5	58.6	6 7	4.2	0.26	F_5	F_4	2.0	. . .	*3.3*	. . .	
1630	7.2	59.6	4 8	0.6	[0.88]	K_0	. . .	. . .	1.2	0.8	. . .	
1631	4.2	12 0.1	9 17	2.3	0.89	G_5		See	table	I		
1632	7.6	0.3	17 51	3.9	0.12	F_2	. . .	. . .	. . .	*2.2*	. . .	
1634	7.0	2.1	13 33	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
1635	7.1	2.9	1 11	4.9	0.05	F_2	. . .	. . .	. . .	*2.2*	. . .	
1637	7.7	4.2	15 24	. . .	[0.37]	F_8	. . .	. . .	*d*	(3.5)	. . .	
1638	6.1	4.6	2 29	3.5	1.05	K_0	K_2	(1.6)	0.7	1.8	1.9	
1639	5.7	5.0	6 21	3.4	0.15	F_0	F_3	1.7	. . .	*2.4*	. . .	*
1640	7.2	5.0	16 59	. . .	[1.17]	K_2	. . .	. . .	(2.1)	. . .	. . .	
1641	6.3	5.4	17 21	—1.2	—0.13	A_0	A1sn	0.9	. . .	—0.3	. . .	
1642	6.8	6.6	4 36	—2.4	0.03	A_0	F_0	2.6	. . .	1.5	. . .	
1643	5.8	8.4	10 49	2.6	0.14	A_2	A8s	2.4	. . .	1.6	. . .	
1645	7.0	8.8	2 50	2.6	0.74	G_5	. . .	. . .	((1.2))	(2.0)	. . .	
1646	6.8	10.2	17 29	. . .	(1.21)	K_2	. . .	. . .	2.0	. . .	. . .	*
1647	5.1	10.9	15 28	1.5	—0.16	A_2	. . .	. . .	. . .	0.7	. . .	
1648	6.5	12.6	15 42	1.7	1.41	K_0	. . .	. . .	—0.9	—0.1	. . .	
1649	7.5	13.0	19 0	—0.6	0.33	F_5	F_6	2.6	. . .	*0.8*	. . .	
1650	5.9	13.6	—0 14	0.1	0.01	A_3	A2n	1.5	. . .	*0.7*	. . .	
1651	7.0	14.1	17 7	5.2	0.44	G_5	G_2	4.4	(4.0)	4.5	4.6	
1652	6.7	14.3	15 7	1.9	1.04	K_0	. . .	. . .	0.7	1.3	. . .	
1654	6.9	15.0	14 24	. . .	1.04	K_0	. . .	. . .	0.7	(1.3)	. . .	*
1655	5.1	15.3	3 52	3.8	1.23	K_0	K_0	0.5	0.2	1.0	—0.6	
1656	4.9	15.7	18 22	1.9	0.90	K_0		See	table	I		
1657	6.5	15.8	16 5	3.0	0.95	K_0	. . .	. . .	0.9	1.8	. . .	
1658	6.6	17.0	17 17	. . .	—0.17	A2p	. . .	. . .	. . .	0.2	. . .	
1659	6.5	17.5	5 51	4.3	0.38	F_8	. . .	. . .	*d*	3.9	. . .	
1660	6.9	21.0	16 26	1.8	0.97	K_0	. . .	. . .	0.9	0.9	. . .	

*1622. *Mt. W'.* —0.2. *1639. Double, $d = 19''$, $\Delta m = 2.8$. *1646. This is B. D. 17° 2454; in *G. A.* misprinted 2354. *1654. Double, $d = 3''$, $\Delta m = 3.9$. Colour of A assumed $C = 1.06$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1661	7.5	12 22.5	18 24	1.1	[0.81]	K_0	. . .	. . .	((2.3))	0.9	. . .	
1662	6.4	22.6	9 10	. . .	0.85	K_0	. . .	. . .	1.5	(0.8)	. . .	*
1664	6.8	23.2	4 58	(2.7)	—0.05	A_0	. . .	. . .	. . .	0.3	. . .	
1666	7.5	24.3	17 53	. . .	—0.06	A_0	. . .	. . .	. . .	0.2	. . .	
1667	7.1	24.4	5 23	4.6	0.26	F_2	. . .	. . .	. . .	*2.2*	. . .	
1668	7.2	24.7	15 12	2.7	(0.85)	K_0	. . .	. . .	1.5	1.7	. . .	
1670	7.4	25 5	4 3	—0.4	[0.93]	K_0	. . .	. . .	1.0	0.5	. . .	
1671	7.5	26.1	17 10	0.8	[0.90]	K_2	K_1	2.0	(2.9)	. . .	. . .	
1672	6.2	26.3	8 9	0.6	1.67	K_5	. . .	. . .	—0.2	. . .	. . .	
1673	7.8	26.6	12 41	. . .	(0.27)	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
1674	6.5	28.0	10 50	1.8	0.84	K_0	G_8	0.4	1.7	1.2	1.8	
1676	6.9	28.5	8 14	3.6	(1.12)	K_0	. . .	. . .	0.6	1.6	. . .	
1677	7.4	29.3	11 28	. . .	0.33	A_5	. . .	. . .	. . .	*1.2*	. . .	
1678	6.9	29.4	8 17	. . .	(1.09)	K_2	. . .	. . .	2.3	. . .	. . .	
1679	7.7	30.1	12 6	2.5	[0.62]	K_0	. . .	. . .	((4.1))	3.0	. . .	
1680	4.8c	30.1	18 56	—2.1b	0.80c	K_0+A_3		See	table	I		
1681	5.8	32.0	17 39	0.6	1.43	K_2	. . .	. . .	0.4	. . .	. . .	
1682	6.6	32.1	9 21	(>2.0)	0.12	A_2	. . .	. . .	. . .	1.4	. . .	
1683	6.9	32.8	4 50	. . .	—0.04	A_2	. . .	. . .	. . .	0.4	. . .	
1684	6.2	33.0	3 50	1.5	—0.13	A_0	. . .	. . .	. . .	0.4	. . .	
1685	6.0	33.3	2 25	1.8	1.65	Ma		See	table	II		
1686	7.3	33.6	14 22	. . .	1.12	K_0	. . .	. . .	0.6	(1.3)	. . .	
1687	6.3	36.6	10 58	3.3	—0.09	A_5	. . .	. . .	. . .	*2.0*	. . .	
1688	5.0	36.8	10 47	2.5	—0.14	A_0		See	table	I		
1689	5.5	36.9	7 21	1.9	—0.13	A_0	B_{9n}	0.6	. . .	0.6	. . .	
1690	5.2	40.6	8 13	2.2	0.11	A_5	A_{5n}	2.4	. . .	*1.5*	. . .	
1691	5.9	41.3	10 7	5.8	0.86	K_0	K_0	3.5	1.3	4.4	((2.4))	*
1692	5.3	41.6	17 8	—3.9	1.23	K_2		See	table	II		
1693	6.4	42.0	6 31	. . .	—0.26	B_9	. . .	. . .	. . .	0.3	. . .	
1694	7.8	42.1	14 10	. . .	0.24	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1695	6.7	42.2	16 9	. . .	0.73	K_0	. . .	. . .	((3.3))	(0.8)	. . .	
1696	6.0	42.2	12 30	1.4	—0.04	A_3	A_{0n}	0.9	. . .	*1.1*	. . .	
1697	6.7	42.8	4 7	—1.4	1.52	Ma	Mb	. . .	0.5	. . .	—1.0	*
1698	7.6	42.9	19 35	. . .	0.41	F_8	. . .	. . .	. . .	. . .	. . .	
1699	6.9	43.0	19 23	1.7	0.76	K_0	. . .	. . .	((3.1))	1.1	. . .	
1700	6.4	43.2	14 6	2.5	—0.16	A_0	A_{0n}	0.9	. . .	0.8	. . .	
1701	7.1	43.8	12 38	5.6	0.55	G_5	. . .	. . .	(3.9)	4.5	. . .	
1702	5.6	43.9	14 40	1.1	—0.18	A_0	A_{0n}	0.7	. . .	0.2	. . .	
1703	7.4	46.3	19 43	4.6	0.17	F_5	. . .	. . .	. . .	*3.6*	. . .	
1704	6.1	46.5	3 36	0.1	1.35	K_0	K_3	0.0	—0.6	0.1	0.2	
1705/6	7.2c	47.0	19 42	(2.4)	0.08c	F_2+A_2	. . .	. . .	. . .	*0.2*c	. . .	*

*1662. Misprint in right ascension in *G. A.*, **B**. *1691. $Ms = 4.2$ (*Mt. W.*) and 2.8 (*Victoria*). *1697. *Mt. W'.* 0.3. *1705/6. Double, $d = 16''$, $\Delta m = 0.5$; F_2 is the spectrum of the brighter component.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1707	6.5	12 47.2	17 37	—1.4	1.59	K_5	K_7	(0.6)	0.1	. . .	0.9	*
1708	6.9	47.4	17 39	1.9	0.35	F_8	. . .	. . .	*d*	2.6	. . .	
1709	6.2	47.5	16 41	(1.7)	—0.02	A_2	. . .	. . .	. . .	1.0	. . .	
1710	6.3	48.8	12 58	2.3	0.04	A_3	A_{7n}	2.6	. . .	*1.4*	. . .	
1711	7.1	48.9	19 37	. . .	1.09	K_0	. . .	. . .	0.7	(1.3)	. . .	
1712	7.0	50.5	12 2	0.4	(1.75)b	Mb	. . .	. . .	—0.7	. . .	. . .	*
1713	6.9	50.6	0 36	1.0	0.77	K_0	. . .	. . .	((2.9))	0.9	. . .	
1714	3.7	50.6	3 56	3.1	1.57	Ma		See	table	I		
1715	6.8	52.2	8 50	. . .	0.28	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1716	5.0	54.0	17 57	—1.3	1.64	Ma		See	table	I		
1717	7.3	54.3	7 3	. . .	0.75	G_5	. . .	. . .	0.5c	(0.5)	. . .	*
1718	6.8	54.8	10 4	. . .	1.07	K_0	. . .	. . .	0.7	(1.3)	. . .	
1719	6.1	55.8	18 55	4.5	0.28	F_5	F_5	3.6	. . .	*3.6*	. . .	
1720	7.2	56.1	4 54	. . .	0.15	A_5	. . .	. . .	. . .	*1.2*	. . .	
1721	6.0	56.2	17 41	—0.2	0.88	G_5	G_8	0.8	0.6	0.5	1.5	
1723	7.6	13 0.6	13 46	2.9	(1.01)	K_0	. . .	. . .	(0.8)	1.7	. . .	
1724/5	7.2c	2.2	1 7	4.5c	0.16c	F_5	. . .	. . .	. . .	*3.3*c	. . .	*
1726	6.9	3.8	5 46	7.5	0.46	G_0	G_4	4.1	4.7	5.0	(5.5)	
1727	7.1	4.2	19 9	2.3	(1.42)	K_2	. . .	. . .	(0.5)	. . .	. . .	
1728	6.0	4.2	10 34	—1.3	0.95	K_0	K_0	(1.2)	0.9	0.3	1.7	
1729	6.2	4.8	17 22	2.2	1.43	K_0	K_5	—1.1	—1.0	—0.2	1.1	
1730	4.5c	5.2	18 4	4.2	0.15c	F_5		See	table	I		
1731	7.3	5.8	13 51	. . .	1.04	K_0	. . .	. . .	0.8	(1.2)	. . .	
1732	7.9	6.2	14 27	. . .	0.27	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1733	7.4	7.3	16 40	3.6	0.17	F_2	. . .	. . .	. . .	*2.2*	. . .	
1734	5.8	7.6	12 6	. . .	1.68	K_5	. . .	. . .	—0.2	. . .	. . .	
1735	6.6	7.7	19 17	(2.5)	0.66	G_5	. . .	. . .	((2.2))	1.9	. . .	
1736	7.4	8.4	13 56	. . .	(1.20)	K_0	. . .	. . .	0.4	(0.9)	. . .	
1737	6.5	8.4	19 15	4.7	1.00	K_0	. . .	. . .	0.8	3.3	. . .	
1738	6.8	8.9	1 59	3.0	1.31	K_2	K_2	—0.6	1.5	. . .	—0.1	
1739	5.8	9.6	11 52	1.9	1.58	K_5	Ma	. . .	0.2	. . .	0.8	*
1741	6.6	10.3	19 26	—0.2	1.46	K_0	. . .	. . .	—1.2	—0.5	. . .	
1742	7.6	10.4	16 43	2.6	[1.64]	K_2	. . .	. . .	(—1.3)	. . .	. . .	
1743	6.9	10.8	8 29	. . .	1.05	K_0	. . .	. . .	0.7	(1.2)	. . .	
1744	7.2	11.4	7 2	. . .	[1.40]	Mb	. . .	. . .	(—1.1)	. . .	. . .	
1745	6.5	11.4	19 35	. . .	0.80	G_5	. . .	. . .	0.9	(0.5)	. . .	
1746	7.6	11.6	17 50	. . .	0.54	G_0	. . .	. . .	4.6	. . .	. . .	
1747	6.8	11.8	19 25	. . .	0.78	K_0	. . .	. . .	((2.8))	(0.8)	. . .	
1748	7.4	11.8	1 46	. . .	0.17	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1749	5.2	11.8	9 56	4.4	0.32	G_0	G_0	4.2	(3.9)	3.9	4.2	

*1707. *Mt. W.'* —0.3. *1712. Double, $d = 29''$, $\Delta m = 2.3$; the colour is here corrected for duplicity and refers to the brighter component. *1717. Double, $d = 22''$, $\Delta m = 2.0$. Colour of A assumed $C = 0.86$. *1724/5. Double, $d = 7''$, $\Delta m = 0.5$. *1739. *Mt. W'.* 0.0.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1750	6.5	13 11.9	17 34	7.1	0.88	K_0		See	table	II		
1751	5.4	12.3	14 12	−1.2	1.28	K_2	. . .	. . .	1.7	. . .	. . .	
1752	6.3	12.4	−0 9	. . .	0.06	F_0	. . .	. . .	. . .	(2.0)	. . .	*
1753	5.0	12.6	6 0	−2.7	1.77	Ma	Ma	−1.6	−0.6	. . .	−0.6	*
1754	6.6	13.8	4 12	2.3	−0.14	A_0	. . .	. . .	. . .	0.7	. . .	
1755	7.0	15.2	3 48	. . .	1.16	K_2	. . .	. . .	2.1	. . .	. . .	
1756	7.3	15.3	16 6	. . .	1.02	G_5	. . .	. . .	0.0	(0.5)	. . .	
1757	7.0	15.4	18 18	2.6	0.36	F_5	. . .	. . .	. . .	2.2c	. . .	*
1758	6.9	15.5	5 21	. . .	0.07	A_3	. . .	. . .	. . .	1.1	. . .	
1759	6.2	15.6	3 29	0.9	−0.07	A_0	. . .	. . .	. . .	−0.3c	. . .	*
1760	5.7	16.6	2 37	2.4	−0.09	A_0	. . .	. . .	. . .	0.0	. . .	
1761	7.3	16.8	16 36	. . .	(1.38)	K_0	. . .	. . .	−0.7	(0.0)	. . .	
1762	5.9	17.1	5 41	2.4	−0.05	A_0	. . .	See	table	II		
1763	7.1	19.2	1 55	(>3.2)	0.14	A_2	. . .	. . .	. . .	1.4c	. . .	*
1764	6.5	19.6	12 58	. . .	1.14	K_0	. . .	. . .	0.6	(1.1)	. . .	
1765	7.0	20.8	16 6	2.3	1.13	K_0	. . .	. . .	0.6	1.3	. . .	
1766	5.2	23.6	14 20	5.6	0.43	G_0		See	table	II		
1767	5.8	24.3	11 20	1.4	1.02	K_0	K_0	0.7	0.8	1.2	1.1	
1768	6.7	24.7	1 36	4.2	−0.09	A_2	. . .	. . .	. . .	1.2	. . .	
1769	7.4	24.9	17 25	. . .	0.28	F_5	. . .	. . .	. . .	(2.8)	. . .	
1770	6.4	25.0	6 32	1.8	1.07	K_0	. . .	. . .	0.7	1.3	. . .	
1771	6.3	25.0	7 42	−1.2	1.62	K_5	. . .	. . .	0.0	. . .	. . .	
1772	7.3	25.2	19 34	3.8	0.83	K_0	. . .	. . .	1.8	(2.2)	. . .	
1773	7.0	25.7	9 50	. . .	0.97	K_0	. . .	. . .	0.8	(1.1)	. . .	*
1774	6.8	28.1	6 22	. . .	0.88	G_5	. . .	. . .	0.6	(0.5)	. . .	
1775	4.9	29.1	4 10	0.5	−0.11	A_{2p}		See	table	I		
1777	6.6	30.1	13 2	. . .	0.89	K_0	. . .	. . .	1.3	(0.7)	. . .	
1778	7.5	30.5	15 25	. . .	0.08	F_2	. . .	. . .	. . .	(2.2)	. . .	
1779	6.5	30.6	10 43	3.0	0.93	K_0	. . .	. . .	1.0	(2.0)	. . .	
1780	7.1	30.8	8 48	0.9	[1.52]	Mb	. . .	. . .	(−1.5)	. . .	. . .	
1781	6.7	32.5	2 53	1.1	1.05	K_0	. . .	. . .	0.1	0.7	. . .	*
1782	6.4	33.2	14 49	−0.1	0.16	F_0	A_{9n}	0.9	. . .	1.9	. . .	
1783	6.5	34.2	18 47	1.0	1.16	K_0	K_5	0.0	0.6	1.3	2.7	
1784	6.7	34.3	11 2	. . .	1.41	K_5	. . .	. . .	0.7	. . .	. . .	
1785	5.5	34.6	11 15	2.4	0.21	F_2	A_{9p}	1.5	. . .	1.5c	. . .	*
1786	6.1	37.3	8 54	5.6	0.28	F_5	. . .	. . .	. . .	4.2	. . .	
1787	5.6	38.1	4 3	4.4	0.94	K_0	K_3	(0.4)	0.6c	2.8c	2.1c	*
1788	6.9	38.8	14 52	5.9	0.44	G_0	. . .	. . .	4.5	4.4	. . .	
1789	6.6	40.3	10 49	. . .	1.16	K_2	. . .	. . .	2.1	. . .	. . .	
1790	7.2	41.1	5 37	3.3c	0.37	G_0	. . .	. . .	3.4c	3.3c	. . .	*

*1752. This is B. D. + 0° 3040; misprint in *G. A.* **B.** *1753. *Mt. W'.* −0.2. *1757. Double, $d = 0''.2$, $\Delta m = 0.0$. 1759. Double, $d = 0''.7$, $\Delta m = 0.6$. *1763. Double, $d = 1''.3$, $\Delta m = 0.5$. *1773. Double, $d = 6''$, $\Delta m = 3.2$. Colour of A assumed $C = 1.03$. *1781. Double, $d = 16''$, $\Delta m = 1.7$. Colour of A assumed $C = 1.25$. *1785. Double, $d = 0''.2$, $\Delta m = 0.1$. *1787. Double, $d = 3''$, $\Delta m = 2.2$. Colour of A assumed $C = 1.08$. *1790. Double, $d = 1''.4$, $\Delta m = 0.4$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1791	6.3	13 42.0	6 52	6.3	0.48	G_0	F_9	4.4	4.8	4.5	4 8	
1792	4.5	42.6	17 57	4.6	0.26	F_5		See	table	I		
1793	6.7	43.6	8 28	. . .	0.21	F_2	. . .	. . .	. . .	(2.2)	. . .	
1794	6.8	44.5	6 50	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
1795	4.3	44.7	16 18	0.8	1.53	K_5		See	table	I		
1796	6.7	44.8	13 31	. . .	0.19	F_5	. . .	. . .	. . .	(2.8)	. . .	
1797	6.5	44.8	8 55	2.1	0.01	A_0	. . .	. . .	. . .	1.3	. . .	
1798	6.6	45.0	13 42	. . .	0.03	A_2	. . .	. . .	. . .	0.8	. . .	
1799	6.7	45.4	19 7	1.4	0.19	F_0	. . .	. . .	. . .	*2.1*	. . .	
1800	6.2	45.4	5 59	. . .	0.68	K_0	. . .	. . .	((3.8))	(0.8)	. . .	
1801	6.7	47.0	10 38	. . .	1.54	K_5	. . .	. . .	0.3	. . .	. . .	
1802	6.8	47.0	12 27	. . .	0.24	F_5	. . .	. . .	. . .	(2.8)	. . .	
1803	6.0	47.4	12 40	0.9	—0.17	A_2	A_{2n}	1.6	. . .	0.5	. . .	
1804	6.8	47.8	17 13	—1.1	(1.52)	K_5	. . .	. . .	0.3	. . .	. . .	
1805	7.1	48.4	13 14	. . .	0.11	A_3	. . .	. . .	. . .	*1.1*	. . .	
1806	5.7	48.4	18 26	0.2	0.69	K_0	G_6	—0.1	((3.7))	0.9	(3.8)	
1808	6.2	51.0	14 34	5.1	0.28	F_5	F_5	3.8	. . .	*3.9*	. . .	
1809	5.9	51.4	1 32	0.7	0.00	A_3	. . .	. . .	. . .	*0.9*	. . .	
1810	6.9	51.6	3 28	. . .	0.07	A_5	. . .	. . .	. . .	*1.2*	. . .	
1811	6.9	51.8	16 24	2.9	0.79	K_0	. . .	. . .	((2.6))	1.6	. . .	
1812	7.3	53.3	16 54	2.3	—0.02	A_0	. . .	. . .	. . .	0.6	. . .	
1813	6.0	53.8	15 9	2.1	1.35	K_0	K_4	(0.5)	—0.6	0.3	0.9	
1816	5.9	56.4	9 23	. . .	—0.14	A_2	. . .	. . .	. . .	0.1	. . .	
1817	7.1	56.5	14 13	. . .	0.54	G_5	. . .	. . .	(4.0)	(1.0)	. . .	
1818	6.9	56.5	9 47	. . .	1.09	K_0	. . .	. . .	0.7	(1.3)	. . .	
1819	7.1	56.6	4 44	. . .	0.85	G_5	. . .	. . .	0.7	(0.5)	. . .	
1820	4.3	56.6	2 2	—1.1	—0.17	A_2		See	table	I		
1821	6.6	56.8	18 10	1.5	0.96	G_5	. . .	. . .	0.3	0.5	. . .	
1822	7.3	56.9	17 14	4.2	0.19	F_8	. . .	. . .	*d*	4.0	. . .	
1823	7.2	57.5	10 48	. . .	0.76	K_0	. . .	. . .	((3.1))	(0.8)	. . .	
1824	6.1	57.6	10 11	4.1	0.70	G_0	. . .	. . .	(0.0)	3.4	. . .	
1825	7.2	58.2	15 28	3.4	0.47	G_5	. . .	. . .	(4.1)	3.5	. . .	
1826	6.4	58.6	11 17	5.3	0.47	G_5	. . .	. . .	(4.1)	4.5	. . .	
1827	6.4	58.6	8 1	. . .	0.72	K_0	. . .	. . .	((3.4))	(0.5)	. . .	
1828	6.3	58.9	5 22	—2.8	0.17	F_2	. . .	. . .	. . .	*—2.8*	. . .	
1829	7.1	59.1	13 13	. . .	0.74	K_0	. . .	. . .	((3.3))	(0.8)	. . .	
1830	6.8	59.1	11 46	. . .	0.96	K_0	. . .	. . .	0.9	(0.7)	. . .	
1831	6.4	59.6	2 46	. . .	0.97	K_0	. . .	. . .	0.9	(0.7)	. . .	
1832	7.4	14 1.4	7 28	. . .	[1.03]	K_0	. . .	. . .	0.8	(1.1)	. . .	
1833	6.8	1.8	17 27	1.5	(1.52)	Ma	. . .	. . .	0.5	. . .	. . .	
1837	7.8	4.0	18 6	. . .	[0.68]	G_5	. . .	. . .	((2.0))	. . .	. . .	
1838	7.2	4.2	7 52	. . .	0.79	K_0	. . .	. . .	((2.3))	(0.8)	. . .	*
1839	6.9	4.4	3 16	. . .	(1.04)	K_0	. . .	. . .	0.8	(1.2)	. . .	

*1838. Double, $d = 5''$, $\Delta m = 3.5$. Colour of A assumed $C = 0.81$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1841	6.7	14 4.8	16 6	2.9	0.32	F_5	. . .	. . .	. . .	*2.8*	. . .	
1842	6.7	5.7	1 17	. . .	0.14	A_2	. . .	. . .	. . .	1.1	. . .	
1843	7.0	6.0	15 46	3.3	1.36	K_2	. . .	. . .	1.1	. . .	. . .	
1844	6.3	6.4	1 50	3.6	0.40	F_5	F_5	4.2	. . .	*3.0*	. . .	
1845	4.9	7.2	2 53	0.9	—0.24	A0p		See	table	I		
1846	6.6	9.0	12 28	. . .	0.86	K_0	. . .	. . .	0.8c	(0.7c)	. . .	*
1847	5.5	9.3	13 27	4.2	0.32	F_8	F_7	3.8	*d*	3.9	. . .	
1848	6.7	9.8	14 27	. . .	1.14	K_2	. . .	. . .	2.2	. . .	. . .	
1849	6.6	9.8	3 48	1.7	1.63	Ma	. . .	. . .	0.9	. . .	. . .	
1850	5.4	10.0	10 35	2.8	0.90	G_5	. . .	. . .	0.5	0.5	. . .	
1851	7.0	10.3	3 35	5.0	0.37	F_8	. . .	. . .	*d*	3.8c	. . .	*
1853	7.9	11.4	6 32	. . .	0.01c	A_0	. . .	. . .	. . .	1.1c	. . .	*
1854	5.8	11.4	19 23	1.4	0.07	A_5	A5sn	2.1	. . .	*1.2*	. . .	
1855	6.0	12.7	15 43	. . .	1.54	Ma	Ma	—1.2	0.8	. . .	0.8	*
1856	7.1	13.5	4 9	. . .	(1.07)	K_0	. . .	. . .	0.7	(1.3)	. . .	
1857	7.1	13.7	10 58	. . .	0.11	A_3	. . .	. . .	. . .	*1.1*	. . .	
1858	6.9	14.4	19 32	1.9	1.00	K_0	. . .	. . .	0.8	1.1	. . .	
1859	5.3	14.4	13 28	2.4	0.24	F_0	. . .	. . .	. . .	*2.3*	. . .	*
1860	6.2	14.6	0 50	. . .	0.08	A_3	. . .	. . .	. . .	*1.1*	. . .	
1861	5.0	15.0	16 46	2.4	1.12	K_0		See	table	I		
1862	7.0	15.4	0 38	3.8	(1.36)	K_0	. . .	. . .	—0.6	0.2	. . .	
1863	7.1	16.5	19 38	. . .	(1.46)	K_5	. . .	. . .	(0.5)	. . .	. . .	
1864	6.6	17.7	—0 11	. . .	0.06	A_0	. . .	. . .	. . .	1.6	. . .	
1865	6.3	18.1	1 43	6.4	0.53	G_0	G_2	5.4	4.6	4.7	5.0	
1866	4.9c	18.5	8 54	1.3	—0.15	A_0+F_1		See	table	I		
1867	5.7	19.1	8 42	—0.6	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
1868	5.1	19.2	6 16	1.7	—0.08	A_3	. . .	. . .	. . .	*1.2*	. . .	
1869/70	6.7c	19.2	11 42	. . .	0.44c	F_5	. . .	. . .	. . .	(*2.8*)	. . .	*
1871	6.2	19.4	8 32	3.8	1.18	K_2	K_4	1.4	2.0	. . .	2.1	
1872	6.8	19.5	16 44	. . .	0.56	F_5+A_0	. . .	. . .	. . .	(*—1.2c*)	. . .	*
1873	7.0	20.9	1 27	. . .	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
1874	7.2	21.7	6 24	3.3	0.92	K_0	. . .	. . .	1.1	(2.2)	. . .	
1875	5.4	21.8	19 40	1.7	—0.04	A_5	. . .	. . .	. . .	*1.3*	. . .	
1876	7.2	22.2	10 27	. . .	0.78	K_0	. . .	. . .	((2.8))	(0.8)	. . .	
1877	7.3	22.8	15 12	. . .	[1.25]	K_0	. . .	. . .	0.1	(0.7)	. . .	
1878	7.1	23.5	3 14	5.2	0.30	F_8	. . .	. . .	*d*	4.3	. . .	
1879	7.0	23.9	4 10	. . .	[1.61]	K_5	. . .	. . .	0.1	. . .	. . .	
1880	5.8	24.8	1 16	. . .	0.09	A_3	. . .	. . .	. . .	*1.1*	. . .	
1882	6.1	25.8	5 13	. . .	1.34	K_2	. . .	. . .	1.2	. . .	. . .	
1883	7.2	26.9	18 5	. . .	0.32	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1884	7.4	26.9	13 18	4.9	0.25	F_5	. . .	. . .	. . .	*3.7*	. . .	

*1846. Double, $d = 2''$, $\Delta m = 2.2$. Colour of A assumed $C = 0.95$. *1851. Double, $d = 1''.0$, $\Delta m = 1.1$. *1853. Double, $d = 5''$, $\Delta m = 2.0$. *1855. *Mt. W'.* 0.0. *1859. In *G. A. for* BD 13°2785 *read* 13° 2782. *1869/70. Double, $d = 9''$, $\Delta m = 0.1$. *1872. Spectrum composite.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1886	7.5	14 27.5	19 17	6.0	0.28	F_8	. . .	. . .	*d*	4.6	. . .	
1887	7.0	28.1	14 31	. . .	0.24	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1888	6.9	28.1	5 46	. . .	0.66	G_5	. . .	. . .	((2.2))	(0.5)	. . .	
1889	7.1	30.2	13 33	. . .	0.08	A_3	. . .	. . .	. . .	*1.1*	. . .	
1890	7.4	31.0	11 31	. . .	—0.07	A_3	. . .	. . .	. . .	*1.1*	. . .	
1891	7.5	31.1	10 12	6.5	0.71	K_0	. . .	. . .	((3.5))	5.0	. . .	
1892	6.9	31.9	13 18	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
1893	6.6	32.4	2 43	2.5	0.32	F_8	. . .	. . .	*d*	3.0	. . .	
1894	6.0	33.6	18 45	2.4	1.08	K_0	K_0	0.6	0.7	1.3	0.6	
1895	6.0	35.9	13 58	1.9	—0.01	A_5	. . .	. . .	. . .	*1.4*	. . .	
1896	4.5	36.0	16 51	—2.2	—0.26	A_0		See	table	I		
1899	5.0	36.8	8 35	—3.5	0.91	G_5	G_5	0.2	0.5	—0.5	0.5	
1900	5.6	37.0	12 4	3.7	0.89	G_5	G_5	0.4	0.5	0.5	0.9	
1901	7.6	37.2	18 55	. . .	(0.98)	K_0	. . .	. . .	(0.8)	. . .	. . .	
1902	6.6	38.0	15 9	. . .	0.07	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1903	7.5	39.6	18 54	5.3	0.51	G_5	. . .	. . .	(4.1)	4.5	. . .	
1904	5.5	40.4	1 7	0.8	—0.14	B_9	. . .	. . .	. . .	—0.5	. . .	
1905	7.1	40.5	11 1	. . .	0.87	G_5	. . .	. . .	0.6	(0.5)	. . .	
1906	4.7	40.6	17 24	0.8	0.87	K_0		See	table	I		
1907	7.1	40.7	8 35	. . .	0.98	K_0	. . .	. . .	0.8	(0.8)	. . .	
1908	6.4	40.8	19 19	0.8	0.64	K_0	. . .	. . .	((4.0))	1.8	. . .	
1909	6.7	41.1	13 33	. . .	1.18	K_0	. . .	. . .	0.5	(1.2)	. . .	
1910	7.5	41.1	10 28	4.9	0.33	F_5	. . .	. . .	. . .	*3.7*	. . .	
1912	7.2	41.4	10 4	6.1	0.49	F_8	G_3	5.2	*d*	3.7c	4.7	*
1913	6.1	41.4	15 33	1.6	1.35	Mb	. . .	. . .	—1.1	. . .	. . .	
1914	7.8	41.8	15 17	. . .	(0.79)	K_0	. . .	. . .	((2.7))	. . .	. . .	
1915	6.6	42.0	1 23	. . .	—0.20c	A_0	. . .	. . .	. . .	—0.6c	. . .	*
1916	7.4	42.9	19 28	. . .	0.21	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1917	6.7	43.9	6 22	2.9	0.27	F_8	. . .	. . .	*d*	2.9c	. . .	*
1918	7.4	44.2	18 37	0.9	0.87	K_2	K_0	2.2	(3.0)	. . .	(2.3)	
1919	6.8	44.6	10 28	. . .	1.30	K_0	. . .	. . .	—0.3	(0.3)	. . .	
1920	7.0	44.8	8 24	. . .	0.59	F_5	. . .	. . .	. . .	(*2.1*c)	. . .	*
1921	7.5	44.8	10 37	. . .	(0.84)	K_0	. . .	. . .	1.7	. . .	. . .	
1922	7.0	45.0	10 54	3.3	—0.13	A_2	. . .	. . .	. . .	1.2	. . .	
1924	6.2	45.9	0 9	. . .	1.39	K_2	. . .	. . .	0.8	. . .	. . .	
1925	4.6	46.8	19 31	2.9b	0.64	G_5		See	table	I		
1926	6.8	48.3	15 32	(2.2)	0.12	A_2	. . .	. . .	. . .	1.5	. . .	
1927	7.1	48.6	2 39	2.6	(1.47)	K_5	. . .	. . .	(0.5)	. . .	. . .	
1928	6.4	48.7	16 6	(—0.8c)	0.43	G_0	. . .	. . .	3.7c	1.1c	. . .	*
1929	6.7	48.7	6 40	0.7	1.29	K_0	. . .	. . .	—0.2	0.5	. . .	
1930	6.0	48.9	19 34	5.9	0.95	K_0	K_1	5.6	[0.9]	5.6	(2.3)	

*1912. Double, $d = 1''.2$, $\Delta m = 1.0$. *1915. Double, $d = 3''.6$, $\Delta m = 2.3$. *1917. Double, $d = 1''.2$, $\Delta m = 0.0$. *1920. Double, $d = 0''.2$, $\Delta m = 0.1$. *1928. Double, $d = 0''.6$, $\Delta m = 0.7$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1931	7.1	14 50.2	15 44	. . .	0.05	A_3	. . .	. . .	. . .	*1.1*	. . .	
1932	7.0	50.3	15 23	(2.0)	0.86	K_0	. . .	. . .	1.4	1.3	. . .	
1933	6.9	50.5	7 13	0.4	(1.88)	K_5	. . .	. . .	—1.1	. . .	. . .	*
1934	6.8	50.7	12 50	. . .	—0.14	A_2	. . .	. . .	. . .	0.1	. . .	
1935	7.1	51.3	3 48	. . .	0.31	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1936	5.8	51.5	14 51	0.0	—0.19	A_0	. . .	. . .	. . .	0.0	. . .	
1937	5.7	52.4	0 14	1.4	1.15	K_0	K_1	0.8	0.6	1.3	0.7	
1938	5.8	52.5	16 48	—0.5	0.98	K_0	G_6	0.1	0.8	0.4	—0.3	
1939	6.7	53.2	19 23	4.4	0.78	K_0	. . .	. . .	((2.8))	(2.1)	. . .	
1940	6.8	53.6	14 26	1.1	1.50	K_2	. . .	. . .	—0.3	. . .	. . .	
1941	6.2	54.4	4 58	—0.5	1.62	Ma	Ma	—1.0	0.9	. . .	0.9	
1942	7.2	55.3	15 14	. . .	1.19	K_0	. . .	. . .	0.4	(0.9)	. . .	
1943	7.1	55.4	8 2	. . .	1.43	K_2	. . .	. . .	(0.4)	. . .	. . .	
1944	6.8	56.0	3 17	3.9	0.29	F_5	. . .	. . .	. . .	*3.2*	. . .	
1945	5.9	56.7	0 15	—0.2	1.76c	K_0	K_2	—3.0	—2.7c	(—1.7c)	—2.7c	*
1946	4.6	57.9	2 29	—0.4	1.03	K_0		See	table	I		
1947	7.0	57.9	16 26	5.0	0.46	G_0	. . .	. . .	4.7	4.1	. . .	
1948	7.7	58.4	5 13	. . .	[0.50]	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
1949	7.3	58.6	18 22	. . .	1.01	K_0	. . .	. . .	0.8	(1.1)	. . .	
1950/1	6.4c	59.2	5 53	. . .	0.11c	F_0	. . .	. . .	. . .	(*2.0*)	. . .	*
1952	7.2	15 1.0	4 37	3.7	0.02	F_0	. . .	. . .	. . .	*2.5*	. . .	
1953	7.1	1.4	5 56	. . .	0.19	F_0	. . .	. . .	. . .	(*2.1*)	. . .	
1954	6.8	2.1	2 45	1.6	(1.39)	K_2	. . .	. . .	0.8	. . .	. . .	
1955	7.7	2.6	10 55	5.8	(0.63)	K_0	. . .	. . .	((4.0))	5.0	. . .	
1956	6.2	2.7	5 53	0.0	0.87	G_5	G_6	—0.1	0.6	0.5	(1.4)	
1957	6.0	2.8	18 50	2.9	0.00	A_0	. . .	. . .	. . .	0.3c	. . .	*
1958	6.7	2.8	9 37	. . .	0.54	G_5	. . .	. . .	(3.2c)	(0.5)	. . .	*
1959	7.2	4.0	12 52	. . .	0.11	A_3	. . .	. . .	. . .	*1.1*	. . .	
1960	6.1	4.2	13 37	. . .	1.00	K_0	. . .	. . .	0.8	(0.7)	. . .	
1961	7.0	4.5	4 15	. . .	0.15	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1962	7.1	5.8	12 3	. . .	[1.72]	Ma	. . .	. . .	(0.0)	. . .	. . .	*
1964	6.8	7.0	10 36	. . .	—0.11	A_0	. . .	. . .	. . .	0.0	. . .	
1965	7.5	7.1	10 10	. . .	0.83	K_0	. . .	. . .	1.8	(0.9)	. . .	
1966	6.0	7.5	19 21	—4.5	1.69	Mb		See	table	II		
1967	6.7	8.0	11 4	. . .	1.31	K_2	. . .	. . .	1.5	. . .	. . .	
1969	6.4c	8.3	19 39	7.0c	0.51c	G_5	G_6	4.0c	(3.5c)	4.8c	(5.2c)	*
1971	5.4	10.2	5 19	—1.3	1.19	K_0	G_9	0.8	0.4	0.6	—0.7	
1972	5.6	10.7	0 45	2.9	0.05	A_3	A_{2n}	1.6	. . .	*1.7*	. . .	
1973	7.1	10.8	10 29	. . .	0.16	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
1974	7.1	10.9	1 10	5.1	0.64	K_0	. . .	. . .	((4.0))	4.1	. . .	

*1933. Companion, $d = 35''$, $\Delta m = 3.9$; A = *orange*; B = *blue*. Colour of A corrected for superposition assumed $C = 2.06+$. *1945. Double, $d = 0''.4$, $\Delta m = 1.4$. Colour of A assumed $C = 1.76$. *1950/1. Double, $d = 10''$, $\Delta m = 0.3$. *1957. Double, $d = 0''.1$, $\Delta m = 0.0$. *1958. Double, $d = 3''.8$, $\Delta m = 0.0$. *1962. Misprint in declination in *G. A.*, **B**. *1969. Double, $d = 25''$, $\Delta m = 0.8$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
1975	6.6	15 11.0	6 50	. . .	1.18	K_0	. . .	. . .	0.5	(1.0)	. . .	
1976	7.5	11.4	13 51	. . .	0.50	G_5	. . .	. . .	(4.1)	. . .	. . .	
1977	6.6	11.8	10 4	. . .	0.23	A_2+G	. . .	. . .	. . .	—0.6c	. . .	*
1978	6.7	13.3	1 18	. . .	1.20	K_0	. . .	. . .	0.4	(0.9)	. . .	
1979	6.0	13.3	—0 4	. . .	1.62	K_5	. . .	. . .	0.0	. . .	. . .	
1980/1	6.7c	13.9	10 48	3.0c	0.42c	F_8	. . .	. . .	*d*	3.2c	. . .	*
1982	5.2	14.2	2 9	5.9	0.40	G_0	F_6	3.8	4.2	4.6	. . .	
1985	5.5	16.0	1 4	2.5	1.12	K_0	K_2	1.2	0.6	1.3	1.4	*
1986	6.2	17.7	12 57	0.3	—0.19	A_0	. . .	. . .	. . .	0.1c	. . .	
1987	7.2	18.0	0 49	. . .	0.56	K_0	. . .	. . .	((4.0))	(3.5)	. . .	
1988	7.1	18.3	19 18	5.6	0.68	K_0	. . .	. . .	((3.7))	4.0	. . .	
1989	7.7	19.1	18 12	. . .	0.32	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
1990	7.6	19.2	9 16	0.9	[0.77]	K_5	. . .	. . .	(2.7)	. . .	. . .	
1991	7.2	19.4	10 54	. . .	—0.10	A_0	. . .	. . .	. . .	0.0	. . .	
1992	7.0	20.0	11 21	4.9	0.21	F_2	. . .	. . .	. . .	*2.2*	. . .	
1993	5.5	21.2	15 47	—0.4	1.78	Ma	Ma	. . .	—0.7	. . .	—0.7	*
1994	6.3	21.4	19 50	2.1	0.46	G_0	. . .	. . .	4.7	(2.7)	. . .	
1995	7.8	21.6	18 32	1.5	0.34	F_8	F_7	2.8	*d*	2.2c	. . .	*
1996	7.1	21.7	10 23	. . .	[1.48]	Ma	. . .	. . .	(0.0)	. . .	. . .	
1997	7.7	22.5	13 44	. . .	0.16	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
1998	7.0	23.3	12 13	. . .	0.14	F_0	. . .	. . .	. . .	(*2.1*)	. . .	
1999	5.1	23.6	2 11	2.1	0.02	A_5	. . .	. . .	. . .	*1.4*	. . .	
2000	7.1	24.4	13 24	. . .	0.79	G_5	. . .	. . .	0.9	(0.5)	. . .	
2001	6.6	24.6	16 45	3.0	0.75	K_0	. . .	. . .	((3.2))	1.6	. . .	
2002	7.4	25.1	16 32	2.4	(0.78)	K_0	. . .	. . .	((2.8))	1.4	. . .	
2003	7.2	25.3	18 51	. . .	(1.03)	K_0	. . .	. . .	0.8	(1.1)	. . .	
2004	7.3	25.6	12 20	. . .	(1.05)	K_0	. . .	. . .	0.7	(1.3)	. . .	
2005	6.5	26.1	8 55	0.4	0.22	F_2	. . .	. . .	. . .	*2.2*	. . .	
2006	6.1	27.6	16 24	—0.4	—0.19	B_9	B_{9n}	0.6	. . .	—1.0	. . .	
2007	7.2	28.0	11 18	4.8	0.47	G_0	. . .	. . .	4.7	4.1	. . .	
2008	6.7	28.5	16 21	0.1	1.25	K_2	. . .	. . .	1.8	. . .	. . .	
2009	6.4	29.3	17 28	2.8	0 19	F_0	. . .	. . .	. . .	*2.4*	. . .	
2010	7.0	29.6	5 4	. . .	—0.09	A_2	. . .	. . .	. . .	0.1	. . .	
2012	6.6	30.0	2 0	4.1	—0.05	A_3	. . .	. . .	. . .	*2.4*	. . .	
2013	6.7	30.8	1 33	. . .	0.03	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
2014	6.1	31.0	17 59	2.1	0.92	K_0	G_7	1.0	1.1	1.1	0.7	
2015	6.1	31.2	11 35	0.5	1.09	G_5	. . .	. . .	—0.3	—0.1	. . .	
2016	7.3	31.2	6 29	. . .	0.11	A_2	. . .	. . .	. . .	1.1	. . .	
2017	7.7	31.2	13 16	. . .	0.36	F_8	. . .	. . .	*d*	(3.5)	. . .	*
2018	5.4	31.7	10 21	2.6	0.71	K_0	G_4	0.1	((3.5))	1.8	(1.6)	

*1977. Spectrum composite. Colour of the A_2 star assumed $C = -0.16\pm$. *1980/1. Double, $d = 13''$, $\Delta m = 1.4$. *1985. Double, $d = 2''$, $\Delta m = 4.0$. Colour of A assumed $C = 1.13$. *1993. *Mt. W.* −0.1. *1995. Double, $d = 1''.5$, $\Delta m = 0.5$. *2017. Double, $d = 1''.4$, $\Delta m = 1.7$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2019	6.8	15 31.9	15 25	—1.5	[1.21]	Mb	Mb	. . .	— 1.2	. . .	—1.2	*
2020	5.9	31.9	16 27	1.9	0.17	F_0	. . .	. . .	. . .	*2.2*	. . .	
2021	6.9	32.1	15 15	. . .	—0.05	A_0	. . .	. . .	. . .	0.3	. . .	
2022	7.0	32.7	12 38	. . .	0.19	F_0	. . .	. . .	. . .	*(2.1)*	. . .	
2023	7.6	32.8	11 28	. . .	(0.66)	G_5	. . .	. . .	((2.3))	. . .	. . .	
2024	7.0	33.2	10 35	6.7	0.32	F_8	. . .	. . .	*d*	4.9	. . .	
2025	7.1	34.0	12 36	. . .	—0.15	B_9	. . .	. . .	. . .	—1.0	. . .	
2026	7.1	34.0	10 56	. . .	0.74	G_5	. . .	. . .	((1.2))	(1.0)	. . .	
2027	6.9	35.1	16 38	3.5	0.17	A_2	. . .	. . .	. . .	1.9	. . .	
2028	6.3	35.4	12 23	. . .	0.87	G_5	. . .	. . .	0.6	(0.5)	. . .	
2029	7.6	36.0	19 0	. . .	--0.02	A_2	. . .	. . .	. . .	—0.2c	. . .	*
2030	6.0	36.4	16 22	0.1	0.83	G_5	G_4	0.6	0.8	0.5	(1.0)	
2031	7.4	36.9	0 46	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2032	5.2	37.1	13 10	0.9	—0.08	Aop		See	table	II		
2033	7.3	37.4	8 8	. . .	0.40	G_0	. . .	. . .	4.2	(2.2)	. . .	
2034	5.8	37.4	18 48	2.8	—0.01	A_3	. . .	. . .	. . .	*1.6*	. . .	
2035	7.9	37.9	18 32	3.7	[0.14]	F_5	. . .	. . .	. . .	*3.1*	. . .	
2036	7.2	38.0	7 12	. . .	(0.84)	K_0	. . .	. . .	1.7	(0.8)	. . .	
2037	6.4	38.5	14 0	. . .	0.77	G_5	. . .	. . .	0.3c	(0.3c)	. . .	*
2038	7.1	38.6	12 2	. . .	[1.23]	K_2	. . .	. . .	(1.9)	. . .	. . .	
2039	5.8	39.0	2 50	3.5	0.53	G_5	. . .	. . .	(4.0)	3.5	. . .	
2041	7.2	39.5	3 41	. . .	0.07	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2042	7.4	39.8	11 36	. . .	0.39	F_8	. . .	. . .	*d*	(3.0)	. . .	
2044	5.9	40.2	17 36	0.7	—0.14	A_0	. . .	. . .	. . .	0.1	. . .	
2045	7.1	40.2	17 4	3.6	0.99	K_2	. . .	. . .	(2.6)	. . .	. . .	
2046	5.6	40.4	5 45	0.6	—0.18	A_0	A1sn	1.0	. . .	0.1	. . .	
2047	6.5	40.6	1 10	. . .	1.12	K_0	. . .	. . .	0.6	(1.3)	. . .	
2049	4.4	41.6	7 41	3.1	0.61	G_0		See	table	I		
2050	6.8	41.8	15 50	1.5	—0.08	A_3	. . .	. . .	. . .	*1.2*	. . .	
2051	7.0	41.9	10 6	. . .	—0.03	A_2	. . .	. . .	. . .	0.4	. . .	
2052	7.2	42.2	0 2	6.0	0.01	F_5	. . .	. . .	. . .	*4.4*	. . .	*
2053	7.5	42.3	11 50	. . .	0.07	A_2	. . .	. . .	. . .	1.0	. . .	
2054	6.7	42.4	1 51	. . .	1.14	K_0	. . .	. . .	0.6	(1.3)	. . .	
2055	5.7	42.6	14 26	2.0	—0.15	A_0	. . .	. . .	. . .	0.6	. . .	
2056	6.1	43.6	14 6	2.9	1.27	K_0	. . .	. . .	—0.1	0.7	. . .	
2057	6.8	44.2	13 2	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
2058	4.3	44.2	18 28	1.1	1.83	K_5		See	table	I		
2059	7.0	44.8	2 48	. . .	0.10	A_2	. . .	. . .	. . .	1.1	. . .	
2060	6.8	44.9	12 51	. . .	0.83	K_0	. . .	. . .	1.8	(0.8)	. . .	
2061	5.3	45.2	2 30	0.8	0.94	K_0	. . .	. . .	1.0	0.7	. . .	
2063	7.6	48.4	15 44	3.8	[0.55]	K_0	. . .	. . .	((4.0))	4.9	. . .	

*2019. *Mt. W'.* —0.4. *2029. Double, $d = 0''.2$, $\Delta m = 0.0$. *2037. Double, $d = 0''.5$, $\Delta m = 0.5$. *2052. This is B. D. 0°3401; in *G. A.* misprinted 0°3041.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2064	6.4	15 48.4	17 42	1.7	1.11	K_0	. . .	. . .	0.7	1.3	. . .	
2065	6.2	48.6	13 31	6.7	0.36	G_0	G_1	5.0	4.0	4.7	4.2	
2066	6.1	49.0	16 22	—0.2	0.25	F_2	. . .	. . .	. . .	*2.2*	. . .	
2067	7.1	49.5	5 36	. . .	0.82	K_0	. . .	. . .	((2.1))	(0.8)	. . .	
2068	6.2	49.8	8 53	—0.8	—0.01	A_2	. . .	. . .	. . .	—0.1	. . .	
2069	6.2	51.2	18 55	0.5	—0.29	B_9	. . .	. . .	. . .	0.7	. . .	
2070	3.9	51.8	16 0	6.4	0.25	F_5		See	table	I		
2071	6.9	52.1	12 47	. . .	0.22	F_2	. . .	. . .	. . .	(*1.7c*)	. . .	*
2072	7.0	52.3	3 41	. . .	—0.01c	A_0	. . .	. . .	. . .	0.4c	. . .	*
2073	5.7	52.6	14 42	2.8	1.13	K_0	K_3	0.4	0.6	1.3	1.9	
2074	7.1	53.5	5 2	. . .	(0.85)	K_0	. . .	. . .	1.5	(0.8)	. . .	
2075	7.5	54.0	0 52	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
2077	5.9	55.9	4 43	1.9	0.98	K_0	. . .	. . .	0.8	1.0	. . .	
2078	7.0	56.3	13 34	. . .	0.29	F_5	. . .	. . .	. . .	(*2.3c*)	. . .	*
2079	5.3	56.8	18 6	2.7	0.98	G_5	G_7	0.5	0.1	0.5	0.2	
2080	7.4	57.2	13 45	. . .	—0.06	A_5	. . .	. . .	. . .	*1.2*	. . .	
2081	7.4	58.2	18 23	. . .	0.02	A_0	. . .	. . .	. . .	1.5	. . .	
2082	6.2	58.8	5 16	1.6	0.87	K_0	. . .	. . .	1.3	1.0	. . .	
2083	7.3	59.0	11 43	. . .	0.99	K_2	. . .	. . .	(2.6)	. . .	. . .	
2084	6.9	59.3	18 5	1.5	1.06	K_0	. . .	. . .	0.7	1.3	. . .	
2085	7.0	59.4	0 56	. . .	0.16	F_8	. . .	. . .	*d*	(4.0)	. . .	
2086	6.1	16 0.8	8 22	. . .	0.04	A_2	. . .	. . .	. . .	0.9	. . .	
2087	7.0	1.1	10 13	. . .	—0.21	A_2	. . .	. . .	. . .	0.7	. . .	
2088	7.5	1.2	1 58	. . .	(0.38)	G_5	. . .	. . .	(3.8)	(2.5)	. . .	
2089	6.7c	1.4	13 35	. . .	0.86c	K_0	. . .	. . .	0.8	(0.8)	. . .	*
2090	7.2	2.8	13 36	. . .	0.18	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2091	5.6	2.9	10 10	0.0	0.08	A_5	. . .	. . .	. . .	*0.8*	. . .	
2092	7.4	3.1	12 39	. . .	0.62	G_5	. . .	. . .	((2.8))	(0.8)	. . .	
2093	7.9	3.2	15 59	. . .	[0.66]	K_2	. . .	. . .	((3.9))	. . .	. . .	
2094	6.7	3.4	10 21	2.2	—0.02	A_3	. . .	. . .	. . .	*1.4*	. . .	
2095	5.3	3.6	17 19	—0.2	} 0.95c	G_5	G_4	0.8	0.3	0.5	0.5	*
2096	6.5	3.6	17 20	1.5		(G_5)	K_2	(1.1)	. . .	. . .	. . .	*
2097	5.9	3.6	8 48	—0.7	1.69	Mb	Ma	. . .	—0.8	. . .	—0.1	*
2098	6.7	3.8	8 53	2.3	1.29	Mb	. . .	. . .	—1.2	. . .	. . .	
2099	6.1	4.0	3 43	. . .	1.52	K_5	. . .	. . .	0.3	. . .	. . .	
2100	6.0	4.3	6 41	6.9	0.96	G_5	K_0	3.8	0.3	4.0	1.6	
2101	6.1	4.3	17 29	1.8	—0.15	A_0	. . .	. . .	. . .	0.5	. . .	
2102	7.7	4.3	16 4	. . .	[1.02]	K_5	. . .	. . .	(2.1)	. . .	. . .	
2103	6.8	4.6	1 4	. . .	(1.15)	K_2	. . .	. . .	2.2	. . .	. . .	
2104	6.9	4.8	12 1	. . .	0.21	F_2	. . .	. . .	. . .	(*2.2*)	. . .	

*2071. Double, $d = 3''$, $\Delta m = 0.7$. *2072. Double, $d = 10''$, $\Delta m = 1.5$. *2078. Double, $d = 0''.6$, $\Delta m = 0.5$. *2089. Companion $d = 32''$, $\Delta m = 1.0$, sp. K_0. The colour derived in *G. A.* is wrong, because the Potsdam magnitude refers to the brighter star, whereas the *G. A.* magnitude is combined; the corrected colour is here given. *2095/6. Optical pair, $d = 31''$. *2097. *Mt. W.* —0.3.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2105	6.6	16 5.1	1 51	. . .	0.82	K_0	. . .	. . .	((2.1))	(0.8)	. . .	
2106	7.4	6.0	10 18	. . .	0.17	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2107	6.5	6.7	9 58	. . .	0.10	A_3	. . .	. . .	. . .	*1.1*	. . .	
2108	5.9	7.0	16 56	—0.8	—0.12	A_0	A2s	1.1	. . .	—0.2	. . .	
2109	7.0	8.3	13 4	. . .	0.07	A_3	. . .	. . .	. . .	*1.1*	. . .	
2110	5.6	8.3	5 17	—0.5	1.64	K_0	K_5	0.8	—2.2	—1.2	—0.8	
2111	7.4	8.4	19 21	2.1	[1.23]	K_2	. . .	. . .	(1.9)	. . .	. . .	
2112	6.8c	8.6	13 47	6.7c	0.63c	K_0	G9a	4.2c	((3.3c))	4.9c	(5.0c)	*
2113	7.3	9.0	7 15	. . .	0.09	A_3	. . .	. . .	. . .	*1.1*	. . .	
2114	6.4	9.3	6 9	. . .	1.15	G_5	K_3	0.0	—0.5	(—0.5)	1.8	
2115	7.1	9.4	2 55	2.4	0.39	F_5	. . .	. . .	. . .	*2.6*	. . .	
2116	6.8	9.8	8 7	0.6	1.24	K_0	. . .	. . .	0.2	0.7	. . .	
2117	7.4	10.3	11 46	4.0	0.17	F_0	. . .	. . .	. . .	*2.5*	. . .	
2118	7.5	10.4	18 28	. . .	(0.65)	K_0	. . .	. . .	((4.0))	(1.5)	. . .	
2119	5.9	11.0	19 5	2.5	0.97	K_0	. . .	. . .	0.9	1.3	. . .	
2120	7.5	11.3	11 41	2.9	0.63	K_0	. . .	. . .	((4.0))	3.0	. . .	
2121	7.6	12.5	19 6	2.7	[1.07]	K_2	K_2	(1.7)	(2.4)	. . .	1.8	
2122	6.6	12.7	1 44	. . .	1.04	K_0	. . .	. . .	0.7	(1.1)	. . .	
2123	4.8	17.0	1 15	3.0	0.28	F_0		See	table	I		
2124	7.4	17.2	3 7	. . .	[0.87]	K_2	. . .	. . .	(3.0)	. . .	. . .	
2125	7.3	17.3	13 42	. . .	[1.22]	K_2	. . .	. . .	(1.9)	. . .	. . .	
2126	7.3	17.3	3 19	. . .	0.22	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2128	5.7	19.3	7 10	—1.1	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
2129	7.2	19.7	10 29	. . .	[1.35]	K_5	. . .	. . .	(0.9)	. . .	. . .	
2130	4.5	20.8	14 16	1.6	—0.15	Aop		See	table	I		
2131	7.3	20.9	19 28	. . .	[1.42]	K_5	. . .	. . .	(0.6)	. . .	. . .	*
2132	6.9	20.9	9 37	. . .	(1.41)	K_2	. . .	. . .	0.6	. . .	. . .	
2133	7.9	21.0	17 31	1.1	0.18	G_0	G_0	3.2	(2.1)	3.1	2.9	*
2134	6.6	21.4	2 44	. . .	0.00	A_0	. . .	. . .	. . .	1.0	. . .	
2135	6.2	21.5	11 39	. . .	1.07	K_0	. . .	. . .	0.7	(1.3)	. . .	
2136	6.2	21.8	2 34	. . .	0.73	G_5	. . .	. . .	((1.3))	(0.9)	. . .	
2137	7.5	21.9	15 20	. . .	(0.94)	K_0	. . .	. . .	1.0	(0.8)	. . .	
2138	6.8	21.9	9 30	. . .	1.05	K_0	. . .	. . .	0.7	(1.2)	. . .	
2139	7.0	22.0	11 12	. . .	[1.57]	Ma	. . .	. . .	1.0	. . .	. . .	
2140	6.8	22.2	16 11	. . .	0.48	G_0	. . .	. . .	4.7	(2.0)	. . .	
2141	6.6	22.5	3 6	—1.4	(1.48)	K_5	. . .	. . .	0.5	. . .	. . .	
2142	5.5	23.5	0 52	1.5	1.47	K_2	K_5	0.6	0.0	. . .	0.7	
2143	7.5	23.6	15 33	. . .	0.32	F_8	. . .	. . .	*d*	(3.0)	. . .	
2144	6.6	23.6	0 17	3.4	1.12	K_5	. . .	. . .	1.8	. . .	. . .	
2145	7.5	23.9	15 40	. . .	(0.75)	K_0	. . .	. . .	((3.2))	(1.0)	. . .	
2146	7.6	24.2	13 50	. . .	0.01	F_0	. . .	. . .	. . .	*(2.2)*	. . .	

*2112. Double, $d = 3''$, $\Delta m = 0.2$. *2131. This is B. D. 19° 3096; misprint in *G. A.* *2133. Double, $d = 10''$, $\Delta m = 3.3$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2147	7.2	16 24.2	19 14	. . .	0.72	G_5	. . .	. . .	((1.4))	(1.2)	. . .	
2148	7.0c	24.5	18 38	7.1c	0.79	K_0	K_3	5.9c	((1.9c))	5.3c	5.8c	*
2149	6.9	25.0	6 12	1.0	0.21	F_5	. . .	. . .	. . .	*2.1*	. . .	
2150	7.2	25.0	7 58	. . .	0.96	K_0	. . .	. . .	0.9	(0.8)	. . .	
2151	7.5	25.6	15 18	0.8	0.16	A_3	. . .	. . .	. . .	*0.9*	. . .	
2153	6.7	27.2	9 38	. . .	0.20	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2154	5.6	27.7	5 44	0.1	—0.15	B_8	A_{1s}	0.6	. . .	—0.2	. . .	
2155	4.9	28.0	11 43	3.0	1.67	K_5		See	table	I		
2156	6.7	28.8	10 35	. . .	0.16	A_3	. . .	. . .	. . .	*1.1*	. . .	
2157	7.0	29.2	13 37	. . .	1.07	K_0	. . .	. . .	0.7	(1.3)	. . .	
2158	6.9	29.7	8 53	. . .	1.00	K_0	. . .	. . .	0.3c	(1.2)	. . .	*
2159	6.3	31.0	17 15	—0.4	—0.03	A_0	. . .	. . .	. . .	0.5	. . .	
2160	7.3	31.0	17 19	1.4	—0.19	A_5	. . .	. . .	. . .	*1.2*	. . .	
2161	7.0	32.0	0 27	3.1	0.63	K_0	. . .	. . .	((4.0))	3.0	. . .	
2162	6.3	32.2	15 42	(2.7)	—0.18	A_{0p}	. . .	. . .	. . .	0.9	. . .	
2163	6.6	32.4	14 40	. . .	—0.15	B_2	. . .	. . .	—1.5	. . .	. . .	
2164	6.7	32.6	5 29	. . .	1.03	K_0	. . .	. . .	0.8	(1.1)	. . .	
2165	6.2	33.2	13 54	2.8	0.32	F_2	. . .	. . .	. . .	*2.2*	. . .	
2166	7.7	33.9	12 50	. . .	0.24	G_0	. . .	. . .	(3.2)	. . .	. . .	
2167	6.9	35.6	4 23	1.3	0.03	A_0	. . .	. . .	. . .	1.5	. . .	
2168	5.7	35.7	4 25	—0.7	—0.23	A_0	. . .	. . .	. . .	0.3	. . .	
2169	7.4	35.8	17 54	. . .	(1.10)	K_2	. . .	. . .	(2.3)	. . .	. . .	
2170	6.0	36.2	12 37	. . .	—0.08	A_2	. . .	. . .	. . .	0.2	. . .	
2171	6.6	36.2	1 25	. . .	0.77	K_0	. . .	. . .	((2.7))	(0.8)	. . .	
2172	6.8	36.6	5 4	0.9	0.01	A_0	. . .	. . .	. . .	1.3	. . .	
2173	5.9	36.7	1 21	3.4	0.10	F_0	F_1	1.6	. . .	*2.4*	. . .	
2174	7.4	37.2	19 8	2.3	(1.23)	K_2	. . .	. . .	(1.9)	. . .	. . .	
2175	7.7	38.4	15 50	. . .	(1.10)	K_2	. . .	. . .	(2.3)	. . .	. . .	
2176	7.6	38.6	13 4	. . .	[1.33]	K_5	. . .	. . .	(1.0)	. . .	. . .	
2177	7.3	38.9	12 36	. . .	(1.19)	K_2	. . .	. . .	(2.0)	. . .	. . .	
2178	6.7	40.2	6 17	5.8	0.60	G_5	G_8	3.7	(3.2)	4.6	(5.6)	
2179	6.0	40.4	1 12	—3.3	—0.18	B_9	A_{0n}	0.8	. . .	—2.1	. . .	
2180	5.8	40.8	15 56	1.3	1.68	Mb	Ma	—0.3	—0.8	. . .	0.4	*
2181	7.1	41.0	4 13	. . .	0.20	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2182	5.4	41.0	8 45	—2.0	1.64	K_2	K_5	(0.8)	—1.3	. . .	—0.8	
2183	6.7	41.9	2 25	3.5	0.03	F_0	. . .	. . .	. . .	*2.4*	. . .	
2184	6.0	42.1	2 15	0.4	—0.09	A_2	. . .	. . .	. . .	0.3	. . .	
2185	8.0	42.5	13 12	. . .	[0.96]	K_2	. . .	. . .	(2.7)	. . .	. . .	
2186	5.3	42.8	5 25	1.4	—0.16	A_{0p}	. . .	. . .	. . .	0.4	. . .	
2187	7.4	43.4	11 20	. . .	0.76	K_0	. . .	. . .	((3.1))	(1.0)	. . .	
2188	6.3	43.6	13 46	. . .	0.94	G_5	G_7	0.1	0.3	(0.5)	0.5	

*2148. Double, $d = 3''$, $\Delta m = 0.0$. *2158. Double, $d = 2''.3$, $\Delta m = 1.7$. Colour of A assumed $C = 1.18$. *2180. *Mt. W.* —0.1.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2189	7.3	16 44.0	17 19	. . .	0.03	A_2	. . .	. . .	. . .	0.8	. . .	
2190	7.6	44.3	18 30	. . .	0.18	F_8	. . .	. . .	*d*	(4.0)	. . .	
2191	7.4	44.4	13 3	. . .	(1.34)	K_5	. . .	. . .	(0.9)	. . .	. . .	
2192	6.7	44.5	13 6	. . .	0.81	K_0	. . .	. . .	((2.3))	(0.8)	. . .	
2193	6.0	45.0	13 26	1.4	—0.11	A_0	. . .	. . .	. . .	0.4	. . .	
2194	7.0	45.2	9 36	. . .	0.69	G_5	. . .	. . .	((1.8))	(0.8)	. . .	
2195	7.0	45.4	15 34	(3.6)	0.33	F_5	. . .	. . .	. . .	*3.0*	. . .	
2196	5.5	45.5	7 26	1.7	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
2197	7.3	46.3	10 3	. . .	(1.51)	Ma	. . .	. . .	(0.4)	. . .	. . .	
2198	6.8	46.4	9 36	4.3	0.25	F_8	F_6	3.1	*d*	3.8c	. . .	*
2199	5.5	46.4	1 23	0.3	—0.19	A_0	A1sn	1.0	. . .	—0.1c	. . .	*
2200	7.2	46 7	15 58	. . .	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
2201	7.6	46.7	18 14	2.6	(0.93)	K_0	. . .	. . .	(1.0)	1.5	. . .	
2202	6.4	47.5	15 9	—0.8	—0.20	A0p	A0ns	0.7	. . .	—0.2	. . .	
2203	7.1	47.6	11 26	. . .	(1.64)	K_5	. . .	. . .	(—0.1)	. . .	. . .	
2204	6.8	48.0	0 12	9.5	0.43	G_5	K_0	5.8	(4.0)	6.0	(6.9)	
2205	6.9	48.3	18 14	0.0	0.25	F_5	. . .	. . .	. . .	*1.2*	. . .	
2206	6.9	48.5	11 2	. . .	(1.47)	K_5	. . .	. . .	0.5	. . .	. . .	
2208	7.2	49.7	15 48	. . .	0.27	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
2209	6.2	50.7	13 47	. . .	0.22	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2210	5.6	51.0	18 36	2.3	1.41	K_2	K_6	0.4	0.6	. . .	1.8	
2211	6.6	51.6	15 32	(—0.3)	1.22	K_0	. . .	. . .	0.3	0.7	. . .	*
2212	7.1	51.9	16 27	(0.5)	0.09	A_5	. . .	. . .	. . .	*1.0*	. . .	
2213	7.5	52.0	6 40	. . .	[1.21]	K_0	. . .	. . .	0.3	. . .	. . .	
2214	6.9	52.1	14 18	. . .	0.80	K_0	. . .	. . .	1.4c	(0.8)	. . .	*
2215	7.6	52.1	15 48	1.8	0.16	F_5	. . .	. . .	. . .	*2.4*	. . .	
2216	6.9	52.4	6 22	. . .	1.30	K_0	. . .	. . .	—0.3	(0.3)	. . .	
2217	7.6	52.6	18 24	. . .	0.60	K_0	. . .	. . .	((4.1))	. . .	. . .	
2218	3.4	53.0	9 32	2.4	0.96	K_0		See	table	I		
2219	6.5	53.0	14 3	3.2	0.73	G_5	. . .	. . .	((1.3))	(2.5)	. . .	
2220	7.8	53.5	15 19	. . .	(0.69)	K_0	. . .	. . .	((3.7))	. . .	. . .	*
2221	7.0	54.1	15 38	4.6	0.44	G_0	. . .	. . .	4.5	4.0	. . .	
2222	7.4	54.6	14 14	. . .	0.13	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
2223	7.6	54.6	17 50	. . .	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
2224	7.3	55.1	11 5	. . .	1.13	K_5	. . .	. . .	(1.8)	. . .	. . .	
2225	7.3	55.4	17 57	. . .	0.04	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
2226	6.4	55.6	6 44	. . .	0.08	A_5	. . .	. . .	. . .	*1.2*	. . .	
2227	7.6	56.4	11 29	. . .	0.05	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
2228	6.8	56.5	7 34	. . .	1.09	K_0	. . .	. . .	0.7	(1.3)	. . .	
2229	7.2	56.6	16 45	(3.3)	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
2230	6.2	57.0	15 5	0.8	—0.08	A0p	. . .	. . .	. . .	0.1	. . .	

*2198. Double, $d = 1''.0$, $\Delta m = 1.7$. *2199. Double, $d = 1''$, $\Delta m = 1.6$. *2211. In *G. A.*, **B**, *for* 16' 3082 *read* 15' 3082. *2214. Double, $d = 2''.8$, $\Delta m = 2.6$. Colour of A assumed $C = 0.85$. *2220. Double, $d = 0''.9$, $\Delta m = 1.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2231	6.2	16 57.2	8 35	. . .	—0.02	A_0	. . .	. . .	. . .	0.2c	. . .	*
2232	6.9	57.8	9 58	5.3	0.10	A_2	. . .	. . .	. . .	(2.0)	. . .	
2233	7.2	58.2	19 33	3.7	—0.02	A_2	. . .	. . .	. . .	1.5	. . .	
2234	5.1	58.6	14 16	0.9	1.68	Ma	Ma	—0.7	0.4	. . .	0.4	*
2235	6.8	58.6	0 1	2.1	—0.14	A_2	. . .	. . .	. . .	0.9	. . .	
2236	6.5	58.6	14 41	5.2	0.66	K_0	. . .	. . .	((3.9))	3.9	. . .	
2237	5.9	59.1	13 45	2.2	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
2238	6.1	59.4	13 43	3.5	0.99	K_2	. . .	. . .	2.6	. . .	. . .	
2239	6.6	59.5	19 50	1.0	1.59	K_5	. . .	. . .	—0.2	. . .	. . .	*
2240	5.9	17 0.2	0 51	5.2	0.43	G_0	G_0	4.3	4.4	4.3	4.9	*
2241	6.1	0.4	19 45	0.2	—0.20	A_0	. . .	. . .	. . .	0.0	. . .	
2242	7.2	0.4	3 34	. . .	0.05	F_0	. . .	. . .	. . .	(2.1)	. . .	
2243	4.9	0.8	12 53	1.0	—0.07	A_3		See	table	I		
2244	7.0	1.4	8 45	. . .	1.35	K_2	. . .	. . .	1.2	. . .	. . .	
2245	6.6	1.4	9 53	. . .	1.32	K_5	. . .	. . .	1.0	. . .	. . .	
2246	6.5	1.5	10 35	. . .	0.69	K_0	. . .	. . .	((3.7))	(1.0)	. . .	
2247	7.3	1.8	15 22	4.2	0.46	K_0	. . .	. . .	((3.7))	5.2	. . .	
2248	7.2	3.4	4 33	5.6	0.35	G_0	G_0	. . .	4.0	4.5	4.4	
2249	6.7	3.8	16 14	. . .	0.20	F_8	. . .	. . .	*d*	(4.0)	. . .	
2250	7.1	4.5	15 6	. . .	1.09	K_0	. . .	. . .	0.7	(1.3)	. . .	
2251	7.0	5.0	10 10	5.0	0.21	F_5	. . .	. . .	. . .	*3.8*	. . .	
2252	6.8	5.2	0 38	. . .	0.69	G_5	. . .	. . .	((1.8))	(0.8)	. . .	
2253	6.5	6.1	12 35	. . .	—0.11	A_0	. . .	. . .	. . .	0 0	. . .	
2254	6.8	6.4	4 49	2.1	0.27	F_8	. . .	. . .	*d*	2.8	. . .	
2255	6.4	6.9	8 1	0.9	0.90	K_0	. . .	. . .	1.2	0.8	. . .	
2256	7.4	7.4	14 37	. . .	(1.04)	K_5	. . .	. . .	(2.1)	. . .	. . .	
2257	5.6	7.8	10 43	0.0	1.61	K_5	Ma	. . .	0.1	. . .	0.7	*
2258	6.5	7.8	0 30	. . .	0.32	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
2259	6.8	8.2	7 52	. . .	0.13	F_0	. . .	. . .	. . .	(*2.0*)	. . .	*
2260	8.1	8.2	18 28	. . .	(0.60)	K_0	. . .	. . .	((4.1))	. . .	. . .	
2261	7.2	9.5	12 9	. . .	0.77	K_0	. . .	. . .	((2.9))	(0.9)	. . .	
2262	7.9	9.8	17 12	. . .	—0.28	A_0	. . .	. . .	. . .	0.6	. . .	
2263	7.4	10.6	19 49	5.4	0.42	G_5	. . .	. . .	(3.9)	4.5	. . .	
2264	7.5	10.7	17 55	. . .	(1.42)	K_5	. . .	. . .	(0.6)	. . .	. . .	
2265	6.0	11.2	2 18	. . .	0.09	A_0	. . .	. . .	. . .	1.6	. . .	
2266	5.8	11.5	1 19	0.3	(0.14)	B_8	. . .	. . .	. . .	1.0	. . .	*
2267	6.9	12.1	18 8	. . .	—0.21	B_9	. . .	. . .	. . .	—0.4	. . .	
2268	7.4	12.5	15 56	. . .	0.73	K_0	. . .	. . .	((3.4))	(1.0)	. . .	
2269	6.7	12.6	1 52	. . .	0.23	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
2270	6.8	12.6	13 14	. . .	0.97	K_2	. . .	. . .	2.7	. . .	. . .	
2271	6.8	13.1	3 15	. . .	0.19	F_2	. . .	. . .	. . .	(*2.2*)	. . .	

*2231. Double, $d = 1''$, $\Delta m = 0.8$. *2234. *Mt. W.'* 0.2. *2239. Double, $d = 2''$, $\Delta m = 3.8$. Colour of *A* assumed $C = 1.68$. *2240. In *G. A.*, **B**, *for* 0°3269 *read* 0° 3629. *2257. *Mt. W.'* —0.4. *2259. Double, $d = 1''.7$, $\Delta m = 1.9$. *2266. Eclipsing variable, range 0.7 mg.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2272	7.1	17 13.6	17 13	. . .	1.15	K_5	. . .	. . .	(1.7)	. . .	. . .	
2273	5.9	13.6	17 26	(2.4)	—0.15	A_0	. . .	. . .	. . .	0.8	. . .	
2274	5.3	13.9	10 59	1.9	1.60	K_5	. . .	. . .	0.1	. . .	. . .	
2275	6.4	14.0	6 12	. . .	0.23	F_0	. . .	. . .	. . .	*(1.9)*	. . .	
2276	7.7	14.6	11 17	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
2277	6.9	14.7	2 16	1.9	1.22	Mb	. . .	. . .	—1.2	. . .	. . .	
2278	7.7	15.2	19 29	. . .	(0.85)	K_5	. . .	. . .	(2.5)	. . .	. . .	
2280	7.5	15.5	15 59	3.7	0.81	K_0	. . .	. . .	((2.3))	(2.0)	. . .	
2281	5.2	15.9	18 11	0.3	1.75	Ma	Ma	—1.8	—0.4	. . .	—0.4	*
2282	7.2	16.1	15 16	. . .	0.24	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2283	7.0	16.1	1 32	6.3	0.29	G_0	. . .	. . .	(3.7)	4.4	. . .	
2284	7.4	16.1	4 44	. . .	(1.08)	K_0	. . .	. . .	0.7	(1.3)	. . .	
2285	7.5	17.1	9 50	. . .	0.81	K_0	. . .	. . .	((2.3))	(0.9)	. . .	
2286	6.6	17.1	16 50	1.4	1.50	Ma	. . .	. . .	0.3	. . .	. . .	
2287	6.9	17.2	5 7	3.4	0.67	G_5	. . .	. . .	((2.1))	3.0	. . .	
2288	7.1	17.3	11 47	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2289	7.7	17.9	15 16	. . .	0.21	F_8	. . .	. . .	*d*	(4.0)	. . .	
2290	7.8	18.0	0 56	. . .	[0.92]	G_5	. . .	. . .	(0.4)	. . .	. . .	
2291	7.1	18.6	9 34	. . .	—0.03	A_2	. . .	. . .	. . .	0.4	. . .	
2292	7.6	19.0	17 0	. . .	—0.15	A_0	. . .	. . .	. . .	0.0	. . .	
2293	7.4	19.0	13 30	. . .	(1.15)	K_5	. . .	. . .	(1.7)	. . .	. . .	*
2294	7.4	19.2	8 43	. . .	(1.24)	K_0	. . .	. . .	0.2	(0.7)	. . .	
2295	5.9	19.2	8 57	. . .	1.20	K_2	. . .	. . .	2.0	. . .	. . .	
2296	7.8	19.6	6 37	. . .	(0.79)	G_5	. . .	. . .	(0.9)	. . .	. . .	
2297	7.5	19.6	18 57	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
2298	5.7	20.0	16 25	1.4	—0.06	A_2	A4s	1.4	. . .	0.7	. . .	
2299	6.2	20.1	15 44	1.6	—0.17	B_9	. . .	. . .	. . .	—0.2	. . .	
2300	7.4	20.5	3 24	. . .	—0.08	A_2	. . .	. . .	. . .	0.2	. . .	
2301	6.9	20.6	9 0	3.1	1.35	K_5	. . .	. . .	0.9	. . .	. . .	
2302	6.7	21.2	16 29	1.4	0.06	F_2	. . .	. . .	. . .	*2.2*	. . .	
2303	7.0	21.4	0 55	. . .	1.20	K_0	. . .	. . .	0.4	(0.9)	. . .	
2304	6.3	21.4	17 0	1.7	1.57	Mb	. . .	. . .	—0.9	. . .	. . .	
2305	6 0	21.5	7 41	—1.4	0.44	A_0+G	. . .	. . .	. . .	0.9c	. . .	*
2306	4.4	21.6	4 13	—6.0	1.64	K_0		See	table	I		
2307	6.6	23.0	8 31	1.9	1.54	Ma	. . .	. . .	0.8	. . .	. . .	
2308	7.2	23.1	16 32	. . .	0.01	F_0	. . .	. . .	. . .	*(2.1)*	. . .	
2309	6.8	23.2	11 28	. . .	0.12c	A_3	. . .	. . .	. . .	*1.1*	. . .	*
2310	5.2	23.7	0 26	1.5	0.21	A_5	. . .	. .	. . .	*1.2*	. . .	
2311	6.9	24.1	10 37	. . .	0.03	A_2	. . .	. . .	. . .	0.8	. . .	*
2312	7.5	24.5	10 59	. . .	—0.06	A_0	. . .	. . .	. . .	0,2	. . .	

*2281. *Mt. W.'* —0.2. *2293. Double, $d = 2''.2$, $\Delta m = 3.2$. *2305. Spectrum composite. Corrected colour of the A_0 component assumed $C = 0.05+$. *2309. Double, $d = 28''$, $\Delta m = 1.8$. *2311. The Harvard magnitude in *H. A.* **54** and in *H. D.* is printed 7.90, but there is little doubt that 6.90 is the right value, as has been adopted here.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2313	7.1	17 25.7	10 51	. . .	0.86	K_0	. . .	. . .	1.4	(0.8)	. . .	
2314	6.4	25.7	12 1	. . .	—0.12	A_0	. . .	. . .	. . .	0.0	. . .	
2315	7.1	25.8	1 13	. . .	0.18	F_0	. . .	. . .	. . .	*(2.1)*	. . .	
2316	6.9	26.2	17 36	4.8	0.23	F_5	. . .	. . .	. . .	*3.7*	. . .	
2317	5.6	26.4	2 48	0.4	0.73	Gop	G_2	0.5c	(—1.4c)	0.6c	—0.8c	*
2318	7.2	26.5	1 45	. . .	[1.35]	K_2	K_2	2.1	(1.2)	. . .	—0.5	
2319	7.0	26.8	0 8	. . .	0.89	K_0	. . .	. . .	1.2	(0.8)	. . .	
2320	7.0	27.0	19 36	3.2	[1.76]	K_5	. . .	. . .	—0.5	. . .	. . .	
2321	6.8	27.5	16 55	. . .	0.39	F_8	. . .	. . .	*d*	(2.5)	. . .	
2322	6.2	27.6	12 0	. . .	—0.10	B_9	. . .	. . .	. . .	—0.6	. . .	
2323	7.4	27.9	14 28	. . .	[1.40]	K_5	. . .	. . .	0.7	. . .	. . .	
2324	7.8	28.5	19 28	. . .	0.18	F_8	. . .	. . .	*d*	(4.0)	. . .	
2325	7.0	28.7	16 51	1.1	(1.48)	K_5	. . .	. . .	0.5	. . .	. . .	
2326	5.6	29.0	19 20	2.4	0.45	F_5	. . .	. . .	. . .	*2.6*	. . .	
2327	5.7	29.2	16 24	1.1	1.02	K_0	G_9	1.8	0.8	1.1	0.7	
2328	6.7	29.2	14 55	(3.1)	1.50	Mb	. . .	. . .	—1.0	. . .	. . .	
2329	6.7	29.8	13 14	1.1	0.77	G_5	. . .	. . .	((1.0))	1.2	. . .	
2330	5.8c	29.9	9 40	—0.5	—0.04c	A_2	. . .	. . .	. . .	—0.1c	. . .	*
2331	6.4	30.0	16 35	1.6	0.11	A_5	. . .	. . .	. . .	*1.3*	. . .	
2332	7.3	30.0	19 18	. . .	0.08	A_5	. . .	. . .	. . .	*1.2*	. . .	
2334	7.2	30.5	13 12	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2335	7.0	31.2	12 6	0.6	1.62	K_5	. . .	. . .	0.0	. . .	. . .	
2336	8.0	31.2	14 20	. . .	—0.24	A_0	. . .	. . .	. . .	0.4	. . .	
2337	6.7	31.5	19 54	(3.3)	0.73	G_5	. . .	. . .	((1.3))	(2.5)	. . .	
2338	7.1	32.0	13 20	. . .	1.00	K_0	. . .	. . .	0.8	(0.9)	. . .	
2339	6.8	32.0	13 53	. . .	0.01	A_3	. . .	. . .	. . .	*1.1*	. . .	
2340	7.7	32.2	16 28	. . .	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
2341	7.7	33.8	12 48	. . .	0.72	K_0	. . .	. . .	((3.4))	. . .	. . .	
2342	6.4	34.1	2 5	1.5	0.96	K_0	G_8	0.8	0.9	0.8	0.8	
2343	6.6	34.4	3 37	4.9	0.94	K_0	. . .	. . .	1.0	3.5	. . .	
2344	6.3	34.4	13 23	. . .	0.40	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2345	6.8	34.5	3 27	. . .	1.55	K_0	. . .	. . .	—2.0	(—1.1)	. . .	*
2346	7.5	35.1	13 21	. . .	0.24	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2347	7.1	35.1	7 51	. . .	0.98	K_0	. . .	. . .	0.8	(0.9)	. . .	
2348	7.3	35.5	6 37	. . .	[1.48]	K_2	. . .	. . .	(—0.1)	. . .	. . .	
2349	6.0	36.6	6 22	. . .	1.37	K_0	. . .	. . .	—0.7	(0.0)	. . .	
2350	6.3	36.6	15 14	(0.6)	—0.13	A_0	. . .	. . .	. . .	0.1	. . .	
2351	6.9	37.0	4 24	. . .	0.81	G_0	. . .	. . .	(—1.6)	(—0.5)	. . .	
2352	7.8	37.2	19 12	. . .	—0.27	A_0	. . .	. . .	. . .	0.6	. . .	
2353	5.6	37.5	16 2	2.5	0.26	F_5	. . .	. . .	. . .	*2.6*	. . .	
2354	7.1	37.8	17 17	3.1	—0.11	A_0	. . .	. . .	. . .	1.0	. . .	

*2317. Double, $d = 0''.1$, $\Delta m = 0.0$. *2330. Double, $d = 41''$, $\Delta m = 1.8$. *2345. Double, $d = 8''$, $\Delta m = 4.6$. Colour of A assumed $C = 1.59$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2356	6.2	17 38.8	14 20	. . .	0.32	F_5	F_3	1.2	. . .	(2.8)	. . .	
2357/8	5.7c	39.6	2 38	—0.8c	—0.09c	A_0	. . .	. . .	. . .	—0.5c	. . .	*
2359	6.8	39.7	13 51	. . .	0.19	A_3	. . .	. . .	. . .	1.1	. . .	
2360	6.1	39.7	14 27	. . .	0.17	A3p	. . .	. . .	. . .	1.1	. . .	
2361	8.0	40.2	19 2	3.8	—0.04	B_9	. . .	. . .	. . .	—0.2c	. . .	*
2362	7.1	40.8	11 12	. . .	0.65	G_5	. . .	. . .	((2.4))	(1.0)	. . .	
2363	7.2	41.0	5 57	. . .	0.05	A_0	. . .	. . .	. . .	1.6	. . .	
2364	6.7	41.2	5 34	. . .	—0.13	B_8	. . .	. . .	. . .	—0.1	. . .	
2365	6.9	41.3	1 6	. . .	(1.48)	K_2	. . .	. . .	—0.1	. . .	. . .	
2366	6.9	41.8	5 48	. . .	—0.14	B_8	. . .	. . .	. . .	—0.2	. . .	
2367	5.6	42.7	17 46	0.7	—0.09	A_0	. . .	. . .	. . .	—0.2c	. . .	*
2369	6.7	43.2	18 56	—0.5	—0.14	A_0	. . .	. . .	. . .	—0.1	. . .	
2370	7.2	43.3	9 49	. . .	0.06	A_2	. . .	. . .	. . .	1.0	. . .	
2371	6.2	43.4	3 51	. . .	—0.01	A_0	. . .	. . .	. . .	0.8	. . .	
2372	6.5	44.3	2 0	2.5	1.17	K_0	. . .	. . .	0.5	1.3	. . .	
2373	6.0	44.5	19 17	1.6	—0.10	A_0	. . .	. . .	. . .	0.4	. . .	
2375	6.8	45.4	9 53	(1.4)	1.39	K_5	. . .	. . .	0.7	. . .	. . .	
2376	6.4	46.1	11 59	. . .	1.16	K_2	. . .	. . .	2.1	. . .	. . .	
2377	7.2	46.2	5 16	—0.1	1.30	K_5	. . .	. . .	(1.1)	. . .	. . .	
2378	6.8	46.3	8 34	. . .	0.18	F_0	. . .	. . .	. . .	(2.0)	. . .	
2379	7.1	46.9	1 8	. . .	0.10	A_0	. . .	. . .	. . .	1.6	. . .	
2380	6.8	47.0	1 8	. . .	0.93	K_2	. . .	. . .	2.8	. . .	. . .	
2381	7.0	47.1	4 30	2.9	[1.64]	K_5	. . .	. . .	—0.1	. . .	. . .	
2382	7.8	47.1	7 25	. . .	—0.19	A_0	. . .	. . .	. . .	—0.6c	. . .	*
2383	6.5c	47.5	15 22	—0.2c	0.79c	K_0	. . .	. . .	((1.9c))	0.1c	. . .	*
2384	6.2	47.5	1 20	. . .	1.54	K_5	. . .	. . .	0.3	. . .	. . .	
2385	7.4	47.6	16 40	. . .	—0.18	A_2	. . .	. . .	. . .	0.3	. . .	
2386	6.6	48.1	16 56	1.5	0.20	F_5	. . .	. . .	. . .	2.3	. . .	
2387	7.4	48.3	2 41	. . .	[0.98]	K_0	. . .	. . .	0.8	(0.9)	. . .	
2388	5.8	48.4	6 7	3.4	0.30	F_5	F_4	4.0	. . .	3.0	. . .	
2389	7.7	49.1	7 57	. . .	0.33	F_5	. . .	. . .	. . .	(2.8)	. . .	
2390	6.6	49.5	3 45	. . .	1.41	K_2	. . .	. . .	0.6	. . .	. . .	
2391	6.3	49.6	11 10	4.7	0.18	F_5	. . .	. . .	. . .	3.6	. . .	
2392	7.4	50.4	5 43	. . .	[1.29]	K_2	. . .	. . .	(1.6)	. . .	. . .	
2393	6.7	50.6	2 7	. . .	0.37	A_3	. . .	. . .	. . .	1.1	. . .	
2394	5.7	51.2	0 42	—2.5	0.05	B_3	B2n	—1.5	—1.0	. . .	. . .	*
2395	6.1	52.0	0 5	. . .	—0.19	A_2	. . .	. . .	. . .	—0.3c	. . .	*
2396	6.6	52.0	18 21	2.6	0.27	A_2	. . .	. . .	. . .	0.9c	. . .	*
2397	6.2	52.1	6 30	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
2398	7.4	52.1	19 54	. . .	—0.17	A_3	. . .	. . .	. . .	1.1	. . .	
2399	6.7	52.2	18 38	4.8	0.68	K_0	. . .	. . .	((3.8))	3.0	. . .	

*2357/8. Double, $d = 20''$, $\Delta m = 0.4$. *2361. Double, $d = 1''.1$, $\Delta m = 1.6$. *2367. Double, $d = 0''.7$, $\Delta m = 1.7$. *2382. Double, $d = 0''.2$, $\Delta m = 0.4$. *2383. Double, $d = 0''.6$, $\Delta m = 0.3$. *2394. $M = -2.0$ (Edwards). *2395. Double, $d = 1''$, $\Delta m = 0.2$. *2396. Double, $d = 2''.6$, $\Delta m = 0.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C,D	M C, W	
		h m	° ′									
2400	7.3	17 52.7	12 38	. . .	0.28	F_8	. . .	. . .	*d*	(3.0)	. . .	
2401	6.5	52.8	11 4	. . .	—0.19	A_0	. . .	. . .	. . .	0.0	. . .	
2402	6.7	52.8	2 16	. . .	—0.02	A_0	. . .	. . .	. . .	0.6	. . .	
2405	7.3	53.6	15 8	3.8	(0.12)	F_{5p}	F_{2p}	2.7	. . .	*3.1*	. . .	*
2406	7.3	53.8	14 31	3.3	—0.14	A_0	. . .	. . .	. . .	1.0	. . .	
2408	7.1	54.2	14 52	4.8	0.26	F_8	. . .	. . .	*d*	4.1	. . .	
2409	7.1	54.6	6 26	. . .	0.27	F_0	. . .	. . .	. . .	(*2.1*)	. . .	
2410	6.3	55.2	0 37	. . .	—0.01	A_{2p}	. . .	. . .	. . .	0.5	. . .	
2411	6.7	55.3	6 34	. . .	—0.06	A_0	. . .	. . .	. . .	0.2	. . .	*
2412	4.8	55.3	4 22	—0.9	—0.20	B_3		See	table	I		
2413	7.1	55.4	8 51	. . .	0.58b	G_5	. . .	. . .	(3.5b)	(0.8b)	. . .	*
2414	4.7	55.6	16 46	—3.2	1.25	K_0		See	table	I		
2416	6.2	56.0	6 16	. . .	—0.21	B_3	. . .	. . .	—1.4	. . .	. . .	
2417	7.2	56.0	9 34	. . .	1.03	K_0	. . .	. . .	0.8	(1.1)	. . .	
2418	7.6	56.1	17 7	. . .	0.34 ?	Ma ?	. . .	. . .	. . .	. . .	. . .	*
2419	6.4	56.1	19 31	(3.1)	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
2420	6.3	56.4	15 7	2.9	0.57	G_5	. . .	. . .	(3.7)	(2.5)	. . .	
2422	4.4	56.7	1 18	—1.1	—0.11	A_2		See	table	I		
2423	7.0	56.9	11 17	. . .	0.14	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2424	7.5	58.3	16 49	. . .	0.19	G_0	. . .	. . .	(2.3)	(3.0)	. . .	
2425	7.0	58.6	8 25	. . .	—0.03	A_0	. . .	. . .	. . .	0.5	. . .	
2426	6.5	59.0	19 35	(3.1)	—0.20	A_0	. . .	. . .	. . .	1.0	. . .	
2427	7.6	59.0	14 5	. . .	0.05	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
2428	7.2	59.0	19 33	2.7	(1.31)	Ma	. . .	. . .	(—1.4)	. . .	. . .	
2429	6.1	59.6	1 55	. . .	—0.22	B_3	. . .	. . .	—1.5	. . .	. . .	
2430	4.1	18 0.4	2 33	6.5a	0.80	K_0		See	table	I		
2431	7.2	0.6	16 55	. . .	(1.55)	Ma	. . .	. . .	(0.9)	. . .	. . .	
2432	6.8	0.7	4 39	6.1	0.38	G_0	G_1	5.4	4.1	4.6	4.4	
2433/4	6.5c	1.1	12 0	. . .	0.00c	A_0	. . .	. . .	. . .	0.4c	. . .	*
2435	6.6	2.3	2 28	. . .	1.31	K_5	. . .	. . .	1.1	. . .	. . .	
2436	7.2	2.4	6 41	. . .	0.88	K_0	. . .	. . .	1.2	(0.9)	. . .	
2438	4.7	2.5	8 43	—1.6	0.88	G_5		See	table	I		
2440	7.4	2.8	15 13	. . .	[1.46]	Ma	. . .	. . .	(—0.3)	. . .	. . .	
2441	6.8	2.9	15 55	4.6	0.90	K_0	. . .	. . .	1.2	3.0	. . .	
2442	6.5	3.1	9 50	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2443	6.5	3.1	2 12	. . .	0.03	A_2	. . .	. . .	. . .	0.8	. . .	
2444	6.5	3.2	13 5	. . .	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
2445	6.9	3.8	1 59	. . .	0.25	F_2	. . .	. . .	. . .	(*2.2*)	. . .	

*2405. Variable, range 0.8 mg. *2411. In *G. A.*, **B.**, the photographic magnitude and colour are printed by 1 magnitude too large. *2413. Companion $d = 63''$, $\Delta m = 1.9$, spectrum K_0; in *H. D.* 7.12 is called the combined magnitude, whereas probably this is the magnitude of the brighter star alone, as has been adopted here. *2418. Abnormally low colour for an Ma star; either the *G. A.* magnitude, derived from 4 plates of $1/2$ weight, or the spectrum is unreliable. *2433/4. Double, $d = 7''$, $\Delta m = 0.4$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2446	6.3	18 4.0	14 16	. . .	—0.02	A_2	. . .	. . .	. . .	0.4	. . .	
2447	5.7	4.6	3 58	0.8	0.24	F_2	F_{2n}	1.4	. . .	*1.9*c	. . .	*
2448	8.0	4.8	12 24	. . .	[0.73]	K_2	. . .	. . .	((3.4))	. . .	. . .	
2449	7.1	4.8	6 12	2.3	0.82	K_0	. . .	. . .	((2.1))	1.4	. . .	
2450	5.7	4.9	3 7	4.0	0.24	F_5	F_4	3.1	. . .	*3.2*	. . .	
2451	6.1	5.7	16 27	—0.8	0.40	F_2+A_0	. . .	. . .	. . .	*—1.7*c	. . .	*
2452	5.7	5.7	3 18	—0.3	1.12	K_0	. . .	. . .	0.6	1.0	. . .	
2453	7.4	5.8	7 36	. . .	(0.88)	K_2	. . .	. . .	(3.0)	. . .	. . .	
2454	7.2	6.4	18 29	. . .	0.05	A_2	. . .	. . .	. . .	1.0	. . .	
2455	7.2	7.4	8 12	. . .	1.09	K_0	. . .	. . .	0.7	(1.3)	. . .	
2456	6.5	7.7	2 48	. . .	—0.07	B_9	. . .	. . .	. . .	0.0	. . .	
2457	7.3	8.0	12 22	. . .	0.11	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
2458	6.6	8.1	2 57	. . .	—0.05	A_2	. . .	. . .	. . .	0.3	. . .	
2459	7.8	8.2	18 0	. . .	[0.74]	K_5	. . .	. . .	((3.3))	. . .	. . .	
2460	6.8	8.8	11 52	. . .	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
2461	6.7	8.8	16 15	. . .	0.37	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2462	6.6	8.8	2 22	. . .	1.42	K_2	. . .	. . .	0.5	. . .	. . .	
2463	7.2	9.0	10 48	. . .	[1.34]	K_5	. . .	. . .	(0.9)	. . .	. . .	
2464	7.9	9.4	0 9	. . .	—0.13	F_2	. . .	. . .	. . .	*(1.5*c)	. . .	*
2465	6.3	11.1	2 21	0.7	1.55	Mb	. . .	. . .	—0.9	. . .	. . .	
2466	7.8	11.8	8 20	. . .	0.00	A_2	. . .	. . .	. . .	0.6	. . .	
2467	6.6	12.0	0 58	. . .	0.12	F_0	. . .	. . .	. . .	*(2.0)*	. . .	
2468	7.1	12.4	12 2	. . .	0.43	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2469	7.0	13.2	11 50	. . .	—0.31	B_8	. . .	. . .	. . .	0.1	. . .	
2470	7.6	13.4	12 10	. . .	—0.15	B_9	. . .	. . .	. . .	—1.0	. . .	
2471	6.2	13.5	13 44	0.7	—0.18	B_5	. . .	. . .	—0.9	. . .	. . .	
2472	7.4	13.5	11 21	. . .	[1.50]	K_5	. . .	. . .	(0.4)	. . .	. . .	
2473	6.0	13.7	18 6	0.4	—0.12	A_0	. . .	. . .	. . .	0.1	. . .	
2474	6.6	13.8	12 57	. . .	—0.13	B_9	. . .	. . .	. . .	—1.0	. . .	
2475	5.6	14.3	7 13	1.3	1.01	K_0	K_1	1.2	0.8	1.1	1.9	
2476	6.9	14.5	12 9	. . .	—0.26	B_8	. . .	. . .	. . .	—0.8	. . .	
2478	7.3	14.6	12 30	. . .	—0.34	B_8	. . .	. . .	. . .	0.8	. . .	
2479	7.0	14.8	15 47	. . .	0.03	A_3	. . .	. . .	. . .	*1.1*	. . .	
2480	7.3	14.9	11 50	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
2481	8.1	15.0	4 27	. . .	[0.20]	G_5	. . .	. . .	(3.1)	. . .	. . .	
2482	4.9	15.9	3 20	—2.6	0.88	G_5		See	table	I		
2484	6.0	16.6	5 23	. . .	—0.17	B_5	. . .	. . .	—0.9	. . .	. . .	
2485	7.1	17.5	7 30	. . .	0.34	G_0	. . .	. . .	4.0	(2.3)	. . .	
2486	5.9	18.0	11 59	. . .	—0.12	A_0	. . .	. . .	. . .	0.0	. . .	
2487	7.3	18.3	14 57	. . .	—0.04	A_2	. . .	. . .	. . .	0.4	. . .	
2488	5.5	18.4	17 46	0.6	1.24	K_0	K_2	0.8	0.1	0.7	0.5	
2489	6.4	18.6	16 38	0.9	1.07	K_0	. . .	. . .	0.7	1.3	. . .	

*2447. Double, $d = 2''$, $\Delta m = 1.2$. *2451. Double, $d = 1''$, $\Delta m = 0.7$; spectrum composite. *2464. Double, $d = 1''.1$, $\Delta m = 0.3$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2490	6.7	18 18.8	14 39	. . .	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
2491	7.8	19.2	14 51	. . .	0.26	G_0	. . .	. . .	3.4	. . .	. . .	
2492	7.8	19.4	10 54	. . .	—0.15	A_9	. . .	. . .	. . .	0.0	. . .	
2493	7.4	19.9	15 36	. . .	—0.27	B_9	. . .	. . .	. . .	0.4	. . .	
2494	7.8	19.9	7 10	. . .	—0.21	B_9	. . .	. . .	. . .	—0.4	. . .	
2495	6.6	20.2	5 2	. . .	—0.15	B_9	. . .	. . .	. . .	—1.0	. . .	*
2496	5.7	20.8	7 58	—3.8	0.79	G_0+A_3	G_2	—0.8	(—2.3 c)	(—2.0c)	—2.8c	*
2497	6.9	21.0	0 44	. . .	0.10	A_3	. . .	. . .	. . .	*0.4*c	. . .	*
2498	6.4	21.4	14 55	(0.8)	—0.24	B_9	. . .	. . .	. . .	0.1	. . .	
2499	7.4	21.5	15 42	. . .	0.20	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2500	5.3	22.1	0 8	—1.3	0.27c	A_0+G	. . .	. . .	. . .	—0.8c	. . .	*
2501	6.1	22.9	3 41	. . .	1.63	K_2	. . .	. . .	—1.2	. . .	. . .	
2502	5.6	23.1	6 8	—1.6	—0.21	B_8	. . .	. . .	. . .	—0.9	. . .	
2503	7.8	23.6	4 47	. . .	0.02c	A_0	. . .	. . .	. . .	1.5	. . .	*
2504	6.9	24.9	13 48	. . .	0.23	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2505	6.5	25.0	17 55	1.9	—0.19	B_9	. . .	. . .	. . .	0.0	. . .	
2506	6.5	25.1	4 0	1.6	—0.04	B_5	. . .	. . .	—0.8	. . .	. . .	
2507	6.8	25.2	10 25	. . .	0.15	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
2508	7.4	25.5	15 52	. . .	0.59	K_0	. . .	. . .	((4.1))	(3.5)	. . .	
2509	6.8	25.7	4 26	. . .	0.03	A_2	. . .	. . .	. . .	0.8	. . .	
2511	5.7	26.6	16 52	2.2	0.10	A_0	. . .	. . .	. . .	1.6	. . .	
2512	7.6	26.6	7 57	. . .	0.71	G_0	. . .	. . .	(—0.2)	. . .	. . .	
2513	7.4	26.9	7 10	. . .	—0.04	B_8	. . .	. . .	. . .	0.0	. . .	
2514	6.3	27.1	3 36	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
2515	7.3	27.2	6 43	(3.9)	0.22	F_5	. . .	. . .	. . .	*3.0*c	. . .	*
2516	7.2	27.6	13 40	. . .	0.52	G_5	. . .	. . .	(4.1)	(1.0)	. . .	
2517	7.5	27.7	4 13	. . .	[1.04]	K_5	. . .	. . .	(2.1)	. . .	. . .	
2518	6.3	28.6	8 12	. . .	—0.15	B_8	. . .	. . .	. . .	—0.2	. . .	
2519	6.8	28.9	18 51	(1.9)	0.94	K_0	. . .	. . .	1.0	0.9	. . .	
2520	7.0	29.4	17 39	2.7	0.10	F_5	. . .	. . .	. . .	*2.0*c	. . .	*
2521	7.5	29.6	3 4	. . .	0.09	A_2	. . .	. . .	. . .	1.1	. . .	
2522	7.2	29.6	6 24	. . .	(1.04)	K_2	. . .	. . .	(2.5)	. . .	. . .	*
2523	7.8	29.7	14 24	. . .	0.10	F_8	. . .	. . .	*d*	(4.0)	. . .	
2524	7.3	30.0	18 37	. . .	0.24	G_0	. . .	. . .	(3.2)	(2.9)	. . .	
2525	6.4	30.1	10 49	1.0	—0.14	A_0	. . .	. . .	. . .	0.2	. . .	
2527	6.7	30.7	4 51	2.5	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
2528	5.7	30.8	18 7	—3.2	—0.17	A_0	. . .	. . .	. . .	—2.1	. . .	
2529	7.4	31.3	11 38	. . .	0.09	A_2	. . .	. . .	. . .	0.4c	. . .	*
2530	6.2	31.4	16 54	2.6c	0.45	G_0	. . .	. . .	3.8c	2.5c	. . .	*

*2495. BD 5°3730 (misprint in *G. A.* B). *2496. Spectrum composite. Colour of the G star assumed $C = 0.98$. *2497. Double, $d = 0''.3$, $\Delta m = 0.2$. *2500. Spectrum composite; double, $d = 4''$, $\Delta m = 2.1$. The visual companion is too faint to affect the spectrum. Colour of the A_0 component assumed $C = -0.12$. *2503. Companion at $d = 48''$, $\Delta m = 1.0$. *2515. Double, $d = 0''.8$, $\Delta m = 0.8$. *2520. Triple; A—B, $d = 0''.2$; AB—C, $d = 2''.3$; relative magnitudes 8.0 : 8.2 : 8.0. *2522. In *G. A.*, **B**, for 8°3846 *read* 6°3846. *2529. Double, $d = 0''.5$, $\Delta m = 0.1$. *2530. Double, $d = 1''$, $\Delta m = 0.2$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2531	6.8	18 31.6	4 52	. . .	1.08	K_2	. . .	. . .	2.4	. . .	. . .	
2532	5.4	31.7	9 3	2.9	0.26	F_2	. . .	. . .	. . .	*2.2*	. . .	
2533	5.4	31.8	6 35	3.2	0.25	F_2	F_0	2.3	. . .	*2.2*	. . .	
2534	7.4	32.0	12 55	. . .	0.28	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
2535	7.9	32.0	19 55	. . .	−0.13	A_0	. . .	. . .	. . .	0.0	. . .	
2536	7.0	32.1	0 52	−0.5	0.31	F_8	. . .	. . .	*d*	1.8	. . .	
2537	7.3	32.1	6 20	. . .	[1.67]	K_5	. . .	. . .	(−0.2)	. . .	. . .	
2538	6.9	32.2	15 22	. . .	0.76	K_0	. . .	. . .	((3.1))	(0.7)	. . .	
2539	8.0	32.4	5 43	. . .	[0.80]	K_0	. . .	. . .	((2.5))	. . .	. . .	
2540	6.4	32.6	11 21	. . .	−0.11	A_0	. . .	. . .	. . .	0.0	. . .	
2541	6.9	32.7	11 16	. . .	−0.20	A_0	. . .	. . .	. . .	0.1	. . .	
2542	6.4	32.7	16 7	2.3	0.76	K_0	. . .	. . .	((3.1))	1.3	. . .	
2543	6.6	32.9	5 48	. . .	−0.17	B_8	. . .	. . .	. . .	−0.4	. . .	
2544	7.5	33.4	18 21	. . .	(1.00)	K_2	. . .	. . .	(2.6)	. . .	. . .	
2545	6.6	33.7	4 46	. . .	1.13	K_0	. . .	. .	0.5	(1.0)	. . .	*
2546	7.9	33.8	14 18	. . .	0.31	F_8	. . .	. . .	*d*	(3.5)	. . .	
2547	6.9	34.0	15 0	(2.5)	−0.21	A_0	. . .	. . .	. . .	0.2	. . .	
2548	7.1	34.0	6 11	. . .	0.15	A_5	. . .	. . .	. . .	*1.2*	. . .	
2549	7.6	34.2	16 28	. . .	0.41	G_5	. . .	. . .	(3.9)	. . .	. . .	*
2550	6.3	34.7	5 10	. . .	0.67	Gop	F_8	0.8	0.9	(1.0)	. . .	
2551	6.4	35.0	7 16	(2.2)	0.78	K_0	. . .	. . .	((2.1))	1.4	. . .	*
2552	7.4	35.3	15 0	. . .	0.09	A_2	. . .	. . .	. . .	1.1	. . .	
2553	7.1	35.6	8 46	. . .	−0.08	A_2	. . .	. . .	. . .	0.2	. . .	
2554	7.0	35.6	11 59	. . .	0.07	A_0	. . .	. . .	. . .	1.6	. . .	
2555	7.2	36.0	8 42	. . .	0.09	A_3	. . .	. . .	. . .	*1.1*	. . .	
2556	7.6	36.0	10 52	. . .	−0.20	B_9	. . .	. . .	. . .	−0.6	. . .	
2557	7.1	36.4	4 28	. . .	0.22	F_8	. . .	. . .	*d*	(4.0)	. . .	
2558	7.0	36.8	12 9	. . .	0.82	G_5	. . .	. . .	0.8	(0.5)	. . .	
2559	7.3	37.2	12 10	. . .	−0.11	A_2	. . .	. . .	. . .	0.1	. . .	
2561	6.8	38.1	15 6	. . .	−0.08	A_0	. . .	. . .	. . .	0.1	. . .	
2563	7.3	38.2	14 45	. . .	−0.22	A_0	. . .	. . .	. . .	0.2	. . .	
2564	7.4	38.3	13 28	. . .	0.03	A_0	. . .	. . .	. . .	1.5	. . .	
2565	7.8	38.6	16 32	. . .	(0.61)	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
2566	7.2	38.9	17 23	. . .	−0.04	A_0	. . .	. . .	. . .	0.4	. . .	
2567	7.1	38.9	19 22	−0.4	−0.17	B_9	. . .	. . .	. . .	−0.9	. . .	
2568	7.2	39.1	8 32	. . .	0.23	F_8	. . .	. . .	*d*	(4.0)	. . .	
2569	6.8	39.2	10 48	. . .	(1.60)	K_5	. . .	. . .	0.1	. . .	. . .	
2570	7.3	39.3	12 4	. . .	(1.25)	K_2	. . .	. . .	(1.8)	. . .	. . .	
2571	5.0	39.8	1 58	−0.4	−0.20	B_5		See	table	II		
2572	5.7	40.6	5 24	−0.8	−0.11	A_0	. . .	. . .	. . .	−0.6c	. . .	*
2573	7.3	40.9	17 37	. . .	0.07	A_5	. . .	. . .	. . .	*1.2*	. . .	
2574	7.0	41.0	11 23	. . .	−0.16	A_0	. . .	. . .	. . .	0.0	. . .	

*2545. Double, $d = 1.''1$, $\Delta m = 3.5$. Colour of A assumed $C = 1.18$. *2549. Double, $d = 0.''3$, $\Delta m = 0.0$. *2551. Companion, $d = 25''$, $\Delta m = 3.7$. Colour of A assumed $C = 0.82$. *2572. Double, $d = 2''$, $\Delta m = 0.5$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2575	6.6	18 41.2	15 37	(2.4)	0.08	A_2	. . .	. . .	. . .	1.6	. . .	
2576	6.7	41.2	19 53	(0.2)	0.96	K_0	. . .	. . .	0.9	0.6	. . .	
2577	7.3	41.3	9 42	. . .	0.26	F_5	. . .	. . .	. . .	(2.8)	. . .	
2578	6.8	41.7	18 22	. . .	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
2579	7.7	42.2	12 27	. . .	0.08	A_0	. . .	. . .	. . .	1.6	. . .	
2580	6.3	42.3	18 36	3.6	1.77	K_5	. . .	. . .	—0.5	. . .	. . .	
2581	4.4	42.6	18 4	2.3	—0.10	A_3	See	table	I			
2582	6.7	42.9	16 48	(3.0)	—0.12	B_8	. . .	. . .	. . .	—0.1	. . .	
2583	7.1	43.1	13 20	. . .	—0.16	B_9	. . .	. . .	. . .	—1.0	. . .	
2584	6.3	43.1	7 8	. . .	1.59	K_5	. . .	. . .	0.1	. . .	. . .	
2585	7.3	43.2	11 3	. . .	—0.12	B_9	. . .	. . .	. . .	—1.0	. . .	
2586	6.9	43.9	15 17	. . .	—0.18	B_8	. . .	. . .	. . .	—0.5	. . .	
2587	5.8	44.5	19 13	1.1	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
2588	6.3	44.5	0 43	1.8	—0.16	A_0	. . .	. . .	. . .	0.5	. . .	
2589	7.0	44.6	14 33	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
2590	7.5	45.0	10 25	. . .	0.59	K_2	. . .	. . .	((4.1))	. . .	. . .	
2591	6.5	45.2	15 49	. . .	—0.19	B_3	. . .	. . .	—1.4	. . .	. . .	
2592	7.1	45.6	11 24	. . .	0.28	A_0	. . .	. . .	. . .	(0.8c)	. . .	*
2593	7.1	45.6	7 20	2.9	(1.30)	K_5	. . .	. . .	(1.1)	. . .	. . .	
2594	6.6	46.0	10 52	. . .	1.30	K_2	. . .	. . .	—2.:b	. . .	. . .	*
2595	6.1	47.5	13 51	. . .	—0.05	B_9	. . .	. . .	. . .	0.0	. . .	
2596	6.5	47.8	14 25	. . .	0.79	K_0	. . .	. . .	1.1c	(0.7)	. . .	*
2597	7.4	49.6	14 53	(2.5)	0.04	F_2	. . .	. . .	. . .	2.2	. . .	
2598	6.8	49.6	10 41	. . .	1.24	K_2	. . .	. . .	1.8	. . .	. . .	
2599	7.0	49.8	13 16	. . .	—0.09	B_9	. . .	. . .	. . .	—0.4	. . .	
2600	7.4	49.8	9 34	. . .	(0.85)	K_0	. . .	. . .	1.5	(0.8)	. . .	
2601	7.0	50.3	15 13	. . .	—0.24	B_9	. . .	. . .	. . .	0.1	. . .	
2602	7.5	50.3	19 43	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
2603	5.7	50.6	6 30	2.1	1.02	G_5	K_1	0.8	0.0	0.5	1.8	
2604	7.5	50.6	4 18	. . .	(0.86)	G_5	. . .	. . .	0.7	. . .	. . .	
2605	7.7	50.7	0 8	. . .	—0.29	B_3	. . .	. . .	—1.7	. . .	. . .	
2606	6.9	50.8	3 19	. . .	—0.06	A_2	. . .	. . .	. . .	—0.5c	. . .	*
2607	6.9	50.9	13 6	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
2608	6.8	50.9	7 3	2.5	0.68	G_5	. . .	. . .	((1.9))	(2.0)	. . .	
2609	6.5	50.9	14 16	. . .	0.21	F_2	. . .	. . .	. . .	(2.2)	. . .	
2610/11	4.1c	51.2	4 4	. . .	—0.14c	A_5		See	table	I		
2612	6.3	51.4	2 20	. . .	0.85	K_0	. . .	. . .	1.5	(0.7)	. . .	
2613	6.4	51.6	17 52	. . .	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
2614	6.7	51.7	4 8	3.2	0.46	G_5	. . .	. . .	(4.1)	3.0	. . .	
2615	5.7	51.7	17 59	3.6	1.02	K_2	. . .	. . .	2.5	. . .	. . .	

*2592. Double, $d = 1.''5$, $\Delta m = 2.0$. *2594. Double, $d = 4''$, $\Delta m = 1.0$; *yellow*: *blue*. Colour of *A* corrected for superposition assumed 2.00 *B*. *2596. Double, $d = 14''$, $\Delta m = 2.8$. Colour of A assumed $C = 0.90$ *B*. *2606. Double, $d = 0.''3$, $\Delta m = 0.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2616	8.0	18 52.0	19 43	. . .	—0.11	B_3	. . .	. . .	—1.0	. . .	. . .	
2617	5.6	52.2	2 24	—0.3	—0.14	B_8	B_{8n}	0.3	. . .	—0.2	. . .	
2618	6.9	52.6	13 14	. . .	0.21	A_3	. . .	. . .	. . .	*1.1*	. . .	
2619	7.1	52.6	14 42	. . .	0.80	G_5	. . .	. . .	0.7c	(0.5)	. . .	*
2620	6.9	53.4	1 4	. . .	0.10	A_2	. . .	. . .	. . .	1.1	. . .	
2621	6.4	53.5	6 6	3.1	0.18	F_5	. . .	. . .	. . .	*2.8*	. . .	
2622	5.4	53.8	17 14	—3.2	0.57	F_5	F_8	—0.1	. . .	*—2.1*	. . .	
2623	5.9	54.2	13 46	1.8	—0.06	A_{3p}	. . .	. . .	. . .	*1.2*	. . .	
2624	6.2	54.4	19 40	. . .	0.00	B_8	. . .	. . .	. . .	0.0	. . .	
2625	5.4	54.5	13 29	2.7	0.31	F_5	F_{2s}	2.8	. . .	*2.7*	. . .	
2626	6.5	54.6	10 0	. . .	0.10	B_5	. . .	. . .	—0.8	. . .	. . .	
2627	7.3	55.0	6 1	. . .	0.81	G_5	. . .	. . .	0.9	(0.5)	. . .	
2628	4.2	55.1	14 56	0.9	0.91	K_0		See	table	1		
2629	6.9	55.2	16 7	4.8	0.28	F_5	. . .	. . .	. . .	*3.7*	. . .	
2630	7.6	55.2	12 10	. . .	[1.59]	K_2	. . .	. . .	(—1.0)	. . .	. . .	
2631	7.1	55.4	12 45	. . .	(1.23c)	K_5+F	. . .	. . .	(—1.0c)	. . .	. . .	*
2632	7.2	56.2	2 21	5.7	(0.82)	K_0	. . .	. . .	((2.1))	3.8	. . .	
2633	8.0	56.2	18 20	1.5	[1.03]	G_5	G_7	1.7	(—0.1)	0.5	—0.2	
2634	7.1	56.2	1 53	. . .	0.82	K_0	. . .	. . .	((2.1))	(0.8)	. . .	
2635	7.3	56.5	2 27	. . .	[1.76]	K_5	. . .	. . .	(—0.5)	. . .	. . .	
2636	6.5	56.7	19 10	—0.7	1.06	K_0	. . .	. . .	0.7	0.5	. . .	
2637	7.2	56.8	20 1	. . .	—0.18	B_8	. . .	. . .	. . .	—0.5	. . .	
2638	6.6	57.2	12 24	. . .	—0.08	B_9	. . .	. . .	. . .	—0.2	. . .	
2639	6.6	57.6	8 14	. . .	1.46	K_2	. . .	. . .	0.1	. . .	. . .	
2640	6.8	57.6	18 58	(3.1)	1.05	G_5	. . .	. . .	—0.6	—0.1	. . .	*
2641	7.4	57.7	9 30	. . .	[1.03]	K_0	. . .	. . .	0.8	(1.2)	. . .	
2642	6.8	58.0	14 25	. . .	0.54	G_0	. . .	. . .	4.6	(2.5)	. . .	
2643	7.1	58.2	0 26	. . .	(1.26)	K_2	. . .	. . .	(1.3)	. . .	. . .	
2644	5.7	58.5	1 40	2.3	0.04	A_2	. . .	. . .	. . .	1.5	. . .	
2645	6.2	58.5	19 31	—0.4	1.25	K_0	. . .	. . .	0.1	0.5	. . .	
2646	7.0	58.6	2 24	. . .	0.91	K_0	. . .	. . .	1.1	(0.8)	. . .	
2647	7.5	59.0	16 56	. . .	0.54	G_0	. . .	. . .	4.6	(3.0)	. . .	
2648	7.1	59.1	17 8	. . .	[1.55]	K_2	. . .	. . .	(0.2)	. . .	. . .	
2649	6.5	59.2	3 10	. . .	0.03	A_2	. . .	. . .	. . .	0.8	. . .	
2650	7.1	59.3	11 9	. . .	0.20	A_5	. . .	. . .	. . .	*1.2*	. . .	
2651	7.0	59.6	16 19	. . .	1.16	K_2	. . .	. . .	1.7	. . .	. . .	
2652	6.6	59.7	17 24	3.8	0.37	F_5	. . .	. . .	. . .	*3.1*	. . .	
2653	6.8	19 0.4	15 35	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2654	6.9	0.4	9 30	. . .	—0.15	B_5	. . .	. . .	—0.8	. . .	. . .	
2655	6.6	0.5	19 0	(1.5)	1.38	K_0	. . .	. . .	—0.7	0.1	. . .	

*2619. Double, $d = 1.''4$, $\Delta m = 2.8$. Colour of A assumed $C = 0.83$. *2631. Double, $d = 17''$, $\Delta m = 1.4$, relatively fixed. Colour of the K_5 star assumed $C = 1.82$. *2640. Two companions: AB, $d = 16''$, $\Delta m = 3.8$; AC, $d = 44''$, $\Delta m = 2.3$. Colour of A assumed $C = 1.21 \pm$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2656	7.5	19 0.6	19 7	. . .	[1.06]	K_0	. . .	. . .	0.7	. . .	. . .	
2657	6.9	0.8	4 8	. . .	0.24	F_0	. . .	. . .	. . .	(2.0)	. . .	
2658	7.5	0.8	11 7	. . .	—0.19	B_9	. . .	. . .	. . .	—0.7	. . .	
2660	6.9	0.9	6 24	(3.4)	0.27c	F_5	. . .	. . .	. . .	3.0	. . .	*
2661/2	6.7c	1.5	7 0	. . .	0.22c	F_2	. . .	. . .	. . .	(1.7c)	. . .	*
2663	7.1	1.7	6 44	. . .	0.11	A_3	. . .	. . .	. . .	1.1	. . .	
2664	7.2	1.8	15 42	. . .	0.19	A_5	. . .	. . .	. . .	1.2	. . .	
2665	6.4	2.1	0 30	. . .	—0.15	B_9	. . .	. . .	. . .	—1.0	. . .	
2666	5.1	2.3	10 55	0.1	—0.35	B_8	. . .	. . .	. . .	1.0	. . .	
2667	7.6	2.4	5 4	. . .	(0.90)	K_0	. . .	. . .	(1.2)	. . .	. . .	
2668	7.1	2.6	6 0	. . .	—0.12	A_2	. . .	. . .	. . .	0.1	. . .	
2669	7.1	2.8	6 50	. . .	0.11	F_0	. . .	. . .	. . .	(2.1)	. . .	
2670	7.2	3.2	18 23	. . .	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
2671	(7.5)	3.2	1 9	0.0	(0.32)	G_5	G_{2p}	—1.4	. . .	. . .	. . .	*
2672	7.5	3.4	9 26	. . .	0.19	F_2	. . .	. . .	. . .	(2.2)	. . .	
2673	6.0	3.5	16 43	5.0	0.73	G_5	G_4	3.8	((1.3))	4.2	(1.5)	
2674	7.7	3.5	19 42	. . .	0.14	A_3	. . .	. . .	. . .	1.1	. . .	
2675	7.5	3.6	12 6	. . .	(0.69)	G_5+A_2	. . .	. . .	—0.6c	. . .	. . .	*
2676	7.0	3.8	12 57	. . .	—0.20	B_8	. . .	. . .	. . .	—0.8	. . .	
2677	6.7	4.0	14 17	. . .	—0.32	B_9	. . .	. . .	. . .	0.9	. . .	
2678	5.4	4.1	5 56	1.8	0.07	F_2	A_7	2.3	. . .	2.2	. . .	
2679	6.5	4.2	16 42	3.4	0.32	F_5	. . .	. . .	. . .	3.0	. . .	
2680	6.7	4.3	11 8	. . .	1.04	K_0	. . .	. . .	0.8	(1.2)	. . .	
2681	6.8	4.4	14 37	. . .	0.97	K_0	. . .	. . .	0.9	(0.7)	. . .	
2682	7.5	4.6	10 4	. . .	[1.84]	K_5	. . .	. . .	(—0.8)	. . .	. . .	
2683	7.1	4.6	11 28	. . .	0.84	G_5	. . .	. . .	0.7	(0.5)	. . .	
2684	7.1	4.8	10 57	. . .	0.23	F_2	. . .	. . .	. . .	(2.2)	. . .	
2685	7.5	6.1	10 11	. . .	(1.16)	K_0	. . .	. . .	0.5	(1.2)	. . .	
2686	7.4	6.2	7 58	. . .	0.10	A_5	. . .	. . .	. . .	1.2	. . .	
2687	7.6	6.2	5 1	. . .	[1.42]	K_0	. . .	. . .	(—0.9)	. . .	. . .	
2688	6.9	6.2	5 6	. . .	—0.16	B_9	. . .	. . .	. . .	—1.0	. . .	
2689	7.2	6.7	15 37	. . .	—0.16	B_9	. . .	. . .	. . .	—1.0	. . .	
2690	6.8	7.0	2 27	. . .	—0.03	B_9	. . .	. . .	. . .	—0.4c	. . .	*
2691	7.4	7.7	5 52	. . .	0.48	F_8	. . .	. . .	. . .	. . .	. . .	
2692	7.2	8.1	17 50	. . .	0.30	F_0	. . .	. . .	. . .	(2.1)	. . .	
2693	6.4	8.1	16 40	(1.4)	—0.18	B_9	. . .	. . .	. . .	—0.5c	. . .	*
2694	5.1	8.7	2 7	—3.2	—0.27	B_8	. . .	. . .	. . .	—1.9	. . .	
2695	6.9	8.7	11 11	. . .	0.73	G_5	. . .	. . .	((1.3))	(1.0)	. . .	
2696	6.7	8.7	14 52	. . .	1.36	K_0	. . .	. . .	—0.6	(0.1)	. . .	
2697	7.4	8.7	14 46	. . .	[1.03]	K_2	. . .	. . .	(2.1)	. . .	. . .	
2699	6.3	8.8	5 21	. . .	—0.06	A_2	. . .	. . .	. . .	0.2	. . .	

*2660. Double, $d = 10''$, $\Delta m = 2.0$. *2661/2. Double, $d = 8''$, $\Delta m = 0.7$. *2671. Variable. *2675. Spectrum composite. Colour of the G_5 component assumed $C = 1.08$ ±. *2690. Double, $d = 0.''4$, $\Delta m = 0.8$. *2693. Double, $d = 0.''7$, $\Delta m = 0.6$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2700	7.4	19 9.1	8 53	. . .	0.95	K_0	. . .	. . .	0.9	(0.8)	. . .	
2701	8.0	9.2	20 2	. . .	[0.67]	K_0	. . .	. . .	((3.8))	. . .	. . .	*
2702	7.0	9.4	7 36	. . .	0.04	A_3	. . .	. . .	. . .	*1.1*	. . .	
2703	6.9	9.6	11 32	. . .	1.34	K_2	. . .	. . .	1.2	. . .	. . .	
2704	7.2	9.8	5 53	. . .	0.50	cF_8	. . .	. . .	*g*	(—2.5)	. . .	*
2705	7.7	9.9	18 54	2.1	0.34	F_8	F_7	3.3	*d*	2.7c	. . .	*
2706	7.1	10.2	10 14	. . .	—0.08	B_8	. . .	. . .	. . .	0.0	. . .	*
2707	7.0	10.5	10 2	. . .	1.19	K_0	. . .	. . .	0.4	(1.0)	. . .	
2708	7.1	10.6	16 2	. . .	—0.04	A_2	. . .	. . .	. . .	0.4	. . .	
2709	6.1	10.7	20 2	0.4	0.65	G_5	K_0	0.4	((2.4))	0.2	(5.8)	
2710	5.7	10.8	14 55	—1.2	0.99	G_{5p}	G_8	—1.4	0.1	—0.3	0.5	*
2711	7.1	11.1	19 14	. . .	0.85	K_0	. . .	. . .	1.5	(0.8)	. . .	
2712	6.7	11.2	18 21	3.9	1.72	K_5	. . .	. . .	—0.4	. . .	. . .	
2713	7.0	11.5	15 59	(2.9)	0.13	F_0	. . .	. . .	. . .	*2.1c*	. . .	*
2714	5.4	11.6	4 40	—0.9	—0.03	A_2	. . .	. . .	. . .	—0.2	. . .	
2715	6.5	11.7	6 25	. . .	—0.04	A_2	. . .	. . .	. . .	0.4	. . .	
2716	5.5	11.9	14 22	—0.7	—0.19	A_0	. . .	. . .	. . .	—0.1	. . .	
2717	7.5	12.1	0 19	. . .	[1.37]	K_2	. . .	. . .	(0.8)	. . .	. . .	
2718	7.0	12.4	18 48	3.3	0.26	G_0	. . .	. . .	(3.4)	3.4	. . .	
2719	6.1	12.8	1 51	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
2720	5.1	13.1	11 25	—2.5	0.15	A_5	A3ns	1.6	. . .	*0.4*	. . .	
2721	6.7	13.4	0 15	1.6	0.20	F_0	. . .	. . .	. . .	*2.1*	. . .	
2722	7.2	13.4	4 57	. . .	0.14	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2723	5.3c	13.5	0 54	—2.2	1.06c	K_0	. . .	. . .	0.5c	0.3c	. . .	*
2724	6.5	13.7	0 10	—2.1	0.99	K_0	G_9	1.2	0.8	0.2	1.0	
2725	7.2	14.0	16 31	. . .	0.16	A_3	. . .	. . .	. . .	*1.1*	. . .	
2726	7.7	14.1	15 29	. . .	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
2727	6.4	14.1	9 26	. . .	0.97	K_0	. . .	. . .	0.9	(0.7)	. . .	
2728	6.9	14.2	16 18	. . .	0.28	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2730	7.3	14.7	13 59	. . .	0.37	G_0	. . .	. . .	4.1	(2.2)	. . .	
2731	5.4	15.0	12 11	—1.2	0.19c	F_0	. . .	. . .	. . .	*1.1*	. . .	*
2732	7.7	15.1	5 24	. . .	0.90±	G_5	. . .	. . .	(0.5)	. . .	. . .	*
2733	7.4	15.2	11 51	. . .	0.45	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
2734	6.0	15.2	11 20	1.4	—0.15	A_2	. . .	. . .	. . .	0.7	. . .	
2735	6.9	15.4	4 36	4.8	—0.01	A_2	. . .	. . .	. . .	1.5	. . .	
2736	7.6	15.6	13 57	. . .	0.20	B_9	. . .	. . .	. . .	1.0	. . .	
2737	7.8	15.7	6 28	. . .	(0.44)	F_8	. . .	. . .	. . .	. . .	. . .	
2738	7.2	16.1	4 55	3.6	[1.32]	K_5	. . .	. . .	(1.0)	. . .	. . .	
2739	7.0	16.2	13 23	. . .	0.96	K_0	. . .	. . .	0.9	(0.7)	. . .	

*2701. Double, $d = 0.''5$, $\Delta m = 3.7$. *2704. The lines are narrow (*H. D.*). *2705. Double, $d = 2.5''$, $\Delta m = 1.5$. *2706. In *H. D. for* 9^{p}4089 read 9^{p}4039. *2710. Narrow lines (*H. D.*). *2713. Double, $d = 0.''8$, $\Delta m = 1.2$. *2723. Double, $d = 3''$, $\Delta m = 3.2$. Colour of A assumed $C = 1.12$. *2731. Companion at $d = 59''$, $\Delta m = 2.8$. *2732. The colour is corrected for superposition with the star *B. D.* 5^{0} 1114, 30″ distant, not taken into account in *G. A.*

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2740	6.8	19 16.6	18 57	. . .	0.20	F_5	. . .	. . .	. . .	(2.8)	. . .	*
2741	7.3	17.2	10 43	. . .	[1.45]	K_2	. . .	. . .	(0.6)	. . .	. . .	
2742	7.8	17.2	0 12	. . .	0.14	F_8	. . .	. . .	*d*	(4.0)	. . .	
2743	6.8	17.6	17 34	. . .	−0.09	A_0	. . .	. . .	. . .	0.0	. . .	
2744	6.2	18.0	9 43	3.3	0.29	F_8	. . .	. . .	*d*	3.5	. . .	
2745	6.6	18.6	14 44	. . .	0.08	A_3	. . .	. . .	. . .	*1.1*	. . .	
2746	7.5	18.8	8 5	. . .	−0.02	A_2	. . .	. . .	. . .	0.5	. . .	
2747	7.1	18.8	8 28	. . .	(1.27)	K_0	. . .	. . .	−0.1	(0.6)	. . .	
2748	7.0	18.9	20 5	3.6	1.07	K_0	. . .	. . .	0.7	1.8	. . .	
2749	7.4	19.3	15 49	. . .	0.01	A_2	. . .	. . .	. . .	0.7	. . .	
2750	6.5	19.4	20 4	3.4	−0.25	A_0	. . .	. . .	. . .	0.4	. . .	
2751	7.6	19.5	5 22	. . .	0.54	F_8	. . .	. . .	*g*	(−0.5)	. . .	
2752	7.5	19.8	18 33	. . .	−0.04	A_2	. . .	. . .	. . .	0.4	. . .	
2753	7.1	19.8	12 6	. . .	(1.36)	K_2	. . .	. . .	(0.9)	. . .	. . .	
2754	6.0	19.9	16 45	0.0	0.15	A_0	A_{4s}	1.6	. . .	(1.3)	. . .	
2755	5.2	20.2	11 44	6.7	0.63	G_5	G_7	4.8	((2.7))	5.0	(4.8)	
2756	6.8	20.3	16 46	2.0	−0.05	A_0	. . .	. . .	. . .	0.3	. . .	
2757	7.1	20.4	19 44	3.5	−0.10	A_0	. . .	. . .	. . .	1.0	. . .	
2759	6.4	21.0	20 5	2.9	−0.24	A_0	. . .	. . .	. . .	0.4	. . .	
2760	5.3	21.1	19 36	2.0	0.88	K_0	. . .	. . .	1.3	1.2	. . .	
2761	4.9	21.4	0 8	−2.9	0.35	F_0		See	table	1		
2762	5.8	21.8	12 50	1.8	0.26	F_5	. . .	. . .	. . .	*2.4*	. . .	
2763	6.8	21.8	11 39	. . .	0.25	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
2764	5.6	21.9	19 54	1.2	−0.24	A_0	B_{9n}	0.6	. . .	0.4	. . .	
2765	6.0	22.1	19 41	1.3	1.42	K_5	. . .	. . .	0.5	. . .	. . .	*
2766	6.7	22.2	20 4	3.5	−0.45	A_0	. . .	. . .	. . .	1.7	. . .	
2767	6.8	22.3	11 52	. . .	0.01	A_0	. . .	. . .	. . .	1.2c	. . .	*
2768	6.6	22.7	4 31	. . .	0.26	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
2769	6.3	23.0	14 5	. . .	−0.29	B_5	. . .	. . .	−1.4	. . .	. . .	
2770	6.9	23.0	18 5	. . .	1.02	B?	. . .	. . .	(0.8)	. . .	. . .	*
2771	5.9	23.3	2 43	. . .	−0.20	B_9	. . .	. . .	. . .	−0.6	. . .	
2772	7.2	23.6	20 2	(−0.3)	−0.49	B_3	. . .	. . .	−3.5	. . .	. . .	*
2773	6.9	23.6	17 39	. . .	0.08	A_2	. . .	. . .	. . .	1.1	. . .	
2774	7.4	23.8	8 39	. . .	0.22	F_0	. . .	. . .	. . .	(*2.2*)	. . .	

*2740. Double, $d = 9''$, $\Delta m = 1.7$. *2765. An optical companion at $d = 23''$, Δm 4.7. The colour of A corrected for superposition may be assumed $C = 1.46$. *2767. Double, $d = 0.''3$, $\Delta m = 2.2$. *2770. In *H. D.* remark: "the spectrum appears to be nearly continuous". There are three distant *B. D.* companions: 1) $\Delta\alpha = -2^s.0$, $\Delta\delta = +7'.5$, $\Delta m = +2.0$; 2) $\Delta\alpha = +0^s.5$, $\Delta\delta = +6'.1$, $\Delta m = +2.1$; 3) $\Delta\alpha = -1.^s5$, $\Delta\delta = -6.'3$, $\Delta m = +1.8$; the superposition of the spectra of these four stars has evidently produced the impression of a continuous spectrum, and led to the evidently wrong classification of the bright star as of class B; the spectrum may be expected most likely to lie between G_5 and K_2. In deriving M (*C*, *D*) the spectrum was assumed to be K_0. *2772. The proper motion given in Berlin A, 0.″075, is too large; rejecting old observations, a value of 0.″01 ± is obtained, which has been adopted here.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2775	7.4	19 23.8	18 43	. . .	0.27	F_5	. . .	. . .	. . .	(2.8)	. . .	
2776	5.8	24.0	1 45	1.2	—0.15	A_0	A_0n	0.9	. . .	0.3	. . .	
2777	7.4	24.1	10 49	. . .	0.41	G_5	. . .	. . .	(3.9)	(3.0)	. . .	
2778	7.2	24.4	12 39	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
2779	5.7	24.8	14 23	0.8	0.89	K_0	K_1	0.6	1.2	0.8	(3.7)	
2780	7.7	24.9	12 12	. . .	0.09	A_3	. . .	. . .	. . .	0.8c	. . .	*
2781	6.4	25.0	20 4	—1.3	—0.37	B_3	. . .	. . .	—2.3	. . .	. . .	
2782	6.4	25.2	2 42	—0.7	1.85	K_5	. . .	. . .	—0.8	. . .	. . .	
2783	6.3	25.6	3 14	—1.6	—0.37	A_0	. . .	. . .	. . .	1.2	. . .	
2784	7.0	25.9	16 30	. . .	0.03	A_0	. . .	. . .	. . .	1.5	. . .	
2785	6.9	25.9	12 37	4.6	0.76	K_0	. . .	. . .	((3.1))	(2.2)	. . .	
2786	7.2	26.0	17 29	. . .	0.02	A_0	. . .	. . .	. . .	1.5	. . .	
2787	7.9	26.0	16 36	. . .	0.42	F_5	. . .	. . .	. . .	(2.8)	. . .	
2788	6.8	26.0	1 49	. . .	1.32	K_0	. . .	. . .	—0.4	(0.2)	. . .	
2789	7.4	26.4	18 2	. . .	[1.21]	K_0	. . .	. . .	0.3	(0.9)	. . .	
2790	7.2	26.8	5 33	4.3	0.18	F_8	. . .	. . .	*d*	4.0	. . .	
2791	7.0	27.2	7 17	. . .	1.47	K_2	. . .	. . .	0.5	. . .	. . .	
2792	7.4	27.3	14 45	. . .	—0.11	A_0	. . .	. . .	. . .	0.0	. . .	
2793	6.9	27.4	9 8	. . .	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
2794	6.8	28.2	4 49	—1.8	(1.91)	Mb	. . .	. . .	—0.6	. . .	. . .	
2795	6.8	28.6	3 33	. . .	—0.24	B_5	. . .	. . .	—1.1	. . .	. . .	
2796	6.7	28.8	5 15	. . .	1.53	Mb	. . .	. . .	—1.0	. . .	. . .	
2797	7.3	29.0	7 42	. . .	—0.37	A_0	. . .	. . .	. . .	1.2	. . .	
2798	4.6	29.2	7 10	3.3	1.19	K_0		See	table	I		
2799	6.9	29.4	7 34	. . .	—0.26	A_0	. . .	. . .	. . .	0.5	. . .	
2800	6.8	29.8	16 3	. . .	—0.17	B_3	. . .	. . .	—1.3	. . .	. . .	
2801	7.0	29.9	10 44	. . .	0.97	K_0	. . .	. . .	0.9	(0.8)	. . .	
2802	8.4	30.0	15 15	. . .	[0.63]	K_2	. . .	. . .	((4.0))	. . .	. . .	
2803	7.2	30.2	17 56	. . .	0.77	G_5	. . .	. . .	0.5c	(1.0)	. . .	*
2804	4.9	30.2	19 33	—4.2	—0.25	B_8		See	table	I		
2805	7.3	30.2	16 26	. . .	(1.19)	K_0	. . .	. . .	0.4	(1.1)	. . .	
2806	6.5	30.4	2 42	3.6	0.18	F_2	. . .	. . .	. . .	2.2	. . .	
2807	6.9	30.7	18 48	. . .	1.65	K_2	. . .	. . .	—1.3	. . .	. . .	
2808	6.6	30.9	15 24	(1.6)	1.16	K_0	. . .	. . .	0.5	1.3	. . .	
2809	6.7	31.3	5 47	. . .	1.08	K_0	. . .	. . .	0.7	(1.3)	. . .	
2810	6.5	31.4	10 56	. . .	—0.01	A_2	. . .	. . .	. . .	0.5	. . .	
2811	7.5	31.5	14 17	. . .	[1.08]	K_2	. . .	. . .	(2.0)	. . .	. . .	
2812	6.8	31.5	11 56	. . .	1.45	K_2	. . .	. . .	0.2	. . .	. . .	
2813	6.5	31.7	14 10	. . .	0.93	K_0	. . .	. . .	1.0	(0.7)	. . .	
2814	7.2	31.8	15 40	4.0b	0.24	F_8	. . .	. . .	*d*	4.0b	. . .	*
2815	6.2	32.2	11 3	. . .	0.69	G_5	. . .	. . .	((1.8))	(0.4)	. . .	

*2780. Double, $d = 0.''2$, $\Delta m = 1.2$. *2803. Double, $d = 0.''6$, $\Delta m = 1.2$. *2814. Companion, $d = 39''$, $\Delta m = 2.5$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_S	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2816	5.7	19 32.8	16 14	—1.3	1.07	K_0	G_8	0.7	0.7	0.5	—0.2	
2817	6.8	33.0	18 45	(0.8)	1.52	K_5	. . .	. . .	0.3	. . .	. . .	
2818	7.4	33.2	0 7	. . .	—0.02	A_2	. . .	. . .	. . .	0.4c	. . .	*
2819	6.9	33.5	18 22	. . .	0.19	A_5	. . .	. . .	. . .	*1.2*	. . .	
2820	6.7	33.7	17 1	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
2821	6.4	33.8	3 9	—1.5	—0.17	B_3	. . .	. . .	—1.3	. . .	. . .	
2822	7.4	34.0	17 2	. . .	0.05	B_3	. . .	. . .	—1.0	. . .	. . .	
2823	5.2	34.3	5 10	—4.2	—0.12	B_3	. . .	. . .	—1.1	. . .	. . .	
2824	6.6	34.9	16 21	1.0	1.82	K_5	. . .	. . .	—1.9	. . .	. . .	*
2825	7.7	35.1	18 56	. . .	[1.23]	K_0	. . .	. . .	(0.2)	. . .	. . .	
2826	7.2	35.1	7 19	. . .	1.03	K_0	. . .	. . .	0.8	(1.2)	. . .	
2827	4.4	35.6	17 48	—1.0	0.68	G_0	See	table	I			
2828	7.3	35.8	16 6	. . .	—0.07	B_8	. . .	. . .	. . .	0.0	. . .	
2829	7.2	36.5	12 56	. . .	0.37	F_8	. . .	. . .	*d*	(3.0)	. . .	
2830	5.8	36.5	13 35	. . .	—0.14	B_3	. . .	. . .	—1.2	. . .	. . .	
2831	4.4	36.6	17 16	—1.0	0.98	K_0	See	table	I			
2832	6.3	37.5	11 58	—0.6	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
2833	5.3	37.8	11 35	—2.2	0.50	F_5+A_3	F_5	2.4	. . .	*—2.3c*	. . .	*
2834	6.8	37.9	18 14	3.3	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
2835	6.8	37.9	8 8	(2.9)	0.24	F_5	. . .	. . .	. . .	*2.8*	. . .	*
2836	6.6	39.2	9 17	. . .	1.25	K_0	. . .	. . .	0.1	(0.7)	. . .	
2837	7.7	39.6	4 45	—1.2	[1.06]	K_5	. . .	. . .	(2.0)	. . .	. . .	
2838	6.5	39.9	8 29	. . .	0.88	K_0	. . .	. . .	1.3	(0.8)	. . .	
2839	6.1	39.9	13 4	0.1	—0.18	B_8	Aos	0.0	. . .	—0.6	. . .	
2840	7.2	40.0	10 40	. . .	—0.05	A_3	. . .	. . .	. . .	*1.1*	. . .	
2841	7.1	40.0	12 59	. . .	(1.62)	K_5	. . .	. . .	(0.0)	. . .	. . .	
2842	7.0	40.1	18 21	. . .	(1.53)	Ma	. . .	. . .	0.7	. . .	. . .	
2843	5.7	40.8	7 22	1.9	0.06	A_2	. . .	. . .	. . .	1.4	. . .	
2844	7.0	41.0	4 0	. . .	0.54	G_0	. . .	. . .	4.6	(2.5)	. . .	
2845	2.8	41.5	10 22	—4.9	1.50	K_2	See	table	I			
2846	6.8	42.5	0 51	5.2	0.47	G_5	. . .	. . .	(4.1)	4.4	. . .	
2847	6.8	42.8	5 32	. . .	1.01	K_0	. . .	. . .	0.8	(1.0)	. . .	
2848	3.8	42.9	18 17	—4.8b	1.57	Ma+A_0	See	table	I			
2849	7.4	43.1	15 40	. . .	—0.12	B_9	. . .	. . .	. . .	—1.0	. . .	
2850	6.9	43.5	13 13	(3.4)	0.22	F_5	. . .	. . .	. . .	*3.0*	. . .	
2851	6.4	43.8	10 27	. . .	1.05	G_{0p}	. . .	. . .	(—2.1)	(—2.0)	. . .	*
2852	5.7	44.0	11 34	—2.1	0.51	F_2+A_2	. . .	. . .	. . .	*—2.5c*	. . .	*
2853	6.6	44.2	11 26	. . .	0.94	K_0	. . .	. . .	1.0	(0.7)	. . .	
2854	7.0	44.3	18 37	. . .	0.80	G_0+A	. . .	. . .	(—2.4c)	(—1.7c)	. . .	*
2855	5.0	44.6	18 54	—0.1	—0.07	A_2	See	table	I			

*2818. Double, $d = 1.''3$, $\Delta m = 2.1$. *2824. Double, $d = 29''$, $\Delta m = 2.1$. Colour of A corrected for superposition assumed $C = 2.32 \pm$. *2833. Spectrum composite; double, $d = 0.''6$, $\Delta m = 1.6$. *2835. Double, $d = 27''$, $\Delta m = 1.7$. *2851. The lines are narrow (*H. D.*). *2852. Spectrum composite; double, $d = 2''$, $\Delta m = 0.5$. *2854. Spectrum composite. Colour of the G_0 component assumed $C = 0.97 +$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_{s_4}	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2856	6.4	19 45.4	7 39	1.6	—0.24	B_3	. . .	. . .	—1.5	. . .	. . .	
2857	6.8	45.8	17 28	—0.3	1.16	K_0	. . .	. . .	0.5	0.9	. . .	
2858	7.8	45.8	0 36	. . .	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
2860	5.2	46.2	10 10	4.2	0.47	G_0	G_0	3.6	4.7	3.9	5.0	
2861	6.7	46.4	19 58	3.1	—0.05	A_2	. . .	. . .	. . .	1.2	. . .	
2862	7.0	46.5	16 36	(3.6)	—0.20	B_8	. . .	. . .	. . .	0.2	. . .	
2863	6.6	46.5	3 50	. . .	1.41	K_0	. . .	. . .	—2.0c	(—1.1c)	. . .	*
2864	6.3	46.5	9 22	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
2865	7.2	46.5	19 47	2.8	—0.08	A_3	. . .	. . .	. . .	*1.6*	. . .	
2866	7.2	47.3	7 12	. . .	0.52	G_5	. . .	. . .	(4.1)	(1.0)	. . .	
2867	6.2	47.4	11 23	6.3	0.51	G_0	. . .	. . .	4.8	4.5	. . .	
2868	6.5	47.5	10 6	. . .	—0.20	B_5	. . .	. . .	—0.9	. . .	. . .	
2869	7.7	47.6	15 4	. . .	0.10	A_0	. . .	. . .	. . .	1.6	. . .	
2870	6.3	47.9	18 24	—4.2	—0.23	Oe	O_{8n}	—2.6	—4.2	. . .	. . .	
2871	6.3	48.4	4 9	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
2872	7.2	49.0	20 5	2.5	} —0.07c	A_0	. . .	. . .	. . .	0.2	. . .	*
2873	7.5	49.0	20 5	3.6		A_0	. . .	. . .	. . .	0.2	. . .	*
2874	7.6	49.2	16 31	. . .	(0.78)	G_0+A_2	. . .	. . .	(—2.4c)	. . .	. . .	*
2875	4.9	49.4	8 12	1.9	1.01	K_0	See	table	I			
2876	7.0	49.4	15 2	—0.3	0.42	F_8	. . .	. . .	*d*	1.5c	. . .	*
2877	6.0	49.8	6 53	(2.6)	—0.03	A_0	. . .	. . .	. . .	0.5	. . .	
2878	7.3	49.8	9 30	. . .	(1.07)	K_0	. . .	. . .	0.7	(1.3)	. . .	
2879	3.9	50.4	6 10	3.9	0.69	K_0	See	table	I			
2880	6.9	51.2	9 57	. . .	0.89	G_5	. . .	. . .	0.5	(0.5)	. . .	
2881	7.1	51.4	14 47	. . .	(1.32)	K_5	. . .	. . .	(1.0)	. . .	. . .	
2883	5.3	51.5	11 10	—0.6	—0.12	A_2	. . .	. . .	. . .	—0.2	. . .	
2884	7.4	53.2	11 9	. . .	0.11	A_3	. . .	. . .	. . .	*1.1*	. . .	
2885	7.6	53.2	11 19	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2886	5.4	53.2	16 32	—1.9	—0.13	B_9	. . .	. . .	. . .	—1.2	. . .	
2887	6.8	53.7	1 24	. . .	1.27	K_0	. . .	. . .	—0.1	(0.6)	. . .	
2888	6.8	53.7	16 13	—0.9	—0.19	B_8	. . .	. . .	. . .	—0.8	. . .	
2889	6.4	54.3	1 6	(2.0)	1.10	G_5	. . .	. . .	—0.3	0.4	. . .	
2890	3.7	54.3	19 13	—0.7	1.57	K_5	See	table	I			
2891	6.6	54.5	11 2	—3.4	1.05	K_0	. . .	. . .	0.7	0.2	. . .	
2892	6.8	55.4	3 4	. . .	1.29	G_5	. . .	. . .	—0.9	(—0.8)	. . .	
2893	5.6	55.5	17 14	—2.0	1.71	Mb	Mb	. . .	—0.8	. . .	—0.8	*
2894	7.1	55.6	17 20	0.0	[1.54]	K_0	. . .	. . .	—1.7	—0.9	. . .	
2895	6.1	56.2	8 17	. . .	1.66	K_2	. . .	. . .	—1.3	. . .	. . .	
2896	7.1	56.2	13 6	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
2897	7.0	56.5	14 16	. . .	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
2898	7.4	56.5	14 33	. . .	[1.25]	K_2	. . .	. . .	(1.8)	. . .	. . .	

*2863. Double, $d = 4''$, $\Delta m = 2.7$. Colour of A assumed $C = 1.57$. *2872. 2873. $d = 42''$. *2874. Spectrum composite. Colour of the G_0 component assumed $C = 0.95$ ±. *2876. Double, $d = 2''$, $\Delta m = 1.4$. *2893. *Mt. W.* - - 0.4.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
2899	7.9	19 56.6	14 56	. . .	0.15	A_5	. . .	. . .	. . .	*1.2*	. . .	
2900/1	6.9c	56.7	10 28	. . .	0.32c	F_2	. . .	. . .	. . .	(*1.5c*)	. . .	*
2902	7.4	57.2	16 14	. . .	0.18	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
2903	6.8	57.4	10 26	. . .	—0.20	B_5	. . .	. . .	—0.9	. . .	. . .	
2904	6.7	57.7	13 38	. . .	1.17	K_2	. . .	. . .	2.1	. . .	. . .	
2905	6.9	58.0	12 4	. . .	1.53	K_5	. . .	. . .	0.3	. . .	. . .	
2906	7.1	58.0	15 22	6.5	0.55	G_5	G_8	5.6	(3.9)	5.0	(5.8)	
2907	8.0	58.0	15 5	. . .	—0.12	A_0	. . .	. . .	. . .	0.0	. . .	
2908	6.8	58.1	10 38	. . .	0.00	A_2	. . .	. . .	. . .	0.6	. . .	
2909	6.7	58.2	14 16	. . .	0.96	K_0	. . .	. . .	0.7c	(1.0)	. . .	*
2910	6.8	58.2	4 27	. . .	1.45	K_5	. . .	. . .	0.6	. . .	. . .	
2911	6.8	58.6	18 1	1.4	0.50	G_0	. . .	. . .	4.8	(2.5)	. . .	
2912	6.1	58.8	18 15	0.7	1.41	K_2	. . .	. . .	—0.3	. . .	. . .	*
2913	5.5	58.9	15 46	—1.7	—0.13	A_0	. . .	. . .	. . .	—0.5	. . .	
2914	6.9	59.2	14 42	. . .	0.93c	cF_8	. . .	. . .	*g*	(—2.5)	. . .	*
2915	5.6	59.3	7 0	—1.0	0.91	K_0	G_8	0.0	1.1	0.5	1.2	
2916	7.7	59.4	16 26	. . .	[0.84]	K_0	. . .	. . .	(1.7)	. . .	. . .	
2917	6.8	59.5	16 51	1.9	—0.04	A_2	. . .	. . .	. . .	1.1	. . .	
2918	5.9	59.6	16 48	6.5	0.52	G_0	G_2	4.8	4.7	4.7	5.0	
2919	6.8	59.7	17 26	1.3	0.34	F_8	. . .	. . .	*d*	2.4	. . .	
2920	7.4	20 0.0	12 44	. . .	0.81	K_0	. . .	. . .	((2.3))	(0.9)	. . .	
2921	6.7	0.1	1 50	3.9	0.42	F_8	. . .	. . .	*d*	4.0	. . .	
2922	7.1	0.2	15 38	2.7c	0.41	G_0	. . .	. . .	3.9c	2.7c	. . .	*
2923	6.9	0.2	0 10	. . .	—0.08	A_0	. . .	. . .	. . .	0 1	. . .	
2924	7.4	0.4	13 28	. . .	0.90	K_2	. . .	. . .	(2.9)	. . .	. . .	
2925	5.3	0.7	19 42	1.4	1.13	K_0	K_2	2.2	0.6	1.3	1.4	
2926	6.6	0.8	15 13	1.3	1.65c	Ma	. . .	. . .	0.7	. . .	. . .	*
2927	6.7	1.0	4 29	. . .	0.05	A_0	. . .	. . .	. . .	1.6	. . .	
2928	7.5	1.9	12 25	. . .	1.17	K_5	. . .	. . .	(1.6)	. . .	. . .	
2929	7.2	2.0	12 39	. . .	0.26	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2930	7.4	2.4	13 2	. . .	(1.53)	K_5	. . .	. . .	(0.3)	. . .	. . .	
2931	7.0	2.6	10 46	. . .	0 28	F_0	. . .	. . .	. . .	(*2.1*)	. . .	
2932	7.1	2.7	2 10	. . .	0.22	A_5	. . .	. . .	. . .	*1.2*	. . .	
2933	7.5	2.8	15 47	. . .	—0.17	B_9	. . .	. . .	. . .	—1.0	. . .	
2934	7.1	3.0	16 21	—3.4	0.94	K_0	. . .	. . .	1.0	0.1	. . .	
2935	6.4	3.0	9 6	1.8	0.28	F_5	F_1	2.8	. . .	*2.4*	. . .	
2936	6.7	3.6	16 23	0.9	1.69	Ma	. . .	. . .	0.3	. . .	. . .	
2937	6.2	3.9	10 26	. . .	—0.25	B_5	. . .	. . .	—1.2	. . .	. . .	
2938	7.0	4.1	11 57	. . .	—0.19	B_9	. . .	. . .	. . .	—0.7	. . .	
2939	7.0	4.6	16 39	1.6	1.12	K_2	. . .	. . .	2.2	. . .	. . .	

*2900/1. Double, $d = 5''$, $\Delta m = 0.7$. *2909. Double, $d = 3''$, $\Delta m = 2.9$. Colour of A assumed $C = 1.01$. *2912. Companion with common proper motion, $d = 48''$, $\Delta m = 3.7$. Colour of A assumed $C = 1.50$. *2914. The lines are narrow (*H. D.*); double, $d = 29''$, $\Delta m = 2.0$. *2922. Double, $d = 34''$, $\Delta m = 1.4$. *2926. Double, $d = 2''$, $\Delta m = 3.8$; the colour of the brighter component is assumed equal to 1.73.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2940	7.5	20 4.6	10 30	. . .	—0.26	A_0	. . .	. . .	. . .	0.5	. . .	
2941	7.0	4.8	18 48	. . .	0.71	K_0	. . .	. . .	((3.5))	(0.7)	. . .	
2942	6.6	5.3	8 9	4.9	0.37	F_8	. . .	. . .	*d*	4.2	. . .	
2943	7.8	5.9	14 15	. . .	[1.35]	K_5	. . .	. . .	(0.9)	. . .	. . .	
2944	7.2	6.5	8 26	. . .	1.58	M_a	. . .	. . .	(1.1)	. . .	. . .	
2945	7.3	6.6	15 53	7.5	0.74	K_0	K_2	6.0	((3.3))	5.7	6.8	
2946	7.4	6.8	19 4	. . .	0.22	F_8	. . .	. . .	*d*	(4.0)	. . .	
2947	7.5	7.0	14 21	. . .	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
2948	7.5	7.2	7 23	. . .	1.27	M_b	. . .	. . .	(—1.2)	. . .	. . .	
2949	7.1	7.2	15 35	. . .	1.54	K_5	. . .	. . .	(0.3)	. . .	. . .	
2950	8.0	7.5	15 4	. . .	—0.42	B_5	. . .	. . .	—1.3	. . .	. . .	
2951	6.2	7.5	0 34	. . .	—0.12	A_0	. . .	. . .	. . .	—0.6c	. . .	*
2952	7.4	7.8	15 57	2.0	0.54	G_5	. . .	. . .	(4.0)	1.0	. . .	
2953	7.6	8.3	15 48	0.4	0.26	F_8	F_6	3.4	*d*	2.0	. . .	
2954	6.6	8.3	11 33	. . .	1.21	K_2	. . .	. . .	2.0	. . .	. . .	
2955	7.5	8.8	14 6	. . .	0.83	K_0	. . .	. . .	1.9	(0.9)	. . .	
2956	7.0	9.0	15 58	1.2	1.54	K_5	. . .	. . .	0.3	. . .	. . .	
2957	5.0	9.6	14 54	1.7	—0.12	A_0		See	table	I		
2958	6.9	10.1	10 11	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2959	7.2	10.6	9 51	. . .	0.21	F_8	. . .	. . .	*d*	(4.0)	. . .	
2960	7.2	10.8	7 30	. . .	0.12	A_2	. . .	. . .	. . .	1.1	. . .	
2961	6.6	11.2	4 17	1.8	0.76	G_5	. . .	. . .	((1.1))	1.2	. . .	
2962	6.6	12.2	8 38	. . .	0.06	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
2963	7.3	12.6	15 34	3.3	—0.25	B_9	. . .	. . .	. . .	0.2	. . .	
2964	6.9	13.5	0 19	. . .	0.21	A_3	. . .	. . .	. . .	(*1.1*)	. . .	
2965	7.8	13.7	18 1	. . .	0.04	A_0	. . .	. . .	. . .	1.6	. . .	
2966	7.3	14.0	1 56	. . .	0.26	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
2967	7.0	14.0	17 2	. . .	1.38	K_5	. . .	. . .	0.8	. . .	. . .	
2968	7.1	14.5	14 4	. . .	0.93	G_5	. . .	. . .	0.4	(0.5)	. . .	
2969	6.8	14.7	14 4	. . .	0.08	A_0+G	. . .	. . .	. . .	0.2c	. . .	*
2970	6.5	14.8	12 56	. . .	1.77	M_a	. . .	. . .	—0.6	. . .	. . .	
2971	6.0	15.3	13 14	. . .	0.08	A_5	. . .	. . .	. . .	*1.2*	. . .	
2972	6.8	15.4	11 9	. . .	1.39	K_2	. . .	. . .	0.8	. . .	. . .	
2973	7.4	15.6	7 18	. . .	1.20	K_2	. . .	. . .	(2.0)	. . .	. . .	
2974	6.9	15.6	15 14	. . .	0.37	F_8	. . .	. . .	*d*	(2.5)	. . .	
2975	6.3	15.7	14 16	(0.5)	0.78	G_5	. . .	. . .	((1.0))	1.0	. . .	
2976	6.0	15.8	17 28	0.0	1.52	K_5	. . .	. . .	0.3	. . .	. . .	
2977	7.4	16.6	1 21	. . .	0.15	A_0	. . .	. . .	. . .	(1.3)	. . .	
2978	6.6	16.6	14 48	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
2979	7.6	17.1	6 52	. . .	0.81	K_0	. . .	. . .	((2.3))	. . .	. . .	

*2951. Double, $d = 3''$, $\Delta m = 0.4$. *2969. Spectrum composite; visual double, $d = 3''$, $\Delta m = 2.7$, which cannot be identical with the spectral double. Colour of the A_0 component assumed $C = -0.31$ ±.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
2980	7.4	20 17.2	13 17	. . .	—0.16	A_0	. . .	. . .	. . .	0.0	. . .	
2981	6.9	18.0	12 8	. . .	1.17	K_2	. . .	. . .	2.1	. . .	. . .	
2982	6.2	18.2	14 13	. . .	0.36	F_5	F_2	4.4	. . .	(2.8)	. . .	
2983	5.4	18.2	5 2	0.6	0.97	K_0	G_9	0.7	0.9	0.6	1.1	
2984	7.2	18.3	19 31	. . .	0.52	G_5	. . .	. . .	(4.1)	(1.0)	. . .	
2985	6.7	18.7	10 2	. . .	1.07	K_2	. . .	. . .	2.4	. . .	. . .	
2986	7.1	18.7	15 4	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
2987	6.7	19.3	15 44	(2.6)	—0.18	B_9	. . .	. . .	. . .	0.0	. . .	
2988	6.1	19.6	0 45	—2.0	—0.15	A_0	A_{0n}	0.9	. . .	—0.7	. . .	
2989	7.2	19.6	5 11	. . .	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
2990	6.8	19.6	1 3	. . .	1.86	K_5	. . .	. . .	—0.8	. . .	. . .	
2991	6.6	19.8	8 17	. . .	—0.02	B_9	. . .	. . .	. . .	0.0	. . .	
2992	7.2	20.0	15 49	. . .	(1.84)	K_5	. . .	. . .	(—0.8)	. . .	. . .	
2993	7.6	20.1	8 52	. . .	0.30	F_5	. . .	. . .	. . .	(2.8)	. . .	
2994	7.6	20.2	7 9	. . .	0.19	F_0	. . .	. . .	. . .	(2.2)	. . .	
2995	6.6	20.5	6 19	. . .	—0.10	A_0	. . .	. . .	. . .	0.0	. . .	
2996	7.9	20.5	7 33	. . .	0.01	A_2	. . .	. . .	. . .	0.7	. . .	
2997	6.5	20.9	9 44	1.3	1.56	K_5	. . .	. . .	0.2	. . .	. . .	
2998	6.6	21.2	2 38	. . .	0.97	G_5	. . .	. . .	0.2	(0.4)	. . .	
2999	6.5	21.4	13 35	. . .	1.42	K_5	. . .	. . .	0.6	. . .	. . .	
3000	7.7	21.4	14 37	. . .	(1.30)	K_5	. . .	. . .	(1.1)	. . .	. . .	
3001	6.4	21.5	19 30	(2.4)	1.00	K_0	. . .	. . .	0.8	1.3	. . .	
3002	6.2	21.8	17 1	0.2	1.09	K_0	. . .	. . .	0.7	1.2	. . .	
3003	6.4	23.2	2 36	. . .	0.80	K_0	. . .	. . .	((2.5))	(0.7)	. . .	
3004	6.3	23.2	8 6	0.4	1.15	K_0	. . .	. . .	0.6	1.2	. . .	
3005	7.2	23.5	0 33	. . .	—0.02	B_8	. . .	. . .	. . .	0.0	. . .	
3006	6.8	23.7	18 28	6.0	0.59	G_5	. . .	. . .	(3.4)	4.7	. . .	
3007	6.8	23.9	19 47	. . .	—0.17	A_0	. . .	. . .	. . .	0.0	. . .	
3008	6.9	24.4	12 21	. . .	—0.09	B_9	. . .	. . .	. . .	—0.4	. . .	
3009	7.3	24.4	15 55	. . .	0.05	A_0	. . .	. . .	. . .	1.6	. . .	
3010	7.0	24.7	2 40	. . .	0.00	A_0	. . .	. . .	. . .	1.0	. . .	
3011	6.4	24.9	19 44	(3.3)	0.14	A_2	. . .	. . .	. . .	1.9	. . .	
3012	6.8	25.1	9 58	. . .	1.05	K_0	. . .	. . .	0.7	(1.2)	. . .	
3013	5.9	25.5	10 34	—0.5	0.03	A_0	. . .	. . .	. . .	1.3c	. . .	*
3014	6.7	25.6	19 20	1.4	—0.23	B_8	. . .	. . .	. . .	—0.1	. . .	
3015	6.6	25.7	19 5	2.2	—0.15	B_9	. . .	. . .	. . .	0.0	. . .	
3016/17	6.4c	26.4	10 57	—0.9c	0.10c	A_0	. . .	. . .	. . .	0.9c	. . .	*
3018	6.8	26.5	15 27	(3.2)	—0.07	A_2	. . .	. . .	. . .	1.2	. . .	
3019	7.1	26.7	4 5	. . .	0.33	F_0	. . .	. . .	. . .	(2.1)	. . .	
3020	7.1	27.3	16 39	1.8	—0.17	B_9	. . .	. . .	. . .	—0.1	. . .	
3022	6.6	27.3	1 47	. . .	1.64	K_2	. . .	. . .	—1.3	. . .	. . .	
3023	7.5	27.6	15 34	. . .	(1.11)	G_5	. . .	. . .	—0.3	. . .	. . .	

*3013. Double, $d = 0.''8$, $\Delta m = 1.9$. *3016/17. Double, $d = 16''$, $\Delta m = 0.4$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3024	7.2	20 27.6	18 17	. . .	(1.71)	Mb	. . .	. . .	(—0.8)	. . .	. . .	
3025	6.7	28.1	16 25	—1.0	—0.17	B_9	. . .	. . .	. . .	—1.0	. . .	
3027	6.7	29.0	4 34	—0.4	0.94	K_0	. . .	. . .	1.0	0.5	. . .	
3028	6.4	29.1	9 43	. . .	—0.01	A_0	. . .	. . .	. . .	0.8	. . .	
3029	5.2	29.2	12 42	1.9	—0.04	A_2	. . .	. . .	. . .	1.1	. . .	
3030	7.3	29.5	17 50	. . .	1.63	K_5	. . .	. . .	(0.0)	. . .	. . .	
3031	7.7	29.5	15 29	. . .	0.89	G_5	. . .	. . .	(0.5)	. . .	. . .	
3032	6.9	29.6	6 32	. . .	—0.19	B_5	. . .	. . .	—0.9	. . .	. . .	
3033	7.3	30.1	13 8	. . .	—0.19	A_2	. . .	. . .	. . .	0.4	. . .	
3034	6.5	30.6	6 36	. . .	—0.25	B_9	. . .	. . .	. . .	0.2	. . .	
3035	4.7	30.6	14 21	—0.1	—0.05	A_2		See	table	I		
3036	6.7	31.6	16 28	(—0.9)	1.42	K_2	. . .	. . .	0.5	. . .	. . .	
3037	8.1	31.8	8 15	. . .	0.00	A_0	. . .	. . .	. . .	1.0	. . .	
3038	3.7	32.8	14 14	0.8	0.21	F_5		See	table	I		
3039	5.4	33.0	11 3	1.1	—0.07	A_2	A_{2s}	0.9	. . .	0.5	. . .	
3040	7.5	33.3	12 47	. . .	0.01	A_0	. . .	. . .	. . .	1.3	. . .	
3041	6.3	33.4	17 55	1.9	1.34	Mc	. . .	. . .	—1.1	. . .	. . .	
3042	6.1	34.0	12 59	—0.9	1.55	K_5	cK_4	—0.8	0.2	. . .	—0.8	
3043	5.2	34.3	9 44	4.2	0.60	G_5	G_2	3.4	(3.2)	4.1	4.3	
3044	5.9	34.4	15 30	0.5	—0.33	B_2		See	table	II		
3046	6.4	35.1	10 54	3.2	0.32	F_8	. . .	. . .	*d*	3.5	. . .	
3047	7.3	35.2	13 5	. . .	1.38	K_2	. . .	. . .	(0.9)	. . .	. . .	
3048	6.9	35.3	3 5	. . .	1.04	K_0	. . .	. . .	0.8	(1.2)	. . .	
3049	6.8	36.0	15 17	3.7	0.15	F_5	. . .	. . .	. . .	*3.1*	. . .	
3050	7.7	36.0	14 10	. . .	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
3051	6.4	36.2	19 34	5.5	0.43	G_5	. . .	. . .	(4.0)	4.5	. . .	
3052	6.6	36.3	17 14	2.5	—0.19	A_0	. . .	. . .	. . .	0.8	. . .	
3053	6.2	36.6	14 15	—1.9	1.14	K_2	K_3	(1.0)	2.2	. . .	1.9	
3054	6.8	36.9	13 27	. . .	—0.06	A_2	. . .	. . .	. . .	0.2	. . .	
3055	6.9	37.2	6 9	. . .	—0.15	B_8	. . .	. . .	. . .	—0.2	. . .	
3056	8.1	37.2	13 58	. . .	—0.20	A_0	. . .	. . .	. . .	0.0	. . .	
3057	6.3	37.4	17 12	1.8	0.79	K_0	. . .	. . .	((2.6))	1.2	. . .	
3058	7.6	37.6	12 16	. . .	0.15 ?	K_5 ?	. . .	. . .	. . .	. . .	. . .	*
3059	7.5	37.6	19 30	. . .	0.71	K_0	K_1	2.0	((3.5))	(0.8)	(5.9)	
3060	7.5	37.7	19 16	. . .	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
3061	6.7	38.7	5 3	. . .	0.00	A_0	. . .	. . .	. . .	1.0	. . .	
3062	7.3	38.7	6 13	. . .	0.92	K_0	. . .	. . .	1.1	(0.8)	. . .	
3063	4.5	38.8	14 44	0.4	0.06	A_5		See	table	I		
3064	7.7	39.0	19 31	3.7	0.50	G_5	. . .	. . .	(4.1)	4.0	. . .	*
3065	7.4	39.9	13 12	. . .	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
3066	6.7	40.2	11 58	. . .	—0.08	A_0	. . .	. . .	. . .	—0.1c	. . .	*
3067	7.1	40.3	20 8	1.8	—0.12	A_5	. . .	. . .	. . .	*1.3*	. . .	

*3058. Abnormally low colour for this type of spectrum. Probably some error either in colour, or in spectrum. *3064. Double, $d = 2''.4$, $\Delta m = 2.1$. *3066. Double, $d = 1''.5$, $\Delta m = 1.8$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3068	(7.0)	20 40.9	17 44	(2.4)	(2.10)	Mb	. . .	. . .	—0.5	. . .	. . .	*
3069	6.9	41.0	7 1	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
3070	7.0c	41.6	15 32	3.7c	0.55c	K_0	G7a	4.6c	((3.5c))	4.6c	(5.1c)	*
3071	4.1c	42.0	15 46	2.4b	0.58c	G_5		See	table	I		
3072	7.8	42.4	14 22	. . .	0.10	A_2	. . .	. . .	. . .	1.1	. . .	
3073	7.3	42.7	6 36	. . .	0.27	F_5	. . .	. . .	. . .	(2.8)	. . .	
3074	6.4	42.8	2 57	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
3075	5.6	42.9	5 38	—2.8	—0.11	A_0	. . .	. . .	. . .	—1.7	. . .	
3076	7.4	42.9	12 37	. . .	0.27	F_8	. . .	. . .	*d*	(3.0)	. . .	
3077	7.5	43.0	10 6	. . .	—0.02	A_0	. . .	. . .	. . .	0.6	. . .	
3078	7.5	43.0	15 53	4.4	0.24	F_8	. . .	. . .	*d*	(4.0)	. . .	
3079	6.9	43.1	2 20	. . .	1.09	K_2	. . .	. . .	2.3	. . .	. . .	
3080	6.6	43.4	3 17	. . .	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
3081	7.4	43.4	1 22	. . .	0.86	K_0	. . .	. . .	1.4	(0.9)	. . .	
3082	7.1	43.4	7 14	. . .	0.96	K_0	. . .	. . .	0.9	(0.7)	. . .	
3083	7.7	44.1	11 30	. . .	(1.10)	K_5	. . .	. . .	(1.9)	. . .	. . .	
3084	7.1	44.6	14 15	. . .	—0.24	A_0	. . .	. . .	. . .	0.4	. . .	
3085	6.0	44.9	12 11	3.1	0.35	F_5	F_2	3.5	. . .	2.8	. . .	
3086	6.2	44.9	7 29	0.4	—0.05	A_0	. . .	. . .	. . .	0.3	. . .	
3087	7.0	44.9	13 36	. . .	0.23	F_8	. . .	. . .	*d*	(4.0)	. . .	
3088	7.4	45.0	11 7	. . .	0.77	K_2	. . .	. . .	(3.3)	. . .	. . .	
3089	6.3	45.0	5 11	. . .	0.86	K_0	. . .	. . .	1.4	(0.8)	. . .	
3090	7.2	45.4	12 57	. . .	0.91	K_2	. . .	. . .	(2.9)	. . .	. . .	
3091	6.5	46.0	17 40	3.7	—0.20	A_0	. . .	. . .	. . .	1.0	. . .	
3092	7.2	47.0	8 24	. . .	1.34	K_5	. . .	. . .	(0.9)	. . .	. . .	
3093	7.7	47.1	13 32	. . .	1.06	K_0	. . .	. . .	(0.7)	. . .	. . .	
3094	7.2	47.8	19 45	. . .	0.38	F_5+A_0	. . .	. . .	. . .	(—0.7c)	. . .	*
3095	6.8	47.9	17 39	. . .	0.73	G_5	. . .	. . .	((1.3))	(1.0)	. . .	
3096	7.6	48.5	2 38	. . .	0.45	F_2	. . .	. . .	. . .	(2.2)	. . .	
3097	7.5	48.6	15 58	. . .	—0.17	A_2	. . .	. . .	. . .	0.2	. . .	
3098	7.4	49.6	19 23	. . .	0.64	K_0	. . .	. . .	((4.0))	(2.0)	. . .	
3099	7.9	49.6	11 42	. . .	0.72	K_2	. . .	. . .	((3.4))	. . .	. . .	
3100	6.7	50.1	1 26	. . .	0.13	F_2	. . .	. . .	. . .	(2.2)	. . .	
3101	7.4	50.2	7 9	. . .	0.07	F_2	. . .	. . .	. . .	(2.2)	. . .	
3102	7.7	50.4	16 52	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
3103	7.4	50.5	9 20	. . .	0.20	F_2	. . .	. . .	. . .	(2.2)	. . .	
3104	6.0	50.7	4 9	1.7c	0.87	G_0	G_0	. . .	(—2.3c)	—0.3c	—2.9c	*
3105	5.5	50.9	12 12	0.9	0.00	A_2	. . .	. . .	. . .	0.7	. . .	
3106	5.4	50.9	13 21	—1.3	1.03	K_0	K_0	0.3	0.8	0.3	1.1	
3107	7.4	50.9	7 18	4.9	0.78	G_5	. . .	. . .	((1.0))	3.8	. . .	

*3068. Variable, range 6.4—7.5. *3070. Double, $d = 4''$, $\Delta m = 0.7$; in *G. A.* the colour is wrongly derived by using the Potsdam magnitude of the brighter component, whereas the integrated magnitude should be used. *3094. Spectrum composite; double, $d = 0.''4$, $\Delta m = 0.0$. *3104. Double, $d = 2''$, $\Delta m = 1.4$. Colour of A assumed $C = 0.90$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3108	7.4	20 51.0	20 2	. . .	1.08	K_2	. . .	. . .	(2.4)	. . .	. . .	
3109	7.1	51.2	8 53	. . .	1.38	K_5	. . .	. . .	(0.8)	. . .	. . .	
3110	7.5	51.7	14 27	. . .	0.62	K_0+A_2	. . .	. . .	0.4c	. . .	. . .	*
3111	7.4	51.8	14 19	. . .	(1.56)	K_5	. . .	. . .	(0.2)	. . .	. . .	*
3112	6.9	52.4	16 44	. . .	—0.01	A_2	. . .	. . .	. . .	0.5	. . .	
3113	7.7	52.5	15 52	. . .	(1.28)	Mb	. . .	. . .	(—1.2)	. . .	. . .	
3114	6.9	52.8	3 48	—0.3	1.39	K_2	. . .	. . .	0.8	. . .	. . .	
3115	7.1	53.1	7 41	. . .	0.67	K_0	. . .	. . .	((3.9))	(1.0)	. . .	
3116	5.6	53.6	10 29	1.7	0.90	K_0	. . .	. . .	1.2	1.0	. . .	
3117		53.9	16 2			B_9	. . .	. . .	. . .		. . .	*
	7.2c			0.8c	—0.28c					0.0c		
3118		53.9	16 2			A_0	. . .	. . .	. . .		. . .	*
3119	7.8	54.0	14 33	. . .	0.66	K_0	. . .	. . .	((4.0))	. . .	. . .	
3120	5.3	54.1	3 55	3.6c	0.35	F_5	F_{1b}	2.4b	. . .	*2.7c*	. . .	*
3121	7.8	54.3	17 27	. . .	0.10	A_5	. . .	. . .	. . .	*1.2*	. . .	
3122	6.0	55.2	7 8	. . .	—0.03	A_5	. . .	. . .	. . .	*1.2*	. . .	
3123	6.5	55.2	16 26	0.8	0.06	F_2	. . .	. . .	. . .	*2.2*	. . .	
3124	7.3	55.4	18 14	. . .	0.82	K_0	. . .	. . .	((2.0))	(0.8)	. . .	
3125	7.4	55.6	19 34	3.4	0.05	F_5	. . .	. . .	. . .	*3.0*	. . .	
3126	6.0	55.9	18 57	1.9	(1.83)b	Ma	Ma	. . .	—1.2	. . .	—1.2	*
3127	6.6	57.3	6 47	—0.7	0.32	F_8	. . .	. . .	*d*	1.1c	. . .	*
3128	6.7	57.7	2 57	. . .	1.04	K_0	. . .	. . .	0.8	(1.1)	. . .	
3129	7.4	57.9	11 16	. . .	—0.12	A_3	. . .	. . .	. . .	*1.1*	. . .	
3130	7.0	58.1	15 35	2.8	1.55	Ma	. . .	. . .	0.9	. . .	. . .	
3131	6.4	58.3	14 20	. . .	1.75	Ma	. . .	. . .	—0.4	. . .	. . .	
3132	5.9	59.6	5 6	—1.1	1.75	K_2	K_3	(1.0)	—1.6	. . .	—2.3	
3133	6.6	59.7	2 32	. . .	1.02	K_0	. . .	. . .	0.8	(1.0)	. . .	
3134	6.4	59.7	1 54	3.4	0.89	G_5	. . .	. . .	0.5	0.5	. . .	
3135	7.6	21 0.1	12 3	. . .	0.12	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3136	6.0	0.5	5 34	3.8	0.32	F_8	F_6	3.0	*d*	3.7	. . .	
3137	7.5	0.5	18 15	. . .	—0.25	A_2	. . .	. . .	. . .	1.1	. . .	
3138	6.6	1.1	14 56	4.1	0.25	F_5	. . .	. . .	. . .	*3.3*	. . .	
3139	6.6	1.6	3 23	3.5	0.63	K_0	. . .	. . .	((4.0))	3.3	. . .	
3140	7.3	2.1	5 3	. . .	0.68	K_0	. . .	. . .	((3.8))	(1.0)	. . .	
3141	6.5	2.9	15 15	(2.1)	0.76	K_0	. . .	. . .	((3.1))	1.3	. . .	
3142	6.7	3.0	4 46	. . .	—0.10	A_2	. . .	. . .	. . .	—0.1c	. .	*
3143	6.4	3.6	6 36	—0.7	1.63	K_5	. . .	. . .	0.0	. . .	. . .	
3144	7.4	4.1	7 13	. . .	—0.08	A_2	. . .	. . .	. . .	0.2	. . .	
3145	6.5	4.9	2 32	. . .	0.18	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3146	7.0	5.2	18 49	(—0.1)	0.19	F_5	. . .	. . .	. . .	*1.1*	. . .	
3147	4.8	5.5	9 44	2.8	0.23	Fop		See	table	I		

*3110. Spectrum composite. Colour of the K_0 component assumed $C = 1.01$±. *3111. In *G. A.*, **B**, *for* $14^0 4469$ *read* $14^0 4479$. *3117/18. Double, $d = 15''$, $\Delta m = 1.3$. *3120. Double, $d = 0.''3$, $\Delta m = 0.5$. *3126. Optical companion, $d = 45''$, $\Delta m = 3.2$. *Mt. W.* 0.3. The corrected colour of the brighter component is given. *3127. Double, $d = 2.''6$, $\Delta m = 0.0$. *3142. Double, $d = 0.''4$, $\Delta m = 1.5$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
3232	7.1	21 35.8	3 25	. . .	1.23	K_5	. . .	. . .	(1.4)	. . .	. . .	
3233	7.1	36.0	4 33	. . .	0.00	A_5	. . .	. . .	. . .	*1.2*	. . .	
3234	5.8	37.1	0 50	—1.9	1.44	K_5	K_2	(1.0)	0.6	. . .	—1.3	
3235	7.5	37.1	4 22	. . .	0.76	K_2	. . .	. . .	(3.3)	. . .	. . .	
3236	5.6	37.3	5 13	—1.2	1.66	Ma	Ma	. . .	0.6	. . .	0.6	*
3237	6.0	37.7	10 23	. . .	—0.19	B_8	. . .	. . .	. . .	—0.6	. . .	
3238	6.7	38.7	7 5	2.4	0.88	K_0	. . .	. . .	1.3	1.6	. . .	
3239	7.4	38.8	19 10	(3.5)	0.00	F_0	. . .	. . .	. . .	*2.4*	. . .	
3240	2.5	39.3	9 25	—4.1	1.69	K_0		See	table	I		
3241	6.1	39.7	14 20	4.5	0.41	G_0	. . .	. . .	4.3	4.2	. . .	
3242	4.5	39.8	16 54	—1.7	1.16	G_5		See	table	I		
3243	7.3	40.8	7 33	. . .	0.74	G_5	. . .	. . .	((1.2))	(1.0)	. . .	
3244	6.6	42.0	13 15	. . .	0.07	A_3	. . .	. . .	. . .	*1.1*	. . .	
3245	5.5	42.2	2 13	—1.7	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
3246	6.2	42.3	16 45	2.6	0.16	F_0	. . .	. . .	. . .	*2.3*	. . .	
3247	7.2	44.6	15 18	—0.2	0.51	K_0	. . .	. . .	((3.9))	4.0	. . .	
3248	6.2	44.8	20 1	—0.9	—0.23	B_3	. . .	. . .	—1.5	. . .	. . .	
3249	5.3	45.4	16 50	1.9	0.24	F_2	A_8	1.4	. . .	*2.2*	. . .	
3250	7.1	45.4	18 58	. . .	—0.10	A_5	. . .	. . .	. . .	*1.2*	. . .	
3251	8.0	46.2	9 54	. . .	0.10	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
3252	7.6	46.8	11 34	. . .	—0.08	A_3	. . .	. . .	. . .	*1.1*	. . .	
3253	5.7	46.9	19 21	0.6	—0.18	B_9	. . .	. . .	. . .	—0.6	. . .	
3254	6.8	47.0	18 51	2.9	0.22	F	. . .	. . .	. . .	*2.2*	. . .	
3255	6.9	47.0	10 39	. . .	—0.07	A_5	. . .	. . .	. . .	*1.2*	. . .	
3256	7.3	48.2	15 27	3.2	0.96	K_2	. . .	. . .	(2.7)	. . .	. . .	
3257	5.8	48.9	19 12	—0.7	—0.13	A_0	. . .	. . .	. . .	—0.1	. . .	
3258	6.6	49.0	6 23	. . .	0.52	G_0	. . .	. . .	4.7	(2.0)	. . .	
3259	7.5	49.0	19 56	. . .	0.82	K_0	. . .	. . .	((2.1))	. . .	. . .	
3261	6.7	49.6	12 17	. . .	—0.21	B_9	. . .	. . .	. . .	—0.4	. . .	
3262	6.3c	49.6	19 14	1.9c	0.63	K_0	. . .	. . .	0.9c	1.0c	. . .	*
3263	8.1	49.7	20 0	. . .	0.25	G_5	. . .	. . .	. . .	. . .	. . .	
3264	7.1	50.6	1 53	. . .	—0.03	A_2	. . .	. . .	. . .	0.4	. . .	*
3265	5.6	52.1	11 37	0.5	—0.07	A_2	A_{0n}	0.7	. . .	0.3	. . .	
3266	7.3	52.3	17 12	. . .	1.26	K_5	. . .	. . .	(1.3)	. . .	. . .	
3267	7.0	52.5	3 42	. . .	0.21	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
3268	7.3	52.8	9 58	. . .	0.35	G_0	. . .	. . .	4.0	(2.4)	. . .	
3269	7.3	53.0	19 50	3.1	—0.24	A_0	. . .	. . .	. . .	0.4	. . .	
3270/1	6.6c	53.0	5 28	. . .	0.17c	A_2	. . .	. . .	. . .	0.6c	. . .	*
3272	7.3	53.1	19 23	. . .	0.10	A_2	. . .	. . .	. . .	. . .	. . .	
3273	7.1	53.5	3 18	6.1	0.30	F_8	G_0	. . .	*d*	4.6	4.0	
3274	6.7	53.6	13 33	. . .	1.32	K_2	. . .	. . .	1.4	. . .	. . .	

*3236. *Mt. W.* —0.3. *3262. Common proper motion pair, $d = 22''$, $\Delta m = 1.7$. Colour of A assumed $C = 0.92\pm$. *3264. In *H. A.* **54**, *for D. M.* 4650 *read* 4560. *3270/1. Double, $d = 10''$, $\Delta m = 0.4$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3275	6.6	21 54.2	18 33	3.0	0.84	K_0	. . .	. . .	1.6	1.9	. . .	
3276	7.3	54.6	10 7	. . .	1.46	K_5	. . .	. . .	(0.5)	. . .	. . .	
3277	6.0	55.1	6 15	—3.0	—0.18	B_3	B4s	--1.2	—1.3	. . .	. . .	*
3278	5.8	56.2	7 46	—1.0	1.43	K_2	K_4	(1.0)	0.4	. . .	0.2	
3279	5.7	56.2	12 38	1.8	0.22	F_2	F_3	2.3	. . .	*2.2*	. . .	
3280	6.4	57.1	10 29	. . .	—0.22	B_8	. . .	. . .	. . .	—0.9	. . .	
3281	6.7	57.8	15 31	0.6	—0.19	A_0	. . .	. . .	. . .	0.0	. . .	
3282	7.2	58.1	15 18	. . .	0.20	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3284	7.6	58.4	18 24	. . .	0.29	F_8	. . .	. . .	*d*	(3.5)	. . .	
3285	5.8	58.4	10 55	—1.1	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
3286	7.0	59.5	13 10	. . .	0.26	F_5	. . .	. . .	. . .	(*2.2c*)	. . .	*
3287	7.0	59.6	9 45	0.8	0.77	K_0	. . .	. . .	((2.9))	0.8	. . .	
3288	6.7	22 0.2	14 20	. . .	1.48	Ma	. . .	. . .	0.0	. . .	. . .	
3289	7.5	0.3	12 7	. . .	—0.20	A_0	. . .	. . .	. . .	0 1	. . .	
3290	7.6	0.4	14 0	. . .	(1.05)	K_2	. . .	. . .	(2.0)	. . .	. . .	
3291	4.9	0.6	4 34	2.1	1.57	K_5		See	table	I		
3292	7.6	0.7	5 30	. . .	(1.02)	K_0	. . .	. . .	(0 8)	. . .	. . .	
3293	7.1	1.3	9 36	(—0.8)	0.11c	A_2	. . .	. . .	. . .	0.3	. . .	*
3294	7.6	1.6	4 43	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
3295	6.5	1.6	1 57	. . .	—0.19	B_9	. . .	. . .	. . .	—0.7	. . .	
3296	7.2	1.7	11 58	. . .	0.19	A_2	. . .	. . .	. . .	1.2	. . .	
3297	7.6	1.9	16 16	. . .	0.29	A_3	. . .	. . .	. . .	*1.1*	. . .	
3298	7.3	2.1	11 16	. . .	(1.42)	Ma	. . .	. . .	(—0.9)	. . .	. . .	
3299	7.0	2.6	9 11	. . .	—0.18	B_9	. . .	. . .	. . .	—0.8	. . .	
3300	5.8	2.7	19 0	3.1	0.19	F_0	F_1	2.6	. . .	*2.4*	. . .	
3301	6.4	2.7	17 32	1.5	1.64	Ma	. . .	. . .	0.8	. . .	. . .	
3302	7.6	3.1	12 34	. . .	0.19	A_5	. . .	. . .	. . .	*1.2*	. . .	
3303	7.0	3.4	17 4	. . .	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
3304	6.6	4.1	2 14	. . .	—0.05	A_0	. . .	. . .	. . .	0.3	. . .	
3305	7.6	5.0	3 35	(4.0)	0.38	G_0	. . .	. . .	4.1	4.1	. . .	
3307	6.4	5.5	14 8	. . .	0.99	K_0	. . .	. . .	0.8	(0.7)	. . .	
3308	6.1	5.6	19 8	2.8	0.68	G_0	. . .	. . .	(0.5)	3.0	. . .	
3309	5.9	5.8	11 8	. . .	1.69	K_5	. . .	. . .	—0.3	. . .	. . .	
3310	6.1	7.0	15 33	—0.7	0.86	K_0	K_0	. . .	1.4	0.7	(2.4)	
3311	7.0	7.2	2 14	. . .	0.21	F_0	. . .	. . .	. . .	(*2.1*)	. . .	
3312	6.6	8.4	17 48	2.0	1.31	K_2	. . .	. . .	1.5	. . .	. . .	
3313	6.6	9.5	7 29	. . .	—0.18	A_0	. . .	. . .	. . .	0.0	. . .	
3314	6.6	9.5	16 42	3.6	1.17	K_2	. . .	. . .	1.6	. . .	. . .	*
3315	7.1	9.8	3 46	—0.8	0.89	K_0	. . .	. . .	1.2	0.6	. . .	
3316	7.4	10.6	3 47	. . .	0.15	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
3317	6.0	11.0	8 3	. . .	—0.03	A_0	. . .	. . .	. . .	0.5	. . .	

*3277. $M = -1.2$ (Edwards). *3286. Double, $d = 3''$, $\Delta m = 0.3$. *3293. Double, $d = 20''$, $\Delta m = 1.7$. *3314. Optical companion, $d = 12''$, $\Delta m = 3.2$. Colour of A assumed C = 1.30.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3148	6.0	21 5.7	9 38	—0.5	—0.10	A_2	. . .	. . .	. . .	—0.2	. . .	
3149	7.5	6.0	19 33	2.1	0.11	F_5	. . .	. . .	. . .	*2.3*c	. . .	*
3150	7.8	6.0	3 30	. . .	(0.81)	K_2	. . .	. . .	(3.2)	. . .	. . .	
3151	7.7	6.1	9 8	. . .	—0.07	A_3	. . .	. . .	. . .	*0.4*c	. . .	*
3152	8.2	7.2	18 58	. . .	—0.19	A_0	. . .	. . .	. . .	0.0	. . .	*
3153	7.3	7.4	17 21	8.8	0.27	F_5	F_4	4.0	. . .	*4.8*	. . .	
3154	7.2	7.4	11 22	. . .	1.24	K_5	. . .	. . .	(1.3)	. . .	. . .	
3155	7.0	7.7	2 15	. . .	—0.08	A_2	. . .	. . .	. . .	0.2	. . .	
3156	7.4	8.5	6 48	. . .	0.01	F_0	. . .	. . .	. . .	(*2.2*)	. . .	*
3157	7.4	8.6	16 32	. . .	1.07	K_2	. . .	. . .	(2.4)	. . .	. . .	*
3158	6.2	8.8	15 34	0.6	0.12	A_5	. . .	. . .	. . .	*0.2*c	. . .	*
3159	4.6	9.6	9 36	3.7	0.36	F_5		See	table	I		
3160	7.9	9.8	17 15	. . .	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
3161	6.7	10.1	16 4	. . .	0.12	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
3163	4.1	10.8	4 50	1.2b	0.34	F_8+A_3		See	table	I		
3164	7.4	11.0	11 5	. . .	0.63	K_0	. . .	. . .	((4.0))	(2.4)	. . .	
3165	6.9	11.0	16 19	4.0	1.04	K_0	. . .	. . .	0.8	(2.4)	. . .	
3166	7.7	11.2	10 17	. . .	0.98	K_5	. . .	. . .	(2.2)	. . .	. . .	
3167	7.3	11.3	19 17	. . .	—0.07	A_2	. . .	. . .	. . .	0.2	. . .	
3168	7.7	11.8	4 52	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
3169	7.4	12.2	13 32	. . .	—0.24	B_8	. . .	. . .	. . .	—1.0	. . .	
3170	7.6	13.1	19 36	. . .	0.66	K_0	. . .	. . .	((4.0))	. . .	. . .	
3171	7.7	13.3	17 13	2.6	0.09	A_2	. . .	. . .	. . .	1.6	. . .	
3172	7.3	13.4	9 50	. . .	0.72	K_0	. . .	. . .	((3.4))	(0.7)	. . .	
3173	7.6	13.8	17 18	—1.1	0.75	K_5	K_1	(1.5)	(2.7)	(0.3)	(5.7)	
3174	7.0	13.8	11 9	(2.6c)	0.47	G_0	. . .	. . .	4.5c	2.8c	. . .	*
3175	7.6	13.9	17 34	—0.3	—0.05	F_5	F_4	3.5	. . .	*1.0*	. . .	
3176	6.3	14.0	10 47	0.3	1.52	K_5	. . .	. . .	0.3	. . .	. . .	
3177	6.6	14.5	17 24	2.9	0.17	F_2	. . .	. . .	. .	*2.2*	. . .	
3178	6.9	14.8	9 6	. . .	0.04	A_2	. . .	. . .	. . .	0.9	. . .	*
3179	7.3	15.3	12 33	. . .	1.26	K_5	. . .	. . .	(1.3)	. . .	. . .	
3180	7.5	15.6	16 23	3.7	0.20	F_8	. . .	. . .	*d*	4.0	. . .	
3181	6.0	16.1	6 57	0.7	1.73	K_5	M_a	—1.4	—0.4	. . .	—0.1	*
3182	6.9	16.5	9 55	. . .	0.31	F_5	. . .	. . .	. . .	(*2.1*c)	. . .	*
3183	6.8	16.8	0 57	. . .	0.11	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3184	6.9	17.0	3 55	—2.1	0.85	K_0	. . .	. . .	1.5	0.5	. . .	
3185	4.2	17.5	19 22	1.1	1.03	K_0		See	table	I		
3186	6.6	17.6	2 30	. . .	0.49	F_8	. . .	. . .	. . .	. . .	. . .	
3187	5.1	17.9	6 23	1.0	0.01	A_0	A_{2s}	1.0	. . .	1.3	. . .	
3188	7.6	18.4	16 4	. . .	[1.35]	K_5	K_4	(1.1)	(0.9)	. . .	0.9	

*3149. Double, $d = 2.''5$, $\Delta m = 0.4$. *3151. Double, $d = 3''$, $\Delta m = 0.2$. *3152. In *G. A.* **B**, right ascension misprinted. *3156. Double, $d = 0.''6$, $\Delta m = 2.3$. *3157. Double, $d = 2.''5$, $\Delta m = 4.3$. *3158. Double, $d = 0.''2$, $\Delta m = 0.0$. *3174. Double, $d = 1.''2$, $\Delta m = 1.9$. *3178. Double, $d = 2.''5$, $\Delta m = 1.1$. *3181. *Mt. W.*' 0.0. *3182. Double, $d = 0.''2$, $\Delta m = 0.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
3189	6.7	21 18.8	13 37	. . .	—0.28	B_{5p}	. . .	. . .	—1.3	. . .	. . .	
3190	6.4	19.6	9 45	2.9	0.34	F_5	F_{3n}	—0.4	. . .	*2.8*	. . .	
3191	7.5	20.5	18 2	. . .	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
3192	7.0	21.1	15 11	2.5	1.41	K_2	. . .	. . .	0.6	. . .	. . .	
3193	6.4	21.4	0 41	4.4	0.08	F_5	. . .	. . .	. . .	*3.4*	. . .	
3194	6.8	21.4	17 38	. . .	—0.14	A_0	. . .	. . .	. . .	0.0	. . .	
3195	7.7	21.5	9 43	. . .	0.69	G_5	. . .	. . .	((1.8))	. . .	. . .	
3196	6.1	21.8	18 57	2.7	—0.02	A_3	A_5	2.7	. . .	*1.6*	. . .	
3197	7.1	21.9	13 16	. . .	0.06	A_2	. . .	. . .	. . .	0.8c	. . .	*
3198	7.0	22.1	10 15	. . .	0.15	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3199	6.7	22.3	4 58	3.8	0.14	F_0	. . .	. . .	. . .	*2.5*	. . .	
3200	6.8	22.4	15 40	4.1	0.34	F_8	. . .	. . .	*d*	3.8	. . .	
3201	7.4	23.0	2 45	. . .	0.32	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
3202	6.7	23.5	7 46	0.4	1.63	Ma	. . .	. . .	0.9	. . .	. . .	
3203	6.7	24.0	10 40	. . .	0.21	F_2	. . .	. . .	. . .	(*1.5c*)	. . .	*
3204	6.4	24.3	17 28	0.6	1.34	K_5	. . .	. . .	0.9	. . .	. . .	
3205	7.4	24.4	11 31	. . .	1.07	K_2	. . .	. . .	(2.4)	. . .	. . .	
3206	6.7	24.6	6 9	. . .	1.07	K_0	. . .	. . .	0.7	(1.3)	. . .	
3207	7.2	25.5	18 9	. . .	0.15	A_5	. . .	. . .	. . .	*1.2*	. . .	
3208	7.0	26.3	3 23	. . .	0.00	A_3	. . .	. . .	. . .	*1.1*	. . .	
3209	5.9	26.3	11 42	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
3210	7.1	27.4	10 28	. . .	—0.21	A_0	. . .	. . .	. . .	0.2	. . .	
3211	7.3	27.5	4 26	. . .	0.09	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
3212	7.4	28.2	12 5	. . .	1.15	K_5	. . .	. . .	(1.7)	. . .	. . .	
3213	6.6	30.1	17 54	0.9	1.09	K_2	. . .	. . .	2.3	. . .	. . .	
3214	7.1	30.2	19 29	(1.7)	0.64	K_0	. . .	. . .	((4.0))	(2.0)	. . .	
3215	7.4	30.3	0 32	. . .	0.27	F_8	. . .	. . .	*d*	(3.0)	. . .	
3216	7.7	31.0	5 38	. . .	0.12	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
3218	6.7	31.4	14 39	3.7	0.70	G_5	. . .	. . .	((1.7))	3.2	. . .	
3219	7.6	31.9	5 22	5.0	0.33	F_8	. . .	. . .	*d*	4.2	. . .	
3221	7.2	32.3	11 16	2.0	—0.11	A_0	. . .	. . .	. . .	0.6	. . .	
3222	7.3	32.4	19 21	(3.6)	0.72	K_0	. . .	. . .	((3.4))	(2.0)	. . .	
3223	6.9	32.5	4 15	(>2.3)	0.01	A_5	. . .	. . .	. . .	*1.5*	. . .	
3224	6.0	32.7	6 10	1.8	0.13c	A_0	. . .	. . .	. . .	(1.1c)	. . .	*
3225	7.5	33.0	14 46	. . .	0.73	K_0	. . .	. . .	((3.4))	. . .	. . .	
3226	5.3	33.1	18 52	2.0	0.28	F_0	A_{2n}	1.4	. . .	*2.2*	. . .	
3227	5.8	33.6	5 19	3.0	0.10	F_0	. . .	. . .	. . .	*2.4*	. . .	
3228	5.8	34.4	19 50	3.1	0.15	F_0	A_{4n}	2.0	. . .	*2.4*	. . .	
3229	5.3	34.5	1 49	1.5	0.89	K_0	G_9	1.1	1.3	1.0	1.8	
3230	6.8	35.1	8 44	. . .	0.02	A_0	. . .	. . .	. . .	1.5	. . .	
3231	7.1	35.7	10 11	. . .	0.91	K_0	. . .	. . .	1.1	(0.8)	. . .	

*3197. Double, $d = 3.''2$, $\Delta m = 1.5$. *3203. Double, $d = 1.''4$, $\Delta m = 0.0$. *3224. Common proper motion pair, $d = 39''$, $\Delta m = 1.3$; the companion is probably red, because in *H. D.* it shows no trace of spectrum.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
3318	7.0	22 11.1	11 16	. . .	—0.11	B_9	. . .	. . .	. . .	—0.8	. . .	
3319	7.5	11.8	12 27	. . .	(0.80)	K_0	. . .	. . .	((2.5))	. . .	. . .	
3320	6.9	12.2	12 24	8.0	0.52	G_0	G_1	5.7	4.7	5.5	4.8	
3321	7.2	12.4	14 33	. . .	0.84	K_0	. . .	. . .	1.6	(0.9)	. . .	
3322	7.0	13.2	13 27	. . .	0.79	K_0	. . .	. . .	((2.6))	(0.8)	. . .	
3323	7.0	14.0	19 28	2.3	1.08	K_2	. . .	. . .	2.4	. . .	. . .	
3324	6.9	14.0	15 45	. . .	—0.06	A_0	. . .	. . .	. . .	0.2	. . .	
3325	7.8	14.5	13 35	. . .	0.05	A_2	. . .	. . .	. . .	1.0	. . .	
3326	7.2	14.6	15 3	. . .	(1.44)	K_5	. . .	. . .	(0.6)	. . .	. . .	
3327	5.4	15.4	5 17	—0.4	—0.13	B_5	B_{6s}	—1.0	—0.8	. . .	. . .	*
3328	6.6	15.8	13 32	. . .	0.82	K_0	. . .	. . .	((2.1))	(0.8)	. . .	
3329	6.2	16.0	7 40	. . .	0.29	F_5	F_3	3.6	. . .	(*2.8*)	. . .	
3330	6.9	16.6	13 53	. . .	0.10	A_3	. . .	. . .	. . .	*1.1*	. . .	*
3331	4.9	16.6	11 44	—4.1	—0.20	B_{3p}		See	table	I		
3332	6.7	17.2	15 9	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
3333	7.5	18.6	17 9	. . .	(1.02)	K_2	. . .	. . .	(2.5)	. . .	. . .	
3334	6.7	19.2	14 46	. . .	—0.20	A_0	. . .	. . .	. . .	0.1	. . .	
3335	7.1	19.6	15 48	. . .	0.18	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3336	4.6	20.2	0 52	—3.5	—0.13	B_{1p}		See	table	I		
3337	6.4	20.9	17 57	0.0	1.10	K_0	. . .	. . .	0.7	1.1	. . .	
3338	5.8	21.5	3 53	4.6	0.29	G_0	F_7	3.8	(3.7)	3.9	. . .	
3339	4.9	22.8	4 12	3.8	1.13	K_0		See	table	I		
3340	7.2	23.2	11 45	4.8	0.78	K_0	. . .	. . .	((2.7c))	(2.4c)	. . .	*
3341	7.5	23.4	16 45	0.2	0.67	K_0	K_0	2.2	((3.4))	1.0	(5.2)	*
3342	5.8	24.1	8 37	1.1	1.71	K_2	K_6	—1.4	—1.5	. . .	—0.7	*
3343	5.5	25.0	3 55	2.9	0.16	F_5	F_1	1.4	. . .	*2.5c*	. . .	*
3344	6.6	27.7	12 31	. . .	0.17	F_2	. . .	. . .	. . .	(*2.2*)	. . .	
3345	6.3	27.8	19 43	3.9	0.20	F_0	. . .	. . .	. . .	*2.5*	. . .	
3346	6.4	27.9	15 20	—2.8	1.14	K_0	. . .	. . .	0.6	0.4	. . .	
3347	7.7	29.5	12 53	. . .	[1.00]	K_0	. . .	. . .	(0.8)	. . .	. . .	
3348	7.7	30.3	14 5	. . .	[0.65]	K_2	. . .	. . .	((4.0))	. . .	. . .	*
3349	6.7	31.0	19 46	3.4	0.89	K_0	. . .	. . .	1.2	(2.3)	. . .	
3350	6.4	31.7	11 12	. . .	—0.10	A_0	. . .	. . .	. . .	0.0	. . .	
3351	7.3	31.8	12 39	. . .	(1.14)	K_5	. . .	. . .	(1.7)	. . .	. . .	
3352	6.5	32.2	12 4	. . .	1.30	K_5	. . .	. . .	1.1	. . .	. . .	
3353	7.7	33.4	8 44	. . .	[0.67]	K_2	. . .	. . .	((3.8))	. . .	. . .	
3354	6.9	33.8	4 1	. . .	—0.06	A_3	. . .	. . .	. . .	*1.1*	. . .	
3355	5.8	34.1	19 2	2.4	0.82	G_5	G_5	0.2	0.8	0.5	(1.5)	
3356	6.1	35.0	19 10	—0.5	—0.06	A_0	A	0.8	. . .	0.2	. . .	
3357	7.0	35.4	4 3	4.1	0.87	K_0	. . .	. . .	1.4	(2.6)	. . .	
3358	7.2	35.7	19 32	. . .	0.19	F_2	. . .	. . .	. . .	(*2.2*)	. . .	

*3327. $M = -0.9$ (Edwards). *3330. In *G. A.*, **A**, *for* 13° 4894 *read* 13° 4898. *3340. Double, $d = 1.''2$, $\Delta m = 3.0$. *3341. Double, $d = 9''$, $\Delta m = 1.7$. Colour of A assumed $C = 0.77\pm$. *3342. *Mt. W.*' —0.1. *3343. Double, $d = 1''$, $\Delta m = 0.6$. *3348. Double, $d = 0.''8$, $\Delta m = 3.5$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3359	5.8	22 35.9	14 1	4.5	0.71	G_5	G_4	4.5	((0.9c))	3.5c	(0.9c)	*
3360	7.7	36.2	14 58	. . .	[0.57]	K_0	. . .	. . .	((4.0))	. . .	. . .	
3362	6.1	37.0	14 0	2.3	1.06	K_0	. . .	. . .	0.7	1.3	. . .	
3363	7.5	37.3	4 38	. . .	—0.06	A_3	. . .	. . .	. . .	*1.1*	. . .	
3364	7.3	37.8	4 26	0.8	(1.16)	K_2	. . .	. . .	(1.7)	. . .	. . .	
3365	6.9	37.9	0 41	. . .	0.03	A_3	. . .	. . .	. . .	*1.1*	. . .	
3366	6.4	38.8	10 26	. . .	0.40	F_5	. . .	. . .	. . .	(*2.2*)	. . .	
3367	7.5	38.8	3 21	6.9	0.20	F_8	. . .	. . .	*d*	4.0	. . .	
3368	7.7	39.0	6 13	. . .	0.19	F_5	. . .	. . .	. . .	(*2.2*)	. . .	
3369	7.6	39.6	13 46	. . .	(0.77)	K_0	. . .	. . .	((2.9))	. . .	. . .	
3370	6.4	40.6	18 50	1.6	0.98	K_0	K_0	0.0	0.8	0.9	1.5	
3371	6.8	41.4	7 4	1.9	0.20	F_2	. . .	. . .	. . .	*2.2*	. . .	
3372	4.3	41.7	11 40	4.5	0.34	F_5		See	table	I		
3373	7.8	41.8	14 28	. . .	(0.50)	K_0	. . .	. . .	((3.9))	. . .	. . .	
3374	7.1	42.4	13 38	. . .	1.06	K_2	. . .	. . .	(2.4)	. . .	. . .	
3376	7.4	43.9	3 46	3.8	0.12	F_5	. . .	. . .	. . .	*3.1*	. . .	
3377	6.5	44.5	9 58	. . .	0.19	F_0	. . .	. . .	. . .	(*2.0*)	. . .	
3378	7.2	45.6	3 32	(3.1)	(0.93)	K_0	. . .	. . .	1.0	(2.0)	. . .	
3379	6.5	45.8	18 36	0.0	0.99	K_0	. . .	. . .	0.8	0.5	. . .	
3380	7.4	46.0	17 28	. . .	0.41	G_5	. . .	. . .	(3.9)	(2.5)	. . .	
3382	7.2	46.6	4 15	. . .	0.15	F_0	. . .	. . .	. . .	(*2.1*)	. . .	
3383	6.9	46.8	14 34	. . .	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
3384	5.3	47.3	9 19	5.3	0.40	F_5	F_4	3.3	. . .	*4.0*	. . .	
3385	6.7	47.4	9 53	. . .	0.22	F_5	. . .	. . .	. . .	(*2.8*)	. . .	
3386	6.9	47.5	3 2	. . .	—0.13	A_0	. . .	. . .	. . .	0.0	. . .	
3387	7.3	47.6	9 41	5.0	0.24	F_5	. . .	. . .	. . .	*3.8*	. . .	
3388	5.7	48.1	16 19	—0.4	1.23	K_0	K_1	0.7	0.2	0.6	0.0	
3389	7.1	49.3	19 21	4.6	0.21	F_8	. . .	. . .	*d*	4.0	. . .	
3390	6.7	49.4	17 16	. . .	0.83	K_0	. . .	. . .	1.8	(0.8)	. . .	
3391	6.5	49.7	16 24	. . .	(1.76)	Mb	Mb	—1.2	—0.7	. . .	—0.7	
3392	6.0	49.9	0 32	—0.4	0.02	A_3	. . .	. . .	. . .	*0.6*	. . .	
3394	5.0	50.2	8 17	1.2	—0.11	A_0		See	table	I		
3395	6.5	51.9	11 18	. . .	0.06c	A_3	. . .	. . .	. . .	*0.8*c	. .	*
3397	7.8	52.2	13 29	. . .	0.29	F_0	. . .	. . .	. . .	(*2.2*)	. . .	
3398	6.4	52.5	3 16	1.4	1.02	K_2	. . .	. . .	2.5	. . .	. . .	
3399	5.6	52.6	20 14	3.5	0.51	G_0	G_4	4.4	4.8	3.8	(5.2)	
3400	6.5	53.5	8 50	6.0c	0.54	G_0	G_0	3.5c	3.8c	4.0c	3.1c	*
3401	6.3	53.7	6 49	. . .	—0.08	A_0	. . .	. . .	. . .	0.1	. . .	
3402	5.8	54.2	11 11	0.9	0.12	F_0	. . .	. . .	. . .	*1.7*c	. . .	*
3403	7.3	54.3	3 50	3.8	0.21	F_5	. . .	. . .	. . .	*3.1*	. . .	
3404	5.6	54.4	0 26	2.0	0.86	K_0	K_1	1.7	1.4	1.2	(4.8)	

*3359. Double, $d = 0''.5$, $\Delta m = 0.5$. *3395. Double, $d = 4''$, $\Delta m = 2.2$. *3400. Double, $d = 0''.4$, $\Delta m = 0.1$. *3402. Double, $d = 0''.9$, $\Delta m = 1.0$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3405	7.0	22 55.0	4 36	. . .	(1.03)	K_0	. . .	. . .	0.8	(1.0)	. . .	
3406	6.0	55.6	2 29	1.8	1.29	K_0	. . .	. . .	—0.2	0.6	. . .	
3407	7.2	56.4	14 21	. . .	0.80	K_0	. . .	. . .	((2.5))	(0.8)	. . .	
3408	7.1	56.6	3 55	4.2	0.28	G_0	. . .	. . .	(3.6)	3.7	. . .	
3409	6.5	56.7	3 0	. . .	0.78	G_5	. . .	. . .	((1.0))	(0.7)	. . .	
3410	7.2	57.0	19 17	. . .	[1.40]	K_2	. . .	. . .	(0.7)	. . .	. . .	
3411	6.7	57.7	15 42	0.7	1.00	K_0	. . .	. . .	0.8	0·9	. . .	
3412	4.6	58.8	3 16	—3.0	—0.32	B_{5p}		See	table	I		
3413	6.3	59.0	6 5	. . .	0.29	F_2	. . .	. . .	. . .	*(2.2)*	. . .	
3415	6.4	23 0.2	0 46	. . .	0.71	K_0	G_8	1.8	((3.5))	(0.5)	(3.6)	
3416	6.4	0.2	16 2	4.9	0.65	K_0	G_9	2.8	((4.0))	4.0	(5.6)	
3417	7.2	0.7	19 42	. . .	0.40	F_5	. . .	. . .	. . .	*(2.8)*	. . .	
3418	7.6	1.3	18 27	. . .	(0.78)	K_0	. . .	. . .	((2.8))	. . .	. . .	
3419	6.1	1.3	17 59	4.5	0.30	F_2	F_3	3.6	. . .	*2.2*	. . .	
3420	6.4	1.6	19 21	5.1	0.38	F_8	. . .	. . .	*d*	4.2	. . .	
3421	4.7	2.0	8 52	—3.3	1.66	Ma		See	table	I		
3422	6.7	2.5	20 3	1.4	0.90	K_0	. . .	. . .	0.9	0.8	. . .	*
3423	5.6	3.6	1 34	3.1	0.70	G_5	. . .	. . .	((1.7))	(2.7)	. . .	
3424	7.5	3.8	10 24	. . .	0.22	F_5	. . .	. . .	. . .	*(2.1c)*	. . .	*
3425	6.6	4.4	18 11	. . .	—0.19	B_9	. . .	. . .	. . .	—0.7	. . .	
3426	5.4	4.5	8 8	—5.6	1.54	Mb		See	table	II		
3427	5.3	5.0	9 17	—0.8	—0.11	B_8	B_{8n}	0.4	. . .	0.0	. . .	
3428	7.2	5.1	6 50	. . .	—0.17	B_9	. . .	. . .	. . .	—1.0	. . .	
3429	5.9	5.8	17 3	—0.2	1.24	K_5	. . .	. . .	1.3	. . .	. . .	
3430	6.8	6.2	4 28	—2.7	1.31	Mb	. . .	. . .	—1.1	. . .	. . .	
3431	5.2	6.7	8 11	—1.7	0.02	A_3	A_{0n}	0.8	. . .	*0.4*	. . .	
3432	5.9	8.4	10 31	—4.8	0.89	K_0	. . .	. . .	0.8	—0.2	. . .	*
3433	7.6	8.8	14 50	. . .	0.23	G_0	. . .	. . .	(3.0)	. . .	. . .	
3434	6.9	8.9	4 27	. . .	—0.31	B_2	. . .	. . .	—2.7	. . .	. . .	
3435	6.6	9.0	19 5	—1.7	1.14	K_2	. . .	. . .	2.2	. . .	. . .	
3436	7.8	9.3	19 13	. . .	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
3437	7.2	9.6	19 53	. . .	0.94	K_2	. . .	. . .	(2.8)	. . .	. . .	
3438	8.0	10.4	5 38	. . .	[0.56]	K_0	. . .	. . .	((4.0))	. . .	. . .	
3439	3.8	11.9	2 44	4.5	0.68	K_0		See	table	I		
3440	6.7	12.7	17 45	2.9	0.22	F_0	. . .	. . .	. . .	*2.1c*	. . .	*
3441	7.1	14.8	7 26	. . .	0.91	K_0	. . .	. . .	1.1	(0.8)	. . .	
3442	5.2	15.3	4 50	1.5	1.15	K_0	. . .	. . .	0.6	1.3	. . .	
3443	7.1	15.7	19 17	. . .	0.05	A_3	. . .	. . .	. . .	*1.1*	. . .	
3444	7.6	15.8	14 31	. . .	—0.05	A_2	. . .	. . .	. . .	0.3	. . .	
3445	6.6	16.0	16 42	2.4	0.20	F_0	. . .	. . .	. . .	*2.3*	. . .	

*3422. Double, $d = 14''$, $\Delta m = 3.7$. Colour of A assumed $C = 0.96$. *3424. Double, $d = 0.''2$, $\Delta m = 0.2$. *3432. Companion at $d = 34''$, $\Delta m = 3.1$. Colour of A assumed $C = 0.99$. *3440. Double, $d = 0.''3$, $\Delta m = 1.4$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
3447	6.6	23 17.8	20 1	5.5	0.56	G_0	G_1	. . .	4.4	4.5	4.3	
3448	5.3	18.0	11 46	—1.0	1.31	K_0	K_4	0.8	—0.4	0.0	1.2	
3449	7.7	21.1	8 22	. . .	[1.08]	K_0	. . .	. . .	(0.7)	. . .	. . .	
3450	7.1	21.4	8 7	5.2	0.45	G_0	. . .	. . .	4.6	4.2	. . .	
3451	4.9	21.8	0 43	2.3	—0.13	A_{2p}		See	table	I		
3452	6.4	22.1	0 34	1.4	0.81	K_0	K_0	0.3	((2.3))	1.0	(3.6)	
3453	4.4	22.9	5 50	1.5	0.96	G_5		See	table	I		
3454	6.7	23.4	19 21	—0.2	0.10	F_0	. . .	. . .	. . .	*1.9*	. . .	
3455	7.0	24.0	15 28	—1.1	—0.08	A_2	. . .	. . .	. . .	—0.4	. . .	
3456	4.7	24.1	12 12	—0.1	0.91	K_0		See	table	I		
3457	7.3	25.1	4 28	. . .	0.84	K_0	. . .	. . .	1.6	(0.8)	. . .	
3458	7.3	25.5	16 0	. . .	0.75	G_5	. . .	. . .	((1.1))	(1.0)	. . .	
3459/60	7.1c	25.6	4 41	. . .	0.09c	A_3	. . .	. . .	. . .	*1.1*	. . .	*
3461	7.4	26.1	18 14	0.1	0.15	A_3	. . .	. . .	. . .	*0.5c*	. . .	*
3462	6.8	27.1	6 32	3.2	0.32	F_5	. . .	. . .	. . .	*2.6c*	. . .	*
3463	7.1	27.4	16 52	—0.3	0.21	F_2	. . .	. . .	. . .	*2.2*	. . .	*
3464	6.7	28.5	17 16	5.2	0.62	G_0	. . .	. . .	(2.8)	4.3	. . .	
3465	7.4	30.2	10 24	. . .	0.95	K_0	. . .	. . .	0.9	(0.8)	. . .	
3466	6.9	30.4	7 58	. . .	[1.49]	K_5	. . .	. . .	0.4	. . .	. . .	
3467	6.6	30.4	0 46	1.4	0.91	K_0	K_4	0.0	1.1	0.9	3.1	
3468	7.3	30.5	7 50	. . .	0.19	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
3469	5.6	31.3	1 33	2.6	0.21	F_5	. . .	. . .	. . .	*2.7*	. . .	
3470	6.2	32.6	16 16	3.5	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
3471	5.4	32.9	17 52	0.9	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
3472	7.3	33.2	20 2	. . .	0.25	F_2	. . .	. . .	. . .	*2.2*	. . .	
3473	6.1	34.8	9 7	. . .	0.01	A_2	. . .	. . .	. . .	0.7	. . .	
3474	4.3	34.8	5 6	4.6	0.35	F_8		See	table	I		
3475	7.3	35.2	17 40	. . .	0.83	K_0	. . .	. . .	1.8	(0.8)	. . .	
3476	5.8	36.9	6 42	. . .	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
3477	4.6	37.0	1 14	2.8	—0.04	A_5		See	table	I		
3478	7.6	37.0	19 44	4.2	0.46	F_8	. . .	. . .	*d*	3.5c	. . .	*
3479	7.3	37.5	18 7	0.3	0.98	K_0	. . .	. . .	0.4c	0.9c	. . .	*
3480	6.5	37.7	15 47	2.4	0.76	K_0	. . .	. . .	((3.1))	1.4	. . .	
3481	5.4	38.3	9 46	—4.1	1.70	Ma	Ma	. . .	0.2	. . .	0.2	*
3482	6.9	39.7	6 39	(0.6)	0.98	K_0	. . .	. . .	0.8	0.7	. . .	
3483	6.5	40.3	9 38	. . .	0.05	A_3	. . .	. . .	. . .	*1.1*	. . .	
3484	6.7	40.4	19 52	0.8	0.96	K_0	. . .	. . .	0.7c	0.8c	. . .	*
3485	7.2	40.6	12 36	. . .	0.15	F_2	. . .	. . .	. . .	*2.2*	. . .	
3486	5.3	41.3	2 56	. . .	2.65	Na		See	table	II		
3487	6.6	43.1	7 42	. . .	0.16	F_0	. . .	. . .	. . .	*(2.0)*	. . .	

*3459/60. Double, $d = 11''$, $\Delta m = 1.0$. *3461. Double, $d = 1.''7$, $\Delta m = 2.0$. *3462. Double, $d = 0.''2$, $\Delta m = 0.6$. *3463. Double, $d = 1.''9$, $\Delta m = 2.7$. *3478. Double, $d = 1.''8$, $\Delta m = 0.6$. *3479. Double, $d = 8''$, $\Delta m = 2.8$. Colour of A assumed $C = 1.17\pm$. *3481. *Mt. W.'* 0.0. *3484. Double, $d = 2.''2$, $\Delta m = 3.2$. Colour of A assumed $C = 1.00$.

Table IV. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
3488	5.8	23 44.4	0 31	—0.1	—0.03	A_2	A_{4ns}	1.8	. . .	0.2	. . .	
3489	7.4	45.4	17 3	. . .	—0.16	B_9	. . .	. . .	. . .	—1.0	. . .	
3490	7.2	46.0	1 41	. . .	0.87	G_5	. . .	. . .	0.6	(0.5)	. . .	
3491	6.1	46.2	8 45	1.4	1.61	Ma	Ma	—1.3	1.0	. . .	1.0	*
3492	7.0	46.6	4 9	. . .	(1.34)	K_2	. . .	. . .	1.2	. . .	. . .	
3493	5.8	46.9	2 23	—1.4	1.44	K_2	K_4	(0.7)	0.3	. . .	0.1	
3494	5.2	47.4	18 34	—0.2	1.74	Ma	Ma	—0.3	— 0.2	. . .	— 0.2	*
3495	5.4	47.6	10 23	—0.2	0.10	A_3	A_{2n}	1.6	. . .	*0.7*	. . .	
3496	6.8	47.9	17 21	2.5	1.36	K_2	. . .	. .	1.1	. . .	. . .	
3497/8	6.8c	47.9	11 22	. . .	0.22c	F_0	. . .	. . .	. . .	*(2.0)*	. . .	*
3499	6.2	48.0	1 31	—1.3	—0.16	A_0	A_{2s}	0.8	. . .	—0.4	. . .	
3500	7.4	48.8	17 26	2.2	1.02	K_0	. . .	. . .	0.8	1.3	. . .	
3501	6.1	50.0	6 31	—1.3	—0.09	B_9	A_{0s}	0.4	. . .	—0.4	. . .	
3502	6.7	50.5	7 40	0.5	— 0.17	A_0	. . .	. . .	. . .	0.1	. . .	
3503	6.6	50 8	14 40	. . .	1.57	Mb	. . .	. . .	—0.9	. . .	. . .	
3504	7.4	51.2	9 28	. . .	—0.01	A_2	. . .	. . .	. . .	0.5	. . .	
3505	6.9	51.7	4 10	(>0.8)	0.13	F_0	. . .	. . .	. . .	*2.0*	. . .	*
3506	8.0	52.5	19 47	. . .	]1.01]	G_5	. . .	. . .	(0.0)	. . .	. . .	
3507	6.5	52.7	10 55	0.2	— 0.04	A_0	. . .	. . .	. . .	0.4	. . .	
3508	7.4	53.2	19 8	. . .	[1.43]	K_2	. . .	. . .	(0.4)	. . .	. . .	
3509	4.0	54.2	6 19	1.9	0.42	F_5		See	table	I		
3510	6.6	54.7	10 43	. . .	0.07	A_2	. . .	. . .	. . .	1.0	. . .	
3511	7.3	54.7	11 8	. . .	(1.59)	K_2	. . .	. . .	(—1.0)	. . .	. . .	
3512	7.8	55.1	7 27	. . .	[1.11]	K_2	. . .	. . .	(2.3)	. . .	. . .	
3513	7.5	55.2	12 46	. .	0.33	F_2	. . .	. . .	. . .	*2.2*	. . .	
3514	6.3	57.3	8 24	—3.5	0.07	A_5	A_{4sn}	1.8	. . .	*0.3*	. . .	
3515	5.8	57.4	7 56	2.5	0.19	F_0	. . .	. . .	. . .	*2.3*	. . .	
3516	7.2	57.4	15 42	. . .	—0.04	A_0	. . .	. . .	. . .	0.4	. . .	
3517	6.7	58.1	16 59	1.0	1.19	K_0	. . .	. . .	0.4	1.0	. . .	
3518	7.6	58.3	20 6	5.3	0.51	G_0	. . .	. . .	4.8	4.3	. . .	
3519	7.2	58.4	11 46	. . .	0.28	A_5	. . .	. . .	. . .	*1.2*	. . .	
3520	7.3	58.8	13 50	. . .	0.07	F_0	. . .	. . .	. . .	*(2.2)*	. . .	
3521	7.2	58.9	11 35	. . .	0.21	F_0	. . .	. . .	. . .	*(2.1)*	. . .	
3522	7.2	59.6	14 24	. . .	0.32	F_5	. . .	. . .	. . .	*(2.8)*	. . .	

*3491. *Mt. W.'* —0.1. *3494. *Mt. W.'* 0.0. *3497/8. Double, $d = 19''$, $\Delta m = 0.4$. *3505. Double, $d = 0''.2$, $\Delta m = 0.5$.

Table V.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
50	6.4	0 32.2	81 56	3.7	0.41	F_8	F_6	4.0	*d*	4.0	. . .	
74	5.6	45.5	83 10	1.9	—0.02	A_2	. . .	. . .	. . .	1.1	. . .	
85	6.6	52.1	80 0	2.8	0.33	F_2	. . .	. . .	. . .	*2.2*	. . .	
87	6.7	52.8	84 4	2.5	0.07	F_{5p}	. . .	. . .	. . .	*2.6*	. . .	
90	4.5	55.0	85 43	0.8	1.18	K_0		See	table	I		
91	6.5	55.6	88 29	2.9	—0.08	A_2	. . .	. . .	. . .	1.2	. . .	
96	6.4	59.1	86 37	1.8	0.97	K_0	. . .	. . .	0.9	0.9	. . .	
115	7.2	1 9.7	80 20	3.5	0.33	F_0	. . .	. . .	. . .	*2.3*c	. . .	*
116	6.7	10.0	80 22	—0.6	—0.17	A_0	. . .	. . .	. . .	—0.1	. . .	
149	7.1	29.6	80 55	0.5	—0.18	A_0	. . .	. . .	. . .	0.1	. . .	
167	7.2	38.8	80 23	—0.1	—0.11	A_0	. . .	. . .	. . .	0.0	. . .	*
168	7.5	39.8	80 53	2.4	—0.07	A_0	. . .	. . .	. . .	0.2	. . .	
174	7.6	44.6	80 25	4.8	0.63	K_0	. . .	. . .	((4.0))	4.0	. . .	
200	7.5	55.7	80 11	2.3	—0.03	A_2	. . .	. . .	. . .	1.2	. . .	
204	6.0	57.1	80 49	—0.9	—0.02	A_0	. . .	. . .	. . .	0.6	. . .	
208	6.8	57.9	81 0	2.8	0.18	A_3	. . .	. . .	. . .	*1.6*	. . .	
213	6.9	2 1.4	83 6	2.0	0.72	K_0	. . .	. . .	((3.4))	1.3	. . .	
265	5.9	33.4	81 2	1.6	1.38	K_0	. . .	. . .	—0.7	0.1	. . .	
297	6.0	56.2	81 5	2.3	0.11	A_2	A_4	3.0	. . .	*1.5*	. . .	
323	5.8	3 8.6	84 33	3.4	0.82	K_0	G_4	—1.4	((2.1))	1.9	(1.4)	
360	7.5	33.7	83 14	1.0	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
361	5.8	33.9	86 20	3.5	0.26	F_5	. . .	. . .	. . .	*3.0*	. . .	
386	5.2	53.3	80 25	—2.3	0.40	F_8+A_2	. . .	. . .	*g*	(—0.9c)	. . .	*
403	6.6	4 1.1	80 17	—1.0	0.79	K_0	. . .	. . .	((2.6))	0.5	. . .	
405	7.3	2.0	81 43	0.9	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
411	5.4	5.0	83 34	—1.8	—0.21	B_3	. . .	. . .	—1.4	. . .	. . .	
412	6.7	5.1	85 17	1.1	0.28	F_8	. . .	. . .	*d*	2.2	. . .	
416	5.7	8.0	83 6	2.1	0.66	G_5	. . .	. . .	((2.3))	1.2	. . .	
423	5.6	9.6	80 35	—1.5	1.26	K_0	G_8	0.9	—0.1	0.3	—1.8	
426	7.2	12.0	80 42	1.0	0.05	A_2	. . .	. . .	. . .	1.0	. . .	
430	7.3	19.2	80 40	1.2	0.06	F_0	. . .	. . .	. . .	*2.0*	. .	
452	5.3	41.6	81 2	—0.2	1.30	K_0	. . .	. . .	—0.3	0.3	. . .	
471	6.5	56.3	85 50	2.4	0.14	A_5	F_1	2.0	. . .	*1.6*	. . .	
495	6.6	5 9.9	85 35	1.0	—0.12	A_0	. . .	. . .	. . .	0.2	. . .	
499	7.3	11.8	83 47	1.0	—0.09	A_0	. . .	. . .	. . .	0.0	. . .	
521	6.4	29.9	85 9	—0.9	1.32	K_0	K_4	(0.7)	—0.4	0.0	1.1	
559	6.6	6 8.0	86 46	3.3	0.99	G_5	G_4	0.0	0.1	0.5	—1.5	
581	6.4	23.4	82 12	2.2	0.11	A_2	. . .	. . .	. . .	1.5	. . .	
614	5.3	53.8	87 12	0.3	1.56	Ma		See	table	II		
627	6.2	7 6.4	81 26	0.4	—0.20	B_9	. . .	. . .	. . .	—0.6	. . .	
633	5.1	10.1	82 36	—0.3	1.71	Mb	Mb	—1.2	—0.8	. . .	—0.8	

*115. Double, $d = 0''.5$, $\Delta m = 1.5$. *167. Double, $d = 0''.6$, $\Delta m = 0.2$. *386. Spectrum composite. Double, $d = 0''.8$, $\Delta m = 0.8$.

Table V. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
643	6.5	7 16.4	81 6	—0.7	0.91	K_0	. . .	. . .	1.1	0.5	. . .	
658	7.6	27.7	81 55	—1.4	—0.22	B_9	. . .	. . .	. . .	—0.2	. . .	
673	6.5	39.8	80 31	6.3	0.57	G_5	G_9	4.8	3.6	4.9	(6.0)	
686	7.3	52.5	85 59	1.9	0.48	G_5	. . .	. . .	4.1	1.0	. . .	
687	6.4	53.0	84 21	2.2	—0.13	A_0	. . .	. . .	. . .	0.7	. . .	
695	7.0	58.0	88 56	—0.8	0.05	A_0	. . .	. . .	. . .	1.6	. . .	
700	6.2	8 5.2	82 44	1.0	—0.13	A_0	. . .	. . .	. . .	0.2	. . .	
729	7.4	25.4	85 25	5.0	0.24	F_2	. . .	. . .	. . .	*2.2*	. . .	*
732	6.7	28.3	82 36	—0.3	—0.16	A_0	. . .	. . .	. . .	—0.1	. . .	
747	7.5	40.9	80 24	0.9	—0.30	A_0	. . .	. . .	. . .	0.8	. . .	
750	7.5	41.8	83 6	—1.9	0.46	K_0	. . .	. . .	((3.7))	(4.)	. . .	
751	7.0	44.5	83 8	—0.5	0.18	F_0	. . .	. . .	. . .	*1.8*	. . .	
764	6.3	54.5	84 35	—1.0	0.17	F_0	. . .	. . .	. . .	*1.7*	. . .	
765	6.5	56.3	81 14	0.5	0.03	F_2	. . .	. . .	. . .	*2.2*	. . .	
793	7.1	9 20.5	83 22	—0.9	0.13	F_5	. . .	. . .	. . .	*0.6*	. . .	
796	4.6	22.8	81 46	—1.8	1.55	K_2		See	table	I		
805	7.5	26.4	82 49	3.4	—0.17	A_0	. . .	. . .	. . .	1.0	. . .	
842	6.5	52.6	84 24	—0.6	1.29	K_0	. . .	. . .	—0.2	0.3	. . .	
864	6.9	10 11.7	83 18	—0.5	0.69	K_0	. . .	. . .	((3.7))	0.6	. . .	
869	5.6	15.2	84 46	2.9	0.06	A_3	A_{2n}	1.7	. . .	*1.7*	. . .	
871	5.3	18.9	83 4	1.6	0.24	F_2		See	table	II		
875	7.4	20.8	84 55	2.6	0.39	K_0	. . .	. . .	((3.2))	(5.)	. . .	
884	6.6	25.7	81 1	0.3	0.76	G_5	G_6	0.2	((1.1))	1.0	(1.9)	
889	6.7	33.6	80 57	0.2	—0.19	A_0	. . .	. . .	. . .	0.0	. . .	
920	7.2	11 2.6	86 11	2.4	0.07	A_2	A_3	—0.9	. . .	1.6	. . .	
924	7.4	4.2	88 11	—0.1	—0.22	B_8	. . .	. . .	. . .	—0.6	. . .	
948	7.4	24.4	85 16	1.7	0.54	K_0	. . .	. . .	((4.0))	4.0	. . .	
949	6.1	24.8	81 41	4.3	0.10	A_0	A_2	1.6	. . .	1.6	. . .	
954	7.4	28.3	86 10	3.1	0.10	F_0	. . .	. . .	. . .	*2.4*	. . .	
986	7.7	54.5	80 9	0.7	0.21	F_8	. . .	. . .	*d*	4.0	. . .	
987	6.4	55.1	81 25	1.7	1.38	M_a	M_b	—0.8	—1.4	. . .	—1.1	
997	6.4	59.7	86 8	3.1	0.29	F_5	. . .	. . .	. . .	*2.8*	. . .	
1006	6.3	12 6.5	82 16	—1.4	1.19	K_0	K_3	(0.8)	0.4	0.6	1.5	
1015	6.3	13.9	86 59	4.7	0.23	F_2	. . .	. . .	. . .	*2.2*	. . .	
1017	6.3	14.4	88 15	2.4	0.07	F_0	A_9	2.3	. . .	*2.3*	. . .	
1046	7.4	31.1	80 48	4.5	0.20	F_2	. . .	. . .	. . .	*2.2*	. . .	
1051	7.1	34.6	86 17	0.5	0.05	F_0	. . .	. . .	. . .	*2.0*	. . .	
1057	7.2	37.8	84 12	5.5	0.35	G_6	F_7	3.2	4.0	4.5	. . .	
1060	6.3	41.9	81 10	1.1	0.01	A_0	A_3	2.4	. . .	1.2	. . .	
1069	4.8c	48.4	83 57	0.6b	—0.07c	A_2	. . .	. . .	. . .	—0.2c	. . .	*

*729. To the *G. A.* magnitude a correction of +0.16 was added, to make account of the overlapping images of two stars, at $d = 40''$, $\Delta m = 2.4$, and $d = 54''$, $\Delta m = 3.3$ (difference of magn. from Greenwich Astrogr. Catalogue). *1069. Double, $d = 22''$, $\Delta m = 0.5$.

Table V. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	° ′									
1076	7.2	12 53.2	83 4	2.4	0.84c	K0	. . .	. . .	1.4c	1.4c	. . .	*
1085	7.3	58.6	81 25	2.9	0.65	G_0	. . .	. . .	(1.5)	3.2	. . .	
1086	7.8	59.7	86 25	0.8	0.03	F_8	. . .	. . .	*d*	4.0	. . .	
1096	6.3	13 11.5	81 00	—2.8	0.86	G_5	G_8	0.3	0.7	—0.2	1.6	
1104	7.4	18.7	85 17	4.1	0.28	G_0	F_9	3.4	(3.6)	3.7	4.0	
1118	7.3	26.7	83 49	4.0	0.46	G_5	. . .	. . .	4.0	4.1	. . .	
1124	8.0	32.4	85 47	2.5	0.09	F_2	. . .	. . .	. . .	*2.2*	. . .	
1140	7.2	42.3	80 42	—0.2	0.99	K_5	. . .	. . .	(2.2)	. . .	. . .	
1142	6.2	45.2	83 15	1.4	0.84	G_5	. . .	. . .	0.7	0.5	. . .	
1149	7.4	49.9	80 25	0.3	0.72	G_5	. . .	. . .	((1.5))	0.4	. . .	
1154	6.8	52.4	81 16	1.7	0.95	K_0	. . .	. . .	0.9	0.9	. . .	
1164	7.4	59.4	86 14	1.4	0.22	F_0	. . .	. . .	. . .	*2.1*	. . .	
1203	7.1	14 33.0	81 15	4.4	0.48	G_5	. . .	. . .	4.0	4.2	. . .	
1205	6.4	36.4	80 6	3.0	1.29	K_0	K_5	0.0	—0.2	0.0	2.1	
1223	7.0	42.6	86 22	—1.8	0.89	K_0	. . .	. . .	0.9c	0.2c	. . .	*
1227	7.2	55.0	81 9	2.1	—0.15	A_0	. . .	. . .	. . .	0.6	. . .	
1232	5.7	57.0	82 55	4.4	0.49	G_0	F_9	3.7	4.8	4.0	4.8	
1243	7.1	15 1.7	84 20	—1.3	1.11	K_0	. . .	. . .	0.7	0.6	. . .	
1253	7.2	9.4	87 37	0.9	0.94	K_0	. . .	. . .	0.9	0.8	. . .	
1289	6.5c	35.0	80 47	4.7c	0.38c	G_5	G_3	5.7	(3.4c)	3.8c	3.0c	*
1290	7.0	36.0	81 6	1.1	0.73	K_0	. . .	. . .	((3.4))	1.0	. . .	
1295	6.9	38.1	82 36	2.4	0.23	F_0	. . .	. . .	. . .	*2.3*	. . .	
1297	7.0	42.5	85 9	2.3	0.85	K_0	. . .	. . .	1.5	1.4	. . .	
1298	7.0	42.9	80 56	2.8	0.84	G_5	. . .	. . .	0.7	0.5	. . .	
1300	6.9	45.1	80 18	2.1	0.12	F_2	. . .	. . .	. . .	*1.8*c	. . .	*
1311	7.3	53.8	83 15	2.2	0.10	A_2	. . .	. . .	. . .	1.5	. . .	
1314	7.0	57.4	85 35	3.4	—0.11	A_5	. . .	. . .	. . .	*2.0*	. . .	
1364	7.1	16 33.6	83 55	1.2	0.05	A_2	. . .	. . .	. . .	1.1	. . .	
1393	4.4	56.2	82 12	—3.3	0.83	G_5		See	table	I		
1407	6.7	17 4.8	81 0	1.7	0.89	G_5	. . .	. . .	0.5	0.5	. . .	
1438	5.9	27.2	80 14	—0.2	1.63	K_2	. . .	. . .	—1.2	. . .	. . .	
1446	7.5	32.6	83 25	5.0	0.41	F_8	. . .	. . .	*d*	4.0	. . .	
1495	4.4	18 4.6	86 37	0.3	—0.11	A_0		See	table	I		
1502	7.5	7.2	85 41	—0.9	0.07	F_0	. . .	. . .	. . .	*1.7*	. . .	
1505	5.9	7.8	87 0	1.9	0.02	A_3	. . .	. . .	. . .	*1.3*	. . .	
1524	7.3	22.9	82 54	2.0	—0.23	B_9	. . .	. . .	. . .	—0.1	. . .	
1525	7.4	24.6	84 37	0.1	0.24	F_2	. . .	. . .	. . .	*2.2*	. . .	
1541	7.3	36.4	83 18	2.0	0.64	G_5	. . .	. . .	((2.6))	1.0	. . .	
1547	6.2	37.4	83 6	0.8	—0.08	A_2	. . .	. . .	. . .	0.4	. . .	
1560	6.8	47.8	86 35	—0.6	1.27	Ma	. . .	. . .	—1.4	. . .	. . .	
1585	6.8	19 4.0	85 46	1.0	—0.10	A_2	. . .	. . .	. . .	0.5	. . .	

*1076. Double, $d = 10''$, $\Delta m = 3.2$. Colour of A assumed $C = 0.87$. *1223. Double, $d = 2''.5$, $\Delta m = 3.0$. Colour of A assumed $C = 0.93$. *1289. Common proper motion pair $d = 30''$, $\Delta m = 0.7$. *1300. Double, $d = 0''.7$, $\Delta m = 1.0$.

Table V. Continued.

G. A.	m_H	1900 α	1900 δ	E	C	Spectrum H. D.	Spectrum W. V.	M_s	M C, D	M μ, C, D	M C, W	
		h m	o ′									
1586	6.8	19 4.7	82 14	2.4	—0.10	A_0	. . .	. . .	. . .	0.8	. . .	
1601	7.5	15.5	80 35	1.8	0.25	A_2	. . .	. . .	. . .	1.3	. . .	
1611	6.6	22.5	88 59	—1.8	1.38	Mb	Mb	—1.2	—1.1	. . .	—1.1	
1620	6.3	28.0	83 16	1.6	0.04	A_2	. . .	. . .	. . .	1.2	. . .	
1697	6.6	20 14.0	84 23	2.3	0.10	A_2	. . .	. . .	. . .	1.5	. . .	
1699	7.4	15.6	81 55	2.6	0.40	F_5	. . .	. . .	. . .	*2.7*	. . .	
1709	6.8	20.2	80 13	1.2	—0.15	A_0	. . .	. . .	. . .	0.3	. . .	
1711	7.2	24.5	84 14	3.4	0.27	F_0	. . .	. . .	. . .	*2.4*	. . .	
1712	7.1	24.6	84 49	3.3	0.41	F_8	. . .	. . .	*d*	4.0	. . .	
1719	7.1	28.7	82 2	2.9	0.30	F_5	. . .	. . .	. . .	*2.8*	. . .	*
1726	6.9	33.2	81 6	1.9	0.88	K_0	. . .	. . .	1.3	1.1	. . .	
1727	6.8	34.4	82 50	—3.8	0.85	G_5	. . .	. . .	0 7	—0.3	. . .	
1728	5.6	34.5	81 5	—0.2	1.05	K_0	G_8	0.0	0.8	0.8	0.0	
1731	6.1	35.2	80 44	4.3	0.82	K_0	. . .	. . .	((2.1))	(2.4)	. . .	
1735	6.2	39.1	83 17	1.4	—0.01	A_2	. . .	. . .	. . .	0.9	. . .	
1749	5.7	49.8	82 10	1.7	—0.13	A_0	. . .	. . .	. . .	0.5	. . .	
1753	5.6	52.1	80 11	0.0	1.18	K_0	K_1	0.6	0.5	0.9	0.4	
1774	6.9	21 8.1	80 45	1.4	0.16	F_0	. . .	. . .	. . .	*2.1*	. . .	
1799	6.0	17.5	80 49	—2.4	0.02	A_2	. . .	. . .	. . .	—0.3	. . .	
1805	7.4	19.6	86 37	0.8	—0.16	A_3	. . .	. . .	. . .	*0.9*	. . .	
1809	7.1	21.5	83 50	1.6	0.68	G_5	. . .	. . .	((2.0))	1.0	. . .	
1866	7.0	50.4	83 34	3.8	0.00	A_5	. . .	. . .	. . .	*2.3*	. . .	
1903	7.1	22 1.9	82 23	4.4	0.44c	F_5	F_6	3.5	. . .	*2.8c*	4.3c	*
1904	7.4	2.0	82 23	4.8		F_5	G_3	4.8	. . .			
1938	7.5	20.9	84 0	1.0	—0.17	A_0	. . .	. . .	. . .	0 2	. . .	
1939	5.4	21.3	85 36	1.5	—0.15	A_0	. . .	. . .	. . .	0.4	. . .	
1941	6.8	21.7	85 43	1.5	0.92	K_0	. . .	. . .	1.1	0.9	. . .	
1951	7.4	24.3	87 34	2.6	—0.04	A_2	. . .	. . .	. . .	1.3	. . .	
1960	7.2	27.5	84 33	1.1	0.65	K_0	. . .	. . .	((4.0))	1.7	. . .	
1985	6.9	39.2	80 52	0.4	0.53	F_8+A_5	. . .	. . .	*g*	(—0.4c)	. . .	*
2007	5.0	47.9	82 37	0.3	1.31	K_0		See	table	I		
2010	7.1	50.1	84 15	3.6	0.73	K_0	. . .	. . .	((3.4))	1.9	. . .	
2018	6.2	53.5	84 50	2.6	1.25	K_5	. . .	. . .	1.3	. . .	. . .	
2022	5.0	55.2	83 49	1.6	1.58	K_5		See	table	I		
2029	6.7	59.5	80 15	2.2	0.05	A_3	. . .	. . .	. . .	*1.4*	. . .	*
2045	7.2	23 5.5	80 2	1.8	—0.03	A_2	. . .	. . .	. . .	1.0	. . .	
2084	6.6	24.4	85 52	1.0	0.22	F_0	. . .	. . .	. . .	*2.0*	. . .	
2089	5.6	27.8	86 45	1.9	0.06	F_0	. . .	. . .	. . .	*2.2*	. . .	
2144	7.2	57.6	82 25	0.3	—0.03	A_0	. . .	. . .	. . .	0.5	. . .	

*1719. In *H. A.* **54** the magnitude is given 8.10, but this is probably a misprint, the magnitude is to be assumed = 7.10. *1903/1904. Double, $d = 14''$. *1985. Spectrum composite. *2029. Double, $d = 0''.2$, $\Delta m = 1.4$.