

No. 132 THIRTEEN-COLOR NARROW-BAND PHOTOMETRY
OF ONE THOUSAND BRIGHT STARS

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ABSTRACT

In this report our previously published eight-color photometry, obtained with a RCA 1P21, is combined with new red-infrared photometry obtained with a RCA 7102. The final system of thirteen colors provides two sample points in the continuum above the Balmer discontinuity and two points below; similarly it gives four sample points above the Paschen discontinuity. The wavelength range of the photometry extends from 0.33 to 1.10 μ . We have derived from recent literature an absolute energy calibration for the thirteen-color photometry.

1. Introduction

With this publication we complete our thirteen-color narrow-band photometry of northern bright stars. Previously published eight-color data (Johnson *et al.* 1967, *Comm. LPL* No. 92) listed our observations in the blue and green part of the spectrum. This report presents the observations of the same bright stars in the red spectral region, observed with a RCA 7102 (a photomultiplier with a S-1 photosensitive surface). Our earlier eight-color 1P21 observations (hereafter called "8-C") are combined with our new 7102 data ("6-RC") to form our final thirteen-color photometric system.

The new 6-RC data make possible a more complete description of the continua of stars and can be used to tie together our far infrared JHKL photometry with the visual region, independently of broad-band UBVRI photometry.

The thirteen-color system encompasses the prop-

erties of many special photometric systems which have appeared in the literature in recent years, as discussed in our earlier paper (*Comm. LPL* No. 92). The general appearance of the stellar continua of different stars is well represented and is comparable with spectral scanner data. This filter-photometric system has the added advantage that large telescopes are not needed to reach 10th magnitude in a reasonable observing time. The filters are narrow enough (less than 10% bandpass) to behave nearly like monochromatic measurements.

Borgman (1961) and Borgman and Blaauw (1964) have discussed many of the uses of the eight-color system: For example, the interstellar reddening law (see also Boggess and Borgman 1964), and the use of several reddening-free indices for luminosity and spectral type determination. Recently Smith (1968) discussed Borgman's α Index as a metal indicator. Johnson and Mitchell (1968) discussed the spectral energy curves of subdwarfs using the 8-C system. The complete thirteen-color data were used in a study of Mars (Mitchell 1969). More

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recently, Smith and Strom (1969) used our thirteen-color photometry to compare the observed ratio of the Balmer to Paschen discontinuities to computed models. These studies suggest the general utility of this new photometric system.

2. Instrumentation

The short-wavelength photometer using a 1P21 was described in *Comm. LPL* No. 92 (8-C). For 6-RC's the same equipment was used to collect the observations, but an RCA 7102 was used as the detector. Table 1 lists the filter-detector response-functions for the 6-RC system. The data in the table are normalized to unity at the peak; they are illustrated in Figures 1 to 6. In Table 2, the effective wavelengths for these filters are given, as defined by equation 2. Table 2 also gives the relative rectangular widths of the filters. The other two columns in Table 2 are discussed in the section on calibration.

3. Observations

The individual 6-RC observations of more than 1000 different stars are listed in Table 10. All stars brighter than 5th visual magnitude, north of -20° declination, have been observed in the red, with the exception of the stars listed in Table 8. The probable error of a single observation is listed in Table 3; the errors of the colors referred to filter 52 are also listed.

Not all of the numbers in Table 10 are satisfactory photometric data, since meaningless zeros appear for some colors or magnitudes; these are indicated to the reader by zeros in the corresponding weight columns. A "3" in the LS column indicates that a least-squares extinction adjustment was made; a "1" indicates that the mean atmospheric extinction from Table 5 was used. Most of the observations in Table 10 were made by Mr. E. Rhoads; most of the observations in Table 9 were made by Mr. M. Smith.

4. Thirteen-Color System

The colors and magnitudes in Tables 7, 8, and 9 are the final definitions for the thirteen-color photometry. The 1P21 observations (8-C, *Comm. LPL*, No. 92) were combined in Table 7 with the 7102 observations (6-RC) through the overlap of filters 58 and 58'; thus, we combined the two independent sets of data through the use of colors, not magnitudes. Figure 7 shows the relation between filters 58 and 58' for 68 stars with 3 or more observations in both systems. The corrections applied to the mean values obtained from Table 10, as given in Table 4, are least-squares adjustments determined from these

68 stars. Throughout this paper, the term "mean A0 V star" refers explicitly to the mean of the following stars: BS 3314, 4554 (γ UMa), 5511 (109 Vir), 5793 α CrB, 6629 (γ Oph), and 7001 (α Lyr). These are the same six stars that were used by Johnson and Morgan (1953) to set the zero points of the UBV system. This definition of the zero-points of the colors necessitated small corrections to the original 8-color data contained in *Comm. LPL*, No. 92, as indicated in Table 4.

Table 7 in its final form is similar in style to our previous publications, *Comm. LPL*, No. 92 and *Comm. LPL*, No. 63. Following the Bright Star Catalogue (Hoffleit 1962) number is the remarks column, in which *, V, D, are from *Comm. LPL*, No. 92. A decimal point added to the remarks field indicates a special note in this publication; these special notes are needed mainly because more than a year's time elapsed between the 8-C and 6-RC measures on certain long-period variables. Following the magnitude "52" and the 12 colors are columns 15 and 16, which list the number of independent 8-C observations and the number of independent 6-RC observations, respectively. The spectral types from *Comm. LPL*, No. 92 are given in the last column.

In Tables 7, 8, and 9, the last decimal place listed is not significant in the usual manner; the computer program truncates the output rather than rounding it off. In our 8-C paper, we indicated less reliable data by placing parentheses around the uncertain values; here we indicate such data by reducing the number of decimal places listed.

5. Comparison With Other Photometric Systems

Figure 7 shows a linear relation with small color corrections between the magnitude system "58" (observed with a 1P21) and the magnitude 58' (observed with a 7102); this comparison was made over a range of 6.5 mag. (-0.3 to 6.2). This is a most significant test of the system, for it shows that the two independent magnitude systems agree over this range.

Figures 8 and 9 show a comparison of the broad band I filter with the "80" filter. Figure 9 exhibits a linear relation between I and 80; it was drawn for the stars in Figure 8 for which $0.3 \leq (80-110) \leq 0.6$.

Figures 10 and 11 compare photometry with a PbS detector with the new 7102 data. In these figures we compare our reddest 7102 magnitude, 110, with J, at 1.25μ . The color range represented in Figure 11 is $0.3 \leq (80-110) \leq 0.6$; the linearity is excellent over a range of 7 magnitudes.

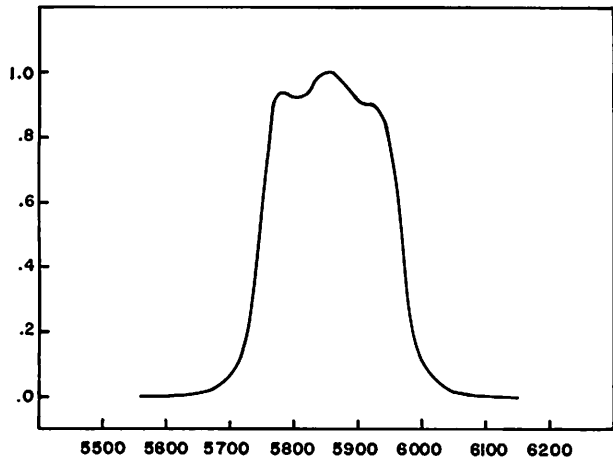


Fig. 1 Normalized response function for filter 58' as given in Table 1.

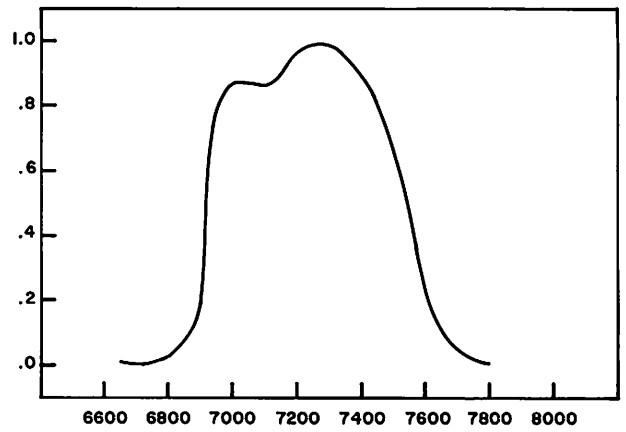


Fig. 2 Normalized response function for filter 72 as given in Table 1.

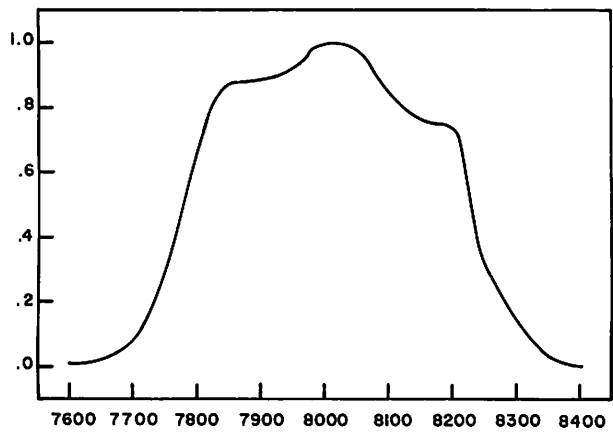


Fig. 3 Normalized response function for filter 80 as given in Table 1.

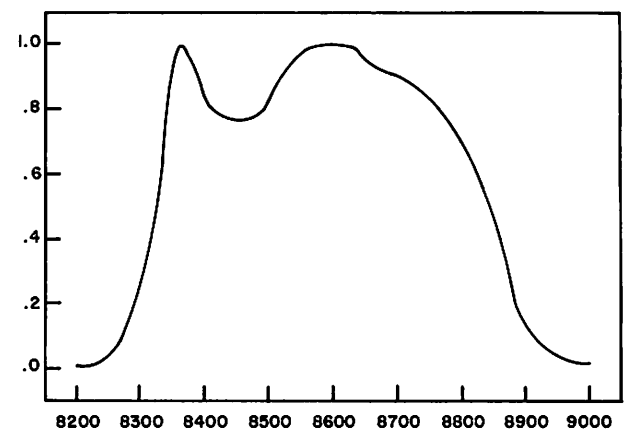


Fig. 4 Normalized response function for filter 86 as given in Table 1.

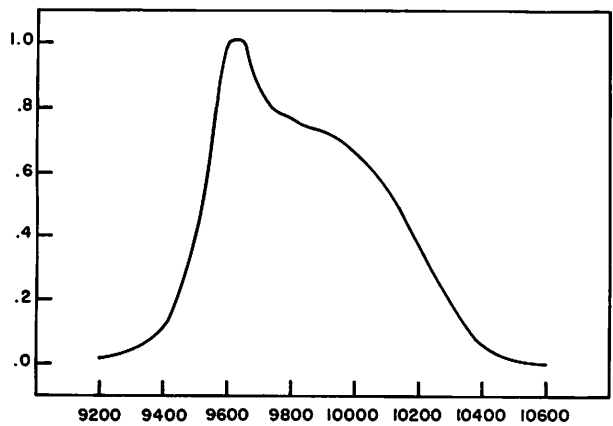


Fig. 5 Normalized response function for filter 99 as given in Table 1.

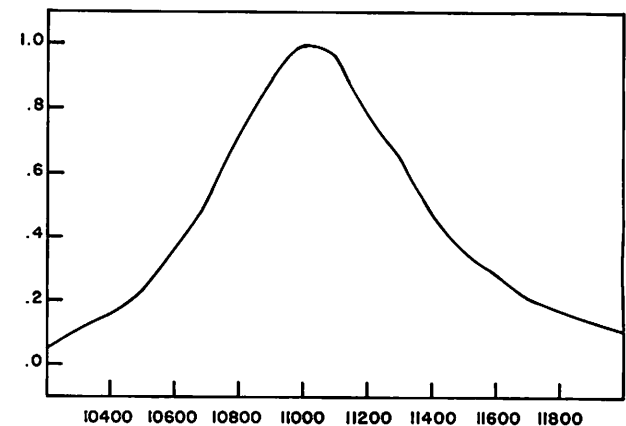


Fig. 6 Normalized response function for filter 110 as given in Table 1.

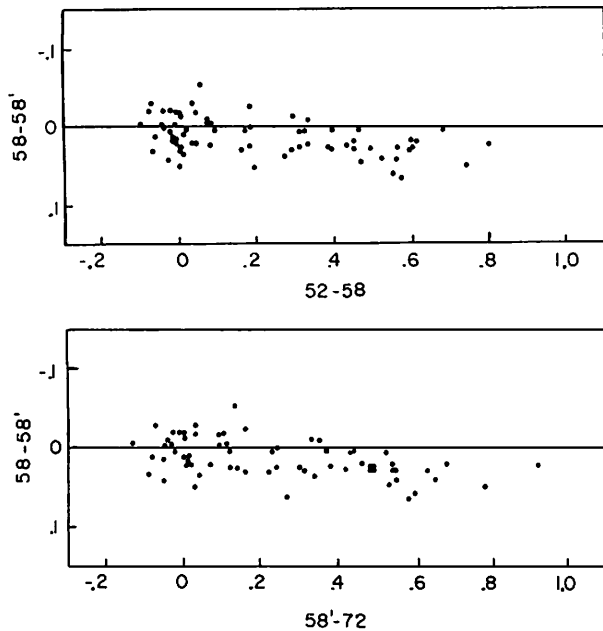


Fig. 7 Filters 58 and 58' are compared as functions of two different colors.

As discussed in our 8-C paper, an approximate V magnitude can be obtained from filters 52 and 58. On the basis of 43 stars, all with more than five independent 8-C measures and more than five V measures, we found for the final system of this paper, Table 7:

$$V_{\text{approx.}} = (52) - 0.5115 (52-58). \quad (1)$$

6. Theory of Filter Photometry

In *Comm. LPL*, No. 92 we defined the effective wavelength of a filter as

$$\lambda_0 = \frac{\int_0^{\infty} \lambda \phi(\lambda) d\lambda}{\int_0^{\infty} \phi(\lambda) d\lambda} \quad (2),$$

where $\phi(\lambda)$ is the relative sensitivity of the measuring equipment. The appropriateness of this definition was discussed by Strömgren (1937), Wesselink (1950) and King (1952a, 1952b). King (1952a) showed how a different, but frequently used definition, leads to misinterpretation of broad band pho-

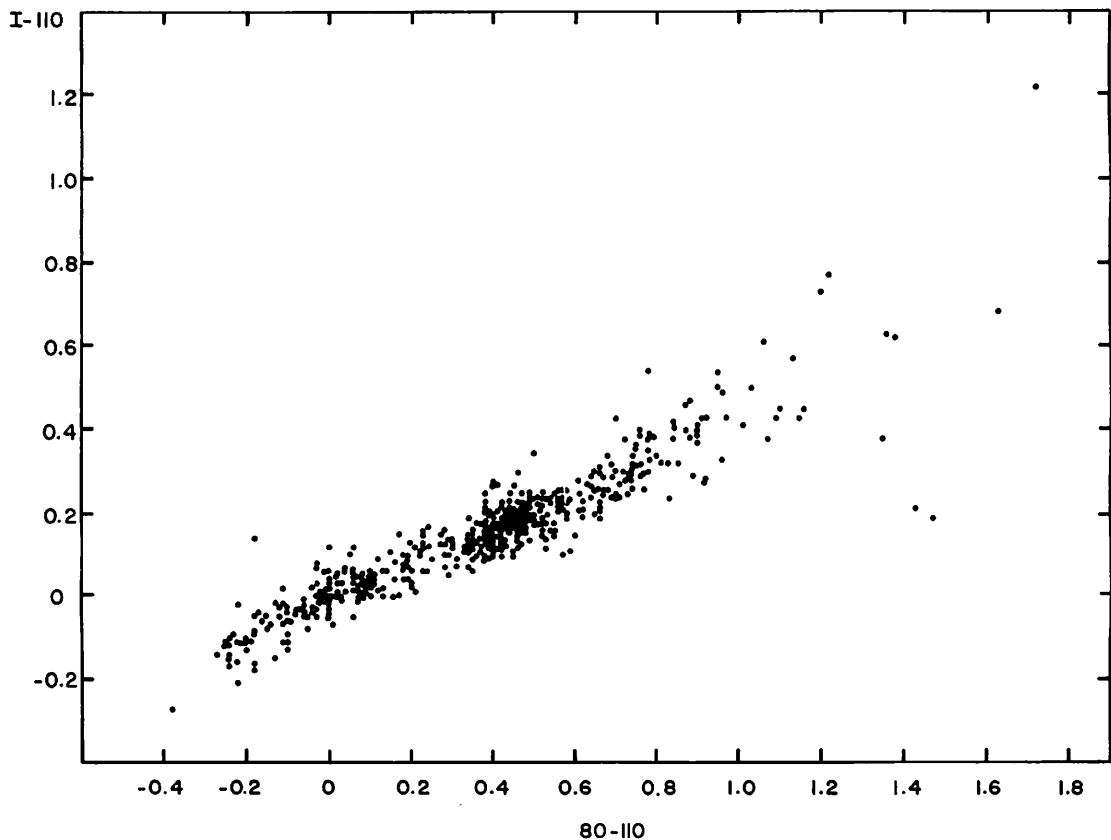


Fig. 8 The color I minus (110) is plotted versus the color (80-110).

tometry; in his other paper (King 1952b) he discussed the theory of the definition of the effective (monochromatic) wavelength of a filter-band.

As King (1952a) pointed out, this definition of effective wavelength requires the comparison of two stars. Under this concept, there is no meaningful way of defining the effective wavelength of an observation of a single star, unless the definition tacitly specifies a second star as a standard. Furthermore, since the properties of the stars appear in the definition, a photometric system is, in general, characterized not by a single effective wavelength, but by a double infinity of wavelengths, one for each pair of stars observed. The same problems arise when an absolute calibration of a photometric system is attempted; for example, by comparisons of stars with black bodies or standard lamps. In order to render the problem manageable, we must choose a single, approximate, effective wavelength for each filter band, no matter how broad, and correct the observed magnitude differences (between stars, or between star and standard lamp) for the errors introduced by this approximation. The effective wavelength defined by Eq. 2 has been shown by King and others to be a suitable approximation.

Under this concept, the meaning of the term "effective wavelength" must be the following: The effective wavelength of a comparison of two stars (or a star and a standard lamp, for example) by the same instrument is that wavelength at which a monochromatic light receiver would measure the same magnitude difference as does the actual instrument. (The term "monochromatic" is not used here in the strictest sense, but refers to an averaged or smoothed energy distribution over the region of the filter band-pass).

It therefore follows that we must choose a type of star (or even a single star) which we adopt as the standard of reference. Since we have already set the zero-points of the 13-color system to zero for a mean A0 V star, we adopt for the purpose of our absolute calibration of the photometry the observed spectral-energy distribution of an A0 V star. This means that the absolute calibration of the 13-color system which is derived below applies, strictly speaking, solely to stars whose "smoothed monochromatic" spectral-energy distributions are those of an A0 V star; when our absolute calibration is applied to stars or other objects that have spectral-energy distributions differing from that of the standard, corrections for the

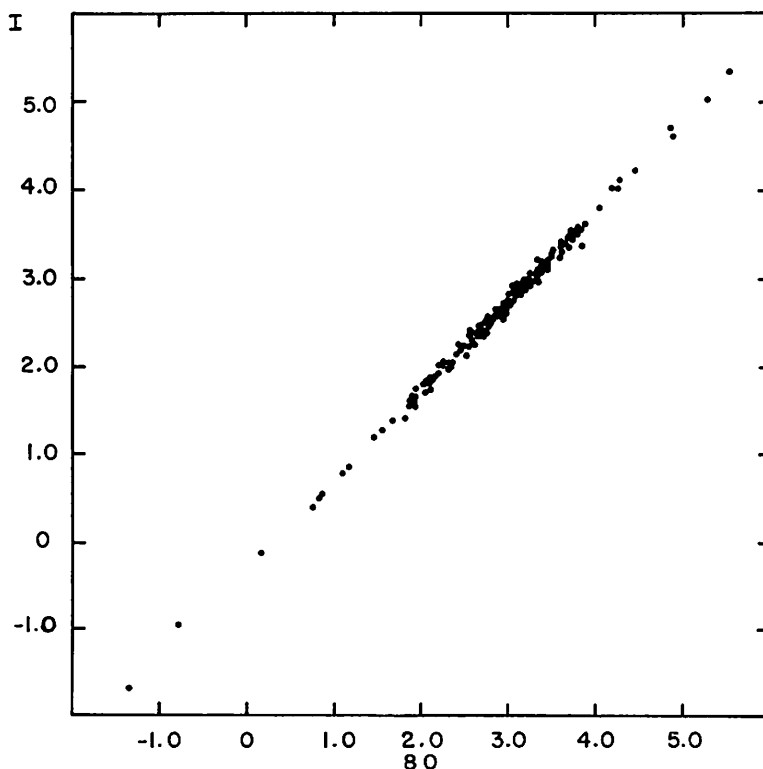


Fig. 9 For the color range $+0.3 \leq (80-110) \leq +0.6$, the mag. I is plotted versus (80).

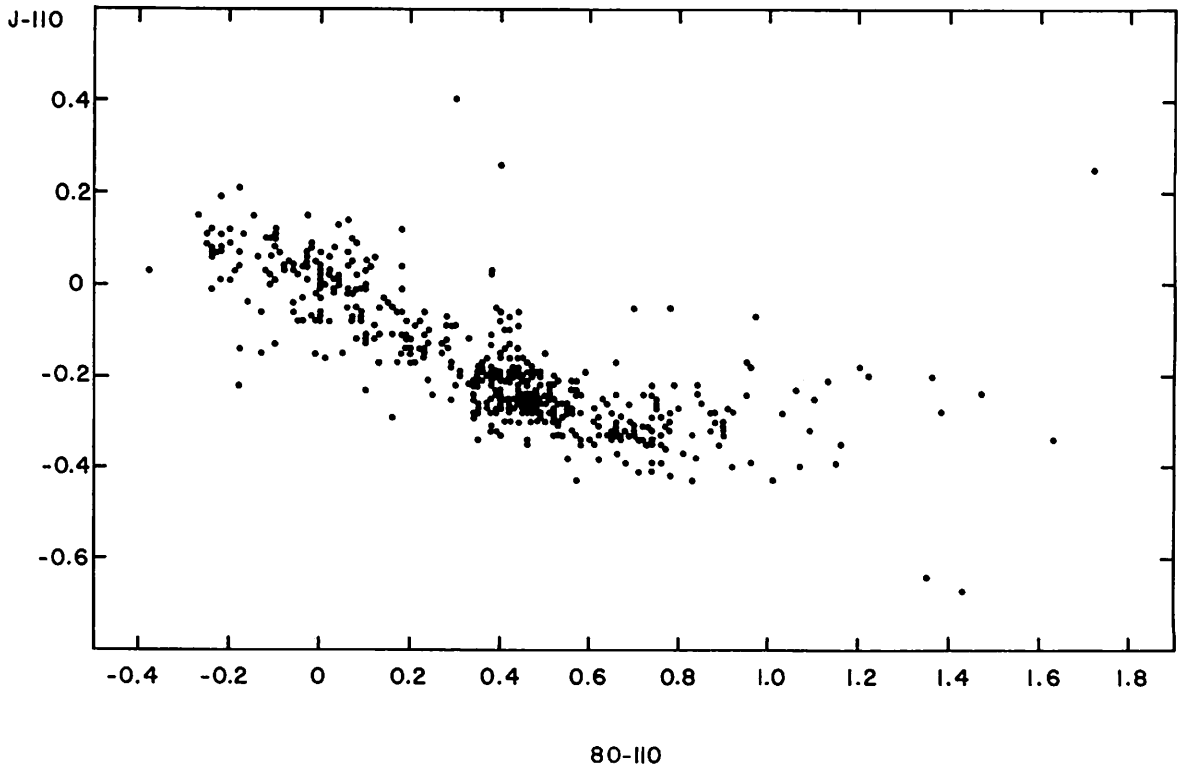


Fig. 10 The color J minus $(I10)$ is plotted versus the color $(80-I10)$.

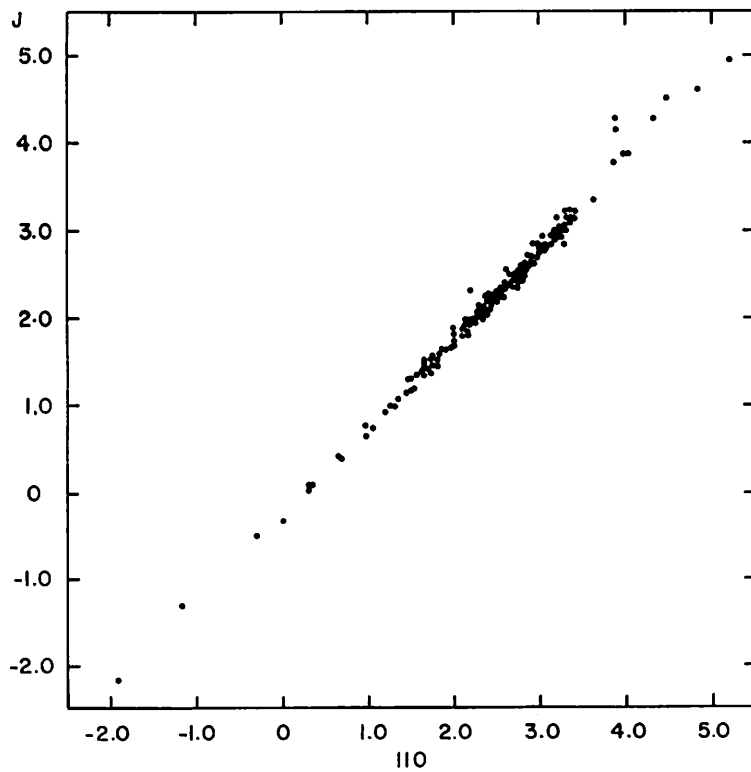


Fig. 11 For the color range $+0.3 \leq (80-I10) \leq +0.6$, the mag. J is plotted versus $(I10)$.

errors introduced by our approximation to the effective wavelength must be applied.

At this point, we introduce a second approximation: We assume that the corrections to be applied to the absolute fluxes obtained by the use of our absolute calibration can be computed from the differences in the black-body gradients of the A0 V standard and the observed objects. For example, we shall compute the correction to the flux observed through the 52 filter by the following procedure: First, we compute a table of corrections for the 52 filter, as a function of black-body temperature; the correction is zero for a 15,000° K black body, which has the same gradient in the region of the 52 filter as does the A0 V standard. Second, we compute the temperature of the black body which has the same gradient between the 52 and the 58 filters as does the observed object. It will be sufficient for this purpose to use the uncorrected absolute calibration of the two filters, although the correction could be included by a second iteration. Third, the correction to the flux measured by the 52 filter is read from the black-body correction table which we computed above as the first step in this correction procedure. Therefore:

a) Table 6a contains the correction factors by which the computed fluxes derived through the use of our absolute calibration are to be multiplied. These correction factors are, by definition, unity for an A0 V star whose colors are zero. It will be noted that these correction factors differ from unity by significant amounts only for observations of cool objects through the shorter-wavelength filters.

b) Table 6b contains the computed black-body color gradients for the several colors, with zero points made zero at the mean A0 V star. One enters Table 6b to obtain black-body temperatures corresponding to the observed color indices; then, one enters Table 6a with these temperatures to obtain the corrections to the observed flux densities.

7. Absolute Calibration

The treatment of the absolute energy calibration given here is divided into two parts, the relative spectral energy distribution and the absolute calibration at a specific wavelength. The discussion of the relative spectral energy distribution is divided into two parts, stellar calibrations and the solar calibration. The final relative and absolute energy distributions are based on the new gold point (1337°58 K) used by Labs and Neckel (1968) for their solar work.

For the relative energy calibrations from stars we have six modern independent photoelectric sources:

Code (1960), Bahner (1963), Stebbins and Kron (1964), Willstrop (1965), and Hayes (1967). Since the stellar samples used in these six studies do not overlap well, it was, in the past, difficult to intercompare the calibrations. Our new 13-color photometry overlaps these samples totally, so that the 13-color system can be used to connect these calibrations. We found the precision of these calibrations to be similar, so we have assigned equal weight to all six sources. Since the method of each calibration source is different, a comment is needed on each comparison with the 13-color system.

Based on a description of the standard lamp used, a wavelength dependent correction was applied to each published source to refer its calibration to the new gold point as used by Labs and Neckel (1968).

Bahner's (1963) calibration is in terms of two black-body gradients and the Bahner decrement of α Lyrae; we, therefore, integrated the black bodies over the response functions given in Table 1 and compared the integrated values with the observed α Lyrae measures from Table 7.

Code's (1960) and Hayes' (1967) data were handled in the same fashion. These authors gave narrow-band photometry at selected wavelengths on a energy-per-unit-frequency-interval basis. We converted their data to energy-per-unit-wavelength-interval and interpolated at the effective filter wavelengths. These data are approximately monochromatic so that a small correction was derived from Tables 6a and 6b to compare these interpolated values with the observations in Table 7. In Code's data the result was found to depend on spectral type. This effect was to be expected. Code selected wavelength regions where he found the spectrum to be relatively free of strong lines; this introduces differences of the type observed. We, therefore, chose to interpolate our calibration from the earliest type stars, which have fewer and weaker spectral features. From Code's list we chose BS 8622, 1903, 1855, and 5191 where the mean color gradients are those of B0. From Hayes' list we chose BS 1903, 7446, and 3454 with mean color about B1.

Willstrop's (1965) spectro-photometry deserves special note; for it is the only uniformly-sampled, overlapping, spectrophotometry that has been published in tabular form. If one multiplies the integrated filter response functions (Table 1) by Willstrop's (1965) spectral curves for various stars, the results are consistent with our observations. Differences appear independent of spectral type. In our study of 30

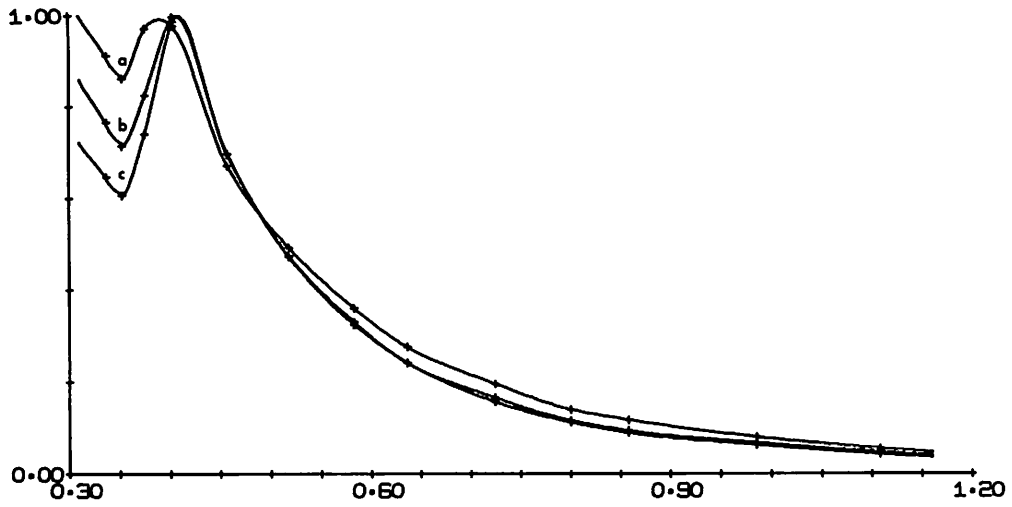


Fig. 12 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at B7 is shown. The stars used for illustration are: a) BS 1713, B8 Ia; b) BS 1719, B7 III; c) BS 3982, B7 V.

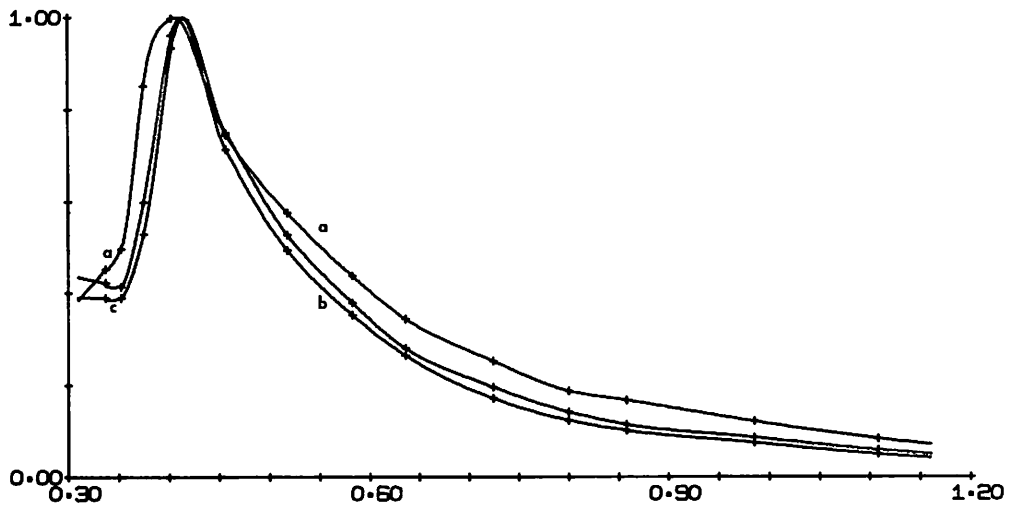


Fig. 13 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at A0 is shown. The stars used for illustration are: a) BS 7924, A2 Ia; b) BS 5291, A0 III; c) BS 7001, A0 V.

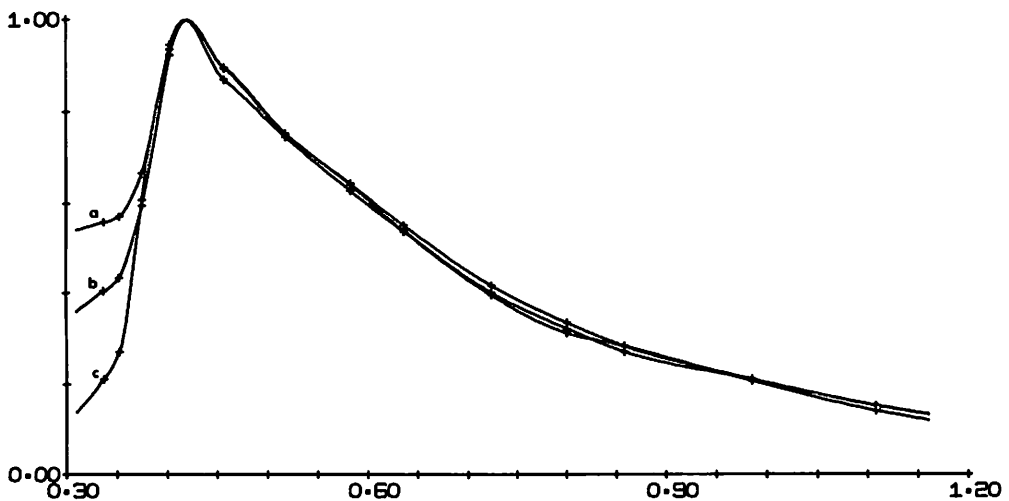


Fig. 14 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at F2 is shown. The stars used for illustration are: a) BS 5447, F2 V; b) BS 840, F2 III; c) BS 6685, F2 Ia.

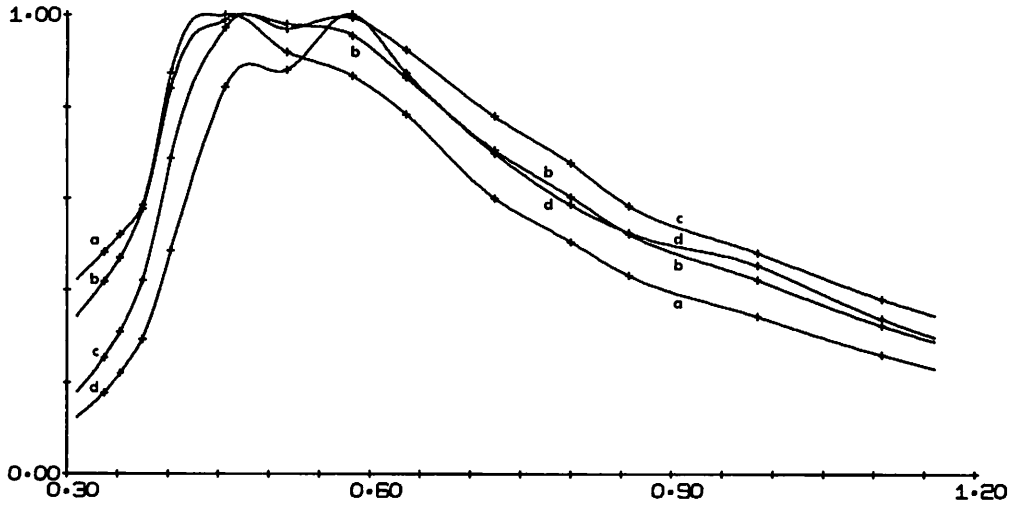


Fig. 15 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at G0 is shown. The stars used for illustration are: a) BS 5868, G0 V; b) BS 4883, G0 III; c) BS 8982, G0 Ib; d) BS 8752, G0 Ia (corrected for reddening).

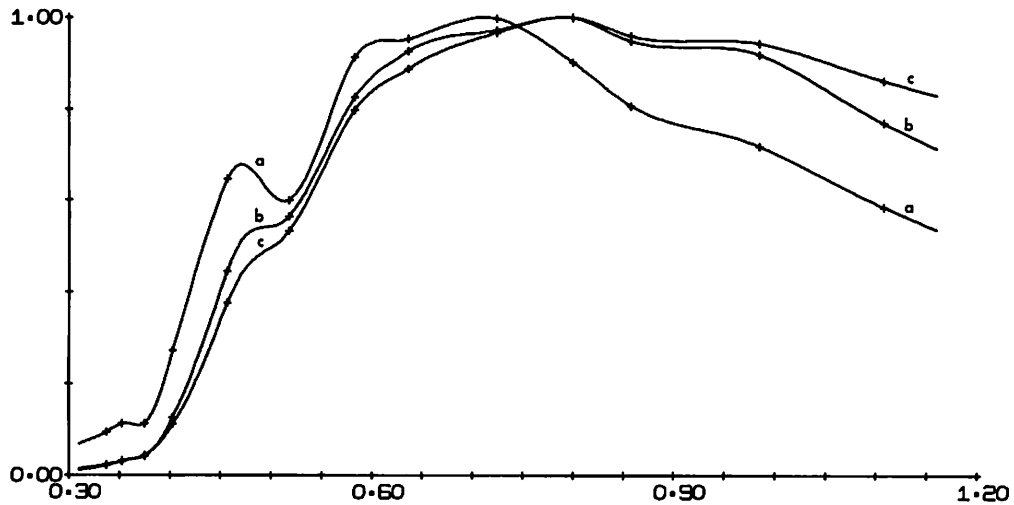


Fig. 16 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at K5 is shown. The stars used for illustration are: a) BS 8085, K5 V; b) BS 6705, K5 III; c) BS 8079, K5 Ib.

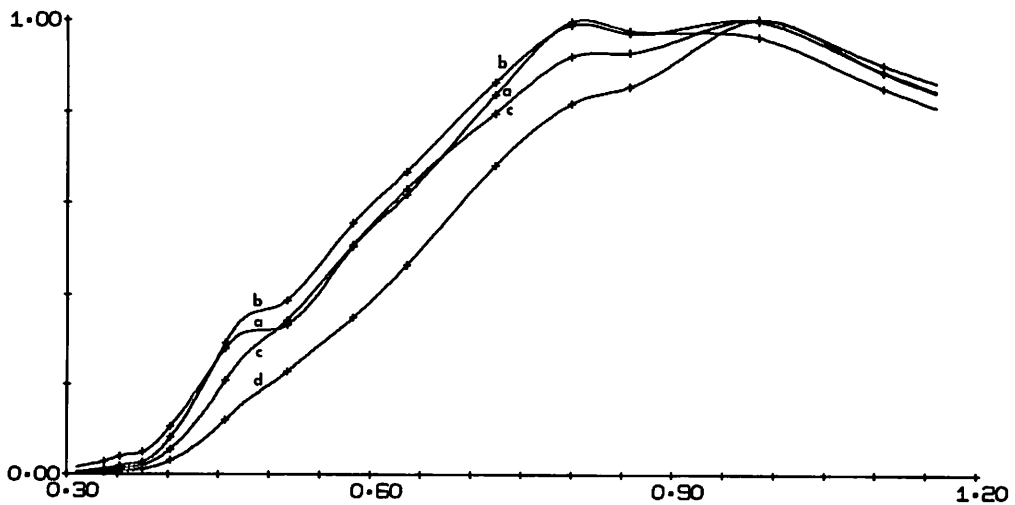


Fig. 17 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at M2 is shown. The stars used for illustration are: a) HD 36395, M1 V; b) BS 45, M2 III; c) BS 1845, M2 Ib (corrected for reddening); d) BS 8316, M2 Ia (corrected for reddening).

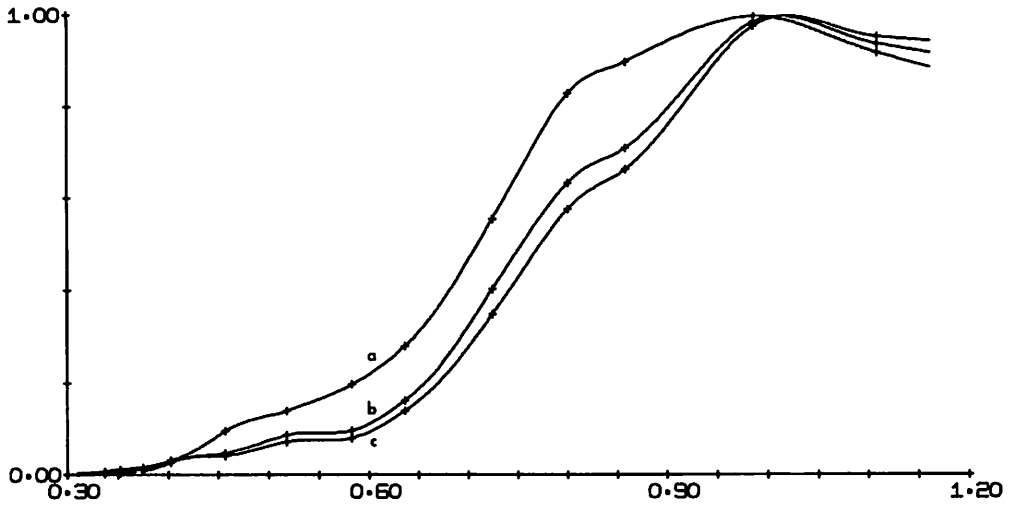


Fig. 18 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The luminosity effect at M5 is shown. The stars used for illustration are: a) Barnard, M5 V; b) BS 7157, M5 III; c) BS 6406/7, M5 III + G5 III.

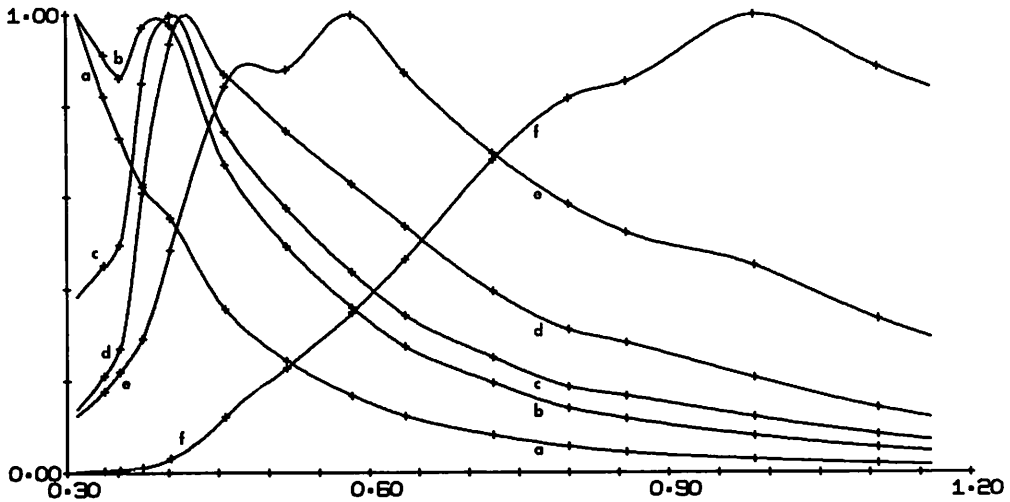


Fig. 19 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The changes with spectral type are shown for a few Ia super giants. The stars used for illustration are: a) BS 1903, B0 Ia; b) 1713, B8 Ia; c) BS 7924, A2 Ia; d) BS 6685, F2 Ia; e) BS 8752, G0 Ia (corrected for reddening); f) BS 8316, M2 Ia (corrected for reddening).

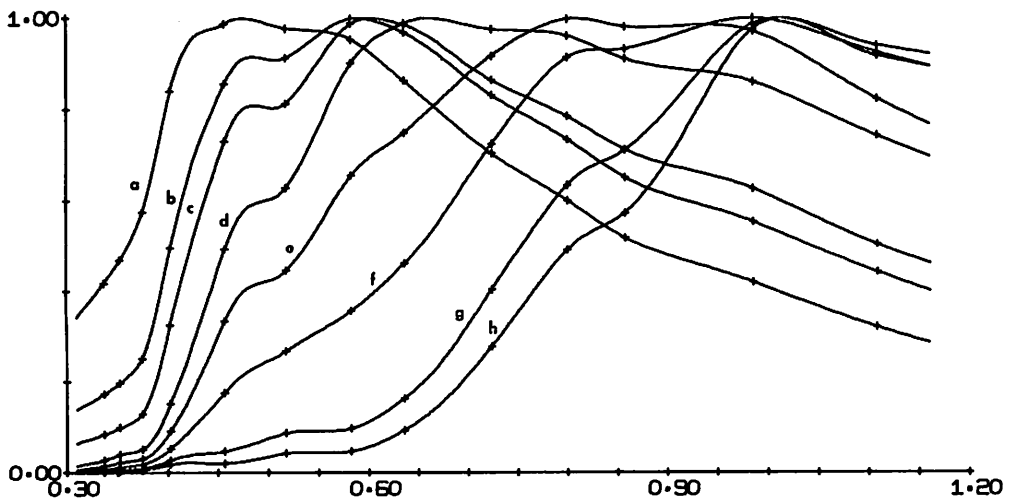


Fig. 20 $F(\lambda) / F(\text{Peak})$ versus λ in microns. Changes with spectral type are shown for a few late giants. The stars used for illustration are: a) BS 4883, G0 III; b) BS 1346, K0 III; c) BS 6603, K2 III; d) BS 3249, K4 III; e) BS 6056, M1 III; f) BS 2286, M3 III; g) BS 7157, M5 III; h) BS 6146, M6 III.

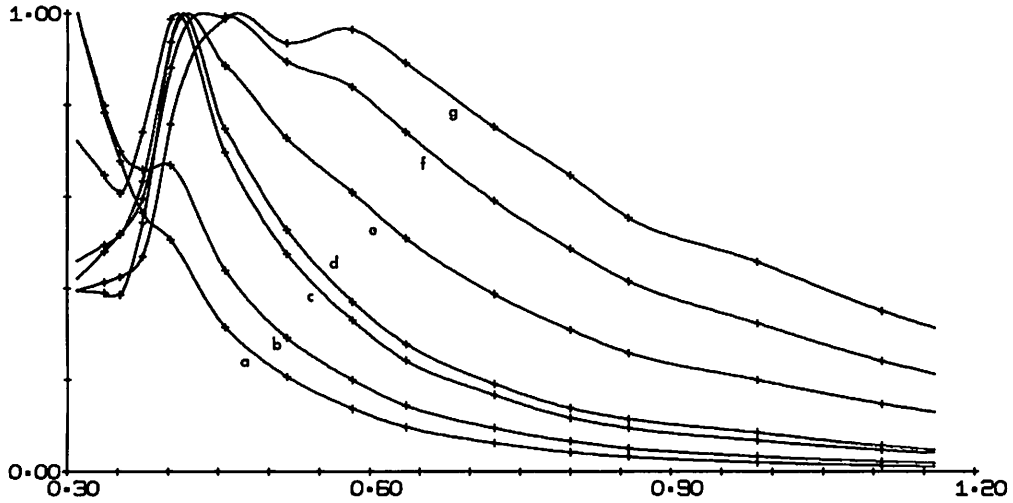


Fig. 21 $F(\lambda) / F(\text{Peak})$ versus λ in microns. Spectral changes for dwarfs, B0 V to G8 V, are shown. The stars used for illustration are: a) BS 1855, B0 V; b) BS 153, B2 V; c) BS 3982, B7 V; d) BS 4554, A0 V; e) BS 2852, F0 V; f) BS 4540, F8 V; g) BS 4496, G8 V.

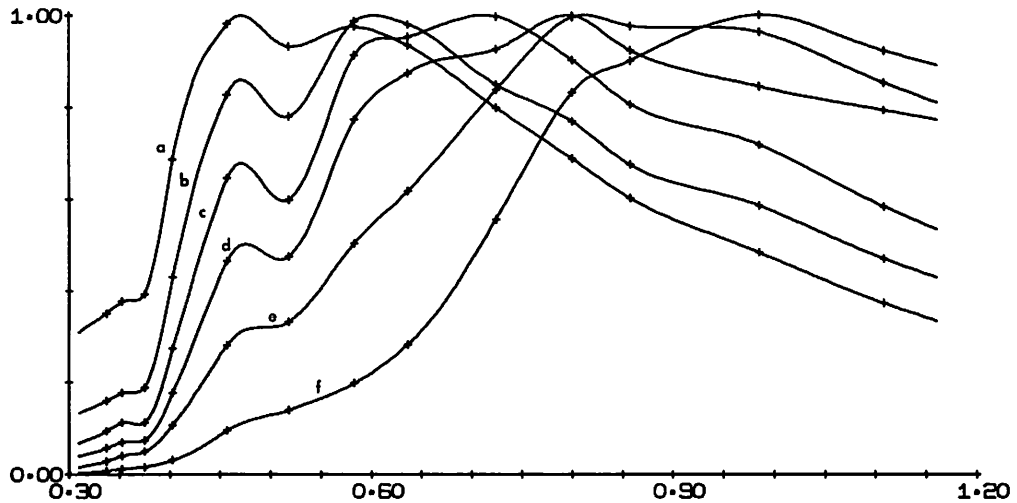


Fig. 22 $F(\lambda) / F(\text{Peak})$ versus λ in microns. Spectral changes for dwarfs, K0 V to M5 V are shown. The stars used for illustrations are: a) BS 7462, K0 V; b) BS 8832, K3 V; c) BS 8085, K5 V; d) BS 8086, K7 V; e) HD 36395, M1 V; f) Barnard, M5 V.

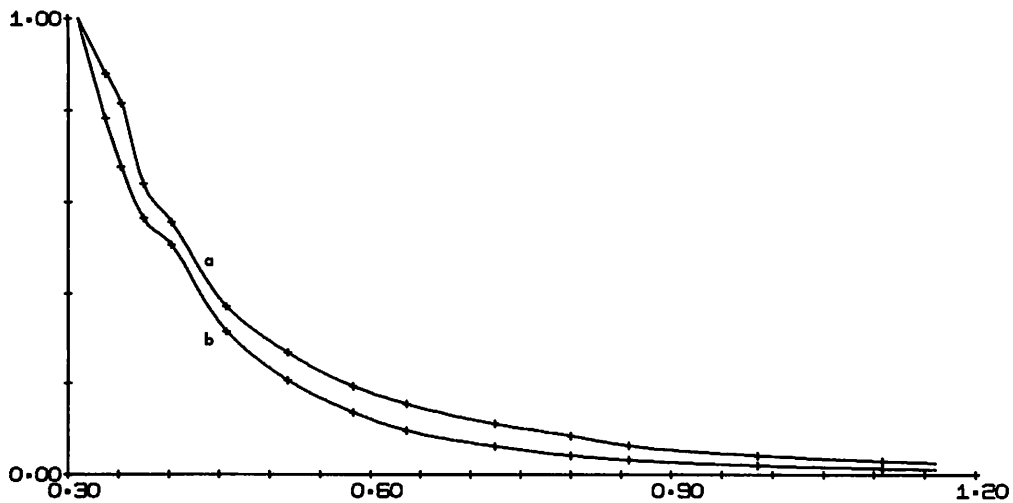


Fig. 23 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The spectrum of the Be star γ Cas (a, BS 264, B0 IVe) is compared with the dwarf ν Ori (b, BS 1855, B0 V). Emission is clearly seen in filter 35 short of the Balmer discontinuity.

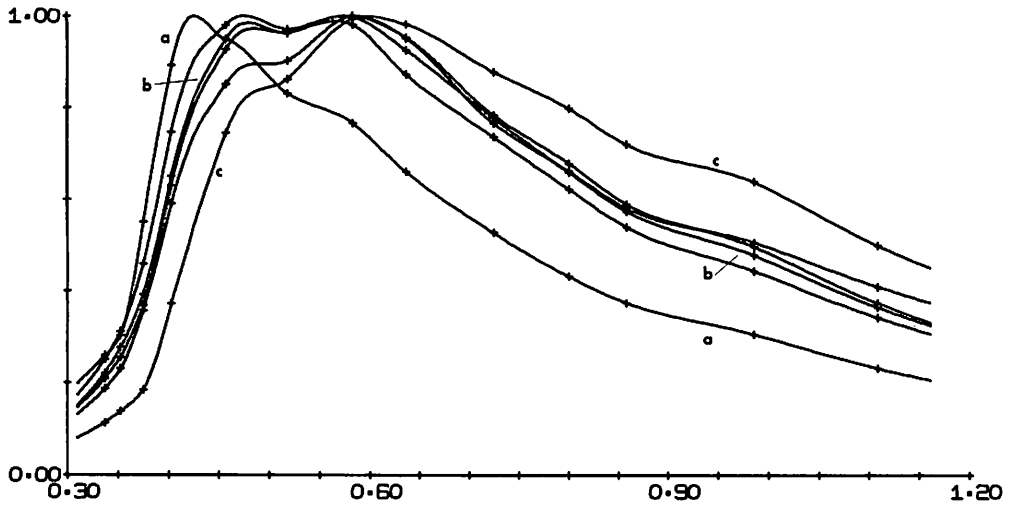


Fig. 24 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The three bright cepheids ζ Gem (BS 2650), η Aql (BS 7570) and δ Cep (BS 8313) as given in Table 7 cluster about the spectral energy curve of β Aqr (b, BS 8232, G0 Ib). For comparison α Per (a, BS 1017, F5 Ib) and 9 Peg (c, BS 8313, G5 Ib) are shown.

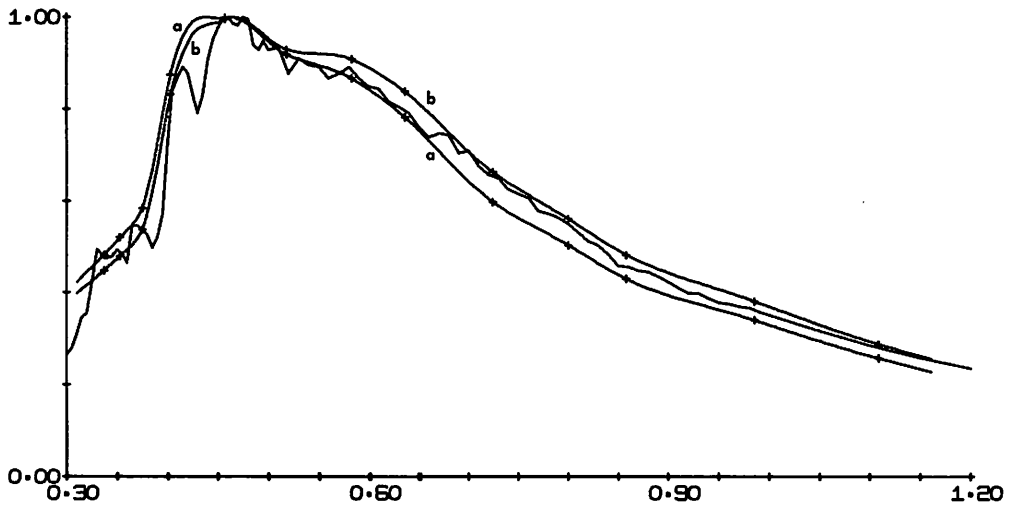


Fig. 25 $F(\lambda) / F(\text{Peak})$ versus λ in microns. A comparison of Arversen's direct solar measurement with two G dwarfs; λ Ser (a, BS 5868, G0 V) and 16 Cyg A (b, BS 7503, G2 V).

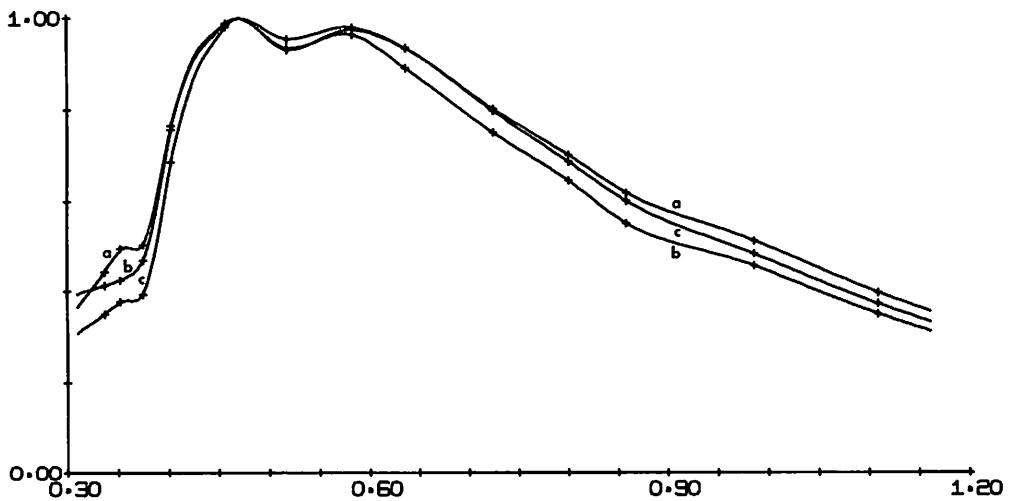


Fig. 26 $F(\lambda) / F(\text{Peak})$ versus λ in microns. The well-known subdwarf HR 4550 (a, G8p V) shows the effects discussed by Johnson and Mitchell (1968) when compared to the two dwarfs; BS 4496 (b, G8 V) and BS 7462 (c, K0 V).

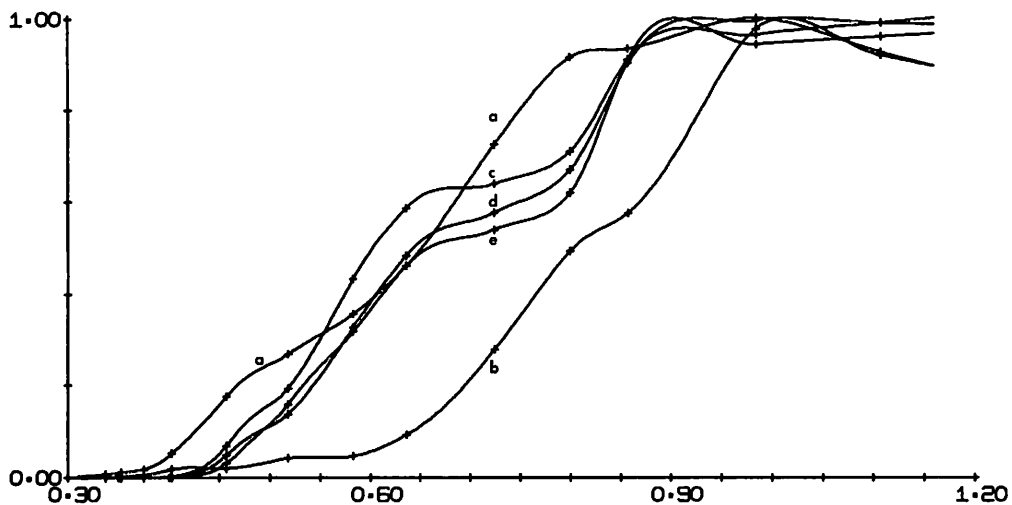


Fig. 27 $F(\lambda) / F(\text{Peak})$ versus λ in microns. Three carbon stars (c, U Hza — BS 4163, C7,3; d, DS Peg — BS 8297, C6,3; e, Y Cvn — BS 4846, C5,4) are illustrated with two normal red giants (a, BS 2286, M3 III; b, g Her — BS 6145, M6 III).

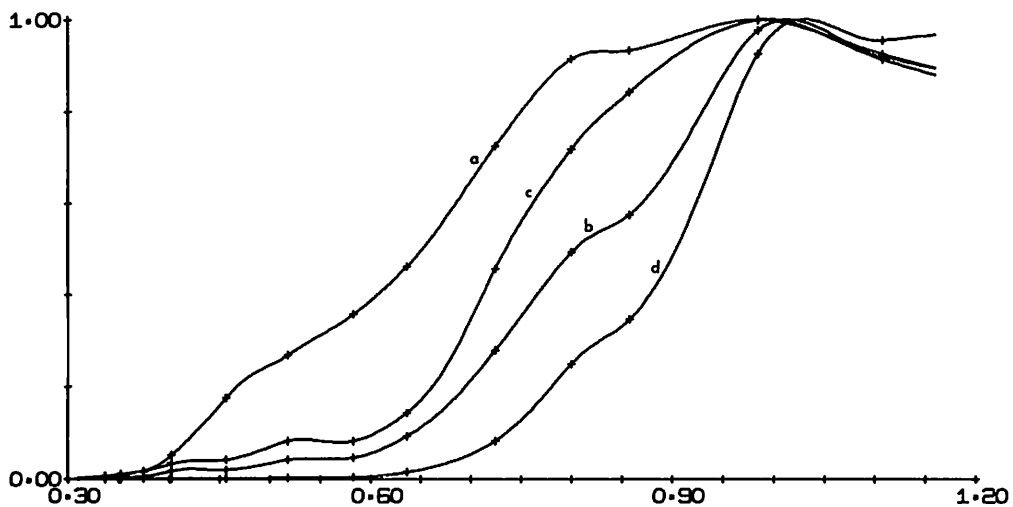


Fig. 28 $F(\lambda) / F(\text{Peak})$ versus λ in microns. Two Mira variables \circ Cet (c, BS 681) and χ Cyg (d, BS 7564, S7,1e) are shown with the same two normal red giants a and b of Figure 27.

stars only χ Peg deviated significantly of all spectral types in Willstrop's list. (For filters 40 and 63 Willstrop's data was extrapolated slightly beyond his table limits.)

The remaining stellar relative energy calibration, by Stebbins and Kron (1964), depends on their broad-band 6-color system. Only the stars in their 1964 paper were used in this calibration of the 13-color system. As a first approximation to the absolute calibration of this 13-color system the mean of the corrections derived from Bahner, Code, Hayes, and Willstrop was applied to the observed colors of Table 7. Then by smooth interpolation we integrated

over our first approximation with Stebbins' and Kron's six color filter responses as given in their 1964 paper. The resulting comparison with their observational data generated a correction at six spectral points, through which a smooth interpolating curve was drawn on a graph. The resulting second approximation was our final calibration from this source. Since systematic effects were found for different spectral types, the mean of the calibrations from eight stars for spectral types O7 to B3 V was taken as representative.

Table 11 summarizes these relative spectral energy corrections for our 13-color system; i.e.,

Table 11 lists the energy distribution of the typical A0 V star as derived from these independent sources of stellar energy calibrations. Table 11 also contains a calibration dependent on recent results on the Sun.

For the solar energy calibration we took the mean of the results by Labs and Neckel (1968) and by Arvesen *et al.* (1968). We had to have some comparison of the Sun with the stars if we are to make use of the solar spectral energy calibration to calibrate our 13-color system. Stebbins and Kron (1957) compared the Sun with seven (G0-4 V type) stars on their old six color system. These stars were used to interpolate the colors of the Sun as if it had been observed on some other system (6 points for interpolation for each star). Emmons and Preski (1967) made a new calibration of the color of the Sun on the UBVR system, based on their observations of three different satellites; from the same G stars used by Stebbins and Kron we get a second determination. The Sun on our 13-color system is the simple average of these two studies; the resulting color is most like λ Ser (BS 5868).

The final calibration derived from these data is given in Table 11. If we use the mean calibration from Table 2 and the filter integrations of the Labs and Neckel solar energy spectrum we predict a color on the 13-color system for the Sun which is most like 16 Cyg A (BS 7503). This raises a question for future study: the comparison of the Sun with other stars is uncertain by approximately the differences between λ Ser and 16 Cyg A, even though the absolute energy calibration of the Sun is quite accurately known (Labs and Neckel 1968).

In Table 2 the relative spectral energy function per unit wavelength for the mean A0 V star (fourth column), is a weighted mean of the values in Table 11. The extrapolated values, indicated by E at the end of the number, were given weights less than one; all other values were given unit weight. As described in Section 6 of this paper, the absolute fluxes computed from the absolute calibration contained in Table 2 must be corrected for deviations in spectral gradient from that of the standard A0 V star. As Tables 6a and b show, however, for most practical purposes, these corrections may be neglected. This fact is a direct consequence of the relative narrowness of the 13-color filters.

As a first step in the absolute calibration of the 52 magnitude, we derived again the absolute calibration of the broad-band V magnitude. The absolute calibration of the V filter depends on three re-

cent sources. In Willstrop's (1960) Table I, we interpolated the calibration for $B-V = 0.64$ and $\lambda_0 = 0.554 \mu$ resulting in $3.83 \times 10^{-9} \text{ erg sec}^{-1} \text{ cm}^{-2} \text{ \AA}^{-1}$ as the calibration of a zero magnitude solar type star. From Code's (1960) data we interpolated between 16 Cyg A and λ Ser at 0.554μ , using Code's calibration at 0.555μ ; we obtained $4.00 \times 10^{-9} \text{ erg sec}^{-1} \text{ cm}^{-2} \text{ \AA}^{-1}$. Finally, from Labs and Neckel (1968) or from Arvesen *et al.* (1968), we obtained the same monochromatic, smoothed, solar energy at 0.554μ , and with the solar magnitude by Stebbins and Kron (1957) we obtained $3.87 \times 10^{-9} \text{ erg sec}^{-1} \text{ cm}^{-2} \text{ \AA}^{-1}$. The unweighted mean flux is $3.90 \times 10^{-9} \text{ erg sec}^{-1} \text{ cm}^{-2} \text{ \AA}^{-1}$ at 0.554μ . The V of an A0 V filter measurement would be 2.7% brighter than this monochromatic value (zero correction for Sun). From this V filter measure and from equation (1) using the solar color ($52-58 \cong 0.32$), we obtain $4.69 \times 10^{-9} \text{ erg sec}^{-1} \text{ cm}^{-2} \text{ \AA}^{-1}$ as the flux density of a zero magnitude A0 V star at $\lambda_0 = 0.518 \mu$ for filter 52. We would obtain the same result if we assume the A0 V star spectrum is like a $15,000^\circ$ black body, in the region of 0.518μ .

The final calibrations, on the new gold point, of the flux densities of a zero magnitude A0 V at the filter effective wavelengths, are given in the last column of Table 2. These flux densities have probable errors of 2% or less, except filters 33, 40, and 110 whose probable errors are about 3%.

8. Conclusion

The final 13-color narrow-band photometric system is defined in Table 7. The linearity and homogeneity of this system has been demonstrated in this paper and in our 8-C paper by comparison with other well-known systems. All the observational data on which the system is based have been presented in our 8-C paper and in Table 10. The nearly monochromatic behavior of the system is demonstrated in Table 6a.

We give in Table 2 an absolute calibration for this photometry, based on modern photoelectric calibrations taken from recent literature. Using our calibration and 13-color photometry, the absolute energy distributions of a number of stars are given in the last figures. These energy distributions are given as smooth curves from our 13 sample points.

The volume of these data is such that we have not been able to exploit fully the information here, but we have referenced published papers which show the variety of possible studies that can be made with these data.

TABLE 1
FILTER-DETECTOR RESPONSE FUNCTIONS
PERCENT OF PEAK RESPONSE

58'		72		80		86		99		110	
$\lambda(\text{\AA})$	%	$\lambda(\text{\AA})$	%	$\lambda(\text{\AA})$	%	$\lambda(\text{\AA})$	%	$\lambda(\text{\AA})$	%	$\lambda(\text{\AA})$	%
5560	0.2	6650	0.9	7600	1.5	8200	1.4	9200	2.3	10200	5.0
5580	0.3	6700	1.3	7650	2.6	8233	2.3	9250	2.7	10300	10.6
5600	0.4	6750	1.8	7700	9.0	8267	8.0	9300	4.3	10400	16.0
5620	0.5	6800	2.3	7750	32.2	8300	26.6	9350	7.0	10500	23.1
5640	0.7	6850	8.6	7800	67.5	8333	64.5	9400	10.6	10600	36.3
5660	1.4	6900	18.1	7850	87.6	8367	99.7	9450	23.8	10700	52.3
5680	2.6	6950	80.4	7900	88.7	8400	81.7	9500	39.9	10800	72.9
5700	5.5	7000	87.1	7950	92.9	8433	76.7	9550	72.6	10900	88.6
5720	15.0	7050	86.7	8000	100.0	8467	77.2	9600	99.9	11000	100.0
5740	40.1	7100	86.1	8050	98.5	8500	82.4	9650	100.0	11100	96.3
5760	78.4	7150	89.9	8100	85.3	8533	94.3	9700	86.5	11200	78.9
5780	94.2	7200	96.3	8150	77.1	8567	98.8	9750	79.4	11300	66.3
5800	92.6	7250	100.0	8200	74.0	8600	100.0	9800	76.9	11400	48.0
5820	94.0	7300	99.4	8250	32.3	8633	98.9	9850	74.3	11500	36.3
5840	99.5	7350	96.2	8300	15.8	8667	93.1	9900	73.2	11600	28.6
5860	100.0	7400	88.9	8350	3.0	8700	90.7	9950	70.7	11700	21.1
5880	96.0	7450	81.6	8400	1.4	8733	87.3	10000	66.1	11800	17.4
5900	91.2	7500	65.7			8767	79.9	10050	61.5	11900	13.7
5920	90.9	7550	45.4			8800	70.8	10100	53.1	12000	10.0
5940	86.2	7600	21.8			8833	55.5	10150	47.4		
5960	59.4	7650	11.1			8867	32.1	10200	37.1		
5980	26.8	7700	5.0			8900	14.0	10250	29.2		
6000	11.7	7750	2.1			8933	6.3	10300	18.6		
6020	5.0	7800	1.3			8967	3.7	10350	10.8		
6040	2.5					9000	1.8	10400	6.5		
6060	1.3							10450	3.1		
6080	0.7							10500	2.0		
6100	0.2							10550	1.2		
6120	0.2							10600	0.5		
6140	0.0										

TABLE 2
ABSOLUTE CALIBRATION FOR 13-COLOR FILTERS

FILTER BAND	$\lambda_0 (\mu)$	EFFECTIVE RECTANGULAR BANDPASS %	RELATIVE ENERGY OF OUR MEAN A0 V (MAG.)	ABSOLUTE FLUX DENSITY (ZERO MAG. A0 V STAR)
33	.337	3.3	+0.275	$3.63 \times 10^{-12} \text{ W/cm}^2\mu$
35	.353	3.6	+0.295	3.57 "
37	.375	3.4	-0.045	4.89 "
40	.402	5.6	-0.625	8.40 "
45	.459	6.1	-0.380	6.67 "
52	.518	5.0	0.000	4.69 "
58	.583	3.8	+0.360	3.36 "
63	.635	5.1	+0.675	2.51 "
72	.724	8.1	+1.085	1.73 "
80	.800	5.4	+1.435	1.25 "
86	.858	5.6	+1.655	1.02 "
99	.985	5.9	+1.970	0.76 "
110	1.108	7.4	+2.385	0.52 "

TABLE 3
PROBABLE ERROR FOR SINGLE OBSERVATION

58	58-72	58-80	58-86	58-99	58-110
± 0.025	$\pm .021$	$\pm .019$	$\pm .021$	$\pm .023$	$\pm .033$
	52-72	52-80	52-86	52-99	52-110
	$\pm .024$	$\pm .022$	$\pm .024$	$\pm .025$	$\pm .035$

TABLE 4
CORRECTIONS INCORPORATED IN TABLES 7, 8 AND 9

- 1) Add to the mean colors relative to 58' derived from Table 10:
 - a) For Data in Table 7
 $(58-58') = + 0.0027 + 0.0245 (52-58)$
 $+ 0.0235 (58'-72)$
 - b) For Data in Table 9
 $(58-58') = 0.0023 + 0.0471 (58'-72)$
- 2) Add to mean colors a zero point correction for A0 V
 - a) From Table 6 *Comm. LPL* No. 92, add to:

33-52	35-52	37-52	40-52
+0.074	+0.022	-0.038	-0.002
45-52	52-58	52-63	
+0.023	+0.009	+0.012	
 - b) From mean of Table 10 this paper after combining Step 1, add to:

58-72	58-80	58-86	58-99	58-110
-0.008	-0.011	-0.029	-0.043	-0.059
- 3) Add to Magnitude 52 from Table 6, *Comm. LPL* No. 92, +0.0015.
 Add to Mean 58 Table 10 after Step 1.b, +0.0015.

TABLE 5
OBSERVED ATMOSPHERIC EXTINCTION
AT THE CATALINA OBSERVATORY
(mean of 15 Nights)

FILTER No.	(58')	72	80	86	99	110
k	0.158	0.096	0.077	0.061	0.05	0.05

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TABLE 6a
COMPUTED CORRECTION FACTORS, FROM MEASURED FILTER MAGNITUDES TO
MONOCHROMATIC MAGNITUDES AT THE FILTER EFFECTIVE WAVELENGTHS

Temp, °K	33	35	37	40	45	52	58	63	72	80	86	99	110
1000	0.786	0.730	0.809	0.726	0.591	0.911	0.953	0.913	0.940	0.979	0.983	0.983	0.983
1500	0.917	0.880	0.928	0.877	0.865	0.971	0.987	0.979	0.987	0.997	0.997	1.000	1.005
2000	0.961	0.939	0.970	0.939	0.951	0.990	0.997	0.996	1.000	1.001	1.001	1.004	1.008
2500	0.980	0.967	0.988	0.968	0.983	0.998	1.001	1.003	1.005	1.003	1.002	1.005	1.008
3000	0.989	0.983	0.996	0.984	0.996	1.001	1.002	1.005	1.006	1.003	1.002	1.005	1.007
4000	0.996	0.995	1.004	0.996	1.006	1.003	1.003	1.006	1.006	1.003	1.002	1.003	1.005
5000	0.999	1.000	1.006	1.000	1.007	1.003	1.003	1.005	1.005	1.002	1.001	1.002	1.003
6000	1.000	1.002	1.007	1.001	1.006	1.003	1.002	1.004	1.004	1.002	1.000	1.001	1.003
8000	1.000	1.002	1.007	1.000	1.005	1.002	1.002	1.003	1.002	1.001	1.000	1.000	1.000
10000	1.000	1.001	1.006	0.998	1.003	1.001	1.001	1.002	1.001	1.000	0.999	0.999	0.999
15000	0.998	0.998	1.005	0.994	0.999	1.000	1.000	0.999	0.999	1.000	0.999	0.998	0.997
20000	0.998	0.997	1.004	0.993	0.998	0.999	1.000	0.999	0.998	0.999	0.998	0.998	0.994
30000	0.997	0.995	1.003	0.991	0.996	0.999	1.000	0.999	0.998	0.999	0.998	0.997	0.994
60000	0.996	0.994	1.002	0.988	0.995	0.998	0.999	0.998	0.997	0.999	0.998	0.997	0.995
100000	0.996	0.993	1.001	0.987	0.994	0.998	0.999	0.998	0.997	0.999	0.997	0.997	0.995

TABLE 6b
COMPUTED BLACK BODY RELATIVE GRADIENTS

Temp, °K	33-35	35-37	37-40	40-45	45-52	52-58	58-63	63-72	72-80	80-86	86-99	99-110
1000	1.987	1.773	2.021	4.511	3.111	3.002	2.121	2.664	1.809	1.160	1.890	1.562
1500	1.238	0.979	1.004	2.721	2.170	1.925	1.340	1.648	1.161	0.721	1.117	0.959
2000	0.860	0.579	0.498	1.901	1.608	1.381	0.960	1.197	0.829	0.501	0.732	0.661
2500	0.634	0.338	0.197	1.424	1.270	1.052	0.735	0.900	0.628	0.369	0.503	0.484
3000	0.485	0.175	-0.003	1.109	1.005	0.832	0.586	0.702	0.494	0.281	0.352	0.368
4000	0.300	-0.030	-0.249	0.718	0.691	0.559	0.398	0.457	0.327	0.174	0.168	0.229
5000	0.191	-0.154	-0.395	0.485	0.502	0.394	0.293	0.313	0.228	0.112	0.062	0.149
6000	0.119	-0.237	-0.490	0.330	0.376	0.287	0.222	0.219	0.165	0.072	-0.005	0.099
8000	0.031	-0.341	-0.607	0.139	0.221	0.157	0.138	0.108	0.090	0.026	-0.084	0.040
10000	-0.020	-0.402	-0.674	0.029	0.132	0.083	0.091	0.046	0.048	-0.002	-0.127	+0.008
15000	-0.084	-0.480	-0.757	-0.110	0.023	-0.007	0.033	-0.030	-0.004	-0.035	-0.180	-0.032
20000	-0.113	-0.515	-0.795	-0.172	-0.028	-0.048	0.007	-0.065	-0.027	-0.047	-0.207	-0.051
30000	-0.139	-0.548	-0.829	-0.230	-0.073	-0.086	-0.017	-0.097	-0.049	-0.061	-0.230	-0.069
60000	-0.162	-0.577	-0.858	-0.281	-0.114	-0.120	-0.039	-0.126	-0.069	-0.074	-0.252	-0.085
100000	-0.170	-0.587	-0.869	-0.299	-0.129	-0.132	-0.047	-0.137	-0.076	-0.078	-0.257	-0.092

Stebbins, J. and Kron, G. 1964, "Six-Color Photometry of Stars. XI. Black-Body Color Temperatures of 25 Stars," <i>Ap. J.</i> , 139, 424.	4163	U Hya	58 filters differ by more than 0.10 Mag.
	4846	Y Cvn	39867.9 matched to 39176.9
	4915	α^2 Cvn	39930.7 matched to 38894.7
	5056	α Vir	39930.8 matched to 39176.9
Strömgren, B. 1937, <i>Handbuch der Experimentalphysik</i> , ed. by W. Wien and T. Harms (Leipzig: Akademische Verlags-Gesellschaft M.B.H.), 26, 321.	5589	RR UMi	39910.9 matched to 39257.8
	6146	g Her	39969.8 matched to 38929.7
	6406	α Her	39973.7 matched to 39227.9
	6431	μ Her	58 filters differ by more than 0.10 Mag.
Wesselink, A. J. 1950, <i>Trans. I.A.U.</i> , 7, 269.	7066	R Sct	39974.9 matched to 38917.8
Willstrop, R. V. 1960, "Absolute Measures of Stellar Radiation," <i>M.N.R.A.S.</i> , 121, 17-40.	7564	x Cyg	40004.9 matched to 40006.9 (unpublished data)
Willstrop, R. V. 1965, "Absolute Measures of Stellar Radiation, II," <i>Mem. R.A.S.</i> , 69, 83-143.	4163		33-52 = 12. is lower limit.
	4846		33 was not measurable.
	8297		33-52 = 12. is lower limit.
			33 was not measurable.
	7570	η Aql	39976.9 matched to 38871.9
NOTES for Table 7, below	8262	W Cyg	58 filters differ by more than 0.10 Mag.
215 ζ And			400022.8 matched to 39407.6
681 \circ Cet	8297	V460 Cyg	58 filters differ by more than 0.10 Mag.
1239 λ Tau	8316	μ Cep	58 filters differ by more than 0.10 Mag.
1845 CE Tau			58 filters differ by more than 0.10 Mag.
2061 α Ori	8383	VV Cep	58 filters differ by more than 0.10 Mag.
2308 BL Ori			58 filters differ by more than 0.10 Mag.
2590 π CMa	8571	δ Cep	39728.8 matched to 39459.6
	8752	HD 217476	58 filters differ by more than 0.10 Mag.
2650 ζ Gem			

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
3	4.879	1.674	1.468	1.578	1.363	0.451	0.523	0.831	1.074	1.304	1.452	1.604	1.762	3	2	K1 III
15	2.061	-0.779	-0.734	-0.478	-0.167	-0.051	-0.014	-0.034	-0.051	-0.064	-0.104	-0.151	-0.161	2	3	B9p (III)
21	2.367	0.366	0.277	0.266	0.376	0.169	0.190	0.322	0.434	0.534	0.549	0.592	0.663	8	3	F2 IV
27	5.120	0.766	0.607	0.334	0.429	0.219	0.242	0.387	0.549	0.676	0.734	0.818	0.943	2	3	F2 II
33	5.018	0.207	0.114	0.305	0.541	0.257	0.259	0.428	0.611	0.763	0.789	0.827	0.930	2	1	F6 V
39	2.794	-1.428	-1.322	-0.891	-0.312	-0.077	-0.069	-0.110	-0.179	-0.241	-0.316	-0.446	-0.486	10	1	B2 IV
45	5.198	3.527	2.998	2.944	2.317	0.691	0.752	1.269	1.953	2.452	2.653	3.001	3.287	29	18	M2 III
48 V	4.894	3.757	3.222	3.146	2.504	0.771	0.786	1.311	1.984	2.475	2.689	3.023	3.253	3	1	(gM1)
63	4.638	0.105	0.083	0.079	0.056	0.020	0.077	0.056	0.066	0.118	0.099	0.126	0.142	2	2	A2 V
68	4.532	0.119	0.105	0.123	0.087	0.038	0.045	0.053	0.069	0.095	0.092	0.113	0.176	2	3	A2 V
74	3.855	2.306	2.068	2.073	1.702	0.541	0.577	0.910	1.193	1.446	1.591	1.773	1.960	3	2	K2 III
123 D	4.715	-0.559	-0.514	-0.373	-0.121	-0.029	-0.014	-0.044	-0.003	-0.023	-0.082	-0.142	-0.126	2	3	(B8)
130	4.220	-1.043	-0.986	-0.582	0.068	0.142	0.092	0.164	0.219	0.271	0.261	0.218	0.286	2	3	B1 Ia
153	3.685	-1.373	-1.246	-0.840	-0.269	-0.064	-0.052	-0.099	-0.149	-0.189	-0.252	-0.393	-0.432	2	3	B2 V
154	4.368	-0.946	-0.864	-0.592	-0.180	-0.036	-0.014	-0.046	-0.058	-0.085	-0.139	-0.216	-0.190	2	2	B5 V
163	4.560	1.176	0.932	1.043	1.077	0.432	0.415	0.679	0.938	1.170	1.257	1.411	1.576	2	3	G8 IIIp
165	3.645	2.577	2.313	2.352	1.845	0.537	0.669	1.002	1.323	1.609	1.737	1.949	2.176	2	3	K3 III
168	2.521	2.142	1.925	1.939	1.645	0.556	0.545	0.840	1.115	1.359	1.475	1.654	1.863	2	2	K0 III-III
179	4.825	-0.985	-0.910	-0.621	-0.174	-0.027	-0.016	-0.018	-0.054	-0.077	-0.104	-0.166	-0.153	2	2	B2 V
188	2.354	1.772	1.556	1.615	1.388	0.477	0.516	0.799	1.042	1.269	1.395	1.534	1.687	2	2	K1 III
193	4.586	-0.778	-0.722	-0.531	-0.102	0.009	0.036	0.042	0.030	0.035	0.017	-0.050	0.033	2	1	B2 V
194	5.038	1.656	1.446	1.539	1.335	0.461	0.497	0.794	1.044	1.280	1.386	1.526	1.688	3	2	K0 III
215 V	4.437	1.800	1.572	1.669	1.473	0.507	0.583	0.912	1.212	1.464	1.571	1.760	1.953	2	2	K1 II
219 D	3.587	0.307	0.200	0.428	0.655	0.275	0.297	0.520	0.689	0.847	0.896	0.991	1.137	4	2	G0 V
224	4.868	3.249	2.816	2.846	2.230	0.624	0.782	1.228	1.652	2.020	2.190	2.466	2.744	2	3	K5 III
226	4.535	-0.947	-0.874	-0.580	-0.181	-0.034	-0.045	-0.063	-0.126	-0.150	-0.166	-0.263	-0.242	3	1	B5 V
244	4.931	0.387	0.305	0.464	0.646	0.281	0.273	0.465	0.619	0.774	0.796	0.860	0.981	2	3	F8 V
248	5.181	3.430	2.935	2.933	2.327	0.674	0.805	1.263	1.756	2.132	2.300	2.593	2.834	3	3	M0 III
253	5.126	2.309	2.008	2.083	1.696	0.540	0.604	0.944	1.250	1.520	1.637	1.853	2.083	2	3	K2 III
264 V	2.270	-1.575	-1.511	-0.905	-0.165	0.022	0.008	0.086	0.129	0.191	0.089	-0.031	0.010	3	3	B0 IV:e
265	4.852	1.417	1.191	1.298	1.217	0.444	0.463	0.756	1.006	1.240	1.335	1.503	1.674	2	3	G8 III-IV
269	3.911	0.261	0.219	0.175	0.151	0.055	0.066	0.130	0.122	0.188	0.171	0.193	0.230	2	1	A4 III
271	4.618	1.425	1.227	1.322	1.216	0.436	0.435	0.726	0.946	1.149	1.239	1.373	1.549	2	3	G8 III-IV
285	4.537	2.370	2.145	2.184	1.757	0.551	0.589	0.913	1.197	1.465	1.577	1.755	1.991	1	3	K2 III
294	4.508	1.474	1.240	1.340	1.256	0.471	0.440	0.768	1.042	1.260	1.357	1.507	1.634	2	2	K0 III
334	3.758	2.154	1.930	1.988	1.608	0.499	0.581	0.903	1.179	1.419	1.539	1.721	1.926	2	3	K3 III
335 D	4.251	-0.556	-0.497	-0.438	-0.105	-0.006	0.013	0.016	-0.008	0.009	0.004	-0.017	0.065	2	2	B7 V
337	2.510	3.545	3.006	3.008	2.365	0.685	0.807	1.287	1.873	2.309	2.493	2.801	3.062	2	3	M0 III
343	4.391	0.302	0.258	0.235	0.220	0.081	0.096	0.144	0.179	0.217	0.230	0.264	0.268	2	3	A7 V
351	4.900	1.647	1.455	1.523	1.368	0.494	0.485	0.759	1.015	1.236	1.336	1.502	1.705	2	3	G8 III
352	4.784	1.872	1.698	1.761	1.474	0.492	0.543	0.850	1.100	1.343	1.415	1.599	1.789	2	2	K0 III-IV
360	4.925	1.677	1.493	1.568	1.410	0.483	0.494	0.766	1.044	1.265	1.366	1.522	1.670	2	3	K0 III
383	4.797	0.202	0.184	0.056	0.030	0.017	0.048	0.044	0.098	0.114	0.127	0.138	0.151	2	3	A3 V
390	5.143	1.900	1.698	1.760	1.474	0.485	0.524	0.807	1.074	1.254	1.399	1.574	1.798	2	2	K0 III-IV
399	5.005	1.761	1.592	1.675	1.422	0.473	0.527	0.815	1.055	1.287	1.394	1.546	1.746	2	3	K0 III
402	3.921	1.789	1.596	1.666	1.414	0.481	0.527	0.839	1.058	1.308	1.426	1.592	1.779	2	3	K0 III
403 V	2.690	0.289	0.252	0.193	0.148	0.059	0.084	0.105	0.172	0.223	0.225	0.244	0.299	3	3	A5 V
417	4.937	0.181	0.116	0.282	0.493	0.214	0.223	0.377	0.522	0.637	0.650	0.715	0.819	2	2	F4 V
424 V	2.120	0.941	0.748	0.617	0.710	0.283	0.318	0.487	0.632	0.808	0.867	0.920	1.025	3	3	F8 Ib
434	5.232	2.858	2.412	2.485	1.964	0.581	0.721	1.123	1.508	1.839	1.978	2.238	2.490	2	2	K4 III
437	3.849	1.507	1.323	1.370	1.264	0.456	0.442	0.730	0.956	1.164	1.266	1.406	1.565	2	3	G8 III
442	4.915	1.557	1.338	1.426	1.296	0.465	0.466	0.755	1.005	1.250	1.341	1.489	1.660	2	3	G8 III
458	4.226	0.300	0.211	0.374	0.596	0.252	0.279	0.444	0.624	0.764	0.795	0.848	0.949	4	3	F8 V
464	3.927	2.491	2.250	2.285	1.820	0.534	0.651	1.000	1.324	1.598	1.707	1.895	2.112	3	2	K3 III
477	4.970	-0.661	-0.612	-0.505	-0.151	-0.021	0.002	-0.009	-0.035	-0.029	-0.056	-0.103	-0.129	2	3	B8 IV
483	5.107	0.419	0.321	0.537	0.712	0.292	0.321	0.519	0.705	0.841	0.906	0.985	1.137	4	3	G2 V
489	4.818	2.819	2.439	2.503	1.961	0.572	0.699	1.101	1.441	1.755	1.912	2.139	2.375	2	2	K3 III
493	5.462	0.954	0.868	1.122	1.016	0.337	0.457	0.719	0.934	1.145	1.239	1.343	1.482	3	3	K1 V
496 V	4.095	-1.357	-1.303	-0.776	-0.111	0.041	0.009	0.178	0.171	0.264	0.191	0.096	0.206	3	3	B1pe (III,V)
509	3.727	0.656	0.518	0.780	0.852	0.332	0.388	0.636	0.830	1.026	1.103	1.195	1.374	2	3	G8 Vp
510	4.493	1.500	1.322	1.378	1.252	0.437	0.453	0.729	0.975	1.184	1.293	1.420	1.525	2	3	G8 III
531	4.719	0.228	0.159	0.263	0.378	0.169	0.187	0.283	0.377	0.495	0.505	0.510	0.585	2	2	F2 IV
539	3.986	2.018	1.793	1.847	1.534	0.509	0.530	0.831	1.107	1.340	1.467	1.647	1.861	2	3	K2 III
542	3.350	-0.972	-0.886	-0.648	-0.207	-0.045	-0.040	-0.054	-0.109	-0.124	-0.152	-0.269	-0.261	2	2	B3 III
544	3.548	0.342	0.229	0.342	0.546	0.242	0.266	0.424	0.570	0.706	0.757	0.795	0.899	2	2	F6 IV
545/6	3.895	-0.239	-0.232	-0.144	-0.048	-0.038	0.021	0.017	-0.011	-0.014	-0.039	-0.047	-0.022	2	2	B9 V /Alp
549	4.838	1.481	1.303	1.388	1.236	0.430	0.460	0.716	0.959	1.185	1.284	1.426	1.589	2	2	K0 III
553	2.710	0.211	0.145	0.193	0.159	0.045	0.080	0.104	0.136	0.171	0.164	0.205	0.234	2	2	A5 V
569	4.850	0.296	0.219	0.252	0.333	0.145	0.159	0.242	0.348	0.417	0.436	0.477	0.565	2	2	F2 IV
575	4.518	0.208	0.155	0.192	0.203	0.076	0.080	0.130	0.184	0.235	0.249	0.263	0.301	2	4	A4 V
580	3.962	0.088	0.054	0.011	0.011	-0.002	0.032	0.027	0.034	0.044	0.029	0.047	0.083	2	3	A1 V
590	4.994	-0.440	-0.429	-0.419	-0.118	-0.007	0.002	0.000	0.023	0.027	0.035	-0.034	-0.024	2	3	B8 V
617	2.315	2.065	1.802	1.903	1.576	0.506	0.561	0.885	1.181	1.441	1.571	1.754	1.963	63	42	K2 III
618	5.806	0.535	0.356	0.207	0.585	0.362	0.349	0.594	0.812	1.031	1.165	1.339	1.473	2	2	A1 Ia
620	4.830	0.														

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
696	6.339	-0.675	-0.658	-0.336	0.242	0.234	0.188	0.311	0.393	0.529	0.586	0.609	0.540	2	2	B2 Ia
699	5.161	3.297	2.879	2.931	2.281	0.661	0.795	1.231	1.713	2.075	2.228	2.519	2.811	3	2	K4 III
707 D	4.513	0.109	0.065	0.146	0.151	0.041	0.110	0.143	0.189	0.280	0.254	0.260	0.331	2	3	A5p
708	4.871	-0.035	-0.030	-0.127	-0.042	0.004	-0.001	0.008	-0.024	-0.018	0.007	-0.001	0.004	2	2	B9 V
718	4.284	-0.204	-0.185	-0.139	-0.066	-0.015	-0.006	-0.023	-0.031	-0.040	-0.059	-0.067	-0.067	56	31	B9 III
740	4.830	0.242	0.173	0.297	0.502	0.249	0.237	0.400	0.526	0.656	0.707	0.727	0.880	2	2	F5 IV-V
753	6.138	1.369	1.176	1.479	1.210	0.298	0.605	0.908	1.180	1.410	1.512	1.666	1.869	6	18	K3 V
779	4.059	-1.448	-1.338	-0.912	-0.319	-0.082	-0.085	-0.135	-0.166	-0.238	-0.298	-0.435	-0.450	3	1	B2 IV
788	5.034	0.429	0.326	0.497	0.661	0.261	0.283	0.459	0.615	0.759	0.796	0.865	1.005	2	2	F9 V
799	4.251	0.230	0.157	0.341	0.559	0.237	0.254	0.434	0.555	0.715	0.736	0.808	0.916	2	3	F7 V
801	4.659	-1.067	-0.954	-0.627	-0.179	-0.035	-0.038	-0.057	-0.111	-0.118	-0.185	-0.246	-0.229	2	2	B3 V
804 D	3.506	0.112	0.083	0.131	0.109	0.029	0.060	0.093	0.114	0.156	0.161	0.184	0.188	2	2	A2 V
811	4.245	-0.733	-0.675	-0.498	-0.175	-0.041	-0.012	-0.034	-0.074	-0.109	-0.151	-0.180	-0.384	2	2	F7 V
813	4.353	0.280	0.219	0.273	0.344	0.141	0.187	0.291	0.368	0.446	0.477	0.510	0.589	2	2	B0 IV
818	4.568	0.231	0.187	0.364	0.557	0.245	0.260	0.415	0.568	0.689	0.741	0.756	0.842	2	2	F6 V
824	4.802	1.997	1.798	1.861	1.535	0.510	0.550	0.843	1.132	1.364	1.487	1.660	1.855	2	3	K1 III
834	4.244	3.317	2.952	2.892	2.393	0.800	0.834	1.294	1.675	2.059	2.238	2.540	2.829	2	3	K3 Ib+B9 V
838	3.625	-0.615	-0.562	-0.389	-0.133	-0.037	-0.014	-0.034	-0.075	-0.123	-0.115	-0.166	-0.143	2	2	B8 V
840	4.320	0.398	0.306	0.300	0.412	0.194	0.187	0.316	0.397	0.513	0.546	0.587	0.654	2	2	F2 III
843	4.982	3.432	2.937	2.965	2.320	0.679	0.794	1.258	1.777	2.218	2.381	2.675	2.968	2	2	K5 III
854	4.143	1.030	0.904	0.946	0.900	0.358	0.378	0.629	0.810	1.060	1.133	1.251	1.406	2	2	G4 III+A4 V
874	4.161	1.888	1.664	1.765	1.465	0.486	0.526	0.842	1.102	1.346	1.452	1.628	1.818	2	2	K1 III-IV
875	5.196	0.182	0.154	0.109	0.103	0.041	0.052	0.079	0.117	0.151	0.151	0.165	0.220	26	19	A1 V
879	4.703	0.220	0.201	0.075	0.057	0.033	0.048	0.076	0.099	0.134	0.129	0.164	0.203	2	2	A2 V
882	5.253	2.344	2.052	2.136	1.720	0.533	0.602	0.956	1.223	1.525	1.640	1.858	2.061	2	3	K2 III
896	4.690	-0.764	-0.699	-0.487	-0.171	-0.042	-0.002	-0.027	-0.036	-0.049	-0.075	-0.136	-0.118	2	2	B5 III
911	2.951	3.585	3.073	2.965	2.436	0.751	0.766	1.285	1.969	2.462	2.671	3.020	3.307	2	2	M2 III
915	3.104	1.003	0.899	0.895	0.832	0.350	0.362	0.587	0.819	1.025	1.107	1.251	1.442	2	2	G8 III
921 V	3.740	3.812	3.082	2.858	2.267	0.926	0.574	1.289	2.407	3.117	3.396	3.882	4.205	2	3	M4 IIIa
932	4.869	0.064	0.058	0.066	0.049	0.024	0.037	0.034	0.049	0.064	0.048	0.064	0.164	3	2	A0 V
936 V	2.159	-0.579	-0.542	-0.358	-0.113	-0.036	0.017	0.037	0.057	0.097	0.093	0.082	0.149	1	3	B8 V
937	4.185	0.457	0.357	0.536	0.704	0.286	0.300	0.503	0.670	0.836	0.870	0.945	1.070	12	2	G0 V
941	4.053	1.557	1.401	1.487	1.285	0.424	0.493	0.778	0.993	1.227	1.323	1.481	1.667	2	2	K0 III
947	4.896	1.958	1.746	1.812	1.535	0.508	0.535	0.845	1.128	1.359	1.469	1.645	1.869	2	2	K0 III
951	4.595	1.737	1.559	1.625	1.398	0.486	0.488	0.775	1.000	1.256	1.361	1.529	1.702	2	2	K2 III
972	4.894	0.005	0.001	-0.043	-0.034	-0.005	0.014	0.005	0.043	0.027	0.031	0.047	0.088	2	2	A0 IV
984	4.875	0.233	0.184	0.206	0.269	0.101	0.144	0.214	0.266	0.333	0.354	0.372	0.496	2	2	A7m
985	4.841	-1.196	-1.109	-0.736	-0.210	-0.036	-0.026	-0.058	-0.063	-0.096	-0.137	-0.232	-0.222	2	2	B2 Ve
991	5.201	2.860	2.545	2.577	2.087	0.708	0.723	1.085	1.467	1.777	1.940	2.215	2.503	2	2	K2 II
996	5.008	0.538	0.459	0.680	0.803	0.311	0.358	0.554	0.767	0.928	0.984	1.075	1.221	2	2	G5 V
999	4.906	3.296	2.884	2.891	2.319	0.712	0.809	1.248	1.676	2.028	2.189	2.524	2.818	2	3	K4 III
1002	4.991	0.102	0.099	0.123	0.085	0.033	0.035	0.043	0.086	0.122	0.112	0.138	0.131	2	3	A3 V
1017	1.937	0.989	0.803	0.492	0.555	0.239	0.274	0.429	0.589	0.724	0.788	0.889	1.000	14	2	F5 Ib
1030	3.832	1.347	1.113	1.178	1.133	0.440	0.438	0.707	0.892	1.130	1.195	1.353	1.528	2	2	G8 III
1034	5.043	-0.853	-0.785	-0.506	-0.133	0.002	-0.019	-0.042	-0.051	-0.052	-0.100	-0.148	-0.112	2	3	B3 V
1035 D	4.408	0.040	-0.036	-0.037	0.386	0.282	0.246	0.437	0.586	0.726	0.836	0.930	1.054	2	2	B9 Ia
1038	3.760	-0.561	-0.513	-0.324	-0.106	-0.016	0.008	-0.002	0.010	-0.006	-0.029	-0.056	-0.067	2	3	B8 V
1040	4.728	0.297	0.179	0.106	0.496	0.346	0.326	0.552	0.783	0.982	1.157	1.301	1.419	3	3	A0 Ia
1044	4.669	-0.927	-0.853	-0.561	-0.158	-0.012	-0.026	-0.030	-0.049	-0.062	-0.103	-0.167	-0.217	2	2	B3 IV
1046 D	5.134	0.088	0.053	0.081	0.051	0.004	0.036	0.040	0.080	0.078	0.048	0.031	-0.342	2	2	A1 V
1052	4.728	2.828	2.417	2.502	1.995	0.593	0.699	1.088	1.434	1.728	1.888	2.112	2.379	2	3	K0 III
1066	4.385	1.961	1.749	1.800	1.566	0.540	0.695	0.788	1.054	1.300	1.405	1.576	1.782	2	3	K3 III-III
1070	4.727	-0.425	-0.378	-0.345	-0.127	-0.016	-0.020	-0.034	-0.060	-0.075	-0.091	-0.126	-0.078	2	3	B8 V
1084	3.967	1.054	0.951	1.232	1.097	0.337	0.496	0.765	1.008	1.221	1.301	1.426	1.597	41	17	K2 V
1087	4.234	-0.879	-0.842	-0.585	-0.125	0.003	-0.009	0.066	0.036	0.080	0.056	0.002	0.070	2	2	B5e
1101	4.423	0.384	0.291	0.457	0.665	0.300	0.263	0.456	0.562	0.773	0.840	0.887	1.011	3	2	F8 V
1122	3.033	-0.842	-0.774	-0.596	-0.176	-0.042	-0.020	-0.026	-0.079	-0.093	-0.114	-0.166	-0.194	3	2	B5 III
1129	5.001	0.812	0.717	0.752	0.894	0.410	0.433	0.718	0.954	1.207	1.299	1.488	1.659	2	2	A1+G2 III
1131	3.857	-1.052	-0.989	-0.577	-0.020	0.088	0.029	0.083	0.103	0.145	0.129	0.090	0.090	2	2	B1 III
1135	3.889	0.727	0.583	0.384	0.478	0.211	0.223	0.390	0.505	0.660	0.705	0.783	0.884	3	2	F5 II
1136	3.764	1.259	1.155	1.332	1.157	0.380	0.464	0.753	0.935	1.149	1.238	1.365	1.545	2	4	K0 IV
1138	5.424	0.205	0.166	0.132	0.118	0.025	0.054	0.079	0.101	0.101	0.088	0.114	0.131	2	2	A m
1140	5.487	-0.576	-0.524	-0.351	-0.077	-0.013	0.014	-0.003	0.013	0.009	-0.010	0.011	0.044	1	2	B7 IV
1142	3.709	-0.665	-0.609	-0.498	-0.160	-0.020	-0.013	-0.030	-0.042	-0.071	-0.046	-0.133	-0.091	3	2	B6 III
1144	5.651	-0.605	-0.556	-0.373	-0.112	0.009	0.005	-0.008	-0.043	-0.041	-0.092	-0.098	0.016	2	2	B8 V
1145	4.309	-0.767	-0.713	-0.496	-0.174	-0.038	0.005	-0.011	-0.035	-0.046	-0.079	-0.104	-0.107	3	2	B6 V
1148	4.645	0.232	0.199	-0.006	0.037	0.038	0.054	0.084	0.096	0.115	0.136	0.165	0.136	2	3	A3 IV
1149	3.888	-0.622	-0.599	-0.467	-0.141	-0.006	0.025	0.032	0.034	0.014	0.018	-0.022	0.008	2	3	B7 III
1151	5.775	-0.402	-0.367	-0.249	-0.070	-0.001	0.015	0.020	-0.026	-0.011	-0.006	-0.012	0.065	2	3	B8 V
1155 V	4.909	4.139	3.557	3.368	2.728	0.979	0.831	1.375	2.345	2.963	3.215	3.648	3.970	2	2	M2 IIIa
1156	4.184	-0.661	-0.615	-0.473	-0.080	0.000	0.012	0.053	0.033	0.064	0.045	-0.024	0.035	3	2	B6 IVnn
1162	4.868	3.648	3.091	3.102	2.430	0.714	0.787	1.289	1.883	2.347	2.558	2.869	3.160	2	2	(gM2)
1165	2.875	-0.562	-0.521	-0.499	-0.151	-0.011	-0.012	0.006	-0.007	-0.054	-0.019	-0.056	-0.058	5	2	B7 III
1172	5.445	-0.532	-0.494	-0.387	-0.118	-0.009	-0.003	-0.016	-0.044	-0.044	-0.063	-0.087				

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
1220 D	2.877	-1.544	-1.441	-0.938	-0.266	-0.043	-0.048	-0.080	-0.124	-0.163	-0.217	-0.351	-0.372	2	2	B0.5 V
1228	4.075	-1.321	-1.257	-0.755	-0.075	0.052	0.079	0.124	0.154	0.189	0.174	0.093	0.139	2	2	O7
1231	3.383	3.466	2.947	2.971	2.338	0.668	0.821	1.262	1.836	2.263	2.449	2.741	3.021	2	2	M0 III
1239 V.	3.428	-1.006	-0.914	-0.617	-0.187	-0.051	-0.026	-0.023	-0.075	-0.068	-0.104	-0.161	-0.161	1	1	B3 V+A4 IV
1251	3.877	0.048	0.044	0.041	0.024	0.005	0.020	0.029	0.032	0.043	0.029	0.058	0.107	3	2	A1 V
1256	4.643	2.074	1.791	1.604	1.463	0.475	0.548	0.825	1.099	1.335	1.435	1.610	1.826	2	2	K0 III
1261	4.322	-0.009	-0.013	-0.208	-0.075	-0.010	0.021	0.006	0.018	0.019	0.076	0.084	0.138	2	3	B9 V
1273	4.084	-0.844	-0.799	-0.520	-0.079	0.036	0.020	0.088	0.051	0.102	0.105	0.037	0.092	3	3	B3 Vp
1298	4.150	0.392	0.315	0.307	0.388	0.171	0.181	0.300	0.369	0.467	0.498	0.532	0.657	2	3	F2 II-III
1303	4.397	1.479	1.237	1.226	1.201	0.493	0.466	0.762	1.010	1.244	1.347	1.512	1.699	2	2	G0 Ib
1306	4.923	1.414	1.286	1.325	1.230	0.489	0.488	0.780	1.074	1.301	1.404	1.586	1.758	2	2	G5 Ib+A2
1311 D	5.025	1.141	0.979	1.017	1.016	0.398	0.386	0.644	0.862	1.064	1.150	1.283	1.461	2	3	(gG5)
1318 D	5.167	2.169	1.935	1.997	1.621	0.511	0.570	0.914	1.190	1.429	1.543	1.726	1.943	2	2	K2 III+G2 V
1319	6.405	0.214	0.130	0.279	0.451	0.181	0.226	0.362	0.488	0.573	0.620	0.664	0.764	1	3	F3 V
1320	4.325	-0.882	-0.799	-0.532	-0.105	-0.002	0.008	0.011	0.019	0.015	-0.015	-0.059	-0.047	1	2	B3 V
1324	4.623	0.116	0.112	0.042	0.048	0.037	0.039	0.060	0.111	0.122	0.120	0.143	0.168	2	2	(A2)
1325	4.645	0.908	0.756	1.036	0.986	0.339	0.454	0.701	0.918	1.140	1.208	1.336	1.474	2	2	K1 V
1329	4.987	0.220	0.168	0.245	0.317	0.122	0.149	0.220	0.291	0.365	0.372	0.364	0.467	2	2	A m
1346	3.868	1.531	1.371	1.445	1.292	0.453	0.460	0.743	0.981	1.200	1.290	1.436	1.601	2	3	K0 III
1350	4.875	-0.819	-0.746	-0.476	-0.087	0.023	0.026	0.053	0.018	0.034	0.000	-0.041	-0.009	2	3	B6 III
1351	5.656	0.302	0.211	0.254	0.339	0.129	0.155	0.258	0.359	0.430	0.433	0.466	0.542	2	4	F0 V
1356	5.338	0.254	0.193	0.230	0.269	0.100	0.139	0.215	0.283	0.334	0.345	0.367	0.413	2	2	A9 V
1373	3.997	1.584	1.422	1.488	1.308	0.456	0.472	0.749	0.980	1.190	1.278	1.421	1.580	2	2	K1 III
1376	5.724	0.317	0.244	0.312	0.378	0.127	0.173	0.257	0.329	0.399	0.418	0.442	0.425	1	2	A m
1380	4.861	0.265	0.220	0.221	0.205	0.077	0.109	0.156	0.227	0.269	0.264	0.311	0.341	2	2	A7.5 V
1385	6.089	0.250	0.178	0.290	0.427	0.188	0.206	0.337	0.463	0.559	0.579	0.670	0.703	1	2	F4 Vn
1387	4.288	0.281	0.229	0.202	0.172	0.054	0.105	0.152	0.183	0.233	0.236	0.261	0.302	2	2	A7 V
1389	4.320	0.101	0.074	0.085	0.069	0.014	0.048	0.061	0.070	0.093	0.078	0.103	0.116	2	4	A3 V
1392	4.384	0.408	0.307	0.237	0.292	0.126	0.179	0.276	0.368	0.434	0.465	0.509	0.599	2	2	A8 Vn
1394	4.565	0.356	0.265	0.239	0.274	0.119	0.162	0.251	0.316	0.403	0.428	0.472	0.522	2	2	F0 V
1396	4.918	1.571	1.310	1.365	1.278	0.473	0.465	0.738	1.006	1.229	1.337	1.494	1.652	2	2	G8 III
1408	5.966	0.254	0.183	0.275	0.384	0.154	0.168	0.286	0.403	0.493	0.483	0.552	0.657	1	3	F0 V
1409	3.781	1.698	1.520	1.576	1.384	0.467	0.444	0.754	0.994	1.210	1.329	1.461	1.647	2	2	K1 III
1411	4.088	1.482	1.328	1.402	1.266	0.441	0.463	0.722	0.965	1.173	1.268	1.413	1.584	6	4	G9 III
1412	3.474	0.307	0.244	0.198	0.205	0.052	0.094	0.179	0.229	0.271	0.269	0.317	0.350	7	3	A7 IVn
1427	4.840	0.275	0.216	0.218	0.193	0.069	0.109	0.146	0.191	0.244	0.244	0.284	0.276	2	2	A6 Vn
1437	5.224	2.649	2.328	2.359	1.896	0.605	0.626	0.986	1.312	1.583	1.743	1.963	2.202	2	2	K3 II-III
1444	4.765	0.265	0.200	0.230	0.271	0.096	0.113	0.190	0.253	0.312	0.333	0.347	0.404	2	2	A8 Vn
1454	4.525	1.777	1.627	1.648	1.557	0.637	0.593	0.947	1.252	1.527	1.676	1.916	2.138	2	3	K4 III+A3 V
1457	1.333	3.376	2.905	2.926	2.287	0.640	0.806	1.258	1.797	2.208	2.387	2.689	2.953	2	2	K5 III
1458	4.305	0.231	0.168	0.197	0.204	0.081	0.097	0.158	0.228	0.274	0.286	0.319	0.400	2	2	A m
1463	3.902	-1.431	-1.309	-0.863	-0.274	-0.057	-0.068	-0.112	-0.174	-0.215	-0.273	-0.417	-0.392	2	2	B2 III
1473	4.329	0.257	0.204	0.190	0.159	0.048	0.082	0.109	0.147	0.182	0.190	0.219	0.258	2	2	A6 Vn
1479	4.721	0.274	0.225	0.218	0.190	0.062	0.087	0.111	0.194	0.253	0.256	0.293	0.322	2	2	A5 Vn
1481 D	4.124	1.810	1.638	1.743	1.461	0.483	0.539	0.855	1.110	1.363	1.484	1.657	1.847	2	1	K2 III
1496 V	4.719	3.581	3.028	2.912	2.319	0.795	0.670	1.260	2.118	2.709	2.971	3.342	3.629	2	2	(gM4)
1497	4.261	-0.982	-0.899	-0.548	-0.155	-0.028	-0.052	-0.072	-0.121	-0.138	-0.163	-0.235	-0.251	2	1	B3 V
1520	3.997	-0.998	-0.919	-0.648	-0.199	-0.048	-0.049	-0.070	-0.103	-0.126	-0.140	-0.236	-0.222	2	2	B5 IV
1542	4.343	-1.300	-1.218	-0.739	-0.063	0.073	0.072	0.119	0.158	0.211	0.199	0.117	0.151	2	2	O9.5 Ia
1543	3.303	0.186	0.116	0.298	0.516	0.228	0.237	0.392	0.525	0.650	0.701	0.739	0.837	2	2	F6 V
1544	4.375	0.065	0.046	-0.038	0.004	0.015	0.028	0.034	0.048	0.073	0.074	0.087	0.142	2	2	A0 V
1547	5.153	0.294	0.227	0.242	0.261	0.103	0.121	0.181	0.239	0.304	0.318	0.356	0.509	3	2	(dA5n)
1552	3.667	-1.332	-1.223	-0.831	-0.253	-0.061	-0.043	-0.070	-0.120	-0.163	-0.204	-0.336	-0.384	2	2	B2 III
1560	4.424	0.433	0.330	0.231	0.281	0.114	0.147	0.228	0.329	0.358	0.411	0.441	0.561	2	2	A9 IV
1567 V	3.704	-1.332	-1.220	-0.834	-0.251	-0.051	-0.070	-0.090	-0.142	-0.173	-0.228	-0.371	-0.356	2	2	B2 III
1568 D	4.498	0.039	0.030	-0.080	-0.028	0.020	0.001	0.015	0.012	0.023	0.024	0.034	0.045	2	2	A1 V
1570	4.695	0.118	0.108	0.147	0.115	0.037	0.018	0.040	0.070	0.088	0.101	0.120	0.157	2	2	A0 V
1577	3.097	3.146	2.782	2.793	2.248	0.688	0.730	1.137	1.516	1.842	1.994	2.287	2.528	2	2	K3 II
1580	4.405	2.101	1.835	1.924	1.599	0.529	0.559	0.889	1.201	1.457	1.582	1.787	2.008	2	2	K2 III
1592 D	4.957	-0.034	-0.027	0.058	0.039	0.013	0.018	0.022	0.056	0.061	0.028	0.079	0.115	2	2	A0 V
1601	4.821	2.779	2.498	2.473	2.018	0.658	0.664	1.038	1.362	1.657	1.810	2.048	2.301	2	2	K2 II
1603	4.248	1.417	1.144	1.128	1.144	0.468	0.417	0.683	0.925	1.106	1.175	1.318	1.466	2	3	G0 Ib
1605 V	3.137	1.174	0.870	0.351	0.524	0.330	0.293	0.495	0.668	0.817	1.014	1.118	1.215	7	2	F0 Iap
1611	4.856	0.465	0.371	0.250	0.298	0.136	0.147	0.240	0.370	0.433	0.467	0.476	0.532	2	2	F0 IV
1612 V	4.133	1.104	1.087	1.278	1.408	0.590	0.713	1.133	1.617	1.967	2.106	2.383	2.646	3	2	K5 II+B
1617	4.794	-1.218	-1.114	-0.729	-0.235	-0.047	-0.063	-0.107	-0.126	-0.188	-0.256	-0.382	-0.531	2	2	B2 V
1621	4.897	-0.256	-0.232	-0.172	-0.069	-0.002	-0.008	-0.024	-0.028	-0.021	-0.051	-0.071	-0.114	2	2	B9 V
1637	5.047	0.173	0.116	0.227	0.372	0.173	0.162	0.292	0.392	0.474	0.507	0.545	0.629	2	2	F0 V
1638	4.677	-0.178	-0.195	-0.262	-0.102	-0.041	0.039	0.024	0.032	0.024	0.017	0.017	0.065	2	2	B9p (Si)
1641	3.148	-1.141	-1.036	-0.686	-0.244	-0.068	-0.041	-0.093	-0.135	-0.167	-0.221	-0.322	-0.344	2	2	B3 V
1657	5.096	-0.346	-0.314	-0.207	-0.098	-0.034	0.004	-0.017	-0.005	-0.037	-0.074	-0.096	-0.014	2	1	(B9)
1676	4.886	0.477	0.385	0.308	0.349	0.152	0.200	0.289	0.430	0.521	0.545	0.596	0.702	2	2	F2 IV
1679	4.242	-1.444	-1.337	-0.897	-0.261	-0.055	-0.053	-0.083	-0.149	-0.208	-0.254	-0.384	-0.379	2	2	B2 IV
1689	4.876	0.212	0.182	0.227	0.247	0.093	0.097	0.159								

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP.TYPE
1729	4.860	0.477	0.386	0.570	0.729	0.291	0.323	0.523	0.728	0.871	0.907	0.985	1.117	3	2	G0 V
1735	3.570	-0.793	-0.715	-0.532	-0.172	-0.043	-0.047	-0.059	-0.080	-0.095	-0.123	-0.187	-0.180	2	2	B5 III
1756	4.248	-1.667	-1.550	-1.015	-0.331	-0.071	-0.098	-0.153	-0.230	-0.296	-0.366	-0.529	-0.537	2	3	B0.5 IV
1765	4.687	-1.289	-1.181	-0.785	-0.230	-0.042	-0.079	-0.116	-0.186	-0.194	-0.251	-0.354	-0.399	2	1	B2 IV
1770 D	4.972	-1.397	-1.295	-0.827	-0.231	-0.036	-0.046	-0.072	-0.145	-0.166	-0.191	-0.307	-0.348	3	2	B1 V
1781	5.655	-1.467	-1.350	-0.869	-0.274	-0.068	-0.087	-0.131	-0.153	-0.234	-0.255	-0.446	-0.966	2	2	B2 V
1784	4.355	1.411	1.209	1.330	1.229	0.449	0.447	0.724	0.995	1.209	1.312	1.458	1.632	2	2	G8 III
1788 DV	3.324	-1.510	-1.406	-0.933	-0.274	-0.048	-0.044	-0.071	-0.108	-0.142	-0.183	-0.328	-0.376	3	2	B0.5 V
1789	4.934	-1.478	-1.361	-0.915	-0.293	-0.063	-0.062	-0.110	-0.156	-0.179	-0.240	-0.389	-0.418	2	2	B1 V:pe
1790	1.591	-1.437	-1.334	-0.920	-0.307	-0.078	-0.090	-0.137	-0.206	-0.266	-0.315	-0.455	-0.465	2	2	B2 III
1791	1.651	-0.802	-0.746	-0.559	-0.178	-0.041	-0.047	-0.050	-0.114	-0.124	-0.152	-0.216	-0.221	2	2	B7 III
1810	4.839	-1.269	-1.178	-0.755	-0.223	-0.026	-0.064	-0.099	-0.143	-0.164	-0.207	-0.303	-0.360	2	3	B3 V
1811 D	4.543	-1.520	-1.388	-0.908	-0.282	-0.063	-0.077	-0.119	-0.191	-0.243	-0.295	-0.442	-0.506	2	2	B2 IV
1829	2.993	1.107	0.874	0.971	1.022	0.395	0.376	0.627	0.844	1.028	1.100	1.219	1.371	2	2	G5 III
1839 D	4.189	-0.976	-0.884	-0.567	-0.191	-0.057	-0.047	-0.077	-0.133	-0.172	-0.205	-0.274	-0.268	2	2	B5 IV
1843	4.789	-0.480	-0.485	-0.260	0.281	0.238	0.121	0.262	0.394	0.516	0.578	0.648	0.698	2	3	B5 Iab
1845 V.	4.889	4.492	3.888	3.600	2.944	1.114	0.936	1.606	2.424	3.030	3.325	3.814	4.180	1	1	M2 Ib
1852 V	2.181	-1.674	-1.557	-1.014	-0.299	-0.058	-0.094	-0.125	-0.206	-0.256	-0.311	-0.480	-0.471	2	2	O9.5 II
1855	4.571	-1.727	-1.588	-1.046	-0.341	-0.076	-0.090	-0.152	-0.228	-0.300	-0.361	-0.546	-0.568	87	28	B0 V
1861	5.300	-1.493	-1.383	-0.894	-0.276	-0.061	-0.074	-0.078	-0.081	-0.260	-0.280	-0.358	-0.266	2	2	B1 V
1865	2.646	0.875	0.687	0.151	0.207	0.097	0.139	0.237	0.306	0.367	0.459	0.496	0.576	2	2	F0 Ib
1868 V	5.327	-1.452	-1.347	-0.861	-0.263	-0.066	-0.060	-0.064	-0.108	-0.130	-0.225	-0.381	-0.382	2	2	B1 V
1876	4.380	-1.503	-1.385	-0.882	-0.221	-0.013	-0.037	-0.060	-0.116	-0.142	-0.173	-0.304	-0.339	2	2	B0 IV
1879/80	3.381	-1.611	-1.503	-0.972	-0.283	-0.055	-0.028	-0.043	-0.085	-0.119	-0.172	-0.305	-0.294	2	2	O8/B0.5 V
1887	4.719	-1.658	-1.544	-1.013	-0.332	-0.074	-0.095	-0.166	-0.200	-0.259	-0.318	-0.463	-0.527	2	2	B0.5 V
1892 D	4.556	-1.512	-1.397	-0.890	-0.270	-0.054	-0.066	-0.097	-0.151	-0.198	-0.248	-0.368	-0.358	2	2	B2 III
1893-6	4.617	-1.279	-1.190	-0.708	-0.034	0.097	0.053	0.268	0.269	0.337	0.356	0.593	0.741	2	3	(TrAp)
1897	5.076	-1.455	-1.335	-0.828	-0.178	-0.002	0.037	0.065	0.083	0.098	0.085	-0.022	-0.080	2	2	O9.5 Vp
1899 D	2.758	-1.716	-1.584	-1.039	-0.334	-0.077	-0.080	-0.103	-0.207	-0.262	-0.324	-0.503	-0.477	2	2	O9 III
1901	5.334	0.423	0.337	0.242	0.293	0.130	0.147	0.252	0.333	0.406	0.429	0.460	0.592	2	1	(gF0)
1903 V	1.694	-1.594	-1.485	-0.972	-0.257	-0.028	-0.046	-0.069	-0.113	-0.155	-0.214	-0.342	-0.343	2	2	B0 Ia
1907	4.329	1.351	1.114	1.276	1.196	0.451	0.470	0.770	1.018	1.254	1.351	1.488	1.726	2	2	G8 III-IV
1908	6.349	3.506	2.894	2.921	2.299	0.703	0.792	1.262	1.802	2.241	2.418	2.706	2.961	1	1	K4 II
1910	2.955	-1.214	-1.131	-0.849	-0.267	-0.039	-0.058	-0.006	-0.169	-0.203	-0.149	-0.252	-0.168	2	2	B2 III:p
1931 D	3.722	-1.628	-1.497	-0.973	-0.293	-0.055	-0.069	-0.113	-0.128	-0.196	-0.239	-0.399	-0.418	2	2	O9.5 V
1934	4.568	-1.189	-1.101	-0.737	-0.171	0.007	-0.019	0.004	-0.011	0.024	-0.046	-0.116	-0.085	2	2	B3 IIIe
1937	4.819	0.226	0.184	0.185	0.169	0.070	0.071	0.111	0.136	0.198	0.174	0.238	0.309	2	1	A4 IV
1946 D	4.839	-1.061	-0.984	-0.647	-0.191	-0.027	-0.029	-0.051	-0.083	-0.103	-0.141	-0.218	-0.259	2	2	B3 IV
1948/9	1.744	-1.662	-1.548	-1.011	-0.294	-0.050	-0.051	-0.080	-0.127	-0.169	-0.263	-0.366	-0.401	2	2	O9.5 Ib
1963	5.211	2.046	1.740	1.860	1.563	0.521	0.583	0.901	1.219	1.490	1.610	1.829	2.029	2	2	K1 III
1995	4.760	1.450	1.236	1.354	1.240	0.456	0.447	0.718	0.968	1.165	1.263	1.416	1.584	2	1	G8 III
2004	2.049	-1.483	-1.365	-0.889	-0.221	-0.020	-0.051	-0.056	-0.091	-0.128	-0.175	-0.318	-0.281	2	1	B0.5 Ia
2010	4.884	-0.286	-0.254	-0.179	-0.082	-0.018	-0.021	-0.043	-0.044	-0.066	-0.079	-0.085	-0.081	2	2	B9 IV
2011	5.209	3.621	3.071	3.046	2.413	0.723	0.790	1.290	1.907	2.371	2.553	2.889	3.221	2	2	(gM1)
2012	4.262	1.994	1.787	1.860	1.548	0.513	0.519	0.847	1.102	1.344	1.459	1.636	1.874	2	2	K0 III
2018	6.704	3.977	3.392	3.218	2.552	0.864	0.757	1.387	2.310	2.946	3.206	3.645	4.007	2	2	M3 III
2029	5.005	0.142	0.130	0.090	0.061	0.033	0.029	0.030	0.053	0.058	0.047	0.073	0.129	2	2	A2p?
2034	4.599	0.028	0.027	-0.063	-0.034	0.002	0.016	0.021	-0.004	-0.009	-0.002	0.022	0.031	2	2	B9.5 V
2035	3.996	1.485	1.198	1.341	1.258	0.475	0.478	0.769	1.030	1.284	1.408	1.538	1.745	2	2	G8 III
2047	4.538	0.363	0.278	0.504	0.699	0.291	0.306	0.502	0.664	0.832	0.876	0.951	1.085	2	2	G0 V
2061 V.	0.801	4.144	3.502	3.229	2.718	1.02	0.802	1.405	2.208	2.757	3.014	3.412	3.730	1	1	M1-M2 Iab
2077	3.967	1.628	1.427	1.541	1.337	0.467	0.480	0.770	0.970	1.205	1.334	1.442	1.678	2	2	K0 III
2085	3.816	0.212	0.147	0.241	0.376	0.168	0.157	0.264	0.344	0.457	0.471	0.495	0.586	2	2	F0 V
2088 V	1.927	0.120	0.095	0.079	0.051	0.013	0.016	0.003	0.042	0.056	0.039	0.082	0.085	2	2	A2 V
2091 V	4.739	3.782	3.167	2.991	2.403	0.929	0.684	1.332	2.311	2.966	3.225	3.692	4.037	2	2	M3.5 II
2113	4.854	2.327	1.935	2.019	1.651	0.543	0.614	0.968	1.272	1.580	1.708	1.920	2.164	2	2	K2 III
2124 D	4.159	0.265	0.225	0.206	0.209	0.082	0.086	0.146	0.211	0.288	0.296	0.347	0.422	3	1	A m
2128	4.954	-1.003	-0.906	-0.603	-0.187	-0.037	-0.033	-0.042	-0.146	-0.122	-0.135	-0.186	-0.133	2	2	B5 IV
2135	4.680	-0.778	-0.773	-0.386	0.232	0.239	0.138	0.263	0.351	0.466	0.520	0.518	0.645	2	2	B2 Ia
2148	5.004	0.668	0.437	0.144	0.168	0.151	0.136	0.325	0.683	1.064	1.255	1.560	1.833	2	2	A2p
2155	4.682	0.088	0.085	0.076	0.058	0.039	0.005	0.019	0.009	0.029	0.040	0.056	0.092	2	2	A1 V
2159	4.399	-1.095	-0.996	-0.648	-0.225	-0.058	-0.045	-0.073	-0.194	-0.214	-0.252	-0.351	-0.372	2	3	B3 V
2198	4.954	-0.977	-0.907	-0.606	-0.204	-0.046	-0.041	-0.055	-0.105	-0.112	-0.156	-0.236	-0.249	2	2	B5 V
2199	4.455	-1.115	-1.019	-0.689	-0.235	-0.069	-0.057	-0.060	-0.133	-0.174	-0.203	-0.296	-0.276	2	2	B3 V
2209	4.758	0.004	-0.005	0.002	0.009	-0.003	0.004	0.006	0.038	0.057	0.041	0.069	0.108	2	2	A0 V
2216 V	3.603	3.190	2.757	2.714	2.252	0.789	0.688	1.259	2.084	2.713	2.947	3.354	3.662	3	1	M3 III
2219	4.563	1.629	1.399	1.509	1.325	0.474	0.486	0.795	1.050	1.295	1.404	1.565	1.769	2	2	G8 III
2227	4.295	2.615	2.277	2.327	1.885	0.602	0.624	0.991	1.311	1.585	1.738	1.957	2.212	2	2	K3 III
2238	4.517	0.038	0.025	0.049	0.031	0.011	0.020	0.038	0.006	0.030	0.013	0.037	0.023	2	3	A2 V
2240	6.379	-0.204	-0.255	-0.068	0.421	0.306	0.260	0.436	0.657	0.841	0.921	1.018	1.094	2	2	B3 Ia
2244	5.002	-0.375	-0.348	-0.340	-0.124	-0.029	-0.008	-0.015	-0.022	-0.039	-0.042	-0.059	-0.043	2	2	B8 V
2286	3.321	3.747	3.123	3.000	2.388	0.842	0.673	1.268	2.161	2.767	3.010	3.405	3.732	2	2	M3 III
2294	1.957	-1.575	-1.449	-0.967	-0.315	-0.071	-0.077	-0.129	-0.196	-0.247	-0.312	-0.478	-0.493	2	2	B1 III-III
2298/9	4.340	0.290	0.206	0.219	0.263											

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NR	NR	SP. TYPE
2421	1.957	0.129	0.121	0.014	0.008	0.006	0.013	0.020	0.036	0.039	0.044	0.066	0.101	2	2	A0 IV
2427	5.117	2.356	2.093	2.159	1.749	0.555	0.595	0.924	1.221	1.487	1.610	1.822	2.045	2	3	K3 III-III
2429	4.236	1.792	1.655	1.752	1.432	0.456	0.525	0.820	1.053	1.283	1.382	1.535	1.729	2	2	K1 IV
2443	4.719	2.019	1.794	1.862	1.579	0.531	0.533	0.855	1.124	1.370	1.487	1.664	1.914	2	2	K1 III-III
2450	5.217	3.123	2.743	2.737	2.183	0.702	0.724	1.136	1.491	1.805	1.967	2.236	2.522	2	3	K3 III
2456 D	4.641	-1.700	-1.566	-1.016	-0.319	-0.059	-0.076	-0.116	-0.193	-0.241	-0.310	-0.455	-0.500	2	2	O7
2467	6.396	-1.416	-1.316	-0.798	-0.133	0.023	0.030	0.042	0.091	0.076	0.060	-0.052	-0.038	1	3	O6
2470 D	4.896	0.093	0.083	0.122	0.102	0.046	0.033	0.058	0.088	0.106	0.112	0.132	0.198	1	2	(A2n)
2473	3.357	2.689	2.397	2.363	2.016	0.689	0.629	0.960	1.281	1.544	1.675	1.887	2.092	1	2	G8 Ib
2478	4.813	2.156	1.890	1.960	1.614	0.531	0.568	0.878	1.202	1.449	1.589	1.774	2.010	1	2	K1 III
2484	3.542	0.305	0.224	0.328	0.496	0.223	0.212	0.395	0.522	0.638	0.673	0.711	0.807	1	2	F5 IV
2491	-1.421	-0.065	-0.066	0.006	-0.010	-0.022	-0.009	-0.022	0.009	-0.009	-0.026	-0.045	-0.043	2	4	A1 V
2506	4.746	1.975	1.761	1.807	1.537	0.519	0.516	0.819	1.083	1.322	1.425	1.604	1.824	2	2	K0 III
2527	4.958	2.839	2.494	2.567	1.988	0.552	0.729	1.111	1.464	1.779	1.918	2.153	2.394	2	4	K4 III
2540	3.676	0.318	0.265	0.134	0.115	0.049	0.073	0.122	0.154	0.206	0.203	0.257	0.303	2	2	A3 III
2560 D	4.584	1.138	1.011	1.100	1.076	0.398	0.436	0.683	0.905	1.115	1.187	1.368	1.556	2	1	G5 III-IV
2564 D	4.750	0.230	0.177	0.258	0.351	0.171	0.187	0.301	0.470	0.552	0.532	0.594	0.693	2	2	F0 Vp
2571	4.780	-1.548	-1.412	-0.934	-0.303	-0.051	-0.079	-0.126	-0.158	-0.206	-0.302	-0.470	-0.537	2	4	B1 IV
2574	4.475	3.027	2.579	2.663	2.065	0.608	0.741	1.167	1.546	1.847	2.036	2.278	2.545	2	2	K4 III
2585	4.942	0.085	0.079	0.039	0.007	0.051	0.029	0.029	0.052	0.069	0.063	0.093	0.066	2	2	A2 V
2590 D.	4.744	0.250	0.183	0.266	0.405	0.195	0.202	0.336	0.462	0.567	0.576	0.622	0.710	2	1	(gF2)
2596	4.380	-1.055	-0.969	-0.688	-0.127	0.024	-0.005	0.019	0.046	0.036	0.027	-0.039	-0.030	2	2	B3 II
2648	4.970	-1.487	-1.368	-0.917	-0.277	-0.050	-0.060	-0.079	-0.096	-0.140	-0.221	-0.360	-0.361	2	3	B1 V
2650 V.	3.946	1.194	0.942	0.859	0.917	0.372	0.373	0.562	0.782	0.953	1.018	1.126	1.254	1	1	F7-G3 Ib
2657	4.107	-0.780	-0.726	-0.542	-0.167	-0.030	-0.021	-0.039	-0.057	-0.079	-0.106	-0.164	-0.207	2	2	B8 II
2697	4.705	2.548	2.243	2.264	1.830	0.567	0.605	0.950	1.239	1.508	1.653	1.848	2.081	2	2	K2 III
2701	5.165	1.579	1.353	1.469	1.319	0.453	0.484	0.769	1.048	1.285	1.393	1.549	1.774	2	2	K0 III
2714	4.182	0.133	0.099	-0.091	-0.043	-0.020	0.046	0.061	0.052	0.074	0.102	0.112	0.120	2	2	A0 IV
2751	5.030	0.292	0.233	0.056	0.075	0.036	0.056	0.106	0.139	0.174	0.192	0.231	0.192	2	2	A3 III-IV
2763	3.605	0.209	0.175	0.160	0.125	0.034	0.042	0.078	0.101	0.140	0.142	0.164	0.226	2	2	A3 V
2812	4.953	-0.601	-0.553	-0.417	-0.112	0.003	0.017	0.031	0.019	0.032	0.009	0.001	-0.013	2	3	(B8)
2818	4.615	0.037	0.019	-0.027	-0.035	0.002	-0.012	0.002	-0.018	-0.004	0.002	0.014	0.018	2	2	A1 IV
2821	4.051	1.634	1.436	1.527	1.332	0.451	0.474	0.783	1.014	1.252	1.364	1.527	1.720	2	2	K0 III
2845	2.863	-0.480	-0.408	-0.339	-0.132	-0.030	-0.049	-0.052	-0.086	-0.088	-0.127	-0.107	-0.107	2	2	B8 V
2852	4.263	0.139	0.074	0.195	0.357	0.167	0.169	0.291	0.398	0.506	0.531	0.567	0.648	39	33	F0 V
2854	4.691	2.791	2.459	2.492	2.049	0.623	0.719	1.118	1.526	1.888	2.027	2.305	2.556	3	2	K3 III
2864	4.861	2.533	2.252	2.230	1.825	0.590	0.604	0.943	1.244	1.528	1.644	1.859	2.096	3	2	K2 III
2890/1	1.599	-0.014	-0.026	0.038	0.033	0.013	0.023	0.035	0.031	0.052	0.035	0.047	0.074	16	2	A1 V+A m
2905	4.486	3.387	2.924	2.938	2.308	0.647	0.785	1.244	1.745	2.168	2.336	2.629	2.953	3	2	M0 III
2930	4.991	0.388	0.274	0.321	0.472	0.211	0.210	0.356	0.481	0.612	0.630	0.705	0.740	3	2	F3 III
2943	0.462	0.260	0.186	0.315	0.480	0.219	0.211	0.353	0.485	0.621	0.630	0.681	0.797	3	2	F5 IV-V
2946	5.006	0.248	0.184	0.083	0.074	0.043	0.046	0.077	0.121	0.167	0.161	0.196	0.317	3	2	A3 III
2970	4.187	1.683	1.508	1.578	1.379	0.484	0.465	0.752	1.000	1.227	1.340	1.483	1.689	3	2	K0 III
2985 D	3.812	1.414	1.235	1.324	1.216	0.438	0.423	0.709	0.920	1.140	1.223	1.350	1.526	2	2	G8 III
2990	1.388	1.624	1.443	1.524	1.328	0.455	0.480	0.777	1.025	1.252	1.343	1.491	1.698	16	2	K0 III
3003	5.300	3.107	2.660	2.719	2.100	0.596	0.750	1.183	1.628	2.004	2.148	2.430	2.709	2	2	K5 III
3067	5.003	0.224	0.204	0.160	0.121	0.053	0.055	0.088	0.129	0.163	0.167	0.201	0.166	2	3	A4 V
3131	4.653	0.218	0.203	0.115	0.089	0.039	0.039	0.067	0.097	0.129	0.122	0.148	0.240	2	2	A3 V
3141	5.099	3.139	2.711	2.784	2.161	0.624	0.752	1.178	1.605	1.953	2.115	2.387	2.654	2	2	K4 III
3145	4.729	2.379	2.057	2.134	1.752	0.558	0.625	0.982	1.320	1.602	1.737	1.963	2.223	3	2	K2 III
3173	4.842	0.091	0.065	0.031	0.015	0.005	0.014	-0.031	0.042	0.047	0.048	0.064	0.042	3	3	A2 V
3188	4.582	1.528	1.295	1.293	1.259	0.481	0.456	0.711	0.969	1.154	1.251	1.404	1.573	3	2	G2 Ib
3192	4.394	-1.017	-0.922	-0.639	-0.217	-0.044	-0.037	-0.079	-0.081	-0.159	-0.182	-0.277	-0.321	3	3	B5 V
3211	4.963	1.430	1.285	1.367	1.238	0.425	0.463	0.719	0.958	1.164	1.255	1.398	1.567	3	2	K0 III
3249	3.949	3.121	2.709	2.774	2.179	0.644	0.753	1.170	1.560	1.897	2.059	2.316	2.568	69	44	K4 III
3275	4.693	3.342	2.891	2.928	2.296	0.656	0.806	1.228	1.671	2.051	2.229	2.506	2.822	3	2	K5 III
3314	3.909	-0.077	-0.057	-0.009	-0.016	-0.010	0.005	-0.001	-0.008	-0.008	0.003	-0.007	0.023	4	2	A0 V
3323	3.588	1.181	0.974	1.062	1.078	0.407	0.395	0.648	0.887	1.092	1.160	1.257	1.403	3	2	G5 III
3403	4.932	2.137	1.869	1.959	1.624	0.509	0.581	0.919	1.188	1.455	1.599	1.803	2.001	3	4	K2 III
3418	4.739	2.333	2.091	2.115	1.730	0.551	0.578	0.904	1.177	1.439	1.572	1.764	2.003	2	4	K2 III
3429	6.374	0.380	0.301	0.259	0.209	0.053	0.087	0.145	0.227	0.252	0.302	0.341	0.587	1	1	A6 III
3441	5.145	1.753	1.572	1.644	1.407	0.483	0.511	0.813	1.044	1.283	1.415	1.582	1.765	2	2	K1 III
3449	4.713	0.031	0.012	0.053	0.013	0.003	0.030	0.032	0.014	0.021	0.026	0.039	0.011	2	2	A1 V
3454	4.278	-1.241	-1.139	-0.752	-0.248	-0.055	-0.060	-0.098	-0.160	-0.204	-0.243	-0.365	-0.406	59	14	B3 V
3459	4.842	1.140	0.985	1.028	1.040	0.411	0.408	0.645	0.871	1.064	1.124	1.272	1.408	2	2	G2 Ib
3461	4.238	1.838	1.648	1.731	1.457	0.479	0.530	0.837	1.079	1.339	1.444	1.606	1.806	2	2	K0 III
3475	4.290	1.553	1.366	1.420	1.297	0.465	0.450	0.758	0.921	1.155	1.285	1.415	1.596	2	2	G8 II
3482 D	3.574	0.838	0.715	0.805	0.810	0.301	0.354	0.599	0.791	0.971	1.063	1.167	1.318	2	2	G0 III-IV+dF7
3484	4.533	1.302	1.089	1.213	1.155	0.435	0.419	0.695	0.919	1.135	1.226	1.343	1.512	2	2	G8 III
3547	3.378	1.593	1.407	1.490	1.319	0.472	0.462	0.749	0.974	1.217	1.321	1.466	1.640	2	2	K0 III-III
3569	3.229	0.188	0.152	0.214	0.246	0.082	0.111	0.185	0.258	0.310	0.323	0.340	0.398	2	2	A7 V
3572	4.322	0.322	0.284	0.232	0.191	0.069	0.088	0.113	0.059	0.050	0.038	0.074	0.185	2	1	A m
3576	5.153	3.529	2.981	2.861	2.278	0.726	0.697	1.245	1.852	2.472	2.738	3.172	3.569	2	1	H3 IIIb
3579	4.114	0.244	0.188	0.345	0.493	0.208	0.251	0.415	0.525</							

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
3665	3.913	-0.245	-0.214	-0.144	-0.076	-0.034	-0.009	-0.011	-0.047	-0.049	-0.074	-0.087	-0.071	2	2	B9.5 Vp
3690 D	3.859	0.106	0.087	0.091	0.089	0.023	0.039	0.087	0.083	0.130	0.125	0.153	0.186	2	2	A2 V
3705	3.576	3.366	2.867	2.911	2.304	0.654	0.805	1.239	1.760	2.154	2.312	2.600	2.877	2	2	M0 III
3706	4.982	1.387	1.190	1.278	1.212	0.442	0.418	0.675	0.937	1.161	1.242	1.385	1.561	2	4	G8 III
3709	5.012	1.368	1.186	1.275	1.192	0.425	0.420	0.683	0.914	1.124	1.209	1.347	1.519	1	2	G8 III-IV
3731	4.760	2.290	2.033	2.125	1.708	0.499	0.615	0.949	1.275	1.553	1.699	1.888	2.085	1	2	K2 III
3748	2.384	2.969	2.611	2.688	2.114	0.621	0.719	1.096	1.452	1.775	1.923	2.168	2.378	1	2	K4 III
3751	4.660	3.065	2.698	2.717	2.188	0.660	0.726	1.112	1.476	1.810	1.956	2.193	2.430	2	3	K3 III
3757	3.750	0.343	0.245	0.272	0.382	0.160	0.176	0.301	0.418	0.532	0.566	0.599	0.633	2	2	F0 IV
3759	4.715	0.224	0.155	0.333	0.519	0.243	0.230	0.391	0.539	0.656	0.680	0.727	0.787	2	2	F6 V
3771	4.736	0.896	0.721	0.897	0.954	0.383	0.369	0.623	0.798	1.008	1.077	1.183	1.351	3	2	G4 V
3773	4.751	3.397	2.931	2.958	2.312	0.652	0.779	1.241	1.709	2.107	2.283	2.567	2.815	2	3	K5 III
3775	3.306	0.266	0.187	0.327	0.547	0.253	0.232	0.425	0.551	0.691	0.729	0.773	0.871	2	2	F6 IV
3800	4.764	1.295	1.128	1.216	1.168	0.431	0.426	0.702	0.890	1.092	1.190	1.326	1.519	4	2	G8 III
3809	5.038	1.527	1.316	1.420	1.299	0.469	0.475	0.766	0.988	1.218	1.315	1.477	1.694	2	2	K0 III
3815	5.602	0.837	0.775	0.977	0.965	0.342	0.417	0.653	0.852	1.042	1.091	1.198	1.337	2	2	G8 IV-V
3834	5.034	2.654	2.290	2.376	1.899	0.573	0.671	1.067	1.392	1.692	1.838	2.067	2.351	2	2	K3 III
3845	4.240	2.569	2.249	2.333	1.878	0.587	0.646	1.034	1.341	1.629	1.771	1.994	2.241	2	2	K3 III
3849	5.048	-0.990	-0.888	-0.585	-0.184	-0.041	-0.045	-0.070	-0.123	-0.165	-0.176	-0.272	-0.319	2	2	B5 V
3852	3.668	0.556	0.468	0.509	0.611	0.240	0.251	0.417	0.496	0.644	0.692	0.743	0.847	2	2	A5 V+F8 III
3873	3.190	1.105	0.878	0.943	1.006	0.377	0.386	0.627	0.817	1.025	1.098	1.191	1.314	2	2	G0 II
3881	5.246	0.500	0.396	0.586	0.723	0.284	0.304	0.497	0.649	0.810	0.857	0.932	1.020	2	2	G1 V
3888	3.852	0.326	0.238	0.220	0.306	0.141	0.162	0.282	0.358	0.462	0.486	0.524	0.535	2	2	F2 IV
3894 D	4.595	0.168	0.151	0.081	0.036	0.029	0.020	0.042	0.048	0.071	0.065	0.083	0.046	2	2	(A3s)
3903	4.339	1.394	1.222	1.303	1.217	0.443	0.431	0.693	0.930	1.141	1.223	1.345	1.494	2	2	G8 III
3905	4.229	2.416	2.206	2.230	1.751	0.487	0.629	0.961	1.218	1.496	1.621	1.806	2.018	2	2	K2 III
3950	5.116	3.611	3.102	3.055	2.399	0.736	0.736	1.263	1.922	2.414	2.621	2.956	3.243	2	2	M2 III
3970	4.550	-0.436	-0.373	-0.314	-0.130	-0.100	-0.035	-0.052	-0.085	-0.091	-0.106	-0.142	-0.142	3	2	B8 V
3974	4.539	0.200	0.181	0.223	0.245	0.089	0.080	0.130	0.184	0.247	0.236	0.274	0.291	3	2	A7 V
3975	3.551	-0.212	-0.248	-0.445	-0.099	0.019	0.049	0.067	0.081	0.098	0.153	0.124	0.097	3	2	A0 Ib
3980	4.762	3.055	2.659	2.710	2.124	0.609	0.760	1.162	1.544	1.888	2.045	2.294	2.548	3	2	K4 III
3981	4.479	-0.055	-0.039	-0.138	-0.046	0.015	-0.013	-0.045	-0.042	-0.028	-0.028	-0.044	-0.056	3	2	A0 III
3982	1.382	-0.615	-0.563	-0.437	-0.162	-0.032	-0.034	-0.058	-0.061	-0.092	-0.106	-0.150	-0.126	3	2	B7 V
3994	3.847	1.743	1.586	1.627	1.374	0.466	0.485	0.772	0.982	1.199	1.297	1.436	1.625	3	2	K0 III
4031	3.536	0.525	0.407	0.276	0.352	0.161	0.179	0.292	0.411	0.517	0.571	0.614	0.681	3	4	F0 III
4033	3.443	0.153	0.105	0.069	0.040	0.011	0.005	0.025	0.035	0.058	0.056	0.080	0.066	2	2	A2 IV
4039	5.902	0.256	0.135	0.308	0.568	0.242	0.228	0.409	0.588	0.746	0.828	0.869	0.953	2	2	(df3)
4054	4.903	0.219	0.173	0.341	0.510	0.218	0.226	0.373	0.537	0.669	0.698	0.754	0.802	2	2	F6 IV
4057/8	2.303	1.909	1.625	1.733	1.511	0.520	0.528	0.853	1.198	1.470	1.609	1.805	1.977	3	4	K0 III/G7 III
4069	3.489	3.303	2.845	2.876	2.314	0.686	0.789	1.261	1.745	2.203	2.418	2.726	2.981	3	2	M0 III
4072	4.972	-0.214	-0.209	-0.190	-0.068	-0.012	0.001	-0.006	0.003	0.010	0.018	-0.002	-0.037	3	3	A0p
4090	4.802	0.367	0.344	0.282	0.299	0.120	0.164	0.237	0.325	0.425	0.450	0.491	0.534	2	4	F0 V
4092	5.995	3.362	2.890	2.877	2.238	0.637	0.771	1.232	1.758	2.166	2.355	2.648	2.923	2	2	M0 III
4094	4.205	3.206	2.795	2.809	2.201	0.625	0.778	1.195	1.601	1.954	2.125	2.378	2.647	2	2	K4 III
4100 D	4.402	1.300	1.161	1.271	1.184	0.430	0.445	0.714	0.927	1.154	1.252	1.395	1.522	2	2	G8 III-IV
4112	4.947	0.234	0.176	0.388	0.601	0.276	0.277	0.462	0.659	0.804	0.855	0.905	1.058	2	2	F8 V
4132	4.766	0.200	0.190	0.219	0.259	0.107	0.106	0.182	0.245	0.312	0.329	0.370	0.384	2	3	A7 IV
4133	3.813	-1.458	-1.344	-0.906	-0.224	-0.013	-0.037	-0.036	-0.094	-0.118	-0.159	-0.266	-0.302	2	2	B1 Ib
4163 V.	5.627	12.	8.9	7.922	5.309	1.500	1.238	1.882	2.381	2.846	3.338	3.720	4.161	1	3	C7.3
4166	4.865	1.181	0.971	1.002	1.037	0.394	0.372	0.617	0.823	1.004	1.076	1.193	1.303	2	3	K3 III
4232	3.433	2.348	2.072	2.149	1.725	0.541	0.592	0.953	1.237	1.506	1.633	1.836	2.080	2	2	K2 III
4247	4.061	1.742	1.540	1.655	1.402	0.475	0.494	0.805	1.053	1.299	1.399	1.570	1.718	3	1	K0 III-IV
4248	4.694	-0.106	-0.095	-0.086	-0.066	-0.011	-0.009	-0.028	-0.024	-0.022	-0.044	-0.023	-0.081	2	2	A1 V
4287	4.359	1.875	1.677	1.745	1.468	0.481	0.524	0.826	1.090	1.324	1.441	1.596	1.805	2	3	K0 III
4295	2.359	0.006	0.015	0.003	-0.016	-0.004	-0.014	-0.015	-0.025	-0.019	-0.033	-0.037	-0.069	2	5	A1 V
4299	5.167	3.548	3.058	3.051	2.402	0.702	0.786	1.264	1.812	2.245	2.440	2.743	3.048	3	2	K5 III
4300	4.444	0.085	0.080	0.128	0.076	0.022	0.010	0.013	0.006	0.027	0.017	0.031	0.031	2	2	A1 V
4301	2.068	1.783	1.588	1.645	1.429	0.505	0.506	0.809	1.072	1.321	1.434	1.597	1.769	3	2	K0 III
4310	4.680	0.294	0.227	0.278	0.387	0.171	0.187	0.307	0.408	0.501	0.519	0.539	0.610	4	2	F2 III-IV
4335	3.312	2.067	1.837	1.920	1.577	0.512	0.550	0.873	1.081	1.394	1.507	1.693	1.871	3	2	K1 III
4357	2.611	0.238	0.199	0.185	0.153	0.051	0.067	0.099	0.192	0.236	0.222	0.240	0.239	3	3	A4 V
4359	3.351	0.082	0.067	-0.008	-0.021	-0.008	0.014	0.022	0.072	0.068	0.079	0.085	0.077	3	2	A2 V
4362	5.010	3.566	3.053	2.939	2.380	0.822	0.691	1.266	2.069	2.647	2.868	3.250	3.540	3	3	M3 III
4368	4.515	0.397	0.324	0.208	0.236	0.114	0.120	0.175	0.236	0.313	0.337	0.374	0.444	3	2	A7 III-IV
4371	5.575	3.297	2.836	2.850	2.210	0.626	0.760	1.207	1.729	2.165	2.358	2.620	2.899	1	2	M0 III
4374/5	3.900	0.298	0.202	0.450	0.662	0.287	0.282	0.491	0.693	0.874	0.937	1.002	1.149	2	3	G0 V
4377	3.839	2.753	2.397	2.456	1.996	0.624	0.682	1.072	1.421	1.736	1.884	2.108	2.311	1	3	K3 III
4380	4.819	0.093	0.086	0.158	0.128	0.047	0.043	0.084	0.093	0.137	0.155	0.153	0.174	2	2	A2 V
4382	3.871	1.913	1.636	1.720	1.479	0.518	0.522	0.863	1.091	1.358	1.480	1.661	1.885	2	2	G8 III-IV
4386	4.086	-0.233	-0.215	-0.186	-0.087	-0.019	0.005	0.009	-0.029	-0.024	-0.035	-0.034	-0.072	2	2	B9 V
4392	5.199	1.597	1.396	1.457	1.319	0.471	0.447	0.720	0.940	1.171	1.281	1.420	1.576	3	2	G8 II
4399 D	4.040	0.309	0.232	0.338	0.471	0.219	0.211	0.333	0.464	0.587	0.621	0.665	0.767	2	2	F2 IV
4405 D	4.143	0.242	0.198	0.237	0.238	0.087	0.110	0.174	0.216	0.281	0.279	0.318	0.410	2	2	A5 V
4434	4.271	3.608	3.062	3.066	2.415	0.703	0.804	1.291	1							

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
4518	4.000	2.149	1.863	1.966	1.612	0.537	0.560	0.907	1.197	1.474	1.608	1.793	1.990	2	2	K0 III
4527 D	4.645	0.687	0.585	0.651	0.626	0.253	0.272	0.481	0.680	0.855	0.924	1.030	1.146	3	2	G5 III-IV+A
4534	2.125	0.131	0.105	0.173	0.142	0.054	0.038	0.075	0.067	0.093	0.092	0.109	0.117	10	48	A3 V
4540	3.701	0.397	0.294	0.489	0.648	0.269	0.292	0.474	0.631	0.773	0.822	0.870	0.961	4	2	F8 V
4550	6.627	0.557	0.417	0.738	0.873	0.348	0.391	0.656	0.895	1.101	1.186	1.305	1.436	49	40	G8 Vp
4554	2.413	0.050	0.042	0.014	0.007	0.004	-0.020	-0.016	-0.025	-0.029	-0.012	-0.017	-0.053	2	5	A0 V
4589	4.710	0.330	0.283	0.186	0.128	0.083	0.048	0.091	0.120	0.153	0.169	0.221	0.219	2	2	A4 V
4608	4.348	1.349	1.153	1.301	1.269	0.466	0.445	0.724	0.962	1.185	1.283	1.421	1.562	3	2	G8 III
4660	3.340	0.156	0.133	0.144	0.107	0.033	0.038	0.070	0.051	0.098	0.113	0.112	0.083	3	5	A3 V
4662	2.577	-0.588	-0.551	-0.434	-0.162	-0.028	-0.023	-0.026	-0.037	-0.054	-0.071	-0.153	-0.129	3	3	B8 III
4689	3.904	0.122	0.09	0.060	0.006	0.009	0.038	0.057	0.000	0.016	0.005	0.029	0.086	3	2	A2 V
4695	5.266	2.192	1.873	1.922	1.575	0.519	0.579	0.913	1.194	1.460	1.590	1.801	2.024	3	2	K1 III
4697	4.972	1.613	1.364	1.468	1.320	0.481	0.460	0.766	1.010	1.246	1.352	1.522	1.706	3	2	G8 III
4707	4.940	0.646	0.569	0.616	0.569	0.241	0.266	0.453	0.605	0.765	0.829	0.938	1.061	3	2	A5+G5 III
4716	4.960	1.317	1.108	1.174	1.145	0.425	0.409	0.670	0.867	1.072	1.155	1.300	1.454	3	2	G7 III
4737	4.616	2.065	1.883	1.943	1.579	0.497	0.543	0.836	1.086	1.333	1.432	1.615	1.785	4	2	K1 III-IV
4757	2.955	-0.182	-0.159	-0.118	-0.061	-0.017	-0.019	-0.021	-0.042	-0.060	-0.083	-0.083	-0.103	3	2	B9.5 V:n
4775	4.380	0.163	0.117	0.263	0.425	0.196	0.192	0.300	0.441	0.537	0.542	0.576	0.667	3	2	F0 IV
4785	4.409	0.327	0.248	0.479	0.659	0.288	0.289	0.491	0.649	0.815	0.861	0.923	1.011	5	2	G0 V
4787	3.850	-0.964	-0.919	-0.605	-0.182	-0.029	-0.035	-0.001	-0.072	-0.047	-0.094	-0.203	-0.232	3	3	B5 IIIe
4789	4.791	0.001	0.009	-0.021	-0.019	0.005	0.014	0.002	0.017	0.026	0.045	0.045	0.085	3	2	A0 III
4813	4.956	2.458	2.236	2.237	1.765	0.535	0.597	0.919	1.196	1.452	1.574	1.766	1.976	3	2	K2 III
4828	4.898	0.082	0.087	0.141	0.100	0.035	0.028	0.043	0.066	0.096	0.089	0.119	0.167	3	2	A1 V
4845	6.081	0.206	0.114	0.383	0.613	0.247	0.270	0.456	0.769	0.933	0.987	1.078	1.107	2	2	G0 V
4846 V.	5.877	12.	11.5	10.16	6.938	2.132	1.121	1.843	2.414	2.917	3.556	3.914	4.345	1	1	C5.4
4883 *	5.093	0.646	0.501	0.621	0.798	0.371	0.335	0.543	0.726	0.909	0.971	1.058	1.179	3	2	G0 III
4902	5.127	3.009	2.656	2.650	2.249	0.784	0.702	1.274	2.119	2.690	2.916	3.281	3.609	3	2	M3 III
4905	1.792	0.061	0.040	-0.074	-0.044	-0.026	0.017	0.014	0.018	0.023	0.018	0.006	-0.014	3	4	A0p
4910	3.742	3.546	2.937	2.834	2.253	0.762	0.645	1.219	2.100	2.705	2.935	3.316	3.609	3	2	M3 III
4914	5.680	0.072	0.027	0.189	0.335	0.150	0.154	0.272	0.400	0.386	0.540	0.574	0.551	3	1	F0 V
4915 *	2.948	-0.572	-0.545	-0.386	-0.149	-0.077	0.015	-0.015	-0.070	-0.124	-0.107	-0.171	-0.220	1	1	B9.5p:
4920	5.193	3.460	2.968	2.992	2.335	0.657	0.787	1.254	1.814	2.252	2.432	2.730	2.995	3	2	M1 III
4931 D	5.008	0.219	0.159	0.284	0.423	0.195	0.188	0.308	0.437	0.548	0.573	0.602	0.641	3	6	F2 V
4932	3.080	1.427	1.255	1.331	1.209	0.434	0.440	0.706	0.937	1.148	1.232	1.354	1.511	3	3	G9 II-III
4954	5.225	3.267	2.834	2.858	2.227	0.622	0.787	1.224	1.683	2.038	2.213	2.469	2.700	3	2	K5 III
4963 D	4.407	0.032	0.037	-0.052	-0.026	0.012	0.024	0.050	0.048	0.046	0.055	0.061	0.075	3	2	A1 V
4983	4.365	0.332	0.277	0.490	0.664	0.291	0.303	0.473	0.642	0.795	0.837	0.892	0.996	4	6	G0 V
5017	4.788	0.480	0.415	0.352	0.373	0.137	0.190	0.255	0.352	0.417	0.436	0.477	0.533	3	6	F0 II-IIIp
5019	4.899	0.651	0.564	0.786	0.854	0.326	0.360	0.585	0.838	1.028	1.062	1.136	1.293	3	1	G6 V
5054/5	2.072	0.046	0.038	0.075	0.037	0.004	0.026	0.034	0.034	0.053	0.050	0.048	0.020	3	3	A2 V+A2 V
5056 V.	0.960	-1.565	-1.439	-0.965	-0.328	-0.107	-0.065	-0.113	-0.194	-0.248	-0.308	-0.446	-0.485	1	1	B1 V
5062	4.033	0.182	0.156	0.189	0.198	0.068	0.075	0.139	0.183	0.234	0.217	0.253	0.267	3	4	A5 V
5068	5.010	1.953	1.805	1.819	1.522	0.495	0.500	0.795	1.038	1.238	1.311	1.504	1.723	3	2	K1 III
5072	5.172	0.666	0.559	0.776	0.886	0.349	0.352	0.577	0.788	0.963	1.029	1.106	1.227	3	2	G5 V
5095	5.122	3.684	3.143	3.057	2.433	0.758	0.745	1.268	1.935	2.463	2.682	3.012	3.291	3	2	M2 III
5105	4.938	-0.039	-0.082	0.006	0.006	-0.015	0.079	0.079	0.039	0.052	0.031	0.045	0.048	3	3	A2p
5107	3.380	0.151	0.125	0.176	0.131	0.064	0.067	0.102	0.023	0.087	0.104	0.124	0.182	3	2	A3 Vn
5110	5.068	0.329	0.234	0.297	0.426	0.205	0.196	0.367	0.473	0.614	0.662	0.735	0.800	3	2	F2 IV
5112	4.692	0.285	0.231	0.182	0.161	0.076	0.058	0.111	0.130	0.169	0.161	0.166	0.141	3	2	A4 V
5127 D	4.810	0.298	0.223	0.200	0.258	0.122	0.122	0.222	0.253	0.318	0.339	0.343	0.386	3	2	A7 III
5154	5.057	3.615	3.088	3.063	2.433	0.769	0.754	1.276	1.944	2.436	2.631	2.961	3.171	3	3	M2 III
5185	4.603	0.282	0.199	0.378	0.557	0.239	0.244	0.405	0.509	0.658	0.662	0.717	0.815	3	2	F7 V
5191	1.829	-1.121	-1.020	-0.650	-0.220	-0.052	-0.081	-0.126	-0.177	-0.205	-0.253	-0.364	-0.449	3	3	B3 V
5200	4.459	3.314	2.856	2.882	2.254	0.621	0.783	1.218	1.692	2.090	2.260	2.536	2.782	3	3	K5 III
5219	5.134	3.788	3.182	3.072	2.447	0.821	0.696	1.271	2.093	2.676	2.910	3.264	3.575	3	3	K5 III
5226	4.940	3.603	3.001	2.900	2.293	0.793	0.646	1.243	2.131	2.749	2.998	3.382	3.650	3	3	(M3)
5235	2.807	0.549	0.48	0.577	0.703	0.272	0.301	0.492	0.627	0.786	0.823	0.867	0.982	3	3	G0 IV
5264	4.233	0.323	0.248	0.155	0.103	0.064	0.052	0.109	0.140	0.167	0.181	0.229	0.228	3	2	A3 III
5291	3.651	-0.108	-0.106	-0.168	-0.092	-0.019	-0.004	0.001	-0.063	-0.070	-0.061	-0.076	-0.104	3	3	A0 III
5299	5.529	3.632	2.895	2.631	2.071	0.925	0.508	1.272	2.531	3.301	3.652	4.210	4.523	3	4	M4-4.5 III
5304	4.908	0.352	0.260	0.403	0.613	0.282	0.252	0.437	0.548	0.713	0.741	0.815	0.914	3	2	F8 IV
5313	5.005	-0.747	-0.674	-0.442	-0.164	-0.048	-0.022	-0.042	-0.080	-0.094	-0.123	-0.190	-0.185	5	3	B9p (Si)
5315	4.536	2.662	2.280	2.373	1.886	0.583	0.660	1.045	1.395	1.710	1.841	2.086	2.331	3	2	K3 III
5328/9	4.434	0.269	0.216	0.226	0.237	0.099	0.119	0.185	0.269	0.320	0.335	0.314	0.357	2	2	F2 V/A7 IV
5338	4.195	0.319	0.230	0.391	0.588	0.277	0.253	0.419	0.602	0.730	0.793	0.838	0.926	3	2	F7 III-IV
5340	0.243	2.403	2.023	2.091	1.702	0.557	0.614	0.978	1.321	1.615	1.749	1.978	2.169	5	12	K2 IIIp
5350	4.803	0.195	0.162	0.239	0.251	0.096	0.108	0.165	0.270	0.326	0.333	0.320	0.283	3	2	A7 V
5351	4.182	0.104	0.102	0.135	0.111	0.041	0.015	0.050	0.114	0.124	0.135	0.151	0.164	3	2	A0p
5359	4.542	0.224	0.181	0.198	0.159	0.056	0.061	0.090	0.072	0.120	0.116	0.137	0.221	3	2	A8m
5361	5.047	1.738	1.540	1.636	1.412	0.476	0.487	0.783	0.979	1.221	1.309	1.489	1.706	3	2	K0 III
5370	5.163	2.368	2.155	2.202	1.729	0.511	0.616	0.947	1.210	1.483	1.601	1.822	1.999	3	2	K3 III
5384	6.392	0.389	0.295	0.551	0.732	0.314	0.305	0.511	0.711	0.889	0.939	1.003	1.111	2	2	(dG3)
5404	4.166	0.263	0.178	0.369	0.572	0.252	0.258	0.424	0.530	0.666	0.710	0.745	0.835	3	2	F7 V
5409	4.970	0.645	0.529	0.672	0.808	0.342	0.343	0.558								

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
5487	3.959	0.166	0.102	0.235	0.421	0.207	0.218	0.334	0.493	0.602	0.644	0.665	0.722	2	2	F3 IV
5490 V	5.172	3.655	3.101	3.024	2.453	0.808	0.731	1.290	2.084	2.646	2.869	3.230	3.481	6	1	(gM3)
5502	4.823	1.479	1.301	1.384	1.268	0.453	0.449	0.722	0.953	1.168	1.268	1.392	1.520	3	3	K0 III
5505/6	2.622	1.424	1.320	1.365	1.222	0.456	0.482	0.755	1.006	1.245	1.349	1.509	1.641	3	2	K0 II-III+A
5511	3.723	-0.027	-0.028	-0.061	-0.010	0.008	0.009	0.022	0.002	0.000	-0.005	-0.033	0.011	3	3	A0 V
5531	2.794	0.244	0.192	0.205	0.183	0.064	0.072	0.104	0.158	0.189	0.188	0.216	0.252	2	2	A m
5544 D	4.747	0.662	0.569	0.839	0.906	0.318	0.418	0.677	0.888	1.084	1.149	1.247	1.375	3	2	G8 V
5563	2.479	3.088	2.676	2.756	2.156	0.626	0.739	1.150	1.525	1.873	2.018	2.269	2.460	3	2	K4 III
5570	4.550	0.237	0.173	0.232	0.348	0.160	0.168	0.285	0.367	0.453	0.463	0.491	0.575	3	2	F0 IV
5586 V	4.941	-0.136	-0.133	-0.123	-0.025	0.018	0.030	0.056	0.082	0.106	0.093	0.359	0.023	3	2	(A0)
5589 V	4.982	3.628	2.872	2.657	2.076	0.941	0.499	1.272	2.470	3.251	3.547	4.096	4.407	1	1	M5 III
5600	5.221	3.183	2.806	2.829	2.224	0.629	0.785	1.210	1.663	2.027	2.175	2.438	2.663	2	2	K4 III
5601	4.589	1.699	1.463	1.571	1.387	0.492	0.489	0.790	1.038	1.302	1.412	1.583	1.738	2	2	K0 III
5602	3.725	1.492	1.302	1.329	1.244	0.454	0.433	0.715	0.930	1.162	1.258	1.388	1.503	2	2	G8 III
5616	4.821	2.415	2.113	2.176	1.773	0.559	0.615	0.977	1.223	1.509	1.640	1.850	2.079	2	2	K2 III
5634	5.012	0.158	0.105	0.282	0.497	0.227	0.223	0.388	0.525	0.642	0.682	0.708	0.733	2	2	F5 V
5652	4.564	-0.590	-0.556	-0.387	-0.126	-0.027	0.008	-0.007	-0.024	-0.048	-0.056	-0.110	-0.130	2	3	B9 IV (Si)
5681	3.725	1.429	1.213	1.336	1.222	0.466	0.438	0.727	0.974	1.224	1.329	1.476	1.618	2	2	G8 III
5685	2.606	-0.569	-0.521	-0.463	-0.162	-0.031	-0.026	-0.043	-0.079	-0.095	-0.100	-0.153	-0.171	86	47	B8 V
5733	4.391	0.261	0.192	0.255	0.349	0.151	0.164	0.273	0.362	0.434	0.456	0.492	0.510	2	2	F0 IV
5735	3.065	0.407	0.335	-0.062	0.026	0.043	0.051	0.102	0.138	0.177	0.227	0.268	0.200	3	3	A3 II-III
5744	3.613	2.191	1.970	2.004	1.617	0.501	0.594	0.912	1.177	1.430	1.549	1.722	1.888	2	2	K2 III
5747	3.738	0.289	0.226	0.327	0.358	0.118	0.145	0.208	0.181	0.227	0.218	0.241	0.326	2	2	F0 IIIp
5763	5.480	3.399	2.876	2.912	2.350	0.717	0.796	1.250	1.747	2.156	2.327	2.633	2.864	1	2	K5 III
5764	5.505	-1.245	-1.117	-0.727	-0.207	-0.027	-0.059	-0.073	-0.118	-0.173	-0.192	-0.302	-0.381	2	2	B2 Vnn
5774 D	5.024	0.315	0.247	0.113	0.083	0.039	0.056	0.082	0.118	0.155	0.164	0.217	0.219	1	2	(A2n)
5777	4.864	1.617	1.414	1.561	1.331	0.447	0.494	0.790	1.004	1.216	1.321	1.485	1.720	2	2	K1 IV
5778	4.144	-0.887	-0.826	-0.552	-0.182	-0.027	-0.041	-0.066	-0.135	-0.169	-0.205	-0.248	-0.227	2	2	B7nn
5780	5.140	-0.809	-0.721	-0.468	-0.137	-0.032	-0.029	-0.041	-0.056	-0.077	-0.126	-0.166	-0.200	2	2	B7 IV:
5787	4.140	1.528	1.300	1.441	1.303	0.469	0.469	0.772	1.025	1.255	1.365	1.523	1.718	2	2	G8 III-IV
5788/9	3.840	0.302	0.246	0.250	0.286	0.111	0.135	0.211	0.244	0.296	0.323	0.358	0.449	2	2	F0 IV
5793 V	2.223	-0.060	-0.046	-0.058	-0.041	-0.014	0.000	-0.010	-0.011	-0.012	-0.016	-0.008	-0.026	3	2	A0 V
5838	5.186	3.399	2.945	2.949	2.306	0.660	0.800	1.289	1.790	2.199	2.378	2.689	2.976	2	2	K5 III
5842 D	4.546	0.098	0.092	0.108	0.060	0.020	0.034	0.043	0.052	0.063	0.060	0.071	0.098	2	2	A1 V
5849 D	3.840	-0.033	-0.032	-0.011	-0.002	0.000	0.026	0.020	-0.016	-0.012	-0.033	-0.022	-0.017	2	2	A0 IV
5854	2.930	2.210	2.017	2.056	1.639	0.501	0.572	0.879	1.141	1.390	1.509	1.691	1.871	77	44	K2 III
5859	5.580	0.092	0.057	0.038	0.017	0.014	0.018	0.042	0.006	0.017	0.025	0.043	0.014	2	2	A0 V
5867	3.696	0.192	0.171	0.101	0.084	0.024	0.044	0.065	0.031	0.059	0.067	0.104	0.124	3	2	A2 IV
5868	4.551	0.423	0.322	0.536	0.686	0.292	0.299	0.506	0.619	0.783	0.831	0.900	1.009	3	3	G0 V
5879	4.521	3.535	3.017	3.014	2.389	0.702	0.801	1.289	1.851	2.296	2.493	2.817	3.055	4	2	M1 III
5881	3.561	-0.185	-0.164	-0.132	-0.056	-0.007	-0.001	0.007	-0.035	-0.032	-0.035	-0.058	-0.081	2	2	A0 V
5889	4.820	0.900	0.724	0.889	0.965	0.380	0.390	0.627	0.807	1.005	1.073	1.182	1.313	2	2	G5 III-IV
5892	3.760	0.202	0.154	0.216	0.195	0.042	0.081	0.123	0.100	0.135	0.135	0.164	0.186	2	2	A m
5899	5.167	3.310	2.875	2.916	2.268	0.644	0.790	1.224	1.689	2.075	2.245	2.534	2.739	2	2	K5 III
5901	5.010	1.634	1.420	1.538	1.323	0.436	0.507	0.786	1.026	1.263	1.366	1.510	1.649	2	2	K0 III-IV
5902	5.042	-0.918	-0.839	-0.477	-0.074	-0.002	0.030	0.058	0.040	0.054	0.040	0.007	0.002	2	2	B3 V
5903	4.268	0.228	0.172	0.027	0.031	0.042	0.002	0.035	0.073	0.107	0.113	0.131	0.136	3	2	A3 V
5908	4.367	1.632	1.403	1.517	1.333	0.481	0.494	0.793	1.050	1.272	1.379	1.537	1.720	2	3	K0 III-IV
5914	4.718	0.282	0.182	0.404	0.631	0.295	0.288	0.483	0.654	0.813	0.859	0.931	1.048	2	3	F9 V
5915 D	5.943	-0.807	-0.752	-0.418	-0.046	0.019	0.016	0.043	0.096	0.077	0.079	0.039	0.177	2	3	B5 V:
5933	3.965	0.192	0.112	0.295	0.519	0.231	0.259	0.432	0.593	0.729	0.769	0.803	0.857	2	3	F6 V
5941	4.946	-0.394	-0.289	-0.496	-0.119	0.024	-0.032	0.014	-0.053	-0.044	-0.003	-0.038	-0.053	1	3	B pe
5947	4.458	2.317	2.027	2.112	1.710	0.543	0.597	0.947	1.248	1.519	1.650	1.860	2.040	31	39	K3 III
5960	5.048	0.230	0.181	0.233	0.309	0.132	0.138	0.221	0.331	0.399	0.425	0.442	0.449	2	3	F0 IV
5971	4.975	-0.334	-0.290	-0.247	-0.091	-0.014	-0.008	-0.028	-0.038	-0.029	-0.044	-0.077	-0.136	2	2	A0 II-IIIp
5972	4.847	0.131	0.114	0.134	0.088	0.027	0.039	0.053	0.049	0.072	0.061	0.083	0.068	2	3	A3 V
5977/8	4.227	0.294	0.231	0.329	0.525	0.237	0.230	0.358	0.508	0.638	0.659	0.607	0.829	2	2	F5 IV
5982	4.713	-0.537	-0.508	-0.397	-0.152	-0.024	-0.017	-0.039	-0.084	-0.098	-0.114	-0.165	-0.201	2	3	B9p
5984/5	2.523	-1.303	-1.198	-0.750	-0.143	0.018	-0.021	-0.011	-0.064	-0.070	-0.107	-0.197	-0.201	2	2	B0.5 V+B2 V
5986	4.131	0.398	0.303	0.439	0.604	0.260	0.262	0.436	0.566	0.713	0.755	0.809	0.857	2	2	F8 IV-V
5993	3.967	-1.248	-1.160	-0.698	-0.110	0.031	0.009	0.014	-0.005	-0.007	-0.031	-0.107	-0.070	2	2	B1 V
5997	4.496	1.184	0.970	1.050	1.055	0.413	0.389	0.637	0.820	1.027	1.098	1.223	1.377	2	2	(gG2)
6018	4.972	1.619	1.443	1.545	1.334	0.443	0.499	0.803	1.031	1.257	1.345	1.510	1.691	2	3	K0 III
6023	4.249	-0.417	-0.392	-0.284	-0.097	-0.018	-0.011	-0.012	-0.023	-0.026	-0.041	-0.065	-0.135	2	3	B9p
6027 D	4.021	-0.973	-0.914	-0.517	-0.022	0.059	0.056	0.112	0.135	0.171	0.179	0.175	0.210	2	3	B2 IV-V
6031	4.958	0.170	0.150	0.157	0.095	0.030	0.061	0.080	0.137	0.142	0.153	0.152	0.262	2	2	A2 V
6056	3.142	3.499	2.992	2.993	2.353	0.693	0.782	1.243	1.868	2.313	2.515	2.823	3.055	2	2	M1 III
6075	3.463	1.494	1.289	1.384	1.258	0.455	0.456	0.739	0.992	1.221	1.329	1.474	1.641	2	2	G9 III
6092	3.895	-0.973	-0.890	-0.597	-0.209	-0.053	-0.047	-0.073	-0.135	-0.162	-0.203	-0.286	-0.322	31	35	B5 IV
6093	4.909	0.216	0.192	0.255	0.376	0.169	0.192	0.313	0.419	0.507	0.535	0.567	0.632	2	2	F0 V
6095	3.835	0.472	0.404	0.320	0.301	0.118	0.161	0.250	0.373	0.453	0.477	0.551	0.557	2	3	A9 III
6103	5.085	1.576	1.405	1.459	1.279	0.436	0.468	0.734	0.977	1.188	1.281	1.427	1.573	2	3	K0 III
6104	4.729	1.591	1.409	1.526	1.335	0.465	0.485	0.771	0.929	1.146	1.252	1.404	1.664	2	1	K0 III
6117	4.626	-0.027	-0.046	-0.049	-0.033	-0.021										

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
6149 D	3.821	0.030	0.021	0.040	0.029	0.011	0.027	0.041	0.052	0.060	0.061	0.072	0.062	2	2	A1 V
6159	5.252	3.216	2.761	2.809	2.175	0.612	0.778	1.214	1.640	2.011	2.180	2.459	2.708	3	2	K4 III
6161	4.964	-0.147	-0.133	-0.199	-0.090	-0.023	-0.003	-0.015	-0.059	-0.049	-0.054	-0.040	-0.135	3	2	B9 IV
6168	4.225	-0.061	-0.068	-0.158	-0.045	0.010	0.008	0.014	0.000	0.003	0.007	0.005	-0.067	2	2	B9 V
6175	2.587	-1.247	-1.177	-0.696	-0.060	0.066	0.029	0.080	0.060	0.087	0.061	-0.020	-0.026	2	2	O9.5 V
6212 D	2.941	0.549	0.449	0.630	0.761	0.287	0.343	0.545	0.703	0.862	0.924	1.000	1.090	4	3	G0 IV
6220	3.725	1.268	1.096	1.222	1.151	0.426	0.418	0.702	0.907	1.116	1.210	1.351	1.482	2	2	G7 III-IV
6237	4.997	0.162	0.099	0.222	0.407	0.202	0.196	0.338	0.440	0.548	0.585	0.623	0.609	2	2	F2 V
6243	4.781	0.371	0.276	0.377	0.552	0.234	0.243	0.410	0.544	0.657	0.694	0.761	0.881	2	2	F5 IV-V
6254	4.875	0.094	0.064	0.121	0.103	0.015	0.062	0.093	0.065	0.085	0.081	0.083	0.088	2	3	A2p
6281	4.374	-0.564	-0.512	-0.368	-0.149	-0.027	-0.025	-0.045	-0.067	-0.094	-0.115	-0.145	-0.228	2	2	B8 IV
6299	3.494	2.101	1.913	1.970	1.588	0.496	0.564	0.882	1.167	1.400	1.520	1.688	1.842	6	1	K2 III
6315	5.015	0.176	0.099	0.317	0.549	0.255	0.257	0.433	0.462	0.697	0.708	0.796	0.844	2	1	F6 V
6322 V	4.413	-1.219	-1.029	-1.133	-1.135	-0.440	0.414	0.686	0.902	1.110	1.201	1.325	1.441	2	2	G5 III
6324	3.938	-0.210	-0.181	-0.111	-0.044	-0.012	0.014	0.016	0.010	0.007	-0.009	-0.021	-0.025	2	3	B9.5 V
6337	5.398	3.589	3.040	2.970	2.345	0.740	0.732	1.282	2.102	2.658	2.875	3.251	3.527	3	2	M3 III
6355	4.940	0.188	0.163	0.198	0.153	0.049	0.067	0.110	0.117	0.155	0.150	0.177	0.167	2	2	A3 IV
6378 D	2.466	0.182	0.169	0.129	0.071	0.051	0.042	0.061	0.051	0.070	0.063	0.070	0.091	2	2	A2.5 V
6396	3.179	-0.702	-0.666	-0.519	-0.180	-0.050	-0.021	-0.026	-0.067	-0.079	-0.097	-0.154	-0.199	2	2	B6 III
6406/7.	3.383	2.646	2.167	1.951	1.548	0.987	0.484	1.398	2.796	3.695	4.067	4.807	5.194	1	1	M5 III+G5 III
6410	3.165	0.149	0.109	0.098	0.079 ³	0.035	0.068	0.093	0.135	0.162	0.164	0.199	0.158	2	1	A3 IV
6415 D	5.036	2.043	1.845	1.907	1.566	0.496	0.577	0.882	1.169	1.403	1.524	1.706	1.872	2	2	K2 III
6418	3.539	2.968	2.609	2.631	2.090	0.625	0.710	1.100	1.424	1.730	1.882	2.123	2.343	2	3	K3 II
6431 V.	4.969	-1.143	-1.050	-0.683	-0.214	-0.045	-0.076	-0.090	-0.180	-0.211	-0.259	-0.360	-0.368	1	2	B3 III
6436	4.600	0.032	0.046	0.027	0.026	0.009	0.032	0.043	0.051	0.050	0.053	0.063	0.059	2	2	A2 V
6446	4.348	0.084	0.095	0.050	0.018	0.019	0.027	0.025	0.039	0.049	-0.002	0.038	0.057	2	2	A1 V
6484/5	4.178	-0.007	-0.029	-0.117	-0.056	-0.005	0.014	0.028	0.024	0.032	0.027	0.037	0.030	2	3	A0p /A0 IV
6493	4.601	0.195	0.122	0.250	0.419	0.215	0.188	0.327	0.426	0.507	0.559	0.595	0.717	2	2	F3 V
6498	4.724	2.980	2.660	2.646	2.168	0.708	0.725	1.137	1.495	1.812	1.985	2.253	2.477	2	2	K3 II
6526	4.797	2.965	2.606	2.659	2.093	0.617	0.712	1.110	1.455	1.758	1.908	2.157	2.377	2	2	K4 III
6536	3.029	1.403	1.186	1.220	1.228	0.474	0.455	0.734	0.931	1.170	1.241	1.386	1.521	2	3	G2 II
6554	4.965	0.199	0.155	0.223	0.288	0.126	0.124	0.219	0.286	0.350	0.379	0.413	0.389	2	2	A m
6555	4.946	0.263	0.218	0.286	0.353	0.140	0.139	0.234	0.300	0.371	0.396	0.415	0.447	2	2	A m
6556	2.129	0.278	0.225	0.203	0.188	0.071	0.081	0.130	0.163	0.209	0.225	0.264	0.276	2	3	A5 III
6561	3.605	0.338	0.273	0.262	0.310	0.114	0.153	0.220	0.335	0.397	0.414	0.446	0.475	2	2	F0 IV
6567	4.656	-0.179	-0.171	-0.172	0.082	0.098	0.087	0.162	0.188	0.246	0.286	0.341	0.395	2	2	B8 V
6581	4.266	0.203	0.187	0.149	0.094	0.044	0.038	0.064	0.104	0.115	0.108	0.125	0.159	2	2	A2 V
6588	3.792	-1.173	-1.066	-0.723	-0.247	-0.055	-0.066	-0.092	-0.156	-0.189	-0.225	-0.328	-0.392	2	3	B3 V
6596	4.890	0.187	0.126	0.301	0.493	0.229	0.378	0.538	0.649	0.668	0.719	0.761	2	3	F5 V	
6603	3.059	2.188	2.003	2.044	1.625	0.500	0.573	0.887	1.148	1.397	1.512	1.693	1.871	70	42	K2 III
6623	3.611	0.819	0.726	0.898	0.902	0.329	0.362	0.590	0.759	0.947	0.997	1.089	1.195	2	2	G5 IV
6629	3.750	0.061	0.055	0.071	0.045	0.013	0.007	0.014	0.034	0.041	0.035	0.053	0.045	63	48	A0 V
6636 D	4.693	0.205	0.147	0.283	0.467	0.208	0.242	0.390	0.483	0.570	0.645	0.751	0.803	2	2	F5 IV-V
6685	5.545	1.089	0.801	0.267	0.387	0.215	0.176	0.321	0.393	0.491	0.607	0.583	0.583	2	2	F2 Ia
6688	4.045	2.175	1.962	2.025	1.614	0.499	0.585	0.914	1.180	1.464	1.588	1.772	1.951	2	2	K2 III
6695	4.180	2.632	2.369	2.355	1.949	0.636	0.617	0.958	1.219	1.486	1.620	1.834	2.015	2	2	K1 II
6698	3.553	1.689	1.507	1.558	1.340	0.457	0.457	0.745	0.951	1.163	1.251	1.403	1.571	2	2	G9 III
6703	3.944	1.410	1.246	1.325	1.209	0.431	0.445	0.724	0.952	1.165	1.256	1.383	1.509	2	2	G9 III
6705	2.662	3.275	2.838	2.885	2.255	0.639	0.778	1.218	1.675	2.057	2.221	2.506	2.725	2	3	K5 III
6707 .	4.519	0.548	0.447	0.288	0.395	0.190	0.206	0.368	0.504	0.632	0.681	0.750	0.826	2	2	F2 II
6710	4.719	0.209	0.122	0.253	0.426	0.195	0.208	0.353	0.449	0.548	0.558	0.593	0.673	2	1	F3 V
6712	4.597	-1.224	-1.154	-0.672	-0.102	0.021	0.034	0.128	0.146	0.217	0.138	0.041	0.100	2	2	B2 Ve
6713	4.950	2.306	2.059	2.072	1.738	0.591	0.570	0.902	1.198	1.461	1.587	1.783	1.967	2	2	K0 III-III
6714	4.000	-0.861	-0.814	-0.564	-0.042	0.073	0.051	0.094	0.086	0.097	0.112	0.057	0.094	2	2	B5 Ib
6723	4.479	0.048	0.045	-0.015	0.014	0.022	0.048	0.070	0.080	0.078	0.091	0.115	0.146	2	2	A1 V
6752 D	4.266	0.988	0.897	1.142	1.069	0.349	0.478	0.753	1.001	1.216	1.301	1.428	1.593	3	2	K0 V
6770	4.862	1.501	1.332	1.409	1.269	0.469	0.433	0.703	0.906	1.114	1.212	1.339	1.516	2	2	G8 III-IV
6771	3.782	0.187	0.157	0.182	0.149	0.041	0.076	0.120	0.161	0.194	0.198	0.225	0.195	2	3	A4 V
6779	3.821	-0.010	0.011	-0.150	-0.046	0.009	-0.014	-0.006	0.009	0.021	0.029	0.042	0.040	2	4	B9.5 III
6787	4.353	-1.315	-1.194	-0.809	-0.246	-0.039	-0.061	-0.093	-0.103	-0.150	-0.228	-0.301	-0.384	2	1	B2 V
6789	4.393	0.089	0.074	0.036	0.011	0.008	0.025	0.016	0.066	0.082	0.078	0.077	0.005	2	2	A1 V
6866	5.055	1.327	1.121	1.234	1.180	0.436	0.406	0.669	0.876	1.094	1.160	1.309	1.475	2	2	G8 III
6868	5.357	3.534	3.049	3.019	2.393	0.692	0.806	1.291	1.885	2.336	2.527	2.857	3.087	2	2	M0 III
6869	3.470	1.322	1.12	1.286	1.199	0.423	0.464	0.752	1.005	1.231	1.314	1.475	1.623	3	3	K0 III-IV
6872	4.632	2.166	1.960	1.996	1.636	0.513	0.552	0.880	1.155	1.404	1.522	1.702	1.863	2	2	K2 III
6884	4.875	1.438	1.250	1.355	1.225	0.447	0.451	0.710	0.985	1.195	1.276	1.420	1.543	2	3	K0 III
6895	4.147	2.113	1.877	1.976	1.596	0.510	0.591	0.920	1.227	1.484	1.599	1.790	1.967	2	2	K2 III
6896 D	5.139	1.973	1.812	1.836	1.643	0.649	0.676	1.086	1.437	1.839	2.037	2.300	2.633	2	2	K2 II
6918 VD	5.331	0.597	0.558	0.572	0.529	0.246	0.287	0.473	0.646	0.833	0.914	1.069	1.191	4	1	G0 III+A6 V
6920 D	4.237	-0.566	-0.535	-0.337	-0.113	-0.037	-0.019	-0.012	-0.084	-0.098	-0.119	-0.164	-0.252	2	2	A0p
6923 D	5.012	0.109	0.096	0.119	0.091	0.042	0.045	0.077	0.033	0.105	0.121	0.141	-0.022	2	1	A1 V
6927	3.691	0.169	0.083	0.300	0.551	0.261	0.252	0.453	0.609	0.762	0.818	0.884	0.945	2	3	F7 V
6930	4.709	0.264	0.204	0.057	0.044	0.035	0.054	0.086	0.133	0.136	0.153	0.173	0.192	2	2	A3 V
6945	5.113	2.155	1.814	1.932	1.596	0.530	0.562	0.920	1.							

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP. TYPE
7063	4.478	1.720	1.539	1.550	1.423	0.566	0.527	0.840	1.177	1.402	1.521	1.720	1.871	2	2	G5 II
7064	5.148	2.216	1.958	2.043	1.651	0.517	0.593	0.929	1.255	1.520	1.632	1.834	1.996	2	3	K3 III
7066 V.	5.489	2.564	2.222	2.041	1.738	0.694	0.660	1.068	1.460	1.644	1.815	2.026	2.218	1	1	G0e1s-K0p1b
7069	4.371	0.156	0.131	0.206	0.183	0.043	0.049	0.091	0.110	0.143	0.134	0.150	0.145	2	2	A3 V
7106 V	3.399	-0.891	-0.865	-0.607	-0.078	0.036	0.050	0.131	0.120	0.162	0.171	0.149	0.228	1	4	B pe
7125	4.972	2.077	1.764	1.859	1.607	0.553	0.571	0.939	1.212	1.474	1.563	1.764	2.011	2	2	K0 II-III
7133 D	4.796	1.084	0.980	1.030	0.954	0.392	0.401	0.675	0.877	1.065	1.157	1.307	1.434	2	2	G4 III+A6 V
7137	5.133	1.259	1.087	1.185	1.147	0.426	0.419	0.703	0.922	1.130	1.219	1.357	1.460	2	2	G8 III
7139 V	4.561	3.301	2.715	2.580	2.134	0.912	0.613	1.305	2.430	3.202	3.506	4.042	4.404	1	2	M4 II
7141/2	4.673	0.205	0.176	0.182	0.179	0.056	0.095	0.148	0.213	0.244	0.238	0.264	0.294	2	2	A5 V
7157 V	4.391	3.662	2.822	2.482	1.886	1.045	0.482	1.362	2.753	3.596	3.940	4.615	4.975	1	2	M5 III
7176	4.313	1.934	1.725	1.776	1.460	0.473	0.512	0.834	1.052	1.260	1.379	1.545	1.723	2	3	K2 III
7178	3.242	0.018	-0.04	-0.272	-0.078	0.006	0.006	0.037	-0.013	-0.018	0.012	0.007	0.018	6	2	B9 III
7180	5.102	2.078	1.836	1.910	1.580	0.524	0.542	0.879	1.128	1.379	1.497	1.657	1.850	2	2	K0 III
7193	4.295	1.894	1.674	1.772	1.477	0.498	0.526	0.854	1.067	1.309	1.423	1.587	1.801	2	2	K1 III
7235	2.981	0.016	0.037	0.006	0.007	0.008	-0.007	0.008	0.022	0.028	0.020	0.037	0.026	2	3	B9.5 V
7236	3.419	-0.448	-0.397	-0.294	-0.124	-0.025	-0.041	-0.047	-0.085	-0.092	-0.117	-0.162	-0.198	3	2	B8 V
7298	4.386	-1.076	-0.990	-0.720	-0.226	-0.041	-0.034	-0.070	-0.098	-0.134	-0.179	-0.285	-0.322	2	2	B2 IV
7306	4.747	-0.865	-0.799	-0.531	-0.134	-0.001	-0.010	-0.012	-0.014	0.003	-0.029	-0.134	-0.139	2	2	B3 IV
7310	3.329	1.584	1.361	1.448	1.293	0.452	0.480	0.760	0.987	1.232	1.321	1.466	1.617	2	2	G9 III
7314	4.629	2.308	2.082	2.098	1.767	0.606	0.570	0.903	1.191	1.468	1.586	1.790	1.963	2	3	K0 II
7328	3.994	1.485	1.305	1.379	1.246	0.446	0.438	0.725	0.951	1.158	1.246	1.376	1.542	2	2	G9 III
7340	3.972	0.313	0.260	0.234	0.265	0.093	0.127	0.180	0.273	0.339	0.376	0.397	0.452	2	2	F0 IV
7342	4.664	-0.650	-0.830	-0.582	-0.022	0.019	0.207	0.318	0.437	0.487	0.564	0.512	0.587	2	2	A pe
7352	4.780	2.561	2.296	2.314	1.813	0.522	0.629	0.967	1.242	1.520	1.650	1.839	1.978	2	1	K3 III
7358	5.168	-0.890	-0.818	-0.513	-0.190	-0.048	-0.041	-0.072	-0.109	-0.134	-0.183	-0.214	-0.237	2	2	B6 III
7371	4.614	0.140	0.111	0.080	0.034	0.000	0.027	0.033	-0.019	0.031	0.041	0.069	0.054	2	2	A2 IV
7372	4.980	-1.149	-1.057	-0.673	-0.192	-0.030	-0.028	-0.054	-0.041	-0.061	-0.088	-0.205	-0.128	2	2	B3 IV
7377	3.430	0.223	0.160	0.224	0.346	0.158	0.158	0.263	0.362	0.447	0.475	0.499	0.565	2	2	F0 IV
7387	4.821	1.476	1.227	0.624	0.604	0.317	0.339	0.514	0.788	0.960	1.099	1.275	1.386	2	2	F2 Ib
7405	4.863	3.319	2.817	2.798	2.198	0.632	0.749	1.216	1.790	2.226	2.398	2.716	2.981	2	3	M0+ III
7417	3.399	1.273	1.244	1.405	1.376	0.514	0.612	0.949	1.262	1.552	1.675	1.905	2.110	2	2	K3 II+b:
7420	3.827	0.280	0.240	0.162	0.163	0.078	0.064	0.141	0.167	0.217	0.210	0.280	0.295	2	2	A5 V
7426	4.740	-1.052	-0.951	-0.666	-0.226	-0.044	-0.051	-0.052	-0.126	-0.154	-0.182	-0.302	-0.219	2	3	B3 IV
7429	4.779	2.173	1.949	2.034	1.602	0.470	0.614	0.957	1.198	1.443	1.566	1.733	1.970	2	2	K3 III
7437	5.017	-0.686	-0.640	-0.483	-0.171	-0.032	0.004	0.003	-0.067	-0.079	-0.066	-0.125	-0.131	2	2	B7 V
7446	4.988	-1.295	-1.206	-0.753	-0.102	0.063	0.055	0.079	0.102	0.111	0.087	-0.006	-0.004	2	2	B0.5 III
7447	4.359	-0.731	-0.669	-0.472	-0.146	-0.017	0.004	0.004	-0.034	-0.041	-0.048	-0.107	-0.122	2	2	B5 III
7462	4.896	0.784	0.686	0.981	0.965	0.326	0.412	0.682	0.916	1.105	1.181	1.265	1.393	2	2	K0 V
7469	4.588	0.144	0.091	0.240	0.444	0.204	0.199	0.346	0.457	0.557	0.601	0.631	0.715	3	2	F4 V
7478	4.930	1.522	1.367	1.442	1.273	0.434	0.465	0.756	0.956	1.193	1.302	1.454	1.611	2	3	G8 III-IV
7479	4.580	1.037	0.828	0.890	0.968	0.374	0.362	0.623	0.793	0.985	1.053	1.155	1.283	2	2	G0 II
7488	4.641	1.750	1.569	1.582	1.405	0.498	0.475	0.778	0.991	1.215	1.314	1.469	1.633	2	2	G8 II
7503	6.145	0.516	0.423	0.639	0.754	0.308	0.337	0.567	0.719	0.889	0.944	1.010	1.120	4	2	G2 V
7504	6.396	0.539	0.437	0.682	0.768	0.306	0.341	0.559	0.736	0.905	0.948	1.034	1.144	5	4	G5 V
7525	3.126	3.081	2.716	2.755	2.208	0.687	0.739	1.139	1.508	1.835	2.000	2.257	2.487	2	2	K3 II
7528	2.893	-0.114	-0.078	-0.140	-0.071	0.006	0.006	0.007	0.006	0.004	0.002	0.006	-0.009	2	4	B9.5 III
7536	4.211	2.068	1.940	1.955	1.739	0.729	0.659	1.214	2.040	2.618	2.855	3.237	3.522	2	3	M2 II+A0 V
7546 D	5.069	0.167	0.152	0.110	0.096	0.047	0.064	0.095	0.146	0.179	0.201	0.227	0.236	2	3	A3 V
7557	0.799	0.235	0.183	0.202	0.255	0.098	0.120	0.182	0.236	0.304	0.328	0.339	0.364	3	2	A7 IV,V
7564 V.	8.708	4.3	2.38	1.132	1.294	1.828	0.601	2.428	4.684	6.235	6.810	8.200	8.645	1	1	M5 (S7,1e)
7565	4.960	-1.110	-1.003	-0.662	-0.242	-0.054	-0.043	-0.075	-0.062	-0.007	-0.084	-0.202	-0.291	2	2	B3 V
7570 V.	4.056	1.432	1.190	1.055	1.094	0.446	0.474	0.736	0.905	1.098	1.177	1.349	1.530	1	1	F6 Ib
7574	6.281	-1.340	-1.253	-0.755	-0.073	0.078	0.056	0.111	0.157	0.182	0.203	0.118	0.029	2	2	O8f
7582 D	4.078	1.178	0.982	1.115	1.096	0.432	0.419	0.714	0.888	1.112	1.204	1.332	1.505	2	2	G8f III
7589	5.653	-1.454	-1.347	-0.837	-0.170	0.026	-0.003	0.019	-0.010	-0.016	-0.046	-0.149	-0.222	2	2	O9.5 III
7592	4.544	-0.200	-0.203	-0.208	-0.062	-0.013	0.023	-0.006	0.079	0.096	0.106	0.120	0.128	2	2	B9.5 III
7595	4.975	1.740	1.518	1.605	1.368	0.469	0.506	0.820	1.046	1.264	1.377	1.541	1.740	2	2	K0 III
7602	3.955	0.997	0.853	1.069	1.025	0.366	0.436	0.725	0.892	1.099	1.188	1.326	1.479	2	2	G8 IV
7613	4.950	-0.831	-0.759	-0.556	-0.161	-0.016	-0.017	-0.018	-0.042	-0.040	-0.065	-0.131	-0.145	2	2	B6 III
7615	4.157	1.661	1.474	1.561	1.340	0.459	0.495	0.797	1.025	1.261	1.339	1.506	1.680	2	1	K0 III
7619 D	5.000	0.238	0.206	0.167	0.158	0.073	0.097	0.163	0.208	0.201	0.176	0.146	0.118	2	2	A3 IV
7635	3.981	3.389	2.960	2.968	2.336	0.655	0.826	1.277	1.753	2.156	2.320	2.627	2.884	2	2	K5 III
7653	4.739	0.391	0.307	0.223	0.202	0.071	0.112	0.182	0.209	0.254	0.281	0.318	0.351	2	4	A m
7678	5.729	-0.329	-0.361	-0.034	0.487	0.357	0.293	0.509	0.707	0.866	0.967	1.092	1.247	2	2	B1.5 Ia+
7685	4.865	2.681	2.388	2.412	1.907	0.570	0.650	1.003	1.292	1.573	1.733	1.953	2.120	2	2	K3 III
7708	5.001	-1.260	-1.168	-0.798	-0.270	-0.079	-0.016	-0.034	-0.036	-0.035	-0.099	-0.206	-0.232	2	2	B3 V
7710	3.183	-0.201	-0.224	-0.207	-0.098	-0.010	-0.019	-0.034	-0.044	-0.047	-0.057	-0.023	-0.082	2	2	B9.5 III
7724	4.982	0.107	0.079	0.135	0.094	0.029	0.033	0.054	0.058	0.074	0.076	0.109	0.071	2	2	A2 V
7730	4.888	0.433	0.360	0.083	0.092	0.048	0.080	0.121	0.115	0.184	0.206	0.261	0.285	2	2	A3 III
7735 V	4.154	1.083	1.109	1.376	1.503	0.607	0.683	1.075	1.419	1.748	1.930	2.199	2.423	2	1	K2 II+B3 V
7736	5.010	0.132	0.105	0.129	0.154	0.084	0.085	0.173	0.209	0.274	0.272	0.292	0.338	2	2	A2 III
7739	4.794	-1.202	-1.093	-0.727	-0.223	-0.037	-0.063	-0.084	-0.216	-0.213	-0.255	-0.380	-0.348	2	2	B3 V
7740	4.356	0.233	0.185	0.125	0.126	0.061	0									

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP.TYPE
7767 D	5.899	-1.088	-1.037	-0.582	0.016	0.108	0.096	0.173	0.216	0.269	0.257	0.195	0.209	2	2	O8
7773	4.764	-0.174	-0.162	-0.144	-0.080	-0.020	0.004	-0.007	-0.013	-0.021	-0.030	-0.051	-0.038	2	1	B9 V
7776	3.294	0.735	0.701	0.823	0.895	0.374	0.422	0.681	0.905	1.105	1.198	1.354	1.561	2	2	F8 V(-A0)
7796	2.392	1.295	1.027	0.781	0.842	0.334	0.339	0.529	0.654	0.818	0.885	1.000	1.097	4	2	F8 Ib
7806	4.787	2.682	2.365	2.451	1.932	0.588	0.687	1.071	1.420	1.715	1.845	2.102	2.286	2	2	K3 III
7822 D	4.844	0.247	0.187	0.273	0.424	0.201	0.193	0.328	0.442	0.526	0.591	0.606	0.696	2	2	F2 IV
7834	4.098	0.816	0.646	0.412	0.484	0.205	0.205	0.353	0.476	0.595	0.642	0.725	0.786	2	3	F5 II
7844	4.931	-1.017	-0.936	-0.658	-0.151	-0.013	-0.006	-0.007	-0.044	-0.055	-0.041	-0.138	-0.183	2	2	B2 V
7847	6.477	1.861	1.577	1.157	1.073	0.517	0.570	0.903	1.193	1.467	1.647	1.937	2.132	2	4	F5 Iab
7850	4.249	0.365	0.302	0.260	0.252	0.091	0.080	0.146	0.197	0.231	0.250	0.258	0.287	2	2	A m
7852	4.017	-0.834	-0.747	-0.538	-0.192	-0.045	-0.039	-0.054	-0.086	-0.118	-0.143	-0.209	-0.235	2	5	B6 III
7866	5.059	1.621	1.646	1.903	1.965	0.797	0.810	1.291	1.830	2.230	2.440	2.777	3.039	2	2	K2 18+B
7884	4.523	1.439	1.260	1.337	1.232	0.442	0.419	0.682	1.000	1.193	1.285	1.415	1.593	2	2	G8 III
7891	4.802	-0.185	-0.152	-0.122	-0.055	-0.017	-0.005	-0.028	-0.011	-0.023	-0.025	-0.040	-0.039	2	1	B9.5 V
7906	3.764	-0.341	-0.297	-0.266	-0.095	-0.026	-0.015	-0.028	-0.024	-0.035	-0.041	-0.059	-0.064	2	56	B9 V
7924	1.309	-0.015	-0.136	-0.379	0.035	0.102	0.063	0.118	0.185	0.218	0.317	0.284	0.289	8	2	A2 Ia
7928	4.464	0.292	0.229	0.225	0.300	0.127	0.170	0.264	0.448	0.520	0.561	0.570	0.635	2	2	A7p III
7939	5.203	2.187	1.917	1.993	1.613	0.524	0.570	0.900	1.186	1.446	1.564	1.766	1.957	2	2	K2 III
7942	4.448	1.739	1.529	1.622	1.410	0.473	0.483	0.785	1.054	1.277	1.382	1.558	1.705	2	3	K0 III
7947/8	4.079	1.042	0.915	1.041	1.023	0.366	0.441	0.702	0.822	1.025	1.203	1.368	1.506	2	1	F8 IV-V/K2 IV
7949	2.703	1.643	1.435	1.527	1.342	0.465	0.481	0.782	1.034	1.265	1.352	1.549	1.719	3	3	K0 III
7950	3.791	0.096	0.093	-0.026	-0.016	-0.004	0.014	0.024	0.044	0.054	0.057	0.072	0.033	2	2	A1 V
7951	4.867	3.734	3.150	3.026	2.405	0.815	0.699	1.293	2.159	2.729	2.981	3.358	3.693	2	2	M3 III
7955	4.628	0.427	0.334	0.487	0.641	0.267	0.272	0.441	0.624	0.778	0.847	0.860	0.980	2	2	F8 IV-V
7957	3.643	1.263	1.078	1.259	1.161	0.416	0.448	0.718	1.022	1.227	1.341	1.439	1.640	2	1	K0 IV
7963 D	4.477	-0.827	-0.752	-0.543	-0.161	-0.032	-0.030	-0.057	-0.080	-0.100	-0.136	-0.193	-0.200	2	2	B5 V
7977	4.933	-0.399	-0.417	-0.191	0.339	0.269	0.227	0.387	0.540	0.678	0.748	0.817	0.918	2	2	B3 Ia
7990	4.838	0.355	0.301	0.325	0.408	0.170	0.183	0.269	0.394	0.472	0.506	0.508	0.559	2	2	A8m
7995	4.754	1.085	0.919	1.031	1.045	0.396	0.382	0.625	0.855	1.053	1.129	1.246	1.408	2	3	G8 III
8001	4.765	-0.967	-0.883	-0.580	-0.182	-0.033	-0.038	-0.078	-0.108	-0.149	-0.198	-0.262	-0.259	2	2	B5 V
8020	5.795	-0.077	-0.157	-0.047	0.451	0.316	0.234	0.437	0.650	0.780	0.895	0.983	1.037	2	1	B8 Ia
8028	3.971	0.092	0.076	-0.112	-0.015	0.017	0.008	0.045	0.066	0.075	0.082	0.106	0.106	2	2	A0 V
8047 V	4.595	-1.364	-1.296	-0.769	-0.096	0.048	0.017	0.105	0.212	0.233	0.162	0.035	0.117	1	1	B1 IV:e
8060	4.888	0.204	0.168	0.197	0.179	0.069	0.102	0.128	0.223	0.265	0.276	0.309	0.375	2	2	A3 m?
8075	4.115	-0.017	-0.020	0.003	-0.001	0.003	0.007	0.017	0.008	0.007	0.005	0.000	0.012	2	2	A0 V
8079	4.135	3.135	2.804	2.770	2.332	0.758	0.804	1.236	1.733	2.122	2.297	2.598	2.912	2	2	K5 Ib
8085	5.698	1.736	1.513	1.864	1.486	0.301	0.820	1.182	1.636	1.880	1.979	2.172	2.359	2	2	K5 V
8086	6.540	2.027	1.776	2.061	1.707	0.407	0.888	1.337	1.804	2.240	2.374	2.597	2.941	2	1	K7 V
8089	4.960	3.292	2.910	2.886	2.356	0.719	0.760	1.209	1.611	1.963	2.132	2.401	2.673	2	2	K4 Ib-IIa
8093	4.728	1.410	1.232	1.342	1.225	0.439	0.429	0.712	0.953	1.158	1.275	1.405	1.562	2	2	G8 III
8097	4.789	0.238	0.206	0.284	0.344	0.115	0.125	0.216	0.274	0.327	0.352	0.384	0.413	2	2	F0p
8115	3.447	1.510	1.373	1.444	1.335	0.479	0.442	0.708	0.914	1.123	1.229	1.372	1.512	5	2	G8 II
8123 D	4.597	0.232	0.160	0.351	0.560	0.258	0.253	0.438	0.522	0.685	0.737	0.789	0.906	2	2	F7 V
8130 D	3.842	0.286	0.207	0.306	0.463	0.229	0.196	0.335	0.474	0.575	0.624	0.666	0.740	2	2	F0 IV
8131	4.020	0.690	0.611	0.653	0.607	0.240	0.256	0.460	0.614	0.766	0.819	0.934	1.075	2	2	G0 III+A5 V
8143 *	4.236	-0.446	-0.435	-0.429	0.037	0.101	0.080	0.167	0.168	0.215	0.289	0.279	0.322	1	2	B9 Iab
8146	4.374	-1.293	-1.213	-0.736	-0.177	-0.010	-0.019	0.030	0.044	0.096	0.019	-0.101	-0.093	2	2	B2 V
8162	2.501	0.302	0.246	0.244	0.272	0.110	0.108	0.181	0.242	0.291	0.329	0.356	0.384	3	1	A7 IV,V
8167	4.490	1.236	1.053	1.168	1.120	0.424	0.422	0.688	0.892	1.106	1.175	1.313	1.454	2	2	G8 III
8173	4.349	1.926	1.727	1.805	1.490	0.494	0.528	0.833	1.118	1.363	1.461	1.633	1.802	2	1	K1 III
8225	4.951	3.491	3.020	2.982	2.353	0.691	0.791	1.267	1.832	2.311	2.490	2.819	3.066	2	2	M1 III
8232	3.094	1.322	1.063	1.022	1.058	0.397	0.402	0.636	0.851	1.024	1.095	1.217	1.333	2	2	G0 Ib
8238 DV	3.186	-1.562	-1.431	-0.961	-0.316	-0.084	-0.097	-0.139	-0.292	-0.341	-0.416	-0.538	-0.558	2	2	B2 III
8252	4.196	1.224	1.046	1.167	1.125	0.419	0.416	0.690	0.997	1.202	1.286	1.414	1.593	2	2	G8 III
8255	5.143	1.859	1.673	1.737	1.449	0.468	0.548	0.852	1.115	1.337	1.447	1.632	1.817	2	2	K1 III
8260	4.633	-1.014	-0.949	-0.800	-0.262	-0.046	-0.058	-0.048	-0.103	-0.135	-0.128	-0.223	-0.226	2	2	B3 V:p
8262 V-	5.733	3.735	2.766	2.291	1.780	1.207	0.532	1.592	3.321	4.344	4.750	5.633	6.061	1	1	(gM4e)
8264	4.749	0.320	0.258	0.215	0.212	0.081	0.086	0.151	0.212	0.250	0.273	0.299	0.331	2	1	A7 V
8278	3.764	0.482	0.418	0.361	0.407	0.133	0.160	0.247	0.318	0.410	0.397	0.459	0.561	2	1	F0 IIIp
8279	4.839	-0.558	-0.566	-0.286	0.243	0.228	0.169	0.293	0.426	0.489	0.528	0.530	0.609	2	2	B2 Ib
8288	4.924	1.284	1.038	1.152	1.118	0.433	0.402	0.687	0.914	1.136	1.227	1.344	1.495	2	2	G8 III
8297 V-	6.888	12.	7.6	7.134	5.263	1.513	1.305	2.043	2.637	3.152	3.697	4.124	4.529	1	1	C6.3
8301	4.688	-1.025	-0.954	-0.659	-0.168	-0.021	-0.051	-0.051	-0.110	-0.130	-0.187	-0.272	-0.302	2	2	B3 V
8308	2.794	3.103	2.715	2.687	2.238	0.735	0.738	1.125	1.455	1.775	1.919	2.183	2.429	2	2	K2 Ib
8309/10	4.571	0.170	0.088	0.277	0.523	0.222	0.239	0.407	0.576	0.687	0.720	0.780	0.885	2	3	F6 V
8313	4.556	1.924	1.693	1.722	1.547	0.541	0.517	0.819	1.102	1.352	1.460	1.649	1.796	2	2	G5 Ib
8315 D	4.222	0.198	0.117	0.250	0.435	0.209	0.234	0.380	0.543	0.658	0.687	0.739	0.827	2	2	F5 IV
8316 V-	4.635	4.892	4.418	4.063	3.329	1.351	1.037	1.846	2.896	3.586	3.952	4.572	4.951	7	2	M2 Ia
8317	4.803	2.020	1.824	1.877	1.538	0.486	0.526	0.829	1.084	1.319	1.423	1.586	1.771	3	1	K0 III
8322 V	2.949	0.256	0.215	0.282	0.359	0.162	0.168	0.277	0.366	0.445	0.467	0.491	0.536	2	2	A6m
8327	6.004	-0.719	-0.722	-0.319	0.274	0.229	0.170	0.292	0.398	0.535	0.559	0.538	0.535	2	2	O9 II
8334	4.435	0.808	0.586	0.201	0.483	0.339	0.277	0.475	0.672	0.837	0.999	1.102	1.234	2	2	A2 Ia
8335	4.224	-1.121	-1.045	-0.724	-0.180	-0.024	-0.022	-0.041	-0.088	-0.096	-0.134	-0.236	-0.221	2	2	B3 III
8338 V-	5.419	1.176	1.094	1.548	2.005	0.941	0.866	1.572	2.381</							

TABLE 7 THIRTEEN-COLOR PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	52-72	52-80	52-86	52-99	52-110	NB	NR	SP.TYPE
8450	3.546	0.169	0.136	0.138	0.105	0.041	0.025	0.036	0.069	0.084	0.089	0.121	0.181	2	2	A2 V
8454	4.384	0.634	0.489	0.417	0.550	0.261	0.233	0.386	0.507	0.649	0.686	0.766	0.914	2	2	F5 III-III
8465	3.741	3.100	2.759	2.724	2.271	0.768	0.731	1.132	1.459	1.779	1.938	2.197	2.440	2	2	K1 Ib
8468	5.026	1.382	1.184	1.238	1.182	0.434	0.421	0.699	0.943	1.148	1.228	1.346	1.518	2	2	G8 III
8469	5.137	-0.911	-0.877	-0.470	0.153	0.191	0.146	0.250	0.375	0.465	0.462	0.435	0.566	2	2	O6f
8485	4.853	2.589	2.358	2.370	1.938	0.625	0.705	1.087	1.440	1.755	1.893	2.156	2.413	2	2	K3 III
8494	4.243	0.269	0.207	0.250	0.328	0.152	0.149	0.228	0.360	0.442	0.451	0.477	0.554	2	2	F0 IV
8498	4.478	2.937	2.627	2.637	2.118	0.655	0.701	1.066	1.400	1.708	1.867	2.107	2.354	2	2	K3 III-III
8499	4.402	1.577	1.392	1.472	1.297	0.439	0.468	0.739	0.976	1.191	1.259	1.427	1.585	2	2	G8 III-IV
8518	3.859	-0.180	-0.171	-0.149	-0.082	-0.028	0.007	-0.017	-0.021	-0.021	-0.028	-0.034	-0.035	2	1	B9 III
8520	5.006	-1.264	-1.169	-0.780	-0.228	-0.037	-0.040	-0.068	-0.063	-0.072	-0.128	-0.249	-0.266	2	2	B2 V
8522	4.828	-0.264	-0.247	-0.266	-0.029	0.005	0.035	0.046	0.050	0.064	0.062	0.069	0.069	2	2	B8 III
8523	4.541	-0.868	-0.786	-0.551	-0.166	-0.037	-0.035	-0.049	-0.086	-0.091	-0.113	-0.188	-0.199	2	2	G6 IV
8538	4.660	1.582	1.350	1.464	1.311	0.459	0.484	0.783	1.061	1.297	1.396	1.575	1.752	2	3	B9 III
8539	4.630	-1.416	-1.344	-0.801	-0.110	0.042	0.034	0.150	0.188	0.278	0.205	0.108	0.195	2	3	B1 Vpe
8541	4.626	-0.384	-0.395	-0.409	0.027	0.088	0.089	0.142	0.177	0.224	0.275	0.263	0.301	2	2	B9 Iab
8551	5.059	1.741	1.505	1.640	1.399	0.478	0.523	0.842	1.124	1.360	1.494	1.665	1.848	3	2	K0 III
8558/9	3.770	0.286	0.185	0.276	0.472	0.213	0.215	0.373	0.516	0.641	0.671	0.712	0.796	2	4	F2 IV
8571 V	4.450	1.388	1.149	1.096	1.097	0.427	0.400	0.664	0.856	1.052	1.120	1.255	1.355	1	1	F5 Ib-G2 Ib
8572 D	4.805	2.214	2.119	2.288	2.200	0.853	0.823	1.355	1.952	2.423	2.647	3.012	3.296	2	2	M0 Iab+b
8573	4.882	-0.082	-0.050	-0.061	-0.027	0.001	-0.001	-0.005	-0.009	-0.037	-0.041	-0.064	-0.061	2	2	A0 IV
8579	4.480	-1.151	-1.065	-0.716	-0.158	0.003	-0.019	-0.030	-0.036	-0.063	-0.095	-0.174	-0.179	2	2	B2 V
8585	3.750	-0.028	-0.034	0.007	0.019	-0.003	-0.003	0.015	-0.014	-0.011	-0.023	-0.015	0.005	2	3	A2 V
8597	4.026	-0.448	-0.397	-0.320	-0.123	-0.037	-0.019	-0.041	-0.040	-0.052	-0.080	-0.123	-0.127	2	2	B8 V
8613	4.667	0.336	0.272	0.236	0.072	0.129	0.112	0.198	0.287	0.368	0.390	0.415	0.406	2	2	A7 V
8622	4.846	-1.662	-1.540	-1.000	-0.293	-0.047	-0.066	-0.102	-0.173	-0.209	-0.271	-0.422	-0.458	99	40	O9 V
8632	4.815	2.541	2.206	2.279	1.835	0.579	0.644	1.007	1.367	1.640	1.786	2.018	2.215	2	1	K3 III
8634	3.410	-0.460	-0.398	-0.356	-0.155	-0.041	-0.017	-0.029	-0.061	-0.065	-0.070	-0.112	-0.123	2	3	B8 V
8641	4.806	0.007	-0.005	-0.048	-0.020	0.002	0.009	-0.012	-0.008	-0.004	-0.025	0.001	-0.005	2	3	A1 V
8649	5.022	2.774	2.415	2.492	1.961	0.597	0.688	1.064	1.444	1.735	1.914	2.127	2.356	2	3	K4 III
8650	3.130	1.225	1.052	1.114	1.068	0.401	0.402	0.650	0.873	1.087	1.178	1.320	1.471	2	2	G2 II-III+F?
8665	4.307	0.238	0.151	0.317	0.552	0.253	0.266	0.427	0.600	0.751	0.800	0.861	0.967	2	2	F7 V
8667	4.192	1.782	1.586	1.630	1.439	0.493	0.491	0.770	1.024	1.246	1.349	1.515	1.704	2	3	G8 II-III
8679	4.440	3.438	2.964	2.968	2.341	0.667	0.782	1.229	1.769	2.180	2.373	2.666	2.922	2	2	M0 III
8684	3.728	1.387	1.197	1.301	1.210	0.446	0.432	0.689	0.981	1.181	1.268	1.398	1.533	2	4	G8 III
8694	3.737	1.753	1.557	1.640	1.405	0.477	0.506	0.782	1.050	1.290	1.384	1.546	1.724	2	3	K1 III
8698	4.140	3.278	2.846	2.839	2.361	0.774	0.775	1.288	2.039	2.548	2.773	3.125	3.430	2	2	M2 III
8702	5.058	2.400	2.109	2.186	1.753	0.541	0.616	0.980	1.314	1.584	1.734	1.930	2.128	2	2	K3 III
8709	3.281	0.226	0.189	0.107	0.073	0.026	0.044	0.049	0.094	0.108	0.121	0.136	0.134	2	4	A3 V
8717	4.891	0.005	0.017	-0.028	-0.008	0.003	0.017	0.001	0.034	0.033	0.024	0.043	0.083	2	3	A1 V
8729	5.612	0.601	0.510	0.699	0.796	0.309	0.332	0.545	0.722	0.846	0.923	0.987	1.126	3	2	G4 V
8748	5.042	3.018	2.641	2.699	2.093	0.595	0.719	1.115	1.475	1.811	1.965	2.178	2.414	2	3	K4 III
8752 V	5.399	2.728	2.346	2.179	2.003	0.808	0.808	1.225	1.689	2.046	2.262	2.605	2.828	1	3	G0 Ia
8762	3.637	-0.881	-0.806	-0.641	-0.179	-0.022	-0.008	-0.026	-0.014	-0.028	-0.024	-0.085	-0.093	1	4	B6p
8773	4.505	-0.827	-0.769	-0.511	-0.162	-0.026	-0.025	-0.055	-0.013	-0.006	-0.009	-0.104	-0.116	2	3	B5 Ve
8775 V	2.849	3.905	3.244	3.113	2.472	0.846	0.699	1.296	2.162	2.766	2.969	3.363	3.677	2	4	M2+ III-III
8780	4.894	1.725	1.536	1.615	1.398	0.484	0.501	0.808	1.098	1.324	1.440	1.611	1.791	2	3	K0 III
8781	2.502	-0.017	-0.021	-0.125	-0.054	0.001	0.000	-0.018	0.007	-0.012	-0.018	-0.018	-0.007	3	4	B9.5 III
8795	4.973	3.464	2.986	2.968	2.340	0.665	0.792	1.276	1.877	2.314	2.503	2.807	3.062	2	3	M2 III
8796	5.089	2.209	1.942	2.016	1.823	0.627	0.632	1.014	1.353	1.630	1.769	1.999	2.208	2	3	K0 Ibp
8797	4.821	-1.283	-1.190	-0.767	-0.116	0.067	0.008	0.023	0.046	0.030	-0.003	-0.094	-0.019	2	3	B0.5 IV
8808 D	6.272	-0.906	-0.821	-0.488	-0.068	0.032	0.013	0.025	-0.003	-0.013	-0.042	-0.085	-0.142	2	2	B3 V
8819 D	4.598	1.017	0.892	0.995	0.983	0.368	0.402	0.646	0.836	1.042	1.118	1.238	1.384	3	3	G2 III
8830	4.597	0.216	0.149	0.212	0.340	0.149	0.153	0.253	0.356	0.450	0.472	0.499	0.557	1	3	F0 V
8832	5.872	1.443	1.311	1.586	1.280	0.318	0.618	0.928	1.175	1.420	1.498	1.665	1.839	68	24	K3 V
8834	4.636	3.416	2.927	2.909	2.300	0.667	0.765	1.261	1.894	2.379	2.583	2.903	3.160	2	4	M2 III
8841	4.514	1.897	1.716	1.783	1.484	0.488	0.544	0.840	1.104	1.363	1.473	1.642	1.804	2	3	K0 III
8852	3.913	1.352	1.081	1.191	1.165	0.442	0.427	0.710	0.969	1.202	1.306	1.457	1.600	2	3	G7 III
8858	4.396	-0.955	-0.866	-0.614	-0.200	-0.047	-0.030	-0.074	-0.101	-0.127	-0.165	-0.260	-0.276	2	3	B5 V
8860	5.231	3.741	3.185	3.105	2.465	0.785	0.743	1.310	2.058	2.588	2.799	3.170	3.468	3	1	(gM2)
8872 D	4.948	1.104	0.943	1.072	1.056	0.397	0.410	0.676	0.892	1.071	1.154	1.298	1.472	2	2	K0 III
8880	4.606	0.236	0.186	0.159	0.169	0.075	0.083	0.134	0.186	0.273	0.282	0.325	0.369	2	3	A5 IV
8892	4.197	1.822	1.568	1.660	1.449	0.496	0.513	0.847	1.134	1.393	1.511	1.689	1.865	2	4	K0 III
8905	4.557	0.516	0.390	0.494	0.677	0.290	0.293	0.499	0.689	0.838	0.876	0.962	1.039	2	2	F8 IV
8906	4.818	3.169	2.787	2.809	2.215	0.636	0.773	1.206	1.607	1.952	2.116	2.367	2.597	2	3	K5 III
8911	4.968	-0.069	-0.112	-0.004	0.039	-0.016	0.070	0.072	0.076	0.074	0.048	0.044	0.014	2	3	A2p
8916	4.554	1.857	1.664	1.730	1.451	0.483	0.531	0.838	1.057	1.317	1.414	1.585	1.763	2	2	K1 III
8923	4.768	1.463	1.290	1.367	1.240	0.443	0.459	0.732	0.950	1.165	1.257	1.402	1.569	2	2	G8 III
8926 V	4.871	-1.069	-0.969	-0.639	-0.183	-0.028	-0.029	-0.039	-0.056	-0.076	-0.116	-0.200	-0.195	2	3	B3 V
8961 V	3.995	1.433	1.194	1.329	1.233	0.445	0.514	0.832	1.155	1.371	1.476	1.658	1.876	2	3	G8 III-IV
8965	4.288	-0.488	-0.450	-0.405	-0.122	-0.014	-0.037	-0.033	-0.075	-0.082	-0.091	-0.076	-0.133	2	2	B8 V
8969	4.228	0.288	0.197	0.356	0.580	0.256	0.252	0.438	0.564	0.709	0.750	0.790	0.909	9	2	F7 V
8974	3.480	1.700	1.533	1.650	1.360	0.431	0.505	0.812	1.036	1.287	1.395	1.533	1.726	2	2	K1 IV
8976	4.136	-0.407	-0.368	-0.256	-0.119	-0.039	-0.012	-0.037	-0.070	-0.068	-0.090	-0.11				

TABLE 8
EIGHT-COLOR (8-C) PHOTOMETRY OF BRIGHT STARS

B.S.	52	33-52	35-52	37-52	40-52	45-52	52-58	52-63	WT	SP. TYPE
595/6	3.842	-0.294	-0.29	-0.155	-0.040	-0.022	0.054	0.061	3	AM+Ap
603/4	2.417	1.745	1.62	1.733	1.554	0.552	0.615	0.924	2	K3 II+a
1620	4.670	0.318	0.27	0.224	0.197	0.076	0.097	0.137	1	A7 V
1666	2.841	0.288	0.21	0.188	0.162	0.068	0.052	0.122	2	A3 III
1726	4.898	2.360	2.02	2.118	1.765	0.550	0.651	1.006	2	K3 III
1998	3.602	0.128	0.106	0.142	0.117	0.027	0.018	0.037	2	A3 V
2084	4.806	-1.376	-1.26	-0.800	-0.152	0.035	-0.012	-0.009	2	B1 Ib
2095 D	2.592	-0.290	-0.27	-0.310	-0.126	-0.050	0.019	-0.012	2	B9.5P V
2134	4.367	1.056	0.96	1.061	1.053	0.375	0.414	0.665	2	(gG5)
2777 D	3.631	0.319	0.26	0.243	0.363	0.164	0.200	0.334	3	F0 IV
2973	4.511	1.845	1.63	1.714	1.514	0.497	0.587	0.911	2	K1 III
3410	4.157	0.013	0.03	0.005	-0.003	0.020	0.015	0.041	3	A0 V
3492	4.363	0.038	-0.01	-0.046	-0.038	0.002	0.010	0.015	3	A0 V
3787	4.565	0.301	0.23	0.104	0.125	0.074	0.045	0.113	3	A3 III
3799	4.508	0.167	0.12	0.071	0.081	0.009	0.006	-0.019	1	A2 V
4119	5.076	-0.850	-0.77	-0.488	-0.171	-0.017	-0.041	-0.039	2	B6 V
4259/60	4.350	0.116	0.06	-0.034	0.000	0.012	0.018	0.027	2	A1 V
4825/6	2.865	0.109	0.08	0.203	0.408	0.177	0.182	0.303	4	F0 V
5958 V	10.342	2.196	1.747	1.901	1.900	0.831	0.535	1.256	1	Pec NOVA
7871	4.687	0.226	0.207	0.172	0.143	0.046	0.038	0.053	2	A3 V
7882 D	3.729	0.398	0.308	0.374	0.536	0.229	0.225	0.366	2	F5 IV

TABLE 9
SIX RED COLOR (6-RC) PHOTOMETRY OF BRIGHT STARS

B.S.	58	58-72	58-80	58-86	58-99	58-110	WT	SP. TYPE
1805	4.779	0.732	1.024	1.189	1.436	1.671	2	K3 p
4141	5.100	0.207	0.303	0.324	0.335	0.384	4	F1 V
4332	5.676	0.001	0.029	0.029	0.073	0.018	2	A3 III
4464	6.412	0.498	0.748	0.846	1.002	1.222	2	A4 III
4562	6.616	0.550	0.799	0.913	1.080	1.241	1	M0 III
4686	6.299	0.250	0.370	0.382	0.374	0.619	1	F2 III
4867	5.731	0.319	0.458	0.498	0.531	0.574	3	F5 V
5129	6.417	0.127	0.173	0.179	0.219	0.254	3	(gF0)
5532	5.791	0.025	0.033	0.035	0.090	0.057	3	A3 III
6084	2.830	0.048	0.215	0.250	0.250	0.361	2	B1 III
6144	6.528	0.374	0.536	0.719	0.781	0.646	1	A7 Ib
6619	6.236	0.001	-0.001	0.074	0.048	0.068	3	A0 Ib
6699	6.014	0.181	0.270	0.280	0.336	0.452	3	(gF1)
6825	6.030	0.217	0.281	0.381	0.400	0.495	3	A0 Ia
6843	6.242	0.299	0.423	0.482	0.588	0.707	3	A5 III
6903	5.144	0.007	0.047	0.072	0.105	0.087	3	A3 III
7055	5.580	0.442	0.620	0.790	0.977	1.124	2	F2 Ib-I
7502	5.911	0.108	0.156	0.191	0.251	0.267	2	A4 III
7573	5.370	0.524	0.733	0.933	1.133	1.272	2	A2 Ia
7601	5.597	-0.024	-0.024	-0.024	-0.014	-0.029	8	A0 III
7657 D	5.131	0.236	0.321	0.359	0.410	0.501	2	F5 II
7692	6.123	0.299	0.426	0.456	0.498	0.466	3	(gF4)
7823	6.273	0.351	0.493	0.579	0.731	0.834	2	F3 II
7874	6.469	0.168	0.181	0.183	0.244	0.279	2	A4 III
7903	6.094	-0.021	-0.020	-0.021	-0.017	-0.012	2	A0 III
8074	6.260	0.169	0.242	0.244	0.288	0.366	2	F2 III
8344 D	6.165	0.241	0.318	0.415	0.418	0.524	2	F2 III
8443	6.072	0.306	0.428	0.629	0.760	0.825	4	A3 Ib
8615	5.021	0.250	0.336	0.381	0.429	0.506	3	F4 III
8874	5.223	0.546	0.777	0.884	1.029	1.202	2	K0 III

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
3	4.340	0.557	0.808	0.954	0.158	0.189	111111	1.35	39741.7948	1	248	4.337	0.898	1.284	1.478	0.298	0.262	111111	1.31	39742.8123	3
3	4.289	0.508	0.724	0.908	0.178	0.159	111111	1.27	39768.7670	1	248	4.380	0.933	1.295	1.477	0.329	0.215	111111	1.20	39771.7970	1
15	2.069	-0.043	-0.051	-0.077	-0.021	-0.004	111111	1.00	39720.9251	1	253	4.493	0.619	0.904	1.048	0.223	0.256	111111	1.11	39768.7940	1
15	2.067	-0.060	-0.067	-0.110	-0.005	0.017	111111	1.03	39741.8627	1	253	4.560	0.613	0.876	1.035	0.215	0.240	111111	1.12	39796.7013	1
15	2.131	0.012	-0.006	-0.002	-0.072	0.001	111111	1.00	39770.7603	3	253	4.531	0.635	0.905	1.009	0.258	0.244	111111	1.12	39827.6668	1
21	2.163	0.228	0.338	0.373	0.080	0.089	111111	1.12	39720.9347	1	264	2.202	0.102	0.156	0.089	-0.113	0.027	111111	1.13	39768.8057	1
21	2.171	0.227	0.344	0.384	0.057	0.059	111111	1.12	39741.8227	1	264	2.282	0.120	0.197	0.115	-0.111	0.064	111111	1.13	39796.7147	1
21	2.147	0.264	0.347	0.370	0.040	0.111	111111	1.17	39771.6943	1	264	2.251	0.152	0.214	0.114	-0.091	0.077	111111	1.14	39827.6782	1
27	4.919	0.299	0.437	0.520	0.103	0.124	111111	1.04	39741.8141	1	265	4.380	0.558	0.776	0.889	0.218	0.132	111111	1.11	39768.8140	1
27	4.880	0.320	0.439	0.511	0.105	0.108	111111	1.08	39771.7044	1	265	4.428	0.512	0.754	0.877	0.167	0.190	111111	1.12	39796.7492	1
27	4.894	0.283	0.414	0.489	0.093	0.183	111111	1.02	39830.6162	1	265	4.378	0.506	0.757	0.861	0.171	0.242	111111	1.11	39830.6252	1
33	4.728	0.344	0.499	0.563	0.055	0.119	111111	1.61	39771.7128	1	269	3.799	0.060	0.128	0.130	0.039	0.052	111111	1.02	39751.8918	1
39	2.873	-0.101	-0.161	-0.217	-0.116	-0.028	111111	1.05	39771.7498	1	271	4.124	0.514	0.714	0.798	0.160	0.210	111111	1.01	39768.8270	1
45	4.506	1.174	1.688	1.910	0.375	0.305	111111	1.02	39720.9055	1	271	4.191	0.477	0.687	0.816	0.145	0.151	111111	1.02	39796.7599	1
45	4.464	1.157	1.657	1.881	0.368	0.290	111111	1.05	39727.9341	1	271	4.138	0.493	0.699	0.812	0.149	0.210	111111	1.01	39830.6352	1
45	4.524	1.181	1.682	1.912	0.357	0.301	111111	1.02	39731.8722	1	285	3.947	0.609	0.867	1.011	0.153	0.226	111111	1.68	39737.8819	1
45	4.494	1.187	1.663	1.887	0.366	0.309	111111	1.02	39732.8897	1	285	3.858	0.564	0.845	0.955	0.221	0.255	111111	1.68	39769.7787	1
45	4.487	1.188	1.677	1.895	0.368	0.295	111111	1.02	39737.8656	1	285	3.913	0.588	0.858	0.993	0.213	0.271	111111	1.68	39830.6473	1
45	4.469	1.122	1.673	1.870	0.374	0.241	111111	1.02	39740.8753	1	294	4.053	0.619	0.837	0.953	0.188	0.111	111111	1.11	39737.9223	1
45	4.475	1.148	1.665	1.883	0.324	0.364	111111	1.21	39744.7438	1	294	3.996	0.525	0.752	0.865	0.129	0.195	111111	1.83	39908.5847	1
45	4.474	1.170	1.668	1.892	0.369	0.300	111111	1.05	39745.8882	1	334	3.124	0.576	0.818	0.960	0.197	0.191	111111	1.51	39742.8207	3
45	4.490	1.167	1.677	1.908	0.356	0.291	111111	1.02	39748.8697	3	334	3.173	0.616	0.862	1.003	0.195	0.191	111111	1.68	39771.8065	1
45	4.459	1.160	1.661	1.888	0.353	0.307	111111	1.08	39757.7491	1	334	3.136	0.538	0.779	0.908	0.204	0.277	111111	1.37	39830.6693	1
45	4.467	1.168	1.664	1.896	0.354	0.296	111111	1.03	39763.8241	1	335	4.218	-0.009	0.018	0.008	-0.011	0.122	111111	1.17	39714.8612	1
45	4.473	1.029	1.602	1.835	0.347	0.366	111111	1.02	39770.7717	3	335	4.201	-0.022	-0.007	0.028	-0.002	0.075	111111	1.03	39749.8633	1
45	4.507	1.182	1.659	1.869	0.370	0.309	111111	2.06	39770.9620	3	337	1.664	1.013	1.453	1.666	0.312	0.000	111110	1.19	39714.8532	1
45	4.476	1.136	1.652	1.852	0.383	0.279	111111	1.14	39771.8621	1	337	1.674	1.017	1.448	1.652	0.330	0.279	111111	1.05	39742.8291	3
45	4.534	1.150	1.680	1.856	0.360	0.303	111111	1.05	39772.7285	1	337	1.724	1.052	1.496	1.689	0.326	0.272	111111	1.00	39771.8153	1
45	4.577	1.290	1.805	2.005	0.363	0.282	111111	1.06	39792.6670	1	343	4.254	0.064	0.104	0.133	0.042	-0.038	111111	1.09	39729.8980	1
45	4.517	1.170	1.670	1.885	0.358	0.291	111111	1.03	39796.7250	1	343	4.273	0.073	0.125	0.144	0.065	0.090	111111	1.08	39753.8435	1
45	4.485	1.142	1.643	1.864	0.356	0.299	111111	1.04	39803.7179	1	343	4.278	0.115	0.146	0.192	0.041	0.005	111111	1.08	39771.8233	1
45	4.452	1.144	1.633	1.857	0.380	0.335	111111	1.18	39808.7633	1	351	4.405	0.513	0.757	0.880	0.184	0.183	111111	1.02	39728.9411	1
45	4.497	1.159	1.678	1.910	0.367	0.301	111111	1.06	39827.5713	1	351	4.397	0.523	0.736	0.850	0.193	0.204	111111	1.03	39771.8548	1
48	4.043	1.158	1.652	1.884	0.350	0.246	111111	1.61	39771.7614	1	351	4.394	0.493	0.717	0.834	0.168	0.272	111111	1.03	39830.6774	1
63	0.000	0.000	0.000	0.000	0.029	0.077	000011	1.00	39745.8420	1	352	4.194	0.540	0.780	0.907	0.196	0.194	111111	1.00	39728.9500	1
63	4.584	-0.010	0.041	0.045	0.062	0.023	111111	1.03	39792.7634	1	352	0.000	0.000	0.000	0.000	0.219	0.000	000010	1.00	39753.8537	1
63	4.581	-0.005	0.055	0.050	0.037	-0.002	111111	1.01	39827.5897	1	352	4.151	0.535	0.786	0.808	0.182	0.217	111111	1.08	39772.7456	1
68	4.490	0.037	0.076	0.081	0.035	0.092	111111	1.00	39724.8963	1	360	4.362	0.516	0.726	0.857	0.187	0.123	111111	1.01	39729.9060	1
68	4.536	0.019	0.033	0.076	0.019	0.022	111111	1.05	39746.6434	1	360	4.402	0.541	0.763	0.878	0.177	0.198	111111	1.05	39742.8373	3
68	0.000	0.000	0.000	0.000	0.043	0.058	000011	1.03	39806.7286	1	360	4.325	0.538	0.779	0.888	0.150	0.175	111111	1.05	39772.7551	1
68	4.487	0.029	0.063	0.062	0.049	0.138	111111	1.00	39827.5977	1	383	4.796	0.048	0.069	0.091	0.047	0.065	111111	1.00	39731.9134	1
74	3.283	0.603	0.862	1.023	0.201	0.194	111111	1.25	39757.7587	1	383	4.696	0.055	0.080	0.118	0.004	-0.029	111111	1.04	39772.7641	1
74	3.273	0.585	0.836	1.002	0.196	0.209	111111	1.42	39796.6517	1	383	4.760	0.059	0.069	0.102	0.029	0.051	111111	1.13	39831.5637	1
123	4.849	0.093	0.061	-0.047	-0.094	0.000	111110	1.07	39724.9054	1	390	4.612	0.520	0.759	0.896	0.178	0.241	111111	1.02	39731.9233	1
123	4.814	-0.026	-0.047	-0.038	-0.018	0.022	111111	1.11	39796.6612	1	390	4.603	0.545	0.652	0.856	0.210	0.236	111111	1.03	39908.5940	1
123	4.754	-0.017	-0.019	-0.038	-0.026	0.038	111111	1.08	39827.6057	1	399	4.484	0.522	0.742	0.877	0.172	0.236	111111	1.22	39731.9424	1
130	4.135	0.117	0.161	0.182	-0.008	0.064	111111	1.15	39755.8155	1	399	4.392	0.490	0.727	0.838	0.163	0.213	111111	1.24	39772.7761	1
130	4.155	0.125	0.194	0.195	-0.060	0.111	111111	1.16	39802.0735	1	399	4.428	0.518	0.764	0.893	0.167	0.198	111111	1.29	39831.5723	1
130	4.098	0.142	0.193	0.194	-0.015	0.074	111111	1.16	39827.6140	1	402	3.329	0.571	0.779	0.920	0.1					

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.O.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.O.	LS
489	4.066	0.731	1.036	1.202	0.259	0.233	111111	1.18	39757.8185	1	620	4.715	0.022	0.124	0.122	0.012	0.206	111111	1.09	39744.8447	1
489	4.039	0.696	1.026	1.211	0.226	0.272	111111	1.31	39797.6710	1	620	4.786	0.079	0.125	0.136	0.049	0.007	111111	1.09	39763.9532	1
493	4.931	0.455	0.670	0.795	0.109	0.101	111111	1.04	39772.8609	1	620	4.785	0.101	0.142	0.178	0.034	0.100	111111	1.00	39869.5664	1
493	5.018	0.467	0.673	0.772	0.128	0.169	111111	1.13	39803.6656	1	620	4.748	0.080	0.099	0.128	0.048	0.025	111111	1.23	39912.5854	1
493	5.040	0.463	0.681	0.795	0.124	0.191	111111	1.12	39836.5798	1	622	2.955	0.101	0.157	0.171	0.041	0.077	111111	1.00	39745.9226	1
496	4.112	0.142	0.250	0.208	-0.064	0.136	111111	1.05	39741.9394	1	622	2.946	0.085	0.125	0.158	0.039	0.099	111111	1.08	39797.7024	1
496	4.017	0.200	0.261	0.192	-0.081	0.101	111111	1.06	39772.8695	1	648	5.338	0.975	1.404	1.602	0.318	0.293	111111	1.04	39762.8689	1
496	4.067	0.152	0.246	0.216	-0.097	0.136	111111	1.10	39836.5882	1	648	5.327	0.955	1.397	1.613	0.314	0.314	111111	1.09	39797.7336	1
509	3.235	0.437	0.635	0.712	0.111	0.230	111111	1.80	39769.7552	1	649	4.160	0.479	0.695	0.790	0.164	0.183	111111	1.09	39762.8801	1
509	3.294	0.439	0.644	0.745	0.095	0.180	111111	1.72	39803.6737	1	649	4.118	0.469	0.681	0.795	0.136	0.197	111111	1.11	39797.7469	1
509	3.279	0.412	0.604	0.712	0.119	0.196	111111	1.64	39836.5966	1	664	3.988	0.013	0.033	0.031	0.036	0.112	111111	1.00	39748.8984	3
510	4.008	0.502	0.727	0.845	0.154	0.176	111111	1.16	39741.8550	1	664	4.007	-0.018	-0.002	0.042	0.018	0.058	111111	1.01	39797.7554	1
510	3.942	0.502	0.722	0.824	0.146	0.149	111111	1.13	39772.8780	1	681	6.214	3.173	4.713	5.330	1.274	0.435	111111	1.27	39740.9009	1
510	4.036	0.512	0.701	0.866	0.128	0.034	111111	1.14	39836.6049	1	681	4.448	2.892	3.944	4.468	0.778	0.295	111111	1.27	39740.8110	1
531	4.477	0.180	0.293	0.329	0.029	0.092	111111	1.46	39741.8657	1	681	3.173	2.509	3.356	3.768	0.521	0.329	111111	1.40	39831.6154	1
531	4.479	0.196	0.322	0.345	0.013	0.087	111111	1.47	39772.8897	1	681	4.911	3.204	4.362	4.870	0.974	0.444	111111	1.27	39878.6072	1
539	3.339	0.534	0.791	0.940	0.186	0.222	111111	1.42	39741.8757	1	696	6.098	0.179	0.301	0.392	0.051	0.149	111111	1.10	39740.9147	1
539	3.424	0.540	0.796	0.931	0.206	0.223	111111	1.56	39773.7565	1	696	6.125	0.225	0.381	0.439	0.027	-0.054	111111	1.10	39773.8209	1
539	3.452	0.598	0.790	0.943	0.194	0.241	111111	1.42	39836.6163	1	699	4.329	0.886	1.241	1.435	0.308	0.287	111111	1.05	39740.9267	1
542	3.382	-0.056	-0.079	-0.083	-0.132	0.065	111111	1.17	39741.8887	1	699	4.353	0.882	1.257	1.405	0.308	0.328	111111	1.05	39773.8314	1
542	3.356	-0.067	-0.068	-0.085	-0.073	-0.022	111111	1.21	39773.7671	1	707	4.458	0.043	0.157	0.183	0.017	0.105	111111	1.21	39740.9382	1
544	3.250	0.286	0.426	0.483	0.072	0.132	111111	1.00	39741.8975	1	707	4.411	0.109	0.216	0.151	0.022	0.091	111111	1.25	39770.8028	3
544	3.266	0.307	0.445	0.528	0.036	0.107	111111	1.08	39773.7756	1	707	4.423	0.092	0.152	0.165	0.029	0.063	111111	1.27	39831.6246	1
545	3.898	-0.025	-0.022	-0.035	0.012	0.043	111111	1.03	39741.9055	1	708	4.883	-0.005	0.001	0.025	0.013	0.033	111111	1.40	39762.8887	1
545	3.855	-0.028	-0.032	-0.032	0.002	0.039	111111	1.12	39773.7846	1	708	4.868	-0.030	-0.019	0.046	0.004	0.008	111111	1.42	39797.7679	1
549	4.328	0.499	0.721	0.839	0.149	0.167	111111	1.14	39741.9136	1	718	4.277	-0.026	-0.026	-0.023	-0.011	0.037	111111	1.26	39714.9331	1
549	4.358	0.466	0.702	0.818	0.166	0.190	111111	1.18	39773.7931	1	718	4.338	0.039	0.027	0.022	0.011	0.018	111111	1.11	39720.9723	1
553	2.613	0.063	0.101	0.122	0.040	0.038	111111	1.02	39741.9219	1	718	4.262	-0.012	-0.038	-0.033	0.007	0.030	111111	1.09	39731.9594	1
553	2.601	0.054	0.091	0.092	0.073	0.051	111111	1.04	39773.8009	1	718	4.312	-0.015	-0.039	-0.020	-0.006	0.061	111111	1.09	39740.9569	1
569	4.701	0.174	0.259	0.293	0.069	0.093	111111	1.01	39741.9303	1	718	4.284	-0.041	-0.051	-0.033	-0.011	0.008	111111	1.32	39741.8455	1
569	4.673	0.199	0.258	0.299	0.047	0.112	111111	1.05	39770.7923	3	718	4.304	-0.004	-0.013	-0.006	-0.011	0.035	111111	1.25	39742.8575	3
575	4.447	0.110	0.173	0.195	0.029	0.060	111111	1.27	39755.8609	1	718	4.293	-0.024	-0.021	-0.033	0.008	0.014	111111	1.10	39745.9569	1
575	4.516	0.130	0.168	0.226	0.024	0.025	111111	1.30	39803.6964	1	718	4.295	-0.037	-0.021	-0.020	0.005	-0.014	111111	1.09	39748.9393	3
575	4.456	0.083	0.135	0.171	0.043	0.065	111111	1.28	39836.6269	1	718	4.282	-0.019	0.000	-0.004	-0.011	0.027	111111	1.10	39749.9068	1
575	4.479	0.098	0.164	0.175	0.026	0.061	111111	1.29	39878.5964	1	718	4.313	-0.007	-0.013	-0.018	0.006	0.039	111111	1.09	39756.8933	1
580	3.887	-0.007	-0.002	-0.007	0.043	0.067	111111	1.36	39749.7657	1	718	4.298	-0.028	-0.031	-0.014	0.004	0.028	111111	1.13	39760.8523	1
580	3.960	0.001	0.021	0.032	0.014	0.032	111111	1.32	39803.7078	1	718	4.314	0.003	-0.012	-0.018	0.015	0.040	111111	1.11	39762.8586	1
580	3.980	0.028	0.040	0.044	0.046	0.052	111111	1.30	39836.6711	1	718	4.322	-0.045	0.036	-0.051	0.006	-0.016	111111	1.13	39769.8271	1
590	5.071	0.051	0.085	0.115	-0.073	-0.017	111111	1.07	39751.9008	1	718	4.309	-0.141	-0.095	-0.050	0.068	0.000	111111	2.23	39770.6897	3
590	5.032	-0.003	0.003	0.029	-0.024	0.000	111111	1.07	39873.5711	1	718	4.327	-0.019	-0.081	0.004	-0.006	0.015	111111	1.09	39770.8627	3
590	5.011	0.034	0.007	0.025	-0.065	0.116	111111	1.42	39908.6309	1	718	4.258	0.006	0.018	-0.005	0.006	-0.032	111111	1.11	39772.8274	1
617	1.683	0.601	0.869	1.012	0.198	0.238	111111	1.12	39714.9230	1	718	4.301	0.019	0.016	-0.009	-0.007	0.001	111111	1.10	39773.8790	1
617	1.688	0.591	0.877	1.039	0.145	0.254	111111	1.51	39720.8368	1	718	4.264	-0.040	-0.052	-0.053	0.003	0.061	111111	1.10	39771.7856	1
617	1.670	0.587	0.855	0.993	0.229	0.225	111111	1.10	39720.9147	1	718	4.306	-0.001	-0.027	-0.018	0.017	0.017	111111	1.15	39795.7448	1
617	1.688	0.607	0.852	1.002	0.205	0.263	111111	1.05	39740.8858	1	718	4.311	-0.004	-0.016	-0.025	0.013	0.030	111111	1.19	39802.7103	1
617	1.663	0.578	0.849	1.002	0.179	0.259	111111	1.17	39741.8358	1	718	4.301	-0.018	-0.023	-0.025	0.007	0.013	111111	1.09	39804.7714	1
617	1.671	0.596	0.845	0.992	0.199	0.222	111111	1.33	39742.8008	3	718	4.252	-0.057	-0.046	-0.042	-0.009	-0.015	111111	1.54	39805.6411	1
617	1.669	0.615	0.878	1.022	0.216	0.243	111111	1.02	39745.8978	1	718	4.286	-0.027	-0.031	-0.031	0.012	-0.025	111111	1.12	39831.6446	1
617	1.674	0.638	0.966	1.057	0.186	0.174	111111	1.04	39748.8709	3	718	4.292	0.003	0.004	-0.034	0.022	-0.019	111111	1.11	39833.6666	1
617	1.677	0.586	0.862	1.015	0.215	0.250	111111	1.01	39749.8964	1	718	4.266	-0.052	-0.053	-0.051	-0.003	0.027	111111	1.12	39867.6401	1
617	1.674	0.583	0.777	0.994	0.201	0.272	111111	1.04	39751.8890	1	718	4.299	-0.008	0.001	-0.017	0.012	-0.011	111111	1.12	39869.5575	1
617	1.690	0.597	0.850	0.999	0.208	0.241	111111	1.01	39755.8526	1	718	4.310	-0.046	-0.037	-0.040	0.021	0.019	111111	1.10	39873.5627	1
617	0.934	0.604	0.848	0.991	0.203	0.240	111111	1.03	39760.8426	1	718	4.273	-0.021	-0.036	-0.037	0.020	0.070	111111	1.14	39875.6308	3
617	1.683	0.600	0.862	1.004	0.209	0.239	111111	1.02	39762.8506	1	718	4.256	-0.064	-0.069	-0.054	0.021	0.171	111111			

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
811	4.237	-0.037	-0.074	-0.128	-0.049	-0.190	111111	1.46	39737.9439	1	999	4.026	0.822	1.186	1.362	0.387	0.271	111111	1.06	39769.8398	1
811	4.230	-0.076	-0.103	-0.092	-0.088	0.076	111111	1.69	39791.7413	1	999	4.086	0.886	1.214	1.384	0.346	0.349	111111	1.08	39808.7255	1
813	4.117	0.192	0.260	0.308	0.060	0.036	111111	1.68	39737.9595	1	999	4.037	0.793	1.164	1.356	0.316	0.310	111111	1.11	39912.5980	1
813	4.147	0.164	0.260	0.310	0.039	0.058	111111	1.18	39791.7503	1	1002	4.963	0.066	0.155	0.171	0.028	-0.083	111111	1.05	39769.8489	1
818	4.309	0.323	0.444	0.507	0.046	0.078	111111	1.59	39737.9699	1	1002	4.972	0.068	0.075	0.074	0.053	0.076	111111	1.07	39808.7342	1
818	4.292	0.276	0.403	0.480	0.016	0.127	111111	1.75	39791.7592	1	1002	4.945	0.030	0.047	0.055	0.047	0.032	111111	1.14	39912.6115	1
824	4.259	0.595	0.822	0.977	0.176	0.216	111111	1.00	39740.9476	1	1017	1.609	0.317	0.458	0.534	0.107	0.123	111111	1.05	39745.9414	1
824	4.202	0.549	0.770	0.916	0.188	0.249	111111	1.04	39791.7677	1	1017	1.632	0.298	0.431	0.521	0.126	0.129	111111	1.04	39792.8359	1
824	4.252	0.540	0.795	0.917	0.204	0.166	111111	1.06	39835.6390	1	1030	3.357	0.431	0.701	0.763	0.196	0.183	111111	1.14	39769.8572	1
834	3.326	0.854	1.234	1.419	0.346	0.296	111111	1.09	39751.9105	1	1030	0.000	0.450	0.654	0.765	0.150	0.194	011111	1.34	39912.6231	1
834	3.317	0.762	1.153	1.373	0.338	0.311	111111	1.09	39797.7819	1	1034	4.979	-0.059	-0.044	-0.105	-0.012	0.042	111111	1.05	39769.8755	1
834	3.338	0.806	1.198	1.383	0.273	0.000	111110	1.09	39830.6866	1	1034	5.043	-0.005	-0.028	-0.055	-0.036	0.060	111111	1.07	39808.7541	1
838	3.607	-0.045	0.000	-0.039	-0.035	0.012	110111	1.03	39744.8809	1	1034	5.070	-0.013	-0.023	0.000	-0.054	-0.147	111111	1.07	39833.7086	1
838	3.609	-0.063	-0.100	-0.107	-0.039	0.064	111111	1.03	39791.7760	1	1035	4.028	0.328	0.461	0.600	0.124	0.111	111111	1.12	39769.8992	1
840	4.071	0.205	0.336	0.374	0.066	0.124	111111	1.01	39749.9188	1	1035	4.068	0.337	0.489	0.606	0.096	0.168	111111	1.05	39808.7834	1
840	4.122	0.207	0.316	0.379	0.047	0.042	111111	1.00	39797.7929	1	1038	3.743	-0.011	-0.016	-0.047	0.021	-0.008	111111	1.08	39769.9082	1
843	4.157	0.926	1.396	1.552	0.312	0.310	111111	1.00	39748.9511	3	1038	3.810	-0.020	-0.021	-0.038	-0.016	0.011	111111	1.08	39808.7927	1
843	4.205	0.969	1.388	1.592	0.309	0.305	111111	1.00	39797.8016	1	1038	3.841	0.053	0.018	0.052	-0.044	-0.009	111111	1.09	39833.7170	1
854	3.699	0.424	0.692	0.784	0.143	0.170	111111	1.10	39744.8945	1	1040	4.420	0.481	0.673	0.865	0.161	-0.157	111111	1.13	39732.9755	1
854	3.744	0.415	0.651	0.763	0.127	0.168	111111	1.06	39797.8124	1	1040	4.376	0.429	0.631	0.797	0.128	0.153	111111	1.11	39792.8445	1
874	3.580	0.558	0.803	0.944	0.189	0.206	111111	1.33	39762.8972	1	1040	4.419	0.423	0.636	0.858	0.190	0.114	111111	1.11	39833.7421	1
874	3.575	0.554	0.801	0.911	0.194	-0.461	111111	1.35	39810.6991	1	1044	4.694	-0.026	-0.047	-0.113	-0.011	-0.110	111111	1.04	39732.9985	1
875	5.131	0.054	0.129	0.159	0.018	0.084	111111	1.47	39744.8681	1	1044	4.728	-0.007	-0.009	0.014	-0.089	0.034	111111	1.04	39833.7263	1
875	5.130	0.065	0.094	0.116	0.030	0.042	111111	1.28	39755.8866	1	1046	5.122	0.083	0.057	0.040	-0.004	-0.362	111111	1.08	39733.0073	1
875	5.141	0.057	0.106	0.141	-0.002	0.034	111111	1.65	39757.8091	1	1046	5.093	0.012	0.039	0.034	0.001	-0.092	111111	1.14	39835.6582	1
875	5.106	0.047	0.115	0.123	0.001	0.089	111111	1.61	39758.7833	1	1052	3.973	0.701	1.004	1.191	0.266	0.213	111111	1.03	39733.0173	1
875	5.157	-0.209	-0.094	-0.038	0.134	0.110	111111	2.64	39750.7186	3	1052	3.933	0.695	0.975	1.165	0.206	0.346	111111	1.05	39731.8096	1
875	5.112	0.047	0.061	0.094	0.027	-0.007	111111	1.23	39770.8807	3	1052	3.382	0.726	1.036	1.193	0.249	0.292	111111	1.07	39808.8587	1
875	5.050	0.026	0.072	0.096	0.041	-0.057	111111	1.39	39772.9544	1	1066	3.817	0.537	0.799	0.910	0.192	0.193	111111	1.06	39733.0268	1
875	5.173	0.078	0.130	0.122	0.046	0.050	111111	1.26	39794.7892	1	1066	3.964	0.555	0.796	0.929	0.184	0.254	111111	1.14	39869.5749	1
875	5.133	0.053	0.106	0.137	0.028	0.084	111111	1.25	39797.8367	1	1066	3.831	0.529	0.769	0.898	0.186	0.220	111111	1.132	39912.6319	1
875	5.169	0.099	0.133	0.136	0.056	-0.008	111111	1.33	39802.8586	1	1070	4.754	-0.018	-0.021	-0.019	-0.038	0.083	111111	1.43	39760.8610	1
875	5.082	0.031	0.069	0.087	0.004	0.086	111111	1.35	39805.6328	1	1070	4.721	-0.031	-0.046	-0.052	0.001	0.047	111111	1.35	39869.5820	1
875	5.156	0.090	0.121	0.137	0.018	0.097	111111	1.37	39806.7186	1	1070	4.700	-0.057	-0.076	-0.061	-0.027	0.059	111111	1.174	39912.6393	1
875	5.133	0.070	0.107	0.125	0.031	0.066	111111	1.36	39809.7120	1	1084	3.458	0.489	0.700	0.819	0.133	0.155	111111	1.71	39720.9482	1
875	5.168	0.087	0.117	0.122	0.049	0.147	111111	1.26	39827.7003	1	1084	3.473	0.494	0.725	0.826	0.135	0.165	111111	1.35	39731.9967	1
875	5.100	0.031	0.070	0.100	0.028	0.130	111111	1.23	39831.7254	1	1084	3.465	0.507	0.710	0.822	0.130	0.179	111111	1.36	39732.9887	1
875	5.156	0.131	0.163	0.146	0.057	0.079	111111	1.24	39834.6937	1	1084	3.424	0.532	0.735	0.835	0.147	0.136	111111	1.35	39737.9801	1
875	5.151	0.092	0.099	0.125	0.037	-0.006	111111	1.23	39836.7019	1	1084	3.496	0.520	0.733	0.827	0.149	0.198	111111	1.34	39743.0022	3
875	5.123	0.081	0.099	0.105	0.034	0.081	111111	1.26	39869.6473	1	1084	3.441	0.492	0.711	0.814	0.131	0.187	111111	1.41	39756.9969	1
875	5.143	0.055	0.102	0.124	0.024	0.042	111111	1.25	39879.5683	1	1084	3.435	0.510	0.716	0.819	0.122	0.161	111111	1.50	39768.8464	1
875	5.117	0.077	0.102	0.147	0.023	0.151	111111	1.24	39880.5767	1	1084	3.456	0.475	0.717	0.780	0.128	0.171	111111	2.90	39770.7488	3
879	4.642	0.039	0.096	0.101	0.047	0.093	111111	1.00	39749.9385	1	1084	3.464	0.515	0.755	0.818	0.132	0.195	111111	1.38	39771.9435	1
879	4.686	0.074	0.089	0.111	0.055	0.008	111111	1.24	39798.6870	1	1084	3.443	0.484	0.690	0.770	0.158	0.225	111111	1.49	39794.7785	1
882	4.582	0.608	0.916	1.061	0.239	0.236	111111	1.03	39744.9065	1	1084	3.408	0.469	0.685	0.795	0.140	0.225	111111	1.49	39794.7785	1
882	4.636	0.634	0.906	1.045	0.226	0.206	111111	1.18	39798.7031	1	1084	3.441	0.485	0.704	0.809	0.132	0.190	111111	1.61	39798.7468	1
882	4.631	0.556	0.889	1.004	0.237	0.212	111111	1.05	39835.6482	1	1084	3.469	0.483	0.708	0.818	0.127	0.157	111111	1.34	39801.8208	1
896	4.755	-0.025	-0.033	-0.042	-0.047	0.074	111111	1.13	39757.8765	1	1084	3.454	0.487	0.705	0.800	0.152	0.178	111111	1.37	39834.7077	1
896	4.724	-0.032	-0.045	-0.052	-0.044	-0.019	111111														

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
1149	3.908	0.050	-0.015	0.004	-0.022	0.132	111111	1.03	39771.8792	1	1350	0.000	0.009	0.030	-0.008	-0.022	0.040	011111	1.06	39802.8059	1
1149	3.909	-0.001	0.010	0.017	-0.035	-0.016	111111	1.07	39835.6780	1	1350	4.815	-0.013	-0.017	0.001	-0.032	0.103	111111	1.11	39836.6842	1
1149	3.939	-0.005	-0.008	0.038	-0.020	0.016	111111	1.03	39877.5880	1	1350	4.812	-0.008	0.034	0.008	-0.025	0.002	111111	1.03	39878.6372	1
1151	5.743	-0.002	-0.013	0.044	-0.022	0.122	111111	1.02	39771.8882	1	1351	5.587	0.299	0.354	0.351	0.060	0.154	111111	1.08	39802.8187	1
1151	5.673	-0.129	-0.070	-0.062	0.058	0.130	111111	1.11	39831.6738	1	1351	5.452	0.114	0.219	0.238	0.056	0.077	111111	1.14	39836.6934	1
1151	5.769	0.016	0.026	0.033	-0.004	0.031	111111	1.02	39877.5967	1	1351	5.485	0.162	0.246	0.274	0.035	0.103	111111	1.05	39878.6649	1
1155	4.024	1.485	2.110	2.360	0.459	0.343	111111	1.19	39771.9058	1	1351	5.481	0.230	0.282	0.324	0.046	0.024	111111	1.17	39904.6555	1
1155	3.997	1.446	2.063	2.352	0.437	0.331	111111	1.24	39831.6816	1	1356	5.211	0.173	0.215	0.232	0.046	0.068	111111	1.06	39802.8267	1
1156	4.176	0.040	0.069	0.079	-0.088	0.096	111111	1.01	39771.8966	1	1356	5.184	0.115	0.181	0.222	0.032	0.056	111111	1.04	39873.6605	1
1156	4.158	0.012	0.051	0.039	-0.017	0.049	111111	1.07	39831.6928	1	1373	3.534	0.527	0.740	0.842	0.167	0.167	111111	1.06	39742.9843	3
1162	4.063	1.070	1.530	1.767	0.322	0.297	111111	1.53	39796.7873	1	1373	3.497	0.441	0.653	0.766	0.148	0.182	111111	1.48	39939.6246	1
1162	4.030	1.047	1.519	1.741	0.335	0.313	111111	1.50	39831.6998	1	1376	5.534	0.149	0.230	0.268	0.047	-0.007	111111	1.04	39878.6636	1
1165	2.903	0.032	-0.048	0.017	-0.012	0.000	111111	1.01	39771.9342	1	1376	5.512	0.159	0.226	0.262	0.032	0.009	111111	1.04	39878.6636	1
1165	2.904	-0.009	-0.021	0.025	-0.036	0.028	111111	1.04	39831.7075	1	1380	4.774	0.115	0.161	0.173	0.047	0.064	111111	1.03	39757.9666	1
1172	5.453	-0.043	-0.034	-0.048	-0.004	0.000	111111	1.17	39802.7377	1	1380	4.784	0.122	0.167	0.181	0.079	0.029	111111	1.06	39795.8350	1
1172	5.454	-0.057	-0.035	-0.018	-0.012	0.070	111111	1.05	39835.6940	1	1385	5.824	0.256	0.346	0.369	0.129	0.102	111111	1.20	39768.8551	1
1172	5.476	-0.006	-0.028	-0.036	-0.010	0.125	111111	1.02	39877.6055	1	1385	5.847	0.250	0.354	0.407	0.087	0.000	111111	1.04	39795.8439	1
1178	3.642	0.007	-0.005	-0.013	-0.024	0.000	111111	1.11	39802.7561	1	1387	4.163	0.079	0.131	0.145	0.034	0.067	111111	1.02	39756.9616	1
1178	3.652	-0.017	-0.006	0.005	-0.051	0.040	111111	1.01	39835.7226	1	1387	4.193	0.081	0.134	0.162	0.048	0.047	111111	1.02	39795.8533	1
1178	3.697	0.023	0.015	0.028	-0.053	0.011	111111	1.01	39877.6136	1	1389	4.243	0.036	0.042	0.033	0.048	0.039	111111	1.16	39768.8686	1
1180	5.042	0.010	-0.001	0.012	-0.040	0.073	111111	1.13	39802.7484	1	1389	0.000	0.039	0.079	0.065	0.054	0.019	011111	1.03	39795.8703	1
1180	5.046	-0.027	0.018	-0.015	-0.035	0.051	111111	1.02	39835.7135	1	1389	4.304	0.028	0.067	0.089	0.034	0.020	111111	1.10	39879.5853	1
1180	5.041	-0.004	-0.006	0.012	-0.043	0.056	111111	1.01	39877.6382	1	1389	4.272	-0.006	0.005	0.025	0.022	0.039	111111	1.53	39939.6318	1
1183	6.173	-0.008	-0.013	0.011	0.008	0.258	111111	1.03	39869.6146	1	1392	4.174	0.194	0.242	0.309	0.038	0.113	111111	1.10	39768.8791	1
1183	6.168	-0.062	-0.101	-0.079	-0.025	0.189	111111	1.34	39930.6161	1	1392	4.218	0.179	0.267	0.300	0.082	0.098	111111	1.01	39795.8621	1
1203	2.804	0.135	0.197	0.219	-0.052	0.083	111111	1.04	39756.9107	1	1394	4.377	0.161	0.256	0.269	0.063	0.071	111111	1.12	39768.8873	1
1203	2.848	0.140	0.204	0.216	-0.026	0.060	111111	1.01	39869.6230	1	1394	4.400	0.144	0.229	0.302	0.058	0.061	111111	1.10	39834.7185	1
1204	4.989	-0.007	-0.012	-0.016	-0.006	0.060	111111	1.18	39756.9219	1	1396	4.412	0.511	0.735	0.862	0.168	0.165	111111	1.11	39768.8947	1
1204	4.959	-0.029	-0.018	-0.002	-0.014	0.026	111111	1.16	39869.6378	1	1396	4.442	0.536	0.763	0.889	0.177	0.184	111111	1.08	39834.7272	1
1211	4.287	0.420	0.624	0.723	0.128	0.222	111111	1.25	39756.9327	1	1408	5.840	0.251	0.365	0.318	0.091	0.081	111111	1.09	39768.9067	1
1211	4.249	0.373	0.588	0.670	0.169	0.146	111111	1.23	39835.7335	1	1408	5.787	0.230	0.294	0.328	0.105	0.136	111111	1.07	39834.7363	1
1211	4.277	0.393	0.594	0.682	0.114	0.154	111111	1.22	39878.6280	1	1408	5.795	0.214	0.314	0.353	0.060	0.145	111111	1.11	39879.5926	1
1220	2.946	-0.046	-0.090	-0.135	-0.125	-0.003	111111	1.01	39756.9428	1	1409	3.258	0.499	0.708	0.866	0.129	0.209	111111	1.05	39768.9154	1
1220	2.938	-0.093	-0.120	-0.146	-0.112	-0.015	111111	1.06	39873.5807	1	1409	3.278	0.486	0.716	0.830	0.166	0.193	111111	1.07	39879.5999	1
1228	3.996	0.083	0.113	0.121	-0.065	0.068	111111	1.00	39756.9518	1	1411	3.612	0.501	0.713	0.835	0.139	0.212	111111	1.05	39768.9245	1
1228	4.024	0.071	0.118	0.115	-0.066	0.055	111111	1.04	39873.5910	1	1411	3.606	0.479	0.709	0.802	0.157	0.171	111111	1.07	39879.6076	1
1231	2.604	1.003	1.440	1.631	0.307	0.290	111111	1.65	39802.7665	1	1411	3.601	0.532	0.717	0.838	0.181	0.185	111111	1.04	39904.6009	1
1231	2.553	0.956	1.379	1.596	0.308	0.298	111111	1.48	39873.6111	1	1411	3.604	0.431	0.649	0.764	0.169	0.176	111111	1.04	39906.5890	1
1239	3.405	-0.071	-0.083	-0.071	-0.040	0.015	111111	1.14	39794.8020	1	1412	3.331	0.109	0.155	0.174	0.072	0.041	111111	1.06	39756.8252	1
1239	3.441	-0.042	-0.032	-0.050	-0.042	0.015	111111	1.07	39873.6227	1	1412	3.387	0.128	0.176	0.199	0.061	0.043	111111	1.06	39879.6138	1
1251	3.912	0.025	0.036	0.042	0.032	0.096	111111	1.18	39794.8111	1	1412	3.378	0.173	0.214	0.221	0.059	0.062	111111	1.22	39904.6779	1
1251	3.908	0.011	0.027	0.030	0.059	0.034	111111	1.12	39873.6314	1	1427	4.705	0.085	0.140	0.150	0.038	-0.021	111111	1.19	39755.9045	1
1256	4.094	0.556	0.777	0.914	0.173	0.225	111111	1.03	39740.9790	1	1427	4.648	0.083	0.139	0.165	0.074	0.035	111111	1.11	39880.5861	1
1256	4.068	0.506	0.763	0.862	0.208	0.238	111111	1.05	39794.8210	1	1437	4.562	0.664	0.924	1.105	0.257	0.219	111111	1.33	39755.9166	1
1261	4.279	0.016	-0.030	0.091	0.007	0.046	111111	1.05	39740.9887	1	1437	4.493	0.660	0.946	1.122	0.218	0.288	111111	1.26	39880.5936	1
1261	4.258	0.002	0.020	0.053	0.046	0.160	111111	1.06	39794.8342	1	1444	4.565	0.165	0.220	0.259	0.040	0.000	111111	1.13	39755.9279	1
1261	4.281	-0.013	0.033	0.105	0.019	-0.007	111111	1.23	39934.6029	1	1444	4.559	0.104	0.173	0.216	0.013	0.072	111111	1.11	39939.6496	1
1273	4.015	0.054	0.077	0.092	-0.058	0.076	111111	1.04	39740.9990	1	1454	3.896	0.689	0.961	1.124	0.261	0.198	111111	1.03	39742.9925	3
1273	4.046	0.003	0.070	0.095	-0.058	0.123	111111	1.04	39794.8457	1	1454	3.838	0.601	0.876	1.046	0.265	0.291	111111	1.03	39791.8564	1
1273	4.058	0.051	0.127	0.151	-0.039	-0.003	111111	1.24	39934.6103	1	1454	3.895	0.610	0.900	1.068	0.238	0.218	111111	1.46	39939.6569	1
1298	3.910	0.182	0.297	0.321	0.070	0.183	111111	1.29	39794.8567	1	1457	0.469	0.960	1.373	1.569	0.351	0.234	111111	1.09	39755.9384	1
1298	3.955	0.193	0.277	0.336	0.039	0.147	111111	1.30	39873.6392	1	1457	0.441	0.951	1.364	1.563	0.289	0.322	111111	1.06	39880.6204	1
1298	3.949	0.181	0.286	0.358	0.037	0.068	111111	1.95	39934.6197	1	1458	4.196	0.140	0.199	0.216	0.044	0.096	111111	1.12	39755.9497	1
1303	3.853	0.521	0.761	0.870	0.192	0.245	111111														

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
1552	3.702	-0.054	-0.095	-0.124	-0.120	-0.016	1.1111	1.14	39791.8770	1	1788	3.387	-0.052	-0.087	-0.114	-0.107	-0.028	1.1111	1.21	39804.8912	1
1552	3.720	-0.089	-0.128	-0.143	-0.115	-0.058	1.1111	1.48	39944.6145	1	1788	3.369	-0.062	-0.088	-0.110	-0.157	-0.040	1.1111	1.24	39833.8499	1
1560	4.349	0.189	0.194	0.278	0.053	0.172	1.1111	1.27	39791.8897	1	1789	5.064	-0.068	-0.088	-0.128	-0.134	-0.030	1.1111	1.25	39833.8800	1
1560	4.295	0.168	0.239	0.292	0.035	0.086	1.1111	1.81	39944.6145	1	1789	5.018	-0.103	-0.123	-0.169	-0.136	0.000	1.1111	1.22	39875.6504	3
1567	3.760	-0.065	-0.086	-0.121	-0.122	0.017	1.1111	1.18	39756.9723	1	1790	1.679	-0.093	-0.144	-0.171	-0.130	0.030	1.1111	1.15	39869.6725	1
1567	3.728	-0.062	-0.098	-0.136	-0.135	0.042	1.1111	1.20	39879.6226	1	1790	1.681	-0.121	-0.185	-0.222	-0.118	-0.024	1.1111	1.31	39946.6011	3
1568	4.446	0.037	0.020	0.052	0.029	0.007	1.1111	1.08	39801.8463	1	1791	1.642	-0.064	-0.075	-0.085	-0.056	0.014	1.1111	1.10	39748.9702	3
1568	4.455	-0.004	0.041	0.047	0.021	0.049	1.1111	1.10	39836.7351	1	1791	1.697	-0.055	-0.058	-0.068	-0.043	0.006	1.1111	1.04	39876.7584	1
1570	4.642	0.066	0.085	0.111	0.034	0.078	1.1111	1.09	39801.8550	1	1805	4.765	0.731	1.014	1.198	0.257	0.243	1.1111	1.03	39743.0149	3
1570	4.631	0.046	0.069	0.105	0.036	0.029	1.1111	1.12	39836.7429	1	1805	4.720	0.681	0.987	1.170	0.266	0.261	1.1111	1.00	39836.7888	1
1577	2.306	0.774	1.067	1.263	0.306	0.265	1.1111	1.00	39801.8679	1	1810	4.877	-0.081	-0.097	-0.143	-0.048	-0.037	1.1111	1.02	39756.0155	1
1577	2.327	0.739	1.084	1.247	0.314	0.247	1.1111	1.02	39879.6296	1	1810	4.930	-0.064	-0.082	-0.098	-0.069	-0.062	1.1111	1.03	39836.7735	1
1580	3.772	0.616	0.871	1.022	0.207	0.244	1.1111	1.05	39801.8788	1	1810	4.917	-0.067	-0.085	-0.100	-0.130	-0.029	1.1111	1.05	39875.6581	3
1580	3.761	0.624	0.886	1.021	0.236	0.229	1.1111	1.07	39879.6363	1	1811	4.615	-0.112	-0.169	-0.203	-0.119	-0.071	1.1111	1.19	39876.7660	1
1592	4.919	0.051	0.042	0.003	0.095	0.073	1.1111	1.00	39801.8883	1	1811	4.627	-0.098	-0.138	-0.173	-0.147	-0.029	1.1111	1.17	39875.6660	3
1592	4.916	0.033	0.060	0.068	0.039	0.028	1.1111	1.01	39879.6431	1	1829	2.586	0.473	0.644	0.736	0.136	0.211	1.1111	1.67	39836.7982	1
1601	4.108	0.699	0.985	1.156	0.255	0.255	1.1111	1.16	39801.8965	1	1829	2.612	0.436	0.639	0.726	0.132	0.124	1.1111	1.70	39875.6744	3
1601	4.076	0.645	0.954	1.127	0.253	0.281	1.1111	1.17	39879.6505	1	1839	4.214	-0.090	-0.125	-0.136	-0.048	0.043	1.1111	1.17	39831.7755	1
1603	3.678	0.519	0.710	0.794	0.115	0.148	1.1111	1.17	39772.9026	1	1839	4.231	-0.066	-0.105	-0.121	-0.064	-0.002	1.1111	1.17	39877.6471	1
1603	0.000	0.000	0.000	0.000	0.160	0.179	000011	1.13	39801.9074	1	1843	4.662	0.281	0.400	0.479	0.120	0.049	1.1111	1.00	39756.0288	1
1603	3.748	0.479	0.666	0.745	0.191	0.156	1.1111	1.14	39801.9194	1	1843	4.692	0.257	0.376	0.469	0.075	0.109	1.1111	1.02	39831.7830	1
1603	3.765	0.481	0.653	0.752	0.166	0.171	1.1111	1.14	39801.9294	1	1843	4.633	0.270	0.408	0.476	0.066	0.035	1.1111	1.03	39877.6542	1
1605	2.748	0.380	0.533	0.741	0.116	0.112	1.1111	1.03	39757.9761	1	1845	3.843	1.437	2.046	2.359	0.504	0.380	1.1111	1.05	39831.7912	1
1605	2.905	0.348	0.498	0.722	0.124	0.113	1.1111	1.24	39944.6216	1	1845	3.885	1.457	2.067	2.368	0.498	0.356	1.1111	1.05	39877.6617	1
1611	4.630	0.262	0.329	0.383	0.016	0.101	1.1111	1.51	39772.9122	1	1852	2.256	-0.110	-0.156	-0.189	-0.154	0.044	1.1111	1.19	39831.8001	1
1611	4.691	0.157	0.223	0.272	0.037	0.026	1.1111	2.29	39944.6296	1	1852	2.294	-0.095	-0.142	-0.183	-0.153	0.002	1.1111	1.20	39877.6696	1
1612	3.424	0.941	1.291	1.412	0.288	0.276	1.1111	1.04	39772.9206	1	1855	4.649	-0.121	-0.201	-0.229	0.000	0.000	1.1100	1.63	39728.0121	1
1612	3.361	0.784	1.137	1.344	0.298	0.281	1.1111	1.36	39944.6457	1	1855	4.631	-0.123	-0.187	-0.231	-0.193	-0.002	1.1111	1.43	39741.0086	1
1617	4.927	-0.032	-0.099	-0.160	-0.112	-0.222	1.1111	1.33	39772.9307	1	1855	4.699	-0.137	-0.191	-0.245	-0.171	-0.008	1.1111	1.40	39742.0139	1
1617	4.839	-0.096	-0.143	-0.174	-0.112	-0.035	1.1111	2.49	39944.6533	1	1855	4.677	-0.140	-0.220	-0.266	-0.174	0.053	1.1111	1.42	39748.9912	3
1621	4.848	-0.004	0.027	0.011	-0.011	-0.021	1.1111	1.67	39772.9399	1	1855	4.655	-0.150	-0.211	-0.260	-0.157	-0.010	1.1111	1.42	39755.9701	1
1621	4.911	-0.026	-0.038	-0.045	0.000	-0.037	1.1111	1.73	39875.6406	3	1855	4.664	-0.139	-0.196	-0.236	-0.188	-0.007	1.1111	1.36	39756.9850	1
1637	4.832	0.229	0.294	0.341	0.055	0.114	1.1111	1.08	39801.9390	1	1855	4.665	-0.143	-0.193	-0.234	-0.188	0.004	1.1111	1.38	39762.9632	1
1637	4.867	0.225	0.328	0.383	0.054	0.083	1.1111	1.07	39869.6650	1	1855	4.684	-0.109	-0.170	-0.212	-0.183	-0.100	1.1111	1.37	39768.9485	1
1638	4.684	-0.006	-0.017	0.001	0.022	0.081	1.1111	1.12	39801.9553	1	1855	4.624	-0.169	-0.215	-0.285	-0.071	-0.040	1.1111	1.33	39769.9633	1
1638	4.683	0.001	0.002	0.008	0.010	0.047	1.1111	1.10	39867.6534	1	1855	4.732	-0.226	-0.291	-0.183	-0.203	0.000	1.1111	2.73	39770.8308	1
1641	0.000	0.000	0.000	0.000	-0.091	0.000	000010	1.02	39763.9650	1	1855	4.699	-0.051	-0.145	-0.225	-0.145	-0.079	1.1111	1.30	39770.9933	3
1641	3.233	-0.086	-0.118	-0.139	-0.095	0.009	1.1111	1.01	39803.8790	1	1855	4.682	-0.132	-0.193	-0.187	-0.216	0.038	1.1111	1.33	39771.9545	1
1641	3.197	-0.086	-0.113	-0.162	-0.075	-0.026	1.1111	1.04	39867.6623	1	1855	4.708	-0.139	-0.195	-0.249	-0.170	-0.049	1.1111	1.30	39873.6986	1
1657	0.000	0.000	0.000	0.000	-0.003	0.000	000010	1.26	39763.9774	1	1855	4.676	-0.106	-0.195	-0.230	-0.193	-0.081	1.1111	1.43	39798.8520	1
1657	5.134	-0.004	-0.034	-0.052	-0.013	0.098	1.1111	1.52	39798.8036	1	1855	4.660	-0.131	-0.189	-0.217	-0.187	-0.151	1.1111	1.34	39802.8679	1
1676	4.732	0.236	0.331	0.374	0.066	0.144	1.1111	1.19	39798.8138	1	1855	4.686	-0.115	-0.168	-0.224	-0.169	0.043	1.1111	1.38	39803.8506	1
1676	4.693	0.218	0.310	0.350	0.071	0.099	1.1111	1.07	39867.6717	1	1855	4.662	-0.135	-0.204	-0.247	-0.176	0.028	1.1111	1.30	39831.8404	1
1679	4.296	-0.083	-0.146	-0.167	-0.114	0.032	1.1111	1.52	39798.8233	1	1855	4.710	-0.090	-0.167	-0.197	-0.176	0.036	1.1111	1.30	39833.8172	1
1679	4.259	-0.092	-0.141	-0.176	-0.117	0.009	1.1111	1.35	39867.6806	1	1855	4.661	-0.132	-0.196	-0.257	-0.168	0.025	1.1111	1.40	39835.7571	1
1689	4.783	0.121	0.160	0.184	0.039	0.097	1.1111	1.07	39798.8330	1	1855	4.676	-0.109	-0.190	-0.230	-0.191	-0.015	1.1111	1.30	39770.8175	1
1689	4.818	0.152	0.192	0.235	0.034	0.000	1.1110	1.04	39833.7539	1	1855	4.654	-0.147	-0.221	-0.252	-0.185	-0.017	1.1111	1.36	39869.7716	1
1696	4.481	-0.023	-0.041	-0.060	-0.030	0.013	1.1111	1.52	39798.8430	1	1855	4.695	-0.129	-0.195	-0.249	-0.170	-0.049	1.1111	1.30	39873.6986	1
1696	4.538	0.037	0.0																		

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
1910	3.071	-0.073	-0.104	-0.004	-0.081	0.097	111111	1.02	39880.6751	1	2240	6.133	0.379	0.584	0.683	0.092	0.073	111111	1.04	39771.9761	1
1910	2.983	-0.147	-0.181	-0.153	-0.098	0.098	111111	1.62	39954.6551	1	2240	6.164	0.395	0.566	0.662	0.134	0.109	111111	1.01	39879.7373	1
1931	3.759	-0.087	-0.142	-0.158	-0.144	0.028	111111	1.22	39880.7064	1	2244	5.005	0.004	-0.012	0.010	-0.005	0.027	111111	1.48	39771.9850	1
1931	0.000	0.014	-0.070	-0.112	-0.146	-0.064	011111	2.18	39955.6665	3	2244	5.138	-0.020	-0.033	-0.024	-0.002	0.038	111111	1.45	39879.7463	1
1934	4.514	0.017	0.073	0.012	-0.054	0.080	111111	1.15	39835.7905	1	2286	2.614	1.482	2.087	2.344	0.427	0.377	111111	1.10	39798.8778	1
1934	4.509	0.009	0.018	-0.018	-0.059	-0.009	111111	1.94	39951.6585	3	2286	2.560	1.408	2.021	2.285	0.398	0.311	111111	1.02	39878.7079	1
1937	4.727	0.068	0.133	0.127	0.081	0.087	111111	1.31	39835.7995	1	2294	2.008	-0.099	-0.153	-0.189	-0.145	0.017	111111	1.75	39798.8854	1
1946	4.860	-0.050	-0.061	-0.083	-0.053	-0.010	111111	1.04	39835.8085	1	2294	2.029	-0.119	-0.161	-0.219	-0.157	-0.014	111111	1.57	39878.7152	1
1946	4.838	-0.039	-0.072	-0.087	-0.079	-0.058	111111	1.85	39955.6652	3	2298	4.234	0.126	0.209	0.262	0.031	0.101	111111	1.15	39797.9232	1
1948	1.805	-0.082	-0.123	-0.216	-0.105	-0.031	111111	1.21	39835.8193	1	2298	4.242	0.137	0.210	0.225	0.044	0.056	111111	1.15	39877.7038	1
1948	1.873	-0.040	-0.077	-0.120	-0.151	-0.004	111111	2.32	39955.6556	3	2298	4.231	0.115	0.176	0.209	0.028	0.056	111111	1.37	39939.6674	1
1963	4.595	0.606	0.886	1.023	0.233	0.222	111111	1.16	39835.8286	1	2308	5.871	1.156	1.657	2.189	0.420	0.000	111110	1.06	39773.9913	1
1963	4.534	0.628	0.889	1.030	0.238	0.207	111111	2.16	39951.6677	3	2308	5.653	1.111	1.619	2.112	0.431	0.447	111111	1.05	39877.7164	1
1995	4.265	0.505	0.705	0.821	0.169	0.184	111111	1.39	39946.6756	3	2343	4.168	-0.048	-0.054	-0.049	-0.076	0.026	111111	1.33	39773.9815	1
2004	2.146	-0.033	-0.068	-0.096	-0.129	0.052	111111	1.89	39955.6168	3	2343	4.186	-0.054	-0.065	-0.071	-0.041	0.012	111111	1.02	39876.7235	1
2010	4.295	0.000	-0.031	-0.028	0.023	0.023	111111	1.07	39808.8753	1	2344	5.088	-0.105	-0.135	-0.132	-0.122	0.104	111111	1.27	39773.9977	1
2010	0.000	-0.049	-0.049	-0.036	-0.022	0.009	011111	2.20	39946.7081	3	2344	5.079	-0.118	-0.127	-0.165	-0.107	0.076	111111	1.25	39878.7324	1
2011	4.316	1.087	1.559	1.768	0.333	0.343	111111	1.02	39757.0089	1	2356	3.767	-0.060	-0.053	0.000	0.000	0.000	111001	1.29	39774.0128	1
2011	0.000	1.071	1.532	1.723	0.370	0.353	011111	1.00	39808.8898	1	2356	3.743	-0.056	-0.040	-0.084	-0.096	0.029	111111	1.29	39878.7408	1
2012	3.646	0.571	0.811	0.944	0.180	0.251	111111	1.01	39757.0175	1	2385	4.490	0.064	0.093	0.153	-0.002	0.065	111111	1.20	39802.8802	1
2012	0.000	0.556	0.805	0.940	0.204	0.255	011111	1.00	39808.8991	1	2385	4.506	0.054	0.080	0.145	0.015	0.130	111111	1.10	39876.7493	1
2018	0.000	1.536	2.197	2.474	0.467	0.384	011111	1.00	39808.9078	1	2392	5.979	0.497	0.724	0.824	0.147	0.173	111111	1.49	39802.8898	1
2018	5.943	1.460	2.064	2.343	0.436	0.367	111111	1.53	39946.6899	3	2392	6.021	0.523	0.731	0.844	0.156	0.320	111111	1.39	39877.7241	1
2029	0.000	0.041	0.056	0.052	0.047	0.088	011111	1.09	39808.9199	1	2421	1.915	0.034	0.035	0.054	0.046	0.079	111111	1.11	39798.8999	1
2029	4.943	0.011	0.011	0.031	0.035	0.049	111111	1.49	39946.6990	3	2421	1.957	0.023	0.033	0.061	0.031	0.020	111111	1.04	39877.7317	1
2034	4.536	-0.027	-0.022	0.011	0.050	0.012	111111	1.05	39797.8777	1	2427	4.489	0.623	0.882	1.024	0.221	0.240	111111	1.03	39763.0238	1
2034	4.564	0.000	-0.012	0.008	0.026	0.041	111111	1.31	39944.6622	1	2427	4.448	0.573	0.845	0.987	0.251	0.262	111111	1.07	39795.9028	1
2035	3.501	0.529	0.780	0.919	0.163	0.226	111111	1.69	39873.7498	1	2427	4.511	0.613	0.888	1.027	0.214	0.215	111111	1.01	39877.7433	1
2035	3.523	0.542	0.809	0.959	0.118	0.212	111111	1.16	39944.6709	1	2429	3.629	0.519	0.757	0.889	0.171	0.230	111111	1.75	39795.9120	1
2047	4.225	0.351	0.526	0.596	0.084	0.150	111111	3.04	39797.8864	1	2429	3.661	0.500	0.730	0.832	0.167	0.192	111111	1.60	39877.7510	1
2047	4.223	0.346	0.514	0.567	0.097	0.151	111111	1.04	39867.7074	1	2443	4.088	0.582	0.836	0.980	0.209	0.261	111111	1.68	39795.9199	1
2061	0.041	1.360	1.912	2.187	0.413	0.333	111111	1.13	39797.8945	1	2443	4.120	0.560	0.805	0.931	0.178	0.269	111111	1.57	39877.7595	1
2061	0.137	1.427	1.958	2.223	0.413	0.362	111111	1.11	39867.7166	1	2450	4.391	0.740	1.057	1.241	0.306	0.284	111111	1.51	39795.9284	1
2061	0.122	1.411	1.959	2.221	0.414	0.386	111111	1.42	39951.6297	3	2450	4.467	0.760	1.067	1.246	0.281	0.323	111111	1.46	39877.7674	1
2061	0.130	1.368	1.949	2.234	0.398	0.288	111111	1.30	39955.5953	3	2450	4.418	0.707	1.035	1.213	0.261	0.290	111111	2.02	39939.6914	1
2077	3.375	0.424	0.660	0.836	0.098	0.313	111111	1.11	39793.8901	1	2456	4.704	-0.114	-0.155	-0.207	-0.124	0.083	111111	1.10	39795.9406	1
2077	3.478	0.522	0.762	0.881	0.150	0.189	111111	1.08	39867.7271	1	2456	4.720	-0.102	-0.150	-0.200	-0.139	-0.146	111111	1.09	39877.7767	1
2085	3.498	0.155	0.289	0.330	0.036	0.098	111111	1.53	39793.8999	1	2467	6.443	0.140	0.103	0.071	-0.015	-0.017	111111	1.17	39798.9099	1
2085	3.601	0.215	0.311	0.335	0.047	0.113	111111	1.45	39867.7383	1	2467	6.366	0.009	0.001	0.038	-0.118	0.056	111111	1.14	39877.7898	1
2088	1.846	0.027	0.041	0.023	0.098	0.040	111111	1.03	39769.9818	1	2467	6.391	0.040	0.057	0.056	-0.176	0.050	111111	1.49	39939.7013	1
2088	1.890	0.036	0.054	0.075	0.022	-0.004	111111	1.02	39867.7474	1	2470	4.853	0.077	0.078	0.093	0.059	0.090	111111	1.14	39798.9217	1
2091	3.923	1.574	2.228	2.487	0.529	0.373	111111	1.03	39769.9905	1	2470	4.827	0.043	0.081	0.113	0.017	0.071	111111	1.12	39875.7553	3
2091	4.004	1.586	2.247	2.543	0.436	0.350	111111	1.03	39873.7582	1	2473	2.627	0.639	0.891	1.030	0.231	0.247	111111	1.08	39770.9744	3
2113	4.105	0.606	0.927	1.079	0.216	0.253	111111	1.27	39793.9082	1	2473	2.678	0.618	0.895	1.054	0.228	0.175	111111	1.00	39875.9653	1
2113	4.235	0.661	0.962	1.104	0.238	0.266	111111	1.22	39879.7151	1	2478	4.206	0.616	0.849	1.008	0.206	0.275	111111	1.08	39798.9304	1
2124	4.134	0.127	0.206	0.233	0.067	0.090	111111	1.08	39879.7220	1	2478	4.242	0.606	0.874	1.032	0.197	0.228	111111	1.09	39874.7182	1
2128	4.904	-0.173	-0.126	-0.095	-0.026	0.024	111111	1.38	39793.9260	1	2484	3.234	0.325	0.431	0.487	0.059	0.146	111111	1.07	39798.9381	1
2128	4.942	-0.036	-0.030	-0.050	-0.046	0.113	111111	1.37	39879.7290	1	2484	3.248	0.282	0.414	0.464	0.050	0.077	111111	1.08	39874.7260	1
2135	4.490	0.176	0.286	0.350																	

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
2648	5.122	0.022	-0.019	-0.074	-0.128	0.089	1.1111	1.32	39802.9159	1	3067	4.943	0.086	0.101	0.118	0.051	-0.049	1.1111	1.02	39802.9682	1
2648	5.026	-0.099	-0.136	-0.183	-0.049	-0.103	1.1111	1.29	39835.8375	1	3067	4.908	0.063	0.122	0.126	0.054	-0.046	1.1111	1.04	39867.7730	1
2648	5.040	-0.009	-0.053	-0.139	-0.143	0.005	1.1111	1.24	39875.7727	3	3067	4.942	0.083	0.118	0.163	0.046	-0.032	1.1111	1.01	39912.6731	1
2650	3.861	0.379	0.592	0.734	0.141	0.204	1.1111	1.03	39791.9696	1	3131	4.564	0.058	0.116	0.108	0.036	0.172	1.1111	1.61	39802.9776	1
2650	3.597	0.396	0.570	0.653	0.123	0.143	1.1111	1.04	39804.9258	1	3131	4.548	0.066	0.076	0.106	0.048	0.043	1.1111	1.67	39867.7830	1
2657	4.114	-0.026	-0.052	-0.067	-0.042	-0.039	1.1111	1.50	39791.9781	1	3141	4.302	0.826	1.181	1.343	0.286	0.286	1.1111	1.21	39802.9865	1
2657	4.128	-0.034	-0.045	-0.047	-0.045	-0.017	1.1111	1.52	39804.9343	1	3141	4.302	0.817	1.163	1.362	0.289	0.279	1.1111	1.26	39834.8655	1
2697	4.014	0.588	0.860	1.027	0.199	0.258	1.1111	1.00	39791.9878	1	3145	4.407	0.671	0.948	1.107	0.248	0.282	1.1111	1.17	39801.9843	1
2697	4.086	0.635	0.905	1.063	0.226	0.237	1.1111	1.00	39804.9466	1	3145	4.051	0.671	0.961	1.111	0.237	0.267	1.1111	1.19	39867.7929	1
2701	4.629	0.526	0.759	0.891	0.156	0.269	1.1111	1.24	39791.9985	1	3173	4.718	0.038	0.022	0.037	0.057	0.144	1.1111	1.06	39801.9925	1
2701	4.675	0.566	0.812	0.932	0.190	0.212	1.1111	1.24	39804.9742	1	3173	4.833	0.027	0.044	0.090	0.017	-0.050	1.1111	1.06	39836.8976	1
2714	4.151	-0.008	0.015	0.075	0.007	0.091	1.1111	1.17	39792.0088	1	3173	4.813	0.035	0.056	0.054	0.020	0.034	1.1111	1.07	39874.7776	1
2714	4.148	0.029	0.057	0.088	0.046	-0.046	1.1111	1.18	39804.9831	1	3188	4.089	0.508	0.688	0.811	0.170	0.182	1.1111	1.22	39802.0066	1
2751	4.989	0.081	0.103	0.137	0.043	-0.082	1.1111	1.03	39792.0199	1	3188	4.118	0.484	0.682	0.787	0.170	0.186	1.1111	1.23	39836.9055	1
2751	5.005	0.090	0.145	0.183	0.069	0.032	1.1111	1.04	39804.9567	1	3192	0.000	0.001	-0.111	-0.107	-0.091	-0.016	0.0111	1.60	39802.0143	1
2763	3.554	0.061	0.112	0.132	0.035	0.057	1.1111	1.10	39797.9331	1	3192	4.421	-0.073	-0.129	-0.144	-0.077	-0.112	1.1111	1.60	39836.9130	1
2763	3.552	0.064	0.098	0.117	0.040	0.097	1.1111	1.07	39831.8553	1	3192	4.455	-0.041	-0.096	-0.102	-0.069	0.035	1.1111	1.63	39874.7933	1
2812	4.946	0.014	0.060	0.027	0.024	-0.042	1.1111	1.69	39797.9500	1	3211	4.446	0.494	0.694	0.813	0.152	0.200	1.1111	1.41	39802.0248	1
2812	4.911	-0.001	-0.013	-0.005	0.001	0.016	1.1111	1.66	39831.8653	1	3211	4.439	0.463	0.681	0.779	0.167	0.169	1.1111	1.43	39835.9046	1
2812	4.967	0.009	0.025	0.032	-0.002	0.028	1.1111	1.59	39875.7810	3	3249	3.194	0.786	1.126	1.311	0.281	0.251	1.1111	1.54	39624.6415	3
2818	4.622	-0.006	0.015	0.045	0.000	0.000	1.1100	1.06	39777.9569	1	3249	3.155	0.765	1.111	1.271	0.258	0.244	1.1111	2.43	39624.6958	1
2818	4.622	0.010	0.010	0.043	0.021	0.090	1.1111	1.05	39831.8745	1	3249	3.202	0.791	1.142	1.334	0.309	0.238	1.1111	1.55	39625.6397	1
2818	4.615	-0.005	0.026	0.038	0.034	-0.049	1.1111	1.04	39875.7886	3	3249	3.157	0.769	1.110	1.284	0.265	0.242	1.1111	2.10	39625.6791	3
2821	3.512	0.526	0.782	0.908	0.177	0.221	1.1111	1.01	39797.9689	1	3249	3.095	0.779	1.129	1.307	0.248	0.282	1.1111	1.66	39760.9916	1
2821	3.510	0.519	0.746	0.879	0.181	0.198	1.1111	1.01	39831.8829	1	3249	3.156	0.822	1.159	1.304	0.277	0.266	1.1111	2.19	39770.9310	1
2845	2.862	-0.041	-0.031	0.001	-0.016	-0.009	1.1111	1.16	39797.9409	1	3249	3.104	0.837	1.114	1.306	0.249	0.288	1.1111	1.21	39774.0214	1
2845	2.890	-0.019	-0.029	-0.010	-0.044	0.076	1.1111	1.09	39831.8911	1	3249	3.204	0.760	1.180	1.366	0.264	0.287	1.1111	1.18	39793.9774	1
2852	4.066	0.273	0.376	0.410	0.048	0.086	1.1111	1.31	39755.9827	1	3249	3.143	0.775	1.133	1.297	0.273	0.239	1.1111	1.13	39804.0942	1
2852	4.082	0.235	0.335	0.383	0.017	0.129	1.1111	1.26	39760.9771	1	3249	3.173	0.790	1.130	1.309	0.283	0.205	1.1111	1.25	39809.0645	1
2852	4.004	0.228	0.324	0.322	0.120	0.039	1.1111	1.18	39769.9718	1	3249	3.000	0.000	1.109	1.315	0.265	0.261	0.0111	1.31	39804.9159	1
2852	4.183	0.295	0.480	0.427	0.025	0.085	1.1111	2.72	39770.8438	3	3249	3.173	0.775	1.123	1.297	0.273	0.239	1.1111	1.10	39805.0463	1
2852	4.009	0.158	0.355	0.374	0.081	0.086	1.1111	1.18	39772.9631	1	3249	3.116	0.789	1.126	1.303	0.264	0.297	1.1111	1.12	39795.9587	1
2852	4.046	0.174	0.252	0.287	0.081	0.117	1.1111	1.02	39793.9688	1	3249	3.000	0.000	1.110	1.307	0.277	0.285	0.0111	1.12	39797.9903	1
2852	4.082	0.232	0.328	0.390	0.049	0.085	1.1111	1.04	39795.9497	1	3249	3.131	0.788	1.122	1.297	0.280	0.318	1.1111	1.17	39798.9658	1
2852	4.075	0.216	0.329	0.381	0.059	0.096	1.1111	1.00	39797.9817	1	3249	3.123	0.783	1.122	1.305	0.283	0.273	1.1111	1.15	39801.9658	1
2852	4.110	0.259	0.350	0.390	0.057	0.131	1.1111	1.02	39798.9577	1	3249	3.167	0.792	1.129	1.285	0.285	0.286	1.1111	1.08	39803.0137	1
2852	4.111	0.242	0.364	0.372	0.056	0.172	1.1111	1.00	39803.0054	1	3249	3.166	0.761	1.111	1.291	0.272	0.272	1.1111	1.09	39804.0020	1
2852	0.000	0.208	0.328	0.364	0.046	0.134	0.0111	1.00	39803.9917	1	3249	3.173	0.790	1.130	1.309	0.283	0.205	1.1111	1.25	39809.0645	1
2852	4.058	0.249	0.338	0.369	0.061	0.096	1.1111	1.09	39804.9030	1	3249	3.146	0.775	1.107	1.275	0.202	0.254	1.1111	1.11	39835.8931	1
2852	4.084	0.225	0.344	0.383	0.000	0.000	1.1100	1.04	39805.0362	1	3249	3.174	0.788	1.125	1.297	0.277	0.288	1.1111	1.09	39836.9439	1
2852	3.497	0.261	0.380	0.406	0.073	0.109	1.1111	1.09	39809.0515	1	3249	3.124	0.750	1.093	1.284	0.305	0.293	1.1111	1.21	39867.7648	1
2852	4.096	0.186	0.298	0.402	0.000	0.000	1.1100	1.01	39826.9557	1	3249	3.164	0.808	1.128	1.322	0.274	0.233	1.1111	1.11	39869.8767	1
2852	4.139	0.288	0.386	0.454	0.011	0.104	1.1111	1.00	39833.9141	1	3249	3.172	0.767	1.102	1.291	0.276	0.286	1.1111	1.08	39873.8217	1
2852	4.095	0.224	0.340	0.404	0.038	0.069	1.1111	1.03	39834.8480	1	3249	3.176	0.792	1.131	1.305	0.276	0.271	1.1111	1.08	39874.8285	1
2852	4.087	0.229	0.346	0.371	0.077	0.061	1.1111	1.00	39835.8839	1	3249	3.168	0.792	1.140	1.316	0.279	0.222	1.1111	1.19	39875.7487	3
2852	4.099	0.157	0.264	0.372	0.054	0.119	1.1111	1.02	39836.9366	1	3249	3.137	0.752	1.099	1.294	0.267	0.249	1.1111	1.09	39875.8440	1
2852	4.051	0.221	0.323	0.360	0.069	0.115	1.1111	1.04	39867.7566	1	3249	3.174	0.797	1.130	1.294	0.271	0.264	1.1111	1.08	39877.8132	1
2852	4.120	0.246	0.354	0.399	0.033	0.088	1.1111	1.01	39874.8201	1	3249	3.166	0.774	1.120	1.282	0.277	0.276	1.1111	1.09	39878.8009	1
2852	4.080	0.239	0.3																		

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WIS.	A.M.	J.D.	L5	B.S.	58	58-72	58-80	58-86	86-99	99-110	WIS.	A.M.	J.D.	L5
3454	4.305	-0.089	-0.129	-0.138	-0.109	0.001	111111	1.24	39801.9746	1	3809	4.556	0.548	0.788	0.904	0.168	0.230	111111	1.03	39869.8455	1
3454	4.328	-0.072	-0.121	-0.144	-0.092	0.034	111111	1.14	39802.0480	1	3809	4.504	0.442	0.668	0.781	0.189	0.233	111111	1.06	39954.7235	1
3454	4.310	-0.056	-0.093	-0.115	-0.094	-0.036	111111	1.14	39909.7463	1	3815	5.203	0.426	0.623	0.693	0.120	0.183	111111	1.02	39869.8527	1
3454	4.319	-0.099	-0.146	-0.166	-0.118	0.006	111111	1.15	39929.7199	1	3815	5.129	0.417	0.604	0.669	0.125	0.123	111111	1.08	39954.7341	1
3454	4.358	-0.101	-0.138	-0.169	-0.085	-0.027	111111	1.14	39939.6749	1	3834	4.344	0.741	1.051	1.219	0.243	0.302	111111	1.15	39869.8604	1
3454	4.330	-0.113	-0.157	-0.182	-0.088	-0.002	111111	1.26	39946.7181	3	3834	4.286	0.649	0.945	1.104	0.249	0.298	111111	1.15	39951.7069	3
3454	4.293	-0.084	-0.132	-0.163	-0.084	-0.083	111111	1.20	39951.8880	3	3845	3.534	0.656	0.957	1.119	0.245	0.308	111111	1.18	39869.8681	1
3454	4.276	-0.109	-0.143	-0.164	-0.113	-0.032	111111	2.24	39951.8005	3	3845	3.601	0.683	0.965	1.122	0.233	0.215	111111	1.24	39951.7255	3
3454	4.279	-0.095	-0.155	-0.200	-0.104	-0.064	111111	1.22	39954.6835	1	3849	5.107	-0.066	-0.105	-0.078	-0.069	0.016	111111	1.70	39873.8051	1
3454	4.287	-0.090	-0.121	-0.143	-0.121	-0.028	111111	1.27	39955.6964	3	3849	5.060	-0.074	-0.114	-0.124	-0.091	-0.079	111111	1.52	39951.7158	3
3459	4.412	0.461	0.638	0.728	0.152	0.182	111111	1.36	39799.0028	1	3852	3.416	0.275	0.408	0.476	0.061	0.127	111111	1.18	39873.8130	1
3459	4.405	0.436	0.650	0.718	0.176	0.120	111111	1.33	39835.9130	1	3852	3.414	0.207	0.375	0.438	0.071	0.112	111111	1.09	39907.7620	1
3461	3.638	0.547	0.803	0.928	0.180	0.220	111111	1.14	39795.9792	1	3873	2.742	0.404	0.633	0.718	0.113	0.153	111111	1.14	39878.7850	1
3461	3.642	0.512	0.782	0.904	0.176	0.213	111111	1.12	39803.9641	1	3873	2.760	0.433	0.622	0.721	0.105	0.121	111111	1.10	39910.6485	1
3475	3.765	0.526	0.744	0.856	0.151	0.219	111111	1.08	39795.9878	1	3881	4.896	0.303	0.476	0.543	0.095	0.117	111111	1.02	39939.7124	1
3475	3.778	0.410	0.629	0.830	0.162	0.204	111111	1.05	39803.9779	1	3881	4.869	0.370	0.525	0.588	0.089	0.086	111111	1.10	39954.7430	1
3475	3.761	0.434	0.707	0.837	0.124	0.170	111111	1.02	39831.9204	1	3888	3.691	0.195	0.312	0.356	0.054	0.035	111111	1.23	39878.7765	1
3482	3.154	0.418	0.601	0.711	0.000	0.000	111100	1.20	39795.9961	1	3888	3.693	0.192	0.289	0.330	0.055	0.019	111111	1.15	39910.7364	1
3482	3.174	0.430	0.613	0.724	0.121	0.167	111111	1.13	39805.0005	1	3894	4.585	0.039	0.074	0.095	0.012	0.008	111111	1.25	39878.7567	1
3484	4.044	0.490	0.705	0.813	0.132	0.187	111111	1.51	39796.0118	1	3894	4.562	0.027	0.045	0.049	0.054	-0.051	111111	1.10	39910.7446	1
3484	4.037	0.480	0.703	0.812	0.135	0.183	111111	1.45	39805.0085	1	3903	3.873	0.516	0.737	0.843	0.117	0.157	111111	2.04	39878.7673	1
3547	2.831	0.489	0.727	0.850	0.156	0.188	111111	1.15	39796.0218	1	3903	3.851	0.460	0.668	0.764	0.154	0.169	111111	1.52	39910.7526	1
3547	2.873	0.501	0.753	0.876	0.164	0.189	111111	1.12	39805.0172	1	3905	3.579	0.578	0.846	0.994	0.203	0.233	111111	1.03	39831.9617	1
3569	3.088	0.174	0.226	0.249	0.020	0.073	111111	1.06	39792.0321	1	3905	3.557	0.554	0.850	0.986	0.199	0.221	111111	1.12	39878.7933	1
3569	3.083	0.121	0.177	0.217	0.047	0.073	111111	1.04	39805.0262	1	3950	4.354	1.101	1.604	1.836	0.340	0.332	111111	1.19	39867.8453	1
3572	4.169	-0.026	-0.032	-0.026	0.053	0.126	111111	1.12	39794.0195	1	3950	0.000	1.125	1.611	1.832	0.360	0.274	011111	1.12	39910.7618	1
3576	4.395	1.118	1.741	2.025	0.450	0.414	111111	1.23	39794.0389	1	3970	4.593	-0.046	-0.068	-0.053	-0.016	0.003	111111	1.50	39836.9528	1
3579	3.812	0.300	0.430	0.492	0.061	-0.003	111111	1.06	39797.9998	1	3970	4.617	-0.039	-0.024	-0.033	-0.025	0.024	111111	1.52	39878.8326	1
3579	3.845	0.204	0.310	0.386	0.060	0.144	111111	1.03	39831.9283	1	3974	4.426	0.127	0.191	0.193	0.052	0.045	111111	1.03	39878.8408	1
3579	3.880	0.299	0.438	0.493	0.048	0.067	111111	1.04	39874.8021	1	3974	4.441	0.084	0.153	0.165	0.057	0.018	111111	1.00	39911.7766	1
3594	3.602	0.083	0.073	0.095	0.064	0.018	111111	1.06	39799.0158	1	3975	3.497	0.033	0.041	0.119	-0.028	-0.022	111111	1.06	39831.9781	1
3594	3.550	-0.009	0.024	0.074	0.032	0.012	111111	1.05	39831.9358	1	3975	3.539	0.041	0.071	0.139	0.000	0.049	111111	1.06	39878.8490	1
3612	4.306	0.521	0.739	0.825	0.178	0.222	111111	1.01	39803.0231	1	3980	3.981	0.737	1.082	1.257	0.271	0.292	111111	1.10	39831.9853	1
3612	4.287	0.513	0.737	0.878	0.141	0.169	111111	1.12	39834.8777	1	3980	3.991	0.770	1.120	1.293	0.263	0.245	111111	1.10	39878.8562	1
3616	4.648	0.317	0.442	0.415	0.160	0.156	111111	1.23	39799.0254	1	3981	4.486	-0.024	-0.009	0.024	-0.010	0.015	111111	1.03	39836.9606	1
3616	4.682	0.333	0.489	0.546	0.065	0.040	111111	1.24	39874.8112	1	3981	4.481	-0.021	-0.005	0.001	0.012	-0.010	111111	1.19	39878.8635	1
3619	4.391	0.175	0.246	0.257	0.049	0.116	111111	1.06	39803.0317	1	3982	1.388	-0.038	-0.060	-0.060	-0.022	0.026	111111	1.07	39831.9934	1
3619	4.385	0.147	0.212	0.272	0.016	0.104	111111	1.11	39834.8991	1	3982	1.336	0.006	-0.032	-0.022	-0.041	0.059	111111	1.60	39880.7412	1
3624	0.000	0.177	0.280	0.274	0.048	0.026	011111	1.17	39803.0401	1	3994	3.352	0.487	0.701	0.826	0.152	0.223	111111	1.44	39836.9697	1
3624	4.504	0.162	0.250	0.299	0.039	0.046	111111	1.19	39834.9179	1	3994	3.347	0.474	0.697	0.805	0.160	0.185	111111	1.44	39910.7705	1
3624	4.537	0.189	0.275	0.313	0.023	0.037	111111	1.11	39875.8052	3	4031	3.366	0.184	0.301	0.400	0.070	-0.009	111111	1.06	39826.9805	1
3662	4.808	0.158	0.228	0.252	0.013	0.124	111111	1.09	39804.0133	1	4031	3.399	0.276	0.376	0.443	0.052	0.075	111111	1.02	39833.9891	1
3662	4.770	0.075	0.158	0.200	0.020	0.063	111111	1.10	39835.9235	1	4031	3.296	0.244	0.348	0.405	0.051	0.136	111111	1.40	39880.7523	1
3662	4.755	0.137	0.212	0.249	0.029	0.037	111111	1.11	39875.8052	3	4031	3.364	0.213	0.327	0.389	0.063	0.141	111111	1.04	39955.7283	3
3665	3.910	-0.030	-0.024	-0.033	-0.025	0.031	111111	1.18	39804.0230	1	4033	3.498	0.079	0.099	0.127	0.041	0.000	111111	1.02	39834.0033	1
3665	3.911	-0.033	-0.039	-0.042	-0.027	-0.268	111111	1.18	39835.9319	1	4033	3.442	-0.007	0.022	0.029	0.041	0.001	111111	1.02	39910.7777	1
3690	3.785	0.041	0.087	0.113	0.030	0.080	111111	1.01	39804.0317	1	4039	5.704	0.319	0.487	0.623	0.050	0.084	111111	1.04	39826.9921	1
3690	3.792	0.055	0.108	0.111	0.058	0.015	111111	1.01	39835.9483	1	4039	5.713	0.368	0.541	0.604	0.065	0.115	111111	1.09	39867.8559	1
3705	2.784	0.914	1.305	1.458	0.317	0.292	111111	1.00	39804.0399	1	4054	4.697	0.282	0.414	0.501	0.064	0.032	111111	1.05	39827.0010	1
3705	2.732	0.925	1.329	1.528	0.291	0.293	111111	1.05	39869.8228	1	4054	4.722	0.327	0.466	0.471	0.079	0.098	111111	1.09	39867.8645	1
3706	0.000	0.527	0.742	0.846	0.165	0.197	011111	1.39	39809.0419	1	4057	1.787	0.674	0.942	1.108	0.211	0.188	111111	1.02	39834.0114	1
3706	4.586	0.535	0.784	0.884	0.155	0.182	111111	1.54	39869.8148	1	4057	0.000	0.660	0.930	1.064	0.204	0.163	011111	1.51	39885.7315	1
3706	4.502	0.472	0.704	0.804	0.156	0.234	111111	1.42	39912.7315	1	4057	1.703	0.635	0.909	1.068	0.222	0.209	111111	1.08	39909.7548	1
3706	4.485	0.482	0.690	0.788	0.159	0.149	111111														

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
4133	3.884	-0.062	-0.089	-0.118	-0.087	-0.006	111111	1.14	39835.9714	1	4456	6.102	-0.049	-0.059	-0.091	-0.060	-0.070	111111	1.04	40003.6374	1
4133	3.914	-0.038	-0.054	-0.070	-0.098	-0.053	111111	1.11	39874.8787	1	4456	6.030	-0.071	-0.094	-0.111	-0.088	-0.035	111111	1.04	40003.6343	1
4141	5.116	0.194	0.305	0.328	0.042	0.042	111111	1.13	39992.6514	1	4456	6.021	-0.039	-0.073	-0.106	-0.080	-0.069	111111	1.05	40004.6369	1
4141	5.090	0.233	0.322	0.374	0.021	0.063	111111	1.13	39993.6531	1	4464	6.390	0.509	0.730	0.851	0.136	0.232	111111	1.41	40028.4608	1
4141	5.074	0.207	0.301	0.354	-0.001	0.074	111111	1.18	39999.6633	1	4464	6.386	0.454	0.738	0.850	0.206	0.241	111111	1.40	40029.6573	1
4141	5.065	0.178	0.280	0.309	0.044	0.086	111111	1.20	40000.6685	1	4468	4.695	-0.022	-0.031	-0.031	-0.025	-0.007	111111	1.37	39875.9291	3
4163	4.152	1.075	1.534	2.074	0.388	0.489	111111	1.45	39836.9982	1	4468	4.670	-0.046	-0.055	-0.040	0.023	0.005	111111	1.34	39907.8705	1
4163	4.206	1.112	1.585	2.085	0.400	0.429	111111	1.43	39874.9263	1	4471	4.057	0.519	0.757	0.877	0.153	0.184	111111	1.18	39875.9374	3
4163	4.204	1.093	1.563	2.057	0.406	0.449	111111	1.43	39911.8094	1	4471	4.054	0.486	0.721	0.842	0.168	0.192	111111	1.19	39911.8350	1
4166	4.462	0.420	0.610	0.691	0.164	0.130	111111	1.02	39835.9865	1	4496	5.108	0.429	0.612	0.700	0.096	0.140	111111	1.00	39875.9455	3
4166	4.000	0.485	0.649	0.757	0.089	0.121	011111	1.42	39885.7411	1	4496	5.089	0.411	0.611	0.701	0.099	0.171	111111	1.20	39912.7475	1
4166	4.466	0.422	0.614	0.699	0.136	0.123	111111	1.02	39910.7852	1	4496	5.098	0.461	0.651	0.693	0.183	0.112	111111	1.00	39955.7599	3
4232	2.783	0.629	0.898	1.053	0.204	0.285	111111	1.53	39837.0062	1	4514	4.438	0.465	0.686	0.774	0.172	0.153	111111	1.57	39875.9532	3
4232	2.765	0.616	0.889	1.024	0.237	0.231	111111	1.55	39910.7929	1	4514	4.404	0.498	0.729	0.861	0.099	0.000	011110	2.18	39912.7562	1
4247	3.533	0.541	0.790	0.908	0.187	0.164	111111	1.01	39910.8002	1	4517	3.671	1.016	1.455	1.673	0.314	0.266	111111	1.10	39875.9611	1
4248	4.685	-0.021	0.000	-0.002	0.047	-0.086	111111	1.03	39836.0054	1	4517	3.676	1.016	1.460	1.680	0.316	0.249	111111	1.29	39929.7296	1
4248	4.700	0.001	-0.008	-0.015	0.026	-0.002	111111	1.02	39910.8074	1	4518	3.378	0.609	0.890	1.031	0.206	0.233	111111	1.11	39878.8823	1
4287	3.779	0.517	0.759	0.888	0.186	0.240	111111	1.59	39837.0145	1	4518	3.389	0.622	0.900	1.062	0.199	0.190	111111	1.11	39878.8823	1
4287	3.875	0.615	0.841	0.987	0.154	0.205	111111	1.63	39877.8881	1	4527	4.349	0.384	0.571	0.645	0.132	0.150	111111	1.10	39878.8902	1
4287	3.769	0.510	0.753	0.883	0.170	0.232	111111	1.58	39911.8171	1	4527	4.375	0.414	0.581	0.683	0.111	0.113	111111	1.11	39929.7482	1
4295	2.364	0.028	0.028	0.037	0.016	0.005	111111	1.12	39867.9093	1	4534	2.115	0.013	0.034	0.101	0.040	-0.004	111111	1.11	39827.0408	1
4295	2.401	0.002	0.024	-0.011	0.039	-0.060	111111	1.10	39964.6651	1	4534	2.103	0.057	0.073	0.050	0.061	0.053	111111	1.48	39831.9531	1
4295	2.389	-0.008	0.003	0.005	0.001	-0.010	111111	1.11	39992.6596	1	4534	2.103	0.032	0.076	0.089	0.038	0.066	111111	1.07	39832.0522	1
4295	2.353	-0.009	-0.007	0.021	0.000	-0.014	111111	1.12	39993.6612	1	4534	2.114	0.022	0.063	0.068	0.080	0.006	111111	1.12	39836.0147	1
4295	2.352	-0.043	-0.025	-0.010	0.000	-0.003	111111	1.16	39999.6722	1	4534	2.134	0.044	0.073	0.105	0.025	0.053	111111	1.09	39837.0232	1
4299	4.395	1.024	1.448	1.647	0.316	0.309	111111	1.25	39867.9181	1	4534	2.095	0.025	0.056	0.081	0.036	0.037	111111	1.08	39867.9455	1
4299	4.335	0.955	1.403	1.631	0.323	0.332	111111	1.24	39909.8112	1	4534	2.126	0.027	0.065	0.090	0.016	0.043	111111	1.35	39873.8557	1
4300	4.378	-0.031	-0.005	0.018	0.033	-0.053	111111	1.07	39832.0023	1	4534	2.104	0.060	0.096	0.121	0.032	0.016	111111	1.10	39874.9144	1
4300	4.429	0.034	0.056	0.049	0.029	-0.023	111111	1.04	39877.8960	1	4534	2.100	0.058	0.088	0.110	0.040	0.001	111111	1.21	39875.8779	3
4301	1.538	0.557	0.805	0.948	0.162	0.201	111111	1.17	39832.0101	1	4534	2.140	0.051	0.082	0.090	0.037	0.026	111111	1.07	39877.9270	1
4301	1.538	0.536	0.793	0.912	0.198	0.173	111111	1.15	39877.9039	1	4534	2.116	0.047	0.078	0.096	0.025	0.041	111111	1.20	39878.8715	1
4310	4.508	0.208	0.306	0.350	0.021	0.089	111111	1.13	39832.0180	1	4534	2.122	0.048	0.083	0.105	0.036	0.037	111111	1.06	39878.9310	1
4310	4.545	0.226	0.321	0.350	0.049	0.087	111111	1.11	39877.9115	1	4534	2.127	-0.018	0.055	0.091	0.043	0.021	111111	1.22	39906.7913	1
4332	5.679	-0.008	0.051	0.067	0.078	-0.057	111111	1.46	40032.6597	1	4534	2.146	-0.019	0.016	0.061	0.026	0.022	111111	1.30	39907.7719	1
4332	5.665	0.022	0.024	0.045	0.036	-0.019	111111	1.70	40034.6778	1	4534	2.099	0.019	0.075	0.078	0.054	0.035	111111	1.04	39907.8808	1
4335	2.773	0.446	0.799	0.944	0.209	0.204	111111	1.03	39832.0268	1	4534	2.167	0.103	0.145	0.161	0.021	0.047	111111	1.05	39908.8594	1
4335	2.739	0.577	0.855	0.973	0.194	0.185	111111	1.02	39877.9191	1	4534	2.118	0.029	0.070	0.083	0.028	0.025	111111	1.14	39909.7215	1
4357	2.645	0.169	0.224	0.237	0.033	0.025	111111	1.03	39832.0343	1	4534	2.151	-0.052	-0.027	-0.008	0.045	0.089	111111	1.11	39910.8146	1
4357	2.617	0.118	0.158	0.170	0.023	0.040	111111	1.05	39906.8148	1	4534	2.115	0.036	0.065	0.068	0.044	0.021	111111	1.11	39910.8146	1
4357	2.562	0.092	0.138	0.125	0.044	-0.019	111111	1.03	39964.6762	1	4534	2.120	0.022	0.053	0.075	0.019	-0.015	111111	1.30	39911.7598	1
4359	3.417	0.069	0.056	0.084	0.019	0.041	111111	1.07	39867.9270	1	4534	2.131	0.075	0.092	0.096	0.031	0.011	111111	1.39	39930.6935	1
4359	3.477	0.057	0.067	0.096	0.024	-0.026	111111	1.06	39906.8232	1	4534	2.130	0.044	0.073	0.077	0.039	0.029	111111	1.07	39930.7835	1
4362	4.322	1.332	1.924	2.168	0.401	0.344	111111	1.02	39867.9364	1	4534	2.125	0.019	0.053	0.063	0.015	0.018	111111	1.05	39936.7791	1
4362	4.378	1.374	1.945	2.199	0.404	0.300	111111	1.02	39906.8315	1	4534	2.096	0.022	0.047	0.068	0.013	0.012	111111	1.69	39936.9577	1
4362	4.268	1.300	1.880	2.100	0.394	0.270	111111	1.01	39964.7025	1	4534	2.133	0.034	0.062	0.076	0.029	-0.014	111111	1.04	39938.7955	1
4368	4.396	0.119	0.187	0.239	0.042	0.080	111111	1.44	39873.8652	1	4534	2.143	0.029	0.070	0.083	0.028	0.025	111111	1.14	39939.7215	1
4368	4.395	0.115	0.205	0.238	0.062	0.091	111111	1.35	39907.7906	1	4534	2.100	-0.026	0.000	0.016	0.050	0.043	011111	1.15	39940.7178	1
4371	4.801	0.955	1.380	1.603	0.254	0.310	111111	1.30	39873.8733	1	4534	2.113	0.048	0.053	0.062	0.013	0.026	111111	1.05	39941.7749	1
4371	4.780	0.914	1.																		

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
4550	6.180	0.453	0.641	0.755	0.132	0.153	1.11111	1.00	39938.8042	1	4905	1.745	-0.019	-0.006	0.000	0.010	-0.005	1.11111	1.09	39992.6925	1
4550	6.239	0.529	0.706	0.805	0.126	0.195	1.11111	1.02	39939.7552	1	4905	1.734	-0.003	-0.006	0.022	0.008	-0.013	1.11111	1.09	39993.7001	1
4550	0.000	0.545	0.753	0.858	0.118	0.117	0.11111	1.06	39940.7262	1	4910	3.179	1.414	2.023	2.271	0.403	0.331	1.11111	1.16	39868.0021	1
4550	0.000	0.474	0.660	0.785	0.135	0.152	0.11111	1.00	39941.7833	1	4910	3.126	1.410	2.014	2.264	0.388	0.279	1.11111	1.57	39930.7410	1
4550	6.187	0.494	0.694	0.815	0.118	0.060	1.11111	1.05	39951.8232	3	4914	5.545	0.242	0.231	0.403	0.049	-0.007	1.11111	1.00	39875.0256	1
4550	6.227	0.528	0.730	0.832	0.139	0.178	1.11111	1.05	39954.8170	1	4915	2.910	-0.078	-0.129	-0.094	-0.049	-0.034	1.11111	1.12	39930.7721	1
4550	6.155	0.482	0.700	0.769	0.125	0.242	1.11111	1.00	39964.7213	1	4915	2.804	-0.050	-0.042	-0.081	-0.052	0.106	1.11111	1.00	39964.7736	1
4550	6.138	0.458	0.663	0.776	0.138	0.191	1.11111	1.00	39965.7117	1	4915	2.845	-0.153	-0.200	-0.310	0.123	0.045	1.11111	1.00	39964.7855	1
4550	6.211	0.518	0.718	0.821	0.130	0.183	1.11111	1.02	39966.6839	1	4920	4.415	1.006	1.450	1.643	0.314	0.279	1.11111	1.07	39877.9605	1
4550	6.191	0.529	0.757	0.838	0.120	0.136	1.11111	1.00	39969.7009	1	4920	4.386	0.974	1.412	1.616	0.312	0.283	1.11111	1.13	39930.7929	1
4550	6.171	0.510	0.674	0.795	0.126	0.089	1.11111	1.00	39970.6930	1	4931	4.846	0.271	0.390	0.432	0.050	0.041	1.11111	1.11	39877.9679	1
4550	6.246	0.464	0.684	0.789	0.140	0.186	1.11111	1.06	39991.7205	1	4931	4.810	0.238	0.350	0.384	0.054	0.017	1.11111	1.14	39930.8015	1
4550	6.233	0.465	0.686	0.773	0.118	0.173	1.11111	1.00	39992.6386	1	4931	4.851	0.242	0.369	0.400	0.000	0.000	1.11100	1.09	39992.7017	1
4550	6.221	0.472	0.670	0.695	0.198	0.179	1.11111	1.00	39993.6446	1	4931	4.828	0.263	0.367	0.429	0.013	0.067	1.11111	1.09	39993.7083	1
4550	6.265	0.504	0.710	0.794	0.148	0.145	1.11111	1.05	39998.6922	1	4931	4.828	0.224	0.343	0.383	0.049	0.080	1.11111	1.10	39996.7158	1
4550	6.241	0.476	0.688	0.794	0.117	0.148	1.11111	1.01	39999.6518	1	4931	4.809	0.230	0.332	0.381	0.065	0.069	1.11111	1.15	39999.7530	1
4550	6.245	0.453	0.691	0.804	0.127	0.123	1.11111	1.01	40000.6489	1	4932	2.616	0.463	0.683	0.768	0.000	0.000	1.11100	1.09	39877.9766	1
4550	6.270	0.503	0.718	0.821	0.146	0.118	1.11111	1.01	40003.6428	1	4932	2.658	0.531	0.736	0.844	0.125	0.190	1.11111	1.10	39908.8870	1
4550	6.276	0.490	0.714	0.822	0.143	0.118	1.11111	1.03	40004.6617	1	4932	2.598	0.451	0.663	0.780	0.150	0.152	1.11111	1.13	39939.7887	1
4554	2.432	-0.007	0.031	0.037	0.019	-0.001	1.11111	1.11	39878.9068	1	4954	4.431	0.829	1.190	1.386	0.281	0.270	1.11111	1.03	39878.9655	1
4554	2.462	0.017	0.029	0.052	0.018	-0.016	1.11111	1.24	39930.7051	1	4954	4.489	0.895	1.251	1.440	0.264	0.224	1.11111	1.13	39939.7929	1
4554	2.436	-0.013	-0.045	0.010	0.011	-0.042	1.11111	1.07	39992.6671	1	4963	4.341	0.004	0.003	0.012	0.041	0.011	1.11111	1.31	39878.9731	1
4554	2.422	0.016	-0.015	0.064	0.000	-0.041	1.11111	1.07	39993.6707	1	4963	4.408	0.052	0.055	0.099	0.005	0.046	1.11111	1.28	39908.9058	1
4554	2.425	-0.005	0.002	0.016	0.005	-0.006	1.11111	1.10	39999.8828	1	4983	4.077	0.348	0.488	0.543	0.067	0.085	1.11111	1.01	39624.7404	3
4562	6.588	0.532	0.784	0.916	0.182	0.178	1.11111	1.01	40004.6504	1	4983	4.110	0.347	0.491	0.567	0.070	0.079	1.11111	1.02	39625.7528	3
4589	4.600	0.079	0.115	0.150	0.058	0.000	1.11111	1.17	39878.9143	1	4983	4.092	0.336	0.500	0.575	0.067	0.098	1.11111	1.04	39939.7961	1
4589	4.623	0.072	0.107	0.141	0.078	0.024	1.11111	1.16	39910.8300	1	4983	4.071	0.279	0.443	0.506	0.071	0.167	1.11111	1.01	39951.8433	3
4608	3.874	0.501	0.728	0.841	0.166	0.180	1.11111	1.13	39910.8373	1	4983	3.999	0.258	0.432	0.453	0.104	0.164	1.11111	1.00	39964.7983	1
4608	3.902	0.500	0.725	0.843	0.142	0.134	1.11111	1.09	39989.6512	1	5017	4.673	0.228	0.298	0.331	0.055	0.097	1.11111	1.01	39908.9239	1
4660	3.253	0.009	0.046	0.109	0.007	-0.010	1.11111	1.10	39906.8744	1	5017	4.626	0.164	0.242	0.291	0.035	0.042	1.11111	1.04	39939.8037	1
4660	3.294	0.027	0.053	0.078	0.017	-0.006	1.11111	1.12	39939.7641	1	5017	4.607	0.114	0.168	0.228	0.065	0.093	1.11111	1.17	40030.7135	1
4660	3.335	0.068	0.103	0.126	0.020	-0.038	1.11111	1.10	39992.6749	1	5017	4.648	0.162	0.223	0.247	0.076	0.062	1.11111	1.13	40031.6961	1
4660	3.281	-0.047	0.083	0.111	0.009	-0.016	1.11111	1.10	39993.6824	1	5017	4.620	0.139	0.218	0.246	0.051	0.065	1.11111	1.10	40032.6833	1
4660	3.296	0.030	0.054	0.080	0.018	-0.001	1.11111	1.13	39999.7029	1	5017	4.618	0.141	0.204	0.232	0.059	0.071	1.11111	1.19	40034.7083	1
4662	2.564	-0.040	-0.049	-0.028	0.000	0.000	1.11100	1.54	39906.8933	1	5019	4.594	0.465	0.658	0.710	0.089	0.172	1.11111	1.57	39908.9323	1
4662	2.593	-0.062	-0.073	-0.068	-0.040	0.007	1.11111	1.60	39939.7715	1	5054	2.098	0.027	0.051	0.069	0.009	0.018	1.11111	1.10	39868.0137	1
4662	0.000	0.081	0.057	0.033	-0.094	0.071	0.11111	1.64	39955.8182	3	5054	2.043	-0.014	0.020	0.029	0.032	-0.042	1.11111	1.09	39942.7461	1
4686	6.283	0.245	0.368	0.398	0.008	0.261	1.11111	1.79	40028.6992	1	5054	2.016	0.027	0.032	0.055	-0.001	-0.015	1.11111	1.08	39993.7208	1
4689	3.874	-0.003	0.013	0.032	0.029	0.053	1.11111	1.20	39939.7808	1	5056	1.037	-0.119	-0.170	-0.212	-0.123	-0.024	1.11111	1.56	39930.8101	1
4689	3.827	-0.061	-0.041	-0.046	0.052	0.090	1.11111	1.17	39964.7411	1	5056	1.124	-0.048	-0.090	-0.146	-0.126	-0.125	1.11111	1.39	39964.8196	1
4695	4.657	0.611	0.877	1.015	0.230	0.226	1.11111	1.19	39910.8442	1	5062	0.000	0.091	0.157	0.162	0.033	0.004	0.11111	1.13	39941.7909	1
4695	4.687	0.576	0.846	1.004	0.227	0.249	1.11111	1.21	39991.7314	1	5062	3.964	0.160	0.213	0.184	0.084	0.032	1.11111	1.09	39964.8288	1
4697	4.473	0.540	0.772	0.887	0.185	0.107	1.11111	1.06	39910.8520	1	5062	3.958	0.104	0.143	0.156	0.049	0.045	1.11111	1.17	39999.7826	1
4697	4.531	0.524	0.770	0.904	0.186	0.232	1.11111	1.11	39991.7413	1	5062	3.989	0.080	0.140	0.156	0.037	0.041	1.11111	1.12	40000.7514	1
4707	4.651	0.343	0.506	0.582	0.121	0.113	1.11111	1.02	39910.8593	1	5068	4.465	0.526	0.746	0.871	0.178	0.211	1.11111	1.67	39930.8186	1
4707	4.678	0.316	0.481	0.569	0.130	0.165	1.11111	1.00	39991.7513	1	5068	4.548	0.514	0.701	0.760	0.238	0.257	1.11111	1.57	39964.8373	1
4716	4.528	0.446	0.650	0.748	0.149	0.132	1.11111	1.07	39910.8665	1	5072	4.778	0.437	0.601	0.697	0.107	0.124	1.11111	1.12	39930.8269	1
4716	4.583	0.441	0.654	0.757	0.173	0.209	1.11111	1.14	39991.7610	1	5072	4.718	0.410	0.602	0.674	0.079	0.150	1.11111	1.14	39965.7215	1
4737	4.046	0.532	0.797	0.900	0.204	0.199	1.11111	1.03	39878.9406	1	5095	4.360	1.192	1.727	1.974	0.352	0.284	1.11111	1.45	39936.7968	1
4737	4.051	0.516	0.751	0.882	0.196	0.172	1.11111	1.00	39910.8804	1	5095	4.295	1.110	1.638	1.866	0.342	0.303	1.11111	1.39	39965.7303	1
4757	2.949	-0.007	-0.019	-0.019	0.002	-0.016	1.11111	1.57	39878.9482	1	5105	4.896	0.004	0.007	0.004	0.039	0.020	1.11111	1.25	39936.8045	1
4757	2.971	-0.026	-0.046	-0.056	0.029	0.002	1.11111	1.51	39910.8904	1	5105	4.843	-0.061	-0.012	-0.016	0.017	-0.027	1.11111	1.20	39965.7392	1
4775	4.184	0.268	0.371	0.389	0.050	0.121	1.11111	1.54	39878.9560	1	5105	4.888	-0.048	-0.054	-0.053	0.035	0.055	1.11111	1.18		

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
5226	4.347	1.441	2.064	2.349	0.389	0.317	111111	1.21	39874.0062	1	5531	2.705	0.097	0.127	0.146	0.053	0.057	111111	1.54	39930.9088	1
5226	0.000	1.433	2.057	2.313	0.399	0.298	011111	1.19	39941.8377	1	5531	2.734	0.079	0.117	0.133	0.033	0.048	111111	1.58	39966.7989	1
5226	4.363	1.451	2.066	2.327	0.412	0.234	111111	1.23	39969.7269	1	5532	5.810	0.043	0.056	0.072	0.067	-0.029	111111	1.06	40031.7314	1
5235	2.515	0.306	0.464	0.524	0.073	0.102	111111	1.03	39625.7648	3	5532	5.759	0.002	0.024	0.052	0.086	-0.048	111111	1.05	40032.7223	1
5235	2.516	0.316	0.482	0.535	0.033	0.190	111111	1.04	39879.0131	1	5532	5.787	0.044	0.043	0.057	0.059	0.029	111111	1.13	40034.7506	1
5235	2.534	0.332	0.493	0.545	0.075	0.097	111111	1.11	39930.8356	1	5544	4.334	0.475	0.674	0.749	0.122	0.167	111111	1.08	39910.9431	1
5264	4.240	0.092	0.126	0.162	0.062	0.020	111111	1.26	39877.9886	1	5544	4.288	0.434	0.632	0.726	0.105	0.118	111111	1.17	39989.6930	1
5264	4.236	0.090	0.116	0.143	0.068	0.109	111111	1.26	39930.8442	1	5563	1.670	0.753	1.099	1.263	0.253	0.216	111111	1.36	39910.9507	1
5291	3.666	-0.012	0.011	0.008	0.004	-0.014	111111	1.21	39878.0008	1	5563	1.684	0.759	1.116	1.278	0.280	0.200	111111	1.34	39992.7753	1
5291	3.658	-0.047	-0.071	0.008	0.038	-0.013	111111	1.20	39907.9228	1	5570	4.371	0.195	0.283	0.324	0.035	0.058	111111	1.29	39910.9583	1
5291	3.616	-0.103	-0.114	-0.111	-0.048	0.000	111110	1.29	39966.7088	1	5570	4.405	0.197	0.288	0.304	0.051	0.141	111111	1.24	39992.7878	1
5299	5.021	1.923	2.645	2.954	0.560	0.325	111111	1.19	39664.7558	1	5586	4.480	0.003	0.050	0.073	0.015	0.077	111111	1.36	39910.9653	1
5299	5.246	2.023	2.811	3.131	0.575	0.338	111111	1.05	39878.0098	1	5586	4.907	0.109	0.114	0.103	0.282	-0.322	111111	1.33	39993.7562	1
5299	5.184	1.969	2.774	3.103	0.578	0.325	111111	1.04	39907.9325	1	5589	4.512	1.919	2.703	3.017	0.564	0.326	111111	1.20	39910.9752	1
5299	6.133	1.960	2.729	3.102	0.579	0.327	111111	1.25	39944.7507	1	5589	4.567	1.969	2.751	3.073	0.557	0.336	111111	1.20	39992.9768	1
5304	4.626	0.288	0.439	0.500	0.088	0.101	111111	1.03	39878.0176	1	5600	4.479	0.865	1.215	1.376	0.276	0.248	111111	1.01	39906.9982	1
5304	4.640	0.291	0.474	0.507	0.094	0.127	111111	1.03	39907.9407	1	5600	4.427	0.825	1.208	1.382	0.283	0.231	111111	1.11	39938.8512	1
5313	4.988	-0.054	-0.077	-0.089	-0.047	-0.078	111111	1.18	39878.0265	1	5601	4.111	0.516	0.787	0.910	0.191	0.166	111111	1.20	39907.9692	1
5313	5.065	-0.051	-0.034	-0.051	-0.043	0.056	111111	1.17	39907.9494	1	5601	4.146	0.546	0.809	0.942	0.183	0.175	111111	1.28	39938.6587	1
5313	4.915	-0.049	-0.080	-0.083	-0.066	0.090	111111	1.36	39970.7163	1	5602	3.250	0.469	0.717	0.829	0.147	0.137	111111	1.02	39907.9796	1
5315	3.828	0.724	1.033	1.180	0.248	0.268	111111	1.40	39879.0203	1	5602	3.272	0.495	0.715	0.833	0.147	0.124	111111	1.06	39938.8674	1
5315	3.801	0.694	1.020	1.172	0.272	0.253	111111	1.37	39907.9583	1	5616	4.195	0.633	0.920	1.081	0.225	0.195	111111	1.05	39938.8749	1
5328	4.288	0.144	0.199	0.256	0.035	0.066	111111	1.07	39906.9505	1	5616	4.101	0.540	0.832	0.969	0.228	0.291	111111	1.00	39965.8624	1
5328	4.323	0.157	0.209	0.212	-0.054	0.050	111111	1.29	39946.7421	3	5634	4.832	0.292	0.421	0.487	0.051	0.049	111111	1.05	39938.8824	1
5338	3.896	0.342	0.474	0.551	0.055	0.087	111111	1.29	39906.9596	1	5634	4.734	0.299	0.411	0.460	0.033	0.032	111111	1.01	39965.8724	1
5338	3.926	0.342	0.467	0.554	0.070	0.123	111111	1.80	39946.7548	3	5652	4.523	-0.048	-0.056	-0.074	-0.028	0.007	111111	1.64	39910.9914	1
5340	-0.368	0.683	0.983	1.133	0.234	0.198	111111	1.04	39622.7348	1	5652	4.573	0.001	-0.025	0.011	-0.070	-0.065	111111	2.10	39989.7010	1
5340	-0.387	0.658	0.963	1.120	0.253	0.216	111111	1.02	39622.7643	1	5652	4.548	-0.027	-0.056	-0.040	-0.026	0.029	111111	1.63	39993.7665	1
5340	-0.407	0.697	0.978	1.116	0.222	0.197	111111	1.08	39624.7750	3	5681	3.236	0.499	0.766	0.890	0.173	0.159	111111	1.01	39907.9862	1
5340	-0.296	0.709	1.022	1.194	0.277	0.233	111111	1.05	39624.8013	3	5681	3.258	0.540	0.778	0.901	0.152	0.155	111111	1.03	39938.8894	1
5340	-0.389	0.689	0.976	1.121	0.226	0.199	111111	1.03	39625.7755	3	5685	2.645	-0.043	-0.057	-0.045	-0.021	-0.023	111111	1.36	39622.7766	1
5340	-0.385	0.691	0.978	1.122	0.247	0.196	111111	1.15	39664.7317	1	5685	2.659	-0.036	-0.059	-0.035	-0.013	-0.031	111111	1.37	39624.8362	3
5340	-0.379	0.643	0.967	1.135	0.273	0.241	111111	1.19	39664.7431	1	5685	2.651	-0.046	-0.054	-0.039	-0.030	-0.036	111111	1.33	39625.7870	3
5340	-0.405	0.630	0.926	1.114	0.246	0.165	111111	1.07	39673.6749	1	5685	2.641	-0.051	-0.074	-0.066	-0.040	-0.017	111111	1.52	39664.7697	1
5340	-0.396	0.673	0.955	1.104	0.255	0.182	111111	1.05	39674.6596	1	5685	2.613	-0.087	-0.075	-0.071	-0.062	-0.019	111111	1.83	39720.6522	1
5340	-0.451	0.688	1.012	1.139	0.249	0.203	111111	1.22	39711.6230	1	5685	2.647	-0.051	-0.036	-0.026	-0.037	-0.063	111111	2.61	39748.6172	3
5340	-0.374	0.713	0.994	1.140	0.230	0.230	111111	1.03	39906.9687	1	5685	2.644	-0.046	-0.047	-0.032	-0.043	-0.012	111111	1.52	39879.0283	1
5340	-0.388	0.712	0.993	1.143	0.235	0.207	111111	1.21	39946.7769	3	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5350	4.676	0.169	0.235	0.260	0.001	-0.064	111111	1.05	39906.9794	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5350	4.739	0.154	0.205	0.229	0.007	0.022	111111	1.15	39989.6703	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5351	4.231	0.105	0.116	0.138	0.022	0.037	111111	1.02	39986.8883	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5351	4.177	0.099	0.116	0.151	0.042	0.019	111111	1.07	39946.8199	3	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5359	4.503	0.059	0.108	0.131	0.040	0.022	111111	1.60	39930.8529	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5359	4.407	-0.032	0.021	0.026	0.034	0.183	111111	1.73	39970.7239	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5361	4.551	0.540	0.763	0.894	0.175	0.195	111111	1.04	39930.8630	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5361	4.458	0.412	0.678	0.761	0.215	0.267	111111	1.01	39964.8636	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5370	4.524	0.580	0.839	0.981	0.218	0.202	111111	1.08	39930.8722	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5370	4.634	0.564	0.855	0.985	0.254	0.184	111111	1.07	39964.8727	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5384	6.087	0.408	0.601	0.661	0.094	0.077	111111	1.31	39936.8318	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5384	6.023	0.383	0.554	0.629	0.068	0.166	111111	1.22	39936.7782	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5404	3.900	0.298	0.447	0.513	0.051	0.065	111111	1.12	39936.8398	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5404	3.852	0.235	0.363	0.422	0.050	0.146	111111	1.08	39965.7871	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5409	4.613	0.398	0.575	0.653	0.098	0.134	111111	1.31	39936.8481	1	5685	2.634	-0.042	-0.057	-0.019	-0.055	0.013	111111	1.67	39906.9312	1
5409	4.553	0.401	0.574	0.647	0.095	0.1															

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
5747	3.596	0.068	0.125	0.142	0.045	0.053	1.1111	1.13	39911.9316	1	5901	4.544	0.522	0.764	0.883	0.167	0.176	1.1111	1.05	39939.8996	1
5747	3.508	0.011	0.053	0.055	0.033	0.143	1.1111	1.00	39965.8796	1	5901	4.509	0.475	0.710	0.833	0.152	0.127	1.1111	1.36	39970.7317	1
5763	4.639	0.907	1.332	1.523	0.315	0.232	1.1111	1.10	39911.9420	1	5902	5.009	0.022	0.032	0.047	-0.033	0.040	1.1111	1.77	39939.9079	1
5763	4.627	0.926	1.323	1.512	0.327	0.258	1.1111	1.01	39965.8870	1	5902	4.924	0.009	0.031	0.026	-0.003	-0.022	1.1111	1.88	39970.8056	1
5764	5.521	-0.059	-0.103	-0.133	-0.102	-0.008	1.1111	1.64	39930.9182	1	5903	4.371	0.133	0.176	0.189	0.037	0.014	1.1111	1.43	39939.9192	1
5764	5.505	-0.043	-0.104	-0.076	-0.088	-0.122	1.1111	1.69	39966.8107	1	5903	4.219	0.017	0.047	0.082	0.029	0.029	1.1111	1.48	39970.7815	1
5774	4.967	0.053	0.095	0.137	0.060	0.053	1.1111	1.08	39911.9525	1	5908	0.000	0.543	0.778	0.904	0.168	0.184	1.1111	2.10	39941.8487	1
5774	4.875	0.078	0.116	0.128	0.077	-0.016	1.1111	1.01	39965.8968	1	5908	3.855	0.514	0.749	0.876	0.194	0.192	1.1111	1.56	39970.8456	1
5777	4.343	0.540	0.751	0.881	0.177	0.212	1.1111	1.41	39930.9285	1	5908	3.834	0.557	0.765	0.888	0.158	0.216	1.1111	1.58	39933.7738	1
5777	4.264	0.447	0.665	0.782	0.181	0.291	1.1111	1.38	39969.9125	1	5914	4.491	0.390	0.536	0.593	0.109	0.146	1.1111	1.47	39748.6510	3
5778	4.192	-0.023	-0.058	-0.076	-0.035	0.010	1.1111	1.01	39930.9377	1	5914	0.000	0.390	0.558	0.617	0.093	0.106	1.1111	1.03	39941.9940	1
5778	4.099	-0.148	-0.178	-0.194	-0.025	0.061	1.1111	1.01	39965.9044	1	5914	4.374	0.285	0.456	0.531	0.065	0.155	1.1111	1.27	39970.7474	1
5780	5.162	-0.020	-0.038	-0.081	-0.025	0.000	1.1111	1.35	39910.9483	1	5915	0.000	0.074	0.052	0.041	0.039	0.176	0.1111	2.14	39941.8569	1
5780	5.100	-0.021	-0.040	-0.058	-0.029	-0.020	1.1111	1.33	39965.9212	1	5915	5.888	0.081	0.046	0.074	0.003	-0.008	1.1111	1.63	39970.8540	1
5787	3.636	0.535	0.765	0.889	0.183	0.232	1.1111	1.47	39930.9589	1	5915	5.975	0.094	0.097	0.137	-0.104	0.136	1.1111	1.65	39993.7820	1
5787	3.682	0.543	0.777	0.909	0.166	0.187	1.1111	1.57	39966.8213	1	5933	0.000	0.332	0.472	0.527	0.057	0.077	0.1111	1.13	39941.8907	1
5788	3.719	0.155	0.213	0.262	0.045	0.082	1.1111	1.07	39930.9672	1	5933	3.713	0.311	0.455	0.511	0.048	0.093	1.1111	1.39	39970.7551	1
5788	3.613	0.062	0.114	0.154	0.057	0.135	1.1111	1.13	39965.9329	1	5933	3.694	0.332	0.000	0.530	0.047	0.043	1.1011	1.05	39993.7908	1
5793	2.242	0.008	0.003	0.017	0.032	0.014	1.1111	1.00	39930.9812	1	5941	0.000	-0.029	-0.020	0.046	-0.002	-0.021	0.1111	1.58	39941.8998	1
5793	2.248	-0.023	-0.011	0.005	0.013	-0.025	1.1111	1.31	39966.7471	1	5941	4.883	-0.008	0.004	0.060	0.000	-0.004	0.1111	1.46	39970.7372	1
5830	4.318	0.950	1.351	1.550	0.330	0.335	1.1111	1.62	39930.9900	1	5941	4.889	-0.006	0.007	0.066	-0.043	-0.004	0.1111	1.46	39993.7994	1
5830	4.389	0.959	1.381	1.577	0.323	0.266	1.1111	1.73	39966.8305	1	5947	3.848	0.644	0.920	1.065	0.229	0.191	1.1111	1.03	39622.7924	1
5842	4.485	0.008	0.034	0.045	0.035	0.024	1.1111	1.16	39936.8763	1	5947	3.877	0.636	0.920	1.069	0.239	0.195	1.1111	1.05	39624.8867	3
5842	4.449	0.040	0.040	0.058	0.016	0.063	1.1111	1.33	39966.7576	1	5947	3.816	0.616	0.890	1.037	0.216	0.178	1.1111	1.00	39625.8279	3
5849	3.789	-0.007	0.003	0.006	0.030	-0.010	1.1111	1.10	39936.8845	1	5947	3.828	0.624	0.923	1.035	0.240	0.210	1.1111	1.10	39664.7891	1
5849	3.760	-0.069	-0.066	-0.077	0.022	0.058	1.1111	1.25	39966.7652	1	5947	3.834	0.635	0.923	1.069	0.217	0.202	1.1111	1.00	39674.6750	1
5854	2.391	0.553	0.802	0.932	0.208	0.197	1.1111	1.12	39624.8486	3	5947	3.849	0.639	0.912	1.051	0.235	0.194	1.1111	1.01	39674.7522	1
5854	2.334	0.531	0.790	0.923	0.200	0.196	1.1111	1.11	39625.8026	3	5947	3.917	0.620	0.870	0.900	0.000	0.202	1.1101	1.03	39711.6350	1
5854	2.319	0.535	0.788	0.920	0.209	0.189	1.1111	1.29	39664.7774	1	5947	3.828	0.624	0.923	1.035	0.240	0.210	1.1111	1.10	39664.7891	1
5854	2.314	0.528	0.772	0.903	0.206	0.178	1.1111	1.27	39720.6418	1	5947	3.834	0.635	0.923	1.069	0.217	0.202	1.1111	1.00	39674.6750	1
5854	2.341	0.542	0.798	0.942	0.196	0.175	1.1111	1.54	39742.6239	3	5947	3.849	0.639	0.912	1.051	0.235	0.194	1.1111	1.01	39674.7522	1
5854	2.329	0.543	0.748	0.887	0.204	0.232	1.1111	1.74	39748.6266	3	5947	0.000	0.000	0.882	1.036	0.228	0.224	0.0111	1.08	39911.9708	1
5854	2.371	0.589	0.849	1.065	0.048	0.247	1.1111	1.83	39769.5757	1	5947	3.821	0.634	0.907	1.051	0.239	0.200	1.1111	1.12	39714.6697	1
5854	2.364	0.575	0.828	0.948	0.189	0.207	1.1111	2.14	39770.5905	3	5947	3.808	0.587	0.890	1.034	0.237	0.187	1.1111	1.16	39742.6046	3
5854	2.329	0.556	0.810	0.952	0.179	0.220	1.1111	1.24	39826.0480	1	5947	3.815	0.602	0.883	1.023	0.235	0.216	1.1111	1.43	39748.6373	3
5854	2.314	0.551	0.806	0.938	0.199	0.216	1.1111	1.28	39879.0368	1	5947	3.799	0.628	0.811	1.002	0.223	0.241	1.1111	1.47	39769.5850	1
5854	2.311	0.555	0.810	0.939	0.187	0.200	1.1111	1.39	39906.9396	1	5947	3.768	0.564	0.770	0.993	0.210	0.159	1.1111	1.66	39770.6105	1
5854	2.333	0.548	0.799	0.936	0.188	0.187	1.1111	1.35	39910.9356	1	5947	3.975	0.674	0.955	1.084	0.183	0.202	1.1111	1.27	39868.0399	1
5854	2.334	0.546	0.796	0.934	0.193	0.193	1.1111	1.46	39911.9166	1	5947	4.116	0.538	0.813	1.012	0.241	0.223	1.1111	1.01	39907.0258	1
5854	2.336	0.560	0.815	0.949	0.212	0.194	1.1111	1.30	39920.8907	1	5947	3.831	0.618	0.887	1.038	0.229	0.223	1.1111	1.01	39911.0179	1
5854	2.324	0.549	0.793	0.927	0.219	0.206	1.1111	1.11	39930.9987	1	5947	0.000	0.000	0.882	1.036	0.228	0.224	0.0111	1.08	39911.9708	1
5854	2.335	0.549	0.812	0.952	0.195	0.180	1.1111	1.19	39936.9028	1	5947	3.821	0.558	0.853	1.044	0.230	0.222	1.1111	1.00	39931.0074	1
5854	2.350	0.557	0.828	0.966	0.195	0.174	1.1111	1.17	39938.9042	1	5947	3.858	0.640	0.914	1.061	0.219	0.175	1.1111	1.03	39951.8855	3
5854	2.313	0.534	0.803	0.944	0.187	0.212	1.1111	1.20	39939.8916	1	5947	3.837	0.613	0.908	1.057	0.211	0.184	1.1111	1.31	39954.7964	1
5854	0.000	0.538	0.794	0.943	0.189	0.198	0.1111	1.24	39941.8752	1	5947	3.860	0.638	0.918	1.071	0.222	0.168	1.1111	1.05	39954.8660	1
5854	2.343	0.578	0.827	0.971	0.198	0.208	1.1111	1.34	39946.8382	3	5947	3.788	0.552	0.832	0.980	0.215	0.253	1.1111	1.00	39954.9078	1
5854	2.368	0.574	0.829	0.978	0.193	0.171	1.1111	1.81	39951.7736	3	5947	3.813	0.635	0.912	1.035	0.254	0.201	1.1111	1.00	39964.9141	1
5854	2.362	0.565	0.817	0.955	0.195	0.175	1.1111	1.18	39951.8668	3	5947	3.842	0.653	0.911	1.059	0.218	0.204	1.1111	1.03	39965.9412	1
5854	2.362	0.566	0.810	0.956	0.189	0.184	1.1111	1.11	39951.9303	3	5947	3.851	0.629	0.892	1.046	0.211	0.214	1.1111	1.00	39966.8867	1
5854	2.351	0.533	0.797	0.935	0.212	0.163	1.1111	1.75	39954.7698	1	5947	3.870	0.660	0.946	1.101	0.197	0.165	1.1111	1.10	39969.8061	1
5854	2.357	0.550	0.810	0.958	0.193	0.168	1.1111	1.24	39954.8378	1	5947	3.818	0.644	0.910	1.058	0.224	0.171	1.1111	1.00	39969.8869	1
5854	2.372	0.555	0.805	0.946	0.205	0.178	1.1111	1.12	39954.8912	1	5947	3.834	0.632	0.905	1.059	0.201	0.183	1.1111	1.12	39970.7972	1
5854	2.371	0.564	0.817	0.941	0.209	0.196	1.1111	1.12	39965.8565	1	5947	3.849	0.653	0.920	1.075	0.213	0.251	1.1111	1.35	39971.7430	3
5854	2.348	0.537	0.790	0.923	0.202	0.179	1.1111														

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	
6027	3.967	0.074	0.116	0.153	0.037	0.047	111111	1.71	39938.9308	1	6220	3.204	0.000	0.665	0.805	0.167	0.125	101111	1.05	39673.7819	1	
6027	3.965	0.088	0.125	0.000	0.000	0.087	111001	1.62	39970.8711	1	6220	3.248	0.491	0.711	0.815	0.150	0.139	111111	1.17	39971.8038	3	
6027	3.964	0.082	0.120	0.161	-0.011	0.016	111111	1.61	39993.8165	1	6220	3.220	0.457	0.683	0.773	0.155	0.175	111111	1.06	39989.7939	1	
6031	4.866	0.044	0.049	0.084	0.016	0.146	111111	1.40	39938.9389	1	6237	4.661	0.254	0.364	0.420	0.042	0.018	111111	1.21	39971.8119	3	
6031	4.857	0.114	0.126	0.148	0.014	0.102	111111	1.47	39970.8297	1	6237	4.721	0.225	0.337	0.392	0.064	-0.012	111111	1.14	39989.8019	1	
6056	2.369	1.047	1.495	1.720	0.315	0.257	111111	1.53	39946.8587	3	6243	4.385	0.289	0.426	0.473	0.059	0.044	111111	1.57	39971.8366	3	
6056	2.379	1.050	1.497	1.713	0.333	0.239	111111	1.40	39970.8148	1	6243	4.542	0.300	0.396	0.458	0.104	0.221	111111	1.46	39989.8099	1	
6075	2.995	0.530	0.758	0.893	0.160	0.188	111111	1.67	39946.8484	3	6254	4.789	0.043	0.057	0.050	0.036	0.056	111111	1.03	39674.7028	1	
6075	2.996	0.508	0.745	0.863	0.163	0.177	111111	1.40	39970.8219	1	6254	4.715	-0.030	0.059	0.073	0.010	0.048	111111	1.60	39973.7258	1	
6084	2.832	0.142	0.213	0.260	0.033	0.158	111111	1.88	39970.8849	1	6254	4.750	-0.004	-0.016	0.021	0.004	-0.033	111111	1.05	39989.8175	1	
6084	2.808	0.153	0.222	0.282	-0.003	0.098	111111	1.88	39993.8245	1	6281	4.369	-0.021	-0.039	-0.032	-0.050	-0.023	111111	1.59	39974.7696	1	
6092	3.950	-0.059	-0.095	-0.136	-0.071	-0.032	111111	1.02	39625.8381	3	6281	4.412	-0.046	-0.073	-0.084	0.008	-0.102	111111	1.11	39989.8249	1	
6092	3.948	-0.066	-0.101	-0.129	-0.072	-0.027	111111	1.08	39664.8007	1	6299	2.934	0.582	0.818	0.956	0.185	0.170	111111	1.55	39974.7775	1	
6092	3.936	-0.089	-0.106	-0.145	-0.060	-0.025	111111	1.03	39674.6877	1	6315	4.698	0.201	0.438	0.468	0.105	0.063	111111	1.55	39973.7366	1	
6092	3.953	-0.061	-0.103	-0.124	-0.075	-0.017	111111	1.09	39674.7808	1	6322	3.962	0.456	0.665	0.777	0.139	0.159	111111	1.54	39974.8935	1	
6092	3.936	-0.044	-0.090	-0.127	-0.060	-0.033	111111	2.24	39770.6799	3	6322	4.004	0.490	0.702	0.808	0.143	0.100	111111	1.46	39989.8238	1	
6092	0.000	-0.144	-0.101	-0.116	-0.025	-0.036	011111	1.04	39907.0343	1	6324	3.921	-0.017	-0.008	-0.007	0.004	-0.015	111111	1.00	39674.7250	1	
6092	3.927	-0.084	-0.108	-0.122	-0.077	-0.027	111111	1.04	39911.0258	1	6324	3.888	0.027	0.021	0.021	-0.014	-0.004	111111	1.61	39973.7258	1	
6092	3.933	-0.085	-0.109	-0.120	-0.070	-0.027	111111	1.05	39939.9384	1	6324	3.951	0.004	-0.002	0.003	0.015	0.022	111111	1.19	40006.7188	1	
6092	0.000	-0.106	-0.089	-0.137	-0.123	0.021	011111	1.06	39964.9085	3	6337	4.758	1.335	1.889	2.132	0.398	0.263	111111	1.11	39969.8733	1	
6092	3.896	-0.164	-0.168	-0.181	-0.089	0.048	111111	1.06	39951.8943	3	6337	4.699	1.318	1.881	2.109	0.384	0.262	111111	1.27	40006.7262	1	
6092	3.875	-0.075	-0.097	-0.120	-0.074	-0.062	111111	1.38	39954.7878	1	6355	4.848	0.064	0.092	0.105	0.044	-0.029	111111	1.12	39911.0336	1	
6092	3.984	-0.062	-0.072	-0.094	-0.072	0.009	111111	1.12	39954.8559	1	6355	4.901	0.044	0.097	0.111	0.041	0.040	111111	1.12	39988.8222	1	
6092	3.947	-0.065	-0.103	-0.129	-0.062	-0.058	111111	1.07	39965.9732	1	6378	2.375	0.008	0.031	0.040	0.033	0.022	111111	1.60	39911.0408	1	
6092	3.884	-0.074	-0.098	-0.116	-0.064	-0.003	111111	1.03	39966.8948	1	6378	2.425	0.019	0.040	0.052	0.012	0.051	111111	1.59	39988.8310	1	
6092	3.895	-0.129	-0.136	-0.174	-0.063	-0.005	111111	1.03	39969.8945	1	6396	3.259	-0.003	-0.020	-0.026	0.000	0.000	111100	1.21	39911.0488	1	
6092	3.939	-0.074	-0.113	0.000	-0.000	-0.034	111001	1.03	39970.8945	1	6396	3.234	-0.076	-0.077	-0.072	-0.043	-0.032	111111	1.21	39988.8417	1	
6092	3.948	-0.061	-0.081	-0.123	-0.064	-0.084	111111	1.33	39971.7509	3	6406	2.648	2.142	3.000	3.386	0.787	0.362	111111	1.31	39720.7302	1	
6092	3.948	-0.065	-0.096	-0.131	-0.064	0.017	111111	1.06	39971.8443	3	6406	2.687	2.166	3.034	3.410	0.676	0.180	111111	1.11	39723.6676	1	
6092	3.908	-0.046	-0.099	-0.129	-0.057	-0.059	111111	1.22	39972.7227	1	6406	2.853	2.253	3.155	3.545	0.755	0.402	0.022	111111	1.77	39973.7646	1
6092	3.952	-0.066	-0.094	-0.102	-0.055	-0.064	111111	1.63	39973.7021	1	6410	3.140	0.070	0.100	0.120	0.052	-0.027	111111	1.06	39969.8799	1	
6092	3.902	-0.074	-0.107	-0.137	-0.062	-0.028	111111	1.29	39974.7519	1	6415	4.433	0.577	0.802	0.951	0.193	0.187	111111	1.30	39971.8629	3	
6092	3.870	-0.065	-0.101	-0.114	-0.059	-0.047	111111	1.09	39975.8101	1	6415	4.446	0.564	0.813	0.942	0.202	0.176	111111	1.20	39988.8523	1	
6092	3.944	-0.048	-0.085	-0.101	-0.086	-0.086	111111	1.15	39989.7467	1	6418	2.781	0.686	0.997	1.163	0.275	0.236	111111	1.00	39674.7475	1	
6092	3.964	-0.080	-0.097	-0.120	-0.079	-0.016	111111	1.03	39992.8159	1	6418	2.771	0.696	1.001	1.178	0.236	0.236	111111	1.05	39971.8703	3	
6092	3.974	-0.066	-0.097	-0.126	-0.082	-0.067	111111	1.04	39993.8643	1	6418	2.784	0.679	0.989	1.156	0.259	0.238	111111	1.01	39988.8601	1	
6092	3.954	-0.082	-0.105	-0.121	-0.073	-0.049	111111	1.04	39998.8515	1	6431	4.847	-0.080	-0.102	-0.143	-0.075	-0.003	111111	1.14	39720.7194	1	
6092	3.931	-0.100	-0.120	-0.137	-0.058	-0.024	111111	1.03	39999.8372	1	6431	4.725	-0.107	-0.143	-0.161	-0.098	0.015	111111	1.04	39971.8778	3	
6092	3.925	-0.095	-0.127	-0.135	-0.088	-0.012	111111	1.03	40000.8394	1	6436	4.545	0.025	0.033	0.055	0.025	-0.006	111111	1.03	39971.8859	3	
6092	3.982	-0.065	-0.095	-0.126	-0.067	-0.041	111111	1.19	40006.8888	1	6436	4.621	0.023	0.018	0.038	0.025	0.028	111111	1.00	39988.8673	1	
6092	3.949	-0.077	-0.113	-0.142	-0.088	0.018	111111	1.19	40026.8553	1	6446	4.179	-0.023	-0.009	-0.020	0.055	0.019	111111	1.42	39974.9164	1	
6092	3.930	-0.071	-0.114	-0.136	-0.040	0.012	111111	1.21	40027.8560	1	6446	4.340	0.058	0.088	0.013	0.056	0.049	111111	1.42	39988.8748	1	
6092	3.943	-0.097	-0.116	-0.115	-0.068	0.024	111111	1.04	40028.7744	1	6484	4.181	0.018	0.016	0.040	0.021	0.023	111111	1.00	39674.7598	1	
6092	3.954	-0.078	-0.117	-0.126	-0.064	-0.006	111111	1.03	40030.7592	1	6484	4.116	0.028	0.046	0.060	0.011	0.021	111111	1.61	39973.7550	1	
6092	4.000	-0.062	-0.084	-0.088	-0.064	-0.039	111111	1.04	40031.7687	1	6484	4.189	0.004	0.024	0.027	0.042	-0.013	111111	1.01	39992.8533	1	
6092	3.944	-0.054	-0.079	-0.134	-0.067	0.005	111111	1.11	40034.8033	1	6493	4.407	0.278	0.357	0.381	0.049	0.179	111111	1.26	39974.9437	1	
6093	4.691	0.222	0.302	0.358	0.048	0.124	111111	1.37	39946.8749	3	6493	4.402	0.192	0.278	0.396	0.056	0.095	111111	1.26	39992.8646	1	
6093	4.667	0.224	0.325	0.362	0.048	0.037	111111	1.31	39969.8239	1	6498	3.931	0.729	1.039	1.237	0.295	0.247	111111	1.19	39944.9630	1	
6095	3.734	0.270	0.328	0.381	0.063	0.057	111111	1.11	39946.8926	1	6498	4.002	0.761	1.094	1.274	0.268	0.227	111111	1.81	39974.7860	1	
6095	3.683	0.176	0.269	0.303	0.063	0.007	111111	1.11	39969.8309	1	6526	4.008	0.727	1.031	1.212	0.263	0.233	111111	1.03	39944.9711	1	
6095	3.688	0.183	0.281	0.319	0.144	0.001	111111	1.13	40026.8242	1	6526	3.972	0.695	1.005	1.153	0.271	0.238	111111	1.58	39973.7745	1	
6103	4.664	0.473	0.682	0.778	0.193	0.163	111111	1.30	39674.8412	1	6536	2.515	0.470	0.711	0.793	0.178	0.125	111111	1.25	39720.7527	1	
6103	4.567	0.531	0.733	0.849	0.162	0.150	111111	1.05	39665.8381	1	6536	2.527	0.495	0.720	0.822	0.168	0.128	111111	1.08	39944.9787	1	
6103	4.597	0.472	0.697	0.817	0.1																	

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	L5	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	L5
6603	2.443	0.538	0.787	0.928	0.190	0.209	1.1111	1.13	39624.9160	3	6698	3.149	0.499	0.711	0.821	0.167	0.179	1.1111	1.46	39975.8903	1
6603	2.428	0.555	0.810	0.947	0.188	0.176	1.1111	1.20	39672.7133	1	6698	3.052	0.457	0.674	0.777	0.168	0.188	1.1111	1.39	39989.8745	1
6603	2.455	0.543	0.822	0.954	0.125	0.253	1.1111	1.15	39673.7374	1	6699	5.983	0.159	0.267	0.301	0.052	0.104	1.1111	1.12	40028.7469	1
6603	2.390	0.556	0.825	0.923	0.252	0.187	1.1111	1.18	39709.7175	1	6699	5.996	0.187	0.280	0.339	0.049	0.162	1.1111	1.15	40029.7277	1
6603	2.473	0.529	0.804	0.946	0.206	0.181	1.1111	1.14	39715.6753	1	6699	6.028	0.192	0.265	0.254	0.113	0.000	1.1110	1.20	40030.7004	1
6603	2.450	0.559	0.809	0.942	0.188	0.198	1.1111	1.19	39727.6729	1	6703	3.457	0.487	0.706	0.805	0.157	0.153	1.1111	1.16	39745.6815	1
6603	2.448	0.552	0.806	0.935	0.196	0.197	1.1111	1.32	39742.7881	3	6703	3.490	0.495	0.708	0.829	0.124	0.126	1.1111	1.50	39974.7956	1
6603	2.464	0.557	0.819	0.956	0.194	0.212	1.1111	1.31	39745.6585	1	6705	1.855	0.817	1.202	1.388	0.296	0.248	1.1111	1.16	39720.7423	1
6603	2.412	0.537	0.775	0.913	0.206	0.200	1.1111	1.61	39747.4694	1	6705	1.852	0.847	1.224	1.402	0.294	0.261	1.1111	1.21	39745.6913	1
6603	2.497	0.609	0.802	0.928	0.206	0.187	1.1111	1.25	39749.6342	1	6705	1.977	0.922	1.314	1.494	0.312	0.200	1.1111	1.07	39970.0011	1
6603	2.439	0.563	0.836	0.973	0.181	0.182	1.1111	1.18	39751.6039	1	6707	4.269	0.270	0.398	0.470	0.081	0.121	1.1111	1.00	39744.7708	1
6603	2.471	0.573	0.818	0.960	0.203	0.180	1.1111	1.32	39757.6278	1	6707	4.301	0.321	0.457	0.517	0.090	0.056	1.1111	1.30	40006.7368	1
6603	2.450	0.547	0.811	0.947	0.187	0.198	1.1111	1.17	39762.5715	1	6710	4.502	0.237	0.338	0.367	0.051	0.096	1.1111	1.54	40006.7672	1
6603	2.418	0.546	0.796	0.934	0.204	0.191	1.1111	1.21	39763.5842	1	6712	4.501	0.116	0.188	0.125	-0.095	0.038	1.1111	1.13	39965.9854	1
6603	2.477	0.578	0.815	0.920	0.247	0.196	1.1111	2.16	39770.6703	3	6712	4.589	0.112	0.189	0.131	-0.064	0.121	1.1111	1.49	40006.7520	1
6603	2.449	0.553	0.807	0.938	0.209	0.181	1.1111	1.72	39774.5722	1	6713	4.373	0.597	0.857	1.008	0.196	0.229	1.1111	1.04	39965.9966	1
6603	2.444	0.557	0.795	0.938	0.194	0.183	1.1111	1.60	39803.5420	1	6714	4.370	0.618	0.891	1.026	0.234	0.160	1.1111	1.36	40006.7448	1
6603	2.440	0.530	0.776	0.914	0.192	0.215	1.1111	1.14	39938.0161	1	6713	3.894	0.001	-0.006	0.024	-0.040	0.123	1.1111	1.16	39966.0067	1
6603	2.446	0.552	0.802	0.953	0.202	0.192	1.1111	1.28	39944.9443	1	6714	3.953	0.089	0.126	0.163	-0.040	-0.039	1.1111	1.46	40006.7601	1
6603	2.483	0.578	0.826	0.966	0.189	0.159	1.1111	1.21	39951.9471	3	6723	4.318	0.033	0.029	0.073	0.020	0.046	1.1111	1.20	39966.8227	1
6603	2.476	0.559	0.807	0.949	0.204	0.174	1.1111	1.13	39969.9698	1	6723	4.443	0.041	0.044	0.064	0.061	0.042	1.1111	1.23	40006.0150	1
6603	2.467	0.544	0.800	0.900	0.000	0.209	1.1100	1.18	39970.9036	1	6752	3.759	0.512	0.737	0.828	0.147	0.185	1.1111	1.28	39971.8941	3
6603	2.433	0.535	0.781	0.915	0.196	0.167	1.1111	1.37	39971.8534	3	6752	3.732	0.500	0.712	0.826	0.139	0.176	1.1111	1.16	39953.8822	1
6603	2.497	0.590	0.836	0.972	0.191	0.176	1.1111	1.63	39974.9132	1	6770	4.332	0.407	0.620	0.723	0.174	0.181	1.1111	1.20	39969.9022	1
6603	2.521	0.571	0.818	0.949	0.201	0.181	1.1111	1.13	39975.8986	1	6770	4.405	0.503	0.712	0.840	0.115	0.201	1.1111	1.09	39993.8898	1
6603	2.456	0.527	0.779	0.916	0.196	0.223	1.1111	1.21	39989.8408	1	6771	3.724	0.096	0.138	0.143	0.000	0.000	1.1100	1.16	39723.7119	1
6603	2.449	0.540	0.802	0.943	0.194	0.190	1.1111	1.13	39992.8811	1	6771	3.695	0.069	0.082	0.120	0.036	0.030	1.1111	1.40	39745.7037	1
6603	2.435	0.558	0.810	0.959	0.182	0.187	1.1111	1.13	39993.8729	1	6771	3.739	0.093	0.143	0.170	0.049	-0.054	1.1111	1.17	39969.9087	1
6603	2.444	0.548	0.793	0.928	0.188	0.202	1.1111	1.13	39998.8849	1	6779	3.868	0.039	0.058	0.082	0.027	0.005	1.1111	1.04	39723.7008	1
6603	2.443	0.564	0.807	0.932	0.211	0.203	1.1111	1.13	39999.8960	1	6779	0.000	0.010	0.019	0.042	0.054	0.026	0.1111	1.01	39942.0230	1
6603	2.450	0.572	0.789	0.922	0.220	0.189	1.1111	1.13	40000.8757	1	6779	3.817	0.039	0.046	0.073	0.034	-0.049	1.1111	1.30	39974.8304	1
6603	2.445	0.584	0.828	0.965	0.181	0.200	1.1111	1.13	40002.8715	1	6779	3.886	0.029	0.053	0.083	0.009	0.053	1.1111	1.00	39993.8975	1
6603	2.451	0.542	0.796	0.931	0.193	0.194	1.1111	1.13	40003.8585	1	6787	4.376	-0.035	-0.079	-0.139	-0.050	-0.018	1.1111	1.04	39709.7269	1
6603	2.448	0.549	0.793	0.949	0.193	0.200	1.1111	1.13	40004.8757	1	6787	5.067	0.665	0.599	0.586	-0.069	-0.120	1.1111	1.08	39969.9157	1
6603	2.443	0.570	0.830	0.954	0.204	0.185	1.1111	1.28	40006.7750	1	6789	4.280	0.065	0.061	0.096	0.020	-0.043	1.1111	1.70	39974.9061	1
6603	2.416	0.528	0.776	0.897	0.209	0.136	1.1111	1.24	40027.6683	1	6789	4.401	0.025	0.068	0.061	0.010	-0.072	1.1111	1.71	39922.8320	1
6603	2.481	0.541	0.786	0.941	0.191	0.201	1.1111	1.60	40029.9228	1	6825	5.976	0.195	0.236	0.374	0.022	0.131	1.1111	1.60	40030.7942	1
6603	2.437	0.529	0.771	0.901	0.204	0.195	1.1111	1.24	40031.8594	1	6825	6.056	0.216	0.290	0.416	0.047	0.054	1.1111	1.59	40031.7989	1
6603	2.460	0.555	0.823	0.964	0.199	0.194	1.1111	1.18	40032.7355	1	6825	6.016	0.228	0.314	0.405	0.034	0.150	1.1111	1.59	40032.7949	1
6603	2.433	0.553	0.800	0.936	0.209	0.201	1.1111	1.13	40034.7627	1	6843	6.222	0.302	0.424	0.487	0.128	0.119	1.1111	1.37	40031.7839	1
6619	6.246	0.041	0.005	0.098	-0.010	0.131	1.1111	1.02	40031.7529	1	6843	6.196	0.288	0.412	0.000	0.000	0.191	1.1100	1.38	40032.7767	1
6619	6.256	-0.050	-0.029	0.095	-0.053	0.040	1.1111	1.02	40032.7490	1	6843	6.250	0.287	0.420	0.502	0.115	0.107	1.1111	1.08	40034.7886	1
6619	6.257	0.031	0.050	0.111	0.026	-0.059	1.1111	1.00	40034.7753	1	6866	4.577	0.509	0.725	0.783	0.194	0.140	1.1111	1.18	39709.7371	1
6623	3.180	0.384	0.571	0.637	0.117	0.136	1.1111	1.00	39730.6283	1	6866	4.553	0.401	0.626	0.737	0.133	0.227	1.1111	1.22	39969.9238	1
6623	3.206	0.388	0.582	0.653	0.099	0.107	1.1111	1.02	39938.0081	1	6868	4.526	1.033	1.481	1.684	0.359	0.274	1.1111	1.01	39730.6481	1
6629	3.730	0.047	0.062	0.071	0.002	-0.025	1.1111	1.79	39624.7636	3	6868	4.584	1.051	1.509	1.724	0.334	0.214	1.1111	1.06	39969.9315	1
6629	3.798	0.033	0.055	0.062	0.044	0.004	1.1111	1.31	39624.8245	3	6869	2.961	0.521	0.747	0.852	0.156	0.178	1.1111	1.29	39975.9150	1
6629	3.752	0.028	0.037	0.056	0.029	-0.011	1.1111	1.16	39624.9265	3	6872	4.075	0.591	0.844	0.976	0.208	0.144	1.1111	1.02	39969.9386	1
6629	3.817	0.037	0.053	0.059	0.033	-0.021	1.1111	1.18	39672.7337	1	6872	4.007	0.575	0.824	0.964	0.185	0.206	1.1111	1.00	39993.9053	1
6629	3.827	0.107	0.100	0.077	0.098	-0.009	1.1111	1.15	39673.7621	1	6884	4.427	0.540	0.756	0.856	0.179	0.146	1.1111	1.43	39709.7549	1
6629	3.829	0.100	0.073	0.090	0.056	-0.040	1.1111	1.15	39714.6559	1	6884	4.401	0.451	0.677	0.751	0.157	0.157	1.1111	1.39	39975.9228	1
6629	3.773	0.063	0.059	0.060	0.015	0.016	1.1111	1.15	39715.6661	1	6884	4.420	0.561	0.755	0.876	0.146	0.113	1.1111	1.33	39993.9156	1
6629	3.751	0.031	0.039	0.044	0.037	0.004	1.1111	1.15	39728.6288	1	6895	3.581	0.648	0.893	1.044	0.189	0.181	1.1111	1.37	39974.8388	1
6629	3.758	0.021	0.039	0.048	0.049	-0.007	1.1111														

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
6978	4.574	0.368	0.528	0.580	0.107	-0.168	111111	1.16	39709.7793	1	7235	3.002	0.036	0.048	0.047	0.036	-0.006	111111	1.09	39727.7224	1
6978	4.647	0.398	0.517	0.593	0.115	0.109	111111	1.10	39738.6406	1	7235	0.000	0.045	0.049	0.070	0.029	0.019	011111	1.43	39806.5899	1
6978	4.546	0.337	0.510	0.590	0.083	0.042	111111	1.10	39966.9713	1	7235	2.969	0.023	0.032	0.044	0.032	0.003	111111	1.50	39988.5979	1
6978	4.601	0.315	0.479	0.550	0.119	0.120	111111	1.13	39988.8834	1	7236	3.494	-0.031	-0.028	-0.034	-0.030	-0.019	111111	1.34	39727.7336	1
7001	0.023	0.004	0.003	0.007	0.011	0.005	111111	1.00	39624.9380	3	7236	0.000	-0.045	-0.062	-0.071	-0.032	-0.029	011111	2.13	39806.6074	1
7001	0.060	0.035	0.040	0.040	0.039	0.016	111111	1.01	39564.8125	1	7298	0.000	0.000	0.000	0.000	-0.105	-0.028	000011	1.02	39737.6167	4
7001	-0.003	-0.008	-0.027	-0.005	0.036	0.015	111111	1.04	39733.5890	1	7298	4.449	-0.066	-0.082	-0.109	-0.078	-0.021	111111	1.00	39751.6251	1
7001	0.038	-0.083	0.022	0.033	0.027	0.008	111111	1.02	39757.6088	1	7298	4.362	-0.046	-0.096	-0.123	-0.091	-0.020	111111	1.00	39966.0350	1
7001	0.062	0.019	0.031	0.024	0.050	-0.017	111111	1.05	39771.5972	1	7306	4.699	0.000	0.001	0.017	-0.113	-0.009	111111	1.02	39966.0461	1
7001	0.012	0.011	-0.032	0.045	0.033	-0.013	111111	1.01	39772.5672	1	7306	4.815	0.006	0.045	0.000	-0.067	0.028	111111	1.06	39992.9070	1
7001	0.021	0.004	0.001	0.006	0.025	0.020	111111	1.20	39791.5975	1	7310	2.759	0.476	0.730	0.833	0.162	0.192	111111	1.22	39751.6343	1
7001	0.026	0.005	0.000	0.013	0.014	-0.006	111111	1.09	39795.5507	1	7310	2.791	0.504	0.746	0.858	0.161	0.136	111111	1.34	39971.9033	3
7001	0.064	0.026	0.043	0.048	0.017	0.008	111111	1.07	39798.5361	1	7314	4.041	0.628	0.932	1.053	0.221	0.169	111111	1.01	39751.6442	1
7001	0.007	-0.015	-0.007	0.012	0.029	0.001	111111	1.24	39806.5673	1	7314	4.020	0.608	0.876	1.024	0.204	0.188	111111	1.17	39971.9107	3
7001	0.000	0.020	0.032	0.035	0.034	0.000	011111	1.06	39962.0038	1	7314	3.999	0.562	0.827	0.970	0.233	0.206	111111	1.02	39989.9249	1
7001	0.000	0.019	0.034	0.035	0.044	0.002	011111	1.02	39942.0313	1	7328	3.515	0.488	0.699	0.805	0.147	0.198	111111	1.07	39730.6680	1
7001	0.077	0.059	0.065	0.072	0.023	-0.007	111111	1.02	39945.0280	1	7328	3.537	0.506	0.714	0.821	0.144	0.165	111111	1.21	39806.5785	1
7001	0.043	0.000	0.006	0.009	0.024	-0.021	111111	1.01	39966.9797	1	7340	3.874	0.163	0.229	0.270	0.037	0.063	111111	1.56	39730.6802	1
7001	0.062	0.000	0.010	0.009	0.028	-0.025	111111	1.00	39967.0049	1	7340	3.853	0.128	0.199	-0.759	1.022	0.078	111111	1.58	39975.9840	1
7001	0.050	0.029	0.041	0.037	0.051	0.020	111111	1.01	39971.0130	1	7342	4.503	0.235	0.287	0.386	-0.046	0.109	111111	1.50	39738.6513	1
7001	0.000	0.045	0.055	0.051	0.024	-0.045	011111	1.14	39974.8820	1	7342	4.464	0.215	0.269	0.360	-0.028	0.074	111111	1.51	39975.9914	1
7001	0.105	0.044	0.048	0.046	0.046	-0.045	111111	1.01	39975.0115	1	7352	4.104	0.589	0.870	1.018	0.205	0.153	111111	1.40	39971.9190	3
7001	0.122	0.002	0.024	0.034	0.031	-0.018	111111	1.40	39976.8218	1	7358	5.211	-0.088	-0.097	-0.134	0.006	0.013	111111	1.01	39741.6218	1
7001	0.032	0.015	0.014	0.031	0.032	-0.030	111111	1.03	39976.9256	1	7358	5.181	-0.029	-0.067	-0.090	-0.042	-0.034	111111	1.12	39971.9355	3
7001	0.032	0.013	0.008	0.016	0.047	-0.003	111111	1.02	39988.9082	1	7371	4.592	0.037	0.060	0.063	0.034	0.068	111111	1.19	39741.6337	1
7001	0.030	-0.005	-0.002	0.012	0.038	-0.006	111111	1.00	39989.9508	1	7371	4.516	-0.121	-0.035	0.019	0.054	-0.071	111111	1.25	39971.9461	3
7001	0.051	0.013	0.008	0.009	0.050	0.010	111111	1.05	39992.9492	1	7372	4.946	-0.023	-0.049	-0.072	-0.091	0.038	111111	1.07	39971.9545	3
7001	0.021	0.023	0.027	0.044	0.016	-0.016	111111	1.02	39993.9646	1	7372	5.098	0.010	0.000	0.003	-0.111	0.142	111111	1.03	39992.9155	1
7001	0.038	0.008	0.017	0.015	0.038	0.008	111111	1.00	40006.8845	1	7377	3.228	0.203	0.294	0.339	0.036	0.090	111111	1.15	39763.5753	1
7001	0.017	-0.001	0.003	0.009	0.012	0.039	111111	1.09	40007.8099	1	7377	3.238	0.199	0.284	0.331	0.044	0.075	111111	1.23	39971.9615	3
7001	-0.019	0.010	0.018	0.020	0.033	0.010	111111	1.04	40019.8077	1	7387	4.463	0.428	0.601	0.749	0.192	0.118	111111	1.18	39975.9986	1
7001	-0.001	0.006	-0.012	-0.007	0.040	0.017	111111	1.18	40019.9676	1	7387	4.526	0.445	0.622	0.789	0.193	0.135	111111	1.27	39988.9161	1
7001	0.042	-0.053	0.027	-0.014	0.032	0.013	111111	1.01	40020.7867	1	7405	0.000	1.006	1.461	1.653	0.329	0.280	011111	1.01	39723.7230	1
7001	-0.021	0.027	-0.005	0.002	0.039	0.005	111111	1.01	40020.8756	1	7405	4.131	1.008	1.439	1.620	0.336	0.276	111111	1.65	39972.8551	1
7001	0.042	0.004	0.029	0.025	0.034	0.033	111111	1.04	40022.7960	1	7405	4.086	1.003	1.427	1.625	0.338	0.282	111111	1.05	39988.9255	1
7001	0.028	0.023	0.033	0.026	0.026	0.012	111111	1.00	40022.8538	1	7417	0.000	0.000	0.928	1.063	0.254	0.220	001111	1.01	39723.7328	1
7001	0.025	0.001	0.002	-0.009	0.024	0.074	111111	1.32	40022.9895	1	7417	2.812	0.647	0.930	1.079	0.216	0.205	111111	1.40	39975.8715	1
7001	-0.011	0.008	0.015	0.006	0.058	0.060	111111	1.00	40023.8351	1	7417	2.739	0.612	0.903	1.043	0.260	0.233	111111	1.03	39988.9334	1
7001	0.000	0.043	0.035	0.072	-0.020	0.053	011111	1.00	40025.8482	1	7420	3.705	0.060	0.120	0.119	0.124	0.067	111111	1.38	39972.8705	1
7001	0.042	0.072	0.023	-0.071	0.041	0.140	111111	1.00	40025.8549	1	7420	3.747	0.140	0.186	0.208	0.055	0.002	111111	1.07	39988.9414	1
7020	4.548	0.208	0.281	0.327	0.115	0.025	111111	1.39	39733.6018	1	7426	4.796	-0.051	-0.072	-0.091	-0.092	0.000	111110	1.02	39714.6860	1
7020	4.674	0.283	0.379	0.399	0.047	0.087	111111	1.34	39975.9590	1	7426	4.759	-0.098	-0.111	-0.110	-0.142	0.096	111111	1.00	39749.6537	1
7055	5.550	0.418	0.610	0.789	0.212	0.195	111111	1.38	40028.8108	1	7426	4.713	-0.041	-0.097	-0.108	-0.063	-0.107	111111	1.68	39973.8403	1
7055	5.564	0.440	0.610	0.807	0.193	0.129	111111	1.44	40029.7856	1	7429	0.000	0.586	0.839	0.972	0.161	0.266	011111	1.11	39755.5983	1
7056	4.284	0.092	0.155	0.179	0.094	0.022	111111	1.02	39733.6126	1	7429	4.042	0.535	0.777	0.928	0.208	0.238	111111	1.19	39976.9488	1
7056	4.232	0.095	0.139	0.159	0.095	-0.058	111111	1.00	39966.9880	1	7437	4.967	-0.097	-0.092	-0.108	-0.044	0.000	111110	1.91	39976.8362	1
7061	4.077	0.353	0.454	0.502	0.033	0.147	111111	1.03	39728.6369	1	7437	5.040	-0.047	-0.063	-0.007	-0.047	0.010	111111	1.04	39988.9492	1
7061	4.018	0.268	0.379	0.453	0.030	0.000	111110	1.02	39768.5703	1	7446	4.961	0.037	0.063	0.057	-0.098	0.018	111111	1.30	39762.5905	1
7061	4.017	0.214	0.339	0.394	0.059	0.183	111111	1.02	39966.9970	1	7446	4.984	0.065	0.063	0.057	-0.060	0.000	111110	1.30	39992.9559	1
7063	3.992	0.659	0.876	1.024	0.204	0.169	111111	1.26	39728.6462	1	7447	4.385	-0.034	-0.026	-0.027	-0.049	0.013	111111	1.20	39762.5985	1
7063	3.975	0.598	0.838	0.963	0.224	0.167	111111	1.25	39974.9963	1	7447	4.266	-0.030	-0.047	-0.023	-0.039	-0.015	111111	1.28	39976.9607	1
7064	4.530	0.628	0.893	1.025	0.221	0.182	111111	1.00	39723.6908	1	7462	4.544	0.508	0.701	0.795	0.066	0.168	111111	1.25	39755.6232	1
7064	4.564	0.654	0.934	1.059	0.217	0.152	111111	1.38	39974.8480	1	7462	4.459	0.484	0.655	0.750	0.142	0.113	111111	1.54	39976.8465	1
7064	4.530	0.637	0.899	1.032	0.218	0.19															

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
7536	3.506	1.336	1.907	2.157	0.405	0.312	111111	1.08	39762.6642	1	7747	3.927	0.503	0.788	0.818	0.219	0.185	111111	1.49	39769.6600	1
7536	3.587	1.349	1.941	2.202	0.407	0.305	111111	1.54	39803.6468	1	7747	3.902	0.485	0.718	0.845	0.189	0.233	111111	1.46	39977.0043	1
7536	3.613	1.336	1.919	2.175	0.380	0.279	111111	1.52	39975.8809	1	7750	4.368	-0.031	-0.005	-0.017	0.017	0.082	111111	1.46	39769.6908	1
7546	4.993	0.099	0.129	0.168	0.043	0.104	111111	1.02	39730.6989	1	7750	4.420	-0.016	-0.011	0.007	0.015	-0.060	111111	1.42	39989.9756	1
7546	4.980	0.091	0.142	0.160	0.036	0.004	111111	1.69	39976.8620	1	7750	4.396	-0.031	-0.019	-0.021	-0.006	0.060	111111	1.42	40006.9212	1
7546	5.031	0.065	0.098	0.153	0.043	-0.043	111111	1.08	39992.9240	1	7751	3.557	0.889	1.300	1.496	0.336	0.283	111111	1.07	39720.6925	1
7557	0.658	0.094	0.177	0.223	0.008	0.055	111111	1.09	39760.5813	1	7751	3.603	0.920	1.331	1.522	0.330	0.192	111111	1.05	39741.6526	1
7557	0.686	0.140	0.199	0.236	0.049	0.025	111111	1.15	39976.9698	1	7751	3.555	0.860	1.280	1.483	0.329	0.303	111111	1.04	39989.9846	1
7564	8.259	4.042	5.591	6.173	1.453	0.474	111111	1.00	40000.9797	1	7754	3.323	0.487	0.709	0.819	0.159	0.146	111111	1.43	39741.6623	1
7564	8.237	4.039	5.572	6.162	1.403	0.457	111111	1.04	40003.8971	1	7754	3.307	0.474	0.675	0.775	0.160	0.177	111111	1.52	39769.6700	1
7564	8.247	3.980	5.534	6.127	1.406	0.459	111111	1.02	40004.9078	1	7763	4.667	0.276	0.396	0.464	0.142	0.264	111111	1.00	39741.6716	1
7565	4.791	0.025	0.052	0.015	-0.128	0.071	111111	1.57	39976.8696	1	7763	4.589	0.246	0.369	0.455	0.121	0.264	111111	1.00	39989.9929	1
7565	4.908	-0.038	0.043	-0.033	-0.088	-0.219	111111	1.05	39992.9318	1	7767	5.877	0.121	0.192	0.195	-0.039	0.036	111111	1.01	39757.6569	1
7570	3.528	0.415	0.611	0.708	0.187	0.196	111111	1.22	39976.9796	1	7767	5.827	0.123	0.159	0.169	-0.056	0.019	111111	1.17	40022.8137	1
7570	3.896	0.511	0.758	0.845	0.217	0.162	111111	1.21	39992.9394	1	7773	4.767	-0.012	-0.017	-0.008	-0.007	0.029	111111	1.87	40019.8247	1
7573	5.423	0.536	0.747	0.985	0.199	0.168	111111	1.02	40029.8517	1	7776	2.811	0.458	0.652	0.755	0.194	0.195	111111	1.51	40006.9319	1
7573	5.262	0.475	0.689	0.887	0.229	0.142	111111	1.03	40030.8403	1	7776	2.857	0.480	0.694	0.815	0.147	0.252	111111	1.91	40022.8214	1
7574	6.242	0.098	0.116	0.160	-0.092	-0.075	111111	1.37	39806.6209	1	7796	2.001	0.292	0.460	0.546	0.136	0.125	111111	1.07	39976.6828	1
7574	6.172	0.109	0.149	0.182	-0.047	0.128	111111	1.53	39976.8797	1	7796	2.015	0.319	0.485	0.568	0.128	0.100	111111	1.01	39990.0015	1
7582	3.578	0.454	0.666	0.787	0.145	0.188	111111	1.44	39976.8889	1	7806	4.070	0.689	0.981	1.148	0.266	0.211	111111	1.05	39988.9570	1
7582	3.600	0.454	0.693	0.795	0.144	0.186	111111	1.29	39989.9322	1	7806	4.105	0.722	1.025	1.154	0.280	0.188	111111	1.01	40006.9402	1
7589	5.648	-0.009	-0.004	-0.031	-0.095	-0.003	111111	1.30	39806.6300	1	7822	4.710	0.225	0.310	0.428	0.008	0.067	111111	1.83	39715.6899	1
7589	5.604	0.006	-0.005	-0.003	-0.042	-0.115	111111	1.26	39976.9001	1	7822	4.658	0.263	0.352	0.403	0.053	0.141	111111	1.68	39988.9657	1
7592	4.609	0.003	-0.015	0.010	0.009	-0.026	111111	1.44	39806.6387	1	7823	6.244	0.343	0.467	0.582	0.203	0.078	111111	1.01	40030.8699	1
7592	4.643	0.103	0.150	0.182	0.045	0.060	111111	1.08	40034.9431	1	7823	6.264	0.340	0.506	0.600	0.130	0.162	111111	1.04	40031.8477	1
7595	4.392	0.541	0.768	0.896	0.178	0.196	111111	1.81	39806.6497	1	7834	3.886	0.237	0.378	0.440	0.098	0.075	111111	1.04	39715.7144	1
7595	4.358	0.510	0.727	0.860	0.180	0.226	111111	1.12	39976.9874	1	7834	3.888	0.287	0.397	0.460	0.118	0.058	111111	1.03	39988.9735	1
7601	5.532	-0.045	-0.082	-0.019	0.053	-0.056	111111	1.07	40026.9533	1	7834	3.875	0.273	0.388	0.458	0.079	0.100	111111	1.17	40019.8323	1
7601	0.000	0.003	0.005	-0.018	0.068	0.040	011111	1.05	40028.8323	1	7844	4.968	-0.019	-0.028	-0.025	-0.052	-0.023	111111	1.04	39733.7161	1
7601	5.676	0.008	0.056	0.044	0.022	0.000	111110	1.11	40029.8004	1	7844	4.951	-0.046	-0.053	0.010	-0.115	-0.041	111111	1.12	39993.9272	1
7601	5.628	-0.008	0.018	0.040	-0.008	0.000	111110	1.04	40029.8381	1	7847	5.925	0.651	0.907	1.109	0.320	0.195	111111	1.00	39733.7254	1
7601	5.583	-0.016	-0.031	-0.006	0.048	0.000	111111	1.06	40030.8249	1	7847	5.803	0.523	0.805	1.027	0.259	0.000	111110	1.05	39993.9468	1
7601	5.579	-0.033	-0.031	-0.023	0.010	0.001	111111	1.05	40031.8240	1	7847	5.911	0.597	0.884	1.053	0.344	0.217	111111	1.01	40030.9292	1
7601	5.559	-0.032	-0.027	0.005	0.013	0.048	111111	1.07	40032.8137	1	7847	5.928	0.630	0.912	1.117	0.297	0.220	111111	1.02	40032.8610	1
7601	5.606	-0.014	-0.025	0.013	-0.001	-0.023	111111	1.06	40034.8144	1	7850	4.164	0.114	0.148	0.186	0.000	0.000	111100	1.16	39733.7358	1
7602	3.402	0.422	0.626	0.731	0.154	0.170	111111	1.13	39976.9949	1	7850	4.164	0.123	0.164	0.200	0.025	0.044	111111	1.18	39993.9929	1
7602	3.475	0.462	0.676	0.786	0.153	0.165	111111	1.14	39992.9475	1	7852	4.114	-0.015	-0.046	-0.020	-0.088	0.039	111111	1.49	40020.8051	1
7613	4.987	-0.003	-0.003	-0.003	-0.050	0.000	111111	1.00	39752.6479	1	7852	4.097	-0.004	-0.040	0.000	0.000	-0.061	111001	1.09	40031.8700	1
7613	4.992	-0.036	-0.027	-0.043	0.000	0.000	111110	1.15	40006.8483	1	7852	4.112	-0.036	-0.054	-0.047	-0.043	-0.009	111111	1.08	40032.8736	1
7615	3.631	0.513	0.750	0.847	0.184	0.190	111111	1.03	40006.8999	1	7852	4.077	-0.090	-0.117	-0.118	-0.054	-0.011	111111	1.11	40034.8487	1
7619	4.904	0.100	0.149	0.173	0.041	-0.013	111111	1.09	39989.9395	1	7852	4.088	-0.048	-0.088	-0.109	-0.027	-0.010	111111	1.13	40034.9554	1
7619	0.000	0.125	0.067	0.031	-0.072	-0.014	011111	1.08	40006.9103	1	7866	4.227	0.983	1.399	1.617	0.365	0.280	111111	1.00	39752.6729	1
7635	3.108	0.889	1.286	1.465	0.333	0.272	111111	1.02	39769.5969	1	7866	4.182	0.985	1.369	1.611	0.338	0.272	111111	1.25	40020.8123	1
7635	3.118	0.896	1.310	1.495	0.315	0.274	111111	1.02	39992.9779	1	7874	6.528	0.254	0.231	0.255	0.060	0.097	111111	1.00	40029.9050	1
7653	4.619	0.126	0.168	0.203	0.050	0.030	111111	1.02	39742.6359	1	7874	6.387	0.079	0.133	0.150	0.093	0.006	111111	1.01	40030.8853	1
7653	4.578	0.063	0.132	0.159	0.064	0.073	111111	1.00	39769.6047	1	7884	4.041	0.489	0.692	0.814	0.149	0.200	111111	1.49	40019.8415	1
7653	4.647	0.095	0.149	0.209	0.058	0.060	111111	1.03	40032.8447	1	7884	4.068	0.624	0.814	0.914	0.142	0.188	111111	1.21	40025.9004	1
7653	4.590	0.088	0.133	0.195	0.038	0.025	111111	1.05	40034.8249	1	7891	4.839	-0.001	-0.010	0.008	0.000	0.017	111111	1.18	40019.8476	1
7657	5.075	0.223	0.317	0.370	0.063	0.087	111111	1.00	40027.8919	1	7903	6.078	-0.003	-0.014	-0.014	0.033	-0.052	111111	1.01	40031.8997	1
7657	0.000	0.000	0.320	0.353	0.055	0.147	001111	1.03	40028.8485	1	7903	6.104	-0.029	-0.008	-0.028	0.005	-0.010	111111	1.04	40034.8604	1
7657	5.158	0.241	0.321	0.403	0.079	0.089	111111	1.01	40029.8646	1	7906	3.732	0.011	-0.011	-0.024	-0.042	0.226	111111	1.49	39709.6532	1
7678	0.000	0.394	0.565	0.677	0.128	0.194	011111	1.01	39732.6731	1	7906	3.782	-0.219	-0.003	-0.004	0.089	-0.116	111111	1.37	39712.9063	1
7678	5.369	0.413	0.566	0.692	0.155	0.146	111111	1.04	39970.9965	1	7906	3.787	0.215	-0.026	0.004	-0.089	0.134	111111	1.54	39712.9270	1
7685	4.170	0.578	0.862	1.060	0.247	0.191	111111														

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WFS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WFS.	A.M.	J.D.	LS
7906	3.804	0.007	-0.006	0.027	-0.028	0.027	111111	1.05	39806.5565	1	8115	2.934	0.439	0.647	0.776	0.172	0.141	111111	1.02	39729.7983	1
7906	0.000	0.000	-0.021	-0.008	-0.017	0.003	001111	1.18	39971.9896	3	8115	2.945	0.474	0.690	0.809	0.146	0.169	111111	1.04	40019.9144	1
7906	3.780	-0.051	-0.062	-0.029	-0.017	0.052	111111	1.11	39975.0044	1	8123	4.400	0.197	0.393	0.481	0.059	0.158	111111	1.09	39761.6484	1
7906	3.758	-0.081	-0.089	-0.071	-0.004	0.040	111111	1.10	39976.0055	1	8123	4.360	0.329	0.464	0.517	0.079	0.107	111111	1.12	40019.9227	1
7906	0.000	0.000	0.000	0.000	0.006	0.093	000011	1.53	39976.9169	1	8130	3.614	0.268	0.369	0.450	0.056	0.095	111111	1.01	39741.7052	1
7906	3.736	-0.016	-0.047	-0.028	-0.014	0.053	111111	1.08	39977.0128	1	8130	3.595	0.280	0.384	0.438	0.063	0.082	111111	1.01	40019.9437	1
7906	3.801	0.025	0.026	0.019	0.025	0.016	111111	1.08	39988.9815	1	8131	3.784	0.336	0.503	0.555	0.157	0.151	111111	1.13	39741.7141	1
7906	3.803	0.006	-0.003	-0.001	0.012	0.049	111111	1.12	39989.9597	1	8131	3.737	0.364	0.506	0.596	0.104	0.165	111111	1.17	40020.9185	1
7906	3.797	-0.020	-0.024	0.002	-0.017	0.010	111111	1.07	39993.9725	1	8143	4.270	0.100	0.157	0.254	0.001	0.082	111111	1.00	39761.6705	1
7906	3.831	0.043	0.038	0.026	0.012	-0.028	111111	1.18	40006.8923	1	8143	4.136	0.081	0.122	0.210	0.010	0.033	111111	1.02	40020.9258	1
7906	3.807	0.019	0.004	-0.013	0.012	-0.021	111111	1.69	40007.8179	1	8146	4.436	0.053	0.130	0.064	-0.090	0.040	111111	1.02	39748.7541	3
7906	3.809	-0.002	0.002	0.009	-0.011	0.019	111111	1.39	40019.8170	1	8146	4.433	0.083	0.116	0.063	-0.118	0.003	111111	1.01	40020.9325	1
7906	3.824	0.002	0.004	0.005	0.009	0.000	111111	1.07	40019.8979	1	8162	2.357	0.135	0.187	0.243	0.043	0.044	111111	1.16	40020.9394	1
7906	3.831	0.013	-0.004	0.023	-0.011	-0.016	111111	1.55	40020.7952	1	8167	4.044	0.499	0.697	0.798	0.138	0.169	111111	1.60	39771.6083	1
7906	3.788	0.015	-0.010	0.008	-0.008	0.000	111111	1.10	40020.8838	1	8167	3.952	0.395	0.635	0.706	0.175	0.137	111111	2.24	39809.6642	1
7906	3.793	0.031	-0.006	-0.002	-0.001	0.041	111111	1.06	40020.9566	1	8173	3.802	0.570	0.818	0.934	0.190	0.184	111111	1.04	39771.6173	1
7906	3.836	0.006	0.006	0.011	-0.017	0.047	111111	1.42	40022.8044	1	8225	4.166	1.065	1.520	1.722	0.343	0.287	111111	1.02	39771.6259	1
7906	3.794	0.011	0.004	0.013	0.007	0.001	111111	1.14	40022.8608	1	8225	4.044	0.926	1.440	1.633	0.349	0.229	111111	1.34	39809.6836	1
7906	3.739	0.007	-0.007	-0.004	0.000	0.000	111110	1.19	40023.8433	1	8232	2.677	0.448	0.639	0.716	0.138	0.121	111111	1.28	39771.6346	1
7906	3.904	0.025	0.003	-0.003	-0.027	0.155	111111	1.04	40023.9223	1	8232	2.618	0.423	0.581	0.685	0.138	0.140	111111	1.29	40020.9469	1
7906	3.843	-0.025	-0.035	-0.029	-0.010	-0.046	111111	1.05	40023.9614	1	8238	3.283	-0.111	-0.158	-0.208	-0.137	-0.016	111111	1.26	39730.7713	1
7906	3.707	0.081	0.020	0.055	-0.027	-0.092	111111	1.04	40025.9077	1	8238	3.149	-0.267	-0.312	-0.377	-0.073	0.004	111111	1.46	39809.6964	1
7906	3.785	-0.022	-0.020	0.013	0.000	-0.071	111111	1.05	40031.8837	1	8252	3.892	0.615	0.844	0.934	0.140	0.165	111111	1.02	39751.7208	1
7906	3.838	-0.008	-0.008	0.008	0.028	0.028	111111	1.04	40032.9124	1	8252	3.755	0.506	0.692	0.807	0.149	0.226	111111	1.12	39808.6450	1
7906	3.838	0.029	0.033	0.052	-0.025	-0.016	111111	1.04	40034.8876	1	8255	4.578	0.543	0.767	0.895	0.211	0.270	111111	1.00	39771.6432	1
7924	1.244	0.130	0.174	0.276	-0.015	0.030	111111	1.04	39742.6680	3	8255	4.571	0.550	0.777	0.904	0.191	0.235	111111	1.14	39808.6576	1
7924	1.237	0.117	0.142	0.277	-0.023	0.012	111111	1.18	40020.8327	1	8260	4.559	-0.025	-0.048	-0.016	-0.099	-0.019	111111	1.62	39771.6517	1
7928	4.349	0.227	0.291	0.370	0.030	0.054	111111	1.26	40020.8398	1	8260	4.542	-0.055	-0.094	-0.079	-0.054	0.056	111111	2.33	39809.6724	1
7928	4.307	0.313	0.396	0.439	0.021	0.101	111111	1.05	40025.9148	1	8262	5.794	2.719	3.745	4.169	0.934	0.430	111111	1.02	39771.6671	1
7939	4.604	0.581	0.834	0.972	0.234	0.194	111111	1.02	39729.7066	1	8262	0.000	0.000	0.000	0.000	0.855	0.461	000011	1.30	39808.6982	1
7939	4.644	0.610	0.881	1.018	0.202	0.218	111111	1.15	40019.8548	1	8264	4.658	0.128	0.168	0.210	0.042	0.047	111111	1.31	39771.6778	1
7942	3.905	0.532	0.756	0.869	0.205	0.152	111111	1.00	39729.7165	1	8278	2.693	0.157	0.252	0.257	0.079	0.118	111111	2.35	39808.6859	1
7942	3.937	0.565	0.803	0.922	0.195	0.175	111111	1.00	39752.6827	1	8279	4.682	0.252	0.319	0.380	0.002	0.081	111111	1.14	39727.7877	1
7942	3.931	0.563	0.777	0.917	0.172	0.000	111110	1.19	40022.8292	1	8279	4.685	0.256	0.317	0.372	0.039	0.110	111111	1.42	39808.7152	1
7947	3.632	0.368	0.574	0.770	0.181	0.154	111111	1.05	39729.7418	1	8288	4.514	0.497	0.722	0.847	0.117	0.158	111111	1.60	39727.7974	1
7949	2.185	0.528	0.764	0.884	0.196	0.159	111111	1.00	39729.7438	1	8288	4.500	0.497	0.720	0.813	0.150	0.173	111111	1.65	40019.9505	1
7949	2.168	0.529	0.756	0.877	0.210	0.196	111111	1.00	39747.7037	1	8297	5.568	1.258	1.765	2.317	0.459	0.449	111111	1.00	39727.8080	1
7949	2.201	0.550	0.787	0.858	0.234	0.206	111111	1.16	40022.8374	1	8297	5.714	1.410	1.848	2.411	0.401	0.413	111111	1.02	39772.6251	1
7950	3.767	0.020	0.029	0.049	0.053	-0.046	111111	1.34	39729.7532	1	8297	5.536	1.276	1.793	2.357	0.442	0.419	111111	1.18	40022.8687	1
7950	3.774	0.065	0.085	0.106	-0.007	0.016	111111	2.64	40007.8256	1	8301	4.682	-0.052	-0.091	-0.127	-0.068	-0.027	111111	1.06	39727.8179	1
7951	4.169	1.409	1.997	2.260	0.407	0.323	111111	1.48	40019.8622	1	8301	4.704	-0.051	-0.046	-0.089	-0.072	-0.007	111111	1.05	39751.7300	1
7951	4.081	1.421	1.981	2.258	0.380	0.373	111111	1.26	40025.9300	1	8308	1.966	0.718	1.022	1.193	0.277	0.234	111111	1.11	39727.8281	1
7955	4.366	0.331	0.469	0.541	0.048	0.105	111111	1.21	40020.8468	1	8308	1.957	0.659	1.002	1.154	0.284	0.286	111111	1.08	39805.8836	1
7955	4.288	0.355	0.530	0.631	0.010	0.165	111111	1.12	40025.8818	1	8309	4.344	0.311	0.443	0.482	0.082	0.102	111111	1.03	39727.8363	1
7957	3.123	0.557	0.764	0.897	0.115	0.216	111111	1.17	40025.8759	1	8309	4.352	0.325	0.450	0.513	0.065	0.125	111111	1.01	39763.6578	1
7963	4.539	-0.038	-0.059	-0.086	-0.015	-0.012	111111	1.01	39747.7192	1	8309	4.373	0.353	0.437	0.489	0.079	0.136	111111	1.01	39805.6016	1
7963	4.596	-0.051	-0.062	-0.068	-0.077	0.032	111111	1.35	40007.8365	1	8313	4.043	0.566	0.807	0.933	0.205	0.157	111111	1.09	39727.8444	1
7977	4.698	0.322	0.458	0.535	0.115	0.100	111111	1.04	39747.7285	1	8313	4.030	0.566	0.828	0.955	0.205	0.167	111111	1.04	39763.6659	1
7977	4.738	0.288	0.435	0.537	0.047	0.136	111111	1.29	40007.8460	1	8315	4.022	0.293	0.411	0.459	0.076	0.085	111111	1.07	39727.8523	1
7990	4.651	0.187	0.287	0.332	0.019	0.088	111111	1.33	39730.7470	1	8315	4.010	0.311	0.429	0.475	0.062	0.120	111111	1.01	39763.6741	1
7990	4.647	0.233	0.291	0.351	0.017	0.040	111111	1.60	40020.8605	1	8316	3.709	1.778	2.479	2.864	0.612	0.378	111111	1.17	39727.8617	1
7995	4.341	0.445	0.649	0.741	0.147	0.155	111111	1.00	39730.7588	1	8316	3.752	1.816	2.501	2.885	0.659	0.411	111111	1.11	39763.6838	1
7995	4.359	0.466	0.674	0.768	0.122	0.188	111111	1.02	39745.7141	1	8317	4.236	0.539	0.777	0.899	0.180	0.201	111111	1.34	39727.8717	1
7995	4.337	0.468	0.656	0.751	0.135	0.18															

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
8417	4.200	0.228	0.327	0.368	0.044	0.067	111111	1.22	39760.7773	1	8622	4.948	-0.076	-0.097	-0.168	-0.142	-0.029	111111	1.01	39755.7307	1
8417	4.134	0.198	0.299	0.340	0.052	0.077	111111	1.31	40022.8790	1	8622	5.059	-0.133	-0.189	-0.202	-0.158	-0.024	111111	1.05	39755.6921	1
8418	4.314	-0.035	-0.032	-0.044	-0.015	-0.017	111111	1.67	39760.7890	1	8622	4.952	-0.081	-0.127	-0.183	-0.117	-0.086	111111	1.01	39760.7050	1
8418	4.303	-0.022	-0.043	-0.052	-0.043	0.107	111111	1.76	40022.9060	1	8622	4.921	-0.087	-0.125	-0.180	-0.139	-0.052	111111	1.02	39761.6920	1
8430	3.664	0.327	0.456	0.501	0.063	0.099	111111	1.13	39760.7990	1	8622	4.937	-0.088	-0.125	-0.172	-0.143	-0.027	111111	1.04	39762.6746	1
8430	3.639	0.308	0.429	0.497	0.055	0.142	111111	1.10	40022.9177	1	8622	4.931	-0.114	-0.127	-0.179	-0.137	0.021	111111	1.02	39765.6857	1
8443	6.032	0.283	0.423	0.601	0.167	0.079	111111	1.10	40030.9163	1	8622	4.925	-0.084	-0.134	-0.189	-0.116	0.000	111110	1.00	39769.7010	1
8443	6.001	0.258	0.444	0.600	0.000	0.000	111000	1.07	40031.9435	1	8622	4.936	-0.082	-0.137	-0.162	-0.177	0.015	111111	2.03	39770.9202	3
8443	6.118	0.350	0.395	0.690	0.000	0.000	111100	1.07	40032.9419	1	8622	4.899	-0.071	-0.149	-0.189	-0.141	-0.050	111111	1.13	39792.5545	1
8443	6.065	0.303	0.433	0.635	0.125	0.083	111111	1.08	40034.9303	1	8622	4.922	-0.092	-0.144	-0.169	-0.163	-0.022	111111	1.03	39797.5900	1
8450	3.525	0.038	0.065	0.072	0.063	0.049	111111	1.32	39760.8077	1	8622	4.916	-0.168	-0.177	-0.173	-0.141	-0.001	111111	1.01	39802.5937	1
8450	3.522	0.063	0.068	0.113	0.029	0.110	111111	1.73	40023.8506	1	8622	4.932	-0.119	-0.166	-0.211	-0.127	0.018	111111	1.00	39805.6123	1
8454	4.106	0.272	0.422	0.487	0.089	0.162	111111	1.00	39749.7427	1	8622	4.924	-0.092	-0.140	-0.189	-0.136	0.004	111111	1.01	39808.6231	1
8454	4.098	0.263	0.401	0.445	0.105	-0.332	111111	1.32	40023.8578	1	8622	4.948	-0.078	-0.115	-0.183	-0.099	-0.027	111111	1.02	39830.5790	1
8465	2.953	0.715	1.038	1.216	0.281	0.247	111111	1.22	39760.8176	1	8622	4.912	-0.100	-0.146	-0.179	-0.143	-0.070	111111	1.00	39831.5465	1
8465	2.926	0.685	1.009	1.184	0.270	0.269	111111	1.13	39802.5541	1	8622	4.950	-0.087	-0.102	-0.136	-0.136	-0.160	111111	1.02	39834.5704	1
8468	4.620	0.541	0.732	0.835	0.140	0.156	111111	1.29	39732.7952	1	8622	4.992	-0.099	-0.121	-0.177	-0.157	0.001	111111	1.02	39835.5637	1
8468	4.553	0.471	0.695	0.787	0.129	0.220	111111	1.30	39802.5748	1	8622	4.967	-0.101	-0.132	-0.189	-0.103	-0.010	111111	1.01	39836.5507	1
8469	5.007	0.242	0.327	0.346	-0.034	0.095	111111	1.12	39732.7664	1	8622	4.951	-0.092	-0.125	-0.171	-0.154	-0.007	111111	1.19	40006.9489	1
8469	4.914	0.212	0.312	0.324	0.008	0.099	111111	1.12	39802.5830	1	8622	4.942	-0.088	-0.130	-0.161	-0.156	-0.030	111111	1.22	40019.9063	1
8485	0.000	0.693	1.020	1.200	0.278	0.287	011111	1.00	39749.7598	1	8622	4.906	-0.100	-0.169	-0.179	-0.135	-0.143	111111	1.08	40022.9422	1
8485	4.125	0.722	1.031	1.163	0.278	0.260	111111	1.00	39802.6122	1	8622	4.998	-0.085	-0.114	-0.124	-0.162	-0.024	111111	1.25	40023.8877	1
8494	4.097	0.209	0.309	0.323	0.041	0.059	111111	1.09	39751.7386	1	8622	4.920	-0.180	-0.157	-0.190	-0.245	-0.024	111111	1.08	40026.9332	1
8494	4.151	0.209	0.278	0.318	0.043	0.129	111111	1.10	39798.6460	1	8622	4.950	-0.107	-0.123	-0.180	-0.138	-0.117	111111	1.31	40028.8640	1
8498	3.734	0.689	0.993	1.167	0.258	0.256	111111	1.00	39745.7784	1	8622	4.949	-0.100	-0.148	-0.174	-0.133	-0.001	111111	1.03	40030.9526	1
8498	3.725	0.654	0.972	1.154	0.254	0.267	111111	1.07	39797.5460	1	8622	4.914	-0.102	-0.132	-0.193	-0.114	-0.024	111111	1.09	40031.9141	1
8499	3.944	0.496	0.718	0.833	0.165	0.161	111111	1.32	39755.7536	1	8622	4.913	-0.077	-0.127	-0.183	-0.112	0.019	111111	1.02	40031.9568	1
8499	3.933	0.487	0.699	0.759	0.201	0.183	111111	1.31	39802.6205	1	8622	5.075	-0.018	-0.032	-0.088	-0.097	-0.042	111111	1.02	40032.9583	1
8518	3.870	-0.023	-0.020	-0.009	0.010	0.015	111111	1.22	39755.7647	1	8622	4.995	-0.090	-0.131	-0.156	-0.155	0.004	111111	1.06	40034.9183	1
8520	5.096	-0.050	-0.084	-0.101	-0.094	-0.059	111111	1.09	39755.7752	1	8622	4.956	-0.090	-0.148	-0.173	-0.128	-0.015	111111	1.01	40034.9651	1
8520	4.937	0.017	0.038	-0.021	-0.121	0.053	111111	1.08	39802.6410	1	8632	4.163	0.698	0.973	1.137	0.249	0.212	111111	1.07	39742.7193	3
8522	4.833	0.011	0.024	0.061	0.016	0.039	111111	1.03	39755.7855	1	8634	0.000	-0.043	-0.048	-0.043	-0.009	0.026	011111	1.08	39731.7962	1
8522	4.842	0.029	0.050	0.045	0.032	-0.009	111111	1.03	39802.6523	1	8634	3.392	-0.041	-0.043	-0.033	-0.022	-0.041	011111	1.12	39792.6002	1
8523	4.596	-0.027	-0.033	-0.052	-0.047	-0.031	111111	1.03	39751.7474	1	8634	3.245	-0.027	-0.025	0.001	-0.051	0.026	111111	1.11	40025.9642	1
8523	4.566	-0.060	-0.060	-0.049	-0.074	0.040	111111	1.08	39797.5545	1	8641	4.812	-0.022	-0.014	-0.013	0.001	0.211	111111	1.00	39731.8071	1
8538	4.098	0.563	0.807	0.922	0.211	0.173	111111	1.06	39720.8606	1	8641	4.796	-0.013	-0.017	-0.006	0.053	0.036	111111	1.00	39753.7658	1
8538	4.135	0.551	0.785	0.904	0.186	0.202	111111	1.06	39730.7964	1	8641	4.803	0.000	0.014	-0.002	0.072	-0.017	111111	1.02	39792.6102	1
8538	4.155	0.562	0.797	0.918	0.186	0.199	111111	1.07	39755.7060	1	8649	4.355	0.717	1.034	1.223	0.229	0.255	111111	1.60	39731.8272	1
8539	4.617	0.179	0.262	0.199	-0.076	0.101	111111	1.16	39730.8103	1	8649	4.249	0.697	1.006	1.168	0.248	0.234	111111	1.64	39792.6186	1
8539	4.567	0.131	0.232	0.193	-0.088	0.093	111111	1.25	39797.5635	1	8649	4.111	0.775	1.024	1.271	0.208	0.000	111110	1.76	40025.9504	1
8539	4.594	0.155	0.250	0.188	-0.084	0.114	111111	1.21	39802.6224	1	8650	2.694	0.463	0.668	0.778	0.155	0.173	111111	1.07	39728.7559	1
8561	4.528	0.090	0.139	0.203	-0.002	0.078	111111	1.04	39730.8295	1	8650	2.707	0.450	0.679	0.787	0.160	0.162	111111	1.01	39765.6963	1
8561	4.522	0.088	0.140	0.215	0.014	0.027	111111	1.07	39797.5723	1	8665	4.036	0.339	0.473	0.544	0.068	0.147	111111	1.14	39728.7648	1
8551	4.505	0.602	0.834	0.976	0.189	0.184	111111	1.14	39730.8320	1	8665	4.070	0.314	0.486	0.548	0.090	0.095	111111	1.07	39765.7052	1
8551	4.514	0.559	0.805	0.966	0.184	0.216	111111	1.17	39797.8216	1	8667	3.657	0.522	0.733	0.861	0.180	0.205	111111	1.06	39728.7728	1
8558	0.000	0.341	0.466	0.516	0.050	0.063	111111	1.19	39755.7186	1	8667	3.672	0.521	0.759	0.887	0.182	0.172	111111	1.02	39748.8056	3
8558	3.539	0.273	0.405	0.464	0.062	0.083	111111	1.18	39755.7412	1	8667	3.640	0.503	0.726	0.833	0.187	0.234	111111	1.02	39792.6267	1
8558	3.554	0.277	0.395	0.432	0.066	0.094	111111	1.23	39802.6612	1	8679	3.642	0.961	1.362	1.582	0.298	0.273	111111	1.52	39728.7819	1
8558	3.575	0.288	0.423																		

TABLE 10 BRIGHT STAR OBSERVATIONS IN SIX RED COLORS (6-RC)

B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS	B.S.	58	58-72	58-80	58-86	86-99	99-110	WTS.	A.M.	J.D.	LS
8780	4.356	0.569	0.794	0.932	0.178	0.170	111111	1.05	39737.7907	1	8880	4.623	0.073	0.232	0.243	0.075	0.054	111111	1.01	39709.9140	1
8780	0.000	0.000	0.000	0.943	0.211	0.187	000111	1.05	39747.8115	1	8880	4.551	0.121	0.168	0.213	0.053	0.049	111111	1.03	39732.8781	1
8780	4.404	0.608	0.836	0.966	0.176	0.186	111111	1.08	39795.6036	1	8880	4.546	0.119	0.182	0.209	0.047	0.078	111111	1.01	39762.7619	1
8780	4.457	0.554	0.789	0.918	0.181	0.248	111111	1.23	40023.9145	1	8892	3.754	0.620	0.908	1.012	0.236	0.163	111111	1.66	39709.9242	1
8781	2.476	-0.012	0.003	0.011	0.031	0.001	111111	1.04	39714.8723	1	8892	3.594	0.620	0.857	0.999	0.181	0.170	111111	1.65	39737.8175	1
8781	2.481	0.000	-0.014	0.007	0.019	-0.020	111111	1.05	39737.7992	1	8892	3.624	0.569	0.826	0.969	0.184	0.185	111111	1.67	39795.6446	1
8781	2.469	0.063	-0.008	0.004	-0.006	0.045	111111	1.04	39747.7978	1	8892	3.711	0.592	0.860	1.015	0.172	0.259	111111	1.97	40022.9659	1
8781	2.551	-0.002	0.002	0.011	0.023	0.084	111111	1.26	40023.9296	1	8905	4.261	0.392	0.537	0.598	0.103	0.092	111111	1.01	39737.8264	1
8795	4.172	1.052	1.476	1.680	0.323	0.244	111111	1.08	39737.8087	1	8905	4.263	0.379	0.539	0.590	0.102	0.094	111111	1.01	39771.7404	1
8795	4.205	1.048	1.501	1.708	0.327	0.274	111111	1.10	39757.7312	1	8906	3.942	0.819	1.164	1.344	0.278	0.217	111111	1.67	39737.8393	1
8795	4.190	1.041	1.484	1.696	0.309	0.295	111111	1.12	39795.6143	1	8906	3.951	0.774	1.138	1.317	0.256	0.261	111111	1.67	39762.7723	1
8796	4.413	0.710	0.998	1.152	0.258	0.217	111111	1.02	39714.9113	1	8906	3.963	0.814	1.151	1.336	0.268	0.260	111111	1.68	39795.6550	1
8796	4.386	0.690	0.952	1.108	0.235	0.216	111111	1.01	39732.8079	1	8911	4.903	0.021	0.011	0.000	0.029	-0.051	111111	1.18	39737.8551	1
8796	4.433	0.687	0.976	1.138	0.244	0.240	111111	1.01	39757.7396	1	8911	4.914	-0.025	-0.013	-0.015	-0.015	0.167	111111	1.18	39762.7835	1
8797	4.928	0.087	0.058	0.073	-0.090	0.118	111111	1.12	39732.8178	1	8911	4.950	0.034	0.034	0.026	0.020	0.015	111111	1.17	39795.6643	1
8797	4.800	0.001	0.000	-0.060	-0.045	0.124	111111	1.12	39768.7336	1	8916	3.991	0.517	0.764	0.879	0.196	0.188	111111	1.15	39741.7758	1
8797	4.866	0.041	0.031	0.030	-0.096	0.030	111111	1.13	39795.6265	1	8916	3.980	0.499	0.774	0.892	0.178	0.198	111111	1.13	39762.7918	1
8808	6.242	0.013	-0.005	-0.031	0.000	-0.044	111111	1.16	39732.8390	1	8923	4.295	0.481	0.706	0.812	0.165	0.178	111111	1.08	39741.7848	1
8808	6.220	-0.034	-0.033	-0.027	-0.058	0.199	111111	1.16	39791.6593	1	8923	4.302	0.468	0.680	0.793	0.158	0.187	111111	1.08	39762.7999	1
8819	4.148	0.424	0.609	0.709	0.139	0.115	111111	1.36	39729.8108	1	8926	4.945	-0.061	-0.065	-0.094	-0.065	0.027	111111	1.11	39751.7847	1
8819	4.161	0.415	0.685	0.765	0.139	0.146	111111	1.36	39744.7844	1	8926	4.943	-0.009	-0.036	-0.068	-0.059	-0.039	111111	1.11	39795.6791	1
8819	4.221	0.423	0.594	0.696	0.131	0.224	111111	1.36	39791.6781	1	8926	5.032	-0.014	-0.034	-0.038	-0.087	-0.078	111111	1.26	40023.9367	1
8830	4.432	0.208	0.288	0.334	0.041	0.044	111111	1.05	39729.8189	1	8961	3.503	0.699	1.053	1.120	0.214	0.012	111111	1.03	39748.8277	3
8830	4.431	0.192	0.316	0.359	0.045	0.079	111111	1.04	39744.7954	1	8961	3.467	0.573	0.830	0.950	0.191	0.223	111111	1.03	39795.6873	1
8830	4.440	0.203	0.287	0.319	0.046	0.097	111111	1.08	39762.6942	1	8961	3.594	0.586	0.849	0.975	0.189	0.243	111111	1.19	40023.9442	1
8832	5.275	0.593	0.849	0.925	0.190	0.134	111111	1.10	39709.8760	1	8965	4.318	-0.031	-0.032	-0.020	0.064	-0.077	111111	1.02	39748.8372	3
8832	5.224	0.523	0.764	0.868	0.164	0.204	111111	1.11	39714.8444	1	8965	4.330	-0.032	-0.040	-0.034	-0.002	-0.008	111111	1.02	39795.7086	1
8832	5.275	0.582	0.798	0.898	0.189	0.174	111111	1.13	39720.8099	1	8969	3.993	0.298	0.448	0.507	0.042	0.158	111111	1.12	39731.8371	1
8832	5.256	0.555	0.789	0.896	0.166	0.224	111111	1.09	39730.8447	1	8969	3.991	0.312	0.457	0.517	0.074	0.208	111111	1.14	39762.8078	1
8832	5.225	0.526	0.769	0.839	0.197	0.222	111111	1.15	39741.7412	1	8974	2.975	0.508	0.770	0.900	0.150	0.216	111111	1.41	39731.8691	1
8832	5.253	0.534	0.845	0.915	0.179	0.157	111111	1.12	39744.7541	1	8974	2.921	0.518	0.763	0.885	0.158	0.201	111111	1.43	39762.8207	1
8832	5.274	0.617	0.809	0.907	0.202	0.177	111111	1.10	39747.7817	1	8976	4.155	-0.062	-0.041	-0.053	0.005	0.095	111111	1.02	39720.8840	1
8832	5.193	0.480	0.754	0.861	0.177	0.245	111111	1.09	39749.7903	1	8976	4.184	-0.053	-0.072	-0.076	-0.023	0.081	111111	1.02	39731.8587	1
8832	5.236	0.557	0.797	0.887	0.183	0.201	111111	1.10	39751.7566	1	8976	4.173	-0.039	-0.028	-0.022	-0.017	0.025	111111	1.02	39749.8016	1
8832	5.236	0.516	0.750	0.867	0.192	0.214	111111	1.10	39753.7538	1	8982	4.643	0.463	0.667	0.759	0.105	0.205	111111	1.62	39731.8939	1
8832	5.257	0.552	0.785	0.886	0.171	0.235	111111	1.10	39755.7997	1	8982	4.583	0.429	0.616	0.698	0.148	0.158	111111	1.57	39795.6984	1
8832	5.230	0.532	0.774	0.862	0.181	0.185	111111	1.15	39762.6845	1	8982	4.577	0.438	0.635	0.701	0.135	0.119	111111	1.58	39806.6746	1
8832	5.204	0.517	0.756	0.850	0.189	0.230	111111	1.10	39769.7113	1	8982	4.718	0.447	0.666	0.736	0.108	0.216	111111	1.92	40023.9702	1
8832	5.233	0.546	0.780	0.886	0.180	0.154	111111	1.09	39771.7315	1	8984	4.447	0.131	0.188	0.202	0.021	0.048	111111	1.47	39727.9746	1
8832	5.202	0.527	0.768	0.852	0.191	0.217	111111	1.21	39792.5732	1	8984	4.489	0.103	0.138	0.170	0.028	0.107	111111	1.16	39791.6860	1
8832	5.242	0.538	0.792	0.842	0.218	0.161	111111	1.13	39797.6019	1	8988	4.500	-0.032	-0.043	-0.045	-0.005	0.021	111111	1.85	39727.9641	1
8832	5.241	0.535	0.776	0.858	0.173	0.238	111111	1.11	39802.6032	1	8988	4.526	-0.041	-0.065	-0.031	0.007	0.033	111111	1.46	39791.6956	1
8832	5.260	0.493	0.751	0.854	0.201	0.231	111111	1.05	39805.6215	1	8997	4.681	0.511	0.736	0.847	0.167	0.184	111111	1.00	39714.9017	1
8832	5.292	0.555	0.831	0.942	0.140	0.084	111111	1.09	39808.6341	1	8997	4.718	0.482	0.713	0.829	0.154	0.222	111111	1.01	39731.8850	1
8832	5.236	0.518	0.768	0.882	0.149	0.212	111111	1.10	39810.5948	1	8997	4.687	0.506	0.730	0.840	0.169	0.177	111111	1.00	39751.7949	1
8832	5.252	0.544	0.794	0.905	0.166	0.218	111111	1.10	39813.5552	1	9045	4.240	0.592	0.841	1.067	0.228	0.161	111111	1.10	39720.8951	1
8832	5.224	0.498	0.750	0.837	0.227	0.151	111111	1.10	39816.5836	1	9045	4.208	0.573	0.829	1.051	0.238	0.206	111111	1.11	39753.7781	1
8832	5.264	0.509	0.770	0.892	0.160	0.120	111111	1.12	39835.6048	1	9045	4.258	0.582	0.839	1.060	0.217	0.202	111111	1.13	39762.8361	1
8832	5.261	0.510	0.775	0.871	0.187	0.187	111111	1.10	39836.5588	1	9										