UBVRI PHOTOMETRIC STANDARD STARS IN THE MAGNITUDE RANGE $11.5 < V < 16.0$ AROUND THE CELESTIAL EQUATOR[1]

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ABSTRACT

UBVRI photoelectric observations have been made on the Johnson–Kron–Cousins photometric system of 526 stars centered on the celestial equator. The program stars within a 298 number subset have sufficient measures so that they are capable of providing, for telescopes of intermediate and large size in both hemispheres, an internally consistent homogeneous broadband standard photometric system around the sky. The stars average 29 measures each on 19 nights. The majority of the stars in this paper fall in the magnitude range $11.5 < V < 16.0$, and in the color range $-0.3 < (B-V) < +2.3$.

1. INTRODUCTION

An internally consistent and homogeneous list of standard stars on the Johnson–Kron–Cousins broadband *UBVRI* photometric system was published several years ago (Landolt 1983). These stars easily enabled one to standardize broadband photometric data obtained at all but the largest telescopes. Their location in a narrow band centered on the celestial equator made them accessible to telescopes in both hemispheres. A bit of history regarding this photometric system has been recounted in Landolt (1983), and will not be repeated.

2. THE PROGRAM

The photometric results in this paper represent the second part of the three stage effort to provide *UBVRI* photoelectric photometric standard stars in the magnitude range $7 < V < 21$ over as broad a range in color as possible. The stars that have been observed are located in a band centered on the celestial equator. The candidate stars were chosen from several sources. The brighter candidates were taken from Landolt (1973), where it was merely a matter of adding *RI* values to the already known *UBV* characteristics of the stars. An effort was made to identify candidate standard stars through a photographic program in the celestial equatorial Selected Areas, for initially it was the goal to establish standard star sequences evenly distributed around the sky. Photographic plates were obtained through an appropriate combination of emulsion types and *UBVR* filters at the Yale 1.0 m telescope at CTIO. These plates then were irisphotometered, and pseudo color–magnitude diagrams were plotted. The goal was to identify stars of extreme red and blue colors in this manner, those stars then becoming candidates to be made into standard stars. This technique turned out to be a painfully slow time-consuming process which in the end turned up few potential candidates. For one thing, there just are not many very red or blue stars in most of the Selected Areas that were studied, at least to the approximately 16–17th magnitude limit searched. Additional candidate stars, then, were selected from the literature; for example, several stars from the galactic anticenter study by Rubin *et al.* (1974) were considered, as were selected stars from the Giclas lists in various issues of the Lowell Observatory Bulletins. Several blue stars from the Palomar–Green survey (Green *et al.* 1986) were observed and eventually made into standard stars. All these observational data have been tied into the *UBVRI* standard stars published by Landolt (1983).

The third stage of this standard star project will provide *UBVRI* photometric standards roughly in the magnitude range $14.5 < V < 21.0$ (Landolt *et al.* 1993).

The data obtained for this stage of the standard star project came from the Cerro Tololo Inter-American Observatory (CTIO)'s 1.5 m telescope. Acceptable data were obtained on all or parts of 145 nights of the 211 nights scheduled in the time interval 1977 September through 1991 February. Hence, something more than 60% of the hours scheduled for this project were photometric. A small amount of data were obtained at the CTIO 4.0 m telescope; however, due to weather problems, the quality of those data in general was such that they were not included herein.

The majority of these broadband photometric observations were made with RCA 31034A photomultipliers, which have GaAs photocathodes. This type detector was used in a pulse-counting mode. The photomultipliers available to observers at CTIO are operated at voltages recommended by the CTIO staff, in this case, usually at minus 1600 V. The same RCA 31034A was used from the beginning of the program at each observing session to minimize yet another variable in the data collecting process. This happy circumstance came to an end in 1987 January when RCA 31034A, serial No. N49701, in cold box No. 59, lost much of its sensitivity and its counting rate became erratic. A switch was made to RCA 31034A, serial No. S17594 in cold box No. 60, but that photomultiplier also suffered a loss of sensitivity in 1987 September. Subsequent to 1987

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September, all data have been obtained with a Hamamatsu R943-02 photomultiplier, serial No. EA 1450, also possessing a GaAs photocathode, in cold box No. 71. All data obtained over the years have been recorded through use of the People's Photometry program, and were recorded on magnetic tape. All data reductions have been undertaken at the IBM 3084 and 3090 main frame computers at the Louisiana State University System Network Computer Center.

On the order of 20–25 standard stars chosen from Landolt (1983) were observed each night together with the program stars. *UBVRI* standard stars, four or five to a group, were observed periodically throughout the night. The stars in each group encompassed as wide a color range as possible. Every attempt was made to observe the standard stars over as great an airmass range as that in which the program stars were observed. Most of the program star observations were obtained at less than about 1.6 airmasses.

Following long term practice by the author, the data for each star were obtained in a series of measures *VBURIIRUBV* star plus sky, followed by *VBURI* sky measures. A diaphragm aperture of 14 s of arc diameter was used on all but a few nights of excellent seeing. On those few nights a 10.0 s of arc diameter diaphragm was utilized. (Observers should remember that if they change diaphragms during the night, they also need to observe standard stars for that night for each diaphragm size used. The different diaphragm sizes give rise to different transformation coefficients since the wings of scattered light around a star image are not necessarily the same color as the star itself.) The integration or counting time depended upon the faintness of a particular star; the counting time never was less than ten seconds per filter. The precepts of Schulte & Crawford (1961) were followed in the reduction process.

Extinction information was acquired nightly, whenever possible, through use of the standard stars. A triplet of stars, red, yellow, and blue, were followed to approximately 2.2 airmasses. Atmospheric conditions have been too variable in recent years to permit use of mean extinction coefficients, if ever that technique were applicable. Two recent events which contributed to the instability of the atmosphere above CTIO have been the El Nino weather cycle and the eruption of the volcano El Chichon in 1982 in Mexico. The latter eventually contributed beautiful and colorful sunsets together with somewhat unstable photometric conditions for some months. The average extinction coefficients found over the last 13 yr during which these data were recorded are presented in Table 1. The final column in the table gives the range of the extinction values that were observed. Those data should give one pause when he/she contemplates the use of mean extinction coefficients.

The data acquisition clock in the computer provided the time at which each photometric measurement was made through each filter for each star. The final reduction computer printout listed the magnitude and color indice residuals for each of the standard stars. Thus, it was possible to plot the residuals in the V magnitude and the different color indices for each standard star against Universal Time for a given night. Hence, one was able to determine small corrections which could be applied to all program star measures. These corrections usually were less than a few hundredths of a magnitude. Corrections such as these take into account small changes in both instrumental and atmospheric conditions. The appropriateness of this kind of correction is evidenced by the improvement in the accuracy of the final results.

TABLE 1. Extinction at Cerro Tololo.

Magnitude or color index	Coefficient symbol	Average coefficient value	Range in coefficient values
V	Q_y	+0.152	+0.099 to +0.250
B-V	k_1	+0.124	+0.074 to +0.184
	k_2	-0.023	-0.046 to +0.013
U-B	k_3	+0.315	+0.251 to +0.448
	k_4	-0.022	-0.080 to +0.057
V-R	k_5	+0.044	+0.007 to +0.084
	k_6	+0.007	-0.013 to +0.021
R-I	k_7	+0.045	+0.002 to +0.078
	k_8	-0.006	-0.024 to +0.021
V-I	k_9	+0.091	+0.040 to +0.141
	k_{10}	+0.003	-0.011 to +0.017

The circumstances surrounding the choice of filters used to transform these data onto the *UBV* system defined by Landolt (1973) and the *RI* system defined by Cousins (1976) are described in Landolt (1983). Tables II and III in Landolt (1983) provide the filter combinations that have been used at the telescope throughout this program. As indicated therein, the author is indebted to Dr. John A. Graham for his work in defining the filter combinations.

The data obtained on observing runs in 1977 September and 1978 January used the filters described in Table II (Landolt 1983). All subsequent data have been obtained with the filters defined in Table III (Landolt 1983). Intercomparison of standard stars used in both filter-defined datasets indicated a small difference in the magnitudes and color indices resulting from measures made with the two filter sets. The following linear relations were derived from the above intercomparison of the two different filter sets, where the errors of the coefficients here and under similar circumstances throughout this paper are mean errors:

$$(B-V)_{2nd} = -0.00631 + 1.00004(B-V)_{1st}$$
$$\pm 0.00475 \pm 0.00539,$$

$$(U-B)_{2nd} = -0.00785 + 0.99546(U-B)_{1st}$$
$$\pm 0.00605 \pm 0.00724,$$

$$V_{2nd} = V_{1st} + 0.00026 - 0.00587(B-V)_{2nd}$$
$$\pm 0.00358 \pm 0.00406,$$

$$(V-R)_{2nd} = +0.00230 + 0.99642(V-R)_{1st}$$
$$\pm 0.00244 \pm 0.00490,$$

$$(R-I)_{2nd} = -0.00255 + 0.99599(R-I)_{1st}$$
$$\pm 0.00278 \pm 0.00606,$$

$$(V-I)_{2nd} = +0.00182 + 0.99519(V-I)_{1st}$$
$$\pm 0.00348 \pm 0.00356.$$

The "1st" subscript reflects the filters in Table II and the "2nd" subscript reflects the filters in Table III, both in Landolt (1983). Figures 1–6 illustrate these intercomparisons. The delta quantities on the ordinate in each figure are the color indices obtained with filter set one *minus* the corresponding color indices obtained with filter set two. These delta quantities were then plotted as a function of the appropriate color index obtained via filter set two. Once the above relations were applied, then, the data obtained in 1977 September and 1978 January all were on the system defined by the filters in Table III (Landolt 1983).

The standard star magnitudes and color indices that have been published (Landolt 1983) all have a lineage which can be traced to Johnson's (1963) work on the original *UBV* photometric system (Johnson & Morgan 1953; Morgan 1988), which system was defined through use of a RCA 1P21 photomultiplier. Landolt (1983) illustrated that transformations between *UBV* data obtained with a 1P21 (a S-4 photocathode) and a RCA 31034A (a GaAs [III-V] photocathode) were nonlinear.

Since the instrumental setup herein was identical to that used in the 1983 paper, with the exception of the telescope, one had to investigate, derive, and apply nonlinear transformation relations for the data for the stars of intermediate brightness in the current program as well. Figures 7–12 illustrate the situation. In each case, the delta quantities on the ordinate are in the sense data from this program *minus* corresponding color indices from Landolt (1983). The stars used for these intercomparisons were a subset of 81 standard stars from Landolt (1983) which had been used throughout the observing sessions.

The nonlinearities are apparent in the figures. Inspection of each figure allowed the nonlinear "breakpoints" to be chosen. They are indicated below in association with the appropriate nonlinear transformation relation, which relation was derived by least squares from the data appearing in Figs. 7–9.

The nonlinear transformation relations, then, had the form,

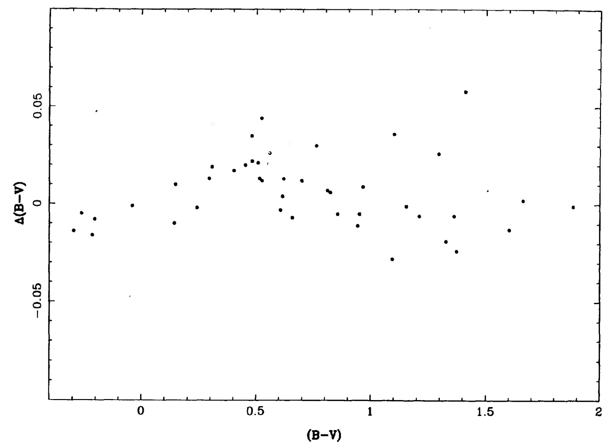

FIG. 2. A comparison of the $(B-V)$ color index as determined with filter set one as a function of filter set two's $(B-V)$ color index.

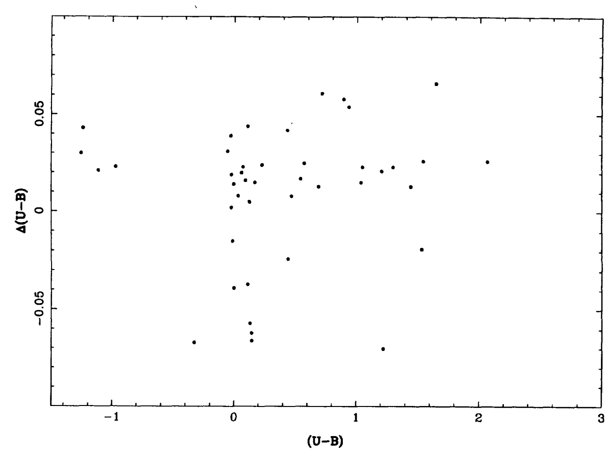

FIG. 3. A comparison of the $(U-B)$ color index as determined with filter set one as a function of filter set two's $(U-B)$ color index.

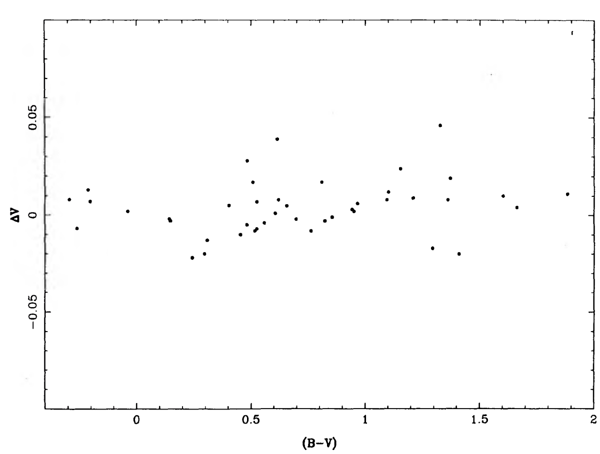

FIG. 1. A comparison of the V magnitude as determined with filter set one as a function of filter set two's $(B-V)$ color index.

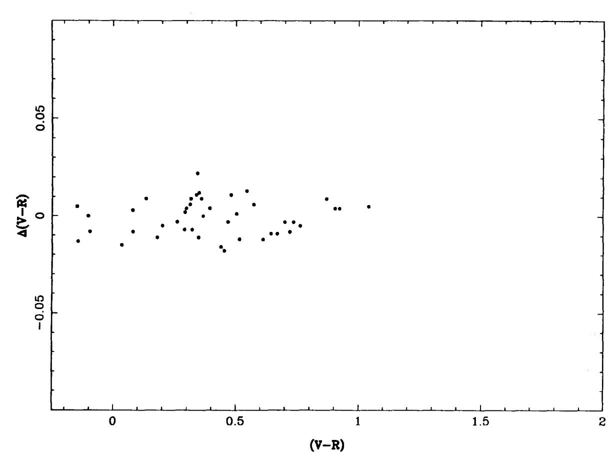

FIG. 4. A comparison of the $(V-R)$ color index as determined with filter set one as a function of filter set two's $(V-R)$ color index.

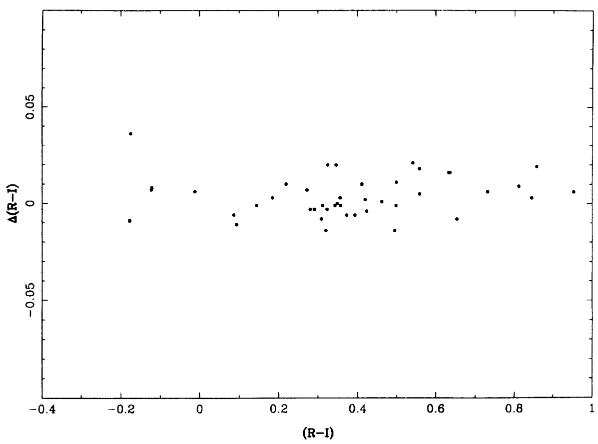

FIG. 5. A comparison of the $(R-I)$ color index as determined with filter set one as a function of filter set two's $(R-I)$ color index.

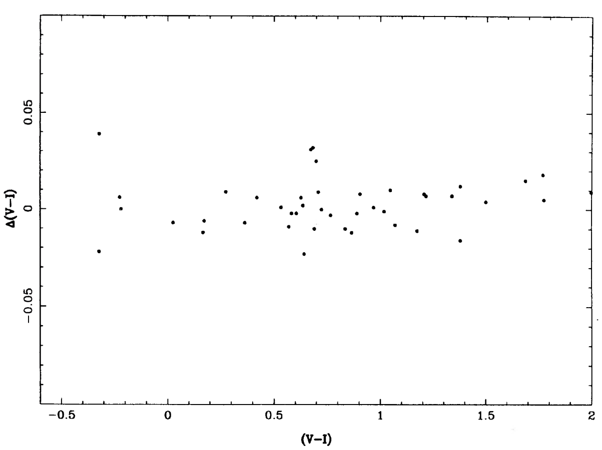

FIG. 6. A comparison of the $(V-I)$ color index as determined with filter set one as a function of filter set two's $(V-I)$ color index.

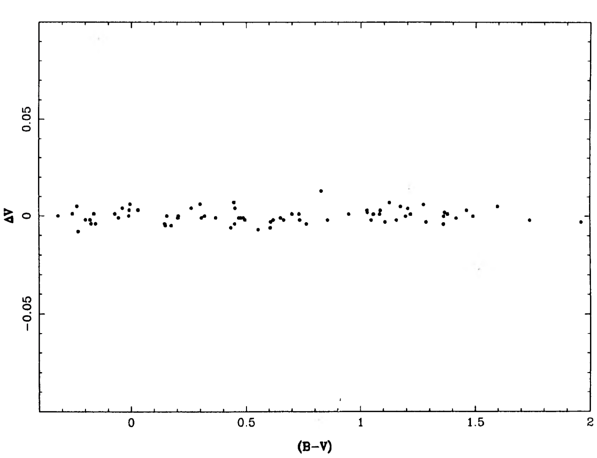

FIG. 7. A comparison of the V magnitude as obtained with serial No. N49701 RCA 31034A as a function of Landolt's (1983) standard star $(B-V)$ color index.

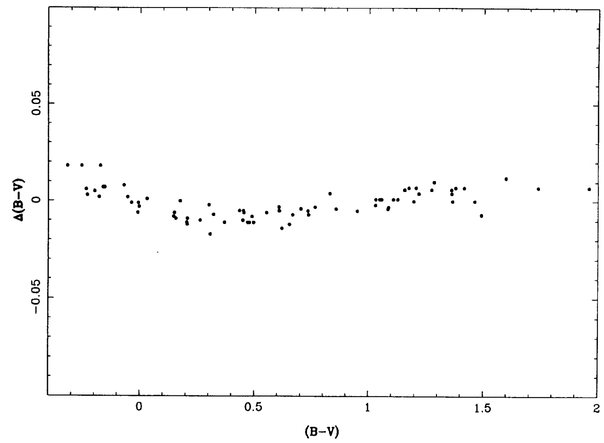

FIG. 8. A comparison of the $(B-V)$ color index as obtained with serial No. N49701 RCA 31034A as a function of Landolt's (1983) standard star $(B-V)$ color index.

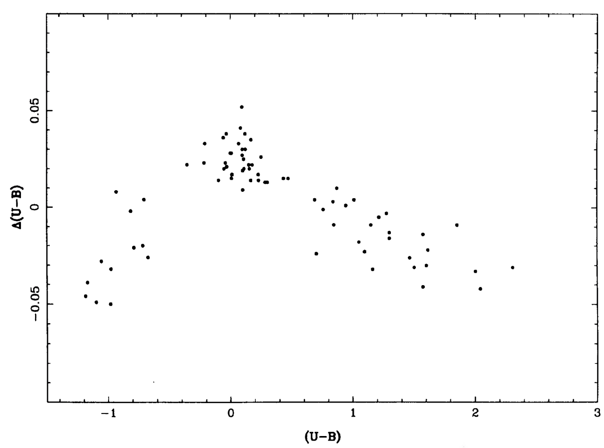

FIG. 9. A comparison of the $(U-B)$ color index as obtained with serial No. N49701 RCA 31034A as a function of Landolt's (1983) standard star $(U-B)$ color index.

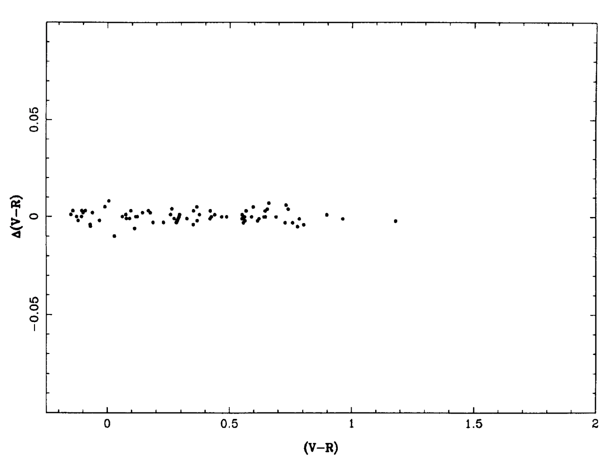

FIG. 10. A comparison of the $(V-R)$ color index as obtained with serial No. N49701 RCA 31034A as a function of Landolt's (1983) standard star $(V-R)$ color index.

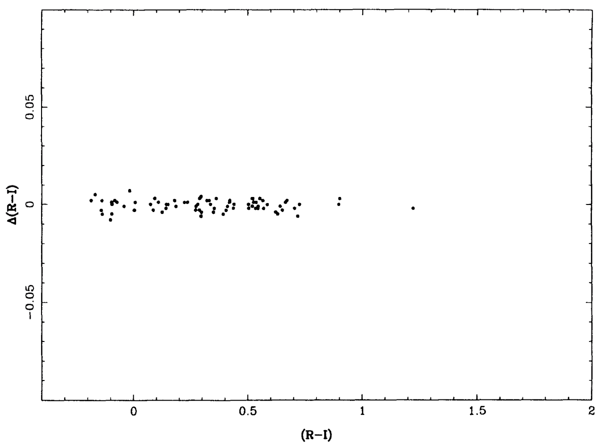

FIG. 11. A comparison of the $(R-I)$ color index as obtained with serial No. N49701 RCA 31034A as a function of Landolt's (1983) standard star $(R-I)$ color index.

$$(B-V)_{\rm corr}= +0.00144+1.05416(B-V)_{\rm obs} \quad (B-V)<+0.1,$$
$$\pm 0.00204 \pm 0.01236;$$

$$(B-V)_{\rm corr}= +0.00923+0.99676(B-V)_{\rm obs} \quad +0.1<(B-V)<+0.8,$$
$$\pm 0.00173 \pm 0.00360;$$

$$(B-V)_{\rm corr}= +0.00830+0.99124(B-V)_{\rm obs} \quad (B-V)>+0.8,$$
$$\pm 0.00414 \pm 0.00326;$$

$$V_{\rm corr}=V_{\rm obs}+0.00048-0.00082(B-V)_{\rm corr}$$
$$\pm 0.00063 \pm 0.00075;$$

$$(U-B)_{\rm corr}= -0.04116+0.93072(U-B)_{\rm obs} \quad (U-B)<-0.2,$$
$$\pm 0.01032 \pm 0.01211;$$

$$(U-B)_{\rm corr}= -0.02729+1.02378(U-B)_{\rm obs} \quad -0.2<(U-B)<+0.6,$$
$$\pm 0.00222 \pm 0.01261;$$

$$(U-B)_{\rm corr}= -0.01407+1.02328(U-B)_{\rm obs} \quad (U-B)>+0.6.$$
$$\pm 0.00711 \pm 0.00521,$$

Similar relations for $(V-R)$, $(R-I)$, and $(V-I)$ all had zero points and slopes essentially zero and one, respectively, as one can see from Figs. 10–12. Hence, it was not necessary to apply such relations for the R and I color indices.

Once the above nonlinear transformation relations were applied to all the RCA-based data in the current program, those data were on the broadband *UBVRI* photometric system defined by the standard stars in Landolt (1983).

An additional step remained before the entire data set for all 145 nights could be said to be on the same photometric system. Recall above that the RCA 31034A photomultiplier ceased to be useful, and that the data for the latter portion of the program were obtained with a Hamamatsu photomultiplier. Figures 13–18 compare magnitudes and color indices of the standard stars used in this program as obtained with the Hamamatsu photomultiplier and the data for those same stars obtained via the RCA 31034A photomultiplier which already had been transformed (above) to the photometric system as defined by Landolt (1983). Perusal of the data via Figs. 13–18 indicated that differences between the data as obtained with the Hamamatsu and with the RCA transformed data did exist. Actually, such differences were to be expected since the RCA transformed data were on the system of Landolt

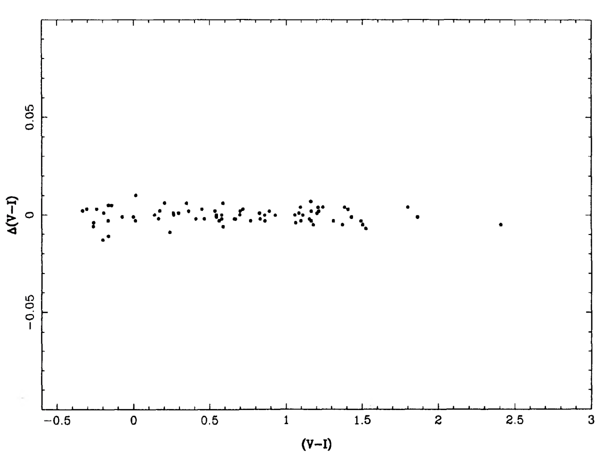

FIG. 12. A comparison of the $(V-I)$ color index as obtained with serial No. N49701 RCA 31034A as a function of Landolt's (1983) standard star $(V-I)$ color index.

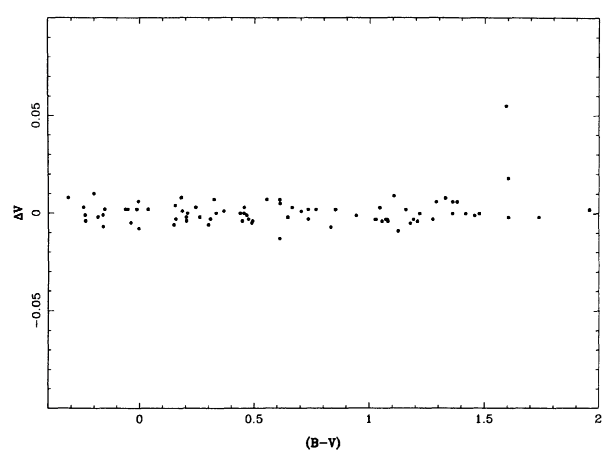

FIG. 13. A comparison of the V magnitudes obtained with the Hamamatsu R943-02 as a function of the transformed RCA $(B-V)$ color index data.

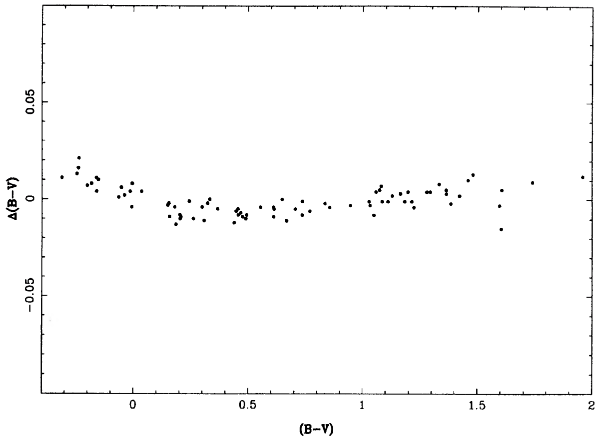

FIG. 14. A comparison of the $(B-V)$ color indices obtained with the Hamamatsu R943-02 as a function of the transformed RCA $(B-V)$ color index data.

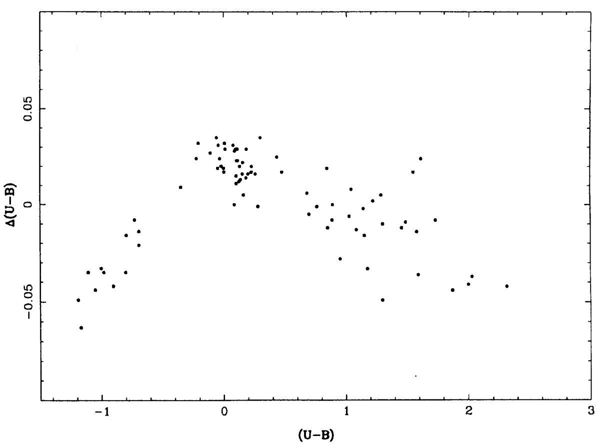

FIG. 15. A comparison of the $(U-B)$ color indices obtained with the Hamamatsu R943-02 as a function of the transformed RCA $(U-B)$ color index data.

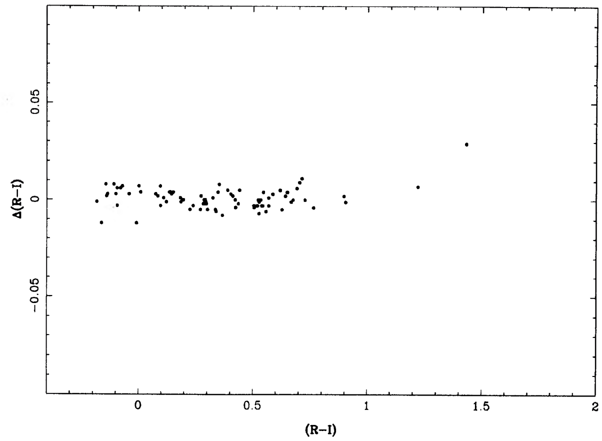

FIG. 17. A comparison of the $(R-I)$ color indices obtained with the Hamamatsu R943-02 as a function of the transformed RCA $(R-I)$ color index data.

(1983), an 1P21 ancestoral system. The plots described above were used to help determine whether or not the transformations were linear.

The linear regression relations which accomplished the transformation of the Hamamatsu-based data onto the 1983 system for this program's stars were then found to be

$$(B-V)_{\rm sys}=$$
$$-0.00030+1.05966(B-V)_{\rm ham} \qquad (B-V)<+0.1,$$
$$\pm 0.00231 \pm 0.01375;$$

$$(B-V)_{\rm sys}=$$
$$+0.00940+0.99453(B-V)_{\rm ham} \qquad +0.1<(B-V)<+0.8,$$
$$\pm 0.00182 \pm 0.00381;$$

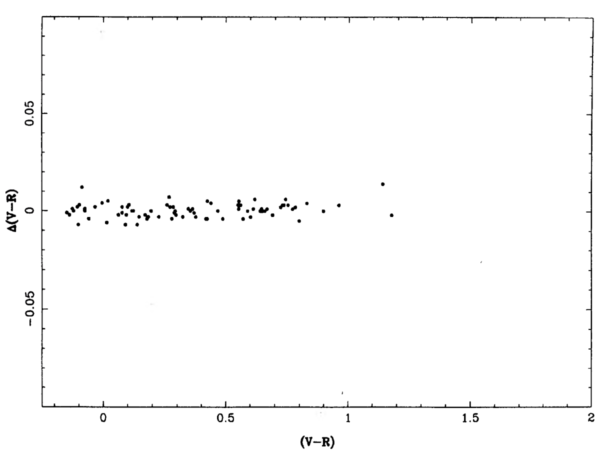

FIG. 16. A comparison of the $(V-R)$ color indices obtained with the Hamamatsu R943-02 as a function of the transformed RCA $(V-R)$ color index data.

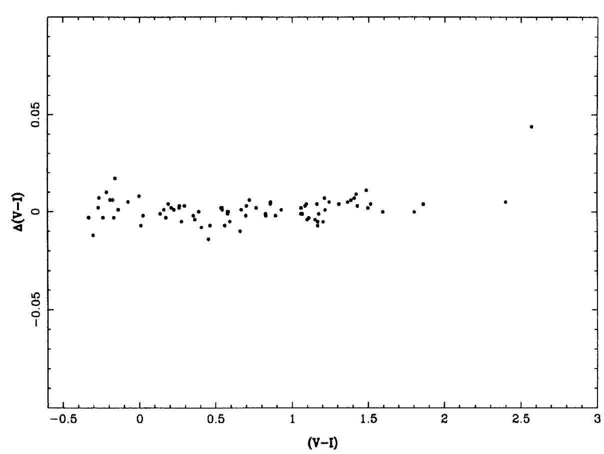

FIG. 18. A comparison of the $(V-I)$ color indices obtained with the Hamamatsu R943-02 as a function of the transformed RCA $(V-I)$ color index data.

$$(B-V)_{\rm sys}= +0.01466+0.98623(B-V)_{\rm ham} \quad (B-V)>+0.8,$$
$$\pm 0.00448 \pm 0.00338;$$

$$V_{\rm sys}=V_{\rm ham}+0.00058-0.00073(B-V)_{\rm sys}$$
$$\pm 0.00088 \pm 0.00104;$$

$$(U-B)_{\rm sys}= -0.03857+0.92527(U-B)_{\rm ham} \quad (U-B)<-0.2,$$
$$\pm 0.00621 \pm 0.00716;$$

$$(U-B)_{\rm sys}= -0.02406+1.02597(U-B)_{\rm ham} \quad (U-B)>-0.2,$$
$$\pm 0.00292 \pm 0.00300;$$

$$(V-R)_{\rm sys}=+0.00083+0.99771(V-R)_{\rm ham}$$
$$\pm 0.00059 \pm 0.00126;$$

$$(R-I)_{\rm sys}= -0.00151+0.99558(R-I)_{\rm ham} \quad (R-I)<+0.2,$$
$$\pm 0.00124 \pm 0.00972;$$

$$(R-I)_{\rm sys}= +0.00220+0.99643(R-I)_{\rm ham} \quad +0.2<(R-I)<+0.7,$$
$$\pm 0.00271 \pm 0.00573;$$

$$(R-I)_{\rm sys}= -0.00667+1.00101(R-I)_{\rm ham} \quad (R-I)>+0.7,$$
$$\pm 0.01063 \pm 0.01215;$$

$$(V-I)_{\rm sys}= -0.00055+1.00096(V-I)_{\rm ham} \quad (V-I)<+0.4,$$
$$\pm 0.00125 \pm 0.00520;$$

$$(V-I)_{\rm sys}= +0.00783+0.99109(V-I)_{\rm ham} \quad +0.4<(V-I)<+1.2,$$
$$\pm 0.00404 \pm 0.00509;$$

$$(V-I)_{\rm sys}= -0.00111+0.99789(V-I)_{\rm ham} \quad (V-I)>+1.2.$$
$$\pm 0.00512 \pm 0.00338,$$

The immediately above set of transformation relations then were applied to all Hamamatsu-based photometric data. Once done, all the individual measures obtained over the years with the two brands of photomultiplier were averaged together, weighted by the integration times. All magnitudes and color indices then were on the photometric system as defined by Landolt (1983).

Figures 19–24 show that the nonlinear transformation effects have been taken into account successfully, and that the data in this paper, as illustrated through the 81 object standard star subset, have been transformed to the photometric system defined in Landolt (1983). (Variable stars have been omitted from these figures.)

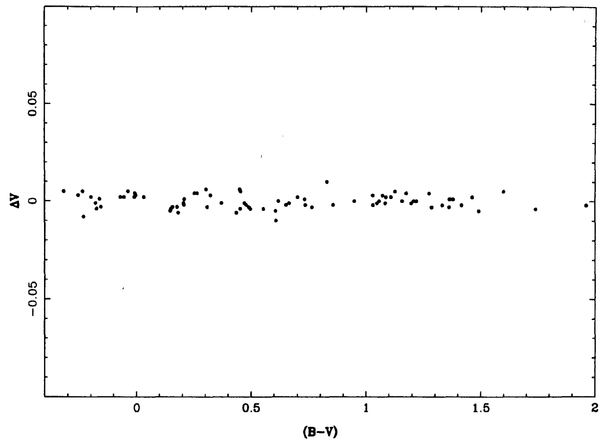

FIG. 19. A comparison of the V magnitude for the 81 standard star subset after all nonlinearity and transformation relations have been applied, as a function of Landolt's (1983) equatorial standard star's $(B-V)$ color index.

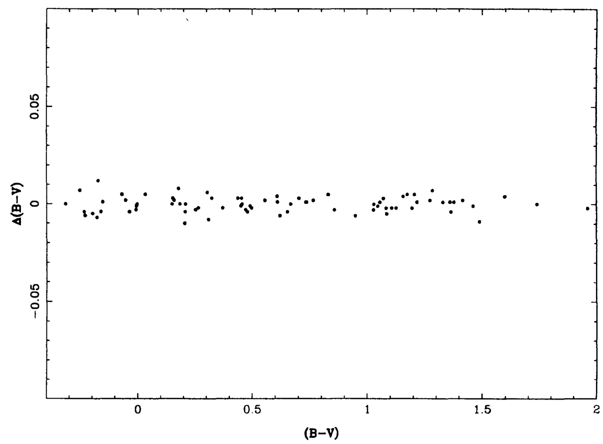

FIG. 20. A comparison of the $(B-V)$ color index for the 81 standard star subset after all nonlinearity and transformation relations have been applied, as a function of Landolt's (1983) equatorial standard star's $(B-V)$ color index.

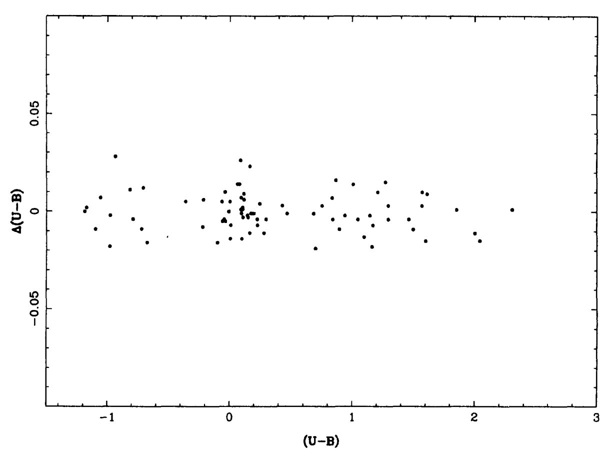

FIG. 21. A comparison of the $(U-B)$ color index for the 81 standard star subset after all nonlinearity and transformation relations have been applied, as a function of Landolt's (1983) equatorial standard star's $(U-B)$ color index.

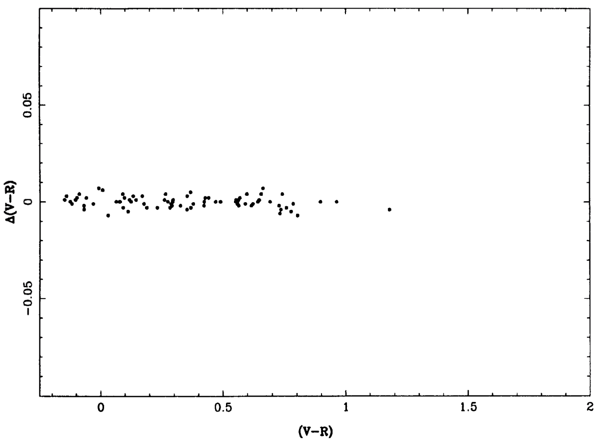

FIG. 22. A comparison of the $(V-R)$ color index for the 81 standard star subset after all nonlinearity and transformation relations have been applied, as a function of Landolt's (1983) equatorial standard star's $(V-R)$ color index.

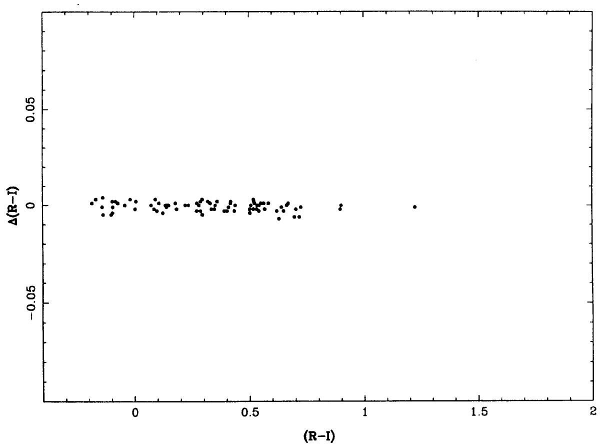

FIG. 23. A comparison of the $(R-I)$ color index for the 81 standard star subset after all nonlinearity and transformation relations have been applied, as a function of Landolt's (1983) equatorial standard star's $(R-I)$ color index.

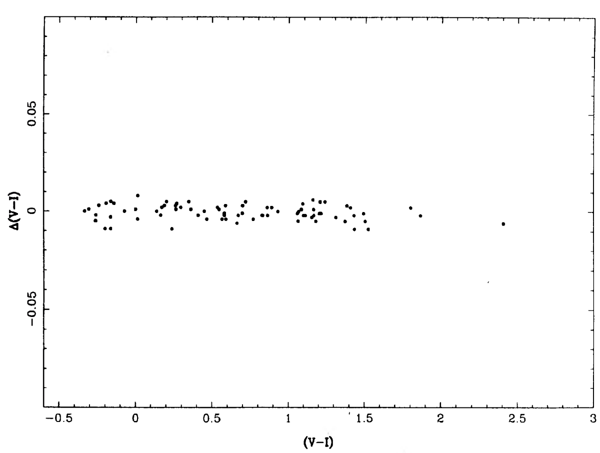

FIG. 24. A comparison of the $(V-I)$ color index for the 81 standard star subset after all nonlinearity and transformation relations have been applied, as a function of Landolt's (1983) equatorial standard star's $(V-I)$ color index.

3. DISCUSSION

Table 2 contains the final magnitudes and color indices for the 526 stars near the celestial equator that comprise the current standard star program. The star identifications have been taken from the Feige (1958, 1959) lists of blue stars, the Giclas stars in several Lowell Observatory Bulletins, the Palomar–Green (PG) stars from Green *et al.* (1986), and from the Harvard Annals, Vol. 101 (Durchmusterung of Selected Areas). The program stars in this paper are identified in Plates 21–76.

Mention should be made of a closely spaced group of stars which the author came upon by accident. By virtue of their position on the sky, they happen to be the first six stars in Table 2. They derive their name from their proximity to the variable star T Phoenicis. Their faintness, their broad range in color, and the small area of the sky which they occupy means that they will easily fit within the confines of most CCD chips currently in use. Unfortunately, they are only of use in the southern hemisphere. One of them, labeled TPHE B in Table 2 and found to be variable, was located in the literature (Dartayet 1929) as the already known 5.4129 day eclipsing binary RW Phe.

The coordinates for the stars in Table 2 have been precessed to the 2000.0 equinox using rigorous formulas which include the effect of proper motion. [See the *Explanatory Supplement to the Astronomical Ephemeris and the American Ephemeris and Nautical Almanac* (1961), p. 30 for the appropriate Besselian formulas. One programming scenario may be found in Jones (1978). Appropriate Julian Ephemeris Day formulas may be found in Lieske (1979).] The stars in Table 2 have been ordered by precessed right ascension; hence some of the Selected Area star numbers may be out of numerical order.

The coordinates in Table 2 have been adjusted for the effect of proper motion, where necessary. Table 3 contains proper motion information for the stars in Table 2 which have appreciable proper motion. The star name is given in the first column. The second and third columns, respectively, include the total proper motion in seconds of arc per year and the direction of motion in degrees. The fourth column gives the proper motion in right ascension in seconds of time per year. Columns five and six provide the proper motion in right ascension and declination, respectively, in seconds of arc per year. The last column references the literature source of the proper motion information. If the proper motion taken from the literature already was in seconds of arc per year, that value was tabulated in Table 3 in the last two columns. If the proper motion retrieved from the literature was the total proper motion and the direction of that motion, i.e., μ and θ, then μ^s_α, μ''_α, and μ''_δ arc were calculated by the relations

$$\mu''_\alpha = \mu \sin\theta \sec\delta,$$

$$\mu^s_\alpha = \mu''_\alpha (15 \cos\delta)^{-1},$$

$$\mu''_\delta = \mu \cos\theta,$$

where μ''_α is the proper motion in right ascension in seconds of arc, μ^s_α is the proper motion in right ascension in sec-

TABLE 2. UBVRI standard stars.

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean V	B-V	U-B	V-R	R-I	V-I	Notes
TPHE A	00:30:09	-46 31 22	14.651	0.793	0.380	0.435	0.405	0.841	29	12	0.0028	0.0046	0.0071	0.0019	0.0035	0.0032	
TPHE B	00:30:16	-46 27 55	12.334	0.405	0.156	0.262	0.271	0.535	29	17	0.0115	0.0026	0.0039	0.0020	0.0019	0.0035	1
TPHE C	00:30:17	-46 32 34	14.376	-0.298	-1.217	-0.148	-0.211	-0.360	39	23	0.0022	0.0024	0.0043	0.0038	0.0133	0.0149	
TPHE D	00:30:18	-46 31 11	13.118	1.551	1.871	0.849	0.810	1.663	37	23	0.0033	0.0030	0.0118	0.0015	0.0023	0.0030	
TPHE E	00:30:19	-46 24 36	11.630	0.443	-0.103	0.276	0.283	0.564	34	8	0.0017	0.0012	0.0024	0.0007	0.0015	0.0019	
TPHE F	00:30:50	-46 33 33	12.474	0.855	0.532	0.492	0.435	0.926	5	3	0.0004	0.0058	0.0161	0.0004	0.0040	0.0036	
TPHE G	00:31:05	-46 22 43	10.442	1.546	1.915	0.934	1.085	2.025	5	3	0.0004	0.0013	0.0036	0.0004	0.0009	0.0009	
PG0029+024	00:31:50	+02 38 26	15.268	0.362	-0.184	0.251	0.337	0.593	5	2	0.0094	0.0174	0.0112	0.0161	0.0125	0.0067	
PG0039+049	00:42:05	+05 09 44	12.877	-0.019	-0.871	0.067	0.097	0.164	4	3	0.0020	0.0030	0.0055	0.0035	0.0055	0.0045	
92 309	00:53:14	+00 46 02	13.842	0.513	-0.024	0.326	0.325	0.652	2	1	0.0035	0.0057	0.0028	0.0014	0.0035	0.0014	
92 235	00:53:16	+00 36 18	10.595	1.638	1.984	0.894	0.911	1.806	5	2	0.0058	0.0045	0.0098	0.0031	0.0045	0.0067	
92 322	00:53:47	+00 47 33	12.676	0.528	-0.002	0.302	0.305	0.608	2	1	0.0007	0.0049	0.0028	0.0014	0.0007	0.0007	
92 245	00:54:16	+00 39 51	13.818	1.418	1.189	0.929	0.907	1.836	21	8	0.0028	0.0079	0.0301	0.0024	0.0024	0.0028	
92 248	00:54:31	+00 40 15	15.346	1.128	1.289	0.690	0.553	1.245	4	2	0.0255	0.0160	0.0955	0.0215	0.0145	0.0175	
92 249	00:54:34	+00 41 05	14.325	0.699	0.240	0.399	0.370	0.770	17	8	0.0049	0.0085	0.0114	0.0046	0.0065	0.0073	
92 250	00:54:37	+00 38 56	13.178	0.814	0.480	0.446	0.394	0.840	20	9	0.0022	0.0034	0.0074	0.0022	0.0022	0.0029	
92 330	00:54:44	+00 43 26	15.073	0.568	-0.115	0.331	0.334	0.666	2	1	0.0141	0.0297	0.0163	0.0304	0.0000	0.0304	
92 252	00:54:48	+00 39 23	14.932	0.517	-0.140	0.326	0.332	0.666	41	18	0.0033	0.0055	0.0082	0.0047	0.0072	0.0068	
92 253	00:54:52	+00 40 20	14.085	1.131	0.955	0.719	0.616	1.337	39	17	0.0032	0.0062	0.0221	0.0027	0.0043	0.0050	
92 335	00:55:00	+00 44 13	12.523	0.672	0.208	0.380	0.338	0.719	2	1	0.0007	0.0028	0.0049	0.0000	0.0014	0.0014	
92 339	00:55:03	+00 44 11	15.579	0.449	-0.177	0.306	0.339	0.645	19	8	0.0087	0.0117	0.0126	0.0117	0.0197	0.0177	2
92 342	00:55:10	+00 43 14	11.613	0.436	-0.042	0.266	0.270	0.538	48	34	0.0013	0.0012	0.0023	0.0013	0.0009	0.0016	
92 188	00:55:10	+00 23 12	14.751	1.050	0.751	0.679	0.573	1.254	14	6	0.0096	0.0187	0.0551	0.0051	0.0043	0.0088	2
92 409	00:55:14	+00 56 07	10.627	1.138	1.136	0.734	0.625	1.361	5	3	0.0031	0.0027	0.0085	0.0022	0.0027	0.0018	
92 410	00:55:15	+01 01 49	14.984	0.398	-0.134	0.239	0.242	0.484	27	13	0.0058	0.0064	0.0083	0.0052	0.0102	0.0117	
92 412	00:55:16	+01 01 53	15.036	0.457	-0.152	0.285	0.304	0.589	27	13	0.0054	0.0077	0.0133	0.0069	0.0094	0.0106	
92 259	00:55:22	+00 40 30	14.997	0.642	0.108	0.370	0.452	0.821	3	1	0.0115	0.0219	0.0214	0.0191	0.0202	0.0150	
92 345	00:55:24	+00 51 07	15.216	0.745	0.121	0.465	0.476	0.941	2	1	0.0007	0.0014	0.0339	0.0057	0.0113	0.0057	
92 347	00:55:26	+00 50 49	15.752	0.543	-0.097	0.339	0.318	0.658	4	2	0.0255	0.0280	0.0355	0.0295	0.0755	0.0995	
92 260	00:55:29	+00 37 07	15.071	1.162	1.115	0.719	0.608	1.328	9	4	0.0090	0.0093	0.0477	0.0070	0.0057	0.0080	
92 348	00:55:30	+00 44 34	12.109	0.598	0.056	0.345	0.341	0.688	4	2	0.0010	0.0015	0.0035	0.0015	0.0005	0.0020	
92 417	00:55:32	+00 53 07	15.922	0.477	-0.185	0.351	0.305	0.657	6	3	0.0127	0.0188	0.0318	0.0151	0.0678	0.0625	
92 263	00:55:40	+00 36 18	11.782	1.048	0.843	0.563	0.522	1.087	52	35	0.0011	0.0014	0.0033	0.0010	0.0011	0.0015	
92 497	00:55:54	+01 11 42	13.642	0.729	0.257	0.404	0.378	0.783	1	1	...	...	...	...	...	...	
92 498	00:55:57	+01 10 40	14.408	1.010	0.794	0.648	0.531	1.181	1	1	...	...	...	...	...	...	
92 500	00:55:58	+01 10 24	15.841	1.003	0.211	0.738	0.599	1.338	1	1	...	...	...	...	...	...	
92 425	00:55:59	+00 52 58	13.941	1.191	1.173	0.755	0.627	1.384	36	19	0.0038	0.0067	0.0115	0.0023	0.0027	0.0038	
92 501	00:56:00	+01 10 52	12.958	0.610	0.068	0.345	0.331	0.677	1	1	...	...	...	...	...	...	
92 426	00:56:00	+00 52 53	14.466	0.729	0.184	0.412	0.396	0.809	8	4	0.0099	0.0131	0.0293	0.0078	0.0124	0.0120	
92 355	00:56:06	+00 50 47	14.965	1.164	1.201	0.759	0.645	1.406	15	7	0.0088	0.0124	0.0465	0.0070	0.0052	0.0090	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean: V	B-V	U-B	V-R	R-I	V-I	Notes
92 427	00:56:07	+01 00 18	14.953	0.809	0.352	0.462	2.922	3.275	2	1	0.0021	0.0085	0.0233	0.0014	0.0113	0.0092	
92 502	00:56:08	+01 04 24	11.812	0.486	-0.095	0.284	0.292	0.576	1	1	...	...	...	...	...	...	
92 430	00:56:16	+00 53 16	14.440	0.567	-0.040	0.338	0.338	0.676	35	18	0.0041	0.0052	0.0081	0.0029	0.0049	0.0051	
92 276	00:56:27	+00 41 53	12.036	0.629	0.067	0.368	0.357	0.726	21	11	0.0039	0.0022	0.0039	0.0031	0.0031	0.0052	
92 282	00:56:47	+00 38 29	12.969	0.318	-0.038	0.201	0.221	0.422	27	15	0.0031	0.0023	0.0044	0.0017	0.0023	0.0033	
92 508	00:56:51	+01 09 35	11.679	0.529	-0.047	0.318	0.320	0.639	3	2	0.0035	0.0046	0.0029	0.0058	0.0029	0.0029	
92 507	00:56:51	+01 05 58	11.332	0.932	0.688	0.507	0.461	0.969	3	2	0.0006	0.0046	0.0006	0.0012	0.0006	0.0012	
92 364	00:56:53	+00 44 02	11.673	0.607	-0.037	0.356	0.357	0.714	4	2	0.0015	0.0015	0.0085	0.0045	0.0010	0.0055	
92 433	00:56:54	+01 00 43	11.667	0.655	0.110	0.367	0.348	0.716	3	2	0.0006	0.0035	0.0115	0.0029	0.0017	0.0023	
92 288	00:57:17	+00 36 46	11.630	0.855	0.472	0.489	0.441	0.931	48	33	0.0014	0.0014	0.0022	0.0012	0.0009	0.0013	
F 11	01:04:22	+04 13 37	12.065	-0.240	-0.978	-0.120	-0.142	-0.261	63	47	0.0009	0.0011	0.0024	0.0011	0.0016	0.0021	
F 16	01:54:08	-06 42 54	12.406	-0.012	0.009	-0.003	0.002	-0.001	45	32	0.0013	0.0013	0.0027	0.0015	0.0018	0.0021	
93 407	01:54:37	+00 53 49	11.971	0.852	0.564	0.487	0.421	0.908	5	3	0.0027	0.0031	0.0134	0.0031	0.0036	0.0027	
93 317	01:54:38	+00 43 00	11.546	0.488	-0.055	0.293	0.298	0.592	37	28	0.0007	0.0008	0.0018	0.0007	0.0008	0.0008	
93 333	01:55:05	+00 45 44	12.011	0.832	0.436	0.469	0.422	0.892	38	28	0.0015	0.0018	0.0026	0.0010	0.0011	0.0016	
93 424	01:55:26	+00 56 43	11.620	1.083	0.943	0.554	0.502	1.058	40	29	0.0009	0.0014	0.0041	0.0008	0.0008	0.0008	
G3 33	02:00:09	+13 04 04	12.298	1.804	1.316	1.355	1.751	3.099	11	5	0.0030	0.0096	0.0145	0.0039	0.0045	0.0048	
PG0220+132B	02:23:34	+13 28 07	14.216	0.937	0.319	0.562	0.496	1.058	3	2	0.0081	0.0375	0.0583	0.0058	0.0127	0.0069	
PG0220+132	02:23:38	+13 27 38	14.760	-0.132	-0.922	-0.050	-0.120	-0.170	5	3	0.0063	0.0112	0.0103	0.0098	0.0170	0.0264	
PG0220+132A	02:23:39	+13 27 33	15.771	0.783	-0.339	0.514	0.481	0.995	3	2	0.0150	0.0699	0.0537	0.0110	0.0589	0.0479	
F 22	02:30:17	+05 15 51	12.799	-0.054	-0.806	-0.103	-0.105	-0.207	60	50	0.0014	0.0017	0.0030	0.0012	0.0028	0.0035	
PG0231+051E	02:33:28	+05 19 44	13.804	0.677	0.201	0.390	0.369	0.757	3	2	0.0046	0.0040	0.0075	0.0035	0.0017	0.0023	
PG0231+051D	02:33:33	+05 19 28	14.027	1.088	1.046	0.675	0.586	1.256	3	2	0.0029	0.0075	0.0312	0.0081	0.0064	0.0110	
PG0231+051A	02:33:40	+05 17 38	12.772	0.710	0.270	0.405	0.394	0.799	7	4	0.0008	0.0015	0.0030	0.0011	0.0030	0.0030	
PG0231+051C	02:33:41	+05 20 19	13.702	0.671	0.114	0.399	0.385	0.783	2	1	0.0014	0.0078	0.0148	0.0028	0.0064	0.0085	
PG0231+051	02:33:41	+05 18 40	16.105	-0.329	-1.192	-0.162	-0.371	-0.534	7	4	0.0068	0.0083	0.0045	0.0276	0.1066	0.1221	
PG0231+051B	02:33:45	+05 17 30	14.735	1.448	1.342	0.954	0.998	1.951	7	4	0.0030	0.0072	0.0178	0.0034	0.0026	0.0057	
F 24	02:35:08	+03 43 57	12.411	-0.203	-1.169	0.090	0.364	0.451	76	65	0.0016	0.0011	0.0030	0.0015	0.0015	0.0021	
94 171	02:53:38	+00 17 19	12.659	0.817	0.304	0.480	0.483	0.964	18	9	0.0028	0.0035	0.0045	0.0035	0.0019	0.0038	
94 296	02:55:20	+00 28 14	12.255	0.750	0.235	0.415	0.387	0.803	2	1	0.0021	0.0014	0.0014	0.0021	0.0021	0.0000	
94 394	02:56:14	+00 35 10	12.273	0.545	-0.047	0.344	0.330	0.676	2	1	0.0028	0.0014	0.0014	0.0007	0.0014	0.0007	
94 401	02:56:31	+00 40 05	14.293	0.638	0.098	0.389	0.369	0.759	2	1	0.0014	0.0028	0.0120	0.0064	0.0035	0.0099	
94 242	02:57:21	+00 18 38	11.728	0.301	0.107	0.178	0.184	0.362	60	53	0.0012	0.0010	0.0022	0.0013	0.0010	0.0017	
94 251	02:57:46	+00 16 02	11.204	1.219	1.281	0.659	0.587	1.247	52	45	0.0010	0.0011	0.0033	0.0008	0.0007	0.0011	
94 702	02:58:13	+01 10 53	11.594	1.418	1.621	0.756	0.673	1.430	64	56	0.0010	0.0014	0.0046	0.0009	0.0009	0.0011	
GD 50	03:48:50	-00 58 33	14.063	-0.276	-1.191	-0.145	-0.180	-0.325	43	24	0.0032	0.0037	0.0056	0.0043	0.0076	0.0098	
95 15	03:52:40	-00 05 22	11.302	0.712	0.157	0.424	0.385	0.809	2	1	0.0007	0.0007	0.0035	0.0014	0.0014	0.0028	
95 301	03:52:41	+00 31 21	11.216	1.290	1.296	0.692	0.620	1.311	47	40	0.0015	0.0015	0.0048	0.0009	0.0007	0.0013	
95 16	03:52:41	-00 05 06	14.313	1.306	1.322	0.796	0.676	1.472	4	2	0.0120	0.0160	0.0310	0.0135	0.0060	0.0090	
95 302	03:52:42	+00 31 18	11.694	0.825	0.447	0.471	0.420	0.891	29	20	0.0020	0.0015	0.0056	0.0013	0.0011	0.0017	

TABLE 2. (continued)

											Mean Errors of the Mean						
Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	V	B-V	U-B	V-R	R-I	V-I	Notes
95 96	03:52:54	+00 00 19	10.010	0.147	0.072	0.079	0.095	0.174	70	55	0.0016	0.0012	0.0032	0.0010	0.0011	0.0014	
95 97	03:52:57	-00 00 20	14.818	0.906	0.380	0.522	0.546	1.068	2	1	0.0007	0.0226	0.0212	0.0028	0.0191	0.0212	
95 98	03:53:00	+00 02 52	14.448	1.181	1.092	0.723	0.620	1.342	2	1	0.0007	0.0014	0.0177	0.0092	0.0071	0.0163	
95 100	03:53:01	+00 00 13	15.633	0.791	0.051	0.538	0.421	0.961	3	1	0.0283	0.0785	0.1132	0.0144	0.0572	0.0439	
95 101	03:53:04	+00 02 53	12.677	0.778	0.263	0.436	0.426	0.863	2	1	0.0028	0.0028	0.0099	0.0064	0.0064	0.0120	
95 102	03:53:07	+00 01 09	15.622	1.001	0.162	0.448	0.618	1.065	3	1	0.0335	0.0803	0.0612	0.0115	0.0508	0.0618	
95 252	03:53:11	+00 27 19	15.394	1.452	1.178	0.816	0.747	1.566	6	3	0.0065	0.0257	0.0433	0.0090	0.0086	0.0131	
95 190	03:53:13	+00 16 20	12.627	0.287	0.236	0.195	0.220	0.415	44	22	0.0020	0.0017	0.0039	0.0017	0.0015	0.0021	
95 193	03:53:20	+00 16 31	14.338	1.211	1.239	0.748	0.616	1.366	20	10	0.0049	0.0063	0.0255	0.0042	0.0034	0.0058	
95 105	03:53:21	-00 00 20	13.574	0.976	0.627	0.550	0.536	1.088	1	1	...	...	...	...	...	...	
95 107	03:53:25	+00 02 18	16.275	1.324	1.115	0.947	0.962	1.907	2	1	0.0035	0.1068	0.1732	0.0438	0.0226	0.0212	
95 106	03:53:25	+00 01 22	15.137	1.251	0.369	0.394	0.508	0.903	2	1	0.0064	0.0615	0.0240	0.1520	0.0127	0.1407	
95 112	03:53:40	-00 01 13	15.502	0.662	0.077	0.605	0.620	1.227	1	1	...	...	...	...	...	...	
95 41	03:53:41	-00 02 31	14.060	0.903	0.297	0.589	0.585	1.176	1	1	...	...	...	...	...	...	
95 317	03:53:44	+00 29 50	13.449	1.320	1.120	0.768	0.708	1.476	24	11	0.0035	0.0067	0.0131	0.0033	0.0012	0.0035	
95 42	03:53:44	-00 04 33	15.606	-0.215	-1.111	-0.119	-0.180	-0.300	41	18	0.0058	0.0073	0.0064	0.0075	0.0269	0.0276	
95 263	03:53:47	+00 26 38	12.679	1.500	1.559	0.801	0.711	1.513	19	10	0.0030	0.0034	0.0094	0.0023	0.0011	0.0028	
95 115	03:53:48	-00 00 48	14.680	0.836	0.096	0.577	0.579	1.157	1	1	...	...	...	...	...	...	
95 43	03:53:49	-00 03 01	10.803	0.510	-0.016	0.308	0.316	0.624	16	10	0.0022	0.0020	0.0027	0.0027	0.0018	0.0035	
95 271	03:54:17	+00 18 49	13.669	1.287	0.916	0.734	0.717	1.453	15	7	0.0057	0.0080	0.0127	0.0023	0.0023	0.0036	
95 328	03:54:19	+00 36 28	13.525	1.532	1.298	0.908	0.868	1.776	23	11	0.0029	0.0054	0.0186	0.0027	0.0015	0.0031	
95 329	03:54:24	+00 37 07	14.617	1.184	1.093	0.766	0.642	1.410	13	6	0.0047	0.0103	0.0311	0.0044	0.0094	0.0089	
95 330	03:54:31	+00 29 05	12.174	1.999	2.233	1.166	1.100	2.268	47	23	0.0025	0.0026	0.0137	0.0020	0.0016	0.0028	
95 275	03:54:44	+00 27 20	13.479	1.763	1.740	1.011	0.931	1.944	40	20	0.0028	0.0054	0.0201	0.0022	0.0016	0.0025	
95 276	03:54:46	+00 25 54	14.118	1.225	1.218	0.748	0.646	1.395	14	7	0.0061	0.0102	0.0216	0.0040	0.0032	0.0051	
95 60	03:54:49	-00 07 05	13.429	0.776	0.197	0.464	0.449	0.914	20	10	0.0031	0.0031	0.0060	0.0029	0.0025	0.0034	
95 218	03:54:50	+00 10 08	12.095	0.708	0.208	0.397	0.370	0.767	20	14	0.0034	0.0022	0.0034	0.0020	0.0020	0.0027	
95 132	03:54:51	+00 05 21	12.064	0.448	0.300	0.259	0.287	0.545	33	27	0.0023	0.0021	0.0057	0.0016	0.0017	0.0026	
95 62	03:55:00	-00 02 55	13.538	1.355	1.181	0.742	0.685	1.428	22	11	0.0030	0.0053	0.0136	0.0019	0.0019	0.0028	
95 137	03:55:04	+00 03 33	14.440	1.457	1.136	0.893	0.845	1.737	1	1	...	...	...	...	...	...	
95 139	03:55:05	+00 03 13	12.196	0.923	0.677	0.562	0.476	1.039	3	2	0.0017	0.0046	0.0191	0.0023	0.0017	0.0035	
95 66	03:55:07	-00 09 31	12.892	0.715	0.167	0.426	0.438	0.864	2	1	0.0021	0.0071	0.0035	0.0007	0.0057	0.0049	
95 227	03:55:08	+00 14 35	15.779	0.771	0.034	0.515	0.552	1.067	14	7	0.0118	0.0289	0.0417	0.0115	0.0107	0.0150	
95 142	03:55:09	+00 01 19	12.927	0.588	0.097	0.371	0.375	0.745	22	11	0.0030	0.0030	0.0036	0.0019	0.0017	0.0028	
95 74	03:55:31	-00 09 13	11.531	1.126	0.686	0.600	0.567	1.165	39	34	0.0016	0.0013	0.0035	0.0013	0.0010	0.0013	
95 231	03:55:39	+00 10 43	14.216	0.452	0.297	0.270	0.290	0.560	26	13	0.0043	0.0045	0.0071	0.0045	0.0053	0.0076	
95 284	03:55:42	+00 26 34	13.669	1.398	1.073	0.818	0.766	1.586	20	9	0.0040	0.0078	0.0239	0.0027	0.0036	0.0049	
95 149	03:55:44	+00 07 05	10.938	1.593	1.564	0.874	0.811	1.685	17	11	0.0051	0.0039	0.0095	0.0024	0.0017	0.0029	
95 285	03:55:46	+00 23 40	15.561	0.937	0.703	0.607	0.602	1.210	2	1	0.0071	0.0255	0.0636	0.0071	0.0064	0.0134	
95 236	03:56:13	+00 08 43	11.491	0.736	0.162	0.420	0.411	0.831	35	31	0.0010	0.0014	0.0035	0.0012	0.0008	0.0015	

TABLE 2. (continued)

											Mean Errors of the Mean						
Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	V	B-V	U-B	V-R	R-I	V-I	Notes
96 21	04:51:16	-00 14 51	12.182	0.490	-0.004	0.299	0.297	0.598	2	1	0.0028	0.0007	0.0028	0.0057	0.0014	0.0035	
96 36	04:51:43	-00 10 12	10.591	0.247	0.118	0.134	0.136	0.271	34	24	0.0014	0.0012	0.0034	0.0009	0.0009	0.0015	
96 737	04:52:35	+00 22 29	11.716	1.334	1.160	0.733	0.695	1.428	35	26	0.0020	0.0019	0.0052	0.0010	0.0008	0.0014	
96 409	04:52:58	+00 09 04	13.778	0.543	0.042	0.340	0.340	0.682	2	1	0.0106	0.0007	0.0240	0.0085	0.0049	0.0127	
96 83	04:52:59	-00 14 44	11.719	0.179	0.202	0.093	0.097	0.190	37	26	0.0013	0.0010	0.0046	0.0010	0.0013	0.0016	
96 235	04:53:19	-00 05 04	11.140	1.074	0.898	0.559	0.510	1.068	32	22	0.0014	0.0011	0.0028	0.0007	0.0009	0.0009	
G97 42	05:28:01	+09 39 07	12.443	1.639	1.259	1.171	1.485	2.655	23	11	0.0017	0.0035	0.0186	0.0025	0.0031	0.0033	
G102 22	05:42:05	+12 30 14	11.509	1.621	1.134	1.211	1.590	2.800	20	10	0.0013	0.0027	0.0074	0.0034	0.0031	0.0042	
GD 71	05:52:28	+15 53 15	13.032	-0.249	-1.107	-0.137	-0.164	-0.302	86	73	0.0014	0.0013	0.0023	0.0014	0.0020	0.0026	
97 249	05:57:07	+00 01 12	11.733	0.648	0.100	0.369	0.353	0.723	69	62	0.0010	0.0008	0.0014	0.0006	0.0007	0.0010	
97 42	05:57:09	-00 11 13	12.448	1.626	1.208	1.160	1.485	2.641	2	1	0.0057	0.0156	0.0127	0.0071	0.0021	0.0057	
97 345	05:57:26	+00 20 26	11.608	1.655	1.680	0.928	0.844	1.771	23	14	0.0027	0.0040	0.0156	0.0021	0.0015	0.0029	
97 351	05:57:37	+00 13 42	9.781	0.202	0.096	0.124	0.141	0.264	102	83	0.0009	0.0008	0.0020	0.0007	0.0008	0.0010	
97 75	05:57:55	-00 09 29	11.483	1.872	2.100	1.047	0.952	1.999	20	12	0.0038	0.0047	0.0101	0.0029	0.0016	0.0038	
97 284	05:58:25	+00 05 12	10.788	1.363	1.087	0.774	0.725	1.500	77	68	0.0009	0.0010	0.0022	0.0007	0.0006	0.0010	
97 224	05:58:44	-00 05 13	14.085	0.910	0.341	0.553	0.547	1.102	2	1	0.0127	0.0177	0.0049	0.0120	0.0127	0.0000	
98 961	06:51:27	-00 15 37	13.089	1.283	1.003	0.701	0.662	1.362	2	1	0.0021	0.0007	0.0014	0.0021	0.0000	0.0021	
98 966	06:51:29	-00 16 27	14.001	0.469	0.357	0.283	0.331	0.613	2	1	0.0035	0.0014	0.0021	0.0014	0.0191	0.0205	
98 556	06:51:30	-00 24 52	14.137	0.338	0.126	0.196	0.243	0.437	6	3	0.0053	0.0053	0.0131	0.0057	0.0045	0.0090	
98 557	06:51:30	-00 25 07	14.780	1.397	1.072	0.755	0.741	1.494	2	1	0.0007	0.0544	0.0269	0.0092	0.0297	0.0198	
98 562	06:51:31	-00 18 59	12.185	0.522	-0.002	0.305	0.303	0.607	2	1	0.0028	0.0049	0.0035	0.0014	0.0014	0.0000	
98 563	06:51:32	-00 26 26	14.162	0.416	-0.190	0.294	0.317	0.610	10	5	0.0051	0.0085	0.0073	0.0044	0.0079	0.0082	
98 978	06:51:34	-00 11 28	10.572	0.609	0.094	0.349	0.322	0.671	46	38	0.0015	0.0009	0.0016	0.0007	0.0009	0.0012	
98 L1	06:51:39	-00 26 38	15.672	1.243	0.776	0.730	0.712	1.445	3	2	0.0075	0.0462	0.0976	0.0110	0.0254	0.0318	
98 L2	06:51:40	-00 21 11	15.859	1.340	1.497	0.754	0.572	1.327	1	1	...	...	...	...	...	...	
98 581	06:51:40	-00 25 43	14.556	0.238	0.161	0.118	0.244	0.361	7	3	0.0246	0.0280	0.0200	0.0193	0.0197	0.0155	
98 580	06:51:40	-00 26 43	14.728	0.367	0.303	0.241	0.305	0.547	4	2	0.0255	0.0185	0.0185	0.0125	0.0460	0.0395	
98 L3	06:51:42	-00 15 18	14.614	1.936	1.837	1.091	1.047	2.142	4	2	0.0145	0.0265	0.1450	0.0090	0.0070	0.0110	
98 L4	06:51:42	-00 16 35	16.332	1.344	1.086	0.936	0.785	1.726	2	2	0.0580	0.0325	0.3429	0.0205	0.0368	0.0580	
98 1002	06:51:43	-00 15 53	14.568	0.574	-0.027	0.354	0.379	0.733	4	2	0.0055	0.0065	0.0110	0.0070	0.0125	0.0130	
98 590	06:51:43	-00 22 21	14.642	1.352	0.853	0.753	0.747	1.500	4	2	0.0110	0.0120	0.0525	0.0050	0.0105	0.0135	
98 614	06:51:49	-00 20 34	15.674	1.063	0.399	0.834	0.645	1.480	2	1	0.0424	0.0474	0.0311	0.0226	0.0368	0.0580	
98 618	06:51:50	-00 21 17	12.723	2.192	2.144	1.254	1.151	2.407	14	7	0.0051	0.0075	0.0307	0.0035	0.0032	0.0045	
98 624	06:51:52	-00 20 16	13.811	0.791	0.394	0.417	0.404	0.822	2	1	0.0141	0.0240	0.0042	0.0014	0.0212	0.0198	
98 626	06:51:53	-00 20 46	14.758	1.406	1.067	0.806	0.816	1.624	2	1	0.0071	0.0028	0.0438	0.0092	0.0205	0.0113	
98 627	06:51:53	-00 22 03	14.900	0.689	0.078	0.428	0.387	0.817	2	1	0.0064	0.0170	0.0085	0.0007	0.0127	0.0127	
98 634	06:51:56	-00 20 57	14.608	0.647	0.123	0.382	0.372	0.757	2	1	0.0042	0.0049	0.0127	0.0113	0.0177	0.0064	
98 642	06:51:59	-00 21 33	15.290	0.571	0.318	0.302	0.393	0.697	2	1	0.0191	0.0453	0.0120	0.0198	0.0021	0.0177	
98 185	06:52:02	-00 27 21	10.536	0.202	0.113	0.109	0.124	0.231	45	37	0.0018	0.0009	0.0033	0.0010	0.0013	0.0018	
98 646	06:52:03	-00 21 18	15.839	1.060	1.426	0.583	0.504	1.090	1	1	...	...	...	...	...	...	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	V (Mean Errors of the Mean)	B-V	U-B	V-R	R-I	V-I	Notes
98 193	06:52:04	-00 27 18	10.030	1.180	1.152	0.615	0.537	1.153	44	35	0.0015	0.0008	0.0023	0.0011	0.0008	0.0015	
98 653	06:52:05	-00 18 19	9.539	-0.004	-0.099	0.009	0.008	0.017	65	50	0.0014	0.0004	0.0009	0.0007	0.0007	0.0011	
98 650	06:52:05	-00 19 40	12.271	0.157	0.110	0.080	0.086	0.166	31	20	0.0020	0.0014	0.0041	0.0016	0.0022	0.0027	
98 652	06:52:05	-00 21 58	14.817	0.611	0.126	0.276	0.339	0.618	2	1	0.0113	0.0297	0.0177	0.0453	0.0240	0.0226	
98 666	06:52:10	-00 23 34	12.732	0.164	-0.004	0.091	0.108	0.200	25	14	0.0034	0.0028	0.0042	0.0042	0.0030	0.0048	
98 671	06:52:12	-00 18 22	13.385	0.968	0.719	0.575	0.494	1.071	27	15	0.0037	0.0048	0.0108	0.0033	0.0035	0.0046	
98 670	06:52:12	-00 19 17	11.930	1.356	1.313	0.723	0.653	1.375	32	19	0.0016	0.0018	0.0058	0.0018	0.0012	0.0023	
98 676	06:52:14	-00 19 21	13.068	1.146	0.666	0.683	0.673	1.352	17	8	0.0032	0.0041	0.0107	0.0015	0.0218	0.0032	
98 675	06:52:14	-00 19 41	13.398	1.909	1.936	1.082	1.002	2.085	44	21	0.0026	0.0035	0.0283	0.0018	0.0018	0.0024	
98 L5	06:52:16	-00 19 39	17.800	1.900	-0.100	3.100	2.600	5.800	6	3	0.1633	0.3266	0.4491	0.1225	0.0408	0.1225	3
98 682	06:52:17	-00 19 42	13.749	0.632	0.098	0.366	0.352	0.717	13	7	0.0039	0.0039	0.0064	0.0017	0.0025	0.0039	
98 685	06:52:19	-00 20 19	11.954	0.463	0.096	0.290	0.280	0.570	22	14	0.0030	0.0021	0.0028	0.0023	0.0021	0.0034	
98 688	06:52:19	-00 23 34	12.754	0.293	0.245	0.158	0.180	0.337	21	11	0.0033	0.0024	0.0081	0.0037	0.0050	0.0074	
98 1082	06:52:20	-00 14 15	15.010	0.835	-0.001	0.485	0.619	1.102	3	1	0.0058	0.0139	0.0225	0.0029	0.0133	0.0162	
98 1087	06:52:21	-00 15 50	14.439	1.595	1.284	0.928	0.882	1.812	12	5	0.0040	0.0141	0.0592	0.0035	0.0049	0.0072	
98 1102	06:52:28	-00 13 43	12.113	0.314	0.089	0.193	0.195	0.388	15	8	0.0034	0.0026	0.0059	0.0026	0.0036	0.0052	
98 1112	06:52:35	-00 15 23	13.975	0.814	0.286	0.443	0.431	0.874	5	2	0.0067	0.0040	0.0152	0.0054	0.0031	0.0076	
98 1119	06:52:37	-00 14 33	11.878	0.551	0.069	0.312	0.299	0.611	7	4	0.0023	0.0038	0.0042	0.0019	0.0042	0.0045	
98 1124	06:52:38	-00 16 34	13.707	0.315	0.258	0.173	0.201	0.373	24	12	0.0035	0.0043	0.0080	0.0029	0.0051	0.0057	
98 1122	06:52:38	-00 17 05	14.090	0.595	-0.297	0.376	0.442	0.816	25	12	0.0034	0.0060	0.0074	0.0038	0.0028	0.0046	
98 724	06:52:38	-00 19 22	11.118	1.104	0.904	0.575	0.527	1.103	12	7	0.0035	0.0035	0.0052	0.0023	0.0023	0.0038	
98 733	06:52:40	-00 17 16	12.238	1.285	1.087	0.698	0.650	1.347	20	10	0.0034	0.0042	0.0060	0.0029	0.0022	0.0040	
RU 149G	07:24:12	-00 31 46	12.829	0.541	0.033	0.322	0.322	0.645	18	12	0.0026	0.0040	0.0042	0.0021	0.0026	0.0040	
RU 149A	07:24:14	-00 32 44	14.495	0.298	0.118	0.196	0.196	0.391	18	12	0.0066	0.0052	0.0111	0.0099	0.0085	0.0139	
RU 149F	07:24:15	-00 30 58	13.471	1.115	1.025	0.594	0.538	1.132	19	11	0.0028	0.0078	0.0223	0.0021	0.0023	0.0034	
RU 149	07:24:15	-00 32 55	13.866	-0.129	-0.779	-0.040	-0.068	-0.108	46	30	0.0022	0.0027	0.0031	0.0022	0.0062	0.0069	
RU 149D	07:24:16	-00 32 38	11.480	-0.037	-0.287	0.021	0.008	0.029	18	11	0.0019	0.0021	0.0028	0.0012	0.0019	0.0024	
RU 149C	07:24:18	-00 32 17	14.425	0.195	0.141	0.093	0.127	0.222	18	11	0.0052	0.0042	0.0111	0.0061	0.0099	0.0106	
RU 149B	07:24:18	-00 32 58	12.642	0.662	0.151	0.374	0.354	0.728	15	10	0.0021	0.0034	0.0049	0.0018	0.0026	0.0028	
RU 149E	07:24:19	-00 31 08	13.718	0.522	-0.007	0.321	0.314	0.637	12	8	0.0064	0.0049	0.0069	0.0035	0.0066	0.0087	
RU 152F	07:29:51	-02 04 29	14.564	0.635	0.069	0.382	0.315	0.689	15	8	0.0052	0.0057	0.0096	0.0067	0.0176	0.0222	
RU 152E	07:29:51	-02 05 09	12.362	0.042	-0.086	0.030	0.034	0.065	12	8	0.0014	0.0020	0.0020	0.0014	0.0023	0.0029	
RU 152	07:29:55	-02 06 18	13.014	-0.190	-1.073	-0.057	-0.087	-0.145	40	25	0.0019	0.0024	0.0032	0.0024	0.0030	0.0038	
RU 152B	07:29:56	-02 05 39	15.019	0.500	0.022	0.290	0.309	0.600	23	10	0.0046	0.0088	0.0181	0.0054	0.0175	0.0211	
RU 152A	07:29:57	-02 06 02	14.341	0.543	-0.085	0.325	0.329	0.654	14	8	0.0061	0.0086	0.0168	0.0051	0.0094	0.0131	
RU 152C	07:29:59	-02 05 18	12.222	0.573	-0.013	0.342	0.340	0.683	13	9	0.0025	0.0031	0.0033	0.0022	0.0019	0.0031	
RU 152D	07:30:03	-02 04 16	11.076	0.875	0.491	0.473	0.449	0.921	14	10	0.0013	0.0016	0.0024	0.0011	0.0019	0.0019	
99 438	07:55:54	-00 16 51	9.398	-0.155	-0.725	-0.059	-0.081	-0.141	105	87	0.0014	0.0007	0.0014	0.0007	0.0007	0.0009	
99 447	07:56:07	-00 20 43	9.417	-0.067	-0.225	-0.032	-0.041	-0.074	70	59	0.0008	0.0008	0.0014	0.0008	0.0008	0.0011	
100 241	08:52:35	-00 39 48	10.139	0.157	0.101	0.078	0.085	0.163	53	43	0.0011	0.0007	0.0016	0.0005	0.0005	0.0008	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean: V	B-V	U-B	V-R	R-I	V-I	Notes
100 162	08:53:15	-00 43 29	9.150	1.276	1.497	0.649	0.553	1.203	72	53	0.0012	0.0011	0.0026	0.0006	0.0007	0.0009	
100 267	08:53:18	-00 41 31	13.027	0.485	-0.062	0.307	0.302	0.608	3	3	0.0069	0.0023	0.0133	0.0075	0.0040	0.0040	
100 269	08:53:19	-00 41 10	12.350	0.547	-0.040	0.335	0.331	0.666	3	3	0.0035	0.0029	0.0150	0.0035	0.0029	0.0017	
100 280	08:53:36	-00 36 41	11.799	0.494	-0.002	0.295	0.291	0.588	58	47	0.0008	0.0009	0.0014	0.0008	0.0008	0.0012	
100 394	08:53:55	-00 32 21	11.384	1.317	1.457	0.705	0.636	1.341	9	5	0.0080	0.0040	0.0087	0.0023	0.0027	0.0030	
PG0918+029D	09:21:22	+02 47 30	12.272	1.044	0.821	0.575	0.535	1.108	19	11	0.0021	0.0030	0.0071	0.0016	0.0018	0.0018	
PG0918+029	09:21:28	+02 46 03	13.327	-0.271	-1.081	-0.129	-0.159	-0.288	45	27	0.0024	0.0024	0.0030	0.0019	0.0055	0.0063	
PG0918+029B	09:21:34	+02 48 01	13.963	0.765	0.366	0.417	0.370	0.787	20	11	0.0034	0.0072	0.0159	0.0025	0.0045	0.0056	
PG0918+029A	09:21:35	+02 46 20	14.490	0.536	-0.032	0.325	0.336	0.661	29	14	0.0033	0.0058	0.0095	0.0039	0.0076	0.0085	
PG0918+029C	09:21:42	+02 46 38	13.537	0.631	0.087	0.367	0.357	0.722	21	10	0.0020	0.0028	0.0048	0.0015	0.0022	0.0028	
-12 2918	09:31:18	-13 29 20	10.067	1.501	1.166	1.067	1.318	2.385	13	9	0.0025	0.0028	0.0075	0.0039	0.0022	0.0042	
PG0942-029D	09:45:10	-03 05 53	13.707	0.564	0.129	0.348	0.343	0.687	1	1	...	...	...	...	...	...	
PG0942-029A	09:45:10	-03 10 17	14.731	0.783	0.339	0.610	0.477	1.081	1	1	...	...	...	...	...	...	
PG0942-029B	09:45:12	-03 06 57	14.108	0.525	0.085	0.368	0.333	0.697	1	1	...	...	...	...	...	...	
PG0942-029	09:45:12	-03 09 24	14.004	-0.294	-1.175	-0.130	-0.149	-0.280	14	7	0.0045	0.0056	0.0069	0.0069	0.0120	0.0144	
PG0942-029C	09:45:15	-03 06 39	14.989	0.727	0.369	0.539	0.376	0.909	1	1	...	...	...	...	...	...	
101 315	09:54:51	-00 27 28	11.249	1.153	1.056	0.612	0.559	1.172	19	11	0.0037	0.0018	0.0067	0.0016	0.0011	0.0021	
101 316	09:54:52	-00 18 32	11.552	0.493	0.032	0.293	0.291	0.584	17	10	0.0027	0.0024	0.0036	0.0019	0.0029	0.0032	
101 L1	09:55:29	-00 21 37	16.501	0.757	-0.104	0.421	0.527	0.947	4	1	0.0310	0.0340	0.0290	0.0225	0.0855	0.1070	
101 320	09:55:33	-00 22 31	13.823	1.052	0.690	0.581	0.561	1.141	11	7	0.0048	0.0103	0.0181	0.0039	0.0036	0.0045	
101 L2	09:55:35	-00 18 48	15.770	0.602	0.082	0.321	0.304	0.625	1	1	...	...	...	...	...	...	
101 404	09:55:41	-00 18 21	13.459	0.996	0.697	0.530	0.500	1.029	12	7	0.0040	0.0078	0.0095	0.0049	0.0032	0.0055	
101 324	09:55:57	-00 23 14	9.742	1.161	1.148	0.591	0.519	1.110	56	43	0.0015	0.0009	0.0020	0.0007	0.0007	0.0011	
101 262	09:56:08	-00 29 48	14.295	0.784	0.297	0.440	0.387	0.827	4	2	0.0045	0.0160	0.0205	0.0075	0.0100	0.0035	
101 408	09:56:08	-00 12 40	14.785	1.200	1.347	0.718	0.603	1.321	2	1	0.0240	0.0438	0.0170	0.0170	0.0120	0.0297	
101 326	09:56:08	-00 27 08	14.923	0.729	0.227	0.406	0.375	0.780	13	6	0.0078	0.0094	0.0128	0.0055	0.0111	0.0122	
101 410	09:56:09	-00 14 02	13.646	0.546	-0.063	0.298	0.326	0.623	2	1	0.0085	0.0014	0.0021	0.0106	0.0035	0.0064	
101 327	09:56:09	-00 25 50	13.441	1.155	1.139	0.717	0.574	1.290	28	15	0.0032	0.0057	0.0098	0.0023	0.0017	0.0028	
101 413	09:56:14	-00 11 56	12.583	0.983	0.716	0.529	0.497	1.025	9	6	0.0023	0.0047	0.0103	0.0033	0.0040	0.0040	
101 268	09:56:19	-00 31 55	14.380	1.531	1.381	1.040	1.200	2.237	11	5	0.0078	0.0199	0.0769	0.0048	0.0036	0.0045	
101 330	09:56:21	-00 27 19	13.723	0.577	-0.026	0.346	0.338	0.684	28	14	0.0038	0.0038	0.0051	0.0028	0.0057	0.0064	
101 415	09:56:23	-00 16 52	15.259	0.577	-0.008	0.346	0.350	0.695	2	1	0.0028	0.0247	0.0021	0.0198	0.0134	0.0332	
101 270	09:56:27	-00 35 43	13.711	0.554	0.055	0.332	0.306	0.637	2	1	0.0000	0.0014	0.0127	0.0049	0.0071	0.0014	
101 278	09:56:55	-00 29 38	15.494	1.041	0.737	0.596	0.548	1.144	2	1	0.0184	0.0226	0.0269	0.0198	0.0148	0.0346	
101 L3	09:56:55	-00 30 27	15.953	0.637	-0.033	0.396	0.395	0.792	2	1	0.0233	0.0184	0.0707	0.0382	0.0488	0.0870	
101 281	09:57:05	-00 31 38	11.575	0.812	0.419	0.452	0.412	0.864	19	11	0.0037	0.0018	0.0048	0.0023	0.0011	0.0025	
101 L4	09:57:08	-00 31 28	16.264	0.793	0.362	0.578	0.062	0.644	2	1	0.0170	0.0141	0.0014	0.0191	0.2638	0.2807	
101 L5	09:57:11	-00 31 37	15.928	0.622	0.115	0.414	0.305	0.720	2	1	0.0106	0.0283	0.0863	0.0078	0.0134	0.0212	
101 421	09:57:16	-00 17 16	13.180	0.507	-0.031	0.327	0.296	0.623	2	1	0.0021	0.0021	0.0035	0.0021	0.0007	0.0014	
101 338	09:57:18	-00 20 59	13.788	0.634	0.024	0.350	0.340	0.691	2	1	0.0071	0.0071	0.0042	0.0021	0.0035	0.0014	

TABLE 2. (continued)

											Mean Errors of the Mean						
Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	V	B-V	U-B	V-R	R-I	V-I	Notes
101 339	09:57:18	-00 25 00	14.449	0.850	0.501	0.458	0.398	0.857	2	1	0.0099	0.0085	0.0099	0.0240	0.0042	0.0290	
101 424	09:57:20	-00 16 26	15.058	0.764	0.273	0.429	0.425	0.855	2	1	0.0276	0.0389	0.0191	0.0226	0.0205	0.0431	
101 427	09:57:26	-00 17 16	14.964	0.805	0.321	0.484	0.369	0.854	2	1	0.0269	0.0297	0.0014	0.0247	0.0113	0.0368	
101 341	09:57:30	-00 21 52	14.342	0.575	0.059	0.332	0.309	0.641	2	1	0.0113	0.0141	0.0071	0.0007	0.0078	0.0071	
101 342	09:57:31	-00 21 49	15.556	0.529	-0.065	0.339	0.419	0.758	2	1	0.0141	0.0085	0.0085	0.0240	0.0021	0.0226	
101 343	09:57:31	-00 22 54	15.504	0.606	0.094	0.396	0.338	0.734	2	1	0.0276	0.0488	0.0177	0.0226	0.0255	0.0481	
101 429	09:57:32	-00 18 17	13.496	0.980	0.782	0.617	0.526	1.143	23	13	0.0039	0.0019	0.0060	0.0017	0.0020	0.0030	
101 431	09:57:37	-00 17 51	13.684	1.246	1.144	0.808	0.708	1.517	23	13	0.0056	0.0063	0.0102	0.0033	0.0029	0.0042	
101 L6	09:57:39	-00 17 52	16.497	0.711	0.183	0.445	0.583	1.024	2	1	0.0219	0.0092	0.0311	0.0113	0.1648	0.1732	
101 207	09:57:53	-00 47 35	12.419	0.515	-0.078	0.321	0.320	0.641	22	14	0.0028	0.0038	0.0062	0.0017	0.0019	0.0023	
101 363	09:58:19	-00 25 35	9.874	0.261	0.129	0.146	0.151	0.297	53	44	0.0012	0.0008	0.0025	0.0008	0.0008	0.0011	
GD 108	10:00:47	-07 33 31	13.561	-0.215	-0.942	-0.098	-0.122	-0.220	21	12	0.0028	0.0041	0.0039	0.0041	0.0050	0.0055	
G162 66	10:33:43	-11 40 39	13.012	-0.165	-0.996	-0.126	-0.141	-0.266	80	64	0.0015	0.0013	0.0022	0.0010	0.0020	0.0025	
G44 27	10:36:02	+05 07 11	12.636	1.586	1.088	1.185	1.526	2.714	8	4	0.0120	0.0106	0.0106	0.0046	0.0039	0.0032	
PG1034+001	10:37:04	-00 08 20	13.228	-0.365	-1.274	-0.155	-0.203	-0.359	33	16	0.0024	0.0024	0.0033	0.0026	0.0042	0.0054	
G163 6	10:42:55	+02 47 22	14.706	1.550	1.228	1.090	1.384	2.478	4	3	0.0070	0.0115	0.0655	0.0090	0.0015	0.0085	
PG1047+003	10:50:03	-00 00 32	13.474	-0.290	-1.121	-0.132	-0.162	-0.295	32	18	0.0039	0.0030	0.0041	0.0037	0.0088	0.0110	
PG1047+003A	10:50:06	-00 01 08	13.512	0.688	0.168	0.422	0.418	0.840	15	7	0.0046	0.0049	0.0067	0.0026	0.0026	0.0036	
PG1047+003B	10:50:09	-00 02 00	14.751	0.679	0.172	0.391	0.371	0.764	13	5	0.0050	0.0086	0.0128	0.0022	0.0080	0.0086	
PG1047+003C	10:50:18	-00 00 23	12.453	0.607	-0.019	0.378	0.358	0.737	11	6	0.0093	0.0024	0.0060	0.0036	0.0033	0.0045	
G44 40	10:50:54	+06 48 57	11.675	1.644	1.213	1.216	1.568	2.786	13	6	0.0033	0.0031	0.0092	0.0031	0.0017	0.0039	
102 620	10:55:06	-00 48 19	10.069	1.083	1.020	0.642	0.524	1.167	54	45	0.0010	0.0010	0.0018	0.0011	0.0008	0.0012	
G45 20	10:56:38	+07 02 23	13.507	2.034	1.165	1.823	2.174	4.000	19	10	0.0060	0.0069	0.0346	0.0073	0.0025	0.0062	
102 1081	10:57:04	-00 13 10	9.903	0.664	0.255	0.366	0.333	0.698	58	50	0.0009	0.0009	0.0017	0.0008	0.0008	0.0011	
G163 27	10:57:35	-07 31 23	14.338	0.288	-0.548	0.206	0.210	0.417	26	15	0.0055	0.0047	0.0065	0.0041	0.0075	0.0082	
G163 50	11:08:00	-05 09 26	13.059	0.035	-0.688	-0.085	-0.072	-0.159	54	41	0.0014	0.0020	0.0023	0.0012	0.0020	0.0027	
G163 51	11:08:07	-05 13 47	12.576	1.506	1.228	1.084	1.359	2.441	29	16	0.0046	0.0046	0.0182	0.0019	0.0035	0.0041	
G10 50	11:47:44	+00 48 55	11.153	1.752	1.318	1.294	1.673	2.969	14	7	0.0024	0.0024	0.0078	0.0037	0.0021	0.0037	
103 302	11:56:06	-00 47 54	9.861	0.368	-0.056	0.228	0.237	0.465	57	45	0.0016	0.0011	0.0017	0.0009	0.0009	0.0015	
103 626	11:56:46	-00 21 54	11.836	0.413	-0.057	0.262	0.274	0.535	17	10	0.0034	0.0027	0.0032	0.0022	0.0015	0.0024	
G12 43	12:33:20	+09 01 08	12.467	1.846	1.085	1.530	1.944	3.479	13	6	0.0042	0.0053	0.0466	0.0053	0.0039	0.0033	
104 306	12:41:04	-00 37 11	9.370	1.592	1.666	0.832	0.762	1.591	89	68	0.0067	0.0030	0.0059	0.0020	0.0024	0.0033	4
104 423	12:41:36	-00 31 15	15.602	0.630	0.050	0.262	0.559	0.818	2	1	0.0247	0.0389	0.0269	0.0361	0.1167	0.1520	
104 428	12:41:41	-00 26 27	12.630	0.985	0.748	0.534	0.497	1.032	25	16	0.0038	0.0028	0.0044	0.0024	0.0018	0.0036	
104 L1	12:41:44	-00 22 43	14.608	0.630	0.064	0.374	0.364	0.739	2	1	0.0007	0.0014	0.0127	0.0113	0.0163	0.0042	
104 430	12:41:50	-00 25 52	13.858	0.652	0.131	0.364	0.363	0.727	15	8	0.0052	0.0062	0.0085	0.0046	0.0041	0.0065	
104 325	12:42:03	-00 41 36	15.581	0.694	0.051	0.345	0.307	0.652	2	1	0.0163	0.0431	0.0219	0.0255	0.0148	0.0403	
104 330	12:42:12	-00 40 40	15.296	0.594	-0.028	0.369	0.371	0.739	15	6	0.0103	0.0276	0.0155	0.0124	0.0214	0.0225	
104 440	12:42:14	-00 24 48	15.114	0.440	-0.227	0.289	0.317	0.605	11	5	0.0081	0.0084	0.0103	0.0069	0.0232	0.0262	
104 237	12:42:17	-00 51 18	15.395	1.088	0.918	0.647	0.628	1.274	1	1	...	...	...	...	...	...	

TABLE 2. (continued)

											Mean Errors of the Mean						
Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	V	B-V	U-B	V-R	R-I	V-I	Notes
104 L2	12:42:20	-00 35 13	16.048	0.650	-0.172	0.344	0.323	0.667	4	2	0.0190	0.0265	0.0450	0.0295	0.0755	0.1000	
104 443	12:42:20	-00 25 22	15.372	1.331	1.280	0.817	0.778	1.595	3	2	0.0087	0.0023	0.1120	0.0139	0.0104	0.0202	
104 444	12:42:21	-00 32 29	13.477	0.512	-0.070	0.313	0.331	0.643	2	1	0.0014	0.0099	0.0085	0.0021	0.0014	0.0007	
104 335	12:42:22	-00 33 09	11.665	0.622	0.145	0.357	0.334	0.691	4	2	0.0095	0.0010	0.0020	0.0035	0.0045	0.0070	
104 334	12:42:21	-00 40 28	13.484	0.518	-0.067	0.323	0.331	0.653	24	16	0.0047	0.0031	0.0039	0.0029	0.0031	0.0047	
104 239	12:42:23	-00 46 32	13.936	1.356	1.291	0.868	0.805	1.675	7	3	0.0060	0.0087	0.0231	0.0045	0.0030	0.0057	
104 336	12:42:25	-00 39 58	14.404	0.830	0.495	0.461	0.403	0.865	14	6	0.0067	0.0072	0.0123	0.0059	0.0099	0.0104	
104 338	12:42:31	-00 38 32	16.059	0.591	-0.082	0.348	0.372	0.719	8	5	0.0078	0.0219	0.0368	0.0088	0.0209	0.0170	
104 339	12:42:34	-00 41 39	15.459	0.832	0.709	0.476	0.374	0.849	1	1	...	...	...	...	...	...	
104 244	12:42:35	-00 45 47	16.011	0.590	-0.152	0.338	0.489	0.825	2	2	0.0092	0.0057	0.0113	0.0035	0.0269	0.0290	
104 455	12:42:52	-00 24 19	15.105	0.581	-0.024	0.360	0.357	0.716	13	7	0.0067	0.0144	0.0122	0.0053	0.0089	0.0122	
104 456	12:42:54	-00 32 06	12.362	0.622	0.135	0.357	0.337	0.694	4	2	0.0025	0.0025	0.0045	0.0035	0.0065	0.0080	
104 457	12:42:54	-00 28 49	16.048	0.753	0.522	0.484	0.490	0.974	9	4	0.0107	0.0187	0.0770	0.0183	0.0370	0.0213	
104 460	12:43:03	-00 28 21	12.886	1.287	1.243	0.813	0.693	1.507	24	16	0.0043	0.0033	0.0067	0.0022	0.0020	0.0033	
104 461	12:43:07	-00 32 21	9.705	0.476	-0.030	0.289	0.290	0.580	95	74	0.0010	0.0008	0.0013	0.0007	0.0006	0.0006	
104 350	12:43:15	-00 33 21	13.634	0.673	0.165	0.383	0.353	0.736	14	7	0.0043	0.0035	0.0056	0.0032	0.0045	0.0061	
104 470	12:43:22	-00 29 56	14.310	0.732	0.101	0.295	0.356	0.649	3	1	0.0121	0.0092	0.0202	0.0133	0.0035	0.0150	
104 364	12:43:47	-00 34 30	15.799	0.601	-0.131	0.314	0.397	0.712	2	1	0.0156	0.0488	0.0559	0.0085	0.0410	0.0495	
104 366	12:43:54	-00 34 52	12.908	0.870	0.424	0.517	0.464	0.982	1	1	...	...	...	...	...	...	
104 479	12:43:56	-00 32 51	16.087	1.271	0.673	0.657	0.607	1.264	2	1	0.0339	0.0276	0.3995	0.0028	0.0035	0.0071	
104 367	12:43:59	-00 33 36	15.844	0.639	-0.126	0.382	0.296	0.679	2	1	0.0255	0.0212	0.0156	0.0177	0.0042	0.0226	
104 484	12:44:20	-00 30 57	14.406	1.024	0.732	0.514	0.486	1.000	2	1	0.0071	0.0184	0.0134	0.0057	0.0064	0.0120	
104 485	12:44:24	-00 30 16	15.017	0.838	0.493	0.478	0.488	0.967	2	1	0.0113	0.0339	0.0226	0.0014	0.0113	0.0099	
104 490	12:44:33	-00 25 53	12.572	0.535	0.048	0.318	0.312	0.630	12	8	0.0029	0.0032	0.0052	0.0023	0.0023	0.0026	
104 598	12:45:17	-00 16 37	11.479	1.106	1.050	0.670	0.546	1.215	70	59	0.0017	0.0011	0.0027	0.0010	0.0008	0.0012	
G14 55	13:28:22	-02 21 28	11.336	1.491	1.157	1.078	1.388	2.462	5	2	0.0058	0.0049	0.0076	0.0067	0.0013	0.0063	
PG1323-086	13:25:39	-08 49 16	13.481	-0.140	-0.681	-0.048	-0.078	-0.127	39	18	0.0019	0.0022	0.0026	0.0018	0.0045	0.0045	
PG1323-086A	13:25:49	-08 50 22	13.591	0.393	-0.019	0.252	0.252	0.506	20	12	0.0257	0.0022	0.0045	0.0027	0.0047	0.0060	5
PG1323-086C	13:25:50	-08 48 37	14.003	0.707	0.245	0.395	0.363	0.759	26	13	0.0031	0.0027	0.0076	0.0024	0.0041	0.0049	
PG1323-086B	13:25:50	-08 51 53	13.406	0.761	0.265	0.426	0.407	0.833	23	13	0.0019	0.0029	0.0042	0.0023	0.0023	0.0031	
PG1323-086D	13:26:05	-08 50 34	12.080	0.587	0.005	0.346	0.335	0.684	15	6	0.0023	0.0018	0.0036	0.0013	0.0026	0.0031	
105 505	13:35:25	-00 23 38	10.270	1.422	1.218	0.910	0.861	1.771	6	3	0.0061	0.0102	0.0053	0.0053	0.0033	0.0069	
105 437	13:37:17	-00 37 56	12.535	0.248	0.067	0.136	0.143	0.279	7	3	0.0060	0.0038	0.0094	0.0053	0.0026	0.0076	
105 815	13:40:04	-00 02 10	11.453	0.385	-0.237	0.267	0.291	0.560	22	14	0.0016	0.0030	0.0028	0.0013	0.0013	0.0015	
+2 2711	13:42:21	+01 30 17	10.367	-0.166	-0.697	-0.072	-0.095	-0.167	54	39	0.0012	0.0014	0.0018	0.0008	0.0010	0.0012	
121968	13:58:52	-02 55 12	10.254	-0.186	-0.908	-0.073	-0.098	-0.172	46	32	0.0012	0.0010	0.0021	0.0007	0.0010	0.0012	
PG1407-013	14:10:26	-01 30 13	13.750	-0.259	-1.119	-0.130	-0.144	-0.277	3	2	0.0040	0.0064	0.0173	0.0046	0.0173	0.0219	
106 1024	14:40:07	+00 01 45	11.599	0.332	0.085	0.196	0.195	0.390	35	27	0.0051	0.0022	0.0029	0.0019	0.0014	0.0029	6
106 700	14:40:52	-00 23 36	9.785	1.362	1.582	0.728	0.641	1.370	53	44	0.0011	0.0010	0.0022	0.0010	0.0010	0.0014	
PG1514+034	15:17:14	+03 10 27	13.997	-0.009	-0.955	0.087	0.126	0.212	6	3	0.0078	0.0082	0.0102	0.0029	0.0065	0.0073	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean V	B-V	U-B	V-R	R-I	V-I	Notes
PG1525-071	15:28:11	-07 16 27	15.053	-0.198	-1.148	-0.088	-0.075	-0.168	1	1	...	...	...	...	...	...	
PG1525-071D	15:28:12	-07 16 33	16.301	0.564	0.305	0.411	0.346	0.757	2	1	0.0021	0.1570	0.0325	0.0113	0.0198	0.0085	
PG1525-071A	15:28:13	-07 15 54	13.509	0.757	0.257	0.445	0.425	0.869	1	1	...	...	...	...	...	...	
PG1525-071B	15:28:14	-07 16 08	16.403	0.730	0.135	0.442	0.366	0.808	1	1	...	...	...	...	...	...	
PG1525-071C	15:28:16	-07 14 21	13.530	1.109	1.130	0.590	0.513	1.104	1	1	...	...	...	...	...	...	
PG1528+062B	15:30:40	+06 01 11	11.989	0.593	0.005	0.364	0.344	0.711	1	1	...	...	...	...	...	...	
PG1528+062A	15:30:49	+06 01 24	15.553	0.830	0.356	0.433	0.389	0.824	1	1	...	...	...	...	...	...	
PG1528+062	15:30:50	+06 00 56	14.767	-0.252	-1.091	-0.111	-0.182	-0.296	1	1	...	...	...	...	...	...	
PG1528+062C	15:30:56	+06 00 07	13.477	0.644	0.074	0.357	0.340	0.699	1	1	...	...	...	...	...	...	
PG1530+057A	15:33:10	+05 33 45	13.711	0.829	0.414	0.473	0.412	0.886	1	1	...	...	...	...	...	...	
PG1530+057	15:33:11	+05 32 27	14.211	0.151	-0.789	0.162	0.036	0.199	1	1	...	...	...	...	...	...	
PG1530+057B	15:33:18	+05 33 48	12.842	0.745	0.325	0.423	0.376	0.799	1	1	...	...	...	...	...	...	
107 970	15:37:25	+00 18 34	10.939	1.596	1.750	1.142	1.435	2.574	57	47	0.0074	0.0017	0.0061	0.0020	0.0033	0.0040	4
107 568	15:37:53	-00 17 18	13.054	1.149	0.862	0.625	0.595	1.217	15	7	0.0015	0.0028	0.0039	0.0021	0.0028	0.0028	
107 1006	15:38:34	+00 14 22	11.712	0.766	0.279	0.442	0.421	0.863	59	51	0.0010	0.0010	0.0025	0.0008	0.0009	0.0010	
107 720	15:38:37	-00 02 24	13.121	0.599	0.088	0.374	0.355	0.731	2	1	0.0057	0.0028	0.0106	0.0099	0.0028	0.0078	
107 456	15:38:43	-00 19 47	12.919	0.921	0.589	0.537	0.478	1.015	20	10	0.0020	0.0029	0.0045	0.0020	0.0025	0.0036	
107 457	15:38:46	-00 20 15	14.910	0.792	0.350	0.494	0.469	0.964	2	1	0.0021	0.0035	0.0099	0.0028	0.0064	0.0092	
107 351	15:38:46	-00 32 06	12.342	0.562	-0.005	0.351	0.358	0.708	25	14	0.0020	0.0024	0.0040	0.0016	0.0022	0.0026	
107 592	15:38:51	-00 17 10	11.847	1.318	1.380	0.709	0.647	1.357	9	5	0.0033	0.0047	0.0133	0.0013	0.0023	0.0020	
107 458	15:38:50	-00 24 27	11.676	1.214	1.189	0.667	0.602	1.274	2	1	0.0042	0.0057	0.0049	0.0028	0.0007	0.0035	
107 459	15:38:51	-00 22 31	12.284	0.900	0.427	0.525	0.517	1.045	2	1	0.0014	0.0106	0.0099	0.0028	0.0007	0.0035	
107 212	15:38:57	-00 45 30	13.383	0.683	0.135	0.404	0.411	0.818	2	1	0.0064	0.0106	0.0198	0.0071	0.0085	0.0148	
107 215	15:38:57	-00 43 06	16.046	0.115	-0.082	-0.032	-0.475	-0.511	3	2	0.0266	0.0312	0.0092	0.0935	0.2991	0.3943	
107 213	15:38:57	-00 44 14	14.262	0.802	0.261	0.531	0.509	1.038	1	1	...	...	...	...	...	...	
107 357	15:39:05	-00 39 11	14.418	0.675	0.025	0.416	0.421	0.840	2	1	0.0000	0.0035	0.0057	0.0120	0.0233	0.0113	
107 599	15:39:09	-00 14 28	14.675	0.698	0.243	0.433	0.438	0.869	17	7	0.0082	0.0121	0.0061	0.0053	0.0121	0.0155	
107 359	15:39:09	-00 35 31	12.797	0.580	-0.124	0.379	0.381	0.759	6	3	0.0049	0.0069	0.0118	0.0029	0.0033	0.0053	
107 600	15:39:11	-00 15 49	14.884	0.503	0.049	0.339	0.361	0.700	9	4	0.0170	0.0130	0.0227	0.0097	0.0147	0.0203	2
107 601	15:39:14	-00 13 26	14.646	1.412	1.265	0.923	0.835	1.761	33	13	0.0045	0.0073	0.0247	0.0035	0.0031	0.0038	
107 602	15:39:19	-00 15 29	12.116	0.991	0.585	0.545	0.531	1.074	17	9	0.0027	0.0029	0.0070	0.0015	0.0022	0.0032	
107 612	15:39:35	-00 15 06	14.256	0.896	0.296	0.551	0.530	1.081	2	1	0.0057	0.0014	0.0035	0.0035	0.0007	0.0021	
107 611	15:39:36	-00 12 36	14.329	0.890	0.455	0.520	0.447	0.968	4	2	0.0065	0.0085	0.0165	0.0090	0.0105	0.0170	
107 614	15:39:42	-00 13 10	13.926	0.622	0.033	0.361	0.370	0.732	4	2	0.0065	0.0170	0.0150	0.0040	0.0130	0.0090	
107 626	15:40:06	-00 17 28	13.468	1.000	0.728	0.600	0.527	1.126	24	12	0.0045	0.0082	0.0118	0.0024	0.0022	0.0035	
107 627	15:40:08	-00 17 22	13.349	0.779	0.226	0.465	0.454	0.918	24	12	0.0055	0.0047	0.0049	0.0022	0.0027	0.0037	
107 484	15:40:17	-00 21 13	11.311	1.237	1.291	0.664	0.577	1.240	13	7	0.0044	0.0022	0.0111	0.0019	0.0008	0.0022	
107 636	15:40:41	-00 14 54	14.873	0.751	0.121	0.432	0.465	0.896	2	1	0.0134	0.0120	0.0177	0.0085	0.0417	0.0325	
107 639	15:40:45	-00 17 11	14.197	0.640	-0.026	0.399	0.404	0.803	10	6	0.0161	0.0092	0.0202	0.0104	0.0095	0.0126	
107 640	15:40:50	-00 16 48	15.050	0.755	0.092	0.511	0.506	1.017	5	3	0.0250	0.0103	0.0322	0.0183	0.0161	0.0246	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean V	B-V	U-B	V-R	R-I	V-I	Notes
G153 41	16:17:55	-15 35 52	13.422	-0.205	-1.133	-0.135	-0.154	-0.290	23	11	0.0035	0.0031	0.0063	0.0033	0.0056	0.0065	
G138 25	16:25:14	+15 41 15	13.513	1.419	1.265	0.883	0.796	1.685	2	1	0.0007	0.0177	0.0382	0.0028	0.0028	0.0049	
-12 4523	16:30:18	-12 39 08	10.069	1.568	1.192	1.152	1.498	2.649	8	5	0.0032	0.0025	0.0025	0.0007	0.0018	0.0014	
PG1633+099	16:35:24	+09 47 50	14.397	-0.192	-0.974	-0.093	-0.116	-0.212	13	6	0.0025	0.0022	0.0047	0.0033	0.0089	0.0111	
PG1633+099A	16:35:26	+09 47 53	15.256	0.873	0.320	0.505	0.511	1.015	15	6	0.0036	0.0052	0.0090	0.0036	0.0093	0.0111	
PG1633+099B	16:35:34	+09 46 22	12.969	1.081	1.007	0.590	0.502	1.090	12	6	0.0017	0.0020	0.0069	0.0012	0.0014	0.0020	
PG1633+099C	16:35:38	+09 46 16	13.229	1.134	1.138	0.618	0.523	1.138	10	6	0.0025	0.0022	0.0038	0.0016	0.0022	0.0038	
PG1633+099D	16:35:40	+09 46 43	13.691	0.535	-0.025	0.324	0.327	0.650	9	5	0.0020	0.0020	0.0050	0.0017	0.0033	0.0033	
108 719	16:36:11	-00 25 32	12.690	1.031	0.648	0.553	0.533	1.087	4	2	0.0045	0.0025	0.0005	0.0045	0.0025	0.0050	
108 1848	16:36:58	+00 05 57	11.738	0.559	0.073	0.331	0.325	0.657	1	1	...	...	...	...	...	...	
108 475	16:37:00	-00 34 40	11.309	1.380	1.462	0.744	0.665	1.409	71	58	0.0014	0.0013	0.0042	0.0008	0.0007	0.0011	
108 1863	16:37:13	+00 02 34	12.244	0.803	0.378	0.446	0.398	0.844	1	1	...	...	...	...	...	...	
108 551	16:37:47	-00 33 06	10.703	0.179	0.178	0.099	0.110	0.208	104	76	0.0011	0.0007	0.0023	0.0006	0.0010	0.0011	
108 1918	16:37:50	-00 00 37	11.384	1.432	1.839	0.773	0.661	1.434	2	1	0.0007	0.0014	0.0000	0.0042	0.0000	0.0042	
108 981	16:39:17	-00 25 08	12.071	0.494	0.237	0.310	0.312	0.622	4	2	0.0025	0.0015	0.0075	0.0020	0.0030	0.0010	
PG1647+056	16:50:18	+05 32 53	14.773	-0.173	-1.064	-0.058	-0.022	-0.082	7	3	0.0087	0.0087	0.0076	0.0102	0.0151	0.0163	
WOLF 629	16:55:27	-08 18 53	11.759	1.677	1.256	1.185	1.525	2.715	6	3	0.0041	0.0029	0.0033	0.0016	0.0012	0.0012	
PG1657+078	16:59:32	+07 43 31	15.015	-0.149	-0.940	-0.063	-0.033	-0.100	9	4	0.0067	0.0053	0.0090	0.0087	0.0270	0.0330	
PG1657+078B	16:59:32	+07 42 11	14.721	0.708	0.065	0.417	0.420	0.838	2	1	0.0021	0.0064	0.0071	0.0014	0.0000	0.0014	
PG1657+078A	16:59:33	+07 42 25	14.033	1.069	0.730	0.573	0.539	1.113	2	1	0.0007	0.0007	0.0064	0.0064	0.0057	0.0127	
PG1657+078C	16:59:35	+07 42 26	15.225	0.840	0.385	0.521	0.444	0.967	2	1	0.0000	0.0042	0.0085	0.0057	0.0127	0.0071	
-4 4226	17:05:15	-05 05 05	10.071	1.415	1.085	0.970	1.141	2.113	6	3	0.0033	0.0012	0.0029	0.0004	0.0008	0.0012	
109 71	17:44:06	-00 24 59	11.493	0.323	0.153	0.186	0.223	0.410	50	42	0.0010	0.0011	0.0020	0.0008	0.0008	0.0011	
109 381	17:44:12	-00 20 32	11.730	0.704	0.225	0.428	0.435	0.861	55	45	0.0011	0.0015	0.0015	0.0009	0.0008	0.0011	
109 949	17:44:13	-00 02 28	12.828	0.806	0.363	0.500	0.517	1.020	2	1	0.0064	0.0007	0.0099	0.0078	0.0035	0.0113	
109 954	17:44:15	-00 02 17	12.436	1.296	0.956	0.764	0.731	1.496	9	5	0.0093	0.0060	0.0203	0.0017	0.0027	0.0033	
109 956	17:44:17	-00 02 32	14.639	1.283	0.858	0.779	0.743	1.525	2	1	0.0113	0.0198	0.0035	0.0184	0.0156	0.0346	
109 199	17:45:02	-00 29 28	10.990	1.739	1.967	1.006	0.900	1.904	3	2	0.0098	0.0040	0.0035	0.0035	0.0040	0.0046	
109 231	17:45:20	-00 25 51	9.332	1.462	1.593	0.785	0.704	1.492	76	52	0.0011	0.0014	0.0028	0.0006	0.0007	0.0009	
109 537	17:45:42	-00 21 34	10.353	0.609	0.227	0.376	0.392	0.768	66	47	0.0027	0.0012	0.0020	0.0009	0.0010	0.0015	
G21 15	18:27:13	+04 03 05	13.889	0.092	-0.598	-0.039	-0.030	-0.069	19	9	0.0046	0.0053	0.0067	0.0046	0.0094	0.0094	
110 229	18:40:45	+00 01 51	13.649	1.910	1.391	1.198	1.155	2.356	30	16	0.0031	0.0091	0.0225	0.0018	0.0020	0.0026	
110 230	18:40:51	+00 02 23	14.281	1.084	0.728	0.624	0.596	1.218	21	11	0.0031	0.0050	0.0116	0.0020	0.0044	0.0050	
110 232	18:40:52	+00 01 58	12.516	0.729	0.147	0.439	0.450	0.889	28	16	0.0032	0.0028	0.0045	0.0015	0.0019	0.0025	
110 233	18:40:52	+00 00 51	12.771	1.281	0.812	0.773	0.818	1.593	22	10	0.0028	0.0034	0.0070	0.0021	0.0015	0.0021	
110 239	18:41:19	+00 00 14	13.858	0.899	0.584	0.541	0.517	1.060	1	1	...	...	...	...	...	...	
110 339	18:41:27	+00 08 26	13.607	0.988	0.776	0.563	0.468	1.036	1	1	...	...	...	...	...	...	
110 340	18:41:29	+00 15 22	10.025	0.303	0.127	0.170	0.182	0.353	64	51	0.0014	0.0010	0.0022	0.0006	0.0009	0.0010	
110 477	18:41:43	+00 26 41	13.988	1.345	0.715	0.850	0.857	1.707	21	11	0.0072	0.0131	0.0375	0.0031	0.0039	0.0063	
110 246	18:41:51	+00 05 20	12.706	0.586	-0.129	0.381	0.410	0.790	1	1	...	...	...	...	...	...	

TABLE 2. (continued)

											Mean Errors of the Mean						
Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	V	B-V	U-B	V-R	R-I	V-I	Notes
110 346	18:41:55	+00 10 00	14.757	0.999	0.752	0.697	0.646	1.345	1	1	...	...	...	...	...	...	
110 349	18:42:13	+00 10 14	15.095	1.088	0.668	0.503	-0.059	0.477	1	1	...	...	...	...	...	...	
110 355	18:42:19	+00 08 24	11.944	1.023	0.504	0.652	0.727	1.378	16	8	0.0027	0.0030	0.0045	0.0022	0.0022	0.0035	
110 358	18:42:37	+00 15 01	14.430	1.039	0.418	0.603	0.543	1.150	1	1	...	...	...	...	...	...	
110 360	18:42:40	+00 09 10	14.618	1.197	0.539	0.715	0.717	1.432	5	2	0.0094	0.0192	0.0291	0.0085	0.0031	0.0080	
110 361	18:42:45	+00 08 04	12.425	0.632	0.035	0.361	0.348	0.709	30	17	0.0022	0.0022	0.0029	0.0018	0.0020	0.0029	
110 362	18:42:48	+00 06 26	15.693	1.333	3.919	0.918	0.885	1.803	1	1	...	...	...	...	...	...	
110 266	18:42:49	+00 05 06	12.018	0.889	0.411	0.538	0.577	1.111	8	3	0.0014	0.0028	0.0039	0.0014	0.0021	0.0032	
110 L1	18:42:50	+00 07 10	16.252	1.752	2.953	1.066	0.992	2.058	1	1	...	...	...	...	...	...	
110 364	18:42:52	+00 07 54	13.615	1.133	1.095	0.697	0.585	1.281	15	7	0.0021	0.0067	0.0088	0.0015	0.0026	0.0021	
110 365	18:42:57	+00 07 20	13.470	2.261	1.895	1.360	1.270	2.631	45	20	0.0027	0.0091	0.0313	0.0021	0.0022	0.0034	
110 157	18:42:57	-00 08 56	13.491	2.123	1.679	1.257	1.139	2.395	7	3	0.0057	0.0257	0.1750	0.0034	0.0049	0.0057	
110 496	18:42:59	+00 31 08	13.004	1.040	0.737	0.607	0.681	1.287	9	4	0.0027	0.0060	0.0230	0.0020	0.0023	0.0043	
110 273	18:42:59	+00 02 23	14.686	2.527	1.000	1.509	1.345	2.856	5	2	0.0161	0.0783	1.3416	0.0040	0.0103	0.0107	
110 497	18:43:02	+00 30 56	14.196	1.052	0.380	0.606	0.597	1.203	5	2	0.0054	0.0063	0.0143	0.0067	0.0045	0.0063	
110 280	18:43:07	-00 03 40	12.996	2.151	2.133	1.235	1.148	2.384	25	12	0.0034	0.0144	0.0906	0.0018	0.0030	0.0036	
110 499	18:43:07	+00 28 00	11.737	0.987	0.639	0.600	0.674	1.273	23	13	0.0031	0.0029	0.0071	0.0019	0.0017	0.0029	
110 502	18:43:10	+00 27 40	12.330	2.326	2.326	1.373	1.250	2.625	38	19	0.0031	0.0047	0.0225	0.0019	0.0024	0.0041	
110 504	18:43:11	+00 30 05	14.022	1.248	1.323	0.797	0.683	1.482	5	2	0.0013	0.0063	0.0268	0.0036	0.0063	0.0080	
110 503	18:43:11	+00 29 43	11.773	0.671	0.506	0.373	0.436	0.808	26	14	0.0031	0.0020	0.0051	0.0018	0.0016	0.0022	
110 506	18:43:19	+00 30 27	11.312	0.568	0.059	0.335	0.312	0.652	2	1	0.0021	0.0021	0.0064	0.0007	0.0042	0.0042	
110 507	18:43:19	+00 29 26	12.440	1.141	0.830	0.633	0.579	1.206	2	1	0.0049	0.0057	0.0057	0.0042	0.0000	0.0049	
110 290	18:43:22	-00 01 15	11.898	0.708	0.196	0.418	0.418	0.836	3	2	0.0029	0.0006	0.0046	0.0023	0.0029	0.0035	
110 441	18:43:34	+00 19 40	11.121	0.555	0.112	0.324	0.336	0.660	43	36	0.0015	0.0015	0.0023	0.0012	0.0009	0.0020	
110 311	18:43:48	-00 00 22	15.505	1.796	1.179	1.010	0.864	1.874	4	2	0.0180	0.0360	0.1255	0.0340	0.0830	0.1130	
110 312	18:43:50	+00 00 07	16.093	1.319	-0.788	1.137	1.154	2.293	1	1	...	...	...	...	...	...	
110 450	18:43:52	+00 22 58	11.585	0.944	0.691	0.552	0.625	1.177	49	42	0.0020	0.0017	0.0033	0.0011	0.0010	0.0016	
110 316	18:43:52	+00 01 05	14.821	1.731	4.355	0.858	0.910	1.769	1	1	...	...	...	...	...	...	
110 315	18:43:52	+00 00 49	13.637	2.069	2.256	1.206	1.133	2.338	8	4	0.0067	0.0361	0.4639	0.0032	0.0057	0.0067	
110 319	18:43:55	+00 02 01	11.861	1.309	1.076	0.742	0.700	1.443	3	2	0.0110	0.0029	0.0035	0.0040	0.0017	0.0058	
111 775	19:37:16	+00 12 05	10.744	1.738	2.029	0.965	0.896	1.862	61	48	0.0015	0.0009	0.0059	0.0008	0.0006	0.0010	
111 773	19:37:16	+00 10 59	8.963	0.206	-0.210	0.119	0.144	0.262	66	47	0.0012	0.0010	0.0017	0.0007	0.0007	0.0009	
111 1925	19:37:29	+00 25 01	12.388	0.395	0.262	0.221	0.253	0.474	26	13	0.0018	0.0014	0.0043	0.0018	0.0014	0.0024	
111 1965	19:37:42	+00 26 50	11.419	1.710	1.865	0.951	0.877	1.830	16	8	0.0018	0.0037	0.0090	0.0010	0.0010	0.0012	
111 1969	19:37:44	+00 25 48	10.382	1.959	2.306	1.177	1.222	2.400	58	47	0.0017	0.0014	0.0054	0.0008	0.0009	0.0013	
111 2039	19:38:05	+00 32 13	12.395	1.369	1.237	0.739	0.689	1.430	8	4	0.0021	0.0028	0.0120	0.0021	0.0021	0.0021	
111 2088	19:38:22	+00 31 01	13.193	1.610	1.678	0.888	0.818	1.708	8	4	0.0014	0.0042	0.0110	0.0018	0.0014	0.0018	
111 2093	19:38:24	+00 31 25	12.538	0.637	0.283	0.370	0.397	0.766	8	4	0.0025	0.0035	0.0071	0.0032	0.0021	0.0039	
112 595	20:41:18	+00 16 28	11.352	1.601	1.993	0.899	0.901	1.801	46	37	0.0022	0.0016	0.0060	0.0009	0.0012	0.0015	
112 704	20:42:02	+00 19 10	11.452	1.536	1.742	0.822	0.746	1.570	19	12	0.0030	0.0023	0.0076	0.0021	0.0018	0.0025	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean V	B-V	U-B	V-R	R-I	V-I	Notes
112 223	20:42:14	+00 09 01	11.424	0.454	0.010	0.273	0.274	0.547	45	37	0.0012	0.0009	0.0021	0.0012	0.0010	0.0016	
112 250	20:42:26	+00 07 43	12.095	0.532	-0.025	0.317	0.323	0.639	18	12	0.0021	0.0019	0.0042	0.0019	0.0019	0.0026	
112 275	20:42:36	+00 07 21	9.905	1.210	1.299	0.647	0.569	1.217	63	48	0.0001	0.0009	0.0025	0.0008	0.0005	0.0009	
112 805	20:42:46	+00 16 08	12.086	0.152	0.150	0.063	0.075	0.138	51	42	0.0010	0.0011	0.0028	0.0011	0.0015	0.0021	
112 822	20:42:55	+00 15 04	11.549	1.031	0.883	0.558	0.502	1.060	36	27	0.0012	0.0015	0.0040	0.0008	0.0010	0.0012	
MARK A2	20:43:54	-10 45 32	14.540	0.666	0.096	0.379	0.371	0.751	21	10	0.0028	0.0031	0.0046	0.0024	0.0050	0.0059	
MARK A1	20:43:58	-10 47 11	15.911	0.609	-0.014	0.367	0.373	0.740	25	10	0.0040	0.0090	0.0136	0.0044	0.0128	0.0148	
MARK A	20:43:59	-10 47 42	13.258	-0.242	-1.162	-0.115	-0.125	-0.241	39	22	0.0019	0.0018	0.0038	0.0018	0.0045	0.0048	
MARK A3	20:44:02	-10 45 39	14.818	0.938	0.651	0.587	0.510	1.098	22	10	0.0023	0.0034	0.0104	0.0021	0.0030	0.0045	
WOLF 918	21:11:30	-13 08 22	10.868	1.494	1.146	0.981	1.088	2.065	8	4	0.0049	0.0039	0.0053	0.0025	0.0032	0.0028	
G26 7	21:31:16	-09 47 28	12.005	1.669	1.235	1.300	1.695	2.986	6	3	0.0057	0.0037	0.0204	0.0053	0.0049	0.0073	
113 440	21:40:35	+00 41 45	11.796	0.637	0.167	0.363	0.350	0.715	2	1	0.0014	0.0014	0.0042	0.0000	0.0028	0.0021	
113 221	21:40:36	+00 21 00	12.071	1.031	0.874	0.550	0.490	1.041	24	10	0.0016	0.0020	0.0055	0.0018	0.0014	0.0022	
113 L1	21:40:47	+00 28 32	15.530	1.343	1.180	0.867	0.723	1.594	2	1	0.0042	0.0509	0.1867	0.0049	0.0049	0.0007	
113 337	21:40:49	+00 27 55	14.225	0.519	-0.025	0.351	0.331	0.682	5	3	0.0130	0.0058	0.0085	0.0072	0.0063	0.0116	
113 339	21:40:56	+00 27 57	12.250	0.568	-0.034	0.340	0.347	0.687	31	18	0.0020	0.0020	0.0038	0.0014	0.0016	0.0025	
113 233	21:40:59	+00 22 00	12.398	0.549	0.096	0.338	0.322	0.661	2	1	0.0021	0.0014	0.0007	0.0000	0.0007	0.0007	
113 342	21:41:00	+00 27 34	10.878	1.015	0.696	0.537	0.513	1.050	7	3	0.0015	0.0015	0.0060	0.0019	0.0023	0.0049	
113 239	21:41:07	+00 22 32	13.038	0.516	0.051	0.318	0.327	0.647	2	1	0.0057	0.0028	0.0042	0.0014	0.0035	0.0049	
113 241	21:41:09	+00 25 50	14.352	1.344	1.452	0.897	0.797	1.683	22	9	0.0019	0.0032	0.0056	0.0012	0.0031	0.0038	
113 245	21:41:13	+00 21 51	15.665	0.628	0.112	0.396	0.318	0.716	2	1	0.0092	0.0099	0.0021	0.0240	0.0106	0.0354	
113 459	21:41:15	+00 43 04	12.125	0.535	-0.018	0.307	0.313	0.623	4	2	0.0070	0.0055	0.0070	0.0055	0.0060	0.0105	
113 250	21:41:24	+00 20 41	13.160	0.505	-0.003	0.309	0.316	0.626	4	2	0.0025	0.0025	0.0165	0.0035	0.0045	0.0045	
113 466	21:41:28	+00 40 14	10.004	0.454	-0.001	0.281	0.282	0.563	58	41	0.0007	0.0008	0.0016	0.0009	0.0008	0.0012	
113 259	21:41:44	+00 17 37	11.742	1.194	1.221	0.621	0.543	1.166	48	34	0.0010	0.0016	0.0032	0.0010	0.0010	0.0013	
113 260	21:41:48	+00 23 52	12.406	0.514	0.069	0.308	0.298	0.606	23	11	0.0044	0.0021	0.0029	0.0019	0.0015	0.0019	
113 475	21:41:51	+00 39 19	10.306	1.058	0.844	0.570	0.527	1.098	40	30	0.0013	0.0011	0.0027	0.0009	0.0009	0.0011	
113 263	21:41:53	+00 25 37	15.481	0.280	0.074	0.194	0.207	0.401	4	1	0.0100	0.0080	0.0250	0.0035	0.0120	0.0140	
113 265	21:41:53	+00 18 02	14.934	0.639	0.101	0.411	0.395	0.807	9	4	0.0180	0.0120	0.0163	0.0160	0.0170	0.0263	2
113 366	21:41:54	+00 29 21	13.537	1.096	0.896	0.623	0.588	1.211	2	1	0.0007	0.0049	0.0049	0.0113	0.0021	0.0099	
113 268	21:41:57	+00 19 53	15.281	0.589	-0.018	0.379	0.407	0.786	6	2	0.0033	0.0094	0.0229	0.0078	0.0208	0.0229	
113 34	21:41:59	+00 01 07	15.173	0.484	-0.054	0.306	0.346	0.652	2	1	0.0014	0.0035	0.0205	0.0106	0.0127	0.0021	
113 372	21:42:02	+00 28 36	13.681	0.670	0.080	0.395	0.370	0.766	2	1	0.0042	0.0028	0.0141	0.0042	0.0099	0.0064	
113 149	21:42:06	+00 09 27	13.469	0.621	0.043	0.379	0.386	0.765	2	1	0.0078	0.0148	0.0099	0.0049	0.0085	0.0042	
113 153	21:42:09	+00 15 06	14.476	0.745	0.285	0.462	0.441	0.902	3	2	0.1051	0.0381	0.0502	0.0121	0.0139	0.0064	
113 272	21:42:21	+00 21 04	13.904	0.633	0.067	0.370	0.340	0.710	2	1	0.0014	0.0007	0.0255	0.0007	0.0134	0.0120	
113 158	21:42:22	+00 14 09	13.116	0.723	0.247	0.407	0.374	0.782	3	2	0.0035	0.0023	0.0040	0.0029	0.0046	0.0029	
113 156	21:42:22	+00 12 06	11.224	0.526	-0.057	0.303	0.314	0.618	2	1	0.0035	0.0035	0.0057	0.0042	0.0007	0.0028	
113 491	21:42:25	+00 43 53	14.373	0.764	0.306	0.434	0.420	0.854	4	2	0.0025	0.0020	0.0185	0.0085	0.0095	0.0175	
113 492	21:42:28	+00 38 21	12.174	0.553	0.005	0.342	0.341	0.684	9	5	0.0033	0.0063	0.0063	0.0027	0.0033	0.0053	
113 493	21:42:29	+00 38 10	11.767	0.786	0.392	0.430	0.393	0.824	8	4	0.0039	0.0035	0.0064	0.0028	0.0018	0.0039	
113 495	21:42:30	+00 38 07	12.437	0.947	0.530	0.512	0.497	1.010	6	3	0.0024	0.0029	0.0053	0.0033	0.0037	0.0057	
113 163	21:42:35	+00 16 46	14.540	0.658	0.106	0.380	0.355	0.735	15	7	0.0041	0.0049	0.0093	0.0054	0.0083	0.0108	
113 165	21:42:38	+00 15 34	15.639	0.601	0.003	0.354	0.392	0.746	2	1	0.0007	0.0057	0.0297	0.0212	0.0431	0.0643	
113 281	21:42:39	+00 19 00	15.247	0.529	-0.026	0.347	0.359	0.706	2	1	0.0078	0.0014	0.0311	0.0021	0.0368	0.0389	
113 167	21:42:41	+00 16 08	14.841	0.597	-0.034	0.351	0.376	0.728	2	1	0.0007	0.0099	0.0240	0.0071	0.0141	0.0219	
113 177	21:42:56	+00 14 46	13.560	0.789	0.318	0.456	0.436	0.890	27	13	0.0052	0.0040	0.0060	0.0044	0.0037	0.0056	
113 182	21:43:08	+00 14 51	14.370	0.659	0.065	0.402	0.422	0.824	13	6	0.0144	0.0089	0.0089	0.0039	0.0086	0.0089	
113 187	21:43:20	+00 16 52	15.080	1.063	0.969	0.638	0.535	1.174	7	4	0.0060	0.0163	0.0299	0.0068	0.0042	0.0072	
113 189	21:43:27	+00 17 22	15.421	1.118	0.958	0.713	0.605	1.319	8	4	0.0138	0.0127	0.0714	0.0113	0.0074	0.0156	

TABLE 2. (continued)

Star	α(2000)	δ(2000)	V	B-V	U-B	V-R	R-I	V-I	n	m	Mean Errors of the Mean: V	B-V	U-B	V-R	R-I	V-I	Notes
113 307	21:43:30	+00 18 02	14.214	1.128	0.911	0.630	0.614	1.245	2	1	0.0049	0.0269	0.0035	0.0014	0.0219	0.0198	
113 191	21:43:33	+00 15 56	12.337	0.799	0.223	0.471	0.466	0.937	7	4	0.0042	0.0023	0.0045	0.0023	0.0023	0.0034	
113 195	21:43:40	+00 17 22	13.692	0.730	0.201	0.418	0.413	0.832	10	5	0.0051	0.0057	0.0101	0.0032	0.0038	0.0032	
G93 48	21:52:25	+02 23 20	12.739	-0.008	-0.792	-0.097	-0.094	-0.191	56	40	0.0013	0.0012	0.0024	0.0012	0.0024	0.0027	
PG2213-006C	22:16:18	-00 22 15	15.109	0.721	0.177	0.426	0.404	0.830	7	4	0.0045	0.0057	0.0068	0.0023	0.0068	0.0064	
PG2213-006B	22:16:22	-00 21 49	12.706	0.749	0.297	0.427	0.402	0.829	7	4	0.0011	0.0023	0.0026	0.0008	0.0015	0.0015	
PG2213-006A	22:16:24	-00 21 27	14.178	0.673	0.100	0.406	0.403	0.808	9	5	0.0050	0.0033	0.0057	0.0030	0.0050	0.0060	
PG2213-006	22:16:28	-00 21 15	14.124	-0.217	-1.125	-0.092	-0.110	-0.203	10	5	0.0022	0.0028	0.0063	0.0044	0.0085	0.0092	
G156 31	22:38:28	-15 19 17	12.361	1.993	1.408	1.648	2.042	3.684	20	8	0.0027	0.0049	0.0130	0.0027	0.0027	0.0029	
114 531	22:40:37	+00 51 56	12.094	0.733	0.186	0.422	0.403	0.825	42	32	0.0011	0.0015	0.0028	0.0009	0.0012	0.0015	
114 637	22:40:43	+01 03 10	12.070	0.801	0.307	0.456	0.415	0.872	15	8	0.0044	0.0018	0.0080	0.0026	0.0023	0.0028	
114 446	22:41:04	+00 46 04	12.064	0.737	0.237	0.397	0.369	0.769	2	1	0.0035	0.0035	0.0064	0.0035	0.0028	0.0007	
114 654	22:41:26	+01 10 11	11.833	0.656	0.178	0.368	0.341	0.711	6	3	0.0008	0.0037	0.0057	0.0016	0.0033	0.0037	
114 656	22:41:35	+01 11 13	12.644	0.965	0.698	0.547	0.506	1.051	5	1	0.0036	0.0067	0.0219	0.0040	0.0018	0.0049	
114 548	22:41:37	+00 59 07	11.601	1.362	1.573	0.738	0.651	1.387	52	42	0.0014	0.0017	0.0058	0.0010	0.0010	0.0014	
114 750	22:41:45	+01 12 38	11.916	-0.041	-0.354	0.027	-0.015	0.011	57	46	0.0015	0.0013	0.0024	0.0013	0.0021	0.0025	
114 670	22:42:10	+01 10 17	11.101	1.206	1.223	0.645	0.561	1.208	16	10	0.0027	0.0015	0.0117	0.0020	0.0022	0.0020	
114 176	22:43:11	+00 21 16	9.239	1.485	1.853	0.800	0.717	1.521	60	43	0.0010	0.0013	0.0032	0.0006	0.0008	0.0009	
G156 57	22:53:16	-14 15 38	10.180	1.556	1.182	1.174	1.542	2.713	14	7	0.0027	0.0019	0.0072	0.0011	0.0027	0.0027	
GD 246	23:12:35	+10 50 27	13.094	-0.318	-1.187	-0.148	-0.183	-0.332	73	57	0.0018	0.0015	0.0022	0.0012	0.0028	0.0032	
F 108	23:16:12	-01 50 35	12.958	-0.235	-1.052	-0.103	-0.135	-0.239	76	58	0.0014	0.0016	0.0021	0.0014	0.0029	0.0030	
PG2317+046	23:19:55	+04 52 35	12.876	-0.246	-1.137	-0.074	-0.035	-0.118	10	4	0.0085	0.0041	0.0079	0.0032	0.0028	0.0079	
PG2331+055	23:33:44	+05 46 36	15.182	-0.066	-0.487	-0.012	-0.031	-0.044	2	1	0.0057	0.0071	0.0035	0.0078	0.0057	0.0127	
PG2331+055A	23:33:49	+05 46 49	13.051	0.741	0.257	0.419	0.401	0.821	2	1	0.0021	0.0014	0.0014	0.0014	0.0014	0.0014	
PG2331+055B	23:33:51	+05 45 07	14.744	0.819	0.429	0.481	0.454	0.935	2	1	0.0035	0.0007	0.0014	0.0035	0.0064	0.0021	
PG2336+004B	23:38:39	+00 42 42	12.431	0.507	-0.035	0.314	0.316	0.625	2	1	0.0007	0.0021	0.0021	0.0000	0.0014	0.0014	
PG2336+004A	23:38:43	+00 42 24	11.277	0.679	0.135	0.398	0.372	0.767	2	1	0.0007	0.0014	0.0000	0.0000	0.0014	0.0014	
PG2336+004	23:38:44	+00 42 55	15.899	-0.172	-0.781	-0.061	-0.048	-0.110	2	1	0.0113	0.0099	0.0007	0.0092	0.0127	0.0226	
115 554	23:41:31	+01 26 26	11.812	1.005	0.548	0.586	0.538	1.127	2	1	0.0042	0.0028	0.0028	0.0057	0.0021	0.0028	
115 486	23:41:33	+01 16 45	12.482	0.493	-0.049	0.298	0.308	0.607	16	9	0.0025	0.0035	0.0047	0.0020	0.0020	0.0020	
115 412	23:42:01	+01 09 01	12.209	0.573	-0.040	0.327	0.335	0.665	2	1	0.0021	0.0049	0.0035	0.0007	0.0021	0.0021	
115 268	23:42:30	+00 52 11	12.494	0.634	0.077	0.366	0.348	0.714	1	1	...	...	...	...	...	...	
115 420	23:42:36	+01 05 58	11.161	0.468	-0.027	0.286	0.293	0.580	51	42	0.0013	0.0011	0.0020	0.0013	0.0010	0.0015	
115 271	23:42:41	+00 45 10	9.695	0.615	0.101	0.353	0.349	0.701	77	55	0.0010	0.0010	0.0014	0.0009	0.0008	0.0011	
115 516	23:44:15	+01 14 13	10.434	1.028	0.759	0.563	0.534	1.098	60	49	0.0012	0.0010	0.0019	0.0009	0.0008	0.0010	
PG2349+002	23:51:53	+00 28 17	13.277	-0.191	-0.921	-0.103	-0.116	-0.219	11	5	0.0063	0.0106	0.0078	0.0057	0.0078	0.0060	

1. This "newly discovered" variable star turned out to be RW Phe, a 5.4129 day period eclipsing variable star discovered by Dartayet (1929).
2. Suspected variable star.
3. An extremely red star; see Geisler (1990).
4. A known variable star (Landolt 1983).
5. A new variable star independently discovered by Schmidtke (1990).
6. SA 106 1024 was reported as a suspected variable star (Landolt 1983), and later was found to be a Delta Scuti type variable star (Landolt 1990).

TABLE 3. Proper motion information.

Star	m	q	μ_α^s	μ_α''	μ_δ''	Ref.
F 11			+0.001	+0.020	-0.027	1
F 16			+0.001	+0.019	-0.009	1
G3 33	2.0819	148.6	+0.076	+1.111	-1.777	2
F 22			+0.006	+0.095	-0.019	1
F24			+0.006	+0.083	+0.010	1
GD 50	0.15:	170:	+0.002	+0.026	-0.148	3,4
G97 42	0.81	195	-0.014	-0.212	-0.782	5
G102 22	2.53	129	+0.137	+2.012	-1.592	5
GD 71	0.21	120	+0.013	+0.189	-0.106	6
-12 2918	0.731	85	+0.051	+0.748	+0.064	7
GD 108	0.05:	270:	-0.003	-0.050	0.000	3,4
G162 66	0.31	258	-0.021	-0.309	-0.064	8
G44 27	0.67	284	-0.044	-0.653	+0.162	5
G163 6	0.29	265	-0.019	-0.289	-0.025	5
G44 40	1.20	228	-0.060	-0.899	-0.803	5
G45 20	4.73	235	-0.262	-3.905	-2.713	5
G163 27	0.7952	275.4	-0.054	-0.798	+0.075	2
G163 50	0.43	185	-0.003	-0.038	-0.428	8
G163 51	0.43	185	-0.003	-0.038	-0.428	8
G10 50	1.34	152	+0.042	+0.629	-1.183	5
G12 43	1.70	278	-0.115	-1.705	+0.237	5
G14 55	0.50	160	+0.011	+0.171	-0.470	8
G153 41	0.27	228	-0.014	-0.208	-0.181	8
G138 25	1.23	174	+0.009	+0.133	-1.223	5
-12 4523	1.175	183	-0.004	-0.063	-1.173	7
Wolf 629	1.19	223	-0.055	-0.820	-0.870	7
-4 4226	1.461	219	-0.062	-0.923	-1.135	7
G21 15	0.3766	222.5	-0.017	-0.255	-0.278	2
Wolf 918	2.096	160	+0.050	+0.737	-1.970	6
G26 7	1.15	91	+0.079	+1.168	-0.020	8
G93 48	0.2675	182.3	-0.001	-0.011	-0.267	2
G156 31	3.29	45	+0.167	+2.412	+2.326	8
GD 246	0.128	95	+0.009	+0.130	-0.011	9
F 108			-0.001	-0.015	-0.011	1
G156 57	1.22	124	+0.072	+1.044	-0.682	8

References to TABLE 3

(1) Luyten (1959).
(2) Harrington & Dahn (1980).
(3) Giclas *et al.* (1965).
(4) Turnshek *et al.* (1989).
(5) Giclas *et al.* (1971).
(6) Luyten (1970).
(7) Luyten (1980).
(8) Giclas *et al.* (1978).
(9) Luyten (1963).

onds of time, and μ_δ'' is the proper motion in declination in seconds of arc, all per year.

The 2000 equinox coordinates for all proper motion stars in Table 2 herein, and which appeared in the *HST* lists (Turnshek *et al.* 1989), were taken directly from the *HST* lists. The remaining proper motion stars listed in Table 3 herein were located in the *Guide Star Catalogue* via information from Golombek & Lasker (1991) and Lasker *et al.* (1990). The epoch of the plates from which the proper motion 2000 positions were derived were found in the Lasker *et al.* (1990) Table 3. One then could calculate the time between the plate epochs and the year 2000, followed by multiplying that time interval by each proper motion vector to effectively take the proper motion into account. The coordinates for the proper motion stars in Table 2 in this paper, then, have been corrected for proper motion.

Less accurate precession equations usable over short time intervals of a few years are,

$$\alpha=\alpha_1+\tau(m+n\sin\alpha_1\tan\delta_1)+\frac{\tau}{3600}\left(\frac{\mu_\alpha''}{15\cos\delta}\right),$$

$$\delta=\delta_1+\tau n\cos\alpha_1+\frac{\tau}{3600}\mu_\delta'',$$

where τ is the time interval in years, and m and n are precessional constants (see *The Astronomical Almanac* for 1991, page B 19, for instance).

Proper motions have been published for many of the Selected Areas' stars by Knox-Shaw and Barrett (1934), but have not been applied here because they are quite small.

Columns 4–9 in Table 2 give the final magnitude and color indices on the *UBVRI* photometric system as defined by stars in Landolt (1983). Column 10 indicates the number of times, n, that each star was observed. Column 11 gives the number of different nights, m, that each star was observed. The numbers in columns 4–9 are mean values; hence, the decision was made to tabulate the mean error of the mean magnitude or color index in columns 12–17. This kind of error is defined by $[\Sigma(x_i-x)^2/n(n-1)]^{1/2}$, where x_i is an individual observation, x is the average value, and n is the number of observations. If anyone needs the mean error for a single observation of any quantity in columns 4–9, they need only multiply the appropriate number on the same line in columns 12–17 by $(n)^{1/2}$, where n is given in column 10. The mean error of a single observation is defined by $[\Sigma(x_i-x)^2/(n-1)]^{1/2}$. The numbers in column 18 refer to footnotes at the end of Table 2.

As the observing program progressed, an 81 star subset of the standard stars in Landolt (1983) was used as standard stars in this project. Those 81 stars were observed many times over the course of this program, and their magnitudes and color indices were obtained each night that they were used as standards. Hence, one could obtain their average magnitude and colors over the duration of the program. The magnitudes and color indices obtained for these 81 stars herein were averaged together with the results for those stars in Table IV in Landolt (1983), weighted by the number of observations and the mean error of a single observation via the relations (Barford 1967),

$$\text{weighted result}=\left(\frac{\omega_1X_1/s_1^2+\omega_2X_2/s_2^2}{\omega_1/s_1^2+\omega_2/s_2^2}\right),$$

$$\text{weighted error}=\left(\frac{\omega_1+\omega_2}{\omega_1/s_1^2+\omega_2/s_2^2}\right)^{1/2},$$

where ω_i is the number of nights, X_i is the magnitude or color index, and s_i is the mean error of a single observation.

The 526 stars in Table 2 have been tested as candidate objects which might be made into standard stars. A subset of 298 of those stars, including the 81 from Landolt (1983), have sufficient data to deem them to be useful as *UBVRI* standard stars. These 298 stars each were observed an average of 29 times on 19 nights. If one excludes the 81 stars from Landolt (1983), then this paper provides data for 217 new standard stars, each of which was observed an average of 19 times on 10 nights.

The magnitude range of the 298 standard stars is indicated in 0.25 V magnitude bins in Fig. 25. The magnitude distribution of the 217 new standard stars is illustrated in Fig. 26.

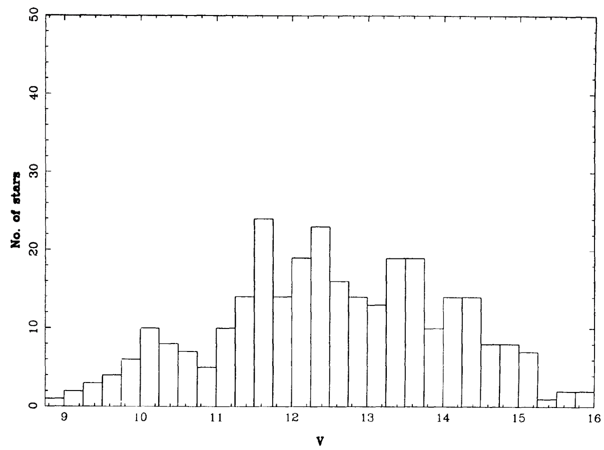

FIG. 25. The magnitude distribution for the 298 standard stars in intervals of $0.25V$ mag.

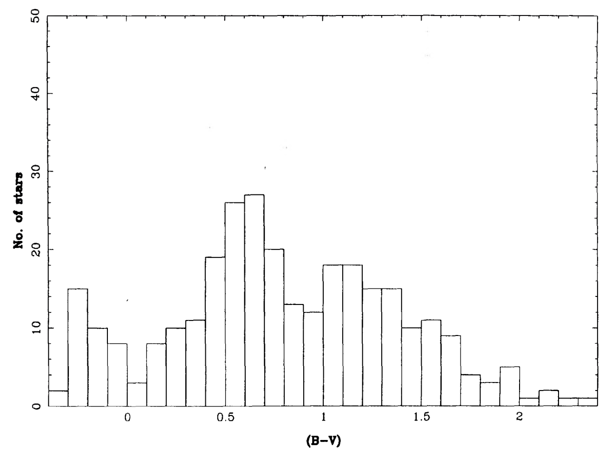

FIG. 27. The distribution in the $(B-V)$ color index for the 298 standard stars in intervals of 0.1 mag.

The $(B-V)$ color index range for the 298 standard stars is indicated in 0.1 mag bins in Fig. 27. And, Fig. 28 shows the $(B-V)$ color index range in 0.1 mag bins for the 217 new standard stars.

The numerical size of the average mean error of a single observation of a V magnitude or a color index for the 298 standard stars is given in the second column of Table 4. The last column shows the average mean error of the mean observed magnitude or color index.

The errors in Table 4 are biased by the large number of measurements for the 81 star subset, for some measures came from Landolt (1983) as well as from this program. Therefore Table 5 presents the same kind of information, but for the 217 new standard stars. As one would expect, these errors are somewhat larger because (i) there are fewer measurements per star, and (ii) most of the new standard stars are appreciably fainter.

A search of Table 2 reveals that several of the stars are variable in light. The average weighted mean error of a single observation of the V magnitude, excluding the obvious variable stars, SA 104 306, SA 106 1024, and SA 107 970, was found to be 0.0141 ± 0.0075 mag. Hence, a 2 σ error would be 0.028 mag. Any star whose weighted mean error of a single observation was greater than 0.028 has been noted in the footnotes of Table 2 as a possible variable star.

Figures 29–35 have been plotted using data from Table 2, and are self-explanatory. Note that in each figure the ordinate is the weighted mean error of a single observation. The large scatter for some blue stars in Figs. 34 and 35 rises from those stars being blue and faint, and observed in the long-wave filters. It is an analogous effect to greater scatter for red stars in similar $(U-B)$ plots [e.g., Fig. 32].

Figures 36 and 37 illustrate the $(U-B)$, $(B-V)$ color-color plot for the 298 stars usable as standards, and the 217

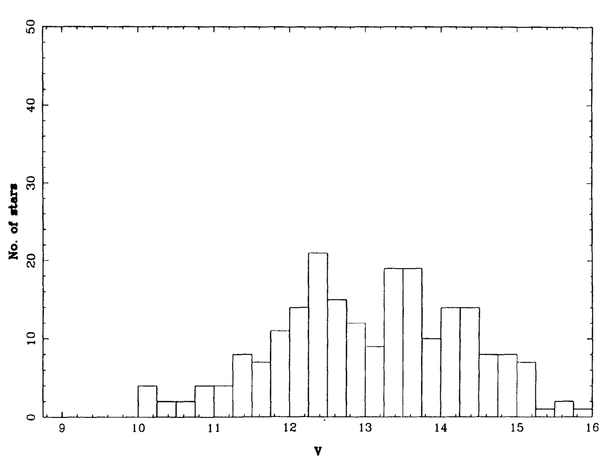

FIG. 26. The magnitude distribution for the 217 new standard stars in intervals of $0.25V$ mag.

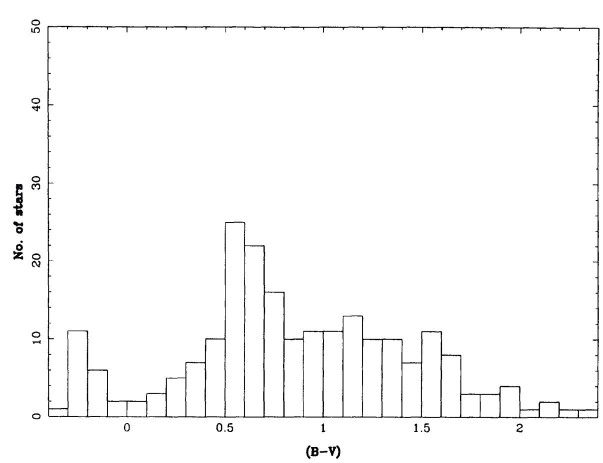

FIG. 28. The distribution in the $(B-V)$ color index for the 217 new standard stars in intervals of 0.1 mag.

TABLE 4. Error analysis for 298 standard stars.

	Mean errors of a single observation	Mean errors of the mean
V	0.0141 ± 0.0075	0.0032 ± 0.0023
B-V	0.0167 ± 0.0118	0.0039 ± 0.0031
U-B	0.0377 ± 0.0414	0.0085 ± 0.0093
V-R	0.0112 ± 0.0072	0.0026 ± 0.0020
R-I	0.0160 ± 0.0194	0.0037 ± 0.0054
V-I	0.0200 ± 0.0199	0.0046 ± 0.0054

new standards, respectively. Figures 38 and 39 show similar information for the $(V-R)$, $(R-I)$ color–color plot, thereby indicating the range in the new stars' color indices.

Many more stars were examined as candidates for possible standard star status than were accepted in the final analysis. These stars are those in Table 2 which in general have less than five measures each. Some of these stars do not have errors attached to them, because there were too few measures to make an error statement meaningful. Since their photometric history is so scanty, few if any of the stars with a small number of measures should ever be used as standard stars. Common sense will dictate that several stars with many measures also should be used as standards only with care, if at all, due to their larger than normal error characteristics.

4. EPILOGUE

A recent paper by Menzies *et al.* (1991) indicates that there are small systematic differences between the *UBVRI* photometric systems defined by Landolt (1973, 1983) and by Cousins (Menzies *et al.* 1989). Discussions within the past several months, most extensively with M. Bessell, indicate that the differences most probably lie in the placement of the *B* filter. In principle, it is possible to transform one set of standards onto another set, although one is bound to lose some accuracy in the process. Observers must realize that they never should mix, directly from the literature, standard stars and the concomitant magnitudes and color indices from different authors' standard star sets, if they want to retain, or approach the accuracy inherent in any particular standard star set. That is, if one needs to achieve the most accurate and systematics free results, don't mix standard stars from different sources.

Since a large majority of the broadband *UBV* photometry of the last two decades has been tied into this author's papers (Landolt 1973, 1983), and since the *Hubble Space*

TABLE 5. Error analysis for 217 new standard stars.

	Mean errors of a single observation	Mean errors of the mean
V	0.0160 ± 0.0080	0.0039 ± 0.0022
B-V	0.0195 ± 0.0125	0.0048 ± 0.0030
U-B	0.0439 ± 0.0467	0.0105 ± 0.0100
V-R	0.0126 ± 0.0076	0.0031 ± 0.0019
R-I	0.0182 ± 0.0194	0.0044 ± 0.0042
V-I	0.0228 ± 0.0203	0.0055 ± 0.0045

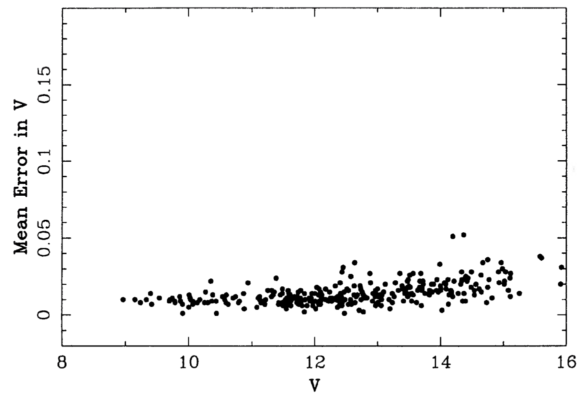

FIG. 29. The weighted mean error of a single observation in V for the 298 standard stars as a function of V.

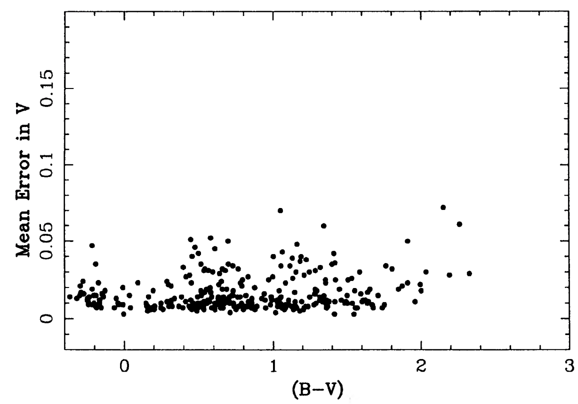

FIG. 30. The weighted mean error of a single observation in V for the 298 standard stars as a function of $(B-V)$.

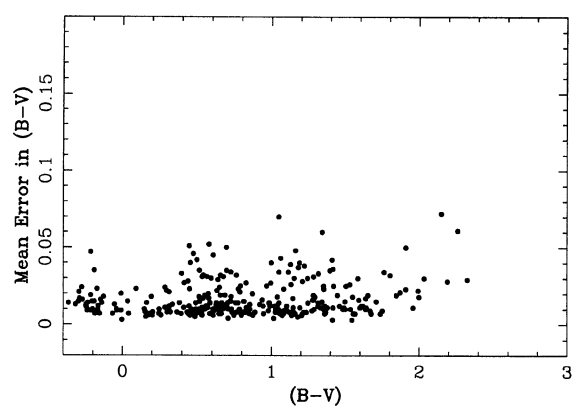

FIG. 31. The weighted mean error of a single observation in $(B-V)$ for the 298 standard stars as a function of $(B-V)$.

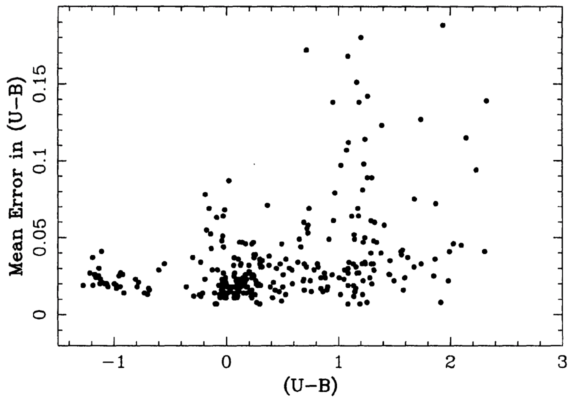

FIG. 32. The weighted mean error of a single observation in $(U-B)$ for the 298 standard stars as a function of $(U-B)$.

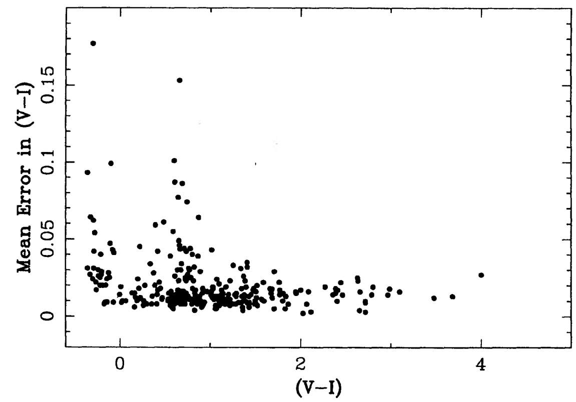

FIG. 35. The weighted mean error of a single observation in $(V-I)$ for the 298 standard stars as a function of $(V-I)$.

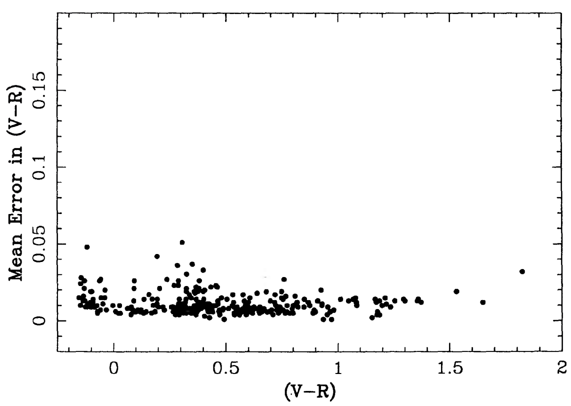

FIG. 33. The weighted mean error of a single observation in $(V-R)$ for the 298 standard stars as a function of $(V-R)$.

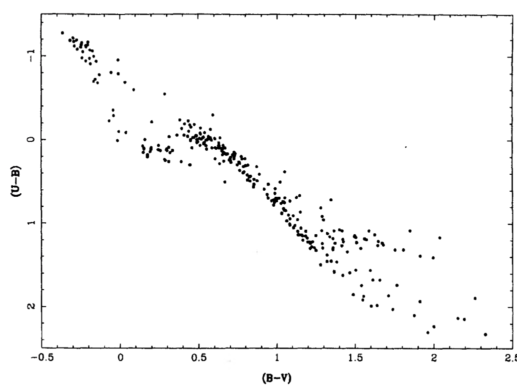

FIG. 36. The $(U-B)$, $(B-V)$ color–color plot for the 298 standard stars in Table 2.

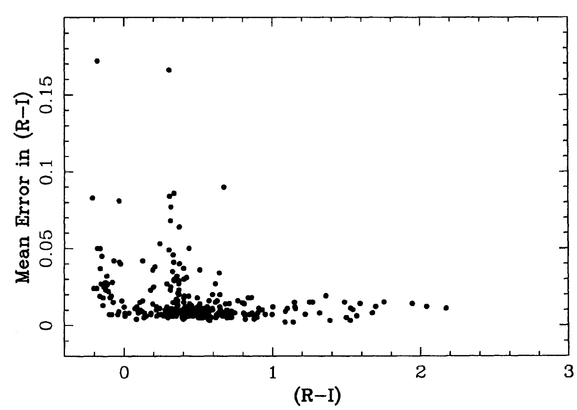

FIG. 34. The weighted mean error of a single observation in $(R-I)$ for the 298 standard stars as a function of $(R-I)$.

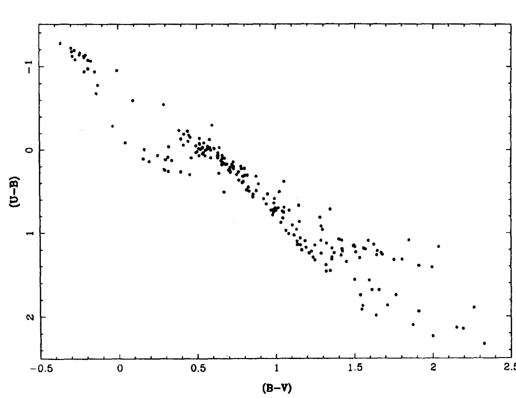

FIG. 37. The $(U-B)$, $(B-V)$ color–color plot for the 217 new standard stars in Table 2.

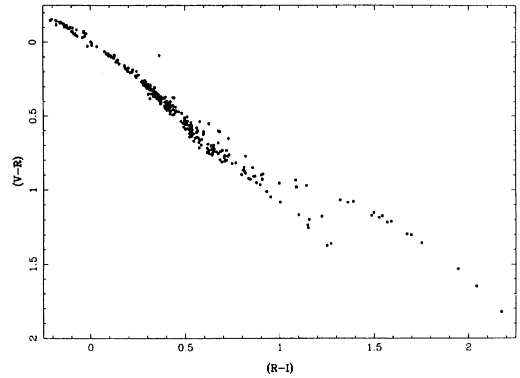

FIG. 38. The $(V-R)$, $(R-I)$ color–color plot for the 298 standard stars in Table 2.

Telescope (*HST*) instrumentation has been and is being calibrated with both the author's published and about to be published standard star values, this author, *to be consistent over the long term*, has placed the new standard stars in this present paper on the *UBVRI* photometric system defined by his 1983 paper. Other observers' detector-filter combinations may or may not need nonlinear transformations, anyway.

In the meantime, an observational program which will investigate differences between the filter sets as used by the author at CTIO and as defined by Bessell (1979, 1990), will be undertaken at CTIO in 1992. Observers should realize, though, that even filter sets designed to match Johnson's original observational setup as close as possible, well may show nonlinear transformation characteristics when one pushes to the highest attainable accuracy. So, once again, observers *ought not* mix standard star sources for the *most consistent* photometric results.

Finally, to further improve magnitudes and color indices, data continue to be collected for many stars in Table 2 herein, as well as for still fainter standard star candidates.

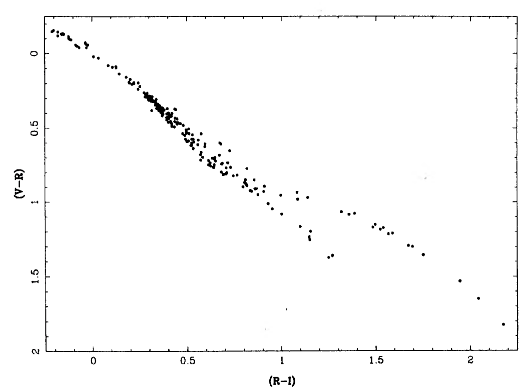

FIG. 39. The $(V-R)$, $(R-I)$ color–color plot for the 217 new standard stars in Table 2.

The completion of this segment of this very long-term standard star project has been aided by many individuals, number one of whom is my wife Eunice. It is a pleasure to thank the CTIO staff and Directors V. M. Blanco, P. S. Osmer, and R. E. Williams for their hospitality, assistance, and support over the years. I thank Dr. R. F. Green for charts of many of the PG stars prior to publication. I acknowledge with thanks more than a decade of aid from the superb CTIO staff, including L. Alday, E. Cosgrove, C. Czuia, M. Fernandez, L. A. Gomez, L. Gonzalez, R. Gonzalez, M. Hernandez, G. Martin, D. Maturana, M. Navarrete, C. Poblette, J. Rios, O. Saa, N. Saavedra, H. Tirado, P. Ugarte, and R. Venegas. The data reductions and computer graphics went smoothly due to the competent aid of Monkia Lee, Hortensia Valdez, and Robert J. Hill. Marcelo Bass (CTIO) and Mark Kleiner (LSU) did the darkroom work for the star charts. Jennifer Landolt assisted with data entry at the computer terminal. Linda Gauthier and Julie Doucet did their usual excellent job of typing. I owe much to conversations with John A. Graham and Albert D. Grauer. Others whose aid has been appreciated include M. Bessell, O. J. Eggen, R. J. Hill, L. Joner, M. D. Joner, K. Kissell, R. M. Light, C. L. Perry, Henry R. Radoski (AFOSR), N. B. Suntzeff, B. J. Taylor, A. K. Uomoto, and A. T. Young. W. Z. Wisniewski told me of a blue star later made into a standard. This project has been supported by Grant Nos. 77-3218 and 82-0192 from the Air Force Office of Scientific Research (AFOSR), and by Grant No. CW-0004-85 from the Space Telescope Science Institute.

APPENDIX A

It is of interest to compare directly the wavelength sensitivity and transformation relations between the RCA 31034A and the Hamamatsu R943-02 photomultipliers, since both have very similar (GaAs) photocathodes. This readily can be done through intercomparison of the 81 member subset of standard stars from Landolt (1983) which was used over the years to calibrate the data obtained in this paper. The intercomparisons were made in the sense of Hamamatsu *minus* RCA, are illustrated in Figs. 40–45, and are represented by the relations below:

$$(B-V)_{\mathrm{RCA}} = -0.00108 + 1.00067(B-V)_{\mathrm{Ham}} \pm 0.00068 \pm 0.00081;$$

$$(U-B)_{\mathrm{RCA}} = +0.00425 + 0.99680(U-B)_{\mathrm{Ham}} \pm 0.00138 \pm 0.00151;$$

$$V_{\mathrm{RCA}} = V_{\mathrm{Ham}} + 0.00028 + 0.00070(B-V)_{\mathrm{RCA}} \pm 0.00087 \pm 0.00104;$$

$$(V-R)_{\mathrm{RCA}} = +0.00074 + 0.99768(V-R)_{\mathrm{Ham}} \pm 0.00058 \pm 0.00124;$$

$$(R-I)_{\mathrm{RCA}} = -0.00045 + 0.99859(R-I)_{\mathrm{Ham}} \pm 0.00098 \pm 0.00222;$$

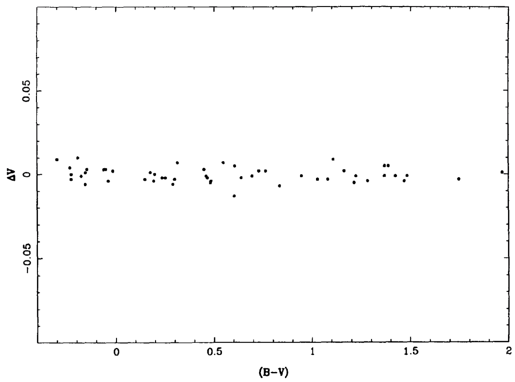

FIG. 40. A comparison of the V magnitudes obtained with the Hamamatsu R943-02 as a function of the $(B-V)$ color index obtained with the RCA 31034A.

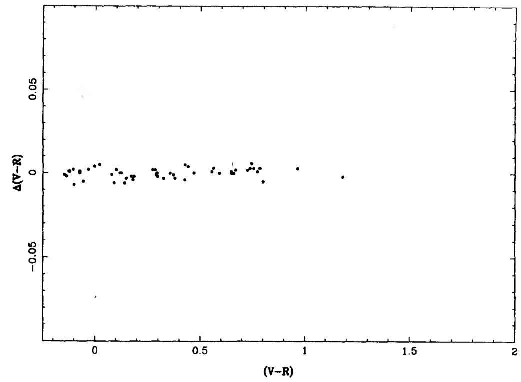

FIG. 43. A comparison of the $(V-R)$ color indices obtained with the Hamamatsu R943-02 as a function of the $(V-R)$ color indices obtained with the RCA 31034A.

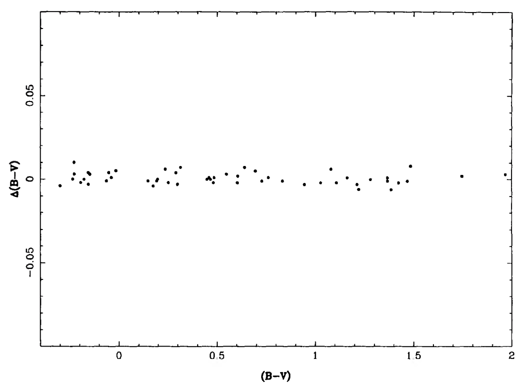

FIG. 41. A comparison of the $(B-V)$ color indices obtained with the Hamamatsu R943-02 as a function of the $(B-V)$ color indices obtained with the RCA 31034A.

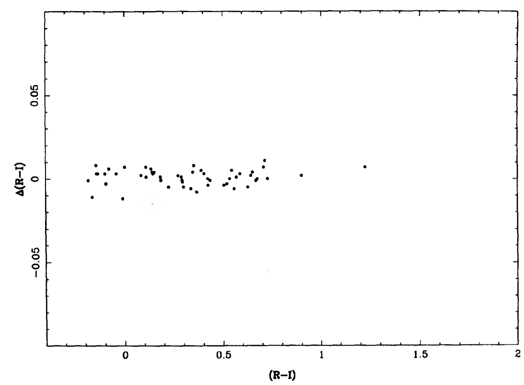

FIG. 44. A comparison of the $(R-I)$ color indices obtained with the Hamamatsu R943-02 as a function of the $(R-I)$ color indices obtained with the RCA 31034A.

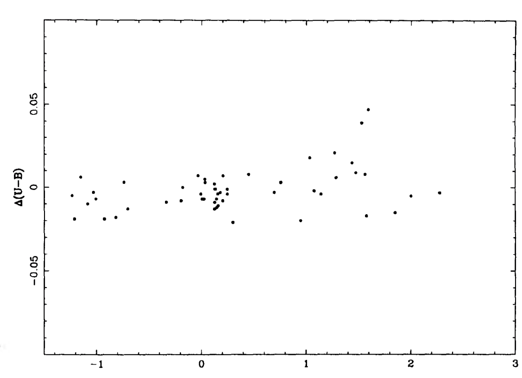

FIG. 42. A comparison of the $(U-B)$ color indices obtained with the Hamamatsu R943-02 as a function of the $(U-B)$ color indices obtained with the RCA 31034A.

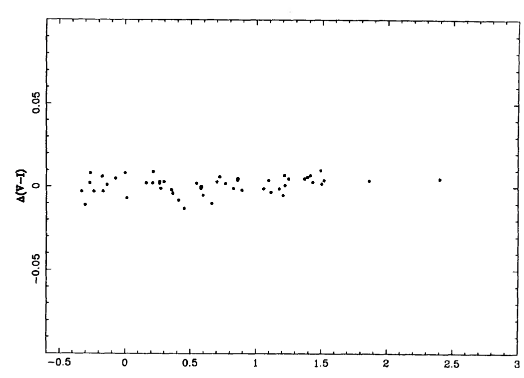

FIG. 45. A comparison of the $(V-I)$ color indices obtained with the Hamamatsu R943-02 as a function of the $(V-I)$ color indices obtained with the RCA 31034A.

$$(V-I)_{\rm RCA}=$$
$$+0.00007+0.99955(V-I)_{\rm Ham} \qquad (V-I)<+1.3,$$
$$\pm 0.00110 \pm 0.00164;$$

$$(V-I)_{\rm RCA}=$$
$$-0.00630+1.00075(V-I)_{\rm Ham} \qquad (V-I)>+1.3.$$
$$\pm 0.00432 \pm 0.00265,$$

As may be seen, the differences between the RCA 31034A and the Hamamatsu R943-02 photomultipliers were very small, and were found to be nonlinear only in $(V-I)$. The I filter differs the most, as may be expected from the different long wavelength cutoffs of the two photomultipliers.

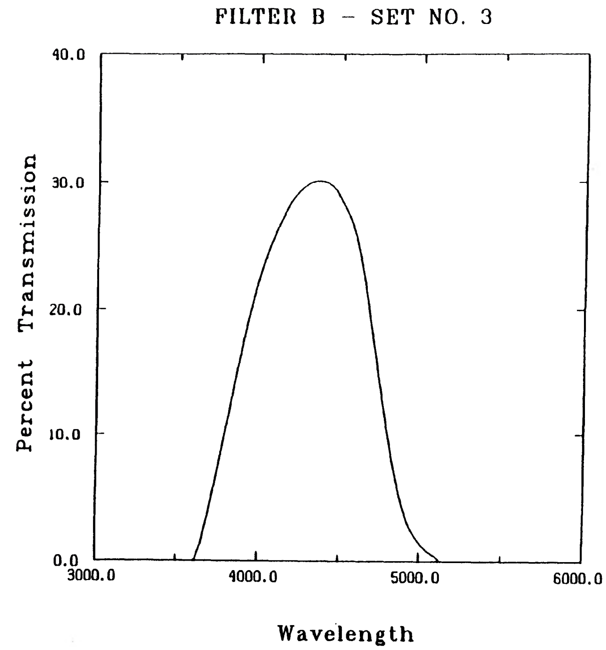

FIG. 47. The transmission characteristics of the B filter: 2 mm GG385 +2 mm BG 18+2 mm BG 12.

APPENDIX B

Knowledge of the sensitivity of a photomultiplier as a function of wavelength, as well as the transmission characteristics of the filters used in a photometric program is needed for the theoretical modeling of a photometric system. Consequently, such information is furnished in the following tables. The author is indebted to Sr. Gabriel Martin of CTIO who made the necessary laboratory measurements on Cerro Tololo.

Figures 46–50 illustrate the transmission characteristics of the filters listed in Table III (Landolt 1983). The corresponding numerical data are tabulated in Tables 6–10.

Figures 51 and 52 illustrate the absolute sensitivity and the quantum efficiency, respectively, as a function of wavelength for the RCA 31034A photomultiplier, serial number N49701. Table 11 gives the corresponding numerical data.

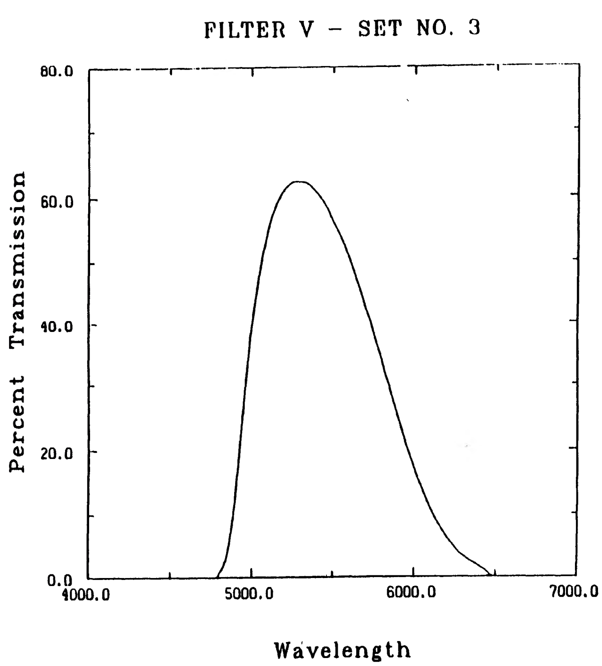

FIG. 46. The transmission characteristics of the V filter: 2 mm GG495 +2 mm BG 18.

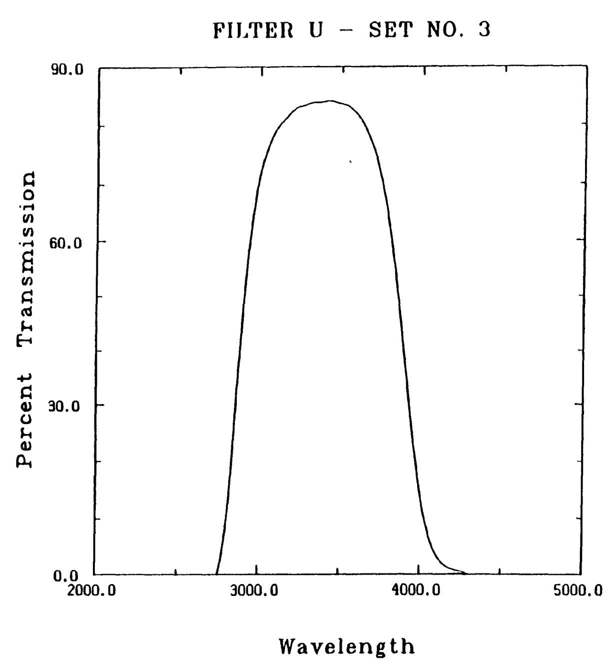

FIG. 48. The transmission characteristics of the U filter: Corning 9863 +solid $CuSO_4$ crystal.

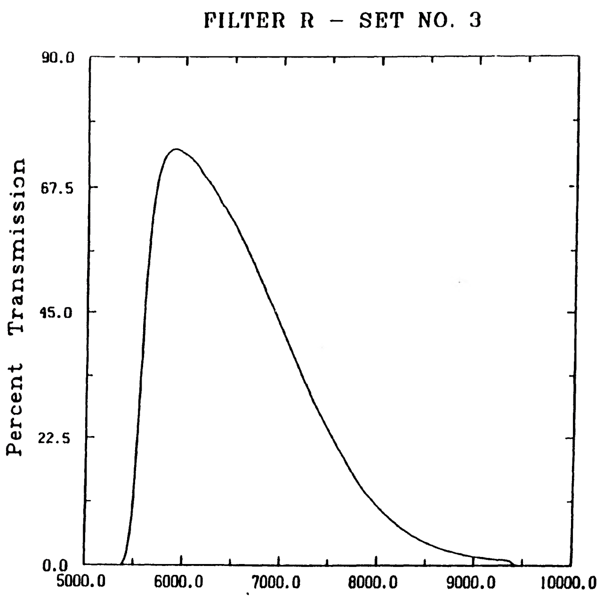

FIG. 49. The transmission characteristics of the *R* filter: 2 mm KG 3+2 mm OG 570.

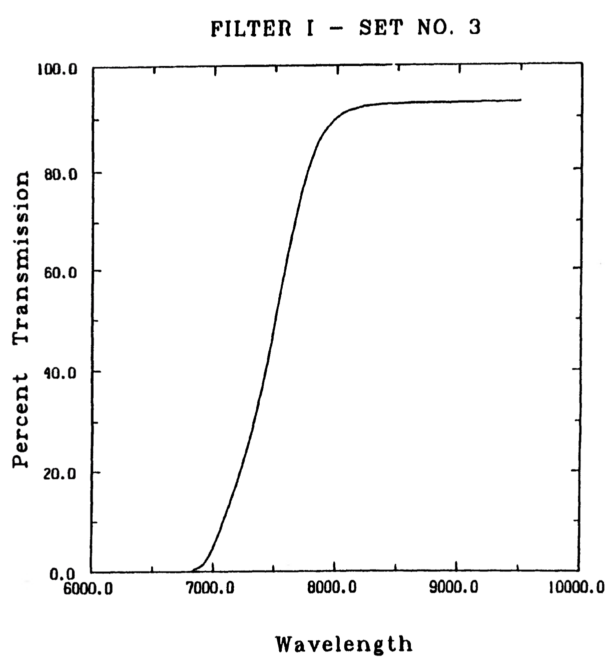

FIG. 50. The transmission characteristics of the *I* filter: 3 mm RG 715+1 mm RG 780.

TABLE 6. Transmission characteristics of *V* filter in CTIO's *UBVRI* filter set No. 3.

λ	%T	λ	%T	λ	%T	λ	%T	λ	%T
4750	0.00	5110	56.48	5470	57.82	5830	30.79	6190	6.70
4760	0.00	5120	57.31	5480	57.31	5840	29.90	6200	6.34
4770	0.00	5130	58.04	5490	56.80	5850	29.02	6210	5.99
4780	0.01	5140	58.68	5500	56.27	5860	28.15	6220	5.64
4790	0.04	5150	59.23	5510	55.73	5870	27.30	6230	5.30
4800	0.68	5160	59.72	5520	55.19	5880	26.46	6240	4.96
4810	1.02	5170	60.15	5530	54.62	5890	25.62	6250	4.63
4820	1.51	5180	60.55	5540	54.05	5900	24.79	6260	4.32
4830	2.17	5190	60.92	5550	53.45	5910	23.96	6270	4.03
4840	3.04	5200	61.25	5560	52.84	5920	23.14	6280	3.75
4850	4.15	5210	61.54	5570	52.20	5930	22.33	6290	3.51
4860	5.52	5220	61.79	5580	51.54	5940	21.54	6300	3.29
4870	7.17	5230	61.99	5590	50.84	5950	20.76	6310	3.09
4880	9.09	5240	62.14	5600	50.11	5960	19.98	6320	2.90
4890	11.27	5250	62.24	5610	49.37	5970	19.21	6330	2.74
4900	13.67	5260	62.31	5620	48.61	5980	18.45	6340	2.58
4910	16.24	5270	62.34	5630	47.83	5990	17.71	6350	2.44
4920	18.93	5280	62.35	5640	47.05	6000	16.98	6360	2.29
4930	21.68	5290	62.34	5650	46.26	6010	16.27	6370	2.13
4940	24.44	5300	62.32	5660	45.47	6020	15.59	6380	1.97
4950	27.20	5310	62.28	5670	44.67	6030	14.93	6390	1.81
4960	29.93	5320	62.22	5680	43.87	6040	14.28	6400	1.64
4970	32.60	5330	62.12	5690	43.06	6050	13.66	6410	1.46
4980	35.19	5340	61.99	5700	42.24	6060	13.05	6420	1.28
4990	37.67	5350	61.82	5710	41.39	6070	12.45	6430	1.10
5000	40.02	5360	61.62	5720	40.53	6080	11.88	6440	0.96
5010	42.23	5370	61.38	5730	39.65	6090	11.32	6450	0.67
5020	44.28	5380	61.11	5740	38.76	6100	10.78	6460	0.38
5030	46.16	5390	60.83	5750	37.87	6110	10.25	6470	0.17
5040	47.89	5400	60.54	5760	36.97	6120	9.74	6480	0.08
5050	49.45	5410	60.23	5770	36.09	6130	9.25	6490	0.00
5060	50.88	5420	59.91	5780	35.21	6140	8.78	6500	0.00
5070	52.20	5430	59.56	5790	34.34	6150	8.32		
5080	53.41	5440	59.19	5800	33.46	6160	7.89		
5090	54.52	5450	58.77	5810	32.58	6170	7.47		
5100	55.55	5460	58.31	5820	31.68	6180	7.08		

TABLE 7. Transmission characteristics of *B* filter in CTIO's *UBVRI* filter set No. 3.

λ	%T	λ	%T	λ	%T	λ	%T	λ	%T
3600	0.00	3920	18.38	4240	29.36	4560	26.75	4880	4.72
3610	0.00	3930	18.96	4250	29.49	4570	26.39	4890	4.28
3620	0.17	3940	19.52	4260	29.61	4580	25.99	4900	3.87
3630	0.59	3950	20.07	4270	29.72	4590	25.55	4910	3.50
3640	0.87	3960	20.60	4280	29.81	4600	25.06	4920	3.17
3650	1.19	3970	21.11	4290	29.89	4610	24.53	4930	2.87
3660	1.73	3980	21.60	4300	29.96	4620	23.96	4940	2.60
3670	2.27	3990	22.07	4310	30.01	4630	23.33	4950	2.36
3680	2.82	4000	22.52	4320	30.05	4640	22.66	4960	2.14
3690	3.38	4010	22.95	4330	30.08	4650	21.94	4970	1.94
3700	3.96	4020	23.35	4340	30.10	4660	21.18	4980	1.76
3710	4.55	4030	23.74	4350	30.10	4670	20.40	4990	1.59
3720	5.17	4040	24.11	4360	30.10	4680	19.58	5000	1.43
3730	5.80	4050	24.47	4370	30.09	4690	18.75	5010	1.29
3740	6.45	4060	24.81	4380	30.07	4700	17.90	5020	1.15
3750	7.11	4070	25.15	4390	30.04	4710	17.03	5030	1.02
3760	7.79	4080	25.47	4400	30.00	4720	16.16	5040	0.90
3770	8.47	4090	25.78	4410	29.94	4730	15.28	5050	0.79
3780	9.16	4100	26.09	4420	29.87	4740	14.41	5060	0.69
3790	9.85	4110	26.39	4430	29.78	4750	13.56	5070	0.60
3800	10.54	4120	26.68	4440	29.66	4760	12.72	5080	0.52
3810	11.24	4130	26.97	4450	29.52	4770	11.89	5090	0.45
3820	11.93	4140	27.26	4460	29.35	4780	11.10	5100	0.39
3830	12.62	4150	27.53	4470	29.15	4790	10.32	5110	0.24
3840	13.30	4160	27.80	4480	28.93	4800	9.58	5120	0.15
3850	13.97	4170	28.05	4490	28.70	4810	8.86	5130	0.02
3860	14.63	4180	28.29	4500	28.45	4820	8.17	5140	0.01
3870	15.28	4190	28.51	4510	28.20	4830	7.52	5150	0.00
3880	15.92	4200	28.72	4520	27.93	4840	6.89	5160	0.00
3890	16.56	4210	28.90	4530	27.66	4850	6.29		
3900	17.18	4220	29.07	4540	27.38	4860	5.73		
3910	17.78	4230	29.23	4550	27.08	4870	5.21		

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TABLE 8. Transmisson characteristics of *U* filter in CTIO's *UBVRI* filter set No. 3.

λ	% T	λ	% T	λ	% T	λ	% T	λ	% T
2750	0.00	3070	77.80	3390	83.94	3710	75.02	4030	9.42
2760	1.12	3080	78.40	3400	83.99	3720	74.03	4040	8.20
2770	2.43	3090	78.93	3410	84.03	3730	72.95	4050	7.11
2780	4.03	3100	79.39	3420	84.04	3740	71.78	4060	6.15
2790	6.01	3110	79.79	3430	84.04	3750	70.52	4070	5.31
2800	8.42	3120	80.13	3440	84.00	3760	69.17	4080	4.58
2810	11.29	3130	80.43	3450	83.94	3770	67.72	4090	3.95
2820	14.59	3140	80.71	3460	83.85	3780	66.15	4100	3.40
2830	18.26	3150	80.98	3470	83.75	3790	64.47	4110	2.94
2840	22.24	3160	81.27	3480	83.66	3800	62.65	4120	2.53
2850	26.40	3170	81.57	3490	83.58	3810	60.70	4130	2.19
2860	30.66	3180	81.88	3500	83.51	3820	58.60	4140	1.90
2870	34.92	3190	82.19	3510	83.44	3830	56.36	4150	1.65
2880	39.11	3200	82.48	3520	83.37	3840	53.99	4160	1.44
2890	43.17	3210	82.72	3530	83.26	3850	51.51	4170	1.26
2900	47.05	3220	82.90	3540	83.13	3860	48.93	4180	1.11
2910	50.70	3230	83.03	3550	82.96	3870	46.27	4190	0.98
2920	54.09	3240	83.10	3560	82.76	3880	43.54	4200	0.87
2930	57.19	3250	83.16	3570	82.52	3890	40.76	4210	0.77
2940	60.02	3260	83.22	3580	82.25	3900	37.96	4220	0.69
2950	62.58	3270	83.31	3590	81.94	3910	35.17	4230	0.61
2960	64.88	3280	83.41	3600	81.61	3920	32.41	4240	0.55
2970	66.95	3290	83.52	3610	81.24	3930	29.72	4250	0.49
2980	68.77	3300	83.63	3620	80.83	3940	27.12	4260	0.44
2990	70.36	3310	83.72	3630	80.37	3950	24.61	4270	0.39
3000	71.73	3320	83.78	3640	79.85	3960	22.22	4280	0.28
3010	72.91	3330	83.81	3650	79.30	3970	19.95	4290	0.16
3020	73.94	3340	83.81	3660	78.72	3980	17.82	4300	0.01
3030	74.84	3350	83.81	3670	78.11	3990	15.83	4310	0.00
3040	75.67	3360	83.81	3680	77.46	4000	14.00	4320	0.00
3050	76.43	3370	83.84	3690	76.73	4010	12.32		
3060	77.14	3380	83.89	3700	75.92	4020	10.80		

Figures 53 and 54 give the same information for an average of many RCA 31034A photomultipliers as kindly made available to me by Bob Landis from the files of Burle Industries, the company which bought the old RCA photomultiplier business. It was not possible to acquire similar information for the Hamamatsu photomultiplier R943-02, serial No. EA 1450. However, as is evident in Appendix A

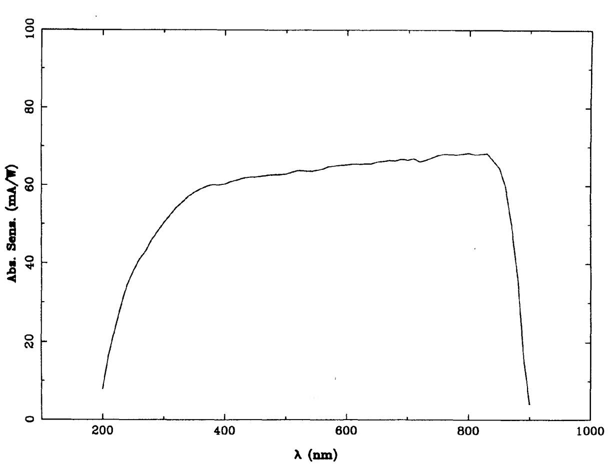

FIG. 51. The absolute sensitivity as a function of wavelength for RCA 31034A, serial No. N49701.

TABLE 9. Transmission characteristics of *R* filter in CTIO's *UBVRI* filter set No. 3.

λ	% T	λ	% T	λ	% T	λ	% T	λ	% T
5360	0.00	5780	72.38	6200	69.34	6620	57.18	7040	40.47
5370	0.00	5790	72.71	6210	69.12	6630	56.84	7050	40.06
5380	0.09	5800	72.99	6220	68.91	6640	56.50	7060	39.66
5390	0.27	5810	73.23	6230	68.69	6650	56.14	7070	39.25
5400	0.50	5820	73.43	6240	68.48	6660	55.78	7080	38.85
5410	0.82	5830	73.60	6250	68.26	6670	55.40	7090	38.45
5420	1.28	5840	73.74	6260	68.02	6680	55.01	7100	38.06
5430	1.93	5850	73.85	6270	67.77	6690	54.61	7110	37.67
5440	2.81	5860	73.94	6280	67.50	6700	54.21	7120	37.29
5450	3.96	5870	74.00	6290	67.22	6710	53.81	7130	36.91
5460	5.42	5880	74.05	6300	66.93	6720	53.41	7140	36.53
5470	7.21	5890	74.07	6310	66.63	6730	53.01	7150	36.14
5480	9.34	5900	74.07	6320	66.33	6740	52.61	7160	35.75
5490	11.82	5910	74.04	6330	66.04	6750	52.21	7170	35.35
5500	14.62	5920	74.00	6340	65.74	6760	51.81	7180	34.95
5510	17.71	5930	73.94	6350	65.43	6770	51.40	7190	34.54
5520	21.04	5940	73.86	6360	65.13	6780	50.99	7200	34.14
5530	24.55	5950	73.77	6370	64.82	6790	50.57	7210	33.74
5540	28.17	5960	73.67	6380	64.52	6800	50.16	7220	33.34
5550	31.83	5970	73.56	6390	64.23	6810	49.74	7230	32.95
5560	35.48	5980	73.45	6400	64.14	6820	49.32	7240	32.56
5570	39.03	5990	73.34	6410	63.89	6830	48.91	7250	32.18
5580	42.45	6000	73.23	6420	63.61	6840	48.49	7260	31.79
5590	45.67	6010	73.11	6430	63.33	6850	48.09	7270	31.40
5600	48.67	6020	73.00	6440	63.03	6860	47.68	7280	31.02
5610	51.44	6030	72.88	6450	62.72	6870	47.29	7290	30.63
5620	53.98	6040	72.75	6460	62.42	6880	46.90	7300	30.25
5630	56.30	6050	72.62	6470	62.12	6890	46.52	7310	29.87
5640	58.40	6060	72.47	6480	61.82	6900	46.14	7320	29.49
5650	60.32	6070	72.31	6490	61.52	6910	45.76	7330	29.12
5660	62.05	6080	72.14	6500	61.22	6920	45.37	7340	28.76
5670	63.61	6090	71.95	6510	60.91	6930	44.97	7350	28.40
5680	65.01	6100	71.75	6520	60.59	6940	44.55	7360	28.06
5690	66.25	6110	71.54	6530	60.26	6950	44.14	7370	27.73
5700	67.36	6120	71.31	6540	59.92	6960	43.72	7380	27.41
5710	68.32	6130	71.07	6550	59.58	6970	43.30	7390	27.09
5720	69.17	6140	70.83	6560	59.23	6980	42.89	7400	26.77
5730	69.91	6150	70.57	6570	58.89	6990	42.48	7410	26.45
5740	70.55	6160	70.31	6580	58.54	7000	42.08	7420	26.13
5750	71.10	6170	70.06	6590	58.20	7010	41.68	7430	25.79
5760	71.58	6180	69.81	6600	57.86	7020	41.28	7440	25.45
5770	72.01	6190	69.57	6610	57.52	7030	40.87	7450	25.11
7460	24.76	7870	12.98	8280	6.07	8690	2.66	9100	1.24
7470	24.42	7880	12.77	8290	5.95	8700	2.60	9110	1.22
7480	24.08	7890	12.57	8300	5.82	8710	2.55	9120	1.20
7490	23.74	7900	12.37	8310	5.71	8720	2.50	9130	1.18
7500	23.40	7910	12.18	8320	5.60	8730	2.46	9140	1.16
7510	23.07	7920	11.98	8330	5.49	8740	2.41	9150	1.14
7520	22.74	7930	11.77	8340	5.38	8750	2.37	9160	1.12
7530	22.42	7940	11.57	8350	5.28	8760	2.33	9170	1.11
7540	22.10	7950	11.36	8360	5.18	8770	2.29	9180	1.09
7550	21.77	7960	11.16	8370	5.09	8780	2.24	9190	1.07
7560	21.46	7970	10.96	8380	4.99	8790	2.20	9200	1.06
7570	21.14	7980	10.76	8390	4.90	8800	2.16	9210	1.04
7580	20.83	7990	10.56	8400	4.82	8810	2.11	9220	1.02
7590	20.53	8000	10.37	8410	4.73	8820	2.07	9230	1.01
7600	20.23	8010	10.18	8420	4.64	8830	2.03	9240	0.99
7610	19.93	8020	9.99	8430	4.55	8840	1.99	9250	0.97
7620	19.64	8030	9.80	8440	4.46	8850	1.95	9260	0.96
7630	19.35	8040	9.61	8450	4.38	8860	1.91	9270	0.94
7640	19.06	8050	9.43	8460	4.29	8870	1.88	9280	0.93
7650	18.77	8060	9.25	8470	4.21	8880	1.85	9290	0.92
7660	18.48	8070	9.08	8480	4.12	8890	1.81	9300	0.91
7670	18.18	8080	8.91	8490	4.04	8900	1.78	9310	0.90
7680	17.88	8090	8.75	8500	3.96	8910	1.75	9320	0.89
7690	17.59	8100	8.59	8510	3.88	8920	1.71	9330	0.88
7700	17.30	8110	8.44	8520	3.80	8930	1.68	9340	0.87
7710	17.01	8120	8.29	8530	3.73	8940	1.64	9350	0.80
7720	16.73	8130	8.14	8540	3.65	8950	1.61	9360	0.76
7730	16.46	8140	8.00	8550	3.57	8960	1.58	9370	0.78
7740	16.19	8150	7.85	8560	3.50	8970	1.55	9380	0.66
7750	15.93	8160	7.71	8570	3.43	8980	1.52	9390	0.45
7760	15.67	8170	7.57	8580	3.36	8990	1.49	9400	0.38
7770	15.41	8180	7.43	8590	3.29	9000	1.46	9410	0.28
7780	15.15	8190	7.29	8600	3.22	9010	1.44	9420	0.15
7790	14.89	8200	7.14	8610	3.16	9020	1.41	9430	0.08
7800	14.64	8210	7.00	8620	3.09	9030	1.39	9440	0.01
7810	14.38	8220	6.86	8630	3.02	9040	1.36	9450	0.00
7820	14.14	8230	6.73	8640	2.96	9050	1.34	9460	0.00
7830	13.89	8240	6.59	8650	2.90	9060	1.32	9470	0.00
7840	13.65	8250	6.46	8660	2.84	9070	1.29	9480	0.00
7850	13.42	8260	6.33	8670	2.77	9080	1.28	9490	0.00
7860	13.19	8270	6.20	8680	2.72	9090	1.26	9500	0.00

TABLE 10. Transmission characteristics of *I* filter in CTIO's *UBVRI* filter set No. 3.

λ	% T	λ	% T	λ	% T	λ	% T	λ	% T
6800	0.00	7210	19.31	7620	65.63	8030	90.60	8440	92.55
6810	0.00	7220	20.13	7630	66.80	8040	90.74	8450	92.55
6820	0.05	7230	20.97	7640	67.96	8050	90.87	8460	92.56
6830	0.18	7240	21.81	7650	69.09	8060	90.99	8470	92.57
6840	0.39	7250	22.67	7660	70.22	8070	91.10	8480	92.57
6850	0.47	7260	23.54	7670	71.34	8080	91.21	8490	92.58
6860	0.55	7270	24.43	7680	72.45	8090	91.30	8500	92.59
6870	0.64	7280	25.34	7690	73.53	8100	91.39	8510	92.60
6880	0.75	7290	26.28	7700	74.57	8110	91.46	8520	92.61
6890	0.88	7300	27.25	7710	75.58	8120	91.53	8530	92.62
6900	1.04	7310	28.24	7720	76.54	8130	91.60	8540	92.63
6910	1.23	7320	29.26	7730	77.45	8140	91.66	8550	92.64
6920	1.47	7330	30.30	7740	78.32	8150	91.73	8560	92.65
6930	1.75	7340	31.36	7750	79.14	8160	91.79	8570	92.67
6940	2.07	7350	32.43	7760	79.91	8170	91.86	8580	92.69
6950	2.45	7360	33.51	7770	80.65	8180	91.93	8590	92.70
6960	2.87	7370	34.57	7780	81.37	8190	91.99	8600	92.71
6970	3.34	7380	35.63	7790	82.06	8200	92.05	8610	92.71
6980	3.84	7390	36.68	7800	82.72	8210	92.10	8620	92.71
6990	4.36	7400	37.73	7810	83.35	8220	92.15	8630	92.71
7000	4.92	7410	38.81	7820	83.96	8230	92.19	8640	92.71
7010	5.49	7420	39.93	7830	84.54	8240	92.22	8650	92.71
7020	6.09	7430	41.09	7840	85.08	8250	92.24	8660	92.71
7030	6.71	7440	42.31	7850	85.59	8260	92.26	8670	92.72
7040	7.35	7450	43.56	7860	86.06	8270	92.28	8680	92.73
7050	8.00	7460	44.85	7870	86.49	8280	92.31	8690	92.74
7060	8.66	7470	46.16	7880	86.88	8290	92.33	8700	92.74
7070	9.33	7480	47.47	7890	87.23	8300	92.36	8710	92.75
7080	10.01	7490	48.78	7900	87.55	8310	92.39	8720	92.76
7090	10.69	7500	50.10	7910	87.85	8320	92.42	8730	92.77
7100	11.37	7510	51.42	7920	88.13	8330	92.45	8740	92.77
7110	12.04	7520	52.74	7930	88.40	8340	92.47	8750	92.78
7120	12.72	7530	54.06	7940	88.67	8350	92.49	8760	92.78
7130	13.39	7540	55.38	7950	88.93	8360	92.50	8770	92.78
7140	14.07	7550	56.70	7960	89.18	8370	92.51	8780	92.78
7150	14.76	7560	58.03	7970	89.43	8380	92.51	8790	92.77
7160	15.46	7570	59.34	7980	89.67	8390	92.52	8800	92.77
7170	16.18	7580	60.64	7990	89.89	8400	92.52	8810	92.77
7180	16.93	7590	61.93	8000	90.09	8410	92.53	8820	92.76
7190	17.70	7600	63.19	8010	90.27	8420	92.54	8830	92.75
7200	18.49	7610	64.42	8020	90.44	8430	92.54	8840	92.75
8850	92.74	8990	92.81	9130	92.84	9270	92.88	9410	92.90
8860	92.74	9000	92.81	9140	92.85	9280	92.87	9420	92.90
8870	92.75	9010	92.81	9150	92.86	9290	92.86	9430	92.91
8880	92.75	9020	92.81	9160	92.86	9300	92.86	9440	92.91
8890	92.75	9030	92.80	9170	92.87	9310	92.86	9450	92.92
8900	92.76	9040	92.80	9180	92.88	9320	92.87	9460	92.93
8910	92.76	9050	92.80	9190	92.89	9330	92.87	9470	92.95
8920	92.76	9060	92.79	9200	92.89	9340	92.88	9480	92.96
8930	92.77	9070	92.79	9210	92.89	9350	92.89	9490	92.98
8940	92.78	9080	92.80	9220	92.89	9360	92.89	9500	93.00
8950	92.78	9090	92.80	9230	92.89	9370	92.90		
8960	92.79	9100	92.81	9240	92.89	9380	92.90		
8970	92.80	9110	92.82	9250	92.89	9390	92.90		
8980	92.80	9120	92.83	9260	92.88	9400	92.90		

TABLE 11. The absolute sensitivity and quantum efficiency for CTIO's RCA 3103A photomultiplier, serial No. N49701.

λ	A.S. (ma/W)	Q.E. %	λ	A.S. (ma/W)	Q.E. %	λ	A.S. (ma/W)	Q.E. %
2000	7.91	4.90	4400	62.12	17.50	6800	66.38	12.10
2100	16.48	9.73	4500	62.08	17.10	6900	66.80	12.00
2200	23.00	12.96	4600	62.35	16.80	7000	66.64	11.80
2300	29.00	15.63	4700	62.57	16.50	7100	67.02	11.70
2400	34.50	17.82	4800	62.74	16.20	7200	66.22	11.40
2500	38.00	18.84	4900	62.69	15.85	7300	66.55	11.30
2600	41.01	19.55	5000	62.93	15.60	7400	67.16	11.25
2700	43.00	19.74	5100	63.36	15.40	7500	67.77	11.20
2800	45.86	20.30	5200	63.77	15.20	7600	68.06	11.10
2900	48.20	20.60	5300	63.71	14.90	7700	68.02	10.95
3000	50.34	20.80	5400	63.61	14.60	7800	67.96	10.80
3100	52.27	20.90	5500	63.90	14.40	7900	68.20	10.70
3200	54.22	21.00	5600	64.15	14.20	8000	68.41	10.60
3300	55.64	20.90	5700	64.84	14.10	8100	67.96	10.40
3400	57.06	20.80	5800	65.04	13.90	8200	68.14	10.30
3500	58.17	20.60	5900	65.21	13.70	8300	68.30	10.20
3600	58.96	20.30	6000	65.35	13.50	8400	66.41	9.80
3700	59.70	20.00	6100	65.45	13.30	8500	64.46	9.40
3800	60.09	19.60	6200	65.53	13.10	8600	59.67	8.60
3900	60.10	19.10	6300	65.57	12.90	8700	49.83	7.10
4000	60.35	18.70	6400	65.57	12.70	8800	36.21	5.10
4100	60.86	18.40	6500	66.08	12.60	8900	15.80	2.20
4200	61.33	18.10	6600	66.29	12.45	9000	3.99	0.55
4300	61.75	17.80	6700	66.49	12.30			

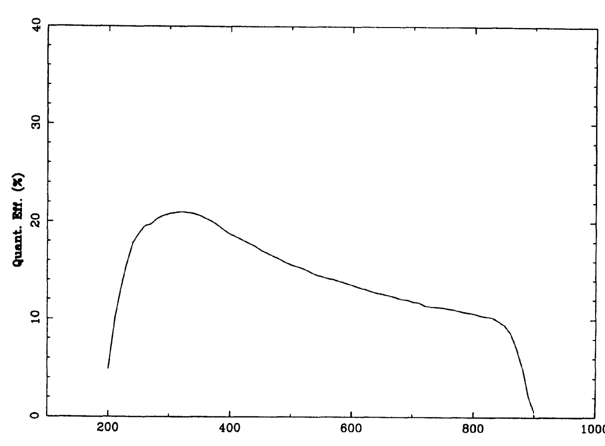

FIG. 52. The quantum efficiency as a function of wavelength for RCA 31034A, serial No. N49701.

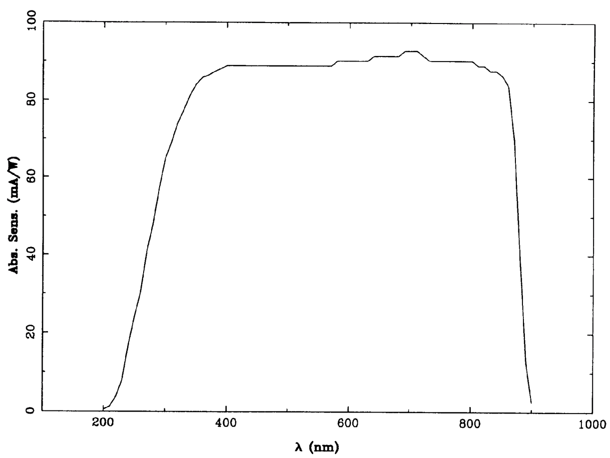

FIG. 53. The average absolute sensitivity as a function of wavelength for several RCA 31034A photomultipliers.

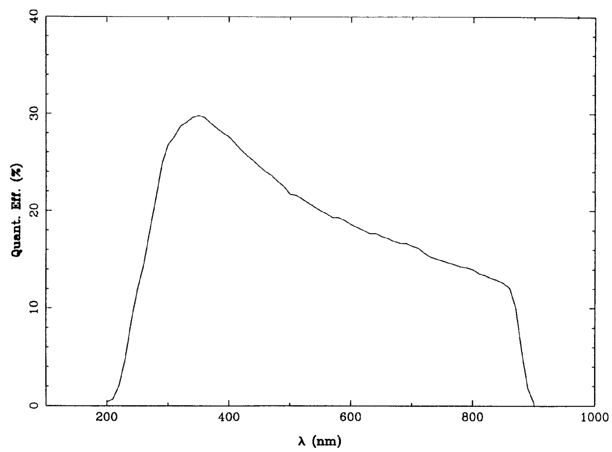

FIG. 54. The average quantum efficiency as a function of wavelength for several RCA 31034A photomultipliers.

above, the RCA 31034A and the Hamamatsu R943-02 photomultipliers are quite similar.

APPENDIX C

Additional information for the brighter stars in Table 2 has been listed in Appendices I and II in Landolt (1973) and in Appendix I in Landolt (1983). MK spectral types for the brighter Selected Area stars may be found in Drilling & Landolt (1979). Another source for many of these stars is the SIMBAD database. Little if anything is known about most the stars fainter than, say, 11th or 12th magnitude, except on occasion what one might find in the Harvard Annals, Volume 100 (photographic photometry), the Potsdam Spektral Durchmusterung (crude objective prism spectral types) and in Knox-Shaw & Barrett (1934) (proper motions).

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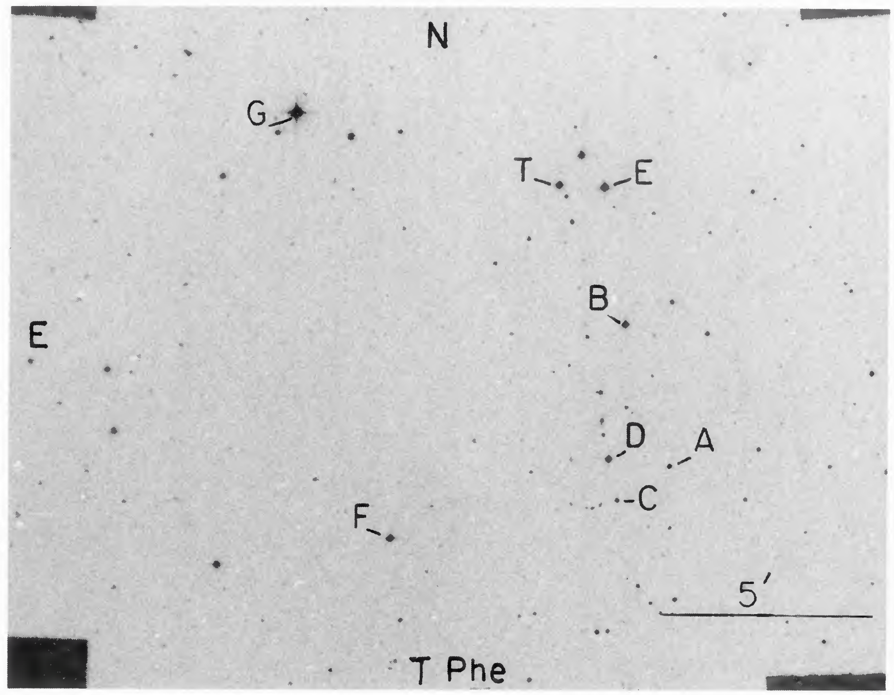


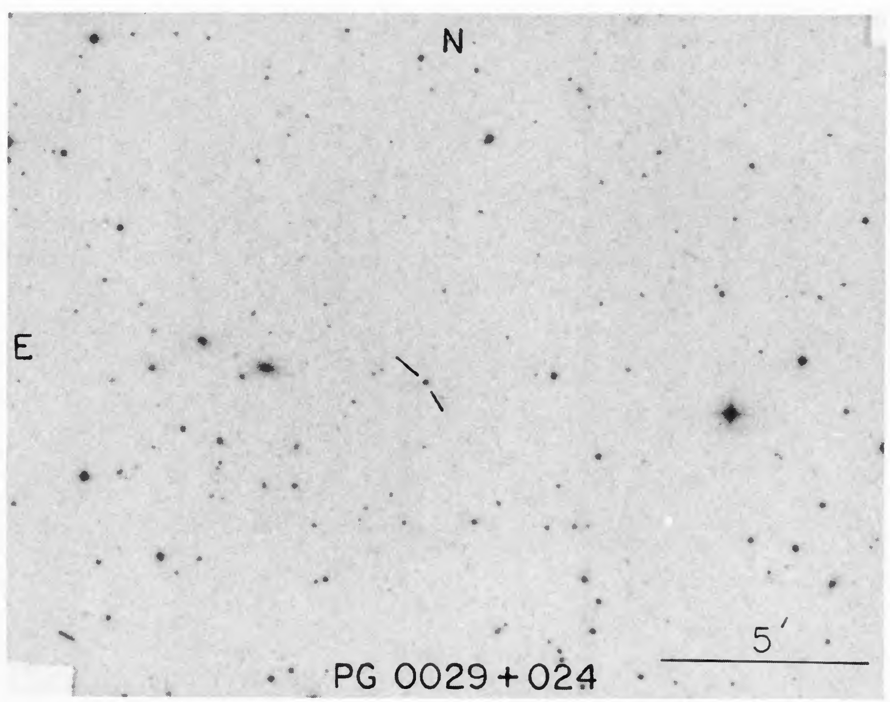
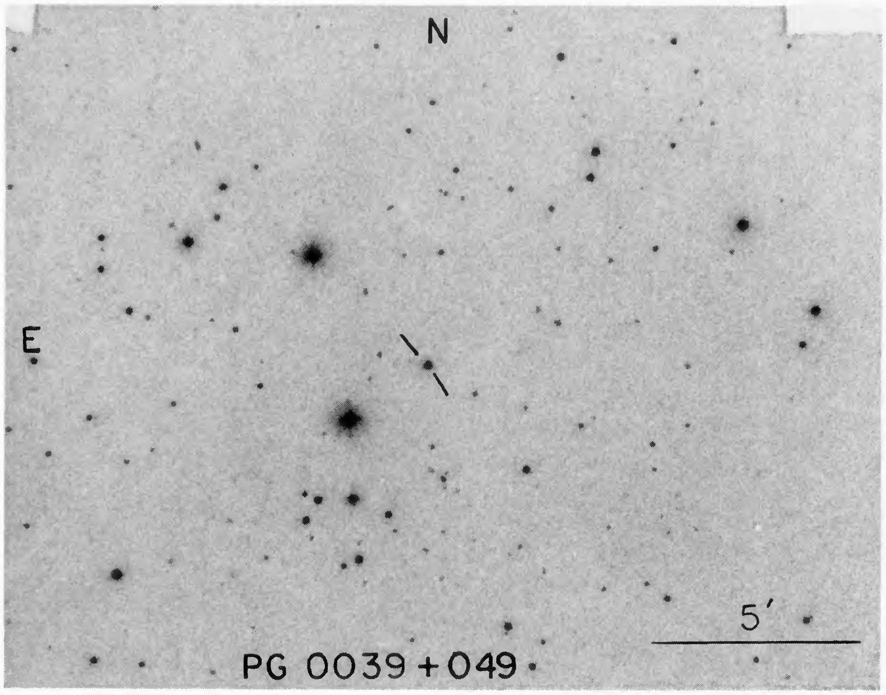


PLATE 21. (a) The field for the T Phe sequence. Star B is the eclipsing binary RW Phe. (b) The field of the star PG0029+024.

A. U. Landolt (see page 347)



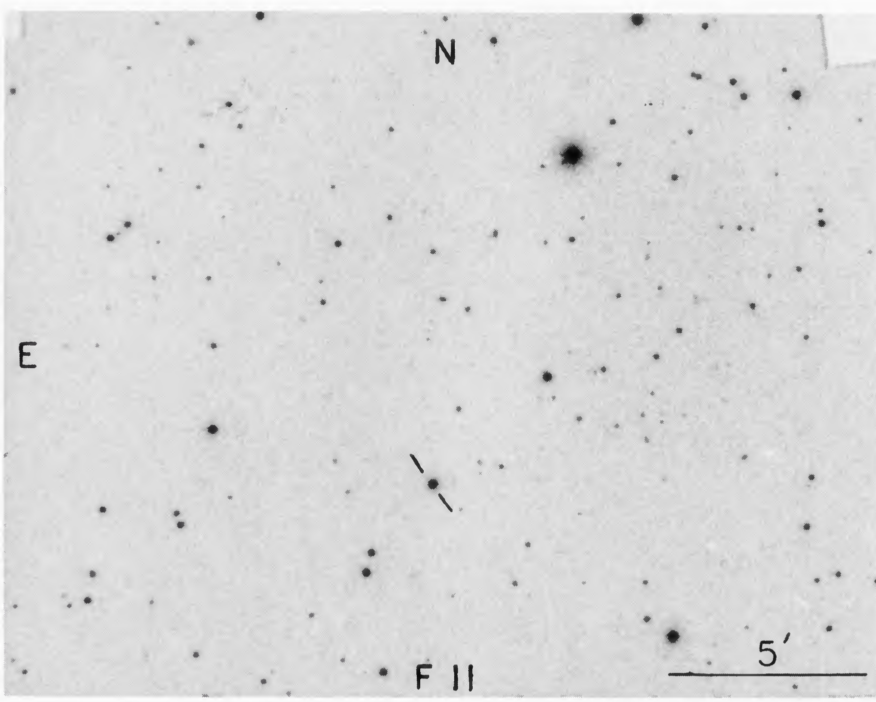


PLATE 22. (a) The field of the star PG0039+049. (b) The field of the star Feige 11.

A. U. Landolt (see page 347)

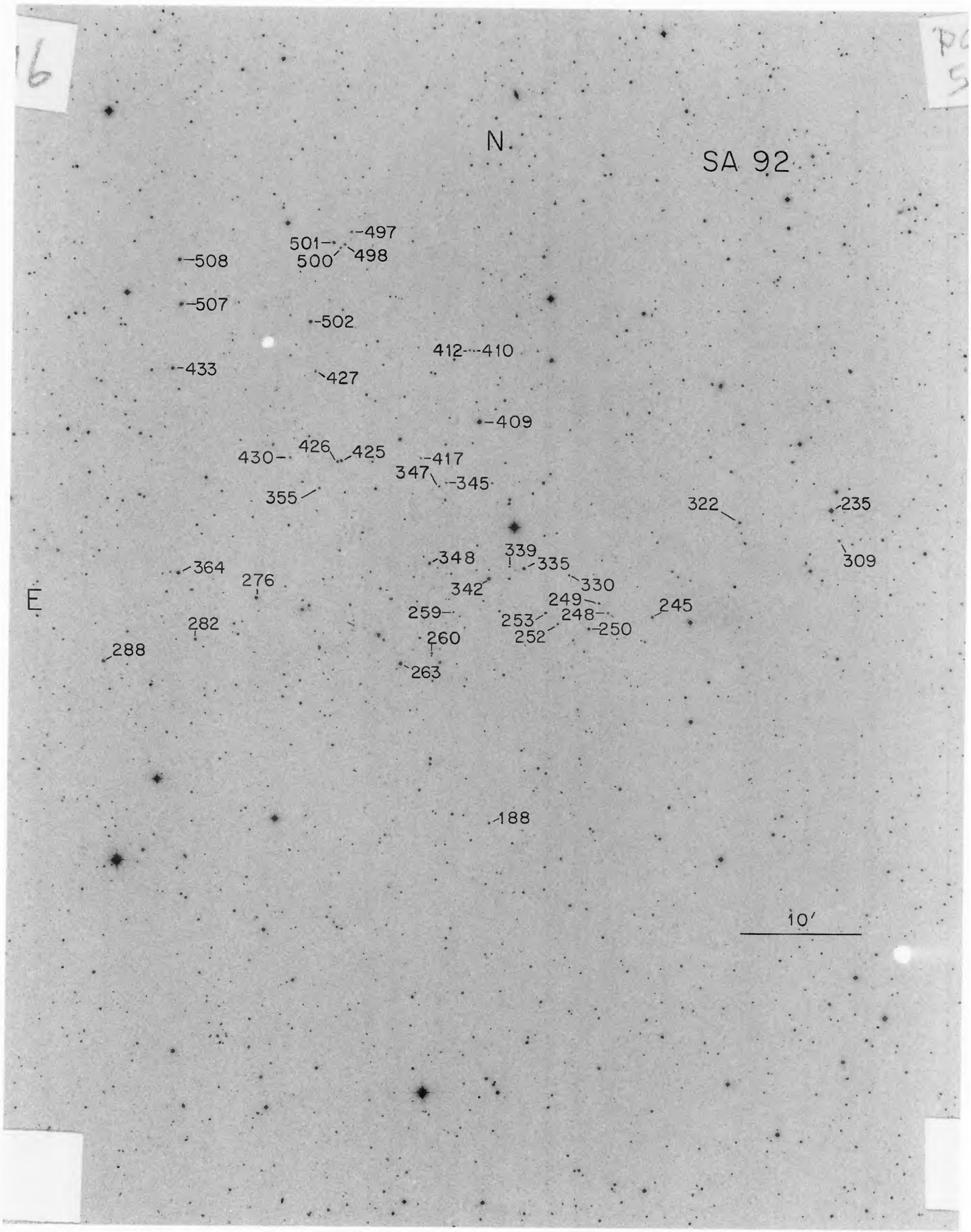


PLATE 23. The field of Selected Area 92.

A. U. Landolt (see page 347)

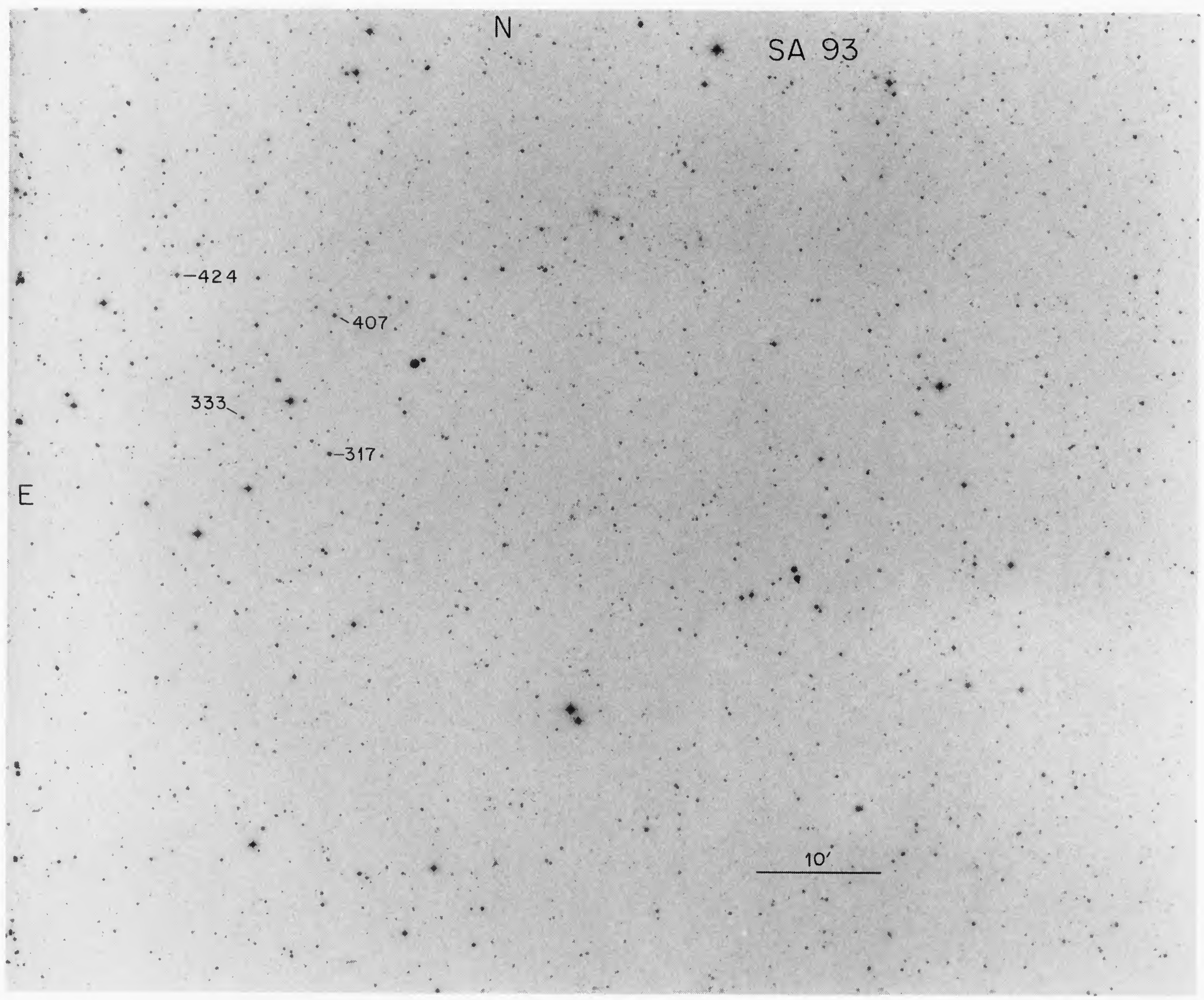


PLATE 24. The field of Selected Area 93.

A. U. Landolt (see page 347)

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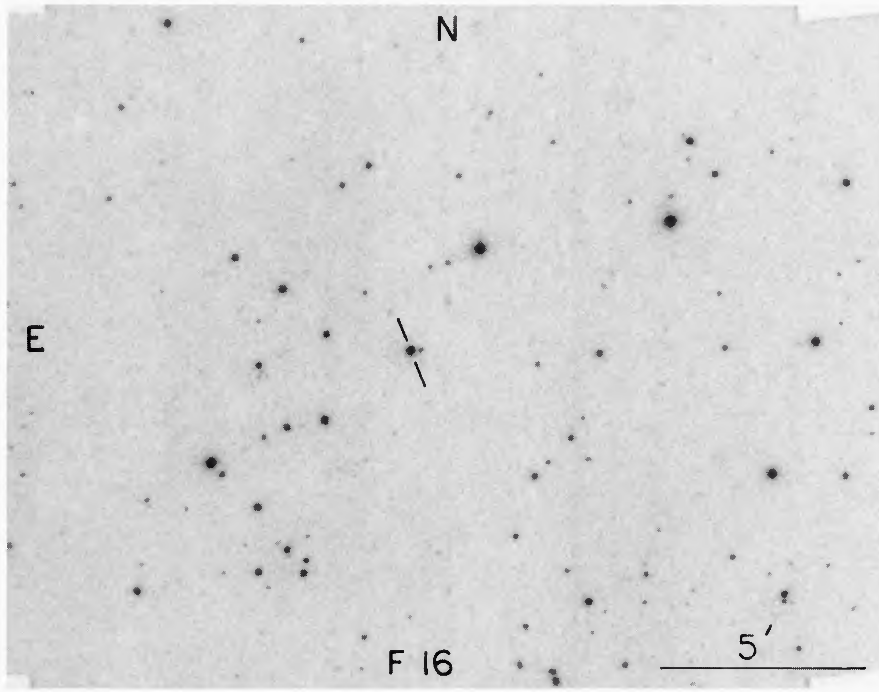

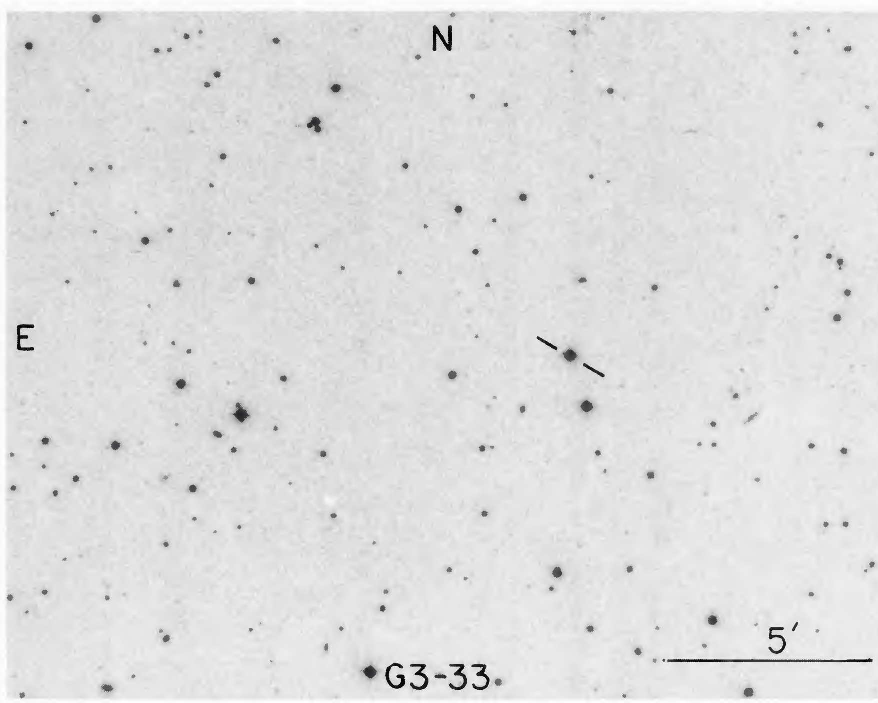

PLATE 25. (a) The field of the star Feige 16. (b) The field of the star G3 33.

A. U. Landolt (see page 347)

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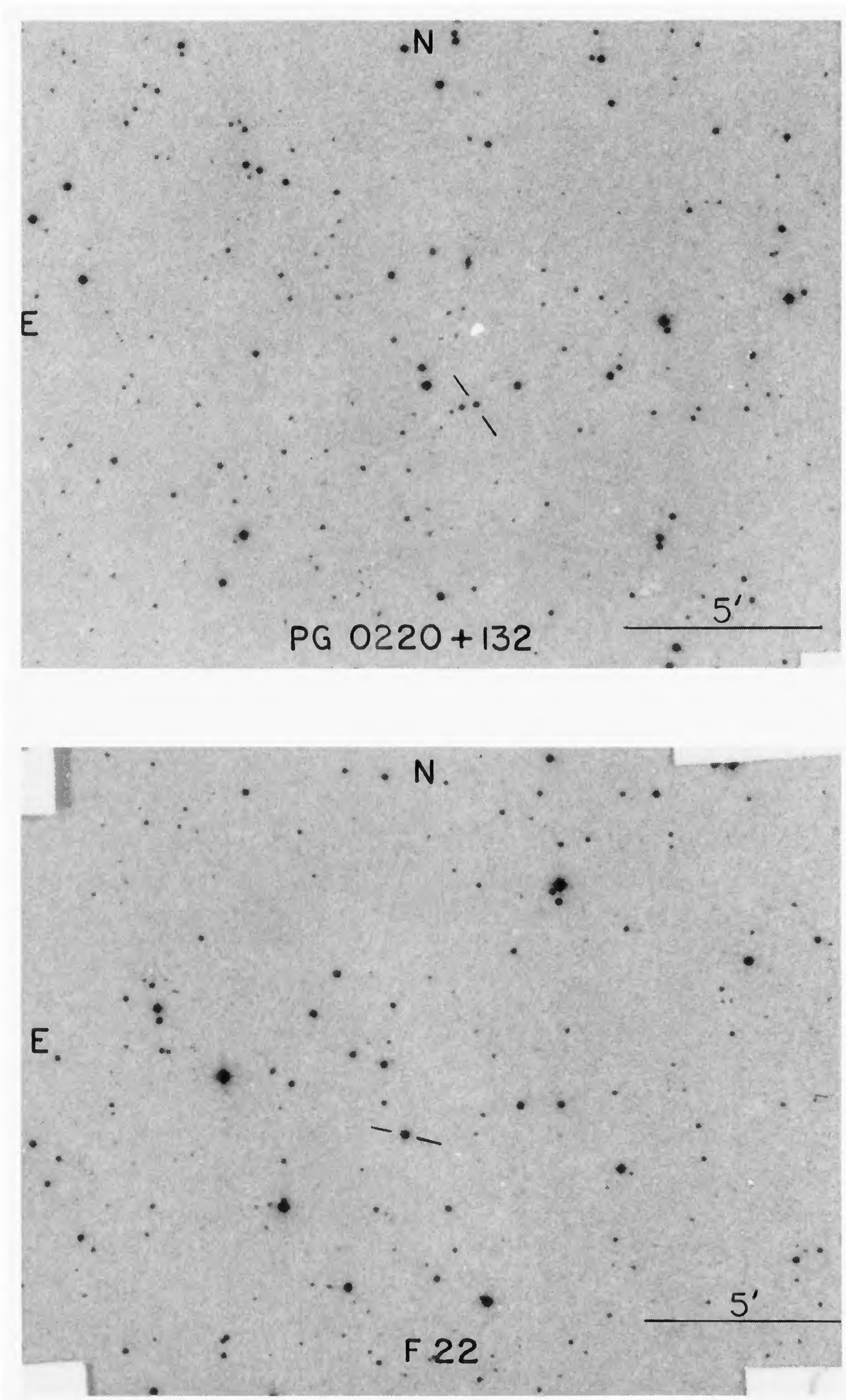
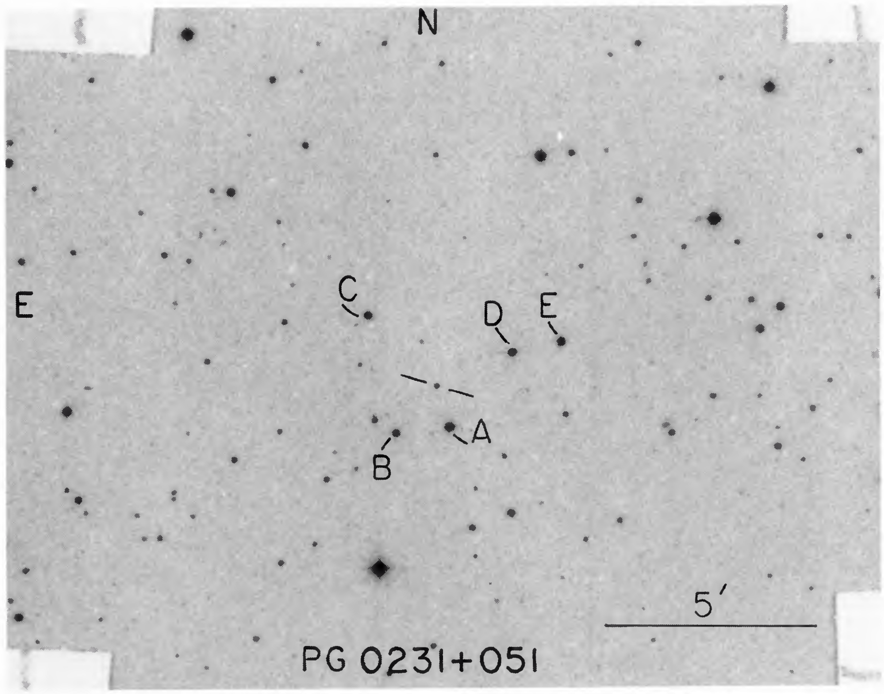


PLATE 26. (a) The field of the star PG 0220+132. (b) The field of the star Feige 22.

A. U. Landolt (see page 347)



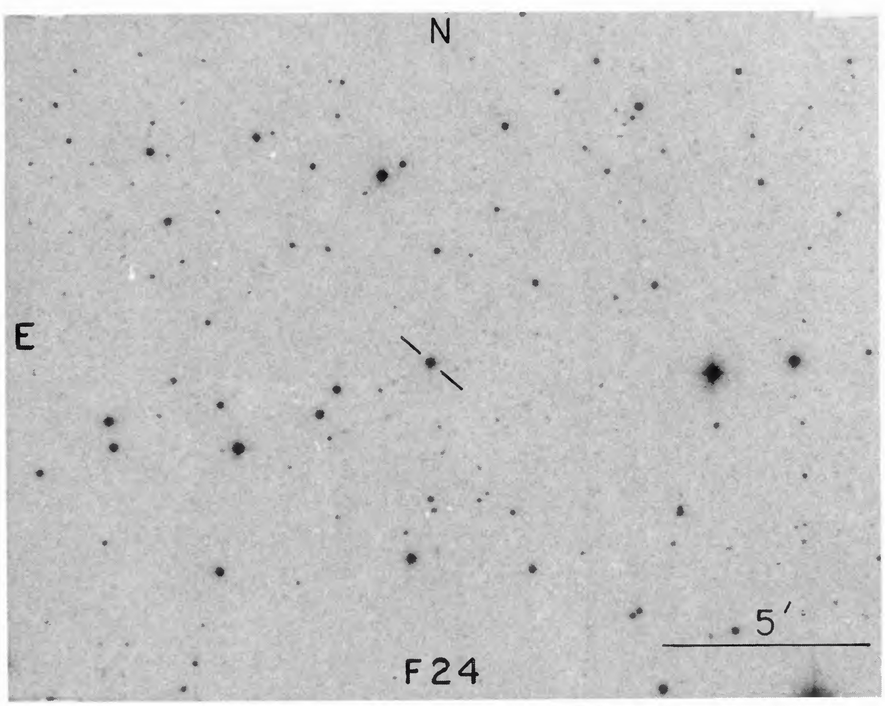


PLATE 27. (a) Sequence in the field of the star PG 0231+051. (b) The field of the star Feige 24.

A. U. Landolt (see page 347)

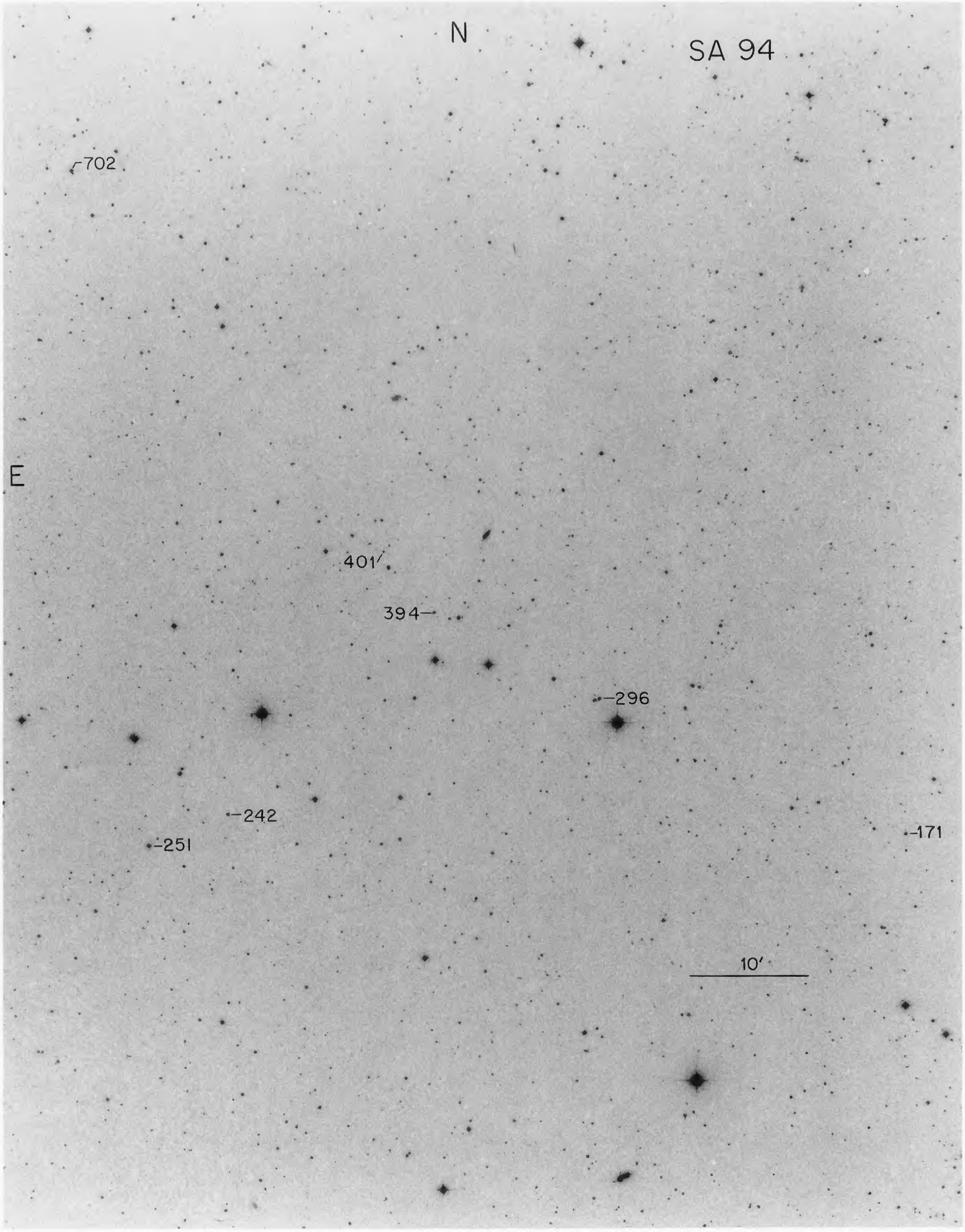


PLATE 28. The field of Selected Area 94.

A. U. Landolt (see page 347)

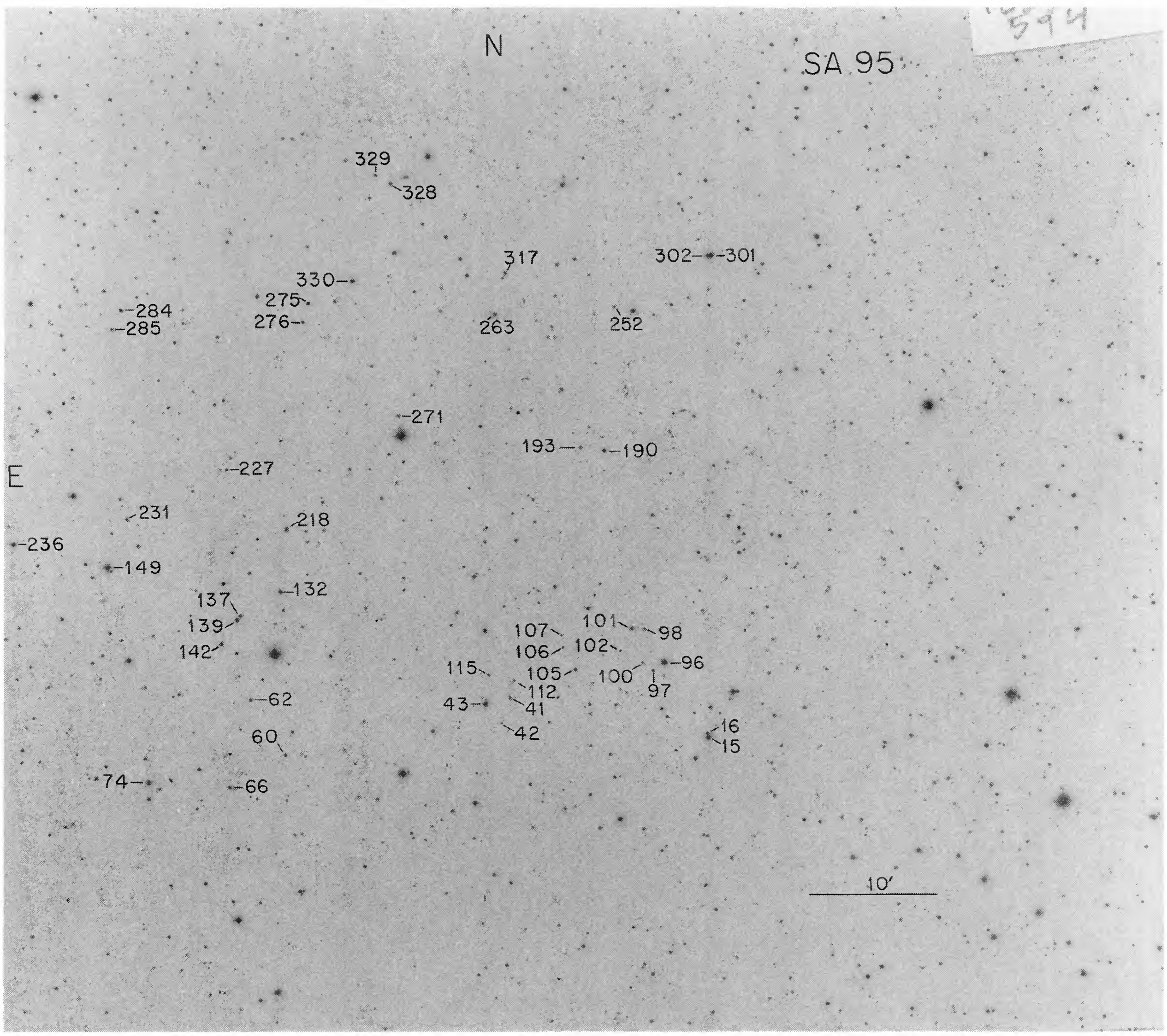
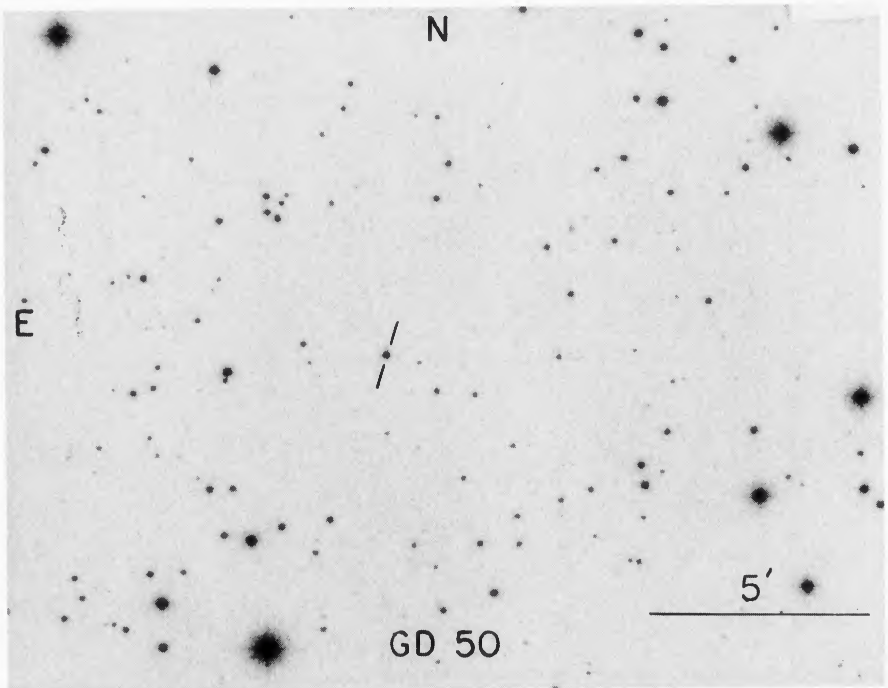


PLATE 29. The field of Selected Area 95.

A. U. Landolt (see page 347)



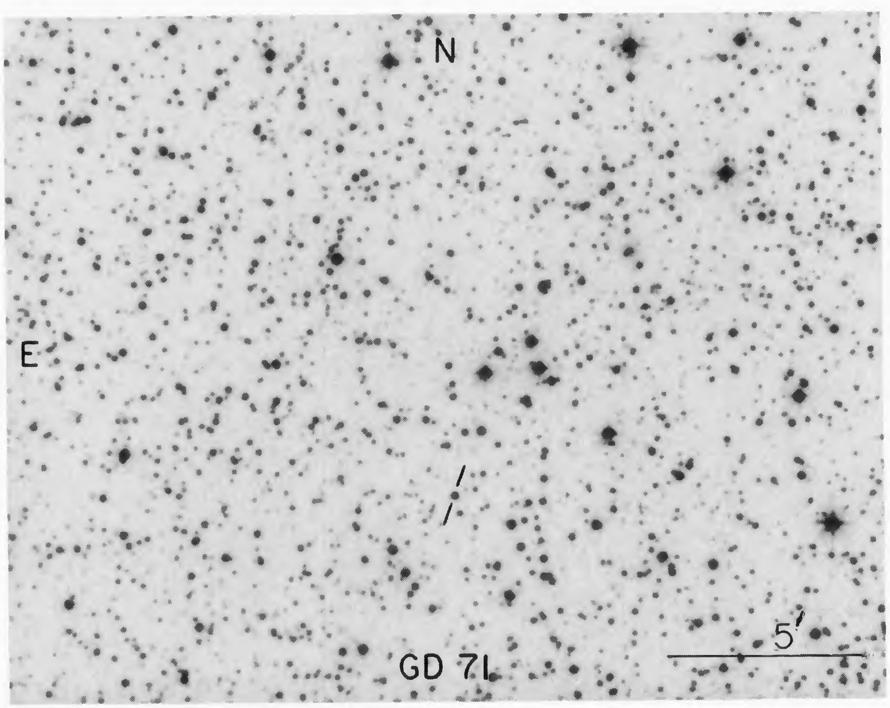


PLATE 30. (a) The field of the star GD 50. (b) The field of the star GD 71.

A. U. Landolt (see page 347)

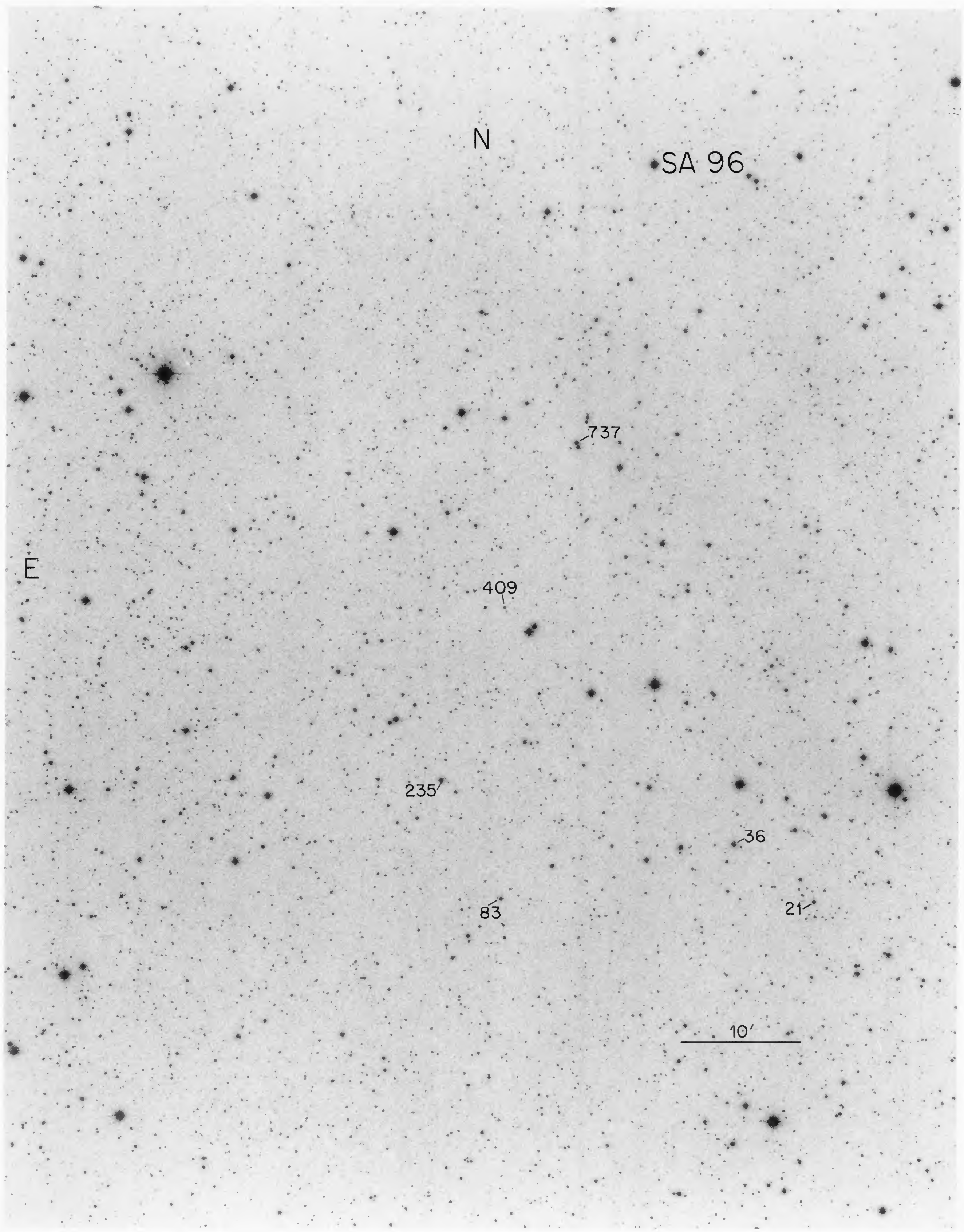
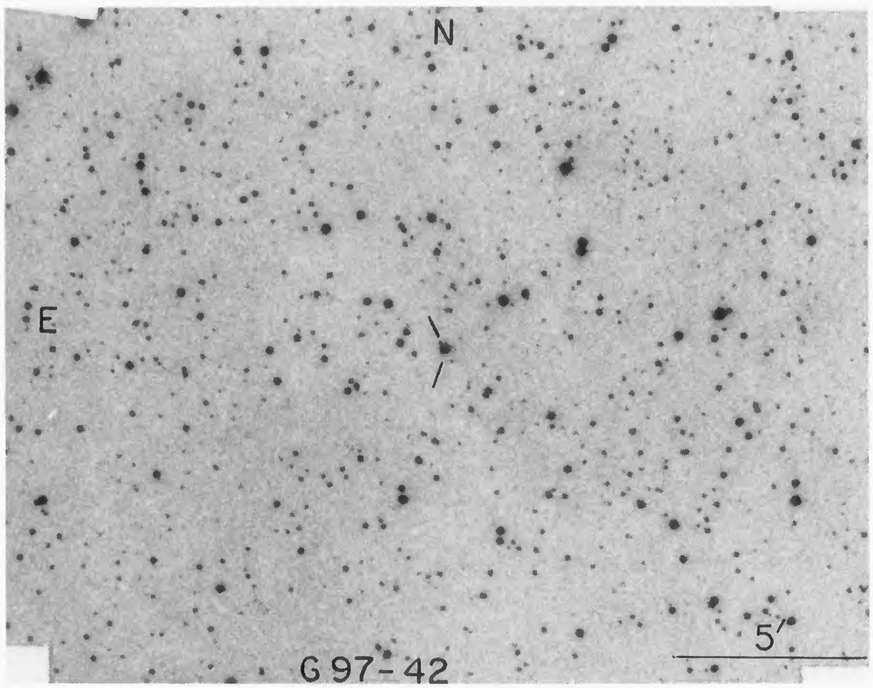


PLATE 31. The field of Selected Area 96.

A. U. Landolt (see page 347)



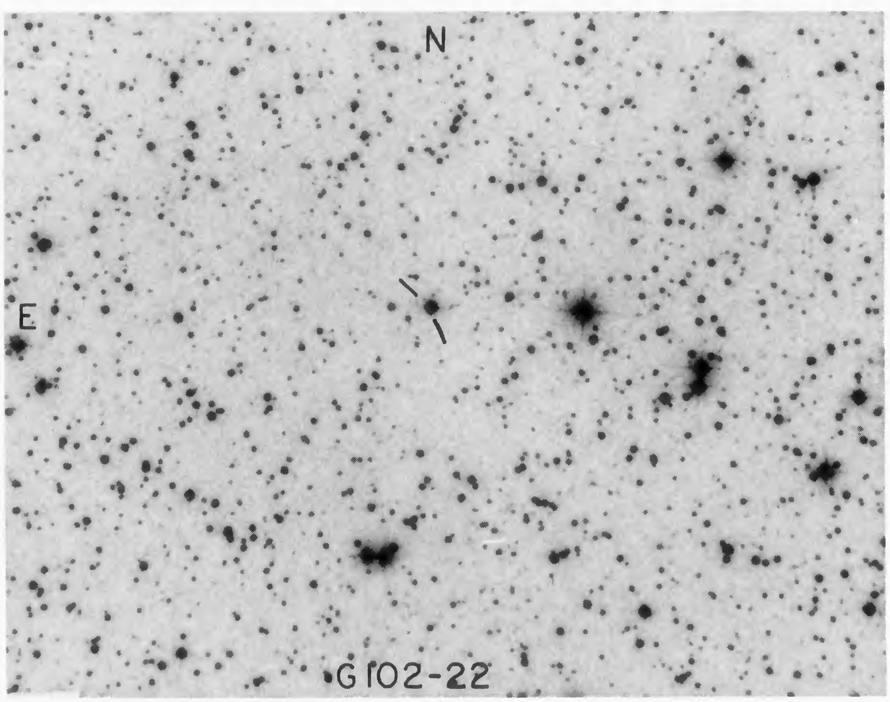


PLATE 32. (a) The field of the star G97 42. (b) The field of the star G102 22.

A. U. Landolt (see page 347)

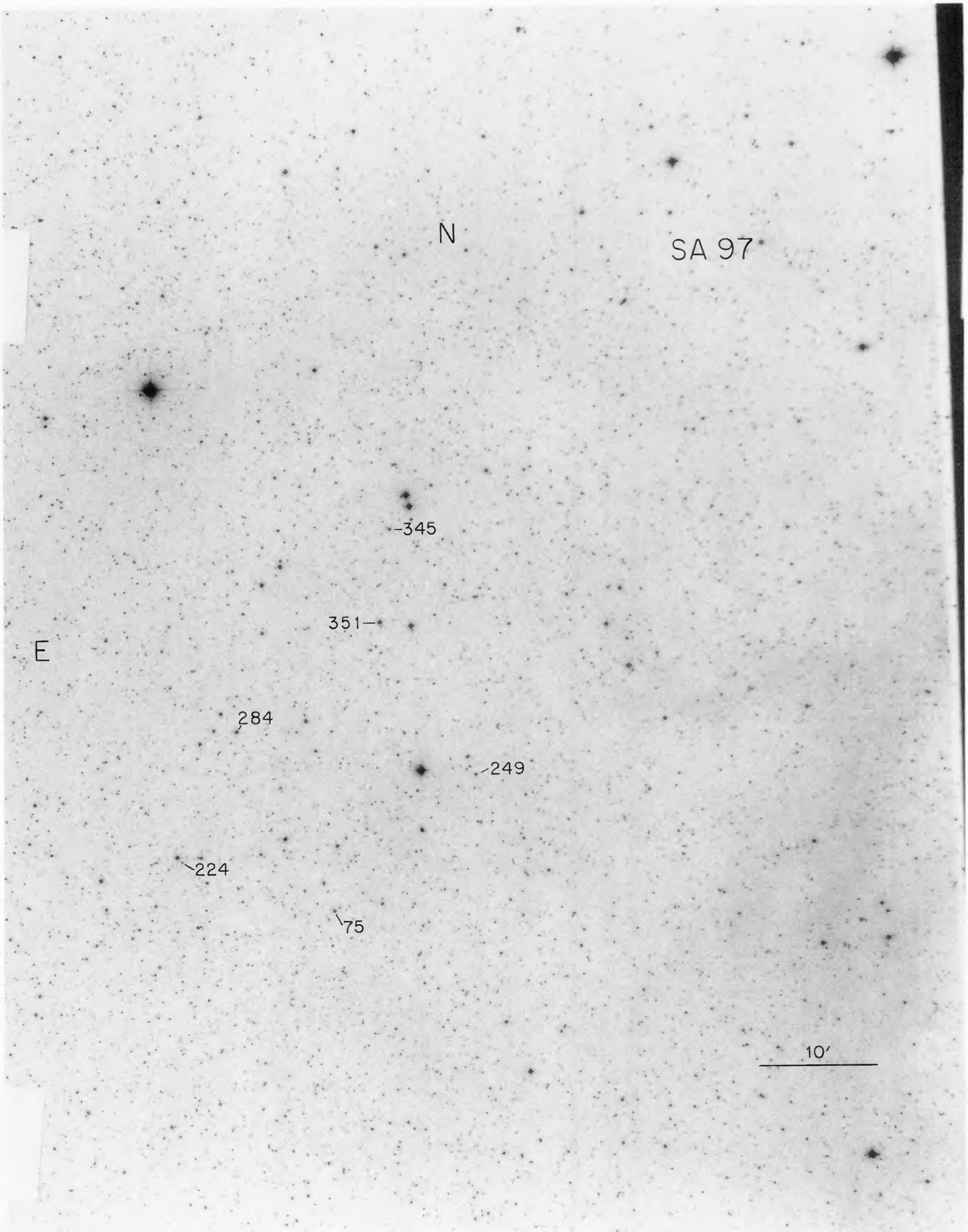


PLATE 33. The field of Selected Area 97.

A. U. Landolt (see page 347)

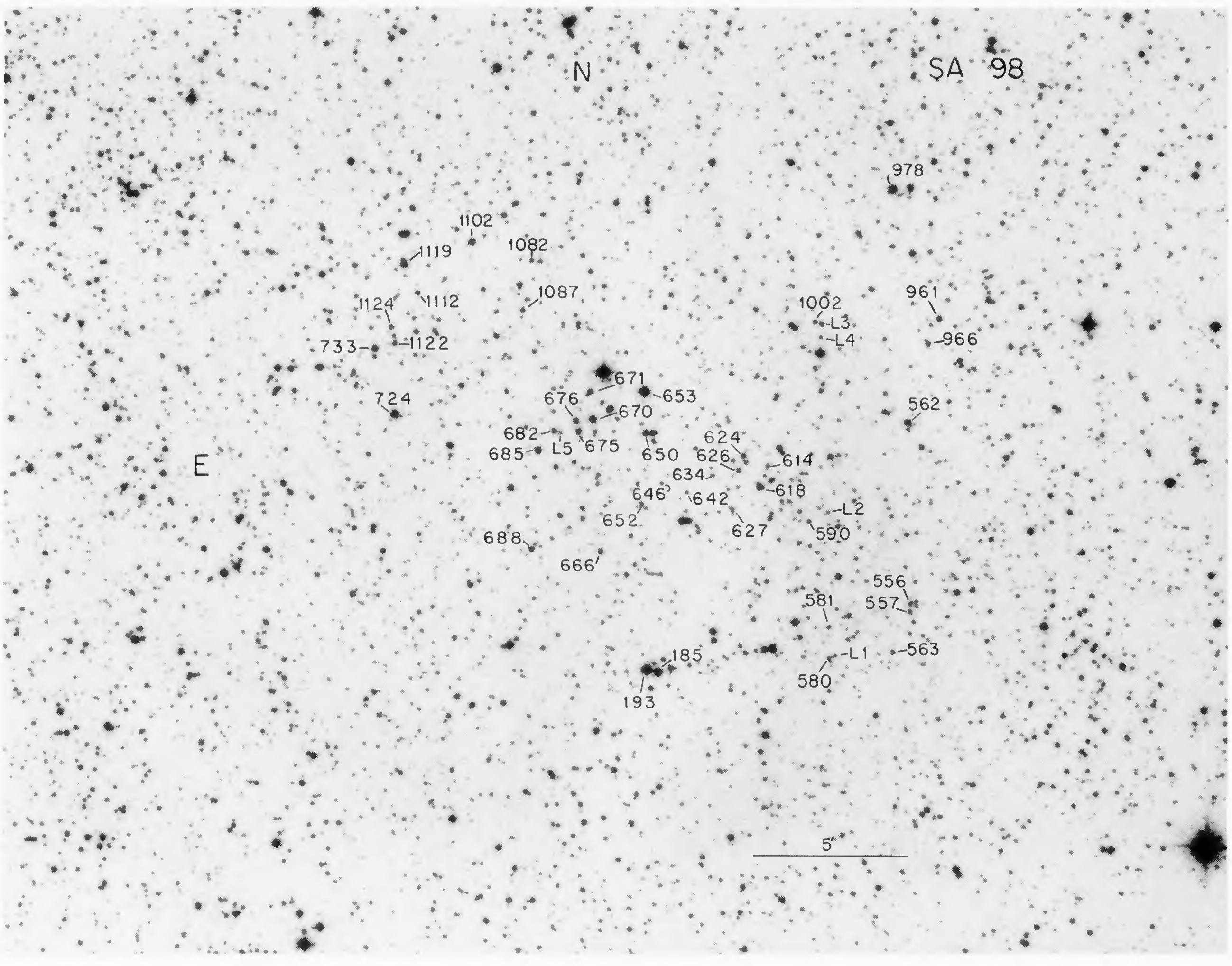


PLATE 34. The field of Selected Area 98.

A. U. Landolt (see page 347)

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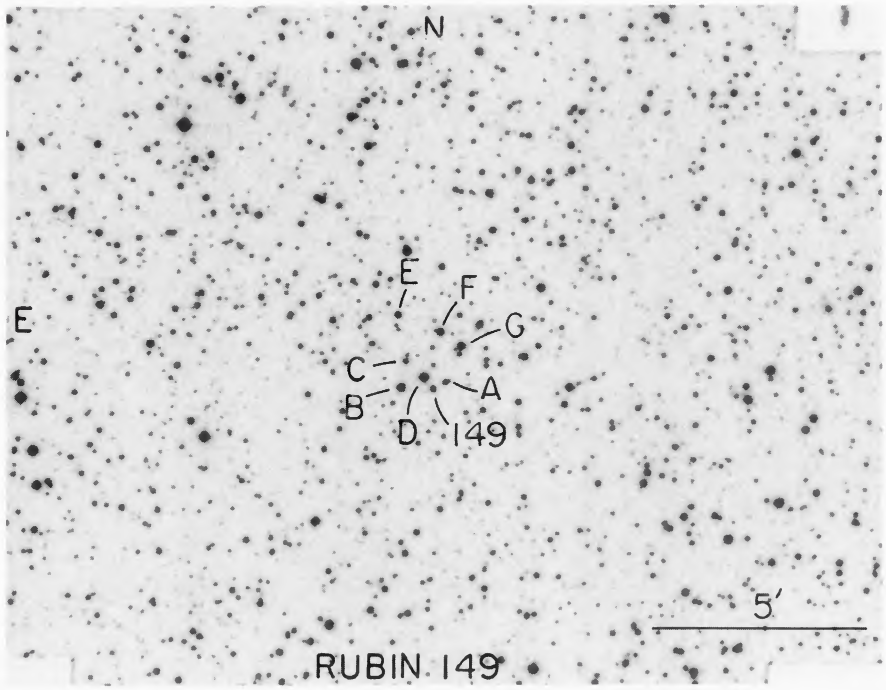

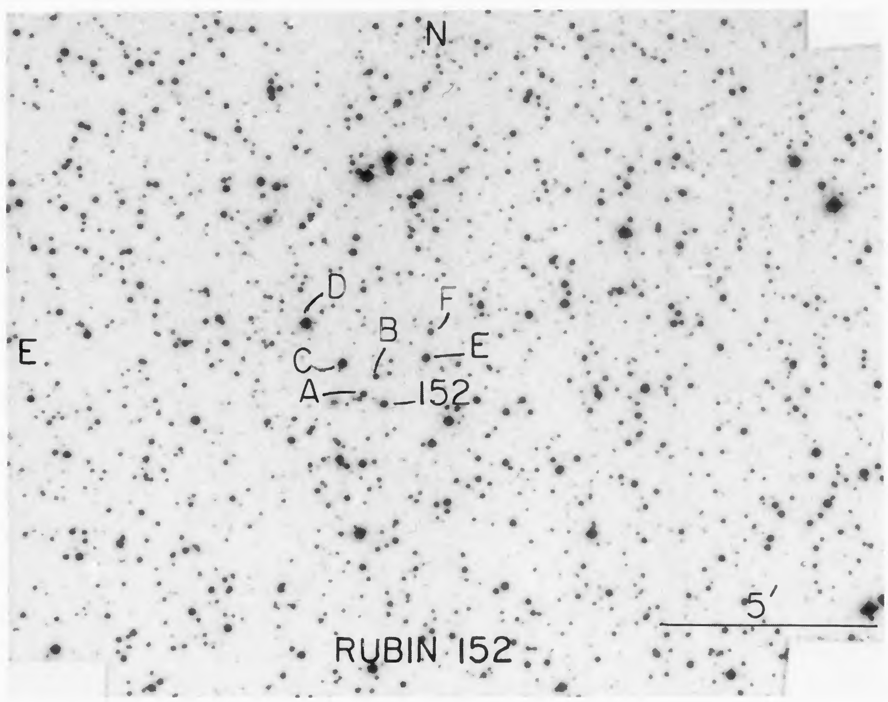

PLATE 35. (a) Sequence in the field of the star Rubin 149. (b) Sequence in the field of the star Rubin 152.

A. U. Landolt (see page 347)

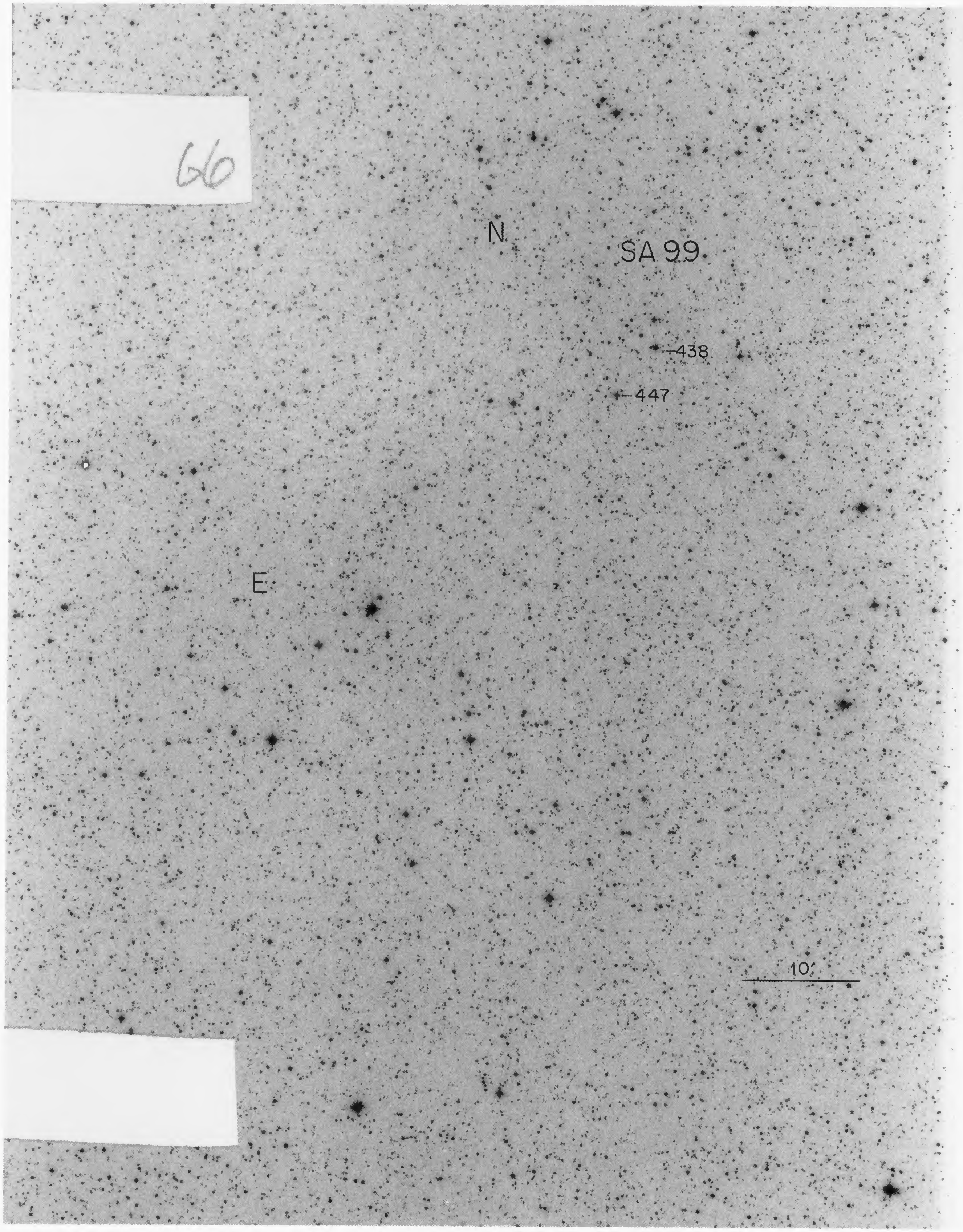

PLATE 36. The field of Selected Area 99.

A. U. Landolt (see page 347)

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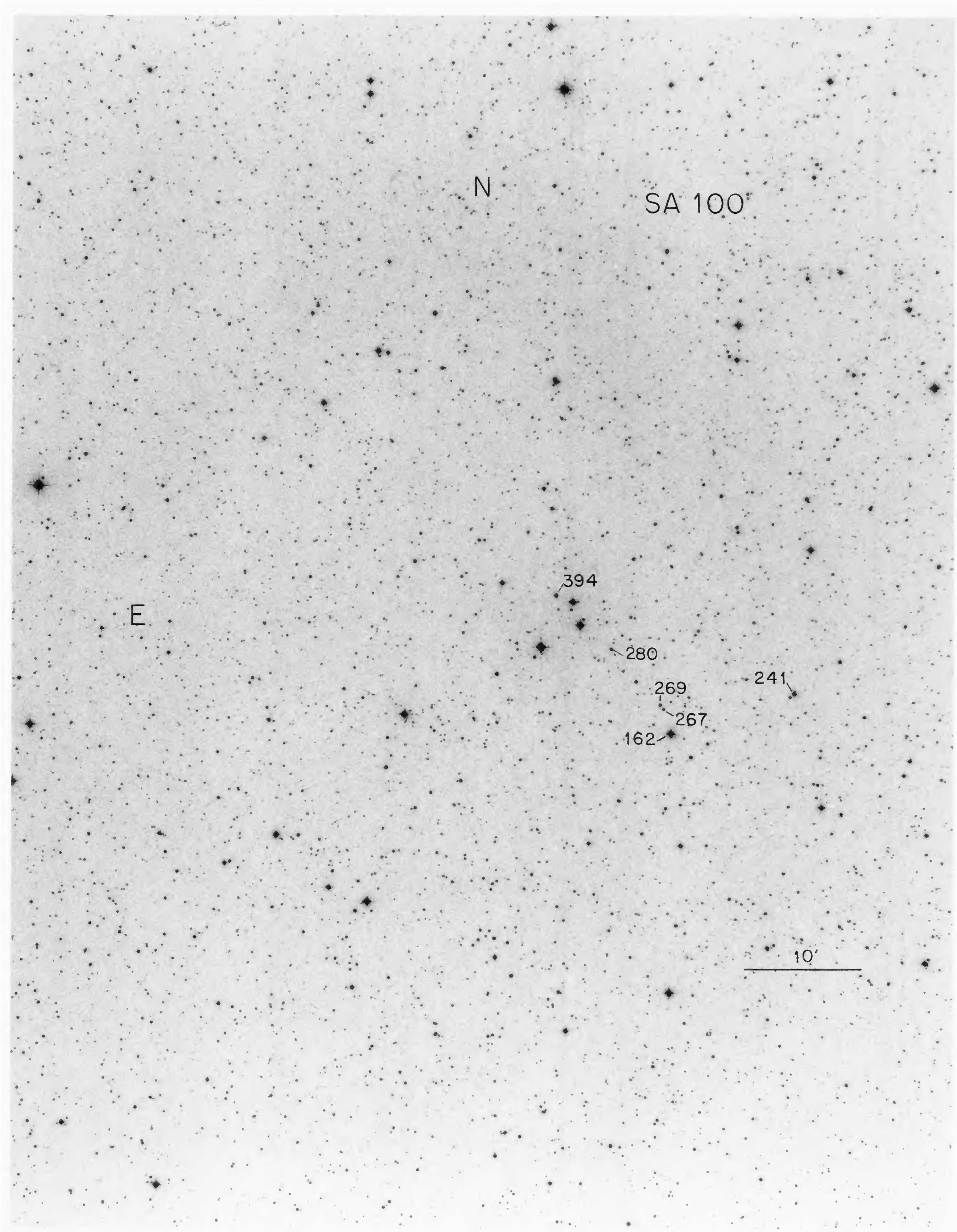
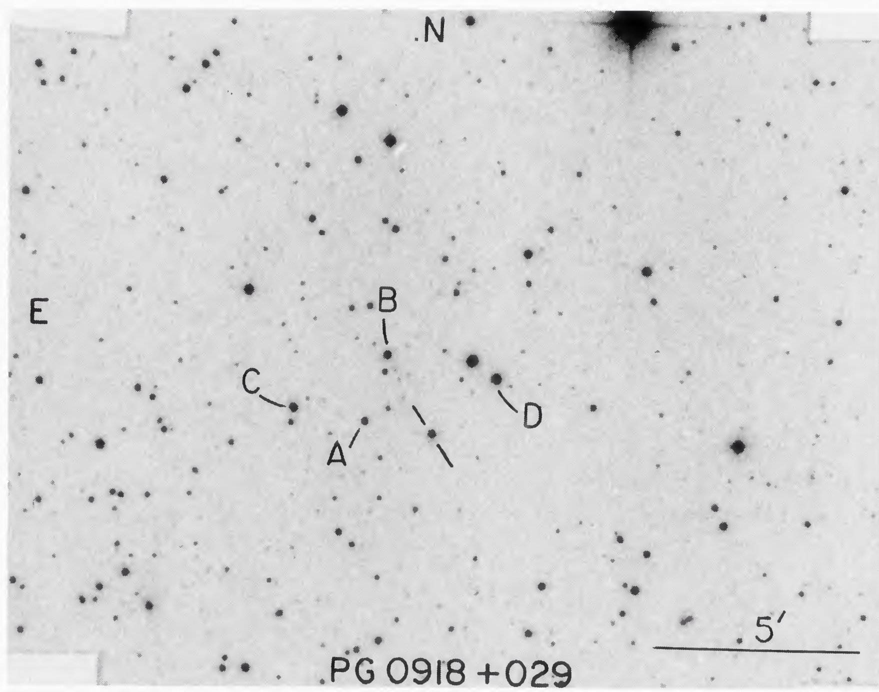


PLATE 37. The field of Selected Area 100.

A. U. Landolt (see page 347)



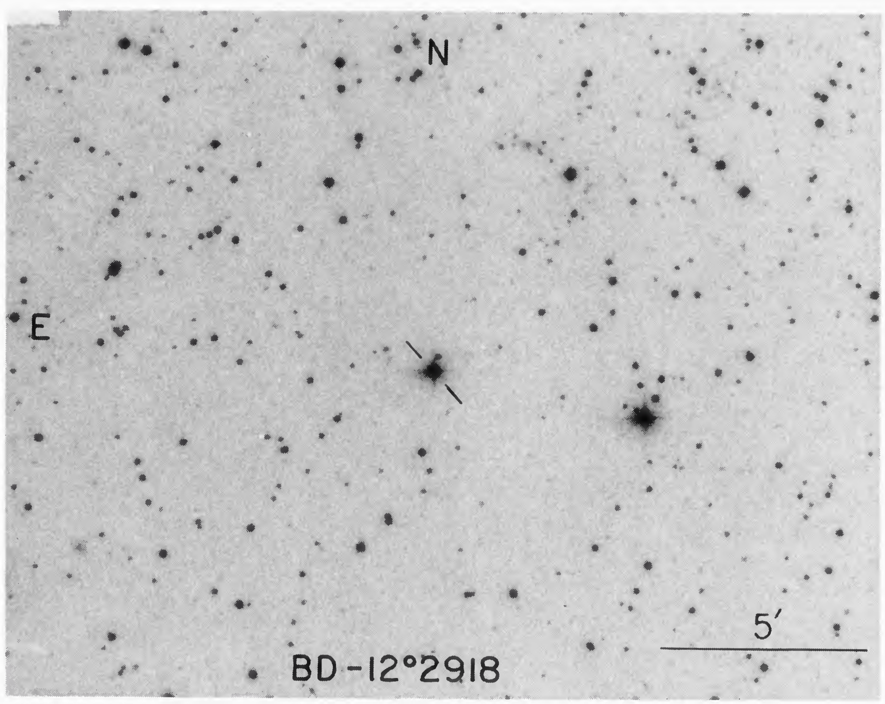
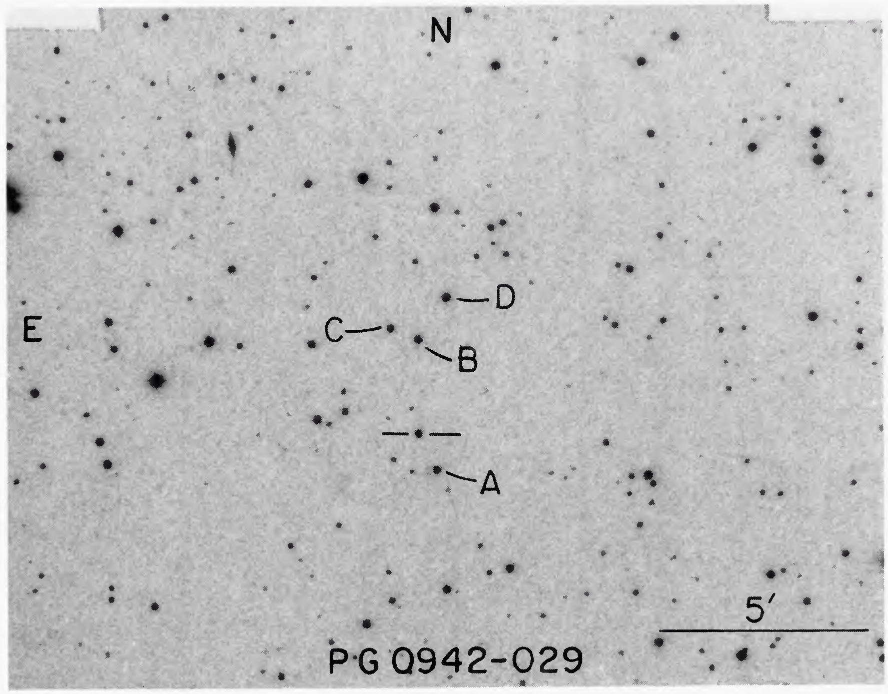


PLATE 38. (a) Sequence in the field of the star PG 0918+029. (b) The field of the star BD −12°2918.

A. U. Landolt (see page 347)



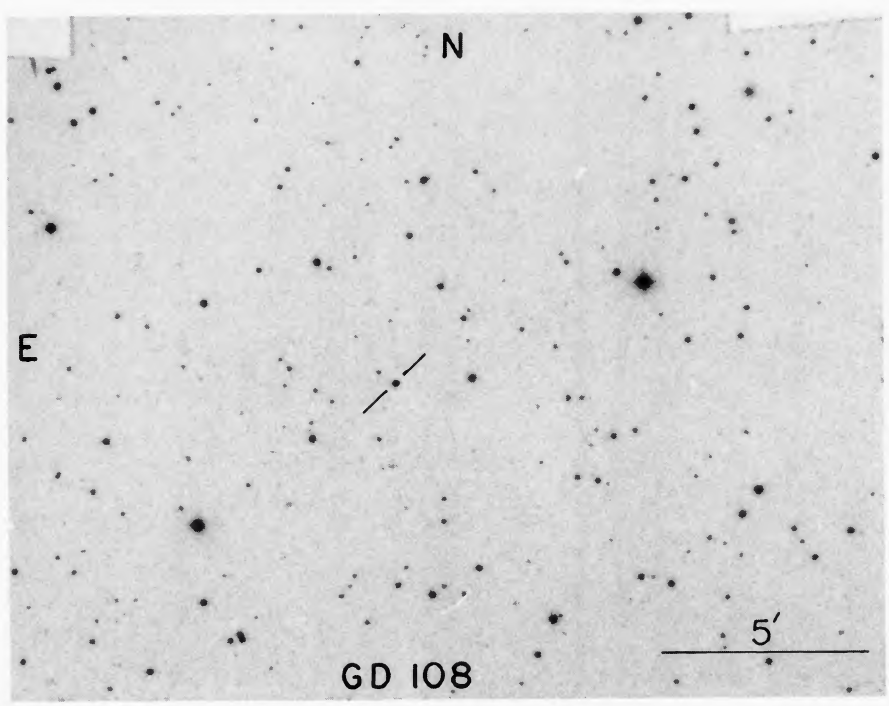


PLATE 39. (a) Sequence in the field of the star PG 0942−029. (b) The field of the star GD 108.

A. U. Landolt (see page 347)

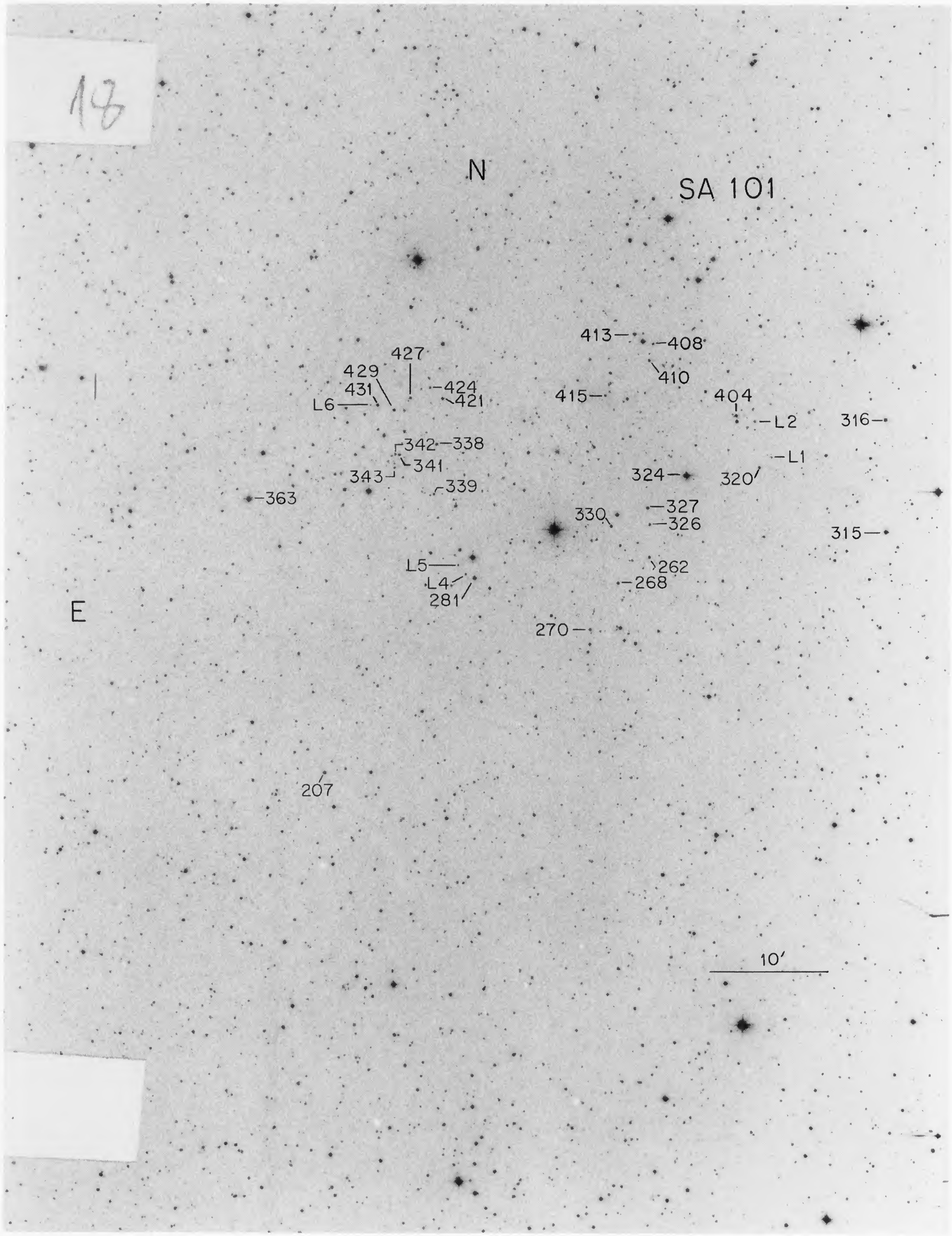
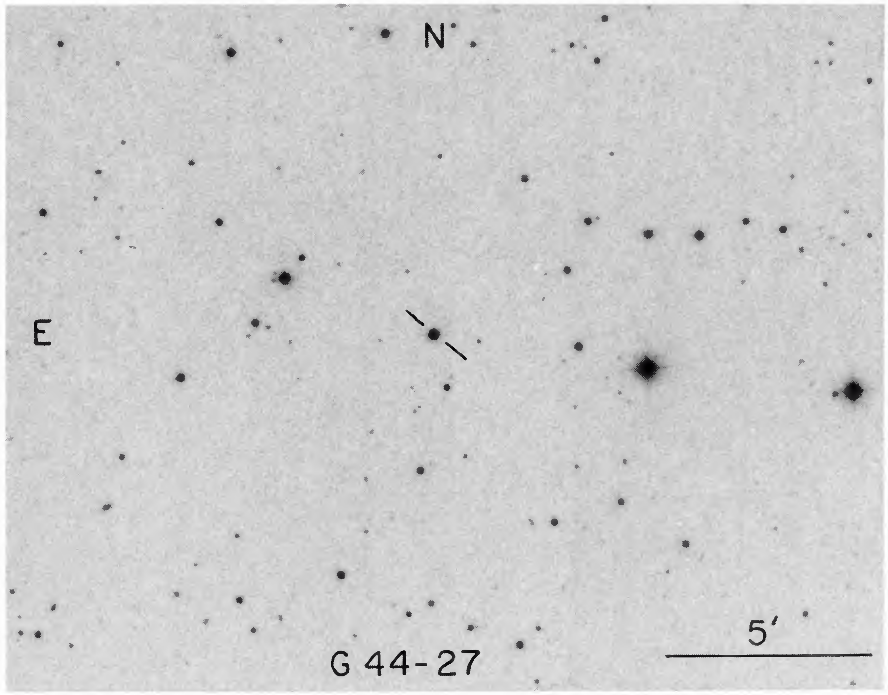


PLATE 40. The field of Selected Area 101.

A. U. Landolt (see page 347)



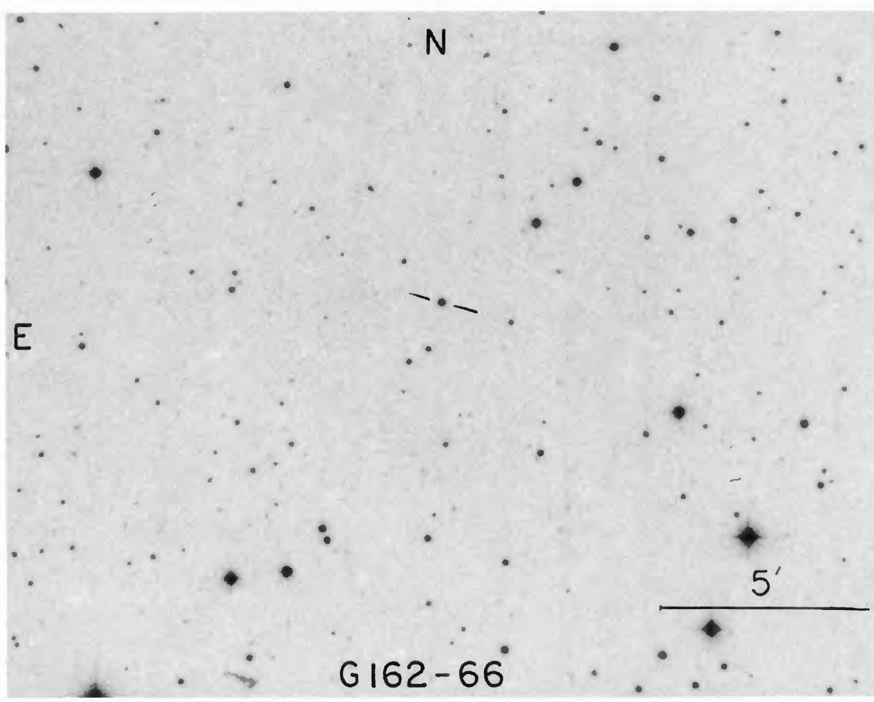


PLATE 41. (a) The field of the star G44 27. (b) The field of the star G162 66.

A. U. Landolt (see page 347)

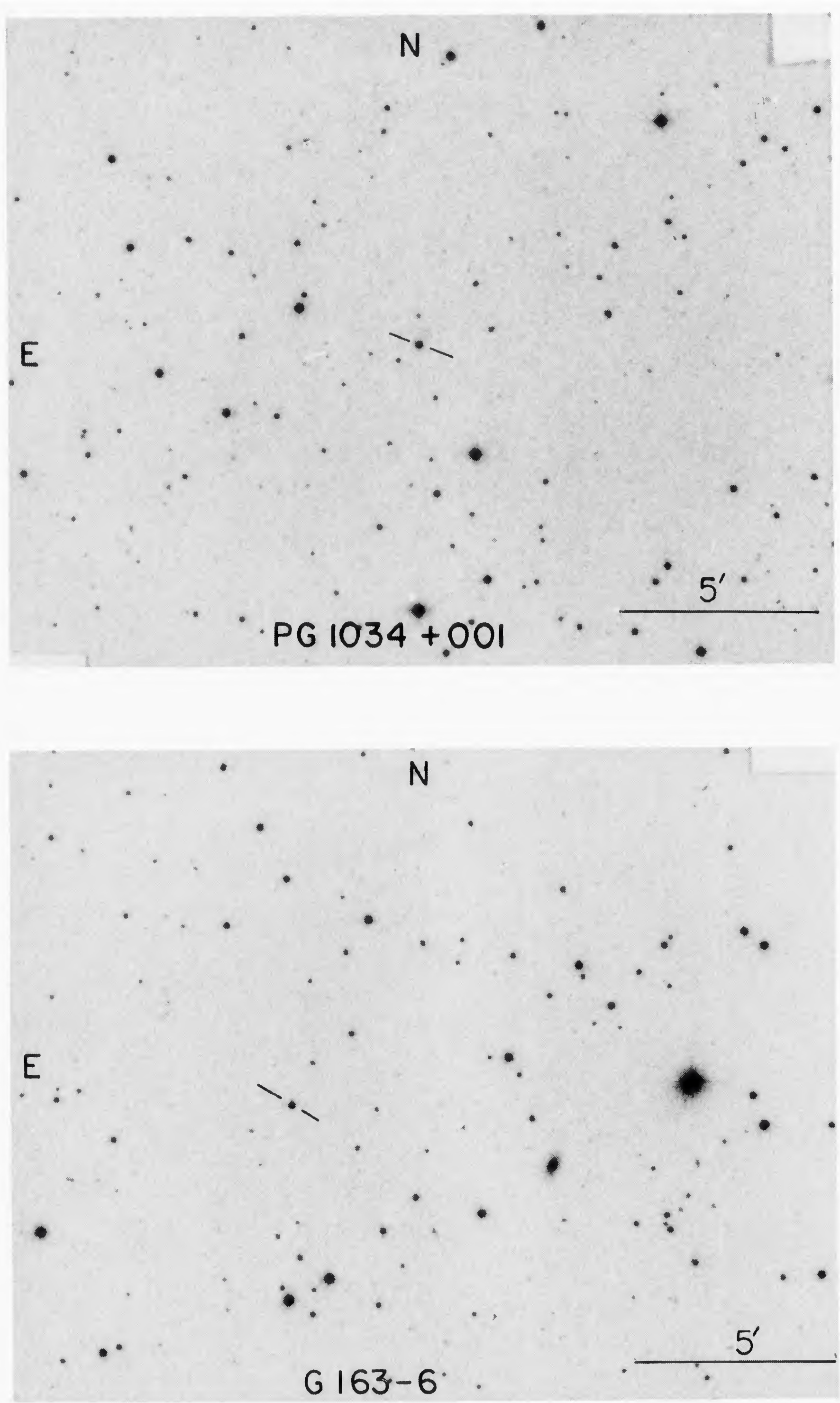
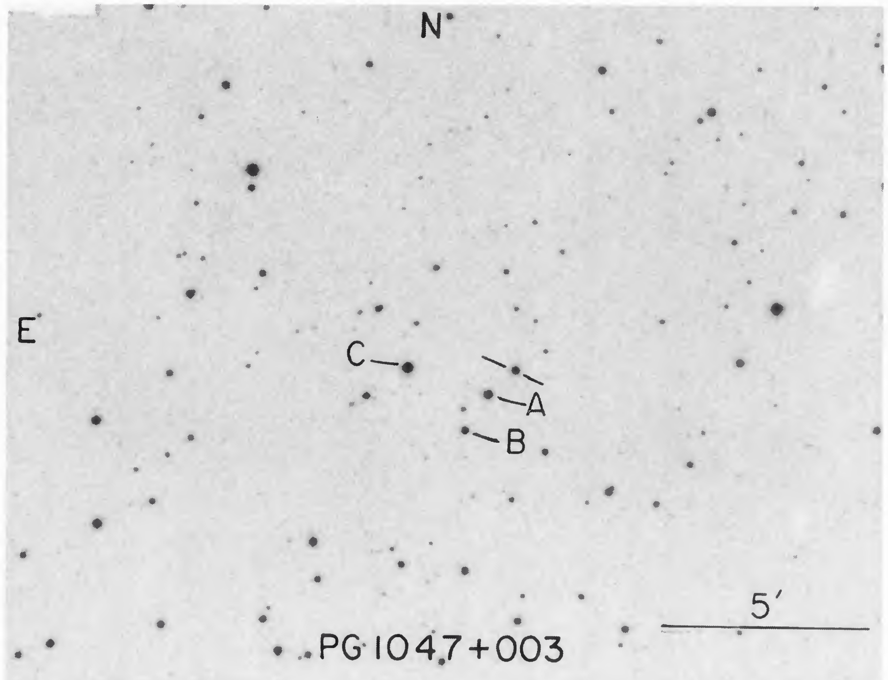


PLATE 42. (a) The field of the star PG 1034+001. (b) The field of the star G163 6.

A. U. Landolt (see page 347)



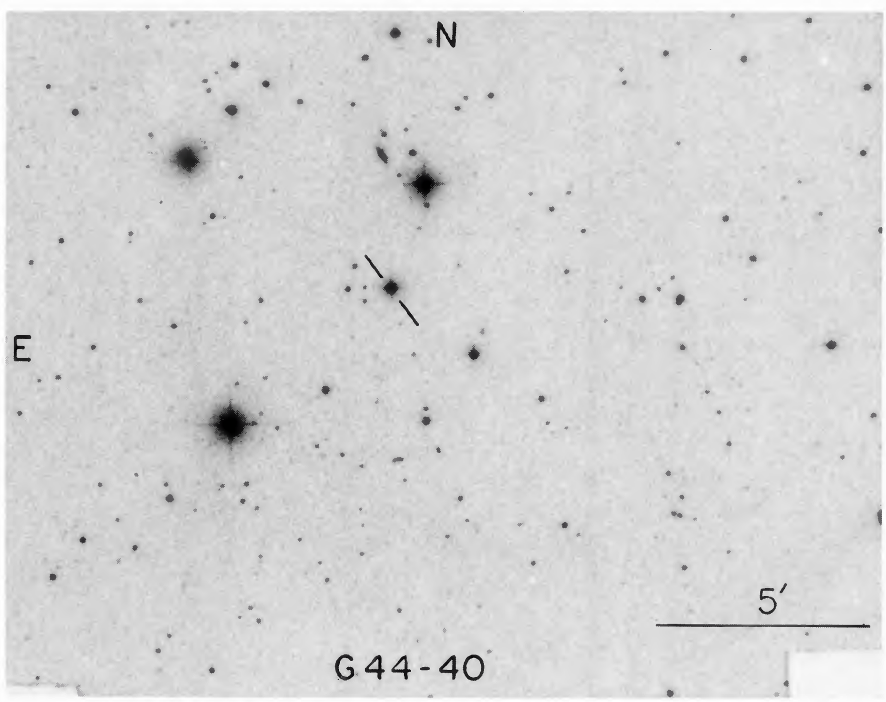


PLATE 43. Sequence in the field of the star PG 1047+003. (b) The field of the star G44 40.

A. U. Landolt (see page 347)

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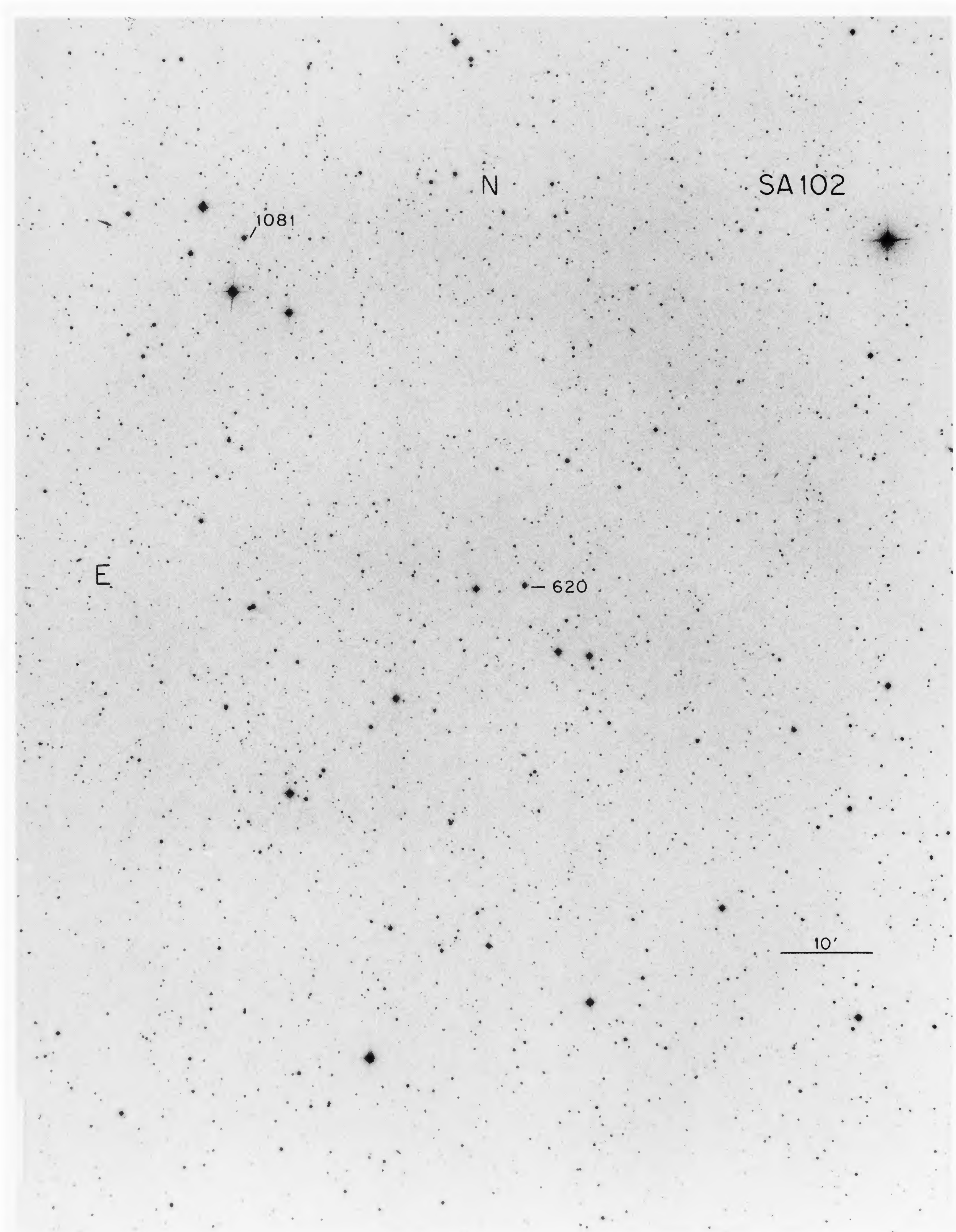
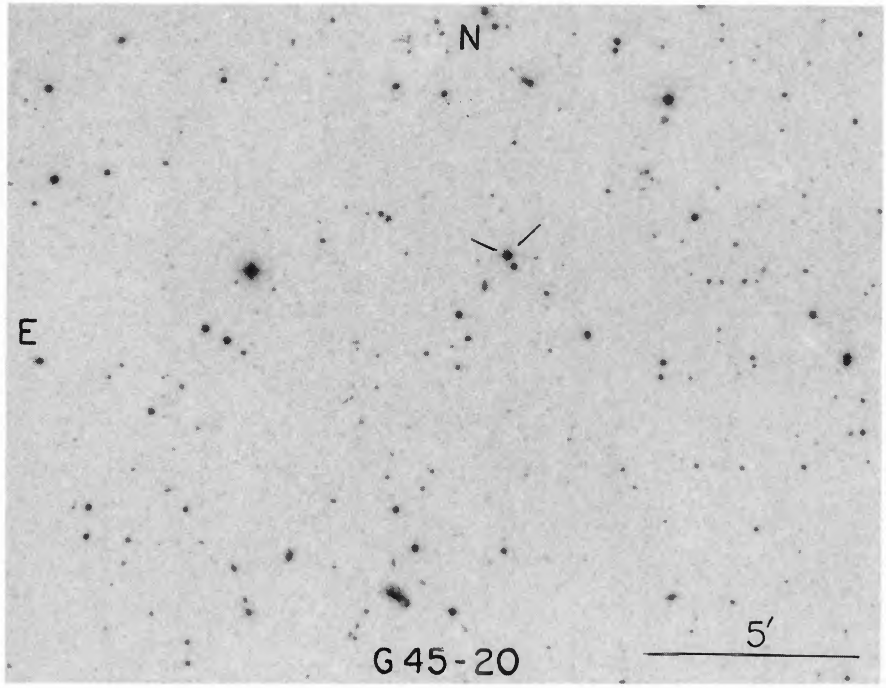


PLATE 44. The field of Selected Area 102.

A. U. Landolt (see page 347)



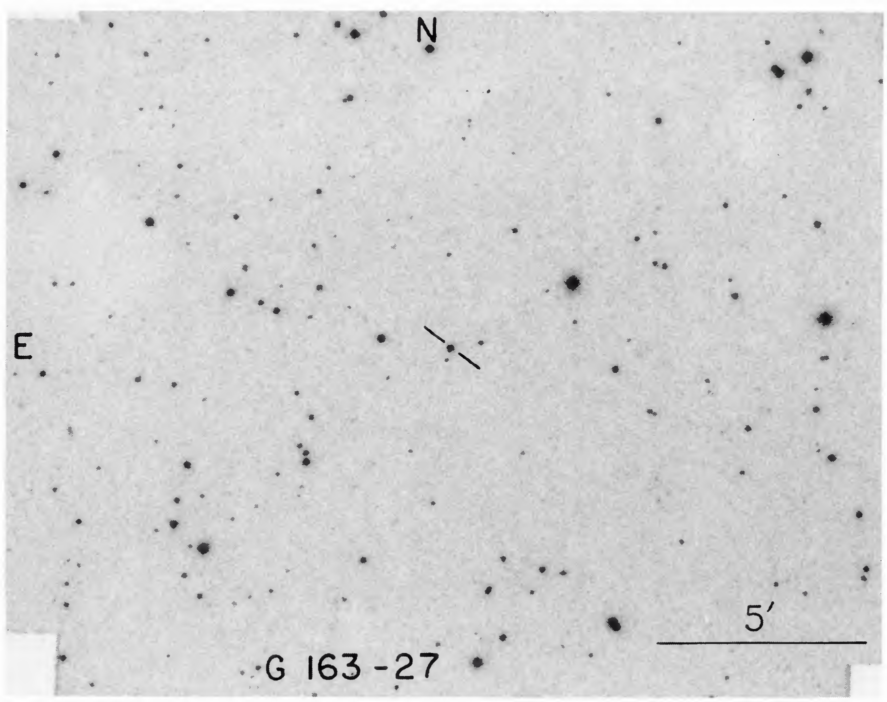
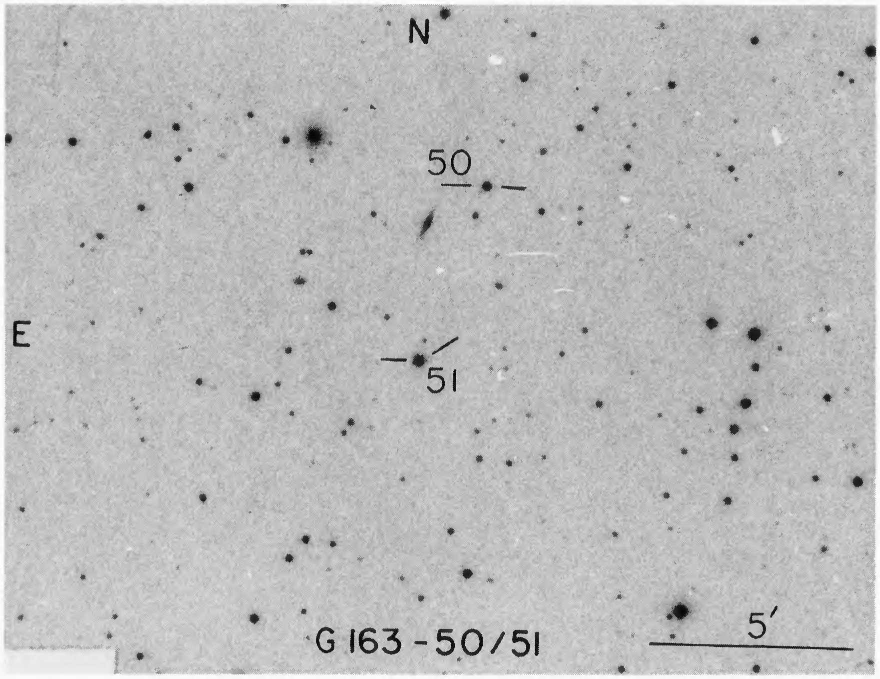


PLATE 45. (a) The field of the star G45 20. (b) The field of the star G163 27.

A. U. Landolt (see page 347)

1992AJ....104..340L



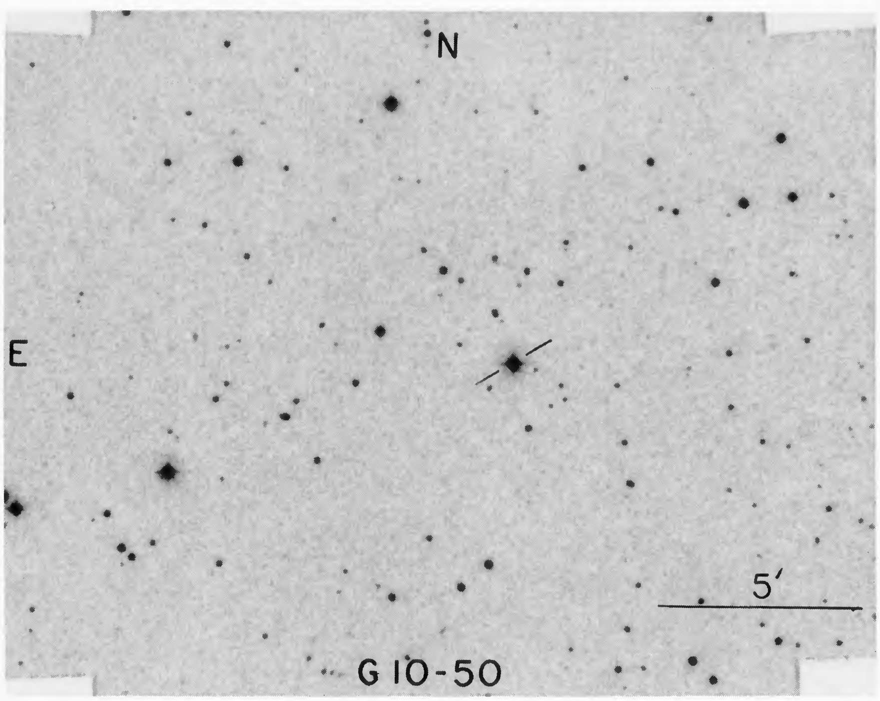


PLATE 46. (a) The field of the stars G163 50/51. (b) The field of the star G10 50.

A. U. Landolt (see page 347)

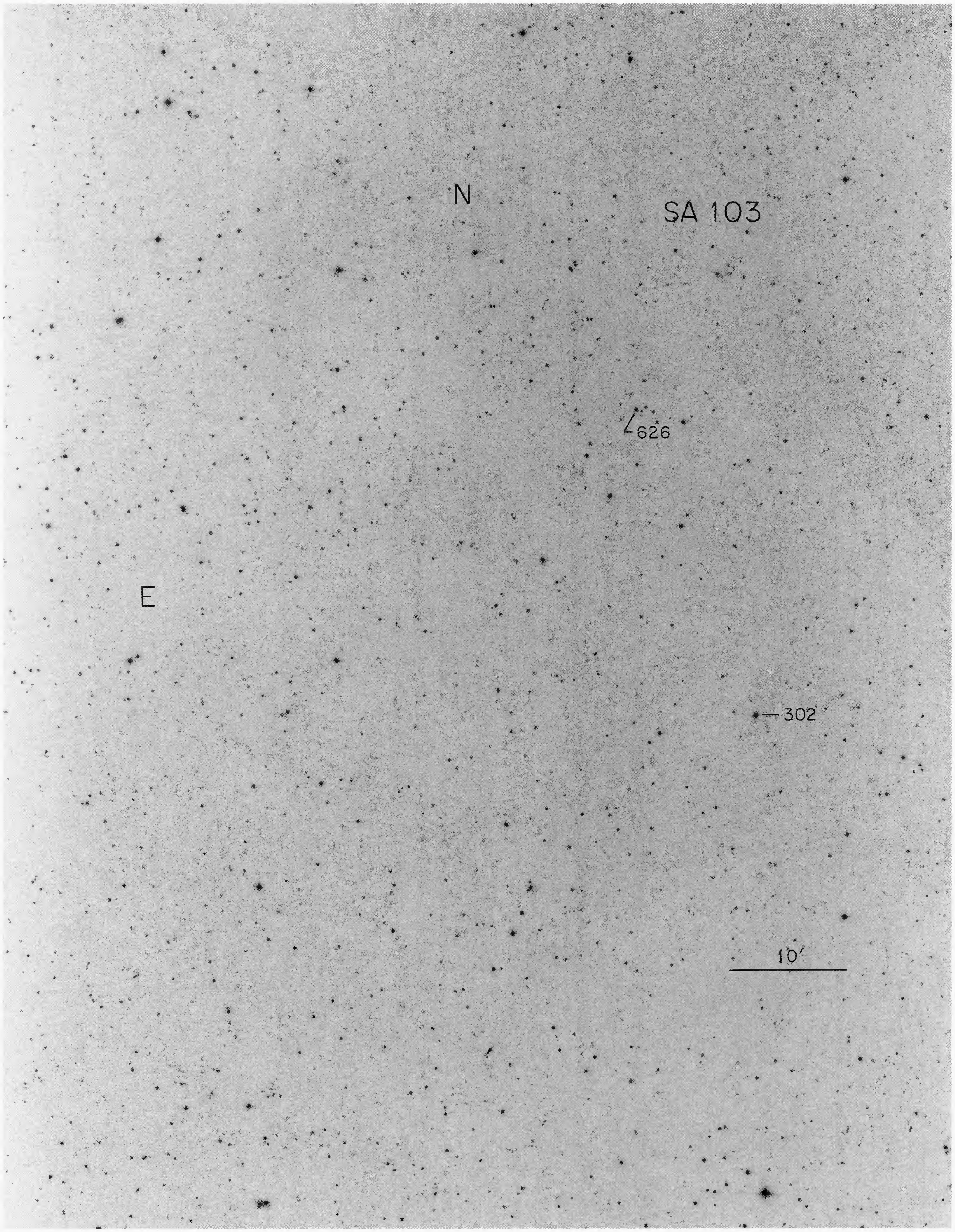


PLATE 47. The field of Selected Area 103.

A. U. Landolt (see page 347)

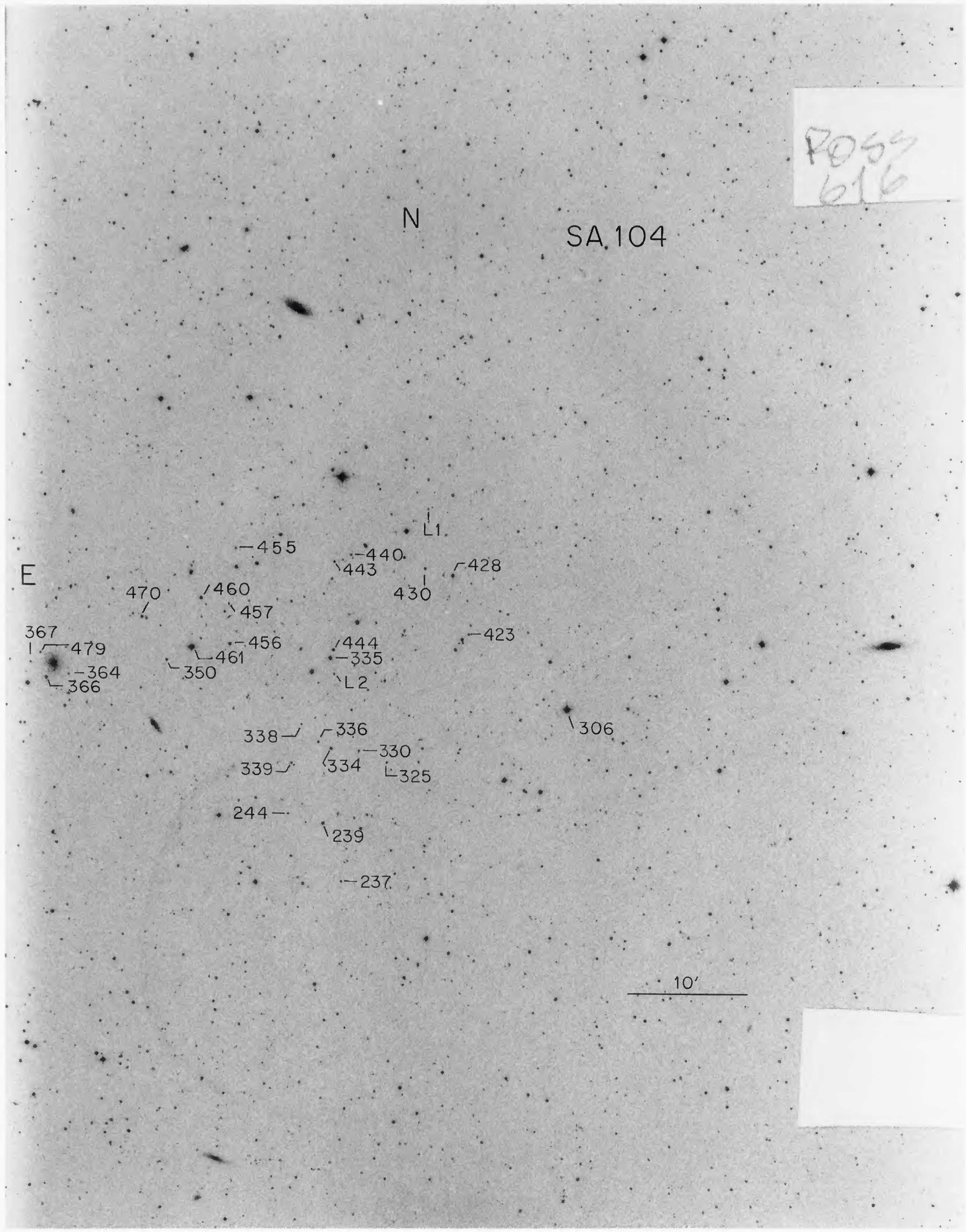


PLATE 48. The field of Selected Area 104.

A. U. Landolt (see page 347)

1992AJ....104..340L

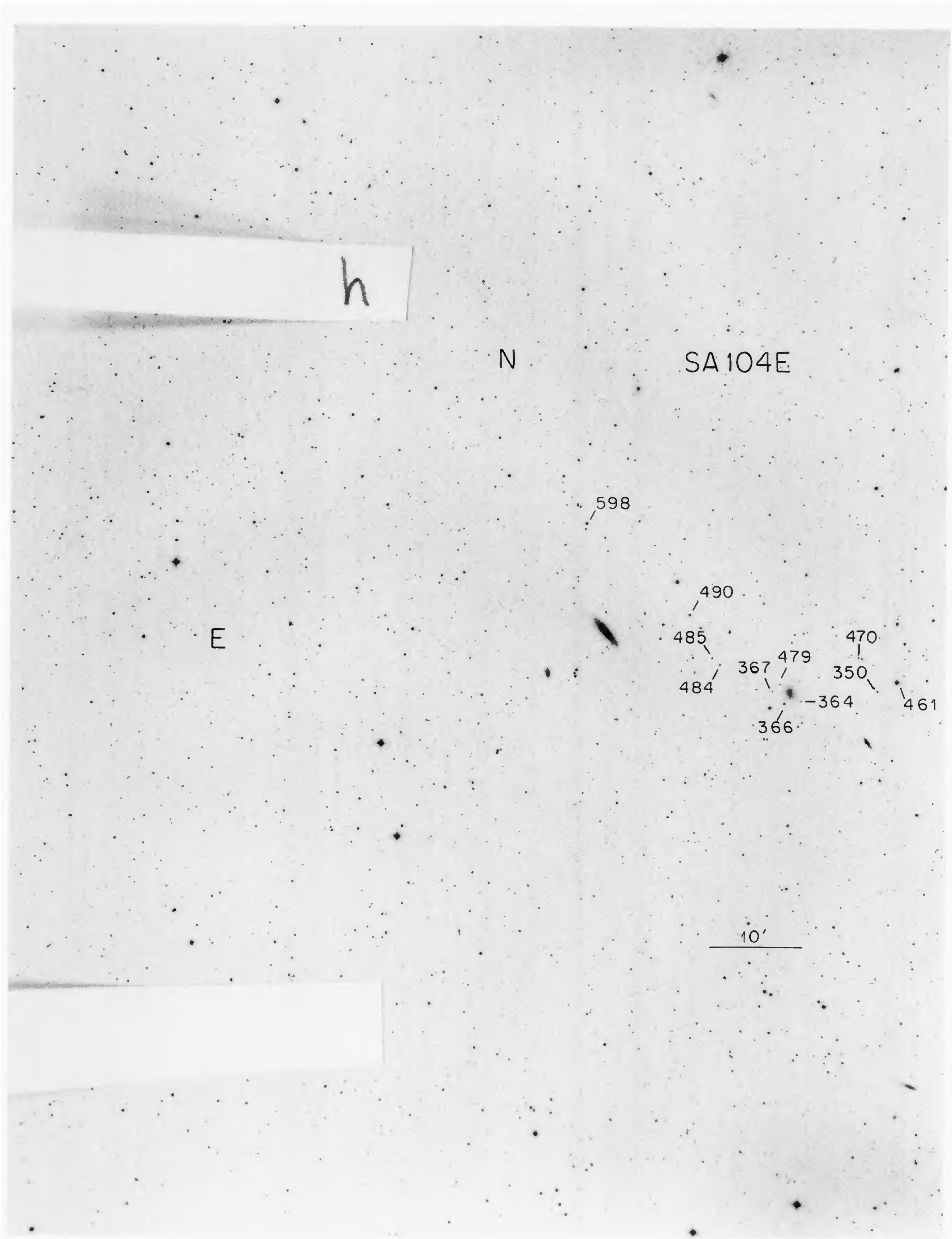
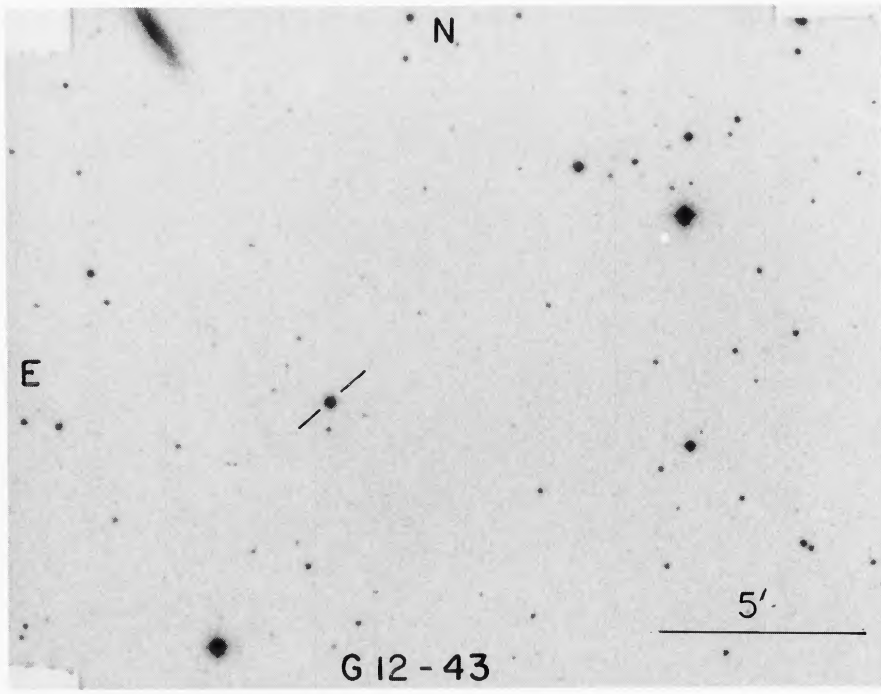


PLATE 49. The field of the eastern part of Selected Area 104.

A. U. Landolt (see page 347)



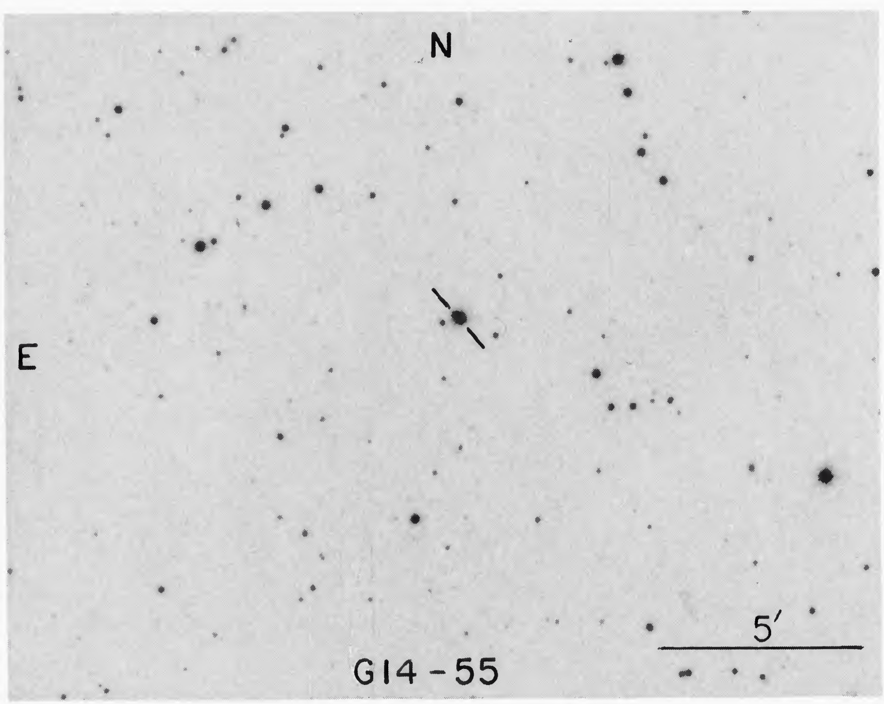


PLATE 50. (a) The field of the star G12 43. (b) The field of the star G14 55.

A. U. Landolt (see page 347)

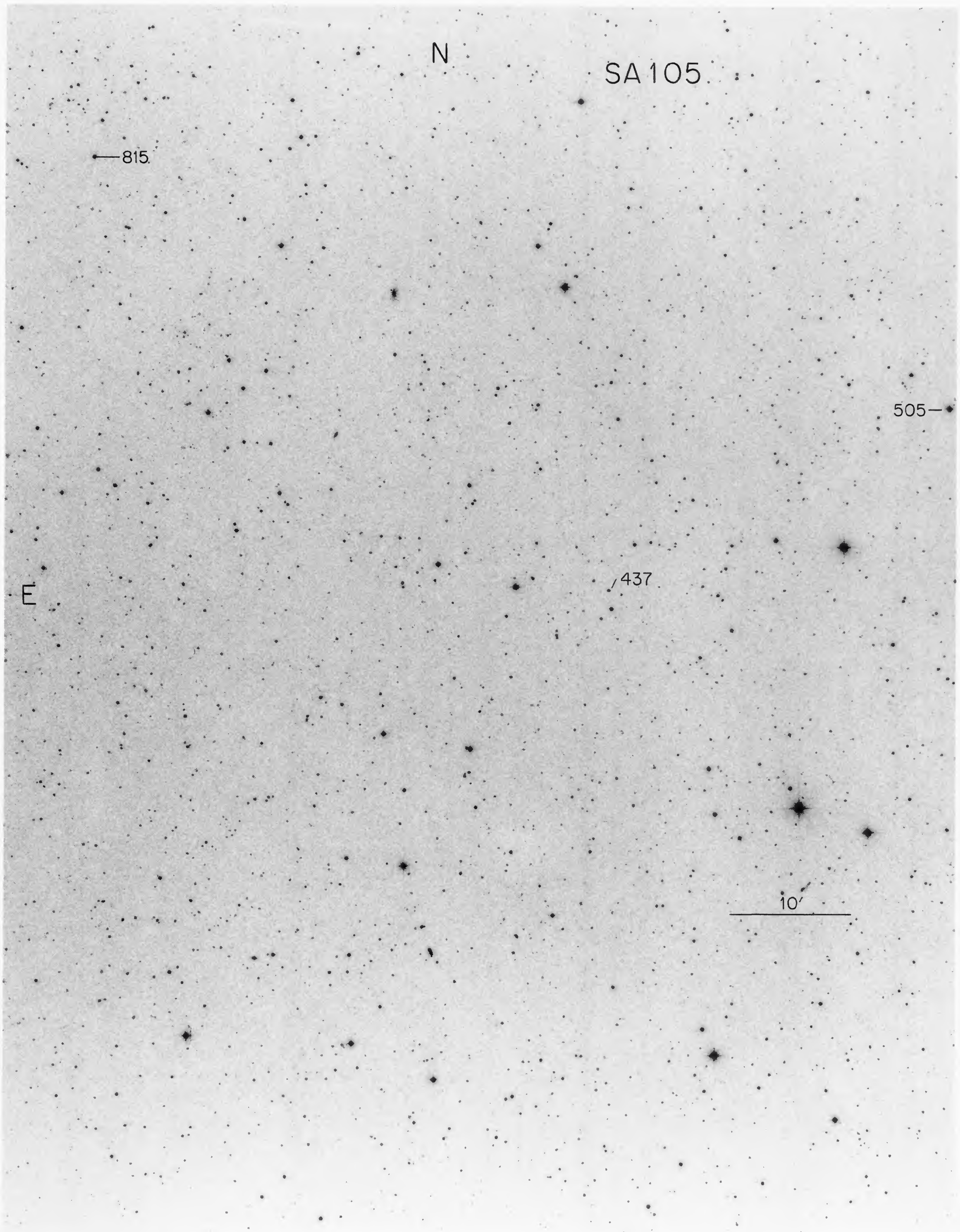
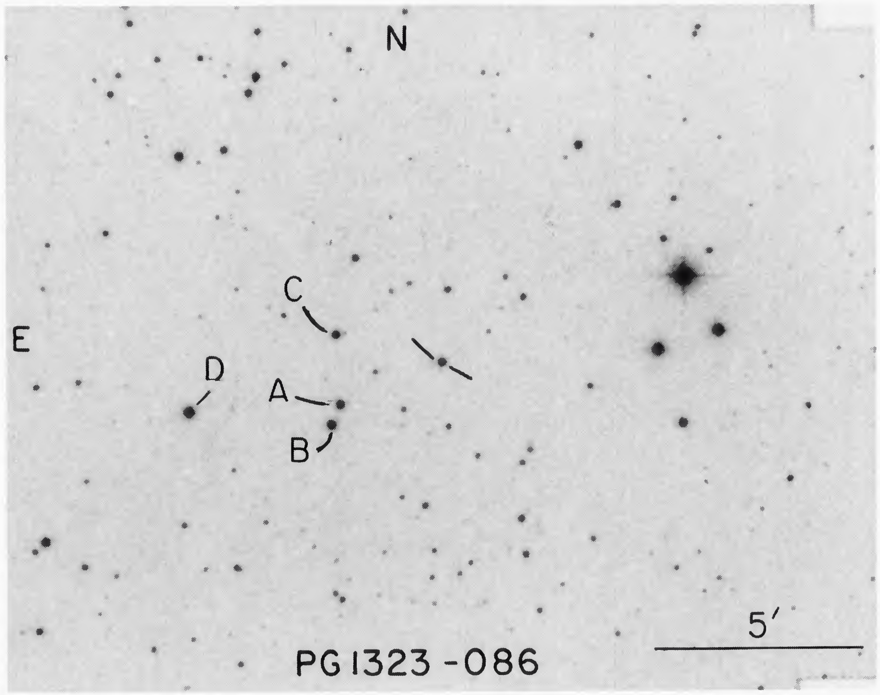


PLATE 51. The field of Selected Area 105.

A. U. Landolt (see page 347)



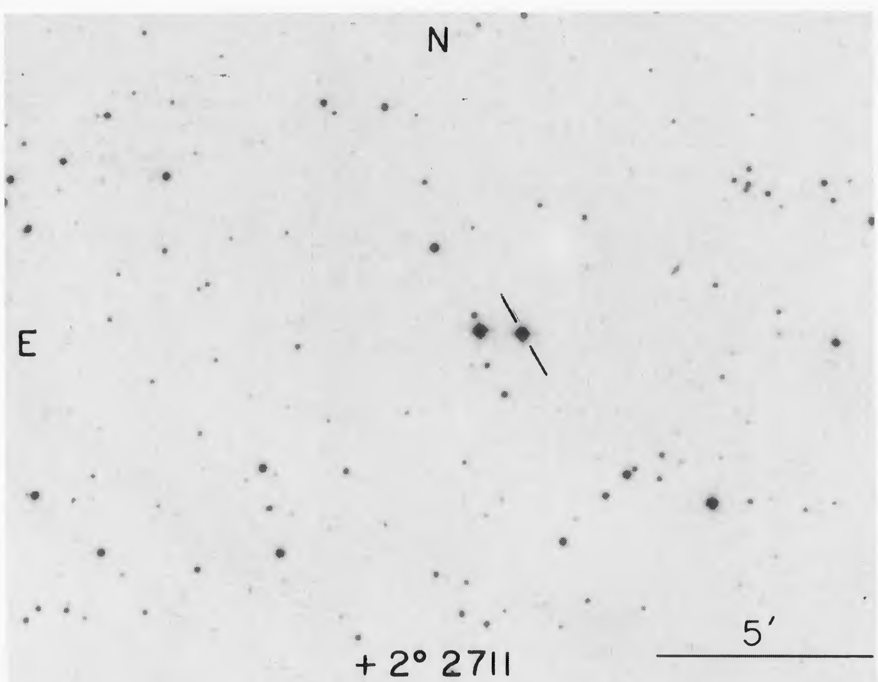
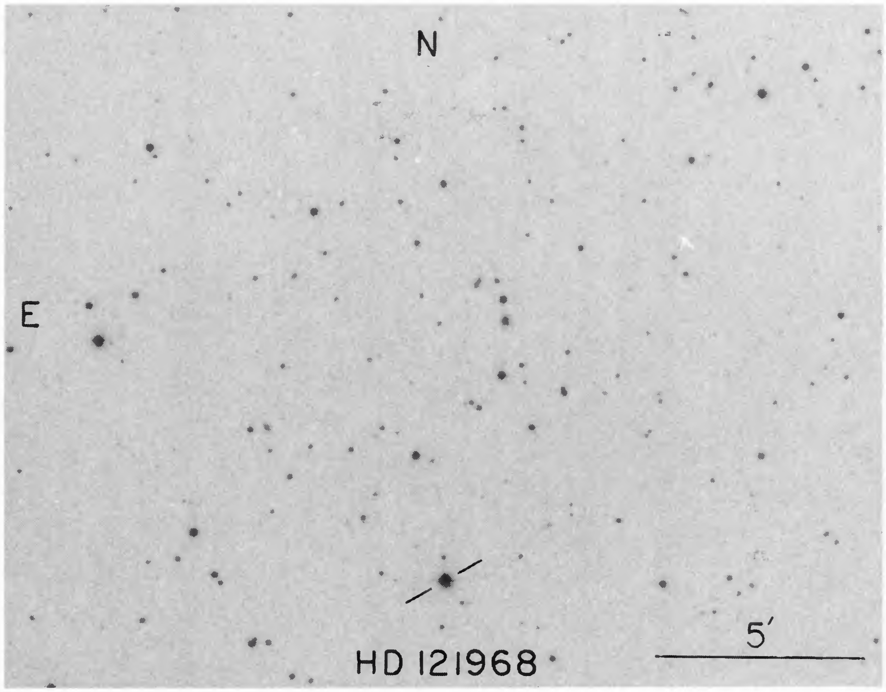


PLATE 52. (a) Sequence in the field of the star PG 1323−086. (b) The field of the star BD+2°2711.

A. U. Landolt (see page 347)



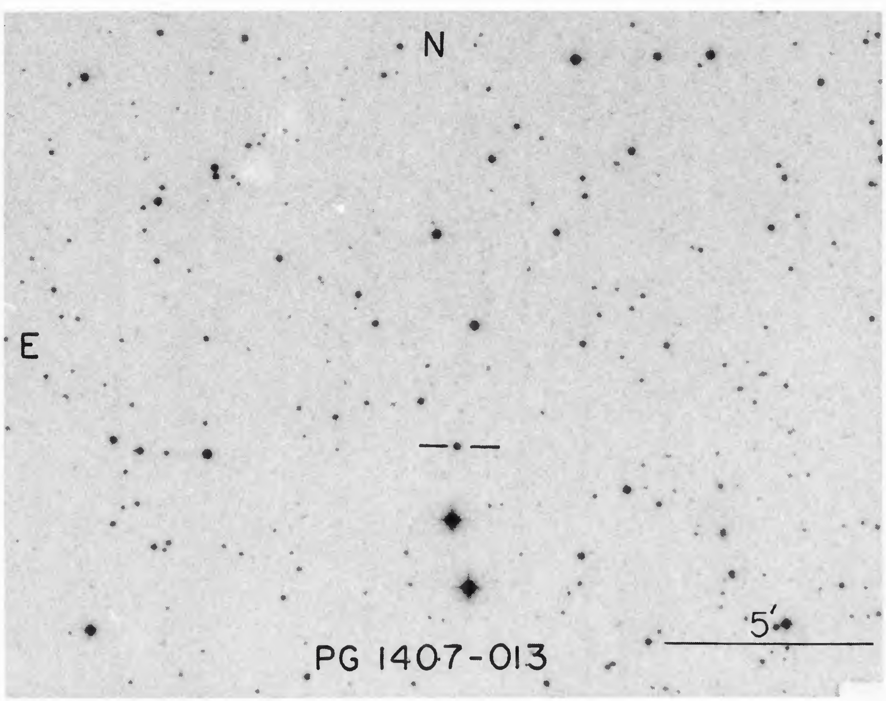


PLATE 53. (a) The field of the star HD 121968. (b) The field of the star PG 1407−013.

A. U. Landolt (see page 347)

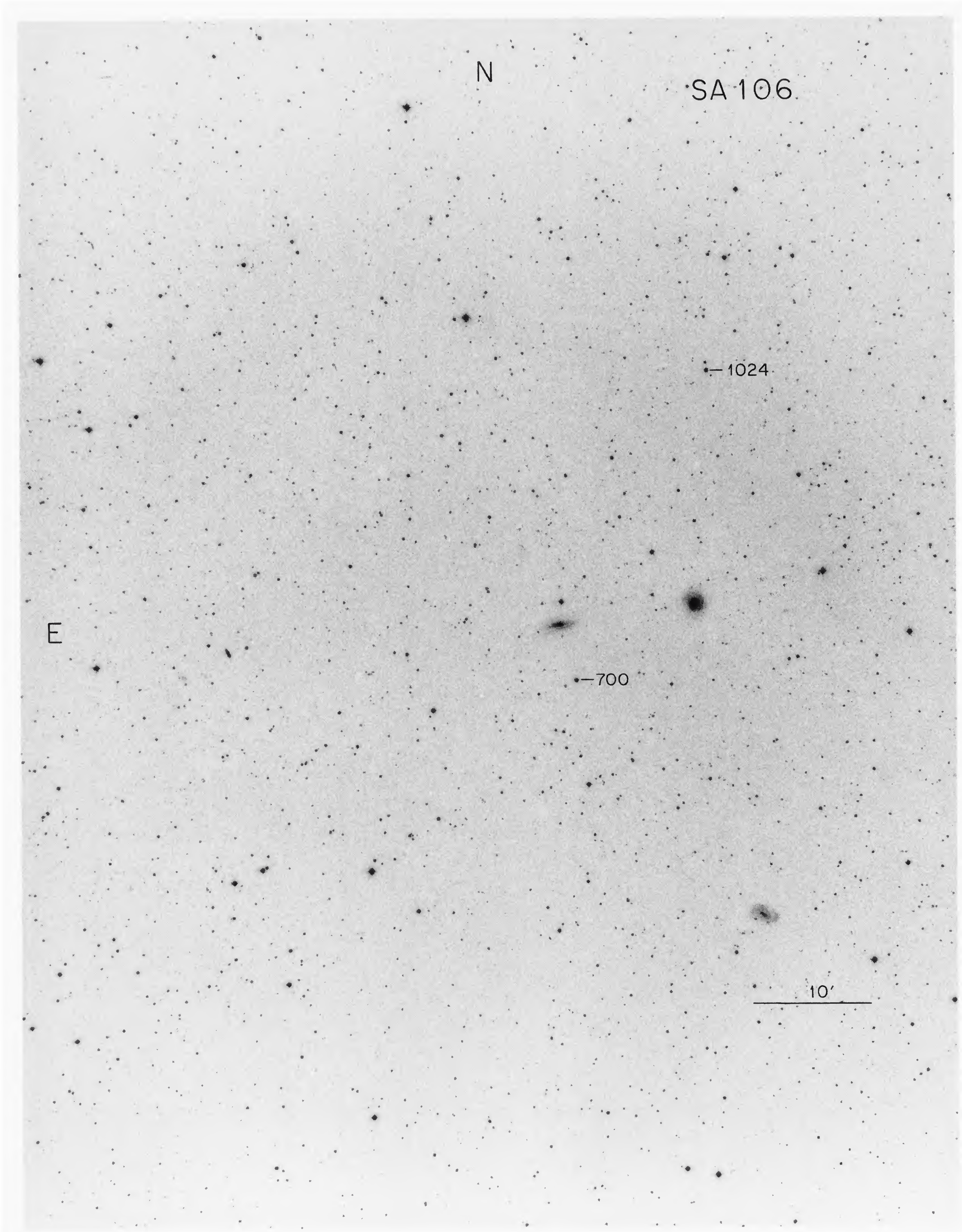
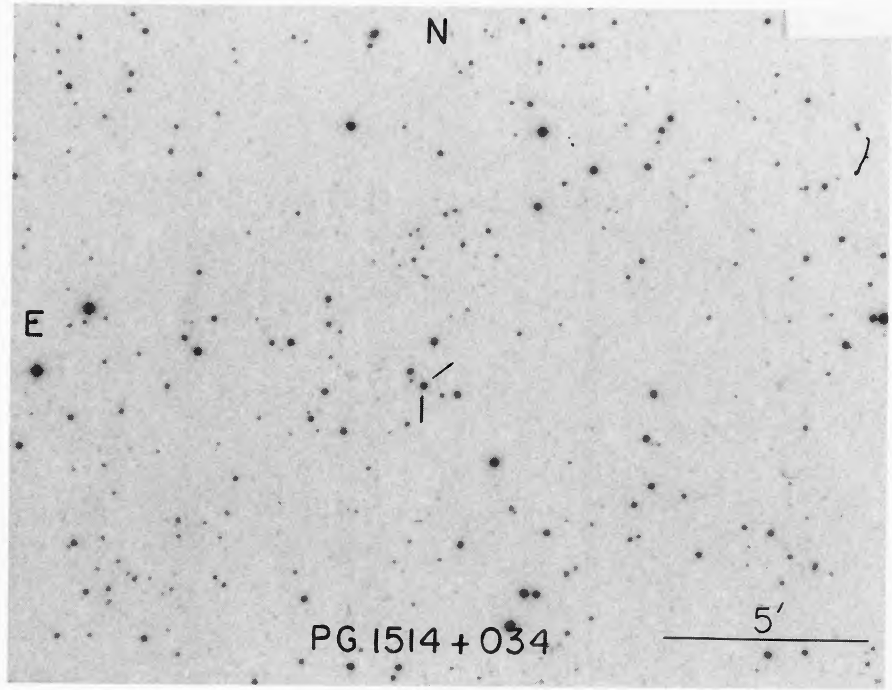


PLATE 54. The field of Selected Area 106.

A. U. Landolt (see page 347)

1992AJ....104..340L



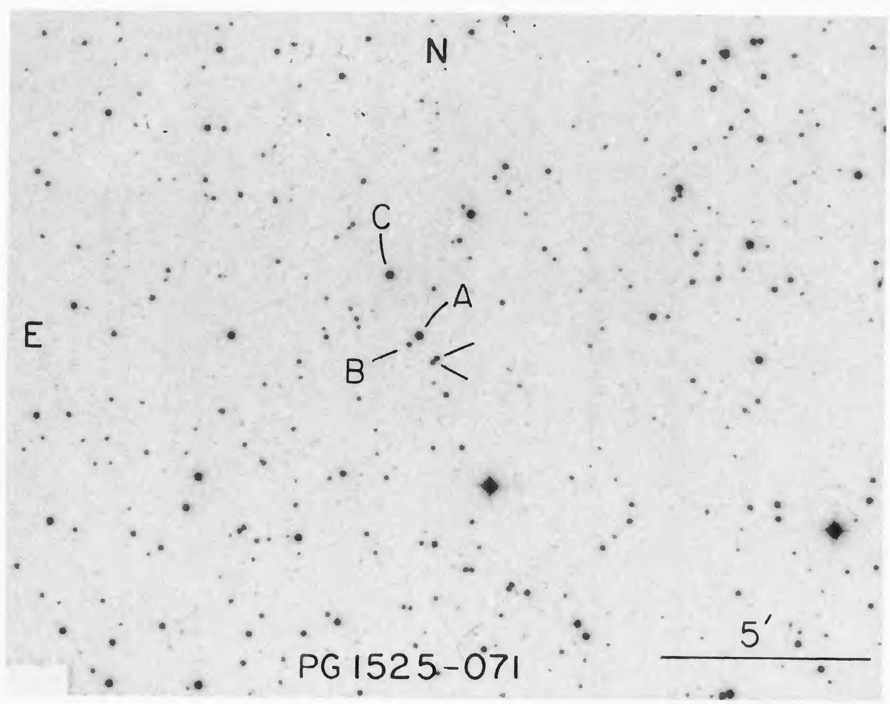
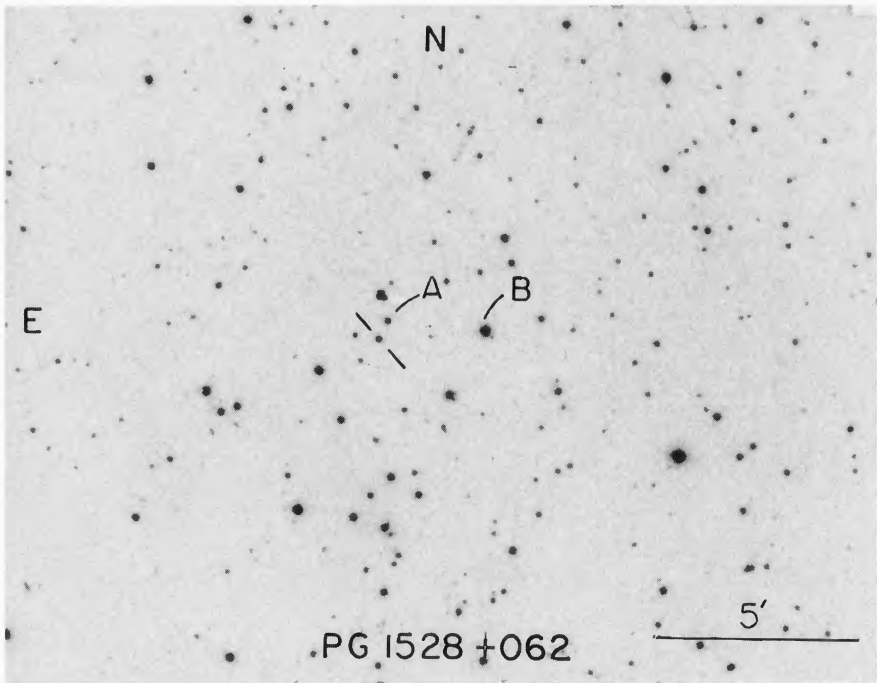


PLATE 55. (a) The field of the star PG 1514+034. (b) Sequence in the field of the star PG 1525−071.

A. U. Landolt (see page 347)



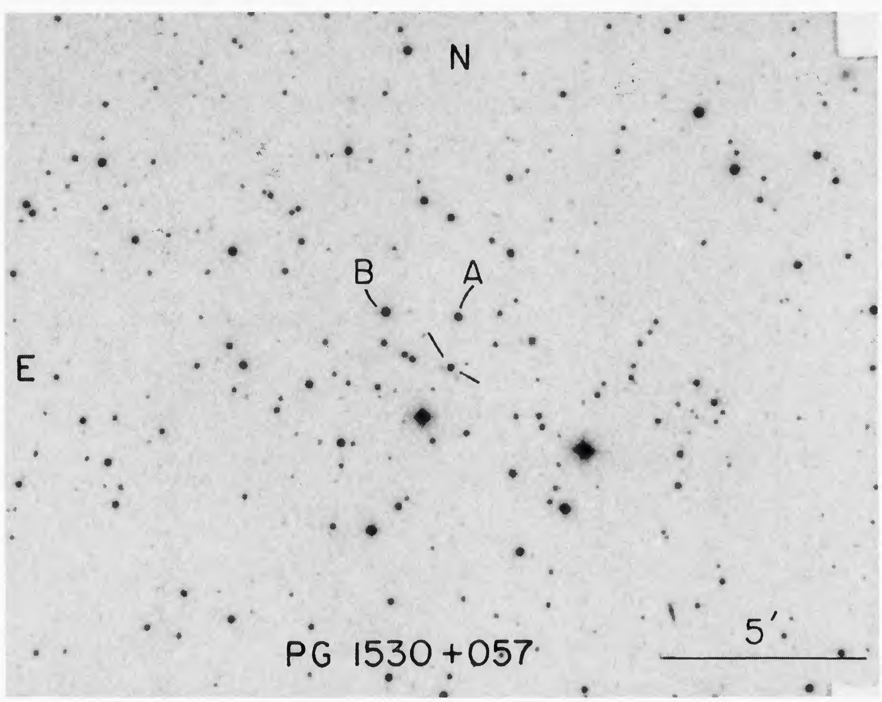


PLATE 56. (a) Sequence in the field of the star PG 1528+062. (b) Sequence in the field of the star PG 1530+057.

A. U. Landolt (see page 347)

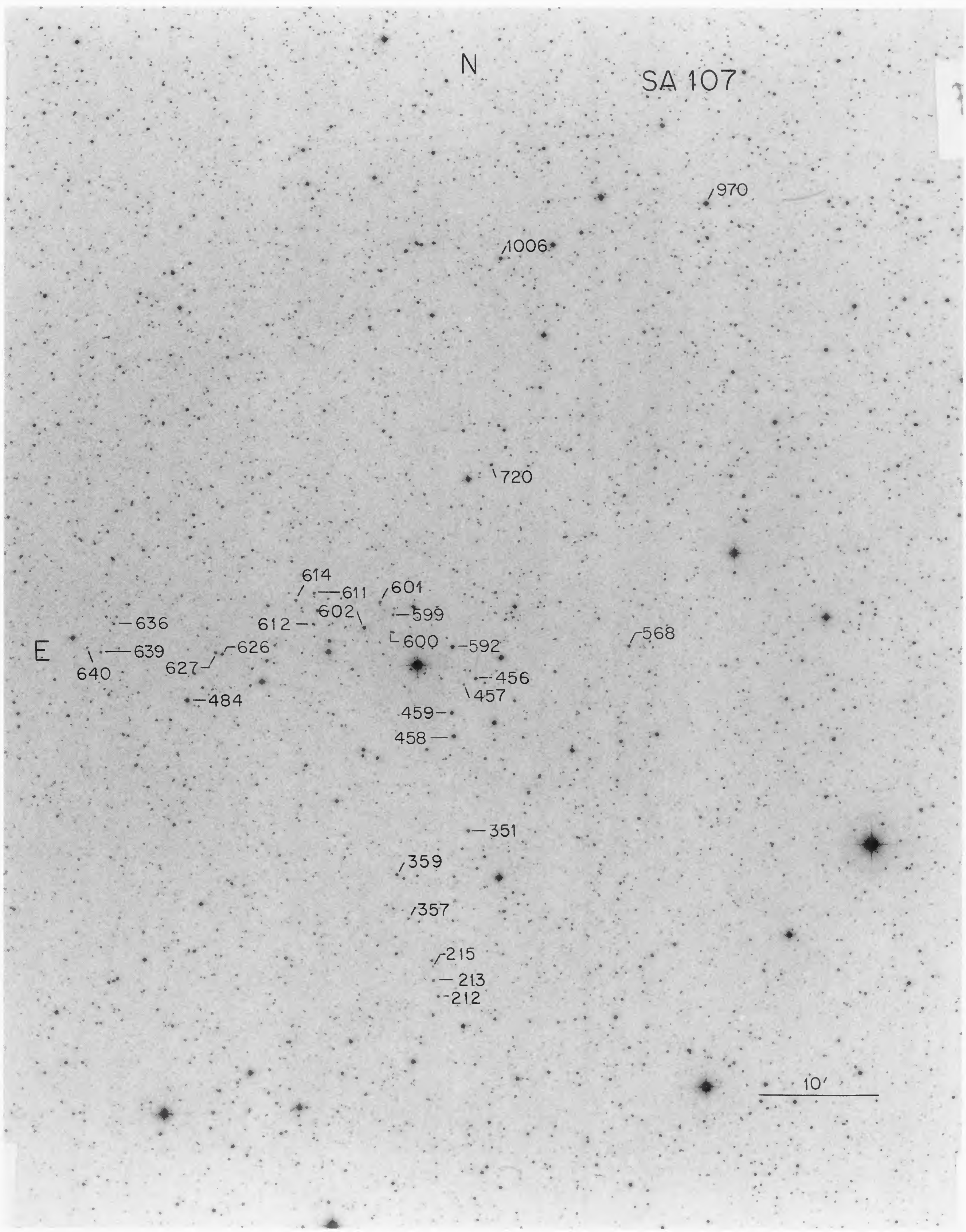
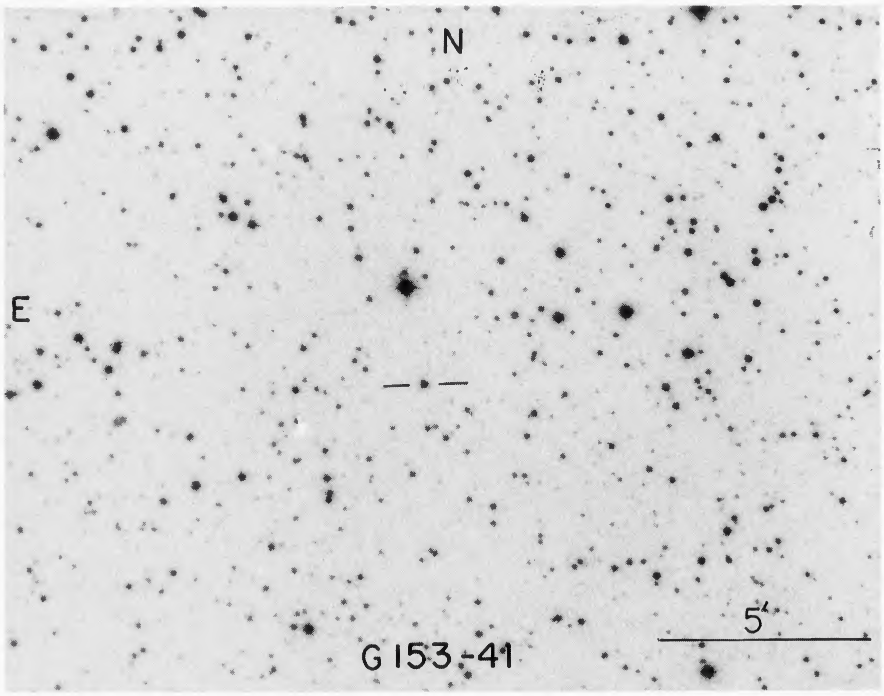


PLATE 57. The field of Selected Area 107.

A. U. Landolt (see page 347)



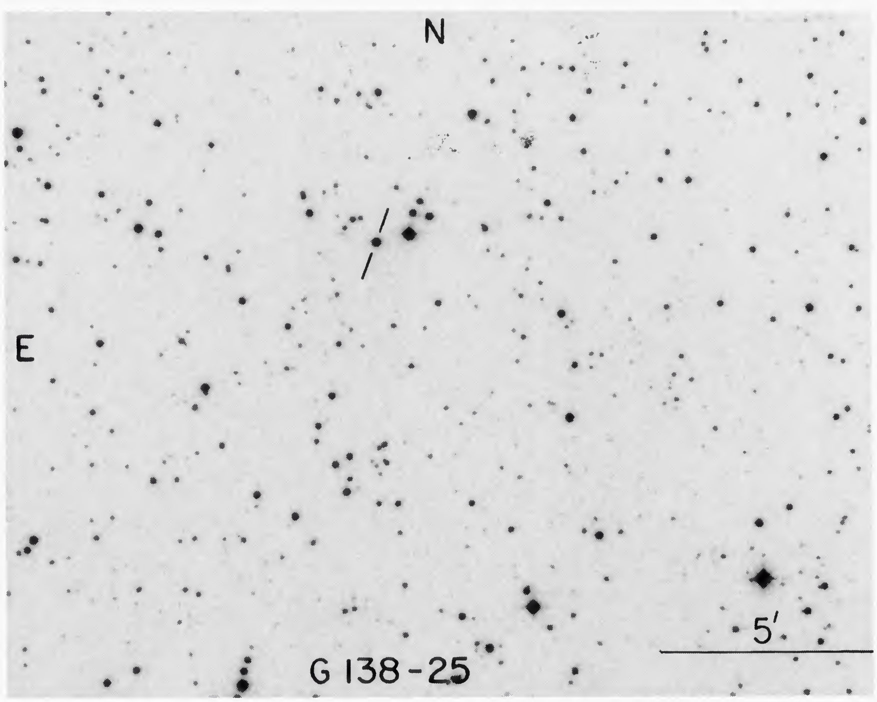
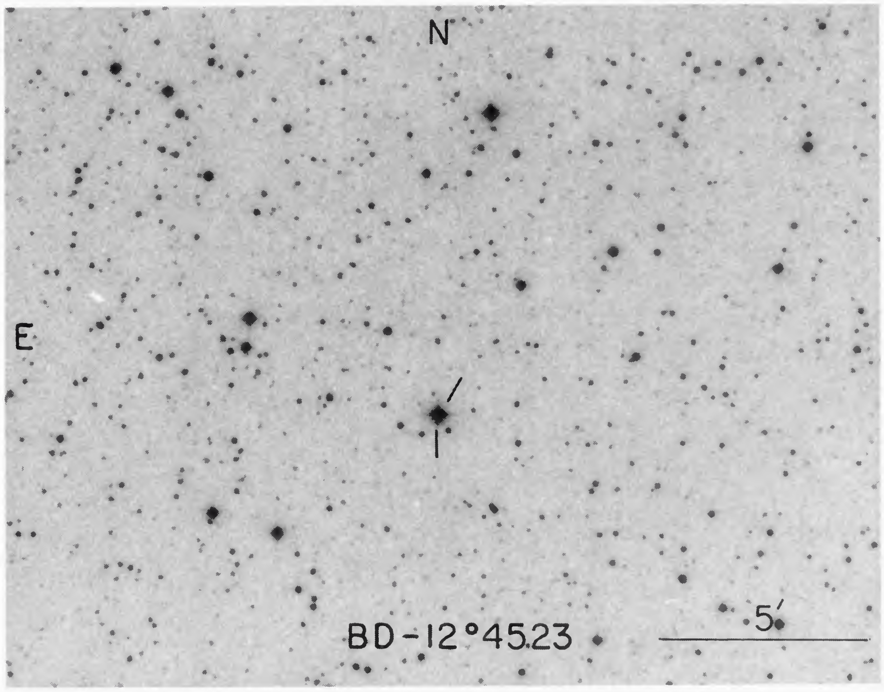


PLATE 58. (a) The field of the star G 153 41. (b) The field of the star G138 25.

A. U. Landolt (see page 347)



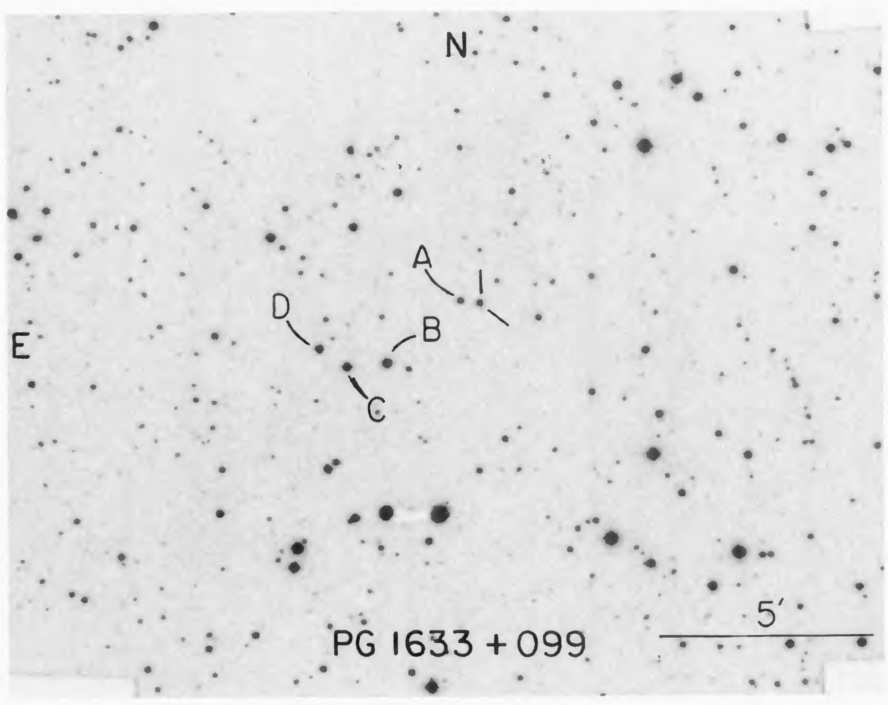


PLATE 59. (a) The field of the star BD−12°4523. (b) Sequence in the field of the star PG 1633 +099.

A. U. Landolt (see page 347)

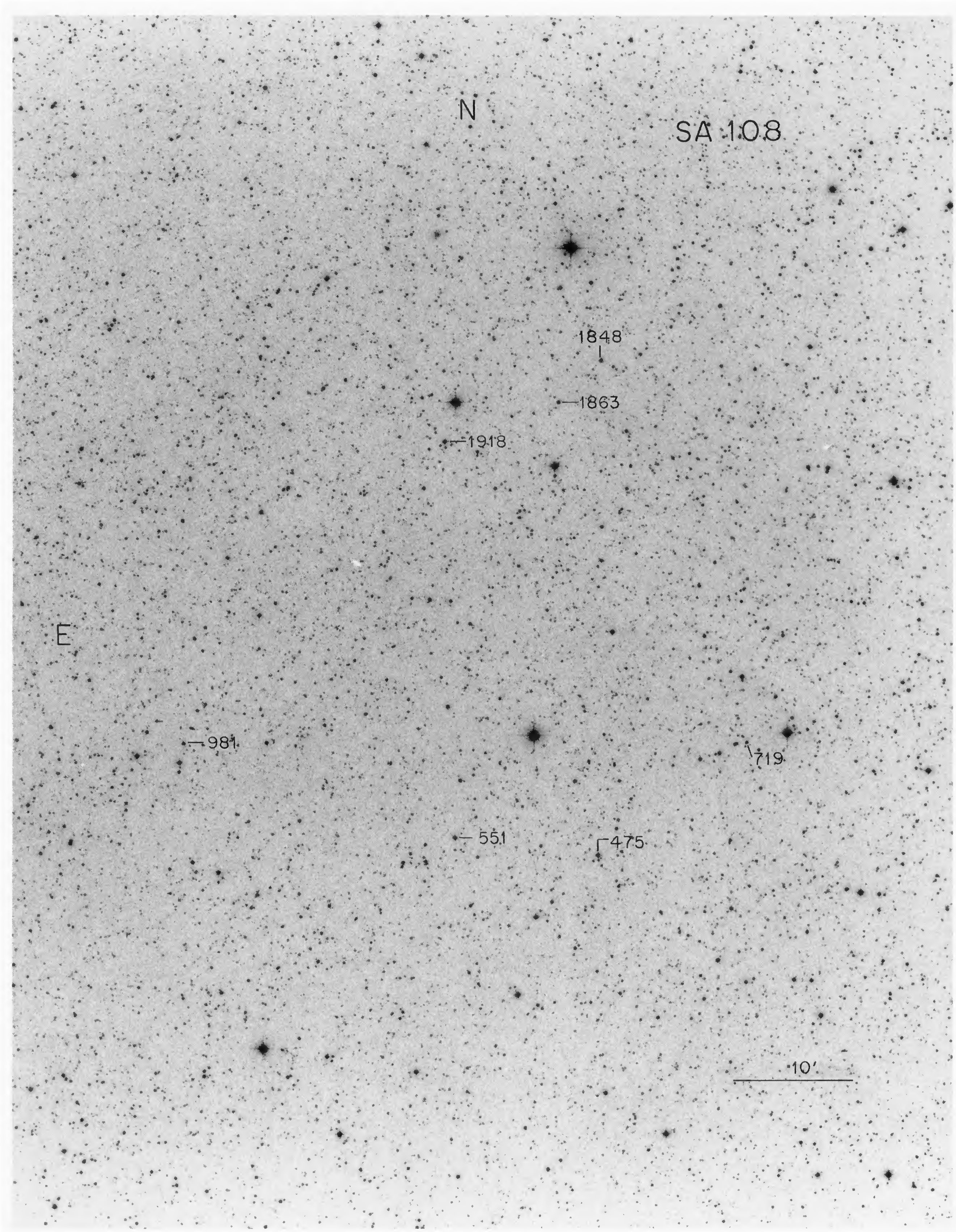
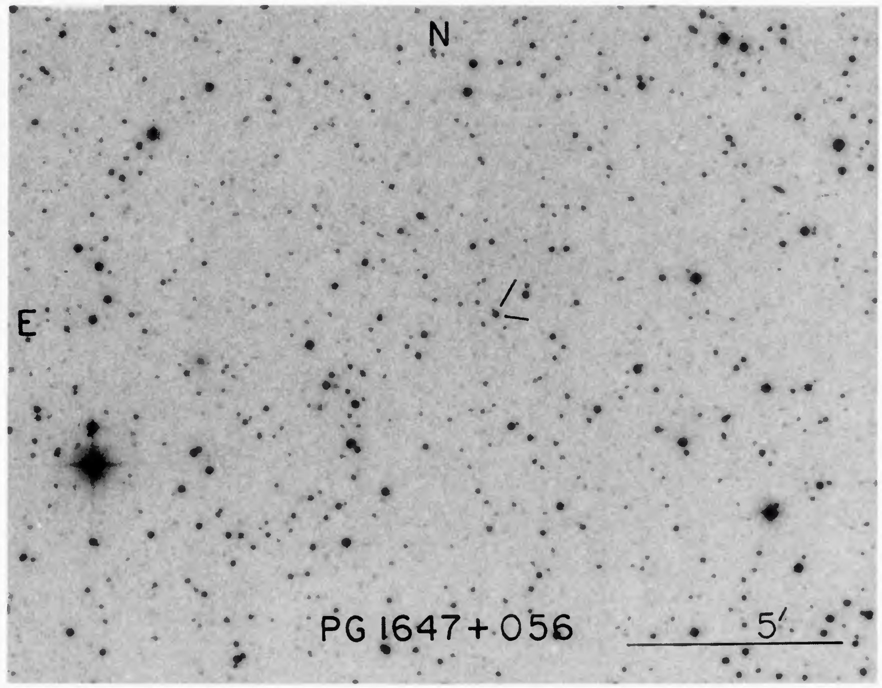


PLATE 60. The field of Selected Area 108.

A. U. Landolt (see page 347)



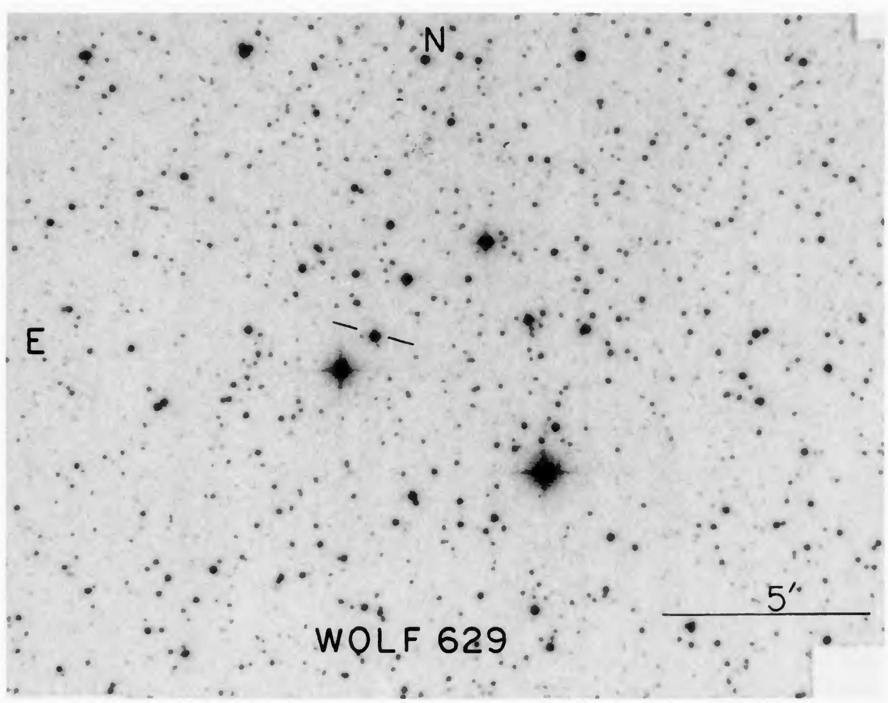
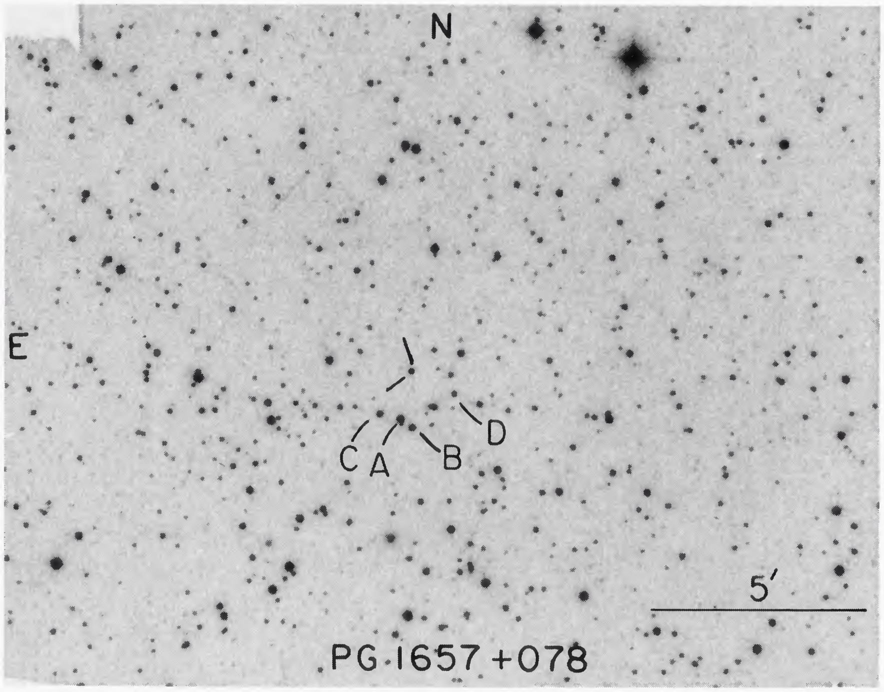


PLATE 61. (a) The field of the star PG 1647+056. (b) The field of the star Wolf 629.

A. U. Landolt (see page 347)

1992AJ....104..340L



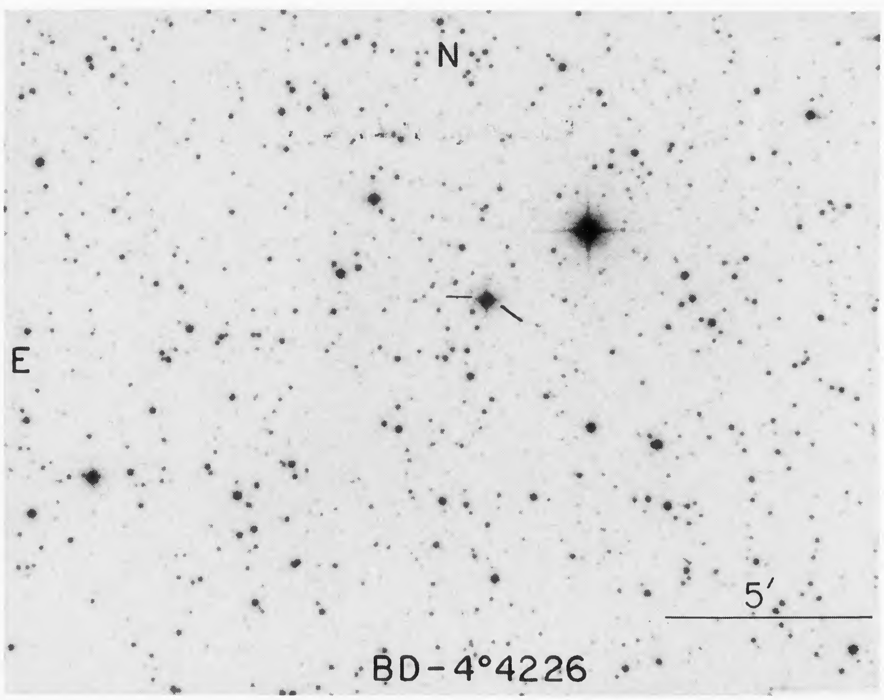


PLATE 62. (a) Sequence in the field of the star PG 1657+078. (b) The field of the star BD−4°4226.

A. U. Landolt (see page 347)

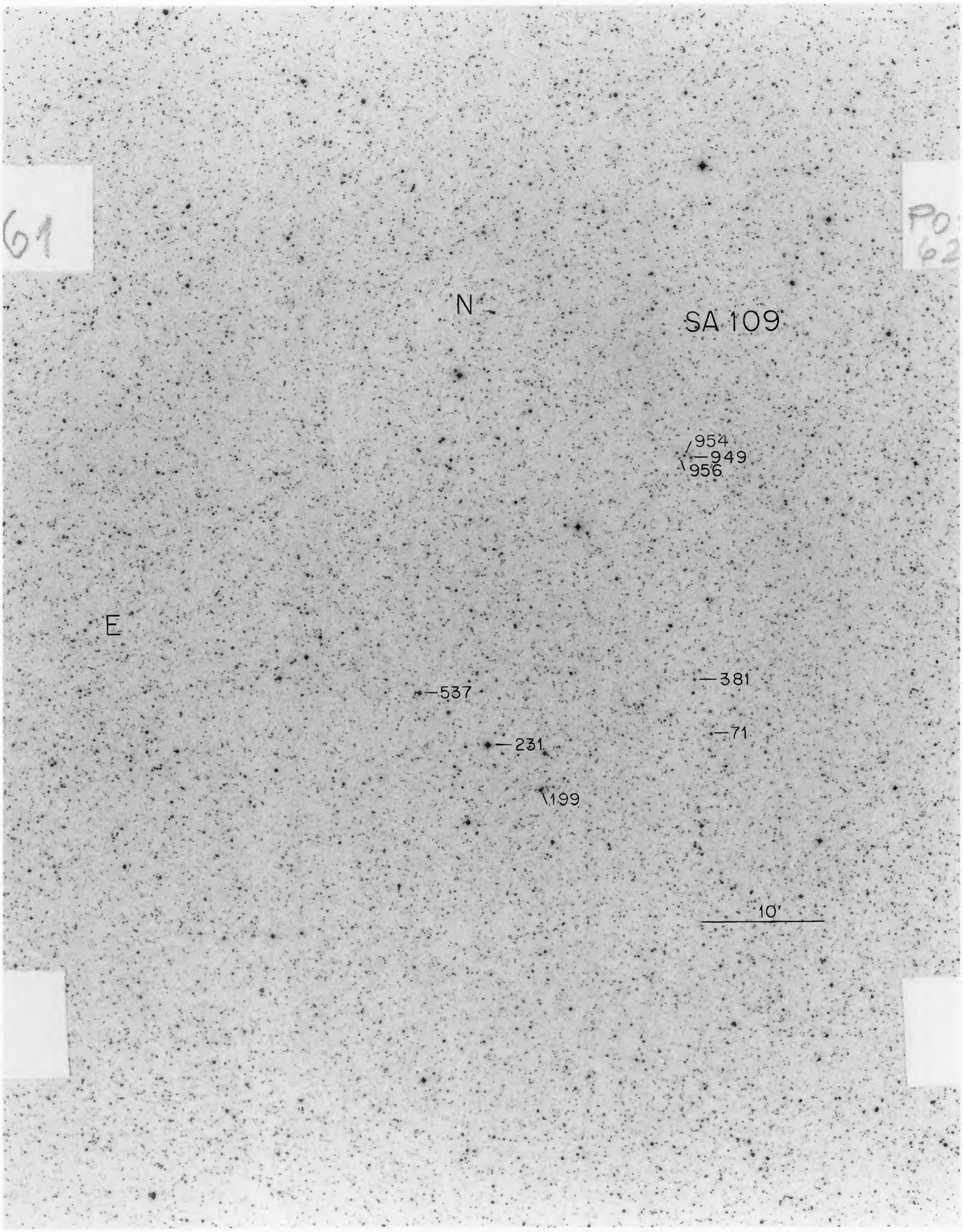
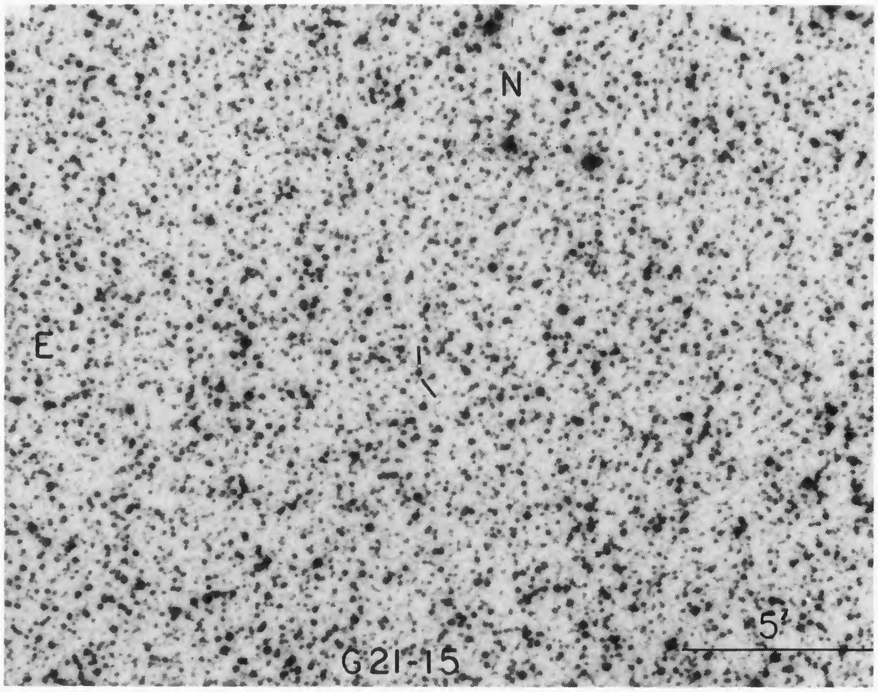


PLATE 63. The field of Selected Area 109.

A. U. Landolt (see page 347)



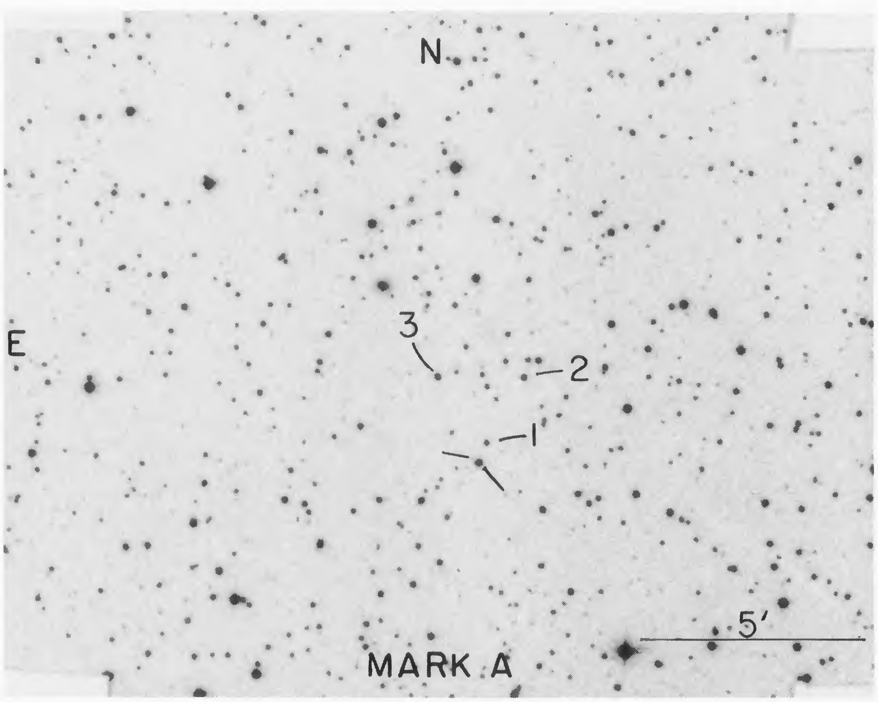


PLATE 64. (a) The field of the star G21 15. (b) Sequence in the field of the star Mark A.

A. U. Landolt (see page 347)

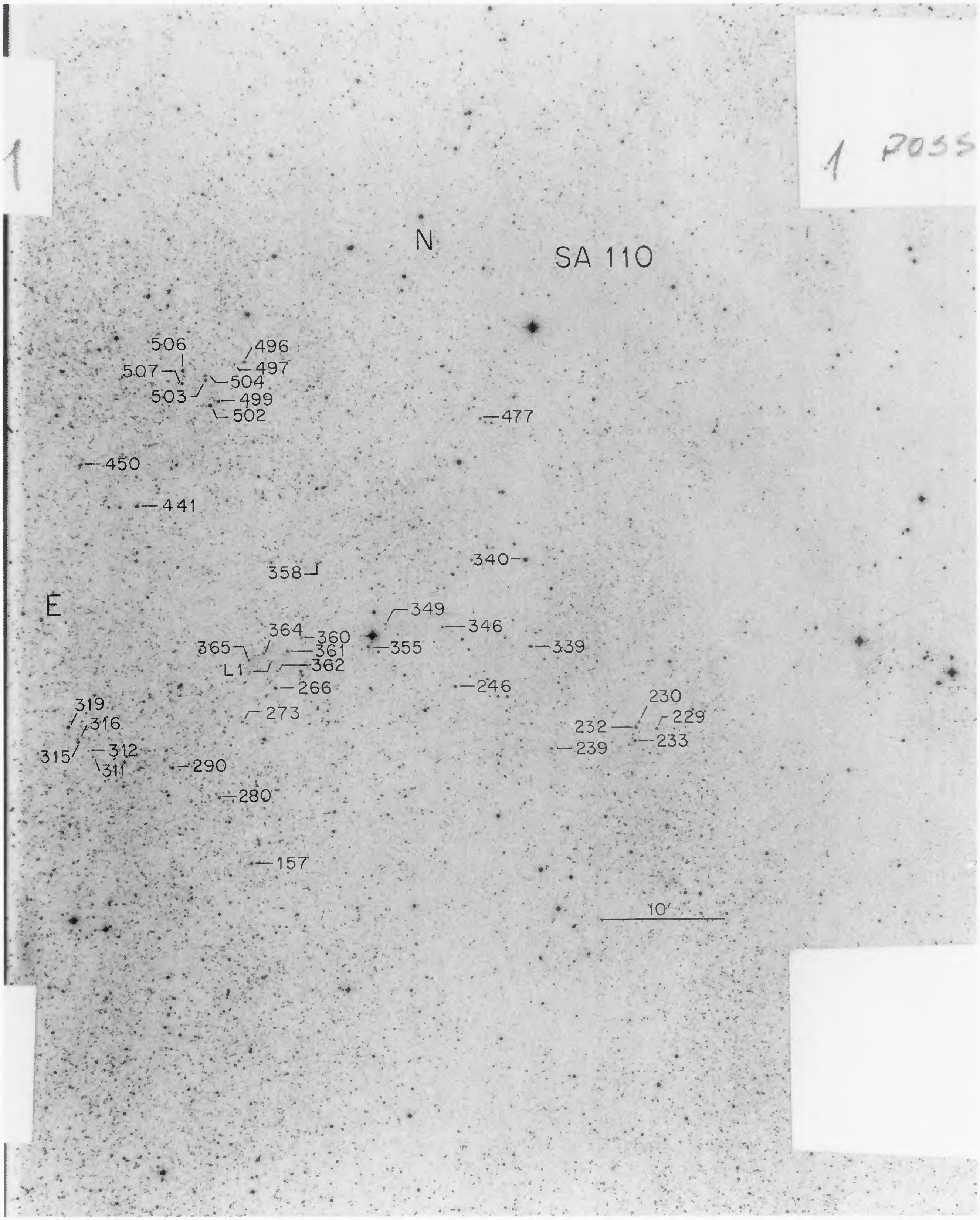


PLATE 65. The field of Selected Area 110.

A. U. Landolt (see page 347)

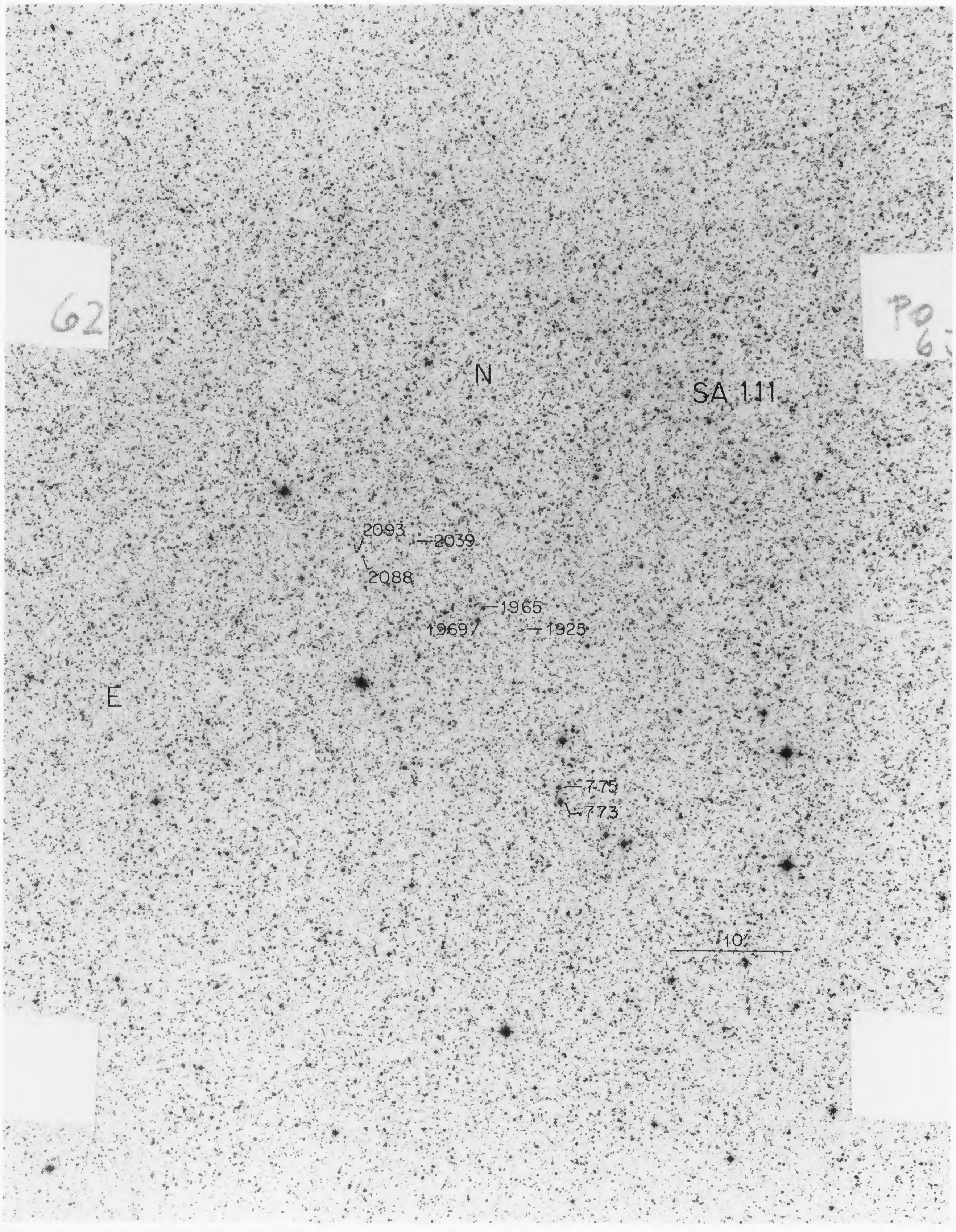


PLATE 66. The field of Selected Area 111.

A. U. Landolt (see page 347)

1992AJ....104..340L

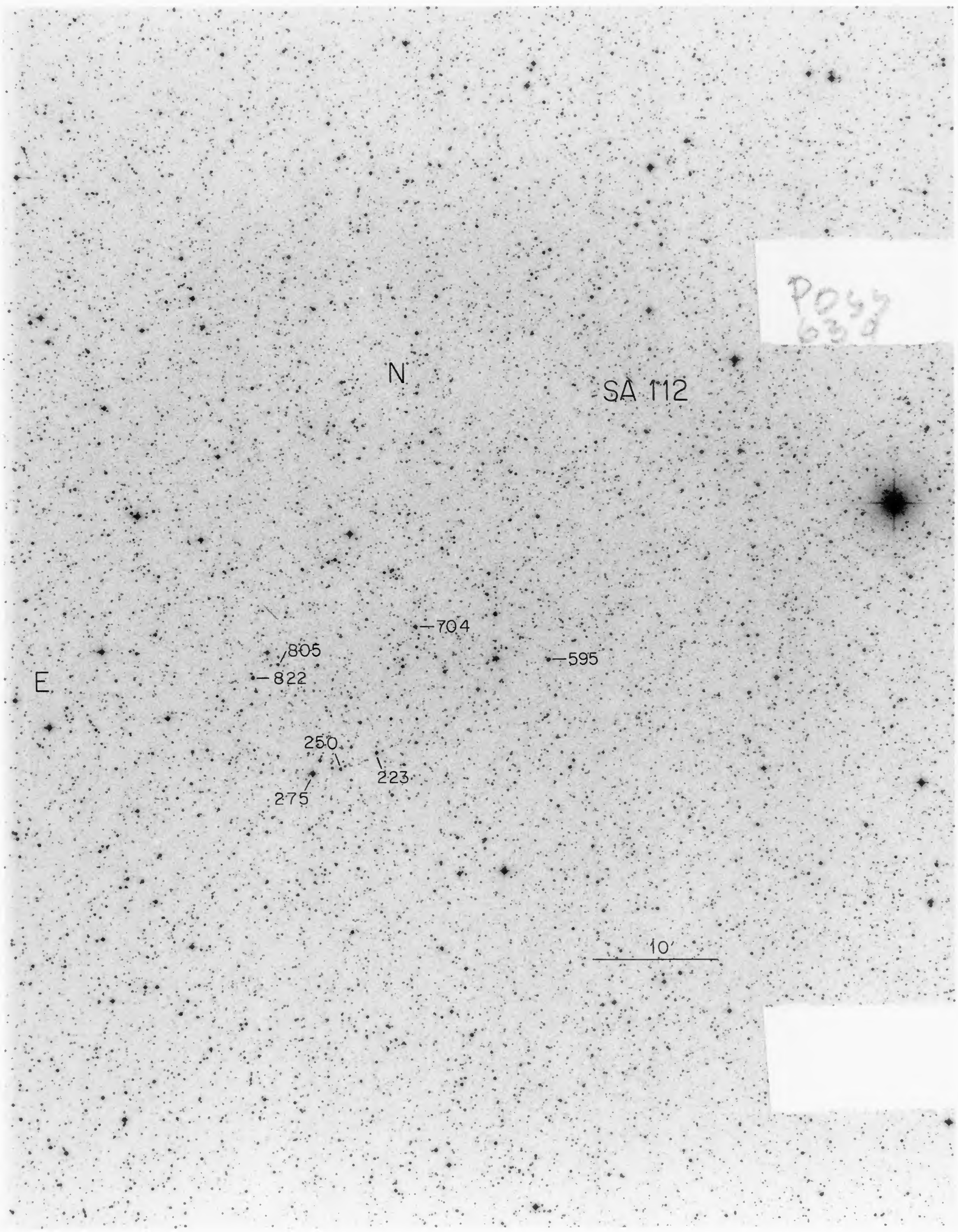
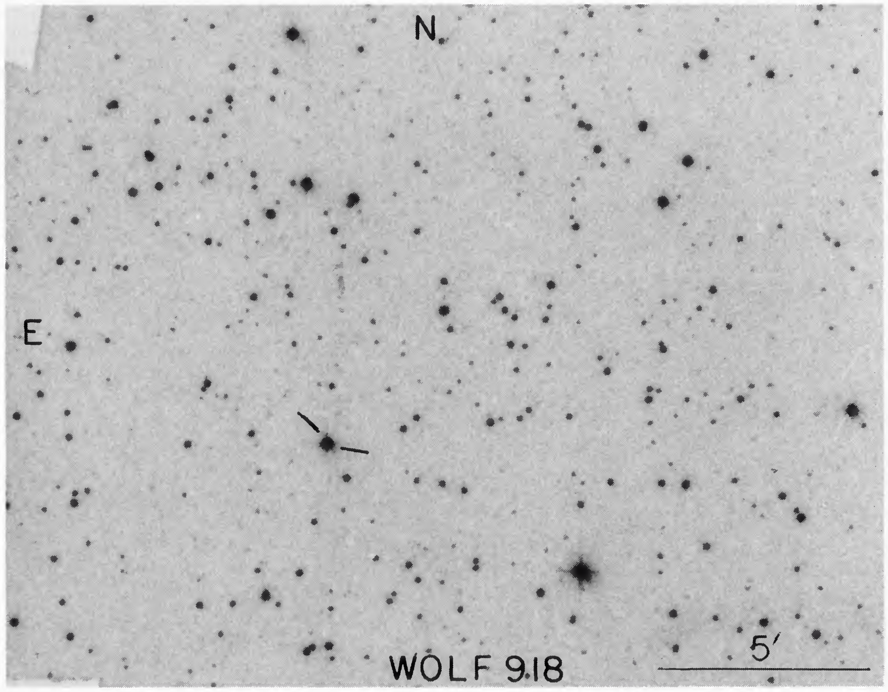


PLATE 67. The field of Selected Area 112.

A. U. Landolt (see page 347)

1992AJ....104..340L



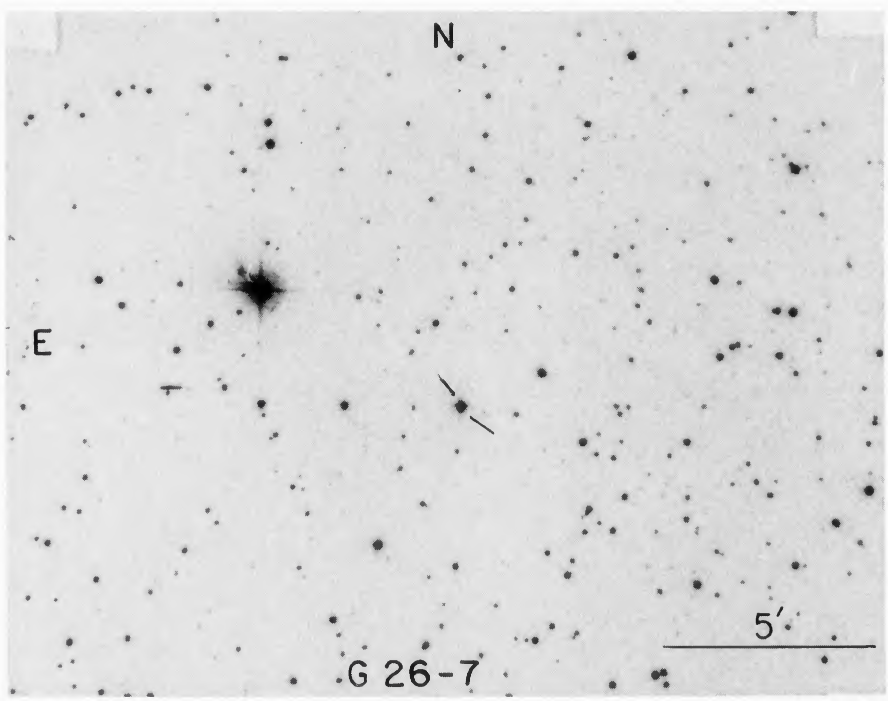


PLATE 68. (a) The field of the star Wolf 918. (b) The field of the star G26 7.

A. U. Landolt (see page 347)

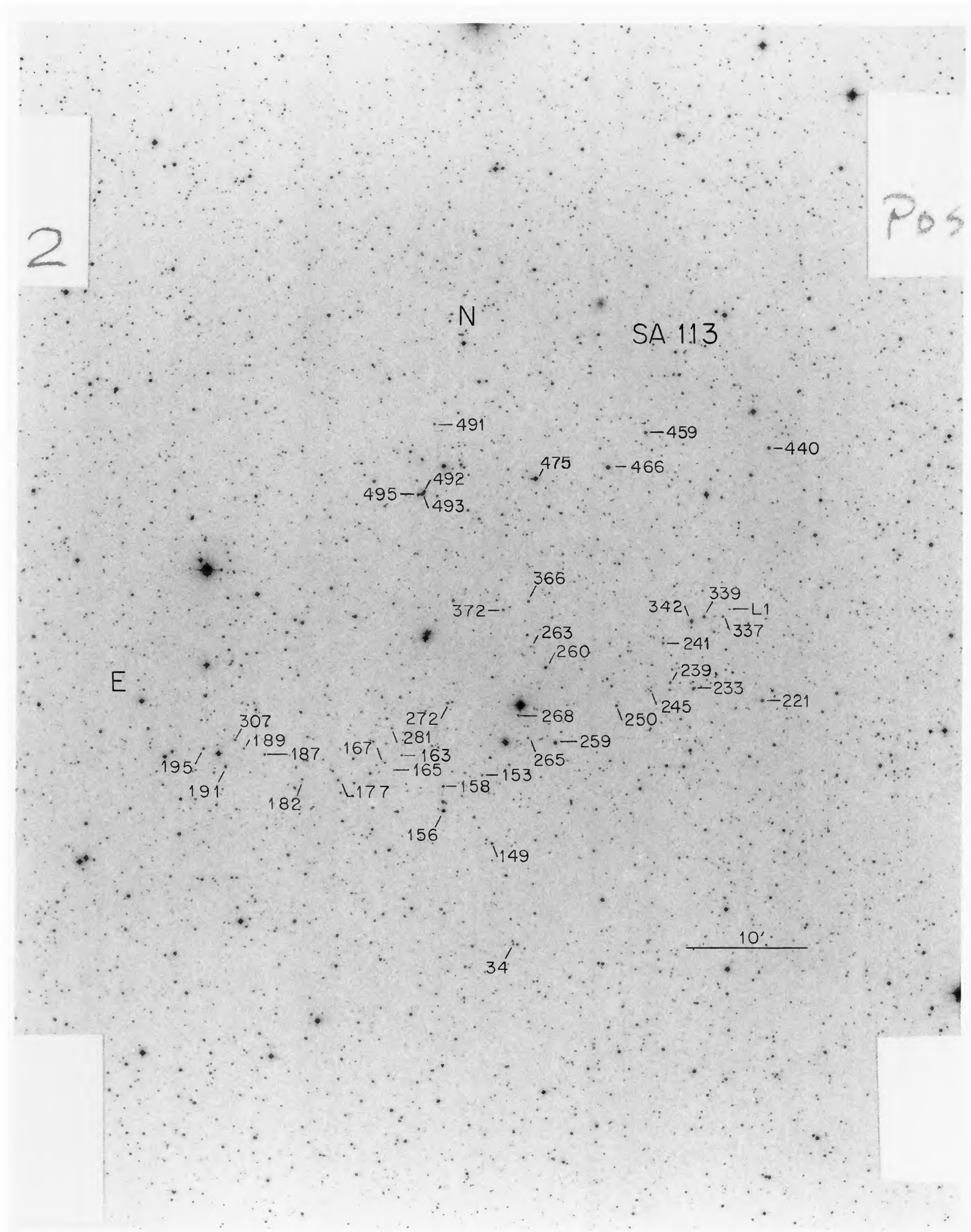
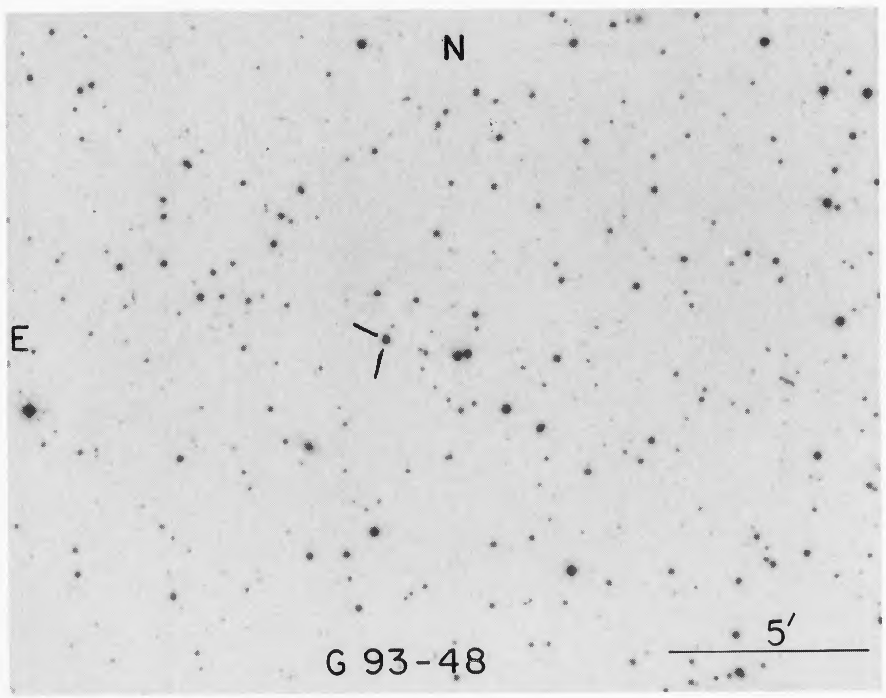


PLATE 69. The field of Selected Area 113.

A. U. Landolt (see page 347)



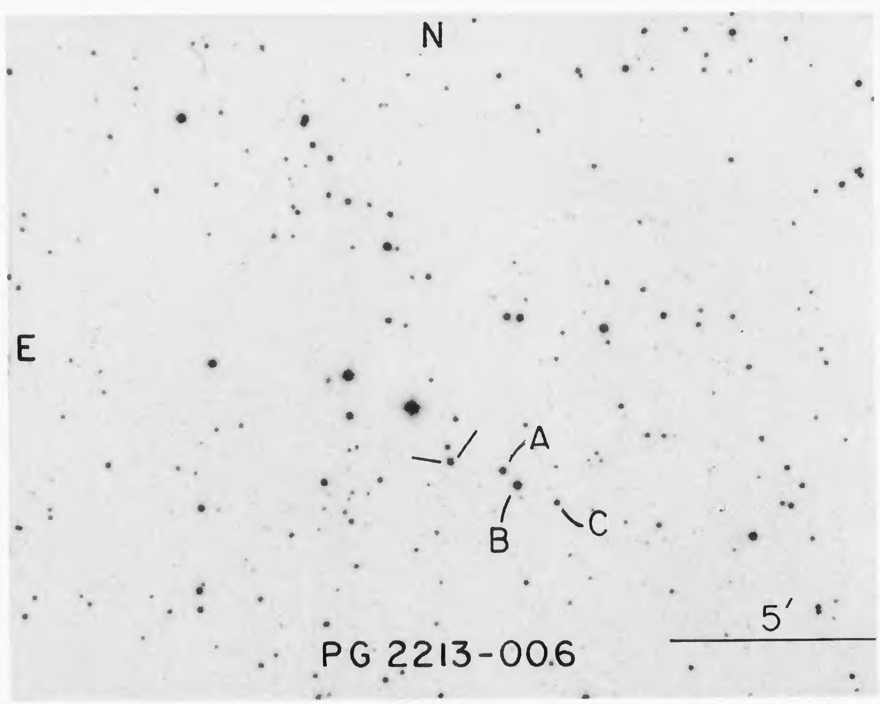


PLATE 70. (a) The field of the star G93 48. (b) Sequence in the field of the star PG 2213−006.

A. U. Landolt (see page 347)

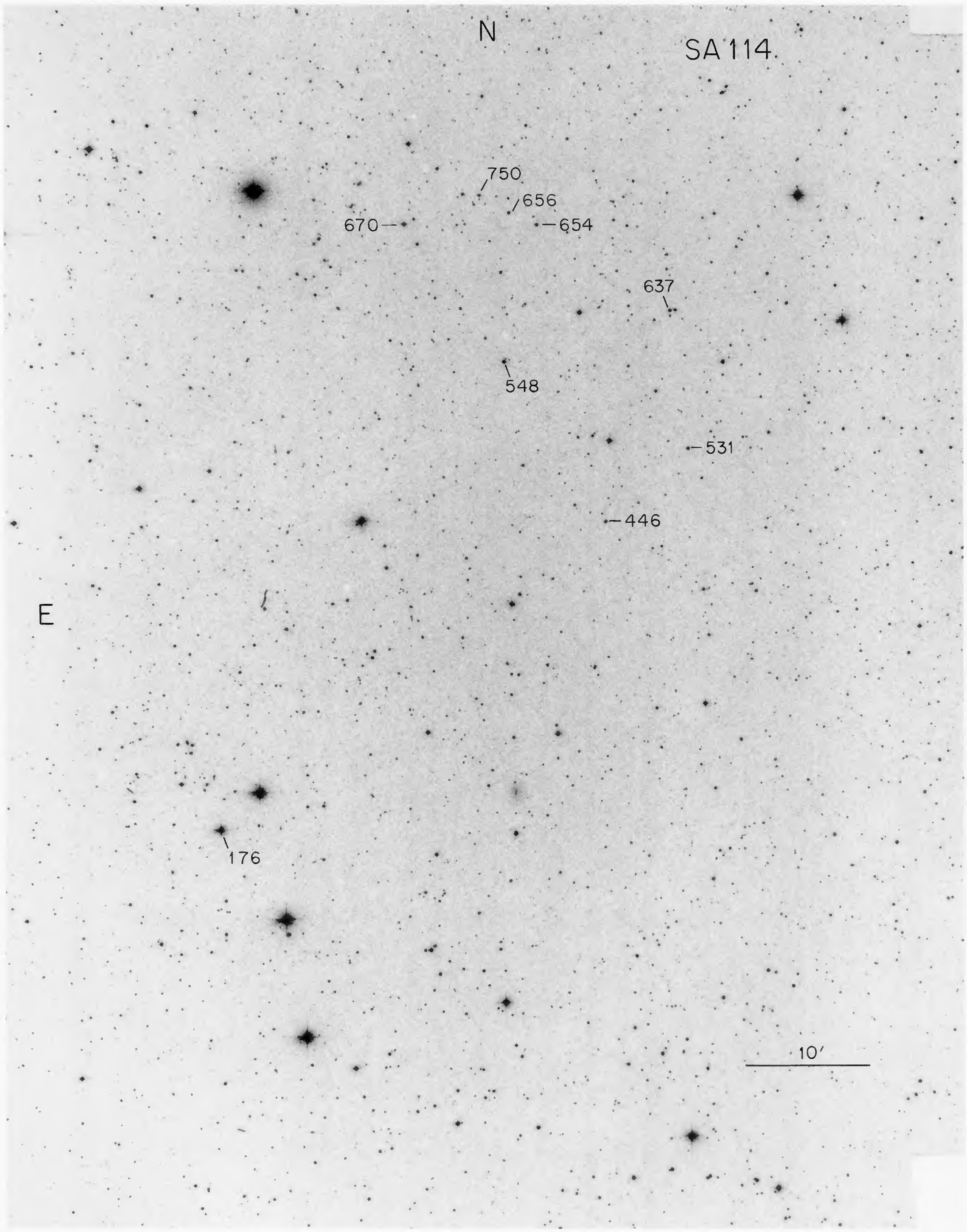
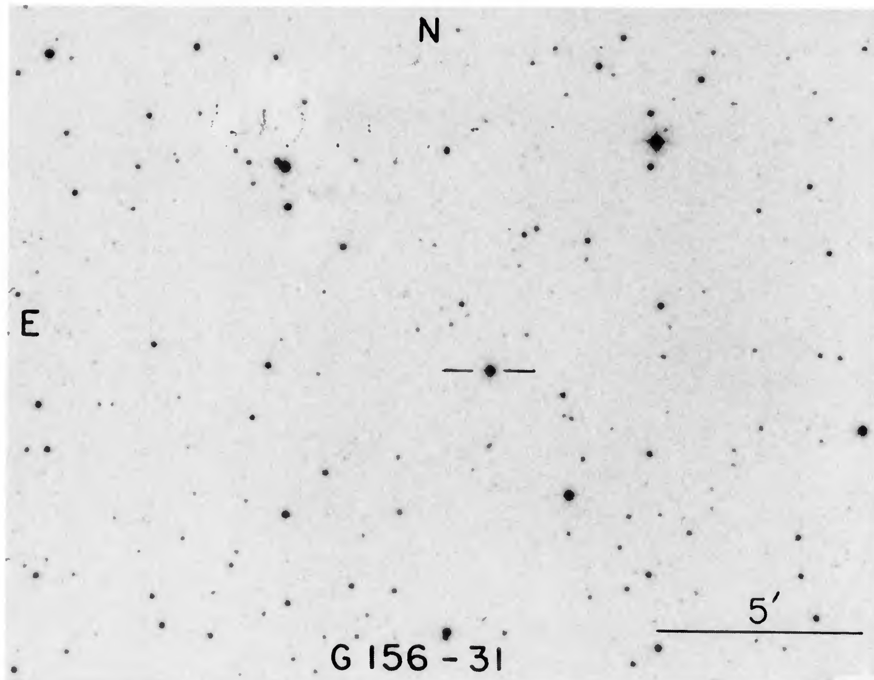


PLATE 71. The field of Selected Area 114.

A. U. Landolt (see page 347)



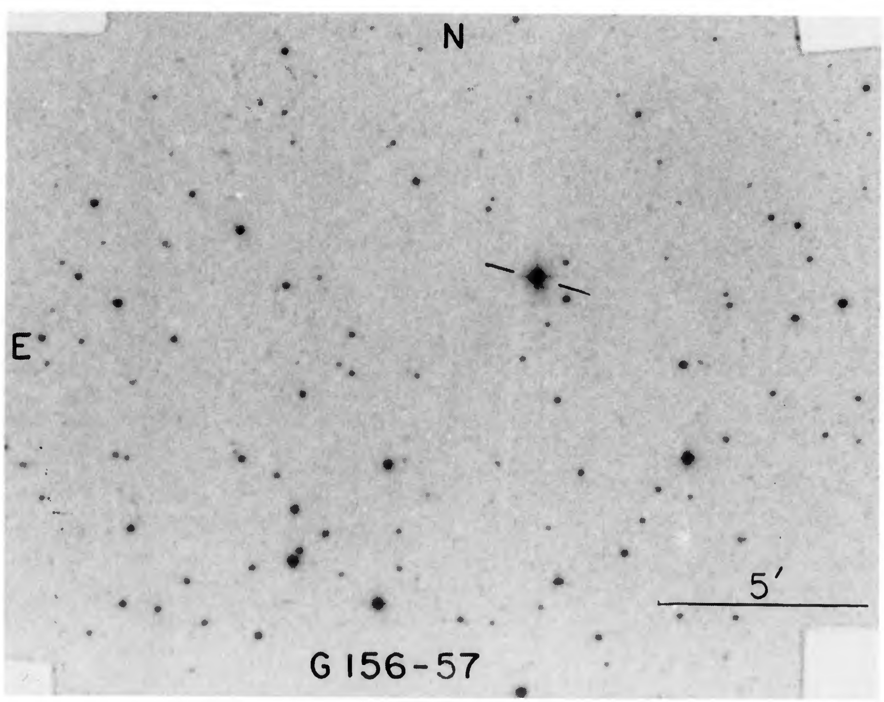
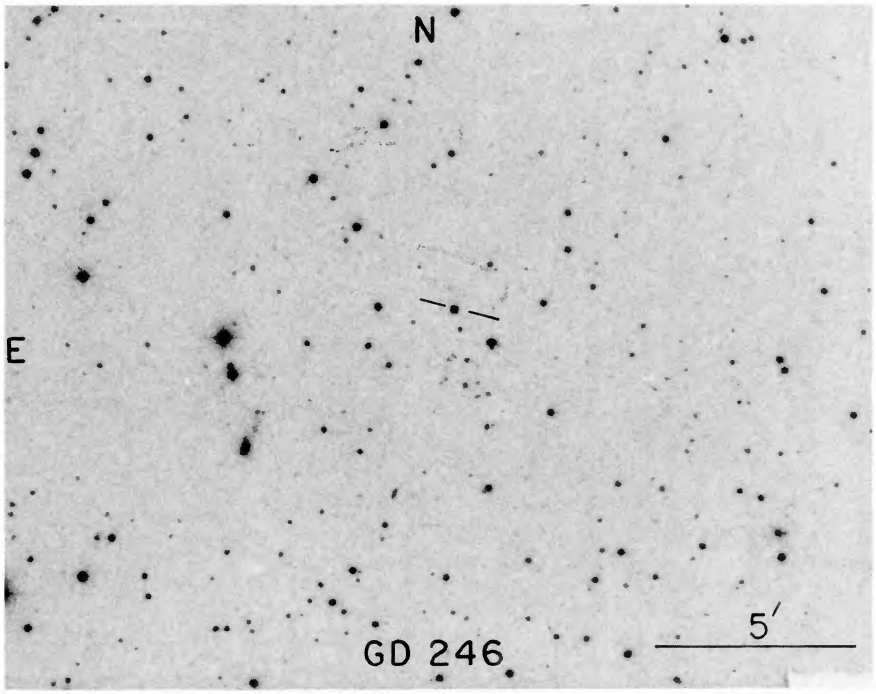


PLATE 72. (a) The field of the star G156 31. (b) The field of the star G156 57.

A. U. Landolt (see page 347)



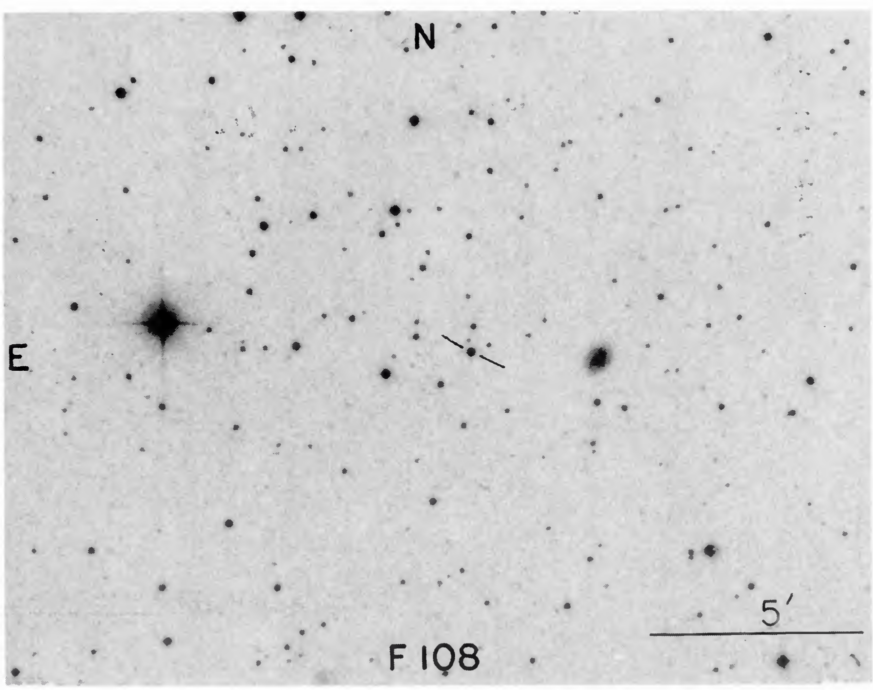
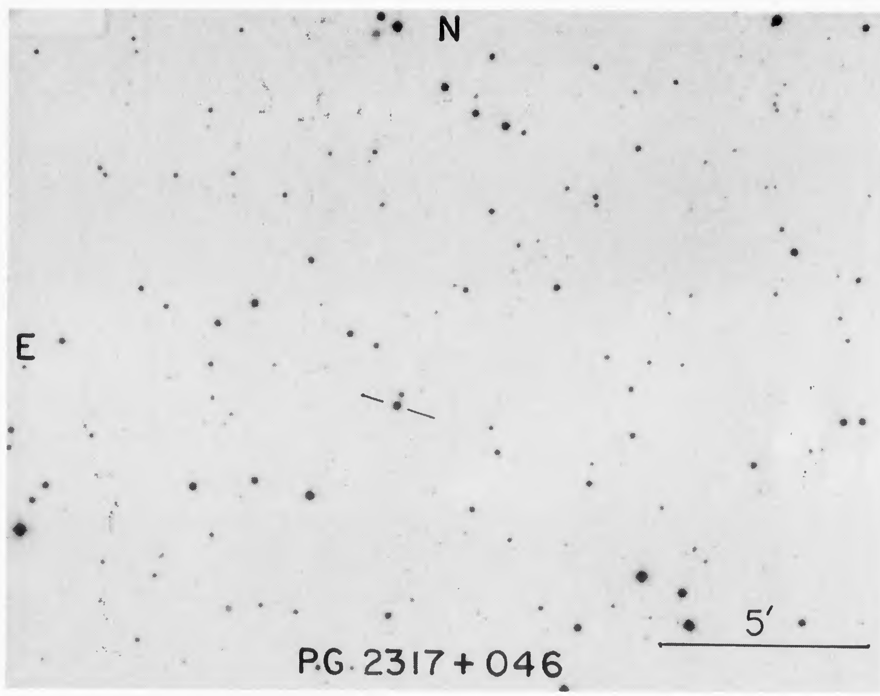


PLATE 73. (a) The field of the star GD 246. (b) The field of the star Feige 108.

A. U. Landolt (see page 347)



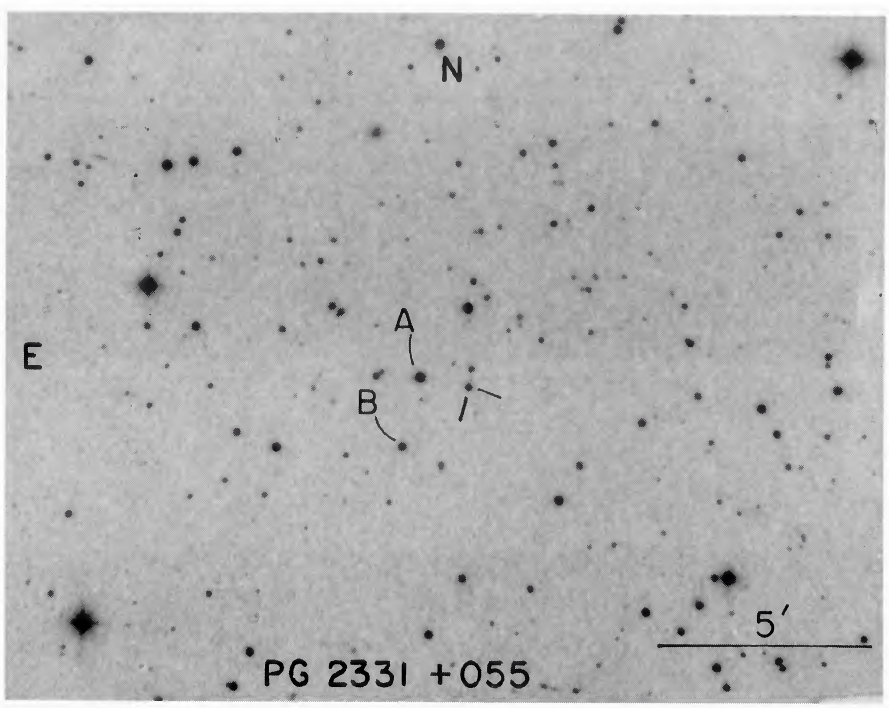
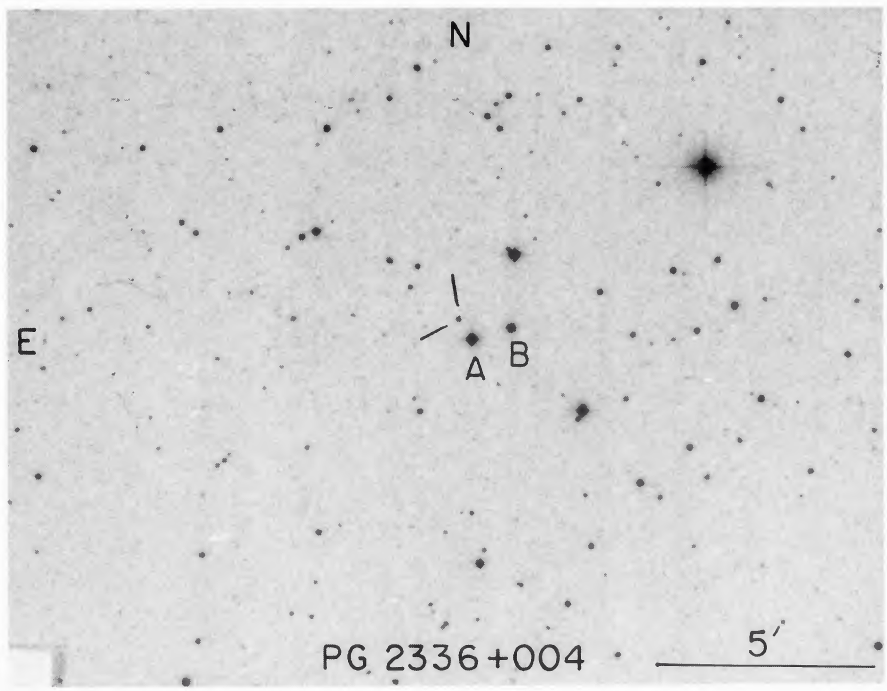


PLATE 74. (a) The field of the star PG 2317+046. (b) Sequence in the field of the star PG 2331+055.

A. U. Landolt (see page 347)



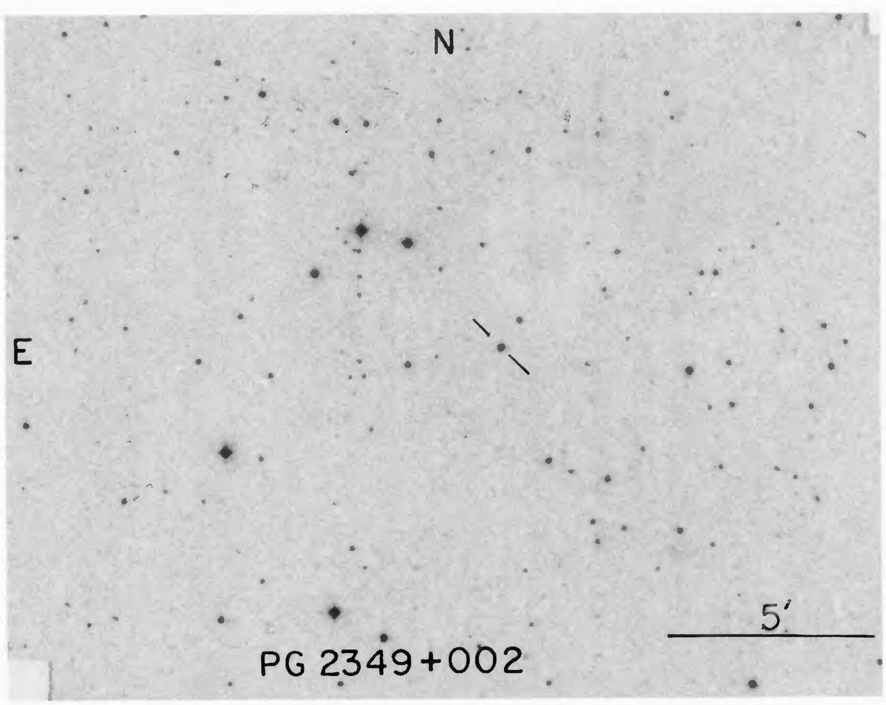


PLATE 75. (a) Sequence in the field of the star PG 2336+004. (b) The field of the star PG 2349+002.

A. U. Landolt (see page 347)

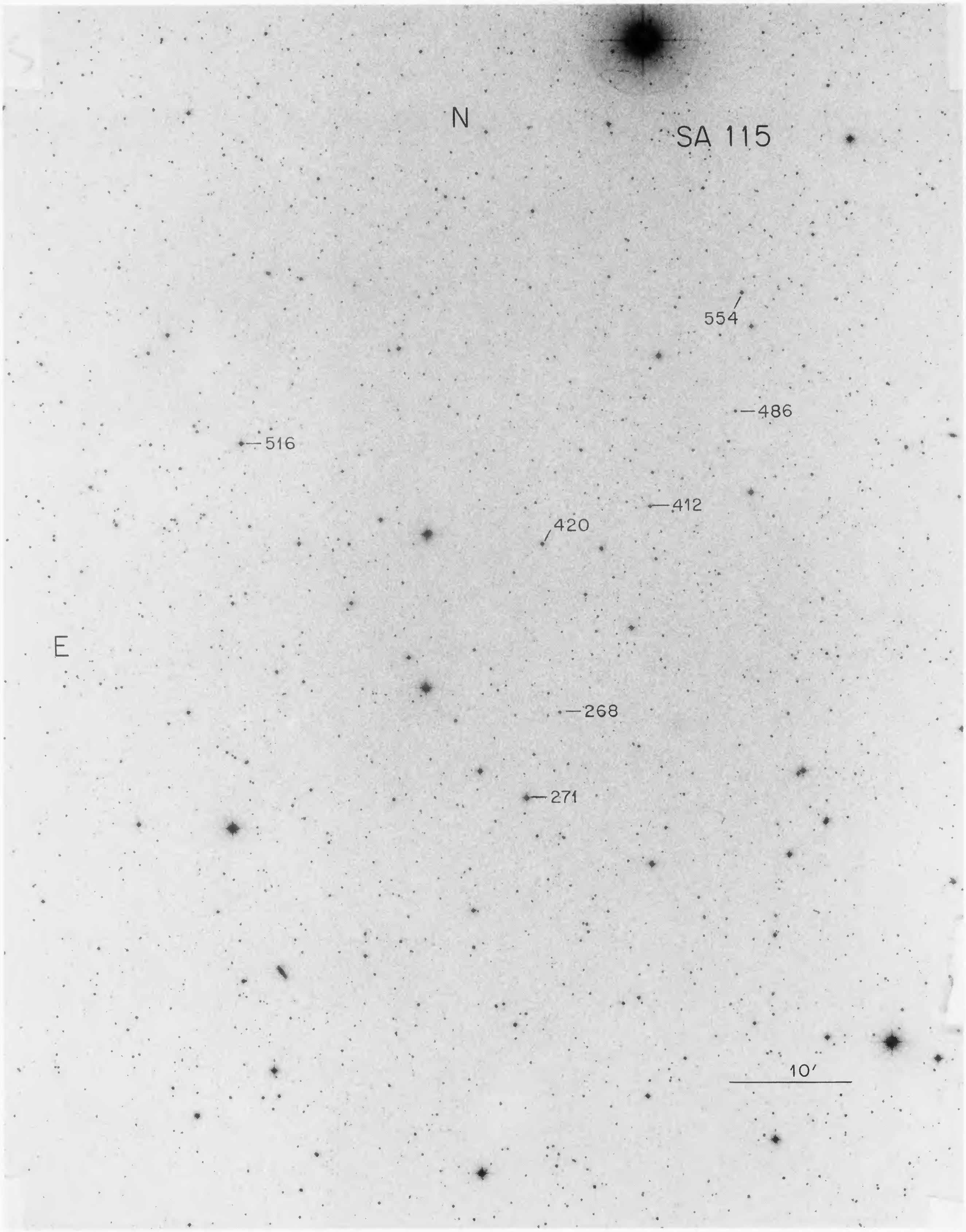


PLATE 76. The field of Selected Area 115.

A. U. Landolt (see page 347)