BOLETÍN DE LOS OBSERVATORIOS DE TONANTZINTLA Y TACUBAYA, VOL. 5, N°33, 1969.

B V R, POTSDAM, AND HARVARD PHOTOMETRIES

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SUMARIO

Las fotometrías visuales de Potsdam y de Harvard se han transformado al sistema foto-eléctrico BVR con ayuda del método de análisis de regresión múltiple. Los resultados indican que las transformaciones son aceptables y que dependen marcadamente del color de la estrella. La dependencia de las desviaciones de la escala de Pogson y del efecto Purkinje no es grande. La ausencia de estos factores en las fórmulas hacen que los resultados tengan una tendencia sistemática: en las estrellas brillantes hay más residuos positivos y en las estrellas débiles hay más residuos negativos. Cuando la muestra de magnitudes se divide en zonas de ascensión recta o declinación los resultados difieren un poco de aquellos en que se incluyen todas las A. R. y Dec. La fotometría de Harvard tiene su punto cero más cercano al del sistema BVR que la de Potsdam. Esta última, sin embargo, es más uniforme que la primera. Probablemente el color B–V casi siempre dé resultados ligeramente mejores que el V–R.

Las ecuaciones dadas al final del resumen en inglés ilustran las propiedades arriba mencionadas. Los símbolos que aparecen en estas ecuaciones representan la magnitud y los colores del sistema BVR, V, B–V y V–R; a las magnitudes de Potsdam y de Harvard, Gr y m44, respectivamente, al número de estrellas, n, que se metieron en la solución y el error estandar de la estimación. Otros datos estadísticos y más ecuaciones se dan también en las tablas 2-5.

ABSTRACT

Multiple Regression Analysis has been used to find equations to transform Potsdam (Müller and Kempf, 1907) and Harvard (Pickering, 1908) visual photometries into the BVR photoelectric system (Johnson and Mitchell, 1962). The results indicate that the transformations are good. They strongly depend on the colors (B–V or V–R). The dependence on Pogson scale deviation and Purkinje effect is not large. However, if these coefficients are absent in the formulae (Ideal Systems), then the residuals are not distributed at random in the (magnitude, residuals)-plane, specially at both ends. If a sample of magnitudes is divided in zones according to the stellar right ascension or declination, then the results are somewhat different than those that include all R. A. and Dec. The Harvard photometry has a zero point closer to that of the BVR-system than Potsdam's. However, the latter is more uniform than the former. In most cases probably the B–V color gives slightly better results than V–R.

The following equations are a part of the results given in Tables 2-5. They illustrate the characteristics of Harvard and Potsdam visual photometries. The symbols in these equations represent V, B–V and V–R, the visual magnitude and colors of the BVR-system; Gr and m44, the Potsdam and Harvard visual magnitudes (see Table 1) respectively; n, the number of stars entered in the solution; and ε, the standard error of the estimation:

$$Gr-V = 0.253 - 0.070\,(B-V) + 0.001\,(Gr-4.92) - 0.014\,(B-V)\,(Gr-4.92);$$
$$n = 963;\ \text{all R. A.; all Dec.;}\ \varepsilon = \pm 0.09.$$

$$Gr-V = 0.258 - 0.091\,(V-R) + 0.000\,(Gr-4.92) - 0.012\,(V-R)\,(Gr-4.92);$$
$$n = 963;\ \text{all R. A.; all Dec.;}\ \varepsilon = \pm 0.09.$$

$$Gr-V = 0.227 - 0.066\,(B-V) - 0.022\,(Gr-4.61) + 0.009\,(B-V)\,(Gr-4.61);$$
$$n = 86;\ \text{all R. A.;}\ 90^\circ \geqslant \text{Dec.} > 60^\circ;\ \varepsilon = \pm 0.07.$$

$$Gr-V = 0.229 - 0.082\,(V-R) - 0.024\,(Gr-4.61) + 0.019\,(V-R)\,(Gr-4.61);$$
$$n = 86;\ \text{all R. A.;}\ 90^\circ \geqslant \text{Dec.} > 60^\circ;\ \varepsilon = \pm 0.07$$

$$Gr-V = 0.234 - 0.059\,(B-V) - 0.033\ (Gr-4.66) + 0.008\,(B-V)\,(Gr-4.66);$$
$$n = 293;\ 16\ \text{hs} \leqslant \text{R. A.} < 24\ \text{hs.; all Dec.;}\ \varepsilon = \pm 0.09.$$

$$Gr-V = 0.237 - 0.080\,(V-R) - 0.036\,(Gr-4.66) + 0.021\ (V-R)\,(Gr-4.66);$$
$$n = 293;\ 16\ \text{hs} \leqslant \text{R. A.} < 24\ \text{hs.; all Dec.;}\ \varepsilon = \pm 0.09.$$

$$m44-V = 0.018 + 0.128\,(B-V) - 0.039\,(m44-4.42) + 0.061\,(B-V)\,(m44-4.45);$$
$$n = 1421;\ \text{all R. A.; all Dec.;}\ \varepsilon = \pm 0.21.$$

$$m44-V = 0.014 + 0.159\,(V-R) - 0.038\,(m44-4.42) + 0.067\ (V-R)\,(m44-4.45);$$
$$n = 1421;\ \text{all R. A.; all Dec.;}\ \varepsilon = \pm 0.21.$$

$$m44-V = 0.028 + 0.141\,(B-V) - 0.029\,(m44-4.08) + 0.006\,(B-V)\,(m44-4.08);$$
$$n = 50;\ \text{circumpolar stars;}\ \varepsilon = \pm 0.08.$$

$$m44-V = 0.027 + 0.166\,(V-R) - 0.023\,(m44-4.08) - 0.014\,(V-R)\,(m44-4.08);$$
$$n = 50;\ \text{circumpolar stars;}\ \varepsilon = \pm 0.08.$$

$$m44-V = -0.029 + 0.127\,(B-V) - 0.045\,(m44-4.45) + 0.051\,(B-V)\,(m44-4.45);$$
$$n = 83;\ 8\ \text{hs.} \leqslant \text{R. A.} < 16\ \text{hs.,}\ 60^\circ \geqslant \text{Dec.} > 30^\circ;\ \varepsilon = \pm 0.11.$$

$$m44-V = -0.029 + 0.151\,(V-R) - 0.041\,(m44-4.45) + 0.044\,(V-R)\,(m44-4.45);$$
$$n = 83;\ 8\ \text{hs.} \leqslant \text{R. A.} < 16\ \text{hs.;}\ 60^\circ \geqslant \text{Dec.} > 30^\circ;\ \varepsilon = \pm 0.12.$$

Other statistical results are also given in Tables 2-5.

I. Introduction

Müller and Kempf (1907) determined visually magnitudes of 14199 stars brighter than 7.5 mag. at Potsdam. Bailey, Frost, Pickering, Searle, and Wendell (see H. A. *50,* 1908) measured 9110 stars brighter than 6.5, distributed over the entire sky from the North to the South Pole. All these observations are very valuable for many astrophysical problems since they were performed with great care.

It is well known that the human eye is not an ideal detector for photometry. At very low levels of illumination (starlight) the eye becomes more sensitive to blue and less sensitive to red light

(Purkinje effect). When dark adapted, a different spectral curve (scotopic) is valid for the eye than under daylight conditions (photopic). These curves change from eye to eye and with age.

To make the best use of the above visual photometries, they should be transformed to an "ideal system" (see section III). In this paper we have taken the BVR photoelectric system defined by Johnson and Mitchell (1962) as the system to which Potsdam and Harvard photometries can be transformed.

II. Selection of the data

We have selected 1640 stars that are listed either in Potsdam or Harvard photometric catalogues (Müller and Kempf, 1907 and Pickering, 1908); in addition they also have been observed in the BVR system (Johnson and Mitchell, 1962). The photoelectric data have been taken from Johnson, Mitchell, Iriarte, and Wisniewski (1966) and Mendoza (1967, 1967b, and 1969a and 1969b). The selected stars are listed in Table 1. The columns of Table 1 give:
1st, Bright Star (BS) Catalogue number (Hoffleit, 1964);

2nd, Potsdam Star (PD) Catalogue number (Müller and Kempf, 1907);
3rd, V magnitude;

4th-5th, (B–V) and (V–R) colors;

6th, Mean PD magnitude (Müller and Kempf, 1907; Table 1, column 9), Gr;

7th, PD magnitude (Müller and Kempf, 1907; Table 1, column 6, left), Gr 1;

8th, PD magnitude (Müller and Kempf, 1907; Table 1, column 6, right), Gr 2;

9th, Mean Harvard Revised Magnitude (H. A. *50,* Table 1, column 9), mag;

10th, Magnitude in H. A. *14,* Table XXVII, column 13th (m14);

11th, Magnitude in H. A. *23,* Table VI, column 19th (m23);

12th, Magnitude in H. A. *24,* Table I, column 5th (m24,1);

13th, Magnitude in H. A. *24,* Table IV, column 6th (m24,4);

14th, Magnitude in H. A. *34,* Table VII, column 6th (m34);

15th, Magnitude in H. A. *44,* Table I, column 5th (m44);

16th, Magnitude in H. A. *45,* Table "A Photometric Durchmusterung", column 5th (m45);

17th, Magnitude in H. A. *46,* Table I, column 5th and Table VI, column 5th (m46);

18th, Remarks, C = HR standard (circumpolar star); D = double or multiple star; F = PD standard; V = variable star (only those with a small amplitude are included in Table 1).

III. Transfer from one system to another

Ideal systems are linear, have the Pogson scale and are independent of intensity. They may differ only in their zero point and/or in the spectral sensitivity function of their photometric receivers. Strömgren (1937) has shown that the difference between two ideal magnitude systems is nearly linear in the reciprocal color temperature or

$$m(1) - m(2) = a + bC \qquad (1)$$

where m (1) and m (2) are the magnitudes in the two systems; a and b are constants, and C is the color index.

Except for good photoelectric systems which because of the nature of the photocell are linear, a magnitude system will probably not be ideal. Instead of differing from another ideal system by merely a zero point correction they will also differ in scale and probably will also evidence Purkinje effect. Let us suppose that the scale of the catalogue in question is not a Pogson scale but it is characterized by the constant $2.5/(1-s)$ where $s << 1$, usually. If Purkinje effect is present the spectral sensitivity function will depend on the magnitude. Strömgren (1937) also has shown that the comparison of two observational systems, in the first order approximation, is given by equation (1) for any two ideal systems and by

$$m(1) - m(2) = a + bC + s(m-m_0) + p(m-m_0)\,C \qquad (2)$$

where m (1) and m (2) are, again, the magnitudes in the two systems, a, b, s, p are constants, C is the color index, m is either m (1) or m (2), and m_0 is also a constant (a standard magnitude). In equation (2), m (1), m (2), $m-m_0$ and C are known. A least squares solution can give a, b, s (Pogson scale deviation) and p (Purkinje effect contribution).

TABLE 1

BVR, POTSDAM AND HARVARD PHOTOMETRIES

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
					(PD magnitudes)			(Harvard magnitudes)									
3		4.61	1.04	0.78				4.68	4.62					4.62	4.78	4.72	
15	31	2.06	-0.11	-0.03	2.42	2.43	2.41	2.15	2.08			2.16		2.09	2.28		
21	41	2.27	0.34	0.31	2.56	2.58	2.55	2.42	2.42	2.39				2.44	2.44		C
25		3.88	1.03	0.75				3.94					3.85	3.90	4.08	3.95	
27	51	5.04	0.40	0.42	5.26	5.16	5.36	5.08	4.92			5.12		5.23	5.04		
39	81	2.84	-0.23	-0.10	3.28	3.12	3.25	2.87	3.04			2.77		2.80			
45	97	4.80	1.57	1.34	5.00	5.03	4.98	4.94	4.92			4.95		4.94			
48		4.46	1.66	1.40				4.68	4.62		4.60			4.83			V
63	128	4.61	0.06	0.08	4.67	4.72	4.62	4.44	4.30					4.57			
68	147	4.52	0.05	0.08	4.70	4.81	4.59	4.51	4.65					4.43	4.44		
74		3.55	1.22	0.85				3.75	3.62		3.91			3.85	3.69	3.66	
77		4.23	0.58	0.49				4.34					4.28			4.39	
98		2.80	0.62	0.50				2.90					2.91			2.89	
99		2.40	1.09	0.81				2.44					2.45	2.40	2.42	2.48	
100		3.94	0.17	0.14				3.90					3.95	3.78	3.69	4.18	
105		4.81	1.64	1.59				4.96	4.78	5.13			4.81	4.99	5.10	4.93	V
123	271	4.73	-0.10	0.00	4.93	4.92	4.94	4.88	4.83					4.93	4.87		D
126		4.37	-0.05	0.00				4.52					4.50			4.54	
127		4.55	0.14	0.18				4.48					4.33			4.64	
130	290	4.16	0.14	0.14	4.38	4.33	4.44	4.24	4.18	4.28				4.25	4.23		C
153	331	3.66	-0.19	-0.08	4.08	4.14	4.01	3.72	3.74					3.78	3.65		
154	332	4.36	-0.16	-0.04	4.52	4.53	4.52	4.44	4.39					4.50			
163	350	4.38	0.87	0.68	4.52	4.65	4.40	4.52	4.58					4.45			
165	355	3.28	1.28	0.92	3.48	3.41	3.50	3.49	3.41			3.66		3.40			
166	357	5.86	0.85	0.65	6.08	6.05	6.12	6.08			6.15			6.04	6.06		
168		2.23	1.17	0.78				2.47	2.25					2.47	2.69		
175	368	5.33	0.89	0.71	5.60	5.71	5.48	5.42	5.57					5.27			
179	376	4.81	-0.10	-0.01	5.08	5.20	4.97	4.85	4.80					4.90			
180		4.59	0.97	0.75				4.65					4.61	4.48	4.89	4.63	
188		2.02	1.01	0.72				2.24	2.13			2.31		2.35		2.18	
191		4.36	-0.01	0.06				4.53					4.49			4.57	
193	396	4.50	-0.06	0.05	4.86	4.91	4.81	4.70	4.64					4.77			
194		4.75	1.00	0.74				4.93	4.93					4.88		4.98	
215	419	4.06	1.12	0.85	4.34	4.22	4.39	4.30	4.38					4.21	4.31		V
219	429	3.44	0.58	0.50	3.72	3.74	3.75	3.64	3.64			3.64		3.62	3.65		D
222	432	5.76	0.88	0.77	5.98	5.96	6.01	5.82	5.68			5.93		5.85			
224	435	4.44	1.51	1.17	4.65	4.67	4.64	4.55	4.58					4.52			
226	448	4.53	-0.15	-0.03	4.80	4.82	4.79	4.42	4.42					4.43			
235		5.20	0.50	0.46				5.24	5.27					5.21			
244	480	4.82	0.53	0.48	5.06	5.11	5.00	4.93	4.89			5.06		4.80	4.97		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
248		4.78	1.57	1.23				4.92	5.04		4.82			4.89			
253	502	4.84	1.22	0.92	5.01	5.08	4.94	4.95	5.06					4.87	4.91		
264	519	2.39	-0.10	0.07	2.46	2.46	2.44	2.25	2.30	2.26				2.23	2.21		CV
265	520	4.64	0.96	0.77	4.86	4.91	4.81	4.83	4.89					4.90			
269	526	3.87	0.12	0.15	4.03	4.03	4.03	3.94	3.92					3.96			
271	532	4.42	0.94	0.73	4.60	4.69	4.50	4.62	4.65					4.59			
276	547	6.32	0.90	0.67	6.41	6.35	6.47	6.44	6.43			6.46		6.44			
280		4.27	-0.18	-0.03				4.39	4.06	4.64			4.46	4.35	4.28	4.53	
285	574	4.26	1.21	0.89	4.42	4.50	4.33	4.52	4.46		4.51			4.59			
290	597	5.98	0.16	0.18	6.13	6.19	6.07	5.86	5.90					5.83			
294	604	4.28	0.96	0.78	4.66	4.62	4.71	4.45	4.46					4.51	4.38		
315		6.12	1.01	0.73				6.41			6.45	6.53			6.24		
321	647	5.18	0.69	0.63	5.32	5.33	5.32	5.26	5.21					5.22	5.34		
322		3.31	0.90	0.71				3.35					3.39	3.19	3.43	3.38	D
330	668	5.53	0.34	0.35	5.70	5.76	5.63	5.67	5.68		6.00	5.58		5.51	5.56		
334		3.45	1.16	0.83				3.60	3.57		3.65			3.62		3.54	
335	674	4.25	-0.07	0.03	4.42	4.50	4.34	4.28	4.30					4.37	4.16		D
337	682	2.05	1.57	1.24	2.32	2.30	2.33	2.37	2.22		2.72			2.17			
338		3.97	-0.11	-0.01				4.13					4.07			4.19	
343	697	4.34	0.17	0.18	4.58	4.59	4.56	4.52	4.43					4.60	4.53		
351	707	4.66	1.03	0.76	4.72	4.76	4.69	4.89	4.92					4.86			
352	708	4.51	1.10	0.82	4.60	4.64	4.56	4.70	4.73					4.67			
360	734	4.66	1.03	0.75	4.84	4.82	4.87	4.64	4.59					4.70			
370		4.96	0.58	0.49				4.88					4.92	4.58	4.82	5.18	
378	779	5.17	0.07	0.11	5.58	5.48	5.67	5.28	5.13			5.30		5.40			
382	786	4.99	0.68	0.64	5.17	5.18	5.16	5.25	5.23					5.37	5.14		
383	789	4.76	0.03	0.08	5.01	5.07	4.95	4.67	4.71					4.67	4.63		
390	812	4.90	1.08	0.81	5.04	5.08	4.99	4.99	4.94					4.87	5.15		
399	834	4.74	1.04	0.78	4.96	4.95	4.97	4.96	4.84					5.07	4.98		
402		3.59	1.06	0.76				3.83	3.77			3.82		3.90			
403	835	2.68	0.13	0.15	2.96	2.97	2.95	2.80	2.84	2.79				2.77	2.78		CV
417	857	4.83	0.42	0.41	5.02	5.12	4.92	4.96	4.80					4.93	5.16		
424	864	2.02	0.60	0.49	2.31	2.31	2.31	2.12	2.15		2.01			2.20			V
429		3.41	1.57	1.26				3.40					3.32	3.32	3.52	3.44	V
434	889	4.84	1.38	1.06	5.12	5.05	5.18	5.12	5.24			5.18		5.04	5.01		
437	898	3.62	0.97	0.72	4.07	3.91	4.23	3.72	3.66					3.77			
440		3.95	0.99	0.75				3.96					3.92			4.00	
442	911	4.72	1.00	0.77	4.81	4.82	4.80	4.88	4.93					4.77	4.93		
458	952	4.10	0.54	0.46	4.28	4.31	4.26	4.18	4.24					4.13	4.16		
461	959	5.56	1.38	0.97	5.64	5.71	5.56	5.74	5.79					5.73	5.70		
464	963	3.57	1.28	0.96	3.81	3.79	3.83	3.77	3.69					3.75	3.88		
472		0.47	-0.15	-0.03				0.60					0.51			0.70	
477	994	4.94	-0.09	-0.01	5.22	5.15	5.29	4.90	4.94		4.97			4.90	4.80		
483	1004	4.96	0.62	0.53	5.29	5.19	5.39	5.10	5.24					4.97			
485	1009	5.99	1.01	0.77	6.12	6.17	6.06	6.02	6.13					5.90			
486		5.07	0.88	0.69				6.03					6.03			6.04	
489	1012	4.44	1.36	1.06	4.70	4.72	4.68	4.68	4.67		4.95			4.47	4.62		
493	1020	5.24	0.84	0.69	5.56	5.52	5.60	5.32	5.35					5.27	5.34		
496	1026	4.06	-0.04	0.16	4.27	4.33	4.21	4.19	4.24		4.27			4.05	4.20		V
509		3.50	0.72	0.62				3.65	3.56			3.77		3.65		3.63	

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
510	1046	4.26	0.96	0.74	4.56	4.48	4.64	4.50	4.42			4.65		4.45	4.46		
511	1050	5.63	0.81	0.64	5.82	5.70	5.94	5.74						4.84	4.64		
519		5.49	1.59	1.49				5.46					5.40			5.52	
530	1078	5.86	0.74	0.68	6.07	6.09	6.05	5.89	5.98					5.74	5.96		D
531		4.68	0.32	0.29				4.77	4.77					4.74	4.74	4.82	
534	1088	5.94	0.30	0.33	6.17	6.17	6.17	5.94	5.83			6.10		5.82	6.00		F
539		3.72	1.14	0.80				3.92	3.85					3.94	3.96		
542	1102	3.38	-0.15	-0.04	3.64	3.71	3.58	3.44	3.55	3.43				3.40	3.39		C
544	1105	3.42	0.48	0.42	3.64	3.69	3.58	3.58	3.58					3.58			
545	1109	3.88	-0.04	0.01	4.15	4.07	4.23	4.04	4.27			4.02		3.87	4.00		D
549	1114	4.63	0.94	0.73	4.91	4.89	4.93	4.84	4.74			4.99		4.78			
553	1127	2.65	0.13	0.14	3.02	2.96	3.07	2.72	2.79		2.45	2.87		2.79			
555		4.41	1.59	1.73				4.41					4.11		4.69	4.43	
558		5.11	-0.06	0.02				5.00					4.95	4.86	4.86	5.35	
566		3.67	0.84	0.68				3.73					3.62			3.84	
569	1158	4.79	0.28	0.28	5.02	4.94	5.10	4.83	4.89					4.74	4.85		
570		4.71	0.94	0.75				4.72					4.65			4.78	
574		4.83	0.88	0.70				4.74					4.65			4.84	
575	1165	4.54	0.16	0.18	4.72	4.79	4.66	4.61	4.60	4.62				4.62	4.61		C
580	1176	3.98	-0.01	0.06	4.12	4.18	4.05	4.06	4.06					4.05			
585		4.01	1.56	1.26				4.18	3.83			4.48		4.25	4.27	4.08	
590	1183	5.04	-0.08	0.03	5.22	5.22	5.22	4.99	4.93					5.05	5.00		
591		2.84	0.29	0.29				3.02					2.96			3.08	
595	1193	3.82	0.02	0.08	4.12	4.07	4.18	4.16	4.21			4.24		4.02			D
599	1197	5.50	0.03	0.06	5.80	5.76	5.83	5.44	5.40					5.48			
602		5.14	1.49	1.22				4.96					4.91	4.97		5.01	
603	1204	2.10	1.21	0.94	2.35	2.37	2.33	2.20	2.14					2.26			D
612		4.69	-0.17	-0.04				4.74	4.63			4.80	4.79	4.58		4.92	
617	1234	2.00	1.15	0.84	2.19	2.19	2.19	2.23	2.04			2.45		2.19			
618	1236	5.67	0.61	0.59	5.86	5.86	5.86	5.90							5.90		
620	1241	4.83	0.12	0.14	4.95	4.83	5.07	4.77	4.77					4.77			
622	1251	3.00	0.14	0.14	3.30	3.27	3.33	3.08	3.12			3.14		2.96			
627	1260	6.35	0.33	0.34	6.56	6.46	6.66	6.36				6.36					
641	1276	6.43	0.60	0.55	6.58	6.58	6.59	6.50						6.53	6.46		
647	1291	6.06	0.40	0.38	6.12	6.12	6.13	6.03							6.03		
648	1290	5.70	1.55	1.24	5.76	5.76	5.76	5.99	6.17					5.81			
649	1292	4.37	0.88	0.67	4.70	4.69	4.70	4.54	4.45			4.54		4.63			
	1313	7.38	0.25	0.26	7.50	7.40	7.59										
654	1315	6.48	0.28	0.34	6.78	6.68	6.89	6.42							6.42		
656	1319	5.79	0.44	0.40	5.96	6.00	5.92	5.84	5.79		5.91			5.83			
664	1331	4.01	0.02	0.03	4.28	4.28	4.29	4.07	4.15			3.95		4.10			
	1338	6.52	0.45	0.52	6.80	6.73	6.88										
	1340	6.63	0.50	0.55	6.90	6.85	6.94										
695		5.20	0.60	0.54				5.37	5.36			5.57		5.21		5.34	
	1364	6.83	0.31	0.41	7.02	7.05	7.00										
	1377	6.37	0.56	0.60	6.62	6.56	6.69										
	1386	7.44	0.70	0.73	7.56	7.55	7.58										
	1387	6.98	0.62	0.58	7.06	7.00	7.12										
696	1409	6.25	0.30	0.33	6.48	6.49	6.47	6.24	6.23		6.26			6.27	6.21		
699	1413	4.70	1.53	1.18	4.83	4.93	4.73	4.86	4.87					4.80	4.91		

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
707	1430	4.53	0.13	0.16	4.78	4.81	4.75	4.59	4.61	4.56				4.60	4.58		D
708		4.89	-0.02	-0.02				4.90	4.88					4.90	4.87	4.96	
710		5.83	0.14	0.12				5.84	5.48		6.02	5.84		5.84		6.03	
	1417	7.38	0.44	0.44	7.66	7.82	7.42										
	1422	7.19	0.72	0.65	7.28	7.34	7.22										
	1446	7.22	0.77	0.71	7.26	7.26	7.27										
718	1448	4.29	-0.06	0.02	4.48	4.47	4.50	4.34	4.41			4.29		4.31			
721		4.25	-0.14	-0.03				4.44					4.28			4.55	
740		4.75	0.45	0.41				4.82	4.70		4.98						
749		4.89	-0.06	0.02				4.95						4.78	4.80	4.84	D
	1471	7.01	0.78	0.71	7.10	7.09	7.11										
753	1545	5.82	0.97	0.83	6.16	6.12	6.20	5.92	5.89					5.96			
754	1547	4.86	0.86	0.65	5.06	5.05	5.08	5.02	4.90		5.11	5.14		4.91			
779		4.06	-0.21	-0.07				4.04	4.13			3.88		4.10	3.90	4.21	
788	1598	4.92	0.59	0.50	5.24	5.26	5.21	4.99	4.90					5.06	5.00		
789		4.75	0.06	0.10				4.53					4.72	4.28	4.17	4.95	
794		4.11	1.02	0.79				4.06					3.92	4.05	4.00	4.20	
	1607	7.70	0.90	0.85	7.98	8.09	7.88										
797	1611	6.30	0.06	0.05	6.62	6.57	6.66	6.27	6.26		6.22	6.35		6.24			
799	1614	4.13	0.49	0.46	4.33	4.33	4.34	4.22	4.24					4.30	4.13		
801	1616	4.67	-0.13	-0.02	4.92	5.01	4.83	4.58	4.68					4.47			
804	1623	3.47	0.09	0.11	3.80	3.80	3.80	3.58	3.59			3.67		3.41	3.64		D
811		4.25	-0.14	-0.02				4.39	4.28		4.46			4.37		4.45	
813	1635	4.27	0.31	0.30	4.41	4.54	4.28	4.36	4.38					4.33			
818		4.46	0.48	0.43				4.61	4.67		4.71			4.65	4.48	4.56	
824	1661	4.52	1.11	0.80	4.79	4.84	4.74	4.62	4.64			4.63		4.63	4.60		
825	1664	6.26	0.88	0.82	6.37	6.41	6.33	6.53							6.53		
834	1677	3.79	1.69	1.23	3.91	3.88	3.94	3.93	3.93					3.93			
838	1684	3.63	-0.10	-0.02	3.67	3.71	3.62	3.68	3.78					3.58			
840	1687	4.23	0.34	0.30	4.51	4.61	4.41	4.27	4.44					4.13	4.24		
841		4.46	0.99	0.76				4.50	4.71	4.54			4.16	4.60	4.54	4.42	
843	1698	4.53	1.56	1.21	4.66	4.72	4.61	4.67	4.80					4.47	4.75		
850		4.77	0.90	0.70				4.81	4.83			4.88		4.90		4.62	
854	1708	3.95	0.75	0.62	4.10	4.10	4.11	4.06	3.97					4.07	4.14		
857		6.05	0.87	0.71				6.14				6.11		6.12	6.18		
874		3.87	1.12	0.79				4.05	3.95		4.24			4.00		4.02	
875		5.17	0.08	0.11				5.27	5.21		5.38			5.13		5.37	
878	1756	5.80	0.41	0.38	6.06	6.04	6.07	5.85	5.88		5.90			5.78			
879	1757	4.70	0.06	0.10	4.88	4.77	4.98	4.62	4.74					4.50			
882	1760	4.94	1.25	0.89	5.10	5.03	5.17	4.97	5.04					4.90			
887	1768	4.63	0.04	0.05	4.74	4.70	4.78	5.55	5.49			5.53		5.62	5.56		D
896	1776	4.70	-0.12	-0.03	4.96	4.96	4.96	4.69	4.60			4.75		4.71			
897		2.91	0.12	0.14				3.06					3.13	2.96	2.79	3.28	D
906	1793	5.95	0.15	0.13	5.98	6.01	5.95	5.95	5.97		5.90			5.98			
911	1797	2.53	1.64	1.35	2.89	2.83	2.96	2.82	2.68			2.93		2.84			
915	1805	2.93	0.70	0.59	3.17	3.17	3.16	3.08	3.11					3.03	3.10		
919		4.09	0.16	0.13				4.16	4.10			4.12		4.12		4.32	
932	1837	4.88	0.02	0.08	5.12	5.20	5.04	4.89	4.73					4.98	4.96		
937	1844	4.05	0.60	0.53	4.22	4.21	4.22	4.17	4.14					4.20			
941	1852	3.81	0.98	0.74	3.98	3.94	4.01	4.00	3.95					4.07	3.98		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
947	1873	4.64	1.11	0.83	4.70	4.67	4.74	4.82	4.74					4.90			
951	1885	4.37	1.03	0.77	4.68	4.69	4.67	4.53	4.48					4.64	4.46		
963		3.85	0.51	0.46				3.95	3.77			4.05		3.95		4.03	D
972	1914	4.89	-0.02	0.06	5.09	5.06	5.12	4.95	4.93			4.88		5.16	4.83		
977		5.74	2.27	1.89				5.72					5.71			5.74	V
984		4.80	0.23	0.22				4.90	4.80		5.02			4.83	4.85	5.00	
985	1931	4.85	-0.15	-0.03	5.02	5.18	5.03	4.76	4.78	4.72	4.76			4.75	4.81		C
	1942	7.40	0.57	0.49	7.80	7.90	7.70										
991	1948	4.82	1.49	1.07	4.96	4.90	5.03	4.92	4.80					4.93	5.04		
996	1964	4.84	0.68	0.57	5.23	5.27	5.19	4.96	4.97					5.01	4.90		
999	1965	4.47	1.54	1.20	4.54	4.54	4.54	4.72	4.73					4.70			F
1002	1973	4.95	0.04	0.08	5.18	5.10	5.27	4.98	4.84					5.03			
1003		3.70	1.62	1.58				3.95	3.79			4.11		3.95			
1006		5.54	0.64	0.54				5.48					5.47			5.49	
1008		4.27	0.71	0.62				4.30					4.27	4.26	4.21	4.47	
1010		5.24	0.60	0.49				5.16					5.13			5.20	
1016		5.52	0.88	0.66				5.67	5.76			5.69		5.55	5.68		
1017	1993	1.79	0.48	0.45	2.16	2.16	2.15	1.90	1.94						1.85		
1030	2023	3.60	0.89	0.68	3.86	3.79	3.92	3.80	3.77			3.82		3.78	3.85		
1034	2037	4.98	-0.10	0.01	5.23	5.18	5.29	4.94	4.95			4.97		4.90			
1035	2038	4.21	0.41	0.37	4.43	4.42	4.44	4.42	4.16					4.48	4.63		D
1038	2044	3.75	-0.09	-0.01	3.94	3.80	4.07	3.75	3.77			3.70		3.79			
1040	2050	4.54	0.56	0.51	4.75	4.73	4.77	4.76	4.79					4.73			
1044	2055	4.67	-0.09	0.02	4.92	4.87	4.96	4.67	4.77					4.53	4.71		
1046	2061	5.10	0.04	0.09	5.26	5.23	5.28	4.98	4.96		4.91			5.07			D
1052	2074	4.38	1.34	1.09	4.52	4.54	4.49	4.55	4.39					4.50	4.76		
1066	2104	4.10	1.13	0.77	4.44	4.37	4.50	4.28	4.26			4.30		4.28			
1069	2110	5.32	0.41	0.41	5.51	5.52	5.50	5.35	5.40					5.27	5.39		
1070		4.73	-0.09	-0.01				4.80	4.75		4.82			4.67		4.94	
1084		3.73	0.88	0.72				3.81	3.66		3.93	3.88		3.80		3.80	
1087	2148	4.23	-0.06	0.10	4.63	4.63	4.63	4.26	4.24					4.22	4.31		
1088		4.28	-0.12	0.00				4.32	4.21			4.31		4.29		4.47	
1101		4.28	0.57	0.49				4.40	4.35		4.37			4.44	4.45		
1103	2182	6.50	0.15	0.17	6.74	6.71	6.76	6.42	6.15		6.45	6.52		6.52	6.47		
1106		4.58	1.04	0.84				4.58					4.48	4.55	4.66	4.62	
	2180	6.77	0.00	0.05	6.94	6.89	6.99										
	2184	7.28	0.08	0.10	7.48	7.49	7.46										
1122	2212	3.01	-0.12	0.02	3.31	3.31	3.30	3.10	3.18					3.11	3.00		
1129	2226	4.79	0.81	0.74	4.92	4.92	4.92	4.96	4.98					4.94	4.96		F
	2230	7.52	0.15	0.15	7.82	7.75	7.88										
1131	2233	3.83	0.05	0.12	3.84	3.92	3.75	3.94	4.01					3.88			
1134		5.00	-0.16	-0.05				4.93	4.77	4.94			4.92	4.94	4.89	5.11	
1135	2237	3.77	0.42	0.41	4.00	4.03	3.96	3.93	4.00					3.90	3.90		
1136		3.54	0.92	0.72				3.72	3.68		3.66	3.71		3.84			
1138	2243	5.44	0.09	0.11	5.56	5.48	5.64	5.40	5.31					5.50			
1140	2244	5.46	-0.04	0.06	5.90	5.88	5.92	5.43				5.39		5.40	5.42		
1142	2245	3.70	-0.12	-0.01	4.01	3.85	4.17	3.81	3.82					3.80			
1144	2248	5.65	-0.07	0.03	6.06	5.97	6.16	5.63			5.81	5.46		5.62			
1145	2249	4.30	-0.11	-0.01	4.61	4.47	4.75	4.37	4.44					4.30			
1148	2252	4.66	0.03	0.13	4.84	4.81	4.88	4.67	4.65	4.61				4.71	4.70		C

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
1149	2254	3.87	-0.07	0.04	4.11	4.02	4.20	4.02	3.98					4.07			
1151	2255	5.76	-0.04	0.06	6.14	6.10	6.19	5.85				5.95		5.84	5.77		
1152	2256	6.43	-0.02	0.04	6.71	6.76	6.66	6.46				6.46					
1155	2260	4.48	1.88	1.71	4.48	4.46	4.50	4.71	4.61	4.78	4.71	4.71		4.76	4.68		VC
1156	2262	4.18	-0.06	0.07	4.34	4.29	4.38	4.25	4.22			4.20		4.28	4.30		
	2269	6.83	0.02	0.07	7.18	7.13	7.24										
	2275	7.04	0.03	0.04	7.35	7.21	7.49										
	2276	7.24	0.07	0.12	7.55	7.57	7.53										
1162		4.42	1.62	1.34				4.64	4.39					4.83	4.70		
1165	2280	2.87	-0.09	0.03	3.09	3.07	3.11	2.96	3.00			2.88		3.00			
	2281	6.83	0.07	0.09	7.14	7.12	7.15										
1172	2293	5.45	-0.07	0.05	5.83	5.82	5.84	5.51							5.55		
1173		4.23	0.42	0.39				4.33	4.30			4.36		4.33			
1178	2300	3.62	-0.09	0.01	3.92	3.78	4.07	3.80	3.77					3.90	3.73		
1180	2302	5.09	-0.08	0.07	5.36	5.22	5.50	5.18						5.19	5.16		V
	2303	6.57	-0.02	0.03	7.04	7.09	7.00										
	2308	7.03	0.03	0.05	7.30	7.28	7.32										
1183	2309	6.17	-0.05	0.03	6.36	6.30	6.43	6.11							6.11		
1185	2311	6.07	-0.01	0.07	6.30	6.19	6.40	5.92	5.83					6.02	5.91		
	2312	6.72	0.06	0.10	7.04	6.98	7.10										
	2318	6.93	0.09	0.10	7.20	7.17	7.23										
1189		4.27	-0.01	0.02				4.35		4.20			4.52	4.18	4.29	4.54	D
1195		4.17	0.95	0.71				4.24		4.37			4.12	4.38	4.20	4.15	
1201	2338	5.97	0.34	0.33	6.34	6.21	6.47	5.96	6.04					5.87			
	2339	6.36	0.12	0.10	6.57	6.57	6.57										
1203	2343	2.85	0.12	0.14	3.05	3.13	3.16	2.91	3.10					2.87	2.76		
1204	2351	5.04	-0.10	0.07	5.20	5.23	5.17	4.87	4.75					4.97	4.89		
1211		4.45	0.68	0.59				4.68	4.79					4.58		4.68	D
1213		4.65	-0.13	-0.03				4.76	4.70			4.77	4.75	4.74		4.86	
1220	2369	2.89	-0.18	-0.07	3.14	3.06	3.23	2.96	3.04					2.88			
1228		4.04	0.02	0.16				4.05	4.06					4.08	4.01		
1231		2.94	1.60	1.26				3.19	3.05			3.34		3.41		2.95	
	2378	7.20	0.04	0.05	7.42	7.43	7.41										
1233	2391	6.37	0.42	0.38	6.78	6.76	6.81	6.42			6.37	6.32			6.56		
1238	2403	5.89	0.32	0.32	6.20	6.16	6.25	5.76	5.68					5.84			
1240		4.66	-0.14	0.02				4.69	4.62			4.71		4.62		4.80	
1242	2414	5.08	0.50	0.51	5.27	5.27	5.27	5.07	4.94					5.13	5.13		
1251	2432	3.91	0.03	0.08	4.20	4.10	4.31	3.94	3.99			4.02		3.90	3.85		
1254	2438	5.46	0.36	0.37	5.80	5.88	5.73	5.48	5.55			5.49		5.41			
1256	2440	4.37	1.07	0.79	4.48	4.55	4.40	4.50	4.45					4.54			
1261	2448	4.29	0.02	0.08	4.51	4.51	4.51	4.33	4.54		4.27			4.20	4.30		
1264		4.49	1.62	1.65				4.46					4.41			4.51	
1273	2472	4.03	-0.03	0.12	4.33	4.36	4.30	4.03	4.32			3.90		3.88			
1279	2481	6.01	0.40	0.38	6.38	6.30	6.47	5.94			6.04			5.91	5.87		D
	2511	6.62	0.42	0.39	6.98	6.96	7.00										
1292	2520	5.73	0.36	0.35	6.10	5.96	6.24	5.71	5.68		5.71			5.75			
1298		4.05	0.33	0.31				4.14	4.10					4.17	4.52	4.16	
1302		4.93	0.33	0.35				4.85					4.78	4.88	4.82	4.92	
1303	2535	4.15	0.95	0.79	4.26	4.31	4.21	4.28	4.23			4.30		4.30			
1306	2538	4.71	1.01	0.80	4.77	4.82	4.72	4.89	4.94		4.92			4.80			

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
1309	2543	5.29	0.36	0.35	5.50	5.54	5.47	5.35	5.28			5.50		5.28			
1311	2549	4.84	0.80	0.66	5.05	5.05	5.05	4.98	4.97			4.99		4.99			FD
	2550	7.05	0.42	0.38	7.26	7.23	7.30										
1318		4.86	1.18	0.85				5.13	4.93		5.38			5.09		4.83	D
1319	2570	6.32	0.40	0.38	6.61	6.72	6.50	6.35	6.39		6.49			6.17			
1320	2571	4.30	-0.05	0.05	4.54	4.63	4.46	4.32	4.28			4.39		4.29			
1324	2575	4.61	0.04	0.15	4.86	4.73	4.99	4.57	4.57		4.72			4.50	4.50		
1325		4.43	0.82	0.69				4.48	4.51					4.46		4.48	
1326		3.86	1.10	0.86				3.83					3.79	3.90	3.77	3.88	
1327	2581	5.27	0.81	0.64	5.44	5.46	5.42	5.40	5.48			5.35		5.37			
1329	2582	4.94	0.26	0.26	5.20	5.13	5.28	4.80	4.65					4.90	4.84		
1331	2592	5.65	0.28	0.28	5.82	5.81	5.82	5.56	5.43			5.72		5.53			
1346	2608	3.65	0.99	0.73	3.98	3.91	4.04	3.86	3.86			3.91		3.82			
	2610	6.89	0.56	0.48	7.17	7.28	7.06										
1347		3.56	-0.12	-0.01				3.59	3.32	3.64			3.76	3.60	3.55	3.67	
1350	2615	4.86	-0.02	0.09	5.00	4.88	5.13	4.89	4.92					4.93	4.83		
1351	2614	5.59	0.28	0.28	5.72	5.83	5.60	5.59	5.67					5.47	5.64		
1354	2619	6.11	0.37	0.37	6.43	6.49	6.37	5.96	5.88					6.01	6.00		
1355		4.44	1.08	0.83				4.42					4.39			4.46	
1356	2621	5.26	0.22	0.23	5.44	5.52	5.35	5.27	5.12			5.27		5.34	5.36		
1358	2625	6.17	0.46	0.42	6.47	6.44	6.50	6.14							6.14		
	2630	6.80	0.44	0.42	7.06	7.00	7.11										
	2632	6.81	0.44	0.39	7.19	7.21	7.17										
	2635	6.61	0.41	0.38	6.94	6.93	6.94										
1368	2639	5.72	0.32	0.31	5.90	6.04	5.76	5.76	5.77					5.73	5.78		
1373	2648	3.76	0.99	0.73	4.16	4.13	4.19	3.93	3.98			3.94		3.87			
	2649	7.18	0.45	0.42	7.39	7.39	7.39										
1376	2653	5.64	0.30	0.27	5.93	5.99	5.87	5.68	5.61					5.77	5.66		
1380	2662	4.80	0.15	0.16	5.12	5.10	5.15	4.84	4.74					4.94			
1381	2663	5.12	0.07	0.10	5.40	5.38	5.42	5.06	5.12					5.01			
1383		5.17	0.08	0.10				5.23	5.28		5.29	5.06		5.30	5.23		
1385	2670	5.97	0.37	0.38	6.38	6.29	6.46	5.96							5.96		
1387	2675	4.22	0.13	0.16	4.58	4.60	4.56	4.36	4.58					4.14			
1388	2676	5.28	0.25	0.26	5.53	5.54	5.52	5.42	5.48					5.37			
1389	2678	4.28	0.04	0.09	4.54	4.49	4.59	4.24	4.24					4.17	4.31		
1391	2681	6.46	0.49	0.45	6.74	6.74	6.74	6.39			6.39						
	2683	7.53	0.68	0.57	7.85	7.96	7.74										
1392	2686	4.28	0.26	0.27	4.52	4.47	4.56	4.40	4.55					4.24			
	2687	7.38	0.54	0.46	7.62	7.47	7.76										
1393		3.96	1.49	1.17				4.06	4.03	4.20			3.94	4.15	4.22	3.85	
1394	2688	4.50	0.25	0.27	4.80	4.78	4.82	4.60	4.61					4.54	4.64		
1396	2695	4.69	0.98	0.72	5.00	4.97	5.02	4.94	4.91					4.97			
1403	2708	5.72	0.27	0.25	5.98	5.91	6.05	5.74	5.68					5.80			
	2711	7.51	0.55	0.49	7.73	7.67	7.79										
1408	2716	5.90	0.32	0.31	6.19	6.10	6.28	5.97			6.04			5.90			
1409	2718	3.54	1.01	0.73	3.88	3.80	3.96	3.63	3.67					3.67	3.54		
1411	2720	3.83	0.95	0.71	3.93	3.95	3.91	4.04	3.92					4.17			
1412	2721	3.39	0.18	0.18	3.68	3.64	3.73	3.62	3.62					3.63			
1414	2724	5.03	0.23	0.20	5.41	5.34	5.48	5.12	5.16			5.06		5.14			
	2726	6.59	0.53	0.47	6.85	6.74	6.96										

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
	2728	7.03	0.50	0.46	7.16	7.17	7.15										
	2730	6.91	0.45	0.41	7.18	7.19	7.17										
1422	2741	5.58	0.32	0.32	5.93	5.81	6.05	5.70	5.55			5.74		5.82			
1427	2745	4.78	0.17	0.17	5.02	5.01	5.03	4.84	4.94			4.91		4.77	4.76		
1428	2746	5.48	0.26	0.24	5.66	5.58	5.73	5.49	5.49			5.64		5.32	5.52		
1430	2747	5.41	0.26	0.26	5.66	5.65	5.68	5.49	5.43					5.60	5.45		
	2748	6.51	0.43	0.41	6.86	6.82	6.91										
1432	2761	6.02	0.34	0.33	6.32	6.26	6.38	6.04			6.07			6.02			
1436	2767	6.40	0.41	0.38	6.66	6.81	6.51	6.43			6.56				6.30		
1437		4.91	1.31	0.94				4.97	4.93					5.06		4.91	
	2782	6.62	0.43	0.39	6.88	6.78	6.98										
1444	2783	4.65	0.25	0.24	4.89	4.94	4.84	4.75	4.85			4.69		4.70			
1448	2789	5.68	0.05	0.12	6.08	6.18	5.97	5.78	5.84			5.84		5.66			
1453		4.51	0.98	0.75				4.59	4.43	4.64		4.83	4.57	4.55	4.58	4.52	
1454	2800	4.27	1.22	0.98	4.37	4.37	4.37	4.46	4.44					4.53	4.41		
1457	2806	0.86	1.54	1.23	1.15	1.15	1.15	1.06	1.00			1.11		1.07			
1458	2805	4.26	0.18	0.19	4.40	4.39	4.40	4.38	4.55		4.37	4.25		4.33			
1459	2809	6.02	0.38	0.37	6.23	6.16	6.30	6.04							6.04		
1463		3.92	-0.21	-0.10				4.12	4.11					4.02		4.24	
1464		3.82	0.98	0.75				3.88	3.80	3.97			3.78	3.90	3.98	3.86	
	2813	6.65	0.44	0.38	6.90	6.99	6.82										
1472	2829	5.79	0.31	0.31	6.13	6.09	6.17	5.80			5.77			5.84			
1473	2831	4.27	0.12	0.14	4.66	4.73	4.60	4.30	4.34			4.40		4.17			
1479	2840	4.70	0.14	0.18	4.94	4.92	4.95	4.85	4.84					4.86			
1480	2841	5.39	0.25	0.23	5.64	5.66	5.62	5.55	5.49			5.92		5.39	5.41		
1481		3.87	1.09	0.84				3.98	3.89		4.06			4.10		3.88	D
1496		4.34	1.61	1.59				4.54	4.48		4.66			4.51	4.69	4.36	V
1497	2860	4.29	-0.14	-0.03	4.48	4.52	4.44	4.33	4.40			4.28		4.30			
1502		4.45	0.34	0.34				4.52					4.55	4.60	4.37	4.56	
1507	2879	5.40	0.25	0.25	5.60	5.54	5.66	5.35	5.33			5.46		5.25			
1517	2894	6.01	1.21	0.88	6.22	6.23	6.22	6.13							6.13		
1519	2895	5.37	0.19	0.18	5.64	5.75	5.52	5.43	5.65					5.21			
1520		4.02	-0.16	-0.06				4.18	4.31					3.97		4.26	
1532		5.51	0.64	0.55				5.63	5.83					5.47		5.60	
	2900	7.26	0.56	0.48	7.38	7.34	7.43										
1542	2924	4.29	0.03	0.11	4.59	4.55	4.63	4.38	4.41	4.35				4.42	4.35		C
1543	2927	3.19	0.46	0.42	3.50	3.45	3.55	3.31	3.33			3.36		3.30	3.25		
	2930	7.11	0.56	0.49	7.38	7.35	7.42										
	2934	7.29	0.50	0.44	7.66	7.60	7.72										
1544	2935	4.35	0.01	0.06	4.68	4.67	4.68	4.35	4.42			4.32		4.32			
1547	2940	5.11	0.21	0.22	5.32	5.35	5.29	5.12	5.07			5.15		5.13			
1551	2947	4.77	1.41	1.09	4.90	4.86	4.93	5.04	5.04					5.00	5.09		
1552	2946	3.68	-0.16	-0.05	3.98	4.01	3.94	3.78	3.98			3.71		3.66			
	2943	6.77	0.55	0.46	6.86	6.81	6.92										
	2950	6.29	0.50	0.45	6.52	6.49	6.54										
	2926	6.96	0.58	0.52	7.16	7.11	7.21										
1560		4.40	0.23	0.32				4.45	4.25		4.65			4.46		4.35	
1566	2983	6.37	0.29	0.28	6.63	6.59	6.67	6.24							6.24		
1567	2982	3.73	-0.19	-0.06	3.99	4.05	3.93	3.87	3.86			4.02		3.73			V
1568	2988	4.47	-0.02	0.09	4.70	4.62	4.78	4.44	4.50			4.40		4.43			D

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
1570	2991	4.67	0.08	0.11	4.94	4.94	4.94	4.74	4.82		4.72			4.69			F
1577	3004	2.69	1.53	1.06	2.84	2.84	2.84	2.90	2.72					2.99	2.99		
1580	3007	4.06	1.15	0.88	4.22	4.35	4.09	4.28	4.33					4.24			
1592	3021	4.95	0.05	0.05	5.10	5.05	5.14	4.99	5.07					4.93	4.98		D
1601	3027	4.49	1.40	1.05	4.60	4.66	4.55	4.73	4.72					4.82	4.66		
	3035	6.76	0.45	0.38	6.98	6.92	7.04										
1603	3040	4.03	0.93	0.70	4.14	4.11	4.17	4.22	4.21	4.22				4.24	4.19		
1611		4.78	0.26	0.28				4.85	4.90					4.80			
1612	3048	3.75	1.22	1.13	3.85	3.84	3.86	3.94	3.96			3.96		3.80	4.02		V
1614		6.21	1.06	0.85				6.50			6.64				6.36		
1617		4.81	-0.19	-0.08				4.81	4.66					4.82	4.72	5.05	
1620	3060	4.64	0.16	0.16	4.90	4.79	5.01	4.70	4.73					4.67			
1621		4.92	-0.05	0.02				4.99	5.05		5.01			4.90		5.11	
1637	3078	5.00	0.34	0.31	5.16	5.17	5.14	4.99	4.89			5.07		5.13	4.87		
1638	3077	4.68	-0.05	0.04	5.08	5.09	5.07	4.65	4.71					4.67	4.57		
1641	3085	3.18	-0.18	-0.05	3.46	3.44	3.48	3.28	3.33					3.26	3.25		
1648	3096	6.17	3.44	2.32	6.02	5.97	6.07										V
1652		4.55	1.20	0.91				4.62		4.67			4.59	4.69	4.66	4.48	D
1654		3.19	1.46	1.10				3.29	3.26			3.43		3.36		3.10	
1657		5.14	-0.06	0.01				5.19	5.18		5.18			5.23	5.08	5.09	
1663		5.01	1.46	1.20				4.92					4.91			4.92	
1666		2.79	0.13	0.14				2.92	2.87		2.88			2.87		3.06	
1670	3121	6.01	0.27	0.25	6.22	6.11	6.32	5.97	5.96					5.97	5.98		
1672	3126	5.43	0.24	0.20	5.69	5.66	5.72	5.42	5.32			5.59		5.34			
1674		4.72	0.52	0.48				4.76					4.70			4.83	
1676	3129	4.82	0.32	0.32	5.20	5.25	5.16	4.86	4.81					4.91			
1679		4.27	-0.20	-0.08				4.34	4.39					4.30			
1689	3151	4.88	0.18	0.19	5.00	4.93	5.08	4.78	4.92					4.67	4.74		
1690		6.67	-0.07	0.02				6.58			6.63	6.50			6.60		
1696		4.44	-0.09	-0.02				4.54	4.66					4.49		4.46	D
1698	3159	4.45	1.19	0.85	4.70	4.68	4.72	4.64	4.47			4.80		4.65			D
1702		3.29	-0.11	-0.01				3.30	3.29					3.28		3.32	
1705		4.36	-0.10	-0.01				4.46	4.55			4.45		4.31		4.51	D
1708	3171	0.08	0.80	0.60	0.43	0.43	0.43	0.21	0.18					0.24			V
1713		0.13	-0.03	0.01				0.34	0.32			0.35		0.28	0.40	0.36	
1724	3193	6.42	-0.02	0.05	6.78	6.87	6.68	6.37							6.37		
1726	3195	4.54	1.27	0.98	4.55	4.57	4.53	4.81	4.97					4.68	4.79		
1729	3202	4.71	0.62	0.53	4.83	4.82	4.84	4.85	4.95		4.77			4.83	4.85		
1735		3.59	-0.12	-0.02				3.68	3.65					3.62		3.77	
1743		4.83	1.00	0.74				4.91		4.84			4.96	5.02	4.96	4.76	
1748		6.35	-0.11	0.01				6.42	6.40					6.43			
1756		4.29	-0.25	-0.12				4.29	4.28					4.17		4.41	
1761	3250	6.65	-0.08	0.04	6.92	6.95	6.90	6.41							6.41		
1762		4.71	-0.05	0.05				4.73	4.63			4.76		4.71		4.83	D
1763	3251	5.80	-0.13	0.01	6.26	6.18	6.33	5.71	5.75			5.65		5.72			
1764		5.69	-0.11	-0.02				5.65			5.68			5.51	5.77		
1765		4.74	-0.16	-0.05				4.65	4.65					4.55		4.76	
1770	3259	5.00	-0.15	-0.05	5.21	5.29	5.13	4.99	5.00			5.07		4.97	4.93		D
1781		5.70	-0.21	-0.08				5.64			5.58			5.51		5.82	
1784		4.12	0.96	0.72				4.21	4.30					4.26		4.18	

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
1786	3273	6.32	-0.15	-0.05	6.64	6.57	6.70	6.32							6.32		
1788		3.35	-0.17	-0.09				3.44	3.49					3.38		3.39	DV
1789	3275	4.96	-0.20	-0.08	5.20	5.19	5.21	4.73	4.64			4.76		4.78			
1790	3276	1.64	-0.22	-0.09	2.06	1.98	2.15	1.70	1.86			1.64		1.59			
1791	3277	1.65	-0.13	-0.01	2.01	2.01	2.00	1.78	1.90					1.66			
1803	3287	6.16	-0.18	-0.06	6.56	6.51	6.61	6.02			5.98			6.08	5.99		
1806		6.23	-0.05	0.01				6.13			6.12			6.08	6.19		
1810	3300	4.89	-0.14	-0.05	5.05	4.94	5.16	4.83	4.82					4.84			
1811	3299	4.59	-0.20	-0.10	4.89	4.99	4.79	4.66	4.73			4.77		4.48			D
	3303	6.75	-0.16	-0.06	7.16	7.19	7.14										
1820	3313	6.44	-0.17	-0.07	6.80	6.77	6.84	6.37	6.39					6.35	6.36		
1829		2.84	0.82	0.65				2.96	3.03		2.83			3.07		2.90	
1830		5.78	1.15	0.83				6.06	5.96					6.17			
1833	3342	5.78	-0.20	-0.06	6.12	6.01	6.22	5.67	5.55					5.78	5.69		
1839	3351	4.20	-0.13	-0.06	4.48	4.47	4.48	4.32	4.34			4.18		4.45			D
1840		6.32	-0.19	-0.08				6.24				6.20		6.28			
1842	3355	5.46	-0.17	-0.04	5.75	6.15	5.76	5.52	5.50					5.55			D
1843	3361	4.77	0.35	0.37	4.92	4.92	4.92	4.88	5.00					4.91	4.72		F
1845	3362	4.35	2.06	1.76	4.54	4.42	4.65	4.73	4.57					4.70	4.91		V
1848		6.21	-0.18	-0.06				6.03							6.03		
1852		2.24	-0.22	-0.08				2.48	2.38					2.51		2.46	V
1855		4.62	-0.26	-0.12				4.64	4.66			4.83		4.51	4.48	4.74	
1861		5.35	-0.19	-0.05				5.30	5.20					5.33	5.38		
1862		3.87	1.14	0.82				3.92	3.78	3.99			3.86	3.95	4.05	3.86	
1863		6.53	-0.10	0.00				6.46						6.46			D
1865		2.57	0.20	0.22				2.69	2.67					2.73	2.64	2.66	
1868		5.34	-0.18	-0.05				5.37						5.33	5.22	5.56	V
1871	3388	6.58	-0.16	-0.07	6.80	6.84	6.76	6.42							6.42		
1872	3391	5.36	0.05	0.08	5.62	5.54	5.69	5.32	5.33			5.32		5.31			
1873		6.20	-0.16	-0.05				6.18							6.18		
1876	3393	4.41	-0.15	-0.01	4.68	4.79	4.58	4.53	4.40			4.54		4.65			
	3395	6.71	-0.14	-0.02	7.02	7.06	6.99										
1879	3396	3.39	-0.19	-0.07	3.70	3.70	3.71	2.57	2.57			2.57		2.56			D
1886		5.67	-0.24	-0.07				5.58						5.58			
1887		4.79	-0.25	-0.11				4.67	4.47			4.87		4.67			
1890		6.57	-0.13	-0.06				6.54			6.44				4.68		
1891		6.25	-0.15	-0.01				6.28			6.35				6.20		
1892		4.59	-0.19	-0.08				4.65	4.60		4.67			4.68	4.55	4.75	D
1893		6.72	0.00	0.31				6.84	6.58		7.00	7.16		6.69			
1895		5.13	0.00	0.22				5.36	5.01		5.52	5.68		5.21			
1896		6.70	0.08	0.29				6.85	6.50		7.01	7.01		6.70			
1897		5.08	-0.11	0.11				5.17	4.90		5.28			5.34			
1898		6.31	-0.13	-0.02				6.29							6.29		
1899		2.77	-0.24	-0.07				2.87	2.97					2.77		3.08	D
1900		6.40	-0.12	-0.01				6.33				6.33					
1901		5.27	0.23	0.29				5.28	4.95		5.43			5.32	5.33	5.38	
1903		1.69	-0.18	-0.07				1.75	1.76			1.54		1.74		1.96	V
1905	3414	5.54	0.22	0.21	5.84	5.76	5.92	5.39	5.37					5.34	5.46		
1907	3416	4.09	0.95	0.76	4.20	4.24	4.15	4.39	4.42			4.44		4.32			
1908	3417	5.90	1.60	1.19	6.16	6.11	6.20	6.10			5.99	6.21		6.11			

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
1910	3420	3.03	-0.19	-0.03	3.29	3.29	3.30	3.00	2.92					3.02			
1911		5.74	-0.22	-0.06				5.62							5.62		
1918		6.06	-0.21	-0.07				5.75							5.75		
1925	3439	6.23	0.84	0.69	6.42	6.45	6.39	6.41							6.41		
1931		3.80	-0.24	-0.08				3.78	3.74					3.84	3.69	3.86	D
1934	3445	4.59	-0.11	0.02	4.77	4.75	4.79	4.54	4.50			4.57		4.51	4.57		
1937		4.81	0.13	0.15				4.88	4.96					4.77		4.91	
1938	3447	6.04	0.05	0.11	6.30	6.28	6.33	5.96							5.96		
1946	3463	4.86	-0.12	-0.01	5.12	5.26	4.97	4.87	4.93			4.91		4.77			D
1948		1.77	-0.21	-0.08				1.91	1.89					1.89		1.95	D
1956		2.64	-0.12	-0.02				2.75	2.72	2.99			2.74	2.55	2.69	2.82	
1963	3486	4.90	1.17	0.88	5.12	5.22	5.01	5.24	5.26					5.22			
1971	3493	5.47	0.03	0.08	5.78	5.82	5.75	5.52	5.45					5.60			
1983		3.60	0.47	0.45				3.80	3.76			3.81		3.86	3.92	3.66	
1995	3543	4.53	0.94	0.73	4.70	4.65	4.74	4.64	4.60					4.80	4.53		
1998		3.55	0.10	0.12				3.67	3.74		3.68	3.69		3.50	3.70	3.72	
2004		2.05	-0.18	-0.02				2.20	2.22		2.23			2.20	2.05	2.30	
2010	3560	4.91	-0.07	0.02	5.10	5.14	5.05	4.92	4.83			4.98		4.94	4.91		
2011	3561	4.74	1.62	1.36	4.83	4.95	4.71	4.99	5.20					4.17	4.94		
2012	3564	3.97	1.14	0.82	4.18	4.19	4.16	4.18	4.19					4.18			
2018	3570	6.25	1.75	1.55	6.50	6.45	6.56	6.41							6.41		
2029	3584	5.00	0.05	0.09	5.15	5.17	5.13	4.92	5.03					4.80			
2034	3590	4.59	-0.02	0.04	4.84	4.78	4.90	4.54	4.46			4.46		4.57	4.65		
2035		3.85	0.98	0.86				3.90	3.98		3.90			3.94		3.76	
2040		3.12	1.16	0.85				3.22	2.93	3.54			3.06	3.36	3.34	3.10	
2047	3600	4.41	0.59	0.51	4.65	4.71	4.59	4.62	4.65			4.70		4.58	4.55		
2056		4.87	-0.15	-0.07				4.89		4.84			5.00	4.82	4.72	5.05	
2061		0.42	1.84	1.64				0.92	0.91					0.94			V
2077	3634	3.72	0.99	0.77	3.92	3.89	3.95	3.88	3.79					3.98			
2084	3641	4.82	-0.06	0.06	5.02	5.02	5.01	4.90	5.06					4.96	4.67		
2085		3.72	0.33	0.33				3.77	3.74		3.67			3.75		3.93	
2088	3646	1.90	0.03	0.08	2.21	2.23	2.20	2.07	2.07		2.17			1.98			V
2091	3654	4.25	1.72	1.69	4.34	4.37	4.31	4.59	4.47					4.57	4.72		V
2095	3658	2.62	-0.08	0.00	2.87	2.82	2.93	2.71	2.67					2.70	2.77		D
2106		4.36	-0.18	-0.07				4.36	4.08	4.40			4.49	4.34	4.38	4.45	
2113		4.52	1.22	0.93				4.68	4.73					4.77	4.76	4.45	
2120		3.96	1.14	0.82				4.03					4.00	4.14	4.00	3.98	
2124	3695	4.13	0.16	0.19	4.36	4.36	4.36	4.19	4.29			4.15		4.14			DF
2128		4.94	-0.12	-0.03				4.97	4.77		5.06	5.14		4.78		5.09	
2134	3712	4.15	0.87	0.68	4.37	4.40	4.34	4.30	4.33					4.44	4.14		
2135	3709	4.63	0.28	0.31	4.80	4.87	4.73	4.71	4.78		4.55			4.81			
2155		4.67	0.05	0.09				4.67	4.63		4.66			4.56	4.60	4.91	
2159	3745	4.42	-0.15	-0.06	4.62	4.63	4.61	4.40	4.37			4.31		4.74	4.20		
2198	3793	4.92	-0.12	-0.02	5.19	5.27	5.11	4.92	5.01			4.94		4.81			
2199	3791	4.48	-0.17	-0.05	4.60	4.62	4.57	4.35	4.21			4.47		4.37			
2209	3811	4.80	0.03	0.07	4.96	4.97	4.96	4.73	4.66	4.72				4.77	4.78		C
2219	3824	4.35	1.01	0.80	4.56	4.59	4.52	4.45	4.46					4.47	4.42		
2227		3.96	1.31	0.97				4.09	4.04					4.26		3.98	
2228	3838	6.52	0.27	0.27	6.94	6.93	6.94	6.46	6.40					6.48	6.50		
2230	3839	6.09	0.90	0.69	6.30	6.31	6.28	6.11			6.09			6.10	6.13		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
2238	3850	4.48	0.01	0.06	4.65	4.70	4.61	4.42	4.33					4.50			
2240	3854	6.25	0.45	0.47	6.52	6.56	6.49	6.26				6.33			6.18		
2244		5.01	-0.09	0.02				4.99	4.84					5.01		5.11	
2256		4.37	1.00	0.73				4.51		4.47			4.50	4.56	4.66	4.37	
2261		5.09	0.72	0.61				5.14					5.20			5.07	
2282		3.02	-0.18	-0.05				3.10	3.09	3.07			3.25	3.03	3.02	3.22	
2286	3918	2.87	1.64	1.57	3.06	3.02	3.11	3.19	3.22					3.16			
2291	3930	5.64	0.24	0.22	5.84	5.74	5.94	5.50	5.36					5.63			
2294		1.97	-0.24	-0.14				1.99	2.01					1.97			
2296		3.85	0.88	0.67				3.98	4.07	4.07			3.84	4.02	4.04	3.87	
2298	3933	4.31	0.20	0.19	4.60	4.58	4.62	4.33	4.40			4.38		4.21			D
2308	3951	6.23	2.34	1.83	6.26	6.36	6.16	6.56			6.49	6.77			6.43		V
2326		-0.75	0.15	0.24				-0.86					0.76			0.96	
2343	3987	4.14	-0.14	-0.03	4.42	4.51	4.34	4.06	3.98					4.16	4.03		
2344		5.05	-0.18	-0.10				4.98	4.98		5.05			4.88	5.03		
2356		3.76	-0.15	-0.01				4.33	4.33					4.34			D
2361		4.48	-0.17	-0.06				4.48	4.13	4.64			4.60	4.54	4.40	4.57	
2382	4035	5.83	1.00	0.72	6.04	5.97	6.12	5.98	6.27		6.01	5.98		6.03	6.20		
2385	4040	4.50	0.00	0.10	4.73	4.62	4.84	4.50	4.31			4.61		4.36	4.72		
2387		4.33	-0.24	-0.12				4.35	4.21			4.41		4.37		4.42	
2392		6.24	1.11	0.75				6.38	6.30					6.47			
2405	4068	5.29	2.60	1.97	5.56	5.70	5.42	5.87				5.84		6.04	5.73		
2414		4.54	-0.06	0.04				4.54	4.35			4.70		4.54		4.58	
2421	4089	1.92	0.00	0.06	2.34	2.28	2.41	1.93	2.00			1.91		1.88			
2427	4094	4.79	1.23	0.90	4.88	4.93	4.83	5.09	5.17					4.92	5.17		
2429		3.92	1.05	0.79				4.14	4.25		4.10			4.30	4.10	3.97	
2443		4.42	1.15	0.86				4.65	4.68			4.71		4.69	4.61	4.54	
2450		4.81	1.49	1.03				4.97	4.97		5.07			5.04		4.79	
2451		3.17	-0.11	0.00				3.18					3.23	3.17	3.06	3.27	
2456		4.66	-0.24	-0.11				4.68	4.57		4.72	4.85		4.59			D
2467	4144	6.37	-0.05	0.07	6.64	6.67	6.62	6.20							6.20		
2470	4149	4.87	0.08	0.12	5.00	5.04	4.97	4.89	4.68					5.10	4.89		D
2473	4153	2.98	1.40	0.96	3.21	3.19	3.24	3.18	3.19					3.18			
2478	4158	4.49	1.16	0.86	4.57	4.60	4.54	4.65	4.62			4.71		4.62			
2484	4172	3.36	0.43	0.39	3.63	3.66	3.60	3.40	3.36					3.45			
2491		-1.46	0.00	0.00				-1.58	1.73			1.40		1.49		1.70	
2506	4193	4.46	1.11	0.79	4.64	4.66	4.61	4.70	4.75			4.56		4.79			
2527	4219	4.55	1.36	1.02	4.72	4.82	4.62	4.75	4.62					4.88			
2538		3.95	-0.23	-0.10				3.78	3.92	3.70			3.90	3.81	3.78	3.60	
2540	4229	3.60	0.10	0.10	3.84	3.77	3.90	3.64	3.74					3.53			
2553		2.92	1.19	0.85				2.83					2.76			2.90	
2560	4252	4.35	0.85	0.65	4.53	4.53	4.53	4.54	4.52					4.55			D
2564	4258	4.65	0.30	0.32	4.78	4.70	4.87	4.70	4.78					4.61			D
2571		4.83	-0.21	-0.12				4.66	4.43		4.72			4.65		4.82	
2574		4.08	1.43	1.13				4.25	4.23					4.25	4.27	4.07	
2580		3.92	1.71	1.17				4.12	4.04			4.17		4.16	4.11	3.80	
2583		6.75	-0.30	0.28				6.55	6.37			6.70		6.57			
2585	4270	4.90	0.03	0.05	5.16	5.16	5.16	4.80	4.74					4.87	4.78		
2590		4.69	0.36	0.38				4.62	4.45		4.68			4.72		4.63	D
2591		6.32	2.24	1.73				6.00								6.00	

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
2596		4.37	-0.06	0.05				4.39	4.46					4.32			
2608		4.95	1.69	1.48				4.88					4.91			4.86	
2618		1.50	-0.21	-0.09				1.63	1.49			1.72		1.65		1.67	
2646		3.43	1.72	1.32				3.68	3.49			3.82		3.92	3.90	3.26	
2648		5.00	-0.20	-0.06				4.89	4.82		4.96			4.91		4.88	
2653		3.01	-0.08	0.01				3.12	3.05			3.07		3.22		3.12	
2657		4.12	-0.11	-0.01				4.07	4.10		3.98			4.15		4.06	
2667		5.28	0.66	0.23				5.47					5.48	4.52	4.38	4.51	D
2693		1.84	0.67	0.51				1.98	1.85			2.14		2.16		1.76	
2697	4401	4.42	1.26	0.96	4.59	4.69	4.49	4.48	4.63					4.47	4.35		
2701		4.92	1.03	0.79				5.02	5.09		5.03			5.08	5.07	4.84	
2702		4.83	-0.18	-0.07				4.85		5.00			4.87	4.94	4.80	4.95	
2714		4.15	0.00	0.06				4.09	4.01					4.17		4.10	
2740		4.49	0.32	0.32				4.47					4.54	4.61	4.47	4.54	
2745		4.65	-0.20	0.01				4.66	4.54			4.90		4.49	4.61	4.74	V
2749		3.82	-0.18	0.02				3.83	3.69			3.99		3.82		3.82	
2751	4458	5.05	0.08	0.15	5.16	5.19	5.12	4.80	4.77					4.84			
2762		4.76	-0.10	-0.01				4.88					4.88			4.89	
2763	4470	3.58	0.12	0.12	3.75	3.63	3.87	3.65	3.58					3.70	3.66		
2764		4.78	1.70	1.32				4.82	4.67			4.79		4.83	4.98		
2766		4.60	1.60	1.48				4.77	4.92			4.86		4.68		4.63	
2773		2.70	1.62	1.24				2.74		2.80			2.48	2.92	2.96	2.53	
2777	4482	3.53	0.34	0.35	3.69	3.66	3.71	3.51	3.65					3.54	3.34		D
2781		4.95	-0.15	0.00				4.90	4.77			4.92		4.79	4.94	5.09	V
2782		4.40	-0.15	-0.04				4.40	4.31			4.45	4.52	4.26	4.47	4.68	
2787		4.67	-0.10	0.10				4.68		4.50			4.80	4.60	4.63	4.88	
2790		5.11	-0.16	-0.06				5.11		4.77			5.33	5.17	5.06	5.23	
2812		4.96	-0.05	0.06				4.87	4.90					4.84			
2818	4521	4.64	-0.02	-0.01	4.80	4.79	4.81	4.45	4.57					4.35	4.44		
2821	4524	3.79	1.04	0.77	3.96	3.96	3.96	3.89	4.03					3.86	3.78		
2827		2.44	-0.09	0.07				2.43	2.41			2.30		2.50		2.52	
2828	4531	4.99	1.01	0.73	5.02	4.90	5.15	5.07	4.99					5.12	5.09		
2845	4552	2.89	-0.09	-0.01	3.20	3.12	3.28	3.09	3.07					3.11			
2852	4563	4.18	0.32	0.32	4.40	4.43	4.39	4.18	4.15					4.21			
2854	4564	4.30	1.43	1.11	4.30	4.24	4.36	4.60	4.62					4.58			
2864	4582	4.55	1.29	0.90	4.76	4.72	4.79	4.85	4.96			4.76		4.84			
2874		4.84	0.24	0.27				4.80	4.83			4.73	4.93	4.75	4.84	4.75	
2878		3.25	1.52	1.21				3.27					2.99	3.60	3.31	3.18	
2881		4.65	0.93	0.67				4.77	4.79	4.70			4.72	4.92	4.86	4.64	
2890	4614	1.58	0.04	0.06	1.94	1.94	1.94	1.30	1.28					1.33			D
2902		4.99	1.46	1.62				5.06	5.00		5.07			5.02	5.17		
2905	4635	4.06	1.54	1.24	4.18	4.21	4.16	4.22	4.18					4.26			
2906		4.45	0.51	0.51				4.52	4.51			4.51		4.54			
2922		4.61	-0.12	-0.03				4.55	4.40			4.47		4.57		4.76	
2930	4665	4.91	0.40	0.39	5.08	5.10	5.05	4.92	4.67		5.07			5.03			
2937		4.53	-0.09	-0.02				4.62		4.44			4.67	4.76	4.52	4.70	
2943	4678	0.37	0.42	0.42	0.72	0.72	0.72	0.48	0.46			0.54		0.47	0.45		
2944		4.70	-0.11	0.01				4.64	4.34			4.77	4.67	4.70	4.76	4.62	D
2946	4679	4.99	0.08	0.18	5.18	5.18	5.18	4.96	4.88					5.07	4.92		F
2948		3.80	-0.19	-0.04				3.81	3.86			3.76		3.82			D

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
2961		4.85	-0.19	-0.08				4.91		4.60			5.13	5.16	4.89	4.77	
2967	4692	5.56	1.64	1.60	5.68	5.66	5.69	5.81	5.87		5.74			5.84	5.79		
2970		3.93	1.02	0.77				4.07	4.20		4.10			4.10		3.88	
2973	4698	4.29	1.12	0.92	4.38	4.34	4.39	4.26	4.13					4.40			
2974		6.56	1.18	0.87				6.64							6.77	6.50	
2985	4711	3.57	0.92	0.71	3.75	3.80	3.67	3.68	3.61					3.82	3.62		D
2990	4719	1.14	1.00	0.75	1.51	1.51	1.51	1.21	1.12			1.26		1.25			
2993		4.59	1.63	1.31				4.82	5.04			4.90		4.70		4.64	
2996		3.95	0.18	0.26				4.10	4.15			4.15		3.96		4.12	
3003	4726	4.87	1.46	1.15	5.02	5.01	5.02	5.02	5.08					5.01	4.98		
3017		3.61	1.73	1.35				3.72		3.90			3.40	3.95	4.00	3.33	
3034		4.52	-0.05	0.15				4.59	4.68			4.55		4.55			
3045		3.35	1.25	0.88				3.47	3.40			3.41		3.55	3.51		
3046		4.71	1.06	0.76				4.64					4.68	4.55		4.70	
3055		4.11	-0.18	-0.08				4.25					4.11	4.39		4.26	
3064		5.16	0.60	0.52				5.34	5.49			5.34		5.27		5.26	
3067	4791	4.98	0.09	0.13	5.25	5.30	5.20	4.99	4.89					5.17	4.90		
3080		3.73	1.05	0.81				3.76					3.72		3.87	3.68	
3084		4.49	-0.19	-0.08				4.53		4.27			4.67	4.63	4.53	4.56	
3089		4.63	-0.23	-0.13				4.83					4.81			4.85	
3090		4.24	-0.14	-0.02				4.32					4.28			4.36	
3102		4.20	0.72	0.59				4.35	4.26			4.30		4.60	4.33	4.28	
3113		4.79	0.15	0.20				4.85	4.81	4.97			4.91	4.79	4.84	4.79	
3131		4.61	0.08	0.15				4.64	4.62			4.74		4.56			
3141		4.67	1.49	1.17				4.88	4.88			5.05		4.77	4.83		
	4852	7.00	0.71	0.60	7.32	7.28	7.35										
3145	4882	4.38	1.25	0.99	4.60	4.61	4.59	4.52	4.56					4.48			
3165		2.25	-0.27	-0.12				2.27		2.04			2.33	2.36	2.34	2.30	
3173	4912	4.84	0.05	0.11	5.00	5.02	4.98	4.87	4.79					4.95	4.87		
3185		2.81	0.43	0.35				2.88	2.88			2.83		2.95		2.84	V
3188		4.32	0.97	0.73				4.41	4.47					4.38		4.38	
3192		4.40	-0.15	-0.03				4.34	4.23					4.32		4.48	
3206		4.27	-0.24	-0.11				4.79					4.91	4.79	4.79	4.67	
3207		1.83	-0.25	-0.02				2.22					2.21	2.22	2.22	2.22	
3211		4.72	0.96	0.73				4.68	4.61					4.74			
3225		4.45	1.62	1.20				4.43		4.44			4.27	4.52	4.66	4.26	
3226		4.75	0.18	0.24				4.87					4.85	4.91	4.82	4.90	
3237		4.77	-0.11	0.09				4.77		4.82			5.00	4.71	4.63	4.71	
3243		4.44	1.17	0.84				4.43		4.44			4.30	4.44	4.59	4.39	
3249	4988	3.53	1.48	1.12	3.74	3.78	3.70	3.76	3.82			3.65		3.70	3.85		
3270		4.45	0.22	0.21				4.43		4.27			4.53	4.34	4.53	4.47	
3275	5030	4.25	1.55	1.20	4.21	4.34	4.08	4.43	4.42					4.45	4.42		
3279		5.58	0.77	0.64				5.56	5.42		5.69			5.63		5.50	
3282		4.83	1.45	1.00				4.94		5.14			4.77	4.96	5.01	4.82	
3294		4.82	-0.15	-0.04				4.90					4.83			4.98	D
3306	5062	5.13	0.94	1.25	5.34	5.38	5.29	5.23	5.09					5.36	5.23		
3307		1.85	1.27	1.15				1.74					1.74			1.74	
3314		3.90	-0.02	0.03				3.95	3.86					3.98		4.02	
3319	5073	5.50	1.60	1.62	5.78	5.73	5.83	5.75	5.63			5.73		5.88			
3323	5081		0.85	0.69	3.43	3.45	3.40	3.47	3.43	3.47		3.47		3.49	3.50		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
3387		6.59	0.68	0.54				6.55			6.60	6.45			6.60		
3391	5151	5.64	0.62	0.52	5.82	5.89	5.75	5.69	5.65					5.73			
3403	5159	4.61	1.17	0.89	4.75	4.80	4.70	4.76	4.79	4.77				4.73	4.75		C
3407		5.01	1.33	0.97				4.87					4.31			4.83	
	5166	6.75	0.19	0.20	6.94	6.94	6.93										
3410	5170	4.17	0.00	0.04	4.38	4.29	4.46	4.18	4.13			4.14		4.28			
3418	5183	4.43	1.20	0.89	4.58	4.58	4.59	4.54	4.40					4.69			
	5185	6.67	0.24	0.25	6.79	6.78	6.80										
	5187	6.59	0.95	0.72	6.68	6.68	6.69										
3426		4.14	0.10	0.15				4.13					4.08	4.07	4.17	4.21	
3427	5193	6.39	0.98	0.72	6.54	6.50	6.59	6.48				6.48					
	5194	6.61	0.01	0.05	6.78	6.72	6.85										
	5195	6.77	0.27	0.26	7.04	7.14	6.93										
3428	5196	6.44	1.02	0.74	6.70	6.67	6.74	6.40			6.30				6.49		
3429	5197	6.30	0.17	0.17	6.56	6.57	6.55	6.32	6.32		6.25	6.42		6.32	6.28		
3438		3.98	0.93	0.66				4.04		4.14			3.92	4.04	4.10	4.01	
3441		4.88	1.07	0.82				4.98	5.02		4.97			5.01	5.01	4.91	
3445		3.83	0.70	0.63				4.06					3.71	4.12	4.60	3.80	
3447		3.60	-0.18	-0.06				3.68					3.58			3.78	
	5199	6.85	0.20	0.20	7.07	7.15	6.99										
	5207	6.91	0.96	0.71	7.18	7.20	7.17										
3449	5216	4.66	0.02	0.06	4.90	4.97	4.83	4.73	4.75					4.76	4.67		
3452		4.77	0.12	0.21				4.85					4.81	4.77		4.89	
3454	5222	4.30	-0.20	-0.07	4.57	4.41	4.73	4.32	4.17			4.43		4.36			
3459		4.61	0.84	0.65				4.70	4.77					4.57	4.59	4.86	
3461	5227	3.94	1.08	0.78	4.04	3.97	4.12	4.17	4.27			4.15		4.10			
3464	5229	6.13	0.94	0.70	6.30	6.33	6.28	6.14				6.07		6.13	6.21		
3468		3.69	-0.18	-0.08				3.70	3.55	3.69			3.72	3.70	3.68	3.85	
3474	5243	4.02	1.03	0.75	4.11	4.06	4.16	4.09	4.16					4.05	4.05		D
3477		4.07	0.87	0.63				4.12					3.98	4.26	4.18	4.07	
3482	5252	3.38	0.68	0.60	3.57	3.53	3.61	3.48	3.58			3.45		3.43	3.48		D
3484		4.32	0.90	0.68				4.44	4.38					4.44		4.49	
3485		1.96	0.04	0.05				2.01					2.00			2.02	D
3487		3.91	0.00	0.05				4.09					4.01	4.15	4.15	4.05	
3492	5259	4.37	-0.05	0.05	4.66	4.61	4.71	4.42	4.31			4.68		4.27			
3518		4.01	1.26	0.95				4.19	4.33			4.17		4.15		4.12	
3527		5.10	-0.21	-0.08				4.89					5.23	4.28		5.17	
3541	5315	6.64	3.36	2.28	6.39	6.46	6.31										
3547	5322	3.10	1.00	0.71	3.34	3.36	3.32	3.30	3.33					3.28	3.30		
3556		4.89	0.10	0.13				4.87	4.80			4.90		4.68	4.85	5.11	
3569	5345	3.14	0.19	0.22	3.40	3.37	3.42	3.12	3.17					3.07			
3572	5351	4.26	0.13	0.14	4.56	4.66	4.46	4.27	4.26			4.41		4.13			
3576	5355	4.76	1.53	1.47	4.96	4.99	4.93	4.99	5.04	5.02				4.94	4.96		
3579	5361	3.97	0.43	0.40	4.12	4.12	4.13	4.09	4.19			4.10		4.02	4.04		
3591		4.45	0.65	0.55				4.42					4.37	4.47	4.48	4.37	
3594	5376	3.60	0.00	0.07	3.86	3.85	3.87	3.68	3.70					3.67			
3595	5378	5.46	-0.03	0.02	5.63	5.64	5.62	5.45	5.56		5.41			5.50	5.33		
3612	5403	4.56	1.04	0.75	4.79	4.80	4.78	4.71	4.69					4.67	4.78		
3614		3.75	1.20	0.82				3.69					3.74	3.73		3.60	
3616	5411	4.81	0.49	0.45	5.06	5.06	5.05	4.87	4.79			4.87		4.87	4.94		D

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
3619	5415	4.48	0.27	0.27	4.67	4.70	4.64	4.54	4.44					4.60	4.57		
3624	5425	4.67	0.35	0.32	4.80	4.77	4.84	4.74	4.76	4.72				4.73	4.75		
3628		4.56	1.61	1.24				4.82	4.79			4.76		5.00	4.94	4.61	
3634		2.21	1.65	1.24				2.22					2.10	2.37	2.37	2.04	
3654		5.00	0.22	0.20				4.96					5.04	4.97	4.88	4.95	
3662	5462	4.84	0.18	0.25	4.99	4.98	5.00	4.89	4.92			4.76		5.00			
3665	5464	3.88	-0.07	-0.01	4.26	4.19	4.33	3.84	3.93					3.73	3.86		
3682		4.94	1.11	0.79				4.98		4.94			4.80	4.99	5.11	5.04	
3684		4.62	0.45	0.38				4.70		4.64			4.70	4.68	4.62	4.85	
3685		1.68	0.00	0.07				1.80					1.73			1.87	
3690	5491	3.82	0.06	0.12	3.98	3.98	4.04	3.82	3.82					3.82			D
3705	5508	3.13	1.55	1.23	3.38	3.39	3.36	3.30	3.44		3.17			3.29			
3706		4.81	0.93	0.72				4.94	4.90					4.99		4.92	
3709		4.79	0.94	0.70				4.97	4.89					4.98	4.98	5.04	
3718		4.72	1.61	1.40				4.93	4.93			5.09		4.88	5.06	4.69	
3731	5541	4.46	1.23	0.91	4.66	4.61	4.72	4.61	4.63					4.60	4.60		
3733		4.68	0.91	0.71				4.90	4.93			4.89		4.90	4.88	4.96	
3734		2.50	-0.18	-0.04				2.63					2.59			2.67	
3748		1.97	1.45	1.04				2.16	2.02					2.29		2.33	
3749		4.68	1.13	0.88				4.94	5.02			4.95		4.89	4.88		
3751	5563	4.30	1.48	1.13	4.42	4.50	4.34	4.58	4.58		4.73			4.42			
3757	5571	3.67	0.33	0.34	3.86	3.85	3.87	3.75	3.71	3.76				3.80	3.72		C
3759		4.61	0.45	0.43				4.78	4.94					4.63			
3765		4.51	1.44	1.01				4.64		4.70			4.40	4.74	4.78	4.56	
3771	5587	4.57	0.77	0.66	4.80	4.79	4.81	4.57	4.59					4.61	4.51		
3773	5593	4.31	1.54	1.23	4.50	4.54	4.46	4.48	4.39					4.57			
3775	5599	3.18	0.46	0.44	3.49	3.53	3.45	3.26	3.22					3.30	3.25		
3786		3.60	0.36	0.36				3.64		3.67			3.53	3.62	3.57	3.82	D
3787		4.57	0.10	0.16				4.50	4.60					4.40			
3799	5619	4.51	0.00	0.09	4.78	4.71	4.85	4.65	4.57					4.80	4.57		
3800	5620	4.55	0.92	0.71	4.80	4.91	4.69	4.62	4.67					4.53	4.67		
3809	5627	4.81	0.99	0.76	4.98	5.03	4.93	4.99	5.04					5.03	4.89		
3815	5636	5.41	0.77	0.62	5.66	5.66	5.65	5.48	5.47					5.50			
3834	5662	4.68	1.32	1.06	4.90	4.90	4.90	4.78	4.78			4.71		4.86			
3836		4.35	0.17	0.15				4.49					4.41			4.57	
3845		3.91	1.32	0.99				4.10	4.15					4.04		3.87	
3849		5.05	-0.15	-0.07				4.96	4.94					5.02	4.91	5.37	
3852	5685	3.52	0.49	0.41	3.88	3.88	3.89	3.76	3.80			3.80		3.69			
3858		4.78	-0.12	0.02				4.74	4.62			4.87		4.81	4.68	5.05	
3871		4.79	0.50	0.47				4.98	4.93			5.00		5.00			
3873	5720	2.98	0.81	0.65	3.22	3.19	3.24	3.12	3.14					3.11			
3881	5734	5.10	0.62	0.53	5.36	5.29	5.43	5.20	5.34					5.13	5.12		
3888	5744	3.81	0.29	0.34	4.01	3.97	4.05	3.89	3.98	3.85				3.88	3.84		C
3894	5754	4.60	0.03	0.10	4.74	4.76	4.71	4.54	4.43					4.68	4.50		D
3903		4.11	0.92	0.69				4.29	4.30		4.25			4.37	4.23	4.08	
3905	5773	3.88	1.22	0.91	4.08	4.16	4.04	4.10	4.14					4.05			
3912		4.58	1.20	0.83				4.56					4.45	4.53	4.50	4.70	
3950	5820	4.70	1.60	1.43	4.76	4.74	4.77	4.89	4.97			4.69		4.89	5.02		
3970		4.59	-0.10	-0.01				4.72	4.69					4.79	4.62	4.78	
3974	5868	4.49	0.18	0.18	4.71	4.74	4.70	4.47	4.50			4.37		4.50	4.45		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	N
3975	5873	3.53	-0.04	0.09	3.82	3.84	3.81	3.58	3.59			3.54		3.62			
3980	5877	4.37	1.45	1.13	4.52	4.52	4.52	4.58	4.60			4.60		4.55			F
3981	5881	4.50	-0.04	0.06	4.68	4.68	4.67	4.50	4.51					4.40	4.59		
3982	5885	1.35	-0.11	-0.02	1.73	1.73	1.73	1.34	1.42			1.23		1.34	1.36		
	5898	6.59	1.35	1.23	6.60	6.64	6.56										
3994		3.61	1.00	0.77				3.83	3.92					3.81	3.84	3.76	
3998	5904	6.44	0.46	0.41	6.58	6.59	6.57	6.41				6.41					
4023		3.85	0.05	0.02				4.09					3.96	4.29	3.96	4.15	
4031	5934	3.44	0.31	0.31	3.73	3.69	3.78	3.65	3.78					3.77	3.39		
4033	5932	3.45	0.03	0.08	3.68	3.70	3.65	3.52	3.57					3.57	3.42		
4039	5941	5.82	0.50	0.48	6.02	6.07	5.96	5.85							5.85		
4054	5956	4.80	0.45	0.45	5.09	5.16	5.02	4.97	4.95					4.86	5.10		
4057	5957	1.98	1.15	0.85	2.43	2.49	2.37	2.30	2.24					2.35			D
4069	5970	3.05	1.59	1.28	3.29	3.29	3.29	3.21	3.12			3.24		3.18	3.30		
4072	5972	4.99	-0.07	0.04	5.20	5.15	5.24	4.92	5.00	4.87		4.92		4.92	4.91		C
4080		4.83	1.12	0.80				4.99					4.88	5.18	4.97	4.93	
4090	6001	4.74	0.25	0.26	4.96	5.01	4.92	4.83	5.07					4.70	4.72		
4092		5.56	1.52	1.25				5.85	6.04					5.86	5.92	5.64	
4094		3.79	1.48	1.11				4.06	4.14					4.03	4.07	3.98	
4100	6018	4.21	0.90	0.69	4.33	4.42	4.29	4.41	4.42					4.40			D
4104		4.25	1.45	1.10				4.42	4.50	4.44			4.23	4.43	4.49	4.44	
4112	6038	4.84	0.52	0.48	5.12	5.18	5.07	4.84	4.89					4.80	4.82		
4119	6044	5.10	-0.14	-0.03	5.36	5.34	5.39	4.95	4.94		4.96	-5.05		4.86			
4132	6060	4.75	0.23	0.20	5.02	5.05	4.98	4.84	5.10					4.73	4.69		
4133	6062	3.85	-0.14	-0.05	3.98	3.90	4.05	3.85	3.99		3.57	3.92		3.92			
4141	6069	5.16	0.34	0.33	5.36	5.36	5.36	5.16	5.16					5.22	5.10		F
4153		5.38	2.88	2.11				5.75		5.90			5.41	5.90	6.01	5.55	
4166	6087	4.72	0.81	0.68	4.90	4.97	4.82	4.77	4.76			4.74		4.80			
4167		3.84	0.30	0.25				4.06					3.99			4.14	
4195	6118	6.00	2.41	1.74	6.07	6.01	6.12	6.32				6.37		6.28			V
4199		2.76	-0.22	-0.11				3.03					3.01			3.05	
4216		2.69	0.90	0.68				2.84					2.81			2.87	D
4232		3.11	1.24	0.93				3.32	3.26		3.30	3.40		3.30		3.43	
4247	6180	3.83	1.04	0.83	3.93	3.96	3.92	3.92	3.92		3.87			3.97			
4248	6183	4.71	-0.05	0.05	4.98	4.98	4.98	4.84	4.90					4.77			
4259	6194	4.32	0.02	0.10	4.47	4.49	4.46	4.32	4.33					4.30			D
4273		4.60	1.03	0.75				4.70		4.67			4.61	4.71	4.75	4.76	
4278	6223	6.00	1.59	1.49	6.16	6.22	6.10	6.22	6.34					6.10			
4287		4.07	1.09	0.80				4.20	4.09					4.26		4.26	
4293		4.39	0.11	0.13				4.56					4.58	4.48	4.56	4.64	
4295	6239	2.37	-0.02	0.06	2.63	2.60	2.66	2.44	2.60			2.16		2.57			
4299		4.75	1.62	1.33				4.97	5.00			5.00		5.03		4.86	
4300	6245	4.42	0.05	0.06	4.62	4.61	4.62	4.42	4.48					4.37			
4301	6249	1.79	1.07	0.81	2.04	2.04	2.04	1.95	1.96	1.95				1.93	1.95		C
4310	6264	4.63	0.33	0.33	4.88	4.88	4.88	4.66	4.74			4.52		4.78	4.62		F
4335	6301	3.01	1.14	0.84	3.26	3.25	3.26	3.15	3.12					3.18	3.15		
4343		4.48	0.03	0.07				4.52	4.42			4.37		4.63		4.68	
4357	6337	2.56	0.12	0.13	2.92	2.92	2.91	2.58	2.75			2.35		2.68	2.53		
4359	6341	3.35	-0.02	0.05	3.58	3.54	3.63	3.41	3.47			3.31		3.44			
4362	6347	4.63	1.66	1.56	4.67	4.65	4.69	4.87	4.89			4.83		4.87	4.88		

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
4368		4.47	0.21	0.27				4.58	4.53					4.62	4.58	4.71	
4371	6361	5.18	1.52	1.27	5.40	5.47	5.32	5.44	5.40					5.49	5.43		
4374	6368	3.79	0.59	0.54	3.92	3.97	3.86	3.86	3.80					3.93			D
4377	6370	3.49	1.40	1.06	3.62	3.59	3.64	3.71	3.78			3.70		3.65			
4380	6374	4.79	0.12	0.11	4.94	4.94	4.95	4.78	4.75			4.70		4.97	4.72		
4382		3.56	1.11	0.83				3.82	3.86			3.84		3.85	3.73		
4386	6388	4.05	-0.06	0.02	4.38	4.33	4.44	4.13	4.13			3.94		4.28	4.17		
4392	6397	5.00	0.98	0.75	5.07	5.04	5.10	5.06	5.07					5.00	5.12		
4399	6403	3.94	0.41	0.39	4.22	4.30	4.15	4.03	3.98			3.93		4.18			D
4405		4.08	0.21	0.23				4.14	4.16					4.25	4.02	4.23	D
4418	6434	4.95	1.00	0.75	5.30	5.32	5.29	5.18	5.12			5.13		5.28			
4434	6464	3.85	1.62	1.31	3.84	3.81	3.86	4.06	4.09	4.05	4.06			4.05	4.04		C
4450		3.54	0.93	0.70				3.72	3.76	3.70			3.65	3.73	3.77	3.70	
4456	6488	5.95	-0.16	-0.06	6.13	6.22	6.04	5.76	5.71					5.81			
4468		4.70	-0.08	0.01				4.81	4.72					5.01	4.61	4.90	
4471		4.30	1.01	0.72				4.47	4.48		4.38			4.60		4.42	
4494		4.70	-0.07	0.01				4.88		4.92			4.98	4.84	4.70	4.97	
4496	6537	5.34	0.74	0.61	5.58	5.59	5.56	5.46	5.84		5.32			5.23			
4514		4.72	0.97	0.73				4.90	4.89					5.00	4.82		
4517	6567	4.04	1.50	1.26	4.20	4.26	4.13	4.20	4.24			4.24		4.11			
4518	6568	3.72	1.18	0.88	3.85	3.84	3.86	3.85	3.89					3.74	3.91		
4527	6581	4.53	0.55	0.53	4.74	4.77	4.71	4.54	4.55					4.57	4.49		D
4534	6589	2.14	0.08	0.06	2.62	2.52	2.71	2.23	2.23			2.24		2.28	2.16		
4540	6599	3.60	0.55	0.48	3.86	3.83	3.90	3.80	3.72			3.89		3.80			
4546		4.46	1.30	0.94				4.71					4.59	4.92	4.79	4.55	
4550	6608	6.45	0.75	0.66	6.56	6.46	6.67	6.46	6.44					6.47			
4552		4.28	-0.10	0.01				4.40	4.18	4.44			4.47	4.32	4.33	4.63	D
4554	6614	2.44	0.00	0.00	2.68	2.68	2.67	2.54	2.56					2.53			
4589	6665	4.67	0.13	0.16	4.87	4.83	4.91	4.57	4.44			4.61		4.66			
4608	6691	4.12	0.99	0.74	4.30	4.26	4.34	4.24	4.27			4.24		4.13	4.32		
4618		4.47	-0.15	-0.09				4.81					4.79			4.83	
4621		2.65	-0.09	0.04				2.88					2.81			2.95	
4623		4.02	0.32	0.30				4.18	4.32			3.92		4.23	4.25	4.20	
4630		2.98	1.34	0.93				3.21	3.14			3.20		3.26	3.36	3.07	
4633	6732	6.04	0.11	0.13	6.25	6.22	6.28	5.78	5.73					5.84			
4638		3.96	-0.15	-0.10				4.20					4.15			4.26	
4660	6773	3.31	0.08	0.06	3.52	3.51	3.53	3.44	3.41					3.47			
4662		2.58	-0.11	-0.04				2.78	2.76					2.73		2.86	
	6776	8.16	0.40	0.33	8.38	8.39	8.37										
	6786	7.48	0.14	0.13	7.86	7.75	7.96										
4684	6792	6.48	0.18	0.17	6.76	6.76	6.77	6.39							6.39		
	6795	7.78	0.29	0.23	8.05	8.12	7.98										
4685	6797	6.27	0.17	0.13	6.47	6.53	6.41	6.15				6.09		6.13	6.23		
4689	6801	3.90	0.02	0.08	4.25	4.22	4.28	4.00	4.05		4.03	3.93		4.00			
	6802	6.70	0.18	0.17	6.89	6.96	6.82										
4694	6809	6.15	0.30	0.28	6.52	6.53	6.51	6.11							6.11		
4695	6808	4.96	1.16	0.89	5.02	5.17	4.88	5.10	5.15			5.07		5.09			
4697	6813	4.74	1.01	0.79	4.88	4.94	4.81	4.91	4.88			4.88		4.93	4.94		
	6824	7.44	0.28	0.24	7.62	7.69	7.55										
4705	6830	6.20	0.00	0.00	6.45	6.47	6.43	6.02	5.89		6.06			5.98	6.16		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
4707	6833	4.81	0.49	0.47	5.02	5.01	5.02	4.78	4.75			4.93		4.68	4.76		
4708	6832	6.40	0.60	0.43	6.66	6.63	6.69	6.46				6.46					
	6838	7.42	1.05	0.67	7.72	7.63	7.81										
	6844	6.72	0.24	0.20	7.04	7.00	7.07										
4716	6846	4.80	0.87	0.70	5.00	5.02	4.98	4.97	5.04					4.97	4.91		
4717	6847	5.18	0.08	0.07	5.48	5.53	5.43	5.10	5.09					5.00	5.22		
4719	6848	6.42	0.27	0.23	6.72	6.69	6.76	6.31							6.31		
4725	6855	6.03	1.10	0.79	6.21	6.20	6.23	6.08	6.16					6.01			
4732		4.82	-0.14	-0.11				5.04					5.07			5.02	
4733	6862	4.95	0.27	0.25	5.20	5.18	5.23	5.15	5.13					5.17			
4737	6864	4.37	1.13	0.83	4.49	4.49	4.49	4.56	4.73					4.40			
4738	6866	5.00	0.08	0.09	5.20	5.21	5.20	5.04	5.09					5.07	4.95		
	6872	6.69	0.17	0.14	6.96	6.95	6.96										
4743		3.91	-0.19	-0.11				4.16					4.14			4.18	
4750	6881	6.54	0.18	0.15	6.79	6.72	6.86	6.48							6.48		
4751	6882	6.65	0.22	0.15	6.88	6.91	6.84	6.69						6.80	6.64		
4752	6885	5.29	-0.06	0.02	5.52	5.53	5.52	5.38						5.42	5.24		
4757		2.94	-0.05	-0.05				3.11	3.13		2.97			3.06		3.27	
4766	6901	5.46	0.05	0.06	5.68	5.64	5.71	5.39	5.49			5.39		5.28			
4775		4.32	0.37	0.38				4.42	4.45		4.37			4.32		4.54	
4780	6923	6.29	0.11	0.09	6.56	6.59	6.54	6.14			6.11	6.21		6.02	6.20		
4785	6928	4.27	0.59	0.54	4.46	4.37	4.54	4.32	4.30					4.37	4.29		
4786		2.64	0.88	0.61				2.84	2.81			3.12		3.00	2.72	2.96	
4787	6929	3.89	-0.14	0.05	4.10	4.06	4.14	3.88	3.84					3.91			
4789	6936	4.81	0.00	0.06	5.12	5.07	5.16	4.78	4.89			4.66		4.81	4.76		
4802		3.86	0.05	0.05				4.02					3.99			3.06	
4803		5.45	0.32	0.31				5.44	5.50			5.23		5.58		5.64	
4807	6957	5.71	1.60	1.56	5.62	5.62	5.63	6.02	6.12					5.92			
4813		4.67	1.22	0.90				4.78	4.66					4.87	4.81	4.77	
4817		4.64	-0.08	-0.02				4.79		4.77			4.71	4.90	4.72	4.84	
4819		2.17	-0.01	0.03				2.38					2.36			2.39	D
4825		2.74	0.36	0.29				2.91	2.84			2.88		3.00		3.13	D
4828	6982	4.88	0.09	0.08	5.11	5.11	5.11	4.95	5.10			5.00		4.81	4.89		F
4831		4.66	1.10	0.75				4.65					4.63			4.67	
4837		5.93	0.86	0.67				6.08						6.05	6.12		
4845	7004	5.95	0.55	0.54	6.25	6.31	6.19	5.97	5.87		6.02			5.97	6.03		
4846	7005	4.87	2.54	1.75	5.24	5.35	5.12	5.53	5.59			5.39		5.57	5.56		V
4848		4.65	-0.16	-0.11				4.86					4.93			4.79	
4853		1.25	-0.23	-0.13				1.50					1.49			1.50	
4865	7037	5.70	0.02	0.04	6.02	6.00	6.05	5.64	5.74		5.49			5.71	5.61		
4867	7042	5.85	0.46	0.44	6.02	5.98	6.06	5.87	5.96					5.90	5.76		
4883	7058	4.94	0.67	0.55	5.10	5.10	5.10	5.07	5.04					5.09	5.08		F
4888		4.33	1.37	0.98				4.35					4.36			4.34	
4889		4.27	0.21	0.20				4.34		4.20			4.31	4.33	4.37	4.47	
4898		4.03	-0.17	-0.14				4.26					4.29			4.23	
4900	7071	6.25	0.27	0.25	6.45	6.40	6.50	6.34	6.36			6.36		6.21	6.42		
4902		4.80	1.59	1.57				4.91	4.97					5.02		4.74	
4905	7077	1.77	-0.02	-0.02	2.16	2.15	2.16	1.63	1.85			1.69		1.76	1.44		
4910	7083	3.38	1.59	1.53	3.64	3.71	3.58	3.66	3.73			3.53		3.72			
4914		5.60	0.34	0.24				5.39	5.58			5.26		5.36	5.33		D

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
4915		2.89	-0.12	-0.13				2.90	3.10			2.77		2.87	2.84		D
4914	7087	2.84	-0.10	-0.04	3.10	3.16	3.05	2.80	3.00			2.67		2.77	2.74		D
4920	7102	4.79	1.56	1.35	4.78	4.79	4.78	4.96	5.00					4.97	4.92		
4931	7125	4.93	0.36	0.37	5.13	5.07	5.19	4.89	4.79					4.88	5.00		D
4932	7128	2.84	0.94	0.64	3.11	3.12	3.10	2.95	3.00			3.13		2.89	2.77		
4940		4.71	-0.14	-0.06				4.96					4.94			4.97	
4942		4.27	-0.19	-0.09				4.40					4.36			4.45	
4949	7156	5.60	1.59	1.97	5.85	5.82	5.88	5.90	6.06					5.74			
4954	7162	4.82	1.45	1.18	4.95	4.96	4.94	4.90	4.89					4.90			
4955		5.19	1.14	0.82				5.26	5.22		5.13	5.54		5.38	5.19	5.10	
4963		4.38	-0.01	0.05				4.44	4.37		4.43			4.32		4.64	D
4979		4.85	0.70	0.57				4.89		4.82			4.82	4.93	4.98	4.88	
4983	7194	4.26	0.58	0.49	4.45	4.48	4.42	4.32	4.38					4.27			
	7212	6.82	0.59	0.55	7.06	6.99	7.12										
5017	7241	4.73	0.30	0.25	4.98	4.96	4.99	4.66	4.72					4.60	4.66		
5019		4.74	0.71	0.58				4.80	4.82					4.76	4.84	4.76	
5020		3.00	0.92	0.60				3.33	3.35			3.42		3.23		3.24	
5026		5.49	-0.13	-0.08				5.70					5.72			5.68	
5028		2.73	0.03	0.05				2.91		2.74			2.98	2.95	2.89	2.97	
5054	7290	2.06	0.02	-0.04	2.38	2.37	2.39	2.17	2.38			1.96		2.18			D
5056		0.97	-0.23	-0.09				1.21	1.23		1.31	1.21		1.09	-	1.09	V
5062	7294	4.02	0.16	0.17	4.18	4.12	4.23	4.02	4.18					3.85			
5068		4.75	1.10	0.79				4.89	4.85		4.79			5.02		4.81	
5072	7301	4.98	0.71	0.61	5.25	5.35	5.15	5.16	5.21			5.27		5.01			
5089		3.88	1.16	0.84				3.96		3.80			3.95	4.04	4.08	3.94	D
5095		4.69	1.60	1.46				4.83	4.91		4.69			4.90			
5105	7346	4.94	0.02	0.08	5.15	5.08	5.22	4.93	4.87			4.93		4.96	4.96		
5107	7348	3.38	0.12	0.07	3.56	3.55	3.57	3.44	3.53		3.23	3.65		3.52			
5110	7355	4.98	0.40	0.41	5.11	5.06	5.16	4.96	4.99					4.93	4.95		
5112	7356	4.70	0.12	0.11	4.96	4.97	4.96	4.63	4.84					4.67	4.38		
5127	7374	4.83	0.23	0.27	5.02	5.01	5.02	4.92	5.00					4.83			D
5132		2.30	-0.22	-0.15				2.56					2.58			2.54	
5154	7404	4.66	1.63	1.40	4.64	4.70	4.59	4.75	4.83					4.67			
5165		5.60	0.81	0.64				5.71	5.78		5.63			5.74	5.64	5.76	
5168		4.23	0.38	0.33				4.36		4.47			4.25	4.28	4.39	4.41	
5185	7438	4.50	0.48	0.41	4.74	4.64	4.83	4.51	4.50			4.55		4.47			
5190		3.41	-0.22	-0.12				3.53					3.54	3.46	3.47	3.65	
5191	7444	1.86	-0.19	-0.12	2.26	2.26	2.26	1.91	2.02		1.82			1.88			
5192		4.19	1.50	2.13				4.40		4.69			4.28	4.24	4.47	4.33	
5193		2.94	-0.16	0.03				3.32					3.33	3.12	3.28	3.53	V
5200	7454	4.07	1.52	1.20	4.07	4.01	4.13	4.28	4.11			4.31		4.29	4.39		
5210		4.32	-0.13	-0.05				4.47		4.60			4.35		4.26	4.67	D
5214	7469	6.65	0.12	0.08	7.01	6.91	7.11	6.57	6.37		6.77			6.57			
5217		5.89	0.01	0.06				6.06					6.05			6.08	
5219	7478	4.75	1.65	1.54	4.90	4.83	4.96	4.96	4.94		4.92			5.93			
5221		4.73	-0.14	-0.04				4.76	4.66	4.80			4.88	4.66	4.70	4.83	D
5226	7487	4.66	1.57	1.61	4.78	4.80	4.76	4.77	4.71	4.77				4.83	4.76		
5231		2.55	-0.22	-0.14				3.06					2.81	3.56		2.81	
5235	7497	2.68	0.58	0.44	3.08	3.16	3.00	2.80	2.89			2.72		2.80			
5248		3.83	-0.21	-0.13				4.05					4.04	4.04	4.05	4.06	

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
5249		3.87	-0.20	-0.14				4.17					4.05	4.24	4.30	4.08	
5260		4.34	0.60	0.48				4.39					4.50	4.23		4.45	
5264	7546	4.26	0.10	0.15	4.50	4.46	4.53	4.34	4.36			4.27		4.32	4.42		
5270	7556	6.19	0.91	0.82	6.42	6.43	6.40	6.12			6.19			6.05			
5285		4.36	-0.19	-0.11				4.54					4.59	4.45	4.43	4.70	
5287		3.28	1.12	0.87				3.48	3.51			3.61		3.44		3.35	
5288		2.06	0.99	0.76				2.26	1.73	2.74			2.19	2.34	2.34	2.23	
5291	7585	3.65	-0.05	-0.03	3.84	3.84	3.84	3.64	3.63		3.50			3.79	3.62		
5299	7600	5.28	1.58	1.85	5.39	5.31	5.46	5.44	5.47					5.37	5.48		
5304	7614	4.83	0.54	0.44	5.12	5.05	5.20	4.82	4.84			4.86		4.77			
5313	7622	5.02	-0.12	-0.08	5.28	5.25	5.32	4.90	4.97					4.79	4.93		
5315		4.21	1.32	1.07				4.31	4.29		4.29	4.50		4.30		4.18	
5328	7641	4.41	0.20	0.17	4.66	4.59	4.72	4.44	4.44					4.40	4.48		D
5338		4.09	0.51	0.50				4.16	4.23		4.18			4.17		4.06	
5340	7656	-0.05	1.23	0.97	0.24	0.24	0.24	0.24	0.03		0.62			0.07			
5343	7658	5.98	0.26	0.23	6.26	6.32	6.21	5.84			5.80			5.87			
5350	7670	4.75	0.20	0.15	4.98	4.91	5.06	4.78	4.79					4.80	4.75		
5351	7669	4.18	0.08	0.02	4.40	4.26	4.54	4.26	4.29					4.23			
5354		3.55	-0.18	-0.10				4.10					3.91	4.04	4.63	3.80	
5359		4.52	0.13	0.10				4.60	4.56					4.49		4.74	
5361	7681	4.81	1.06	0.76	4.98	4.90	5.05	4.83	4.77					4.80	4.92		
5365	7690	5.41	0.38	0.34	5.59	5.62	5.56	5.31	5.23			5.40		5.29			
5367		4.05	-0.03	-0.01				4.17		4.10			4.19	4.15	4.17	4.26	
5370	7696	4.86	1.23	0.89	5.08	5.13	5.03	4.97	4.86			5.04		5.00			
5373	7701	6.33	0.05	0.06	6.47	6.47	6.47	5.98	5.94					6.03			
5378		4.42	-0.18	-0.11				4.55		4.44			4.61	4.54	4.56	4.59	
5381		4.75	1.31	0.97				4.93	4.90			4.90		4.81	5.16	4.89	
5384	7712	6.27	0.63	0.56	6.45	6.54	6.36	6.34	6.32					6.35			
5395		4.56	-0.15	-0.10				4.65					4.58	4.60		4.77	
5396		4.35	0.43	0.41				4.49					4.35	4.66		4.45	D
5404	7746	4.06	0.50	0.42	4.38	4.26	4.49	4.06	4.25					4.07	3.86		
5409		4.82	0.74	0.58				4.97	4.89					5.01		5.01	
5429	7784	3.59	1.30	0.92	3.75	3.71	3.79	3.78	3.64					3.67	4.03		
5430	7786	4.25	1.44	1.05	4.37	4.46	4.28	4.37	4.29					4.54	4.29		
5435	7790	3.02	0.19	0.14	3.34	3.31	3.38	3.00	3.10			3.13		2.82	2.97		
5440		2.31	-0.19	-0.10				2.65					2.54	2.84	2.55	2.68	
5447	7804	4.47	0.37	0.34	4.70	4.67	4.74	4.48	4.49					4.53	4.43		
5453		4.05	-0.15	-0.09				4.14					4.04			4.24	
5463		3.19	0.24	0.23				3.41					3.37			3.45	
5469		2.30	-0.20	-0.09				2.89					2.46	3.33	3.13	2.63	
5471		4.00	-0.17	-0.11				4.09		3.94			4.17	4.00	4.09	4.27	
5475	7837	4.54	-0.04	0.07	4.61	4.54	4.68	4.54	4.59					4.49			D
5477	7840	3.78	0.05	0.02	4.04	4.02	4.06	3.86	3.84					3.88			D
5485		4.05	1.35	1.01				4.13		4.04			3.76	4.41	4.34	4.08	
5487		3.88	0.38	0.40				3.95	3.92		4.03			3.84		4.01	
5489		4.92	0.01	0.06				5.00		4.90			4.96	5.01	4.98	5.14	
5490	7861	4.81	1.66	1.49	4.91	4.91	4.91	4.93	4.93					4.93			FV
5492	7862	6.25	0.41	0.37	6.47	6.51	6.43	6.17	6.23	6.19				6.07	6.19		C
5502	7868	4.60	0.98	0.73	4.84	4.81	4.88	4.69	4.81					4.57			
5505	7869	2.37	0.97	0.75	2.66	2.57	2.75	2.59	2.56					2.62	2.59		D

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
5511	7877	3.73	-0.01	0.07	4.00	3.94	4.05	3.76	3.72					3.80			
5526		4.41	1.40	1.07				4.63	4.96			4.36		4.61	4.73	4.47	
5528		4.33	-0.14	-0.05				4.49					4.43	4.54	4.42	4.58	
5530		5.16	0.41	0.38				5.33	5.30		5.22	5.65		5.10	5.38		
5531		2.75	0.15	0.14				2.90	3.02		2.75			2.96	2.68	3.08	
5544	7921	4.54	0.77	0.63	4.81	4.78	4.84	4.64	4.60			4.65		4.67			D
5563	7954	2.08	1.47	1.11	2.26	2.24	2.27	2.24	2.13	2.24		2.24		2.31	2.29		
5568		5.71	1.11	0.99				5.76	5.89		5.74			5.64			
5570		4.49	0.32	0.32				4.59	4.53					4.60		4.65	
5571		2.68	-0.22	-0.10				2.81					2.74	2.68	2.77	3.04	
5576		3.13	-0.20	-0.08				3.35					3.36	3.36	3.22	3.46	
5586		4.93	0.00	0.08				4.84	4.91					4.76			V
5589	7994	4.59	1.59	1.86	4.74	4.73	4.75	4.86	4.84	4.88		4.86		4.87	4.83		V
5600	8009	4.82	1.50	1.19	5.04	5.04	5.04	4.93	4.86					5.00			
5601	8010	4.40	1.04	0.81	4.64	4.61	4.66	4.62	4.56					4.67			
5602	8013	3.50	0.97	0.65	3.70	3.71	3.69	3.63	3.62					3.53	3.75		
5603		3.27	1.71	1.53				3.41	3.25			3.66	3.20	3.62		3.30	
5605		3.89	-0.14	-0.10				4.02					3.84			4.20	D
5616	8032	4.55	1.23	0.93	4.64	4.58	4.70	4.67	4.46					4.70	4.84		
5625		5.85	-0.12	-0.07				6.00					6.01	5.89		6.11	
5626		4.05	-0.18	-0.08				4.39					4.34	4.41		4.42	D
5634	8055	4.93	0.43	0.40	5.24	5.17	5.30	5.03	5.03					5.03			
5646		3.70	-0.03	-0.05				3.97					3.98			3.95	D
5651		4.82	-0.17	-0.10				4.92					4.97	4.79		5.01	
5652		4.54	-0.08	-0.04				4.66	4.87		4.36	5.02		4.37	4.53	4.79	
5660		4.91	0.37	0.36				4.95		4.84			5.01	4.89	4.96	5.06	
5681	8127	3.49	0.95	0.73	3.59	3.59	3.59	3.54	3.50					3.57			
5683		4.27	-0.09	-0.02				4.36					4.18			4.53	D
5685		2.61	-0.11	-0.04				2.74	2.74			2.85		2.66	2.59	2.84	
5686		4.33	1.10	0.81				4.43	4.69			4.21	4.37	4.44		4.42	
5694	8144	5.06	0.54	0.41	5.17	5.14	5.20	5.18	5.12					5.21	5.20		
5695		3.22	-0.22	-0.11				3.43					3.37	3.40	3.30	3.51	
5705		3.56	1.54	1.19				3.59		3.54			3.28	3.81	3.72	3.61	
5708		3.37	-0.18	-0.11				3.74					3.56	3.97		3.68	D
5712		4.54	-0.15	-0.06				4.69		4.54			4.69	4.75	4.60	4.89	
5721		6.12	0.26	0.24				6.10	6.09		6.13	6.18		6.01			
5727	8182	4.98	0.58	0.48	5.24	5.18	5.29	5.05	4.98			5.03		5.07	5.13		D
5733	8189	4.32	0.31	0.30	4.60	4.56	4.65	4.47	4.52			4.51		4.37			D
5735	8193	3.05	0.05	0.08	3.34	3.34	3.34	3.14	3.18	3.11				3.10	3.16		C
5736		5.45	-0.15	-0.09				5.52		5.44			5.60	5.32	5.46	5.78	
5744	8216	3.29	1.16	0.78	3.52	3.54	3.49	3.47	3.35	3.48				3.52	3.53		C
5747	8223	3.68	0.29	0.18	3.90	3.77	4.04	3.72	3.79					3.65			
5763	8253	5.02	1.59	1.27	5.13	5.12	5.15	5.15	5.09			5.17		5.20			
5764		5.50	-0.14	-0.09				5.59	5.41			5.67		5.57		5.70	
5774	8260	5.02	0.07	0.15	5.21	5.21	5.21	4.98	5.04					4.98	4.93		D
5776		2.78	-0.20	-0.14				2.95					2.96	2.84	2.94	3.07	D
5777		4.62	1.01	0.77				4.83	4.86		4.74	5.04		4.81		4.72	
5778	8263	4.13	-0.13	-0.05	4.44	4.38	4.50	4.17	4.27					4.07			
5780		5.18	-0.09	-0.04				5.15	4.95			5.22		5.11	5.20	5.25	
5781		4.54	-0.18	-0.15				4.84					4.76	4.95		4.80	D

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
5787		3.91	1.02	0.71				4.02	4.01		4.06	4.13		4.10		3.78	
5788	8268	3.80	0.26	0.22	4.08	4.07	4.08	3.85	3.96					3.74			D
5793	8269	2.24	-0.02	0.03	2.58	2.55	2.61	2.31	2.37					2.25			V
5794		3.57	1.39	1.00				3.78	3.93			3.55		3.85	3.93	3.64	
5797		4.33	1.43	1.03				4.27					4.04	4.39	4.04	4.37	
5812		3.65	-0.18	-0.11				3.80	3.91			3.67		3.80		3.80	
5820		4.67	1.00	0.68				4.63	4.58	4.50			4.44	4.64	4.82	4.79	
5824		4.96	1.33	0.96				5.06	5.22			4.91		5.07		5.04	
5825		4.64	0.40	0.35				4.69					4.51	4.76	4.74	4.75	
5830	8310	5.75	0.36	0.33	6.01	6.00	6.02	5.78	5.74					5.80	5.80		
5838		4.72	1.58	1.28				4.96	4.97		4.69	5.39		4.97		4.80	
5839		4.75	-0.14	-0.10				4.82		4.72			4.75	4.79	4.82	5.00	
5840	8319	6.01	0.90	0.69	6.25	6.18	6.32	5.97	5.84					6.07	6.01		
5842	8330	4.53	0.05	0.04	4.82	4.74	4.89	4.49	4.55		4.50	4.48		4.44			D
5843	8329	5.33	0.04	0.05	5.50	5.53	5.48	5.26	5.13			5.35		5.30			
5849	8344	3.85	-0.01	-0.03	3.98	3.91	4.05	3.93	4.18					3.68			n
5854	8351	2.64	1.17	0.81	2.88	2.90	2.87	2.75	2.71					2.79			
5859	8361	5.58	0.04	0.04	5.95	5.94	5.96	5.56			5.66			5.47			
5867	8367	3.67	0.06	0.06	3.84	3.78	3.91	3.74	3.84					3.65			
5868	8368	4.43	0.60	0.51	4.62	4.62	4.62	4.42	4.35					4.49			F
5879	8394	4.09	1.62	1.25	4.10	4.16	4.03	4.28	4.25			4.32		4.27			
5881		3.53	-0.04	-0.01				3.63	3.48					3.62		3.80	
5883		3.95	-0.04	-0.02				4.11	4.01	4.04			4.20	4.03	4.06	4.32	
5885		4.68	-0.06	0.01				4.77	4.79			4.83		4.80	4.66	4.79	
5888	8403	5.23	1.02	0.77	5.42	5.45	5.38	5.33	5.19					5.35	5.46		
5889	8405	4.63	0.80	0.63	4.78	4.62	4.93	4.73	4.56					4.80	4.84		
5892	8407	3.70	0.16	0.08	3.96	3.96	3.96	3.75	3.67		3.80			3.79			
5897		2.85	0.29	0.32				3.04					3.09			2.98	
5899	8409	4.78	1.54	1.22	4.89	4.85	4.93	4.88	4.78					4.97			
5901	8414	4.82	1.00	0.76	5.03	5.02	5.04	4.77	4.74					4.80			
5902		5.03	-0.01	0.01				5.06	5.04		5.04	5.18		5.09	4.93		
5903	8417	4.32	0.04	0.06	4.52	4.57	4.48	4.34	4.49					4.16	4.36		
5904		4.59	-0.06	-0.02				4.66	4.74			4.64	4.72	4.55			D
5906		5.39	-0.02	0.01				5.44	5.58			5.38		5.35			
5907		5.43	-0.04	0.01				5.36	5.38			5.38		5.31			
5908		4.16	1.01	0.72				4.34	4.31					4.36			
5914	8427	4.62	0.57	0.48	4.78	4.75	4.81	4.61	4.47					4.67	4.70		
5915		5.93	-0.02	0.02				5.90				6.02		5.89	5.78		D
5924	8435	5.44	1.59	1.26	5.57	5.63	5.50	5.76	6.05		5.65			5.58			
5928		3.86	-0.20	-0.11				4.02	4.01			4.07		4.00		3.98	
5932	8439	5.38	1.64	1.49	5.35	5.50	5.20	5.54	5.47					5.60			
5933	8442	3.86	0.48	0.49				3.86	4.00			3.99		3.77	3.67		
5941		4.87	-0.10	-0.04				4.68	4.80					4.68	4.57		
5944		2.91	-0.20	-0.09				3.00	3.08			2.95		2.98		2.98	
5947	8450	4.15	1.23	0.89	4.30	4.25	4.34	4.22	4.13			4.26		4.28			D
5948		3.41	-0.22	-0.14				3.61		3.54			3.77	3.60	3.37	3.78	D
5953		2.32	-0.12	-0.05				2.54	2.52			2.47		2.49	2.71	2.52	
5960	8462	4.95	0.26	0.23	5.19	5.17	5.21	4.96	5.02		4.96	4.96		4.90			
5962		4.65	0.92	0.67				4.74					4.66			4.82	
5967		4.89	-0.14	-0.07				4.97		4.76			5.10	5.00	4.77	5.24	

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
5971	8479	4.98	-0.07	0.01	5.25	5.19	5.31	4.91	5.09					4.73			
5972	8481	4.83	0.07	0.10	5.06	5.09	5.02	4.82	4.99					4.66			
5977		4.17	0.47	0.37				4.16	4.10		4.17			4.20		4.27	
5980		4.72	0.23	0.20				4.84					4.78	4.84	4.72	5.01	
5982	8493	4.76	-0.11	0.02	4.98	4.95	5.02	4.64	4.70					4.57			
5984		2.59	-0.08	-0.02				2.76	2.91		2.66			2.70		2.88	D
5986	8496	4.03	0.52	0.45	4.24	4.25	4.23	4.11	4.15	4.12				4.06	4.11		C
5987		4.23	-0.18	-0.10				4.33		4.27			4.42	4.33	4.14	4.47	
5993		3.97	-0.05	0.06				4.13	4.10		4.01			4.02	4.28	4.22	
5997		4.33	0.84	0.65				4.58	4.57		4.37	4.94		4.44		4.47	
6018	8541	4.76	1.01	0.75	4.98	4.96	4.99	4.94	5.20					4.70	4.93		
6023	8543	4.27	-0.07	0.00	4.46	4.49	4.41	4.26	4.22					4.19	4.37		
6027		4.01	0.03	0.11				4.29	4.30		4.26	4.60		4.24	4.04		D
6028		4.59	-0.16	-0.05				4.70	4.69			4.66		4.62		4.81	
6031		4.93	0.09	0.12				4.91	4.81		4.84			5.08			
6056		2.75	1.59	1.29				3.03	2.77			3.13		3.16	3.07		
6070		4.77	0.02	0.08				4.87	4.96			4.93		4.84	4.76	5.08	
6072		4.02	1.08	0.78				4.14					4.19			4.09	
6074	8605	5.78	0.07	0.07	5.98	6.02	5.94	5.73	5.80			5.76		5.63			
6075		3.23	0.98	0.70				3.34	3.37		3.13			3.40		3.48	
6076		6.28	1.07	0.83				6.38			6.38			6.51	6.24		
6081		4.57	0.84	0.87				4.76	4.70			4.93		4.78		4.65	
6084		2.88	0.13	0.20				3.08	2.99			3.16	3.02	3.10	3.03	3.15	V
6092	8627	3.90	-0.15	-0.09	4.17	4.18	4.16	3.91	3.87					3.96	3.89		
6093	8631	4.82	0.34	0.31	5.01	5.05	4.97	4.80	4.76			4.92		4.72			
6095	8635	3.76	0.27	0.29	3.97	4.00	3.94	3.79	3.83			3.82		3.72			
6098		4.91	0.55	0.54				4.93					4.99			4.87	
6103	8641	4.85	0.97	0.73	5.01	5.00	5.02	4.72	4.50					4.93			
6104		4.50	1.03	0.78				4.59	4.57		4.56			4.65		4.57	
6112		4.63	0.22	0.36				4.76	4.82			4.79		4.60		4.84	D
6115		4.47	-0.07	0.04				4.71					4.67			4.75	
6117	8662	4.58	-0.01	0.07	4.76	4.76	4.75	4.53	4.69			4.47		4.44			
6118		4.43	0.28	0.46				4.85	5.03			5.11		4.72		4.54	V
6129		4.63	0.16	0.16				4.68	4.60					4.56		4.89	
6132	8685	2.74	0.91	0.61	2.99	2.98	3.00	2.89	2.82	2.87				2.98	2.88		C
6134		0.91	1.84	1.55				1.22	1.06			1.34		1.44	1.34	0.92	V
6141		4.79	-0.07	-0.06				4.87	4.64			4.94	4.92	4.75		5.12	
6143		4.23	-0.16	-0.06				4.33		4.14			4.46	4.30	4.28	4.49	
6146	8709	5.01	1.52	2.52	5.07	5.18	4.96	5.02	5.08					4.97			V
6147		4.27	0.92	0.65				4.40	4.44					4.41		4.34	
6148	8713	2.77	0.94	0.64	3.01	3.00	3.02	2.81	2.76					2.86			
6149	8712	3.83	0.01	-0.01	3.98	3.84	4.13	3.85	3.97			3.79		3.78			D
6153		4.45	0.11	0.13				4.57	4.66			4.66		4.37		4.59	
6159	8732	4.85	1.49	1.20	4.93	4.99	4.87	4.92	5.00					4.85			
6161	8734	5.01	-0.06	0.05	5.18	5.19	5.17	4.98	5.03	4.95				4.96	5.00		C
6165		2.81	-0.25	-0.12				2.91	2.90			2.91		2.85	2.78	3.10	
6166		4.16	1.57	1.20				4.30		4.24			4.08	4.50	4.41	4.28	
6168	8747	4.20	-0.01	0.03	4.46	4.47	4.44	4.25	4.25					4.32	4.19		
6171		5.74	0.81	0.61				5.87	5.84		6.12	5.60		5.92			
6175		2.56	0.02	0.10				2.70	2.84		2.48	2.74		2.64		2.80	

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
6212	8803	2.81	0.65	0.51	3.16	3.17	3.16	3.00	3.09					2.92			D
6220	8817	3.50	0.92	0.67	3.76	3.74	3.77	3.61	3.69					3.57	3.56		
	8818	6.47	0.54	0.44	6.76	6.76	6.75										
6237	8845	4.84	0.39	0.35	5.04	5.04	5.04	4.88	4.93					4.84			
6241		2.29	1.16	0.86				2.36	2.15	2.53			2.29	2.44	2.42	2.34	
6243		4.66	0.47	0.45				4.73	4.68		4.64	4.77		4.78	4.67	4.82	
6247		3.03	-0.22	-0.12				3.09		2.57			3.26	3.19	3.09	3.34	V
6252		3.57	-0.21	-0.13				3.64		3.24			3.74	3.71	3.69	3.83	
6254	8870	4.82	0.09	0.10	5.04	5.02	5.07	4.86	5.00					4.83	4.74		
6271		3.59	1.36	1.12				3.75					3.53	3.98	3.86	3.62	
6281	8902	4.38	-0.08	-0.09	4.56	4.50	4.61	4.29	4.41			4.16		4.31			
6292	8910	6.08	0.92	0.70	6.30	6.25	6.34	6.33			6.33						
6299	8926	3.20	1.16	0.84	3.36	3.37	3.34	3.42	3.37					3.48			
6315	8945	4.90	0.48	0.45	4.95	5.03	4.87	4.82	4.68					4.91	4.88		
6322	8953	4.23	0.90	0.70	4.48	4.48	4.48	4.40	4.47		4.32			4.40			V
6324	8956	3.92	-0.01	-0.01	4.16	4.24	4.09	3.92	4.04					3.80			
6334		4.87	0.26	0.28				4.87		4.65			4.98	4.80	4.87	5.07	
6337	8982	4.98	1.60	1.44	5.12	5.11	5.13	5.10	5.11					5.10			
6355	9010	4.91	0.12	0.12	5.02	5.03	5.02	4.91	4.88			4.95		4.91			
6378		2.42	0.05	0.03				2.63	2.62		2.45	2.86		2.60		2.62	D
6380		3.34	0.40	0.36				3.44					3.37	3.50	3.32	3.55	
6396	9074	3.17	-0.11	-0.06	3.45	3.45	3.44	3.22	3.27	3.21				3.22	3.20		C
6401		4.32	0.86	0.70				4.56	4.72			4.53		4.48	4.64	4.44	D
6406		3.06	1.45	2.10				3.48	3.39					3.57			DV
6410	9094	3.13	0.08	0.05	3.46	3.41	3.49	3.16	3.26		3.14	3.19		3.05	3.18		
6415		4.72	1.15	0.80				4.82	4.95					4.77	4.82	4.76	D
6416		5.48	0.80	0.72				5.58					5.54			5.62	
6418	9099	3.16	1.44	0.96	3.32	3.34	3.29	3.36	3.36					3.31	3.40		
6426		5.91	1.04	0.94				5.89		5.87			5.85	5.93	5.94	5.86	
6431	9115	4.78	-0.15	-0.05	5.12	5.33	4.90										V
6436	9123	4.66	0.05	0.09	4.78	4.74	4.81	4.80	4.94					4.67			
6445		4.38	0.41	0.37				4.46	4.51		4.39			4.49		4.43	
6446		4.31	0.03	0.06				4.35	4.38			4.22		4.34	4.30	4.50	
6453		3.26	-0.23	-0.12				3.37	3.44			3.34	3.48	3.21		3.38	
	9141	7.03	0.60	0.55	7.20	7.18	7.22										
6484	9184	4.17	0.00	0.02	4.33	4.34	4.32	4.14	4.14					4.05	4.23		D
6486		4.16	0.28	0.29				4.28	4.47			4.39		4.10	4.08	4.36	
6492		4.27	0.40	0.33				4.37	4.38			4.58	4.31	4.22	4.29	4.43	
6493		4.54	0.41	0.38				4.61	4.62		4.60			4.45	4.69	4.67	
6498	9198	4.33	1.50	1.10	4.40	4.36	4.44	4.44	4.42			4.50		4.39			
6508		2.68	-0.23	-0.14				2.80	2.84	2.70			2.84	2.72	2.81	2.88	
6510		2.95	-0.17	-0.10				2.97					2.86			3.08	
6519		4.81	0.00	0.07				4.89	4.88			4.90		4.97	4.79	4.96	
6526	9236	4.41	1.44	1.04	4.62	4.66	4.57	4.48	4.29					4.50	4.65		
6527		1.63	-0.22	-0.17				1.71	1.68	1.64			1.79	1.79	1.42	1.93	
6536	9251	2.78	1.00	0.68	3.01	3.03	2.99	2.99	2.97					2.95	3.06		
6537		4.59	-0.02	-0.01				4.63					4.54			4.72	
6546		4.29	1.09	0.75				4.34		4.31			4.19	4.46	4.38	4.35	
6553		1.87	0.40	0.35				2.04					1.99	2.08	2.02	2.05	
6554	9273	4.88	0.26	0.24	5.18	5.25	5.10	4.98	4.86			5.03		5.13	4.88		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
6555	9274	4.88	0.27	0.24	5.16	5.04	5.28	4.95	4.75			4.99		5.10	4.95		
6556	9275	2.07	0.15	0.14	2.54	2.52	2.57	2.14	2.18					2.10			
6561		3.52	0.24	0.20				3.64	3.67		3.70			3.52		3.67	
6567		4.63	0.11	0.18				4.65	4.73					4.45	4.60	4.82	
6569		4.77	0.40	0.29				4.84					4.85			4.83	
6580		2.41	-0.21	-0.08				2.51		2.18			2.59	2.60	2.45	2.75	
6581		4.24	0.08	0.08				4.39	4.41					4.32	4.35	4.48	
6588	9334	3.80	-0.18	-0.10	4.03	4.01	4.04	3.79	3.92					3.85	3.61		
6592	9340	6.36	1.20	0.92	6.52	6.44	6.59	6.46			6.56			6.36			
6595		4.87	0.47	0.41				4.89	4.98			4.88		4.78	4.84	4.96	
6596	9345	4.80	0.43	0.41	5.05	5.01	5.09	4.87	4.86	4.84				4.88	4.90		C
6603	9354	2.77	1.17	0.82	3.06	3.04	3.07	2.94	2.90					2.99			
6623	9394	3.42	0.75	0.53	3.62	3.65	3.59	3.48	3.49					3.47			
6629	9399	3.75	0.04	0.04	4.10	4.19	4.00	3.74	3.82			3.67		3.74			
6636	9406	4.58	0.43	0.38	4.93	4.82	5.04	4.90	4.84	4.93				4.83	4.99		C
6685	9492	5.45	0.34	0.32	5.72	5.73	5.71	5.48	5.63					5.33			
6688	9495	3.75	1.18	0.83	3.95	3.96	3.94	3.90	3.93					3.88			
6695	9507	3.87	1.35	0.90	3.95	3.97	3.92	3.99	4.00					3.98			
6698		3.34	0.99	0.71				3.50	3.46		3.63			3.40		3.46	
6700		4.75	-0.05	0.05				4.76	4.60			4.93		4.71	4.80		
6703	9523	3.70	0.94	0.69	3.88	3.90	3.87	3.82	3.91					3.74			
6705	9528	2.22	1.52	1.14	2.47	2.53	2.40	2.42	2.35					2.48			
6707	9534	4.41	0.39	0.40	4.72	4.74	4.69	4.48	4.63					4.33			
6710		4.62	0.39	0.33				4.60	4.46					4.58		4.76	
6712	9543	4.60	-0.02	0.13	4.94	4.87	5.01	4.81	4.83			4.77		4.82			
6713	9548	4.68	1.27	0.87	4.72	4.70	4.75	4.71	4.53			4.84		4.76			
6714	9550	3.97	0.02	0.10	4.18	4.09	4.27	3.92	4.00			3.85		3.90			
6723	9564	4.42	0.04	0.07	4.54	4.52	4.56	4.44	4.42			4.52		4.39			
6736		5.97	0.00	0.25				5.86	5.66			6.16		5.77		6.17	
6746		2.99	1.01	0.73				3.07	3.05	3.07			3.02	3.02	3.15	3.12	
6752	9606	4.03	0.86	0.65	4.12	4.06	4.17	4.07	4.11			4.02		4.06	4.10		D
6766		4.55	0.95	0.66				4.66	4.69			4.46		4.68	4.73	4.75	
6770	9638	4.63	0.97	0.69	4.81	4.81	4.81	4.73	4.82			4.72		4.65			
6771	9639	3.73	0.12	0.14	4.00	4.06	3.94	3.73	3.85			3.65		3.70			
6779	9655	3.83	-0.02	0.03	4.06	4.09	4.04	3.83	3.99					3.67			
6783		4.53	1.01	0.70				4.60					4.54			4.66	
6787	9665	4.35	-0.15	-0.06	4.60	4.71	4.49	4.32	4.48					4.16			
6789	9667	4.36	0.02	0.05	4.68	4.68	4.68	4.44	4.34		4.45			4.53			
6806	9691	6.40	0.87	0.77	6.56	6.61	6.51	6.40							6.40		
6812		3.85	0.22	0.27				4.01	4.08			4.06		3.90		4.06	V
6832		3.11	1.56	1.56				3.16	2.97	3.17			2.96	3.38	3.38	3.12	
6842		4.63	1.66	1.21				4.69	4.71			4.61		4.74		4.63	
6859		2.70	1.38	1.00				2.84	2.83			2.87	2.69	2.98		2.84	
6866	9799	4.84	0.91	0.69	4.82	4.86	4.77	4.92	4.97			4.93		4.96	4.82		
6868	9802	4.96	1.58	1.34	5.03	5.08	4.98	4.98	4.81			5.05		5.07			
6869		3.25	0.94	0.70				3.42	3.35			3.43		3.48		3.26	
6872	9803	4.34	1.17	0.86	4.51	4.52	4.50	4.34	4.37					4.30			
6879		1.85	-0.03	0.00				1.95	2.12	1.90			1.93	1.81	1.90	2.04	
6884		4.68	0.94	0.72				4.83	4.95		4.79			4.74		4.89	
6895	9841	3.84	1.18	0.85	4.06	4.14	3.99	3.92	3.92					3.91			

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
6896		4.81	1.30	1.10				4.96	4.87		5.00			5.01		4.73	D
6897		3.51	-0.17	-0.13				3.76					3.69	3.93	3.60	3.80	
6913		2.81	1.04	0.75				2.94	3.06			2.86		2.90			
6917	9869	5.83	0.07	0.08	5.86	5.82	5.91	5.71	5.83		5.66			5.63			
6918	9868	5.21	0.50	0.49	5.30	5.08	5.53	5.33	5.21		5.63			5.14			VD
6920	9870	4.22	-0.10	-0.04	4.54	4.50	4.59	4.24	4.21	4.19				4.26	4.28		D
6923	9874	4.99	0.08	0.05	5.26	5.25	5.26	4.85	4.83					4.93	4.78		D
6927	9881	3.58	0.49	0.44	3.75	3.81	3.69	3.69	3.66	3.63				3.67	3.74		C
6930		4.71	0.07	0.08				4.73	4.71		4.63			4.85			
6945	9901	4.82	1.19	0.86	5.00	4.89	5.10	4.99	4.98	4.98				4.99	5.00		C
6951		4.64	1.02	0.69				4.69					4.41	4.84	4.80	4.70	
6973		3.83	1.34	0.97				4.06	4.01			4.10		4.07			
6978	9958	4.80	0.61	0.53	5.04	5.00	5.07	4.95	4.83					5.07			
6993		5.74	0.06	0.07				5.80	5.78					5.81		5.81	
7001	10002	0.03	0.00	-0.04	0.38	0.38	0.38	0.14	0.19					0.10			
7020		4.72	0.35	0.30				4.74	4.75		4.69			4.72	4.60	4.96	V
7029		4.87	-0.18	-0.14				4.82		4.54			4.91	4.86	4.75	5.05	
7039		3.16	-0.11	-0.01				3.30	3.33			3.41		3.16		3.33	
7056	10103	4.36	0.19	0.15	4.73	4.82	4.64	4.29	4.34					4.24			
7059		5.64	0.14	0.13				5.68	5.75					5.64	5.66		
7061	10106	4.19	0.46	0.39	4.44	4.49	4.40	4.26	4.25					4.26			
7063		4.22	1.09	0.79				4.47	4.35		4.52	4.52		4.48		4.47	
7064	10113	4.84	1.20	0.88	5.10	5.09	5.11	4.92	4.86					4.97			
7069	10118	4.36	0.12	0.09	4.42	4.29	4.54	4.37	4.52					4.20	4.38		
7116		4.83	1.40	1.01				4.96	5.02			5.09		4.86	5.00	4.84	
7120		4.98	1.32	0.94				5.04	5.15			4.99		5.03	5.06	4.97	
7121		2.03	-0.22	-0.11				2.14	2.30			2.10		2.02			
7125	10196	4.67	1.19	0.90	4.78	4.80	4.77	4.78	4.64					4.80	4.89		
7133	10212	4.60	0.78	0.64	4.71	4.79	4.63	4.56	4.55					4.58			D
7137	10217	4.93	0.90	0.68	5.16	5.16	5.16	4.97	4.94					5.00			
7139	10222	4.30	1.67	1.78	4.37	4.52	4.22	4.52	4.53					4.52			
7141	10226	4.07	0.17	0.17	4.95	5.04	4.86	4.10	4.08			4.27		3.94			D
7150		3.51	1.18	0.80				3.61	3.53			3.66		3.65		3.59	
7157		4.00	1.59	2.05				4.32	4.35					4.30			V
7172	10265	5.22	0.53	0.42	5.40	5.39	5.41	5.37	5.20			5.60		5.31			
7176	10273	4.02	1.08	0.76	4.28	4.29	4.27	4.21	4.10		4.34			4.19			
7178	10276	3.24	-0.05	-0.03	3.55	3.57	3.52	3.30	3.31					3.30			
7180	10282	4.82	1.15	0.85	5.05	5.05	5.04	4.91	4.83					4.97	4.92		
7193		4.02	1.09	0.79				4.15	4.02		4.26			4.18			
7194		2.59	0.08	0.05				2.71	2.89	2.44			2.69	2.79	2.57	2.86	D
7215	10335	5.02	0.19	0.21	5.32	5.32	5.33	5.06	5.04					5.07			
7217		3.77	1.00	0.72				3.90	3.91			3.74		4.00	3.93		
7234		3.31	1.20	0.87				3.42	3.48			3.46		3.39	3.49	3.27	
7235	10361	2.99	0.01	0.01	3.32	3.29	3.34	3.02	3.10					2.99	2.96		
7236		3.43	-0.09	-0.03				3.55	3.62		3.45			3.51		3.61	
7254		4.11	0.04	0.04				4.12		3.84			4.22	4.06	4.08	4.41	
7259		4.11	1.20	0.82				4.16		3.94			3.99	4.34	4.32	4.19	
7264		2.88	0.34	0.34				3.02	3.11			2.83		3.11			
7292		4.83	0.55	0.49				4.93	5.19			4.69		4.91			D
7298	10504	4.38	-0.14	-0.10	4.68	4.71	4.65	4.46	4.47					4.30	4.61		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
7306	10526	4.77	-0.04	0.01	4.98	5.07	4.89	4.60	4.67					4.52			
7310	10541	3.07	1.00	0.70	3.32	3.31	3.34	3.24	3.21	3.19				3.31	3.25		C
7312	10546	5.14	0.31	0.31	5.28	5.33	5.23	5.06	4.92					5.08	5.18		
7314	10547	4.37	1.25	0.87	4.52	4.54	4.50	4.46	4.34					4.58			
7317		6.06	1.43	1.12				6.28			6.37			6.25	6.21		
7328	10575	3.76	0.97	0.63	3.95	3.90	4.00	3.98	3.94			4.07		3.97	3.94		
7340		3.93	0.22	0.19				3.95	3.93					3.97			
7342		4.61	0.10	0.27				4.58	4.67					4.62	4.44		
7352	10617	4.45	1.25	0.90	4.42	4.40	4.44	4.63	4.54	4.64				4.67	4.66		C
7358	10630	5.18	-0.12	-0.04	5.33	5.40	5.26	4.92	5.01					4.83			
7371	10650	4.59	0.02	0.04	4.80	4.76	4.84	4.63	4.55					4.71			
7372	10653	4.97	-0.09	0.02	5.10	5.11	5.10	4.86	4.93					4.80	4.86		
7377	10663	3.36	0.32	0.25	3.74	3.70	3.77	3.44	3.46			3.46		3.39			
7387	10676	4.67	0.60	0.51	4.82	4.82	4.81	4.86	4.80		4.98			4.81			
7405	10724	4.45	1.50	1.21	4.43	4.47	4.40	4.63	4.69					4.57			
7417	10749	3.08	1.13	0.87	3.16	3.18	3.14	3.24	3.13					3.35			
7420	10757	3.79	0.14	0.11	3.97	3.91	4.03	3.94	3.89			3.90		4.02			
7426	10769	4.74	-0.13	0.01	4.88	4.93	4.84	4.85	4.80					4.90			
7429	10789	4.45	1.18	0.91	4.56	4.56	4.57	4.65	4.68			4.71		4.54	4.68		
7437	10804	4.99	-0.07	-0.01	5.20	5.17	5.22	4.88	4.98					4.77			
7440		4.60	-0.06	-0.03				4.66	4.64			4.57	4.42	4.67	4.75	4.94	
7446		4.96	0.00	0.06				5.04	4.93					4.92	5.12	5.21	
7447		4.36	-0.09	0.02				4.28	4.27					4.28			
7451	10833	5.74	0.48	0.46	5.93	5.89	5.97	5.65	5.57					5.73			
7462	10844	4.69	0.80	0.65	4.87	4.86	4.88	4.78	4.74	4.78				4.81	4.81		C
7469	10866	4.47	0.39	0.35	4.60	4.66	4.55	4.64	4.65		4.87	4.70		4.48	4.48		
7478	10891	4.70	0.95	0.68	4.78	4.78	4.78	4.79	4.89			4.69		4.78			F
7479	10893	4.37	0.77	0.57	4.52	4.54	4.50	4.37	4.27					4.30	4.54		
7488	10908	4.37	1.05	0.71	4.62	4.61	4.62	4.45	4.40			4.51		4.44			
7503	10939	5.95	0.64	0.45	6.32	6.30	6.34	6.26	6.24		6.01			6.67	5.94		
7504	10941	6.20	0.66	0.44	6.31	6.36	6.26	6.37	6.35		6.33			6.78	6.52		
7525	10975	2.72	1.52	1.07	3.08	3.01	3.14	2.80	2.77					2.84			
7528	10977	2.87	-0.02	-0.01	3.18	3.21	3.14	2.97	3.05					2.90	2.95		
7546	11009	5.00	0.10	0.14	5.23	5.28	5.18	4.95	4.95					4.90	4.99		D
7536	10989	3.83	1.41	1.44	3.86	3.73	3.98	3.78	3.72					3.85			
7557	11027	0.76	0.22	0.14	1.12	1.12	1.12	0.89	0.97			0.95		0.74			
7565	11044	4.96	-0.12	-0.02	5.13	5.14	5.12	4.91	5.02					4.85	4.86		
7582	11065	3.82	0.89	0.64	3.99	4.04	3.94	3.99	3.93	3.98	3.99			4.03	4.01		DC
7589	11071	5.62	-0.07	0.10	5.81	5.76	5.86	5.51	5.64					5.33	5.56		
7592	11075	4.58	-0.06	0.03	4.75	4.37	4.29	4.50	4.66					4.34			
7595	11078	4.68	1.05	0.76	4.85	4.85	4.85	4.86	4.92			4.79		4.88			F
7597		4.70	0.75	0.59				4.81	4.95			4.75		4.79	4.79	4.78	
7602	11089	3.72	0.86	0.66	3.82	3.70	3.93	3.90	3.95					3.84			
7604		4.50	1.46	1.02				4.62	4.72			4.59		4.60		4.56	
7613	11114	4.95	-0.09	0.01	5.15	5.14	5.17	4.87	4.67					5.00	4.95		
7615	11118	3.93	1.03	0.74	4.08	4.14	4.03	4.03	4.04			4.04		4.00			
7618		4.82	0.89	0.65				4.95	5.03			5.05		4.66		5.06	
7619	11123	4.92	0.12	0.10	5.11	5.18	5.04	4.80	4.77					4.83			D
7635	11146	3.47	1.57	1.20	3.83	3.78	3.88	3.71	3.65			3.72		3.76			
7650		4.59	1.65	1.87				4.60	4.69			4.64		4.53		4.52	

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
7653	11187	4.65	0.18	0.16	4.89	4.86	4.93	4.74	4.93					4.66	4.63		
7665		3.56	0.76	0.61				3.64					3.56			3.73	
7678	11255	5.65	0.54	0.52	5.91	5.87	5.94	5.69	5.50			5.77		5.86	5.64		
7685	11274	4.50	1.31	0.93	4.73	4.66	4.79	4.66	4.58	4.67				4.74	4.66		C
7703		5.32	0.87	0.75				5.34		5.17			5.38	5.42	5.42	5.31	
7708	11315	4.92	-0.12	0.03	5.23	5.20	5.26	4.82	4.84					4.80			
7710		3.22	-0.07	-0.07				3.37	3.39			3.50		3.23	3.35	3.47	
7722		5.73	0.88	0.71				5.69	5.97			5.37		5.66	5.76	5.83	
7724	11376	4.95	0.09	0.10	5.12	5.15	5.10	4.96	5.11			4.84		4.94	4.94		
7730	11388	4.83	0.09	0.16	4.94	4.95	4.94	4.96	4.94					4.97	4.97		
7735	11396	3.80	1.28	0.97	3.94	3.93	3.94	3.95	3.80					4.02	4.02		V
7736	11401	4.99	0.12	0.20	5.22	5.17	5.27	4.98	5.04					5.10	4.81		
7739	11410	4.77	-0.18	-0.08	5.08	5.03	5.13	4.82	4.76		4.86			4.83			
7740	11411	4.30	0.11	0.12	4.54	4.51	4.58	4.32	4.41			4.23		4.24	4.38		
7741	11413	5.15	1.04	0.74	5.34	5.38	5.30	5.38	5.49					5.26			
7744	11416	4.52	1.26	0.96	4.68	4.63	4.72	4.73	4.79					4.67			
7746	11420	6.12	1.04	0.77	6.32	6.30	6.34	6.16	6.15					6.16			
7747		4.26	1.08	0.79				4.55	4.53					4.68		4.43	
7750	11429	4.39	-0.05	-0.02	4.63	4.63	4.62	4.40	4.38					4.41			D
7751	11432	3.98	1.52	1.20	4.16	4.13	4.18	4.16	4.07					4.25			V
7754		3.58	0.95	0.69				3.77	3.78					3.80		3.74	
7763	11468	4.82	0.42	0.54	5.04	5.09	5.00	4.88	4.90					4.87			V
7767	11475	5.84	0.10	0.15	6.05	6.05	6.05	5.82			5.82			5.82			D
7770	11481	5.17	0.65	0.57	5.31	5.29	5.33	5.18	5.20					5.17			
7773		4.76	-0.04	0.01				4.84	4.68					4.66	5.00	5.00	
7776		3.08	0.79	0.55				3.25	3.38		3.20			3.16	3.16	3.36	
7781	11497	5.76	0.12	0.13	5.87	5.90	5.83	5.71	5.69		5.71			5.80	5.64		
7784	11509	6.23	0.06	0.06	6.56	6.49	6.64	6.07							6.07		
7790		1.94	-0.20	-0.09				2.12					2.05			2.18	
7796	11531	2.23	0.67	0.49	2.48	2.47	2.50	2.32	2.31					2.33			
7806	11550	4.44	1.33	1.01	4.65	4.57	4.73	4.60	4.60					4.67	4.54		
7822		4.81	0.37	0.35				4.96	4.98			4.74		4.99	4.99	5.10	D
7834	11616	4.02	0.40	0.36	4.32	4.25	4.39	4.09	4.13		4.06			4.08			
7844	11640	4.95	-0.09	0.03	5.09	5.16	5.01	4.89	4.97					4.88	4.83		
7847	11643	6.18	1.01	0.85	6.38	6.34	6.41	6.30				6.30					
7850	11664	4.22	0.20	0.17	4.34	4.26	4.41	4.28	4.33	4.28				4.24	4.25		C
7852	11668	4.04	-0.12	-0.02	4.39	4.34	4.44	3.98	4.13			3.80		4.02			
7866	11693	4.63	1.61	1.30	4.79	4.77	4.82	4.85	4.77					4.93			
7871	11705	4.69	0.11	0.13	4.74	4.79	4.70	4.69	4.71			4.70		4.67			
7882	11727	3.63	0.44	0.40	4.02	3.95	4.09	3.72	3.65			3.77		3.73			D
7884		4.33	0.96	0.67				4.51	4.44					4.51	4.57	4.52	
7891	11745	4.82	-0.02	0.03	5.04	4.99	5.09	4.78	4.82					4.71	4.82		
7906	11758	3.77	-0.06	0.00	4.14	4.11	4.17	3.86	3.96					3.77			
7924	11806	1.25	0.09	0.11	1.59	1.59	1.59	1.33	1.47			1.27		1.25			
7928	11814	4.44	0.32	0.26	4.54	4.60	4.47	4.53	4.57			4.47		4.56			
7936		4.13	0.43	0.36				4.26	4.33			4.12		4.29		4.28	
7939	11833	4.91	1.19	0.85	5.10	5.06	5.14	5.13	5.13					5.13			
7942	11840	4.23	1.06	0.77	4.46	4.43	4.50	4.34	4.29					4.40			
7947	11847	3.91	0.85	0.68	4.19	4.17	4.21	4.12	4.16					4.07			D
7949	11848	2.46	1.03	0.73	2.72	2.77	2.68	2.64	2.69					2.58			

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
7950		3.77	0.00	0.07				3.83	3.81		3.98			3.84	3.63	3.90	
7951		4.44	1.67	1.47				4.60	4.62		4.67			4.78	4.54	4.41	
7955	11856	4.52	0.54	0.47	4.67	4.67	4.67	4.63	4.56					4.60	4.74		F
7957	11862	3.43	0.92	0.67	3.64	3.63	3.66	3.59	3.59	3.59				3.60	3.57		C
7963	11869	4.54	-0.11	-0.04	4.86	4.83	4.89	4.47	4.57					4.37			D
7977	11899	4.86	0.42	0.45	4.95	5.04	4.86	4.89	5.00					4.77	4.90		
7980		4.12	1.63	1.25				4.24	4.43			4.23		4.21		4.07	
7990		4.73	0.32	0.28				4.80	4.77		5.09			4.59	4.72	4.85	
7995	11924	4.61	0.82	0.68	4.80	4.80	4.80	4.76	4.73					4.67	4.88		
8001	11943	4.77	-0.14	-0.07	4.97	5.00	4.93	4.68	4.59					4.80	4.65		
8020	11996	5.67	0.47	0.48	5.84	5.81	5.88	5.76	5.84					5.68			
8028	12011	3.94	0.02	0.05	4.10	4.10	4.10	4.04	4.09					3.99			
8034	12025	5.23	0.46	0.32	5.26	5.25	5.26	5.29	5.37			5.20		5.31	5.13		
8047	12055	4.75	-0.04	0.13	4.95	4.79	5.11	4.86	4.57					5.01	4.99		
8060		4.84	0.18	0.16				4.93	5.17		4.87			4.96	4.78	4.89	
8075		4.07	-0.01	0.01				4.19	4.29			4.22		4.06	4.11	4.26	
8079	12117	3.70	1.65	1.20	3.80	3.80	3.81	3.92	3.73			4.07		3.85	4.05		
8080		4.49	1.60	1.28				4.60	4.63			4.36		4.80	4.61	4.62	
8085	12126	5.22	1.17	1.03	5.44	5.47	5.41	5.57	5.56			5.60		5.51	5.73		
8086	12127	6.03	1.37	1.17	6.09	6.14	6.04	6.28	6.27			6.47		6.22	6.44		
8089	12136	4.56	1.56	1.17	4.60	4.72	4.47	4.88	5.07					4.80	4.78		
8093		4.52	0.94	0.69				4.52	4.63					4.42		4.76	
8097	12162	4.68	0.26	0.25	4.66	4.74	4.57	4.76	4.79					4.72			
8115	12206	3.20	0.99	0.70	3.45	3.51	3.39	3.40	3.48					3.45	3.27		
8123	12221	4.49	0.50	0.43	4.68	4.68	4.68	4.61	4.60			4.62		4.60	4.62		D
8130	12238	3.73	0.40	0.35	3.90	3.91	3.88	3.82	3.94					3.83	3.68		D
8131	12239	3.90	0.52	0.44	4.08	4.08	4.07	4.14	4.11			4.17		4.06	4.23		
8143	12274	4.23	0.13	0.15	4.50	4.50	4.49	4.28	4.32					4.24			
8146	12281	4.42	-0.10	0.05	4.59	4.61	4.57	4.42	4.44					4.40			
8151		4.82	0.02	0.09				4.92					5.01	4.71	4.80	5.14	
8162	12316	2.45	0.22	0.21	2.78	2.83	2.73	2.60	2.58	2.55				2.63	2.63		
8167		4.27	0.91	0.62				4.30	4.35					4.26			
8170	12333	6.40	0.53	0.47	6.73	6.74	6.72	6.46			6.37				6.56		
8173	12338	4.09	1.11	0.79	4.24	4.28	4.20	4.24	4.28					4.20	4.25		
8181		4.22	0.48	0.47				4.30					4.27			4.44	
8204		3.74	1.00	0.64				3.86	3.79			3.72		3.94	4.07	3.76	
8207		5.78	1.44	1.05				6.03	6.03			6.02		6.05	6.03	5.77	
8213		4.51	0.91	0.68				4.59	4.46			4.51		4.80		4.61	
8225	12447	4.57	1.62	1.25	4.62	4.73	4.50	4.76	4.76					4.70	4.81		
8232		2.87	0.84	0.61				3.07	3.14			3.31		3.02	2.99	2.88	
8238	12476	3.23	-0.22	-0.10	3.48	3.51	3.46	3.32	3.39	3.26	3.32			3.30	3.35		CDV
8252	12514	4.02	0.89	0.71	4.24	4.23	4.26	4.22	4.17		4.37			4.13	4.21		
8255	12518	4.91	1.08	0.82	4.98	4.99	4.97	4.98	5.00					4.97			
8260		4.72	-0.16	-0.04				4.72	4.53		4.81			4.62	4.72	4.94	
8263		6.25	0.06	0.08				6.27	6.18					6.20		6.42	
8264		4.69	0.19	0.17				4.78	4.77			4.75		4.76		4.84	
8278		3.67	0.32	0.23				3.80	3.78					3.72		3.90	
8279	12572	4.73	0.30	0.31	5.06	5.13	4.99	4.87	4.79			4.93		4.84	4.82		
8288		4.73	0.88	0.67				4.82	4.72		5.02			4.64		4.89	
8291	12606	6.11	0.07	0.11	6.31	6.27	6.35	6.05			6.10	6.27		5.77			

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
8297	12611	6.05	2.52	1.83	6.13	6.13	6.13	6.38			6.32	6.44		6.37			V
8301	12618	4.67	-0.12	-0.02	4.94	4.96	4.93	4.78	4.87					4.70	4.78		
8305		4.34	-0.05	-0.01				4.35	4.23	4.22			4.41	4.34	4.35	4.53	
8308	12628	2.39	1.52	1.05	2.76	2.64	2.87	2.54	2.41					2.67			
8309	12635	4.51	0.49	0.38	4.72	4.73	4.72	4.45	4.37					4.50			D
8313	12638	4.31	1.18	0.80	4.40	4.36	4.45	4.52	4.44			4.77		4.34			
8315	12642	4.12	0.44	0.37	4.24	4.28	4.19	4.27	4.21		4.31			4.24	4.31		
8317	12644	4.57	1.10	0.84	4.68	4.68	4.69	4.85	4.79					4.77	5.00		
8322		2.83	0.29	0.24				2.98	3.01					2.95			V
8327	12660	5.94	0.31	0.28	6.09	6.09	6.09	5.97	6.05			6.02		5.92	5.90		
8334	12667	4.29	0.52	0.50	4.48	4.54	4.43	4.46	4.50	4.46				4.40	4.47		
8335	12670	4.24	-0.12	-0.05	4.44	4.40	4.49	4.26	4.44					4.10	4.23		
8353		3.01	-0.12	-0.05				3.16		3.14			3.20	3.07	3.14	3.26	
8371	12768	5.80	0.72	0.68	5.94	5.90	5.97	6.01	6.06		5.86			6.10			
8383	12800	4.90	1.75	1.71	5.06	5.02	5.09	5.35	5.17					5.46	5.41		V
8387		4.69	1.06	0.88				4.74					4.79			4.69	
8402		4.69	-0.05	-0.01				4.66	4.70					4.62			
8407	12859	5.60	-0.02	0.03	5.76	5.69	5.82	5.52	5.64					5.33	5.59		
8410		5.31	0.23	0.18				5.23	5.24					5.22			
8411		4.46	1.37	1.00				4.60		4.64			4.52	4.76	4.61	4.59	
8413	12875	4.84	1.44	1.07	5.07	5.19	4.95	4.90	4.80					5.00			
8414		2.93	0.97	0.66				3.19	3.16			3.28		3.12			
8417	12879	4.29	0.34	0.32	4.42	4.38	4.45	4.40	4.45	4.38				4.38	4.38		D
8418		4.25	-0.07	-0.05				4.35	4.34		4.35			4.36			
8421	12887	6.12	1.60	1.66	6.35	6.34	6.36	6.29							6.29		
8425		1.74	-0.13	-0.08				2.16					1.92	2.10	2.63	1.97	
8428	12901	5.11	0.08	0.16	5.38	5.45	5.31	5.17	5.16					5.18			
8430	12908	3.76	0.44	0.40	4.00	4.03	3.97	3.96	3.99					3.83	4.05		
8431		4.50	0.05	0.07				4.62	4.53	4.69			4.64	4.65	4.53	4.69	
8450	12940	3.55	0.07	0.05	4.08	4.07	4.08	3.70	3.76			3.78		3.57			
8454	12950	4.29	0.46	0.39	4.46	4.53	4.38	4.38	4.41					4.27	4.48		
8461	12966	5.95	0.95	0.72	6.16	6.13	6.20	6.06			6.09			5.90	6.18		
8465	12971	3.35	1.55	1.08	3.60	3.63	3.57	3.62	3.54					3.70			
8468	12977	4.79	0.92	0.69	4.95	5.01	4.89	4.99	4.95			4.93		5.10			
8469	12980	5.05	0.24	0.28	5.34	5.29	5.38	5.19	5.29					5.00	5.27		
8473	12982	6.37	-0.06	0.00	6.62	6.54	6.71	6.36				6.36					
8485	12998	4.49	1.39	1.01	4.55	4.55	4.54	4.64	4.65					4.62			
8494	13021	4.19	0.28	0.27	4.36	4.38	4.34	4.23	4.24					4.23	4.23		
8498	13023	4.13	1.46	1.00	4.32	4.33	4.31	4.22	4.14					4.30			
8499		4.15	0.99	0.70				4.32	4.32					4.31	4.32	4.35	
8502		2.83	1.36	1.05				2.91					2.90			2.92	
8518		3.84	-0.06	0.04				3.97	4.07					3.81		4.04	
8520	13073	4.99	-0.10	-0.07	5.15	5.15	5.15	4.93	5.06					4.82	4.92		P
8521		6.62	2.01	3.44				6.65								6.65	V
8522	13076	4.81	0.00	0.09	5.01	5.01	5.01	4.88	4.89					4.78	4.98		P
8523	13079	4.56	-0.10	-0.02	4.72	4.81	4.62	4.66	4.77					4.54	4.67		
8538	13104	4.44	1.02	0.75	4.59	4.63	4.55	4.58	4.52					4.60	4.62		
8539	13108	4.64	-0.04	0.16	4.60	4.53	4.66	4.64	4.59			4.82		4.51			
8541	13109	4.58	0.09	0.13	4.74	4.81	4.68	4.64	4.64					4.63	4.65		
8551	13133	4.80	1.06	0.78	4.91	4.94	4.88	4.93	4.97					4.89	4.94		

T A B L E 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
8556		3.97	1.03	0.73				4.02					4.07	4.01	3.96	4.04	
8558		3.66	0.38	0.39				3.75	3.81					3.79	3.66		D
8560		4.11	1.57	1.73				4.31					4.26	4.33	4.34	4.32	
8572	13166	4.37	1.68	1.39	4.48	4.54	4.41	4.61	4.57					4.65	4.61		D
8573		4.81	-0.08	0.00				4.89	4.83					4.77		5.07	
8576		4.29	0.01	0.02				4.36	4.26	4.37			4.48	4.32	4.31	4.44	D
8579	13178	4.51	-0.09	-0.01	4.71	4.88	4.75	4.54	4.57					4.47	4.58		
8585	13187	3.77	0.01	0.00	3.94	3.94	3.93	3.85	3.90					3.80			
8597		4.00	-0.10	-0.06				4.13	4.22			4.21		3.97			
8613	13250	4.63	0.24	0.22	4.88	4.82	4.95	4.83	4.80					4.93	4.77		
8622	13270	4.88	-0.20	-0.09	5.06	5.15	4.98	4.91	5.04					4.93	4.76		
8628		4.16	-0.12	-0.06				4.22	4.06			4.41		4.20			
8630		4.16	0.21	0.22				4.34					4.35			4.34	
8632	13289	4.46	1.33	0.92	4.58	4.62	4.54	4.64	4.70					4.70	4.51		
8634	13294	3.40	-0.09	-0.04	3.74	3.80	3.67	3.61	3.59		3.97	3.55		3.34			
8636		2.11	1.62	1.91				2.24					2.09	2.14	2.50	2.25	
8641	13303	4.79	-0.01	0.04	5.02	5.02	5.03	4.85	4.93					4.83	4.79		
8644		4.85	1.03	0.76				4.89					4.83	4.85	4.84	5.05	
8649		4.69	1.36	0.97				4.88	4.81		5.02			4.81			
8650	13313	2.95	0.86	0.64	3.22	3.30	3.15	3.10	3.06					3.20	3.03		
8665	13354	4.19	0.50	0.43	4.39	4.38	4.40	4.31	4.23			4.40		4.31			
8667	13355	3.94	1.08	0.76	4.19	4.27	4.11	4.14	4.18					4.12	4.13		
8675		3.47	0.08	0.11				3.69					3.69			3.69	
8679		3.98	1.59	1.19				4.21	4.07		4.38			4.35		4.04	
8684	13388	3.48	0.94	0.68	3.86	3.88	3.83	3.67	3.74					3.60	3.68		
8694	13399	3.53	1.05	0.83	3.68	3.69	3.68	3.68	3.62	3.72				3.72	3.68		
8695		4.46	-0.04	0.02				4.52	4.29	4.47			4.63	4.51	4.54	4.67	D
8698		3.79	1.65	1.42				3.84	3.80					3.99	3.81	3.76	
8702	13421	4.74	1.26	0.94	4.81	4.87	4.75	4.97	4.82		5.06			5.02			
8704		5.81	-0.08	0.01				5.89	5.82					5.84		6.02	
8709		3.28	0.05	0.07				3.51	3.42					3.54		3.58	
8717	13449	4.90	0.00	0.04	5.08	5.01	5.14	4.95	4.95			5.02		4.88			
8720		4.21	0.97	0.74				4.33	4.43	4.40			4.08	4.28	4.40	4.38	
8721		6.49	1.10	0.95				6.46							6.65	6.26	
8726	13463	4.94	1.77	1.35	5.00	5.05	4.96	5.10	5.17					5.20	4.94		
8728		1.16	0.09	0.06				1.29	1.26	1.18			1.27	1.31	1.28	1.42	
8729	13469	5.50	0.67	0.54	5.48	5.44	5.52	5.59	5.55		5.60			5.61			
8737	13480	6.43	0.64	0.53	6.59	6.65	6.53	6.50						6.54	6.47		
8747		4.11	0.95	0.77				4.18					4.13			4.22	
8748	13495	4.72	1.43	1.09	4.76	4.87	4.64	4.96	4.96		4.86			5.06			
8752	13498	5.13	1.55	1.17	5.34	5.31	5.37	5.48	5.63					5.37	5.44		V
8762	13515	3.62	-0.09	0.01	4.00	4.02	3.97	3.63	3.77					3.49			
8773	13541	4.52	-0.12	-0.02	4.66	4.66	4.67	4.58	4.57			4.83		4.34			
8775		2.42	1.67	1.50				2.61	2.56					2.76	2.52		V
8780	13548	4.66	1.06	0.74	4.80	4.83	4.77	4.91	4.87					5.08	4.79		
8781	13550	2.48	-0.04	0.01	3.20	3.19	3.21	2.57	2.61			2.49		2.61			
8787		4.29	0.43	0.38				4.35					4.40	4.23	4.35	4.42	
8789		4.48	0.90	0.71				4.77	4.82			4.92		4.54		4.80	
8795	13571	4.51	1.58	1.26	4.62	4.62	4.62	4.69	4.65					4.73			F
8796	13575	4.77	1.35	0.97	4.95	4.93	4.97	4.98	4.89					5.00	5.06		

TABLE 1 (continued)

BS	PD	V	B-V	V-R	Gr	Gr1	Gr2	mag	m14	m23	m24,1	m24,4	m34	m44	m45	m46	R
8797	13579	4.86	-0.03	0.10	4.97	4.89	5.05	4.93	4.99					5.00	4.79		
8804	13591	5.33	1.41	1.02	5.33	5.29	5.37	5.56	5.67					5.43	5.59		
8808	13600	6.25	-0.01	0.05	6.54	6.59	6.48	6.19							6.19		D
8812		3.64	1.23	0.84				3.80	3.55			4.03		3.81			
8817		4.68	0.64	0.54				4.94	4.89			5.12		4.80			
8819	13614	4.42	0.82	0.65	4.54	4.49	4.59	4.56	4.48	4.55				4.63	4.60		D
8820		3.90	1.02	0.75				4.10					4.06	4.07	4.20	4.06	
8830	13653	4.53	0.30	0.29	4.66	4.67	4.66	4.62	4.70					4.53	4.62		
8832	13657	5.57	1.00	0.83	5.65	5.66	5.64	5.65	5.46					5.73	5.76		
8834		4.22	1.55	1.28				4.40	4.24					4.56			
8841		4.25	1.11	0.79				4.46	4.48		4.63	4.36		4.54		4.28	
8848		3.98	0.39	0.41				4.10					3.98			4.21	
8852	13690	3.69	0.91	0.72	4.08	3.99	4.16	3.85	3.82					3.88			
8858		4.40	-0.14	-0.07				4.56	4.53		4.51			4.68		4.54	
8860	13701	4.86	1.67	1.46	4.96	4.96	4.95	4.99	4.87			5.10		5.00			
8863		4.41	1.13	0.84				4.51	4.59	4.50			4.34	4.68	4.53	4.43	
8872	13714	4.76	0.84	0.65	4.90	4.90	4.90	4.90	4.92					4.89	4.92		D
8880	13729	4.60	0.17	0.21	4.65	4.60	4.70	4.65	4.71					4.59			
8892		3.98	1.10	0.82				4.20	4.12		4.48			4.15		4.06	
8905	13775	4.41	0.61	0.54	4.70	4.72	4.69	4.57	4.57					4.57			
8906		4.40	1.47	1.13				4.52	4.36			4.69		4.64		4.41	
8911	13789	4.94	0.04	0.07	5.19	5.16	5.22	4.94	4.87					4.88	4.93		
8916	13799	4.30	1.08	0.80	4.48	4.52	4.44	4.45	4.41					4.49			
8923	13813	4.56	0.94	0.74	4.68	4.78	4.59	4.67	4.65			4.63		4.72			
8926	13827	4.94	-0.12	0.01	5.13	5.16	5.10	4.89	4.76			4.86		4.97	4.97		V
8937		4.37	-0.09	0.00				4.46		4.40			4.58	4.37	4.35	4.62	
8939		4.72	0.02	0.07				4.76	4.73			4.72		4.78		4.82	
8947	13878	5.59	0.10	0.12	5.94	5.90	5.99	5.50	5.54			5.54		5.43			
8949		4.71	0.08	0.12				4.80					4.87	4.72	4.66	4.95	
8959		4.74	0.08	0.11				4.86					4.92	4.60	4.96	4.98	
8961	13908	3.82	1.02	0.78	3.94	3.98	3.90	4.00	3.95			4.04		4.14	3.89		V
8965	13914	4.29	-0.11	0.00	4.48	4.54	4.41	4.28	4.30					4.23	4.30		
8969	13927	4.13	0.51	0.44	4.28	4.27	4.29	4.28	4.28		4.35	4.28		4.21			
8974	13939	3.21	1.03	0.75	3.43	3.45	3.41	3.42	3.37					3.48			
8976	13942	4.14	-0.08	-0.01	4.44	4.33	4.54	4.33	4.42					4.30	4.26		
8982		4.84	0.81	0.62				4.95	4.78					5.07		4.99	
8984	13955	4.51	0.21	0.18	4.78	4.74	4.82	4.61	4.69		4.54	4.76		4.44			
8988		4.51	-0.04	0.02				4.62	4.68		4.63			4.43		4.76	
8997	13970	4.93	0.96	0.71	5.07	5.14	5.00	4.98	4.93					4.96	5.06		D
9004	13990	5.04	2.61	1.87	5.12	5.05	5.19	5.30	5.15					5.44			V
9016		4.57	0.00	0.04				4.64	4.56			4.61		4.68	4.62	4.72	
9030	14037	5.79	1.66	0.26	5.92	6.05	5.80	6.11	6.02			6.19		6.11			
9045	14076	4.59	1.26	0.96	4.92	4.78	5.05	4.85	4.56					5.04	4.96		V
9064	14115	4.66	1.59	1.46	4.80	4.84	4.77	4.75	4.56			4.99		4.69			
9071	14123	4.88	-0.06	0.04	5.12	5.11	5.14	4.93	4.96		4.66			5.05	5.04		D
9072	14125	4.01	0.42	0.38	4.25	4.28	4.22	4.03	4.16			3.88		4.04			
9076		4.46	-0.09	0.02				4.71					4.64			4.78	
9084		4.79	1.24	0.98				4.73					4.62			4.84	
9088	14159	3.75	0.67	0.59	5.96	5.91	6.00	5.85	5.83					5.90	5.82		
9089		4.41	1.63	1.56				4.66	4.59			4.67		4.79		4.60	
9091		5.00	-0.16	-0.05				4.99	4.98	5.07			4.93	5.00	4.86	5.11	
9098		4.56	-0.04	0.03				4.62	4.56					4.51		4.79	

IV. Multiple regression analysis

Multiple regression is used in data analysis to obtain the best fit of a set of observations of independent and dependent variables by an equation of the form:

$$y = c + b_1x_1 + b_2x_2 + \ldots + b_nx_n \qquad (3)$$

where y is the dependent variable; x_1, x_2, . . . , x_n are the independent variables; and c, b_1, b_2, . . . , b_n are the coefficients to be determined.

A multiple regression solution gives the least square "best" fit value of these coefficients for a particular sample of observations. The solution also gives a measure of the reliability of each of the coefficients so that inferences can be made regarding the parameters of the population from which the sample of observations was taken.

Thus, the data given in Table 1 can be studied with the help of multiple regression analysis using the above equations. Since we have two colors (B—V and V—R), we have

$$m - V = c + b_1\ (B-V) + b_2\ (m - \overline{m}) + b_3\ (B-V)\ (m - \overline{m}) \qquad (4)$$

and

$$m - V = c' + b'_1\ (V-R) + b'_2\ (m - \overline{m}) + b'_3\ (V-R)\ (m - \overline{m}) \qquad (5)$$

where

m, is one of the magnitudes listed in Table 1, columns 6—17; V, (B—V), and (V—R) are the magnitude and colors also given in Table 1 columns 3-5; $\overline{m} = \frac{1}{n}\sum_1^n m$; and the c's and b's are the coefficients to be derived.

The IBM 360/40 computer of the University of Chile has been used to carry out the multiple regression analysis. The program was made with the help of Messrs. Quinteros and Pérez, both from the University of Chile. A copy of this program (in Fortran language) is given in Appendix I. The program was prepared to compute first, equation 4 and next equation 5. Immediately it assumed $b_3 = b'_3 = 0$ and it calculated all, again. Forthwith it assumed $b_2 = b'_2 = b_3 = b'_3 = 0$ and it made again all the computations. Only in a few cases it was assumed $b_2 = b'_2 = 0$ and $b_3 \neq b'_3 \neq 0$. Most of the results of these computations are given in Tables 2-5. Tables 2 and 3 give those obtained with Potsdam photometry. Tables 4 and 5 those obtained with Harvard photometry. Tables 2 and 4 list the results employing equation (4). Tables 3 and 5 list the results employing equation (5). The columns of Tables 2—5 give:

1st. Line 1, the Postdam or Harvard magnitude, m (see equations (4) and (5)). Line 2, the arithmetic mean of all the m magnitudes entered in the regression (see above). Line 3, the constant term, c, obtained from the computation.

2nd. Lines 1—3 the regression coefficients b_1, b_2 and b_3 or b'_1, b'_2 and b'_3. When in lines 2 or 3 there appears a 0.0000000 number, it means that the regression was made without this coefficient (see above).

3rd. Lines 1—3, the standard deviation of the coefficients given in the 2nd column.

4th. Lines 1—3, T-values (stundent's T distribution) of the coefficients given in the 2nd column.

5th. Line 1, multiple correlation coefficient, R, of the variables. Line 2, standard error of the estimation, ε. Line 3, sum of squares "due to" or "explained by" the regression, SSAR.

6th. Line 1, k (3, 2 or 1) degrees of freedom. Line 2, SSAR/k. Line 3, sum of squares of the deviations, SSDR.

7th. Line 1, degrees of freedom of SSDR, n—k—1. Line 2, mean square error, SSDR/n—k—1. Line 3, F-value

$$F = \frac{SSAR/k}{SSDR/n-k-1}$$

8th. Remarks. *All* means that in the sample were included all stars with a given magnitude from one of the columns 6—17 listed in Table 1; $90° \geqslant \delta > 60°$ means that in the sample were included only stars with declination between 90 and 60 degrees north; and so on.

TABLE 2

POTSDAM STATISTICAL RESULTS WITH B-V

magnitude $\bar{m}$	coefficients			R	k	n-k-1	
constant term	Regression	St.deviation	T-values	ϵ SSAR	SSAR/k SSDR	SSDR/n-k-1 F	Remarks
Gr	-0.0697601	0.0048069	-14.5125942	0.4279503	3	959	
4.9247	0.0009453	0.0032447	0.2913503	0.0856865	0.5262142	0.0073422	
0.2532640	-0.0135424	0.0044810	- 3.0222044	1.5786428	7.0411596	71.6699677	All
Gr	-0.0682179	0.0047999	-14.2123232	0.4187621	2	960	
4.9247	-0.0058722	0.0023421	- 2.5071917	0.0860488	0.7557912	0.0074044	
0.2531043	0.0000000			1.5115824	7.1082201	102.0733185	All
Gr	-0.0673351	0.0048001	-14.0277815	0.4122646	1	961	
4.9247	0.0000000			0.0862851	1.4650402	0.0074451	
0.2526200	0.0000000			1.4650402	7.1547623	196.7785950	All
Gr	-0.0663246	0.0125490	- 5.2852545	0.5181920	3	82	
4.6093	-0.0218914	0.0121424	- 1.8028927	0.0680242	0.0464303	0.0046273	
0.2265248	0.0088467	0.0140557	0.6294054	0.1392908	0.3794389	10.0339813	$90° \geq \partial > 60°$
Gr	-0.0654675	0.0124294	- 5.2671385	0.5147710	2	83	
4.6093	-0.0163093	0.0082631	- 1.9737434	0.0677763	0.0687289	0.0045936	
0.2255437	0.0000000			0.1374578	0.3812720	14.9617538	$90° \geq \partial > 60°$
Gr	-0.0631210	0.0125839	- 5.0160227	0.4800949	1	84	
4.6093	0.0000000			0.0689346	0.1195626	0.0047520	
0.2240732	0.0000000			0.1195626	0.3991672	25.1605225	$90° \geq \partial > 60°$
Gr	-0.0556132	0.0068892	- 8.0724745	0.4350872	3	345	
4.7569	-0.0142485	0.0051948	- 2.7428427	0.0745988	0.1494361	0.0055650	
0.2319596	0.0029720	0.0069427	0.4280795	0.4483082	1.9199219	26.8528900	$60° \geq \partial > 30°$
Gr	-0.0559077	0.0068467	- 8.1655807	0.4345922	2	346	
4.7569	-0.0126433	0.0035910	- 3.5208025	0.0745107	0.2236444	0.0055519	
0.2321717	0.0000000			0.4472888	1.9209414	40.2828369	$60° \geq \partial > 30°$
Gr	-0.0565123	0.0069581	- 8.1241589	0.3997629	1	347	
4.7569	0.0000000			0.0757244	0.3784678	0.0057342	
0.2325069	0.0000000			0.3784678	1.9897623	66.0020447	$60° \geq \partial > 30°$
Gr	-0.0779626	0.0070755	-11.0187244	0.4383830	3	524	
5.0875	0.0045400	0.0044200	1.0271530	0.0917110	0.349499	0.0084109	
0.2700045	-0.0203787	0.0062221	- 3.2752047	1.0484972	4.4073200	41.5530243	$30° \geq \partial \geq 0°$
Gr	-0.0747324	0.0070710	-10.5688677	0.4190975	2	525	
5.0875	-0.0053970	0.0032438	- 1.6637897	0.0925567	0.4791374	0.0085667	
0.2700582	0.0000000			0.9582749	4.4975414	55.9299164	$30° \geq \partial \geq 0°$
Gr	-0.0733207	0.0070317	-10.4271832	0.4138796	1	526	
5.0875	0.0000000			0.0927121	0.9345613	0.0085955	
0.2693141	0.0000000			0.9345613	4.5212555	108.7262726	$30° \geq \partial \geq 0°$
Gr	-0.0708126	0.0078876	- 8.9776812	0.4103688	3	408	
5.1510	0.0106499	0.0044474	2.3946638	0.0849270	0.1986398	0.0072126	
0.2633793	-0.0215970	0.0066231	- 3.2608595	0.5959195	2.9427414	27.5406647	$0^h \leq \alpha < 8^h$
Gr	-0.0644211	0.0077297	- 8.3342705	0.3830533	2	409	
5.1510	0.0007097	0.0032762	0.2166209	0.0859213	0.2596135	0.0073825	
0.2617189	0.0000000			0.5192271	3.0194330	35.1661835	$0^h \leq \alpha < 8^h$
Gr	-0.0645646	0.0076923	- 8.3934040	0.3829257	1	410	
5.1510	0.0000000			0.0858214	0.5188812	0.0073653	
0.2617859	0.0000000			0.5188812	3.0197792	70.4493103	$0^h \leq \alpha < 8^h$
Gr	-0.0766062	0.0080541	- 9.5114164	0.5241631	3	254	
4.8700	-0.0053626	0.0055133	- 0.9726515	0.0776361	0.1933226	0.0060274	
0.2570043	-0.0077849	0.0070131	- 1.1100492	0.5799684	1.5309496	32.0742035	$8^h \leq \alpha < 16^h$
Gr	-0.0765746	0.0080577	- 9.5032310	0.5207962	2	255	
4.8700	-0.0096167	0.0039654	- 2.4251776	0.0776713	0.2862708	0.0060328	
0.2571548	0.0000000			0.5725416	1.5383759	47.4520416	$8^h \leq \alpha < 16^h$
Gr	-0.0759925	0.0081306	- 9.3464823	0.5044006	1	256	
4.8700	0.0000000			0.0784084	0.5370597	0.0061479	
0.2567972	0.0000000			0.5370597	1.5738583	87.3568420	$8^h \leq \alpha < 16^h$
Gr	-0.0586587	0.0087824	- 6.6790838	0.4348033	3	289	
4.6556	-0.0331315	0.0083059	- 3.9889145	0.0881652	0.1745683	0.0077731	
0.2338565	0.0081977	0.0103620	0.7911311	0.5237049	2.2464294	22.4579620	$16^h \leq \alpha < 24^h$
Gr	-0.0584197	0.0087716	- 6.6601028	0.4327791	2	290	
4.6556	-0.0283729	0.0057242	- 4.9566469	0.0881083	0.2594200	0.0077631	
0.2335710	0.0000000			0.5188400	2.2512941	33.4171295	$16^h \leq \alpha < 24^h$

TABLE 2 (continued)

magnitude $\bar{m}$ / constant term	coefficients: Regression	St.deviation	T-values	R / ϵ / SSAR	k / SSAR/k / SSDR	n-k-1 / SSDR/n-k-1 / F	Remarks
Gr	-0.0569954	0.0091150	- 6.2529392	0.3441612	1	291	
4.6556	0.0000000			0.0916069	0.3281140	0.0083918	
0.2327123	0.0000000			0.3281140	2.4420204	39.0992584	$16^h \leq \alpha < 24^h$
Gr 1	-0.0580839	0.0056104	-10.3529291	0.3209109	3	959	
4.9220	0.0032694	0.0037758	0.8658863	0.1001268	0.3679314	0.0100254	
0.2442552	-0.0135433	0.0051970	- 2.6060028	1.1037941	9.6143398	36.6999969	All
Gr 1	-0.0566413	0.0055998	-10.1148338	0.3108562	2	960	
4.9220	-0.0035510	0.0027298	- 1.3008347	0.1004283	0.5178547	0.0100859	
0.2440991	0.0000000			1.0357094	9.6824245	51.3446198	All
Gr 1	-0.0561472	0.0055889	-10.0461340	0.3082845	1	961	
4.9220	0.0000000			0.1004645	1.0186443	0.0100931	
0.2438279	0.0000000			1.0186443	9.6994896	100.9246216	All
Gr 1	-0.0698527	0.0150832	- 4.6311455	0.4680336	3	82	
4.6167	-0.0205730	0.0146732	- 1.4020815	0.0817752	0.0512708	0.0066872	
0.2360376	0.0059305	0.0171000	0.3468117	0.1538124	0.5483497	7.6670160	$90° \geq \delta > 60°$
Gr 1	-0.0693055	0.0149208	- 4.6449003	0.4668084	2	83	
4.6167	-0.0168449	0.0099341	- 1.6956654	0.0813407	0.0765041	0.0066163	
0.2353895	0.0000000			0.1530082	0.5491539	11.5629492	$90° \geq \delta > 60°$
Gr 1	-0.0668196	0.0150134	- 4.4506617	0.4368261	1	84	
4.6167	0.0000000			0.0822436	0.1339844	0.0067640	
0.2338315	0.0000000			0.1339844	0.5681776	19.8084106	$90° \geq \delta > 60°$
Gr 1	-0.0385003	0.0081187	- 4.7421503	0.3142069	3	345	
4.7592	-0.0201158	0.0061357	- 3.2784853	0.0880244	0.0976065	0.0077483	
0.2246250	0.0108888	0.0081345	1.3385944	0.2928195	2.6731625	12.5971556	$60° \geq \delta > 30°$
Gr 1	-0.0394052	0.0080998	- 4.8649654	0.3066676	2	346	
4.7592	-0.0141952	0.0042574	- 3.3342524	0.0881251	0.1394680	0.0077660	
0.2253654	0.0000000			0.2789359	2.6870461	17.9587250	$60° \geq \delta > 30°$
Gr 1	-0.0403140	0.0082124	- 4.9089384	0.2548258	1	347	
4.7592	0.0000000			0.0894005	0.1925997	0.0079925	
0.2258697	0.0000000			0.1925997	2.7733822	24.0976868	$60° \geq \delta > 30°$
Gr 1	-0.0674283	0.0083088	- 8.1152439	0.3474010	3	524	
5.0799	0.0120136	0.0051465	2.3343277	0.1078160	0.2786734	0.0116243	
0.2565334	-0.0241867	0.0072311	- 3.3447962	0.8360204	6.0911303	23.9733582	$30° \geq \delta \geq 0°$
Gr 1	-0.0636567	0.0083115	- 7.6589108	0.3192392	2	525	
5.0799	0.0002643	0.0037976	0.0695921	0.1088570	0.3529857	0.0118499	
0.2565535	0.0000000			0.7059715	6.2211790	29.7881622	$30° \geq \delta \geq 0°$
Gr 1	-0.0637234	0.0082484	- 7.7255688	0.3192265	1	526	
5.0799	0.0000000			0.1087540	0.7059153	0.0118274	
0.2565886	0.0000000			0.7059153	6.2212353	59.6845245	$30° \geq \delta \geq 0°$
Gr 2	-0.0814924	0.0061580	-13.2334766	0.3941398	3	959	
4.9269	0.0049730	0.0041505	1.1981459	0.1096309	0.7066193	0.0120189	
0.2616591	-0.0149799	0.0057502	- 2.6051168	2.1198578	11.5261707	58.7921143	All
Gr 2	-0.0796658	0.0061364	-12.9824734	0.3864828	2	960	
4.9269	-0.0025559	0.0029880	- 0.8553612	0.1099609	1.0191460	0.0120914	
0.2614765	0.0000000			2.0382919	11.6077366	84.2868958	All
Gr 2	-0.0792512	0.0061164	-12.9572115	0.3856432	1	961	
4.9269	0.0000000			0.1099455	2.0294466	0.0120880	
0.2612491	0.0000000			2.0294466	11.6165819	167.8891907	All
Gr 2	-0.0690045	0.0164390	- 4.1976061	0.4225175	3	82	
4.6033	-0.0156504	0.0157489	- 0.9937460	0.0890650	0.0471194	0.0079326	
0.2223665	0.0104581	0.0181362	0.5766428	0.1413583	0.6504714	5.9399881	$90° \geq \delta > 60°$
Gr 2	-0.0679469	0.0162706	- 4.1760654	0.4185570	2	83	
4.6033	-0.0090418	0.0107585	- 0.8404278	0.0887061	0.0693603	0.0078688	
0.2211662	0.0000000			0.1387206	0.6531090	8.8146191	$90° \geq \delta > 60°$
Gr 2	-0.0666144	0.0161648	- 4.1209593	0.4100866	1	84	
4.6033	0.0000000			0.0885509	0.1331628	0.0078413	
0.2203313	0.0000000			0.1331628	0.6586668	16.9822845	$90° \geq \delta > 60°$
Gr 2	-0.0757409	0.0089290	- 8.4826126	0.4227662	3	345	
4.7553	-0.0053608	0.0066998	- 0.8001464	0.0965242	0.2331769	0.0093169	
0.2416345	-0.0030886	0.0090030	- 0.3430643	0.6995309	3.2143383	25.0272522	$60° \geq \delta > 30°$

TABLE 2 (continued)

magnitude $\bar{m}$ constant term	coefficients Regression	St.deviation	T-values	R ϵ SSAR	k SSAR/k SSDR	n-k-1 SSDR/n-k-1 F	Remarks
Gr 2	-0.0753829	0.0088564	- 8.5116510	0.4224349	2	346	
4.7553	-0.0070212	0.0046270	- 1.5174246	0.0964010	0.3492174	0.0092932	
0.2414051	0.0000000			0.6984349	3.2154341	37.5778809	$60° \geq \partial > 30°$
Gr 2	-0.0755848	0.0088721	- 8.5194311	0.4159136	1	347	
4.7553	0.0000000			0.0965818	0.6770373	0.0093280	
0.2415167	0.0000000			0.6770373	3.2368317	72.5808258	$60° \geq \partial > 30°$
Gr 2	-0.0857328	0.0090834	- 9.4384003	0.3841315	3	524	
5.0934	0.0061017	0.0056880	1.0727415	0.1176223	0.4182962	0.0138350	
0.2798870	-0.0209131	0.0080359	- 2.6024618	1.2548885	7.2495451	30.2346039	$30° \geq \partial \geq 0°$
Gr 2	-0.0823507	0.0090392	- 9.1103506	0.3695120	2	525	
5.0934	-0.0040928	0.0041467	- 0.9870130	0.1182672	0.5805936	0.0139871	
0.2799613	0.0000000			1.1611872	7.3432465	41.5091095	$30° \geq \partial \geq 0°$
Gr 2	-0.0812477	0.0089697	- 9.0580435	0.3673377	1	526	
5.0934	0.0000000			0.1182643	1.1475620	0.0139864	
0.2793798	0.0000000			1.1475620	7.3568716	82.0481415	$30° \geq \partial \geq 0°$

TABLE 3

POTSDAM STATISTICAL RESULTS WITH V-R

magnitude $\bar{m}$ constant term	coefficients Regression	St.deviation	T-values	R ϵ SSAR	k SSAR/k SSDR	n-k-1 SSDR/n-k-1 F	Remarks
Gr	-0.0907475	0.0062745	-14.4628773	0.4255722	3	959	
4.9247	0.0001492	0.0034500	0.0432494	0.0857930	0.5203822	0.0073604	
0.2577164	-0.0120464	0.0059794	- 2.0146351	1.5611467	7.0586557	70.6999512	All
Gr	-0.0897439	0.0062647	-14.3254223	0.4214807	2	960	
4.9247	-0.0049743	0.0023351	- 2.1302567	0.0859295	0.7656364	0.0073839	
0.2575418	0.0000000			1.5312729	7.0885296	103.6902161	All
Gr	-0.0891279	0.0062695	-14.2161350	0.4168437	1	961	
4.9247	0.0000000			0.0860875	1.4977655	0.0074111	
0.2572538	0.0000000			1.4977655	7.1220369	202.0985107	All
Gr	-0.0820906	0.0158944	- 5.1647520	0.5104229	3	82	
4.6093	-0.0242656	0.0129930	- 1.8675900	0.0683948	0.0450485	0.0046779	
0.2287253	0.0190468	0.0197973	0.9620925	0.1351454	0.3835843	9.6301575	90°≥ ∂ >60°
Gr	-0.0800420	0.0157441	- 5.0839491	0.5021798	2	83	
4.6093	-0.0146602	0.0083113	- 1.7638884	0.0683641	0.0654078	0.0046737	
0.2271621	0.0000000			0.1308156	0.3879141	13.9949760	90°≥ ∂ >60°
Gr	-0.0783899	0.0159125	- 4.9263248	0.4734474	1	84	
4.6093	0.0000000			0.0692180	0.1162745	0.0047911	
0.2262816	0.0000000			0.1162745	0.4024552	24.2686920	90°≥ ∂ >60°
Gr	-0.0746103	0.0087718	- 8.5057354	0.4510726	3	345	
4.7569	-0.0157929	0.0054292	- 2.9088678	0.0739442	0.1606185	0.0054678	
0.2365323	0.0105705	0.0087475	1.2084103	0.4818557	1.8863745	29.3756104	60°≥ ∂ >30°
Gr	-0.0747180	0.0087771	- 8.5127897	0.4473201	2	346	
4.7569	-0.0108551	0.0035773	- 3.0344629	0.0739934	0.2369359	0.0054750	
0.2370249	0.0000000			0.4738718	1.8943586	43.2757874	60°≥ ∂ >30°
Gr	-0.0769252	0.0088498	- 8.6923075	0.4228567	1	347	
4.7569	0.0000000			0.0748634	0.4234581	0.0056045	
0.2380863	0.0000000			0.4234581	1.9447727	75.5563660	60°≥ ∂ >30°
Gr	-0.1017380	0.0095293	-10.6763926	0.4246572	3	524	
5.0875	0.0042700	0.0047465	0.8996150	0.0923810	0.3279560	0.0085343	
0.2744159	-0.0226384	0.0085158	- 2.6584072	0.9838679	4.4719486	38.4281921	30°≥ ∂ ≥0°
Gr	-0.0979348	0.0094755	-10.3355532	0.4114354	2	525	
5.0875	-0.0049666	0.0032524	- 1.5270653	0.0929133	0.4617779	0.0086329	
0.2740638	0.0000000			0.9235558	4.5322609	53.4906158	30°≥ ∂ ≥0°
Gr	-0.0963492	0.0094304	-10.2168932	0.4069267	1	526	
5.0875	0.0000000			0.0930308	0.9034251	0.0086547	
0.2733610	0.0000000			0.9034251	4.5523920	104.3850555	30°≥ ∂ ≥0°
Gr	-0.0947868	0.0106762	- 8.8782911	0.4058741	3	408	
5.0875	0.0118403	0.0048835	2.4245663	0.0851141	0.1943123	0.0072444	
0.2698008	-0.0258563	0.0088401	- 2.9248981	0.5829369	2.9557238	26.8223267	$0^h \leq \alpha < 8^h$
Gr	-0.0874684	0.0104743	- 8.3507481	0.3836924	2	409	
5.0875	0.0011565	0.0032711	0.3535533	0.0858966	0.2604805	0.0073782	
0.2677265	0.0000000			0.5209610	3.0176992	35.3038940	$0^h \leq \alpha < 8^h$
Gr	-0.0877250	0.0104380	- 8.4043770	0.3833527	1	410	
5.0875	0.0000000			0.0858049	0.5200391	0.0073625	
0.2678323	0.0000000			0.5200391	3.0186214	70.6336060	$0^h \leq \alpha < 8^h$
Gr	-0.0947223	0.0100477	- 9.4272575	0.5206419	3	254	
4.8700	-0.0060987	0.0057020	- 1.0695753	0.0778327	0.1907341	0.0060579	
0.2594977	-0.0065643	0.0092716	- 0.7080068	0.5722023	1.5387154	31.4850006	$8^h \leq \alpha < 16^h$
Gr	-0.0949454	0.0100329	- 9.4633665	0.5192586	2	255	
4.8700	-0.0089950	0.0039683	- 2.2667093	0.0777565	0.2845829	0.0060461	
0.2596654	0.0000000			0.5691658	1.5417519	47.0689697	$8^h \leq \alpha < 16^h$
Gr	-0.0946422	0.0101128	- 9.3586435	0.5048897	1	256	
4.8700	0.0000000			0.0783824	0.5381016	0.0061438	
0.2595066	0.0000000			0.5381016	1.5728159	87.5843201	$8^h \leq \alpha < 16^h$
Gr	-0.0798534	0.0114764	- 6.9580669	0.4464106	3	289	
4.6556	-0.0359377	0.0083898	- 4.2835140	0.0876074	0.1840131	0.0076751	
0.2374913	0.0205326	0.0136696	1.5020618	0.5520393	2.2180948	23.9754333	$16^h \leq \alpha < 24^h$
Gr	-0.0783065	0.0114548	- 6.8361254	0.4393533	2	290	
4.6556	-0.0266755	0.0057013	- 4.6788321	0.0877970	0.2673615	0.0077083	
0.2368286	0.0000000			0.5347229	2.2354116	34.6847992	$16^h \leq \alpha < 24^h$

TABLE 3 (continued)

magnitude $\bar{m}$	coefficients			R ϵ	k SSAR/k	n-k-1 SSDR/n-k-1	
constant term	Regression	St.deviation	T-values	SSAR	SSDR	F	Remarks
Gr	-0.0789235	0.0118581	- 6.6556711	0.3634765	1	291	
4.6556	0.0000000			0.0908939	0.3659769	0.0082617	
0.2371284	0.0000000			0.3659769	2.4041576	44.2979736	$16^h \leq \alpha < 24^h$
Gr 1	-0.0758128	0.0073206	-10.3560877	0.3192750	3	959	
4.9220	0.0026033	0.0040113	0.6489841	0.1001852	0.3641894	0.0100371	
0.2481148	-0.0127353	0.0069350	- 1.8363895	1.0925684	9.6255655	36.2843781	All
Gr 1	-0.0748610	0.0073112	-10.2391596	0.3142906	2	960	
4.9220	-0.0028123	0.0027225	- 1.0329628	0.1003090	0.5293608	0.0100619	
0.2479447	0.0000000			1.0587215	9.6594124	52.6104889	All
Gr 1	-0.0745538	0.0073054	-10.2052326	0.3126931	1	961	
4.9220	0.0000000			0.1003124	1.0479870	0.0100626	
0.2478009	0.0000000			1.0479870	9.6701469	104.1468658	All
Gr 1	-0.0862661	0.0190847	- 4.5201635	0.4595842	3	82	
4.6167	-0.0230261	0.0157041	- 1.4662447	0.0821846	0.0494363	0.0067543	
0.2383256	0.0157920	0.0240677	0.6561505	0.1483090	0.5538531	7.3192320	$90° \geq \partial > 60°$
Gr 1	-0.0846733	0.0188647	- 4.4884653	0.4550566	2	83	
4.6167	-0.0150852	0.0099734	- 1.5125446	0.0819021	0.0727006	0.0067080	
0.2370701	0.0000000			0.1454013	0.5567608	10.8379641	$90° \geq \partial > 60°$
Gr 1	-0.0829052	0.0189722	- 4.3698292	0.4303727	1	84	
4.6167	0.0000000			0.0825275	0.1300550	0.0068108	
0.2361277	0.0000000			0.1300550	0.5721071	19.0953979	$90° \geq \partial > 60°$
Gr 1	-0.0521142	0.0104153	- 5.0036087	0.3237085	3	345	
4.7592	-0.0215516	0.0064450	- 3.3439198	0.0877279	0.1035990	0.0076962	
0.2276730	0.0183626	0.0103235	1.7787142	0.3107970	2.6551847	13.4610853	$60° \geq \partial > 30°$
Gr 1	-0.0519266	0.0104473	- 4.9703350	0.3107696	2	346	
4.7592	-0.0129394	0.0042671	- 3.0323429	0.0880018	0.1432239	0.0077443	
0.2284314	0.0000000			0.2864479	2.6795340	18.4940643	$60° \geq \partial > 30°$
Gr 1	-0.0548433	0.0105251	- 5.2107420	0.2693864	1	347	
4.7592	0.0000000			0.0890349	0.2152384	0.0079272	
0.2298341	0.0000000			0.2152384	2.7507439	27.1518250	$60° \geq \partial > 30°$
Gr 1	-0.0895429	0.0111453	- 8.0341539	0.3397979	3	524	
5.0799	0.0121030	0.0055021	2.1996984	0.1081358	0.2666089	0.0116934	
0.2610653	-0.0283964	0.0098643	- 2.8787155	0.7998268	6.1273232	22.8000183	$30° \geq \partial \geq 0°$
Gr 1	-0.0847991	0.0110990	- 7.6402349	0.3185495	2	525	
5.0799	0.0005618	0.0037943	0.1480532	0.1088837	0.3514621	0.0118557	
0.2605759	0.0000000			0.7029243	6.2242260	29.6450653	$30° \geq \partial \geq 0°$
Gr 1	-0.0849721	0.0110271	- 7.7057543	0.3184907	1	526	
5.0799	0.0000000			0.1087824	0.7026650	0.0118336	
0.2606525	0.0000000			0.7026650	6.2244854	59.3787079	$30° \geq \partial \geq 0°$
Gr 2	-0.1060036	0.0080331	-13.1959352	0.3922880	3	959	
4.9269	0.0039368	0.0044123	0.8922178	0.1097254	0.6999950	0.0120397	
0.2668666	-0.0128194	0.0076645	- 1.6725721	2.0999851	11.5460434	58.1407166	All
Gr 2	-0.1048180	0.0080092	-13.0872002	0.3891295	2	960	
4.9269	-0.0015114	0.0029791	- 0.5073224	0.1098281	1.0331526	0.0120622	
0.2666651	0.0000000			2.0663052	11.5797234	85.6520081	All
Gr 2	-0.1046075	0.0079953	-13.0835476	0.3888373	1	961	
4.9269	0.0000000			0.1097856	2.0632038	0.0120529	
0.2665668	0.0000000			2.0632038	11.5828247	171.1792297	All
Gr 2	-0.0854833	0.0207821	- 4.1133060	0.4161116	3	82	
4.6033	-0.0179449	0.0168053	- 1.0678110	0.0893557	0.0457015	0.0079845	
0.2246682	0.0210174	0.0254932	0.8244316	0.1371045	0.6547252	5.7238092	$90° \geq \partial > 60°$
Gr 2	-0.0831022	0.0205407	- 4.0457296	0.4077932	2	83	
4.6033	-0.0073341	0.0107851	- 0.6800187	0.0891832	0.0658388	0.0079536	
0.2228612	0.0000000			0.1316775	0.6601521	8.2778139	$90° \geq \partial > 60°$
Gr 2	-0.0822475	0.0204365	- 4.0245352	0.4020579	1	84	
4.6033	0.0000000			0.0888973	0.1279997	0.0079027	
0.2224057	0.0000000			0.1279997	0.6638300	16.1968689	$90° \geq \partial > 60°$
Gr 2	-0.1014931	0.0113312	- 8.9569225	0.4417027	3	345	
4.7553	-0.0073716	0.0069946	- 1.0538988	0.0955573	0.2545337	0.0091312	
0.2480945	0.0058723	0.0113055	0.5194240	0.7636011	3.1502686	27.8751221	$60° \geq \partial > 30°$

TABLE 3 (continued)

magnitude $\bar{m}$ constant term	coefficients Regression	St.deviation	T-values	R ϵ SSAR	k SSAR/k SSDR	n-k-1 SSDR/n-k-1 F	Remarks
Gr 2	-0.1016786	0.0113137	- 8.9872437	0.4409899	2	346	
4.7553	-0.0046337	0.0045931	- 1.0088387	0.0954564	0.3805692	0.0091119	
0.2483979	0.0000000			0.7611384	3.1527309	41.7659912	60°≥ ∂ >30°
Gr 2	-0.1025023	0.0112844	- 9.0835047	0.4382952	1	347	
4.7553	0.0000000			0.0954589	0.7518650	0.0091124	
0.2487940	0.0000000			0.7518650	3.1620045	82.5100708	60°≥ ∂ >30°
Gr 2	-0.1106308	0.0122242	- 9.0501575	0.3686136	3	524	
5.0934	0.0056593	0.0061078	0.9265751	0.1184254	0.3851827	0.0140246	
0.2842091	-0.0225784	0.0109867	- 2.0550604	1.1555481	7.3488855	27.4647980	30°≥ ∂ ≥0°
Gr 2	-0.1068059	0.0121187	- 8.8133221	0.3590425	2	525	
5.0934	-0.0035561	0.0041595	- 0.8549375	0.1187884	0.5481596	0.0141107	
0.2838825	0.0000000			1.0963192	7.4081144	38.8471069	30°≥ ∂ ≥0°
Gr 2	-0.1056376	0.0120383	- 8.7751198	0.3573498	1	526	
5.0934	0.0000000			0.1187580	1.0860062	0.0141035	
0.2833647	0.0000000			1.0860062	7.4184275	77.0027466	30°≥ ∂ ≥0°

TABLE 4

HARVARD STATISTICAL RESULTS WITH B-V

magnitude $\bar{m}$ / constant term	coefficients: Regression	St.deviation	T-values	R_e / SSAR	k / SSAR/k / SSDR	n-k-1 / SSDR/n-k-1 / F	Remarks
mag.	0.0816938	0.0044039	18.5504913	0.4716160	3	1564	
4.4738	-0.0355761	0.0032277	-11.0221176	0.1052753	1.6527300	0.0110829	
0.0446407	0.0250484	0.0040926	6.1204557	4.9581919	17.3336487	149.1243896	All
mag.	0.0816497	0.0044549	18.3282318	0.4514397	2	1565	
4.4738	-0.0237199	0.0026117	- 9.0822830	0.1064945	2.2715158	0.0113411	
0.0455641	0.0000000			4.5430326	17.7488098	200.2907562	All
mag.	0.0793216	0.0045617	17.3885040	0.4022832	1	1566	
4.4738	0.0000000			0.1092302	3.6075306	0.0119312	
0.0467664	0.0000000			3.6075306	18.6843109	302.3601074	All
m14	0.0972393	0.0081447	11.9389124	0.4015818	3	1230	
4.3936	-0.0601788	0.0067049	- 8.9753389	0.1686599	2.2425032	0.0284462	
0.0362354	0.0815993	0.0082163	9.9313564	6.7275095	34.9888153	78.8331604	All
m14	0.0925792	0.0084475	10.9593563	0.3066126	2	1231	
4.3936	-0.0165692	0.0052641	- 3.1476164	0.1752207	1.9609032	0.0307023	
0.0403886	0.0000000			3.9218073	37.7945251	63.8682861	All
m14	0.0916398	0.0084727	10.8158903	0.2944822	1	1232	
4.3936	0.0000000			0.1758530	3.6176300	0.0309243	
0.0408910	0.0000000			3.6176300	38.0987091	116.9834900	All
m23	0.1274304	0.0181564	7.0184832	0.5023457	3	152	
4.1182	0.0032835	0.0156581	0.2096996	0.1450613	0.3598598	0.0210428	
-0.0022339	-0.0052077	0.0187754	- 0.2773681	1.0795794	3.1985064	17.1013184	All
m23	0.1266198	0.0178655	7.0874014	0.5019692	2	153	
4.1182	0.0010589	0.0134074	0.0789818	0.1446230	0.5389810	0.0209158	
-0.0022645	0.0000000			1.0779619	3.2001238	25.7690277	All
m23	0.1268292	0.0176107	7.2018433	0.5019390	1	154	
4.1182	0.0000000			0.1441557	1.0778322	0.0207809	
-0.0023708	0.0000000			1.0778322	3.2002535	51.8665619	All
m24,1	0.1266887	0.0171566	7.3842640	0.4525401	3	220	
4.8408	-0.0074713	0.0113668	- 0.6572884	0.1487510	0.4178832	0.0221269	
0.0402749	-0.0143409	0.0151560	- 0.9462206	1.2536497	4.8679123	18.8857727	All
m24,1	0.1265032	0.0171514	7.3756819	0.4489504	2	221	
4.8408	-0.0141331	0.0089218	- 1.5841017	0.1487158	0.6169200	0.0221164	
0.0398607	0.0000000			1.2338400	4.8877220	27.8942413	All
m24,1	0.1250008	0.0171833	7.2745657	0.4387374	1	222	
4.8408	0.0000000			0.1492205	1.1783419	0.0222668	
0.0406621	0.0000000			1.1783419	4.9432201	52.9193268	All
m24,4	0.1163110	0.0153949	7.5551682	0.3394598	3	456	
4.4626	-0.0161523	0.0104375	- 1.5475149	0.2047812	0.8301795	0.0419354	
0.0698280	0.0115024	0.0131208	0.8766491	2.4905386	19.1225281	19.7966309	All
m24,4	0.1171484	0.0153613	7.6261892	0.3372564	2	457	
4.4626	-0.0110468	0.0086595	- 1.2756834	0.2047294	1.2291555	0.0419141	
0.0699858	0.0000000			2.4583120	19.1547546	29.3255615	All
m24,4	0.1156684	0.0153279	7.5462437	0.3325447	1	458	
4.4626	0.0000000			0.2048695	2.3901024	0.0419715	
0.0707636	0.0000000			2.3901024	19.2229614	56.9457855	All
m34	-0.1460626	0.0170937	- 8.5448065	0.4787036	3	283	
4.0850	-0.0175633	0.0130646	- 1.3443432	0.1846071	0.9557180	0.0340798	
0.1265392	0.0568282	0.0171892	3.3060398	2.8671541	9.6445808	28.0435333	All
m34	-0.1462487	0.0173899	- 8.4099770	0.4465267	2	284	
4.0850	0.0030669	0.0116769	0.2626497	0.1878067	1.2473326	0.0352714	
0.1277331	0.0000000			2.4946661	10.0170689	35.3638763	All
m34	-0.1461012	0.0173524	- 8.4196472	0.4463091	1	285	
4.0850	0.0000000			0.1874997	2.4922352	0.0351561	
0.1276695	0.0000000			2.4922352	10.0194998	70.8904572	All

TABLE 4 (continued)

magnitude $\bar{m}$ constant term	coefficients: Regression	St.deviation	T-values	R: SSAR	k: SSAR/k SSDR	n-k-1: SSDR/n-k-1 F	Remarks
m44	0.1277478	0.0093305	13.6914835	0.3742881	3	1417	
4.4233	-0.0387526	0.0074479	- 5.2031384	0.2117326	3.4497223	0.0448307	
0.0178766	0.0605181	0.0091223	6.6341181	10.3491678	63.5251160	76.9499664	All
m44	0.1274801	0.0094708	13.4603004	0.3367242	2	1418	
4.4233	-0.0080819	0.0059272	- 1.3635225	0.2149198	4.1880531	0.0461905	
0.0205491	0.0000000			8.3761063	65.4981842	90.6690674	All
m44	0.1265532	0.0094493	13.3929319	0.3349937	1	1419	
4.4233	0.0000000			0.2149848	8.2902346	0.0462185	
0.0210381	0.0000000			8.2902346	65.5840607	179.3704529	All
m44	0.1205688	0.0075158	16.0420380	0.3926830	2	1418	
4.4198	0.0000000			0.1708631	3.7736311	0.0291942	
0.0206101	0.0026340	0.0058575	0.4496894	7.5472631	41.3973846	129.2595825	All
m44	0.1522386	0.0243130	6.2616186	0.5740144	3	86	
4.4061	-0.0312699	0.0220753	- 1.4165087	0.1302533	0.2389996	0.0169659	
0.0167984	0.0125538	0.0246560	0.5091582	0.7169989	1.4590712	14.0870228	90° ≥ ∂ > 60°
m44	0.1544827	0.0238082	6.4886389	0.5722513	2	87	
4.4061	-0.0232988	0.0154973	- 1.5034161	0.1296976	0.3563005	0.0168215	
0.0163985	0.0000000			0.7126009	1.4634686	21.1812744	90° ≥ ∂ > 60°
m44	0.1489690	0.0236919	6.2877712	0.5567759	1	88	
4.4061	0.0000000			0.1306230	0.6745805	0.0170624	
0.0198454	0.0000000			0.6745805	1.5014896	39.5361176	90° ≥ ∂ > 60°
m44	0.1410763	0.0177875	7.9311953	0.7670661	3	46	
4.0790	-0.0291473	0.0166654	- 1.7489700	0.0712443	0.1112545	0.0050758	
0.0277839	0.0060222	0.0202149	0.2979083	0.3337635	0.2334849	21.9187775	Circumpolar
m44	0.1415125	0.0175545	8.0613308	0.7665485	2	47	
4.0790	-0.0255557	0.0113937	- 2.2429638	0.0705503	0.1666566	0.0049773	
0.0278383	0.0000000			0.3333132	0.2339352	33.4830475	Circumpolar
m44	0.1373941	0.0181765	7.5589018	0.7371927	1	48	
4.0790	0.0000000			0.0734528	0.3082728	0.0053953	
0.0303166	0.0000000			0.3082728	0.2589756	57.1370392	Circumpolar
m44	0.1337823	0.0160213	8.3502865	0.4767513	3	311	
4.4740	-0.0141670	0.0130235	- 1.0878019	0.1666980	0.8473616	0.0277883	
-0.0006065	0.0585079	0.0160870	3.6369591	2.5420847	8.6421480	30.4934998	60° ≥ ∂ > 30°
m44	0.1355975	0.0163243	8.3064909	0.4409387	2	312	
4.4740	0.0172378	0.0099385	1.7344379	0.1699332	1.0872574	0.0288773	
0.0014660	0.0000000			2.1745148	9.0097179	37.6509247	60° ≥ ∂ > 30°
m44	0.1382075	0.0163068	8.4754267	0.4320415	1	313	
4.4740	0.0000000			0.1704774	2.0876474	0.0290626	
0.0000281	0.0000000			2.0876474	9.0965853	71.8328552	60° ≥ ∂ > 30°
m44	0.1523920	0.0100902	15.1029148	0.5909769	3	439	
4.5387	-0.0130146	0.0080093	- 1.6249475	0.1241758	1.2110081	0.0154197	
-0.0195971	-0.0046693	0.0093265	- 0.5006431	3.6330252	6.7692270	78.5366669	30° ≥ ∂ > 0°
m44	0.1525674	0.0100756	15.1423149	0.5906627	2	440	
4.5387	-0.0157642	0.0058247	- 2.7064524	0.1240700	1.8145809	0.0153934	
-0.0197245	0.0000000			3.6291628	6.7730894	117.8805695	30° ≥ ∂ > 0°
m44	0.1522744	0.0101470	15.0068779	0.5814147	1	441	
4.5387	0.0000000			0.1249566	3.5164080	0.0156142	
-0.0195630	0.0000000			3.5164080	6.8858442	225.2064056	30° ≥ ∂ > 0°
m44	0.1331332	0.0146592	9.0819130	0.4877893	3	386	
4.3741	-0.0727668	0.0112615	- 6.4615803	0.1770144	1.2588024	0.0313341	
0.0311508	0.0266989	0.0156561	1.7053394	3.7764072	12.0949564	40.1735687	0° ≥ ∂ >-30°
m44	0.1325352	0.0146910	9.0214977	0.4818683	2	387	
4.3741	-0.0631118	0.0097588	- 6.4671745	0.1774502	1.8426418	0.0314886	
0.0323045	0.0000000			3.6852846	12.1860790	58.5177765	0° ≥ ∂ >-30°
m44	0.1272068	0.0154203	8.2493114	0.3862878	1	388	
4.3741	0.0000000			0.1865522	2.3682966	0.0348017	
0.0350358	0.0000000			2.3682966	13.5030670	68.0511322	0° ≥ ∂ >-30°
m44	0.0242598	0.0239798	1.0116758	0.2118262	3	178	
4.1460	-0.0525743	0.0209877	- 2.5050039	0.2092150	0.1220061	0.0437709	
0.0927031	0.0539674	0.0254227	2.1228027	0.3660185	7.7912264	2.7873774	-30° ≥ ∂
m44	0.0271360	0.0241748	1.1224909	0.1438403	2	179	
4.1460	-0.0320897	0.0188194	- 1.7051382	0.2112542	0.0843868	0.0446283	
0.0947644	0.0000000			0.1687737	7.9884710	1.8908796	-30° ≥ ∂

TABLE 4 (continued)

magnitude $\bar{m}$ / constant term	coefficients: Regression	St.deviation	T-values	R / ε / SSAR	k / SSAR/k / SSDR	n-k-1 / SSDR/n-k-1 / F	Remarks
m44	0.0224580	0.0241456	0.9301078	0.0691601	1	180	
4.1460	0.0000000			0.2123706	0.0390171	0.0451013	
0.0968485	0.0000000			0.0390171	8.1182280	0.8651009	$-30° \geq \partial$
m44	0.1611903	0.0363238	4.4375896	0.4790736	3	110	$60° \geq \partial > 30°$
4.4098	-0.0333705	0.0296673	- 1.1248255	0.2128101	0.4946457	0.0452882	and
-0.0016994	0.1283482	0.0369268	3.4757462	1.4839373	4.9816980	10.9221859	$0^h \leq \alpha < 8^h$
m44	0.1472393	0.0378605	3.8889952	0.3806470	2	111	$60° \geq \partial > 30°$
4.4098	0.0417392	0.0213170	1.9580202	0.2231796	0.4684099	0.0498091	and
0.0047001	0.0000000			0.9368198	5.5288153	9.4040937	$0^h \leq \alpha < 8^h$
m44	0.1465003	0.0383346	3.8216228	0.3396432	1	112	$60° \geq \partial > 30°$
4.4098	0.0000000			0.2259854	0.7458596	0.0510694	and
0.0050783	0.0000000			0.7458596	5.7197752	14.6048183	$0^h \leq \alpha < 8^h$
m44	0.1266763	0.0222886	5.6834459	0.5891012	3	79	$60° \geq \partial > 30°$
4.4537	-0.0447870	0.0156678	- 2.8585358	0.1116531	0.1744784	0.0124664	and
-0.0293801	0.0507984	0.0207677	2.4460249	0.5234351	0.9848486	13.9958496	$8^h \leq \alpha < 16^h$
m44	0.1326786	0.0228327	5.8109131	0.5455167	2	80	$60° \geq \partial > 30°$
4.4537	-0.0229003	0.0132559	- 1.7275524	0.1150780	0.2244239	0.0132429	and
0.0260652	0.0000000			0.4488478	1.0594358	16.9466705	$8^h \leq \alpha < 16^h$
m44	0.1232980	0.0224476	5.4927025	0.5209461	1	81	$60° \geq \partial > 30°$
4.4537	0.0000000			0.1164791	0.4093252	0.0135674	and
-0.0206969	0.0000000			0.4093252	1.0989580	30.1697998	$8^h \leq \alpha < 16^h$
m44	0.1384385	0.0199659	6.9337511	0.5671611	3	114	$60° \geq \partial > 30°$
4.5505	0.0161710	0.0177867	0.9091587	0.1363302	0.3349196	0.0185859	and
0.0110423	0.0101836	0.0212851	0.4784395	1.0047588	2.1187973	18.0200500	$16^h \leq \alpha < 24^h$
m44	0.1392719	0.0198230	7.0257797	0.5659592	2	115	$60° \geq \partial > 30°$
4.5505	0.0217668	0.0133555	1.6298056	0.1358724	0.5002527	0.0184613	and
0.0110443	0.0000000			1.0005054	2.1230507	27.0973511	$16^h \leq \alpha < 24^h$
m44	0.1418544	0.01999001	7.1283197	0.5519153	1	116	$60° \geq \partial > 30°$
4.5505	0.0000000			0.1368389	0.9514681	0.0187249	and
0.0095518	0.0000000			0.9514681	2.1720877	50.8130035	$16^h \leq \alpha < 24^h$
m44	0.0942457	0.0434692	2.1681032	0.2253903	3	158	
3.8315	-0.0555890	0.0237354	- 2.3420258	0.2602366	0.1908912	0.0677231	Ap.J. 117
0.0517263	0.0595430	0.0329106	1.8092299	0.5726737	10.7002544	2.8187008	313, 1953.
m44	0.0784354	0.0428851	1.8289671	0.1764541	2	159	
3.8315	-0.0246236	0.0165622	- 1.4867344	0.2620904	0.1754973	0.0686914	Ap.J. 117
0.0626799	0.0000000			0.3509946	10.9219332	2.5548658	313, 1953.
m44	0.0727295	0.0428743	1.6963434	0.1329179	1	160	
3.8315	0.0000000			0.2630798	0.1991608	0.0692110	Ap.J. 117
0.0654739	0.0000000			0.1991608	11.0737667	2.8775883	313, 1953.
m45	0.1490987	0.0114708	12.9981136	0.4427006	3	775	
4.5583	-0.0370624	0.0088710	- 4.1779346	0.1914971	2.3091936	0.0366711	
-0.0007195	0.0505635	0.0113166	4.4680624	6.9275808	28.4201355	62.9703217	All
m45	0.1485658	0.0116095	12.7969408	0.4186561	2	776	
4.5583	-0.0127588	0.0070928	- 1.7988510	0.1938227	3.0977488	0.0375673	
0.0012462	0.0000000			6.1954975	29.1522064	82.4586945	All
m45	0.1473819	0.0116075	12.6971569	0.4145285	1	777	
4.5583	0.0000000			0.1941015	6.0739365	0.0376754	
0.0018693	0.0000000			6.0739365	29.2737732	161.2176514	All
m46	-0.1133281	0.0125216	- 9.0506306	0.3928292	3	561	
4.2328	-0.0398831	0.0098137	- 4.0640421	0.1881546	1.2080097	0.0354022	
0.1907595	0.0277343	0.0122424	2.2654371	3.6240311	19.8606262	34.1224518	All
m46	-0.1133202	0.0125675	- 9.0169106	0.3828553	2	562	
4.2328	-0.0286130	0.0084903	- 3.3700781	0.1888451	1.7211695	0.0356625	
0.1917139	0.0000000			3.4423389	20.0423126	48.2627563	All
m46	-0.1157849	0.0126611	- 9.1449280	0.3596271	1	563	
4.2328	0.0000000			0.1905742	3.0373096	0.0363185	
0.1929229	0.0000000			3.0373096	20.4473419	83.6297150	All

TABLE 5

HARVARD STATISTICAL RESULTS WITH V-R

magnitude $\bar{m}$	coefficients			R ϵ	k SSAR/k	n-k-1 SSDR/n-k-1	
constant term	Regression	St.deviation	T-values	SSAR	SSDR	F	Remarks
mag.	0.0990831	0.0057467	17.2418365	0.4461738	3	1564	
4.4738	-0.0337070	0.0033781	- 9.9779587	0.1068444	1.4792204	0.0114157	
0.0430203	0.0220896	0.0051564	4.2838888	4.4376621	17.8541870	129.5774841	All
mag.	0.1004046	0.0057701	17.4008484	0.4355147	2	1565	
4.4738	-0.0245934	0.0026386	- 9.3205462	0.1074350	2.1140823	0.0115423	
0.0432750	0.0000000			4.2281656	18.0636749	183.1598053	All
mag.	0.0961553	0.0059077	16.2763519	0.3803843	1	1566	
4.4738	0.0000000			0.1103413	3.2254581	0.0121752	
0.0451663	0.0000000			3.2254581	19.0663910	264.9199219	All
m14	0.1169004	0.0106801	10.9456129	0.3778934	3	1230	
4.3936	-0.0613095	0.0070395	- 8.7093897	0.1705064	1.9857454	0.0290724	
0.0341217	0.0962148	0.0106841	9.0053883	5.9572382	35.7590942	68.3033752	All
m14	0.1148823	0.0110197	10.4251986	0.2937455	2	1231	
4.3936	-0.0178867	0.0052929	- 3.3793497	0.1759661	1.7997761	0.0309641	
0.0375835	0.0000000			3.5995531	38.1167755	58.1246490	All
m14	0.1126176	0.0110457	10.1956024	0.2789445	1	1232	
4.3936	0.0000000			0.1767086	3.2459497	0.0312260	
0.0386231	0.0000000			3.2459497	38.4703827	103.9503632	All
m23	0.1693227	0.0232387	7.2862463	0.5200932	3	152	
4.1182	0.0005197	0.0160034	0.0324762	0.1432902	0.3857365	0.0205321	
-0.0109923	-0.0072380	0.0245401	- 0.2949481	1.1572094	3.1208763	18.7870026	All
m23	0.1677691	0.0225661	7.4345675	0.5196922	2	153	
4.1182	-0.0020872	0.0133014	- 0.1569127	0.1428620	0.5777125	0.0204095	
-0.0108842	0.0000000			1.1554251	3.1226606	28.3059998	All
m23	0.1671518	0.0221499	7.5463934	0.5195793	1	154	
4.1182	0.0000000			0.1424088	1.1549225	0.0202803	
-0.0106161	0.0000000			1.1549225	3.1231632	56.9480438	All
m24,1	0.1648638	0.0225868	7.2991180	0.4479323	3	220	
4.8408	-0.0088190	0.0121819	- 0.7239451	0.1491386	0.4094168	0.0222423	
0.0329626	-0.0162911	0.0206923	- 0.7872994	1.2282505	4.8933115	18.4071045	All
m24,1	0.1647758	0.0225671	7.3015938	0.4454114	2	221	
4.8408	-0.0153186	0.0089502	- 1.7115240	0.1490102	0.6072321	0.0222041	
0.0324091	0.0000000			1.2144642	4.9070978	27.3477936	All
m24,1	0.1619247	0.0226031	7.1638231	0.4333202	1	222	
4.8408	0.0000000			0.1496563	1.1494236	0.0223970	
0.0337061	0.0000000			1.1494236	4.9721384	51.3203735	All
m24,4	0.1527244	0.0205485	7.4323902	0.3360683	3	456	
4.4626	-0.0204077	0.0110617	- 1.8448906	0.2050462	0.8136736	0.0420440	
0.0623574	0.0218614	0.0178778	1.2228251	2.4410210	19.1720428	19.3529205	All
m24,4	0.1537438	0.0205427	7.4841089	0.3317124	2	457	
4.4626	-0.0120302	0.0086896	- 1.3844442	0.2051573	1.1890755	0.0420895	
0.0629395	0.0000000			2.3781519	19.2349091	28.2510986	All
m24,4	0.1511327	0.0204764	7.3808260	0.3260378	1	458	
4.4626	0.0000000			0.2053625	2.2974825	0.0421738	
0.0641052	0.0000000			2.2974825	19.3155823	54.4765778	All
m34	-0.1755728	0.0222443	- 7.8929501	0.4434850	3	283	
4.0850	-0.0161492	0.0138291	- 1.1677713	0.1884560	0.8202651	0.0355157	
0.1298152	0.0535922	0.0219309	2.4436836	2.4607954	10.0509396	23.0958405	All
m34	-0.1769443	0.0224310	- 7.8883867	0.4239438	2	284	
4.0850	0.0018137	0.0118158	0.1535000	0.1900983	1.1243563	0.0361374	
0.1308556	0.0000000			2.2487125	10.2630224	31.1133575	All
m34	-0.1768734	0.0223878	- 7.9004469	0.4238637	1	285	
4.0850	0.0000000			0.1897724	2.2478638	0.0360136	
0.1308292	0.0000000			2.2478638	10.2638712	62.4170990	All

TABLE 5 (continued)

magnitude $\bar{m}$ / constant term	coefficients: Regression	St.deviation	T-values	R / ϵ	k / SSAR/k / SSDR	n-k-1 / SSDR/n-k-1 / F	Remarks
m44	0.1587157	0.0122650	12.9405537	0.3511269	3	1417	
4.4233	-0.0380160	0.0078408	- 4.8485117	0.2137911	3.0359898	0.0457067	
0.0139017	0.0674292	0.0120177	5.6108322	9.1079712	64.7663269	66.4233551	All
m44	0.1587964	0.0123961	12.8101950	0.3221993	2	1418	
4.4233	-0.0090651	0.0059668	- 1.5192509	0.2160767	3.8345337	0.0466892	
0.0165160	0.0000000			7.6690674	66.2052307	82.1289825	All
m44	0.1571434	0.0123539	12.7201014	0.3199277	1	1419	
4.4233	0.0000000			0.2161763	7.5613108	0.0467322	
0.0172606	0.0000000			7.5613108	66.3129730	161.8009186	All
m44	0.1514186	0.0098452	15.3799362	0.3782585	2	1418	
4.4198	0.0000000			0.1719826	3.5014887	0.0295780	
0.0164627	-0.0031665	0.0073660	- 0.4298800	7.0029774	41.9416656	118.3813477	All
m44	0.1865142	0.0321089	5.8088007	0.5588301	3	86	
4.4061	-0.0353776	0.0240626	- 1.4702282	0.1319135	0.2265224	0.0174012	
0.0124233	0.0191109	0.0353637	0.5404109	0.6795673	1.4965029	13.0176325	90° ≥ ∂ > 60°
m44	0.1913525	0.0307098	6.2309999	0.5567368	2	87	
4.4061	-0.0255865	0.0157706	- 1.6224127	0.1313757	0.3372428	0.0172596	
0.0112663	0.0000000			0.6744857	1.5015841	19.5394440	90° ≥ ∂ > 60°
m44	0.1823390	0.0304818	5.9818878	0.5376603	1	88	
4.4061	0.0000000			0.1325884	0.6290553	0.0175797	
0.0160573	0.0000000			0.6290553	1.5470142	35.7830353	90° ≥ ∂ > 60°
m44	0.1656370	0.0244195	6.7829895	0.7250238	3	46	
4.0790	-0.0232328	0.0190605	- 1.2188988	0.0764808	0.0993931	0.0058493	
0.0272304	-0.0140430	0.0291874	- 0.4811311	0.2981795	0.2690689	16.9922485	Circumpolar
m44	0.1618346	0.0229155	7.0622435	0.7233762	2	47	
4.0790	-0.0301766	0.0123483	- 2.4437733	0.0758529	0.1484129	0.0057537	
0.0282641	0.0000000			0.2968258	0.2704226	25.7944641	Circumpolar
m44	0.1526980	0.0237505	6.4292526	0.6802192	1	48	
4.0790	0.0000000			0.0796847	0.2624648	0.0063497	
0.0330477	0.0000000			0.2624648	0.3047836	41.3352661	Circumpolar
m44	0.1545003	0.0211232	7.3142576	0.4362562	3	311	
4.4740	-0.0131829	0.0136980	- 0.9623964	0.1706395	0.7095257	0.0291179	
-0.0005556	0.0655214	0.0217170	3.0170593	2.1285772	9.0556555	24.3673706	60° ≥ ∂ > 30°
m44	0.1599341	0.0213178	7.5023775	0.4081923	2	312	
4.4740	0.0149908	0.0101509	1.4767904	0.1728411	0.9317636	0.0298741	
0.0006561	0.0000000			1.8635273	9.3207054	31.1897278	60° ≥ ∂ > 30°
m44	0.1640089	0.0211783	7.7441807	0.4009935	1	313	
4.4740	0.0000000			0.1731668	1.7983770	0.0299868	
-0.0012684	0.0000000			1.7983770	9.3858557	59.9723663	60° ≥ ∂ > 30°
m44	0.1950855	0.0131209	14.8682938	0.5863518	3	439	
4.5387	-0.0099201	0.0082760	- 1.1986685	0.1246943	1.1921272	0.0155487	
-0.0261609	-0.0127601	0.0118359	- 1.0780830	3.5763817	6.8258705	76.6706238	30° ≥ ∂ > 0°
m44	0.1955749	0.0131155	14.9117708	0.5848686	2	440	
4.5387	-0.0162264	0.0058555	- 2.7711439	0.1247173	1.7791557	0.0155544	
-0.0264847	0.0000000			3.5583115	6.8439407	114.3827209	30° ≥ ∂ > 0°
m44	0.1949882	0.0132127	14.7576342	0.5749685	1	441	
4.5387	0.0000000			0.1256582	3.4388676	0.0157900	
-0.0262112	0.0000000			3.4388676	6.9633846	217.7878723	30° ≥ ∂ > 0°
m44	0.1726184	0.0198281	8.7057371	0.4770344	3	386	
4.3741	-0.0779173	0.0121581	- 6.4086924	0.1782154	1.2039051	0.0317607	
0.0232853	0.0377193	0.0216588	1.7415228	3.6117172	12.2596464	37.9054413	0° ≥ ∂ > -30°
m44	0.1720858	0.0198778	8.6571999	0.4706301	2	387	
4.3741	-0.0654361	0.0098469	- 6.6453428	0.1786829	1.7576952	0.0319276	
0.0248733	0.0000000			3.5153904	12.3559732	55.0525665	0° ≥ ∂ > -30°
m44	0.1608334	0.0208780	7.7034674	0.3642216	1	388	
4.3741	0.0000000			0.1883591	2.1054535	0.0354791	
0.0298057	0.0000000			2.1054535	13.7659101	59.3433990	0° ≥ ∂ > -30°
m44	0.0351991	0.0307667	1.1440668	0.2072079	3	178	
4.1460	-0.0544159	0.0216699	- 2.5111246	0.2094269	0.1167440	0.0438596	
0.0909044	0.0652573	0.0316294	2.0631847	0.3502321	7.8070135	2.6617651	-30° ≥ ∂
m44	0.0331565	0.0310292	0.0187823	0.1415895	2	179	
4.1460	-0.0315233	1.0685558	- 1.6783524	0.2113234	0.0817665	0.0446576	
0.0942119	0.0000000			0.1635332	7.9937124	1.8309650	-30° ≥ ∂

TABLE 5 (continued)

magnitude $\bar{m}$ / constant term	coefficients: Regression	St.deviation	T-values	R / ϵ SSAR	k SSAR/k SSDR	n-k-1 SSDR/n-k-1 F	Remarks
m44	0.0284054	0.0310554	0.9146698	0.0680175	1	180	
4.1460	0.0000000			0.2123873	0.0377386	0.0451084	
0.0960230	0.0000000			0.0377386	8.1195068	0.8366213	$-30° \geq \delta$
m44	0.2175205	0.0496032	4.3852119	0.4867541	3	110	$60° \geq \delta > 30°$
4.4098	-0.0516306	0.0318932	- 1.6188593	0.2117832	0.5106331	0.0448521	and
-0.0170431	0.1916553	0.0514754	3.7232380	1.5318995	4.9337358	11.3848095	$0^h \leq \alpha < 8^h$
m44	0.1986046	0.0521228	3.8103189	0.3751871	2	111	$60° \geq \delta > 30°$
4.4098	0.0401749	0.0213682	1.8801260	0.2237175	0.4550688	0.0500495	and
-0.0080178	0.0000000			0.9101375	5.5554972	9.0923700	$0^h \leq \alpha < 8^h$
m44	0.1994927	0.0527072	3.7849216	0.3367528	1	112	$60° \geq \delta > 30°$
4.4098	0.0000000			0.2262350	0.7332187	0.0511823	and
-0.0084070	0.0000000			0.7332187	5.7324162	14.3256340	$0^h \leq \alpha < 8^h$
m44	0.1515093	0.0295513	5.1269875	0.5471142	3	79	$60° \geq \delta > 30°$
4.4537	-0.0409782	0.0163745	- 2.5025654	0.1156600	0.1504934	0.0133772	and
-0.0294420	0.0441291	0.0265411	1.6626673	0.4514804	1.0568027	11.2499542	$8^h \leq \alpha < 16^h$
m44	0.1610432	0.0293077	5.4949179	0.5242285	2	80	$60° \geq \delta > 30°$
4.4537	-0.0255184	0.0136262	- 1.8727417	0.1169286	0.2072499	0.0136723	and
-0.0285641	0.0000000			0.4144998	1.0937834	15.1583853	$8^h \leq \alpha < 16^h$
m44	0.1456957	0.0285707	5.0994797	0.4929745	1	81	$60° \geq \delta > 30°$
4.4537	0.0000000			0.1187243	0.3665490	0.0140955	and
-0.0210895	0.0000000			0.3665490	1.1417341	26.0046997	$8^h \leq \alpha < 16^h$
m44	0.1498117	0.0261860	5.7210569	0.4982430	3	114	$60° \geq \delta > 30°$
4.5505	0.0186831	0.0189396	0.9864537	0.1435192	0.2584702	0.0205978	and
0.0176581	0.0012553	0.0299737	0.0418806	0.7754107	2.3481445	12.5484657	$16^h \leq \alpha < 24^h$
m44	0.1499491	0.0258673	5.7968559	0.4982316	2	115	$60° \geq \delta > 30°$
4.5505	0.0192094	0.0141079	1.3616066	0.1428949	0.3876876	0.0204190	and
0.0176646	0.0000000			0.7753753	2.3481808	18.9866333	$16^h \leq \alpha < 24^h$
m44	0.1542808	0.0257653	5.9879351	0.4859171	1	116	$60° \geq \delta > 30°$
4.5505	0.0000000			0.1434199	0.7375199	0.0205693	and
0.0155297	0.0000000			0.7375199	2.3860359	35.8554077	$16^h \leq \alpha < 24^h$
m44	0.1143234	0.0601714	1.8999624	0.2111738	3	158	
3.8315	-0.0568402	0.0248197	- 2.2901278	0.2610860	0.1675697	0.0681659	Ap.J. 117
0.0501996	0.0724885	0.0428494	1.6917019	0.5027091	10.7702188	2.4582624	313, 1953.
m44	0.0982581	0.0597642	1.6440973	0.1651940	2	159	
3.8315	-0.0256002	0.0166800	- 1.5347872	0.2626102	0.1538138	0.0689641	Ap.J. 117
0.0609974	0.0000000			0.3076276	10.9653006	2.2303448	313, 1953.
m44	0.0859246	0.0594718	1.4447956	0.1134833	1	160	
3.8315	0.0000000			0.2637203	0.1451779	0.0695484	Ap.J. 117
0.0660308	0.0000000			0.1451779	11.1277494	2.0874357	313, 1953.
m45	0.1944848	0.0149735	12.9885759	0.4402672	3	775	
4.5583	-0.0386581	0.0092822	- 4.1647787	0.1917528	2.2838774	0.0367691	
-0.0098989	0.0582015	0.0145934	3.9882145	6.8516331	28.4960785	62.1139832	All
m45	0.1948001	0.0151164	12.8866386	0.4210580	2	776	
4.5583	-0.0144642	0.0070927	- 2.0393190	0.1935856	3.1333952	0.0374754	
-0.0080720	0.0000000			6.2667904	29.0809174	83.6120300	All
m45	0.1924896	0.0151045	12.7438307	0.4157894	1	777	
4.5583	0.0000000			0.1939787	6.1109447	0.0376278	
-0.0070334	0.0000000			6.1109447	29.2367706	162.4052124	All
m46	-0.1401108	0.0161185	- 8.6925707	0.3791838	3	561	
4.2328	-0.0424979	0.0100332	- 4.2357025	0.1893229	1.1255445	0.0358432	
0.1936610	0.0392261	0.0139145	2.8190804	3.3766346	20.1080170	31.4019165	All
m46	-0.1350956	0.0161187	- 8.3813047	0.3628376	2	562	
4.2328	-0.0275712	0.0085749	- 3.2153511	0.1904895	1.5458908	0.0362862	
0.1929486	0.0000000			3.0917826	20.3928680	42.6026611	All
m46	-0.1390597	0.0162042	- 8.5816927	0.3401136	1	563	
4.2328	0.0000000			0.1920628	2.7166424	0.0368881	
0.1946171	0.0000000			2.7166424	20.7680206	73.6454163	All

V. Conclusion

Tables 2–5 indicate that the visual photometries of Potsdam and Harvard can be transformed to the BVR–system satisfactorily. For Potsdam the standard errors, ε, are smaller than $\pm$ 0.1, while for Harvard they are between $\pm$ 0.1 and $\pm$ 0.2 (see column 5 in Tables 2-5). The resulting equations depend strongly on the color of the stars (B–V or V–R). The dependence on Pogson scale deviations and Purkinje effect is not large.

It is well known that Potsdam photometry covers a smaller area of the sky than that of Harvard, and that the latter was made with more observers than the former. The consequence of this is that the results for Potsdam are more uniform than for Harvard. Nevertheless, some Harvard results are very good, per example those for m44 –circumpolar stars.

The regression coefficients which describe the Pogson scale deviations and the Purkinje effect listed in Tables 2–5 (column 2, lines 2 and 3) are present with different stages of significance. For instance, in the Potsdam photometry if the sample contains all stars listed in Table 1, column 6 (magnitude "Gr"), then the Pogson scale deviation coefficient is practically zero, while the Purkinje effect coefficient is not zero. If in the last sample we only include those stars with declination between 30° and 60°, then the Pogson scale deviation coefficient is not zero and the Purkinje effect coefficient is nearly zero. Both coefficients are not zero if the sample contains only stars with right ascension between 16 and 24 hours. In Harvard photometry the same phenomenon is also present. Both coefficients are not zero in the systems "mag", "m14", "m44", and "m46". Both coefficients are very small in the system "m23". Only one of them is practically zero in the systems "m34" and "m45". Individual systems like "m44" when divided in groups also present the above combinations.

Rybka (1960) and Winiarski (1963) in their work on systematic differences in Harvard and Potsdam photometries have constructed diagrams which plot the residuals (observed minus computed values) versus magnitudes and colors. The Burroughs 5500 computer of the University of Mexico has been used to construct similar diagrams. The program was made with the help of Mr. Cruz. A copy of this program (in Algol language) is given in Appendix II. Of the 420 Figures obtained we have selected only 48 for publication. Instructions to read these graphs are given in Appendix III. No deviation from linear dependence on colors may be inferred from the diagrams. However, in those in which the computations were made with the Pogson scale deviation equal to zero and those with also the Purkinje effect coefficient equal to zero show a tendency of more positive residuals for the brightest stars and of more negative residuals for the faintest stars. This effect may be also present in most of the Potsdam magnitude *vs* residuals plots, while it is almost unnoticeable on those with all the regression coefficients different from zero. In this respect Harvard photometry is better than that of Potsdam. Harvard visual photometry has a zero point closer to the BVR system than Potsdam's, and perhaps the results obtained with B–V are slightly better than those with V–R.

Acknowledgments

We wish to express our appreciation to Dr. R. Iturriaga, Director of the University of Mexico Computer Center and Mr. R. Peralta, Director of the University of Chile Computer Center for giving us the necessary computing facilities; we are also very grateful to Messrs. C. Cruz, C. Pérez, and M. Quinteros for their great assistance in the programming, and to Mrs. G. B. de Palazuelos who helped in the preparation of the data.

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APPENDIX I

MULTIPLE REGRESSION ANALYSIS PROGRAM

```
      DIMENSION RX (100), R (55), AB (10), ANS (10), B (10), IKA (10), ISA (10), ISAVE
     1 (10), D (10), RY (10), SB (10), STD (10), T (10), XBAR (10), W (10)
      INTEGER U
      COMMON X (10200)
      PRINT 1401
 1401 FORMAT ('0 PORCION DE LA MUESTRA ORIGINAL///)
      N = 0
      DO 972 I = 1,1700
      READ 81, X (I), X (I + 1700), X (I + 3400), X (I + 5100)
      IF (I - 50) 1217, 1217, 1218
 1217 PRINT 81, X (I), X (I + 1700), X (I + 3400), X (I + 5100)
 1218 IF (ABS (X (I) - 99.99) - 0.1) 991, 991, 990
  990 N = N + 1
  972 CONTINUE
  991 WRITE (3,993) N
  993 FORMAT ('NUMERO TOTAL DE TARJETAS LEIDAS, N = I4)
      S = 0.
      DO 973 I = 1, N
  973 S = S + X (I + 5100)
      RK = S/N
      WRITE (3,1901) RK
 1901 FORMAT ('T. M. DE LECT. ANTIGUA, =', F10.4)
      DO 802 MS = 1, N
      X (MS) = X (MS + 5100) - X (MS)
      X (MS + 5100) = X (MS + 5100) - RK
      X (MS + 6800) = X (MS + 1700)* X (MS + 5100)
  802 X (MS + 8500) = X (MS + 3400)* X (MS + 5100)
      U = 11
      DO 801 MS = 1,4
      I1 = (MS - 1)* 1700 + 1
      I2 = I1 + N - 1
      REWIND U
      WRITE (U) (X (J), J = I1, I2)
  801 U = U + 1
   16 READ (1, 3) PR, PR1, PR2, NS
    3 FORMAT (3A4, I2)
      WRITE (3, 4) PR, PR1, PR2, NS
    4 FORMAT ('1 REGRESION MULTIPLE', 3A4//6X, 'SELECCION', I2//)
      IF (NS - 99) 17, 99, 17
   17 READ (1, 1) M, NOPC, NLIST, NCOMP, NCAM
    1 FORMAT (I4, 4I2)
      NOPC = NOPC + 1
      READ (1, 5) ISA (I), I = 1, M)
    5 FORMAT (40I2)
      KI = 0
      DO 750 I = 1, M
      MS = ISA (I)
      GO TO (701, 702, 703, 704, 705, 705), MS
  701 U = 11
      GO TO 707
  702 U = 12
      GO TO 707
  703 U = 13
      GO TO 707
  704 U = 14
  707 I1 = KI + 1
      I2 = I1 + N - 1
      REWIND U
      READ (U) (X (MS1), MS1 = I1, I2)
      KI = KI + N
      GO TO 750
```

```
705  I1 = KI + 1
     I2 = I1 + N - 1
     MS3 = 1700 * (MS - 1)
     DO 709 MS1 = I1, I2
     MS3 = MS3 + 1
709  X(MS1) = X(MS3)
     KI + KI + N
750  CONTINUE
 28  K = M - 1
     DO 18 J = 1, K
 18  ISAVE(J) = J + 1
     ISAVE(M) = 1
     NDEP = 1
C    .....
 20  CALL CORR1(N, M, X, XBAR, STD, RX, R, D, B, T)
C    .....
     CALL PRINT3(XBAR, M, STD, RX, D, R)
C    .....
     CALL ORDER(M, R, NDEP, K, ISAVE, RX, RY)
C    .....
     CALL MINV(RX, K, DET, B, T)
C    .....
     IF(DET) 22, 21, 22
 21  WRITE(3, 6)
  6  FORMAT ('0 LA MATRIZ ES SINGULAR, ESTA SELECCION SE ABANDONA.-)
     GO TO 16
C    .....
 22  CALL MULTR(N, K, XBAR, STD, D, RX, RY, ISAVE, B, SB, T, ANS)
C    .....
     WRITE(3, 7)
  7  FORMAT ('0 NUMERO DE ORDEN DE LAS VARIABLES QUE SE OCUPARON EN ESTA.
    1REGRESION (LA PRIMERA ES LA VARIABLE DEPENDIENTE)'/)
     WRITE (3, 8) (ISA(I), I = 1, M)
  8  FORMAT ('O', 1615)
     MOPC = NOPC - 1
     WRITE (3, 23) M, MOPC, NLIST, NCOMP, NCAM
 23  FORMAT (///, 'LA SEGUNDA TARJETA DE CONTROL DE LA SELECCION FUE'///
    115, 4I2, ' (M, NOPC, NLIST, NCOMP, NCAM)'////)
     CONST = ANS(1)
     IF (NOPC - 1) 24, 26, 24
 24  IF(NOPC - 5) 25, 26, 25
 25  ANS (1) = EXP (ANS (1))
C    .....
 26  CALL PRINT4(M, ISAVE, B, K, ANS, SB, T)
C    .....
     GO TO 16
 75  FORMAT(5F5.3)
 76  FORMAT(6F5.3)
 77  FORMAT(7F5.3)
 78  FORMAT(8F5.3)
 80  FORMAT(10F5.3)
 81  FORMAT(5X, F5.2, 2F7.2, 36X, F6.2)
 99  STOP
     END
```

APPENDIX II

RESIDUALS PLOTTING PROGRAM

```
FILE IN TARJ (1,10);
FILE OUT IMPR 17(2, 17); FILE DISCO DISK SERIAL [2:1000](2, 13, 26);
ARRAY C[1:2], A[1:9], B[1:5];
REAL V;
ALPHA COIN;
```

```
LABEL P3;
INTEGER NAME, NES, I, J, K, NE, NPAG, L, L2;
DEFINE PAG = WRITE (IMPR PAGE) #;
FORMAT FT1 (I4, 3F7.3, 9F6.3);
NES ← 0;
PAG;
P3: READ (TARJ, FT1, NAME, V, C[1], C[2], FOR K ← 1 STEP 1 UNTIL 9 DO A[K]);
NES ← NES + 1; WRITE (DISCO, *, NAME, V, C[1], C[2], FOR K ← 1 STEP 1 UNTIL 9 DO
      A[K])
; IF NAME < 9999 THEN GO TO P3;
BEGIN COMMENT SE DEFINEN LAS MATRICES;
ARRAY R, Y, Y2 [1:NES]; INTEGER ARRAY NOMBRE [1:NES];
LABEL P4, P10, P12, P13, P5;
FORMAT FT2 (2I1, 5F10.7);
FORMAT FT5 (X35, "C O E F I C I E N T E S          E M P L E A D O S",///);
FORMAT FT8 (X3, "I =", I1, X4, "J =", I1, X4, "M (PRO) =", F10.7, X4, "K =", F10.7, X4
,"B1 =", F10.7, X4, "B2 =", F10.7, X4, "B3 =", F10.7);
FORMAT FT25 (////, X25, "FIN"), FT35 (////////////);
P4: REWIND (DISCO);
READ (TARJ, FT2, I, J, FOR K ← 1 STEP 1 UNTIL 5 DO B[K]);
IF I = 0 THEN GO TO P10;
IF I = 1 THEN COIN ← "B − V" ELSE COIN ← "V − R";
WRITE (IMPR, FT35);
WRITE (IMPR, FT5);
WRITE (IMPR, FT8, I, J, FOR K ← 1 STEP 1 UNTIL 5 DO B[K]);
NE ← 0;
P12: READ (DISCO, *, NAME, V, C[1], C[2], FOR K ← 1 STEP 1 UNTIL 9 DO A[K]);
IF A[J] = THEN BEGIN IF NAME < 9999 THEN GO TO P12 ELSE GO TO P5 END;
NE ← NE + 1;
R[NE] ← A[J] − V − B[2] − B[3] ×C[I] − B[4] × (A[J] − B[1]) − B[5] × (A[J] − B[1]) ×C[I];
Y[NE] ← V; Y2[NE] ← C[I]; NOMBRE[NE] ← NAME;
GO TO P12;
P5: BEGIN COMMENT DIBUJA LAS GRAFICAS;
ALPHA ARRAY PLANO [−21:133, −60:60]; LABEL SIGUE, CONT;
FORMAT RENG (X3, 121A1);
FORMAT FRTO1 ("LA ESTRELLA", I4, "ESTA FUERA DEL RANGO");
FORMAT FT30 (////////////);
DEFINE AVISA = WRITE (IMPR, FRTO1, NOMBRE [K]) #, COSA = GO TO SIGUE END #,
      COSA1 = IF PLANO [I, J] ← #, COSA2 = THEN BEGIN PLANO [I, J] ← #, COSA 3 =
      GO TO CONT END #;
WRITE (IMPR, FT30);
FOR K ← −60 STEP 1 UNTIL 60 DO
FOR L ← −21 STEP 1 UNTIL 113 DO PLANO [L, K] ← " ";
FOR K ← −60 STEP 1 UNTIL 60 DO PLANO [−21, K] ← PLANO [113, K] ← "+";
FOR L ← −21 STEP 1 UNTIL 113 DO PLANO [L, 60] ← PLANO [L, −60] ← "+";
WRITE (IMPR, FT30);
FOR K ← 1 STEP 1 UNTIL NE DO BEGIN
I ENTIER (Y[K] × 13.3333333333 + .5); J ← ENTIER (R[K] × 133.333333333 + .5);
IF ABS (J) > 60 OR I < −21 OR I > 113 THEN BEGIN AVISA; COSA;
COSA1 " " OR PLANO [I, J] = "+" COSA2 "*"; COSA;
COSA1 "*" COSA2 "#"; COSA;
COSA1 "#" COSA2 "<"; COSA;
COSA1 "<" COSA2 "X"; COSA;
COSA1 "X" COSA2 "."; COSA;
COSA1 "." COSA2 "−"; COSA;
SIGUE: END;
WRITE (IMPR, FT30);
FOR K ← −21 STEP 1 UNTIL 113 DO
WRITE (IMPR, RENG, FOR L ← −60 STEP 1 UNTIL 60 DO PLANO [K, L]);
FOR K ← −20 STEP 1 UNTIL 133 DO
FOR L ← −60 STEP 1 UNTIL 60 DO PLANO [K, L] ← " ";
FOR K ← −60 STEP 1 UNTIL 60 DO PLANO [−20, K] ← PLANO [133, K] ← "+";
FOR K ← −20 STEP 1 UNTIL 133 DO PLANO [K, 60] ← PLANO [K, −60] ← "+";
WRITE (IMPR, FT30);
```

```
FOR K ← 1 STEP 1 UNTIL NE DO
BEGIN
I ← ENTIER (Y2[K] × 66.666666666 + .5); J ENTIER (R[K] × 133.333333333 + .5);
IF ABS (J) > 60 OR I = −20 OR I > 133 THEN BEGIN AVISA; COSA3;
COSA1 " " OR PLANO [I, J] = "+" COSA2 "*"; COSA3;
COSA1 "*" COSA2 "#"; COSA3;
COSA1 "#" COSA2 "<"; COSA3;
COSA1 "<" COSA2 "X"; COSA3;
COSA1 "X" COSA2 "."; COSA3;
COSA1 "." COSA2 "−"; COSA3;
CONT: END;
WRITE (IMPR, FT30);
FOR K ← −20 STEP 1 UNTIL 133 DO
WRITE (IMPR, RENG, FOR L ← −60 STEP 1 UNTIL 60 DO PLANO [K, L]);
END TERMINA DE DIBUJAR;
GO TO P4;
P10: WRITE (IMPR, FT35);
WRITE (IMPR, FT25);
END;
END.
```

APPENDIX III

KEY DATA FOR FIGURES 1–48

Ordinates range from −0.45 to +0.45 mag. ($^{0.9}/_{121}$ $^{mag}/_{+}$).
Abscissas (magnitude-diagrams) range from −1.6 to +8.5 mag ($^{10.1}/_{13}$ $^{mag}/_{+}$).
Abscissas (color-diagrams) range from −0.3 to +2.0 mag ($^{2.3}/_{154}$ $^{mag}/_{+}$).

* denotes one observation.
\# denotes two observations.
V Denotes three observations.
X denotes four observations.
. denotes five observations.
| denotes more than five observations.

c = constant term
b_i = regression coefficients (i = 1, 2, 3).
p = observations with residuals larger than | 0.45 |
The straight-line is the locus of residuals equal to zero. Above it positive values. Negative colors and bright magnitudes to the left.

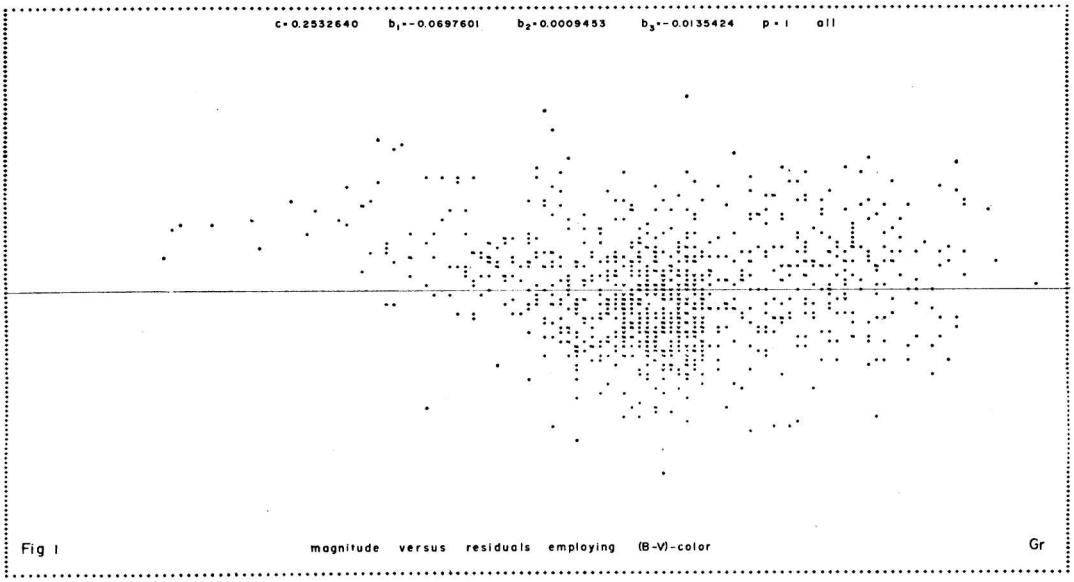


Fig 1 magnitude versus residuals employing (B-V)-color Gr

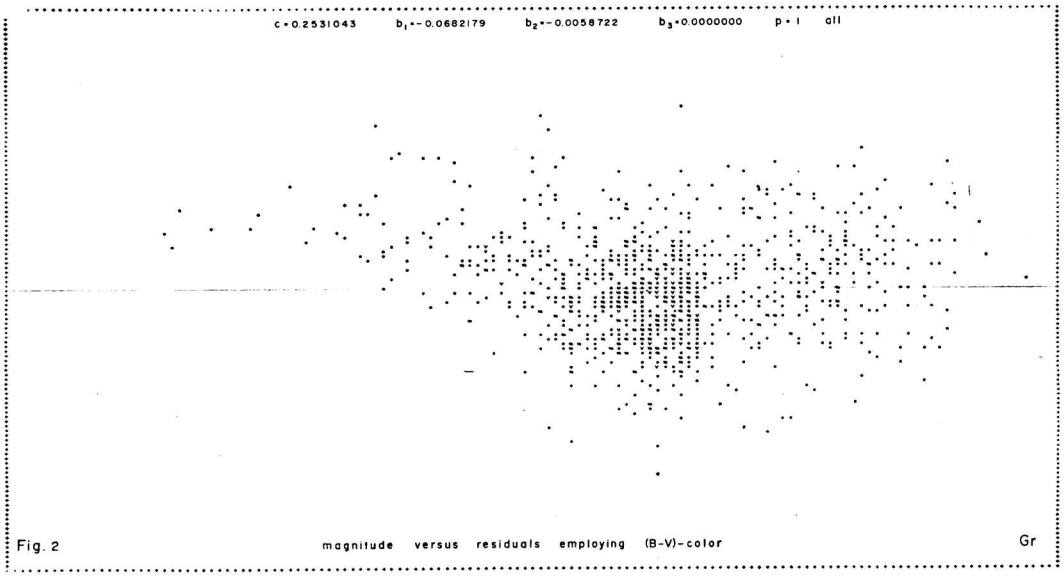


Fig. 2 magnitude versus residuals employing (B-V)-color Gr

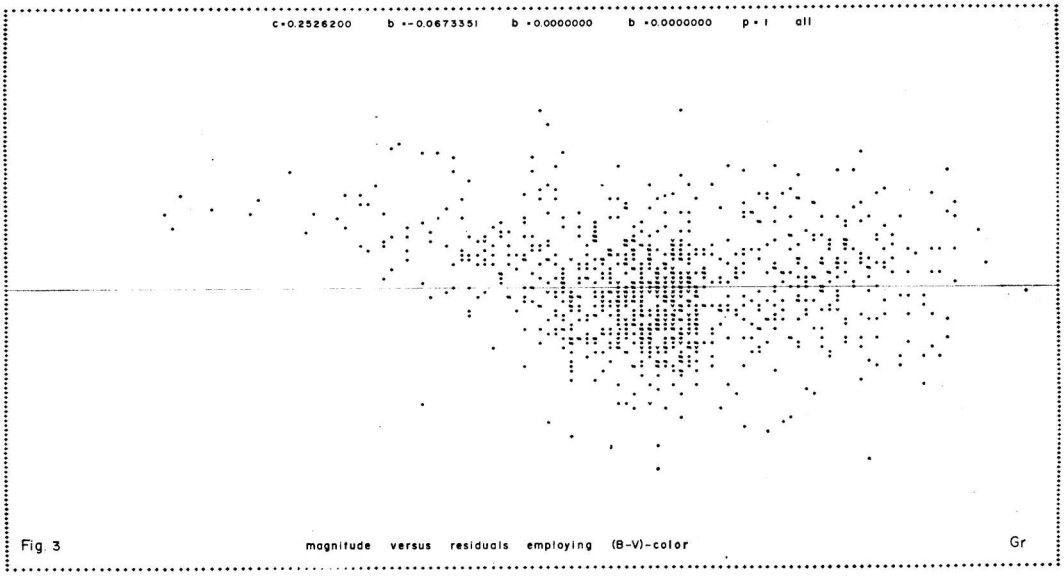
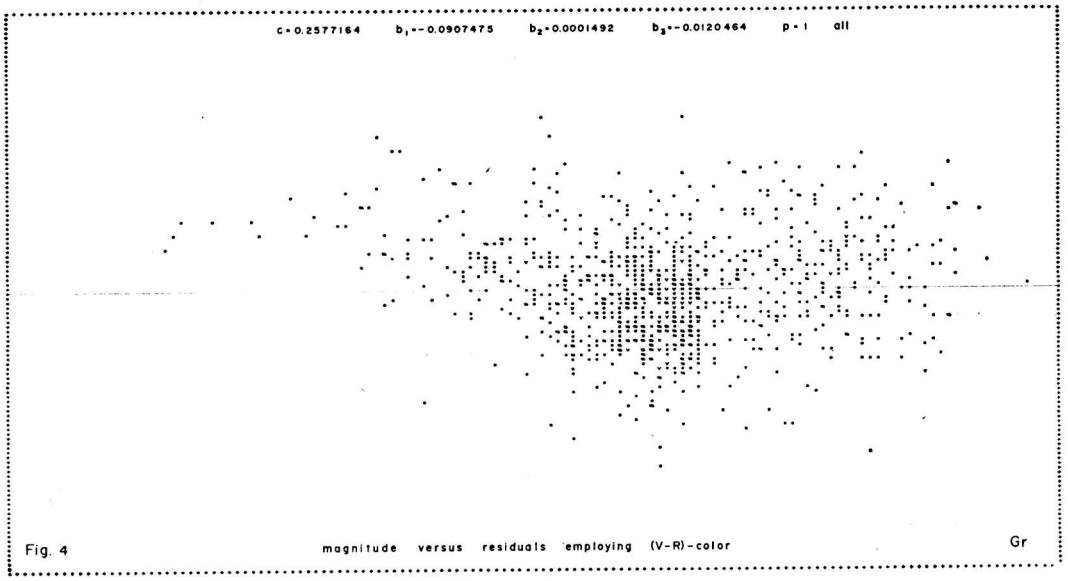
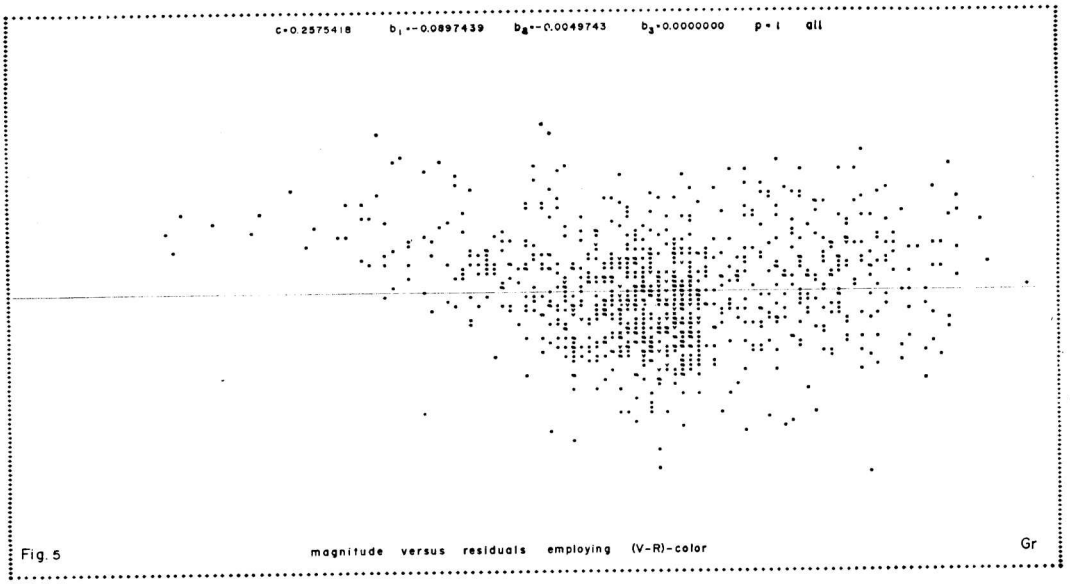
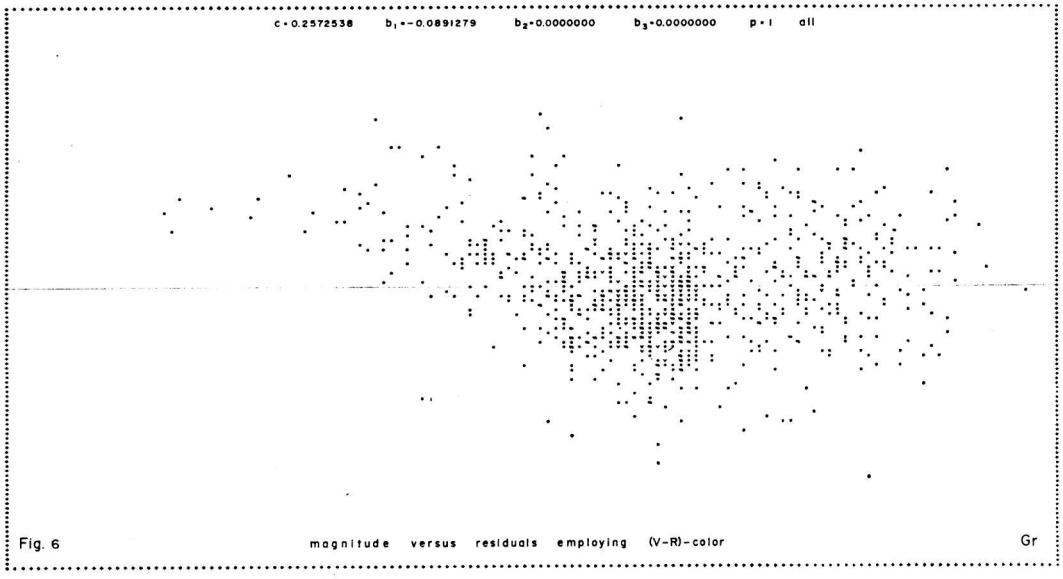
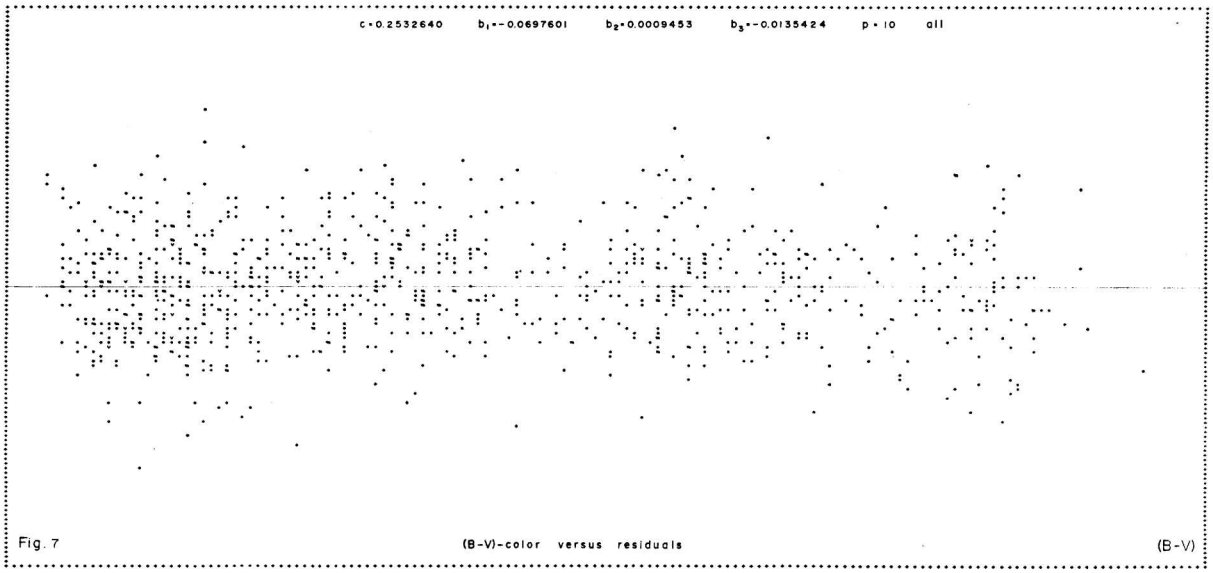


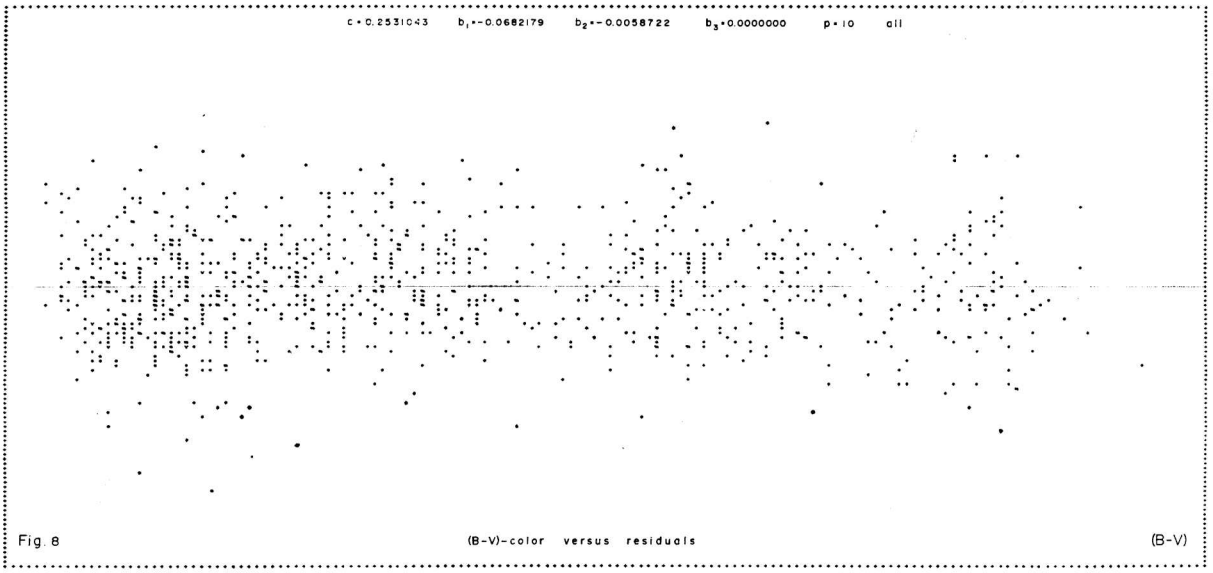
Fig. 3 magnitude versus residuals employing (B-V)-color Gr

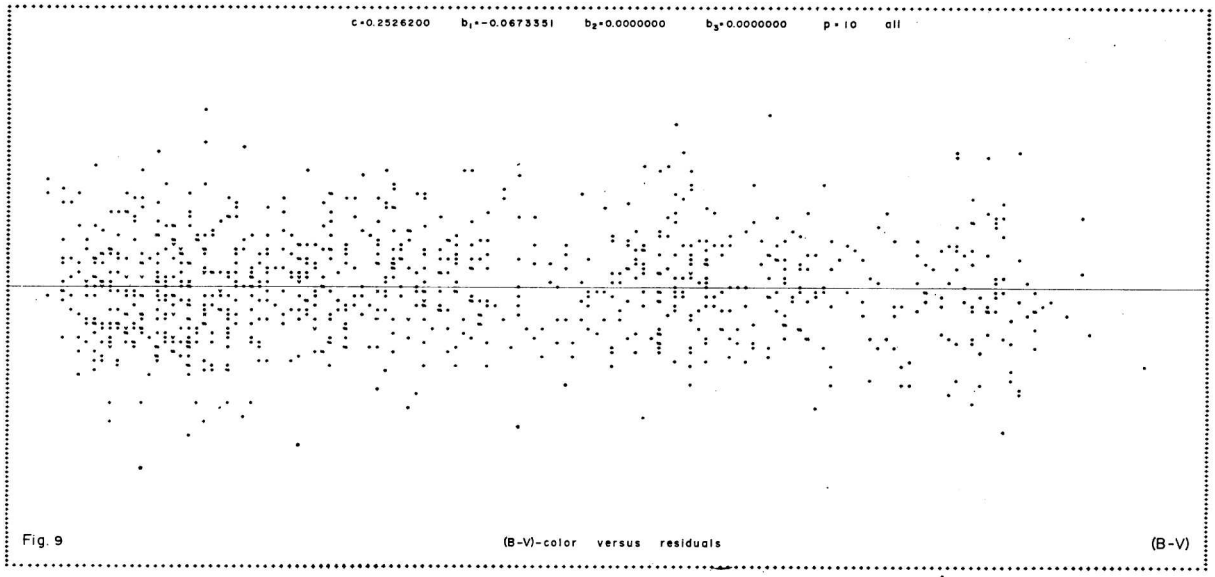












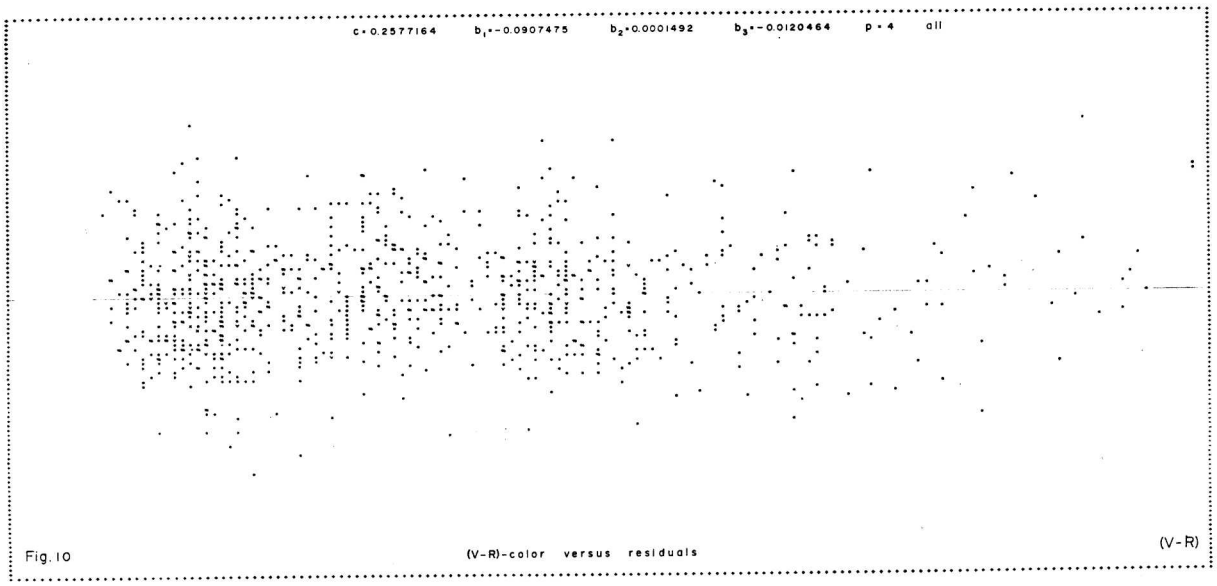


Fig. 10

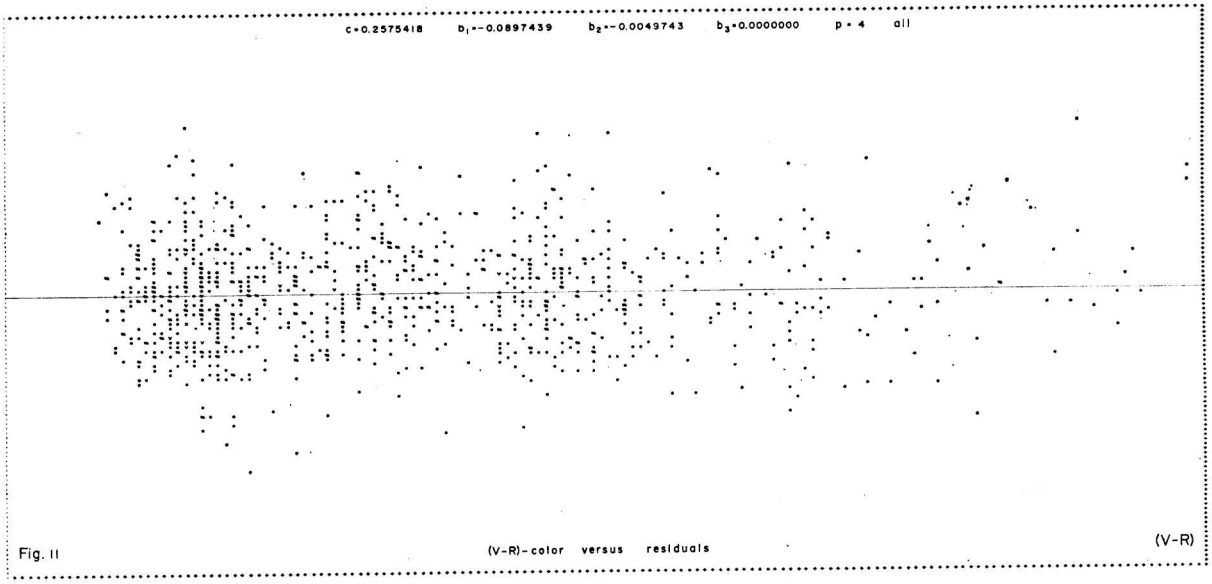


Fig. 11

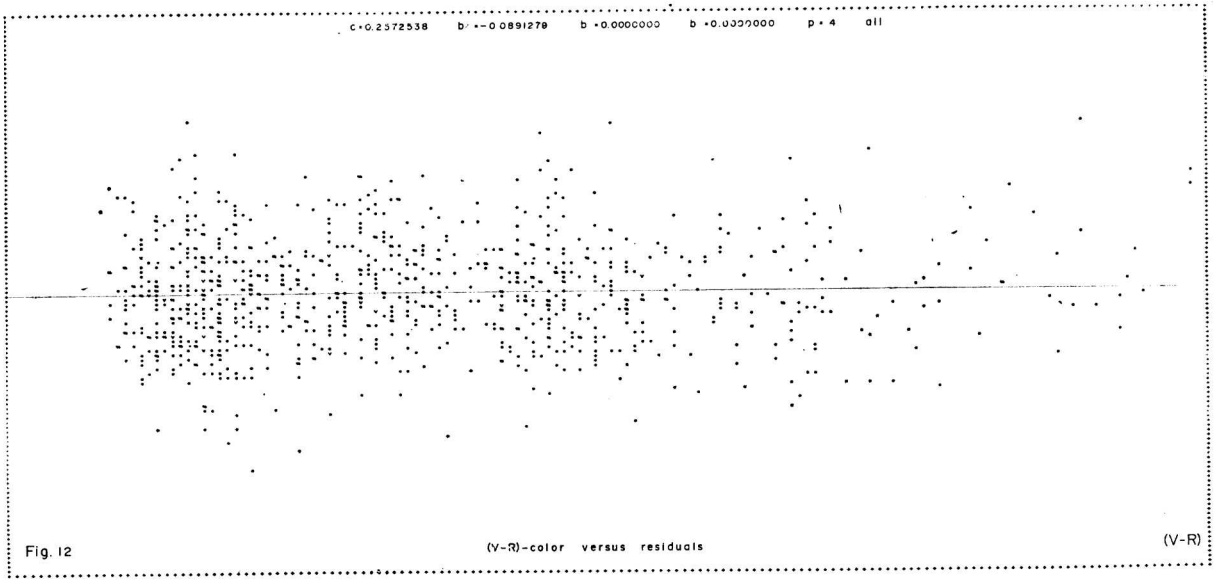


Fig. 12

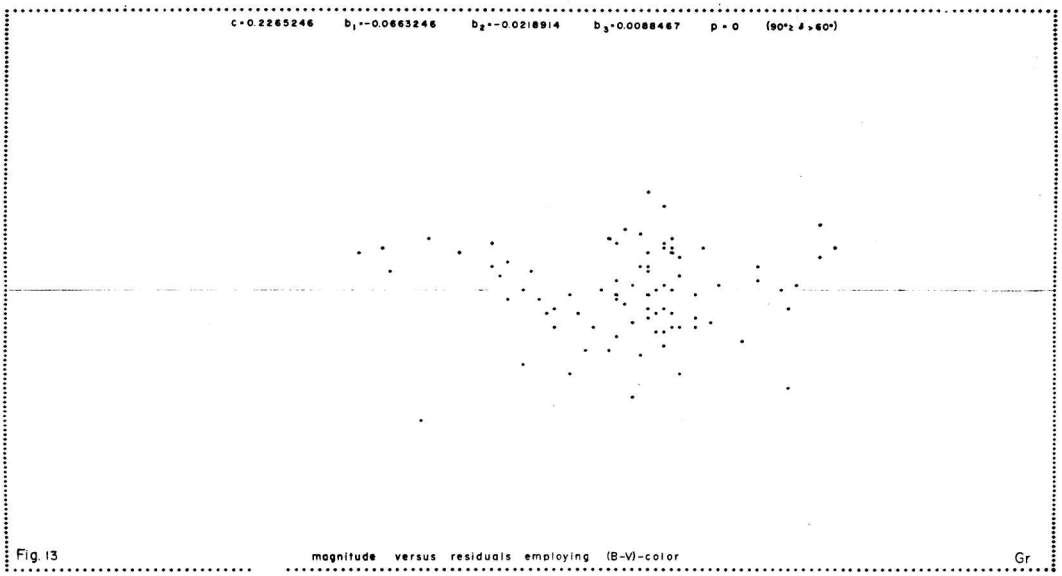


Fig. 13 magnitude versus residuals employing (B-V)-color Gr

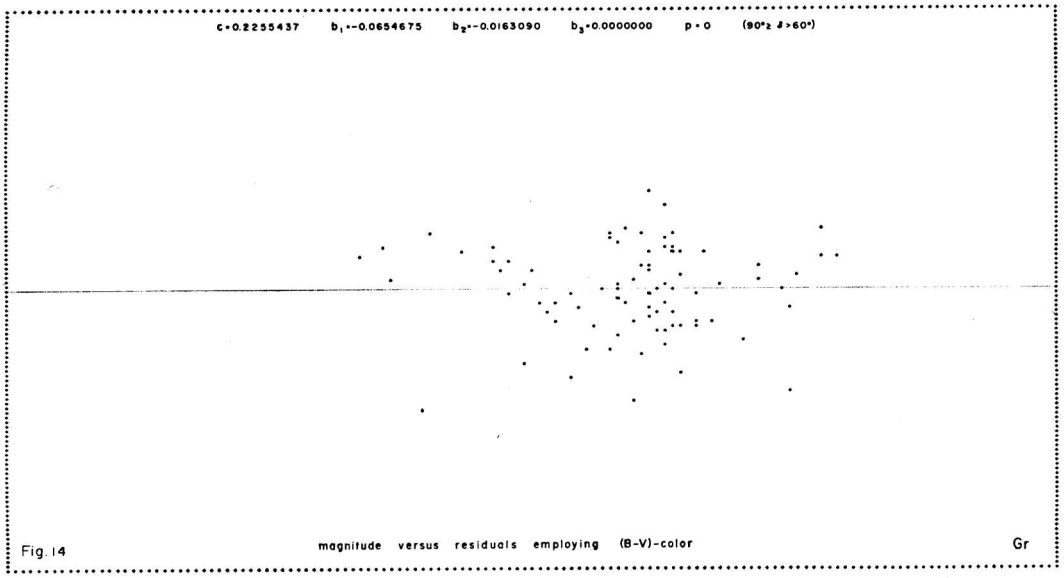


Fig. 14 magnitude versus residuals employing (B-V)-color Gr

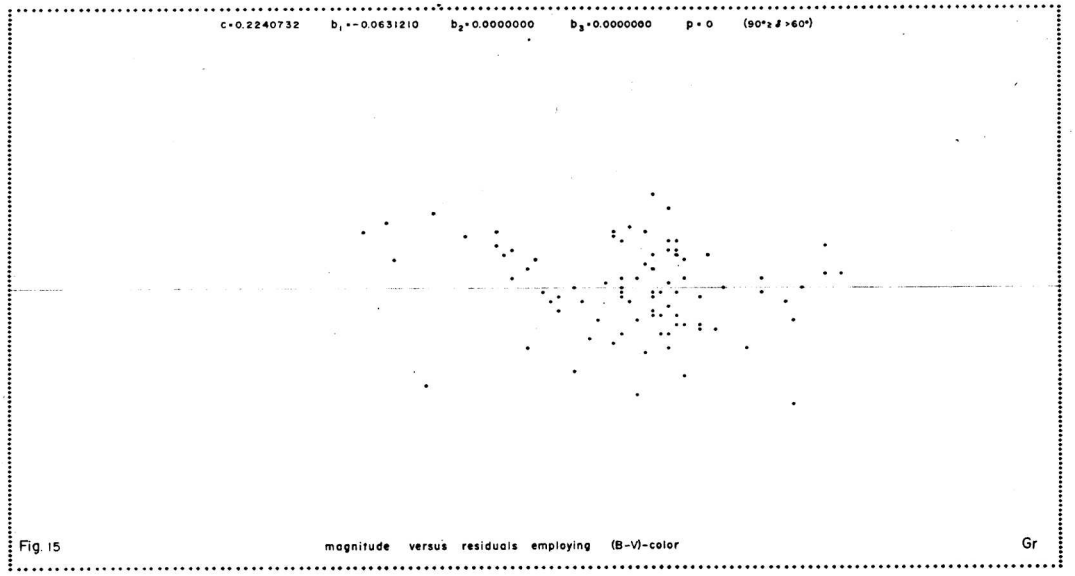
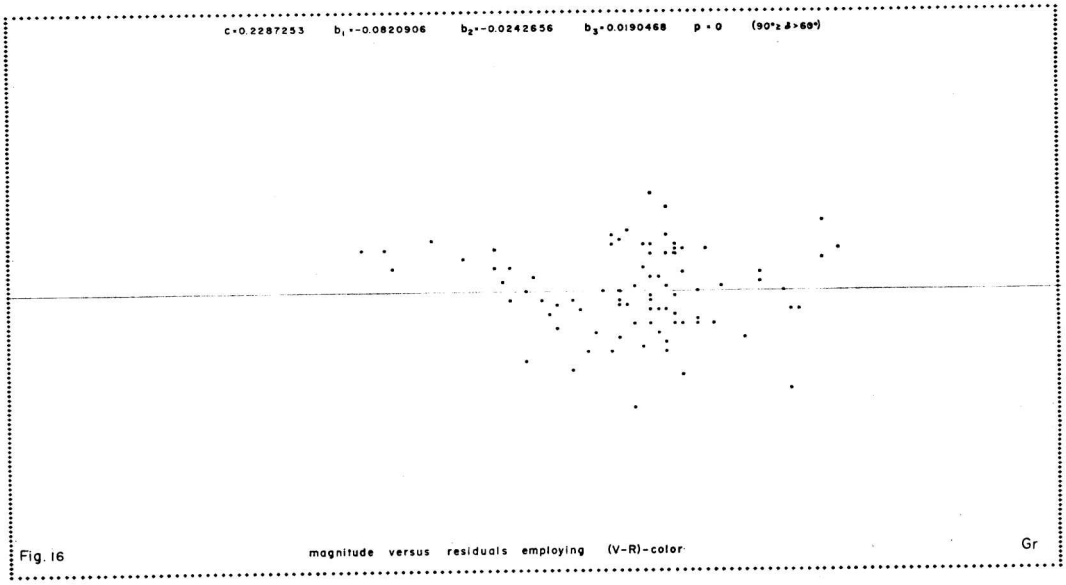
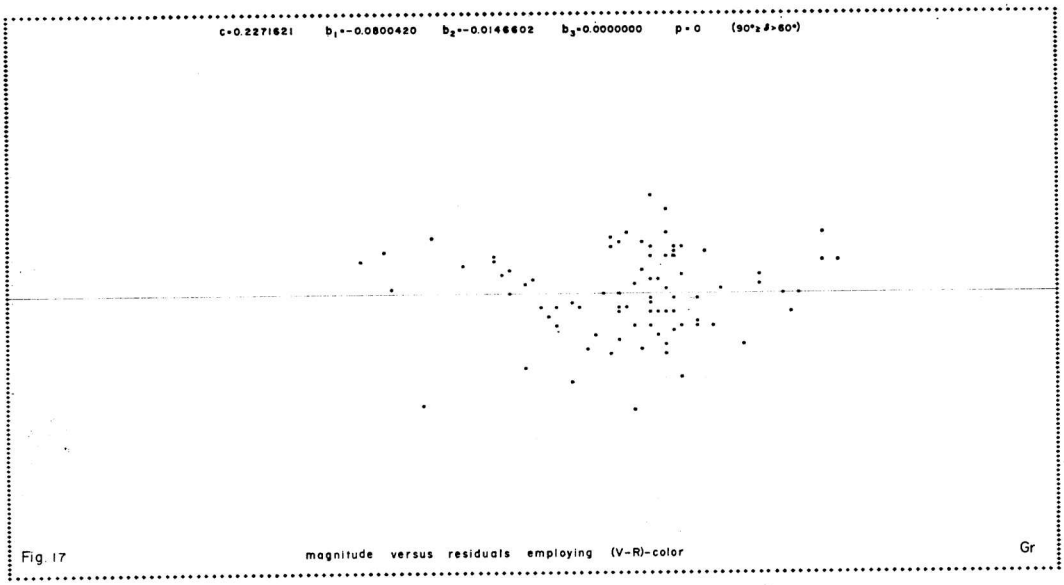
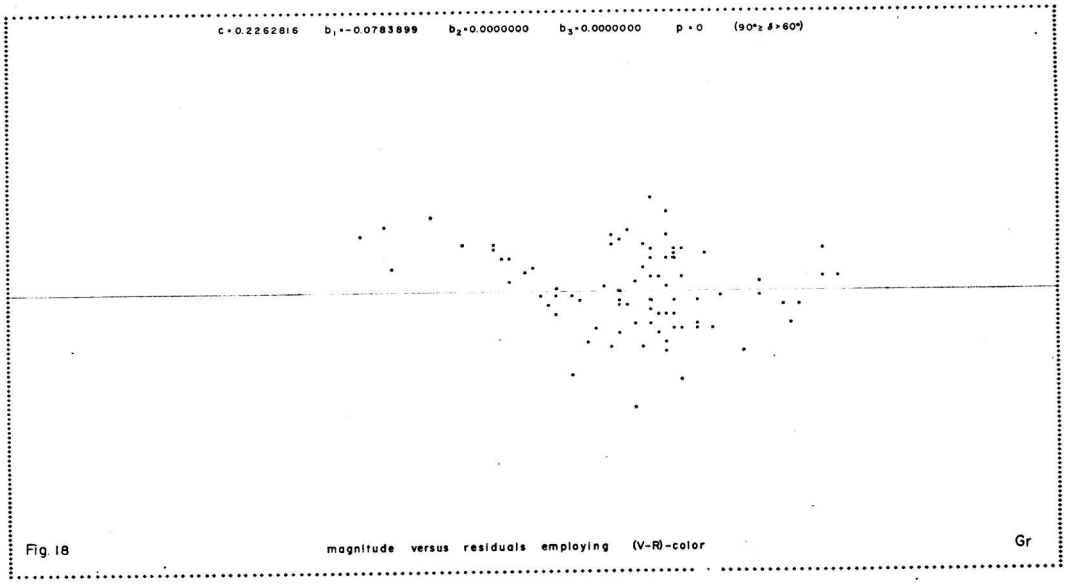


Fig. 15 magnitude versus residuals employing (B-V)-color Gr







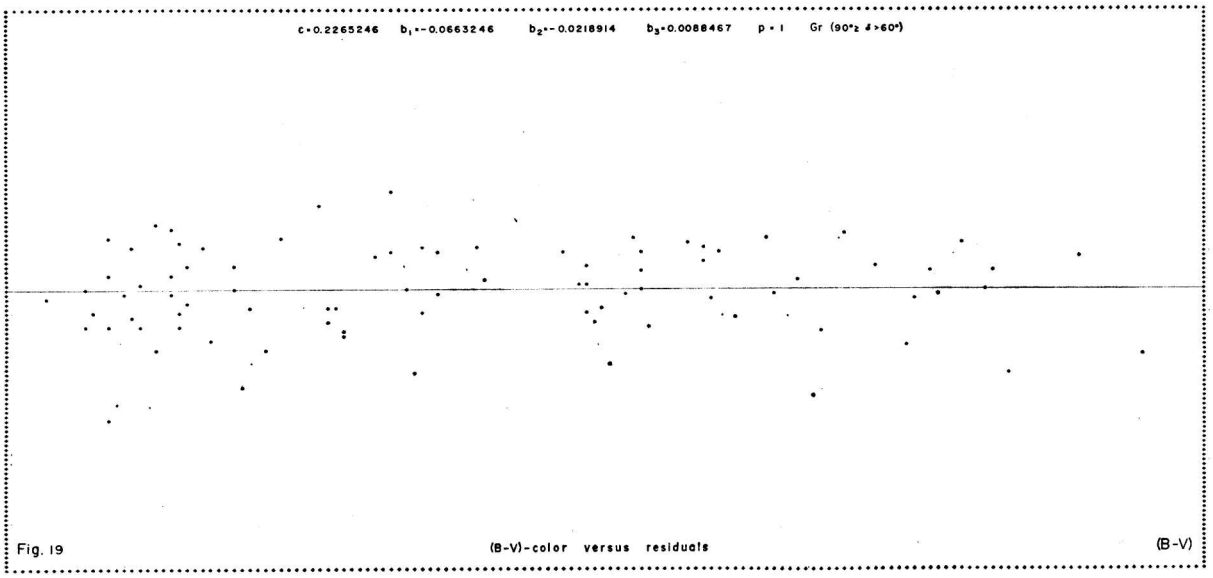


Fig. 19 (B-V)-color versus residuals

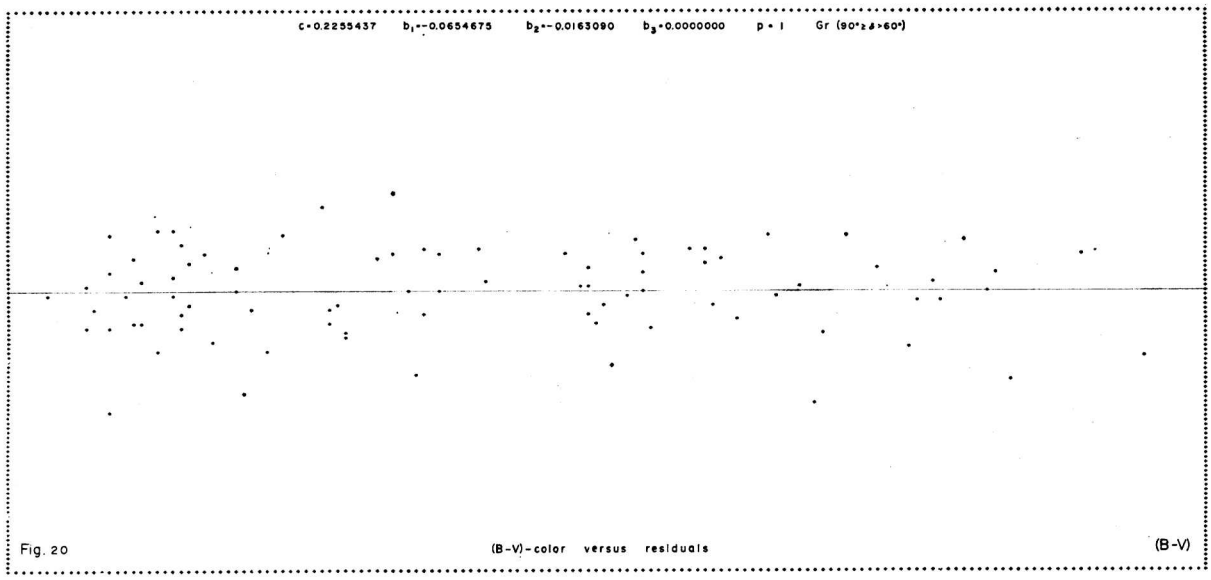


Fig. 20 (B-V)-color versus residuals

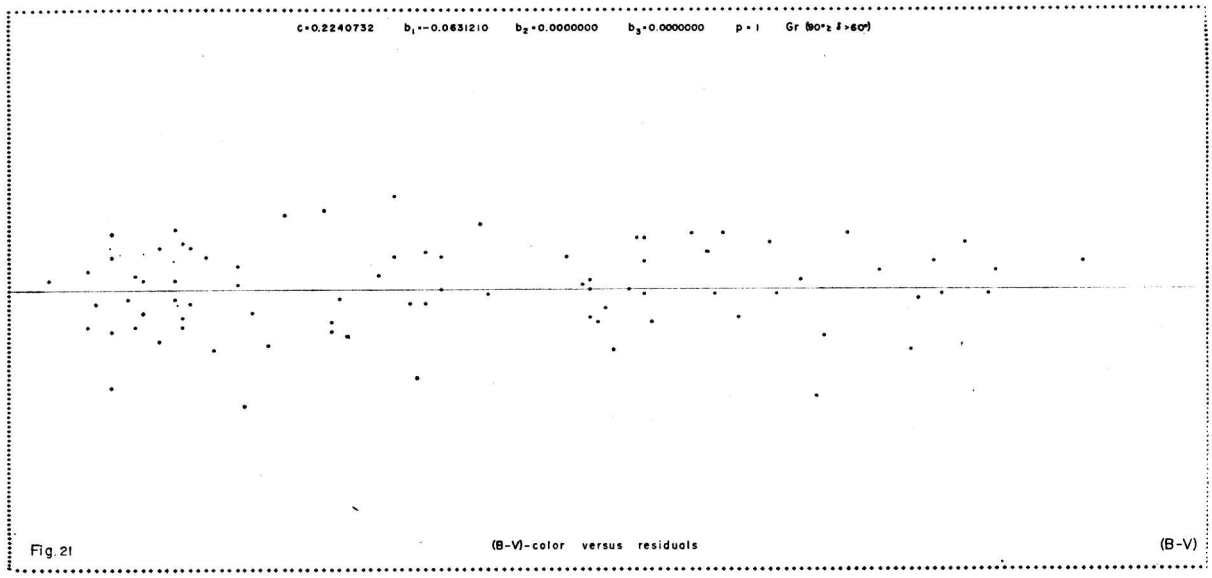


Fig. 21 (B-V)-color versus residuals

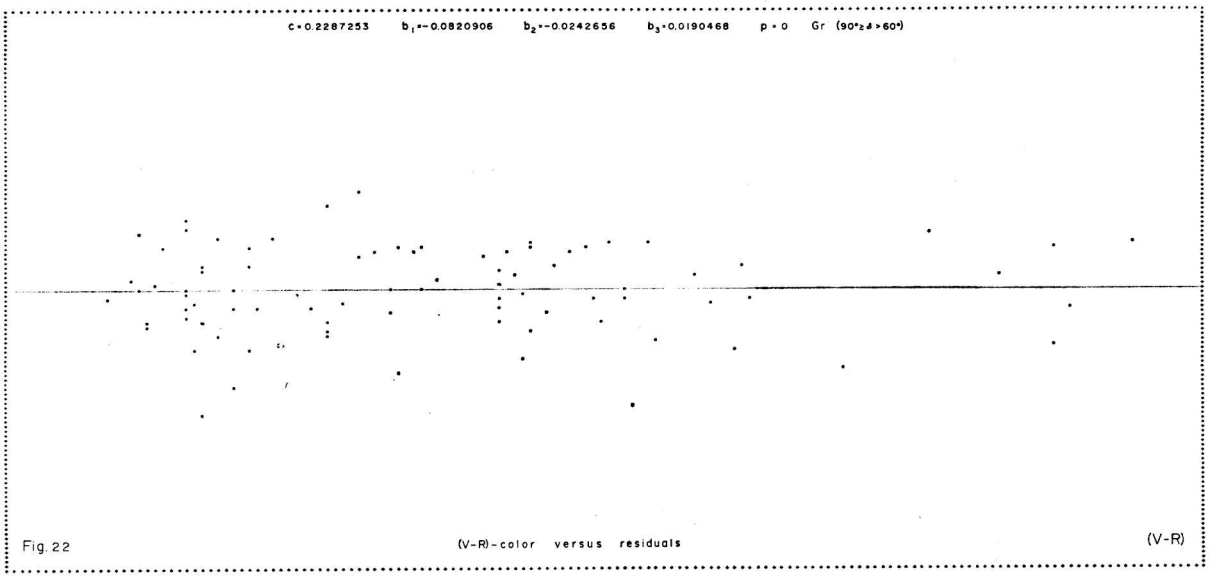


Fig. 22 (V-R)-color versus residuals

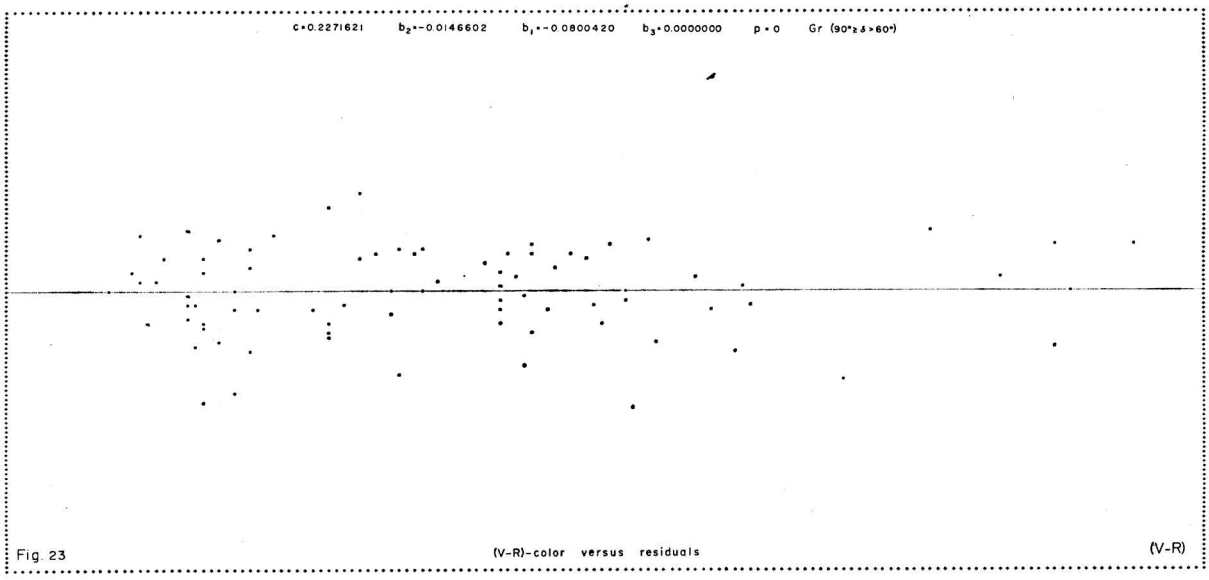


Fig. 23 (V-R)-color versus residuals

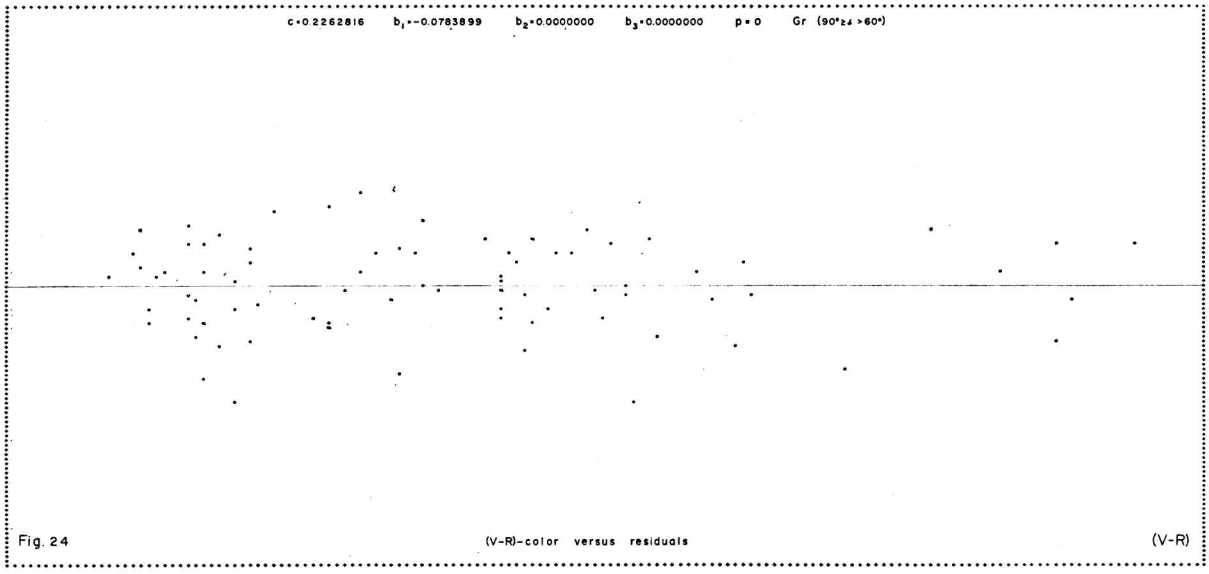


Fig. 24 (V-R)-color versus residuals

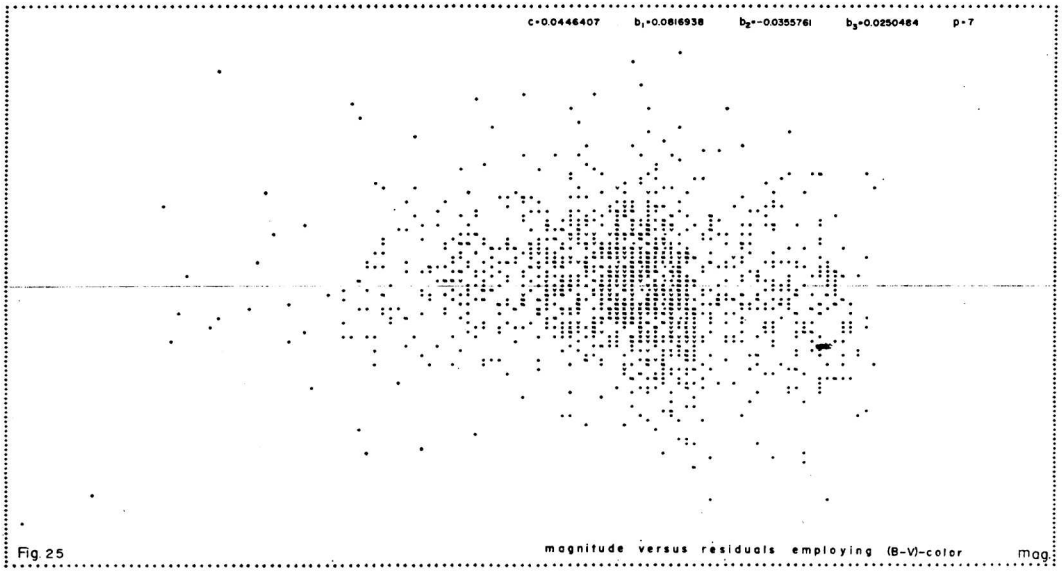


Fig. 25

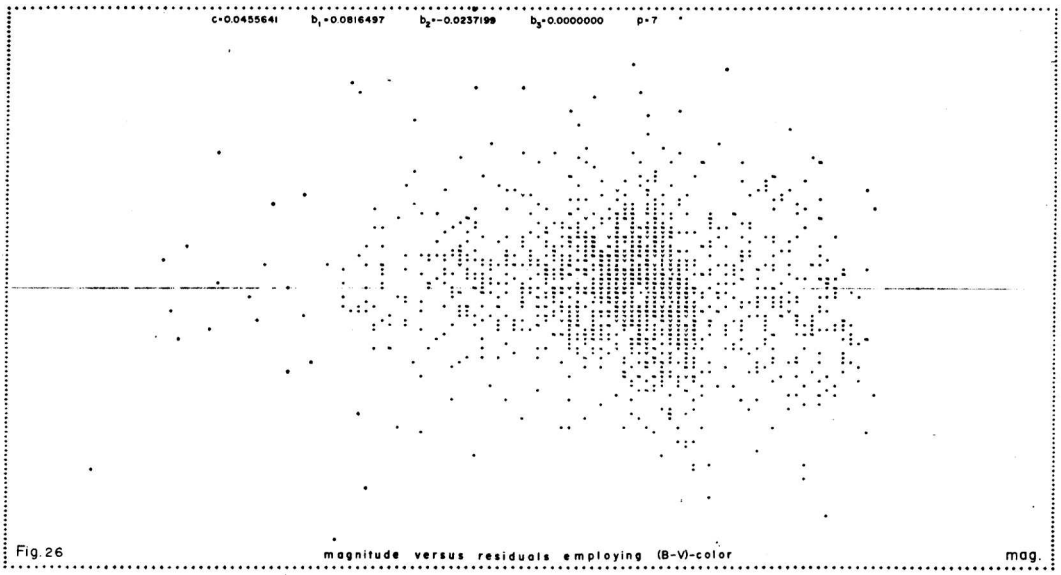


Fig. 26

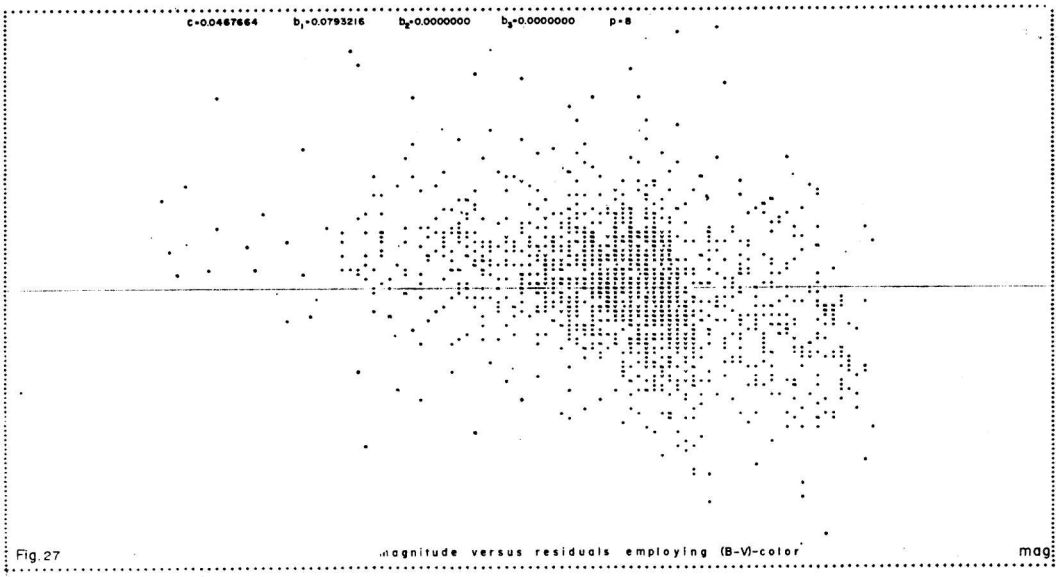


Fig. 27

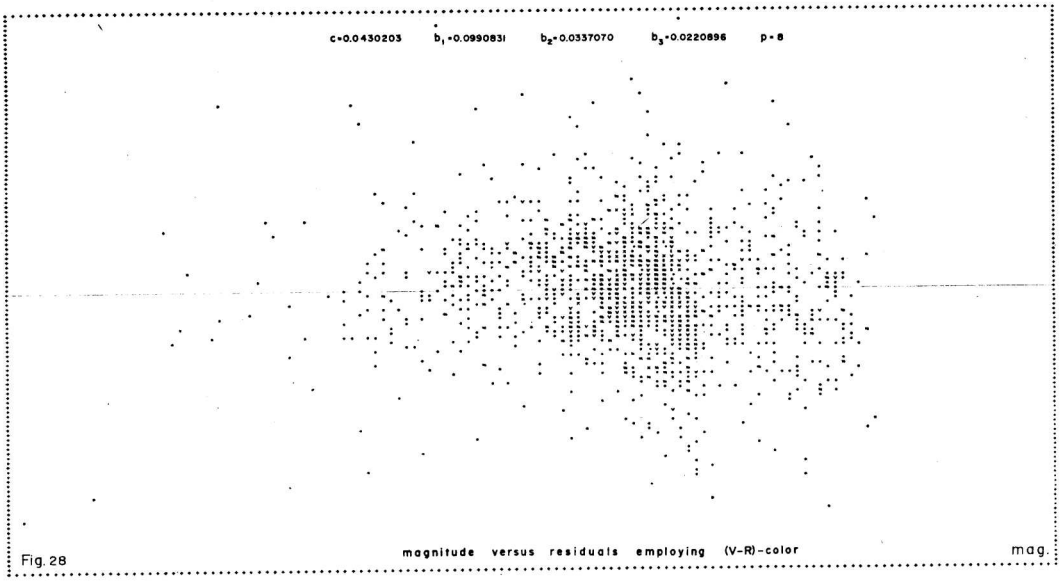


Fig. 28

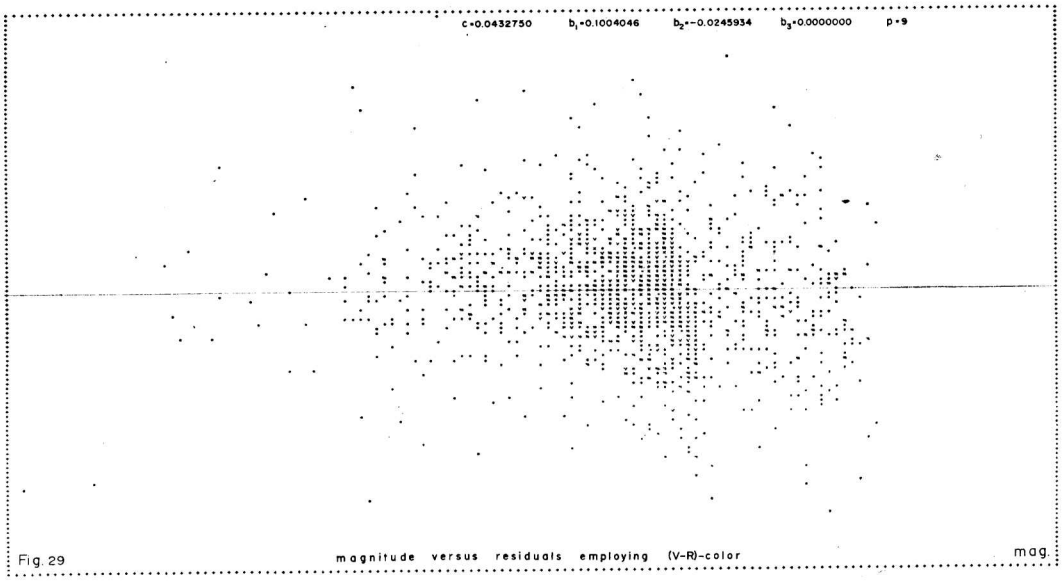


Fig. 29

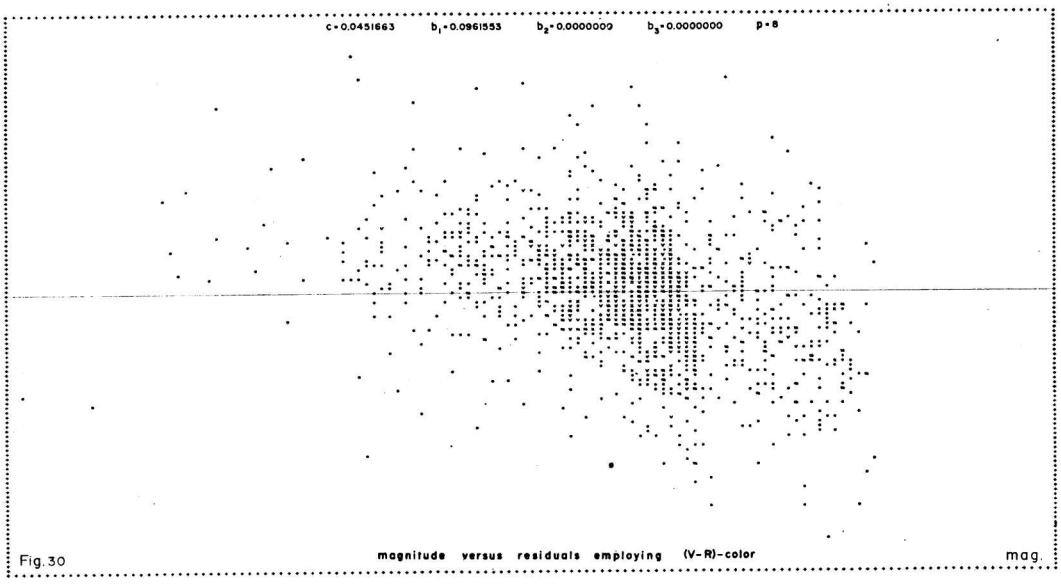
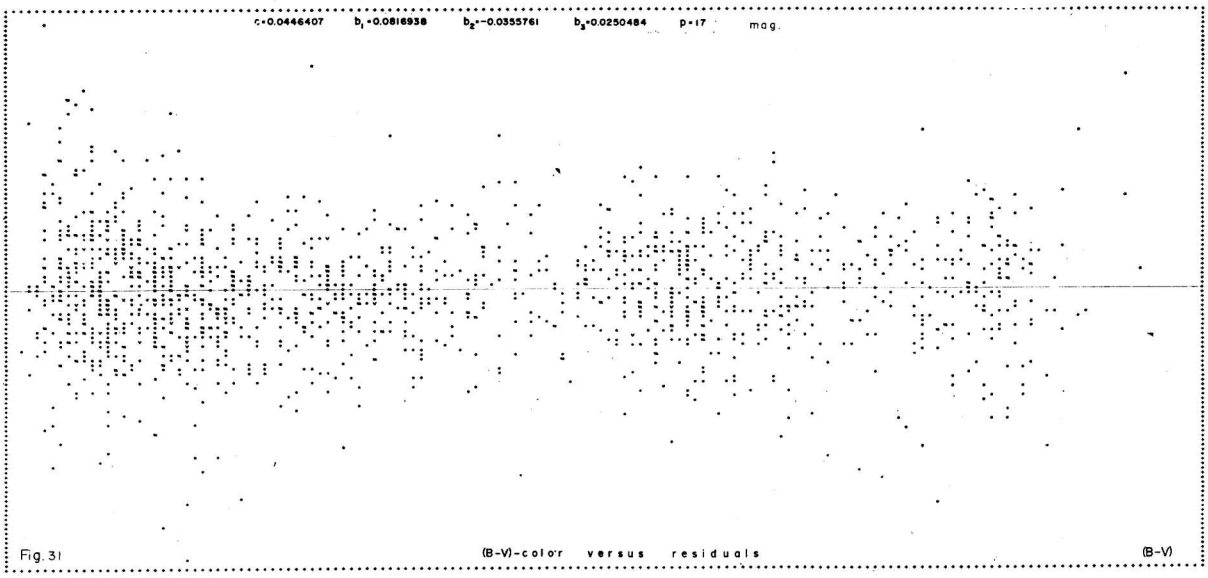
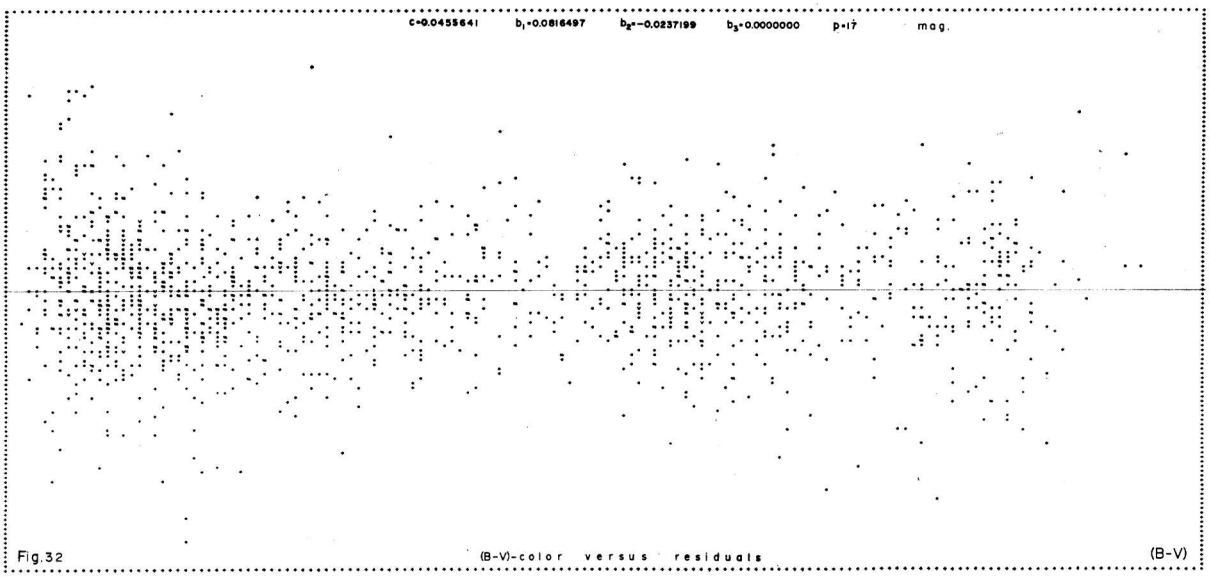
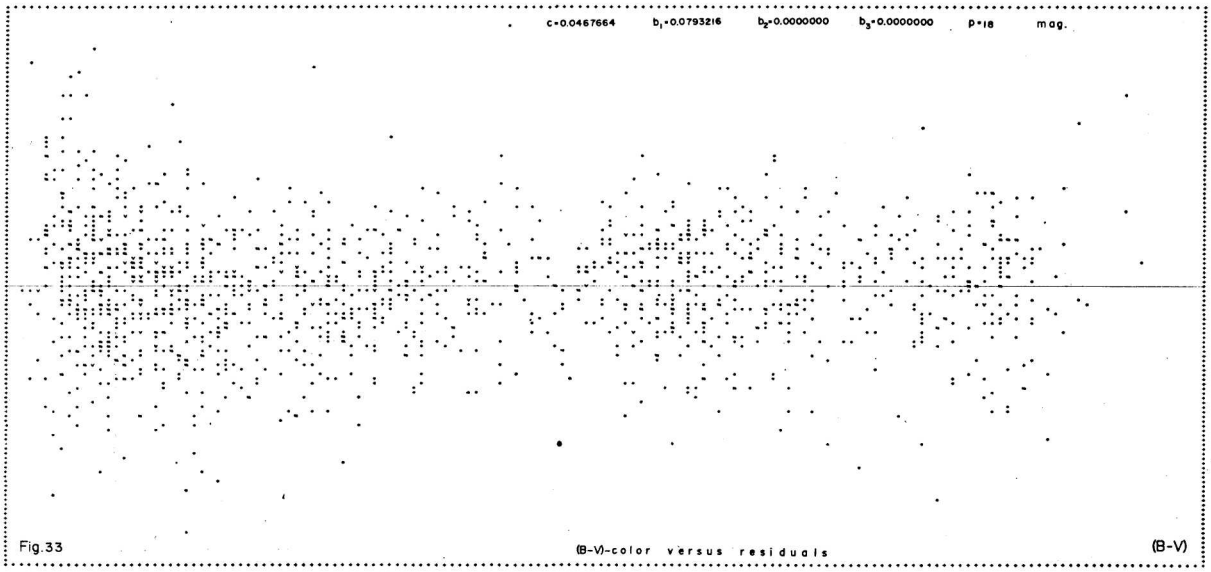


Fig. 30







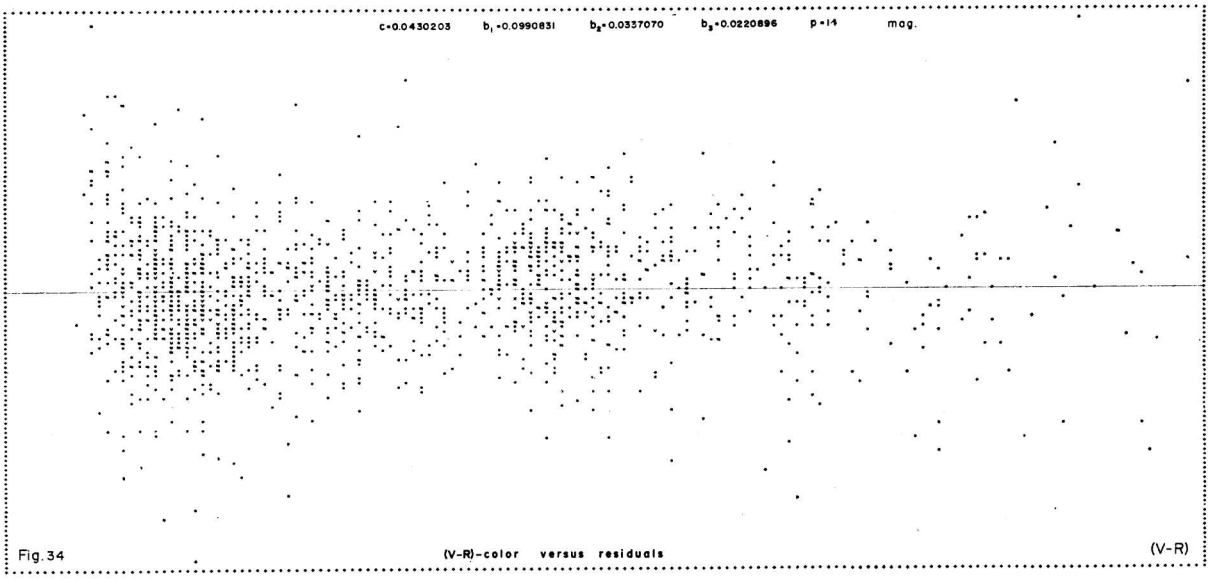


Fig. 34 (V-R)-color versus residuals

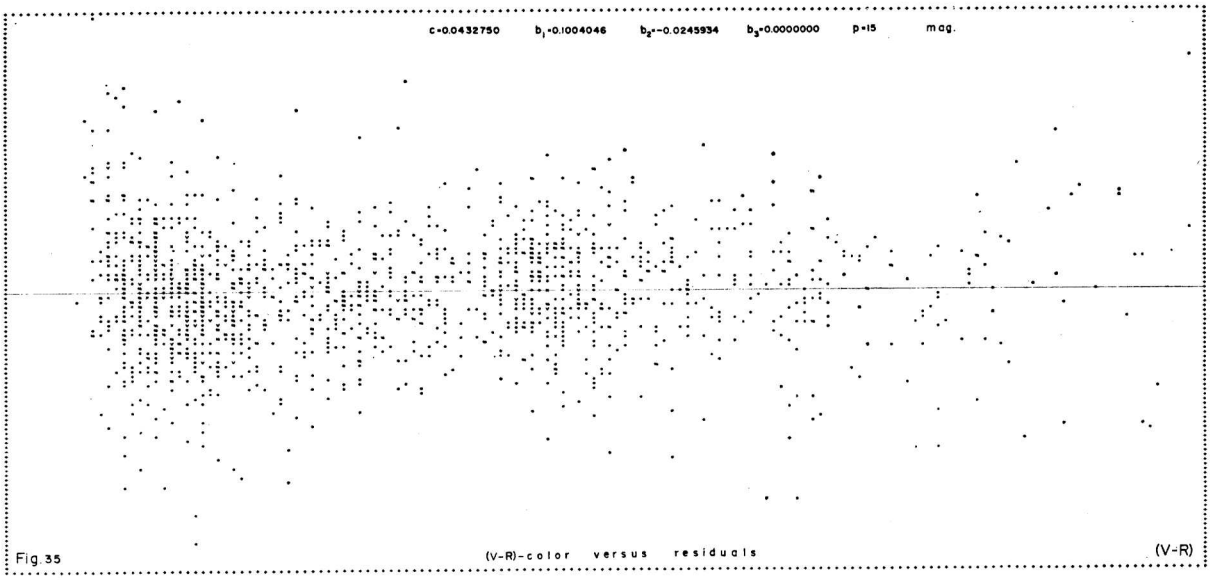


Fig. 35 (V-R)-color versus residuals

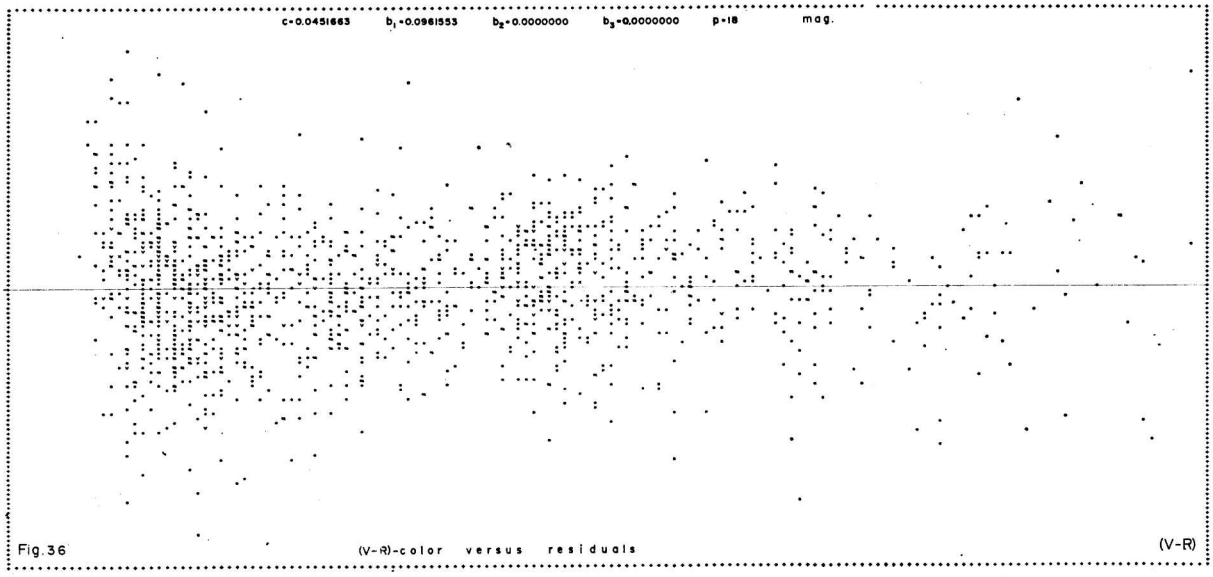


Fig. 36 (V-R)-color versus residuals

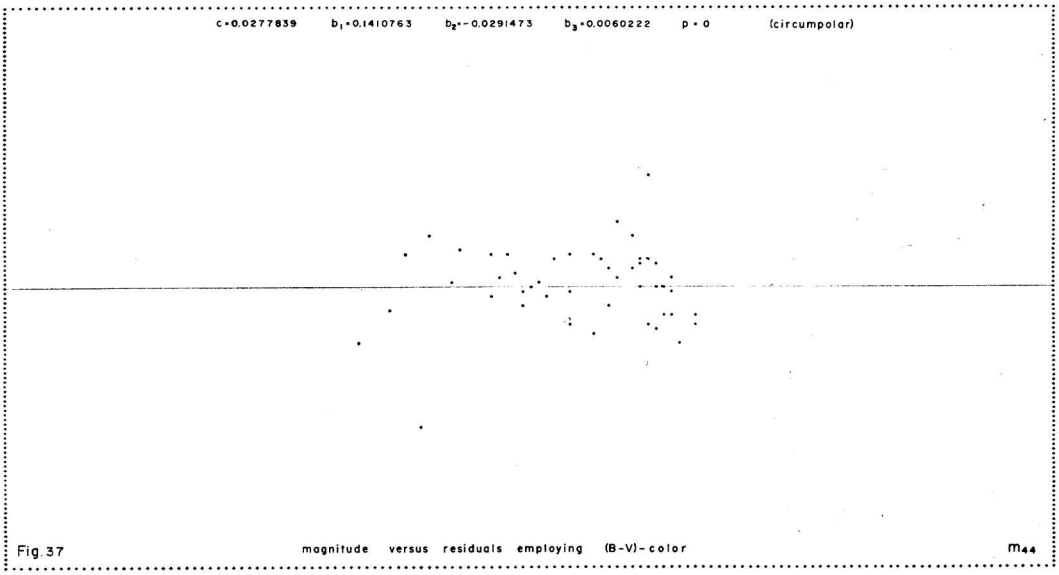


Fig. 37 magnitude versus residuals employing (B-V)-color

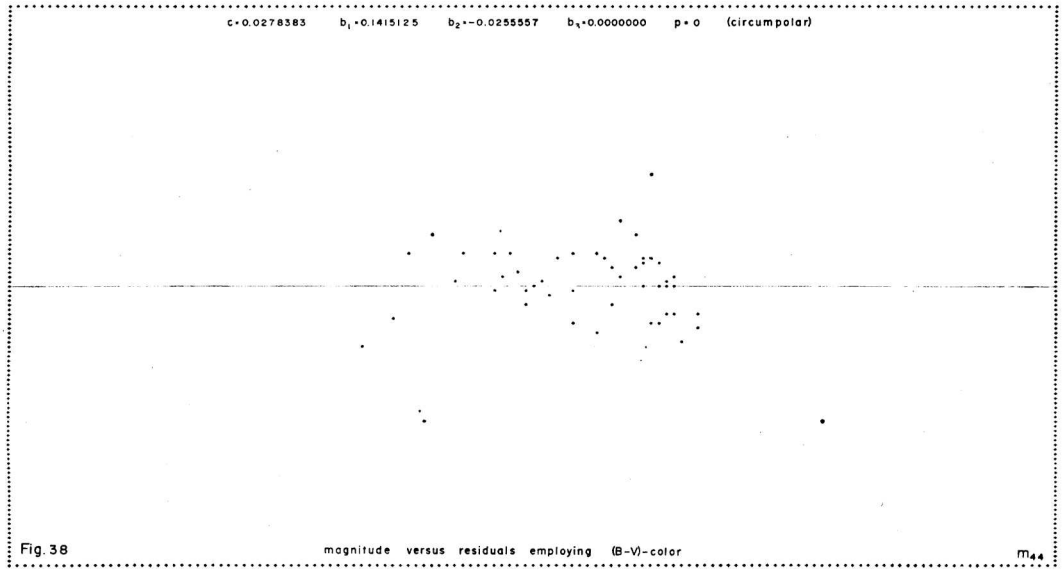


Fig. 38 magnitude versus residuals employing (B-V)-color

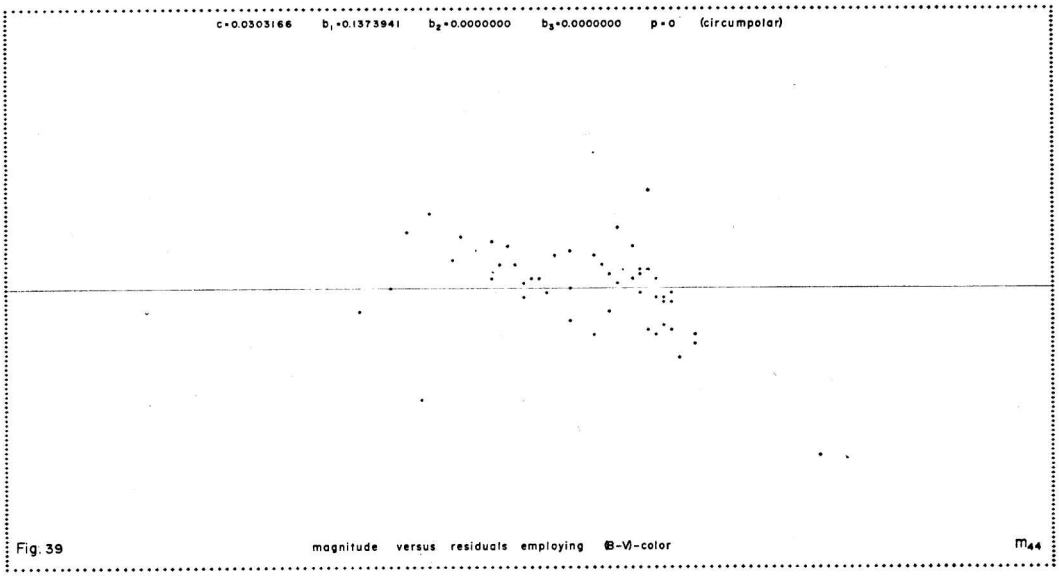


Fig. 39 magnitude versus residuals employing (B-V)-color

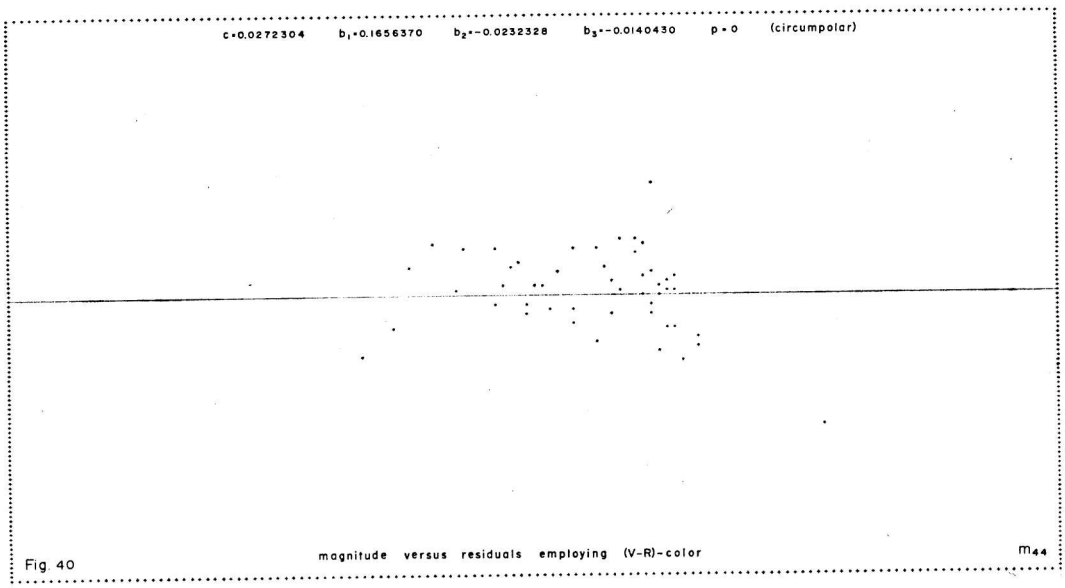


Fig. 40 magnitude versus residuals employing (V-R)-color

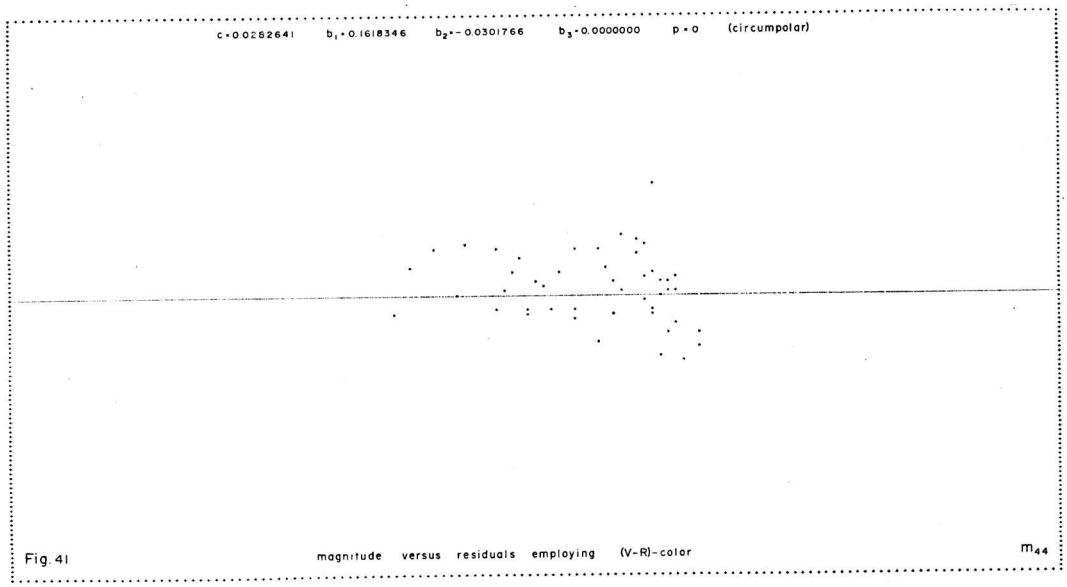


Fig. 41 magnitude versus residuals employing (V-R)-color

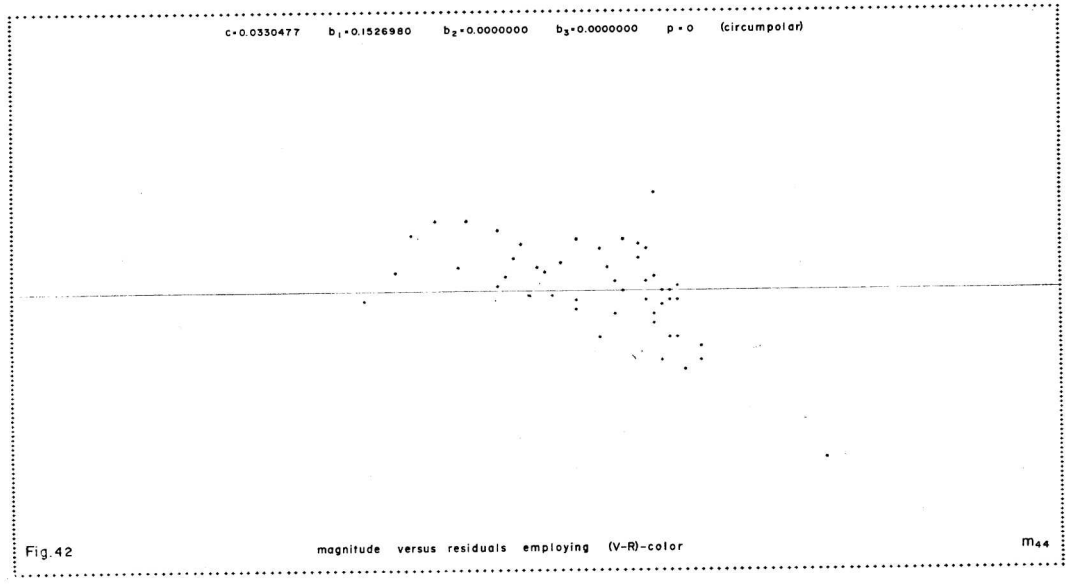


Fig. 42 magnitude versus residuals employing (V-R)-color

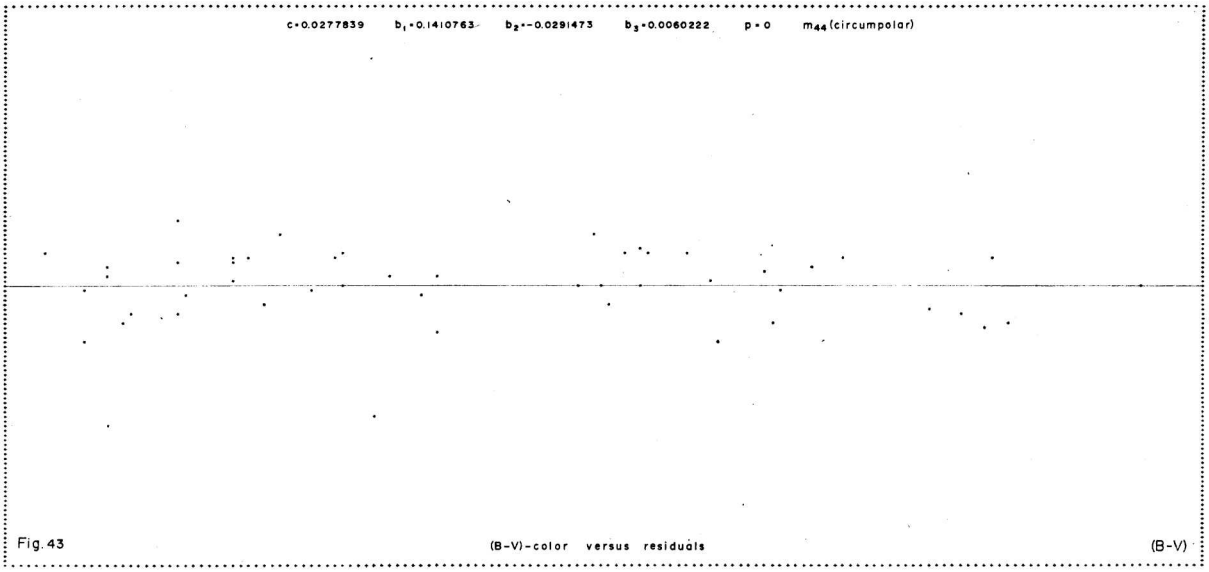


Fig. 43

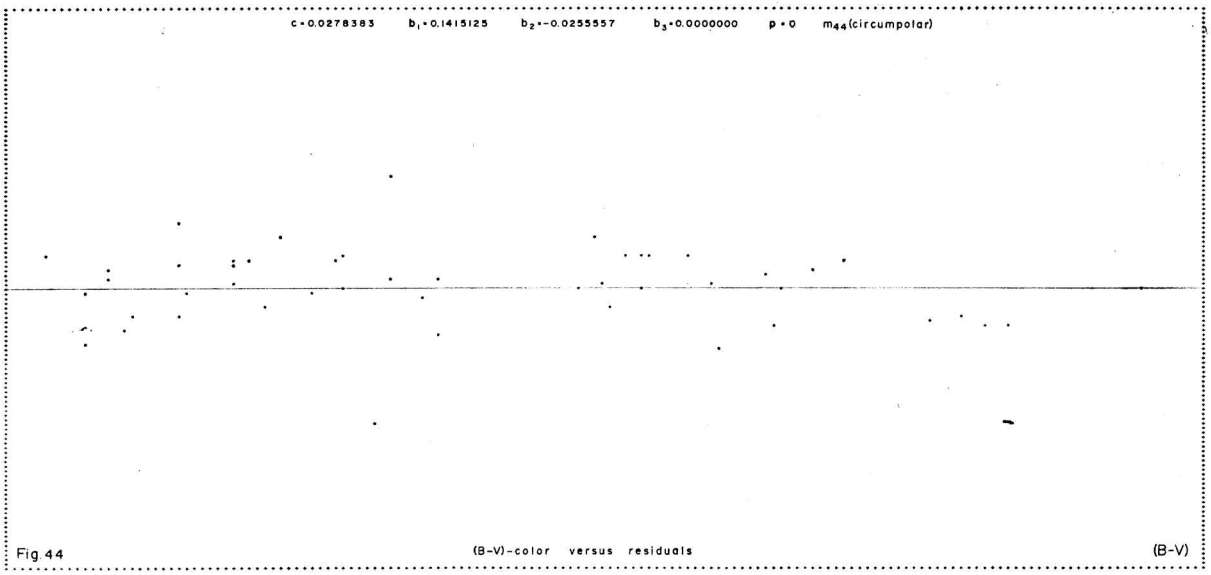


Fig. 44

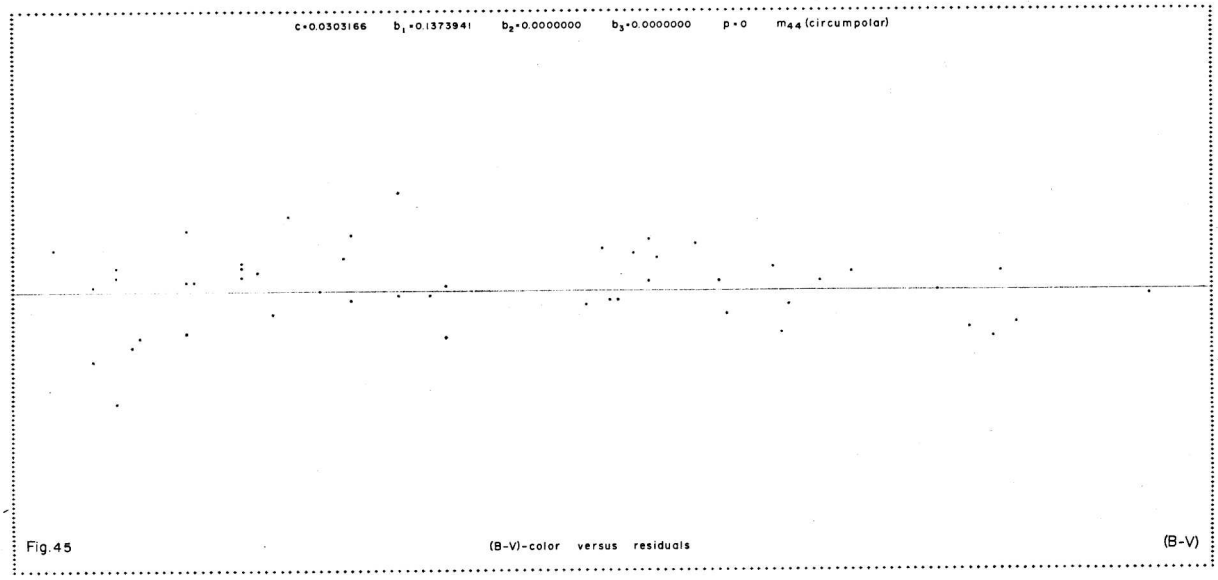


Fig. 45

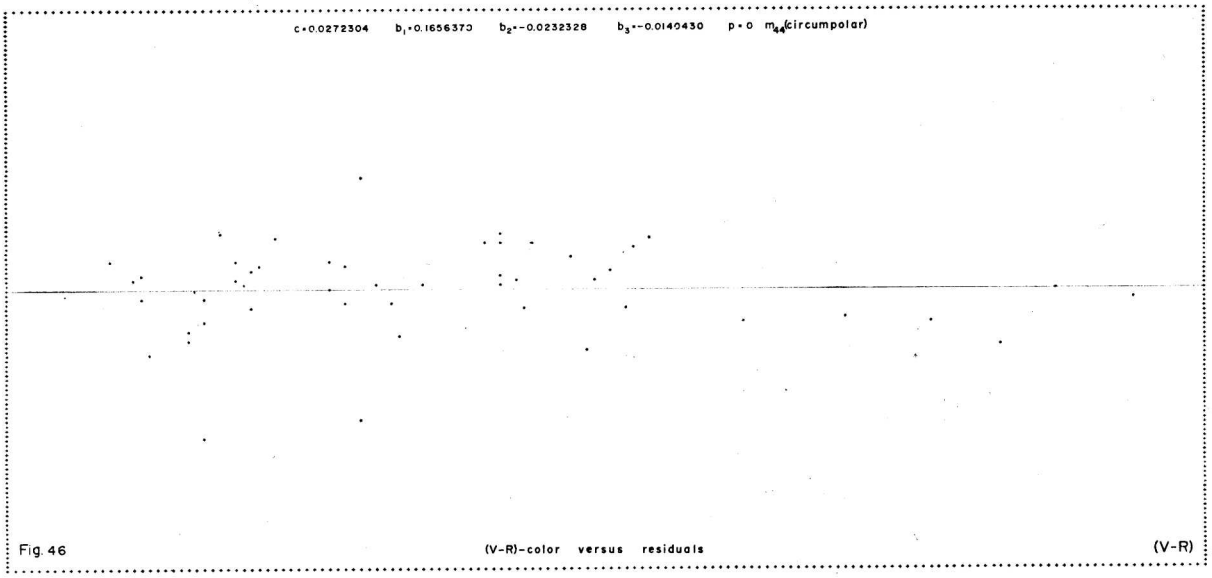


Fig. 46 (V-R)-color versus residuals

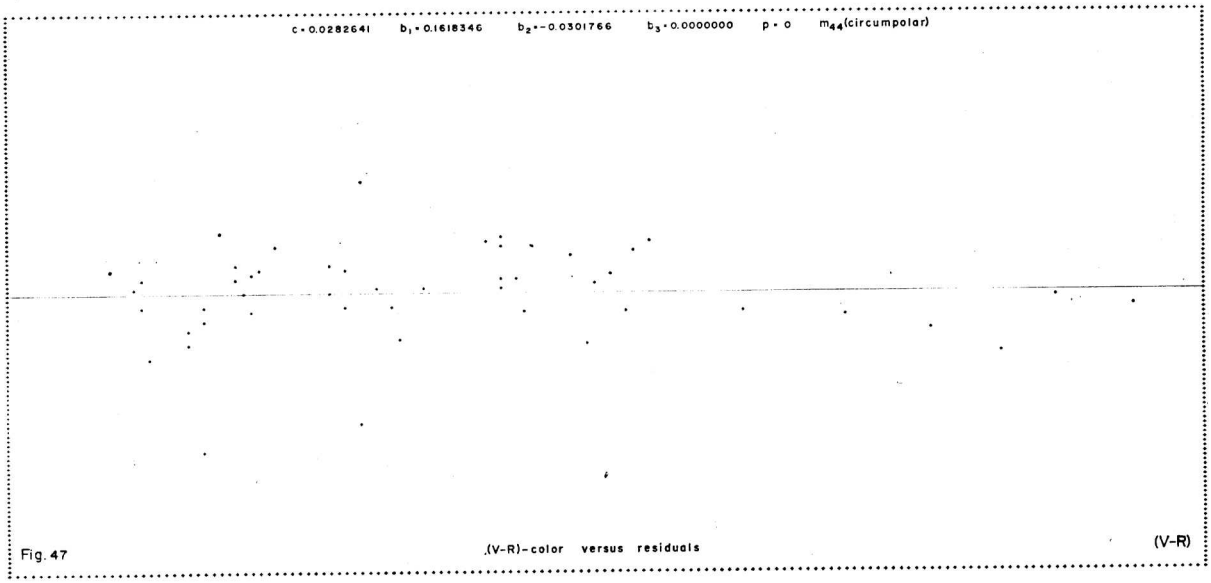


Fig. 47 (V-R)-color versus residuals

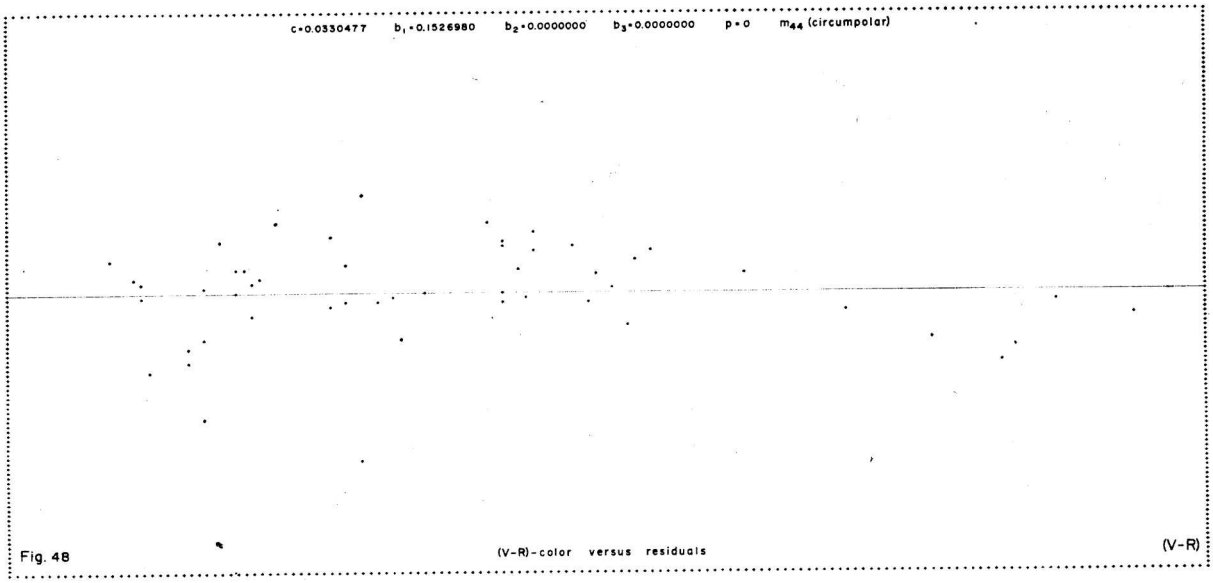


Fig. 48 (V-R)-color versus residuals