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THE BEHLEN OBSERVATORY VARIABLE STAR SURVEY. IV.

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ABSTRACT

Finding charts, accurate coordinates, and light curves are presented for 106 variable stars including 6 which are newly discovered. Parameters descriptive of the light curves are tabulated including periods for 16 stars which lacked them. The periods from the General Catalog of Variable Stars for ten stars were found to be seriously in error. The classification of the stars is discussed. Revisions or refinements of the classifications from the General Catalogue of Variable Stars are suggested for 20 stars and classifications are given for 7 which were previously unclassified. 15%–23% of the Bailey type *ab* RR Lyrae stars show scatter in their light curves which is suggestive of the Blazhko effect. © 1996 American Astronomical Society.

1. INTRODUCTION

This is the fourth of a series of papers presenting the results of a photometric survey of little-studied variable stars from the General Catalogue of Variable Stars (hereafter referred to as GCVS; Kholopov 1985, 1987). The motivation for this project was described in Paper I (Schmidt 1991). In brief, although variable stars are of interest in connection with a number of astrophysical problems and a large number are known (the GCVS contains more than 28 000; in excess of 40 000 new variables have been discovered in microlensing searches, Alcock *et al.* 1995, Udalski *et al.* 1995) the information on many in the GCVS is sketchy. The survey is intended to provide some of this missing information and, in doing so, identify variables of special interest. The emphasis in the previous papers of this series was on stars which were thought to be regular pulsating variables or stars of unknown type. In the present sample we have also included a number of stars which are classified as semiregular variables (SR, SRA, SRB), RV Tauri stars (RV, RVA), Miras (M), irregular nebular variables (IN), rapidly varying poorly studied stars (S:) or eclipsing binaries (E,EW/KW). This was done in order to make comparisons of the gross light-curve properties with those of the regular pulsators. The goal is to develop objective methods for classifying variables from photometric data and particularly from limited photometric samples.

In Papers I, II (Schmidt & Reiswig 1993) and III (Schmidt *et al.* 1995) data was presented for 239 variables. The present paper presents data for an additional 106 stars.

The techniques of observation and data analysis were described fully in Paper I and references therein. There have been no important changes in the procedures so they will not be described again here.

The original photometric data will appear in the ApJ/AJ CD-ROM series. We reproduce the data for the first star in Table I as a guide to the form and content of the CD-ROM file.

2. FINDING CHARTS AND STAR IDENTIFICATION

Table 2 lists the stars. The first two columns contain the variable star designation and the GCVS variable type. The star number from the *Hubble Space Telescope Guide Star Catalogue* (GSC; described by Lasker *et al.* 1990; Russell *et al.* 1990; Jenkner *et al.* 1990) is given in the third column for stars contained therein. The GSC number is given in the form *xxxxyyyy*, where *xxxx* is the number of the small region of the catalogue while *yyyy* is the number of the star within the region. The coordinates from the GSC for equinox 2000 are listed in columns four and five. When the variable is not in the GSC, the coordinates were determined from a GSC star within our CCD field.

The finding charts for the variables are presented in Fig. 1. Each chart is 10' on a side with north up and east to the left. The sizes of the symbols denote the stars' magnitudes as indicated by the figure legends. The variable is indicated by an open symbol if it is brighter than about fourteenth magnitude or is circled if it is fainter. As described in Paper II these charts were generated from the GSC. Objects which were classified there as nonstellar (Object Classification Code 3) were not plotted in the finding charts of Papers II and III. However, many of these objects turn out to be stars with fuzzy images or close companions; they have been included in Fig. 1 as squares. Each field was examined on prints made from the STScI Digitized Sky Survey. Using these prints stars which were missing from the GSC but were needed for completeness, including some of the variables, were added to our charts.

The coordinates of variables in the GCVS are often uncertain and obtaining published finding charts is often time consuming and difficult. For these reasons, the most efficient approach to finding the variables is to take CCD frames centered on the GCVS coordinates and locate the star in question by its variability. However, this procedure raises the possibility of misidentifications (very few as it turns out) and

TABLE 1. Photometric data for UV And. Period: 227.000000. Epoch of maximum: 2,448,611.000.

HJD - 2,440,000	PHASE	V	s.d.	R	s.d.	V-R	s.d.
8191.695	0.153	10.849	3	9.121	1	1.726	3
8191.798	0.153	10.845	3	9.116	2	1.727	4
8192.627	0.157	10.875	2	9.134	1	1.738	2
8192.899	0.158	10.879	2	9.142	1	1.734	2
8205.605	0.214	11.112	3	9.285	1	1.825	3
8205.688	0.214	11.116	3	9.262	2	1.852	4
8205.796	0.215	11.123	5	9.301	2	1.821	5
8206.615	0.219	11.129	3	9.306	1	1.821	3
8206.788	0.219	11.158	3	9.318	1	1.837	3
8206.891	0.220	11.161	3	9.316	1	1.842	3
8210.719	0.237	11.202	2	9.335	1	1.876	2

The full table is reproduced in the AAS CD-ROM series. The first part is shown here as a guide to form and content.

the discovery of additional new variables. If the star was very close to the GCVS coordinates and there were no other variable candidates in the CCD field, we have assumed it was the correct object. If the location was up to a few minutes of arc off but the period deduced from our data agreed with the GCVS we have also assumed that we have the right star. When neither of these conditions was satisfied, the identification was verified by consulting original published charts.

Six of the stars we have observed are newly discovered variables. Since they do not have variable star designations we have designated them as Anon followed by the constellation name for the purposes of the present paper. A letter is added after "Anon" to distinguish cases where more than one star was found in a particular constellation. The majority of these stars were found in fields of known variables but two, AnonA Mon and AnonC Mon, were discovered in a field which was observed at an erroneous coordinate.

3. THE PHOTOMETRY

Tables 3 and 4 are identical in form with Tables 3 and 4 of Paper III so we will not discuss them in detail. Briefly, in Table 3, columns two through five give information on the comparison stars (the number of comparison stars, the errors in the V and R magnitude calibrations and the number of nights used to standardize them) while the intensity mean magnitudes in V and R for the variables are in columns six and seven. The last two columns give the range of Julian Dates and the number of data points. Table 4 presents the light-curve parameters for the variables. Column two gives the adopted period of the star and column three gives an estimate of the uncertainty of the period as derived solely from our data. Note that periods from the GCVS are generally more accurate than this and the value in column three simply indicates the accuracy to which we could test the period with our photometry. In column four we indicate whether the period comes from the GCVS, indicated by the letter "G," has been altered by less than 1% from the GCVS period, "A" or differs by more than 1% from the GCVS period, "S". If the GCVS does not give a period this is

indicated by the letter "N" while the letter "I" indicates that no regular period could be found. The fifth column of Table 4 gives the epoch of maximum from our observations except for stars which are now regarded as eclipsing binaries in which case the epoch of minimum is given. The remaining columns give the amplitudes of the V and R light curves, the light-curve acuteness parameter a , the rise-time parameter r , the slope of the $(V-R)-V$ relation and the linear correlation coefficient between V and $V-R$, r_p . The reader should consult Papers I and III for a detailed description of these quantities.

Figure 2 presents the light and color curves for the stars with apparently regular variations. In some cases, the light curves do not appear to repeat well from cycle to cycle or we were unable to derive adequate periods. We have plotted the magnitudes of such stars against Julian Date in Fig. 3 for a selected range of dates.

As was the case for the stars discussed earlier, a significant number of changes have been made to the periods of the stars. We give 16 new periods for stars which lacked such data in the GCVS. We have also found periods that differ significantly from those in the catalogue (by more than 1%) for an additional ten stars and have made smaller changes in the periods of nine stars. The stars in Table 4 with large period corrections (indicated by S in column 4) fall into two categories. Two stars, T Dra and RZ Peg, are long period variables. The differences between our periods and those from the GCVS can be attributed to the well known variations these stars exhibit in their light curves and periods. For the remaining stars with large period errors, TY Ari, AA Boo, AU Cas, V568 Cas, V357 Cyg, IT Her, V400 Lyr, and GX Vir, our periods differ by between 18% and a factor greater than 10. Errors of this size can only be attributed to error. The remaining stars with small period discrepancies in Table 4 (indicated by A) can be attributed to such things as the Blazhko effect, errors due to cycle count errors from season to season and actual period changes as discussed in Paper I.

4. CLASSIFICATION OF THE STARS

In Papers I and III we described the classification of variables using the light-curve acuteness and rise time, the color-magnitude plot, the amplitudes in V and R , the appearance of the light curve and the slope and correlation coefficient of the color-magnitude relation, S , and r_p . In Table 5 we list the stars for which we suggest new classifications based on these criteria. In each case the criteria which have led to the new classification are indicated. We have utilized the notation of the GCVS and the reader should consult the first volume of that work for detailed definitions of the classes. Some stars in Table 5 are discussed below.

For the convenience of readers interested in particular classes of objects, we list the stars in our sample by variable star type for the more common types in Table 6.

TABLE 2. Identification and coordinates of variables.

Star	Type	GSC #	α_{2000}	δ_{2000}	Star	Type	GSC #	α_{2000}	δ_{2000}
UV And	S:	23040764	1 29 17.7	36 39 22	CR Hya	RRAB	02150575	8 41 17.6	2 30 37
XY And	RRAB	23000401	1 26 42.5	34 04 07	DD Hya	RRAB	01991667	8 12 31.8	2 50 05
AG And	S:	11931452	0 35 42.9	21 55 51	XZ Lac	RRAB	36152911	22 18 58.3	49 44 23
QR Aql	...	10500182	19 20 38.1	12 55 55	V759 Her	RRAB	30810651	17 14 50.7	41 51 23
TY Ari	RR	17611085	2 08 40.3	25 13 07	CR Hya	RRAB	02150575	8 41 17.6	2 30 37
AA Boo	SR	09011102	14 02 34.3	7 53 52	DD Hya	RRAB	01991667	8 12 31.8	2 50 05
AB Cam	DCEP	37281258	3 46 08.3	58 47 03	XZ Lac	RRAB	36152911	22 18 58.3	49 44 23
BL Cam	SXPHE	40670471	3 47 19.6	63 22 43	CQ Lac	RRAB	32040359	22 21 10.4	39 43 14
TZ Cnc	SRA	14070565	9 04 01.1	20 56 56	DF Lac	DCEP	39863395	22 21 16.8	54 31 56
VX Cnc	SRB	13841771	8 02 54.0	18 59 40	AS Leo	RRAB	08560821	11 29 11.2	9 32 11
SZ CVn	RRAB	30270370	13 50 44.3	37 37 07	RW Lyn	RRAB	29601157	7 50 39.1	38 27 14
RV CMi	RRAB	01720672	7 21 50.6	4 14 41	SY Lyn	SR	37831230	7 49 29.3	53 07 52
AU Cas	RR	40251396	0 55 12.9	64 15 39	WW Lyr	RRAB	26570669	19 13 45.4	33 29 34
AW Cas	DCEP	40300380	1 16 01.2	61 37 15	EN Lyr	RRAB	26611974	19 14 54.3	34 46 02
AY Cas	DCEP	40391143	1 39 00.0	64 59 22	KN Lyr	RRAB	31051085	18 30 44.5	38 23 55
BK Cas	RRAB	40251131	0 53 07.4	64 36 03	NR Lyr	RRAB	31200591	19 08 27.3	38 48 46
BV Cas	DCEP	40351242	1 30 01.1	62 17 03	V400 Lyr	RRAB:	31211799	19 13 52.7	38 06 56
CT Cas	DCEP	40192352	0 20 03.1	63 10 47	Anon Lyr	...	26570147	19 13 58.9	33 28 59
DW Cas	DCEP	40121061	23 38 48.4	59 23 31	TW Mon	CEP	01480483	6 50 32.3	0 00 24
GL Cas	DCEP	36971284	2 10 46.4	59 15 14	WW Mon	DCEP	07332419	6 33 37.2	9 12 13
GM Cas	DCEP	40460427	2 28 56.7	60 34 17	BE Mon	DCEP	07461480	6 40 05.5	7 36 21
LT Cas	DCEP	40510708	2 45 51.5	63 18 15	DP Mon	S:	01450321	6 25 43.9	6 39 19
V363 Cas	RRAB	40141751	0 15 14.4	60 20 26	DV Mon	RRAB	53782034	6 45 19.3	-8 50 20
V556 Cas	RR:	40341188	1 23 51.7	62 31 20	V479 Mon	IN:	07370530	6 30 44.8	9 45 25
V568 Cas	RR:	43090238	1 17 13.5	74 51 20	V589 Mon	DSCTC	07501820	6 39 28.5	9 42 04
AK Cep	DCEP	39951462	22 28 50.2	58 12 40	AnonA Mon	...	01520069	6 52 10.1	2 42 50
BI Cep	RVA	44632825	22 02 02.7	68 24 32	AnonB Mon	...	01450898	6 25 47.6	6 39 05
CN Cep	DCEP	42871183	23 25 34.8	64 47 25	AnonC Mon	...	01520239	6 52 23.9	2 42 25
GZ Cep	RRAB	45850156	20 13 54.9	76 08 49	V477 Oph	CWB	...	17 59 08.3	5 38 24
ST Cet	RR	00110226	0 49 04.3	2 25 15	CM Ori	RRAB	07172599	6 03 54.9	8 14 33
TU Com	RRAB	25270010	12 13 46.9	30 59 08	DF Ori	DCEP	...	6 24 04.1	11 42 32
TV CrB	RRAB	20281124	15 22 21.5	26 52 38	DW Ori	E:	07291236	6 05 38.5	13 59 30
GK Cyg	RV	31541020	20 00 34.5	39 36 36	RZ Peg	M	27241872	22 05 52.9	33 30 25
V343 Cyg	CWA	...	20 04 04.2	39 06 14	VZ Peg	RRC	22510527	23 42 16.3	24 54 59
V357 Cyg	RRAB	27053428	21 08 58.3	31 59 38	AE Peg	RRAB	16951345	22 27 21.5	16 48 17
V360 Cyg	RVA	27022124	21 10 35.5	30 40 21	DZ Peg	RRAB	17131366	23 20 07.1	16 04 07
V492 Cyg	DCEP	26791631	20 11 13.6	35 24 49	ET Peg	RRAB	22282004	22 40 42.3	26 23 02
V495 Cyg	DCEP	26801262	20 15 58.3	35 00 53	Anon Peg	...	22281602	22 40 53.9	26 22 43
V835 Cyg	RRC	27021647	21 09 09.8	31 40 39	SX Per	DCEP	28860874	4 17 06.1	41 43 55
AnonA Cyg	...	27063255	21 09 01.7	32 00 19	UX Per	DCEP	36930588	2 13 07.5	58 04 48
T Dra	M	39140546	17 56 23.3	58 13 07	BR Per	CEP:	23612472	3 57 07.3	32 02 59
BK Dra	RRAB	42291189	19 18 20.7	66 24 47	IY Per	SRA:	28850464	4 07 57.4	43 00 48
X Equ	RR	11031064	21 00 12.1	9 14 22	V378 Per	RRAB	23611582	3 55 01.3	32 35 37
RT Equ	RRAB	05351242	21 14 43.3	4 29 37	SW Psc	RRAB	00170263	0 41 19.4	5 20 47
BE Eri	RRAB	47390640	4 38 03.3	-1 59 45	U Tri	RRAB	23150716	1 55 31.5	33 46 08
AG Her	RRAB	30741136	16 40 32.9	40 37 06	UV UMa	SRA	38421279	12 59 25.9	52 45 24
GS Her	RRAB	25810397	16 28 26.7	32 08 07	VZ UMa	RR	19831774	11 17 28.3	29 40 30
GV Her	RRC	25871676	16 34 54.8	35 15 51	UZ Vir	RRAB	08900554	13 08 44.4	13 24 08
IT Her	RRC	21121845	18 45 46.4	25 20 00	XZ Vir	RR:	02760151	11 58 59.2	2 35 56
V596 Her	RR	25811937	16 32 34.2	30 20 39	AR Vir	RRAB	03301132	14 54 40.1	2 41 43
V650 Her	RRAB	15140637	16 29 07.8	19 06 23	BC Vir	RRAB	03060647	13 22 21.1	5 53 11
V652 Her	a	09740693	16 48 04.7	13 15 42	BI Vir	RRAB	02820923	12 29 30.5	0 13 27
V716 Her	RRAB	35012072	17 07 11.4	45 49 26	BX Vir	RRAB	02910958	12 50 11.6	1 57 17
V725 Her	RRAB	30770388	17 12 33.9	40 28 27	GH Vir	RRAB	02950121	12 38 04.5	7 18 29
V759 Her	RRAB	30810651	17 14 50.7	41 51 23	BK Vul	EW/KW	21952372	21 25 23.3	27 51 19

^aUnique variable. See the GCVS

5. COMMENTS ON INDIVIDUAL STARS

UV And: We have classed this star as SR based on the poor reproducibility of its light curve and its long period. In Fig. 2 we distinguished the seasons in which it was observed with various symbols as follows: filled circles, JD 2,448,191–2,448,234, 1990 October 27–1990 December 9; X's, JD 2,448,495–2,448,980, 1991 August 27–1992 December 24; asterisks, JD 2,449,605–2,449,936, 1994 September 10–1995 August 7.

AG And: No period could be found so the magnitudes are plotted against Julian Date in Fig. 3. The magnitude of this

star hovers near 15.2 most of the time with a few times when it faded by as much as 0.4 mag. This suggests an eclipsing variable. However, the deepest minimum (at JD 2,449,634) is accompanied by no color change while the less deep minima at JD 2,449,687 and 2,449,699 are accompanied by redder colors. This behavior is hard to explain if the minima are eclipses. Another possibility is that AG And is a type III T Tau star as described by Herbst *et al.* (1994). These stars are near maximum most of the time with fadings at irregular intervals. While the stars redden towards minimum, when the minimum is deep enough they become bluer again. On this basis we have classified this star as a T Tau star (GCVS

FIG. 1. Finding charts for the variables. Each chart is 10 on a side. North is up and east to the left. The magnitudes of the stars are indicated by the size of the symbols as shown in the legend under each panel. Squares represent objects classed as nonstellar in the GSC (Object Classification code 3). The variables are indicated by open symbols or by circled symbols.

FIG. 1. (continued)

FIG. 1. (continued)

type IN, INA, INB, or INT) of Herbst *et al.*'s type III.

QR Aql: There is apparently no published finding chart for this star. The fact that we find GSC 10500182 to vary, together with the close agreement in position with the GCVS coordinates (better than $20''$ in both coordinates) leads to its identification as QR Aql. An examination of the photometry shows this star to vary over a long period. Our coverage does not permit a definitive period determination but a period near 190 days is likely; the data is plotted with this period in Fig. 2. Observations from various intervals of time are distinguished by various symbols as follows: filled circles, JD 2,449,613–2,449,774, 1994 September 18–1995 February 26; X's, JD 2,449,867–2,449,942, 1995 May 30–1995 August 13; asterisks, JD 2,449,976–2,450,039, 1995 September 16–1995 November 18. With the long period and relatively poor cycle-to-cycle reproducibility this star is classed as a semiregular variable, SR. Rapid variations are superimposed on the overall variation in Fig. 2.

TY Ari: The short period, the acuteness and the rise time all indicate a type *c* RR Lyrae star. However, the appearance of the light curve is more typical of a type *ab* RR Lyrae. We have tentatively designated it type RRC.

AA Boo: The GCVS cites a period of 30 days for this star. However, a much longer period is indicated by our photometry and 109.5 days is most likely although not definitive. This period, the red color, the late spectral type (M4p, GCVS) and the poor cycle-to-cycle reproducibility of the light curve are consistent with the GCVS classification of this star as semiregular. Our data are insufficient to assign a subclass.

TZ Cnc: The variations of this star over the interval from

JD 2,449,634 to 2,449,773 (calendar dates 1994 October 9 to 1995 February 25) are shown in Fig. 3. During most of this time the star was nearly constant and the behavior resembles DP Mon which is discussed below. Three points in late 1995 indicate a maximum near JD 2,450,020. This behavior is consistent with the GCVS classification of SRA.

VX Cnc: The data from the last season (H.J.D. = 2,449,976–2,450,039, 1995 September 16–1995 November 18, plotted as X's in Fig. 2) shows a small amplitude variation, $\Delta V=0.16$, $\Delta R=0.15$, at the GCVS period. Earlier points (H.J.D. = 2,449,634–2,449,773, 1994 October 9–1995 February 25 plotted as solid circles) were fainter and more irregular in behavior. This behavior, together with the moderately long period and very red color, are all consistent with the GCVS classification of SRB.

V363 Cas: The period and acuteness of this star are more appropriate to a type *ab* than to a type *c* RR Lyrae. However the rise time and the appearance of the light curve suggest a type *c* star. We have therefore classed this star tentatively as RRC. If this proves to be correct, this star will be among the longest period RRC stars.

BI Cep: Data for the two seasons in which this star were observed are distinguished by the symbols in Fig. 2 as follows: solid circles, 2,449,612–2,449,725, 1994 September 17–1995 January 8; X's 2,449,867–2,450,039, 1995 May 30–1995 November 18.

CN Cep: The period, rise time, and acuteness are all consistent with the GCVS classification as a classical Cepheid, DCEP. However, the light curve with its relatively broad, flat maximum and narrow minimum (as reflected the combination of a large value of *a* and a small value of *r*) does not resemble those of other classical Cepheids with periods near 10 days. It is quite similar to the light curve of the type II Cepheid IX Cas ($P=9.2$ days; data for the various type II Cepheids cited here were obtained from the McMaster Cepheid Photometry and Radial Velocity Data Archive maintained by Douglas Welch at the World Wide Web site <http://www.physics.mcmaster.ca/Cepheid/>). Unfortunately, type II Cepheids with periods near 10 days show a variety of light curve forms including a broad flat minimum with a narrow pointed maximum (AP Her), a large still stand on a steep rise (V343 Cyg) and a slower rise than decline (PZ Aql). Thus, the form of the light curve appears to be a poor discriminant of type for these stars. We have tentatively classed this star as a long period type II Cepheid, CWA.

AnonA Cyg: This star is designated AnonA Cyg because another newly discovered star was designated Anon Cyg in Paper 1. The shape of the light curve and the light-curve parameters, *a* and *r*, are all consistent with a very short period RRC star but the small amplitude and large slope and small correlation coefficient of the color–magnitude relation are not. The presence of an unresolved companion which is brighter and redder than the variable would increase the slope of the color–magnitude relation while reducing the amplitude of the variation. The reduced amplitude would then amplify the relative errors and produce a lower correlation coefficient. A star on the red giant branch (a reasonable object to be the companion to an RR Lyrae star) which was one or two magnitudes brighter than the variable would be

TABLE 3. Summary of photometric observations.

Variable	n_C	σ_V	σ_R	n_n	$\langle V \rangle$	$\langle R \rangle$	Julian Dates	n_V	Variable	n_C	σ_V	σ_R	n_n	$\langle V \rangle$	$\langle R \rangle$	Julian Dates	n_V
UV And	2	5	5	33	11.27	9.42	8191-9936	110	V725 Her	1	10	13	7	13.83	13.56	8761-9941	15
XY And	2	11	13	5	13.73	13.51	9612-9687	12	V759 Her	1	9	6	9	14.22	13.98	8716-9936	19
AG And	2	6	7	7	15.25	14.08	9613-9760	39	CR Hya	3	8	10	6	14.62	14.42	9650-9714	14
QR Aql	2	6	5	12	12.39	10.39	9613-10039	38	DD Hya	1	15	3	3	12.22	12.01	9650-9710	12
TY Ari	2	9	12	9	13.50	13.29	9634-10039	31	XZ Lac	3	3	5	6	13.47	13.12	9612-10039	35
AA Boo	1	8	15	10	9.84	8.46	8761-9909	18	CQ Lac	2	9	8	5	12.46	12.16	9612-9710	13
AB Cam	3	9	14	5	11.90	11.17	8605-9657	11	DF Lac	3	12	14	6	11.92	12.19	8716-10019	13
BL Cam	3	10	10	4	13.14	12.84	9934-9941	19	AS Leo	1	12	15	4	13.94	13.73	8689-9774	21
TZ Cnc	1	7	10	10	9.38	8.15	8761-10025	15	RW Lyn	2	11	8	10	12.90	12.68	8654-9690	19
VX Cnc	2	6	7	7	9.89	8.74	9634-10039	15	SY Lyn	2	8	7	5	10.72	9.56	9687-10039	20
SZ CVn	1	12	13	3	12.98	12.74	9714-9886	10	WW Lyr	1	6	6	5	13.60	13.30	9907-10004	16
RV Cmi	2	15	12	3	13.19	12.87	9714-10011	11	EN Lyr	2	5	6	7	13.32	13.02	9880-9998	13
AU Cas	3	9	5	8	13.05	11.98	9645-10039	45	KN Lyr	1	9	15	3	13.64	13.35	8374-9888	12
AW Cas	4	9	11	5	12.08	11.13	8605-9634	9	NR Lyr	4	12	9	6	12.76	12.44	8367-9888	17
AY Cas	3	13	9	4	11.56	10.73	8605-9652	11	V400 Lyr	1	6	5	8	12.98	12.47	9687-9942	30
BK Cas	3	6	9	3	13.52	12.88	9645-9662	12	Anon Lyr	1	6	6	5	14.94	14.36	9907-10004	14
BT Cas	2	12	12	4	12.36	11.40	8605-9888	14	TW Mon	2	15	3	4	12.61	11.76	8654-9652	9
CT Cas	2	8	11	6	12.26	11.43	8639-9650	15	WW Mon	1	5	11	12	12.51	11.80	8654-9714	61
DW Cas	3	10	9	7	11.14	10.27	8642-9940	11	BE Mon	3	12	7	6	10.55	9.86	8704-10039	14
GL Cas	3	13	12	5	12.74	11.98	8605-10011	11	DP Mon	2	7	7	13	13.40	12.64	8581-9724	31
GM Cas	2	10	16	4	11.88	10.72	8605-10012	11	DV Mon	2	10	5	3	12.97	12.60	9668-10025	16
LT Cas	1	11	7	5	12.52	11.73	8642-9942	15	V479 Mon	2	6	7	3	12.76	12.12	9668-10004	24
V363 Cas	3	9	9	4	10.54	10.04	9645-9689	10	V589 Mon	1	3	12	4	10.32	10.06	8675-9687	22
V556 Cas	1	9	8	5	12.51	11.48	9645-10039	23	AnonA Mon	1	13	10	14	11.14	11.07	8663-9696	31
V568 Cas	1	8	5	4	12.69	12.24	9652-10004	25	AnonB Mon	2	7	7	13	11.1	9.5	8581-9724	31
AK Cep	3	6	10	7	11.21	10.42	9612-10018	11	AnonC Mon	1	13	10	14	12.87	12.12	8663-9696	32
BI Cep	2	9	7	15	11.58	9.32	9612-10039	41	V477 Oph	4	18	20	4	13.81	13.42	7706-9888	21
CN Cep	3	9	5	7	12.33	11.18	9612-10039	12	CM Ori	3	10	9	3	12.74	12.36	8654-9662	11
GZ Cep	1	7	7	4	13.65	13.26	8573-10019	26	DF Ori	2	12	13	4	13.55	12.62	8545-9652	23
ST Cet	1	8	6	7	13.87	13.70	9662-10018	16	DW Ori	2	10	7	5	12.95	12.58	9668-9774	29
TU Com	2	5	7	7	13.80	13.61	8689-9752	16	RZ Peg	2	5	6	13	9.14	7.88	8714-9909	45
TV CrB	1	6	14	6	11.93	11.71	8528-9888	16	VZ Peg	2	5	4	5	11.87	11.71	9612-9662	13
GK Cyg	2	7	8	15	12.63	11.92	9612-10039	35	AE Peg	1	9	4	6	12.65	12.43	9612-9714	12
V343 Cyg	4	9	8	12	13.61	12.71	8605-9909	24	DZ Peg	2	6	11	6	11.96	11.75	9612-9689	12
V357 Cyg	3	13	12	12	13.64	13.31	9612-9942	21	ET Peg	1	8	9	9	13.13	12.88	8551-9942	41
V360 Cyg	2	7	10	17	11.24	10.68	9612-10039	35	Anon Peg	1	8	9	9	15.30	14.33	8551-9942	40
V492 Cyg	3	15	12	5	12.41	11.36	8573-9942	11	SX Per	1	14	11	4	11.17	10.46	8647-9650	12
V495 Cyg	1	13	9	6	10.59	9.59	8506-10039	35	UX Per	4	12	7	6	11.63	11.01	8642-9725	13
V835 Cyg	4	10	6	4	13.76	13.48	9612-9662	9	BR Per	2	9	10	14	12.76	12.15	8551-9687	50
AnonA Cyg	3	13	12	12	15.36	14.78	9612-9942	21	IY Per	2	8	7	12	10.89	8.37	9689-10039	24
T Dra	2	9	9	15	...	...	8746-9901	25	V378 Per	2	12	8	6	13.00	12.55	8551-9687	18
BK Dra	1	8	6	5	11.18	10.95	9907-10004	14	SW Psc	1	10	10	4	13.86	13.64	9612-9662	10
X Equ	1	7	6	7	14.57	14.34	9652-9936	12	U Tri	2	13	13	4	12.70	12.48	9645-9662	11
RT Equ	2	9	7	6	13.05	12.79	9907-10004	17	UV UMa	1	8	11	10	10.60	9.53	8761-9909	25
BE Eri	2	12	5	3	13.04	12.81	9696-10039	16	VZ UMa	1	7	5	10	14.20	13.97	8692-9760	40
AG Her	1	9	13	7	12.75	12.53	8708-9940	15	UZ Vir	1	16	23	8	13.30	13.05	8698-9752	22
GS Her	1	14	11	4	14.26	13.99	8674-9908	11	XZ Vir	1	10	6	9	13.79	13.60	8691-9725	36
GV Her	2	9	4	3	14.04	13.88	8979-9934	10	AR Vir	1	9	9	4	13.01	12.70	8633-9760	12
IT Her	2	15	10	4	12.48	12.03	8226-9888	34	BC Vir	1	18	16	5	12.17	11.96	8647-9774	20
V596 Her	2	5	5	12	14.82	14.61	8681-9942	31	BI Vir	2	3	5	4	14.29	14.14	8696-9752	14
V650 Her	2	6	6	5	14.17	13.94	8677-9941	13	BX Vir	1	11	8	4	15.37	15.14	7230-8374	27
V652 Her	1	7	5	5	10.53	10.62	8682-9909	23	GH Vir	1	14	9	4	14.00	13.76	8695-9725	15
V716 Her	1	8	11	6	14.16	13.87	8761-9940	14	BK Vul	1	14	8	6	12.79	12.45	8528-9652	15

NOTE.— The table columns contain the following information: column one, the star name; column two, the number of local comparison stars, n_C ; columns three and four, standard errors of the adopted magnitudes of the comparison stars, σ_V and σ_R ; column five the number of photometric nights used to establish the comparison star magnitudes, n_n ; columns six and seven, the intensity mean magnitudes for the variables, $\langle V \rangle$ and $\langle R \rangle$; column eight, the range of Julian Dates on which the stars were observed (given as J.D. -2,460,000); column nine, the number of observations of the variables, n_V .

adequate. We thus conclude that this star is most likely to be an RRC.

T Dra: This star was too bright for our CCD system except near minimum. Thus our coverage of the cycle is incomplete and we are unable to derive the epoch of maximum or the light-curve parameters.

AS Leo: There is some indication that our comparison star varies slightly. Unfortunately, only one star was available in our field. Thus, the scatter in the light curve may not be real.

SY Lyn: This star is a SR variable. Our data came from two seasons and show the poor reproducibility of such stars' light curves. Data from the first season (JD 2,449,687–2,449,773, 1994 December 1–1995 February 25) are shown by solid circles while data from the second season (JD 2,449,976–2,450,039, 1995 September 16–1995 November 18) are represented by X's.

Anon Lyr: The period is appropriate to an RR Lyrae star but the slope and correlation coefficient of the color-magnitude relation are not. The amplitude may be small but we have not covered maximum light so this is uncertain. These properties resemble Anon A Cyg so we conclude that it is probably an RR Lyrae star with a companion. We cannot determine whether it is an *ab* or a *c* RR Lyrae due to the gap in the light curve.

AnonB Mon: During the first season of observation (JD 2,448,581 to 2,448,720, 1991 November 21–1992 April 8) this star first faded for about 30 days, was constant for about 90 days then went through a dip over the last 20 days. This interval is plotted in Fig. 3. During the second season of observation (JD 2,449,606–2,449,724, 1994 September 11–1995 January 7), there were only six observations during

TABLE 4. Photometric parameters for variable star light curves.

Star	Period	$\pm$	Δ	$J.D._{max}^b$	ΔV	ΔR	α	r	S	r_p	Star	Period	$\pm$	Δ	$J.D._{max}^b$	ΔV	ΔR	α	r	S	r_p
UV And	227.	5.	N	8611.	1.13	0.75	38-49	19-24	0.362	0.95	XZ Lac	0.6304	.0002	A	10004.73	0.97	0.82	...	...	0.181	0.92
XY And	0.39872544	.0005	G	9645.848	1.05	0.83	21-29	04-14	0.203	0.93	CQ Lac	0.620040	.004	G	9696.63	1.15	1.00	26-31	06-11	0.178	0.89
AG And	2.3626	...	N	9634.76	0.44	0.37	...	...	0.293	0.61	DF Lac	0.47925	.001	G	8980.71	0.67	0.50	38-47	16-23	0.246	0.97
QR Aql	190.	...	N	9880.84	0.76	0.57	...	...	0.377	0.88	AS Leo	0.54505	.00002	A	8691.73	1.22	1.00	24-32	08-17	0.221	0.93
TY Ari	0.329755	.00001	S	9710.763	0.66	0.50	41-50	18-37	0.221	0.82	RW Lyn	0.495657	.0004	G	8680.655	1.20	0.96	24-28	06-12	0.217	0.98
AA Boo	113.5	...	S	9689.6	0.34	0.60	...	...	0.715	0.47	SV Lyn	79.02	2.0	G	9970.5	1.44	1.14	...	...	0.221	0.95
AB Cam	5.78764	.002	G	9652.8	0.95	0.71	40-48	12-17	0.230	0.97	WW Lyr	0.51576489	.0002	G	9997.74	1.11	0.87	23-27	07-15	0.224	0.94
BL Cam	.0390976	.00001	G	9936.845	0.36	0.27	31-39	23-27	0.240	0.81	EN Lyr	0.70296986	.0003	G	9934.71	1.10	0.92	21-27	07-14	0.215	0.92
TZ Cnc	55.3	...	G	10019.0	0.57	1.22	...	...	-0.499	-0.25	KN Lyr	0.601483	.0003	G	8524.75	0.76	0.57	29-34	02-14	0.248	0.85
VX Cnc	36.4	...	G	9635.5	0.52	0.43	...	...	0.259	0.92	NR Lyr	0.6820293	.00003	G	8383.80	0.86	0.68	32-37	03-08	0.183	0.87
SZ CVn	0.5496623	.00015	G	9766.86	1.00	0.79	24-33	00-12	0.222	0.94	V400 Lyr	0.25347	.00004	S	9940.822	0.64	0.60	...	...	0.055	0.64
RV CMi	0.62551	.00007	G	10011.88	1.05	0.88	31-33	04-10	0.173	0.98	Anon Lyr	0.45424861	...	N	9936.85	0.10	0.13	...	...	0.738	0.62
AIU Cas	5.616	.004	S	9689.45	0.63	0.49	40-48	14-18	0.229	0.90	TW Mon	7.0969	.005	G	8678.6	0.53	0.40	45-58	17-22	0.246	0.97
AW Cas	4.27833	.0012	G	9634.80	0.75	0.58	39-47	12-16	0.221	0.94	WW Mon	4.66231	.0005	G	9652.96	1.00	0.80	39-43	10-12	0.222	0.89
AY Cas	2.871294	.0006	G	8605.88	0.67	0.54	35-41	01-20	0.193	0.79	BE Mon	2.70551	.0006	G	10005.01	0.61	0.47	30-37	15-22	0.218	0.90
BK Cas	0.3902572	.0007	G	9662.885	0.88	0.64	27-35	08-15	0.212	0.95	DP Mon	3.0875	.0003	N	9724.91	0.93	0.71	28-35	08-12	0.220	0.89
BV Cas	5.39964	.003	G	9613.7	0.78	0.63	33-42	07-22	0.224	0.97	DV Mon	0.413394	.00005	G	10025.914	0.54	0.47	17-26	02-06	0.195	0.70
CT Cas	3.81061	.003	G	8663.59	0.60	0.47	34-46	12-16	0.217	0.95	V479 Mon	1.4680	.001	N	9696.75	0.68	0.65	...	...	0.014	0.21
DW Cas	4.99776	.002	G	9689.69	0.57	0.44	41-61	08-16	0.246	0.98	V589 Mon	0.124	...	G	9668.857	0.05	0.04	...	...	0.092	0.12
GL Cas	4.0073	.0005	A	8980.69	0.73	0.60	25-42	03-13	0.218	0.92	AnonA Mon	0.14283	.00003	N	9612.951	0.08	0.05	...	...	0.335	0.38
GM Cas	7.4689	.006	G	8607.0	0.53	0.40	46-55	12-23	0.217	0.94	AnonB Mon	...	...	I	...	0.80	0.54	...	...	0.346	0.60
LT Cas	5.90488	.004	G	9942.8	1.01	0.78	29-36	05-11	0.237	0.93	AnonC Mon	2.2110	.0003	N	8979.8	0.29	0.22	41-53	25-34	0.283	0.76
V363 Cas	0.5465353	.001	G	9652.75	0.42	0.31	35-39	22-35	0.207	0.97	V477 Oph	2.01566917	.0003	G	8205.53	0.80	0.64	54-64	21-26	0.202	0.91
V556 Cas	6.035	.005	N	10012.67	0.50	0.41	37-48	07-25	0.244	0.89	CM Ori	0.65922205	.00002	G	8663.63	0.98	0.84	20-35	03-11	0.833	0.46
V568 Cas	0.51404	.00003	S	9689.81	0.69	0.57	31-35	06-13	0.181	0.86	DF Ori	3.1807	.0008	G	8599.79	1.04	0.93	32-34	08-12	0.254	0.94
AK Cep	7.23268	.012	G	9650.9	0.67	0.53	42-47	12-17	0.216	0.90	DW Ori	0.9168	.0008	N	9710.70	1.00	0.93	...	...	0.069	0.79
BI Cep	212.	15.	G	10025.	0.77	0.65	...	...	0.265	0.70	RZ Peg	425.	...	S	8750.55	4.16	2.85	42-76	21-25	0.459	0.91
CN Cep	9.50250	.01	G	9652.7	0.58	0.45	45-56	10-24	0.240	0.96	VZ Peg	0.3064863	.0003	G	9637.725	0.50	0.43	43-47	18-29	0.175	0.87
GZ Cep	0.694582	.00001	G	9941.77	0.90	0.74	25-36	07-12	0.209	0.97	AE Peg	0.496707	.0007	G	9714.587	1.48	1.18	23-33	03-09	0.179	0.93
ST Cet	0.52649	.00002	A	9940.78	0.97	0.81	22-32	10-17	0.206	0.84	DZ Peg	0.6073441	.0004	G	9689.67	1.19	0.94	25-30	03-08	0.548	0.87
TU Com	0.4618091	.0009	G	8705.806	0.90	0.71	24-36	15-28	0.211	0.97	ET Peg	0.489899	.00002	A	9941.954	1.07	0.87	29-33	03-11	0.191	0.86
TV CrB	0.5846145	.00004	G	8760.62	1.23	0.99	25-31	03-11	0.192	0.94	Anon Peg	0.11692233	...	N	8559.588	0.17	0.13	...	...	0.406	0.56
GK Cyg	79.75	5	G	9699.7	1.51	1.32	71-76	14-15	0.141	0.89	SX Per	4.289967	.003	G	8677.61	0.76	0.63	34-45	08-15	0.232	0.93
V343 Cyg	11.9275	.004	G	9651.89	0.86	0.67	41-45	24-27	0.238	0.89	UX Per	4.565815	.001	G	9725.72	1.02	0.80	30-36	11-13	0.229	0.98
V357 Cyg	0.34182	.00003	S	9657.68	0.88	0.69	31-37	13-19	0.217	0.94	BR Per	...	...	N	...	0.34	0.32	...	...	0.058	0.18
V360 Cyg	70.39	1.5	G	9908.5	1.50	1.29	...	...	0.110	0.67	IY Per	157.9	...	G	10026.	0.48	0.39	...	...	0.595	0.45
V492 Cyg	7.58017	.002	G	9889.1	0.50	0.45	54-61	10-18	0.173	0.80	V378 Per	0.3987185	.00001	G	8580.787	1.25	1.03	25-32	02-14	0.197	0.96
V495 Cyg	5.717	.001	A	8546.4	0.44	0.36	50-54	08-11	0.274	0.77	SW Pac	0.521265	.002	G	9652.802	1.11	0.92	20-29	05-15	0.195	0.96
V835 Cyg	0.39375764	.0004	G	9634.778	1.19	1.00	31-37	03-15	0.208	0.91	U Tri	0.447253	.001	G	9662.789	1.27	1.03	25-30	03-09	0.206	0.96
AnonA Cyg	0.22024	.00002	N	9901.83	0.08	0.05	30-47	11-27	0.652	0.57	UV UMa	65.65	...	G	9902.	0.93	0.72	...	...	0.197	0.92
T Dra	435.	...	S	...	...	...	...	...	0.346	0.46	VZ UMa	0.5155	.0005	N	9714.88	1.35	1.09	12-35	03-21	0.230	0.78
BK Dra	0.5920815	.00015	G	10004.55	1.24	1.00	19-32	03-12	0.203	0.98	UZ Vir	0.459195	.00001	A	9710.894	1.35	1.06	19-27	07-16	0.204	0.88
X Equ	0.47644350	.0001	G	9907.851	1.18	0.98	17-24	00-07	0.173	0.95	XZ Vir	0.47712	.00002	N	9710.91	1.25	1.09	17-26	06-27	0.247	0.89
RT Equ	0.4447564	.0003	G	9976.656	0.92	0.77	32-44	02-12	0.199	0.95	AR Vir	0.530304	.00002	G	8682.81	1.00	0.87	25-33	08-17	0.242	0.93
BE Eri	0.57954	.00004	G	9908.79	1.00	0.82	28-34	01-05	0.185	0.96	BC Vir	0.56455	.00002	A	8689.83	1.30	1.06	25-34	06-10	0.202	0.94
AG Her	0.6494465	.00002	G	9888.87	1.06	0.87	30-40	08-17	0.221	0.94	BI Vir	0.3356548	.00001	G	8713.623	0.45	0.41	41-54	20-26	0.195	0.95
GS Her	0.5849656	.00005	G	9880.66	0.92	0.71	22-32	00-07	0.243	0.94	BX Vir	0.455244	.00005	S	7247.97	1.49	1.18	22-24	02-07	0.127	0.43
GV Her	0.291466	.00013	A	9907.839	0.45	0.33	48-54	20-35	0.259	0.91	GH Vir	0.605306	.00004	G	8705.72	1.30	1.09	22-33	07-18	0.177	0.77
IT Her	0.339378	.00002	S	8367.910	0.51	0.44	...	...	0.048	0.41	BK Vul	0.45347	.000005	G	9613.665	0.43	0.40	...	...	-0.023	-0.17
V596 Her	0.51745	.00005	N	9773.96	1.14	0.94	23-27	04-07	0.231	0.91											
V650 Her	0.518868	.00002	G	9941.65	1.10	0.90	22-29	06-15	0.215	0.95											
V652 Her	0.10800182	...	G	9760.984	0.06	0.05	...	...	0.414	0.46											
V716 Her	0.71439	.00006	G	9773.87	0.76	0.63	29-31	01-07	0.184	0.83											
V725 Her	0.577112	.00006	G	9652.59	0.95	0.77	27-34	04-12	0.193	0.97											
V759 Her	0.512397	.00004	G	9909.66	1.17	0.96	21-27	05-07	0.194	0.95											
CR Hya	0.469415	.0003	G	9714.946	1.13	0.91	29-37	04-11	0.209	0.98											
DD Hya	0.501776	.001	G	9696.76	1.11	0.90	21-34	05-17	0.185	0.90											

*A "G" in column four indicates that the adopted period comes from the GCVS while an "A" indicates that the period was adjusted slightly (less than one percent) using the present photometry. An "S" indicates that the adopted period differs significantly from the GCVS value (more than one percent). An "N" means that no period was listed in the GCVS and the adopted period was determined solely from the present photometry. An "I" means that the star is irregular or semi-irregular in its behavior.

^bFor eclipsing binaries the Julian Date of minimum light is given.

which the brightness varied but no regularity could be discerned. This behavior is typical of stars classed as SRA in the GCVS. The magnitudes in Table 3 refer to the still stand in 1992 while the amplitudes are the total range of all our data.

Anon Peg: During the first season of observation (JD 2,448,551–2,448,591, 1991 October 22–1991 December 1, plotted as solid dots in Fig. 2) this star varied by about 0.17 mag. However, during the second and third seasons of observation (JD 2,449,612–2,449,652, 1994 September 17–1994 October 27, plotted as X's and JD 2,449,934–2,449,942, 1995 August 5–1995 August 13, plotted as asterisks) there was no variation larger than about 0.04 in V . Given the faintness of this star this may be consistent with constancy. A peculiarity is that during the time of apparent constancy, the star was about equal in V to minimum light from the earlier season but had a color closer to that of the earlier maximum light. The light curve parameters in Table 4 refer to the first season. This star needs to be observed more to determine its nature but we have tentatively classed it as a DSCT or IN star.

BR Per: This star is relatively constant except for

FIG. 2. Light curves for the variables with known periods and repetitive light curves. The name of the star, the variable star type and the period in days is given above each plot. For each variable the upper panel presents the V magnitudes while the $(V-R)$ colors are plotted in the lower panel. For a few stars, various symbols are used to distinguish observations from various seasons. Such cases are explained in the comments on the individual stars.

FIG. 2. (continued)

FIG. 2. (continued)

FIG. 2. (continued)

FIG. 2. (continued)

FIG. 2. (continued)

FIG. 2. (continued)

TABLE 5. Stars with revised types.

Star	GCVS	Revised	Reasons
UV And	S:	SR	a,d,e
AG And	S:	I	a,c,e
QR Aql	...	SR	a,d,e
TY Ari	RR	RRC:	e
AU Cas	RR	DCEP	a,b,d
V363 Cas	RRAB	RRC:	a,b,e
V556 Cas	RR:	DCEP	a,b,d
V568 Cas	RR:	RRAB	a,b
CN Cep	DCEP	CWA:	a,b,d,e
ST Cet	RR	RRAB	a,b,d
V835 Cyg	RRC	RRAB	a,b
AnonA Cyg	...	RRC:	a,b,e
X Equ	RR	RRAB	a,b,d
IT Her	RRC	E	a,c
V596 Her	RR	RRAB	a,b,d
V400 Lyr	RRAB:	E	a,c
Anon Lyr	...	RR:	a,e
DP Mon	S:	DCEP	a,b,c,d
V479 Mon	IN:	E	a,c
Anon A Mon	...	DSCT	a,d
Anon B Mon	...	SRB	a,e
Anon C Mon	...	DCEPS	a,b,d
DW Ori	E:	E	a,c
Anon Peg	...	DSCT or IN	a,d,e
BR Per	CEP:	E or IN	a,c,e
VZ UMa	RR	RRAB	a,b,d
XZ Vir	RR:	RRAB	a,b,d

^aLight curve appearance^bThe acuteness and rise time^cThe slope of the color—magnitude relation and its correlation coefficient^dPeriod^eSee the discussion of this star in the text

TABLE 6. Stars sorted by type.

Cepheids (CEP, DCEP, CWA, CWB)				
AB Cam	DW Cas	AK Cep	DF Lac	AnonC Mon
AU Cas	GL Cas	CN Cep	TW Mon	V477 Oph
AW Cas	GM Cas	V343 Cyg	WW Mon	DF Ori
AY Cas	LT Cas	V492 Cyg	BE Mon	SX Per
BV Cas	V556 Cas	V495 Cyg	DP Mon	UX Per
CT Cas				
Dwarf Cepheids (SXPHE, DSCT)				
BL Cam	AnonA Mon	Anon Peg*		
Eclipsing Binaries (E)				
DW Ori	IT Her	V400 Lyr	V479 Mon	BR Per*
BK Vul				
RR Lyrae Stars (RR, RRAB, RRC)				
XY And	V357 Cyg	V650 Her	EN Lyr	SW Psc
TY Ari	V835 Cyg	V716 Her	KN Lyr	U Tri
SZ CVn	AnonA Cyg	V725 Her	NR Lyr	VZ UMa
RV Cmi	BK Dra	V759 Her	Anon Lyr	UZ Vir
BK Cas	X Equ	CR Hya	DV Mon	XZ Vir
V363 Cas	RT Equ	DD Hya	CM Ori	AR Vir
V568 Cas	BE Eri	XZ Lac	VZ Peg	BC Vir
GZ Cep	AG Her	CQ Lac	AE Peg	BI Vir
ST Cet	GS Her	AS Leo	DZ Peg	BX Vir
TU Com	GV Her	RW Lyn	ET Peg	GH Vir
TV CrB	V596 Her	WW Lyr	V378 Per	
RV Tauri Stars (RV, RVA)				
BI Cep	GK Cyg	V360 Cyg		
Semiregular Variables (SR, SRA, SRB)				
UV And	AA Boo	VX Cnc	IY Per	AnonB Mon
QR Aql	TX Cnc	SY Lyn	UV UMa	

* May also be a rapid irregular variable, IN.)

FIG. 3. The magnitudes and colors plotted against Heliocentric Julian Date for variables for which periods could not be determined. In each case a subset of the data is plotted to show the general behavior of the star.

RRAB stars in our sample. While this incidence is consistent with previous estimates of the prevalence of the Blazhko effect, further observations of the stars in question should be made to confirm the presence of light-curve modulation. Additionally, since many stars were observed over a relatively brief interval, there are possibly other stars in our sample which exhibit the effect but do not stand out in Fig. 2.

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