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A systematic study of variability among OB-stars based on HIPPARCOS photometry

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ABSTRACT

Context. Variability is a key factor for understanding the nature of the most massive stars, the OB stars. Such stars lie closest to the unstable upper limit of star formation.
Aims. In terms of statistics, the data from the HIPPARCOS satellite are unique because of time coverage and uniformity. They are ideal to study variability in this large, uniform sample of OB stars.
Methods. We used statistical techniques to determine an independant threshold of variability corresponding to our sample of OB stars, and then applied an automatic algorithm to search for periods in the data of stars that are located above this threshold. We separated the sample stars into 4 main categories of variability: 3 intrinsic and 1 extrinsic. The intrinsic categories are: OB main sequence stars (∼2/3 of the sample), OBe stars (∼10%) and OB Supergiant stars (∼1/4).The extrinsic category refers to eclipsing binaries.
Results. We classified about 30% of the whole sample as variable, although the fraction depends on magnitude level due to instrumental limitations. OBe stars tend to be much more variable (≈80%) than the average sample star, while OBMS stars are below average and OBSG stars are average. Types of variables include α Cyg, β Cep, slowly pulsating stars and other types from the general catalog of variable stars. As for eclipsing binaries, there are relatively more contact than detached systems among the OBMS and OBe stars, and about equal numbers among OBSG stars.

Key words. methods: statistical – methods: data analysis – techniques: photometric – catalogs – stars: variables: general – stars: fundamental parameters

1. Introduction

OB stars are taken to comprise O to B3 stars of all luminosity classes and B4 to B8 supergiants as explained in the atlas of Walborn & Fitzpatrick (1990). In fact, OB does not refer to the whole range of O and B stars but only to the most massive O and B stars that usually core-collapse as type II, Ib or Ic supernovae, depending on their initial mass. They also define the arms in spiral galaxies. O stars in particular are precursors of Wolf-Rayet stars, which considerably stir up and enrich their immediate environments in heavy elements in the process.

The most massive stars tend to be the most unstable (close to the Eddington limit) and, like WR stars, sometimes have strong, optically-thick stellar winds that prevent us from seeing their hydrostatic surface and thus deducing their characteristics directly. Thus, studies of their photometric variations can be more revealing in an indirect way. First, the presence of a periodic phenomenon in a given star enables one to constrain its parameters. If the variability is intrinsic, i.e. from within the star itself, it allows one to probe the otherwise mostly inaccessible internal parameters of a massive star. Second, when studying a whole sample of stars, classification of different types of variability helps to deduce statistical properties of a subclass of massive stars. Depending on the period and/or amplitude of the phenomenon, one can deduce a most likely responsible mechanism and judge if such a mechanism dominates in a given subcategory of stars.

The HIPPARCOS (ESA 1997, The Hipparcos and Tycho catalogs, ESA-SP1200) satellite offers a unique opportunity to study an unbiased sample of OB stars in exactly this manner. It provides a homogeneous set of photometric data for a large sample of OB stars, over a relatively long period of time (∼3 years). Moreover, a period search of the variable candidates has already been undertaken by the HIPPARCOS consortium, thus providing us with an initial basis of our study. We exploit here the HIPPARCOS photometric results concerning OB stars by reanalyzing them in a more accurate and systematic way.

In Sect. 2 we present the selection of targets. Section 3 details the method used for the detection of variable stars in this sample. In Sect. 4, we briefly explain the analysis of the periodicities in the sample stars and in Sect. 5 we present and discuss the different results beginning with the extrinsic variability, i.e. due to effects outside the star, then proceeding to the different classes of intrinsic variability. Section 6 concludes our analysis.

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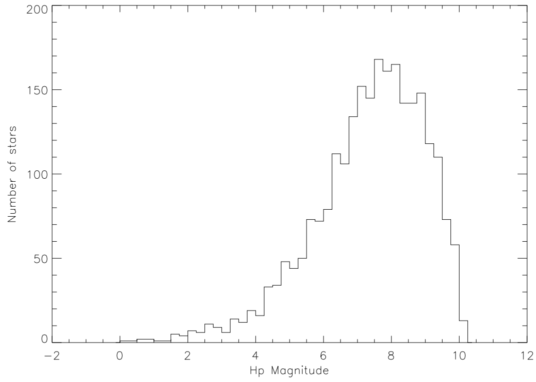

Fig. 1. Histogram of the magnitude of the stars in our sample. The cutoff near $Hp = 10$ mag is completely artificial as it corresponds to the limit we chose for our sample. Note the steep decrease of the histogram above $Hp = 8$ mag, where the sample is not complete.

2. Selection of OB stars

We selected OB stars from the VIZIER database and created a photometric catalog of the selected targets from the HIPPARCOS CD-rom. We selected only stars with magnitude down to $Hp = 10$ mag because of the rapid growth of the instrumental error below that limit.

Although it is now evident from Fig. 1 that the sample is only complete down to $Hp \sim 8$, we examine the whole sample of 2497 stars (including 13 stars for which new calculations are slightly fainter than $Hp = 10$ and have thus been omitted from further study). Excluded from this study are Wolf-Rayet stars (studied by Marchenko et al. 1998) and most Luminous Blue Variables (LBVs). Note that 3 confirmed LBVs (namely HR Car, AG Car and P Cyg) are included in the OBe category as their extracted Vizier spectral types do not reflect their supergiant status (B2evar, B2:pe and B2pe, respectively). The small influence they could have on the variability levels of this class will be discussed in Sect. 5.3.

Each data point for each star is flagged with a 9-bit number, indicating if any problem was encountered during the exposure. Each bit corresponds to a precise problem, and the resulting flag is a combination of bits. Rather than boldly rejecting all flagged points, we have chosen the most "damaging" flags by carefully assessing the influence of the flagged points on the light curves of non variable stars, in an attempt to minimize both the number of rejected points and the number of rejected stars. The most damaging bits were selected (mainly *sun pointing*, *high background* and *object in either field of view*) and we removed the points corresponding to the flags. These flags are represented by these bits exactly or any combination of them.

Each point also is assigned an instrumental error based primarily on Poisson statistics. Some of the points with a larger error do not have significantly "bad" flags, while some points with "bad" flags do not present a larger error. Thus we decided to adopt a method which takes into account flags **and** measurement errors. First, we eliminated the problematic data-points for each star according to their flags. Typically 3 points per star on average were flagged and thus deleted. A total of 77 stars were excluded from the analysis (including 7 previously known periodically varying stars) because >10% of their points were flagged as problematic. The inclusion of measurement errors is explained in Sect. 3. Note that the variability characteristics of these 7 previously known periodically varying stars will be taken into account in the final statistics.

3. Detection of variables

Each HIPPARCOS star was assigned by the HIPPARCOS consortium a "variability flag", which indicates whether it is variable (periodic "P", unsolved variable "U", or microvariable "M"), constant ("C"), or presented problems during the reduction (mainly Duplicity-induced variable, i.e. instrumental, "D", or Revised-color-index "R"). Some of the stars could not be entered into any of the above categories (not-classified " ", i.e. no flag). We computed a *weighted* mean and amplitude for each of these stars to correctly allow for variable quality. In a last step (a posteriori) we also deleted a few points from a limited number of targets, after checking their lightcurves by eye, i.e. points more than approximately 3σ from the mean. The following formulae were used to calculate the weighted mean and amplitude for each star, where "peak-to-peak amplitude" = $3.289{*}S$ (ESA 1997, The Hipparcos and Tycho catalogs, Vol. 1, Eq. (1.3.14)).

$$\mu_w = \frac{\sum_{i=1}^{N}\left(\frac{X_i}{\sigma_i^2}\right)}{\sum_{i=1}^{N}\frac{1}{\sigma_i^2}} \approx \mu = \frac{\sum_{i=1}^{N} X_i}{N}\text{, for } \sigma_i \approx \text{cst.} \quad (1)$$

$$\sigma_w^2 = \frac{\sum_{i=1}^{N}\frac{(X_i-\mu)^2}{\sigma_i^2}}{\sum_{i=1}^{N}\frac{1}{\sigma_i^2}} \approx \sigma^2 = \frac{\sum_{i=1}^{N}(X_i-\mu)^2}{N}\text{, for } \sigma_i \approx \text{cst.} \quad (2)$$

$$S^2 = \frac{\sum_{i=1}^{N}(X_i-\mu)^2}{N-1} \approx \sigma^2 \times \frac{N}{N-1}\text{, for N} \gg 1. \quad (3)$$

X_i is the individual observation for a star, and σ_i is the error on this individual observation. As can be seen, μ_w and σ_w^2 are the weighted mean and variance determined for a population. For identical errors σ_i for all the observations of a star, $\mu_w = \mu$ and $\sigma_w^2 = \sigma^2$; this will be the case for most of the stars in our sample except for a few cases where outlying points influence the values. Here we used $\sigma_w^2 \times \frac{N}{N-1}$ to approximate S^2, because $N \approx 122$ on average (i.e. large) in our sample of retained stars. The factor 3.289 enables one to estimate the amplitude (max − min mag.) of the variations of a star considering that individual transits are distributed according to a Gaussian in the case of a constant star (99.9% probability for a transit being comprised between *min* and max). This will create a simple quantity that allows us to distinguish between variable and non-variable stars.

The estimation of the amplitude calculated here ($3.289 \times S$) depends on the internal measurement errors for each transit. In fact, given that these errors are similar for a given star, and that our weighted S was corrected for any outliers, S depends on the median internal error for a given star. To use S in our threshold calculations, we must first make sure that the internal error (I) depends only on one parameter: the magnitude of the star. Indeed, if it depends on anything else (spectral type, extension of the source etc...) calculating a threshold in the Magnitude-Amplitude domain makes no sense.

Figure 2 shows the distribution of the internal error (i.e. measurement error) of our sample with respect to Hp magnitude. One can easily see that Poisson errors dominate this plot. Moreover, the 3 intrinsic categories established in Sect. 5 are equally distributed. To make certain that the error depends *only* on the magnitude, we can make use of the variable called "external error / internal error" (Duquennoy et al. 1991) or S/I in our case and check if it has been correctly estimated. The closer to 1 the S/I variable is, the better the estimation of I. Of course, the

Table 1. Selected stars.

	P	U	C	D	M	R	" "	Total
ampl. $\geq T_{\rm h}$	209	493	0	17	15	2	15	751
$T_{\rm l} \leq$ ampl. $< T_{\rm h}$	17	105	50	52	78	2	347	651
ampl. $< T_{\rm l}$	1	3	435	99	20	0	447	1005
Total	227	601	485	168	113	4	809	2407

Number of "P", "U", "C", "D","M", "R" and not-classified (" ") stars, above the positive threshold ($T_{\rm h}$), between the positive and negative thresholds ($T_{\rm h} = T_{\rm m} + {\rm err}_+$, $T_{\rm l} = T_{\rm m} - {\rm err}_-$), and below both of them. $T_{\rm m}$ denotes the threshold calculated according to the method presented in Fig. 3.

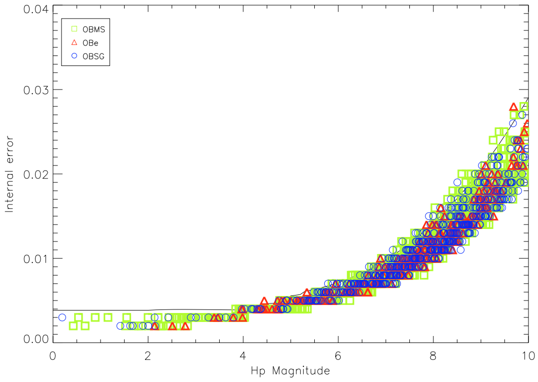

Fig. 2. Distribution of the internal error in our sample in the 3 intrinsic categories of stars from Sect. 5. Squares represent OBMS stars, triangles OBe stars and circles OBSG stars. Overplotted in black is the calculated threshold $T_{\rm m}$. Note that the shape of the $T_{\rm m}$-curve matches that of the internal error distribution, except for the brighter stars, which are less populated.

more a star is variable, the more S/I exceeds 1. When plotting the S/I variable distribution in different bins of magnitude, we indeed see that the peaks stay relatively close to $S/I = 1$ (error on I is $\lesssim$10% in all cases), as confirmed by the overplotted threshold in Fig. 2.

Thus we can say that, although some scatter appears progressively at higher magnitudes (cf. Fig. 2; the scatter is ~identical in the 3 intrinsic categories), I was correctly estimated for each star and depends only on the magnitude. The variations of S should then follow those of I relatively closely and it is now possible to calculate a threshold depending on the magnitude based on S, without doubt about the variability being falsely induced by different internal errors.

The indicative variability threshold from the HIPPARCOS consortium (ESA 1997, The Hipparcos and Tycho catalogs, Vol. 1, p. 52) would indicate that *all* the stars in our sample are variable, although some of them are classified as "constant" (cf. Table 1). This is probably due to the different estimator ($3.289 \times S$) used for the computation of the amplitude. We calculated a threshold for our given sample by assessing the amplitude distribution in different magnitude bins. Despite the near-Gaussian distribution of the original magnitude measurements (for some test stars, the Kolmogorov-Smirnov test gives ~80% probability that the measurements are drawn from a normally -distributed sample), the amplitudes of variability, being directly related to S, cannot be distributed according to a well-known distribution. However, the squared amplitude, related to S^2, should be distributed according to a χ^2 distribution with $N-1$ degrees of freedom, which asymptotically approaches a normal distribution for large N (N being typically 122 in our sample).

To be more exact, we simulated bins with 10 000 stars (the actual number of stars in each magnitude bin is actually closer to 100, but we chose 10 000 for greater reliability), with 100 transits each and compared the outcome to the actual distribution of the squared amplitude ($S^2 \times$ cst) in each magnitude bin. Magnitudes for a *constant star* should be distributed according to a Gaussian centered on the mean magnitude, so the simulation represents what the distribution inside a given bin of magnitude should look like, if all the stars were *constant*. This is exactly what we are looking for, since *variable stars* should be located outside this simulated squared-amplitude distribution. We then adjusted the simulated squared-amplitude distribution to the real distribution and placed the *variability limit* ($t_{\rm m}$, m for middle) at the point where the simulated distribution reaches 0.1% of the maximum. The error on this limit is represented by the $FWHM = 2.35 \times \sigma_{\rm err}$ ($\approx$Gaussian because $order_{\chi^2} = 121$) of the adjusted simulated distribution. The errors on the calculated $t_{\rm m}$ are transformed to $t_{\rm l}$ and $t_{\rm h}$ with $t_{\rm l,h} = t_{\rm m} \pm 3 \times \sigma_{\rm err} = t_{\rm m} \pm {\rm err}$. Sample-simulated and real distributions of the squared-amplitude are represented in Fig. 3, where the distributions for the 3 different classes of intrinsic variability presented in Sect. 5 have been overplotted. The error err on $t_{\rm m}$ is then transformed into the error on $T_{\rm m}$ ($T_{\rm m}^2 = t_{\rm m}$) to be representable in a more classical way in Fig. 4. Note that err becomes ${\rm err}_-$ and ${\rm err}_+$ in the *amplitude* domain, i.e. the error is asymmetrical.

A fourth order polynomial is adjusted to the points in each bin of magnitude to obtain the resulting thresholds presented in Fig. 4, where the 3 lines represent the threshold $T_{\rm m}$ minus the error to the lower side ($T_{\rm l}$, lower dash-dotted line), the threshold $T_{\rm m}$ itself (solid line) and $T_{\rm m}$ plus the error to the higher side ($T_{\rm h}$, upper dash-dotted line). We chose $T_{\rm h}$ as a conservative measure of the variability threshold, i.e. the 751 stars above $T_{\rm h}$ are assumed to be variable. Between $T_{\rm l}$ and $T_{\rm h}$ lie "possibly variable stars", while supposedly "non variable" stars are located below $T_{\rm l}$. Table 1 presents the results in a general manner. As one can see, there is a negligible fraction (<0.5%) of known periodic or variable stars below the established lower limit ($T_{\rm l}$). Moreover, no stars deemed as constant by the HIPPARCOS consortium appear above the highest threshold $T_{\rm h}$, thus validating "a posteriori" our calculations. Most of the "M" stars are located in the "possibly variable" zone which is normal, considering the small amplitude of their variations. "D" stars are mostly classified as "non-variable", a result that is also encouraging, i.e. the number of stars wrongly classified as variable is minimal. In addition, less than 2% of the total number of stars which could not be classified lie above the threshold $T_{\rm h}$.

We assume all stars above $T_{\rm h}$ to be variable, hence (per our choice of $T_{\rm h}$) the probability of having a non-variable star among the candidates is less than 0.1% as confirmed by the statistics (cf. Table 1). The probability of finding a variable star (with amplitude Amp. $\gtrsim$0.03 mag) below $T_{\rm l}$ is ~1%, as indicated by the quasi absence of "U" or "P" stars, while it is around 15% for

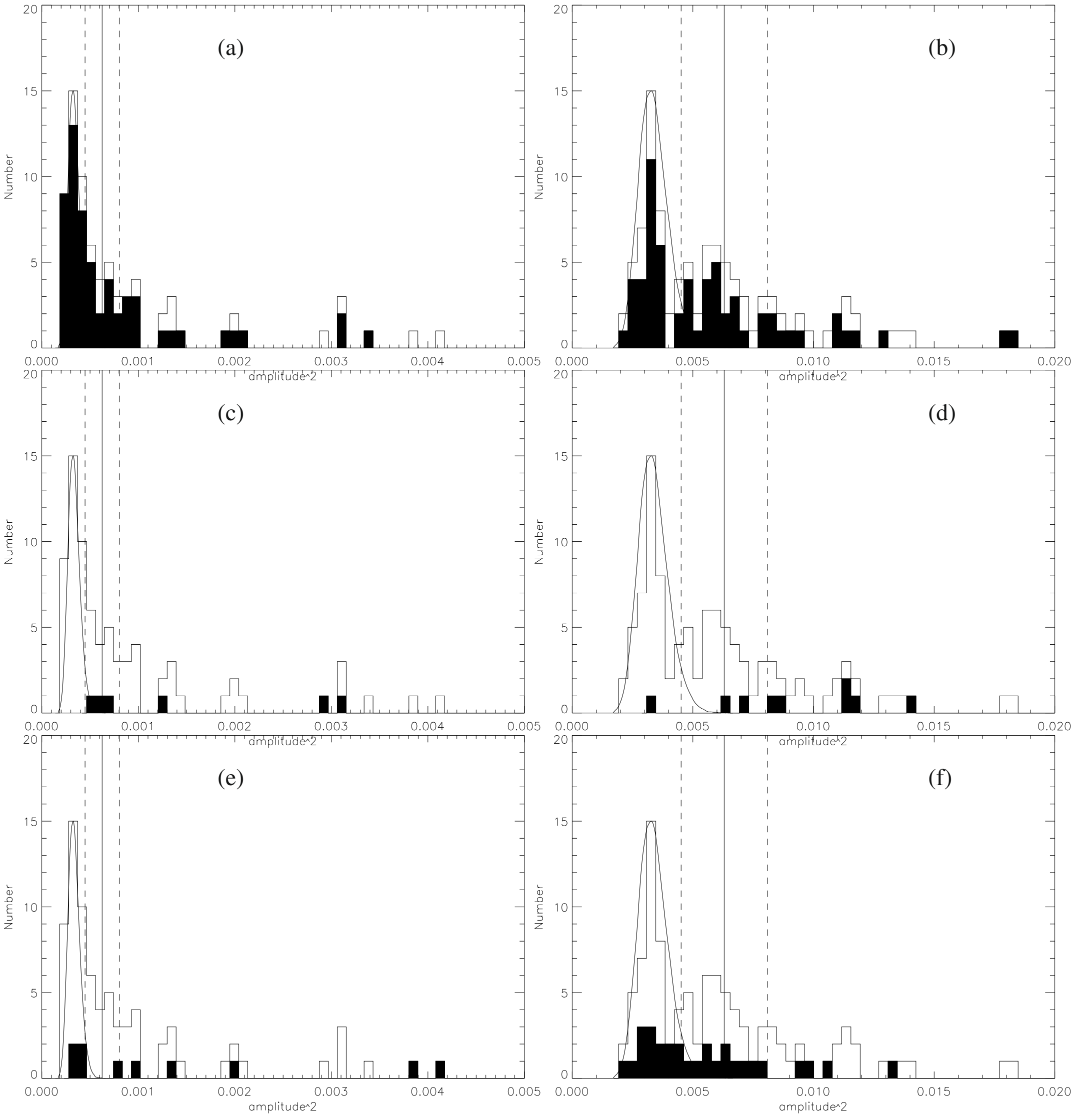

Fig. 3. Comparison between the distribution in bins of magnitude and the simulated results for the whole sample of OB stars superimposed in black with the 3 intrinsic categories from Sect. 5. Bins are for Hp = [5, 5.5] (*left*), and Hp [9, 9.25] (*right*). *From top to bottom*, the filled histograms represent the number of OBMS, OBe and OBSG stars in the above-mentioned magnitude bins. Note that there are a few points with a squared-amplitude that is off-scale in these diagrams; these have not been shown for reasons of clarity. The solid line represents t_m while the dotted lines represent t_l and t_h. The thresholds calculated in each category separately correspond (within the errors) to the combined threshold in both the S and S/I cases. As can be seen from panels **c)** and **d)**, OBe stars are less numerous.

stars with a relatively low amplitude (Amp. $\lesssim$0.03 mag). On the other hand, when considering stars below T_h, the probability of finding a variable star rises to ~10% for Amp. $\gtrsim$0.03 mag and ~70% for Amp. $\lesssim$0.03 mag. That is the reason why stars located in this particular region have been classified as "possibly variable stars". It comprises more than 80% of the microvariable stars and about 15% of the "U" and "P" stars (cf. Table 1). The error on the magnitude is ~0.002 mag on average and depends on the number of points for each star and on the variability level. Some shifts in magnitude in Fig. 4 could modify the distribution around the threshold by a few percent ($\lesssim$5%), below the limiting magnitude (H_p = 8 mag) and more above it, but this is within the error margins in the statistics of Table 2, which are quite large.

It is important to stress that the "S/I" method from Duquennoy et al. (1991) also provides us with the means to verify a posteriori the accuracy of the calculated threshold, i.e. the distribution of stars above and below the threshold. Indeed, the introduction of a variable $\chi^2 = (N-1) \times (S^2/I^2)$ (Duquennoy et al. 1991) allows us to calculate a threshold ($T_{S/I}$) which does not depend on the magnitude. Applying a false probability detection of 0.1% for this threshold, we find that the distribution of stars above and below $T_{S/I}$ is similar to the distribution above and below T_h within less than 5%. Of course, this is not surprising considering the fact that we established that the internal error I was correctly estimated and thus the shape of the internal error seen in Fig. 2 is the same (×3.289) as that of T_m (cf. Figs. 2 and 4).

4. Analysis of the variability

The 751 stars selected as "variable" thanks to our determined threshold were then analyzed with the CLEAN algorithm (Scargle 1982; Roberts 1987) followed by a Phase Dispersion Minimization technique (Stellingwerf 1978, PDM). For the

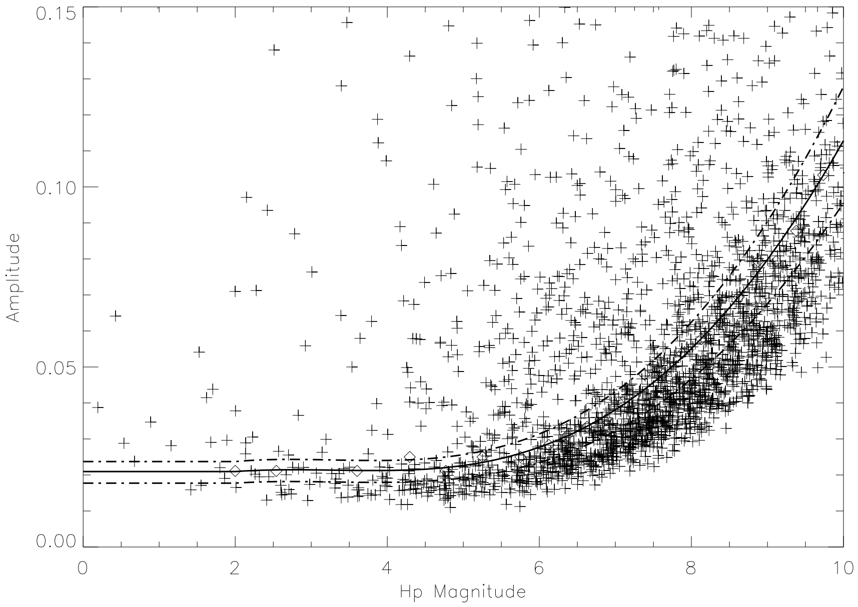

Fig. 4. Variability threshold calculated for our sample. T_m (solid line) corresponds to the point where the distribution reaches 0.1% of its maximum, T_h (upper dash-dotted curve) corresponds to the higher error limit and T_l (lower dash-dotted curve) corresponds to the lower error limit.

CLEAN program we used a gain of 0.2 and a maximum number of 250 iterations. We calculated a false alarm probability (*fap*) threshold for each star and kept the three biggest power peaks of the CLEAN spectrum, only if they were above a 99% *fap* threshold. We then used the PDM around each of those peaks to locate the position more precisely.

5. Results and discussion

Of the 227 previously known periodically varying stars (flagged "P"), about 90% were found to be periodic in this study, some with revised periods. The 10% discrepancy between HIPPARCOS and this study most probably comes from the difference in the number of points in the analysis. The HIPPARCOS consortium excluded all the flagged points while we kept some of them, hence the difference.

We chose to classify the supposedly variable stars in 4 broad categories. These include, first under intrinsic variables: OB stars of luminosity classes I and II (OBSG), Main sequence (III to V) stars with no emission (OBMS) and OB stars in luminosity classes III to V with emission (OBe stars) and then under extrinsic variables: eclipsing binaries (E). Some eclipsers may reveal other types of variability but the eclipse phenomenon usually dominates, so we will retain them only in the E category. As for types of variability, we follow the definition in the General catalog of Variable Stars (GCVS, Samus et al. 2004) and of Gautschy & Saio (1996). The principal variability types used are listed in Appendix A. Note that stars for which the lightcurve is not precise enough to decide between an ellipsoidal variable and an eclipsing binary, were given preference as eclipsing binaries.

We found 169 stars with new periods, of which ≈50% were also found by Koen & Eyer (2002). Included in these new periodically varying stars, are 5 new eclipsing binaries of which 1 was also in Koen & Eyer (2002) and 2 were found by Otero (2003). The phase plots of stars with new periodicities are given in Appendix B (see Fig. 5). When classifying the variability types, all of the probable periods have been taken into account; we made no assumptions on the veracity of those periods. However, periods of $P \approx 0.089$ d are probably related to the orbital period of the HIPPARCOS satellite as discussed in Koen & Eyer (2002), so they have not been taken into account when classifying the types of variability. To indicate any "unsure" status of the new periods, we added question marks to the variability types (Appendix A tables).

Our complete sample of OB stars consists of 127 eclipsing (or supposed as eclipsing) binaries, 229 OBe stars, 1482 OBMS stars and 577 OBSG stars. The statistics for all the categories are presented in Tables 2 (intrinsic categories) and 3 (eclipsing binaries), while the details are presented in a separate table in Appendix A. The errors on the proportions in Tables 2 and 3 are based on the assumption that the numbers of stars in a given category (N_i compared to N_{tot}) arise from a Binomial distribution (which tends towards a Poisson distribution for $N_{\mathrm{tot}} \gg 10$), hence $\sigma_{\mathrm{binomial}} = \sqrt{N_{\mathrm{tot}} p_i (1 - p_i)}$, which gives an estimated error margin with a confidence interval of 99% of $E_{99\%} = 2.58 \times \sqrt{N_{\mathrm{tot}} p_i (1 - p_i)}$, and an error in percent of $E_{99\%}(\%) = \frac{E_{99\%}}{N_{\mathrm{tot}}} = 2.58 \times \sqrt{\frac{p_i(1-p_i)}{N_{\mathrm{tot}}}}$, where $p = \frac{N_i}{N_{\mathrm{tot}}}$ is the proportion and N_{tot} the number of stars in the chosen sub-sample.

Moreover, we recalculated the proportions taking the 7 previously known periodically varying stars that were deleted because of too many flagged points and concluded that their influence is negligible, as can be seen from the row labeled "Not included" in Table 2. Note that the HIPPARCOS satellite scans along an axis with a "scan-data angle" depending on the time of observation. Thus, the more a source is extended, the more the variation of this angle can induce false variability. This angle is mainly sensitive to extended sources and nebulosities. This will be discussed in Sect. 5.2.

One can see from Table 2 that OBe stars are much more variable intrinsically than OBSG or OBMS stars, and also more variable than the complete sample (line labeled "OB$_{i,v}$ vs. tot. OB$_i$"). On the other hand, OBMS stars are below T_h in 83% of cases, which means they are mostly non variable (53% are classified as non-variable, against 11% for the OBe stars and 34% for the OBSG stars). Figure 6 also shows these aspects in a different way. One can see in that figure that OBe stars are overrepresented above the threshold T_h. This will be developed in Sects. 5.1 and 5.2.

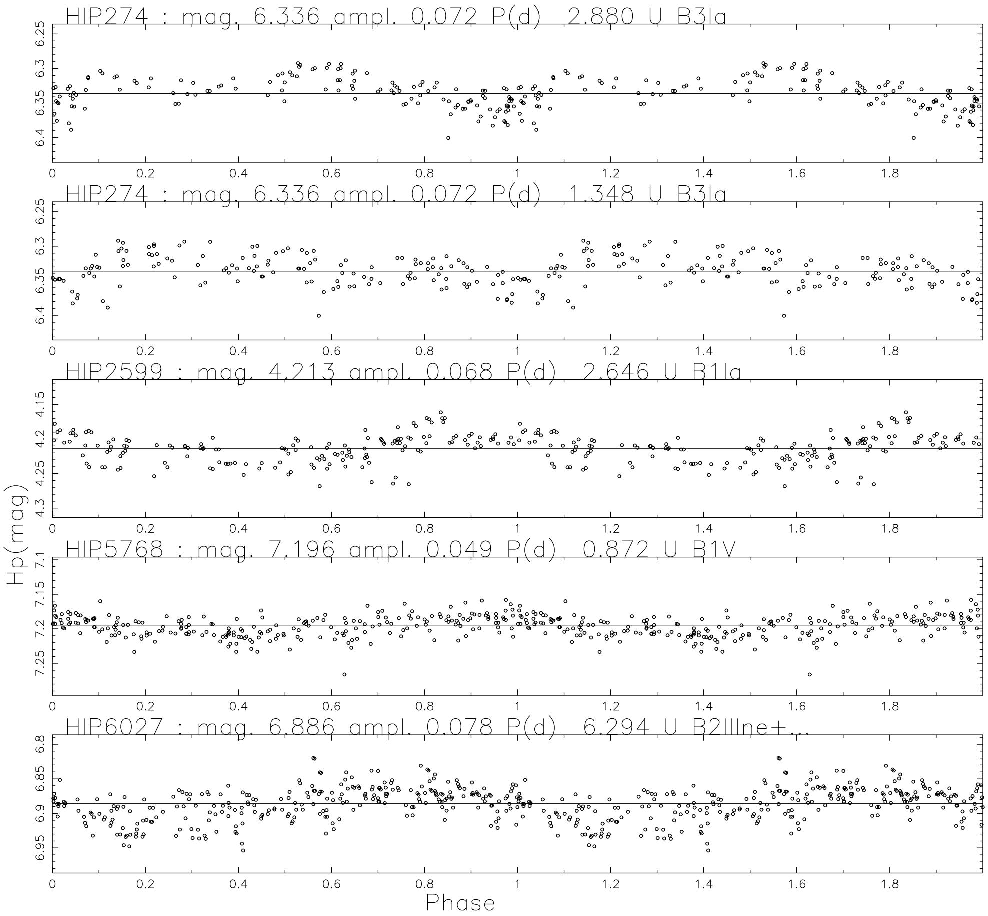

Fig. 5. This figure is a representative extraction of our "catalog of New Periodic stars" given in Appendix B2. It plots Hp mag. vs. Phase. The epoch is arbitrarily taken as JD-2 440 000 = 7800, which is the beginning of the HIPPARCOS observations. On top of each lightcurve are the HIPPARCOS number, the Hp magnitude and mean amplitude calculated in this study, the period, variability flag and spectral type from the HIPPARCOS data (periods can also be new ones). The Hp magnitude, mean amplitude and periods are accurate to ~0.1%.

Table 2. OB Stars in the 3 OB categories and corresponding statistics.

N_i:	**OBMS** (%)	**OBe** (%)	**OBSG** (%)	Ecl. (%)	$N_{\rm tot}$ (%)
ampl. ≥ $T_{\rm h}$	256 (34 ± 4.5)	172 (23 ± 4)	201 (27 ± 4)	122 (17 ± 3.5)	751 (31 ± 2.5)
$T_{\rm l}$ ≤ ampl. < $T_{\rm h}$	442 (68 ± 5)	32 (5 ± 2)	177 (27 ± 4.5)		651 (27 ± 2)
ampl. < $T_{\rm l}$	782 (78 ± 3)	25 (2 ± 1)	198 (20 ± 3)	(1)	1005 (42 ± 2.5)
Total category	**1480** (61 ± 2.5)	**229** (10 ± 1.5)	**576** (24 ± 2)		2407
Not included	2	0	1	(4)	7
Total category	**1482** (61 ± 2.5)	**229** (10 ± 1.5)	**577** (25 ± 2)		2414
Statistics (%)					
$OB_{i,v}$ vs. tot. OB_i	17 ± 2.5	75 ± 7	35 ± 5		
$OB_{i,b}$ vs. tot. OB_i	83 ± 2.5	25 ± 7	65 ± 5		
$OB_{i,pv}$ vs. tot. OB_i	30 ± 3	14 ± 6	31 ± 5		
$OB_{i,nv}$ vs. tot. OB_i	53 ± 3	11 ± 5	33 ± 5		
$OB_{i,v}$ vs. OB_v	46 ± 4.5	24 ± 4	30 ± 4		751
$OB_{i,b}$ vs. OB_b	74 ± 3	3 ± 1	23 ± 2.5		1656

OB_i corresponds to the 3 intrinsic categories, i being OBMS, OBe or OBSG. The index v stands for "variable" (above $T_{\rm h}$), b means below $T_{\rm h}$, nv stands for "non-variable" and pv stands for "possibly variable". In the cases "A vs. B", $B = OB_i$ corresponds to $N_{\rm tot}$ = 1480, 229 or 576; while A corresponds to N_i.

5.1. Extrinsic variability: eclipsing binaries

All the eclipsing binary lightcurves are presented in Appendix B, an extraction of which is presented here in Fig. 7. They are also summarized, along with their variability types, in Appendix A, of which Table 4 is the beginning. When taking into account only the stars down to $Hp = 8$, the statistics from Table 3 do not vary significantly (i.e., the proportions are identical).

Figure 8 presents the periods and amplitudes of variation for the eclipsing binaries in the 3 classes of intrinsic variability. The amplitude of Fig. 8 is representative of the depths of the eclipses,

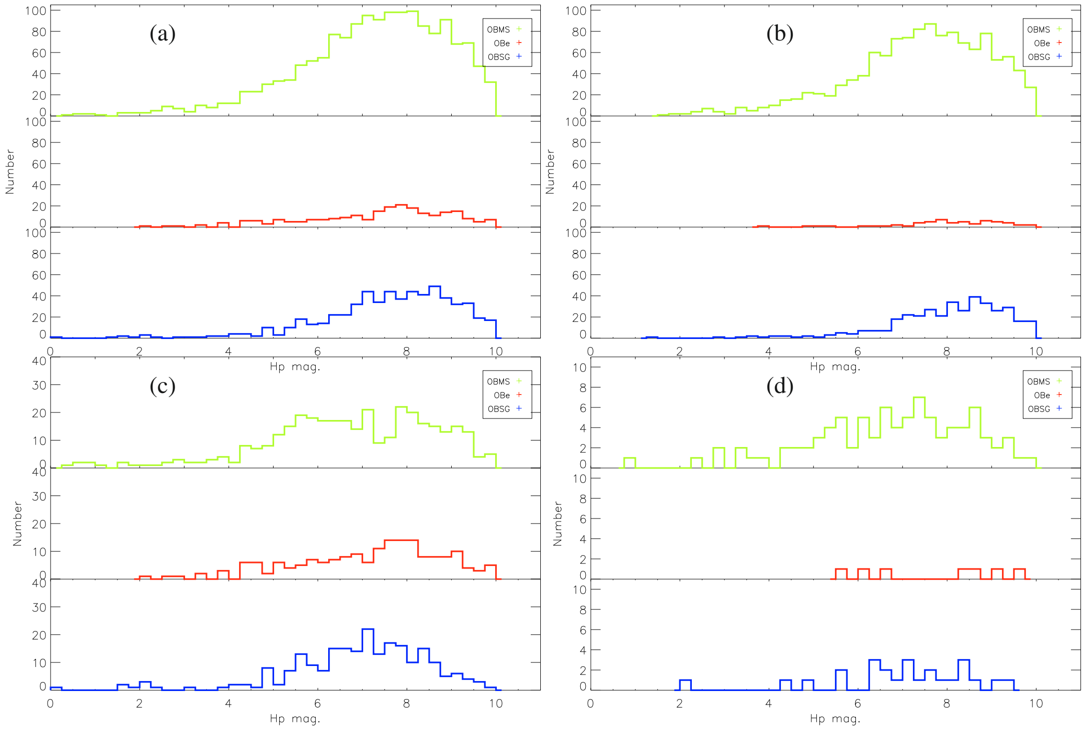

Fig. 6. The four panels of this figure represent the distribution in magnitude for the 3 intrinsic variability classes in 4 different situations. *From top to bottom*, OBMS stars, OBe stars and OBSG stars. **a)** The whole sample of 2407 stars, **b)** the 1656 stars below T_h, **c)** the 751 stars above T_h and **d)** the 127 eclipsing binaries.

Table 3. OB eclipsing Stars in the 3 OB categories and corresponding statistics.

N_i:	**OBMS** (%)	**OBe** (%)	**OBSG** (%)	N_tot
Ecl. binaries	89 (73 ± 10)	7(6 ± 5)	26 (21 ± 9)	**122**
OB$_{i,e}$ vs. tot. OB	4 ± 1	0.3 ± 0.3	1 ± 0.5	5.3 ± 1.2
OB$_{i,e}$ vs. tot. OB$_i$	6 ± 2	3 ± 3	4 ± 2	
OB$_{i,e}$ vs. OB$_{i,v}$	28 ± 6	3.9 ± 3.8	10 ± 5	
Not included	5	0	0	5
Total category	**94** (74 ± 10)	7 (6 ± 5)	26 (20 ± 9)	**127**

OB$_i$ corresponds to the 3 intrinsic categories, i being OBMS, OBe or OBSG. The index v stands for "variable" (above T_h). The line "Not included" refers to the stars that were not included in the analysis because of too many flagged points, or below T_h.

but not as precisely as for other types of variability. Indeed, the estimation of the peak-to-peak amplitude works better the more the lightcurve approaches a sinusoid. In the case of a detached system, where the primary and the secondary minima are very different, the accuracy of the estimation of the amplitude strongly depends on the number of points during the eclipses versus those between.

Table 4 also shows that there are twice as many contact (EB) systems as detached (EA) among the OBMS stars, while there are about as many contact as detached systems among OBSG stars. This will be discussed in Sect. 5.2 in their respective categories although this is not an intrinsic variability. Note the difference in the peaks of the period histograms between the OBSG and the OBMS stars. The orbital periods seem to be larger for OBSG stars on average. This difference is highly significant (p = 99%) according to the Wilcoxson criterion (Wilcoxon 1945). It is also seen when considering the sample to the limit of completeness (i.e. below Hp = 8 mag).

5.2. Intrinsic variability

Figure 9 presents the periods and amplitudes of variation in the 3 classes of intrinsic variability. Periods in the 3 classes appear equally distributed in this figure, although if we consider only the periods already found by HIPPARCOS (allowing for the fact that our periods might not be reliable) the peak from the OBSG class seems to occur at a slightly longer period than the OBMS-class peak (8d compared to 3d). This could be easily explained by the well-known period-mass relation: the greater the mass of the star, the larger its radius, the lower its mean density, and therefore the longer its pulsation period. This relation should basically apply to all the OB stars studied here. Moreover, there seems to be a gap in Fig. 9a and b between P = 0.3d and P = 1d, whose origin remains unknown.

Note that the first and second panels of Fig. 9 take the new periods into account, while the third and fourth do not. This is because some of the stars have several periods which are associated with identical amplitudes and magnitudes. The total numbers of stars are 56, 7 and 29 for the OBMS, OBe and OBSG categories, respectively, in the amplitude histogram (lower left panel), while they reach 108, 39 and 121 in the period histogram (upper right panel), because they include all the possible new periods. It is interesting in this case to note that the total number of OBe periods is more than five times higher if we add the new periods (number of new/old = 5.5). On the other hand, the total number of OBSG periods (including new periods) is about 4 times the initial number of OBSG periods, while the number of new periods found in the OBMS stars class is modest (new/old = 1.9).

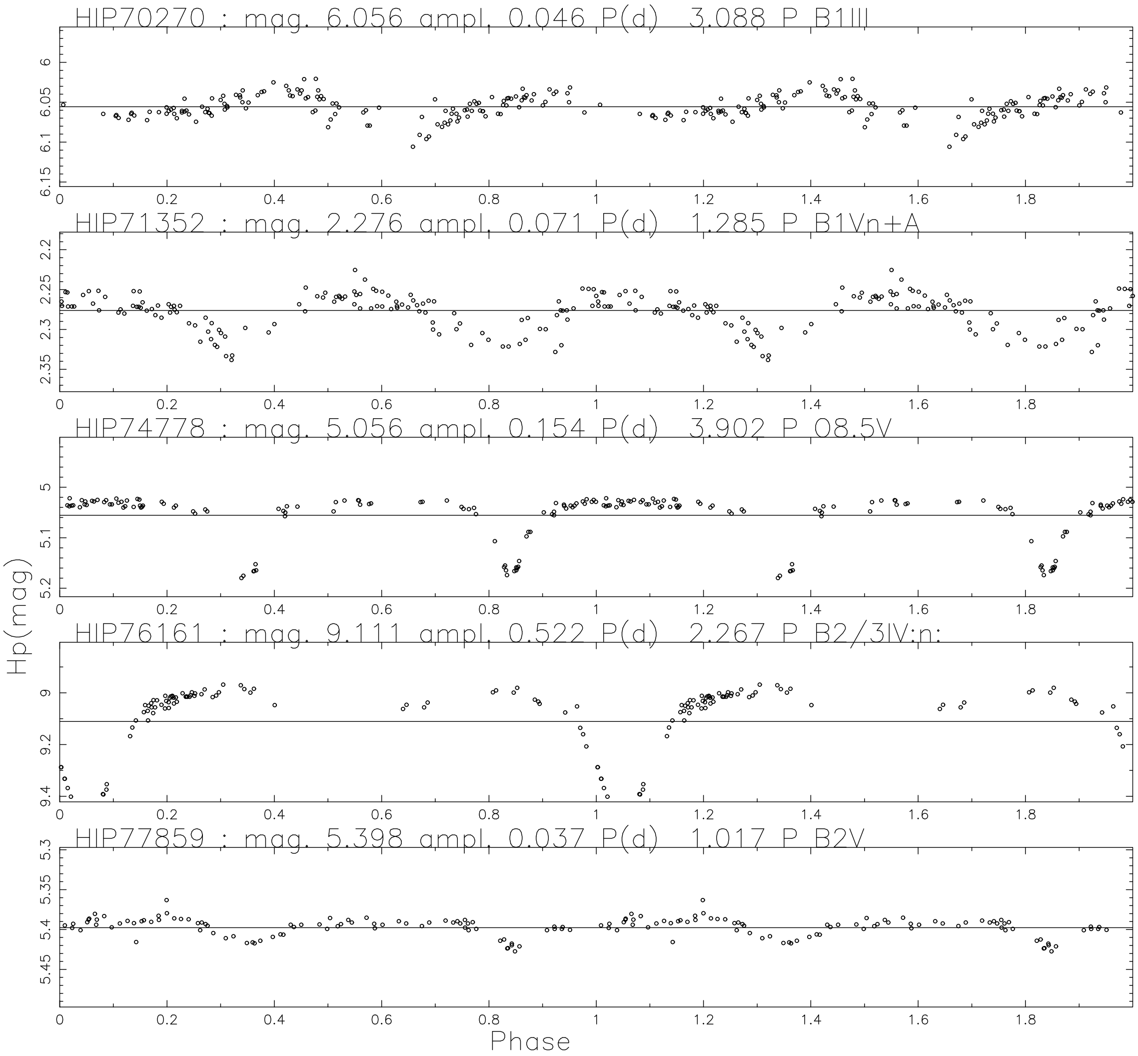

Fig. 7. This figure is the beginning of our "catalog of Eclipsing Binaries" given in Appendix B1. It contains 122 candidates; the remaining 5 are in Appendix B3 and B4. It plots *Hp* mag. vs. Phase. The epoch is arbitrarily taken as JD-2 440 000 = 7800, which is the beginning of the HIPPARCOS observations. On top of each lightcurve are the HIPPARCOS number, the *Hp* magnitude and mean amplitude calculated in this study, the period, variability flag and spectral type from the HIPPARCOS data (periods can also be new ones). The *Hp* magnitude, mean amplitude and periods are accurate to ~0.1%.

Table 4. OB eclipsing binaries of the HIPPARCOS catalog.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	⟨Hp⟩ (mag)	Ampl. (mag)	Sp. type
					OBMS		Total : 94				
V444 Cyg	193576	100214	P	EA	4.213				8.060	0.243	O6
NX Vel	73882	42433	P	E:	1.460				7.292	0.074	O8V:
V1182 Aql	175514	92865	P	EB	1.622				8.747	0.191	O8:Vnn
TU Mus	100213	56196	P	EB/KE	1.387				8.427	0.518	O8 (+O8)
V382 Cyg	228854	100135	P	EB	1.886				8.730	0.830	O8
del Cir	135240	74778	P	EA	3.902				5.056	0.154	O8.5V
AO Cas	1337	1415	P	EB	3.523				6.062	0.198	O9IIInn
CC Cas	19820	15063	P	EB/DM	3.366				7.237	0.108	O9IV
LY Aur	35921	25733	P	EB/SD:	4.003				6.944	0.722	O9.5III
LZ Cep	209481	108772	P	EB	3.070				5.554	0.099	O9V

Table 4 is presented in its entirety in Appendix A. The columns are: the variable name, the HD number, the HIPPARCOS number, the HIPPARCOS variability flag, the variability type we assigned in this study, the HIPPARCOS period (if any), the new periods found in this study (2 columns, for a possible alternative period), the periods found by Koen & Eyer (2002) (if any), the *Hp* magnitude, the mean amplitude calculated here according to Eq. (1) and the spectral type according to the Vizier database.

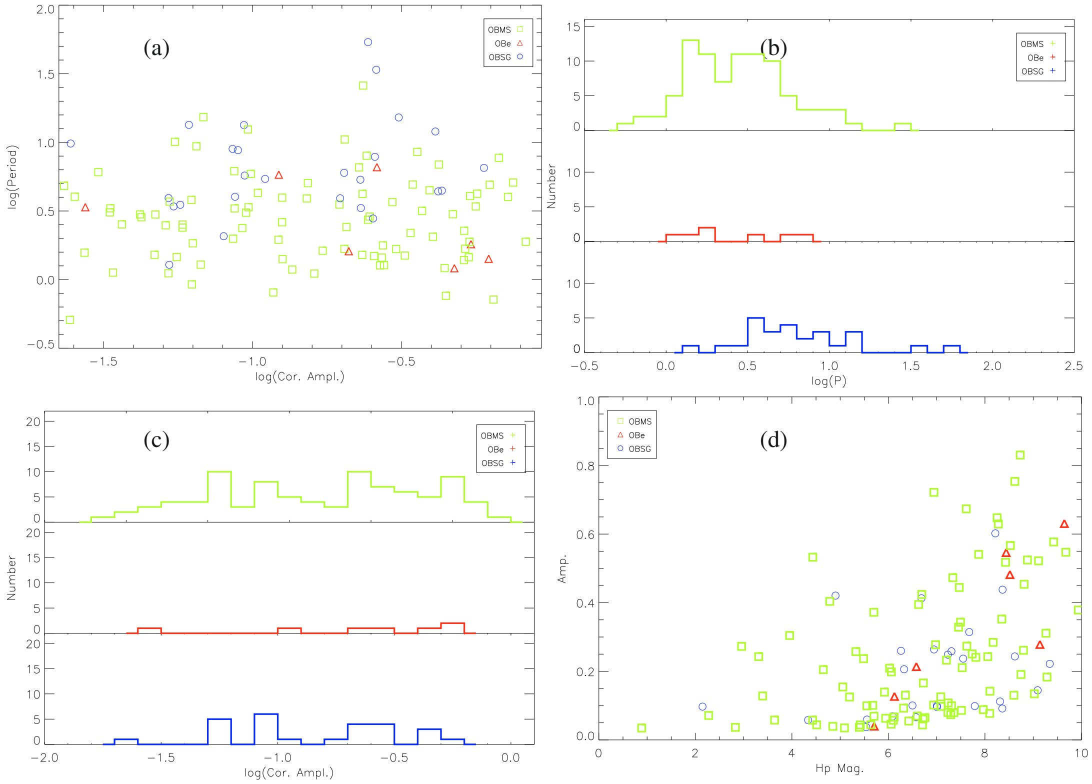

Fig. 8. Eclipsing binaries: *the upper left panel* **a)** presents the log of the period (days) versus the log of the amplitude of the variations, while *the upper right panel* **b)** presents the histograms of the periods in the 3 intrinsic variability classes OBMS, OBe and OBSG. Squares represent OBMS stars, triangles OBe stars and circles OBSG stars. *The lower left panel* **c)** presents the histograms of the amplitude in the 3 intrinsic variability classes. *The lower right panel* **d)** presents the amplitude vs. Hp magnitude.

5.2.1. OB Main Sequence stars

Not surprisingly, OBMS stars represent the greater part of our OB sample of stars (65%). Their variability classification is presented in Table 5. As can be seen in Table 2, less than 20% of them are classified as variable in this study, which is rather low compared to the percentage of variable OBe and OBSG stars (OBe: 75%, OBSG: 35%). In fact, about 30% of all the stars in the sample are supposedly variable, and the proportion of variable OBMS stars is below that average. This is easily explained when one considers the fact that main sequence stars are much more stable than the two other categories involved here. There also seem to be more eclipsing systems among this class (cf. Table 3). It is not impossible that this is due to the fact that the stability of these stars prevents them from merging as often as the stars in the other categories, hence the higher number of non-merged eclipsing binaries (Podsiadlowski 2006). Moreover, despite the limited sample, there is a trend towards more EB (contact) systems than EA (detached). Indeed there are ≈60% EB eclipsing binaries compared to ≈30% EA eclipsing binaries (the rest are classified as E or EW). The statistics stay the same if we consider only the stars with $Hp \leq 8$ mag. This might be related to the fact that OBMS stars in binary systems are closer together than the stars in our other categories, and thus easier to detect (i.e., the inclination angle can deviate more from 90°, because the components are closer).

5.2.2. OBe stars

The variability classification of OBe stars is presented in Table 6. We mention that the OBe stars we defined here are in fact Oe and Be stars. Oe stars were first introduced by Conti & Leep (1974), and usually fall inside the range O9-B0. However, Negueruela et al. (2004) mention that some published spectral types are too early most likely due to filling in of HeI lines. That is why we also included spectral types earlier than O9. Although Oe stars do not show the presence of a disk as in Be stars they are considered to be the extension of the Be stars to the O type stars.

As noted earlier, OBe stars seem to be by far the most variable class in our 3 intrinsic categories. Indeed the incidence of rapid rotation and pulsations and their possible interactions could explain this high level of variability. These hypotheses are strengthened by the apparent correlation found between pulsations and an outburst in the COROT observations of the B0e star HD 49330 (Huat 2009). Moreover, OBe stars are nearly absent below the threshold $T_{\rm h}$ and the cause may be that even if the variability is not periodic, a few outbursts might have been picked up by HIPPARCOS observations and lead to high amplitude variability. As for the variability of the "scan-data angle" noted earlier, Quirrenbach et al. (1997) note that the disks, if present, have negligible (for the HIPPARCOS satellite optics) extensions in the optical of a few milli-arcseconds. So this cannot account for variations seen in OBe stars. It does not apply, though, to any flux variations due to the instabilities in the disks which can augment the variability of the star.

In addition, a good fraction (20–60%) of OBe stars are supposed to be in a post mass-transfer phase of a close binary system (Pols et al. 1991). The upper right panel of Figure 8 seems to indicate that OBe star periods do not reach as high as OBMS star periods. However, when taking into account the actual numbers with a Wilcoxon test (7-OBe against 89-OBMS EB Periods), the

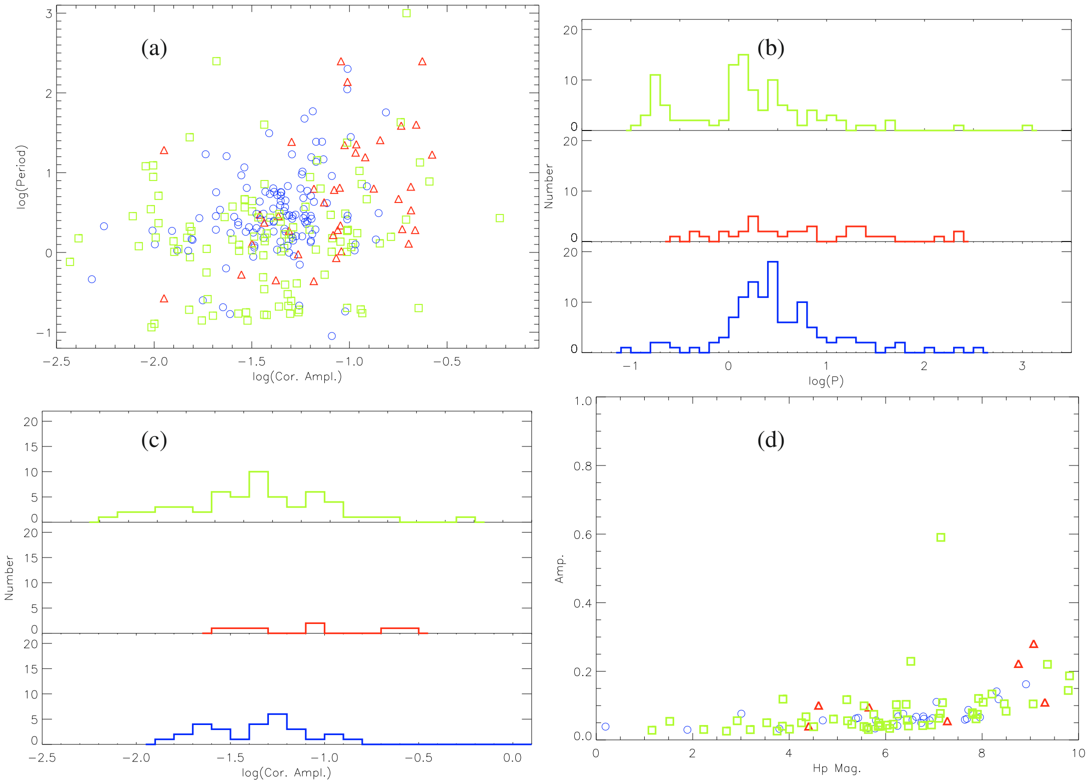

Fig. 9. Variable stars: *from top to bottom, left to right*. Colors and symbols are the same as in Fig. 8. *The first panel* **a)** presents the log of the period (days) versus the amplitude of the variations, while *the second panel* **b)** presents the histograms of the periods in the 3 intrinsic variability classes of OBMS, OBe and OBSG stars (*from bottom to top*). *The third panel* **c)** presents the amplitude histograms of the same 3 classes of variability, and the fourth **d)** is the same as Fig. 4 for the periodic stars above T_h.

Table 5. OBMS stars above the threshold T_h.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)	CK P(d)	$\langle Hp \rangle$ (mag)	Ampl. (mag)	Sp. type
	97950	54948	D	IA				9.019	0.114	O5
S Mon	47839	31978	U	SR/L?		3.271		4.551	0.040	O7
	91824	51773		IA				8.129	0.068	O7
	152623	82876	D	IA				6.726	0.043	O7
NSV 08060	152723	82936	U	BCEP?		0.395		7.150	0.065	O7
gam02 Vel	0	39953	U	BCEP?		1.384		1.705	0.044	O8III
	96670	54358	U	IA				7.467	0.055	O8
V871 Cen	101205	56769	U	IA				6.474	0.092	O8var
	124314	69628	D	IA				6.696	0.040	O8
V1809 Cyg	203064	105186	U	L?				5.022	0.031	O8

Table 5 is presented in its entirety in Appendix A.

difference between both distributions is significant only to a level of 60% (Wilcoxon 1945; Mann & Whitney 1947). It would be of considerable interest to see if this tendency is confirmed in a larger sample of OBe binary systems.

5.2.3. OB supergiants stars

OB supergiants are usually thought to be more prone to variability, mainly because of their large radii, thus weaker surface gravity, and subsequent tendency to be unstable. When we take the total sample of stars, we find that about 30% of the variable stars (above T_h) are OBSGs, while only about 20% of the non-variables (below T_h) are OBSGs. A finer analysis with different bins in magnitude confirms this tendency. Below $Hp = 8$ mag, OBSG stars are about twice as often above T_h than below ($Hp < 6$: 11% below T_h, ≈23% above T_h; $6 < Hp < 8$, <18% below T_h, ≈32% above T_h). This would tend to indicate that OBSG stars are globally more variable than OB stars in general. Fainter than $Hp = 8$ mag, on the other hand, there is no real difference between the percentage of OBSGs above and below T_h (OBSGs ≈ 25% of OB above and below T_h, cf. Table 8) but this is probably due to the incompleteness of the sample, thus the increased scatter of the instrumental error fainter than $Hp = 8$ mag.

We also studied the distribution of periods in OBSGs to see if the trends seen in de Jager (1980, p.343) appear with our much larger sample of OBSG stars. As can be seen in Fig. 10, there is a tendency for longer periods (20d $< P <$ 70d) to be located near the upper right corner of the diagram, while shorter periods (5d $< P <$ 10d) are located nearer to the lower left corner of

Table 6. OBe stars above the threshold T_h.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)	CK P(d)	$\langle Hp \rangle$ (mag)	Ampl. (mag)	Sp. type
V1382 Ori	39680	27941	U	L				7.901	0.131	O6:pe SB
	0	101425	D	IA				8.851	0.088	O6e
NSV 14069	210839	109556	U	IA				5.128	0.036	O6e
BN Gem	60848	37074	U	GCAS?		2.983		6.868	0.054	O8V:pevar
QZ Sge	188001	97796	U	IA				6.232	0.047	O8e
	192639	99768	M	IA				7.197	0.048	O8e
PZ Gem	45314	30722	U	IA				6.617	0.043	O9:pe
	24534	18350		IA				6.825	0.044	O9.5pe
V783 Cas	0	10147	U	IA?		6.330	36.900	9.910	0.182	Bpe
V725 Tau	245770	26566	U	XNG/L				9.267	0.256	Bpe

Table 6 is presented in its entirety in Appendix A.

Table 7. OBSG stars above the threshold T_h.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle Hp \rangle$ (mag)	Ampl. (mag)	Sp. type
	66811	39429	M	IA?		1.880			2.136	0.026	O5Iaf
	206267	106886	U	GCAS					5.644	0.049	O6 (f)
NSV 08031	152408	82775	U	IA					5.829	0.040	O8Iab+...
	61827	37334	U	IA					7.749	0.093	O8/O9Ib:
	152424	82783	U	IA					6.384	0.051	O9Ia
NSV 06024	112244	63117	U	ACYG?		1.845		2.003	5.372	0.045	O9Ib
UV Aur	34842	25050	P	M?	394.420				9.608	2.248	O9II
	30614	22783	U	L/IA?		1.776	0.885	0.885	4.295	0.040	O9.5Ia SB:
	188209	97757	U	ACYG?		5.234		5.233	5.605	0.051	O9.5Ia
	195592	101186	U	ACYG?		1.832	2.414	0.085	7.215	0.062	O9.5Ia

Table 7 is presented in its entirety in Appendix A.

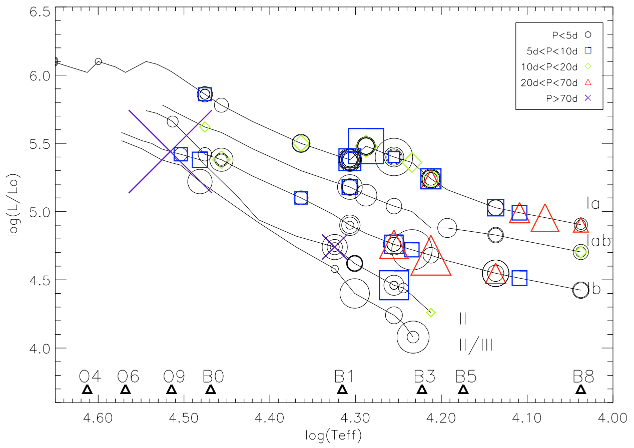

Fig. 10. Periodicities as a function of spectral type and luminosity class (cf. de Jager 1980). The tracks have been plotted according to the values of Vanbeveren et al. (1998). Symbol size is proportional to the amplitude of the variation.

the diagram. Intermediate periods (10d $< P <$ 20d) are mostly located between the above two groups. Short periods ($P <$ 5d) are more scattered across the diagram (although still more to the lower left), but this tendency also appears when the new periods (some of them are not reliable) are not taken into account. Longer periods ($P >$ 70d) are too few to conclude anything. Nevertheless, we confirm the effect shown in de Jager (1980) for a bigger sample with greater spread in spectral types. All the "variable" OBSG stars and their parameters are presented in Table 7.

Table 8. OBSG star proportions in 3 mag bins.

		$H_p \leq 6$	$6 < H_p \leq 8$	$H_p > 8$	Total
OB stars	ampl. $\geq T_h$	214	322	215	751
	$T_l \leq$ ampl. $< T_h$	90	270	291	651
	ampl. $< T_l$	149	429	427	1005
	Total	453	1021	933	2407
OBSG stars	ampl. $\geq T_h$	49	105	47	201
	$T_l \leq$ ampl. $< T_h$	14	65	98	177
	ampl. $< T_l$	12	65	121	198
	Total	75	235	266	576

Figure 8 also shows that there is a tendency for OBSG systems to have longer periods. This might be attributed in part to the larger size of the components (Söderhjelm & Dischler 2005).

Finally, we note that the number of detached (EA) versus contact (EB) binary systems in this category is about equal, compared to a higher fraction of contact binaries among OBMS stars. Considering that surviving supergiant systems would have to have been farther apart than those that merged (Podsiadlowski 2006), this explains a greater relative number of detached systems among OBSGs.

5.3. Special cases

All the previously known periodically varying stars that were deleted because of a significant number of flagged points or were located below T_h, are presented in Table 9 and their lightcurves are presented in Appendix B3 and B4. As indicated by their number (≈1%), their effect on the threshold calculations is negligible. Moreover, the distribution of their periodicities and amplitudes does not visibly differ from the above results, and the

Table 9. Periodic stars not included because of too many flagged points or below T_h.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	$\langle H_p \rangle$ (mag)	Ampl. (mag)	Sp. type
				Not incl.	Total : 7			
				OBMS stars	Total : 6			
DH Cep	215835	112470	P	?	2.111	8.667	0.090	O5.5
V1331 Aql	173198	91910	P	EA	1.364	7.870	0.259	B1Vvar
V427 Cep	239676	105960	P	EB	1.911	9.223	0.117	B2
AN Dor	31407	22663	P	EA	2.033	7.621	0.136	B2/B3V
HY Vel	74560	42726	P	EB?	3.102	4.773	0.055	B3IV
V686 CrA	175362	92989	P	SPB?	3.674	5.315	0.078	B3V
				OBSG stars	Total : 1			
V731 Mon	47240	31697	P	ACYG	2.742	6.204	0.044	B1Ib
				Below Th	Total : 18			
				OBMS stars	Total : 14			
V486 Cas	3950	3346	P	?	5.543	6.967	0.034	B1III
kap Sco	160578	86670	P	BCEP?	0.202	2.317	0.019	B1.5III
V1046 Ori	37017	26233	P	SPB?	0.901	6.518	0.029	B1.5V
V470 Cyg	228911	100193	P	EB	1.873	8.550	0.055	B2+...
gam Peg	886	1067	P	BCEP	0.152	2.755	0.022	B2IV
nu. Cen	120307	67464	P	SPB	2.625	3.323	0.019	B2IV
V387 Cep	217943	113853	P	SPB	4.176	6.738	0.034	B2V
V1377 Ori	37055	26263	P	SPB	1.014	6.362	0.033	B3IV
KT Lup	138769	76371	P	SPB	2.089	4.490	0.023	B3IVp
V490 Per	25799	19178	P	SPB	0.912	7.065	0.038	B3V...
V1148 Tau	29376	21575	P	SPB	1.061	6.993	0.041	B3V
XZ Lep	41814	28973	P	SPB	0.935	6.608	0.029	B3V
IS Lup	128585	71666	P	SPB?	0.855	9.312	0.091	B3V
V2111 Cyg	191811	99415	P	SPB	1.442	7.637	0.052	B3V
				OBe stars	Total : 1			
V1012 Cen	128588	71709	P	SPB?	5.516	9.126	0.092	B3Vne
				OBSG stars	Total : 3			
V2371 Oph	157485	85189	P	BCEP	0.213	9.149	0.087	B1/B2Ib
V348 Nor	147985	80563	P	BCEP	0.132	7.964	0.060	B1/B2II/III
V856 Cen	112481	63250	P	BCEP	0.255	8.373	0.070	B2Ib

4 periodic OBSG stars that were deleted or located below the threshold T_h have periods in the range $P < 5$ days and would not influence the interpretation of Fig. 10.

As mentioned earlier, LBV stars HR Car, AG Car and P Cyg (B2evar, B2:pe and B2pe, respectively) have been included in the OBe category. They represent 1% of the OBe stars and considering the error of 4% (cf. Table 2) on the level of variability of this class, it is not significant. Moreover, their HIPPARCOS data do not show any periodic variations and thus do not influence the results of the analysis of the periodic components. There are also a few unconfirmed LBV candidates according to Clark et al. (2005) within our sample but we cannot exclude them from this analysis without further evidence of their true status.

Star HIP34646 (HD55173, B3/5V(p)) was flagged under category 2 (corresponding to *FAST data only*) part of the time, hence the origin of the scatter. The unflagged points correspond to the "seemingly perfect" eclipsing binary lightcurve. However the value of the peak-to-peak amplitude indicated in the table in Appendix A represents the real amplitude of the variations due to binarity because the errors (significantly larger on the flagged points in this case) were taken into account.

Stars HIP65474 and HIP81305 have been classified as binaries (with "?") because of the shape of the dips seen in the lightcurves and the position of the lack of points about 0.5 phase later than the "first" dip. Of course, our choice can be discussed as stressed by "?" added to their variability type, but in this case, those two stars do not affect the statistics.

Star HIP10486 is definitely variable, almost certainly periodic but we do not have the definitive period. It might be an eclipsing binary but changing the period might affect the shape of our light curve to a large extent. Stars HIP31593 and HIP78526 belong to the eclipsing binary group as shown in Table 4. They have also been represented in the "New periodic variables" group because they were not detected as variable before this study (HIP31593) or before the article by Otero et al. (2003, HIP78526).

Some Be stars show typical outbursts (e.g. HIP32947, HIP35933, HIP74147, HIP88149). There are 3 studied Oe stars in the sample (HIP27941, HIP37074 and HIP30722) and their spectral types have been estimated to be too early (Negueruela et al. 2004), they are rather O8.5Ve, B0IVe and O9.5IVe, respectively. Rauw et al. (2007) find long term spectroscopic variations for HIP30722 (HD45314) and HIP37074 (HD60848), and our study points toward a new shorter period of 2.983 days for HIP37074, that remains to be studied in more detail.

6. Conclusions

First of all, we note that although this analysis is presented for $Hp \leq 10$ mag, the sample is complete only down to $Hp = 8$ mag. All the figures and statistics have also been calculated when limiting the sample to $Hp = 8$ mag, and no major difference was noted. Thus the conclusions are not affected by our choice of limiting magnitude.

In our sample, there are about 26 ± 2% intrinsically variable stars, which compares to the statistics given in Marchenko et al. (1998) for the WR-stars of ≈33 ± 19%. These results are similar, with a possibly higher variability among WR stars probably induced by the presence of the dense stellar winds (e.g., rotational modulation: WR6, dust formation episodes or blobs: WR137).

This analysis has enabled us to constrain the differences of variability among three classes of intrinsic variability (OBMS, OBe and OBSG stars). Indeed, OBe stars are much more variable than the two other intrinsic classes (75% compared to 17 and 35% for OBMS ans OBSG stars, respectively). The large physical sizes of the OBSG stars may explain the longer periods, compared to the OBMS sample, of the eclipsing binaries with an OBSG component. On the other hand, we note that there are more eclipsing binaries among OBMS stars, probably because those stars are more stable. Moreover, the proportion of contact systems is twice that of detached systems among OBMS stars. This might be an observational bias related to the closeness of the components in OBMS systems (i.e., contact systems are more variable and thus easier to observe).

The unique photometric data base of the HIPPARCOS program archive has enabled us to find a number of useful trends in variability among OB stars. It is expected that large, uniform photometric programs, space or ground-based, will provide even more impressive quantities of data of even higher quality. It is already the case for space missions such as the Canadian satellite MOST, the European COROT and the newly launched KEPLER mission. Large quantities of extremely precise data will soon enable one to enlarge this kind of statistical analysis of the variability of OB stars on other timescales.

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Appendix A: Variable OB stars in the HIPPARCOS catalog according to this study

This appendix presents tables of the stars classified as "variable" in this study. The variability types used here are described in the "general catalog of variable stars" (Samus et al. 2004) and in Gautschy & Saio (1996). The main types are I, IA, L, SDOR et GCAS for irregular variations; ACYG, BCEP, SPB, ACV, PVTEL, SR, SXARI for pulsating stars; and E, EA, EB for eclipsing binaries.

Table A.1. OB eclipsing binaries of the HIPPARCOS catalog.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_p \rangle$ (mag)	Ampl. (mag)	Sp. type
					OBMS		Total : 94				
V444 Cyg	193576	100214	P	EA	4.213				8.060	0.243	O6
NX Vel	73882	42433	P	E:	1.460				7.292	0.074	O8V:
V1182 Aql	175514	92865	P	EB	1.622				8.747	0.191	O8:Vnn
TU Mus	100213	56196	P	EB/KE	1.387				8.427	0.518	O8 (+O8)
V382 Cyg	228854	100135	P	EB	1.886				8.730	0.830	O8
del Cir	135240	74778	P	EA	3.902				5.056	0.154	O8.5V
AO Cas	1337	1415	P	EB	3.523				6.062	0.198	O9IIInn
CC Cas	19820	15063	P	EB/DM	3.366				7.237	0.108	O9IV
LZ Cep	209481	108772	P	EB	3.070				5.554	0.099	O9V
LY Aur	35921	25733	P	EB/SD	4.003				6.944	0.722	O9.5III
XZ Cep		111257	P	EB/DM:	5.098				8.619	0.753	O9.5V
V745 Cas	1810	1805	P	EW	1.411				8.104	0.142	B0IV
AB Cru	106871	59935	P	EB	3.413				8.527	0.567	B0IVvar
V2107 Cyg	191473	99246	P	EA	4.285				8.601	0.130	B0IV
Y Cyg	198846	102999	P	EA/DM	2.996				7.335	0.473	B0IVv SB
NY Cep	217312	113461	P	EA	15.276				7.514	0.086	B0IV
V478 Cyg	193611	100227	P	EB	2.881				8.799	0.261	B0Vp
V649 Cas	219634	114904	P	EA	2.391				6.598	0.069	B0Vn
UU Cas		117576	P	EB/DM	8.520				9.934	0.379	B0.5III
del Pic	42933	29276	P	EB/D:	1.673				4.651	0.205	B0.5IV
AI Cep	239767	107500	P	EB/DM	4.225				9.424	0.577	B0.5V:pvar
	213405	110998[a]	U	EA?		2.847		2.847	8.099	0.077	B0.5V
AH Cep	216014	112562	P	EW	1.775				6.977	0.277	B0.5V:nn
V431 Pup	69882	40596	P	E	9.363				7.234	0.080	B1III:
VZ Cen	103146	57895	P	EB	4.929				8.350	0.352	B1III:var
HX Lup	125721	70270	P	EB?	3.088				6.056	0.046	B1III
V380 Cyg	187879	97634	P	EA	12.426				5.676	0.101	B1III
V1898 Cyg	200776	103968	P	EB	1.513				7.812	0.241	B1IV:p
EM Cep	208392	108073	P	EW	0.806				7.085	0.126	B1IV:
eta Ori	35411	25281	P	EA/BCE	7.990				3.312	0.243	B1V+B2
VV Ori	36695	26063	P	EB	1.485				5.327	0.257	B1V
V Pup	65818	38957	P	EB/SD	1.455				4.433	0.533	B1Vp+B2
LN Mus	110946	62339	P	EB	3.672				9.265	0.311	B1V:
alf Vir	116658	65474	P	EB?	4.014				0.888	0.035	B1V
eta Cen	127972	71352	P	EB	1.285				2.276	0.071	B1Vn+A
pi. Sco	143018	78265	P	EB	1.570				2.829	0.037	B1V+B2V
V1012 Sco	155775	84409	P	EB	1.515				6.717	0.061	B1V
V701 Sco	317844	85985	P	EW/KE	0.762				8.811	0.454	B1:V:nn
V1331 Aql	173198	91910[d]	P	EA	1.364				7.870	0.259	B1Vvar
V446 Cep	210478	109311	P	EA	3.808				7.355	0.079	B1V
CW Cep	218066	113907	P	EA/DM	2.729				7.736	0.251	B1:V:var
mu.01 Sco	151890	82514	P	EB/SD	1.446				2.957	0.273	B1.5IV+B
V436 Per	11241	8704	P	EA/D	25.936				5.485	0.237	B1.5V
HX Vel	74455	42712	P	EB?	1.124				5.417	0.044	B1.5Vn
u Her	156633	84573	P	EB	2.051				4.785	0.404	B1.5Vp
pi.05 Ori	31237	22797	P	EB?	3.700				3.641	0.058	B2III SB
MS CMa	56554	35168	P	EA	6.171				7.095	0.098	B2III/IV
psi Ori	35715	25473	P	EB	2.526				4.514	0.044	B2IV
V954 Sco	149779	81508	P	EB	1.269				7.625	0.273	B2IV
V461 Car	66546	39225	P	EA	2.515				6.119	0.067	B2IV-V
V1384 Ori	40005	28142	P	EA	6.572				7.203	0.233	B2V
V1388 Ori	42401	29321	P	EB	2.187				7.494	0.343	B2V
LZ CMa	54912	34579	P	EB	3.309				5.635	0.044	B2V
MX CMa	57192	35461	P	EB	2.486				6.757	0.065	B2V
QZ Pup	64503	38455	P	EB	1.112				4.430	0.058	B2V
TU Mon		38523	P	EB	5.049				9.286	0.183	B2Vn
XY Pyx	71801	41515	P	EB	0.923				5.702	0.069	B2V
CV Vel	77464	44245	P	EA/DM	6.889				6.692	0.424	B2V+B2V
V1040 Sco	142184	77859[b]	P	EB/SD	0.508	0.508	**1.017**		5.398	0.037	B2V
V539 Ara	161783	87314	P	EA/DM	3.169				5.699	0.372	B2V+B3V
V599 Aql	176853	93502	P	EB	1.846				6.707	0.044	B2V
V1773 Cyg	193536	100142	P	EB?	2.985				6.423	0.055	B2V
V1792 Cyg	198784	102953	P	EB	3.303				7.308	0.100	B2V
V383 Cep	208106	107913	P	EB	1.496				7.454	0.328	B2Vnp
V470 Cyg	228911	100193[d]	P	EB	1.873				8.550	0.055	B2+...
V427 Cep	239676	105960[d]	P	EB	1.911				9.223	0.117	B2
NO Vel	69144	40285	P	EB	4.823				5.090	0.035	B2.5IV
IT Lib	138503	76161	P	EB	2.267				9.111	0.522	B2/3IV:n:
AN Dor	31407	22663[d]	P	EA	2.033				7.621	0.136	B2/B3V
V4197 Sgr	177559	93785	P	EW	0.715				8.253	0.648	B2/3V(n)

Table A.1. continued.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_\mathrm{p} \rangle$ (mag)	Ampl. (mag)	Sp. type
V393 Sco	161741	87191	P	EB	7.713				7.613	0.674	B3III
HY Vel	74560	42726^d	P		3.102				4.773	0.055	B3IV
V360 Lac	216200	112778	P		10.082				5.943	0.063	B3IV:var
AR Cas	221253	115990	P		6.066				4.849	0.039	B3IV
lam Tau	25204	18724	P		3.953				3.395	0.128	B3V+A
EO Aur	34333	24744	P	EB/SD	4.066				7.871	0.541	B3V+B3V
WX Lep	37622	26612	P	EB	1.840				7.966	0.088	B3Vn
AE Pic	46792	31068	P	EB	2.982				6.103	0.057	B3V
	47247	31593^b	U	EA		0.993	**1.986**	2.095	6.315	0.093	B3V
V462 Car	66768	39310	P	EB/IA	1.106				6.724	0.166	B3V(n)
V438 Pup	71302	41250^c	U	EA?		1.183			5.918	0.139	B3V
QX Car	86118	48589	P	EA/DM	4.478				6.626	0.395	B3V+B3V
V345 Vel	90000	50780	P	EA	10.495				7.528	0.211	B3V
V3894 Sgr	161756	87163	P	EB	2.619				6.352	0.130	B3Vn
V1441 Aql	177624	93732	P	EB	2.374				6.937	0.102	B3V
sig Aql	185507	96665	P	EB	1.950				5.195	0.125	B3V+B3V
MR Cyg		108508	P	EB	1.677				8.881	0.524	B3V
GT Cep	217224	113385	P	EA/SD	4.909				8.279	0.629	B3V
FZ CMa	52942	33953	P	EA	1.273				8.170	0.284	B3n
AO Mon	53883	34299	P	EA	1.885				9.676	0.547	B3+B5
V2126 Cyg	235271	101439	P	EB	5.891				9.023	0.134	B3
RS Sgr	167647	89637	P	EB	2.416				6.025	0.209	B3/B4IV/V
FF CMa	55173	34646	P	EB/KE	1.213				7.468	0.444	B3/5V(p)
zet Phe	6882	5348	P	EA/DM	1.670				3.953	0.304	B6V+B0V
					OBe		Total : 7				
V1036 Sco	159176	86011	P	EB?	3.367				5.705	0.040	O5/6(e)
V1007 Sco	152248	82691	P	EA	5.817				6.125	0.127	O7e
V729 Cyg		101341	P	EB/D/G	6.597				9.139	0.278	O7e
SX Aur	33357	24201	P	EB/KE	1.210				8.518	0.482	B1:V:ne:
AI Cru		59026	P	EB	1.418				9.645	0.631	B2IVe
GU CMa	52721	33868	P	EB	1.610				6.579	0.214	B2Vne
IU Aur	35652	25565	P	EB/SD	1.811				8.439	0.546	B3Vnne
					OBSG		Total : 26				
V884 Sco	153919	83499	P	EB	3.411				6.573	0.066	O5f
UW CMa	57060	35412	P	EB/KE:	4.393				4.904	0.421	O7f
MY Ser	167971	89681	P	EB	3.322				7.549	0.237	O8/9f
V918 Sco	149404	81305	P	EA?	9.813				5.540	0.037	O9Ia
tau CMa	57061	35415	P	EW/GS	1.282				4.336	0.058	O9Ib
V453 Sco	163181	87810	P	EB/GS	12.006				6.684	0.413	O9.5Ia/ab
del Ori	36486	25930	P	EA	5.732				2.148	0.097	O9.5II
QZ Car	93206	52526	P	EB/GS	5.999				6.325	0.206	B0Ib:
V861 Sco	152667	82911	P	EB/GS	7.848				6.260	0.260	B0.5Ia
GP Vel	77581	44368	P	E	8.965				7.005	0.096	B0.5Ib
V1765 Cyg	187459	97485	P	EA/GS	13.374				6.499	0.100	B0.5Ibvar
V373 Cas	224151	117957	P	E	13.419				6.087	0.069	B0.5IIv SB
V421 Pup	68026	39968	P	EB	5.417				9.093	0.145	B1II
QR Ser	168183	89753	P	EB:	4.016				8.313	0.112	B1Ib/II
V448 Cyg	190967	99021	P	EB	6.520				8.216	0.602	B1Ib-II
FY Vel	72754	41882	P	EB:/GS	33.840				6.944	0.264	B2Iape
V390 Pup	62747	37751	P	EA	3.928				5.556	0.059	B2II
V399 Pup	64014	38186	P	EA	3.910				9.343	0.222	B2II
FM CMa	53756	34221	P	EA	2.789				7.306	0.258	B2/B3II
V1069 Sco	152504	82819	P	EA	5.347				8.620	0.243	B2/B3II
V1081 Sco	158186	85569	P	EA	8.770	8.770	1.957		7.004	0.099	B2/B3II
RZ Sct	169753	90382	P	EA/GS	15.190				7.675	0.314	B3Ib
V368 Cas	19644	14936	P	EA	4.452				8.365	0.438	B3II-III
V438 Per	13970	10704	P	EB/GS?	3.509				8.360	0.092	B5Ib
V505 Mon	48914	32397	P	EB/GS	53.781	53.780	30.303		7.231	0.249	B5Ib
MP TrA	143028	78526^{b,c}	U	EA		2.070		2.070^c	7.789	0.099	B7Ib/II
			Total:				127				

Table A.1 is the complete version of Table 4. The columns are: the variable name, the HD number, the HIPPARCOS number, the HIPPARCOS variability flag, the variability type we assigned them in this study, the HIPPARCOS period (if any), the new periods found in this study (2 columns, for a possible second period), the periods found by Koen & Eyer (2002) (if any), the Hp magnitude, the mean amplitude calculated here and the spectral type according to the Vizier database.

[a] Koen et al. (2002); [b] This study; [c] Otero et al. (2003); [d] refers to the stars that were not included in the study or below T_h.

Table A.2. OBMS stars above the threshold T_h.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)	CK P(d)	$\langle H_\mathrm{p} \rangle$ (mag)	Ampl. (mag)	Sp. type
	97950	54948	D	IA				9.019	0.114	O5
S Mon	47839	31978	U	SR/L?		3.271		4.551	0.040	O7
	91824	51773		IA				8.129	0.068	O7
	152623	82876	D	IA				6.726	0.043	O7
NSV 08060	152723	82936	U	BCEP?		0.395		7.150	0.065	O7
gam02 Vel		39953	U	BCEP?		1.384		1.705	0.044	O8III
	96670	54358	U	IA				7.467	0.055	O8
V871 Cen	101205	56769	U	IA				6.474	0.092	O8var
	124314	69628	D	IA				6.696	0.040	O8
V1809 Cyg	203064	105186	U	L?				5.022	0.031	O8
	57236	35493	U	IA				8.799	0.128	O9V
V1075 Sco	155806	84401	U	IA				5.601	0.080	O9
	16429	12495	D	IA?		12.053		7.817	0.059	O9.5III
	151564	82378	U	IA				8.026	0.072	O9.5IV
AE Aur	34078	24575	U	IA?				6.053	0.056	O9.5Vvar
V961 Cen	115071	64737	P	SPB	1.366			8.022	0.110	O9.5V
	125206	70052	U	IA				7.981	0.072	O9.5V
	149757	81377	M	IA				2.570	0.027	O9.5V
V744 Her		87280	U	?		27.778		6.746	0.042	Bpsh
V473 Per	13831	10615	U	IA				8.308	0.078	B0IIIp
NSV 01458	25638	19272	U	IA			2.871	7.042	0.630	B0III
DL Cam	28446	21148	U	IA				5.826	0.035	B0III SB
	164340	88352	U	IA				9.246	0.109	B0III
V808 Cas		114815	P	SPB	1.300			9.812	0.187	B0III:p:
RX Cyg	192035	99424	U	L?				8.242	0.075	B0III-IV(n)
	81370	46032	U	IA				8.796	0.096	B0IV:
V413 Lac		111071	P	SPB	1.509			9.786	0.144	B0IVn
SZ Cam	25639	19270	P	?	2.699			7.144	0.590	B0V
	42259	29201	U	IA				8.618	0.085	B0V
	71609	41388	U	IA				7.833	0.088	B0V
		106884	D	?				6.673	2.340	B0V
		106890	U	?				5.696	0.221	B0V
	235549	106529		IA				9.086	0.097	B0
	22253	16917	M	?		0.762	0.762	6.596	0.038	B0.5III
MN CMa	55885	34986	U	IA				9.631	0.170	B0.5III
DF Cru	104705	58783	P	SPB	1.135			7.813	0.074	B0.5III
bet Cru	111123	62434	P	BCEP	0.191			1.156	0.028	B0.5III
	119159	66925	M	SPB?		1.103	0.901	5.976	0.034	B0.5III
	192445	99667	U	L				7.074	0.083	B0.5III
SY Equ	203664	105614	P	BCEP	0.166			8.497	0.084	B0.5IIIn
	191531	99327	U	BCEP?		0.164	0.164	8.341	0.080	B0.5III-IV
V803 Cas	237090	15139	U	IA?		4.652	4.257	9.198	0.156	B0.5IV:nn
	53755	34234	M	BCEP?		0.561		6.480	0.041	B0.5IVn
FN CMa	53974	34301	U	BCEP^a		1.529		5.412	0.031	B0.5IV
	126827	60718	D	L				0.675	0.024	B0.5IV
CY Cru		62937	U	?				8.981	1.646	B0.5IVn
ES Vul	180968	94827	U	BCEP^b				5.458	0.037	B0.5IV
V1294 Aql	184279	96196	U	SPB?		7.752		7.010	0.260	B0.5IV
V732 Mon	47360	31739	P	?	7.207			8.204	0.134	B0.5V
omi Per	23180	17448	P	ELL?	4.419			3.860	0.040	B1III
CY Cam	24094	18151	P	BCEP	0.526			8.459	0.105	B1III
ksi01 CMa	46328	31125	P	BCEP	0.210			4.256	0.050	B1III
	90313	50919	U	IA				8.443	0.089	B1III
bet Cen	122451	68702	U	BCEP^c				0.536	0.029	B1III
	144969	79279	U	SPB?		2.101		8.408	0.074	B1III
sig Sco	147165	80112	P	BCEP	0.247			2.923	0.056	B1III
	3191	2816	U	IA				8.687	0.082	B1IV:nn
V351 Per	13051	10055	U	BCEP^d				8.688	0.141	B1IV:
V455 Sct	173637	92128	U	L				9.225	0.252	B1IV
	7252	5768	U	BCEP?		0.872	0.872	7.196	0.049	B1V SB
V792 Cas	17114	13016	P	ELL?	2.581			9.354	0.220	B1V
		29127	D	IA?				8.528	0.265	B1V
	43907	30075	U	IA				8.684	0.113	B1V:p:
V746 Mon	51193	33361	U	IA?				8.081	0.099	B1V:nn
V637 Mon	52918	33971	P	BCEP	0.191			4.919	0.061	B1V
QZ Vel	85871	48469	P	SPB	1.031			6.449	0.057	B1V
DQ Cru	110863	62291	U	L				9.122	0.175	B1Vp
	115034	64716		IA				8.821	0.091	B1V
	154445	83635	M	IA				5.671	0.033	B1V
BE Cap	191639	99457	U	IA				6.398	0.077	B1V
V417 Cep	198895	102926	U	L				8.416	0.173	B1V
V1931 Cyg	200310	103732	U	BCEP?		0.300	0.300	5.345	0.055	B1V
		107456	U	L				9.094	0.135	B1V:
V439 Cep	209145	108546	U	L				7.734	0.107	B1V
V422 Lac	216092	112698	U	L				7.813	0.064	B1V
V454 Cep	216711	113065	U	IA?				9.187	0.154	B1V
V503 Car	90578	51063	U	L				9.342	0.116	B1.5III
V906 Cen	306387	55499	U	IA			0.208	9.642	0.143	B1.5III
alf Lup	129056	71860	P	BCEP	0.260			2.228	0.031	B1.5III
	73	470	U	IA				8.394	0.121	B1.5IV
MZ Aur	34626	24938	U	IA				8.200	0.143	B1.5IVnp
V372 Car	64722	38438	P	BCEP	0.115			5.642	0.030	B1.5IV
	136298	75141	M	IA				3.143	0.026	B1.5IV

Table A.2. continued.

Var. name	HD $N_{\rm o}$.	HIP $N_{\rm o}$.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_{\rm p}\rangle$ (mag)	Ampl. (mag)	Sp. type
lam Sco	158926	85927	P	BCEP	0.214				1.525	0.054	B1.5IV+...
V1378 Ori	37334	26442	P	SPB	2.437				7.103	0.063	B1.5V
V916 Cen	101794	57106	U	L					8.704	0.203	B1.5V
V2123 Cyg	195907	101411	U	L					7.799	0.133	B1.5V
V787 Cas	13590	10486	U	L/IA?		13.433			8.065	0.238	B2III
nu. Eri	29248	21444	P	BCEP	0.174				3.871	0.119	B2III SB
	66396	39331		IA					8.929	0.088	B2III
V426 Pup	68570	40148	U	L					7.754	0.132	B2III
NSV 04232	74824	42923	U	IA				2.737	5.691	0.053	B2III
Bw Cru		62949		IA					9.081	0.096	B2III
	120928	67912	U	L				12.092	9.818	0.136	B2III:
BU Cir	129557	72121	P	BCEP	0.128				6.083	0.034	B2III
	159792	86363		IA					9.497	0.116	B2III
mu. Sgr	166937	89341	U	SPB?		1.746			3.881	0.112	B2III:
BW Vul	199140	103191	P	BCEP	0.201				6.522	0.229	B2IIIvar
V421 Cep	203025	105091	U	IA					6.477	0.062	B2III
DD Lac	214993	112031	P	BCEP	0.193				5.195	0.117	B2IIIv SB
KV CMa	50118	32856	U	IA?					7.112	0.116	B2III/IV
	67924	39894	U	IA					7.723	0.090	B2III/IV
del Cet	16582	12387	P	BCEP	0.161				4.006	0.031	B2IV
KP Per	21803	16516	P	BCEP	0.202				6.426	0.104	B2IV
lam Eri	33328	23972	U	SPB?		2.959			4.186	0.084	B2IVn
V901 Ori	37776	26742	P	SPB	1.539				6.950	0.044	B2IV
	55856	34940	U	IA?		0.088		0.088	6.273	0.049	B2IV
TY Crv	104337	58587	P	SPB	1.481				5.211	0.056	B2IV
tau01 Lup	126341	70574	P	BCEP	0.177				4.509	0.038	B2IV
gam Lup	138690	76297	P	SPB	2.851				2.701	0.026	B2IV
V848 Ara	152979	83105	U	L					8.144	0.191	B2IV
the Oph	157056	84970	P	BCEP	0.141				3.194	0.030	B2IV
V4372 Sgr	183133	95755	P	SPB	1.018				6.768	0.042	B2IV
V2139 Cyg	199356	103277	U	L					7.192	0.136	B2IVp:
EN Lac	216916	113281	P	BCEP	0.171				5.550	0.039	B2IV
	6226	4983	U	IA					6.798	0.104	B2IV-V
V433 Aur	37367	26606	P	SPB?	4.638	4.639	3.678		6.032	0.043	B2IV-V
MM CMa	55522	34798	P	SPB?	2.729				5.859	0.050	B2IV/V
	56995	35370		IA					8.878	0.093	B2IV/V
	68217	39961	U	IA					5.133	0.028	B2IV-V
V2052 Oph	163472	87812	P	BCEP	0.140				5.849	0.043	B2IV-V
IN Peg	212076	110386	U	L					4.775	0.278	B2IV-V
	232819	17200	U	IA					9.446	0.124	B2V
	39478	27881	U	BCEP?		0.489			8.270	0.078	B2V
	41534	28756	M	?		12.348	8.850	8.837	5.582	0.030	B2V
	46547	31190	U	SPB?		1.681			5.657	0.058	B2V
FT CMa	48917	32292	U	SPB?		1.168			5.182	0.106	B2V
	51285	33309	U	IA?		1.732			8.086	0.075	B2V(n)
	52812	33846	U	IA					6.891	0.046	B2V
FV CMa	54309	34360	U	L					5.725	0.286	B2V:nn
NSV 04058	71130	41037	U	L					1.999	0.071	B2V
V335 Vel	85953	48527	P	SPB	3.756				5.893	0.040	B2V
	93684	52766	U	IA					7.687	0.068	B2V
	103574	58128	U	IA					7.983	0.076	B2V
	124298	69617	U	IA					9.621	0.132	B2V
V761 Cen	125823	70300	P	SPB?	8.812				4.350	0.067	B2V
	170740	90804	U	IA					5.806	0.036	B2V
	172910	91918	U	SPB?		1.199		1.198	4.795	0.026	B2V
V4024 Sgr	178175	93996	U	IA					5.538	0.046	B2V
	182180	95408	U	IA				0.261	5.995	0.048	B2Vnn
V396 Vul	187851	97681	P	BCEP	0.410				7.797	0.079	B2V:nn
	209454	108720	U	?		25		254.453	7.839	0.062	B2V
V365 Lac	209961	109082	P	SPB	1.086				6.238	0.075	B2V SB
	214652	111828	M	L					6.791	0.040	B2:V SB
V399 Cep		386	U	L/IA?					9.245	0.212	B2
V771 Cas		7936	U	IA					9.382	0.164	B2
		17146	U	IA					9.288	0.107	B2
V836 Cen	129929	72241	U	IA					8.030	0.069	B2
V1018 Cen	130903	72710	P	SPB	1.313				7.927	0.121	B2:p
V2172 Cyg	235668	108326	U	L					8.225	0.127	B2
LS CMa	52670	33804	U	IA					5.584	0.061	B2/B3III/IV
V408 Pup	65719	39020	U	IA					9.288	0.153	B2/B3III
	101795	57108	U	IA				5.507	7.330	0.065	B2/B3III
	121531	68222	D	IA?					9.903	0.124	B2/B3III
V692 CrA	166596	89290	U	IA				0.689	5.415	0.071	B2.5III
	40494	28199	U	L					4.305	0.044	B2.5IV
EO Leo	87015	49220	P	SPB?	2.779				5.609	0.037	B2.5IV
V1003 Sco	149711	81472	U	IA					5.817	0.039	B2.5IV
V2014 Cyg	195556	101138	U	L				1.137	4.918	0.034	B2.5IV
NSV 02891	43544	29771	U	IA					5.908	0.054	B2/B3V
	46994	31436	U	IA					7.806	0.061	B2/B3V
	52597	33769	U	IA					7.785	0.067	B2/B3V
V378 Pup	60855	36981	U	SPB?		1.020			5.632	0.086	B2/3V(n)
V403 Pup	64298	38439	U	IA					9.068	0.106	B2/B3V:nn
V375 Car	67536	39530	P	SPB	1.016				6.223	0.103	B2.5Vn
V1008 Cen	127449	71194	U	IA					7.741	0.097	B2/B3Vn
CO Cir	129954	72438	U	L					5.867	0.124	B2.5V

Table A.2. continued.

Var. name	HD $N_{\rm o}$.	HIP $N_{\rm o}$.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_{\rm p}\rangle$ (mag)	Ampl. (mag)	Sp. type
alf Sco	148478	80763	U	L					0.985	0.151	B2.5V
CX Dra	174237	92133	U	L				1.273	5.866	0.178	B2.5V
V341 Sge	186272	96984	U	L					7.803	0.144	B2.5V
V395 Vul	187811	97679	U	L					4.846	0.123	B2.5V
V1624 Cyg	191610	99303	U	L					4.881	0.092	B2.5V
	124327	69633	U	IA				55.991	8.593	0.104	B2/B3
V760 Cas	6417	5161	P	SPB?	1.932				7.135	0.077	B3III
V737 Mon	48282	32088	U	L?					8.862	0.112	B3III
EW CMa	56014	34981	U	L					4.382	0.058	B3III
	61207	37113	U	IA					8.086	0.070	B3III
	72771	41980	U	IA					7.829	0.065	B3III
V485 Car	84375	47549	U	IA					7.093	0.052	B3III:psh
LX Vel	91188	51444	U	L				1030.928	6.590	0.124	B3III
	116053	65223	U	IA					7.750	0.074	B3III
	157455	85308	U	SPB?		2.750		2.748	6.881	0.054	B3III
	167233	89502	U	IA					6.899	0.083	B3III
	67059	39508	U	L?		10.529			7.713	0.126	B3III/IV
V420 Pup	67698	39834	U	L					6.481	0.303	B3III/IV
	124834	70042	M	IA					6.613	0.038	B3III/IV
omi Vel	74195	42536	P	SPB/IA	2.798				3.535	0.050	B3IV
IY Vel	76566	43807	U	SPB?		0.921			6.210	0.049	B3IV
V514 Car	92287	52043	P	SPB	1.453				5.848	0.039	B3IV
V817 Cen	105521	59232	U	L?		42.840		42.409	5.468	0.185	B3IV
	116862	65630	U	SPB?		1.582			6.231	0.047	B3IV
	129123	71953	U	IA					8.879	0.135	B3IV
MQ TrA	143448	78682	U	L					7.104	0.387	B3IV
	164852	88331	M	IA?		1.381		1.261	5.225	0.029	B3IV
	189687	98425	M	SPB?		2.331	5.128		5.106	0.028	B3IV
	239683	106134	U	IA					9.407	0.107	B3IV
KY And	218674	114329	U	IA					6.748	0.056	B3IV SB:
	13669	10475	U	IA					8.403	0.090	B3IV-V
V994 Sco	160124	86432	P	SPB	1.917				7.178	0.108	B3IV/V
Alf Eri	10144	7588	U	IA?		3.731		3.731	0.426	0.064	B3Vp
NSV 01089	20340	15188	U	IA					7.938	0.092	B3V
	21428	16244	D	IA?					4.643	0.087	B3V
	23466	17563	U	IA					5.313	0.032	B3V
V1133 Tau	25558	18957	P	ELL/SP	1.532				5.299	0.046	B3V
	36013	25648	U	BCEP?		40.003	0.347		6.851	0.055	B3V:n
V593 Tau	39340	27808	U	IA					8.131	0.094	B3V
NSV 02931	44506	30143	U	IA					5.477	0.058	B3V
	49260	32354	U	IA					7.171	0.061	B3V
HZ CMa	50123	32810	P	?	14.302				5.755	0.074	B3V
LQ CMa	52356	33673	U	IA					7.171	0.125	B3V(n)
FU CMa	52437	33721	P	SPB	1.109				6.471	0.041	B3Vnn
IL CMa	54031	34248	U	IA?		0.178		0.089	6.295	0.065	B3V
	53857	34262	U	IA					8.274	0.183	B3V
	57593	35611	U	IA					5.938	0.052	B3V
NO CMa	58155	35795	U	IA					5.359	0.045	B3V
NSV 03629	60098	36582	U	IA?		7.195			6.626	0.053	B3V
	62663	37533	U	L				934.579	6.912	0.068	B3V
MX Vel	67341	39584	U	I/L?					6.133	0.070	B3Vnp
PQ Pup	67888	39866	U	L					6.334	0.150	B3V
AI Pyx	75112	43114	U	IA					6.303	0.140	B3V
V492 Car	86659	48782	P	SPB?	1.062				6.157	0.046	B3V
V518 Car	92938	52370	U	L		100		970.874	4.693	0.198	B3V
	99872	55979	U	SPB?		1.504			6.133	0.033	B3V
NSV 05357	102776	57669	U	L					4.270	0.049	B3V
KV Mus	106881	59959	U	L					8.559	0.142	B3Vnn
KZ Mus	109885	61751	P	BCEP	0.171				9.058	0.105	B3V
	129092	72000	U	L/IA?					6.358	0.066	B3V:
	132955	73624		IA					5.409	0.030	B3V
CU Cir	133495	74011	U	SPB?		2.066			8.550	0.092	B3Vn...
	133699	74110	U	IA					6.800	0.058	B3V
	135737	75091	D	SPB?		1.497			6.249	0.034	B3V
	142883	78168	U	IA				0.095	5.857	0.084	B3V
iot Her	160762	86414	P	SPB	3.487				3.750	0.026	B3V SB
V543 Lyr	176502	93177	U	SPB?		23.809	1.859	0.093	6.145	0.103	B3V
V550 Lyr	178329	93808	P	SPB	1.687				6.452	0.059	B3V
NSV 11808	179406	94385	U	IA					5.385	0.030	B3V
QR Vul	192685	99824	U	SPB?		6.321			4.707	0.075	B3V
V381 Cep	203338	105259	U	IA				51.020	5.651	0.078	B3Vv comp
V433 Cep	206135	106712	U	L					8.307	0.156	B3V
eps Cap	205637	106723	U	SPB?		1.570			4.465	0.165	B3V:p
OQ Peg	208057	108022	U	SPB?		1.247	1.048	1.247	5.038	0.038	B3V
UU PsA	209522	108975	U	IA					5.912	0.032	B3V (+B)
V423 Lac	216851	113226	U	L					8.004	0.084	B3V:n
V378 And	217543	113640	U	L					6.533	0.101	B3Vp
	223145	117315		L				2.966	5.119	0.026	B3V
	232161	1621	D	IA?					8.948	0.097	B3
	236737	6775	U	IA					8.585	0.085	B3
	236875	8313	U	IA				56.689	9.500	0.172	B3
V788 Cas	15472	11894	P	ELL/SP	3.038				7.901	0.074	B3
V1156 Ori	35298	25235	P	SXARI	1.854				7.874	0.062	B3vw He wk
	46339	31196	U	IA					9.008	0.104	B3

Table A.2. continued.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_\mathrm{p}\rangle$ (mag)	Ampl. (mag)	Sp. type
V1448 Aql	180126	94596	U	L					8.036	0.191	B3p
V2149 Cyg		105010	U	L					8.872	0.210	B3:nnpsh
V379 And	218325	114100	U	L					7.768	0.132	B3
V380 Pup	61328	37099	U	IA				0.811	9.489	0.430	B3/4V+B8/9
	85860	48547	D	IA					7.018	0.056	B3/5V+B/A

This table is the appendixed version of Table 5.
The columns are: the variable name, the HD number, the HIPPARCOS number, the HIPPARCOS variability flag, the variability type we assigned them in this study, the HIPPARCOS period (if any), the new periods found in this study (2 columns, for a possible second period), the periods found by Koen & Eyer (2002) (if any), the Hp magnitude, the mean amplitude calculated here and the spectral type according to the Vizier database.
The classification is based on the variable types from the GCVS (Samus et al. 2004). The question mark means that the classification is either based on a new period (thus unsure) or that the type cannot be clearly identified from the HIPPARCOS lightcurve.

[a] HIP34301 is reported to have a period $P = 0.123$d.

[b] HIP94827 is reported to have a period $P = 0.609$d.

[c] HIP68702 is reported to have a period $P = 0.157$d.

[d] HIP10055 is reported to have a period $P = 0.374$d.

Table A.3. OBe stars above the threshold T_{h}.

Var. name	HD N_{o}.	HIP N_{o}.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_{\mathrm{p}}\rangle$ (mag)	Ampl. (mag)	Sp. type
V1382 Ori	39680	27941	U	L					7.901	0.131	O6:pe SB
		101425	D	IA					8.851	0.088	O6e
NSV 14069	210839	109556	U	IA					5.128	0.036	O6e
BN Gem	60848	37074	U	GCAS?		2.983			6.868	0.054	O8V:pevar
QZ Sge	188001	97796	U	IA					6.232	0.047	O8e
	192639	99768	M	IA					7.197	0.048	O8e
PZ Gem	45314	30722	U	IA					6.617	0.043	O9:pe
	24534	18350		IA					6.825	0.044	O9.5pe
V783 Cas		10147	U	IA?		6.330		36.900	9.910	0.182	Bpe
V725 Tau	245770	26566	U	XNG/L					9.267	0.256	Bpe
FS CMa	45677	30800	U	GCAS					8.049	0.410	Bpe (shell)
QQ Gem	46264	31236	U	IA					7.657	0.092	Be
Z CMa	53179	34042	R	IN/L					9.765	0.346	Bpe
GG Car	94878	53444	U	L/IA?[a]					8.783	0.438	Bep
CQ Cir	130437	72616	U	IA[b]					9.976	0.132	Be
V4375 Sgr	316285	87136	U	IA					9.016	0.119	Be
V1427 Cyg		106628	U	L					9.197	0.143	Bpe
KX And	218393	114154	U	GCAS?		38.856		38.956	7.091	0.189	Bpe
gam Cas	5394	4427	U	GCAS					2.138	0.029	B0IV:evar
V420 Aur	34921	25114	U	I/L?					7.472	0.121	B0IVpe
V750 Mon	53367	34116	U	GCAS					7.100	0.265	B0IV:e
	166524	89158	D	IA					9.825	0.296	B0Vpe
	206773	107164	U	L?					6.948	0.052	B0V:pe
V739 Mon	49330	32586	U	IA?		19.235	0.267	19.113	8.986	0.091	B0:nnpe
	237056	14166	U	IA					8.971	0.093	B0.5:V:pe
	122669	68817	U	SPB?		0.951		0.951	9.010	0.106	B0.5Ve
CW Cir	134958	74654	U	IA					8.233	0.106	B0.5Vne
V811 Cas	220116	115244	P	SPB?	3.387				8.753	0.223	B0.5Vpe
V555 Per	15450	11722	U	IA					9.062	0.183	B1IIIe
omi Pup	63462	38070	U	IA					4.443	0.034	B1IV:nne
V415 Lac	240010	111785	U	L					9.270	0.121	B1:IV:nnpe
V548 Per		9017	U	L/IA?					9.835	0.324	B1V:pe
V780 Cas	12302	9538	U	IA?		25.638			8.157	0.158	B1:V:pe
V801 Cas	19243	14626	U	L/IA?		25		271.739	6.537	0.098	B1V:e
DE Cam	25348	19008	U	IA					8.229	0.145	B1Vnnpe
V1153 Tau	32190	23436	U	L/IA					8.403	0.356	B1Ve
V413 Aur	33152	24029	U	L					8.182	0.375	B1Ve
V1086 Ori	35439	25302	U	GCAS					4.806	0.145	B1V:pe
V1163 Tau	37318	26574	U	IA					8.474	0.118	B1Vne
V1165 Tau	38010	26998	U	IA					6.815	0.080	B1Vpe
V1167 Tau	248753	27850	U	I/L?					8.440	0.203	B1Vnne
FR CMa	44458	30214	U	GCAS					5.539	0.116	B1Vpe SB
PY Gem	44674	30452	U	L?					8.459	0.116	B1Vne
V801 Cen	102567	57569	U	GCAS					8.936	0.256	B1Vne
LU Mus	116849	65693	U	IA					9.227	0.108	B1Vpe
LV Mus	117111	65848	U	GCAS?				5.115	7.711	0.121	B1Vpe
V1059 Sco	149313	81256	U	GCAS					9.528	0.319	B1:Ve
V448 Sct	170714	90768	U	IA					7.452	0.063	B1Vne
	173219	91946	U	IA					7.891	0.063	B1:V:npe
V457 Sct	174513	92510	U	GCAS					8.656	0.202	B1V:npe
V2113 Cyg	193009	99953	U	GCAS					7.191	0.168	B1V:nnpe
V2135 Cyg	198512	102700	U	L					8.227	0.115	B1Vnnpe
V2153 Cyg	203731	105565	U	IA					7.565	0.095	B1Vne
V2155 Cyg	204116	105699	U	GCAS					7.637	0.254	B1Ve
V357 Lac	212044	110287	U	GCAS					7.263	0.122	B1:V:nnpeva
pi. Aqr	212571	110672	U	GCAS					4.742	0.040	B1Ve
kap01 Aps	137387	76013	U	IA					5.356	0.105	B1npe
V832 Cyg	200120	103632	U	BCEP?					4.719	0.039	B1ne
V810 Cas	220058	115224	U	L					8.620	0.124	B1npe
LS Mus	113120	63688	U	GCAS					5.944	0.103	B1.5IIIne
kap CMa	50013	32759	U	GCAS					3.469	0.146	B1.5IVne
CV Cir	133738	74147	U	GCAS?		15.643			6.977	0.128	B1/2IVne
V581 Per	24560	18424	U	IA					7.817	0.110	B1.5Vne
V907 Cen	98927	55524	U	?		17.858			9.295	0.147	B1.5Ve
V397 Lac		109113	U	IA					9.732	0.118	B1.5V:nne:
LP CMa	52244	33676	U	IA					9.246	0.107	B1/B2e
V764 Cas	7636	6027	U	IA?		6.294		6.294	6.886	0.078	B2IIIne+...
AX Mon	45910	31019	U	I/IA					6.757	0.152	B2:IIIpshev
V337 Vel	88263	49743	U	GCAS					7.972	0.304	B2IIIe
V863 Cen	105382	59173	P	SPB:	1.295				4.405	0.040	B2IIIne
V767 Cen	120991	67861	U	GCAS?				4.260	5.851	0.270	B2IIIe
iot Ara	157042	85079	U	GCAS					5.208	0.054	B2IIIne
V374 Car	66194	38994	U	GCAS					5.760	0.110	B2IVnpe
V345 Car	78764	44626	P	?	137.700				4.610	0.101	B2IVe
QY Car	88661	49934	U	GCAS					5.716	0.123	B2IVnpe
del Cen	105435	59196	U	GCAS					2.511	0.138	B2IVne
V952 Cen	114441	64359	U	IA				0.841	8.064	0.081	B2IVpe
V828 Ara	153261	83323	U	SPB?		6.098		6.087	6.224	0.090	B2IVne
V549 Per	13661	10463	U	IA					7.850	0.072	B2IV-Ve
V960 Tau	36576	26064	P	SPB	1.037				5.655	0.095	B2IV-Ve
ome CMa	56139	35037	U	GCAS					3.968	0.213	B2IV/Ve
mu. Cen	120324	67472	U	GCAS					3.390	0.064	B2IV-Ve
V568 Cyg	197419	102195	U	GCAS					6.633	0.082	B2IV-Ve

Table A.3. continued.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)	CK P(d)	$\langle H_p \rangle$ (mag)	Ampl. (mag)	Sp. type
phi Per	10516	8068	U	GCAS				3.986	0.107	B2Vpe
V777 Cas	11606	8980	U	GCAS				7.049	0.187	B2Vne
CR Cam	21212	16195	U	GCAS				8.397	0.346	B2V:e
CT Cam	22298	16941	U	L/IA				7.765	0.142	B2Vne
DU Eri	28497	20922	U	GCAS				5.530	0.084	B2V:ne
DX Eri	30076	22024	U	GCAS			4.782	5.756	0.090	B2Ve
V1155 Tau	32991	23883	U	GCAS				5.871	0.146	B2Ve
V414 Aur	33232	24118	U	GCAS?		1.657		8.248	0.107	B2Vne
V415 Aur	33461	24238	U	IA				7.836	0.067	B2:V:nne
V416 Aur	33604	24326	U	L				7.379	0.220	B2V:pe
V431 Aur		26354	P	?	16.861			9.069	0.281	B2Ve
	41335	28744		IA				5.220	0.027	B2Vne+
V1390 Ori	42908	29563	U	IA				8.087	0.112	B2Ve
V725 Mon	45901	30992	U	GCAS?		22.222		8.928	0.129	B2Ve
V728 Mon	46380	31199	U	L?				8.071	0.093	B2Vne
V733 Mon	47761	31894	U	L		249.990		8.762	0.250	B2V:pe
V742 Mon	50083	32947	U	SPB?		2.369		6.920	0.056	B2Ve
KZ CMa	50737	33119	U	IA?		24.387		8.721	0.096	B2Vnne
V744 Mon	50868	33267	U	GCAS				7.804	0.180	B2Vne
	55439	34839	D	IA				8.530	0.094	B2Ve
HI CMa	55538	34852	U	GCAS				7.826	0.194	B2Vn(e)
OT Gem	58050	35933	U	GCAS?		6.677		6.381	0.209	B2Ve
FW CMa	58343	35951	U	GCAS				5.197	0.306	B2Vne
V370 Pup	59094	36250	U	SPB?		1.915		8.514	0.115	B2V:ne
V373 Pup	59497	36404	U	GCAS				7.723	0.197	B2V:ne
OW Pup	60606	36778	U	GCAS				5.392	0.178	B2Vne
BT CMi	65079	38855	U	GCAS/I		2.183	2.182	7.750	0.106	B2V(ne)
NR Vel	71934	41501	U	GCAS				7.678	0.212	B2V:e
V353 Car	97151	54572	U	GCAS				7.701	0.106	B2Ve
DG Cru	104722	58794	U	GCAS				7.562	0.236	B2Vne
V955 Cen	114800	64578	U	SPB?		6.491		7.984	0.109	B2Vpe
V1010 Cen	127489	71264	U	GCAS				9.098	0.308	B2Vne
V364 Nor	144320	79038	P	SPB	2.863			9.301	0.110	B2Ve
chi Oph	148184	80569	U	GCAS				4.293	0.136	B2Vne
OZ Nor	148259	80721	U	GCAS				7.358	0.265	B2Ve
V1078 Sco	156468	84745	U	GCAS?		1.966		7.902	0.196	B2V:ne
alf Ara	158427	85792	U	GCAS				2.780	0.087	B2Vne
V1083 Sco	159684	86253	U	GCAS/S		1.292		8.256	0.212	B2Vne
V2048 Oph	164284	88149	U	GCAS?		4.695		4.717	0.180	B2Ve
V4031 Sgr	170235	90610	U	GCAS				6.621	0.113	B2Vnne
V4400 Sgr	171348	91130	U	GCAS				8.091	0.106	B2Vnne
V2119 Cyg	194335	100574	U	GCAS				5.803	0.095	B2Vne
V2120 Cyg	194883	100744	U	GCAS				7.260	0.208	B2Ve
V420 Cep	239618	104883	U	GCAS?			1.709	8.733	0.279	B2Ve
ups Cyg	202904	105138	U	GCAS				4.334	0.283	B2Vne
V2162 Cyg	204722	106079	U	GCAS				7.619	0.102	B2V:nne:
V2166 Cyg	205618	106620	U	GCAS				8.155	0.102	B2Vne
V818 Cas	223501	117514	U	GCAS				7.744	0.122	B2Vn(e)
MX Pup	68980	40274	U	L				4.721	0.230	B2ne
HR Car	90177	50843	U	SDOR/L				7.599	0.574	B2evar
AG Car	94910	53461	U	L				7.261	1.322	B2:pe
BZ Cru	110432	62027	U	SPB?		1.880		5.339	0.056	B2pe
P Cyg	193237	100044	U	L				4.863	0.172	B2pe
V507 Car	90966	51265	U	GCAS				6.418	0.063	B2/B3III:ne
V1339 Aql	187567	97607	U	GCAS				6.465	0.048	B2.5IVe
NT Peg	203699	105623	U	GCAS				6.739	0.145	B2.5IVne
BK Cam	20336	15520	U	GCAS			0.108	4.697	0.057	B2.5Vne
V1150 Tau	29441	21626	U	L/IA				7.639	0.096	B2.5Vne
BV Cam	32343	23734	U	GCAS				5.179	0.140	B2.5Ve
V695 Mon	65875	39172	U	GCAS?		22.713		6.450	0.114	B2.5Ve
V480 Car	81654	46147	U	GCAS?		40.036	39.984	7.892	0.228	B2/3V(e)
	140926	77452	U	GCAS				7.925	0.068	B2/B3Vnne
V3984 Sgr	163868	88123	U	SPB?		4.254		7.345	0.089	B2/B3V:ne
NSV 13966	208682	108226	U	GCAS				5.881	0.048	B2.5Ve
ome Ori	37490	26594	U	GCAS				4.490	0.073	B3IIIe
QV Tel	167128	89605	U	GCAS				5.349	0.080	B3IIIpe
V382 Cep	203467	105268	U	GCAS				5.172	0.130	B3IVe
V434 Aur	37657	26872	U	I?				7.252	0.150	B3Vne
V447 Aur	40978	28783	U	I?		0.090	0.091	7.274	0.119	B3Ve
NSV 02977	45725	30867	U	IA			11.204	3.792	0.063	B3Ve
V339 Pup	49336	32434	U	GCAS				6.160	0.072	B3Vne
LL CMa	50938	33200	U	I?		1.913	1.908	7.577	0.223	B3Ve
V387 Pup	62753	37675	U	GCAS				6.527	0.145	B3Vne
	69404	40397	U	BCEP?		0.449	0.449	6.397	0.055	B3Vnne
	72014	41599	U	IA				6.543	0.049	B3Vnne
V344 Car	75311	43105	U	GCAS				4.439	0.046	B3Vne
OR Vel	75465	43229	U	IA				9.076	0.162	B3Vn:e
OU Vel	76534	43792	U	GCAS				8.093	0.069	B3Vne
IU Vel	77320	44213	U	GCAS				6.009	0.075	B3Vne
KP Mus	100324	56252	U	GCAS?			2.279	8.621	0.119	B3Ve
V774 Cen	120958	67809	U	GCAS				7.567	0.271	B3Vnne
CK Cir	128293	71668	U	IA				6.859	0.087	B3Vne
V846 Ara	152478	82868	U	I/IA				6.310	0.089	B3Vnpe
V2382 Oph	160319	86487	P	BCEP	0.528			7.279	0.055	B3Vne

Table A.3. continued.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_p \rangle$ (mag)	Ampl. (mag)	Sp. type
NW Ser	168797	89977	U	BCEP?		0.439		0.434	6.133	0.073	B3Ve
V558 Lyr	183362	95673	U	GCAS					6.260	0.075	B3Ve
V404 Lac	211835	110177	U	GCAS					8.374	0.198	B3:Ve
V438 Aur	38708	27459	U	IA					8.065	0.104	B3:pe:shell
QY Gem	51354	33493	U	BCEP?		0.852		0.852	7.125	0.097	B3ne

This table is the longer version of Table 6.
The columns are: the variable name, the HD number, the HIPPARCOS number, the HIPPARCOS variability flag, the variability type we assigned them in this study, the HIPPARCOS period (if any), the new periods found in this study (2 columns, for a possible second period), the periods found by Koen & Eyer (2002) (if any), the Hp magnitude, the mean amplitude calculated here and the spectral type according to the Vizier database.

[a] The star is refered to as a EB/GS in the HIPPARCOS catalog with a period of $P = 62.086$d, but we do not see any eclipse in the folded lightcurve in this study.

[b] We classified as GCAS, the irregularly variable stars (no periods) of type BIII-Ve. When a star has no spectral class but only the spectral type O or B, we classified it as IA.

Table A.4. OBSG stars above the threshold T_h.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_\mathrm{p} \rangle$ (mag)	Ampl. (mag)	Sp. type
	66811	39429	M	IA?		1.880			2.136	0.026	O5Iaf
V967 Cen	116781	65637	U	GCAS					7.631	0.168	O9/B1ab:e:
	206267	106886	U	IA					5.644	0.049	O6 (f)
NSV 08031	152408	82775	U	IA					5.829	0.040	O8Iab+...
	61827	37334	U	IA					7.749	0.093	O8/O9Ib:
	152424	82783	U	IA					6.384	0.051	O9Ia
NSV 06024	112244	63117	U	ACYG?		1.845		2.003	5.372	0.045	O9Ib
UV Aur	34842	25050	P	M?	394.420				9.608	2.248	O9II
	30614	22783	U	L/IA?		1.776	0.885	0.885	4.295	0.040	O9.5Ia SB:
	188209	97757	U	ACYG?		5.234		5.233	5.605	0.051	O9.5Ia
	195592	101186	U	ACYG?		1.832	2.414	0.085	7.215	0.062	O9.5Ia
V1074 Sco	154368	83706	P	ACYG	16.106				6.243	0.041	O9.5Iab
	37742	26727	D	IA					1.679	0.029	O9.5Ib SB
	154811	83973	U	ACYG?		1.220			7.008	0.054	O9.5Ib
	202124	104695	U	IA					7.809	0.060	O9.5Ib
	209975	109017	M	ACYG?		1.264			5.121	0.028	O9.5Ib
V689 Mon	47432	31766	U	ACYG?		3.548	6.359	3.549	6.263	0.053	O9.5II
the Mus	113904	64094	U	ACYG?		1.748			5.482	0.037	O9.5II
V2076 Oph	160641	86605	U	IA					9.856	0.148	O9.5-B1Ia(p)
eps Ori	37128	26311	U	IA					1.623	0.041	B0Ia
	91969	51866	U	ACYG?				3.930	6.513	0.056	B0Ia
NSV 06544	122879	68902	U	IA					6.457	0.047	B0Ia
mu. Nor	149038	81122	U	IA					4.919	0.029	B0Ia
V4398 Sgr	171012	90950	P	ACYG	2.420				6.912	0.057	B0Ia/ab
GS Mus	105056	58998	U	ACYG?				3.853	7.392	0.085	B0Iab:pe
	150898	82171	U	IA					5.548	0.038	B0Iab
		3197		IA					9.334	0.105	B0Ib
V526 Car	94909	53479	U	ACYG?		16.972			7.413	0.071	B0Ib
V1357 Cyg	226868	98298	U	ACYG?		2.797		2.798	8.987	0.094	B0Ib
V2157 Cyg	204172	105811	U	ACYG?		2.020	3.049	3.048	5.890	0.045	B0Ib
V429 Cep	205196	106285	U	ACYG?		1.056			7.513	0.054	B0Ib
NSV 04330	76968	43989	U	?		5.751		5.750	7.127	0.061	B0II
		114990	U	L					8.589	0.083	B0II
	18076	13736	U	IA?		1.438		0.736	9.198	0.098	B0II-III
NSV 02641	38771	27366	U	IA					2.004	0.038	B0.5Iavar
DW Cru	112272	63170	U	IA					7.479	0.088	B0.5Ia
NSV 06193	115842	65129	U	ACYG?		10.309		13.382	6.089	0.066	B0.5Ia
NSV 07343	142468	78145	U	ACYG?		2.209			8.032	0.069	B0.5Ia
	152234	82676	U	IA					5.517	0.039	B0.5Ia
	167264	89439	U	IA				2.209	5.344	0.031	B0/1Ia/ab
	194839	100804	U	ACYG?		0.994		3.007	7.624	0.073	B0.5Ia
NSV 04790	88879	50068	U	IA					8.536	0.077	B0.5Iab
	125545	70228	U	IA				0.087	7.458	0.057	B0.5Iab
V4383 Sgr	166443	89129	U	IA					8.739	0.103	B0.5Iab:ne
V342 Vel	89767	50598	U	ACYG?		1.154		0.090	7.244	0.057	B0.5Ib
V513 Car	91943	51857	P	ACYG	6.445				6.739	0.049	B0.5Ib
	93619	52762	U	IA				1.830	7.010	0.059	B0.5Ib
	213087	110817	U	IA					5.597	0.046	B0.5Ib
	190336	98740	U	IA?				0.224	8.642	0.101	B0.7II-III
kap Cas	2905	2599	U	ACYG?		2.646		2.647	4.213	0.068	B1Ia
V786 Cas	13256	10243	U	ACYG?		1.976		2.954	8.725	0.094	B1Ia
	58510	35997	U	IA					6.824	0.064	B1Ia
V499 Car	89201	50272	U	BCEP?		0.082	1.813		7.952	0.068	B1Ia
KY Mus	109867	61703	U	ACYG?		4.482	1.825	4.483	6.270	0.058	B1Ia
	113422	63802	U	IA					8.368	0.079	B1Ia
	114340	64324	U	ACYG?		4.425		7.186	8.143	0.080	B1Ia comp
	115363	64896	U	ACYG?		5.119		5.118	7.905	0.088	B1Ia comp
V1058 Sco	148688	80945	P	ACYG	6.331				5.385	0.062	B1Ia
V900 Sco	152235	82669	U	ACYG?		4.149		4.150	6.415	0.084	B1Ia
zet01 Sco	152236	82671	U	SDOR/L					4.836	0.076	B1Iae
V430 Sct	169454	90281	U	ACYG?				9.224	6.725	0.083	B1Ia
V449 Sct	170938	90907	U	ACYG?		2.273			7.964	0.086	B1Ia
NSV 14337	216411	112881	U	IA					7.343	0.070	B1Ia
V551 Per	13854	10633	P	ACYG?	5.643				6.557	0.058	B1Iab
V790 Cas	15785	12009	U	ACYG?		4.312		4.310	8.478	0.100	B1Iab
V414 Car	96248	54179	P	BCEP	0.703				6.633	0.067	B1Iab
	108002	60570	U	ACYG?		5.155	5.710		6.965	0.062	B1Iab
	154043	83603	U	IA?		0.089		0.090	7.196	0.061	B1Iab:
NSV 10662	168571	89946	U	IA					7.852	0.065	B1Iab/b
	190066	98661	U	IA					6.556	0.053	B1Iab
	194153	100484	U	L					8.633	0.080	B1Iab
V820 Cas	224424	118139	U	IA					8.230	0.072	B1Iab
	52382	33754	U	IA					6.543	0.065	B1Ib
NSV 04317	76510	43868	U	BCEP?		0.632			7.975	0.066	B1Ib
rho Leo	91316	51624	P	ACYG	3.427			1.492	3.797	0.032	B1Ib SB
NSV 05100	96880	54448	U	ACYG?		2.473		2.471	7.670	0.082	B1Ib
	194057	100409	U	IA					7.608	0.060	B1Ib
	54764	34561	U	ACYG?		2.694			6.055	0.036	B1Ib/II
FY CMa	58978	36168	U	IA?		111.116	2.606	109.890	5.574	0.101	B1II
DE Cru	104631	58748	P	SPB	3.688				6.793	0.062	B1II
	150168	81733		IA					5.643	0.031	B1II
V4386 Sgr	167003	89404	U	L?					8.416	0.141	B1Ib/II
bet CMa	44743	30324	P	BCEP	0.251				1.890	0.030	B1II/III

Table A.4. continued.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_p \rangle$ (mag)	Ampl. (mag)	Sp. type
DL Cru	106343	59678	P	ACYG	2.878				6.261	0.068	B1.5Ia
CZ Cir	136239	75224	U	ACYG?		15.625			7.956	0.089	B1.5Ia
V361 Nor	142758	78310	U	IA					7.124	0.050	B1.5Ia
QU Nor	148379	80782	P	ACYG	4.818				5.430	0.064	B1.5Iap
V433 Sct		90267	P	ACYG	6.750				8.300	0.141	B1.5Ia comp
V1768 Cyg	190603	98863	U	ACYG?		3.497		0.947	5.738	0.065	B1.5Ia comp
V2118 Cyg	194279	100548	U	ACYG?		2.416			7.157	0.075	B1.5Ia
OS Vel	75860	43443	P	ACYG	1.938				7.714	0.087	B1.5Iab
	5551	4567	U	IA					7.863	0.081	B1.5Ib
LY CMa	54786	34569	U	L					9.081	0.241	B1/B2Ib:
NN CMa	58011	35769	U	L/ACYG				21.505	7.146	0.286	B1/B2Ib/IIn
	173502	92152	U	IA					9.706	0.126	B1/B2Ib
	54551	34429	U	IA					8.608	0.081	B1/B2II
YZ Pyx	71913	41586	P	BCEP	0.206				7.643	0.059	B1/B2II
	164002	88126	U	SPB?		3.058	1.515		7.397	0.062	B1/B2II
V4382 Sgr	165812	88884	P	BCEP	0.169				7.955	0.066	B1/B2II
V1449 Aql	180642	94793	P	BCEP	0.182				8.342	0.119	B1.5II-III
	14143	10816	U	L/IA?		0.089		0.089	6.780	0.080	B2Ia
V554 Per	14818	11279	U	L/IA?					6.324	0.070	B2Ia
V475 Per	14956	11391	U	ACYG?		1.367		1.367	7.329	0.066	B2Ia
chi02 Ori	41117	28716	P	ACYG	2.868				4.697	0.057	B2Iavar
	60308	36727	U	IA?		0.089		0.089	8.291	0.075	B2Ia
PV Vel	80077	45467	U	GCAS?		3.115		3.116	7.570	0.151	B2Iape
V808 Cen	99953	56050	U	IA					6.533	0.078	B2Ia
	119646	67206	U	ACYG?		5.682		8.962	6.645	0.044	B2Ia
CX Cir	134959	74660	U	L					8.108	0.170	B2Ia
V2174 Cyg	235679	108476	U	ACYG?		1.062			8.979	0.139	B2Ia:
V1073 Sco	154090	83574	U	ACYG?		1.593		1.593	4.915	0.063	B2Iab
	10898	8415	U	ACYG?		1.927	2.857	1.927	7.502	0.056	B2Ib
V963 Ori	43837	30041	U	BCEP[a]		2.584		5.926	8.574	0.085	B2Ibp:
	172694	91725	U	AYCG?		9.263			8.242	0.074	B2Ibe
NSV 13041	193946	100391	U	ACYG?		24.391			9.088	0.115	B2Ib
V337 Cep	206165	106801	U	L					4.844	0.056	B2Ib
	33203	24072	R	IA					6.059	0.033	B2II: comp
PT Pup	61068	37036	U	BCEP[b]		1.051		0.181	5.651	0.032	B2II
	60993	37040	U	L?		9.095	0.090		8.775	0.116	B2II
	62483	37471	U	IA?		3.905			8.213	0.081	B2II
V360 Nor	141318	77645	P	SPB	1.467				5.783	0.034	B2II
	151158	82199	U	IA					8.237	0.070	B2Ib/II
	160430	86515	D	IA					7.971	0.453	B2II
KK Vel	78616	44790	P	BCEP	0.216				6.781	0.068	B2II/III
lam Pav	173948	92609	U	IA				6.181	4.168	0.089	B2II-III
V519 Car	92964	52405	U	ACYG?		14.711		14.680	5.444	0.079	B2.5Ia
PU Gem	42087	29225	P	ACYG	6.807				5.800	0.057	B2.5Ib
V536 Car	98410	55207	P	ACYG	1.453				8.910	0.162	B2/B3Ib/II
	116084	65247	U	IA					5.870	0.052	B2.5Ib
	46185	31088	U	?		2.131			6.740	0.040	B2/B3II:
V639 Cas	225094	274	U	ACYG?		2.880	1.348	2.881	6.336	0.072	B3Ia
V520 Per	14134	10805	U	L/IA?				1.625	6.699	0.093	B3Ia
PX Gem	43384	29840	P	ACYG	13.700				6.364	0.076	B3Ia
omi02 CMa	53138	33977	P	ACYG	24.440				3.008	0.076	B3Ia
OP Vel	75149	43082	U	SPB?		1.086		1.086	5.520	0.051	B3Ia
V504 Car	90706	51150	U	ACYG?		1.600		1.601	7.171	0.070	B3Ia
V4384 Sgr	166628	89203	U	ACYG?		1.404			7.264	0.079	B3Ia/Iab
NSV 10498	167838	89641	U	IA					6.812	0.052	B3Ia/Iab
V1403 Aql	178129	93904	U	ACYG?		5.917		5.912	7.539	0.080	B3Ia
V1661 Cyg	198478	102724	U	L				4.885	4.922	0.053	B3Ia
	224055	117884	U	L					7.343	0.084	B3Ia
	7103	5649	U	IA					8.472	0.086	B3Ib
	250290	28513	U	IA				109.529	7.493	0.055	B3Ib
BU Cru	111934	62913	U	ACYG?		56.956		57.110	6.977	0.160	B3Ib:
	111990	62953	U	ACYG?		2.890		2.891	6.853	0.063	B3Ib
V449 Cep	239923	110200	U	ACYG?		1.220			9.009	0.103	B3Ib
V425 Pup	68535	40139	U	L				4.211	7.898	0.143	B3II
	194779	100771	U	L?					7.837	0.090	B3II
V448 Cep		109606	U	SPB?		20	2.890	211.862	9.658	0.150	B3II:
V715 Mon	49567	32682	U	IA?		4.348		2.559	6.116	0.048	B3II-III
	54104	34355	U	SPB?		1.261		1.671	8.394	0.129	B3II-III
V4030 Sgr	168625	89963	U	L					8.475	0.135	B2/5Ia(e)
V975 Sco	157038	85020	U	IA					6.446	0.074	B4Ia+...
Fg Sge		99527	U	L				0.089	9.351	0.452	B4Ieq-K2Ib
	62150	37444	U	ACYG?		1.534		0.798	7.783	0.077	B4Iab
	4841	4006	U	IA				12.912	7.004	0.074	B5Ia
	13267	10227	U	ACYG?		2.653		2.654	6.466	0.062	B5Ia
eta CMa	58350	35904	U	L				4.704	2.422	0.093	B5Ia
GX Vel	79186	45085	U	IA					5.055	0.071	B5Ia
V922 Cen	102997	57808	U	ACYG?		2.977		2.980	6.608	0.065	B5Ia
	111973	62931	U	ACYG?		9.536		9.536	5.967	0.065	B5Ia
V440 Cep	239828	108714	U	L				2.318	9.475	0.123	B5Ia
	9105	7088		ACYG?		1.866			7.627	0.056	B5Iab
	36371	25984	U	L?					4.801	0.053	B5Iab
NSV 03231	49888	32786	U	IA					7.151	0.069	B5Iab/b
LN Vel	74371	42679	U	IA				8.291	5.269	0.073	B5Iab
V523 Car	94304	53109	P	ACYG	3.296				6.972	0.063	B5Iab

Table A.4. continued.

Var. name	HD N_o.	HIP N_o.	Var. flag	Var. type	HIP P(d)	New P(d)		CK P(d)	$\langle H_p \rangle$ (mag)	Ampl. (mag)	Sp. type
V406 Lac	212455	110500	U	IA					7.983	0.068	B5Iab
	4768	3932		IA					7.672	0.062	B5Ib
NSV 00542	9311	7232	U	ACYG?		58.823		58.651	7.351	0.081	B5Ib
MU CMa	56847	35355	U	ACYG?		0.094	2.698	0.094	8.987	0.107	B5Ib
NSV 05072	95880	53996	U	ACYG?		2.933			7.041	0.066	B5Ib
NP CMa	58200	35829	U	IA					9.056	0.160	B5Ib/II
V782 Cas	12882	9997	U	ACYG?		47.621			7.698	0.081	B6Ia
V425 Per	15497	11769	U	ACYG[c]		5.780		5.783	7.175	0.059	B6Ia
	25914	19404	U	IA					8.161	0.077	B6Ia
NSV 00466	7902	6229	U	ACYG?		5.405			7.079	0.059	B6Ib
V369 Car	91619	51676	U	IA?				1.115	6.201	0.053	B7Ia
HT Sge	183143	95657	U	L					6.956	0.122	B7Ia
V1507 Cyg	187399	97472	P	ACYG	27.971				7.054	0.111	B7Ia:e
LR Vel	80558	45675	U	ACYG?		1.695		1.695	5.977	0.072	B7Iab
	60369	36706	U	IA					8.147	0.097	B7Ib
NSV 00806	14542	11115	U	ACYG?		31.250			7.128	0.060	B8Ia
	17145	13022	U	IA					8.269	0.075	B8Ia
bet Ori	34085	24436	P	ACYG	2.075				0.193	0.039	B8Ia
	105071	59003	U	ACYG?		2.490		1.454	6.354	0.054	B8Ia-Iab
	111558	62722	U	IA					7.280	0.051	B8Ia
FX Lib	142983	78207	U	IA					4.935	0.049	B8Ia/Iab
	184943	96397	U	L?					8.318	0.082	B8Ia
	186745	97209	U	IA					7.166	0.059	B8Ia
V2140 Cyg	199478	103312	U	L?					5.799	0.075	B8Ia
	15620	11841	U	IA					8.497	0.078	B8Iab
V508 Car	91024	51310	P	ACYG	2.399				7.684	0.062	B8Iab
		66904	M	BCEP?		0.461			6.928	0.042	B8Iab:
	155416	84238	U	ACYG?		11.650			6.674	0.048	B8Iab-Ib
	14322	10926	U	ACYG?		0.895		6.467	6.863	0.066	B8Ib
	17857	13608	U	IA				94.607	7.857	0.070	B8Ib
	20567	15698	U	IA					8.676	0.085	B8Ib
	204710	106071	U	IA					7.004	0.047	B8Ib
NSV 13963	208501	108165	U	ACYG?		1.410			5.902	0.060	B8Ibvar
NN Vel	68161	39919	P	ACYG	17.028				5.635	0.034	B8Ib/II

This table is the appendixed version Table 7.
The columns are: the variable name, the HD number, the HIPPARCOS number, the HIPPARCOS variability flag, the variability type we assigned them in this study, the HIPPARCOS period (if any), the new periods found in this study (2 columns, for a possible second period), the periods found by Koen & Eyer (2002) (if any), the Hp magnitude, the mean amplitude calculated here and the spectral type according to the Vizier database.
ACYG type was attributed to variable stars of spectral class Ia-Iab-Ib, and some I/II.
[a] HIP30041 is reported to have a period $P = 0.2$d.
[b] HIP37036 is reported to have a period $P = 0.162$d.
[c] HIP11769 is reported to have a period $P = 16.1$d.

Appendix B: Lightcurves of variable OB stars from the Hipparcos catalog

Above each lightcurve are found the HIPPARCOS number the H_p magnitude, the mean amplitude (derived from this study) the phased period, and the spectral type.

B.1. Catalog of eclipsing binaries

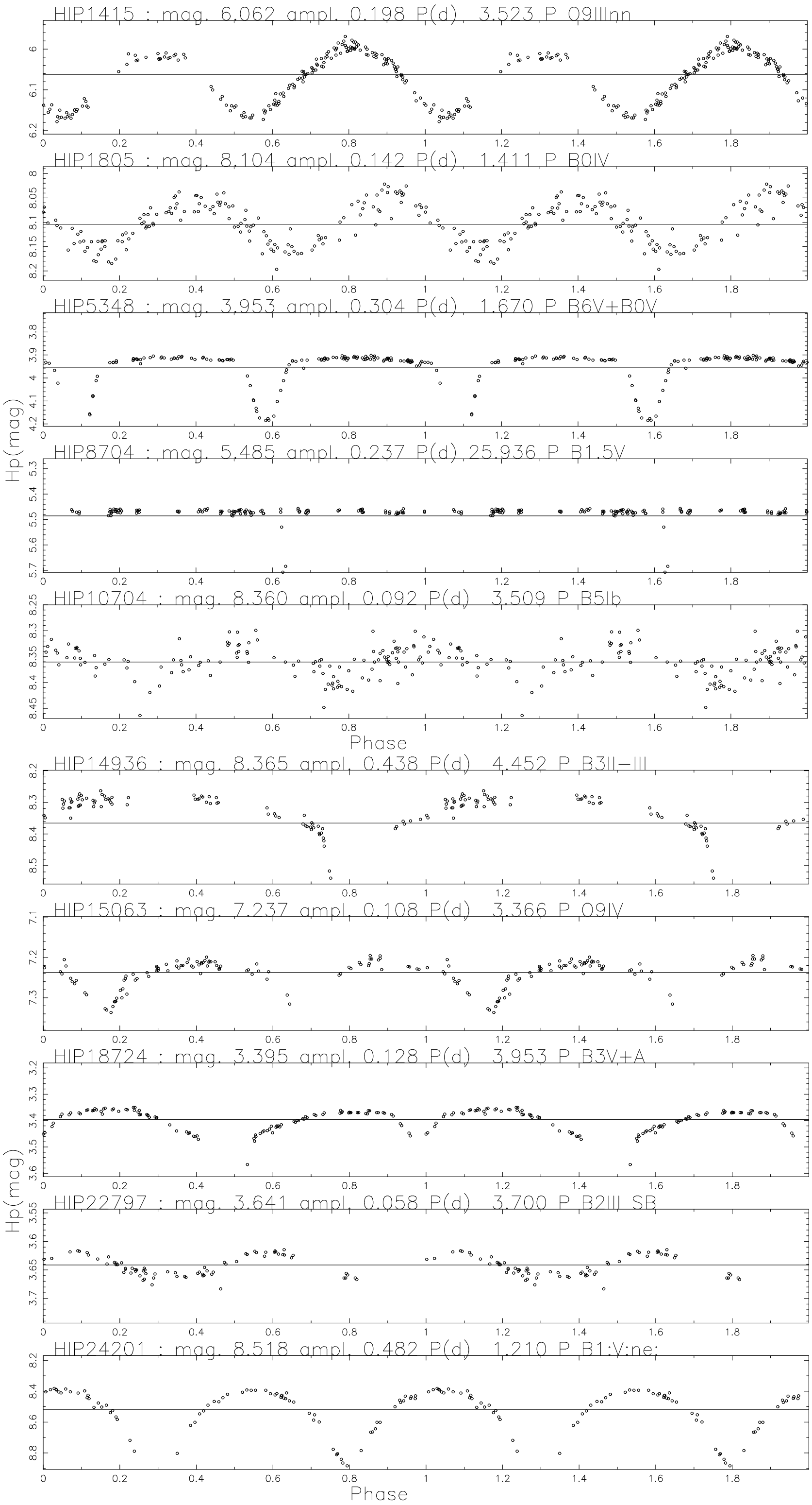
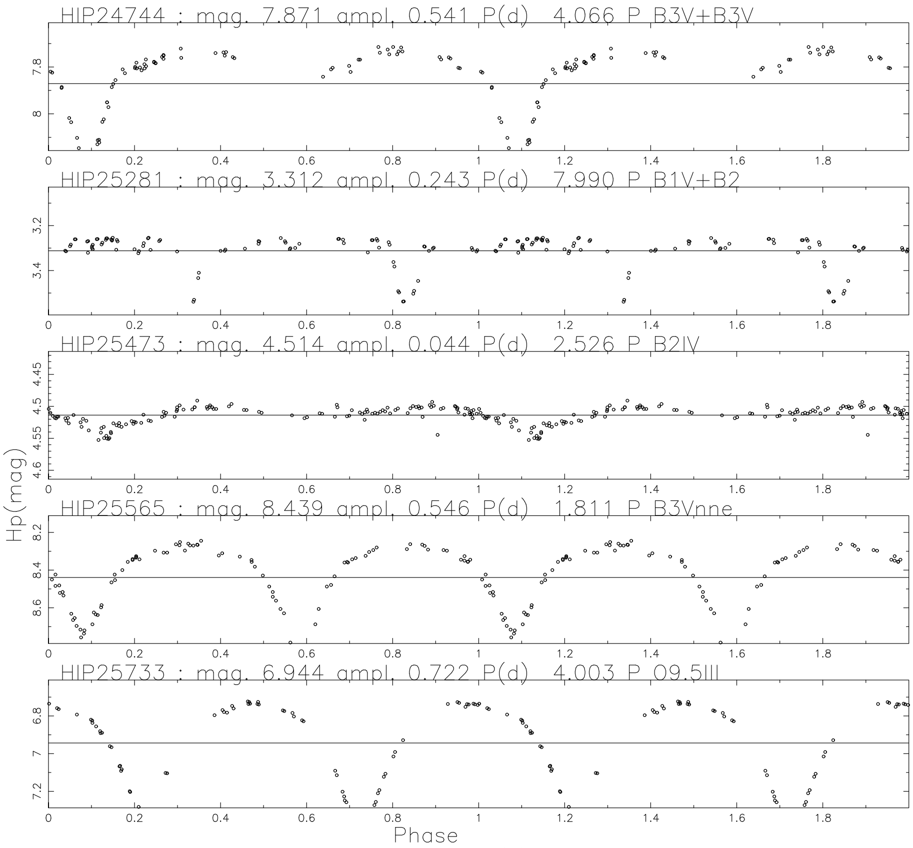


Fig. B.1. This figure plots Hp mag. vs. Phase. Epoch is arbitrarily JD-2 440 000 = 7800, which is the beginning of the HIPPARCOS observations. The Hp magnitude, mean amplitude and periods are accurate to ~0.1%.


HIP24744 : mag. 7.871 ampl. 0.541 P(d) 4.066 P B3V+B3V
HIP25281 : mag. 3.312 ampl. 0.243 P(d) 7.990 P B1V+B2
HIP25473 : mag. 4.514 ampl. 0.044 P(d) 2.526 P B2IV
HIP25565 : mag. 8.439 ampl. 0.546 P(d) 1.811 P B3Vnne
HIP25733 : mag. 6.944 ampl. 0.722 P(d) 4.003 P O9.5III
Hp(mag)
Phase
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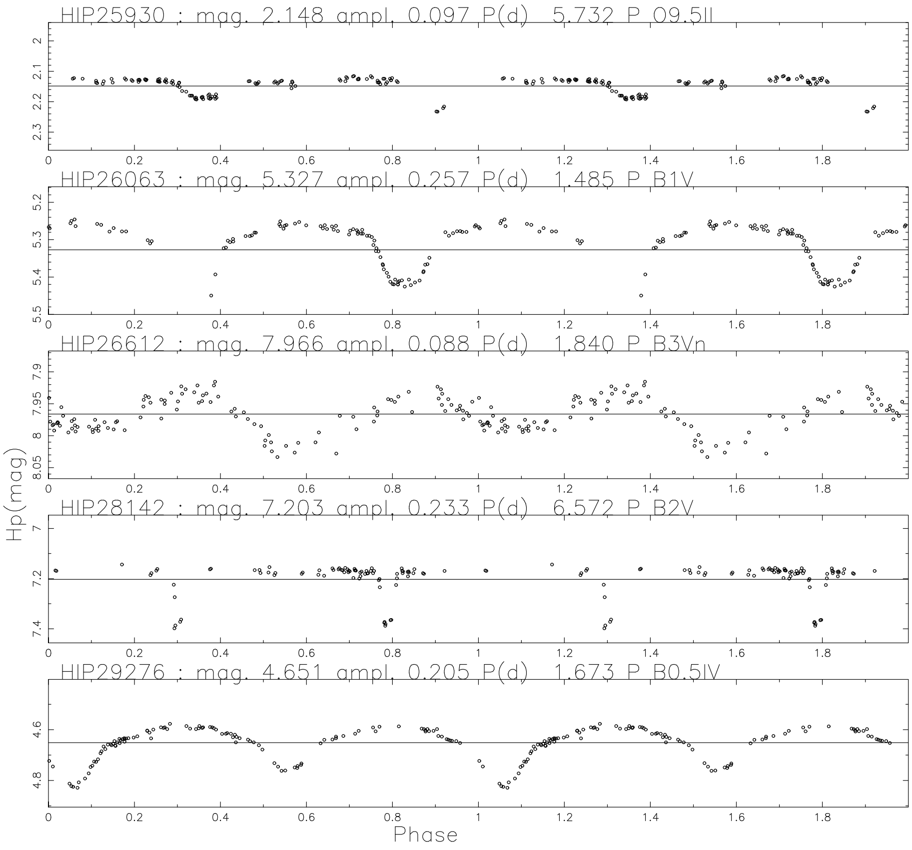
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP25930 : mag. 2.148 ampl. 0.097 P(d) 5.732 P O9.5II
HIP26063 : mag. 5.327 ampl. 0.257 P(d) 1.485 P B1V
HIP26612 : mag. 7.966 ampl. 0.088 P(d) 1.840 P B3Vn
HIP28142 : mag. 7.203 ampl. 0.233 P(d) 6.572 P B2V
HIP29276 : mag. 4.651 ampl. 0.205 P(d) 1.673 P B0.5IV
Hp(mag)
Phase
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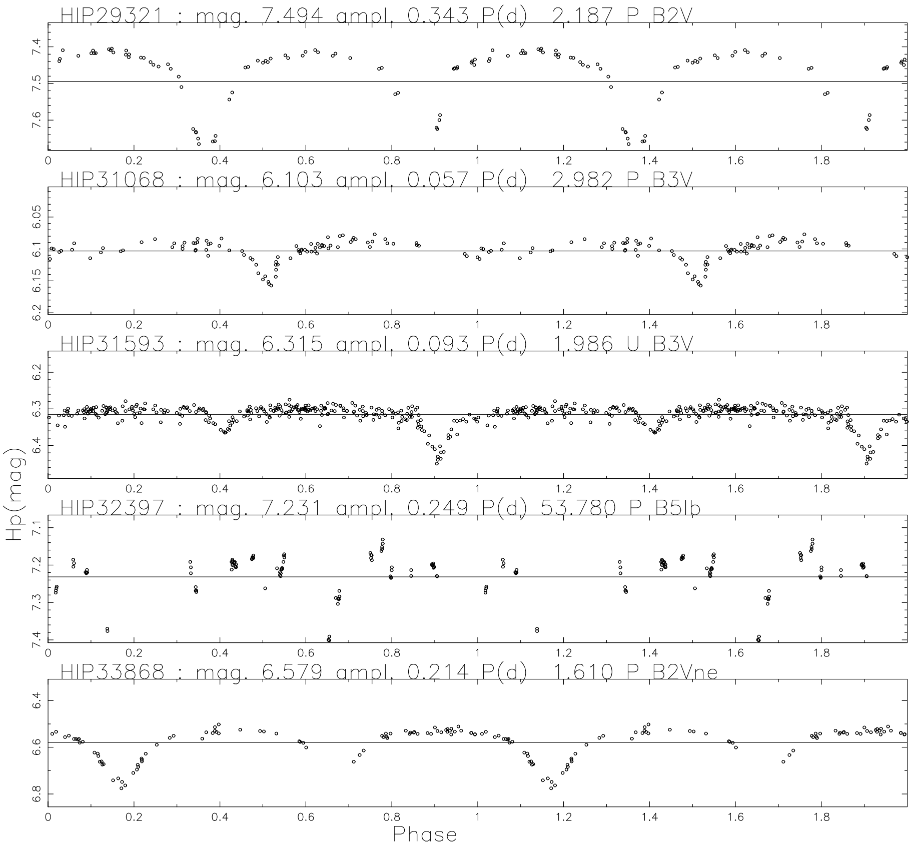
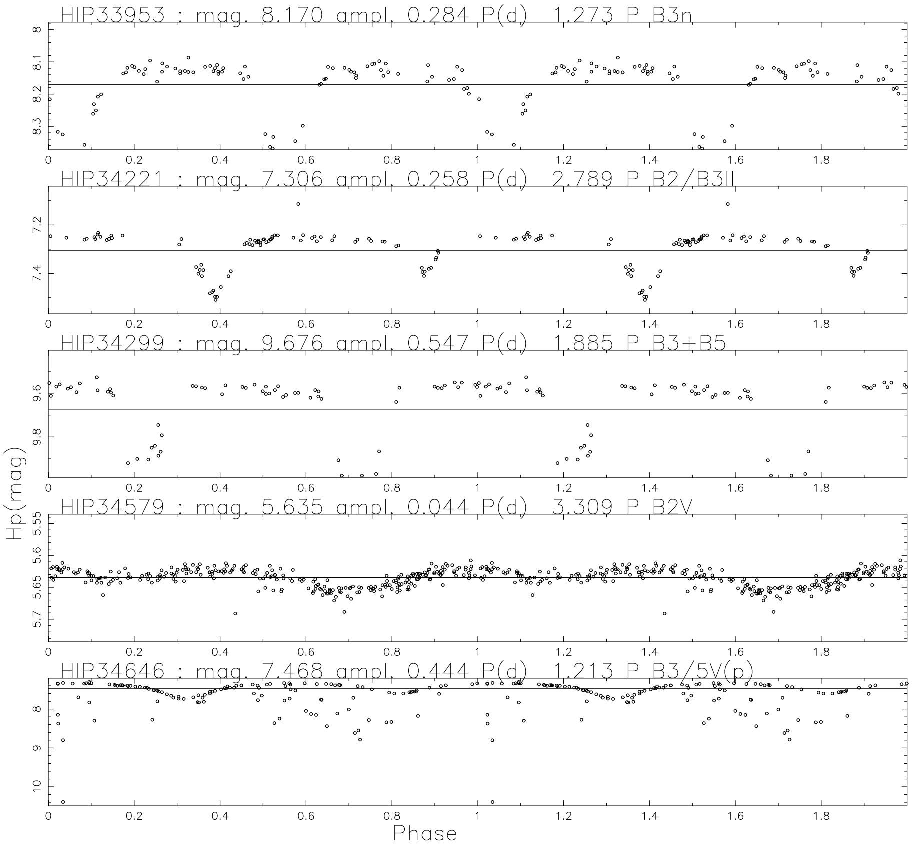
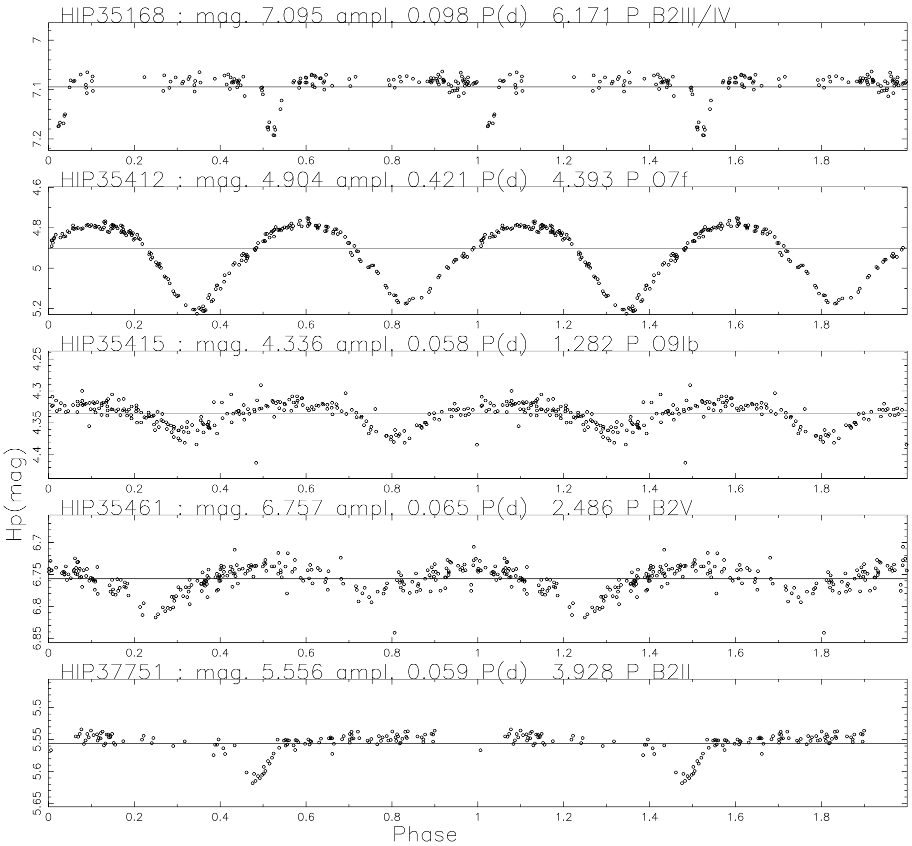
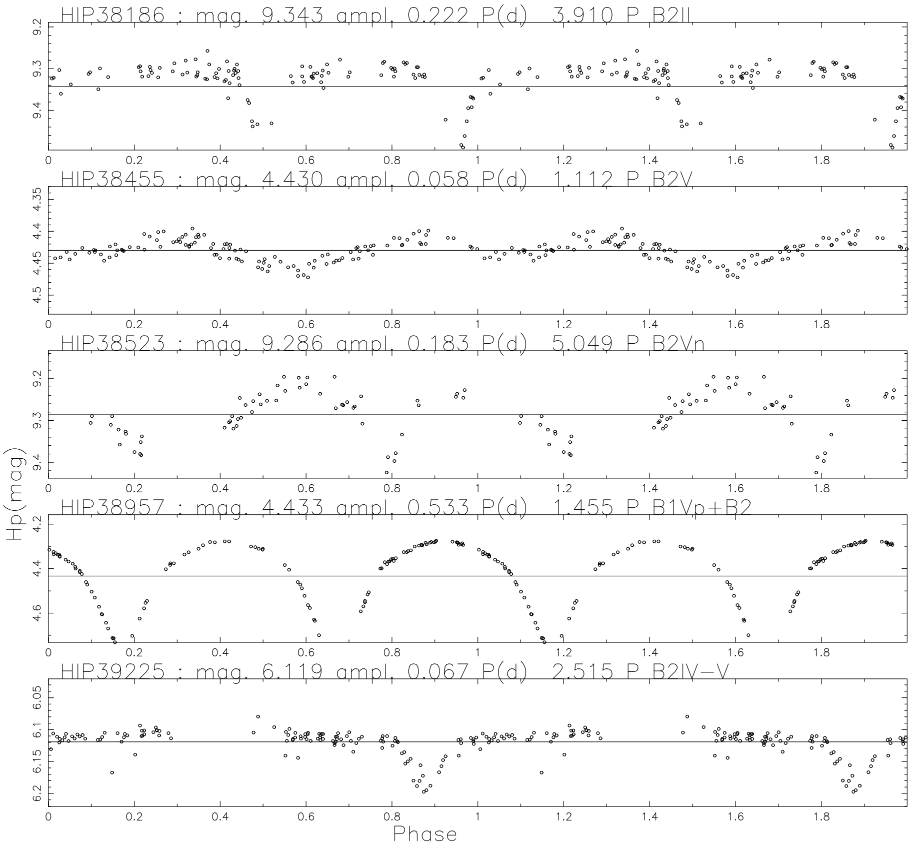
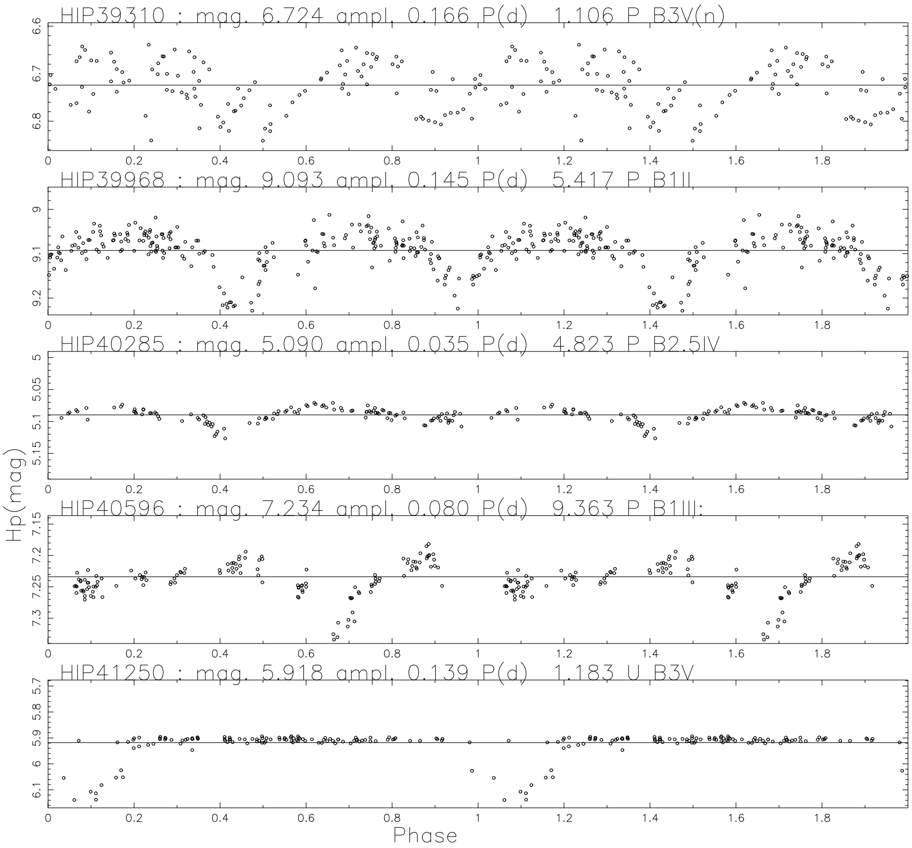
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

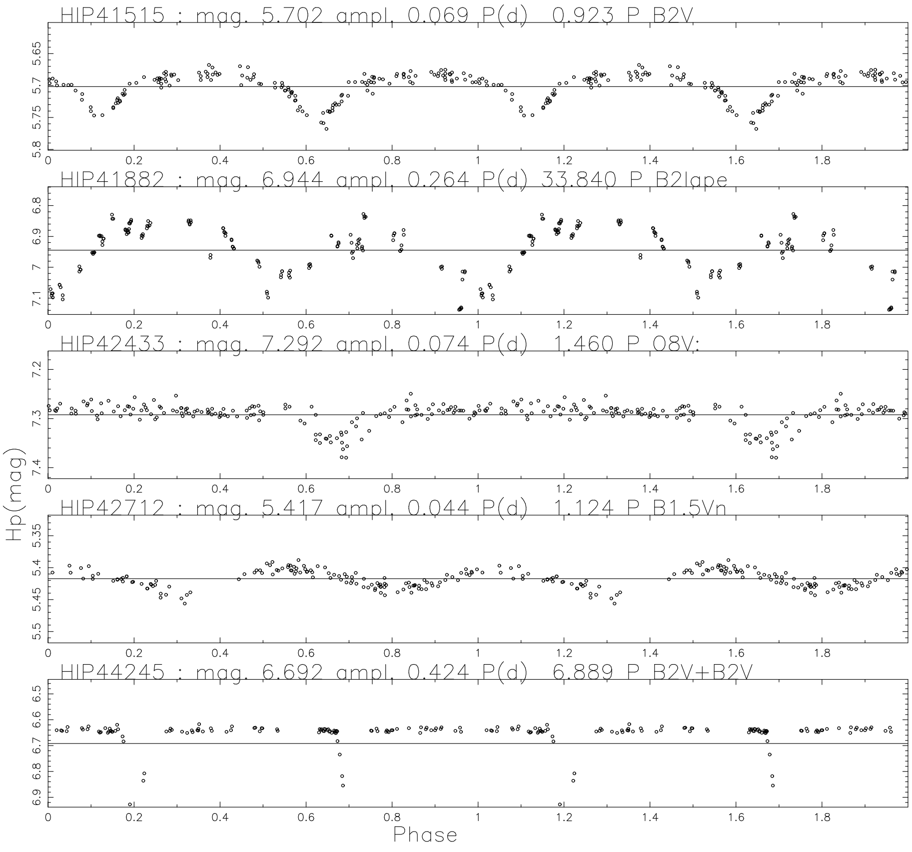

HIP29321 ; mag. 7.494 ampl. 0.343 P(d) 2.187 P B2V
7.4
7.5
7.6
HIP31068 ; mag. 6.103 ampl. 0.057 P(d) 2.982 P B3V
6.05
6.1
6.15
6.2
HIP31593 ; mag. 6.315 ampl. 0.093 P(d) 1.986 U B3V
6.2
6.3
6.4
HIP32397 ; mag. 7.231 ampl. 0.249 P(d) 53.780 P B5Ib
7.1
7.2
7.3
7.4
HIP33868 ; mag. 6.579 ampl. 0.214 P(d) 1.610 P B2Vne
6.4
6.6
6.8
Hp(mag)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
Phase

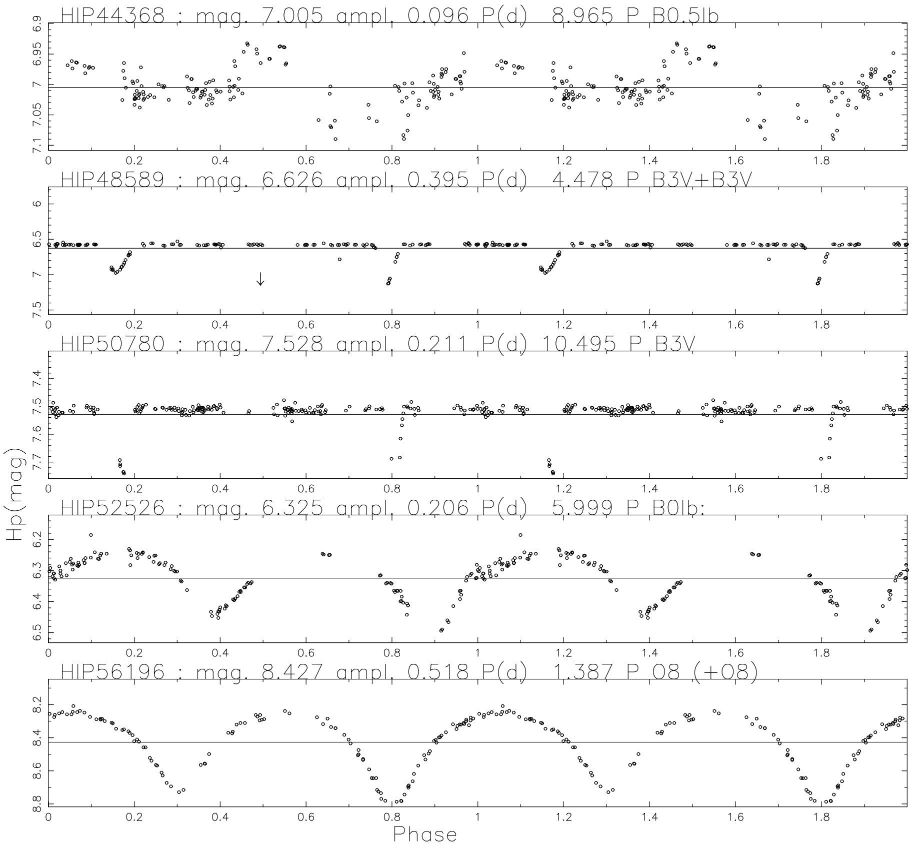

HIP33953 ; mag. 8.170 ampl. 0.284 P(d) 1.273 P B3n
8
8.1
8.2
8.3
HIP34221 ; mag. 7.306 ampl. 0.258 P(d) 2.789 P B2/B3II
7.2
7.4
HIP34299 ; mag. 9.676 ampl. 0.547 P(d) 1.885 P B3+B5
9.6
9.8
HIP34579 ; mag. 5.635 ampl. 0.044 P(d) 3.309 P B2V
5.55
5.6
5.65
5.7
HIP34646 ; mag. 7.468 ampl. 0.444 P(d) 1.213 P B3/5V(p)
8
9
10
Hp(mag)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
Phase


HIP35168 : mag. 7.095 ampl. 0.098 P(d) 6.171 P B2III/IV
HIP35412 : mag. 4.904 ampl. 0.421 P(d) 4.393 P O7f
HIP35415 : mag. 4.336 ampl. 0.058 P(d) 1.282 P O9Ib
HIP35461 : mag. 6.757 ampl. 0.065 P(d) 2.486 P B2V
HIP37751 : mag. 5.556 ampl. 0.059 P(d) 3.928 P B2II
Hp(mag)
Phase


HIP38186 : mag. 9.343 ampl. 0.222 P(d) 3.910 P B2II
HIP38455 : mag. 4.430 ampl. 0.058 P(d) 1.112 P B2V
HIP38523 : mag. 9.286 ampl. 0.183 P(d) 5.049 P B2Vn
HIP38957 : mag. 4.433 ampl. 0.533 P(d) 1.455 P B1Vp+B2
HIP39225 : mag. 6.119 ampl. 0.067 P(d) 2.515 P B2IV-V
Hp(mag)
Phase


HIP39310 ; mag. 6.724 ampl. 0.166 P(d) 1.106 P B3V(n)
HIP39968 ; mag. 9.093 ampl. 0.145 P(d) 5.417 P B1II
HIP40285 ; mag. 5.090 ampl. 0.035 P(d) 4.823 P B2.5IV
HIP40596 ; mag. 7.234 ampl. 0.080 P(d) 9.363 P B1III:
HIP41250 ; mag. 5.918 ampl. 0.139 P(d) 1.183 U B3V
Hp(mag)
Phase


HIP41515 ; mag. 5.702 ampl. 0.069 P(d) 0.923 P B2V
HIP41882 ; mag. 6.944 ampl. 0.264 P(d) 33.840 P B2Iape
HIP42433 ; mag. 7.292 ampl. 0.074 P(d) 1.460 P O8V:
HIP42712 ; mag. 5.417 ampl. 0.044 P(d) 1.124 P B1.5Vn
HIP44245 ; mag. 6.692 ampl. 0.424 P(d) 6.889 P B2V+B2V
Hp(mag)
Phase


HIP44368 : mag. 7.005 ampl. 0.096 P(d) 8.965 P B0.5Ib
HIP48589 : mag. 6.626 ampl. 0.395 P(d) 4.478 P B3V+B3V
HIP50780 : mag. 7.528 ampl. 0.211 P(d) 10.495 P B3V
HIP52526 : mag. 6.325 ampl. 0.206 P(d) 5.999 P B0Ib:
HIP56196 : mag. 8.427 ampl. 0.518 P(d) 1.387 P O8 (+O8)
Hp(mag)
Phase
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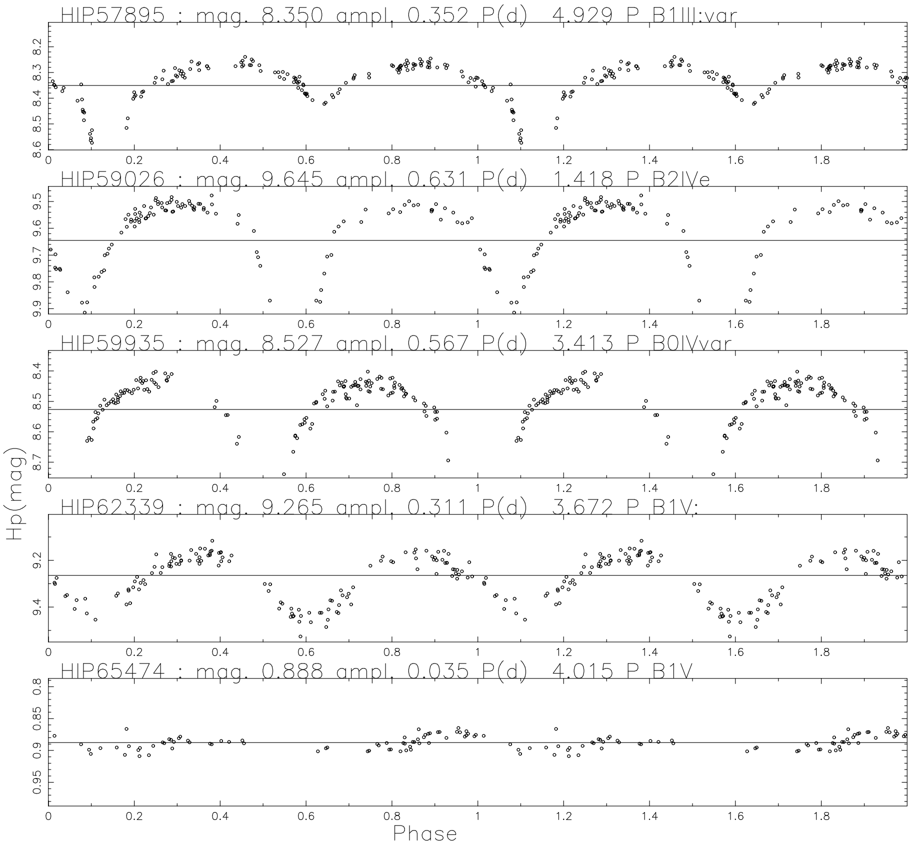
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8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HIP59026 : mag. 9.645 ampl. 0.631 P(d) 1.418 P B2IVe
HIP59935 : mag. 8.527 ampl. 0.567 P(d) 3.413 P B0IVvar
HIP62339 : mag. 9.265 ampl. 0.311 P(d) 3.672 P B1V:
HIP65474 : mag. 0.888 ampl. 0.035 P(d) 4.015 P B1V
Hp(mag)
Phase
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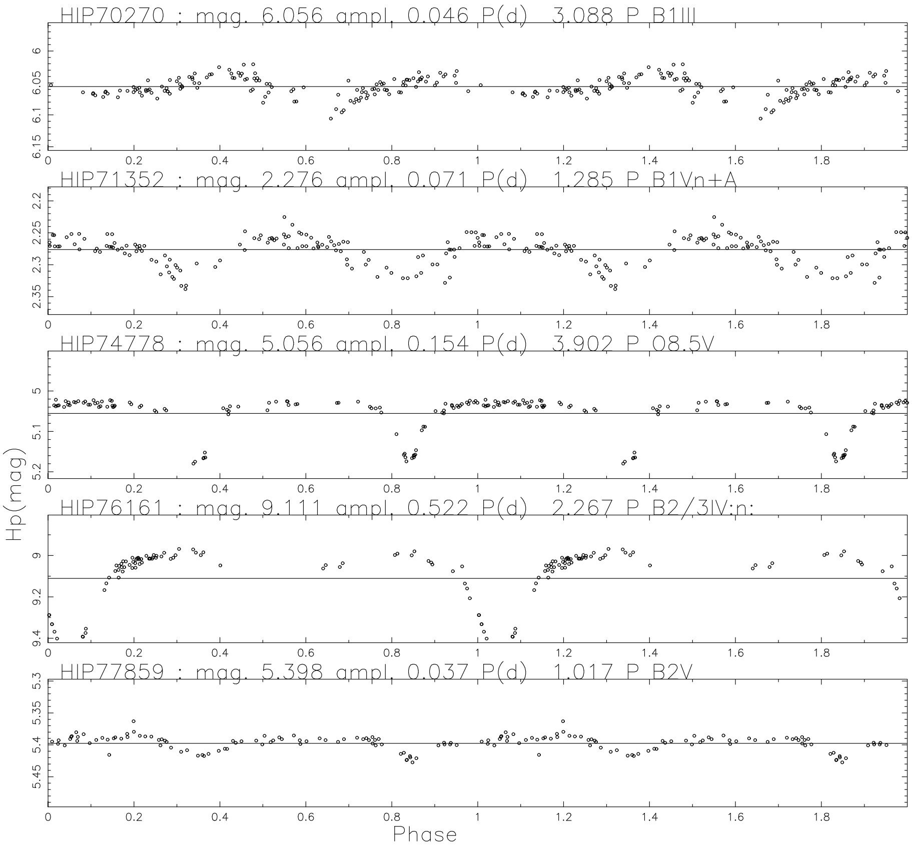
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP70270 ; mag. 6.056 ampl. 0.046 P(d) 3.088 P B1III
HIP71352 ; mag. 2.276 ampl. 0.071 P(d) 1.285 P B1Vn+A
HIP74778 ; mag. 5.056 ampl. 0.154 P(d) 3.902 P O8.5V
HIP76161 ; mag. 9.111 ampl. 0.522 P(d) 2.267 P B2/3IV:n:
HIP77859 ; mag. 5.398 ampl. 0.037 P(d) 1.017 P B2V
Hp(mag)
Phase
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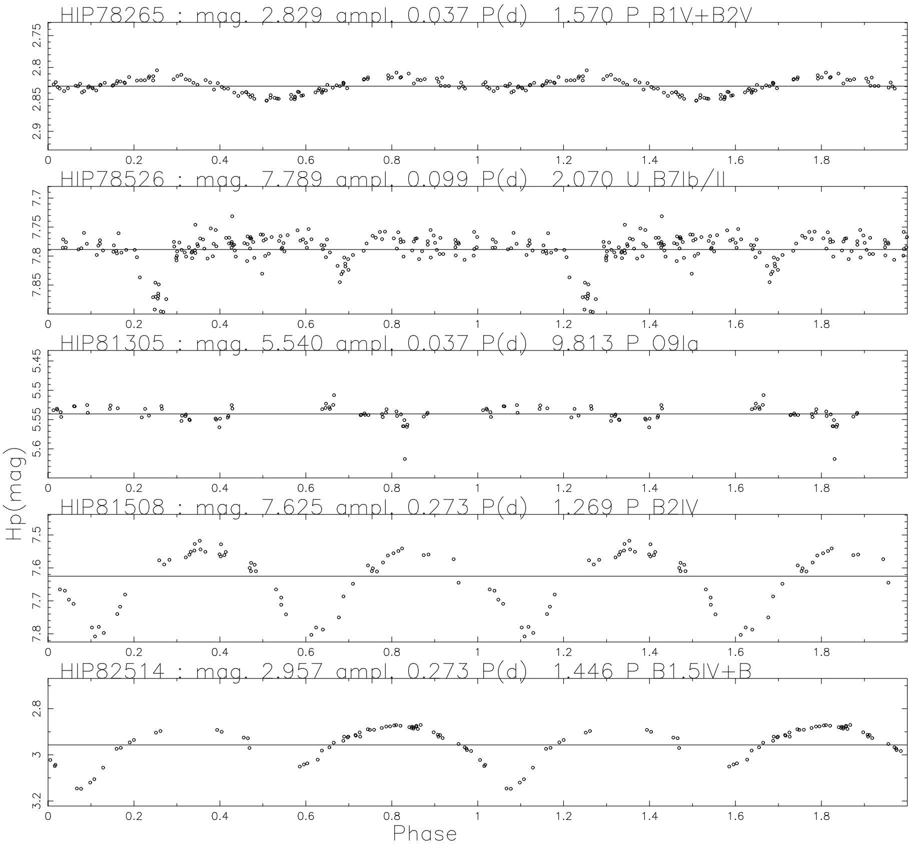
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8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HIP78526 ; mag. 7.789 ampl. 0.099 P(d) 2.070 U B7Ib/II
HIP81305 ; mag. 5.540 ampl. 0.037 P(d) 9.813 P O9Ia
HIP81508 ; mag. 7.625 ampl. 0.273 P(d) 1.269 P B2IV
HIP82514 ; mag. 2.957 ampl. 0.273 P(d) 1.446 P B1.5IV+B
Hp(mag)
Phase
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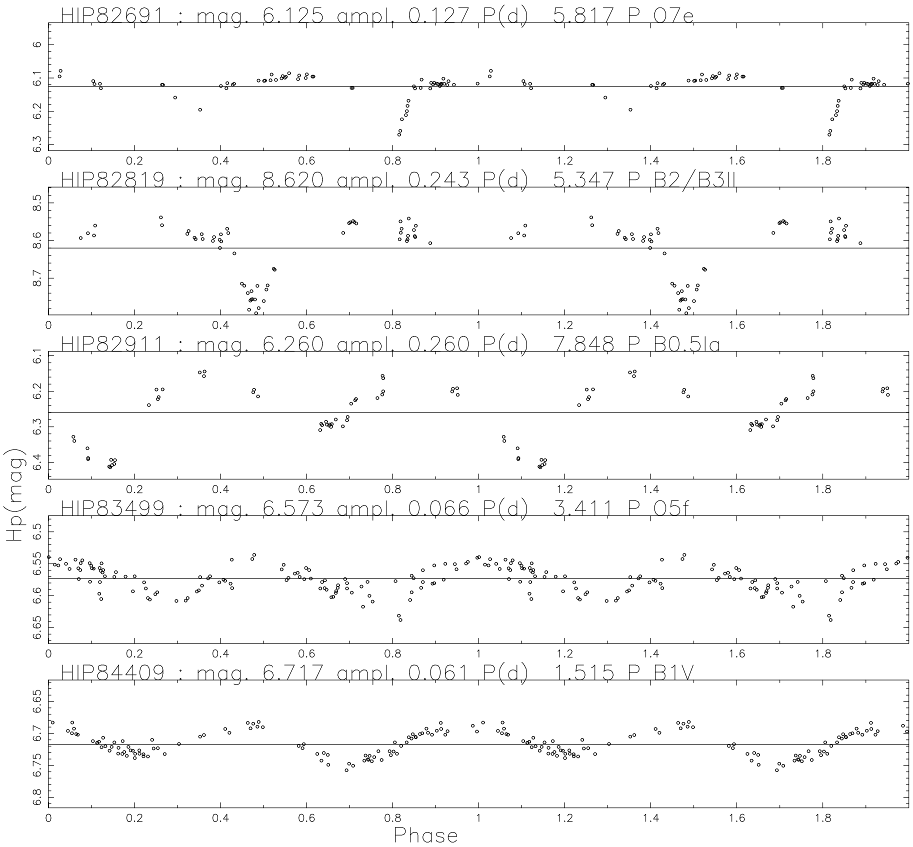
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8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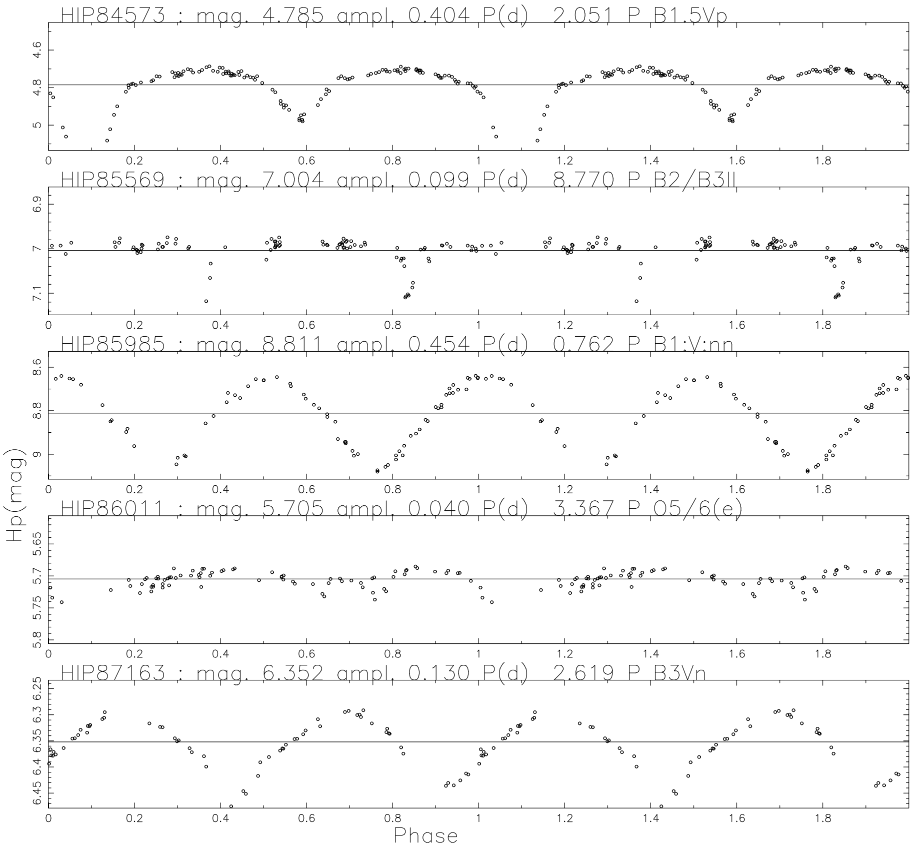
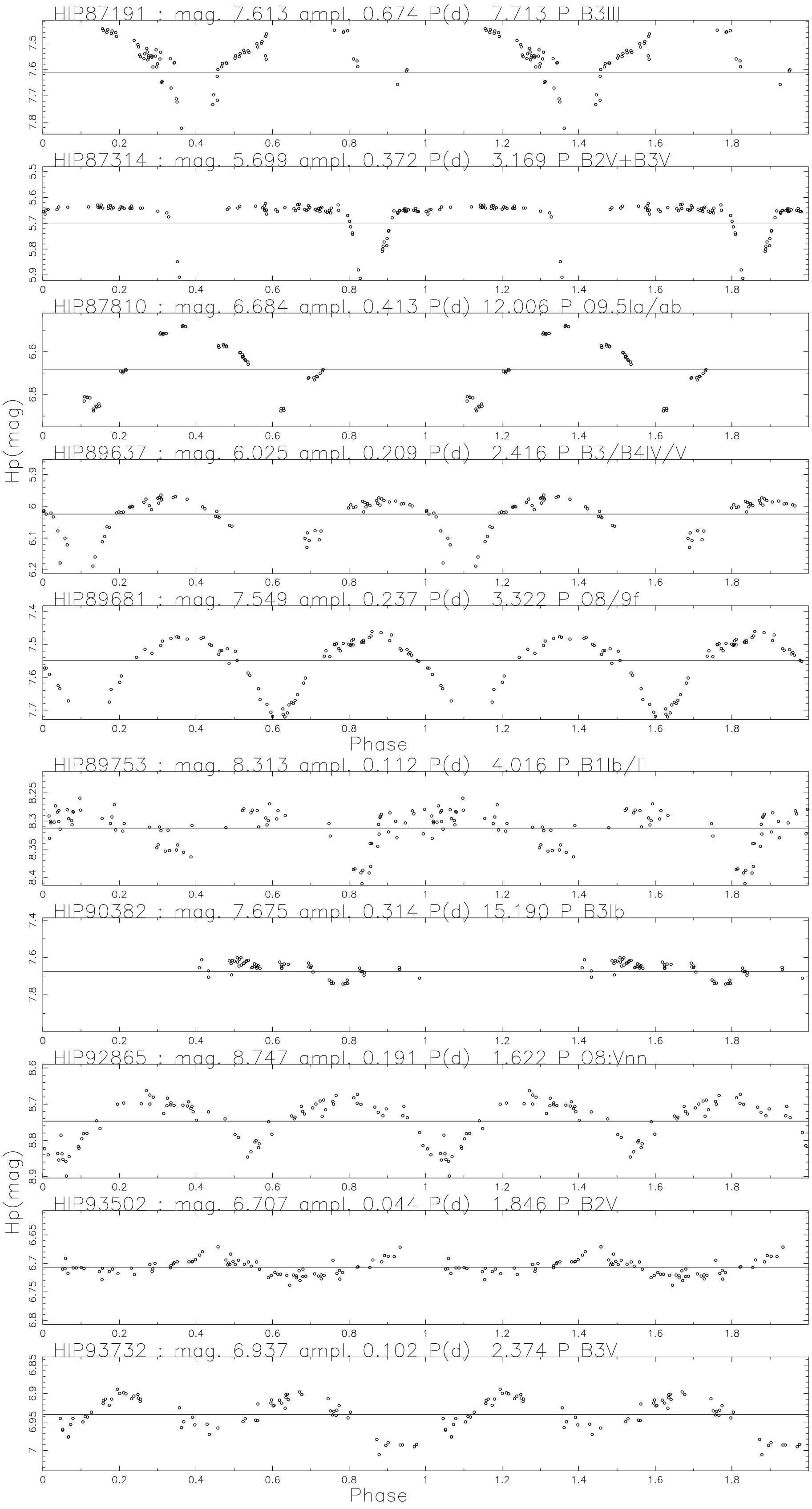
HIP82819 : mag. 8.620 ampl. 0.243 P(d) 5.347 P B2/B3II
HIP82911 : mag. 6.260 ampl. 0.260 P(d) 7.848 P B0.5Ia
HIP83499 : mag. 6.573 ampl. 0.066 P(d) 3.411 P O5f
HIP84409 : mag. 6.717 ampl. 0.061 P(d) 1.515 P B1V
Hp(mag)
Phase


HIP84573 : mag. 4.785 ampl. 0.404 P(d) 2.051 P B1.5Vp
HIP85569 : mag. 7.004 ampl. 0.099 P(d) 8.770 P B2/B3II
HIP85985 : mag. 8.811 ampl. 0.454 P(d) 0.762 P B1:V:nn
HIP86011 : mag. 5.705 ampl. 0.040 P(d) 3.367 P O5/6(e)
HIP87163 : mag. 6.352 ampl. 0.130 P(d) 2.619 P B3Vn
Hp(mag)
Phase


HIP87191 ; mag. 7.613 ampl. 0.674 P(d) 7.713 P B3III
HIP87314 ; mag. 5.699 ampl. 0.372 P(d) 3.169 P B2V+B3V
HIP87810 ; mag. 6.684 ampl. 0.413 P(d) 12.006 P O9.5Ia/ab
HIP89637 ; mag. 6.025 ampl. 0.209 P(d) 2.416 P B3/B4IV/V
HIP89681 ; mag. 7.549 ampl. 0.237 P(d) 3.322 P O8/9f
Hp(mag)
Phase
HIP89753 ; mag. 8.313 ampl. 0.112 P(d) 4.016 P B1Ib/II
HIP90382 ; mag. 7.675 ampl. 0.314 P(d) 15.190 P B3Ib
HIP92865 ; mag. 8.747 ampl. 0.191 P(d) 1.622 P O8:Vnn
HIP93502 ; mag. 6.707 ampl. 0.044 P(d) 1.846 P B2V
HIP93732 ; mag. 6.937 ampl. 0.102 P(d) 2.374 P B3V
Hp(mag)
Phase
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0.4
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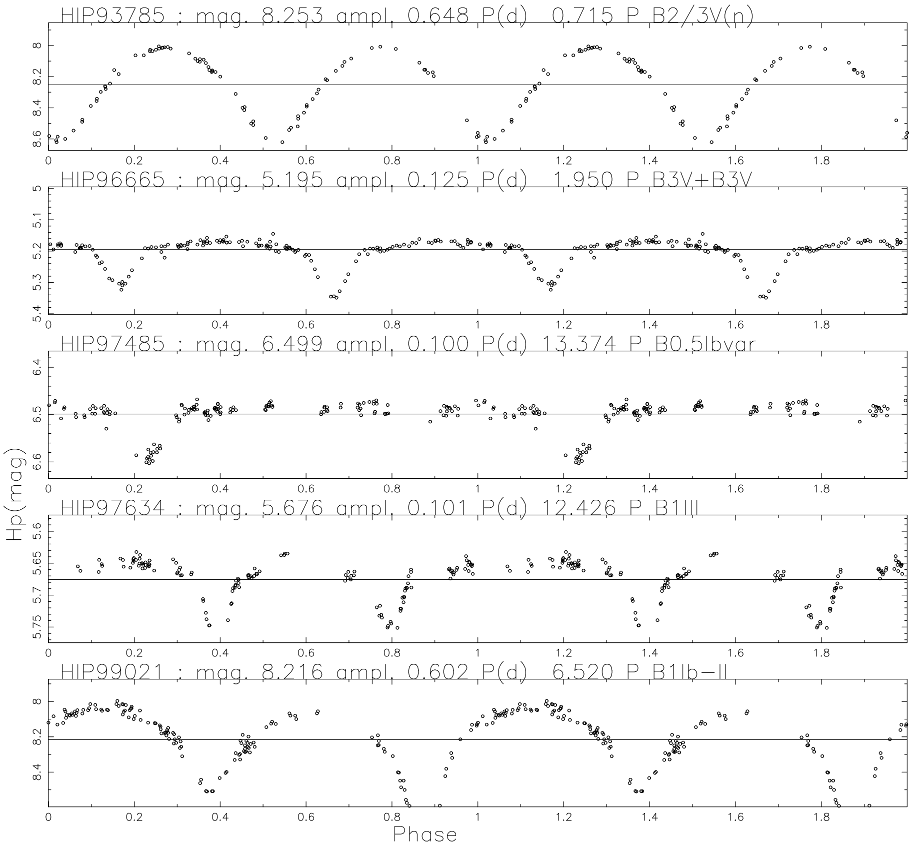
1
1.2
1.4
1.6
1.8


HIP93785 : mag. 8.253 ampl. 0.648 P(d) 0.715 P B2/3V(n)
HIP96665 : mag. 5.195 ampl. 0.125 P(d) 1.950 P B3V+B3V
HIP97485 : mag. 6.499 ampl. 0.100 P(d) 13.374 P B0.5Ibvar
HIP97634 : mag. 5.676 ampl. 0.101 P(d) 12.426 P B1III
HIP99021 : mag. 8.216 ampl. 0.602 P(d) 6.520 P B1Ib-II
Hp(mag)
Phase
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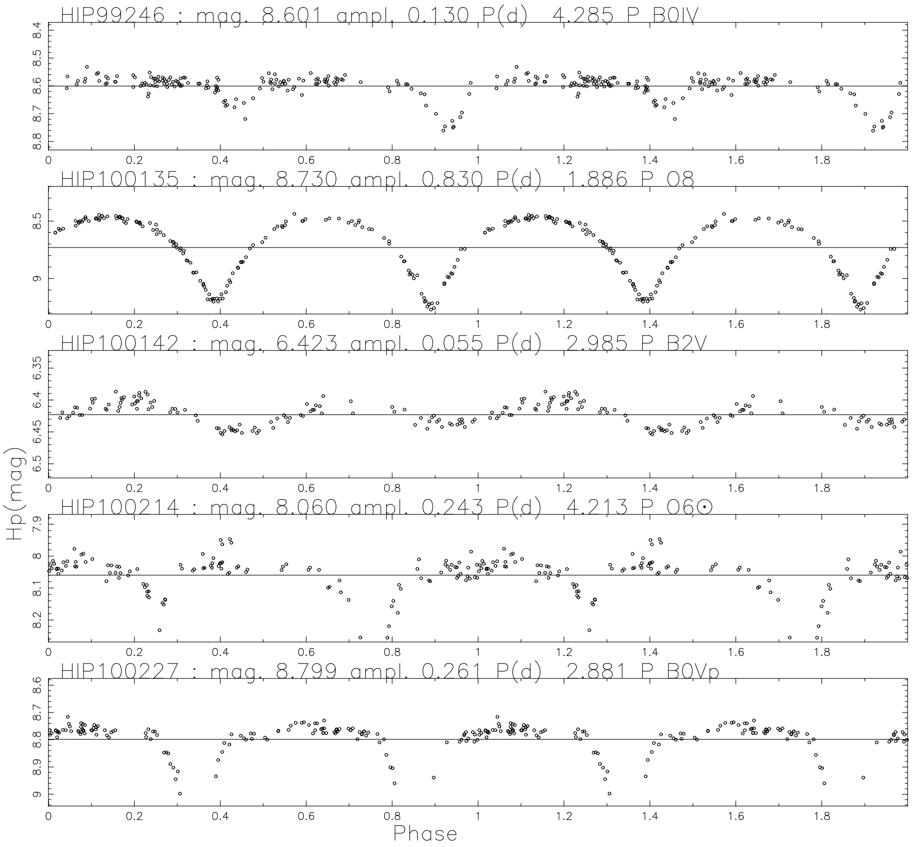
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP99246 : mag. 8.601 ampl. 0.130 P(d) 4.285 P B0IV
HIP100135 : mag. 8.730 ampl. 0.830 P(d) 1.886 P O8
HIP100142 : mag. 6.423 ampl. 0.055 P(d) 2.985 P B2V
HIP100214 : mag. 8.060 ampl. 0.243 P(d) 4.213 P O6⊙
HIP100227 : mag. 8.799 ampl. 0.261 P(d) 2.881 P B0Vp
Hp(mag)
Phase
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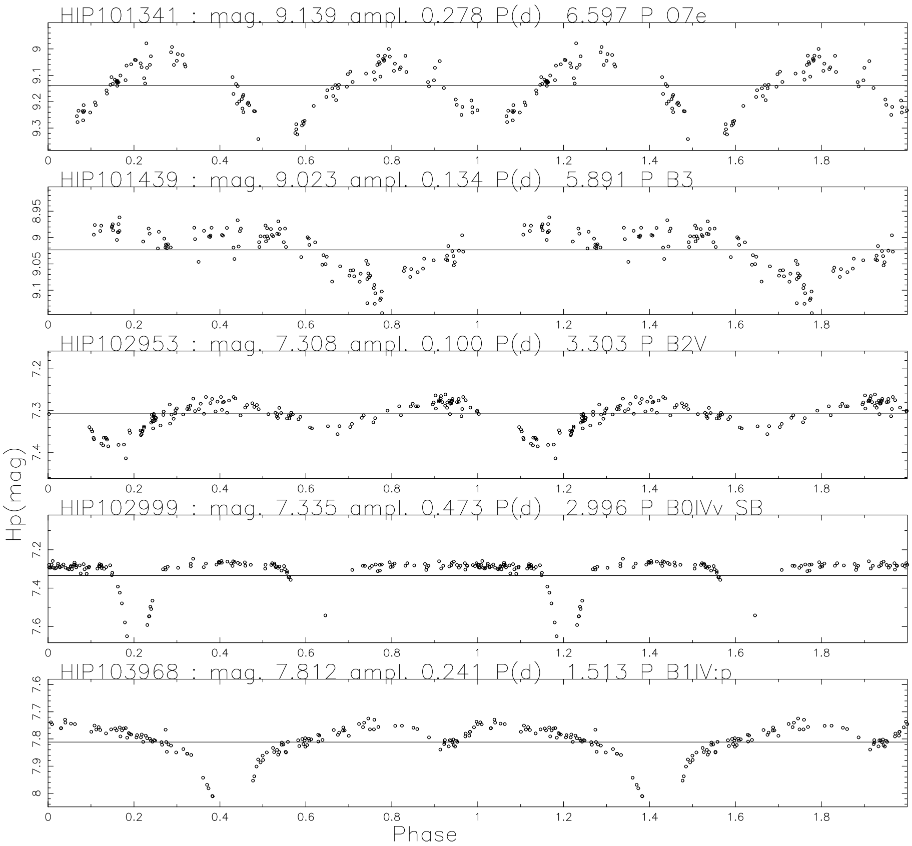
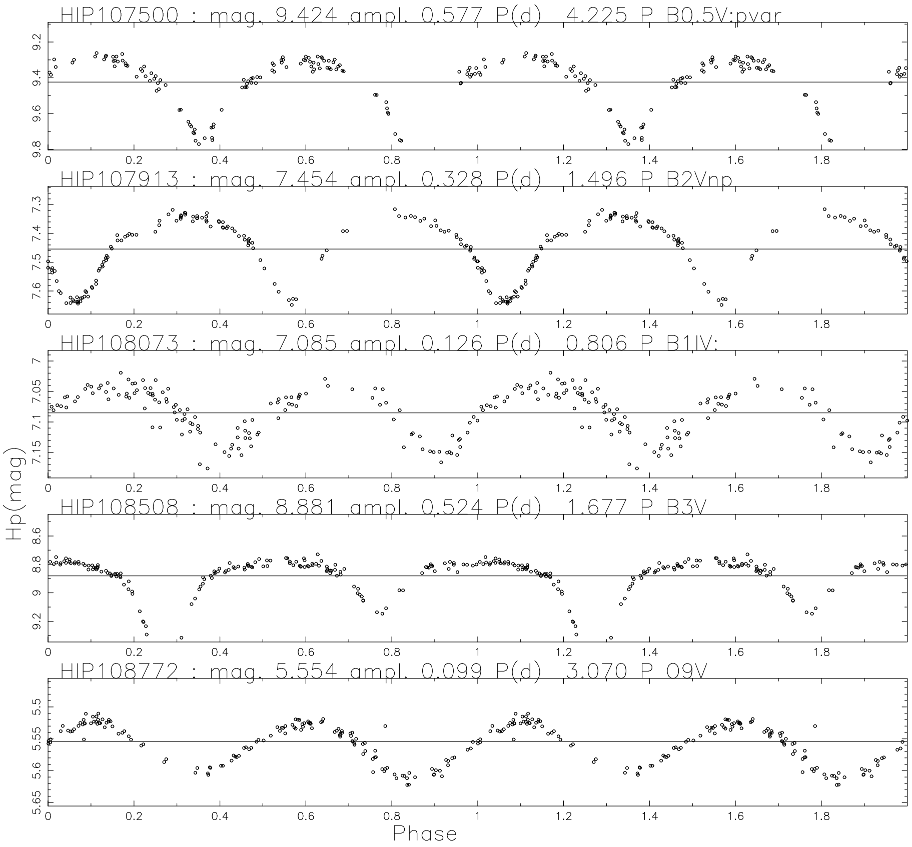
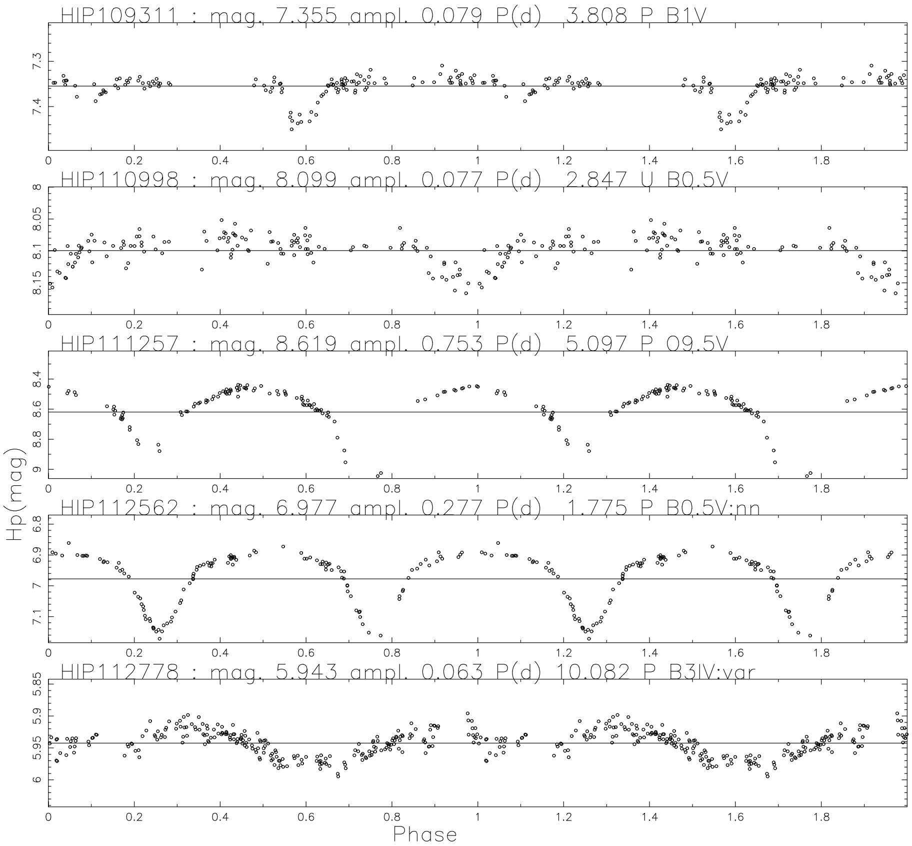
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP101341 : mag. 9.139 ampl. 0.278 P(d) 6.597 P O7e
HIP101439 : mag. 9.023 ampl. 0.134 P(d) 5.891 P B3
HIP102953 : mag. 7.308 ampl. 0.100 P(d) 3.303 P B2V
HIP102999 : mag. 7.335 ampl. 0.473 P(d) 2.996 P B0IVv SB
HIP103968 : mag. 7.812 ampl. 0.241 P(d) 1.513 P B1IV:p
Hp(mag)
Phase


HIP107500 : mag. 9.424 ampl. 0.577 P(d) 4.225 P B0.5V:pvar
HIP107913 : mag. 7.454 ampl. 0.328 P(d) 1.496 P B2Vnp
HIP108073 : mag. 7.085 ampl. 0.126 P(d) 0.806 P B1IV:
HIP108508 : mag. 8.881 ampl. 0.524 P(d) 1.677 P B3V
HIP108772 : mag. 5.554 ampl. 0.099 P(d) 3.070 P O9V
Hp(mag)
Phase


HIP109311 : mag. 7.355 ampl. 0.079 P(d) 3.808 P B1V
HIP110998 : mag. 8.099 ampl. 0.077 P(d) 2.847 U B0.5V
HIP111257 : mag. 8.619 ampl. 0.753 P(d) 5.097 P O9.5V
HIP112562 : mag. 6.977 ampl. 0.277 P(d) 1.775 P B0.5V:nn
HIP112778 : mag. 5.943 ampl. 0.063 P(d) 10.082 P B3IV:var
Hp(mag)
Phase
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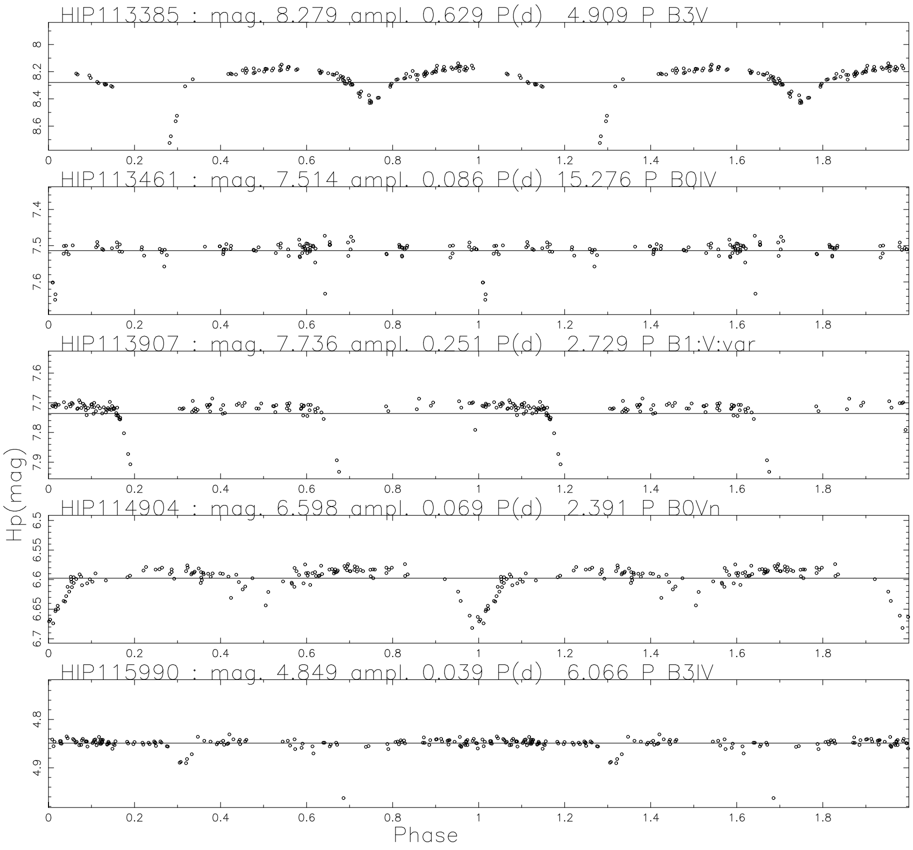
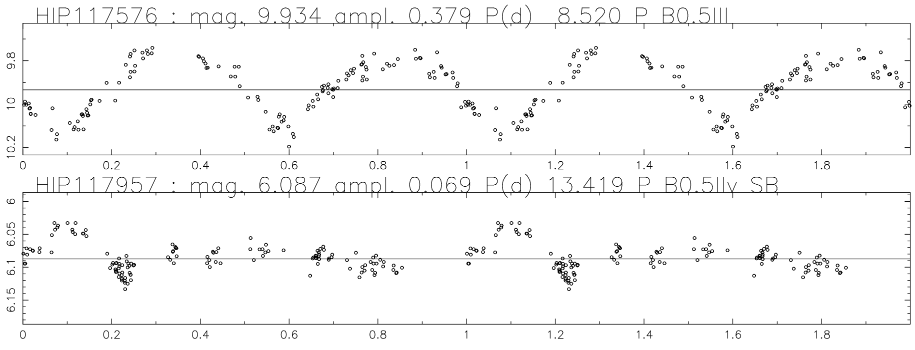
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP113385 : mag. 8.279 ampl. 0.629 P(d) 4.909 P B3V
HIP113461 : mag. 7.514 ampl. 0.086 P(d) 15.276 P B0IV
HIP113907 : mag. 7.736 ampl. 0.251 P(d) 2.729 P B1:V:var
HIP114904 : mag. 6.598 ampl. 0.069 P(d) 2.391 P B0Vn
HIP115990 : mag. 4.849 ampl. 0.039 P(d) 6.066 P B3IV
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP117576 : mag. 9.934 ampl. 0.379 P(d) 8.520 P B0.5III
9.8
10
10.2
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
HIP117957 : mag. 6.087 ampl. 0.069 P(d) 13.419 P B0.5IIv SB
6
6.05
6.1
6.15
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

B.2. Catalog of new periodic variable stars

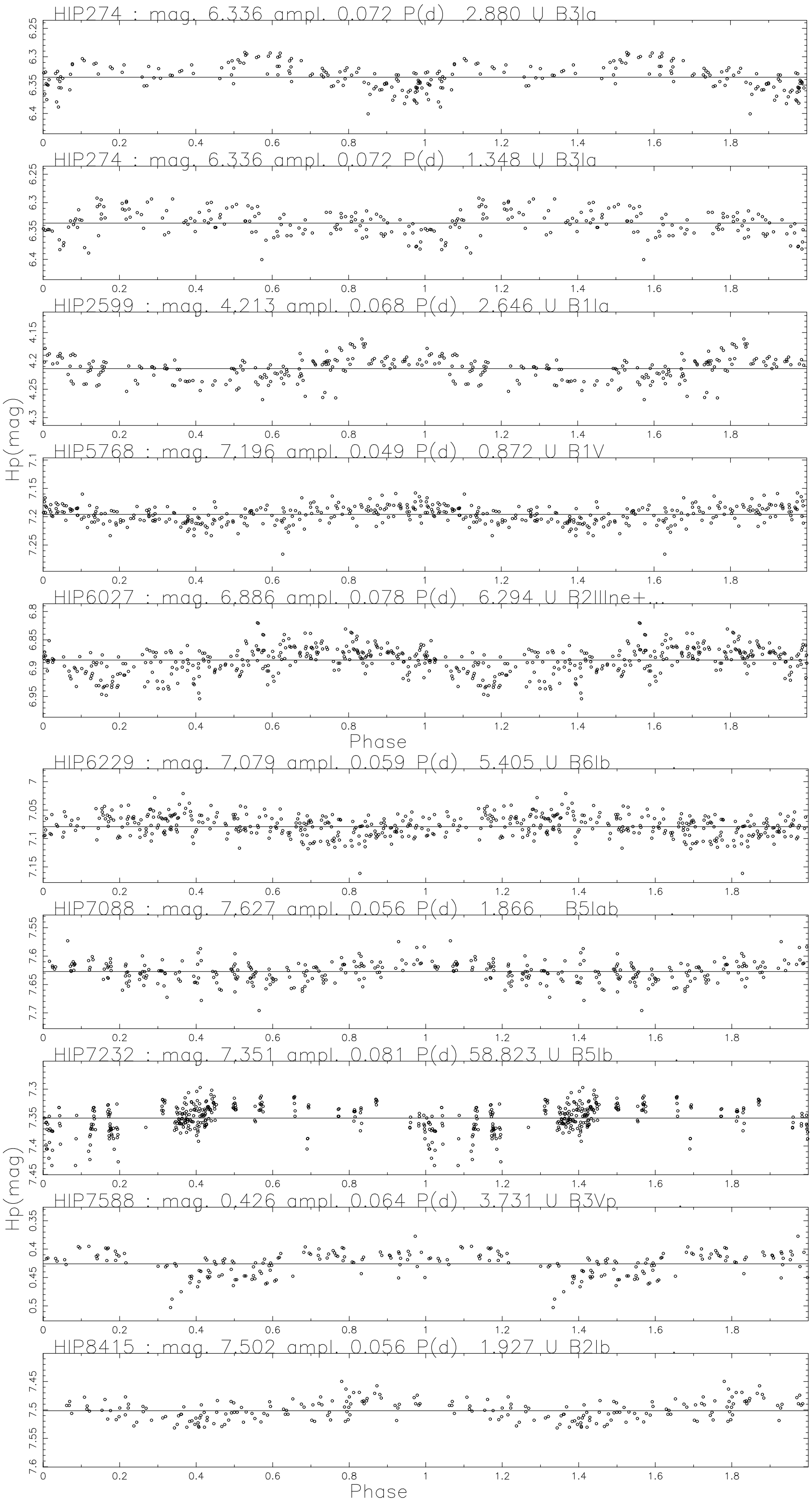
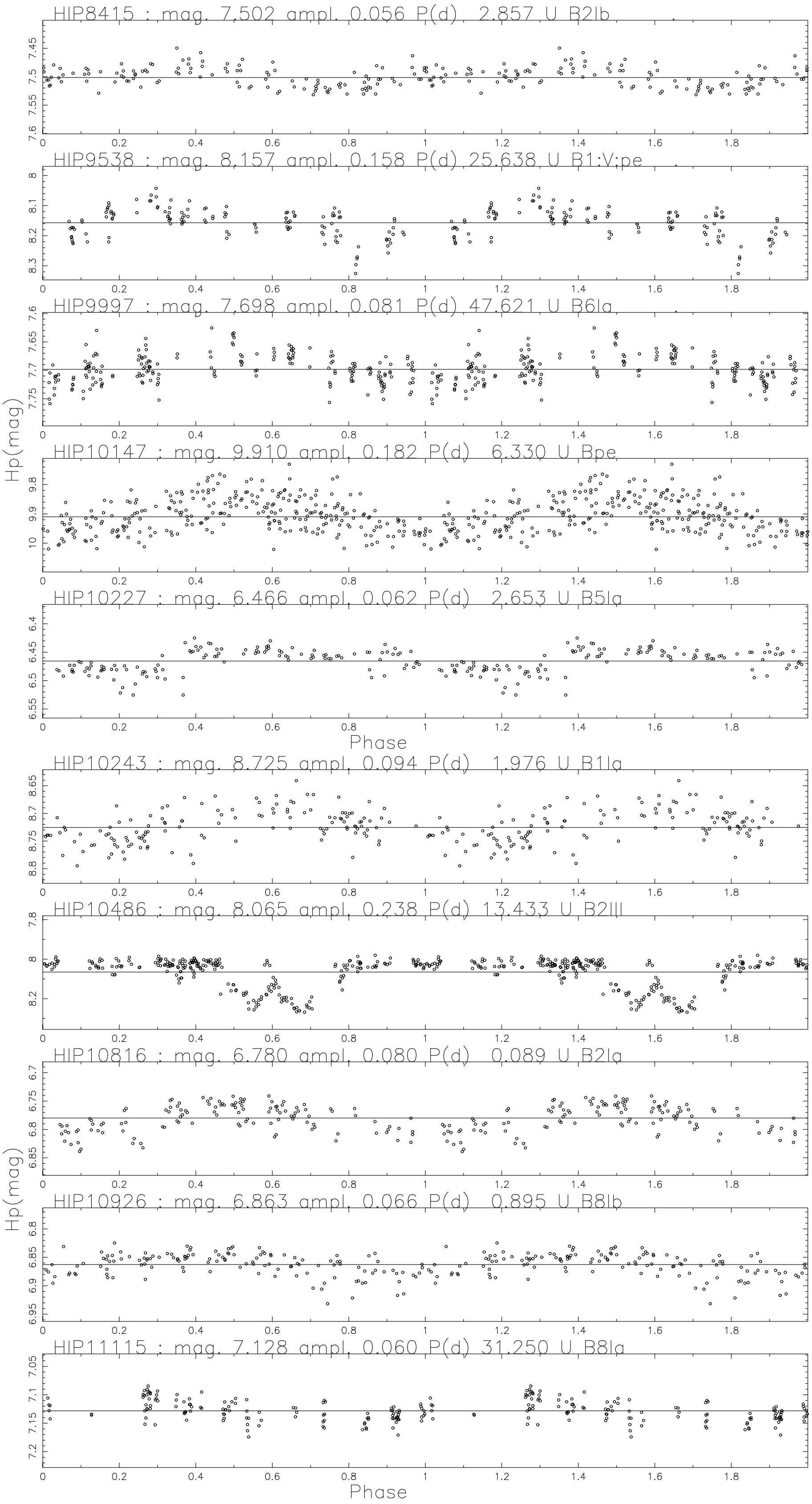
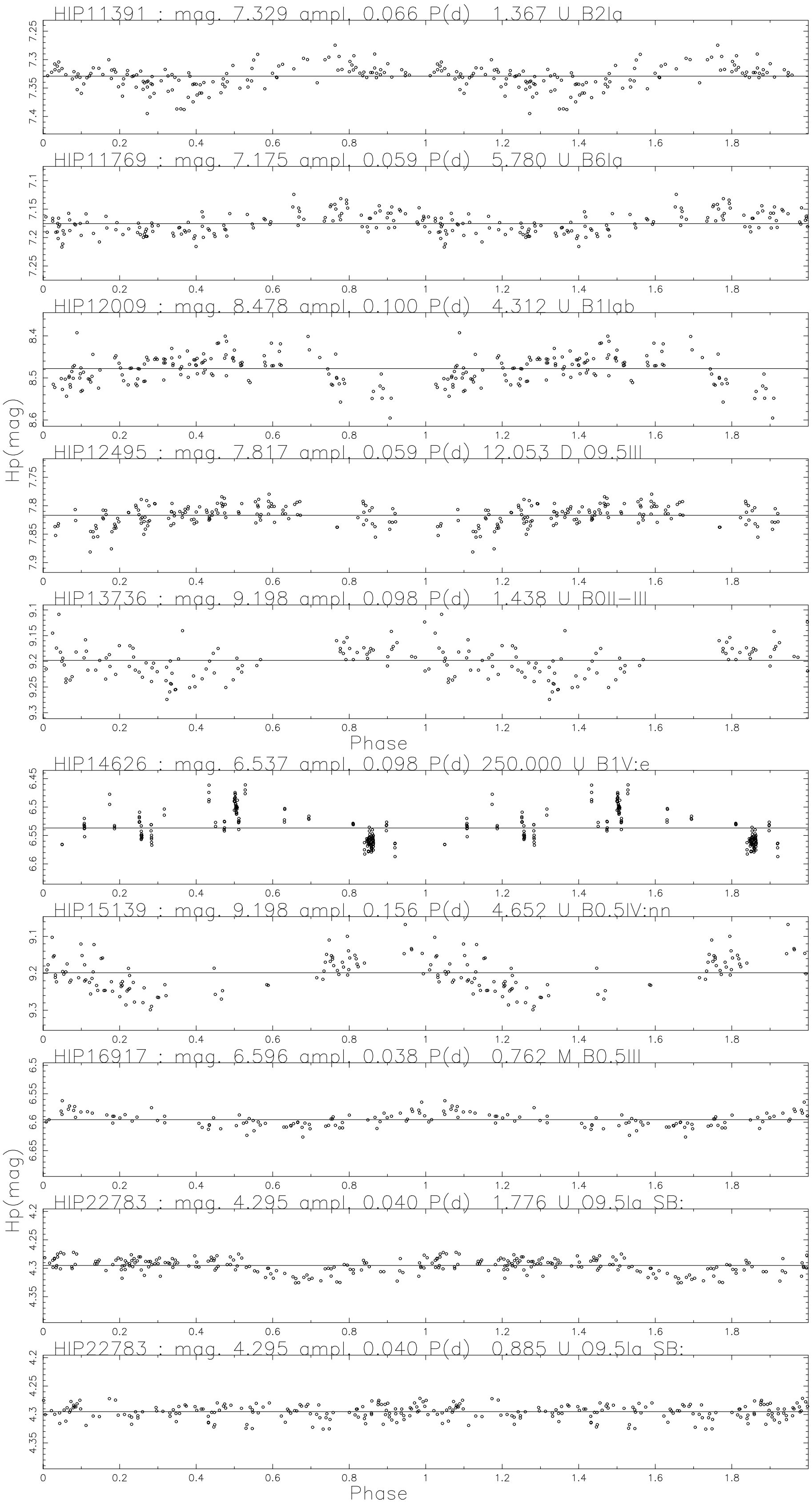
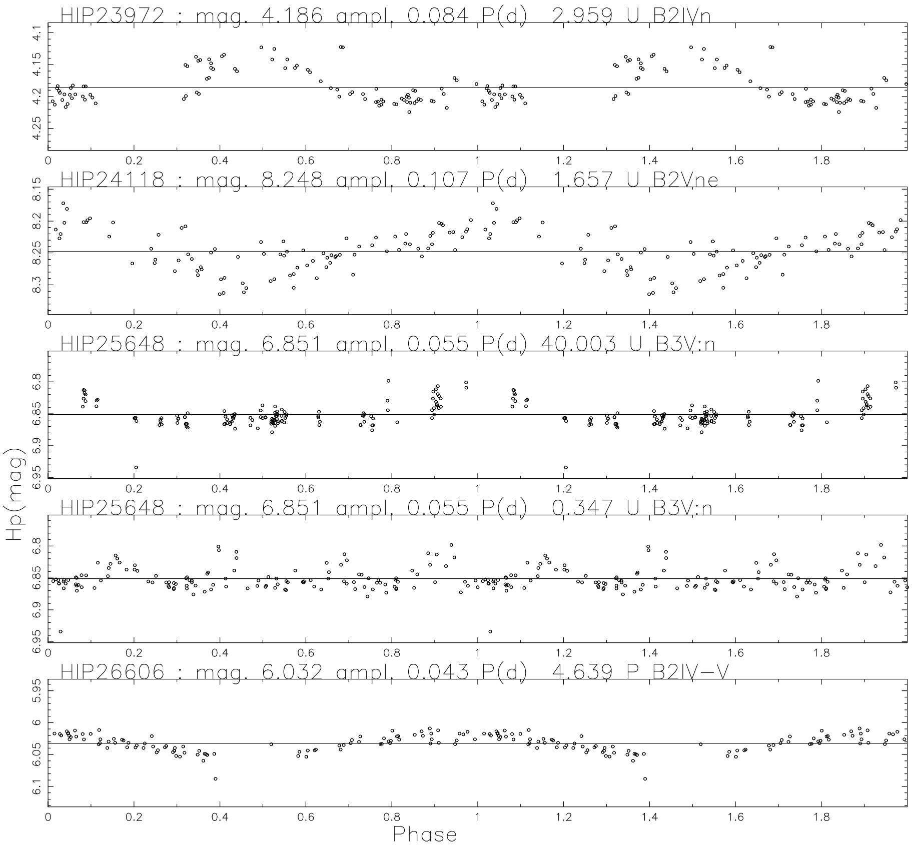
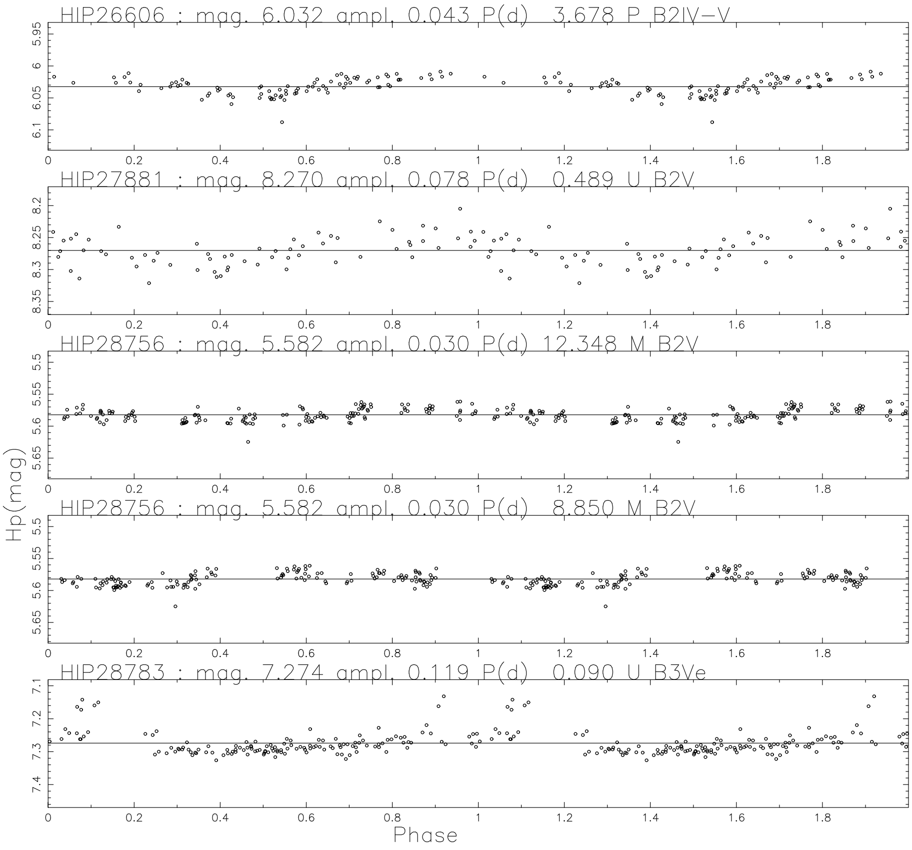


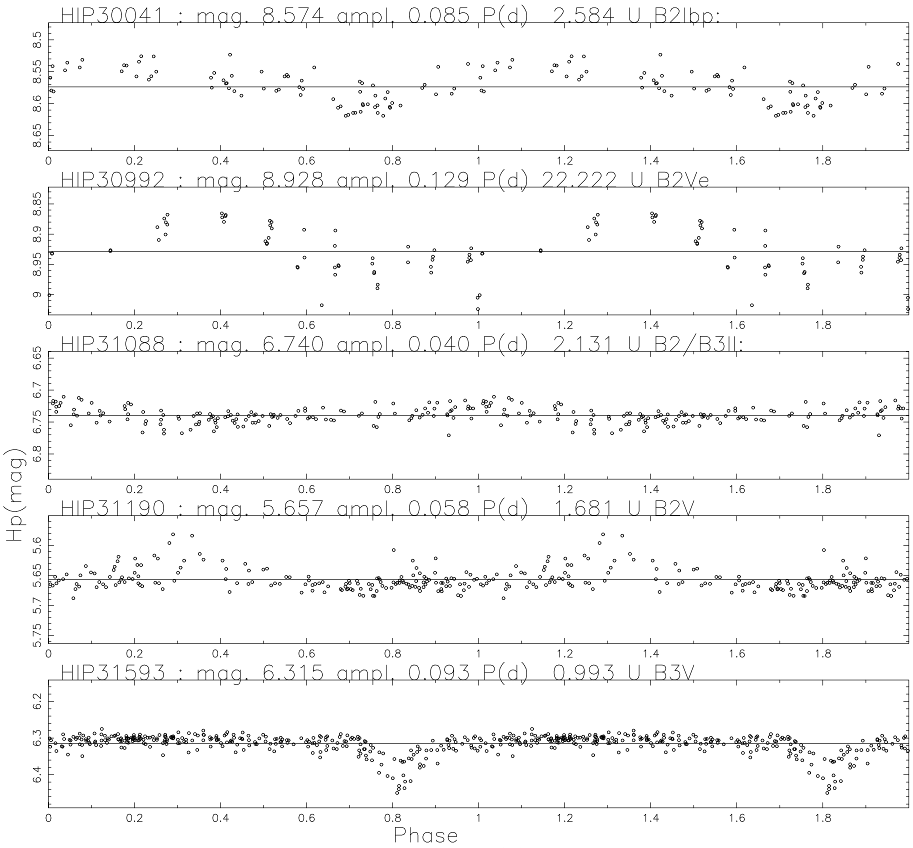
Fig. B.2. This figure plots Hp mag. vs. Phase. Epoch is arbitrarily JD-2 440 000 = 7800, which is the beginning of the HIPPARCOS observations. The Hp magnitude, mean amplitude and periods are accurate to ~0.1%.

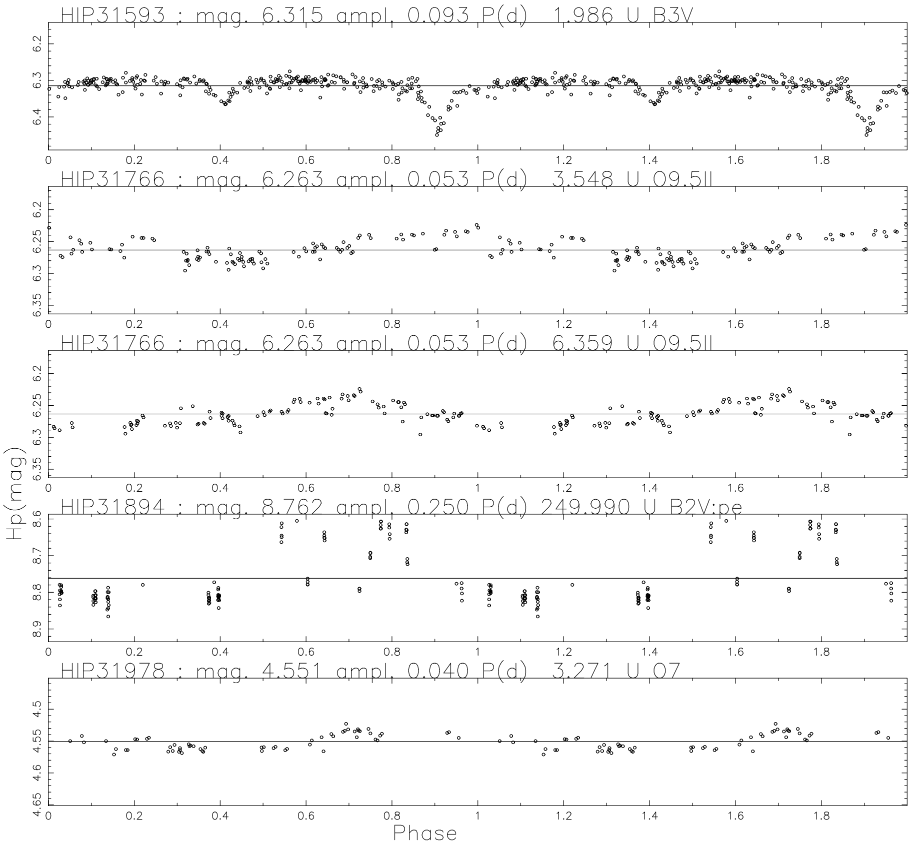

HIP8415 : mag. 7.502 ampl. 0.056 P(d) 2.857 U B2Ib
HIP9538 : mag. 8.157 ampl. 0.158 P(d) 25.638 U B1:V:pe
HIP9997 : mag. 7.698 ampl. 0.081 P(d) 47.621 U B6Ia
HIP10147 : mag. 9.910 ampl. 0.182 P(d) 6.330 U Bpe
HIP10227 : mag. 6.466 ampl. 0.062 P(d) 2.653 U B5Ia
Hp(mag)
Phase
HIP10243 : mag. 8.725 ampl. 0.094 P(d) 1.976 U B1Ia
HIP10486 : mag. 8.065 ampl. 0.238 P(d) 13.433 U B2III
HIP10816 : mag. 6.780 ampl. 0.080 P(d) 0.089 U B2Ia
HIP10926 : mag. 6.863 ampl. 0.066 P(d) 0.895 U B8Ib
HIP11115 : mag. 7.128 ampl. 0.060 P(d) 31.250 U B8Ia
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

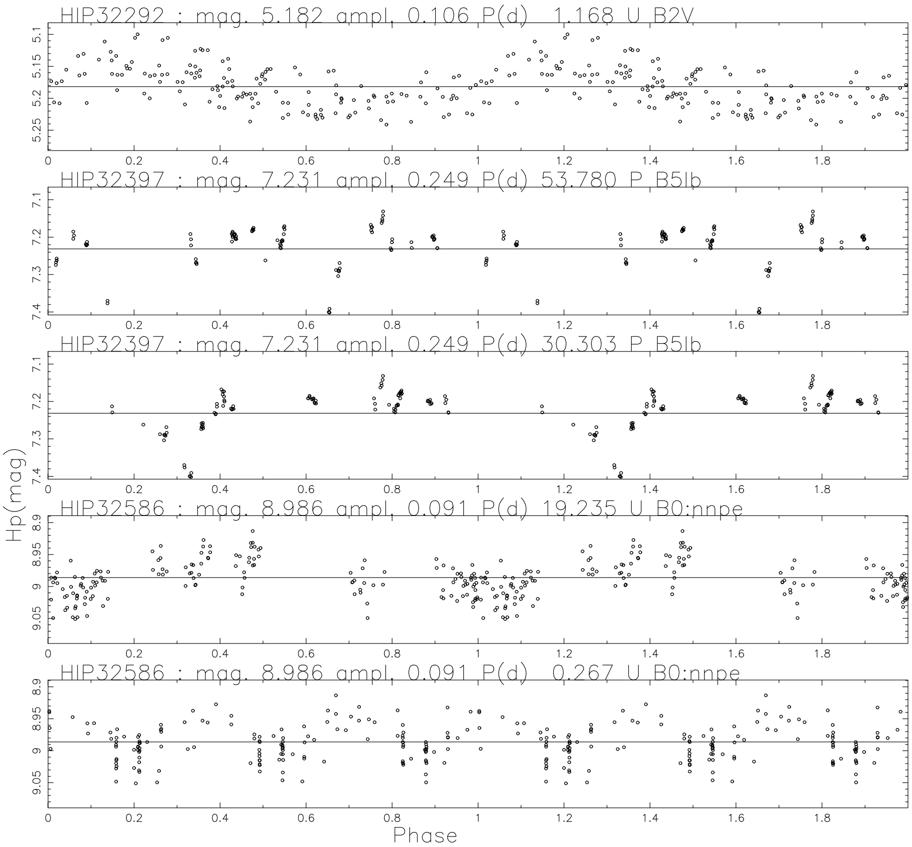

HIP11391 ; mag. 7.329 ampl. 0.066 P(d) 1.367 U B2Ia
HIP11769 ; mag. 7.175 ampl. 0.059 P(d) 5.780 U B6Ia
HIP12009 ; mag. 8.478 ampl. 0.100 P(d) 4.312 U B1Iab
HIP12495 ; mag. 7.817 ampl. 0.059 P(d) 12.053 D O9.5III
HIP13736 ; mag. 9.198 ampl. 0.098 P(d) 1.438 U B0II–III
Hp(mag)
Phase
HIP14626 ; mag. 6.537 ampl. 0.098 P(d) 250.000 U B1V:e
HIP15139 ; mag. 9.198 ampl. 0.156 P(d) 4.652 U B0.5IV:nn
HIP16917 ; mag. 6.596 ampl. 0.038 P(d) 0.762 M B0.5III
HIP22783 ; mag. 4.295 ampl. 0.040 P(d) 1.776 U O9.5Ia SB:
HIP22783 ; mag. 4.295 ampl. 0.040 P(d) 0.885 U O9.5Ia SB:
Hp(mag)
Phase


HIP23972 : mag. 4.186 ampl. 0.084 P(d) 2.959 U B2IVn
HIP24118 : mag. 8.248 ampl. 0.107 P(d) 1.657 U B2Vne
HIP25648 : mag. 6.851 ampl. 0.055 P(d) 40.003 U B3V:n
HIP25648 : mag. 6.851 ampl. 0.055 P(d) 0.347 U B3V:n
HIP26606 : mag. 6.032 ampl. 0.043 P(d) 4.639 P B2IV-V
Hp(mag)
Phase


HIP26606 : mag. 6.032 ampl. 0.043 P(d) 3.678 P B2IV-V
HIP27881 : mag. 8.270 ampl. 0.078 P(d) 0.489 U B2V
HIP28756 : mag. 5.582 ampl. 0.030 P(d) 12.348 M B2V
HIP28756 : mag. 5.582 ampl. 0.030 P(d) 8.850 M B2V
HIP28783 : mag. 7.274 ampl. 0.119 P(d) 0.090 U B3Ve
Hp(mag)
Phase


HIP30041 : mag. 8.574 ampl. 0.085 P(d) 2.584 U B2Ibp:
HIP30992 : mag. 8.928 ampl. 0.129 P(d) 22.222 U B2Ve
HIP31088 : mag. 6.740 ampl. 0.040 P(d) 2.131 U B2/B3II:
HIP31190 : mag. 5.657 ampl. 0.058 P(d) 1.681 U B2V
HIP31593 : mag. 6.315 ampl. 0.093 P(d) 0.993 U B3V
Hp(mag)
Phase


HIP31593 : mag. 6.315 ampl. 0.093 P(d) 1.986 U B3V
HIP31766 : mag. 6.263 ampl. 0.053 P(d) 3.548 U O9.5II
HIP31766 : mag. 6.263 ampl. 0.053 P(d) 6.359 U O9.5II
HIP31894 : mag. 8.762 ampl. 0.250 P(d) 249.990 U B2V:pe
HIP31978 : mag. 4.551 ampl. 0.040 P(d) 3.271 U O7
Hp(mag)
Phase


HIP32292 ; mag. 5.182 ampl. 0.106 P(d) 1.168 U B2V
HIP32397 ; mag. 7.231 ampl. 0.249 P(d) 53.780 P B5Ib
HIP32397 ; mag. 7.231 ampl. 0.249 P(d) 30.303 P B5Ib
HIP32586 ; mag. 8.986 ampl. 0.091 P(d) 19.235 U B0:nnpe
HIP32586 ; mag. 8.986 ampl. 0.091 P(d) 0.267 U B0:nnpe
Hp(mag)
Phase
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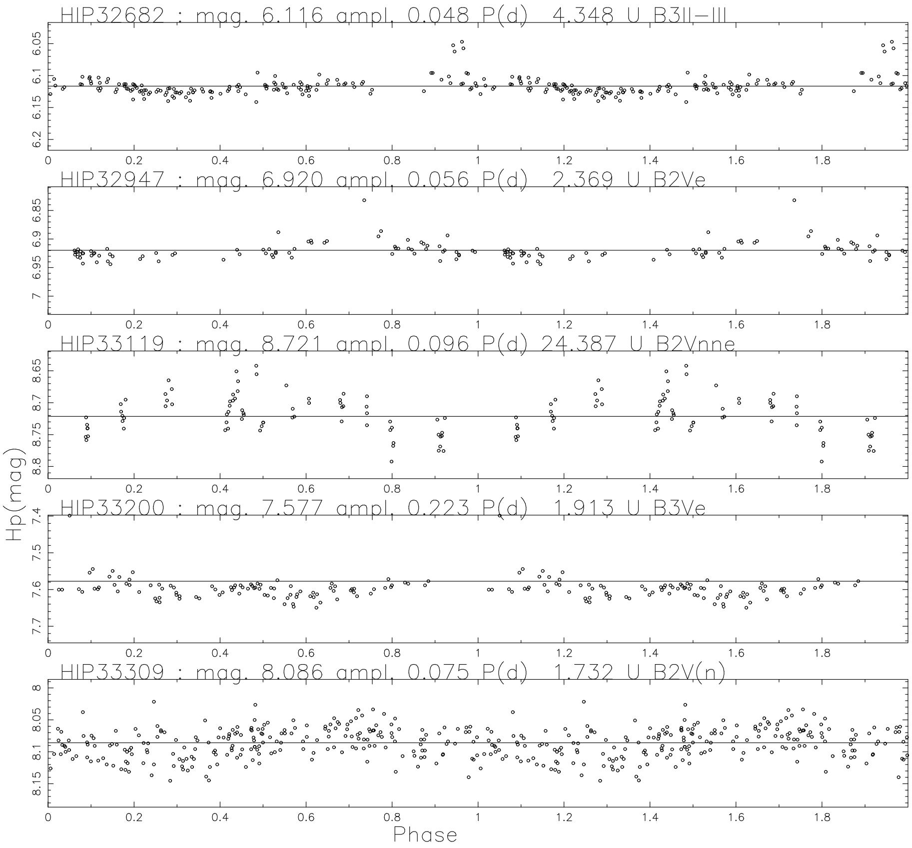
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP32682 ; mag. 6.116 ampl. 0.048 P(d) 4.348 U B3II-III
HIP32947 ; mag. 6.920 ampl. 0.056 P(d) 2.369 U B2Ve
HIP33119 ; mag. 8.721 ampl. 0.096 P(d) 24.387 U B2Vnne
HIP33200 ; mag. 7.577 ampl. 0.223 P(d) 1.913 U B3Ve
HIP33309 ; mag. 8.086 ampl. 0.075 P(d) 1.732 U B2V(n)
Hp(mag)
Phase
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0.4
0.6
0.8
1
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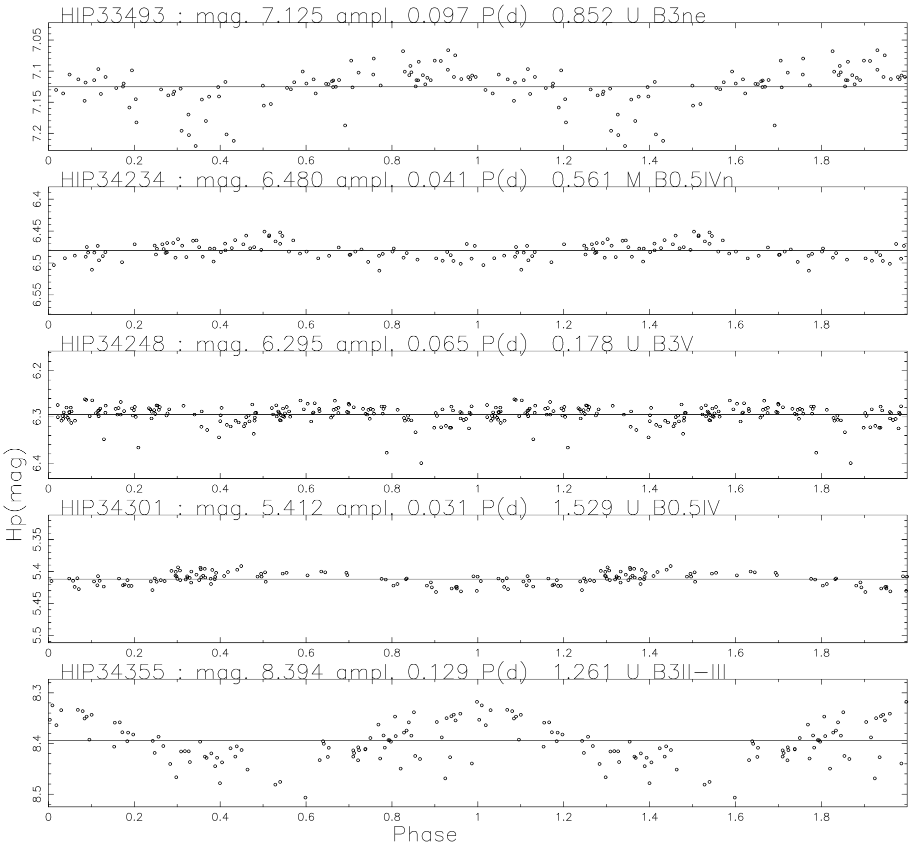
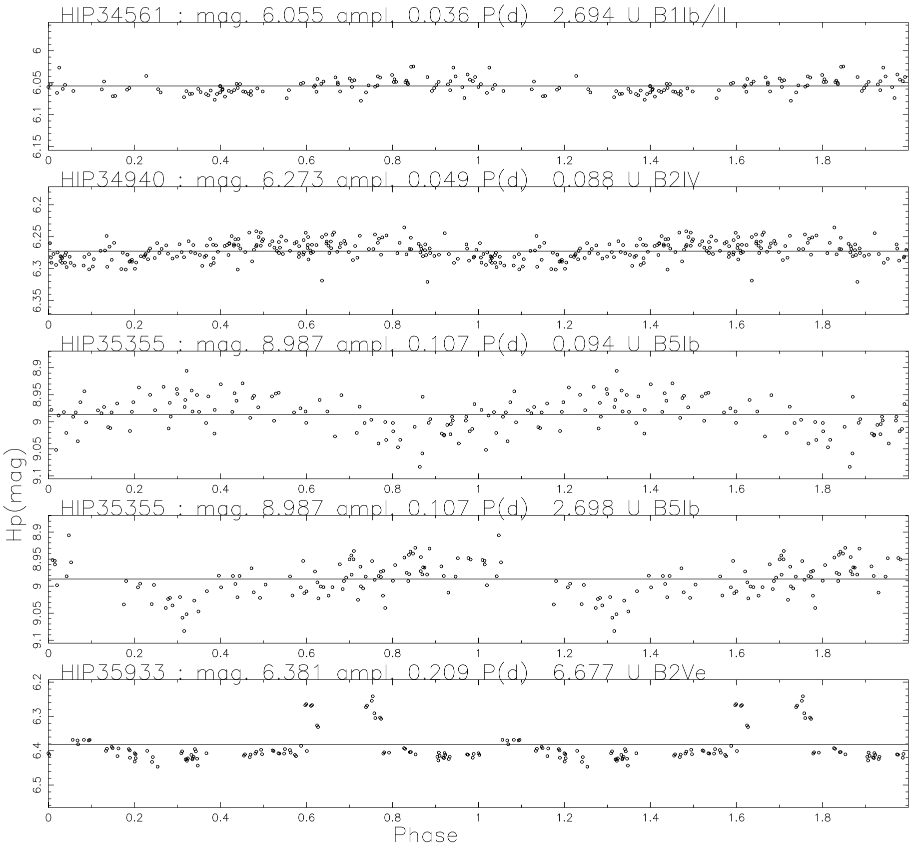
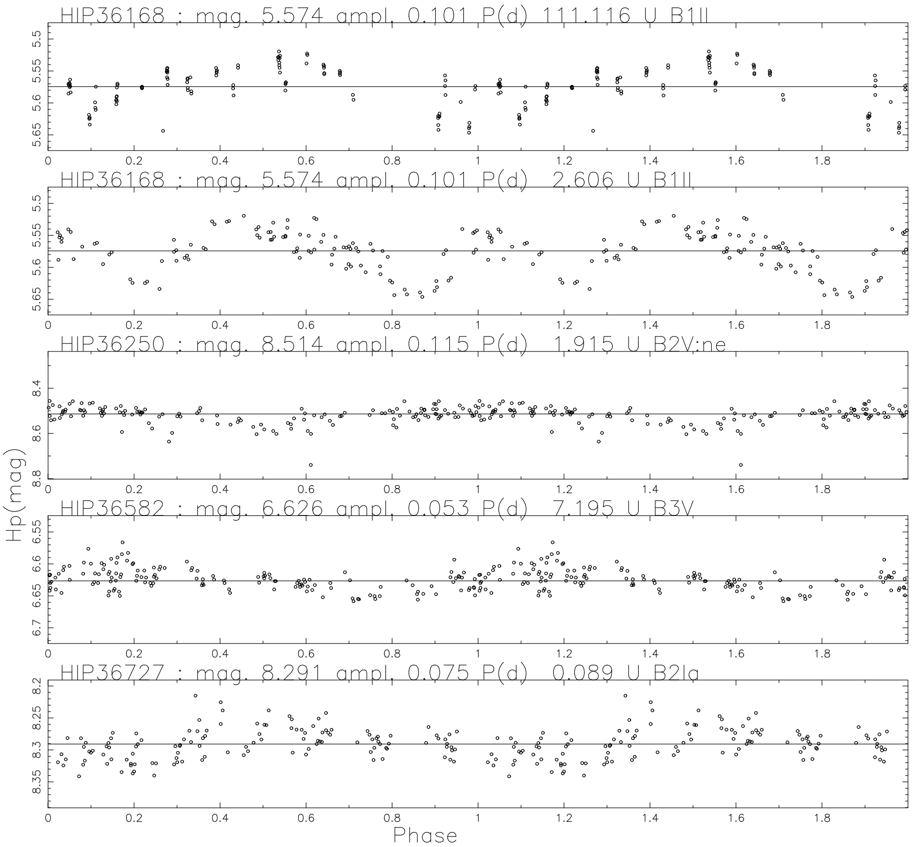
1.4
1.6
1.8


HIP33493 : mag. 7.125 ampl. 0.097 P(d) 0.852 U B3ne
HIP34234 : mag. 6.480 ampl. 0.041 P(d) 0.561 M B0.5IVn
HIP34248 : mag. 6.295 ampl. 0.065 P(d) 0.178 U B3V
HIP34301 : mag. 5.412 ampl. 0.031 P(d) 1.529 U B0.5IV
HIP34355 : mag. 8.394 ampl. 0.129 P(d) 1.261 U B3II-III
Hp(mag)
Phase


HIP34561 : mag. 6.055 ampl. 0.036 P(d) 2.694 U B1Ib/II
HIP34940 : mag. 6.273 ampl. 0.049 P(d) 0.088 U B2IV
HIP35355 : mag. 8.987 ampl. 0.107 P(d) 0.094 U B5Ib
HIP35355 : mag. 8.987 ampl. 0.107 P(d) 2.698 U B5Ib
HIP35933 : mag. 6.381 ampl. 0.209 P(d) 6.677 U B2Ve
Hp(mag)
Phase


HIP36168 : mag. 5.574 ampl. 0.101 P(d) 111.116 U B1II
HIP36168 : mag. 5.574 ampl. 0.101 P(d) 2.606 U B1II
HIP36250 : mag. 8.514 ampl. 0.115 P(d) 1.915 U B2V:ne
HIP36582 : mag. 6.626 ampl. 0.053 P(d) 7.195 U B3V
HIP36727 : mag. 8.291 ampl. 0.075 P(d) 0.089 U B2Ia
Hp(mag)
Phase
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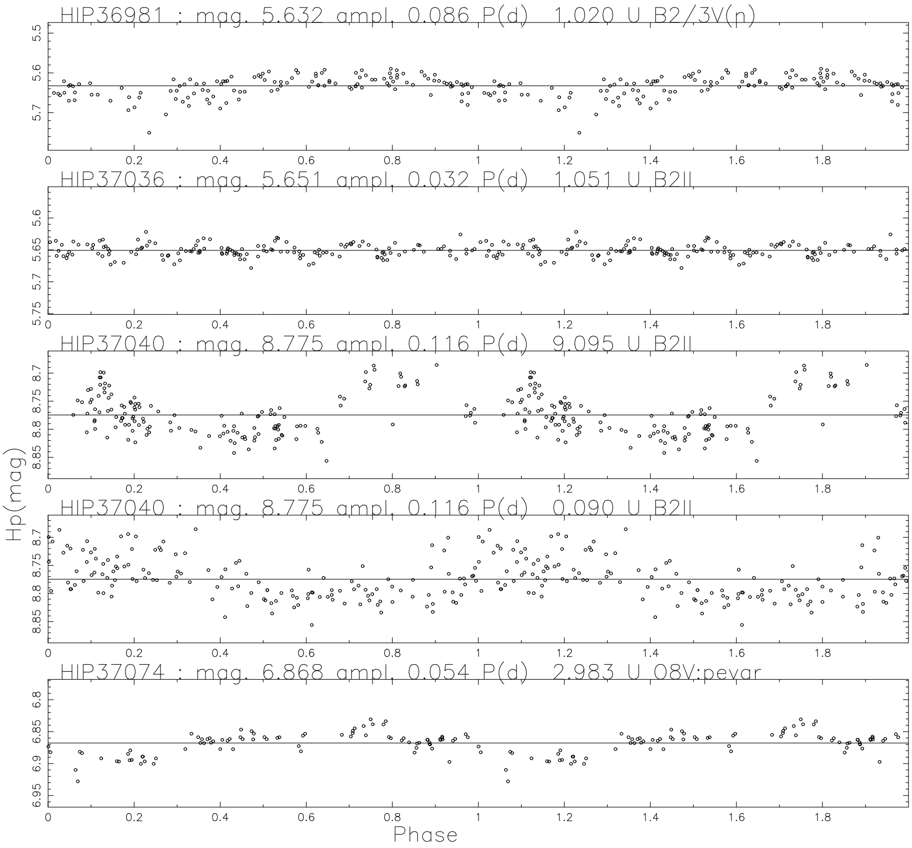
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP36981 : mag. 5.632 ampl. 0.086 P(d) 1.020 U B2/3V(n)
HIP37036 : mag. 5.651 ampl. 0.032 P(d) 1.051 U B2II
HIP37040 : mag. 8.775 ampl. 0.116 P(d) 9.095 U B2II
HIP37040 : mag. 8.775 ampl. 0.116 P(d) 0.090 U B2II
HIP37074 : mag. 6.868 ampl. 0.054 P(d) 2.983 U O8V:pevar
Hp(mag)
Phase
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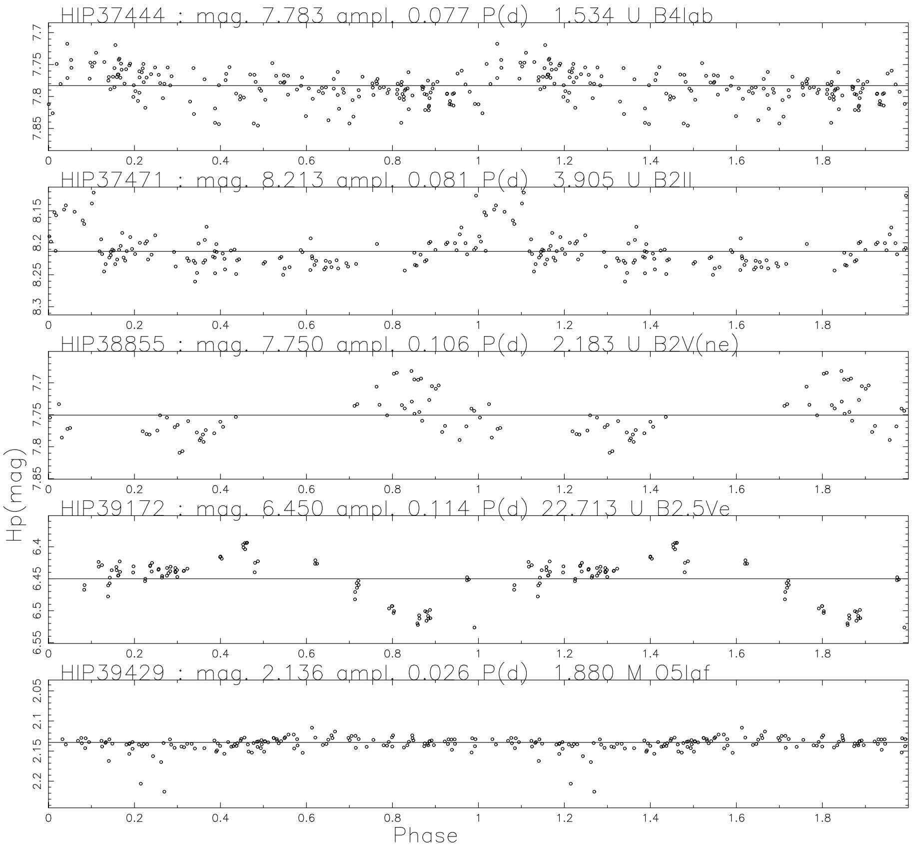
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP37444 : mag. 7.783 ampl. 0.077 P(d) 1.534 U B4Iab
HIP37471 : mag. 8.213 ampl. 0.081 P(d) 3.905 U B2II
HIP38855 : mag. 7.750 ampl. 0.106 P(d) 2.183 U B2V(ne)
HIP39172 : mag. 6.450 ampl. 0.114 P(d) 22.713 U B2.5Ve
HIP39429 : mag. 2.136 ampl. 0.026 P(d) 1.880 M O5Iaf
Hp(mag)
Phase
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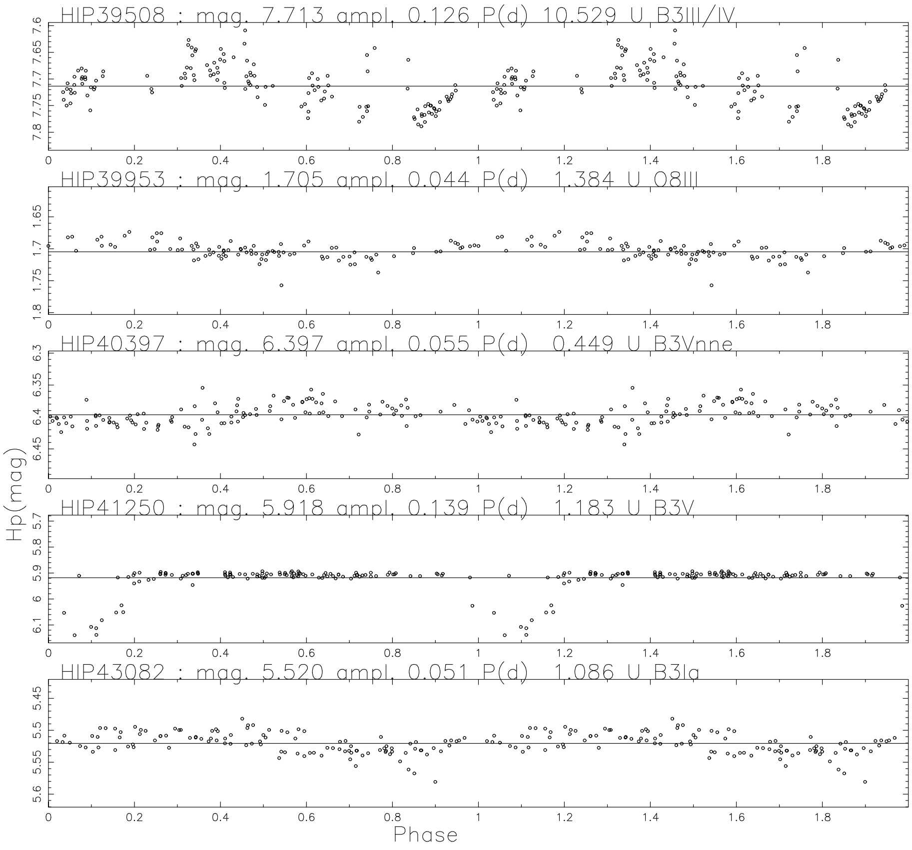
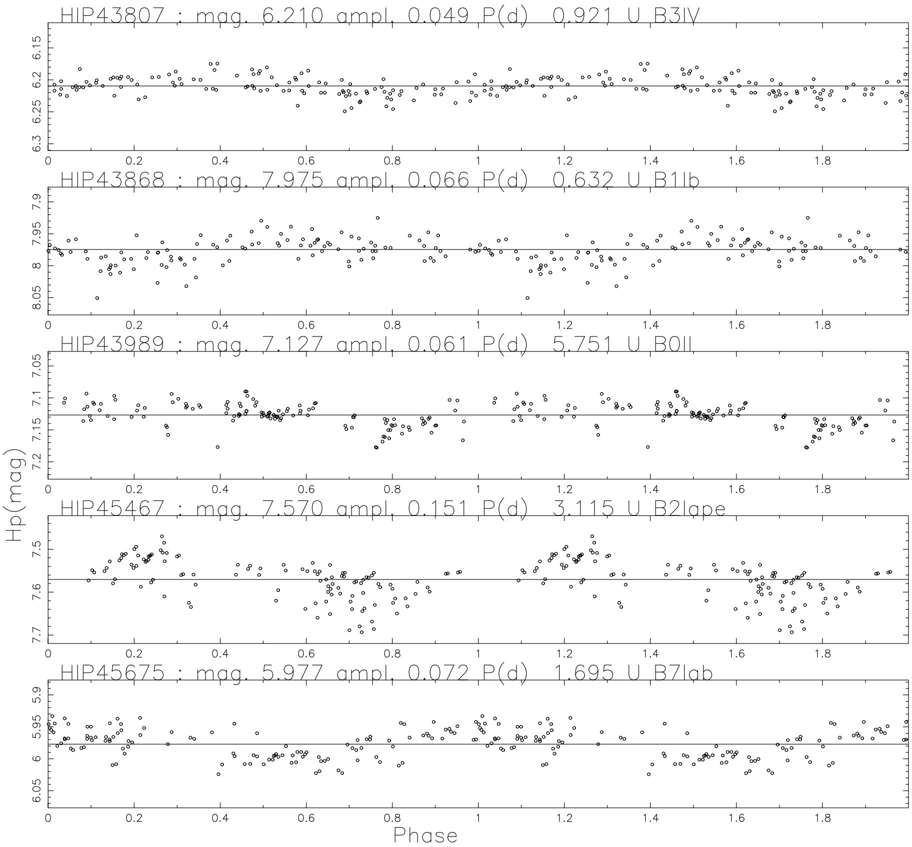
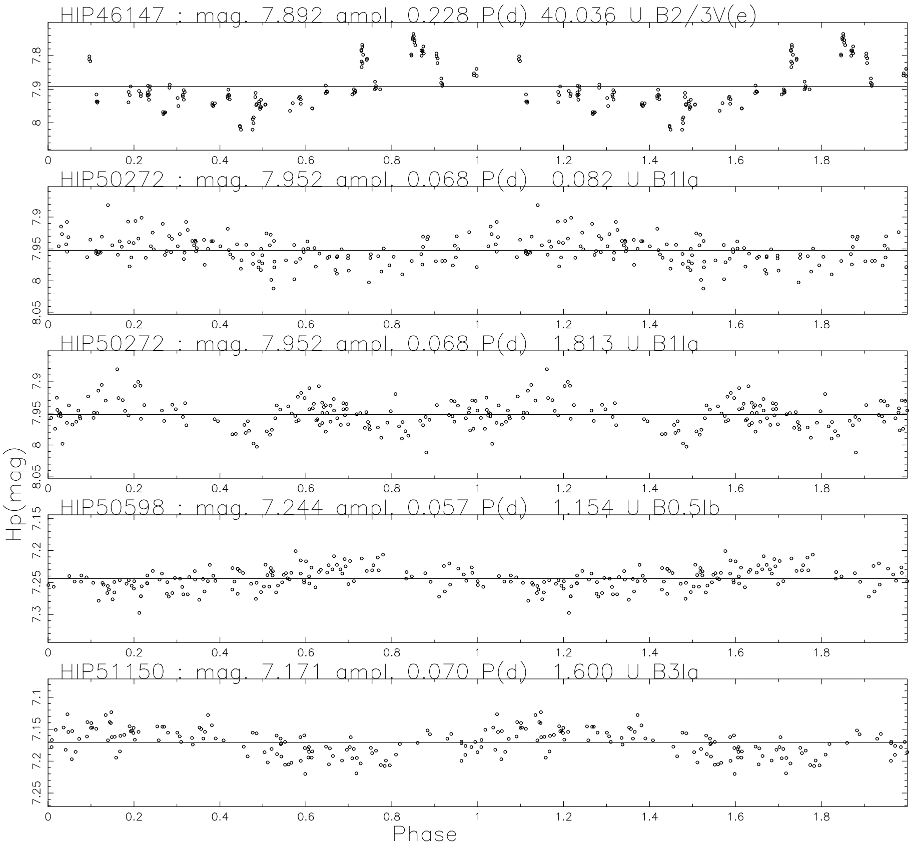
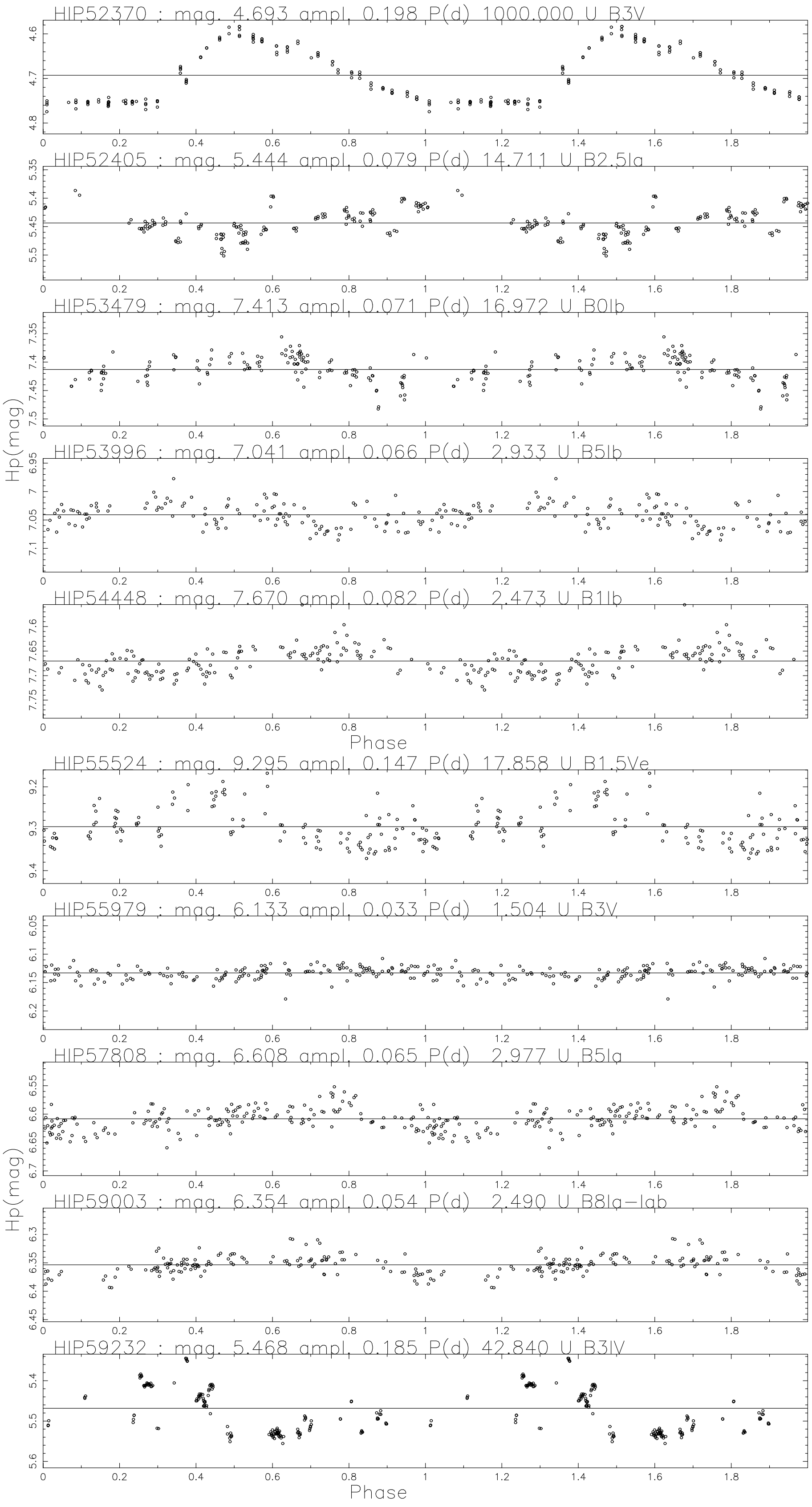
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP39508 : mag. 7.713 ampl. 0.126 P(d) 10.529 U B3III/IV
HIP39953 : mag. 1.705 ampl. 0.044 P(d) 1.384 U O8III
HIP40397 : mag. 6.397 ampl. 0.055 P(d) 0.449 U B3Vnne
HIP41250 : mag. 5.918 ampl. 0.139 P(d) 1.183 U B3V
HIP43082 : mag. 5.520 ampl. 0.051 P(d) 1.086 U B3Ia
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


HIP43807 ; mag. 6.210 ampl. 0.049 P(d) 0.921 U B3IV
HIP43868 ; mag. 7.975 ampl. 0.066 P(d) 0.632 U B1Ib
HIP43989 ; mag. 7.127 ampl. 0.061 P(d) 5.751 U B0II
HIP45467 ; mag. 7.570 ampl. 0.151 P(d) 3.115 U B2Iape
HIP45675 ; mag. 5.977 ampl. 0.072 P(d) 1.695 U B7Iab
Hp(mag)
Phase


HIP46147 ; mag. 7.892 ampl. 0.228 P(d) 40.036 U B2/3V(e)
HIP50272 ; mag. 7.952 ampl. 0.068 P(d) 0.082 U B1Ia
HIP50272 ; mag. 7.952 ampl. 0.068 P(d) 1.813 U B1Ia
HIP50598 ; mag. 7.244 ampl. 0.057 P(d) 1.154 U B0.5Ib
HIP51150 ; mag. 7.171 ampl. 0.070 P(d) 1.600 U B3Ia
Hp(mag)
Phase


HIP52370 : mag. 4.693 ampl. 0.198 P(d) 1000.000 U B3V
HIP52405 : mag. 5.444 ampl. 0.079 P(d) 14.711 U B2.5Ia
HIP53479 : mag. 7.413 ampl. 0.071 P(d) 16.972 U B0Ib
HIP53996 : mag. 7.041 ampl. 0.066 P(d) 2.933 U B5Ib
HIP54448 : mag. 7.670 ampl. 0.082 P(d) 2.473 U B1Ib
Hp(mag)
Phase
HIP55524 : mag. 9.295 ampl. 0.147 P(d) 17.858 U B1.5Ve
HIP55979 : mag. 6.133 ampl. 0.033 P(d) 1.504 U B3V
HIP57808 : mag. 6.608 ampl. 0.065 P(d) 2.977 U B5Ia
HIP59003 : mag. 6.354 ampl. 0.054 P(d) 2.490 U B8Ia-Iab
HIP59232 : mag. 5.468 ampl. 0.185 P(d) 42.840 U B3IV
Hp(mag)
Phase
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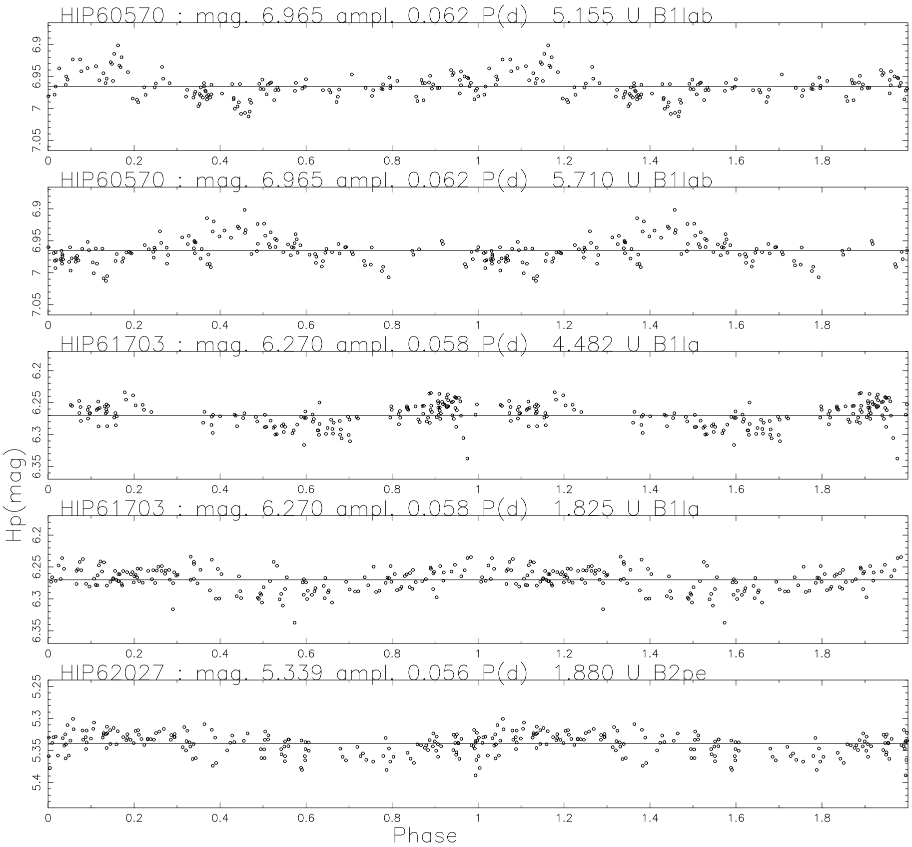
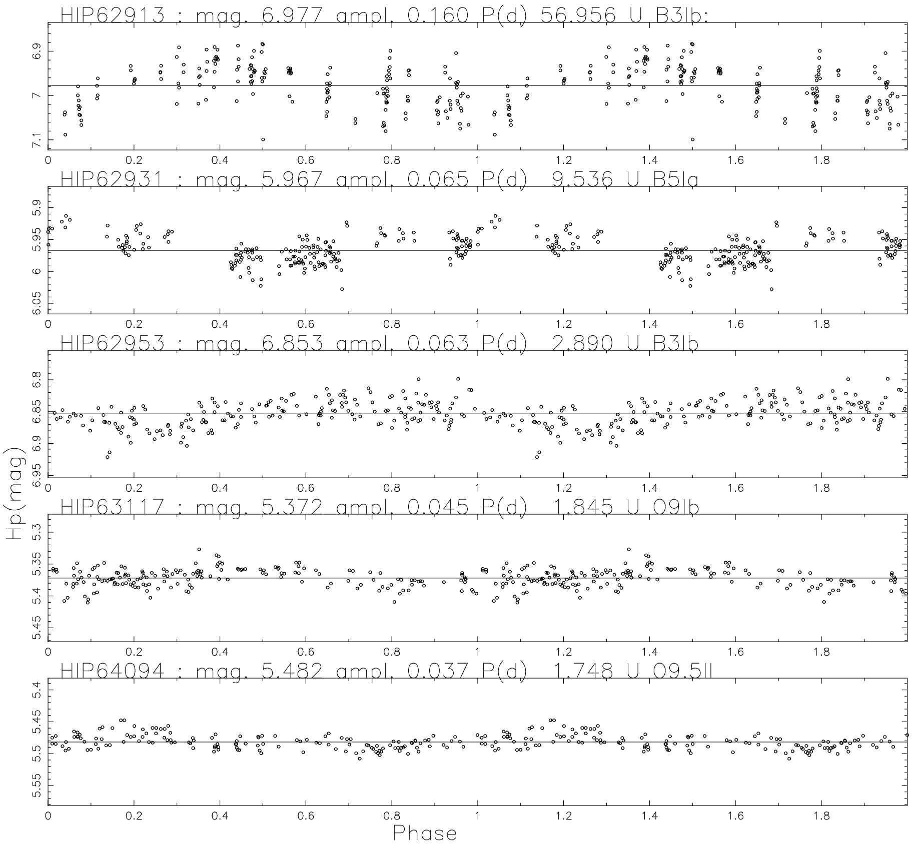
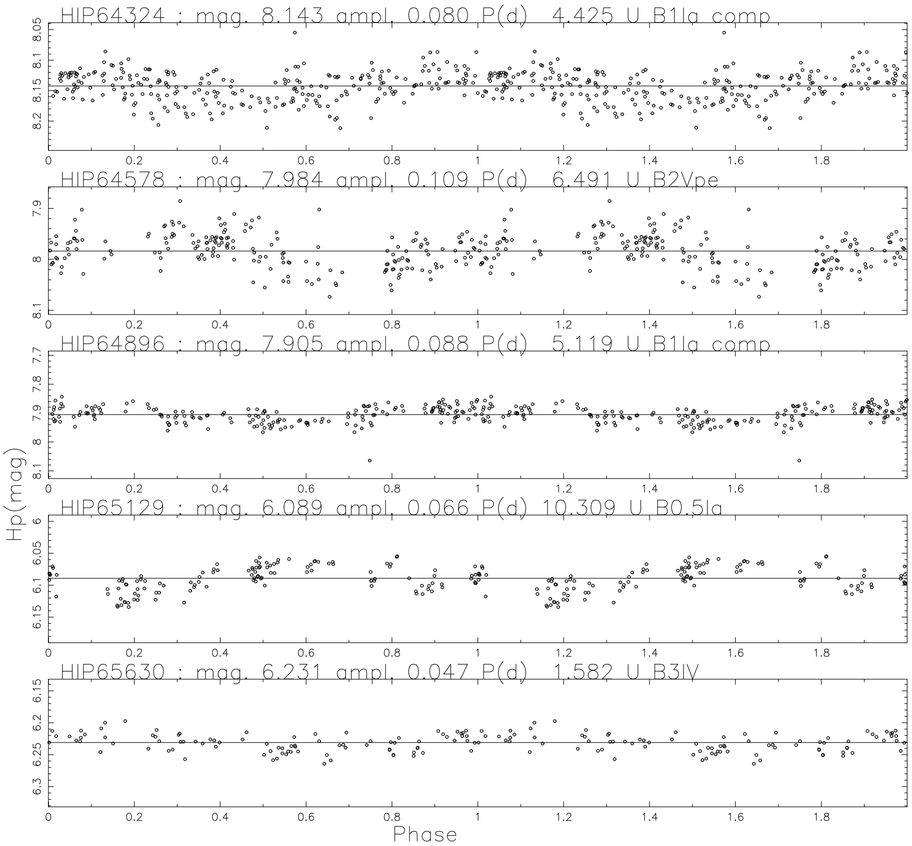
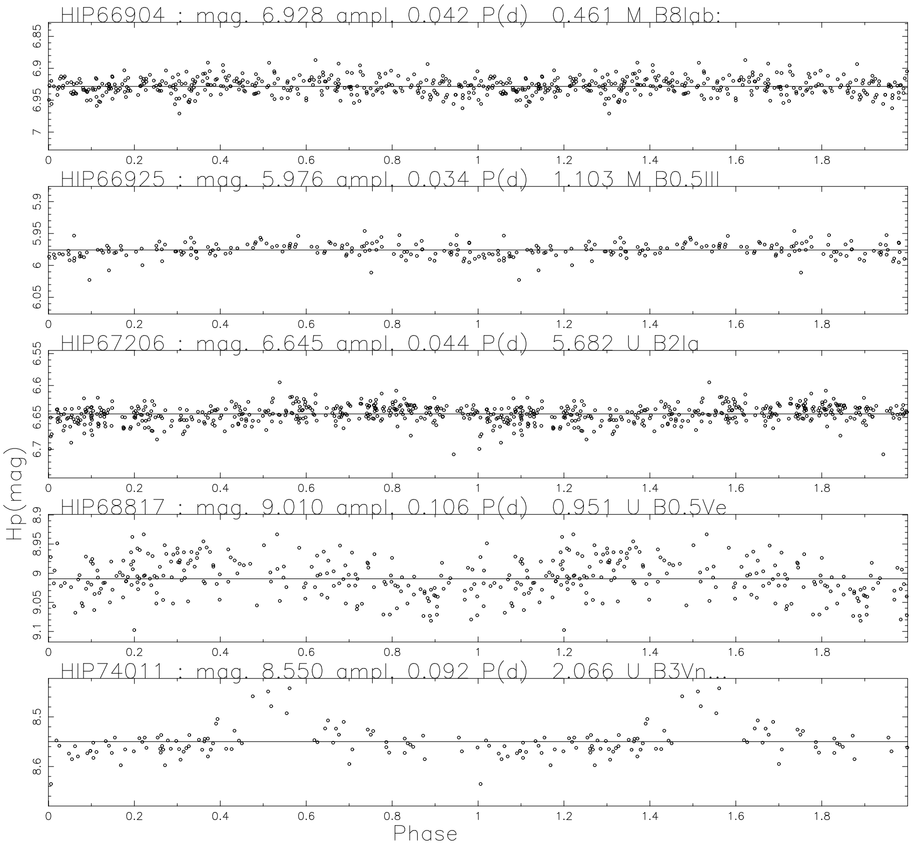
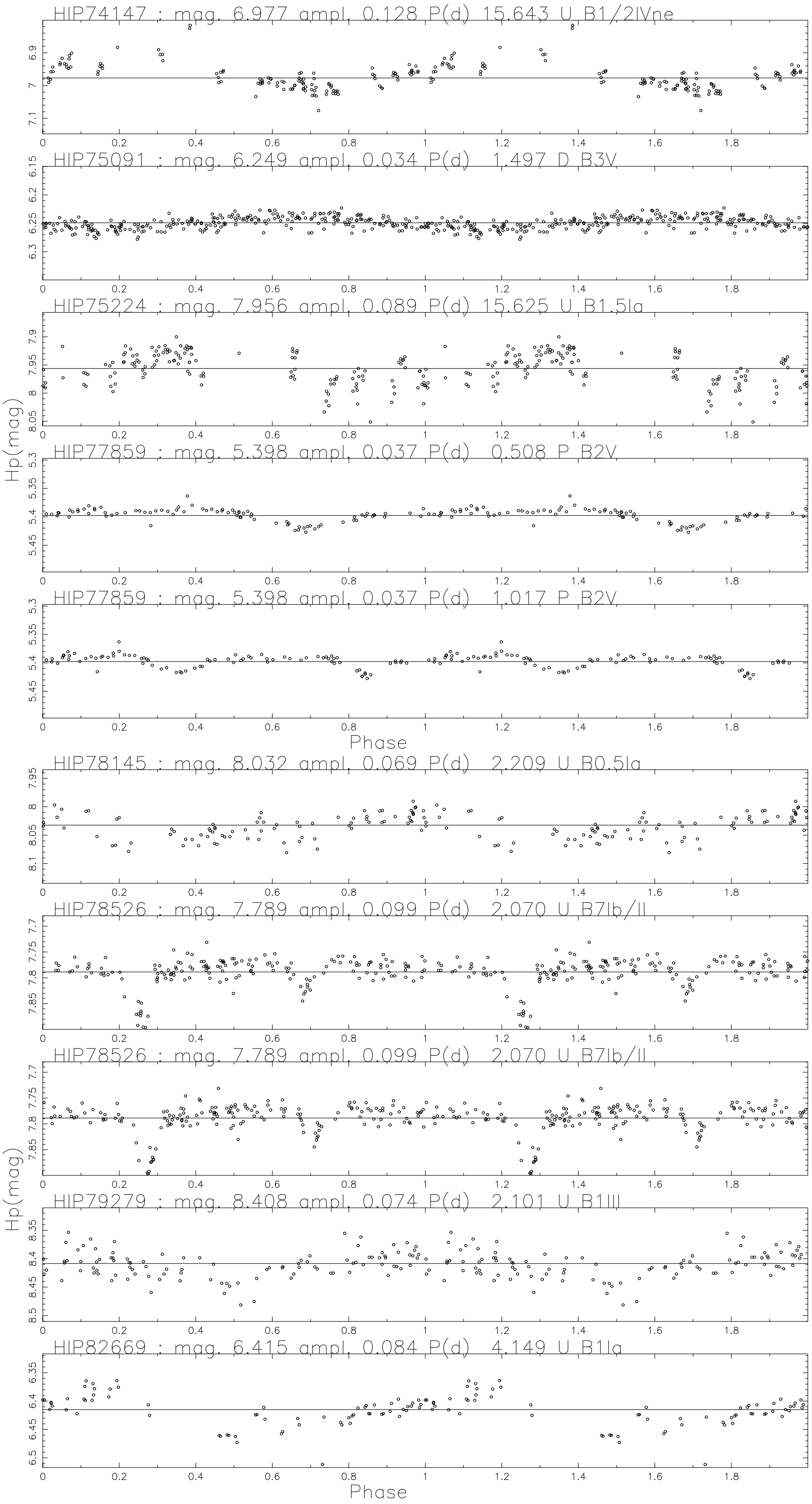
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

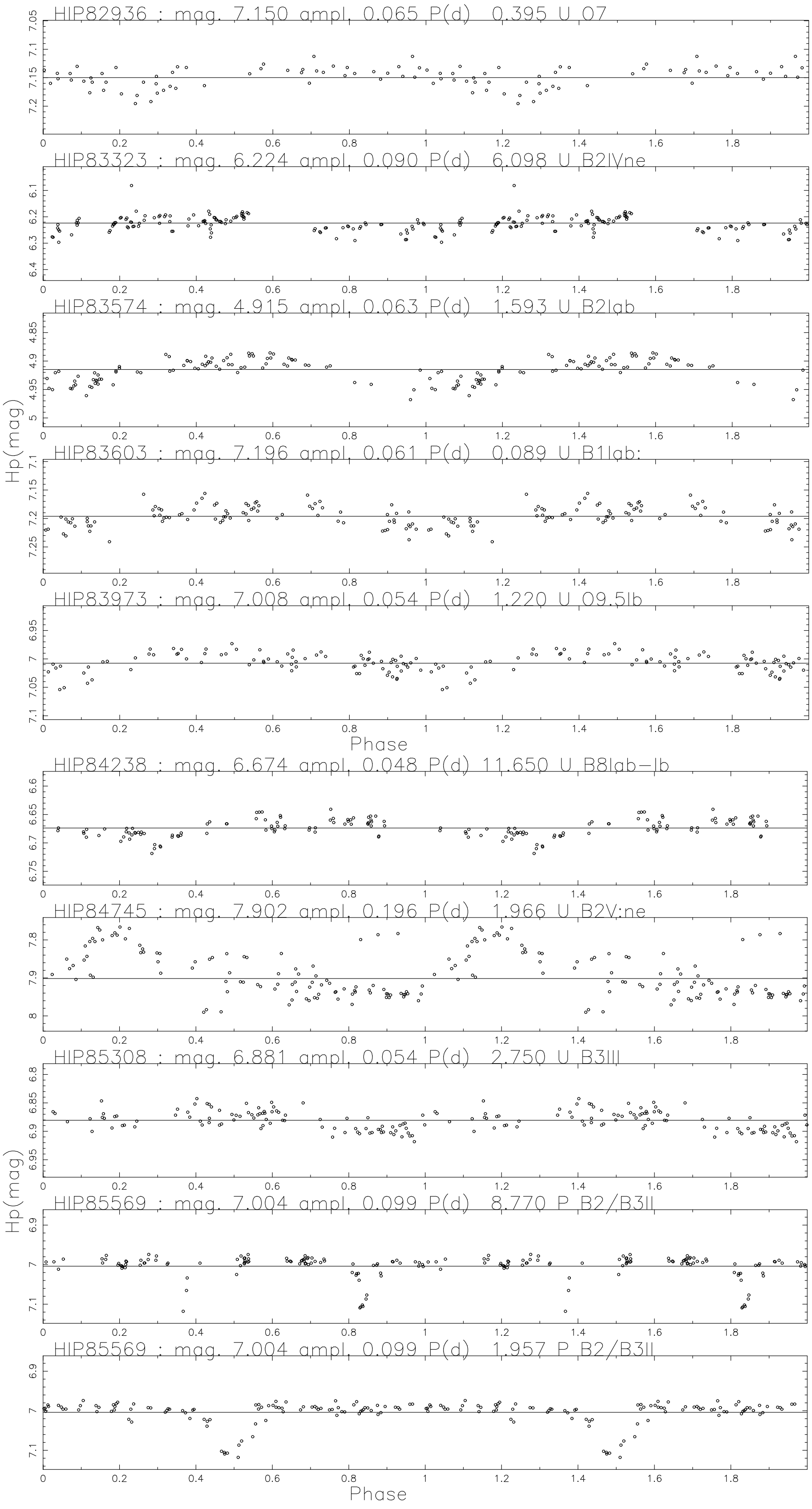

HIP60570 ; mag. 6.965 ampl. 0.062 P(d) 5.155 U B1Iab
HIP60570 ; mag. 6.965 ampl. 0.062 P(d) 5.710 U B1Iab
HIP61703 ; mag. 6.270 ampl. 0.058 P(d) 4.482 U B1Ia
HIP61703 ; mag. 6.270 ampl. 0.058 P(d) 1.825 U B1Ia
HIP62027 ; mag. 5.339 ampl. 0.056 P(d) 1.880 U B2pe
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

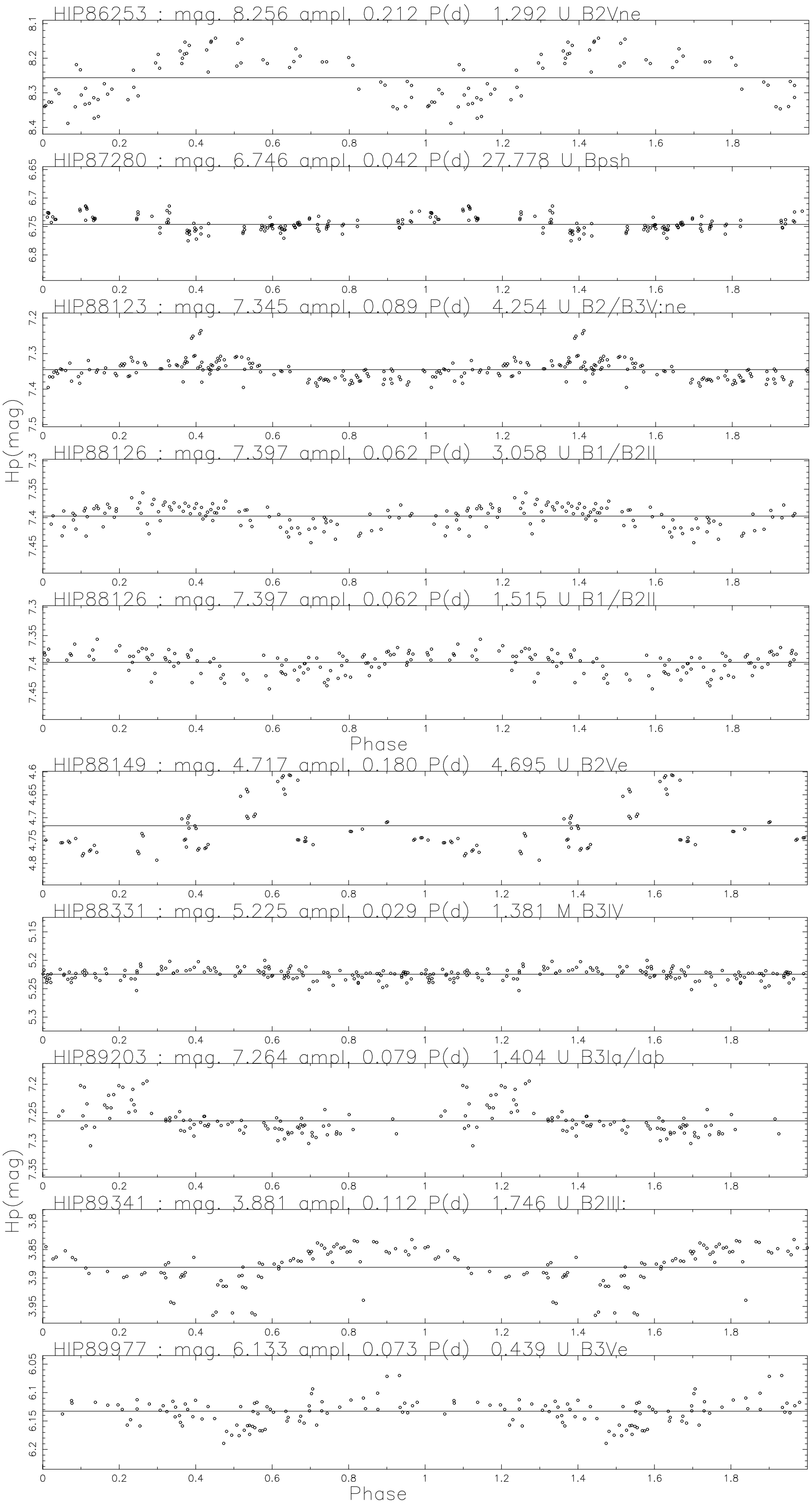

HIP62913 ; mag. 6.977 ampl. 0.160 P(d) 56.956 U B3Ib:
HIP62931 ; mag. 5.967 ampl. 0.065 P(d) 9.536 U B5Ia
HIP62953 ; mag. 6.853 ampl. 0.063 P(d) 2.890 U B3Ib
HIP63117 ; mag. 5.372 ampl. 0.045 P(d) 1.845 U O9Ib
HIP64094 ; mag. 5.482 ampl. 0.037 P(d) 1.748 U O9.5II
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

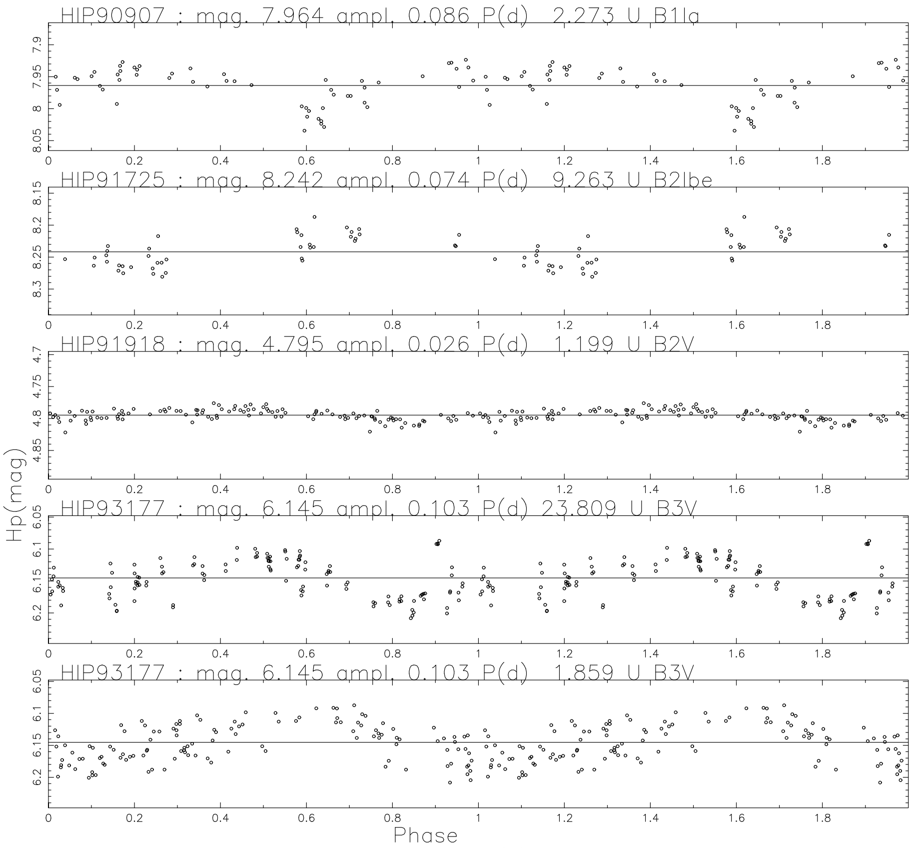

HIP64324 : mag. 8.143 ampl. 0.080 P(d) 4.425 U B1Ia comp
HIP64578 : mag. 7.984 ampl. 0.109 P(d) 6.491 U B2Vpe
HIP64896 : mag. 7.905 ampl. 0.088 P(d) 5.119 U B1Ia comp
HIP65129 : mag. 6.089 ampl. 0.066 P(d) 10.309 U B0.5Ia
HIP65630 : mag. 6.231 ampl. 0.047 P(d) 1.582 U B3IV
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

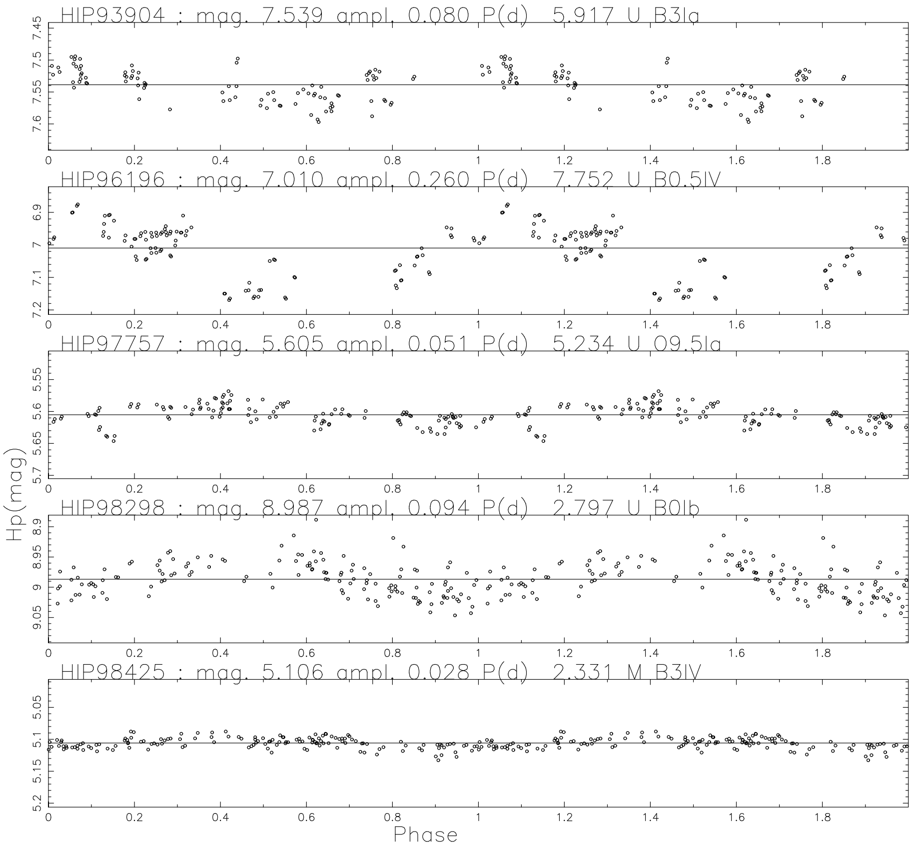

HIP66904 : mag. 6.928 ampl. 0.042 P(d) 0.461 M B8Iab:
HIP66925 : mag. 5.976 ampl. 0.034 P(d) 1.103 M B0.5III
HIP67206 : mag. 6.645 ampl. 0.044 P(d) 5.682 U B2Ia
HIP68817 : mag. 9.010 ampl. 0.106 P(d) 0.951 U B0.5Ve
HIP74011 : mag. 8.550 ampl. 0.092 P(d) 2.066 U B3Vn...
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

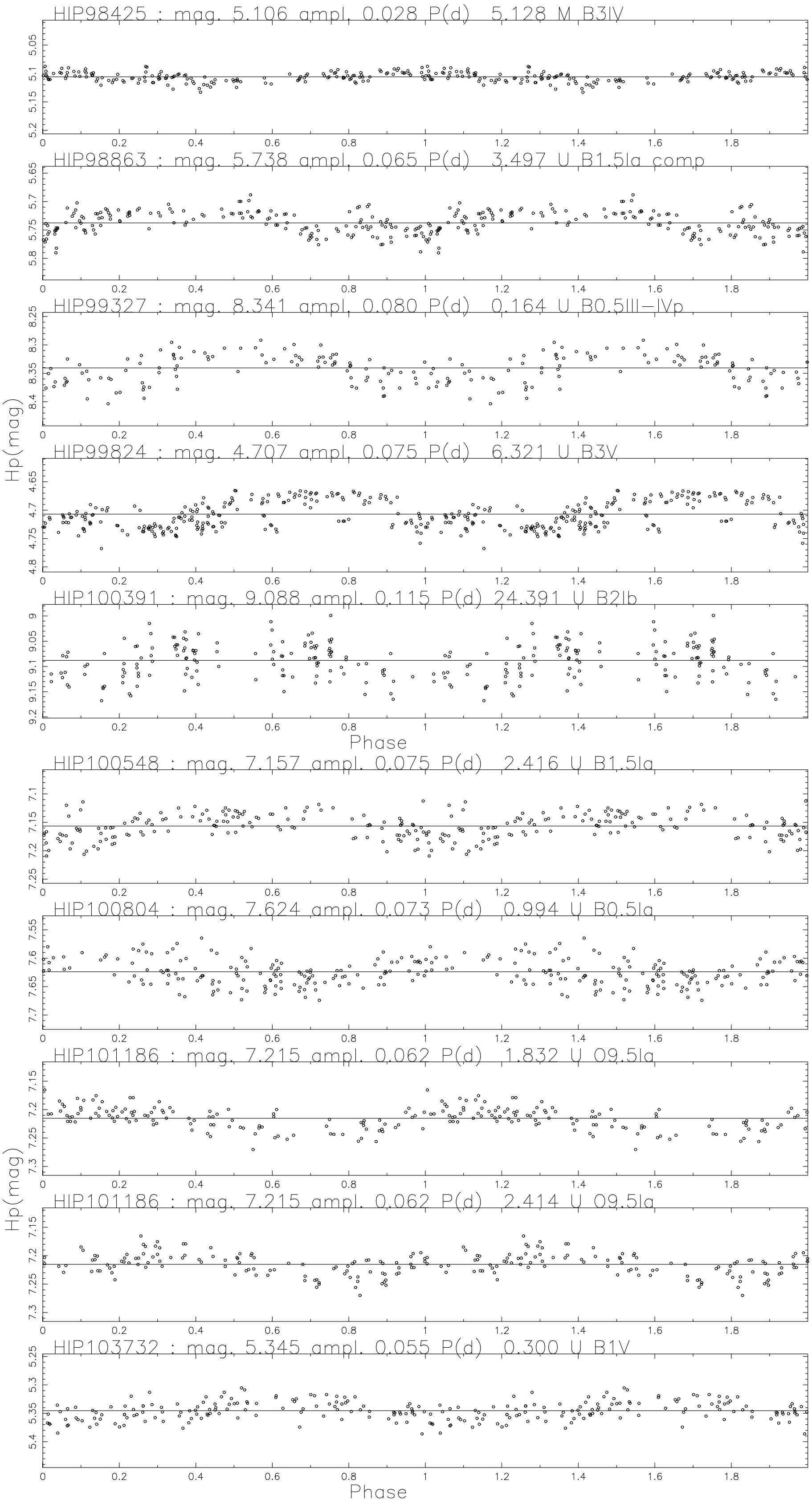

HIP74147 ; mag. 6.977 ampl. 0.128 P(d) 15.643 U B1/2IVne
HIP75091 ; mag. 6.249 ampl. 0.034 P(d) 1.497 D B3V
HIP75224 ; mag. 7.956 ampl. 0.089 P(d) 15.625 U B1.5Ia
HIP77859 ; mag. 5.398 ampl. 0.037 P(d) 0.508 P B2V
HIP77859 ; mag. 5.398 ampl. 0.037 P(d) 1.017 P B2V
HIP78145 ; mag. 8.032 ampl. 0.069 P(d) 2.209 U B0.5Ia
HIP78526 ; mag. 7.789 ampl. 0.099 P(d) 2.070 U B7Ib/II
HIP78526 ; mag. 7.789 ampl. 0.099 P(d) 2.070 U B7Ib/II
HIP79279 ; mag. 8.408 ampl. 0.074 P(d) 2.101 U B1III
HIP82669 ; mag. 6.415 ampl. 0.084 P(d) 4.149 U B1Ia
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

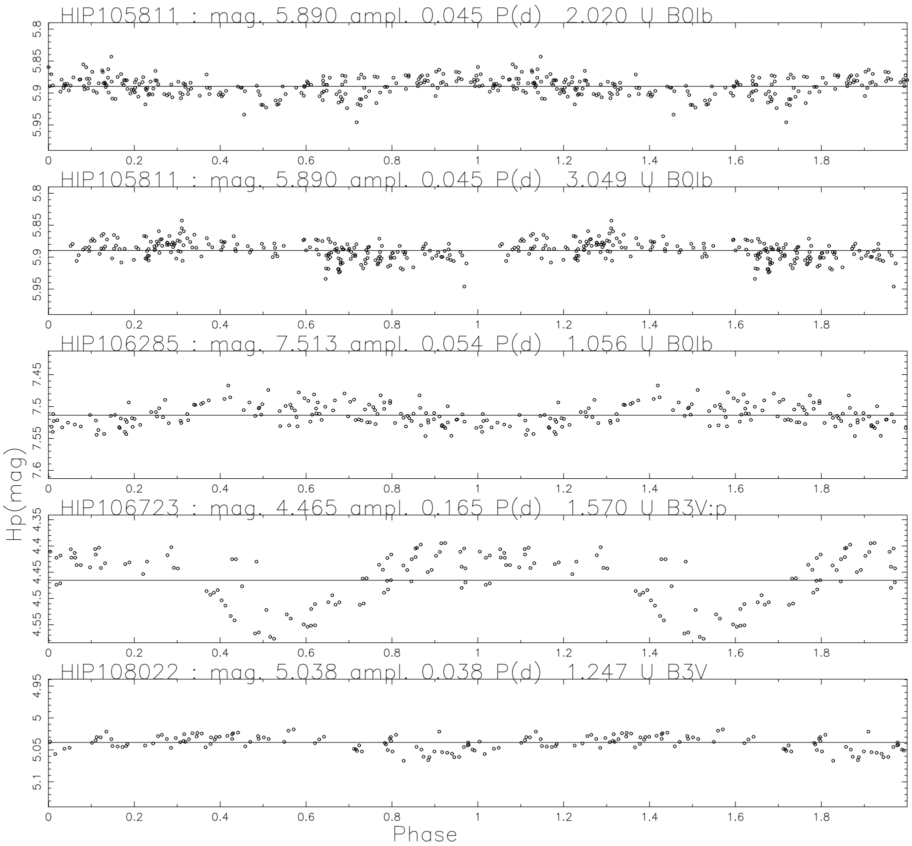

HIP82936 : mag. 7.150 ampl. 0.065 P(d) 0.395 U O7
HIP83323 : mag. 6.224 ampl. 0.090 P(d) 6.098 U B2IVne
HIP83574 : mag. 4.915 ampl. 0.063 P(d) 1.593 U B2Iab
HIP83603 : mag. 7.196 ampl. 0.061 P(d) 0.089 U B1Iab:
HIP83973 : mag. 7.008 ampl. 0.054 P(d) 1.220 U O9.5Ib
Hp(mag)
Phase
HIP84238 : mag. 6.674 ampl. 0.048 P(d) 11.650 U B8Iab-Ib
HIP84745 : mag. 7.902 ampl. 0.196 P(d) 1.966 U B2V:ne
HIP85308 : mag. 6.881 ampl. 0.054 P(d) 2.750 U B3III
HIP85569 : mag. 7.004 ampl. 0.099 P(d) 8.770 P B2/B3II
HIP85569 : mag. 7.004 ampl. 0.099 P(d) 1.957 P B2/B3II
Hp(mag)
Phase

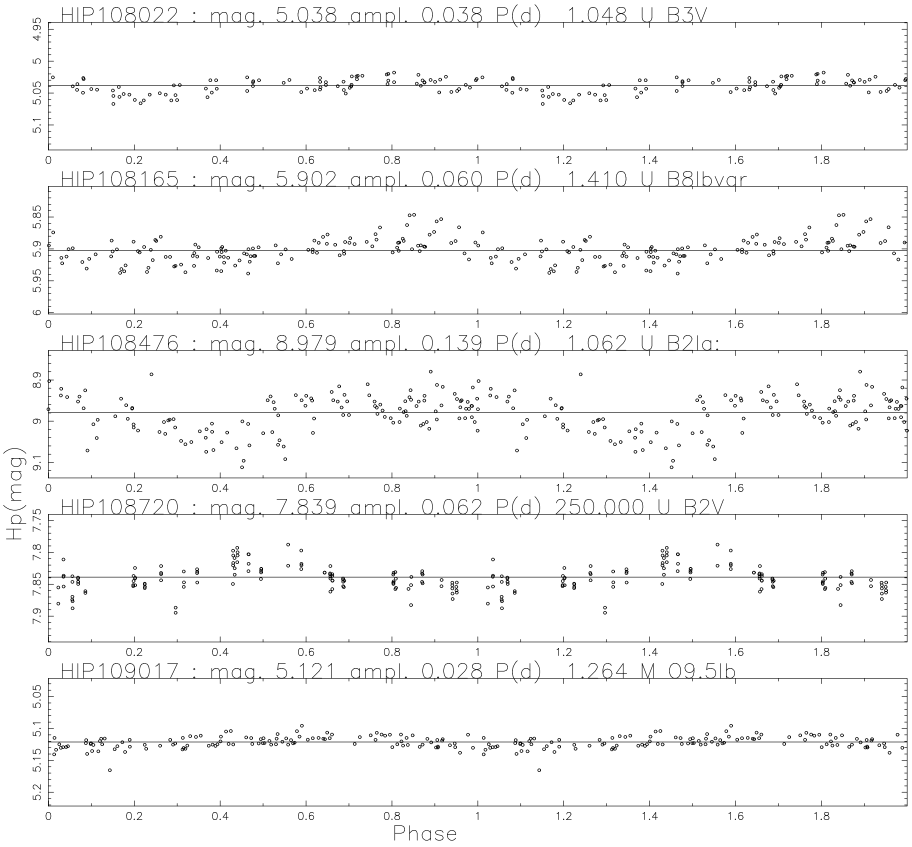

HIP86253 ; mag. 8.256 ampl. 0.212 P(d) 1.292 U B2Vne
HIP87280 ; mag. 6.746 ampl. 0.042 P(d) 27.778 U Bpsh
HIP88123 ; mag. 7.345 ampl. 0.089 P(d) 4.254 U B2/B3V:ne
HIP88126 ; mag. 7.397 ampl. 0.062 P(d) 3.058 U B1/B2II
HIP88126 ; mag. 7.397 ampl. 0.062 P(d) 1.515 U B1/B2II
HIP88149 ; mag. 4.717 ampl. 0.180 P(d) 4.695 U B2Ve
HIP88331 ; mag. 5.225 ampl. 0.029 P(d) 1.381 M B3IV
HIP89203 ; mag. 7.264 ampl. 0.079 P(d) 1.404 U B3Ia/Iab
HIP89341 ; mag. 3.881 ampl. 0.112 P(d) 1.746 U B2III:
HIP89977 ; mag. 6.133 ampl. 0.073 P(d) 0.439 U B3Ve
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8

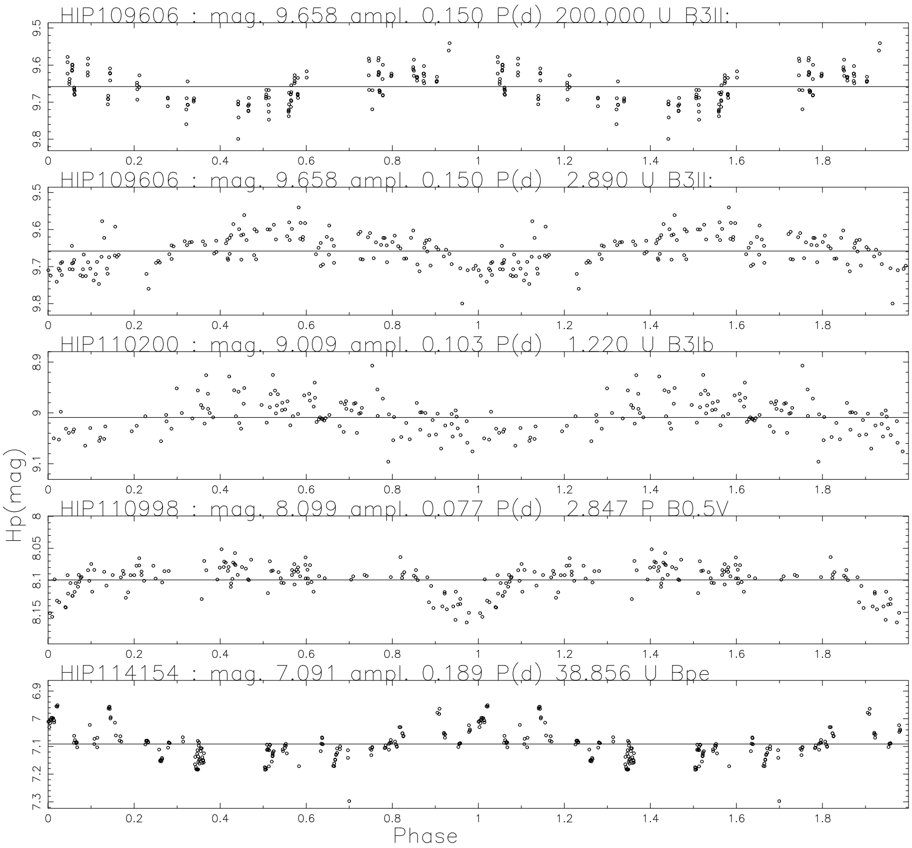

HIP90907 ; mag. 7.964 ampl. 0.086 P(d) 2.273 U B1Ia
HIP91725 ; mag. 8.242 ampl. 0.074 P(d) 9.263 U B2Ibe
HIP91918 ; mag. 4.795 ampl. 0.026 P(d) 1.199 U B2V
HIP93177 ; mag. 6.145 ampl. 0.103 P(d) 23.809 U B3V
HIP93177 ; mag. 6.145 ampl. 0.103 P(d) 1.859 U B3V
Hp(mag)
Phase


HIP93904 ; mag. 7.539 ampl. 0.080 P(d) 5.917 U B3Ia
HIP96196 ; mag. 7.010 ampl. 0.260 P(d) 7.752 U B0.5IV
HIP97757 ; mag. 5.605 ampl. 0.051 P(d) 5.234 U O9.5Ia
HIP98298 ; mag. 8.987 ampl. 0.094 P(d) 2.797 U B0Ib
HIP98425 ; mag. 5.106 ampl. 0.028 P(d) 2.331 M B3IV
Hp(mag)
Phase


HIP98425 : mag. 5.106 ampl. 0.028 P(d) 5.128 M B3IV
5.05
5.1
5.15
5.2
HIP98863 : mag. 5.738 ampl. 0.065 P(d) 3.497 U B1.5Ia comp
5.65
5.7
5.75
5.8
HIP99327 : mag. 8.341 ampl. 0.080 P(d) 0.164 U B0.5III−IVp
8.25
8.3
8.35
8.4
HIP99824 : mag. 4.707 ampl. 0.075 P(d) 6.321 U B3V
4.65
4.7
4.75
4.8
HIP100391 : mag. 9.088 ampl. 0.115 P(d) 24.391 U B2Ib
9
9.05
9.1
9.15
9.2
Hp(mag)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
Phase
HIP100548 : mag. 7.157 ampl. 0.075 P(d) 2.416 U B1.5Ia
7.1
7.15
7.2
7.25
HIP100804 : mag. 7.624 ampl. 0.073 P(d) 0.994 U B0.5Ia
7.55
7.6
7.65
7.7
HIP101186 : mag. 7.215 ampl. 0.062 P(d) 1.832 U O9.5Ia
7.15
7.2
7.25
7.3
HIP101186 : mag. 7.215 ampl. 0.062 P(d) 2.414 U O9.5Ia
7.15
7.2
7.25
7.3
HIP103732 : mag. 5.345 ampl. 0.055 P(d) 0.300 U B1V
5.25
5.3
5.35
5.4
Hp(mag)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
Phase


HIP105811 : mag. 5.890 ampl. 0.045 P(d) 2.020 U B0Ib
HIP105811 : mag. 5.890 ampl. 0.045 P(d) 3.049 U B0Ib
HIP106285 : mag. 7.513 ampl. 0.054 P(d) 1.056 U B0Ib
HIP106723 : mag. 4.465 ampl. 0.165 P(d) 1.570 U B3V:p
HIP108022 : mag. 5.038 ampl. 0.038 P(d) 1.247 U B3V
Hp(mag)
Phase


HIP108022 : mag. 5.038 ampl. 0.038 P(d) 1.048 U B3V
HIP108165 : mag. 5.902 ampl. 0.060 P(d) 1.410 U B8Ibvar
HIP108476 : mag. 8.979 ampl. 0.139 P(d) 1.062 U B2Ia:
HIP108720 : mag. 7.839 ampl. 0.062 P(d) 250.000 U B2V
HIP109017 : mag. 5.121 ampl. 0.028 P(d) 1.264 M O9.5Ib
Hp(mag)
Phase


HIP109606 : mag. 9.658 ampl. 0.150 P(d) 200.000 U B3II:
HIP109606 : mag. 9.658 ampl. 0.150 P(d) 2.890 U B3II:
HIP110200 : mag. 9.009 ampl. 0.103 P(d) 1.220 U B3Ib
HIP110998 : mag. 8.099 ampl. 0.077 P(d) 2.847 P B0.5V
HIP114154 : mag. 7.091 ampl. 0.189 P(d) 38.856 U Bpe
Hp(mag)
Phase
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
9.5
9.6
9.7
9.8
8.9
9
9.1
8
8.05
8.1
8.15
6.9
7
7.1
7.2
7.3

B.3. Catalog of non-included periodic variable stars

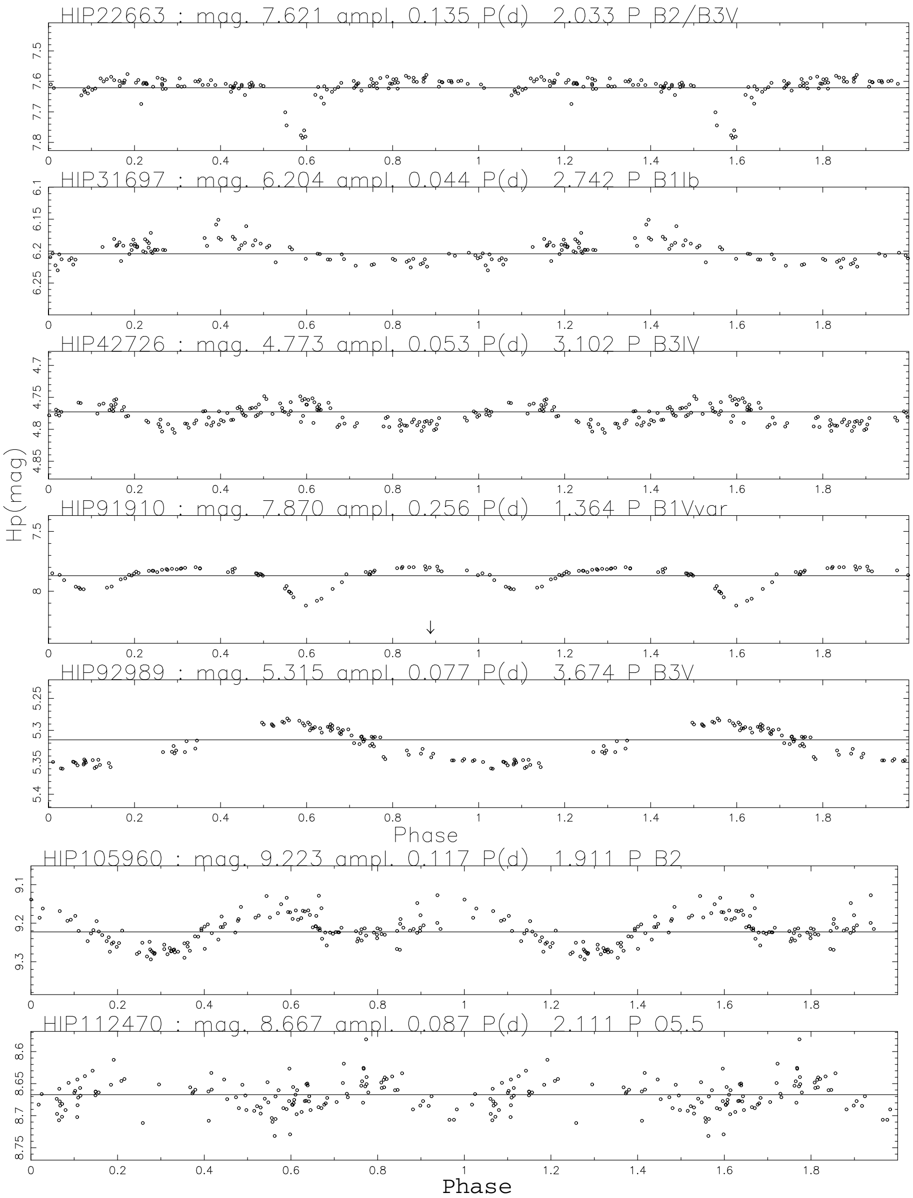


Fig. B.3. This figure plots Hp mag. vs. Phase. Epoch is arbitrarily JD-2 440 000 = 7800, which is the beginning of the HIPPARCOS observations. The Hp magnitude, mean amplitude and periods are accurate to ~0.1%.

B.4. Catalog of periodic stars below T_h

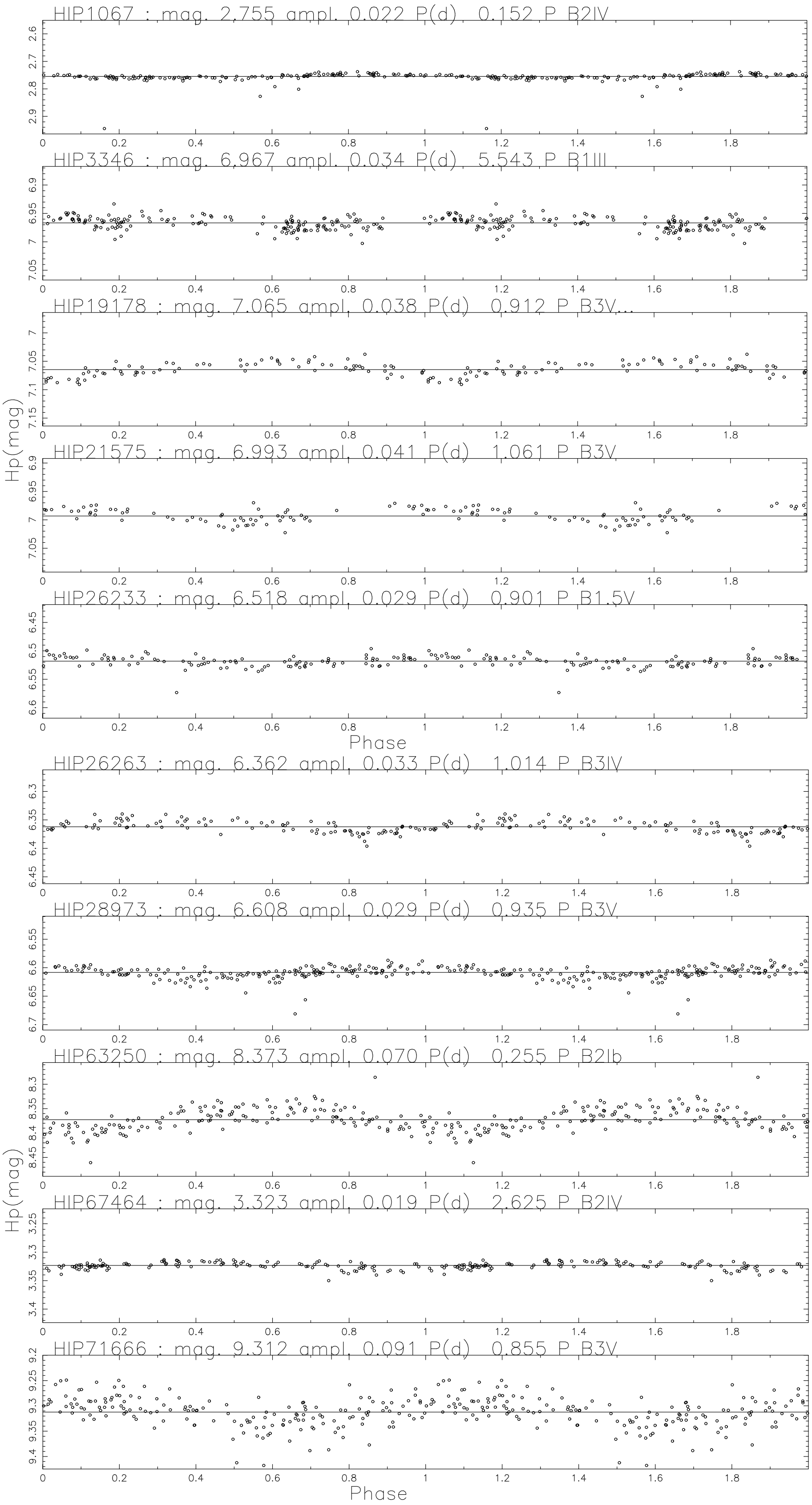
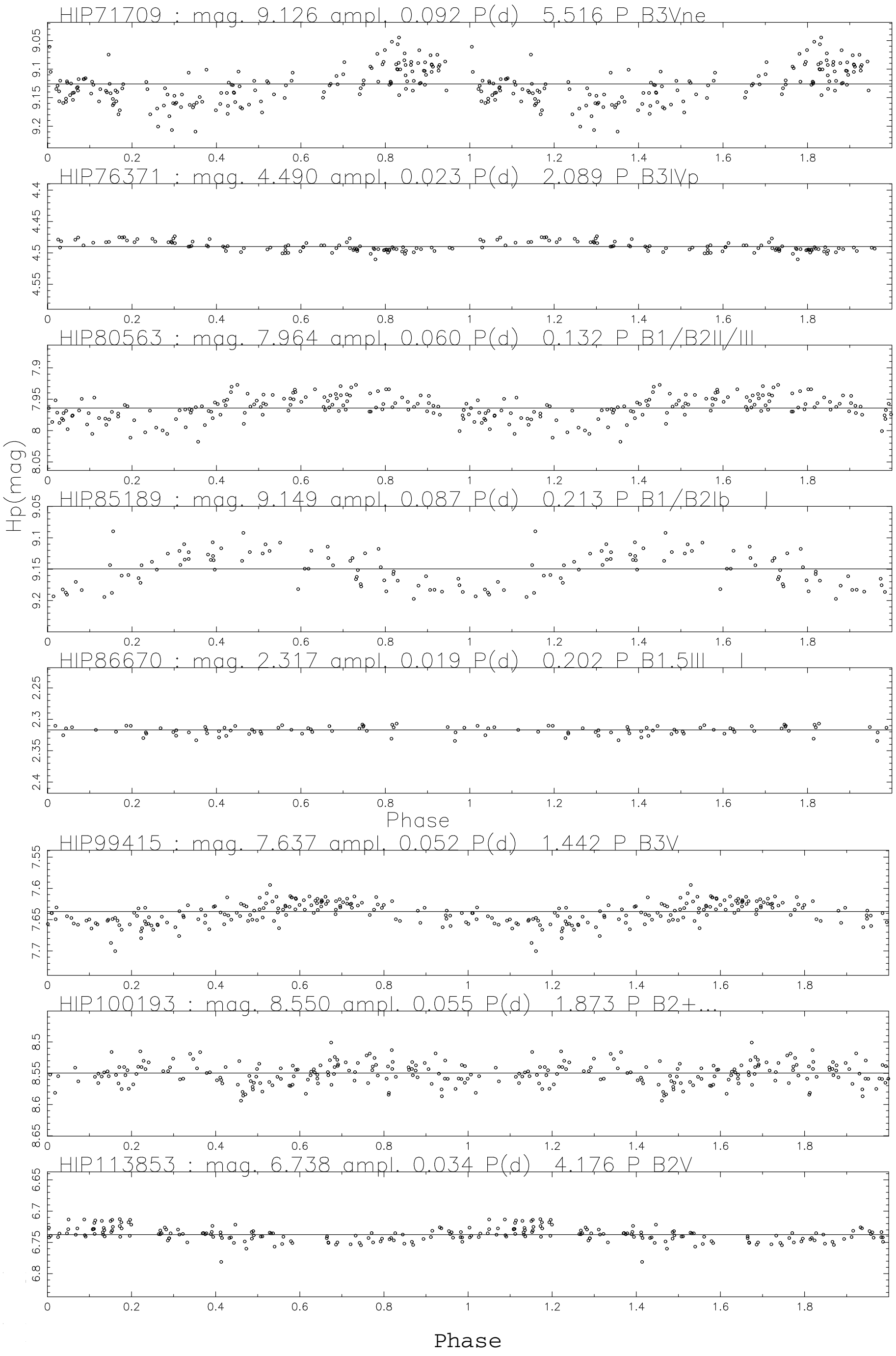


Fig. B.4. This figure plots Hp mag. vs. Phase. Epoch is arbitrarily JD-2 440 000 = 7800, which is the beginning of the HIPPARCOS observations. The Hp magnitude, mean amplitude and periods are accurate to ~0.1%.


HIP71709 : mag. 9.126 ampl. 0.092 P(d) 5.516 P B3Vne
HIP76371 : mag. 4.490 ampl. 0.023 P(d) 2.089 P B3IVp
HIP80563 : mag. 7.964 ampl. 0.060 P(d) 0.132 P B1/B2II/III
HIP85189 : mag. 9.149 ampl. 0.087 P(d) 0.213 P B1/B2Ib I
HIP86670 : mag. 2.317 ampl. 0.019 P(d) 0.202 P B1.5III I
HIP99415 : mag. 7.637 ampl. 0.052 P(d) 1.442 P B3V
HIP100193 : mag. 8.550 ampl. 0.055 P(d) 1.873 P B2+...
HIP113853 : mag. 6.738 ampl. 0.034 P(d) 4.176 P B2V
Hp(mag)
Phase
Phase