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NEW FIELD VARIABLE STARS III[†]

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We have continued the search for new short period variable stars on the CCD frames made for photometry and astrometry of minor planets (see Csák et al. 2000ab, Paper 1, Paper 2). In this note we report the discovery of thirteen new variable stars found between April and July, 2000.

The observations in Hungary leading to the discovery of V18 were carried out with the 60/90/180 cm Schmidt telescope of the Pizskéstető Mountain Station of the Konkoly Observatory. The detector was a Photometrics AT200 CCD camera (1536×1024 pixels) giving a 29' × 18' field of view (FOV). The majority of the presented new variable stars was discovered with the 1.23-m telescope of the German–Spanish Astronomical Center at Calar Alto, Spain. The applied instruments was a SiTe#2b CCD camera (2048 × 2048 pixels) yielding to a 17' × 17' FOV. The observations were made through Cousins R_C filter at both places. The exposure time was chosen between 1–5 minutes, depending on the brightness of the target asteroids (Szabó et al., in preparation).

The data reduction and analysing methods were the same that described in Paper 1. The candidate new variables were checked in the SIMBAD Database. We have to note that although two fields (those of V24 and V25) were also observed by the FASTT instrument (Henden & Stone 1998, Stone et al. 1999) down to a limiting magnitude of 17.8 (R), both stars escaped the detection as variable stars. The only possible hint for variation is the larger photometric error of V25 in Stone et al. (1999). V27 was identified with GSC 03947-01632 using Guide CD-ROM Star Chart (1997). The light curves of 13 new variables are plotted in Figures 1–3. The individual measurements are available upon request from the first author.

The basic data of these stars (celestial coordinates, USNO-A2.0 blue and red magnitudes and suspected types) are summarized in Table 1. The type of variability is exclusively based on the light curve shape, thus it is likely to be quite uncertain in some cases. Follow-up observations are desirable to provide more reliable classification for most of the stars.

[†]Based on observations taken at the German–Spanish Astronomical Centre, Calar Alto, operated by the Max-Planck-Institute for Astronomy, Heidelberg, jointly with the Spanish National Commission for Astronomy

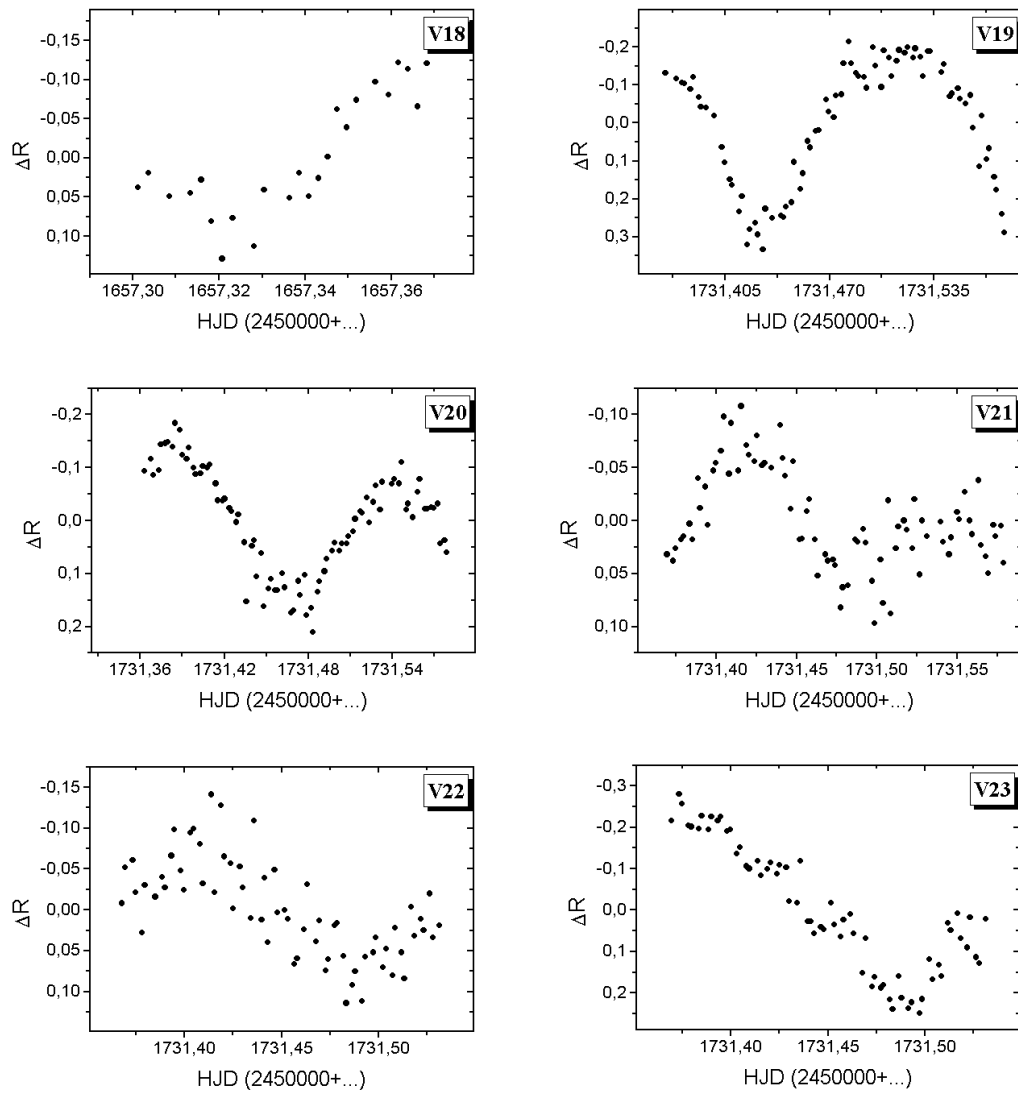


Figure 1. Light curves of 6 new variable stars

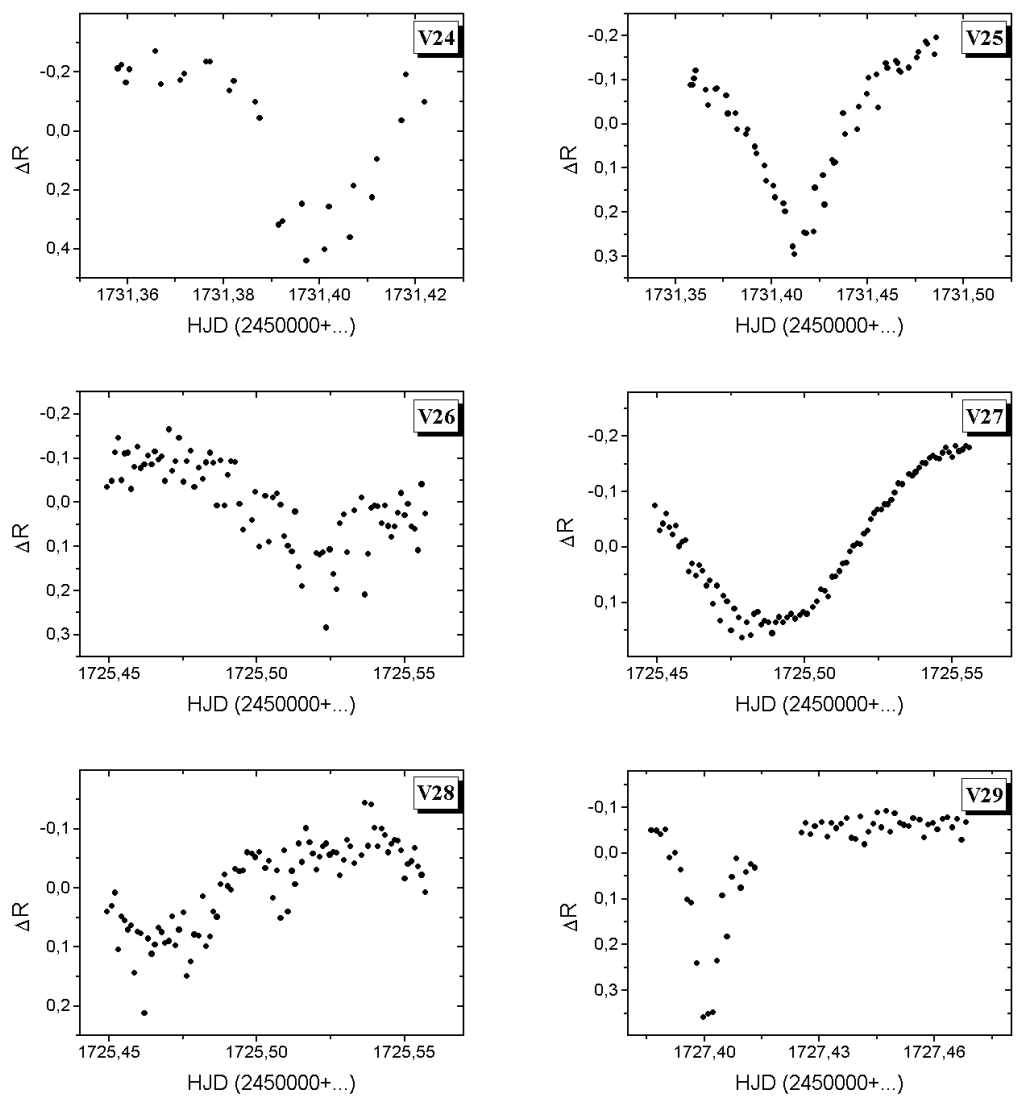


Figure 2. Light curves of 6 new variable stars

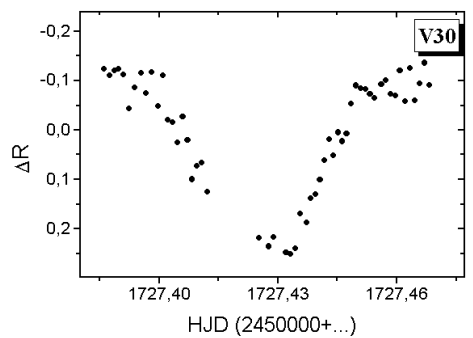


Figure 3. Light curve of the new variable star V30

Table 1: Basic data of the new variables. The coordinates, red and blue magnitudes were taken from USNO-A2.0. The coordinates for V24 and V25 are the improved values from Stone et al. (1999). The given types are based on the light curve shapes, thus they should be considered as approximative ones.

Variable	R.A. (2000)	Dec. (2000)	Red mag.	Blue mag.	Type
V18	08 ^h 26 ^m 32 ^s .5	+09°43'18".2	17.1	19.7	–
V19	17 ^h 33 ^m 08 ^s .2	+10°43'16".5	18.3	19.2	eclipsing
V20	17 ^h 33 ^m 20 ^s .2	+10°46'09".4	17.5	19.1	pulsating
V21	17 ^h 33 ^m 24 ^s .3	+10°47'03".0	17.8	19.3	pulsating
V22	17 ^h 33 ^m 39 ^s .0	+10°47'02".9	18.6	19.5	–
V23	17 ^h 33 ^m 53 ^s .5	+10°49'25".6	18.4	20.3	–
V24	18 ^h 03 ^m 58 ^s .7	+00°59'53".9	16.9	18.4	–
V25	18 ^h 04 ^m 16 ^s .8	+01°02'52".0	15.2	17.5	eclipsing
V26	19 ^h 55 ^m 21 ^s .5	+58°33'30".9	16.9	18.2	–
V27	19 ^h 56 ^m 18 ^s .9	+58°35'17".3	14.0	14.1	eclipsing
			13.4 ^a		
V28	19 ^h 56 ^m 23 ^s .9	+58°43'07".2	17.7	19.3	–
V29	20 ^h 18 ^m 31 ^s .4	+60°41'18".8	17.6	18.5	eclipsing
V30	20 ^h 18 ^m 36 ^s .2	+60°37'03".0	18.1	20.0	–

^a V27 = GSC 03947-01632

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