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NEW ELEMENTS OF V628 CYGNI

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V628 Cyg = S 4554 Cyg was discovered by Hoffmeister (1949) on photographic plates of the Sonneberg Observatory. He classified the star as an Algol-type variable in the range between $13\overset{m}{.}0$ and $13\overset{m}{.}5$. First investigation of this variable was performed by Rohlfs (1950, 1951). She provided a photographic light curve, reclassified the variable as a W UMa-type and determined first elements as:

$$\text{Min I} = \text{HJD}\,2427955.138 + 0\overset{d}{.}651650 \times \text{E} \qquad (1)$$

A few years later Romano (1967) investigated V628 Cyg again. He derived 9 minima and improved the elements of Rohlfs as follows:

$$\text{Min I} = \text{HJD}\,2427955.138 + 0\overset{d}{.}651652 \times \text{E} \qquad (2)$$

Moreover Romano determined the range of variability between $12\overset{m}{.}2$ and $12\overset{m}{.}7$ (phg) in the primary and between $12\overset{m}{.}2$ and $12\overset{m}{.}5$ (phg) in the secondary minimum.

With this data V628 Cyg is listed in the fourth edition of the GCVS (Kholopov et al. 1985). For a quarter of a century the variable had remained obviously unobserved, when we put V628 Cyg on our observing program. The CCD observations were made with SBIG ST6 cameras without filters, attached to a 32cm RC telescope (W.M.) and a 20cm SC telescope (F.A.). GSC 3595.1630 served as comparison star and several other stars in the same field were used to check its constancy. In our instrumental system the amplitude of variability is $0\overset{m}{.}60$ for the primary minima and $0\overset{m}{.}52$ for the secondary minima.

A period analysis program, based on the algorithm of Schwarzenberg–Czerny (1989) showed that the period given in the GCVS is a spurious one with the relation

$$\frac{1}{\mathrm{p}'} - \frac{1}{\mathrm{p}} = \frac{1}{2}$$

Using all available minima a weighted least squares fit led to the new elements:

$$\text{Min I} = \text{HJD}\,2449177.4629 \underset{\pm 4}{} + 0\overset{d}{.}96659115 \underset{\pm 5}{} \times \text{E} \qquad (3)$$

All our times of minimum light were determined with the Kwee–van Woerden (1956) method.

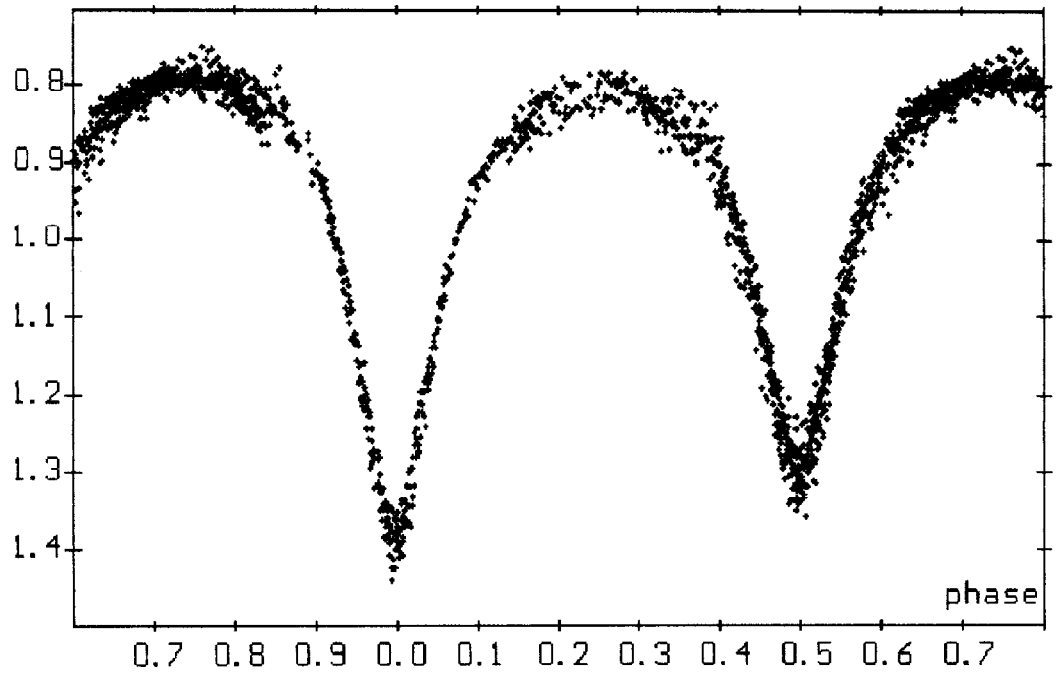

Figure 1. Differential light curve of V628 Cyg drawn with the new ephemeris (3)

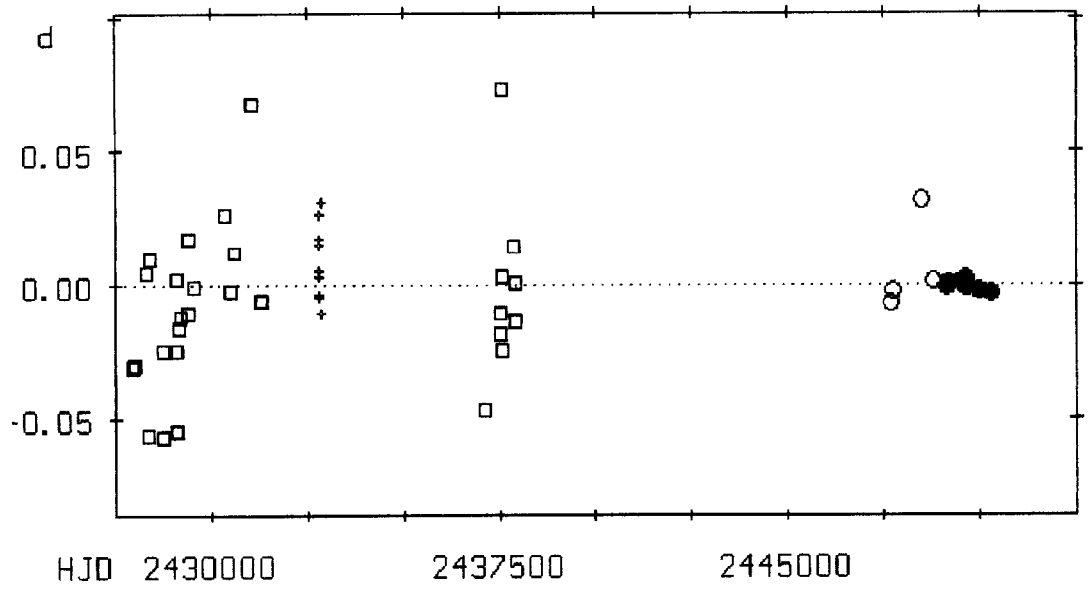

Figure 2. O−C diagram for V628 Cyg using the new ephemeris (3).
• represents photoelectric, ○ photographic series, + visual observations and □ photographic plate minima.

Table 1. Observed times of minima for V628 Cyg, epochs and residuals computed with respect to the linear ephemeris (3) derived in this paper.

JD hel. 2400000+	W	T*	Epoch	(O−C)	Lit	JD hel. 2400000+	W	T*	Epoch	(O−C)	Lit
27955.439	1	P	−21956.5	−0.032	[1]	32862	359.3	V	−16879.0	−0.012	[2]
27983.471	1	P	−21927.5	−0.031	[1]	32865	301.3	V	−16876.0	+0.030	[2]
28285.565	1	P	−21614.0	+0.003	[1]	37130	489.1	P	−12454.0	−0.048	[3]
28344.467	1	P	−21553.0	−0.057	[1]	37517	455.1	P	−12063.0	−0.019	[3]
28404.461	1	P	−21491.0	+0.009	[1]	37530	511.1	P	−12050.5	−0.012	[3]
28778.465	1	P	−21104.0	−0.058	[1]	37547	440.1	P	−12032.0	+0.002	[3]
28779.464	1	P	−21103.0	−0.026	[1]	37549	444.1	P	−12030.0	+0.073	[3]
29109.525	1	P	−20762.5	−0.056	[1]	37560	462.1	P	−12019.5	−0.025	[3]
29111.515	1	P	−20760.5	+0.001	[1]	37848	545.1	P	−11721.5	+0.014	[3]
29112.455	1	P	−20759.5	−0.026	[1]	37936	491.1	P	−11630.5	−0.000	[3]
29158.376	1	P	−20711.0	−0.018	[1]	37938	410.1	P	−11628.5	−0.014	[3]
29187.378	1	P	−20681.0	−0.013	[1]	47671	507.5	F	−1558.0	−0.007	[4]
29401.479	1	P	−20460.5	−0.012	[1]	47744	489.1	F:	−1483.5	−0.003	[4]
29431.472	1	P	−20429.5	+0.016	[1]	48500	398.1	F:	−701.5	+0.032	[5]
29579.342	1	P	−20276.5	−0.002	[1]	48801	460.5	F	−389.0	+0.001	[5]
30378.257	1	P	−19449.0	+0.025	[1]	49119	4667.10	E	−60.0	−0.0007	[6]
30516.451	1	P	−19306.0	−0.003	[1]	49177	4637.10	E	0.0	+0.0008	[6]
30587.510	1	P	−19233.5	+0.011	[1]	49555	4011.10	E	391.0	+0.0011	[7]
31074.244	1	P	−18729.0	+0.067	[1]	49568	4489.10	E	404.5	−0.0001	[7]
31327.417	1	P	−18467.0	−0.007	[1]	49630	3112.10	E	468.5	+0.0003	[7]
32820.350	3	V	−16923.5	+0.026	[2]	49637	5596.10	E	476.0	−0.0007	[7]
32827.569	3	V	−16915.0	−0.005	[2]	49639	4933.10	E	478.0	−0.0002	[7]
32830.490	3	V	−16912.0	+0.017	[2]	49658	3437.10	E	497.5	+0.0017	[7]
32831.442	3	V	−16911.0	+0.002	[2]	49688	3052.10	E	528.5	−0.0011	[8]
32832.411	3	V	−16910.0	+0.004	[2]	50000	5127.10	E	851.5	−0.0026	[7]
32833.387	3	V	−16909.0	+0.014	[2]	50291	4563.10	E	1152.5	−0.0029	[8]
32835.301	3	V	−16907.0	−0.005	[2]						

* P denotes photographic minima, V visually observed,
E CCD observed minima and F photographic series.
Those marked with ':' got reduced weight.

[1]: E. Rohlfs: VSS 1, 487, [2]: C. Hoffmeister: VSS 1, 487, [3]: G. Romano: MSAI 38, 16, [4]: W. Moschner & W. Kleikamp: BAVM, No. 56, [5]: W. Moschner & W. Kleikamp: BAVM, No. 68, [6]: W. Moschner: BAVM, No. 68, [7]: W. Moschner: this paper, [8]: F. Agerer: this paper.

The individual measurements can be requested and will be sent via e-mail.

F. AGERER
W. KLEIKAMP
W. MOSCHNER
Bundesdeutsche Arbeitsgemeinschaft
für Veränderliche Sterne e.V. (BAV)
Munsterdamm 90,
D-12169 Berlin, Germany

E-mail:
agerer.zweik@t-online.de,
wilhelm.kleikamp@t-online.de,
wolfgang.moschner@t-online.de

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EDITORS' NOTE

Mr. Anton Paschke called our attention that the new RR Lyrae-type variable GSC 2576_466 discovered by Gladders and Robb (see IBVS No. 4350) is identical with the new variable No. 22 discovered by Antipin (IBVS No. 4343). The two notes have been published so close in time that they are undoubtedly independent discoveries.