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**SPECTROSCOPIC BINARITY OF THE CEPHEID BY Cas**

The variability of BY Cas was discovered by Beljawsky (1931). According to Szabados (1991), this s-type Cepheid shows considerable period variability and after JD 2443000 varies with the period  $3^d.222199$ .

Joy (1937) published 6 radial velocity values for BY Cas, one radial velocity measurement was later published by Rastorgouev *et al.* (1990). Szabados (1991) was not able to derive  $\gamma$ -velocity for this star. Usenko (1990) suggested the presence of a B5 companion from the star's position in the two-color diagram. In our catalog (Gorynya *et al.*, 1992) of Cepheid radial velocities measured with the CORAVEL-type spectrometer designed by Tokovinin (1987), we presented 9 velocities of the star and suspected variability of its  $\gamma$ -velocity.

We have now added 5 new measurements of the radial velocity of BY Cas. These results clearly confirm that the star is a spectroscopic binary. Though the radial velocity data are still not very abundant, we have attempted to determine provisional orbital elements. Several sets of orbital elements still remain possible, but presently we prefer the solution with small eccentricity:  $T_0 = 2449298$ ,  $P_{orb} = 553^d \pm 20^d$ ,  $e = 0.05 \pm 0.05$ ,  $\omega = 240^\circ$ ,  $\gamma = -58$  km/s,  $K = 9.5$  km/s.

Table 1

JD <sub>hel</sub> 244...	$V_r$ , hel, km/s	$\sigma$ , km/s	Phase, orbit.	Phase, puls.	$V_r$ , orbit.	$V_r$ , puls.
7792.507	-45.0	1.1	0.279	0.469	-48.7	3.7
7793.515	-43.5	1.3	0.281	0.782	-48.7	5.2
8253.282	-49.9	0.8	0.112	0.466	-55.4	5.5
8555.375	-67.3	1.0	0.657	0.217	-61.8	-5.5
8557.306	-58.9	2.0	0.661	0.817	-62.0	3.1
8562.289	-61.5	0.8	0.670	0.363	-62.4	0.9
8565.307	-65.3	0.8	0.675	0.300	-62.7	-2.6
8566.353	-54.4	1.6	0.677	0.624	-62.8	8.4
8567.323	-69.2	1.0	0.679	0.925	-62.9	-6.3
9252.500	-58.8	0.7	0.917	0.563	-66.3	7.5
9255.507	-59.1	0.7	0.923	0.497	-66.2	7.1
9610.585	-49.1	0.6	0.564	0.692	-56.8	7.7
9613.597	-49.8	0.7	0.570	0.626	-57.1	7.3
9615.604	-62.0	0.6	0.574	0.249	-57.2	-4.8

Table 1 presents available correlation-spectrometer radial velocities of BY Cas, as well as the Cepheid's velocities separated into an orbital and a pulsational term. The columns contain: heliocentric Julian dates; measured heliocentric radial velocities; their internal r.m.s. errors; phases of the orbital cycle calculated with our provisional elements; phases of the pulsational cycle calculated using improved light elements in the time interval  $JD_{hel}$  2448200–900:

$$Max_{hel} = 2448441.895 + 3^d 22227 \times E;$$

orbital motion components of the radial velocity computed from the orbital elements; radial velocity residuals (to be attributed to pulsations).

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