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ELEMENTS FOR 6 RR Lyr STARS

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The variability of these stars was announced by Hoffmeister (1967, 1968); no further observations or ephemeris were published until today. Recent estimations, made on photographic plates taken with the Sonneberg Observatory 40cm Astrograph during the years 1964-1994, have allowed to determine the type of variability as well as first elements (see Table 1). The given elements were obtained by means of least-squares solutions. Photographic amplitudes were derived with respect to magnitudes of the comparison stars given in Table 3. Individual data are available upon request.

This research made use of the SIMBAD data base, operated by the CDS at Strasbourg, France.

Table 1. Summary of this paper

Star	Type	Epoch 2400000+	Period (day)	Max.	Min.	M−m	No. of Plates
V1057 Oph	RRab	44749.445 ±7	0.6180418 ±10	$14\overset{m}{.}5$	$15\overset{m}{.}8$	$0\overset{p}{.}14$	236
V1122 Oph	RRab	45525.438 ±5	0.5037831 ±5	$14\overset{m}{.}6$	$15\overset{m}{.}8$	$0\overset{p}{.}10$	236
V1130 Oph	RRab	44704.505 ±5	0.4494288 ±6	$14\overset{m}{.}9$	$15\overset{m}{.}6$	$0\overset{p}{.}11$	217
V1429 Oph	RRab	45075.503 ±8	0.5750345 ±10	$13\overset{m}{.}7$	$14\overset{m}{.}6$	$0\overset{p}{.}15$	230
V1600 Oph	RR(c:)	45003.673 ±4	0.3079728 ±3	$14\overset{m}{.}6$	$16\overset{m}{.}0$		214
NSV 8003	RRab	48067.418 ±9	0.7481946 ±12	$14\overset{m}{.}3$	$15\overset{m}{.}5$	$0\overset{p}{.}17$	223

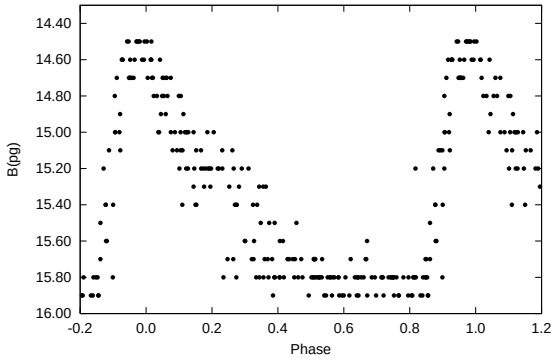

Figure 1. Light curve of V1057 Oph

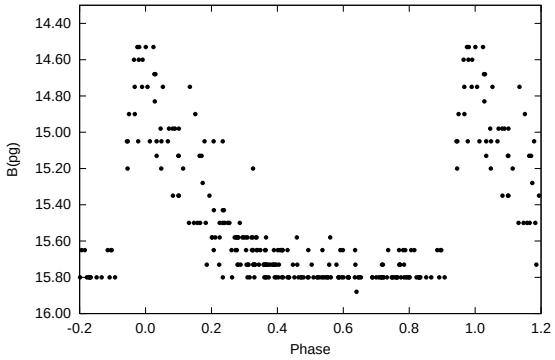

Figure 2. Light curve of V1122 Oph

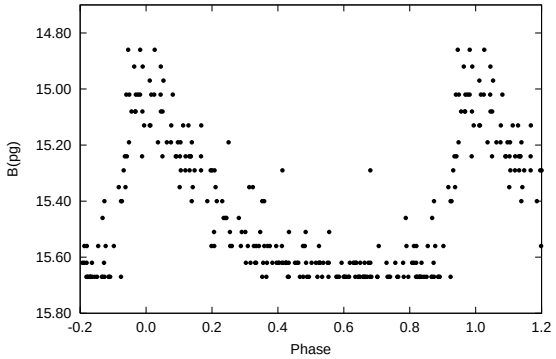

Figure 3. Light curve of V1130 Oph

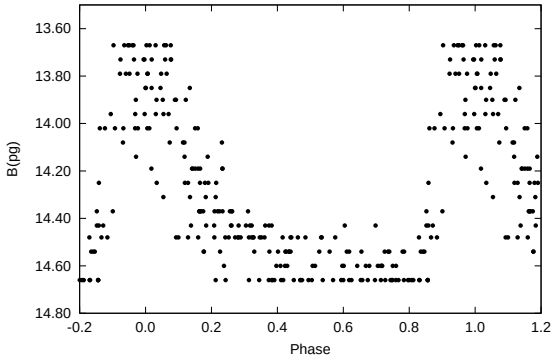

Figure 4. Light curve of V1429 Oph

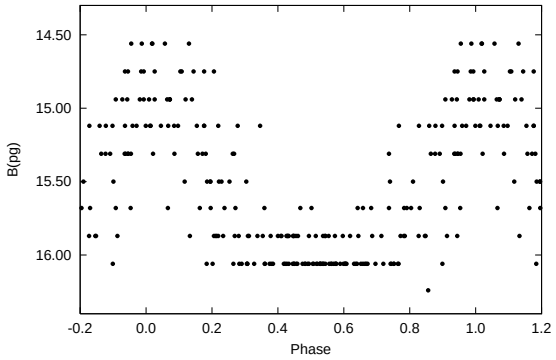

Figure 5. Light curve of V1600 Oph

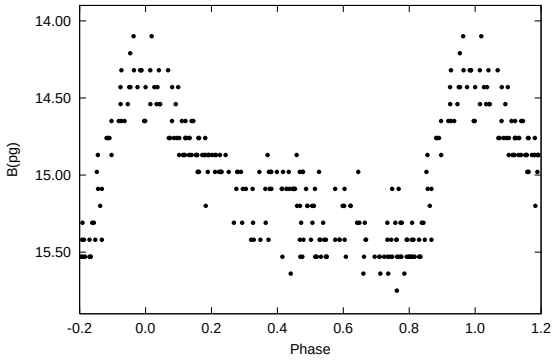

Figure 6. Light curve of NSV 8003

Table 2. Individual maxima and $O-C$ values according to the elements derived in this paper

Star	HJD (max.)	Epoch	$O-C$	Star	HJD (max.)	Epoch	$O-C$
V1057 Oph	38173.453	−10640	−0.027	V1130 Oph	49098.546	9777	−0.024
	38503.528	−10106	0.014	V1429 Oph	37112.443	−13848	0.017
	38521.480	−10077	0.043		38553.465	−11342	0.003
	38555.466	−10022	0.036		38557.467	−11335	−0.020
	38901.492	−9462	−0.041		38587.423	−11283	0.034
	38940.464	−9399	−0.006		38591.425	−11276	0.011
	39262.486	−8878	0.016		38902.485	−10735	−0.023
	39288.461	−8836	0.034		38936.462	−10676	0.027
	39317.451	−8789	−0.024		38940.464	−10669	0.004
	39618.468	−8302	0.006		39293.497	−10055	−0.034
	39917.607	−7818	0.013		43365.383	−2974	0.033
	42987.396	−2851	−0.012		44343.450	−1273	−0.034
	44024.485	−1173	0.003		44373.390	−1221	0.004
	44346.465	−652	−0.017		44427.411	−1127	−0.028
	44372.430	−610	−0.009		44749.455	−567	−0.003
	44427.411	−521	−0.034		45075.475	0	−0.028
	44749.455	0	0.010		45822.442	1299	−0.031
	45056.590	497	−0.022		46197.432	1951	0.037
	45854.459	1788	−0.045		46649.374	2737	0.002
	46613.415	3016	−0.044		49216.362	7201	0.036
	46644.382	3066	0.021	V1600 Oph	38521.480	−21048	0.017
	48804.454	6561	0.037		38525.464	−21035	−0.002
	48830.421	6603	0.046		38640.336	−20662	−0.004
	49482.423	7658	0.014		38852.550	−19973	0.017
V1122 Oph	38532.440	−13881	0.015		38856.523	−19960	−0.014
	38533.459	−13879	0.027		39261.519	−18645	−0.002
	38830.648	−13289	−0.016		39286.461	−18564	−0.006
	38882.544	−13186	−0.010		44346.465	−2134	0.006
	38936.462	−13079	0.003		44371.413	−2053	0.008
	39615.549	−11731	−0.009		44374.480	−2043	−0.005
	44454.383	−2126	−0.012		44375.420	−2040	0.011
	44732.466	−1574	−0.017		45003.681	0	0.008
	45525.433	0	−0.005		45053.547	162	−0.018
	46595.474	2124	0.001		45056.622	172	−0.022
	46649.374	2231	−0.004		45082.497	256	−0.017
	47262.496	3448	0.014		45525.401	1694	0.022
	49124.477	7144	0.012		46646.380	5334	−0.020
V1130 Oph	37110.502	−16897	−0.005		48067.410	9948	0.024
	38856.523	−13012	−0.014	NSV 8003	38502.523	−12784	0.025
	38883.487	−12952	−0.016		38532.440	−12744	0.014
	38901.492	−12912	0.012		38852.619	−12316	−0.034
	38910.446	−12892	−0.023		38882.544	−12276	−0.037
	38937.420	−12832	−0.015		38936.462	−12204	0.011
	39238.572	−12162	0.020		44427.430	−4865	−0.021
	39288.461	−12051	0.022		44454.368	−4829	−0.018
	39621.489	−11310	0.024		44757.432	−4424	0.027
	43656.448	−2332	0.011		46623.413	−1930	0.011
	44371.470	−741	−0.008		46641.392	−1906	0.033
	44372.369	−739	−0.008		46644.382	−1902	0.030
	44376.411	−730	−0.011		48067.408	0	−0.010
	44403.408	−670	0.020		48088.400	28	0.033
	44704.491	0	−0.014		49193.416	1505	−0.035
	44749.455	100	0.007		49214.391	1533	−0.009
	45054.605	779	−0.005		49475.493	1882	−0.027
	46976.404	5055	0.036				

Table 3. Comparison stars and cross references

	V1057 Oph S 9795 USNO 0975-08748081		V1122 Oph S 10320 USNO 0975-08646485	
Comp. No.	GSC	m*	GSC	m*
1	980.0340	$14^{m}.9$	983.0729	$14^{m}.4$
2	980.0037	$15^{m}.4$	983.0043	$14^{m}.6$
3	980.0593	$16^{m}.2$	0975-08646049	$15^{m}.2$
4			983.0903	$15^{m}.7$

	V1130 Oph S 10323 USNO 0975-08674496		V1429 Oph S10329 GSC 406.0812	
Comp. No.	GSC/USNO	m*	GSC/USNO	m*
1	979.1018	$14^{m}.7$	406.1414	$13^{m}.9$
2	979.0890	$14^{m}.9$	406.2020	$14^{m}.1$
3	979.1129	$15^{m}.4$	406.0354	$14^{m}.6$

	V1600 Oph S 10331 USNO 0975-08918791		NSV 8003 S9794 USNO 0900-09035305	
Comp. No.	GSC/USNO	m*	GSC/USNO	m*
1	977.1569	$14^{m}.2$	396.1045	$14^{m}.4$
2	977.1206	$14^{m}.7$	396.0067	$15^{m}.0$
3	0975-08919498	$16^{m}.6$	396.1111	$15^{m}.7$

* Magnitudes refer to the B values of the USNO−A2.0 catalogue

References:

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Hoffmeister, C., 1968, *Astron. Nachr.*, **290**, 277