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ELEMENTS FOR 10 RR LYRAE STARS

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These stars were discovered and reported to be of RR Lyrae type by Boyce & Huruata (1942) and Hoffmeister (1966, 1967, 1968). Except for V552 Her and V659 Her (see details noted in the remarks below), no further observations or ephemeris have been published until today. Photographic plates of a field centered at alpha Oph, taken with the Sonneberg Observatory 40-cm Astrographs during three intervals spread over the years from 1964 to 1994, were used to investigate the behaviour of these objects (see Table 1).

Table 1. Summary of this paper

Star	Type	Epoch 2400000+	Period (day)	Max.	Min.	$M - m$	No. of Plates
V550 Her	RRab	49475.463 ±9	0.5603952 ±8	15 ^m 1	16 ^m 4	0 ^p 19	203
V551 Her	RRab	49076.570 ±8	0.4365392 ±5	14 ^m 5	16 ^m 4	0 ^p 21	235
V552 Her	RRab	49124.456 ±4	0.3785196 ±2	11 ^m 2	12 ^m 8	0 ^p 17	297
V555 Her	RRab	49213.346 ±7	0.5839040 ±6	15 ^m 3	16 ^m 5	0 ^p 20	240
V556 Her	RRab	47265.573 ±8	0.4775347 ±7	14 ^m 5	15 ^m 4	0 ^p 19	265
V557 Her	RRab	49488.536 ±9	0.6114131 ±9	13 ^m 5	14 ^m 2	0 ^p 18	287
V562 Her	RRab	49484.471 ±7	0.4653154 ±7	14 ^m 1	15 ^m 5	0 ^p 20	199
V626 Her	RRab	49076.609 ±10	0.5871079 ±13	14 ^m 5	15 ^m 5	0 ^p 18	194
V659 Her	RRab	53891.711 ±9	0.5164255 ±4	13 ^m 8	15 ^m 1	0 ^p 19	276
V763 Oph	RRab	49076.563 ±7	0.4439681 ±5	14 ^m 7	16 ^m 0	0 ^p 16	254

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 2. An extensive list holding the times of maxima derived can be retrieved as 5770-t3.txt, using the link in the HTML version of this paper. Individual data are available upon request.

Table 2. Comparison stars and cross references

V550 Her		V551 Her		
S 9802		S 9804		
USNO 1050-08668833		USNO 0975-09236295		
Comp. No.	USNO	m^*	USNO	m^*
1	1050-08669099	14 ^m 9	0975-09240518	14 ^m 6
2	1050-08671787	15 ^m 2	0975-09231390	14 ^m 8
3	1050-08671790	15 ^m 6	0975-09237192	15 ^m 6
4	1050-08670689	16 ^m 8	0975-09236592	16 ^m 8
V552 Her		V555 Her		
S 9806		S 8623		
GSC 1004 993		USNO 1050-08969873		
Comp. No.	USNO	m^*	USNO	m^*
1	GSC 1004 603	10 ^m 67	1050-08972384	15 ^m 1
2	GSC 1004 2003	11 ^m 55	1050-08971269	15 ^m 5
3	GSC 1004 1692	12 ^m 55	1050-08970928	16 ^m 1
4	GSC 1004 1833	12 ^m 67	1050-08969012	16 ^m 6
V556 Her		V557 Her		
S 8627		S 9824		
USNO 0975-09653264		USNO 1050-09117461		
Comp. No.	USNO	m^*	USNO	m^*
1	0975-09660147	14 ^m 5	1050-09116433	13 ^m 3
2	0975-09653655	14 ^m 7	1050-09121021	13 ^m 7
3	0975-09653142	15 ^m 1	1050-09117300	13 ^m 9
4	0975-09652715	15 ^m 4	1050-09116424	14 ^m 5
V562 Her		V626 Her		
S 9830		S 10350		
USNO 1050-09311278		USNO 0975-09955355		
Comp. No.	USNO	m^*	USNO	m^*
1	1050-09309572	13 ^m 9	0975-09957358	14 ^m 2
2	1050-09312674	14 ^m 0	0975-09948638	14 ^m 5
3	1050-09312330	14 ^m 8	0975-09955218	15 ^m 3
4	1050-09311285	15 ^m 6	0975-09956666	15 ^m 7
V659 Her		V763 Oph		
S 8619		HV 10945		
USNO 0975-09311040		USNO 0975-09245600		
Comp. No.	USNO	m^*	USNO	m^*
1	0975-09305418	13 ^m 7	0975-09244389	14 ^m 6
2	0975-09318049	14 ^m 2	0975-09243330	15 ^m 2
3	0975-09312948	14 ^m 6	0975-09248801	15 ^m 5
4	0975-09310612	15 ^m 5	0975-09244653	16 ^m 2

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

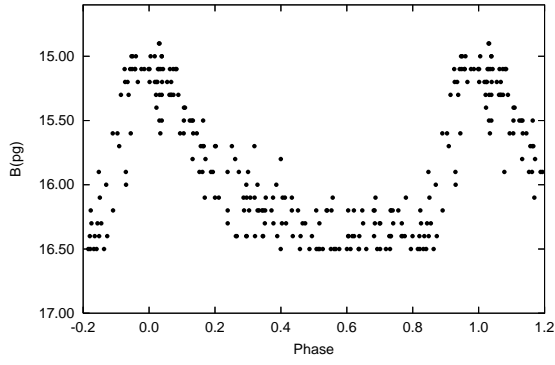


Figure 1. Light curve of V550 Her

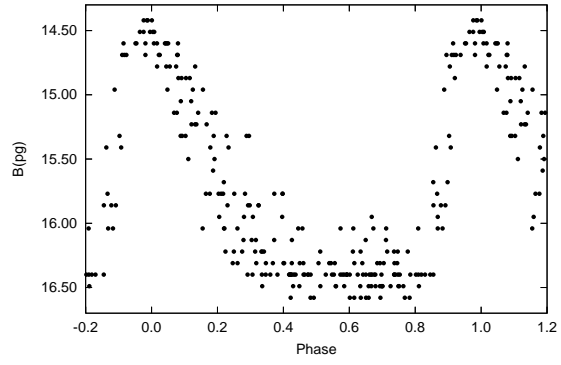


Figure 2. Light curve of V551 Her

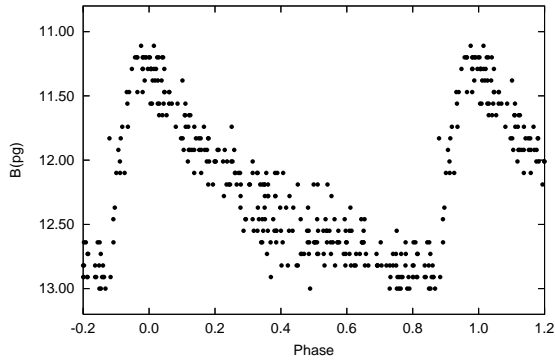


Figure 3. Light curve of V552 Her

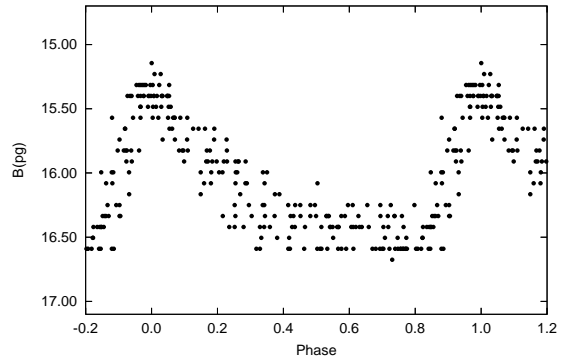


Figure 4. Light curve of V555 Her

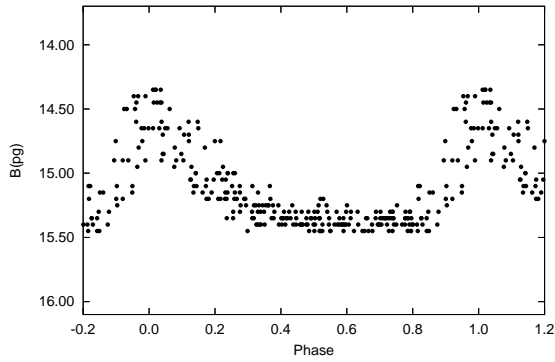


Figure 5. Light curve of V556 Her

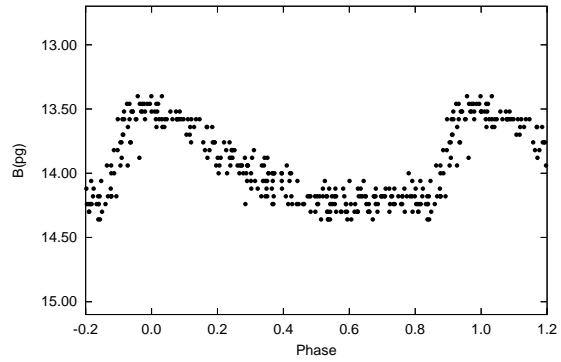


Figure 6. Light curve of V557 Her

*Remarks:**V552 Her*

First elements were derived from Northern Sky Variability Survey data (NSVS 10885457, Max (hel) = J.D. 2451338.78 + 0^d37854) by Wils et al., 2006.

V659 Her

In addition to our observations three further maximum times were derived from ASAS data (ASAS 173053+1421.9, J.D. hel. 2453817.862, 2453832.835 and 2453891.700) and used for this period analysis.

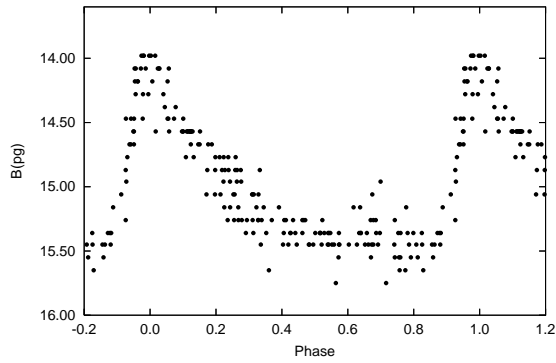


Figure 7. Light curve of V562 Her

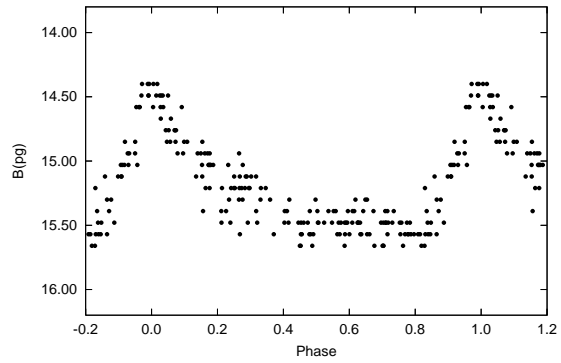


Figure 8. Light curve of V626 Her

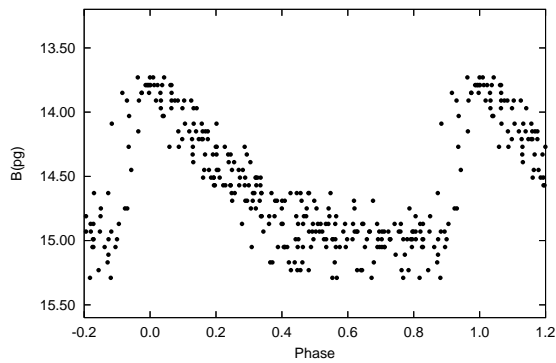


Figure 9. Light curve of V659 Her

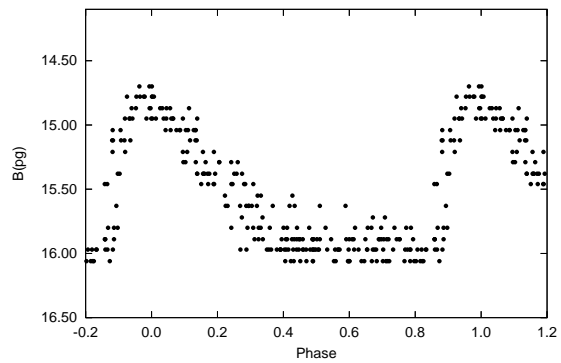


Figure 10. Light curve of V763 Oph

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

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