

COMMISSIONS 27 AND 42 OF THE IAU
INFORMATION BULLETIN ON VARIABLE STARS
Number 3849

Konkoly Observatory
Budapest
26 February 1993
HU ISSN 0324 - 0676

RECENT UBVR MAGNITUDES FOR HR 8752=V509 Cas

The hypergiant HR 8752 has been observed over the past nine observing seasons at the Corralitos Observatory. Most of this data has been previously published (Halbedel, 1985, 1986, 1988, 1991). This paper reports on the most recent UBVR data which has been acquired.

A well-known spectrum and photometric variable, HR 8752 has a long publication history whose most recent entry is by Sheffer & Lambert (1992) who have found interesting correlations between [N II] strength and continuum intensity, showing possible cyclical behavior for the continuum with a ≥ 30 year period. On a shorter time-scale, the star varies semi-regularly with periods around 400 days (Arellano Ferro, 1985; Sheffer & Lambert, 1987). Its most recent photometric behavior has been characterized by a trend of fading and bluing with more rapid changes superimposed.

HR 8752 has been observed photometrically with the 0.6-m. telescope of the Corralitos Observatory. Two photometric systems were utilized, the first based on an EMI 9924A tube and the second on an R4457. All U and R magnitudes were obtained with the second system. Two comparison stars were utilized: HR 8761 ($V=6.200$; $B-V=+1.500$; $U-B=+1.530$; $V-R=+1.088$) and HR 8778 ($V=6.430$; $B-V=+.900$; $U-B=+.538$; $V-R=+.767$). Over the time period of observation, these two stars were stable to within 0.015, 0.014, 0.015 and 0.017 in V, B-V, U-B and V-R respectively.

The most recent UBVR magnitudes obtained for HR 8752 are shown in Figure 1 and appear in Table 1. It may be seen that the trend towards fading and bluing is still continuing. There are too few U-B and V-R magnitudes to ascribe a trend as of yet.

HR 8752 will continue to be observed at the Corralitos Observatory indefinitely into the future.

The author would like to most gratefully acknowledge a Theodor Dunham, Jr. grant of the Fund for Astrophysical Research for purchase of photometric equipment.

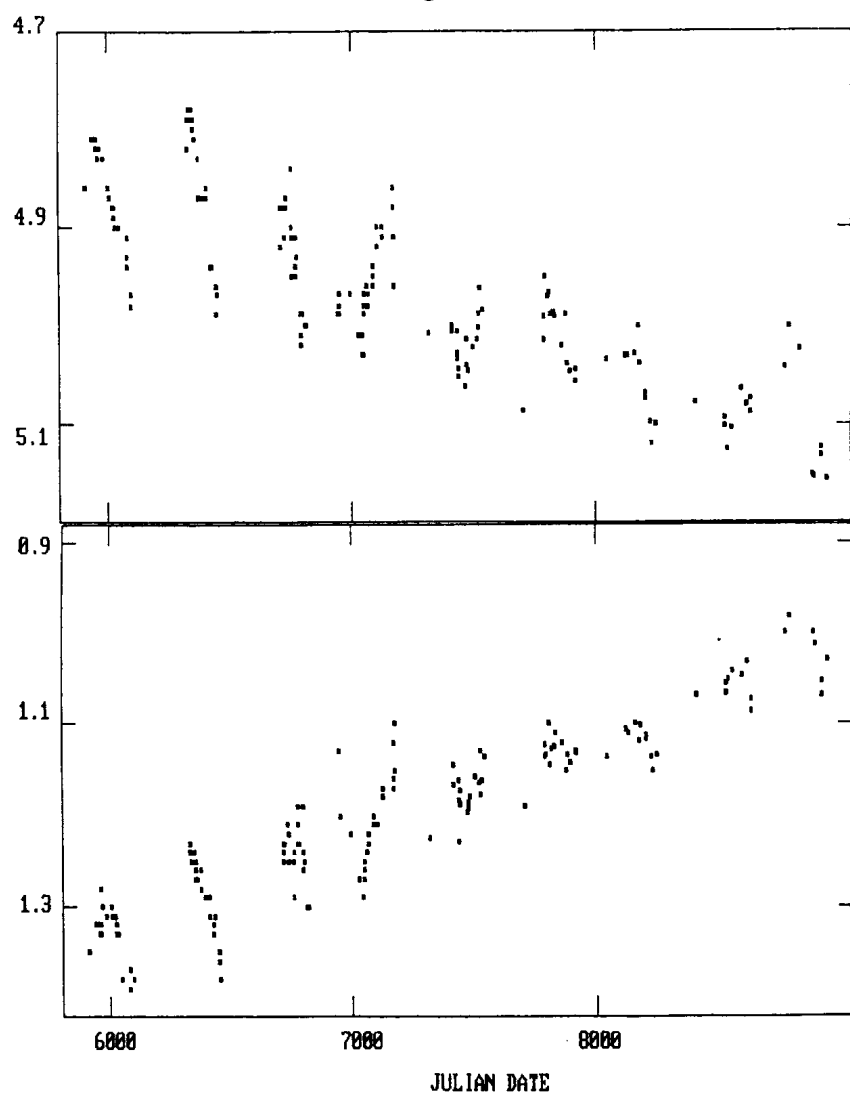


Figure 1. Magnitudes and colors for HR 8752. The top diagram shows V, the bottom B-V.
Julian Date is JD-2440000.

Table 1

UBVR magnitudes for HR 8752

Numbers following magnitudes in parentheses are standard errors in millimags.

Julian Date (2440000+)	V(SE)	B-V(SE)	U-B(SE)	V-R(SE)
8414.93125	5.078(21)	+1.070(4)		
8532.77083	5.095(-)	1.066(5)		
8535.73750	5.103(-)	1.057(7)		
8546.69514	5.128(15)	1.051(6)		
8562.68194	5.104(12)	1.044(1)		
8597.66040	5.064(-)	1.047(8)		
8620.58264	5.080(-)	1.033(17)		
8636.58681	5.089(-)	1.073(13)		
8637.58958	5.075(-)	1.086(15)		
8732.94583	5.042(18)	1.000(3)		
8800.92778	5.001(24)	0.983(4)	+ .682(10)	+ .887(3)
8842.87431	5.024(-)			
8898.74931	5.152(23)	0.999(2)	.744(11)	.905(8)
8901.72639	5.155(18)	1.012(1)	.719(16)	.925(4)
8932.74028	5.124(32)	1.068(26)	.718(6)	.878(19)
8933.70000	5.133(22)	1.053(1)	.736(2)	.871(13)
8951.68958	5.156(-)	1.030(12)	.745(4)	.883(8)

ELAINE M. HALBEDEL
 Corralitos Observatory
 P.O. Box 16314
 Las Cruces, NM
 U.S.A. 88004

References:

- Arellano Ferro, A., 1985, *MNRAS*, **216**, 571
 Halbedel, E. M., 1985, *IBVS* No. 2718
 1986, *IBVS* No. 2876
 1988, *IBVS* No. 3170
 1991, *IBVS* No. 3600
 Sheffer, Y. & Lambert, D. L., 1987, *PASP*, **99**, 1277
 1992, *PASP*, **104**, 1054