

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS

Number 1450

Konkoly Observatory  
Budapest  
1978 July 28

HR 4511 - A POSSIBLE VERY LONG-PERIOD CLASSICAL CEPHEID  
IN THE CLUSTER STOCK 14

It has been stated in the literature that HR 4511 (=HD 101947) shows slight variations in the optical lightcurve (e.g. Fernie, 1977) and in some spectral lines, especially  $H\alpha$  (e.g. Bidelman et al., 1963).

We have carried out an extensive program at the European Southern Observatory at La Silla, Chile, obtaining photometry, spectrum scans, polarization measurements and coudé-spectra, partly through the kind cooperation of several colleagues.

From our reductions the following can be stated now:

- HR 4511 shows a lightcurve similar to the one presented by van Genderen and Thé (1978) for Tr 27-102
- The period is estimated to be of the order of 125 days
- We find amplitudes of  $0.^m17$  in u,  $0.^m24$  in v,  $0.^m16$  in b, and  $0.^m13$  in y, but they may be slightly larger
- The spectral type is GO Ia
- Most of the  $H\alpha$ -profiles we obtained show central emission
- It is a member of the loose open cluster Stock 14 (Moffat and Vogt, 1975)

Our results are consistent with the concept of an extremely long-period low amplitude classical cepheid. These cepheids are very difficult to find and until today no cepheid of such a long period is known in our Galaxy. Also because of its cluster membership HR 4511 may be of great importance in cepheid research. It would therefore be of great value if observers in the southern hemis-

phere could continue the study of this star. Our full results have been submitted to Astronomy and Astrophysics, but are in the meantime available on request.

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