

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1586

Konkoly Observatory
Budapest
1979 April 19

LIGHT VARIATIONS OF HD 54475

HD 54475 is an early type star of magnitude $V = 5.79$ and spectral type B9 according to the Henry Draper Catalogue. In the Michigan Spectral Catalogue it has been classified B3V, a spectral type in accordance with the UBV and *Celelescope* ultraviolet photometry of Deutschman et al. (1976). Heck and Manfroid (1975) and Heck (1977) have used HD 54475 as a comparison star for extensive photoelectric *uvby* photometry of Ap stars. Although at least 54 *uvby* observations exist so far, HD 54475 has never been suspected of photometric variability.

In January 1977, photoelectric UBV photometry of HD 54475 has been carried out at La Silla, Chile using the Bochum University 61cm telescope. Observations of HD 54475 relative to HD 55719, HD 54893 and HD 56410 were made on 25 nights between January 3 and January 31. The reduction procedures employed were those described by Stift (1978); combination of 3 to 4 observations for each night leads to an internal precision of $0^m.002 - 0^m.003$ in B and V.

HD 55719, a known SrCrEu star, remained constant throughout this period within the observational errors; very long-term variations on the $0^m.01$ level appear to be absent, too. HD 54475 on the other hand exhibited low-amplitude variations in both magnitude and colour, the amplitudes ranging from $0^m.02$ in V to $0^m.04$ in U. There is no apparent periodicity in a plot of magnitudes versus Julian Day (Fig. 1); period search programs employing several different methods all yielded negative results. Light variations on a time scale of a few hours like those observed by Elst (1979) in some bright southern B-type stars have to be excluded.

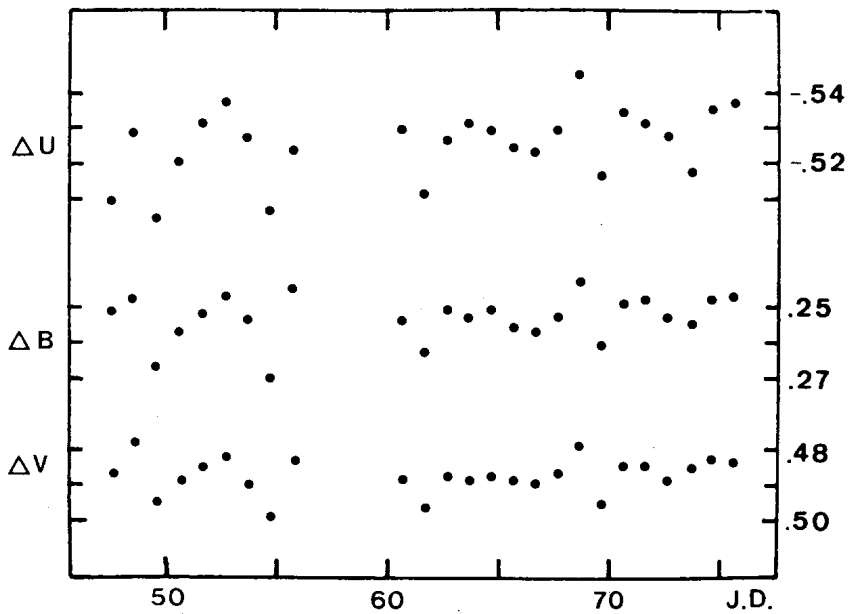


Figure 1: UB observations of HD 54475 relative to HD 55719 plotted versus J.D. - 2443100.

As a conclusion we note that HD 54475 does not fit in any of the well-established classes of variable stars. Whether this star is an irregular variable or whether it exhibits periodic variations with pronounced beat phenomena has to be the subject of further investigations.

MARTIN STIFT
 Institut für Astronomie
 Türkenschanzstr. 17
 A-1180 Wien, Austria

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