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A REVISED PERIOD FOR ONE OF THE WESSELINK-SHUTTLEWORTH
SMC VARIABLES

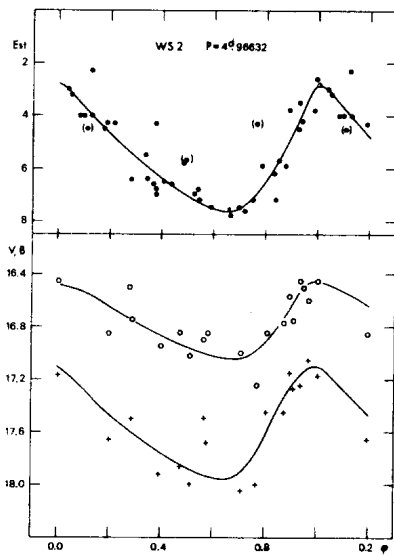
Amongst the 44 faint pulsating variables in the SMC discussed by Wesselink and Shuttleworth (MNRAS 130, 443, 1965), five stars were of special interest because of their periods smaller than 1 day. Also in view of the shape of their light-curves they resemble the RR Lyrae stars, only with that difference that their absolute magnitudes must be brighter than -1. It has been suggested more than once (e.a. Landi Dessy, PASP 71, 435, 1959) that these variables are the extension towards shorter periods of the population I Cepheids of the Magellanic Clouds.

For one of them, viz. WS 2, a period of $0^d.807774$ was derived. This period however did not fit photographic B and V (of the UBV system) observations (van Genderen, BAN Suppl. 3, 221, 1969). A slightly different period viz. $0^d.8327$ gave a reasonable representation of these observations, but not for those of Wesselink and Shuttleworth. Also in view of its large deviation in the period-luminosity relation and the H-R diagram for nearly a hundred SMC Cepheids (van Genderen, *ibid*), such a short period was suspected. A period of several days would be more plausible.

A new investigation of both series of observations revealed a more acceptable period viz. $4^d.96632 \pm 0^d.00050$ (e.e.). The reciprocals of this period and the two shorter ones differ nearly by one. Fig. 1. shows the light-curves. The top one represents brightness estimates with the Argelander step method, by Wesselink and Shuttleworth (*ibid*) and the two lower ones are the photographic V(circles) and B (crosses) observations mentioned above. Uncertain estimates are between brackets. Phases have been computed with the formula:

$$\text{JD} - 2433895.495$$

$$4.96632$$



A few observations seem to be standing off suspiciously from the mean light-curves, but this is a feature present in more light-curves shown in both papers, especially the photographic ones are subject to the disturbing influence of many adjacent stars. We therefore suggest that the new period is probably the right one.

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