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

Number 2370

Konkoly Observatory
Budapest
13 July 1983
HU ISSN 0374-0676

BAV-Mitteilungen Nr. 37

BD + 43°1894, A NEW DELTA SCUTI STAR*

During the photographic observation of UU Lyn, one of the authors of this paper, P. Frank detected that one of the comparison stars, BD + 43°1894 was a rapid variable with small amplitude. This could be confirmed photoelectrically by the other co-authors.

P. Frank used a Zeiss Tessar 250/3.5 in combination with Kodak Technical Pan, hypersensitized, and measured the brightness by a microdensitometer. M. Fernandes observed with a 10in. Schmidt-Cassegrain telescope and a digital photometer equipped with an EMI 9781B tube and filters for B and V. F. Agerer observed with a 16in. Schmidt-Cassegrain telescope and a semiautomatic photometer, equipped with a 1P21 and Schott GG 495 filter for V.

A typical light curve is presented in Figure 1. Fortunately, on JD 2445 406 photoelectric and photographic observations were made independently. Both observations are shown in the same Figure. The excellent accuracy of the photographic method is demonstrated. The shape of the light curve is almost sinusoidal, the star varies between $10^m.86$ and $11^m.08$ (photovisual). From 12 maxima

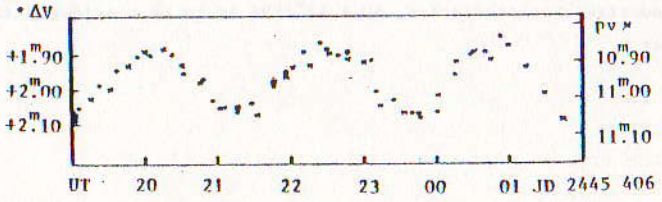

Figure 1

Light curve of BD + 43°1894 in V (comparison BD + 43°1896) and photographic. The photovisual magnitudes are calibrated with the sequence of the Hyades.

*BAV-Mitteilungen Nr. 37

(Table I) the following elements could be derived:

$$\text{Max.} = \text{JD } 2445\,342.3822 + 0^{d}.097949\ E$$
$$\pm 24 \qquad\qquad \pm 4$$

Table I

Maxima of BD + 43° 1894

E	JD 2445...	O-C	method	observer
0	347.3827	+0.0005	pg	Fr
1	347.4743	-0.0058	pg	Fr
2	347.5771	-0.0009	pg	Fr
326	379.3174	+0.0039	V	Fd
327	379.4243	+0.0129	V	Fd
357	382.3630	+0.0131	V	Ag
602	406.3395	-0.0078	V	Fd
602	406.3437	-0.0036	pg	Fr
603	406.4367	-0.0086	V	Fd
603	406.4423	-0.0030	pg	Fr
604	406.5367	-0.0065	pg	Fr
1276	472.3708	+0.0060	V	Fd

The O-C against these elements are given in Table I. The period seems to be somewhat variable.

On two occasions, observations in B and V were performed simultaneously. The amplitude in B ($0^{m}.30$) is larger than in V ($0^{m}.22$). The minima and maxima in B follow those in V by 5 to 14 minutes, the minima and maxima of B-V occur even 5 to 15 minutes later. The colour index varies around $0^{m}.00$. In view of the photometric characteristics, BD + 43°1894 is to be considered as a Delta Scuti star.

F. AGERER

M. FERNANDES

P. FRANK

BAV, Munsterdamm 90
1000 Berlin 41, Germany