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A NEW PERIOD CHANGE OF 44i BOOTIS IN 1979*

Seven infrared light curves ($\lambda = 2.25 \mu\text{m}$) of the contact binary 44i Bootis were obtained in April 1980 included five complete curves secured on a single night. The 585 individual observations will be published and fully discussed elsewhere (Lunel et al., 1984).

The comparison of the new curves (April 1980) with the curves of March 1978 published by Bergeat et al., (1981) led us to the conclusion that the period should have changed during the meantime. Heliocentric epochs were computed by the method of Kwee and van Woerden (1956):

Table I

Night (1980 April)	Hel. J.D. Prim.min. (2444300+)	O-C in days (elements of Duerbeck 1975)	O-C in days (new elements this paper)
19-20	49.39044	+0.0034	+0.0011
21-22	51.53145	+0.0019	-0.0005
24-25	54.47726	+0.0017	-0.0006
25-26	55.55004	+0.0032	+0.0009
26-27	56.35231	+0.0020	-0.0003

The O-C diagram for primary minima is given in Figure 1 which includes our infrared data of March 1978 (triangles, observations published by Bergeat et al., 1981) and the above-mentioned results (squares). Minimum times observed by Hopp et al., (1977), Duerbeck et al., (1978), Duerbeck (1978), Margrave (1980, 1982) Mikolajewska and Mikolajewski (1980), Pohl and Gülmen (1981) Rovithis and Rovithis-Livaniou (1981), Hopp and Witzigmann (1982) and Robb and Milone (1982) are denoted by dots.

Despite the wide scatter observed around JD 2443600, it is clear that some period change should have occurred between this former value and JD 2444350. As a weighted mean of the available data, we propose the following elements:

$$2443944.9851 + 0.^d.2678174 \text{ E.}$$

*The observations were done at the Observatoire de Haute-Provence (CNRS).

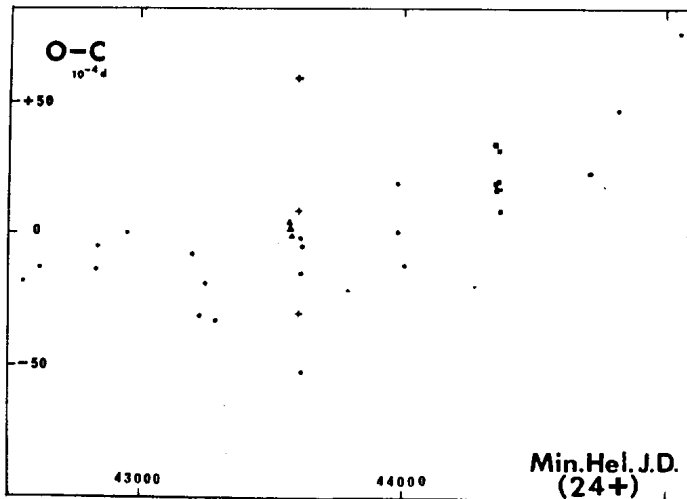


Figure 1

The diagram of O-C (in days) for primary minima against the heliocentric epoch, as recently observed in the contact binary 44i Bootis.

Much more data is needed so as to improve these provisional elements. We note that the new period lengthening (i.e. $+15 \times 10^{-7}$ day) has an amplitude comparable to the previous one reported by Bergeat et al., (1972). Presumably the period change occurred in 1979. It is noteworthy that Hopp and Witzigmann (1982) reported an active phase of *i* Bootis in 1979, while 1978 and 1981 would have been more quiet.

Finally the authors wish to emphasize the necessity of having recent and accurate elements at hand when studying features of light curves such as asymmetries. An undetected recent change of small amplitude on the period result in spurious asymmetries. In particular, the odd sine term b_2 becomes detectable.

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J. BERGEAT

M. LUNEL

R. GARNIER

Observatoire de Lyon
69230 Saint Genis Laval
France

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