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PHOTOELECTRIC V LIGHT CURVE AND MINIMA OF RT And

We made 1032 photoelectric observations, in V light, of the eclipsing binary RT And (BD+52° 3383 a) in 19 nights, between the end of 1972 and 1974.

A photometer, equipped with an EMI 9502 photomultiplier and a pair of Schott filters, GG14+GG13 (2 mm), has been used, attached to the 40 cm looke refractor of the Teramo Observatory. From these data, eight times of primary minimum and three of the secondary one have been calculated; to get them we used the Kwee and van Woerden method (1956). Considering the times of our primary minima, those reported by Williamon (1974) from J.D. 2439000 on, and those given by Dean (1974), we obtained the linear ephemeris

$$\text{Hel. J.D.Min.I} = 2441508.5550 + 0.62892990 E \quad (1)$$

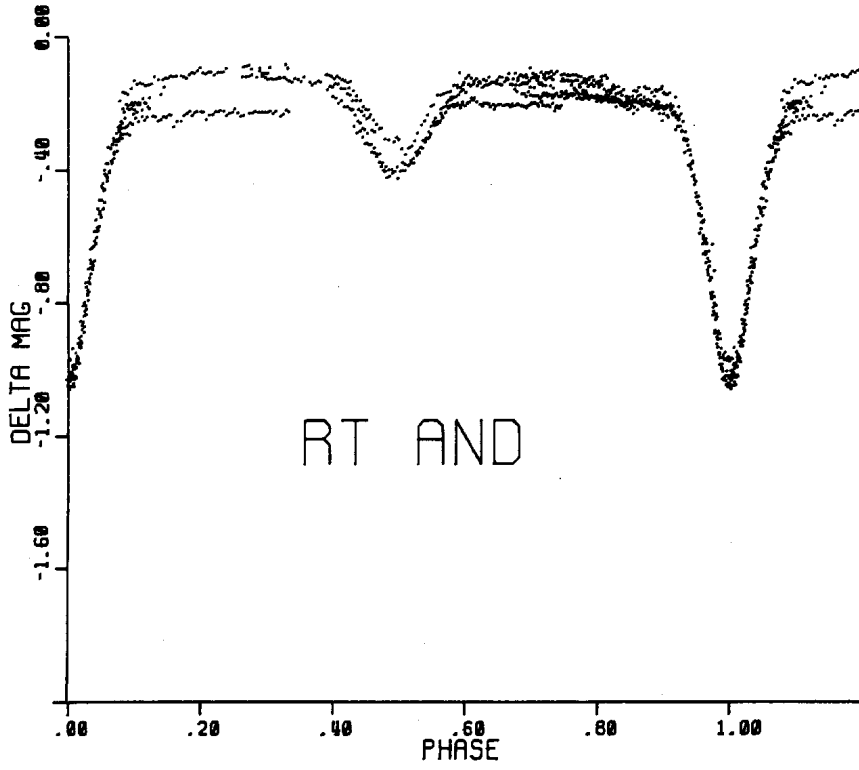
$$\begin{array}{ccc} \pm 1 & & \pm 4 \end{array}$$

We did not consider the secondary minima in the above calculation, because the relative measurements were not very reliable.

The table below lists our times of minimum and the corresponding (O - C)'s:

J.D.	E	O - C	σ
2441508.5563	0	+ 0.0013	\pm 0.0003
41598.4911	143	- 0.0009	0.0006
41627.4228	189	0.0000	0.0001
41886.5418	601	- 0.0001	0.0001
* 42011.3852	799.5	+ 0.0007	0.0009
42329.3092	1305	+ 0.0006	0.0003
42330.5675	1307	+ 0.0011	0.0003
* 42338.4240	1319.5	- 0.0040	0.0004
42339.3710	1321	- 0.0004	0.0002
* 42367.3586	1365.5	- 0.0002	0.0004
42385.2832	1394	- 0.0001	0.0002

* Not used in the calculation of equation (1)



The observations have been reduced in phase by using (1) and the resulting light curve (comp. star 1-var.) is shown in fig. 1.

Stars BD+52° 3377 and BD+52° 3380 have been used as comparison stars: the sequence of observations was

Sky, comp. star 1, Var., comp. star 2, Var.,

With this procedure, we made a very careful analysis of the possible variability of the main comparison star: within an accuracy of 0.02^m we can conclude that it is not so.

Therefore the peculiarities of our light curve are to be attributed to RT And itself: these peculiarities are mainly a great variability in the levels of maxima and in the depths of the secondary minima, both from day to day and from year to year.

In a forthcoming paper, we will analyze the light curve of this star using different methods of solution.

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Kwee, K.K. and van Woerden, H.: 1956, Bull. Astron. Neth. 12, 327
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