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PHOTOELECTRIC MAXIMA OF VZ CANCRI

Between December 1973 and April 1976, 1800 photoelectric observations of the short-period variable VZ Cancri were carried out at the Astronomical Observatory of the University of Cluj-Napoca.

The observations were made in V light with a 50 cm Newton reflector, a photometer employing an unrefrigerated 1P21 photomultiplier tube and a Corning 3384 filter.

The comparison star was HD 73938 (BD+11°1894).

From the observed light-curves, by Pogson's method, 17 heliocentric maxima and the corresponding magnitudes V_{\max} were determined. Table 1 contains the observed times of maxima, where the differences O-C's and the phase ψ_b (for the beat period) refer to the following elements

$$\text{Max.hel.} = \text{JD } 2433631.8655 + 0^{\text{d}}17836367 \cdot E$$

for the principal period, and

$$\text{Max.hel.} = \text{JD } 2433631.8605 + 0^{\text{d}}716292 \cdot E_b$$

for the beat period, respectively.

In order to have a general picture of period variation we have constructed the diagram $\text{O-C} = f(\psi_b)$ for heliocentric maxima. With this end in view we have used the corresponding observations made by Fitch (Ap.J.121,690,1955), Spinrad (Ap.J.131,134,1960), Oosterhoff (BAN 18,459,1966), and the determined maxima published by Guman (Mitt.d.Sternw.Budapest-Szabadsághegy, no.36,1955), and Popovici (IBVS 508, 1971). The results are presented in Figure 1. The diagram $V_{\max} = f(\psi_b)$ is plotted in Figure 2, but here we have used only Fitch's, Spinrad's, Oosterhoff's and Todoran's observations.

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Table 1
Observed Maxima

| Max.hel. 2442000+ | V_{max} | E | O-C | D_p | ψ_b |
|----------------------|--------------------|-------|-----------------------|-------|----------------------|
| 128.3910 | 7 ^m .37 | 47628 | -0 ^d .0063 | 11861 | 0 ^p .8252 |
| 132.3295 | 7.37 | 47658 | + .0082 | 11867 | .3236 |
| 161.3885 | 7.43 | 47821 | - .0061 | 11907 | .8924 |
| 453.5485 | 7.35 | 49459 | - .0058 | 12315 | .7706 |
| 474.4160 | 7.44 | 49576 | - .0068 | 12344 | .9034 |
| 476.3790 | 7.20 | 49587 | - .0058 | 12347 | .6439 |
| 485.4855 | 7.38 | 49638 | + .0041 | 12360 | .3573 |
| 487.4465 | 7.50 | 49649 | + .0031 | 12363 | .0949 |
| 508.3195 | 7.49 | 49766 | + .0076 | 12392 | .2352 |
| 531.3285 | 7.33 | 49895 | + .0077 | 12424 | .3577 |
| 756.4113 | 7.17 | 51157 | - .0045 | 12738 | .5910 |
| 771.3955 | 7.24 | 51241 | - .0028 | 12759 | .5101 |
| 785.4980 | 7.41 | 51320 | + .0090 | 12779 | .1982 |
| 837.3865 | - | 51611 | - .0064 | 12851 | .6387 |
| 867.3600 | 7.22 | 51779 | + .0020 | 12893 | .4840 |
| 871.2775 | 7.38 | 51801 | - .0045 | 12898 | .9532 |
| 873.4160 | 7.36 | 51813 | - .0063 | 12901 | 0.9387 |

