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A NEW W UMa VARIABLE IN THE FIELD OF AN Gru <sup>1</sup>

In the course of a CCD photometric investigation on AN Gru, a Cataclysmic Variable candidate (Steiner, Cieslinski and Jablonski 1988) we discovered a new W UMa variable among the comparison stars. The object, labeled V in Fig. 1, has approximate coordinates  $\alpha = 23^{\text{h}}05^{\text{m}}04^{\text{s}}$ ,  $\delta = -47^{\circ}43'1''$  (epoch=1950.0). Offsets with respect to AN Gru are  $6''$  to the West and  $111''$  to the South.

The differential V magnitudes for several stars in the field of AN Gru were obtained from 1989 to 1993 with a Wright Instruments camera using a P8603 GEC chip (385 x 578 pixels,  $0.58''$  / pixel) at the 0.6 m telescope of CNPq/Laboratório Nacional de Astrofísica, Brazil. The data were reduced using the aperture photometry tasks of the APPHOT package of IRAF <sup>2</sup>. In some selected nights we calibrated the system with the aid of the photometric sequences of Graham (1982). This gives  $V=13.32\pm 0.02$  for the star labeled C1 in Fig. 1.

The period of the new eclipsing binary was obtained by means of standard power spectrum analysis followed by CLEAN deconvolution of the effects of an irregular sampling window. Fig. 2 shows 254 V measurements folded on the orbital period.

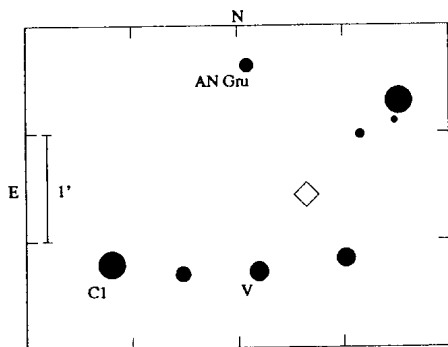


Figure 1: Finding chart for the new eclipsing binary.

<sup>1</sup>Based on observations made at CNPq/LNA, Brazil.

<sup>2</sup>IRAF is distributed by National Optical Astronomy Observatories, which is operated by the Association of Universities for Research in Astronomy, Inc.

As one can see in Fig. 2, it is impossible to tell from the available data which minimum is deeper, so we arbitrarily chose the better observed one to be set as a reference epoch. With this convention an ephemeris for the subsequent times of primary minimum can be written as

$$T_{min} = \text{HJD } 2,448,724.8689 + 0^d 33885744 \times E \\ \pm 0.0003 \pm 0.0000016$$

where E denotes the cycle number from the reference epoch. The uncertainties are quoted at the  $1\sigma$  level.

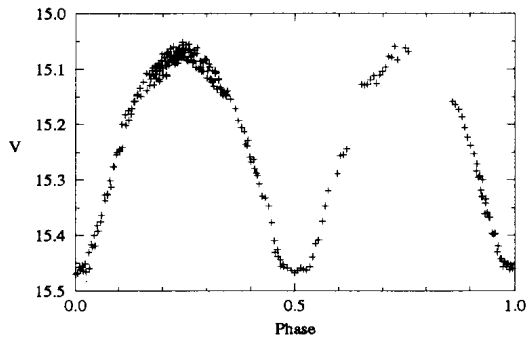


Figure 2: The phase diagram for the  $0^d 33885744$  orbital period

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