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OPTICAL PHOTOMETRY OF CYGNUS X-2

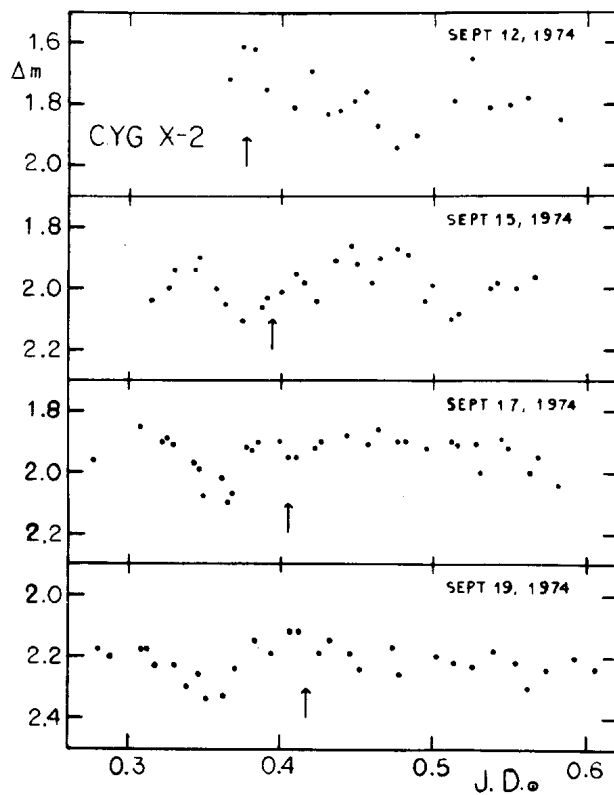
It was reported by Lyutyj (1974) that the optical counterpart of the x-ray source Cygnus X-2 is a double line spectroscopic binary with a period  $0^d.251451$ .

We have made photometric observations in order to check Lyutyj's suggestion, looking for brightness variability with a period of orbital revolution. No deep eclipses could be expected because there are no x-ray eclipses observed. However because of relatively large range of radial velocity variations (Burbidge et al. 1967, Kristian et al. 1967, Kraft and Demoulin 1967) we may expect periodic variability due to tidal deformation of the components or even shallow grazing eclipses.

The unfiltered 1P21 photomultiplier was used on a 60 cm reflector in the Ostrowik station of the Warsaw University Observatory. As a comparison we used star no. 1 from the Fig. 3 in a paper by Giacconi et al. (1967).

Figure 1 gives results of our observations. The arrows point on times of spectroscopic conjunction with the HeII component behind according to Lyutyj's elements. It can be seen that the observed variability is not related to the Lyutyj's period of the orbital motion. The object's average brightness decreased by 0.4 mag during the week covered by our observations. Beside that there are variations on a time scale of 1 hour and an amplitude about 0.2 mag, and these variations seems to be more pronounced when the object is brighter. Similar short time scale flickering was already observed by Kristian et al. (1967).

With the present observational material it could not be excluded that the shallow dips in the light curve that occur at the beginning of nights Sept. 15, 17, and 19 are due to eclipses even though that possibility is not very likely. The possible periods that fit these three dips are  $1^d.990$ ,  $0^d.663$ , and  $0^d.398$ . Few other values of the period could be considered if one is willing to believe that the intrinsic flickering has prevented us from detecting an additional minimum on the night of Sept. 12 and in case of period  $0^d.249$  still another minimum on Sept. 19.



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