ANALYSIS OF THE CCD CAMERA ST–4 AND OBSERVATIONS OF PX AND

I.L. Andronov[1], G.V. Borisov[2], L.L. Chinarova[1], S.S. Guziy[3], S.V. Kolesnikov[1], P.A. Mason[4]

[1] Department of Astronomy, Odessa State University, Odessa 270014 Ukraine

[2] SAI Crimean Laboratory, Nauchny 334413 Crimea, Ukraine

[3] Astronomical Observatory, Nikolaev Pedagogical Institute, Nikolaev 327000 Ukraine

[4] Department of Astronomy, Case Western Reserve University, Cleveland OH 44106 USA

ABSTRACT. Analysis of the spectral sensitivity of the CCD camera ST–4 is presented. The half-maximum sensitivity range is 685–930 nm. Mean wavelengths $\lambda_1 = \overline{\lambda} = 796$ nm, and $\lambda_2 = (\overline{\lambda^{-1}})^{-1} = 730$ nm are measured. Eclipses of PX And were detected at HJD 48861.3933 and .5393.

Key words: Stars: Cataclysmic: PX And

The spectral sensitivity of ST–4 is measured using a standard light source. Unfiltered test observations of PX And were obtained using the SAI 60–cm Zeiss telescope and SBIG ST–4 CCD Camera. Two comparison stars in the field are fainter than the variable, thus the resulting light curve (Fig.2) is noisier than would be expected from the counts themselves. The depth of the first minimum 1.1^m is larger than the values $\Delta V = 0.64^m$ and $\Delta R = 0.61^m$ obtained 55^d later (Shakhovskoy et al. 1995) when the star varied from $V = 14.04^m$ to 14.68^m. Thorstensen et al. (1991) noted a highly variable eclipse depth of about 0.5^m.

Our observations with the weakest count rates correspond to HJD=2448861.3914 and .5395. The phases are –0.012 and +0.001 respectively according to the ephemeris $T_{Min} = 2449238.8369 + 0.14635278 \cdot E$ (Hellier and Robinson 1994). The smoothed minima (see figure 2) correspond to phases +0.002 and –0.001 showing smaller deviations from the fit.

References

Thorstensen J.R., Ringwald F.A., Wade R.A., Schmidt G.D., Northworthy J.E.: 1991, *A. J.*, **102**, 272.
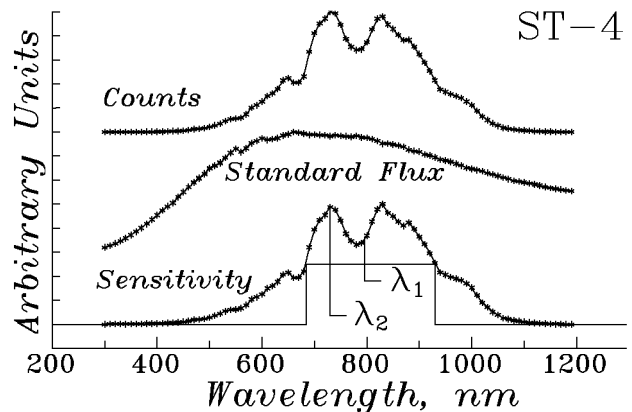
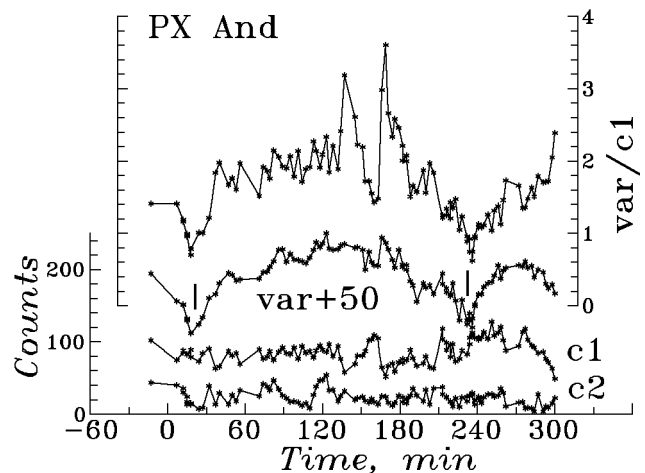Figure 1. Spectral sensitivity of the CCD camera ST–4.

Figure 2. Counts of PX And and 2 faint comparison stars. Vertical bars show smoothed times of minima.

Hellier C., Robinson E.L.: 1994, *Ap. J.*, **431**, L107.

Shakhovskoy N.M., Kolesnikov S.V., Andronov I.L.: 1995, *Ap. Sp. Sci. Libr.*, **205**, 181.