Radio Physcics and Radio Astronomy, 2001, v. 6, No. 2, pp. S64–S65

R-BAND OBSERVATIONS OF THE X-RAY TRANSIENTS XTE J1859+226 AND XTE J1118+480

S. Guziy[1], A. Shlyapnikov, I. Vishnevskaya and E. Zelenskaya

Kalinenkov Astronomical Observatory, Nikolaev State University, Nikolskaya 24, Nikolaev, 54030, Ukraine

We present some results of observations on the X-ray transients XTE J1859+226 and XTE J1118+480 by means of the 0.7-meter telescope at the Kalinenkov Astronomical Observatory of Nikolaev State University. The observations of XTE J1859+226 were obtained in November 1999 and April 2000. The observations of the XTE J1118+480 started in April 2000. The light curves are presented here.

The source XTE J1859+226 was detected by RXTE All-Sky Monitor (ASM) on Oct 9, 1999. Extrapolation indicates that the outburst began around Oct 8.55 UT. The ASM spectrum was roughly Crab-like and did not show evolution [1]. An optical counterpart was detected on Oct 12 [2].

XTE J1118+480 were detected by RXTE ASM on Mar 29, 2000. Retrospective ASM analysis indicated that the x-ray flux was slowly rising since Mar 5. The X-ray spectrum did not vary significantly during intense flares. Preliminary spectral analysis indicated a power law visible to 30 keV. The photon index was roughly 1.8, which is similar to Cyg X-1 in its hard state [3]. The optical counterpart was detected on Mar 30 [4].

Observations and Results

We used the 0.7 m telescope of the Kalinenkov Astronomical Observatory of Nikolaev State University and a SBIG ST-7 CCD. The observations were obtained in the R-band, with a scale of the $0.73''$/pixel.

XTE J1859+226

Optical observations of XTE J1859+226 were started on Nov 3, 1999, 28 days after the discovery by Garnavich et al. [2]. CCD photometry of XTE J1859+226 was obtained on 2 nights in Nov 1999 (120 frames) and Apr 2000 (3 frames). Exposure times were 50 s (Nov 1999) and 300 s (Apr 2000). After a standard reduction (correction for a flat field, hot pixels and a background, magnitudes were measured by means of aperture photometry. For comparison we used the reference star at R.A.=$18^h58^m41.6^s$ and Dec.=$+22^o38'57''$ (2000) with R = 15.36 (Fig.1).

XTE J1118+480

Optical observations of XTE J1118+480 were started on Apr 3, 2000, 4 days after the discovery Uemura et al. [4]. CCD photometry in the R-band was obtained on 8 nights from April to Jul 2000. Exposure times of 30 s (Apr–May) and 60 s (Jun–Jul).We present here the results of optical observations of two X-ray transients, For comparison we used the star USNO-A2.0 1350-07926028 (R.A.=$11^h18^m40.75^s$, Dec.=$+48^o03'25.9''$) with R=10.66 (Fig.2).

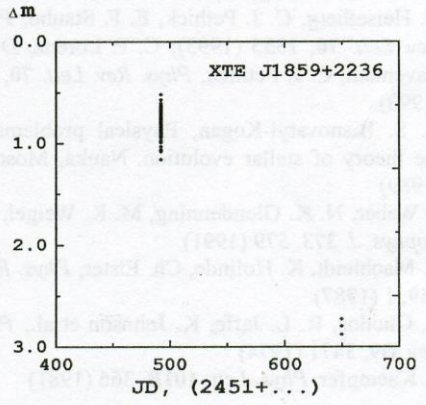

Fig. 1. *The light curve of XTE J1859+226 in the R-band*

[1]e-mail: root@aok.mk.ua

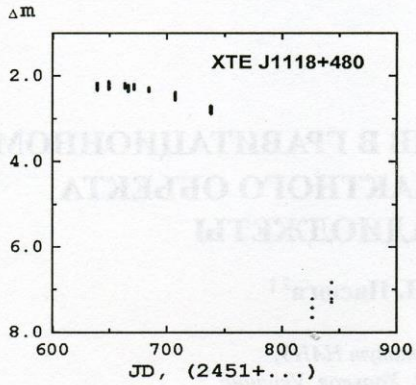

Fig. 2. *The light curve of XTE J1118+480 in the R-band*

Conclusions

We present here the results of optical observations of two X-ray transients, which prove to be important for the multiwavelength studies of high-energy sources.

References

[1] A. Wood et al. *IAU Circ.* **7274** (1999)
[2] P. M. Garnavich, K. Z. Stanek, and Berlind, *IAU Circ.* **7276** (1999)
[3] R. Remillard et al. *IAU Circ.* **7389** (2000)
[4] M. Uemura T. Kato and H. Yamaoka, *IAU Circ.* **7390** (2000)

РЕЗУЛЬТАТЫ НАБЛЮДЕНИЙ РЕНТГЕНОВСКИХ ИСТОЧНИКОВ XTE J1859+226 И XTE J1118+480

С. Гузий, А. Шляпников, И. Вишневская, Е. Зеленская

Мы представляем некоторые результаты наблюдений рентгеновских источников XTE J1859+226 и XTE J1118+480 выполненные на 0.7 м. телескопе Калиненковской астрономической обсерватории Николаевского госуниверситета. Наблюдения источника J1859+226 были проведены в ноябре 1999 г. и апреле 2000 г. Наблюдения источника XTE J1118+480 начались в апреле 2000 г.

РЕЗУЛЬТАТИ СПОСТЕРЕЖЕНЬ РЕНТГЕНІВСЬКИХ ДЖЕРЕЛ XTE J1859+226 ТА XTE J1118+480

С. Гузій, А. Шляпніков, И. Вишнєвська, Е. Зеленська

Ми надаємо деякі результати спостережень рентгенівських джерел XTE J1859+226 та XTE J1118+480 на 0.7 м. телескопі Калиненьковскої астрономічної обсерваторії Миколаївського держуніверситету. Спостереження джерела J1859+226 були проведені у листопаді 1999 р. та квітні 2000 р. Спостереження джерела XTE J1118+480 почалися у квітні 2000 р.