THE SUPERSOFT X-RAY SOURCE RXJ0537.6–7033

M. ORIO[1,2], M. DELLA VALLE[3], G. MASSONE[2],
H. ÖGELMAN[1]
1. Department of Physics, University of Wisconsin, Madison, USA
2. Osservatorio Astronomico di Torino, Italy
3. Dipartimento di Astronomia, Università di Padova, Italy

We present new X-ray data with an improved position for the supersoft X-ray source RXJ0537.6–7033, and propose a candidate for the optical identification.

The source was initially designated as RXJ0537.7–7034 because there was a high uncertainty in the position, at the edge of the field of the ROSAT PSPC (Orio & Ögelman 1993). It was later observed three more times by the ROSAT PSPC at intervals of approximately 6 months, from the beginning of 1992 to the end of 1993. The change of the name is due to the new, more precise position obtained in these observations. The count rate was $0.021 \pm 0.005\,\mathrm{count\,s^{-1}}$ in the first 1992 observation and remained at the same level in the second 1992 observation. The source was not detected in the first half of 1993, with an upper limit of $0.002\,\mathrm{count\,s^{-1}}$; finally in 1993 December it was detected with only $0.0035 \pm 0.0007\,\mathrm{count\,s^{-1}}$. It seems therefore to be very variable.

We propose the identification with an optical counterpart that is only 9 arcsec distant from the PSPC position, belongs to the LMC and shows a peculiar spectrum (as obtained with the ESO 3.6 m telescope at La Silla), with the He II λ4686 line in emission and most likely the hydrogen Balmer lines in absorption. A very preliminary analysis of optical photometric data indicates some variability. If the identification with this LMC object is correct, then RXJ0537.6–7033 is a 'supersoft' X-ray source at lower luminosity ($L_{\mathrm{bol}} \simeq 10^{37}\,\mathrm{erg\,s^{-1}}$) and possibly more absorbed than other LMC supersoft X–ray sources.

References

Orio, M., Ögelman, H., 1993, A&A, **273**, L56

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