A Chandra observation of the long-duration neutron-star X-ray transient KS1731–260

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Abstract

The neutron-star X-ray transient KS 1731–260 was discovered in August of 1989 and until recently, the source was seen persistently bright in X-rays. In January of 2001, the source suddenly returned to quiescence again after more than a decade of actively accreting. We present the results of a Chandra/ACIS-S observation of KS 1731–260 performed just a few weeks after this transition. We detected the source in quiescence at a luminosity and a blackbody temperature which are very similar to those obtained for the normal short-duration neutron-star X-ray transients. If the prolonged accretion in KS 1731–260 had heated the neutron star to a higher temperature than those obtained for the neutron stars in ordinary transients, then a higher luminosity and temperature would be expected (assuming that KS 1731–260 is very similar to those other systems in all other aspects, like age and recurrence time of the outbursts). We will discuss our results in the context of the quiescent X-ray emission mechanisms (such as cooling models, residual accretion in quiescence) in neutron-star X-ray transients.

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