The Nature of the Low-luminosity Globular Cluster X-ray Sources

D. Pooley(*MIT*), W. H. G. Lewin (*MIT*), L. Homer (*Washington*), B. Gaensler (*MIT*), S. Anderson (*Washington*), B. Margon (*STScI*), F. Verbunt (*Utrecht*), J. Miller (*MIT*), D. Fox (*Caltech*), V. Kaspi (*McGill*), M. van der Klis (*Amsterdam*)

Abstract

We present results of our *Chandra* observation of the globular cluster NGC 6752. We detected 19 sources within the half-mass radius of the cluster, down to a luminosity of 10^{30} erg s^{-1}. After performing small astrometric corrections based on X-ray/radio coincidences, we searched the 0.6 arcsec radius *Chandra* error circles for *HST* counterparts and found nine. Five counterparts are bright in Hα and UV emission and are very likely cataclysmic variables (CVs). Two candidate CVs (based on Hα brightness) were previously known in this cluster. The other four counterparts are also bright in UV emission (two of these show some Hα excess as well) and are probably CVs or maybe quiescent low-mass X-ray binaries. Of the remaining 10 sources, we expect five will be the known millisecond radio pulsars (MSPs), the radio positions of which are not yet known. The majority of the other five sources are likely background objects not associated with the cluster; we expect four such sources based on the number of sources detected outside the cluster in our observation.

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