Chandra Observations of M31* and M31 Transients

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Abstract

We have detected two globular clusters in the nuclear region of M31 with both Chandra and HST. These detections allow us to register the Chandra and HST images and therefore determine relative positions to $\sim 0.1''$. This improved positional accuracy shows that (contrary to our earlier reports) the super soft source CXOU J004244.2+411608 is unlikely to be the counterpart of M31*. Instead, we find that CXOU J004244.2+411609 is within $0.15''$ of M31*. This source is variable on $\sim$month long timescales, has a luminosity of $\sim 2 \times 10^{37}$ ergs s^{-1}, an a not atypical power-law slope of ~ 2.

Each month Chandra carries out a brief observation of M31, which typically finds ~ 1 transient of $> 10^{37}$ergs/sec. Starting this July, we will begin a program to identify the UV counterparts to these transients using HST. The results from the first few searches will be described.

CATEGORY: NORMAL GALAXIES