Hubble Space Telescope

Cycle 15 AR Proposal

Searching the optical counterparts for ultraluminous X-ray sources

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Abstract

Ultraluminous X-ray sources are one of our best chances to discover intermediate mass black holes of 100-100,000 solar masses. Optical studies are essential to shed light on their nature by looking into their environments and identfiying the seceondaries, which can be monitored spectroscopically to detect orbital motions, measure the radial velocity curves, and determine the black hole mass beyond doubt. Here we propose to search for the optical counterparts of ULXs by comparing the HST archive and the Chandra archive. We expect at least a few dozens of counterparts from this archive study.

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