Optically faint sources in the Chandra Deep Field North Survey

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Abstract

A considerable fraction ($\approx 30\%$) of the sources that comprise the 0.5–8.0 keV X-ray background have optically faint ($I \geq 24$) counterparts. Here we present constraints on the nature of this source population using the 1 Ms Chandra Deep Field North observation. We find that the majority of the optically faint sources are likely to be obscured AGN at moderate redshift ($z \approx 1$–3), and a considerable fraction (10–50%) are probably obscured QSOs. Although these sources contribute to a significant fraction of the X-ray background radiation, we find that they are unlikely to be strong contributors to the far-infrared background. A number of sources have faint μJy radio counterparts, and we place constraints on the nature of the optically faint μJy source population.

CATEGORY: ACTIVE GALAXIES AND QUASARS