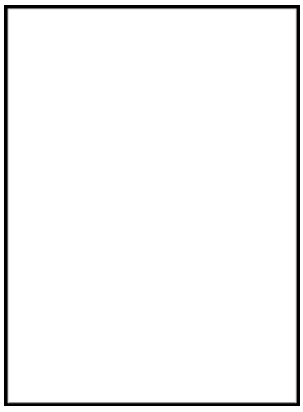
Study of the discrepant QSO X-ray luminosity function from the HEAO-2 data archive - final technical report, period covered May 1, 1982 to April 30, 1984

National Aeronautics and Space Administration - x



Description: -
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X rays.
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NASA contractor report -- NASA CR-173311.
NASA-CR -- 173311.study of the discrepant QSO X-ray luminosity function from the HEAO-2 data archive - final technical report, period covered May 1, 1982 to April 30, 1984
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high x

We have constructed multiple realizations of the X-ray luminosity functions XLFs of Milky Way, using the long term light-curves of sources obtained in the 2-10 keV energy band with the RXTE-ASM. We also constructed the intrinsic HMXB XLF in the soft X-ray band 0. We use the time delay between the formation of the stellar cluster and that of the first X-ray binaries, in order to put limits on the age of a given stellar burst.

high x

Average spectral characteristics of survey detected AGN will be presented and compared with model distributions. The averager spectral index alpha is 0. The numbers of hard x-ray blazars detected in these surveys are finally sufficient to estimate this important component's contribution the cosmic background.

high x

The obtained X-ray luminosities are compared to other well-known tracers of star formation activity such as the far-infrared and the ultraviolet luminosities. The best-fitting intercept for the BHs significantly exceeds that for the NSs, cementing BHs as more radio loud, by a factor ˜22. However, possible explanations for the lack of higher luminosity QSOs in our sample prove even more interesting.

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This completes our source-by-source analyses of HBRPs in the fallback disc model that was also applied earlier to anomalous X-ray pulsars AXPs , soft gamma repeaters SGRs , and dim isolated neutron stars XDINs.

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The contribution of QSOs to the diffuse X-ray background radiation is therefore highly uncertain, but may be quite small.

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This region contains at least six low luminosity X-ray sources within approximately 10 deg.

high x

The results support the hypothesis that hard X-rays are originated in X-ray binaries which, as SN remnants, have a formation time delay of a few mega years after the star-forming burst. The complete sample of identified sources was used to construct X-ray luminosity functions, using the absolute maximum likelihood method, for clusters galaxies and active galactic nuclei.

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The optical data utilized in this study consisted of 121 HST WFPC2 associations stacked images. For the five HBRPs, unlike for AXPs, SGRs and XDINs, our results do not constrain the dipole field strengths of the sources.