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Title:	LeMMINGS – IV. The X-ray properties of a statistically complete sample of the nuclei in active and inactive galaxies from the Palomar sample
Authors:	Beri, A (/jspui/browse?type=author&value=Beri%2C+A)
Keywords:	LeMMINGS – IV X-ray properties X-rays galaxies
Issue Date:	2022
Publisher:	Oxford Academic
Citation:	Monthly Notices of the Royal Astronomical Society, 510(4), 4909- 4928.
Abstract:	All 280 of the statistically complete Palomar sample of nearby ( $<120$ Mpc) galaxies $\delta > 20^\circ$ have been observed at 1.5 GHz as part of the LeMMINGS e-MERLIN legacy survey. Here, we present Chandra X-ray observations of the nuclei of 213 of these galaxies, including a statistically complete sub-set of 113 galaxies in the declination range $40^\circ < \delta < 65^\circ$ . We observed galaxies of all optical spectral types, including 'active' galaxies [e.g. low-ionization nuclear emission line regions (LINERs) and Seyferts] and 'inactive' galaxies like HII galaxies and absorption line galaxies (ALG). The X-ray flux limit of our survey is $1.65 \times 10^{-14}$ erg s $^{-1}$ cm $^{-2}$ (0.3–10 keV). We detect X-ray emission coincident within 2 arcsec of the nucleus in 150/213 galaxies, including 13/14 Seyferts, 68/77 LINERs, 13/22 ALGs and 56/100 HII galaxies, but cannot completely rule out contamination from non-AGN processes in sources with nuclear luminosities $\leq 1039$ erg s $^{-1}$ . We construct an X-ray Luminosity function (XLF) and find that the local galaxy XLF, when including all active galactic nucleus (AGN) types, can be represented as a single power law of slope $-0.54 \pm 0.06$ . The Eddington ratio of the Seyferts is usually 2–4 decades higher than that of the LINERs, ALGs, and HII galaxies, which are mostly detected with Eddington ratios $\leq 10^{-3}$ . Using [OIII] line measurements and black hole masses from the literature, we show that LINERs, HII galaxies and ALGs follow similar correlations to low luminosities, suggesting that some 'inactive' galaxies may harbour AGN.
Description:	Only IISER Mohali authors are available in the record.
URI:	<a href="https://doi.org/10.1093/mnras/stab3310">https://doi.org/10.1093/mnras/stab3310</a> ( <a href="https://doi.org/10.1093/mnras/stab3310">https://doi.org/10.1093/mnras/stab3310</a> ) <a href="http://hdl.handle.net/123456789/4509">http://hdl.handle.net/123456789/4509</a> ( <a href="http://hdl.handle.net/123456789/4509">http://hdl.handle.net/123456789/4509</a> )
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