



Contribution ID: 99

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## **SRG/eROSITA catalogue of X-ray active SDSS dwarf galaxies**

*Tuesday, 9 July 2024 15:40 (25 minutes)*

We present a sample of 99 dwarf galaxies (stellar mass  $< 10^{9.5} M_{\odot}$ ) with X-ray activity in their central regions. The sample was obtained from a match of the SRG/eROSITA X-ray catalogue in the eastern galactic hemisphere with the MPA-JHU SDSS catalogue. The obtained matches were cleaned rigorously with the help of external optical catalogues to increase the purity of the sample. This work is the largest study of this kind - X-ray activity in  $\approx 85$  per cent of matched dwarfs was not reported before. The majority of X-ray active dwarfs are identified as star-forming galaxies. However, the X-ray luminosity of 82 objects cannot be explained by the collective emission of X-ray binaries, rendering them strong candidates for dwarf galaxies with an active accreting black hole in their centre. We find that the fraction of AGN among dwarf galaxies drops from  $\sim 2 \cdot 10^{-2}$  at  $L_X \sim 10^{39}$  erg/s to  $\sim (2 - 4) \cdot 10^{-4}$  at  $L_X \sim 10^{41}$  erg/s and increases with the stellar mass of the host galaxy. We serendipitously discovered sources with unexpected properties. We report on a tidal disruption event (TDE) candidate in a dwarf galaxy, a massive black hole in a dwarf galaxy with a soft thermal spectrum, a luminous dwarf galaxy with an obscured X-ray spectrum and a few other peculiar sources. We found three Ultra-luminous X-ray (ULX) source candidates and a sample of X-ray bright galaxy pairs, in four of which both members shine in X-rays.

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