



# X-RAY ASTRONOMY 2019

*Current Challenges and New Frontiers in the Next Decade*

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## **Correlation between X-ray emission and stellar populations: the definitive study of nearby galaxies observed with XMM-Newton**

*Friday, 13 September 2019 14:41 (1 minute)*

We present the analysis of all galaxies within a radius of 200 Mpc observed with XMM-Newton. These galaxies are the result of cross-correlation between the XMM-Newton archive and the HECATE catalogue, the most complete galaxy catalogue (~165,000 galaxies) of the local universe incorporating robust distances and stellar population parameters. In our analysis we will use data from all objects observed by XMM-Newton, including those with no formal detections (i.e. upper limits). The sample contains 2500 galaxies observed in more than 2100 observations. Using the full set of archival XMM-Newton data we measure their integrated X-ray luminosity and spectral parameters, in order to study the correlation between X-ray luminosity, star-formation rate, and stellar mass. Since the existing X-ray correlations on star-formation rate and stellar mass have been based on a few dozens of galaxies, this much larger sample provides the opportunity to cover the full range of star-formation rate and stellar mass in the local Universe. In addition the large size of the sample enables us to characterize stochastic effects in these scaling relations.

### **Topic**

Compact and diffuse sources in galaxies and in the Galactic Center

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