



# A New Atlas of Galaxies from XMM-Newton



The XMM-Newton mission, run by the European Space Agency with major participation from NASA Goddard, has produced a new atlas of X-ray observations of “early-type” galaxies (ETG’s). The atlas and other data products have been released to the astronomical community, providing an important new tool to understand the history and evolution of galaxies.

Despite the name, early-type galaxies are not young galaxies, but are those with no ongoing star formation, major merger events, or active galactic nuclei.

Optical images of the hot gas in ETG’s show a smooth, featureless distribution. However, X-ray images show the presence of various structures in the distribution of the gas, which may indicate past active phases, like galaxy collisions and mergers, intense radiation from an active supermassive black hole in the core, or other processes that astronomers may wish to explore.

The unprecedented sensitivity and large field of view of the X-ray telescope XMM-Newton has made it possible to study the distribution of this hot gas on a larger scale and investigate its cosmic past. We have systematically analyzed XMM-Newton observations of a large sample of ETGs, with the aim of constructing 2D spectral maps, which are crucial in revealing unique features in the distribution of the gas, which might not otherwise be discernible. The data products are released to the community via a dedicated website so that a user can utilize the scientific products for a wide range of scientific objectives.



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Astrophysical Journal Supplement Series accepted