



X-RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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X-raying the Planck legacy: X-ray properties of SZ-selected galaxy clusters

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The Sunyaev-Zeldovich effect provides an observational window to the intracluster medium, which is complementary to X-ray observations, and over the last few years has proved to be a mature technique to efficiently detect galaxy clusters. For instance, the Planck survey has mapped the whole microwave sky, detecting almost 2000 candidate massive clusters up to $z \sim 1$, performing the first all-sky survey of galaxy clusters 20 years after the RASS. However, X-ray data are still essential to measure in details the properties of the ICM.

I will present preliminary results on the population of massive and high-redshift clusters in the PSZ2 catalogue that we followed-up with Chandra. These observations have allowed us to identify interesting extreme merging systems, candidate cool cores and to study the evolution of the density profiles with respect to Planck-selected samples at lower z and mass.

I will also introduce a population of candidate X-ray underluminous clusters discovered in the Planck catalogue. The analysis of follow-up XMM-Newton observations has allowed us to measure their main ICM properties and to assess that they lie at the boundary of the scatter of known scaling relations.

Topic

Hot and diffuse baryons

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