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Current Challenges and New Frontiers in the Next Decade

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Study of high redshift X-ray sources through an analysis of the deepest X-ray field observed by XMM-Newton

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This work presents preliminary results of the survey carried out on one of the deepest X-ray field observed by the XMM Newton satellite. The survey is made by 13 observations taken over 2 years with a total exposure time of 1.6 Ms over a field of 30 × 30 ⬚⬚⬚⬚⬚2 around the blazar 1ES 1553+113, which were originally addressed to the study of the Warm Hot Intergalactic Medium (Nicastro et al. 2018). We detect 472 X-ray sources with high likelihood (> 6). Preliminary properties (e.g. positions, fluxes at different bands, hardness ratios) are obtained. The X-ray source list was cross correlated with the source list obtained by the observation of the Gran Telescopio Canarias (GTC) over the same field in g,r,i, z bands. Thanks to the availability of photometric redshift, we obtain a sublist of AGNs candidates and their X-ray luminosities, their large scale distribution and the luminosity function as an indicator of the evolution of Supermassive Black Holes at high redshift. Perspective for the study of the X-ray Background (XRB) and Hard X-ray emitting Active Galactic Nuclei and of high redshift Quasars will be included

Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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