MKT-22116

Ultra-steep halo A2244

Abstract

We propose MeerKAT UHF band observation of the galaxy cluster Abell 2244. This is a nearby (z=0.0953) intermediate-mass cluster, whose dynamical classification is yet unclear. X-ray morphological indicators classify it as relaxed, but the thermodynamical properties of the ICM and the presence of extended diffuse radio emission in the system suggest that it is actually dynamically disturbed. The reason for such disturbance is likely a nearby group which interacted with the main cluster, affecting the core of the cluster and increasing its central temperature. This is the ideal scenario for the production of the still elusive ultra-steep spectrum radio halos, which are one of the main predictions of turbulent acceleration models for the generation of cluster radio halos. Sensitive high frequency MeerKAT observations will provide a crucial test for the proposed scenario for A2244 and it has the potential to increase the small number of known ultra-steep halos.