

## A Study on Thermal Conditions at the Central Regions of non-cD Clusters of Galaxies (2)

T08a

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X-ray characteristics of cD and non-cD clusters are systematically different: X-ray surface brightness of cD clusters shows strong central excess, accompanied by central cool component. However, the best studied, nearby non-cD cluster, Abell 1060 (A1060) is characterized by a symmetric distribution of ICM with a sharp X-ray peak at its center; measurements with different satellites consistently indicate that the ICM is even hotter ( $\sim 3.4$  keV) at the center with outward temperature decrease. This is an open question whether all non-cD clusters have central temperature increase like A1060 or not. As non-cD clusters have been poorly studied in detail, our present study focuses on non-cD clusters: Abell 2147 ( $z=0.035$ ) and Abell 119 ( $z=0.0442$ ). A2147 and A119 were chosen for better comparison with A1060: they have nearly circularly symmetric X-ray morphology and medium richness. In the previous ASJ meeting, we presented our results of the XMM-Newton data of A2147 (T07a). The obtained radial temperature profile is approximately isothermal within errors up to  $r \sim 500$  kpc. Furthermore, we derived its beta as  $\beta \sim 0.5$  and core radius as  $r_c \sim 2'.7 \sim 100$  kpc from the X-ray surface brightness profile and compared them with other clusters' results. We also examined the relation between velocity dispersion of galaxies in A2147 and ICM temperature. Additionally, we derived the radial temperature and abundance profiles of XMM-Newton data of A119. Based on these results, we examined whether all non-cD clusters have central temperature increase like A1060 or it is an exception for A1060.