T07a 「あすか」による銀河団 Abell 1795 の観測

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We present our analysis of the ASCA central-pointing observation of the cD cluster Abell 1795 (Results from the spatially integrated spectroscopy on this cluster have been published in Fabian et al. (1994)). The Performance-Verification phase data of both GIS and SIS are used to study the properties of the intra-cluster medium. We find that there is no significant abundance enhancement in the central region of this cluster, while the gas temperature there are found to be lower than that of the outer regions, inferring an additional cool emission component. This has been confirmed by the two-temperature fitting when using the Raymond-Smith model with variable abundance ratios. We find that: (1) in the central region the temperature of the cool component is about 1.45 keV, while that of the hot component (5.77 keV) is relatively constant (5.7 keV) over all the cluster region; and (2) the cool component is strong, and its intensity is about one third of that of the hot component. Besides, we have also noticed that the brightness of this cluster is strongly peaked in the central region—this brightness excess is not likely due to the appearance of the cool component, since it can be also found in the higher energy band ($E > 3$ keV). Thus, we speculate that the brightness excess is most likely due to the sharply shaped potential well in the central region of Abell 1795.

References

Fabian A.C., Arnaud K.A., Bautz M.W., Tawara Y. 1994, ApJ 436, L63