

Q12a **X-ray View of the H α /HI Tails in the Virgo Cluster**

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In nearby clusters of galaxies, the stellar component is spatially much more concentrated than the intracluster medium (ICM), while metals in the ICM distribute more extended than the stars which have produced them. In the 2011 autumn (T11a), 2012 spring (A06a), and 2012 autumn (T04a), we reported a finding that can explain both phenomena. By studying a sample of 34 clusters, we detected clear evolution in galaxy light vs ICM mass ratio, so that the stellar component has become more concentrated than the ICM from $z = 0.9$ to 0.1. This suggests that the galaxies are dragged by the ICM, and gradually fell towards the cluster center. During infall the metal-enriched interstellar medium (ISM) is transported to the ICM by, e.g., ram pressure stripping.

Here, we report result on interactions between galaxies and the ICM of the Virgo cluster/M86 group. At least two tails of stripped ISM were previously reported near the M86 region; one behind NGC 4388 in H α (Yoshida et al. 2002) and HI (Oosterloo & van Gorkom 2005), and the other between NGC 4438 and M86 in H α (Kenney et al. 2008). By analyzing the *XMM-Newton* and *Chandra* data, we detected X-ray counterpart of both tails. The X-ray tails show clear correlation with the H α emission. Hot gas in the tails has a temperature of ≤ 1 keV, cooler than that of surrounding ICM (~ 1.5 keV). We also compare the gas masses in X-ray and HI bands to constrain the heating rate of ISM in the ICM atmosphere. Furthermore, the ionization status of the stripped ISM can be better determined by future *Suzaku* and/or *Astro-H* observations.