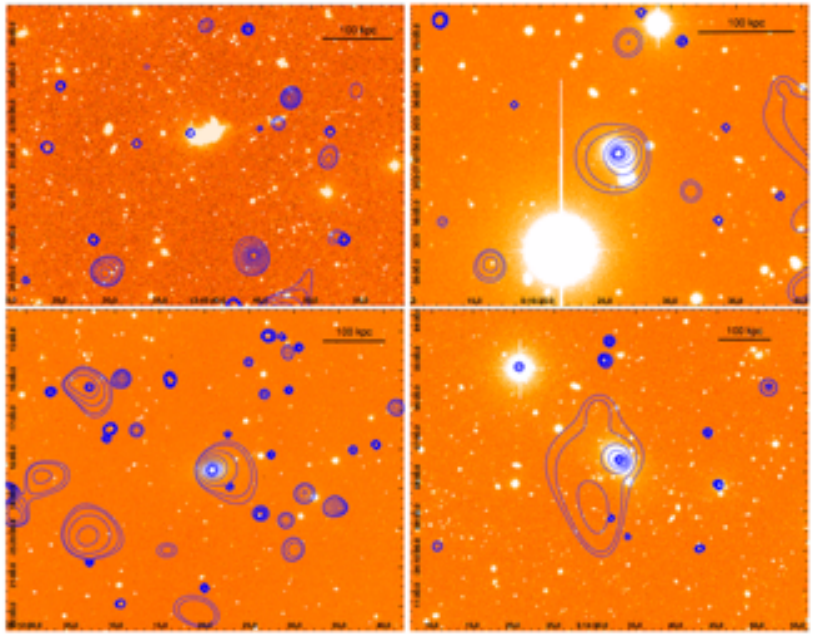
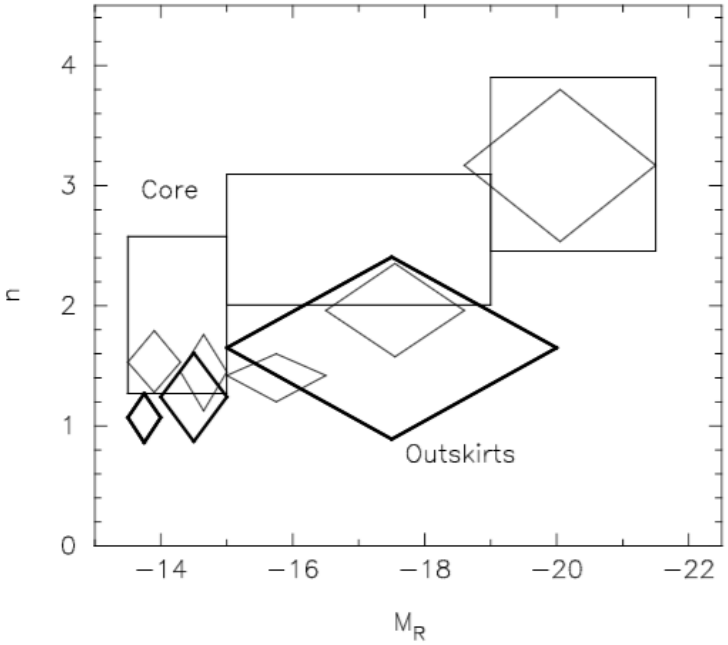
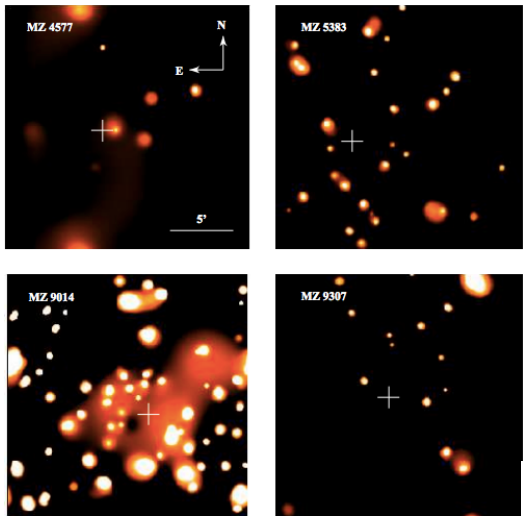
Environment of Groups



Khosroshahi et al (2014)



Khosroshahi et al (2004)



Rasmussen et al (2006)

See Pearson et al (2015) for mass estimate in groups

Isophotal shape of the most massive galaxies

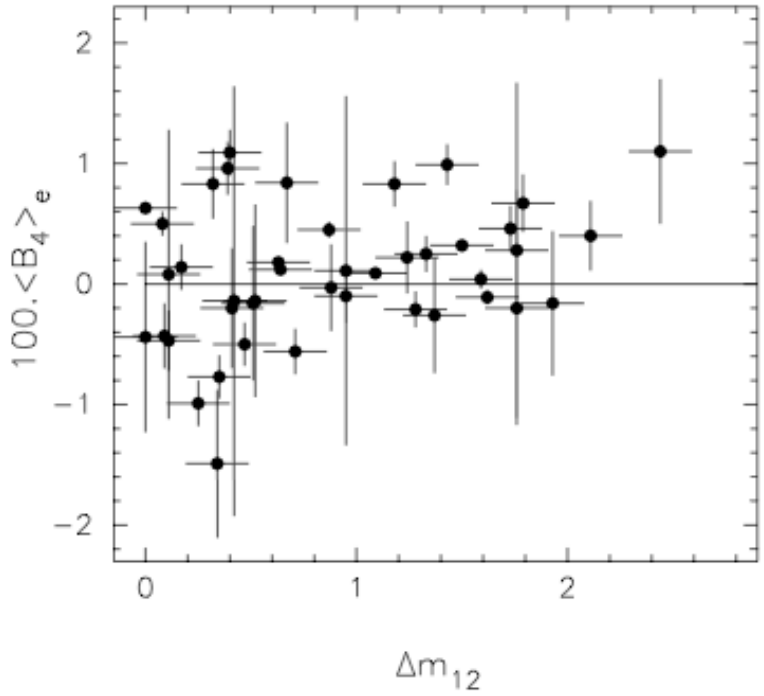
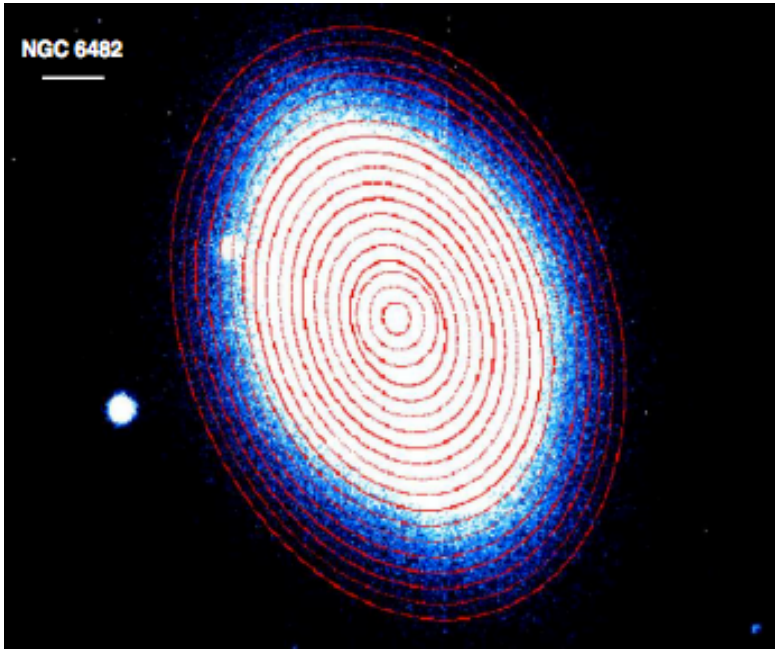


Figure 5. Luminosity gap statistic (Δm_{12}) versus error-weighted mean fourth Fourier component of the BCG light distribution ($\langle B_4 \rangle$). Positive values of $\langle B_4 \rangle$ correspond to Disky BCGs; negative values correspond to Boxy BCGs; values consistent with zero are consistent with elliptical isophotes. Clusters with $\Delta m_{12} \lesssim 1$ host BCGs with both Boxy and Disky isophotes. In contrast clusters with $\Delta m_{12} \gtrsim 1$ host only non-Boxy (i.e. Elliptical or Disky BCGs).

Smith et al (2010)



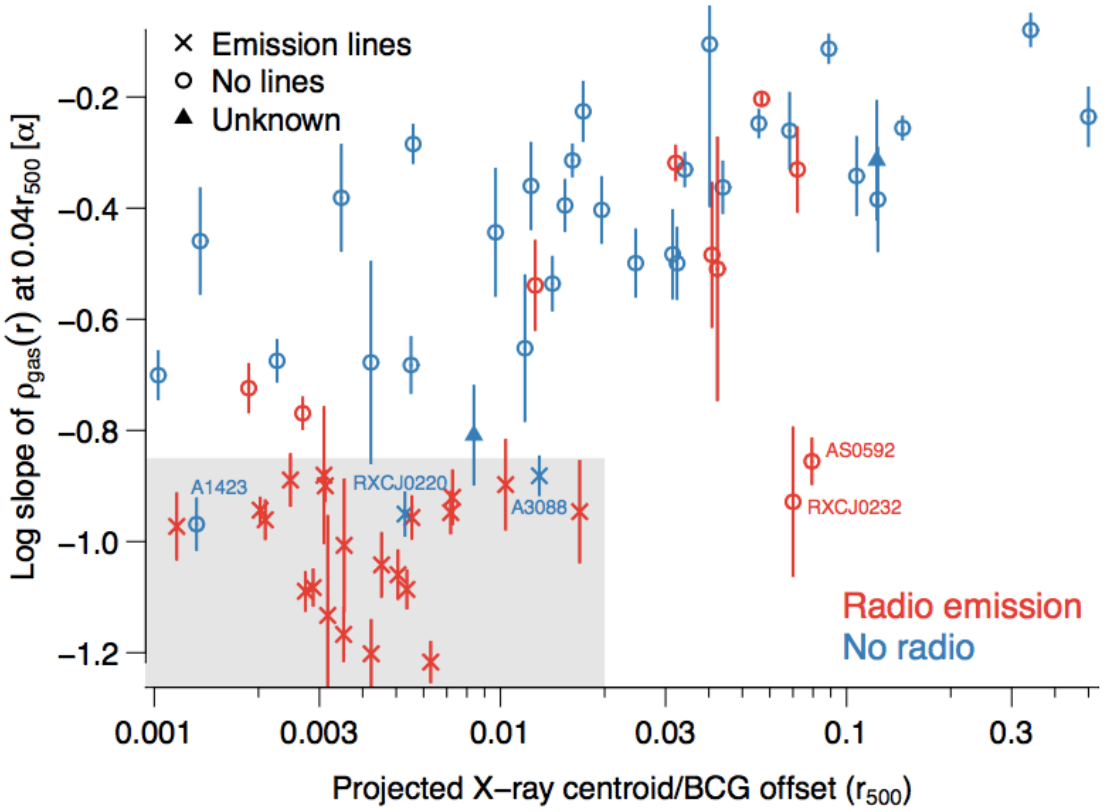
Disky isophotes indicate wet mergers
Boxy isophotes indicate dry mergers

See Khochfar & Burkert (2005)

AGN and environment

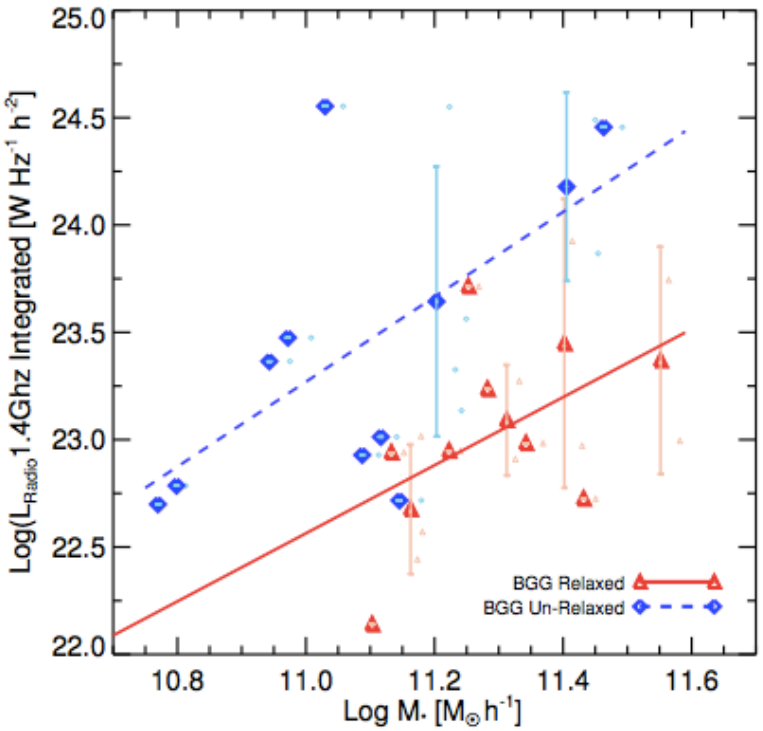
Clear correlation between X-ray/ BCG projected offset and the logarithmic slope of the cluster gas density profile at 0.04r500 (α), implying that more dynamically disturbed clusters have weaker cool cores. Line emitting galaxies all residing in clusters with X-ray/BCG offsets of <=15 kpc.

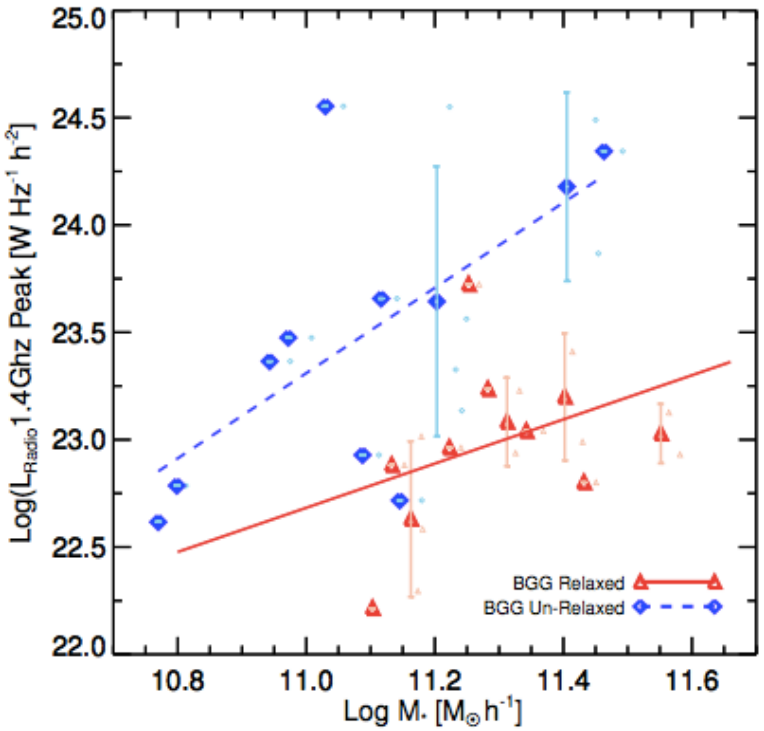
Sanderson et al (2009)



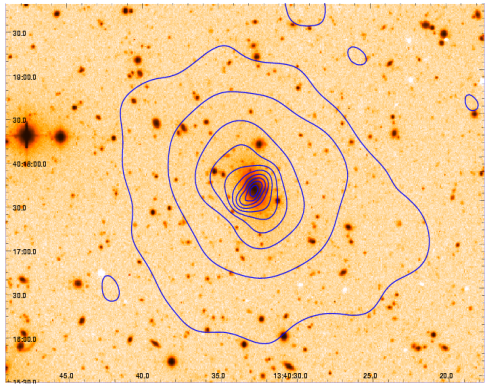
The results imply a link between cool core strength and cluster dynamical state consistent with the view that cluster mergers can significantly perturb cool cores, and set new constraints on models of the evolution of the intracluster medium.

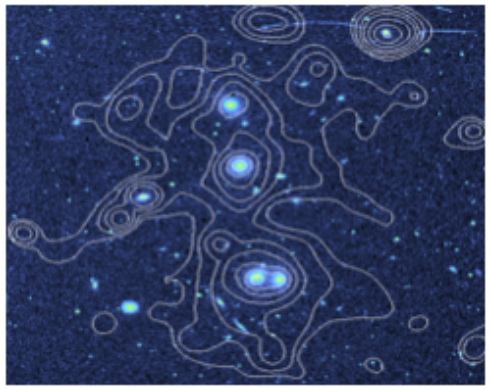
AGN and environment

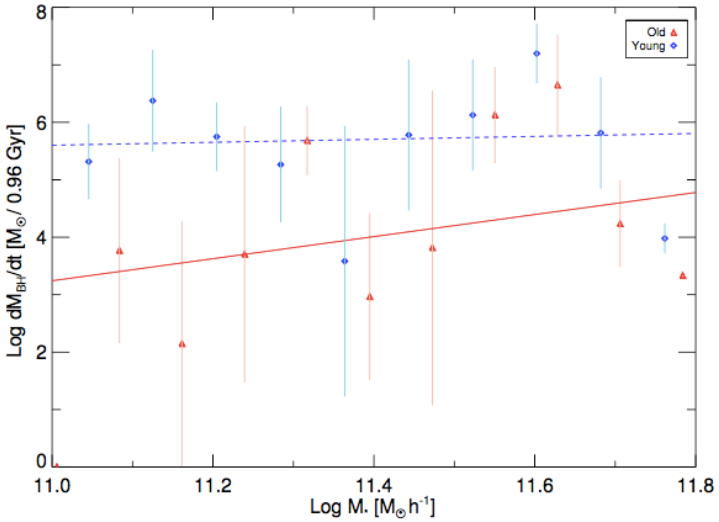




Miraghaei et al (2014)
Khosroshahi et al in prep

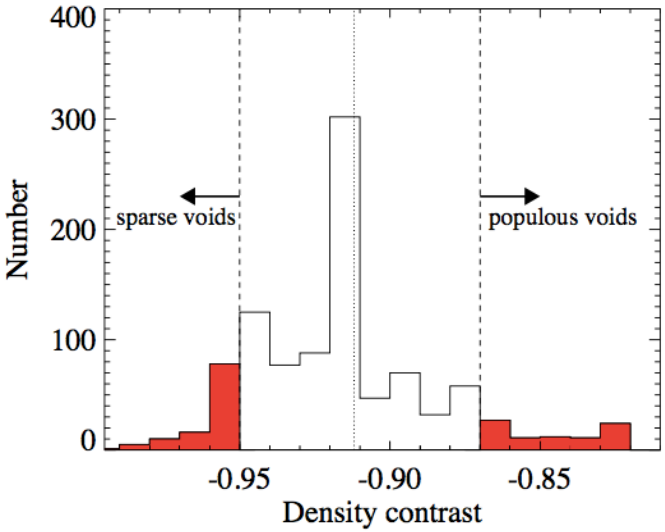


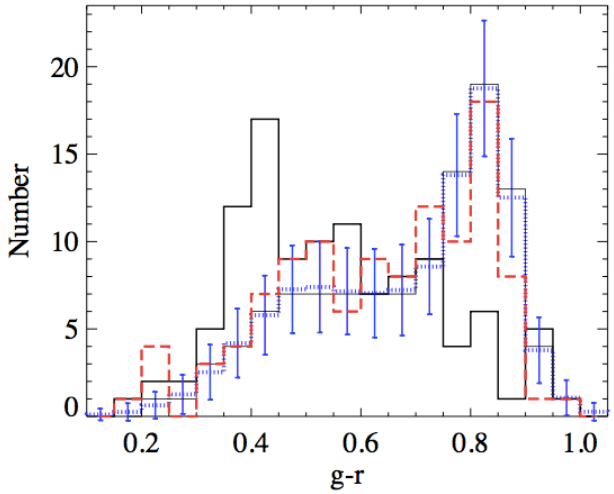


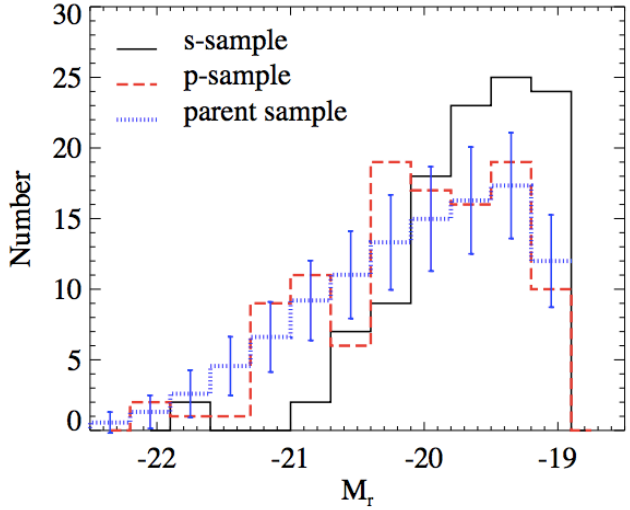


Raouf et al in prep

Under dense environment







We find that galaxies in sparse voids are less massive than galaxies in populous voids. The luminosity distribution of galaxies in populous voids follows the same distribution observed across the SDSS survey in the same redshift range. Galaxies in the sparse voids are also bluer suggesting that they may be going through a relatively slow and continuous star formation. Additionally, we find that the luminosity function of galaxies in populous voids is represented with the Schechter function whereas the same does not hold for sparse voids.

Tavasoli et al 2015, 2013