

From downtown to ghost towns; Shedding light on the red sequence build-up and the end of the star-formation era in galaxy cluster cores with CANDELS.

Audrey Galametz¹ and the CANDELS Clustering Collaboration

¹ *MPE, Garching*

Abstract

The core of present galaxy clusters is populated by massive red and dead galaxies. However, studies of cluster cores at high redshift have recently shown that once upon a time, galaxies were residing in environments of prosperity where they were still actively forming stars. What physical phenomena switched off this opulence phase and make the SF galaxies migrate to the red sequence? Was this build-up hierarchical/bottom-up? top-down? or a mix of both? Putting high- z cluster cores under (always high-resolution) scrutiny has both shed light and raise more questions on galaxy evolution and cluster assembly. Some results support that the red sequence galaxies formed in one single burst of SF at high- z and have been evolving passively ever since. Hierarchical scenario suggest that they would then have increased their mass and size by mergers. This scenario is supported by the recent studies of the size evolution of early-type galaxies and estimation of merger rate in cluster cores. It seems however in tension with the observational evidence that cores of high- z clusters are still the locus of strong SF. I will be reviewing the recent contributions of the CANDELS collaboration on the study of the high-redshift galaxy cluster core population. While summarizing both the statistical and individual cluster CANDELS works, I will focus the talk on the spectroscopic follow-up and multiwavelength/structural analysis of a cluster at $z = 1.82$ found in the CANDELS UDS field.