



Contribution ID : 22

Type : **Poster**

Initial Investigations of the Outskirts of XLSSC 122

Wednesday, 28 October 2026 14:20 (1)

We investigate the redshift 1.98 galaxy cluster XLSSC 122 using the Hubble Space Telescope (HST) from the core of the cluster out to 3 Mpc, a scale equivalent to 10 times the $R_{500} = 295$ kpc radius. We present an expanded photometric and spectroscopic catalogue of the cluster, bringing the total number of spectroscopically classified member galaxies to 74, with 35 new member galaxies added in the outer regions of the cluster. We compute the radial galaxy number density profile in the cluster, and observe no clear evidence of infalling groups or cosmic filaments. We observe a clear bimodal colour relation in member galaxies, with red fraction increasing towards the cluster centre. This rapid increase of red fraction upon infall is indicative of a fast quenching mechanism, such as ram pressure stripping, as galaxies enter the cluster centre. We fit a luminosity function to the cluster members, finding a similar low mass slope but fainter scale magnitude than $z = 1$ clusters of similar temperature, implying a similar galaxy evolution rate to clusters at lower redshift. These findings indicate that XLSSC 122 is experiencing an evolutionary process not typically observed in high redshift clusters, and is more similar to $z = 0$ clusters.

Did you give a contributed talk at CASCA 2026?

No

If you are selected for a poster, would you be interested in giving a short flash talk on your work?

Yes

What is your career level?

PhD

Which keyword describes the area of focus of this talk?

Galaxies

Primary author(s) : TODD, Eleanore (University of Victoria)

Presenter(s) : TODD, Eleanore (University of Victoria)

Session Classification : Galaxies