ULTRADEEP MASSIVE GALAXIES' VIEW

detecting stellar haloes at < z > = 0.65!!

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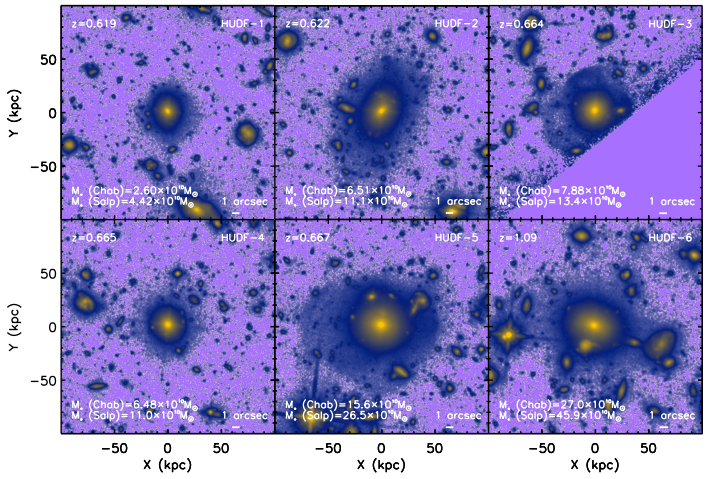
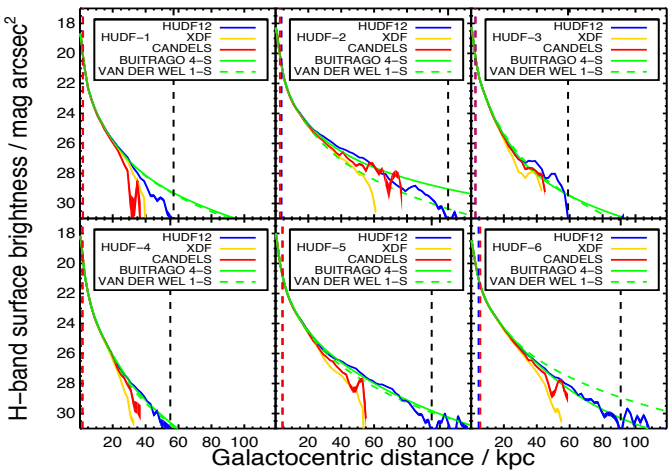
ABSTRACT We have studied the six most massive ($M_{stellar}$ > 5x10^{10} $M_{\odot}$) galaxies within the Hubble Ultra Deep Field[1,2] at z < 1 in order to test the inside-out growth for this galaxy population. Current ideas about their evolution suggest these objects grow by a large factor in size[3] and change dramatically the rest of their visual properties[4,5] by accreting an extended outer envelope through minor merging. Our results agree with this rendition, while we are able to quantify for the first time the fraction of light & mass in these stellar haloes (10-20%, at distances > 10 kpc) at this cosmic era, retrieving also the mass ($\Delta M/M_{gal}$~10% Gyr $^{-1}$) in ongoing mergers.





EXPLANATION OF THE PLOTS

Left side: HUDF12 WFC3 images for our sample. Color palette ranges from 18 to 30 mag arcsec^{-2}. The superb HST resolution (PSF FWHM ~0.18", ~1.25 kpc at z = 0.65) and the careful data reduction allow us to see the halo substructure.

Right side: H-band surface brightness profiles for the HUDF12, XDF and CANDELS surveys. Overplotted are our PSF-convolved four Sérsic and Van der Wel[6] single Sérsic fits. Dashed vertical lines are the measured effective radii while the black line marks our limit for the galaxies' surface brightness profiles (31 mag arcsec^{-2}). This value translates into ~29 mag arcsec^{-2} restframe or > 25 effective radii, i.e., analysing these profiles to the same level of detail (sometimes 100 kpc!) as in the local Universe but this time at < z > = 0.65.

TAKE AWAY POINTS

- Our derived total structural parameters are similar to the determination in shallower observations ➔ previously reported size-mass relation is accurate
- 4 out 6 galaxies sit on the local size-mass relation
- The relative importance of stellar haloes in early-types seems to be greater than for late-types
- I have created two papers close to submission, I appreciate any feedback you can give me

References:
1. Ellis R. et al. 2013, ApJ, 763, L7
2. Koekemoer A. et al. 2013, ApJS, 209,3
3. Buitrago F. et al. 2008, ApJ, 687, L61
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5. Buitrago F. et al. 2014, MNRAS, 439, 1494
6. Van der Wel A. et al. 2012, ApJS, 203, 24

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I work in this tower over here

Don't hesitate to ask me any questions you may have

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