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От Сильченко О.К.

Astro-ph: 1606.06252

The ALMA Redshift 4 Survey (AR4S).
I. The massive end of the $z = 4$ main sequence of galaxies

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Received ...; accepted ...

Примеры объектов на лаб. Длине волны 180 мкм

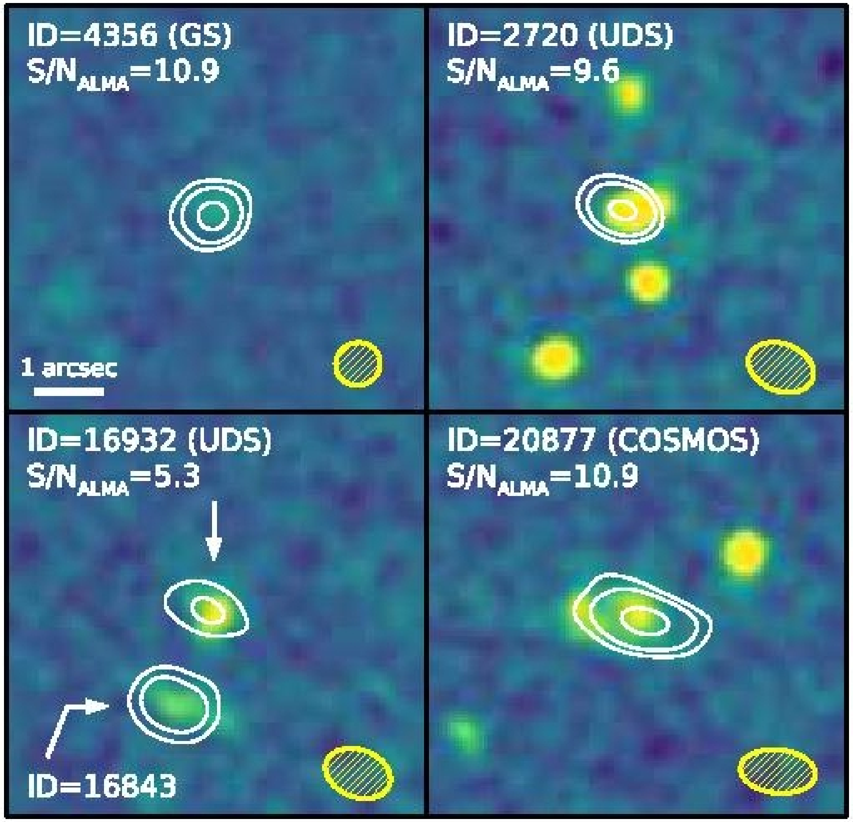
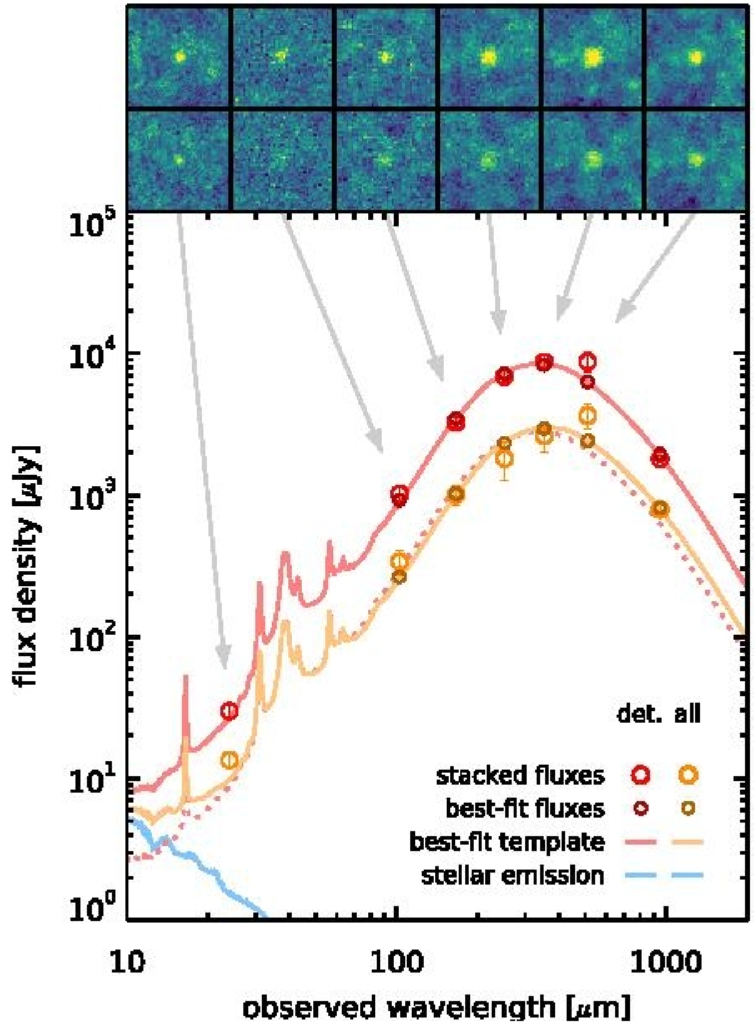
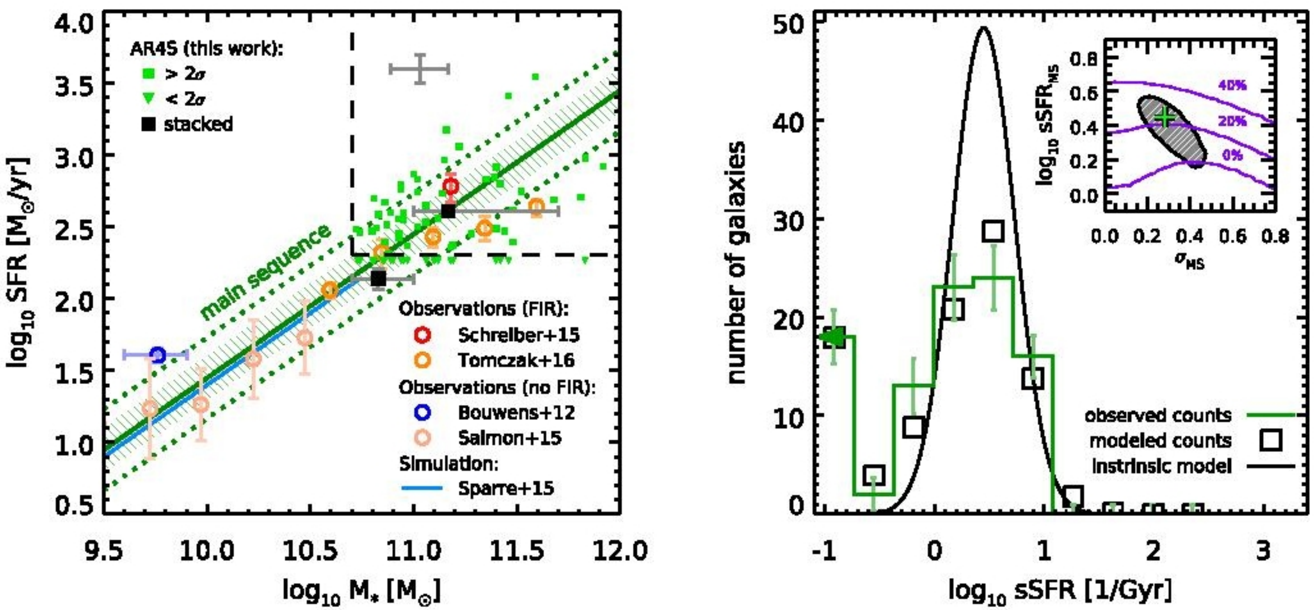


Fig. 1. Examples of ALMA-detected galaxies in our sample. The *HST* F160W image is shown in the background, smoothed by a 0.3″ FWHM

Суммарные спектры: Herschel+ALMA



Темпы звездообразования



Выводы

This median sSFR is lower but still consistent with our previous determination from *Herschel* stacking of $\log_{10}(\mathrm{sSFR_{MS}}\,[1/\mathrm{Gyr}]) = 0.6 \pm 0.1$ (Schreiber et al. 2015), and the width of the distribution appears unchanged from the value of $\sigma_{\mathrm{MS}} = 0.31 \pm 0.02$ dex we obtained at $z \sim 1$ (see also Ilbert et al. 2015; Guo et al. 2015). Overall this confirms the theoretical expectation that the MS paradigm still holds in the early Universe (e.g., Sparre et al. 2015). This agreement is both qualitative and quantitative, since our determination of the locus and scatter of the MS is also in agreement with the prediction of the latest numerical simulations. Sparre et al. (2015) indeed found a scatter of 0.2–0.3 dex at $z = 4$ in the Illustris simulation with a scatter closer to 0.3 dex at high mass, although at these redshifts they lack the volume to constrain the $M_* > 3 \times 10^{10}\,\mathrm{M_\odot}$ population. Similarly, Mitchell et al. (2014) found a 0.27 dex scatter in the GALFORM semi-analytic model at $z = 3$, this time with an increase towards higher redshifts (contrary to Sparre et al. who found, if anything, an opposite evolution). Our data are still insufficiently deep to rule out current models based on the scatter only, however the $z = 3$ MS normalization of Mitchell et al. (as also discussed in their work) is particularly low. Assuming a typical redshift dependence of $\mathrm{sSFR} \sim (1 + z)^{2.5}$ (e.g., Dekel et al. 2013), it is inconsistent with our observations at the $3.5\,\sigma$ level.

Astro-ph: 1606.06291

A HIGH STELLAR VELOCITY DISPERSION AND $\sim$ 100 GLOBULAR CLUSTERS FOR THE ULTRA DIFFUSE GALAXY DRAGONFLY 44

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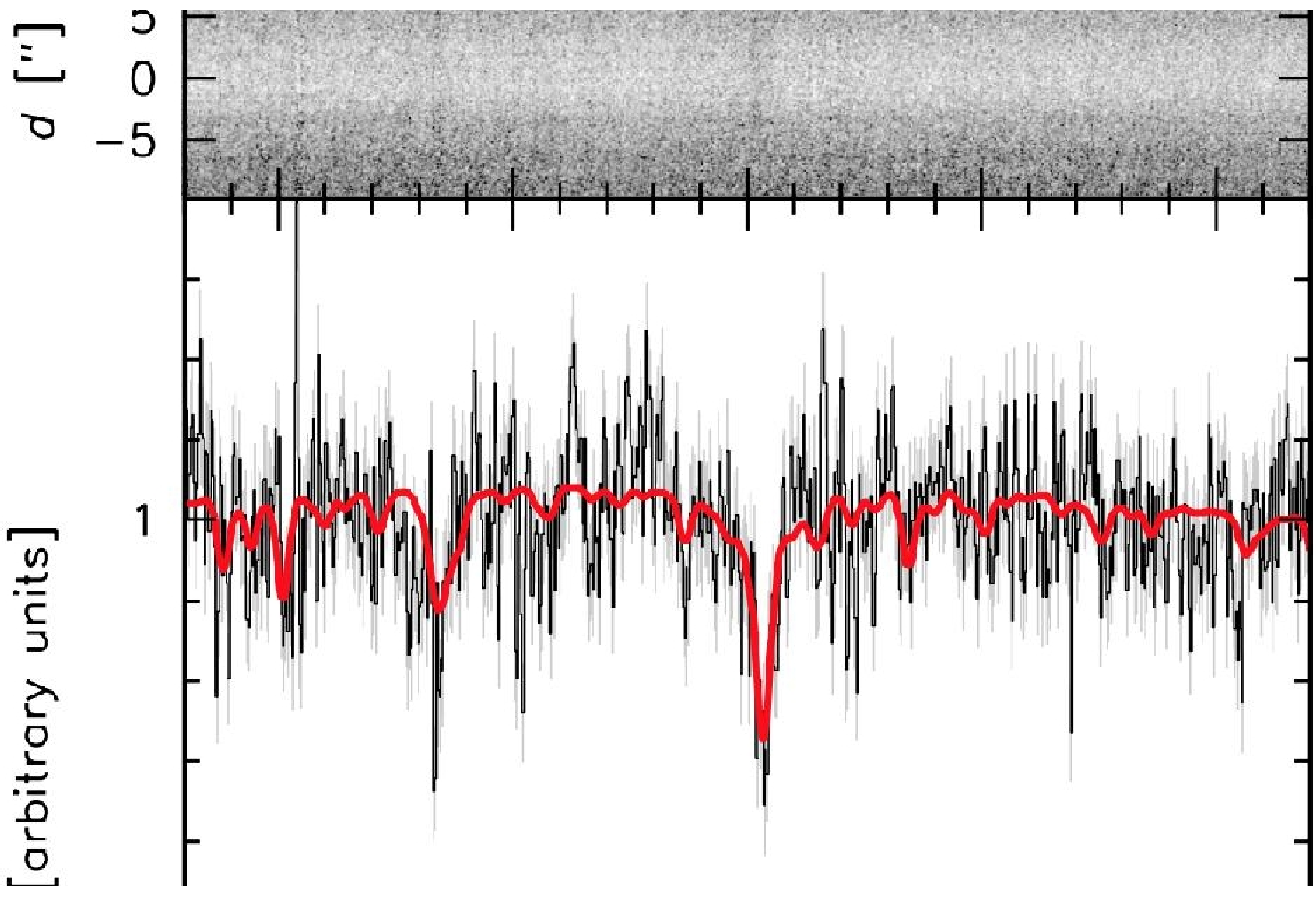
Submitted to ApJ Letters

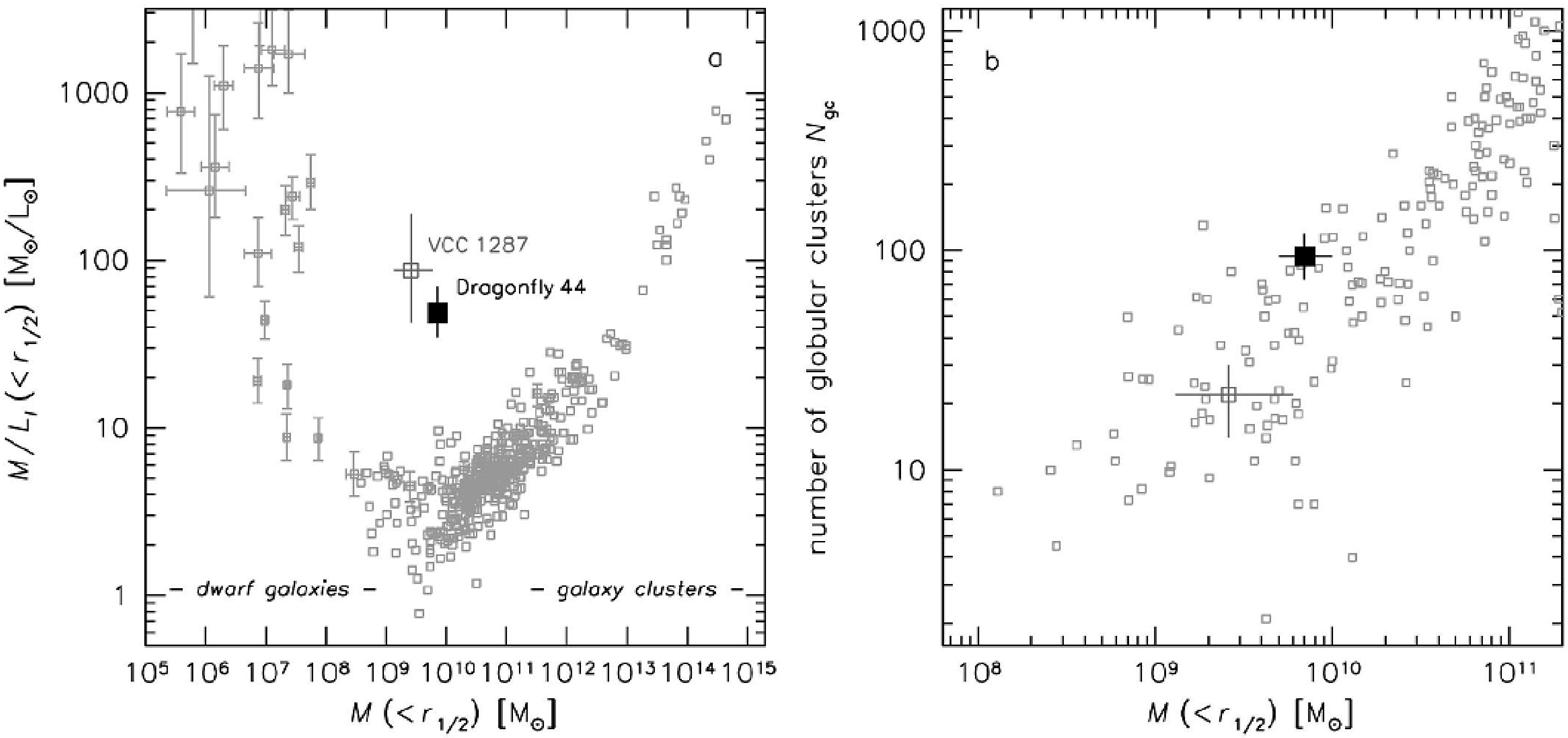
ABSTRACT

Recently a population of large, very low surface brightness, spheroidal galaxies was identified in the Coma cluster. The apparent survival of these Ultra Diffuse Galaxies (UDGs) in a rich cluster suggests that they have very high masses. Here we present the stellar kinematics of Dragonfly 44, one of the largest Coma UDGs, using a 33.5 hr integration with DEIMOS on the Keck II telescope. We find a velocity dispersion of $\sigma = 47^{+8}_{-6}\,\mathrm{km\,s^{-1}}$, which implies a dynamical mass of $M_{\rm dyn}(< r_{1/2}) = 0.7^{+0.3}_{-0.2} \times 10^{10}\,\mathrm{M}_\odot$ within its deprojected half-light radius of $r_{1/2} = 4.6 \pm 0.2$ kpc. The mass-to-light ratio is $M/L_I(< r_{1/2}) = 48^{+21}_{-14}\,\mathrm{M}_\odot/\mathrm{L}_\odot$, and the dark matter fraction is 98% within $r_{1/2}$. The high mass of Dragonfly 44 is accompanied by a large globular cluster population. From deep Gemini imaging taken in 0.″4 seeing we infer that Dragonfly 44 has 94^{+25}_{-20} globular clusters, similar to the counts for other galaxies in this mass range. Our results add to other recent evidence that many UDGs are "failed" galaxies, with the sizes, dark matter content, and globular cluster systems of much more luminous

Спектр суммарный



Масса какая-то неправильная…



Astro-ph: 1606.07405

The Formation of Bulges, Discs and Two Component Galaxies in the CANDELS Survey at $z < 3$

Berta Margalef-Bentabol[1⋆], Christopher J. Conselice[1], Alice Mortlock[2], Will Hartley[3], Kenneth Duncan[4], Harry C. Ferguson[5], Anton M. Koekemoer[5], Avishai Dekel[6], Joel R. Primack[7]

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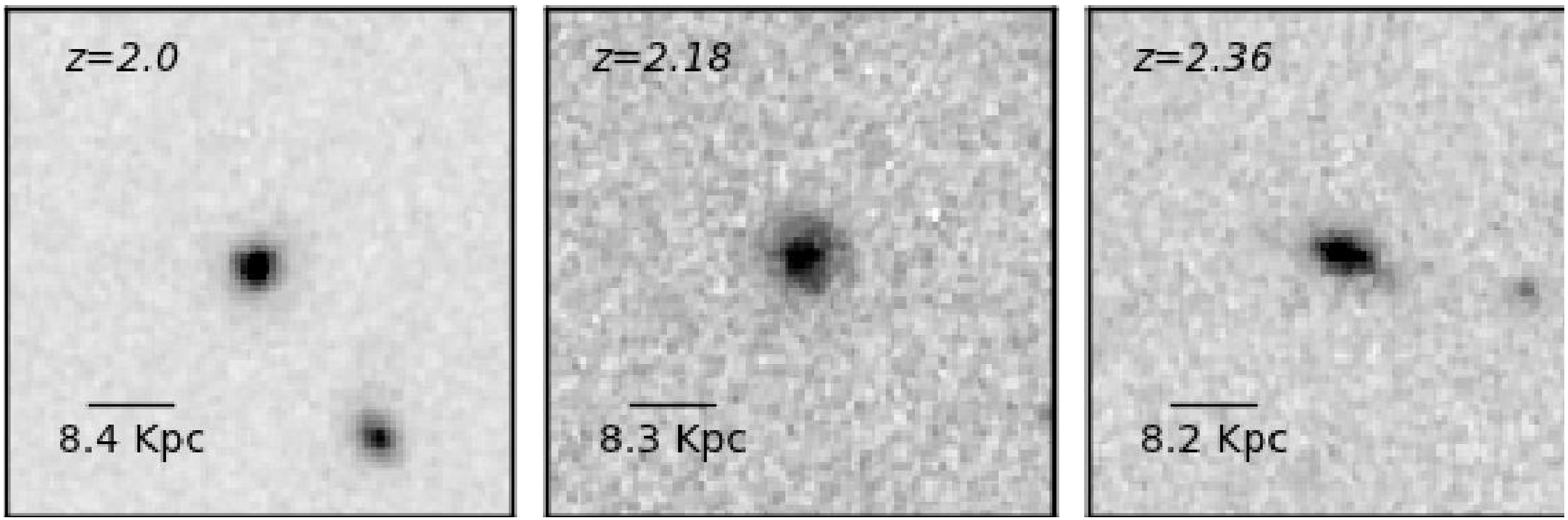
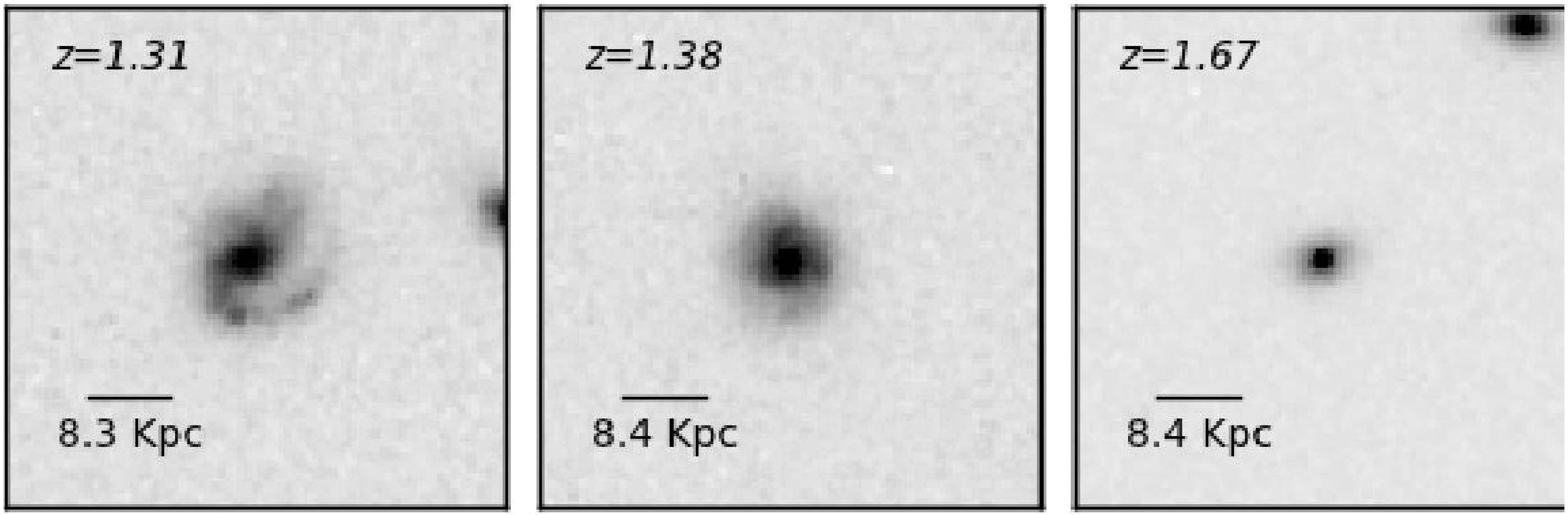
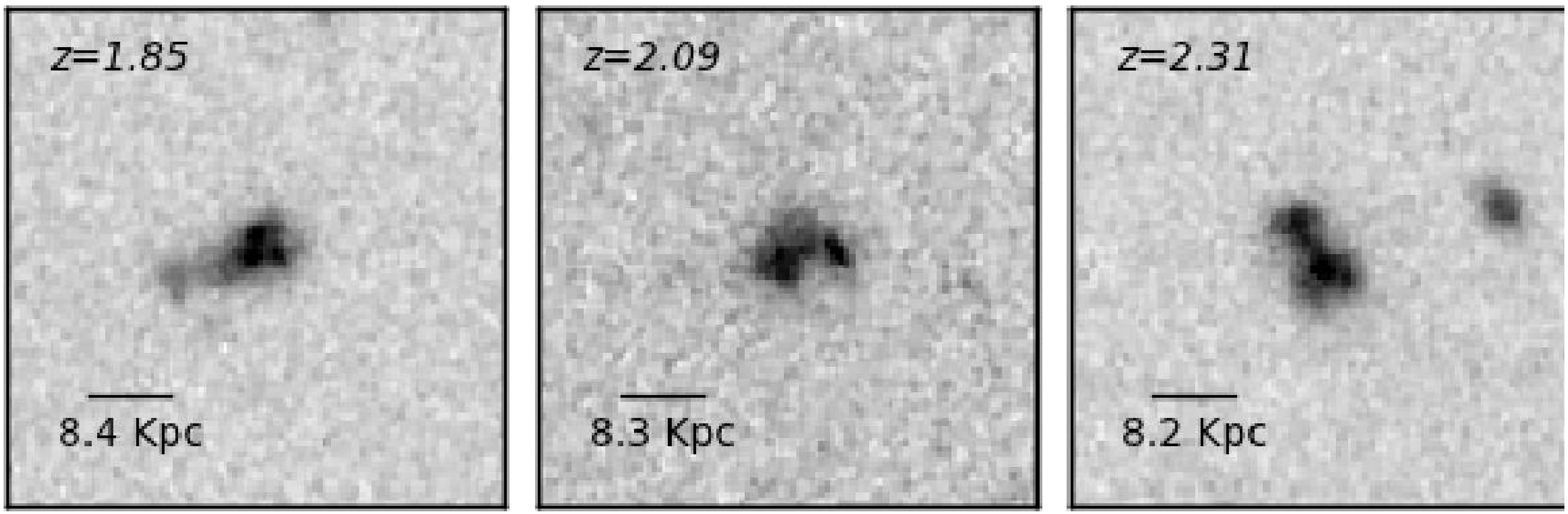
CANDELS: пример однокомпонентных



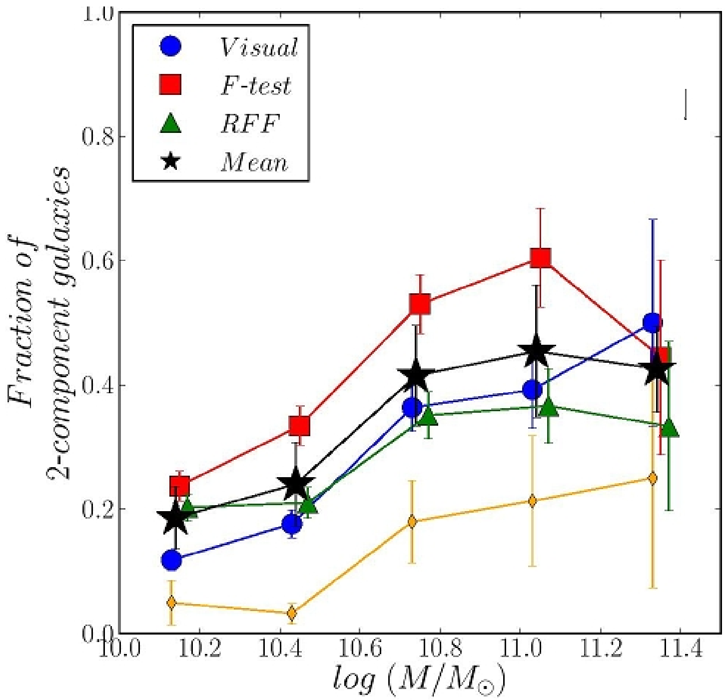
CANDELS: пример двухкомпонентных

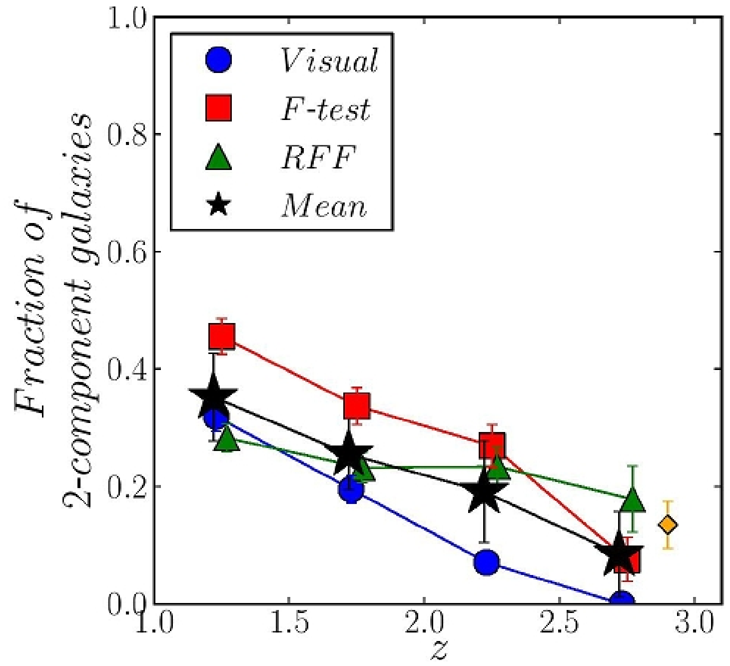


CANDELS: пример пекулярных

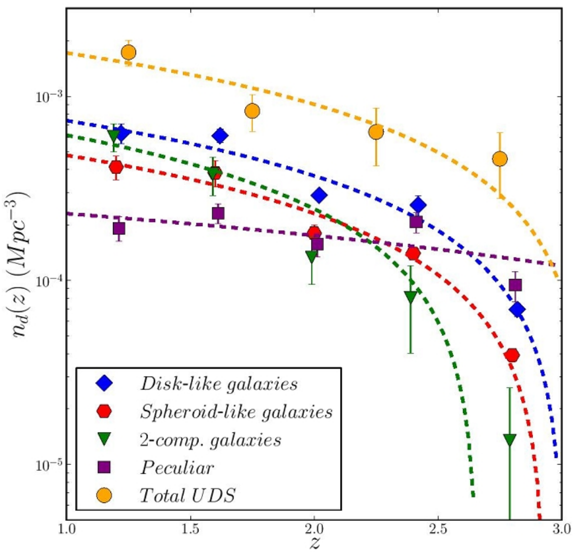


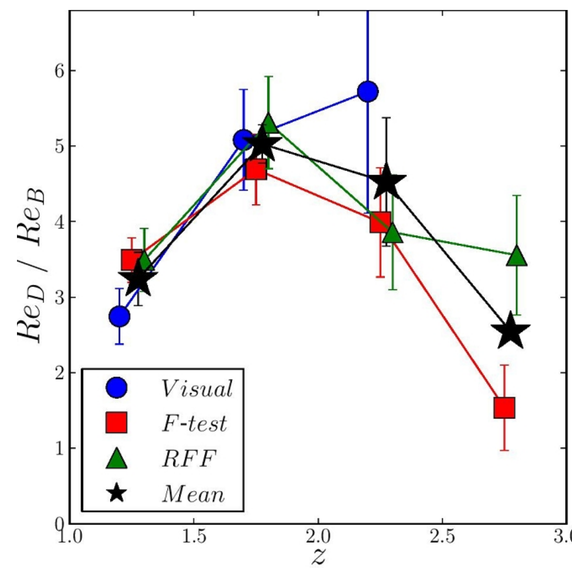
Когда что формируется?

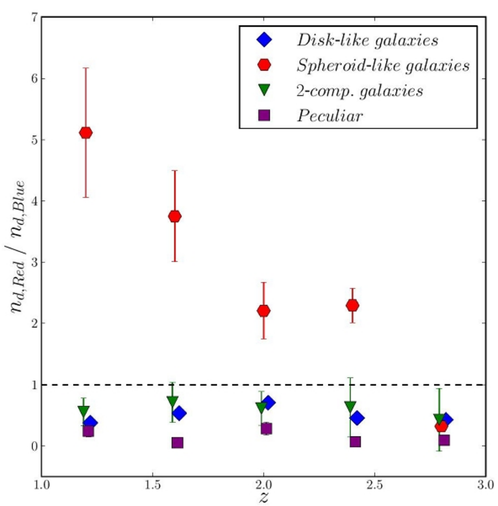


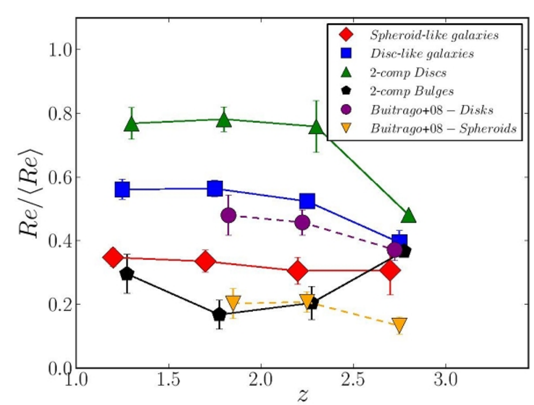


Всякие статистики…

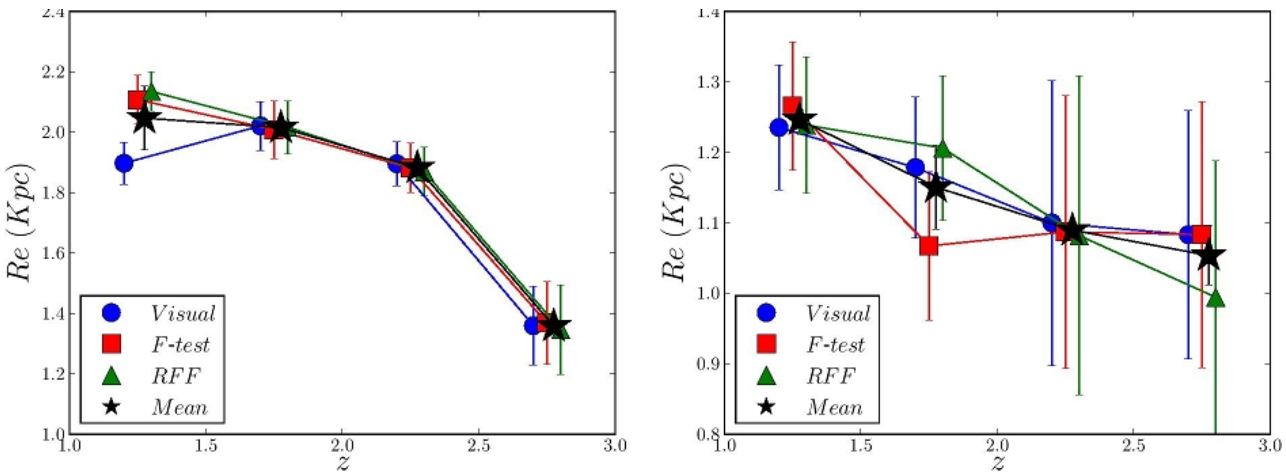








Эволюция размеров



(a) 1-component disc-like galaxies

(b) 1-component spheroid-like galaxies