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От Сильченко О.К.

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THE MASSIVE SURVEY VI: THE SPATIAL DISTRIBUTION AND KINEMATICS OF WARM IONIZED GAS IN THE MOST MASSIVE LOCAL EARLY-TYPE GALAXIES

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ABSTRACT

We present the first systematic investigation of the existence, spatial distribution, and kinematics of warm ionized gas as traced by the [O II] 3727Å emission line in 74 of the most massive galaxies in the local Universe. All of our galaxies have deep integral field spectroscopy from the volume- and magnitude-limited MASSIVE survey of early-type galaxies with stellar mass $\log(M_*/M_\odot) > 11.5$ ($M_K < -25.3$ mag) and distance $D < 108$ Mpc. Of the 74 galaxies in our sample, we detect warm ionized gas in 28, which yields a global detection fraction of $38\pm6\%$ down to a typical [O II] equivalent width limit of 2Å. MASSIVE fast rotators are more likely to have gas than MASSIVE slow rotators with detection fractions of $80\pm10\%$ and $28\pm6\%$, respectively. The spatial extents span a wide range

26 галактик с газом и 36 галактик без ионизованного газа

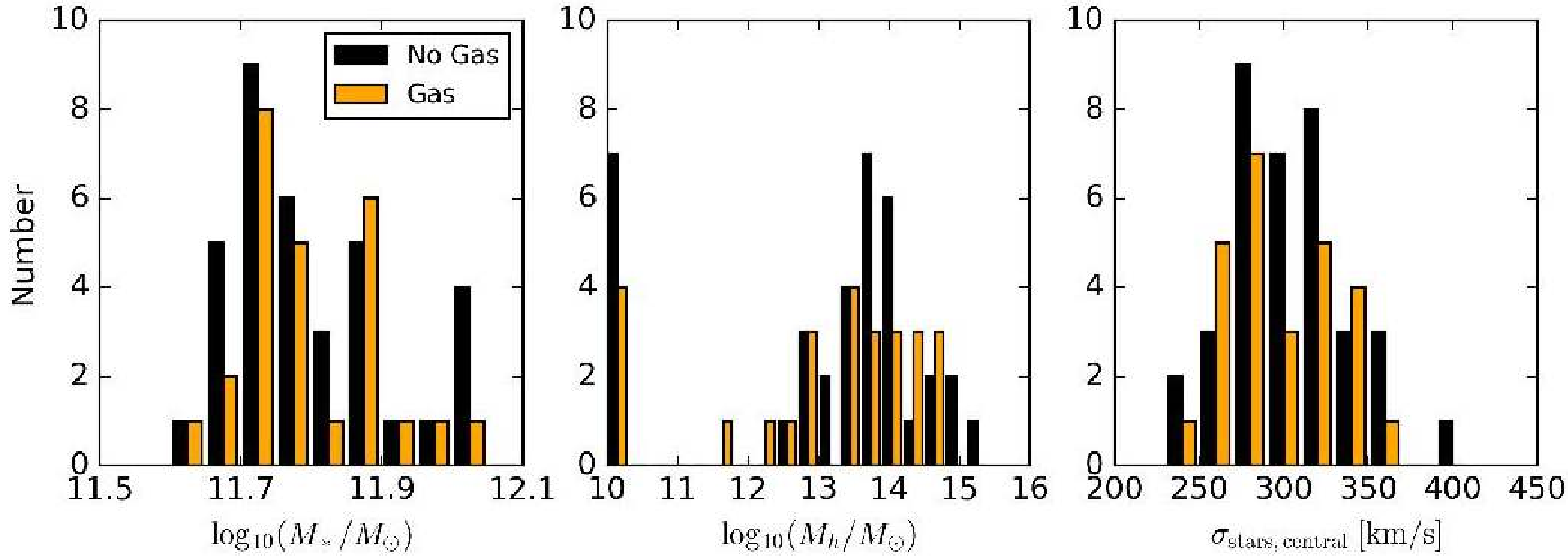
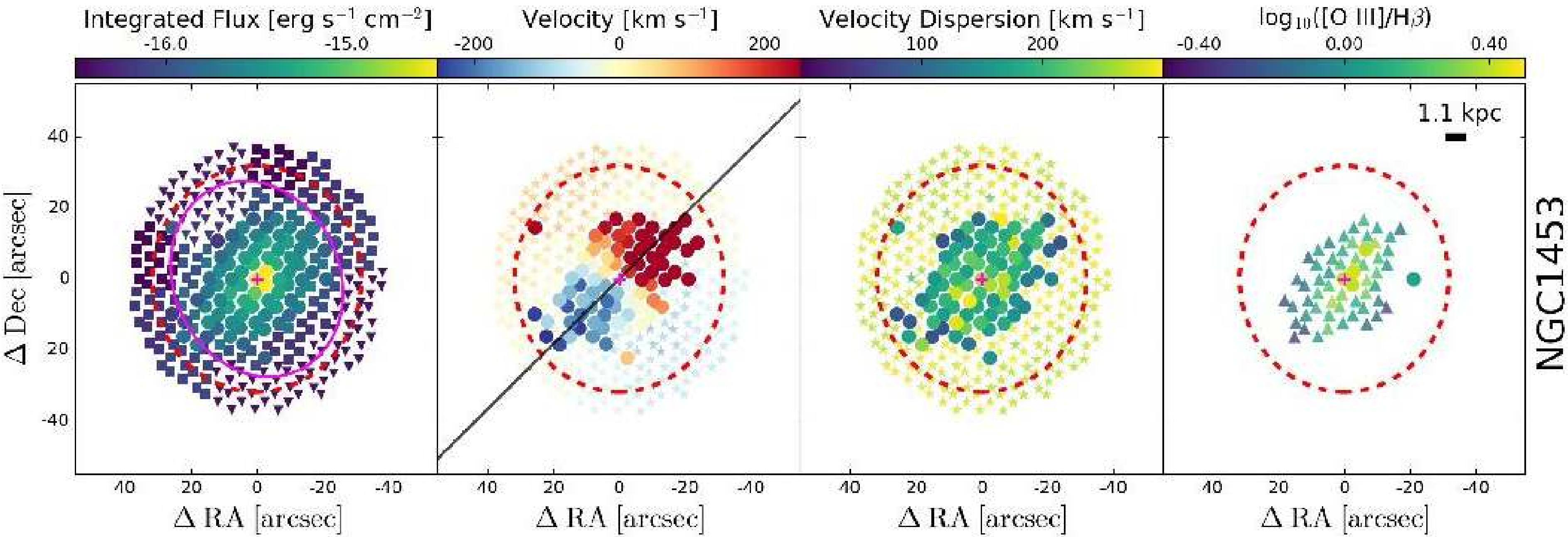
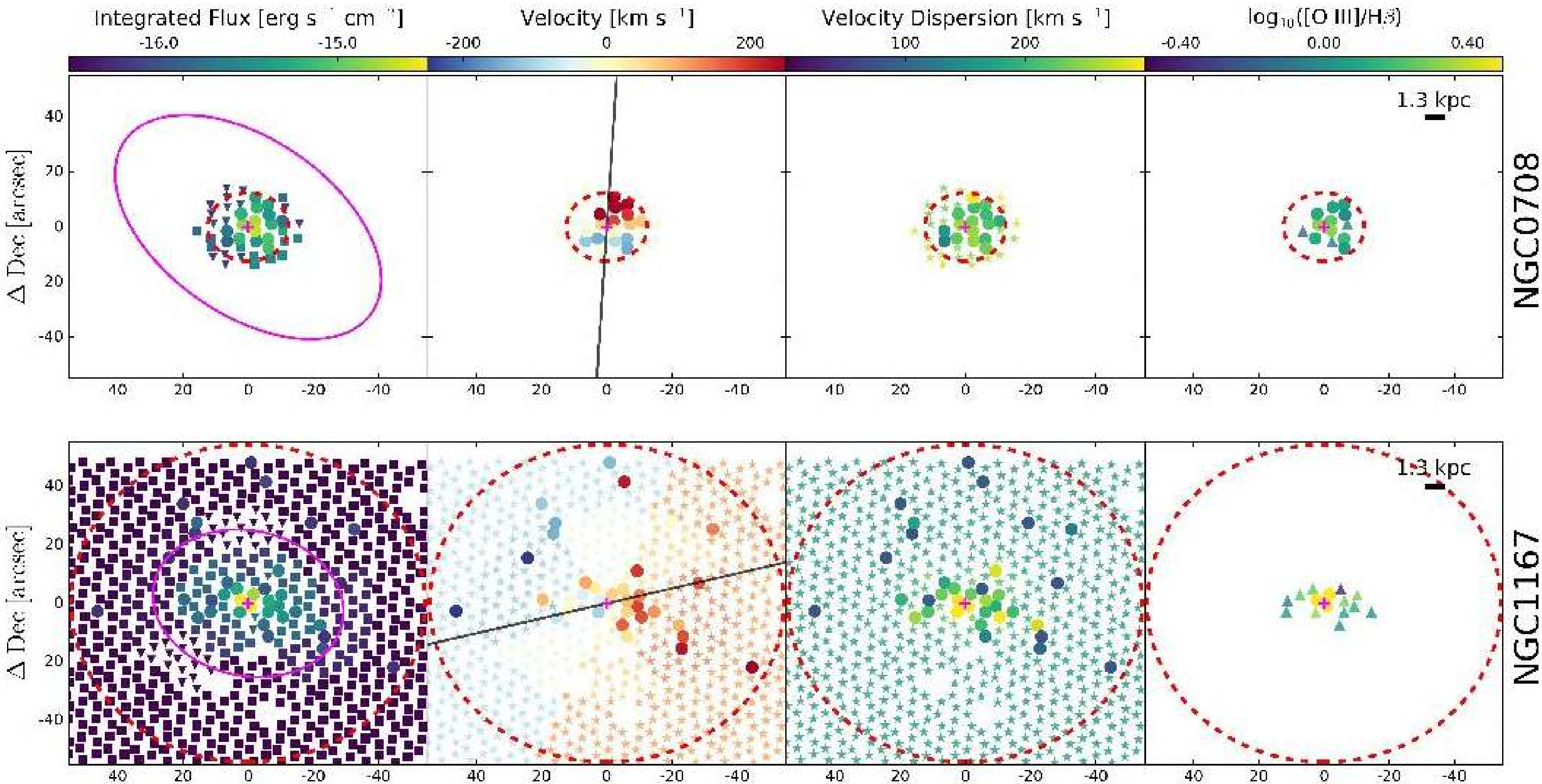


Figure 3. The distributions of stellar mass (left), halo mass (middle), and central stellar velocity dispersion (right) for the MASSIVE galaxies with (orange) and without (black) warm ionized gas detections. After requiring measurements of the three physical properties to

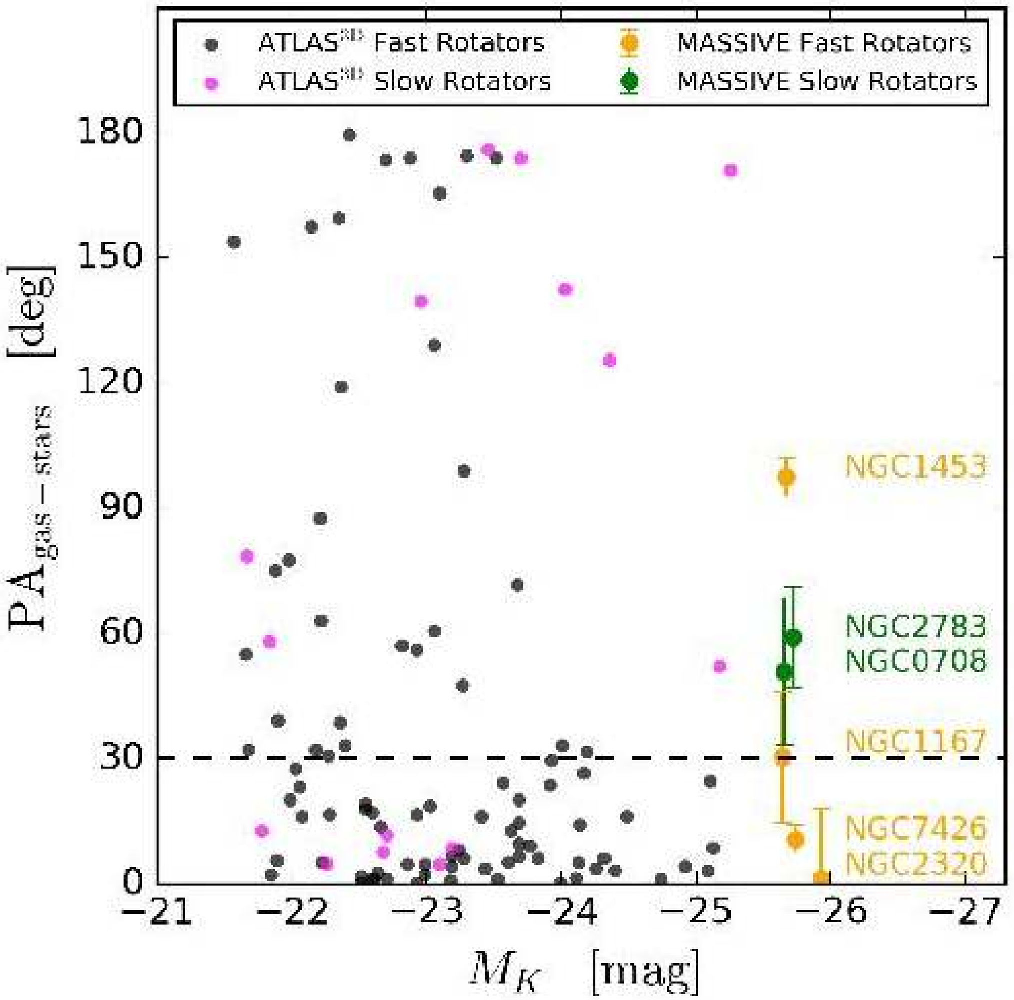
26 галактик с протяженной эмиссией: карты VIRUS-P





Integrated Flux [erg s⁻¹ cm⁻²]
Velocity [km s⁻¹]
Velocity Dispersion [km s⁻¹]
log₁₀([O III]/Hβ)
1.3 kpc
Δ Dec [arcsec]
NGC0708
NGC1167

Сравнение кинематики газа и звезд



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Stellar content of extremely red quiescent galaxies at $z > 2$

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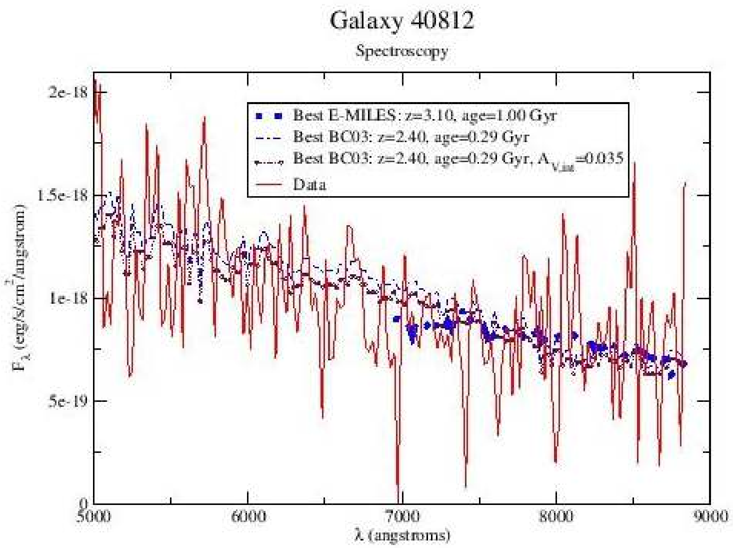
ABSTRACT

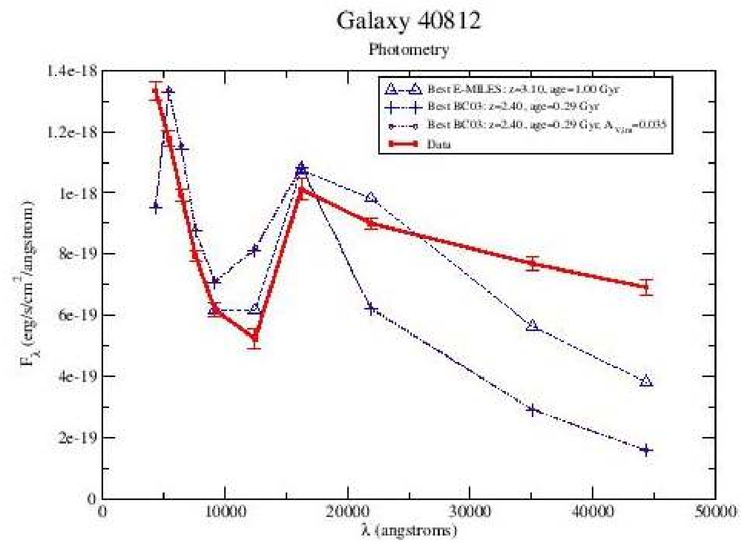
Context. A set of 20 extremely red galaxies at $2.5 \leq z_{\rm phot.} \leq 3.8$ with photometric features of old passive-evolving galaxies without dust, with stellar masses of $\sim 10^{11}$ $M_\odot$, have colors that could be related to passive-evolving galaxies with mean ages larger than 1 Gyr. This suggests they have been formed, on average, when the Universe was very young (< 1 Gyr).
Aims. We provide new estimates for the stellar content of these 20 galaxies, with a deeper analysis for two of them that includes spectroscopy.
Methods. We obtained, with the GRANTECAN-10.4 m, ultraviolet rest-frame spectra of two galaxies and analyzed them together with photometric data. The remaining 18 galaxies are analyzed only with photometry. We fit the data with models of a single-burst

Одна эпоха звездообразования – ПЛОХО, даже с exp завалом

Table 1. Best fit parameters obtained with a single stellar population for galaxies #40812 and #78891 combining spectroscopy photometry.

Galaxy	Model	$\chi^2_{\rm red.}$	z	Age (Gyr)	[M/H]
#40812	E-MILES	3.69	$3.10^{+0.20}_{-0.20}$	$1.00^{+0.75}_{-0.10}$	$-1.26^{+0.30}_{-1.01}$
#40812	BC03	9.51	$2.40^{+0.10}_{-0.10}$	$0.29^{+0.34}_{-0.19}$	$-0.40^{+0.40}_{-0}$
#78891	E-MILES	1.07	$3.20^{+0.25}_{-0.70}$	$1.75^{+1.00}_{-1.25}$	$-1.79^{+1.54}_{-0.48}$
#78891	BC03	3.33	$2.45^{+0.15}_{-0.15}$	$0.29^{+0.34}_{-0.19}$	-0.4, unconstr.





Нужны 2 вспышки звездообразования

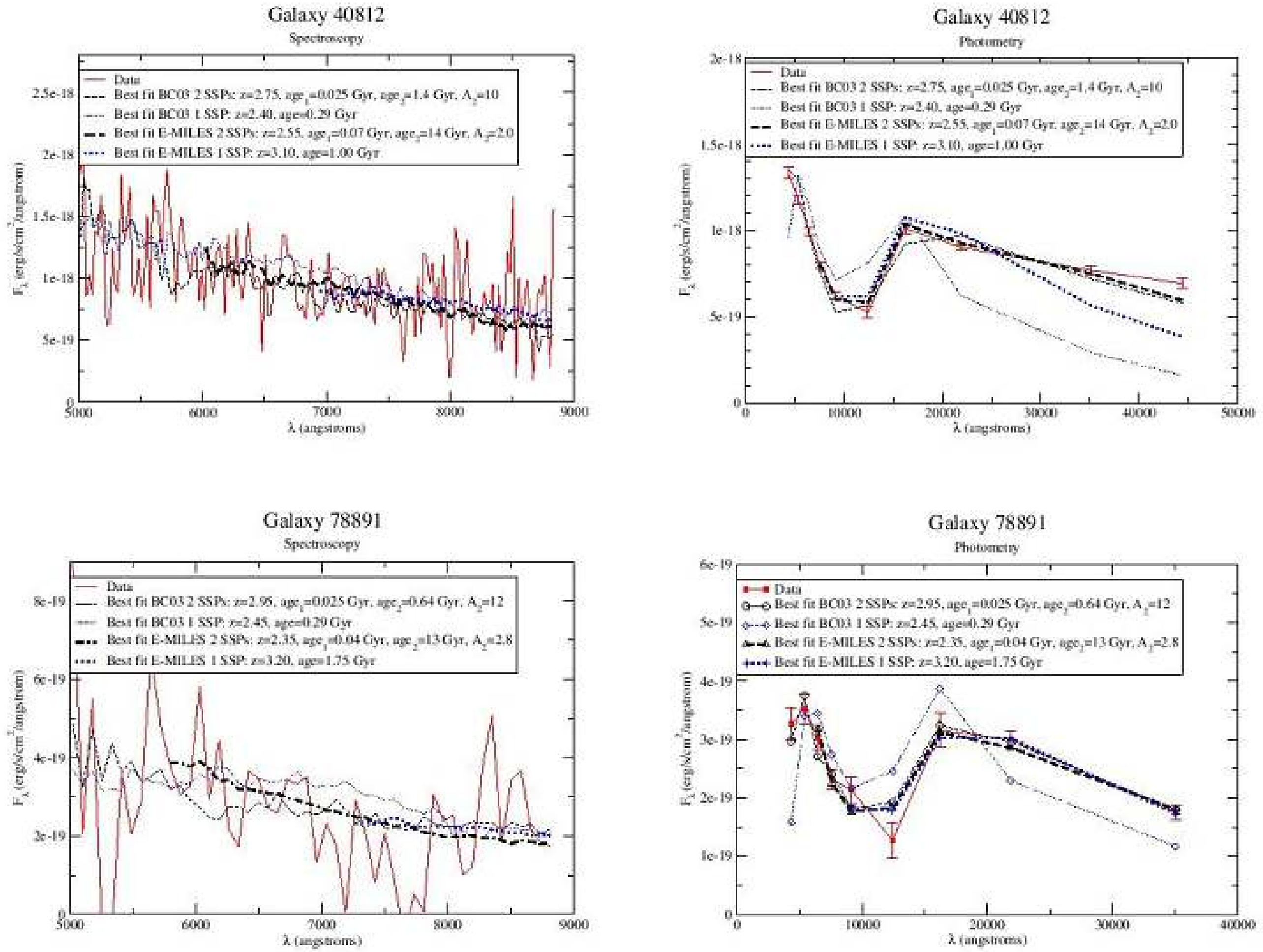


Fig. 4. Spectrum and photometry at observed wavelength corresponding to the best fits with two SSPs (see Table 2) or with one SSP (see Table 1) of spectroscopy or photometry for galaxies #40812 and #78891.

Параметры вспышек

Table 2. Best fitted parameters with two stellar populations for galaxies #40812 and #78891.

Galaxy	Model	$\chi^2_{\mathrm{red.}}$	z	Age$_1$ (Gyr)	Age$_2$ (Gyr)	A_2	[M/H]	Young/old stellar mass
#40812	E-MILES	0.82	$2.55^{+0.25}_{-0.10}$	$0.07^{+0.02}_{-0.01}$	$14^{+0}_{-3.5}$	$2.0^{+0.2}_{-0.4}$	$+0.40^{+0}_{-0.14}$	$0.042^{+0.013}_{-0.010}$
#40812	BC03	1.41	$2.75^{+0.10}_{-0.10}$	$0.025^{+0.075}_{-0.020}$	$1.4^{+3.6}_{-0.5}$	10^{+1}_{-2}	$+0.40^{+0}_{-0.40}$	$0.009^{+0.008}_{-0.009}$
#78891	E-MILES	0.83	$2.35^{+0.60}_{-0.20}$	$0.04^{+0.26}_{-0.04}$	13^{+1}_{-12}	$2.8^{+7.2}_{-0.4}$	$+0.15^{+0.25}_{-1.64}$	$0.005^{+0.014}_{-0.005}$
#78891	BC03	1.34	$2.95^{+0.05}_{-0.25}$	$0.025^{+0.265}_{-0.020}$	$0.64^{+0.76}_{-0.35}$	12^{+4}_{-3}	+0.4, unconstr.	$0.014^{+0.035}_{-0.014}$