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От Сильченко О.К.

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Two Distinct Classes of Quiescent Galaxies at Cosmic Noon Revealed by JWST PRIMER and UNCOVER

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Выборка JWST

- Обзор UNCOVER: 45 квадратных минут вокруг скопления Abell 2744, 8 фильтров.

- Обзор PRIMER: 378 квадратных минут, включающих глубокие поля HST, COSMOS и UDS.

- Всего 332 «спокойных» галактик в интервале красных смещений 1<z<3.

Отбор «спокойных»
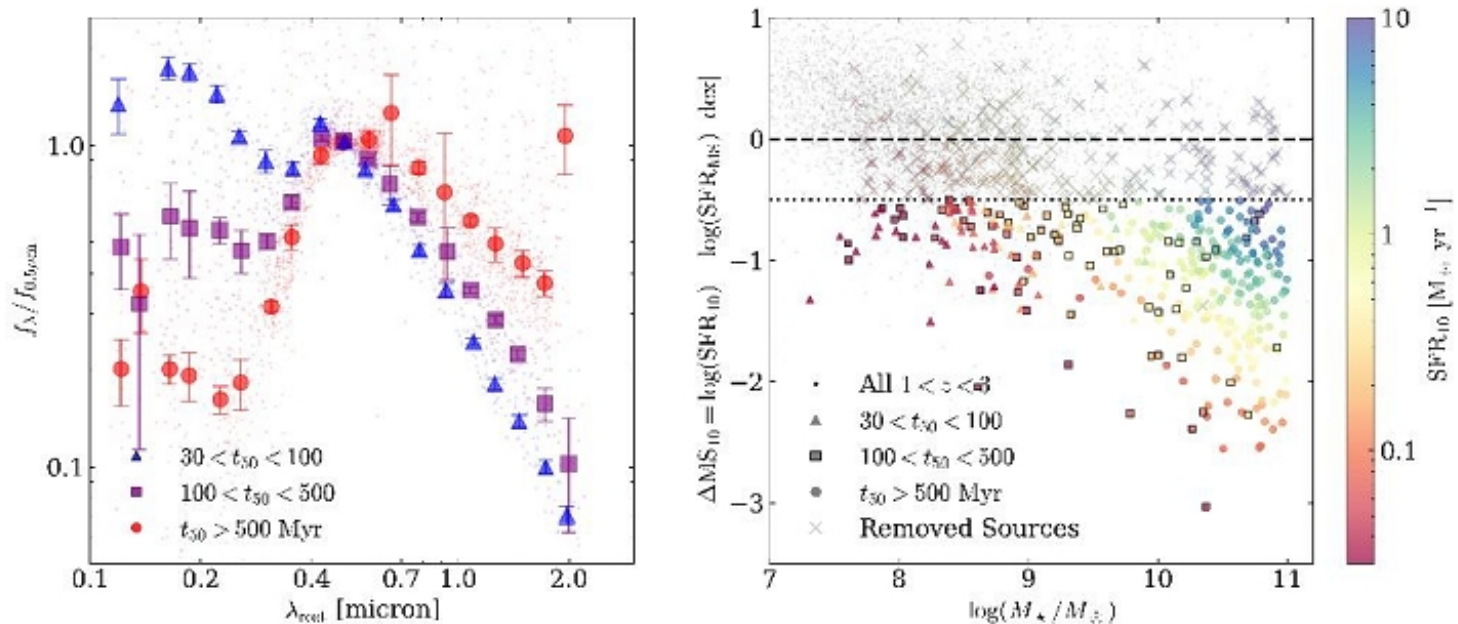
Figure 1. Rest-frame colors and physical properties of the 281 quiescent galaxies at $1 < z < 3$ with $\log(M_*/M_\odot) < 11$, as defined in Section 2. Sources are identified as $t_{50} > 500$ Myr quiescent (circles), 100-500 Myr quiescent (squares), or 30-100 Myr quenched galaxies (triangles), respectively, relative to the parent sample at $1 < z < 3$ (small black points). The top row shows rest-frame UVJ colors from best-fit SPS models, with an inset (top right) to show more detail, colored by ΔMS_{10} (Eqn. 3). Solid black and dotted lines show the UVJ selections for general quiescent galaxies and cuts selecting galaxies of varying median age, respectively. Composite SEDs (bottom left) demonstrate that each sub-population has fundamentally different spectral shapes. The degree of quiescence for the sample is captured by difference in SFR relative to the average SFMS (dashed line), ΔMS_{10}, colored by the SFR at 10 Myr (bottom right). Galaxies 0.5 dex below the SFMS (dotted line) are considered quenched. Sources marked with black x's are potential contaminants and have been removed from the sample.

Граница по массам – 10.3; маломассивные – это диски
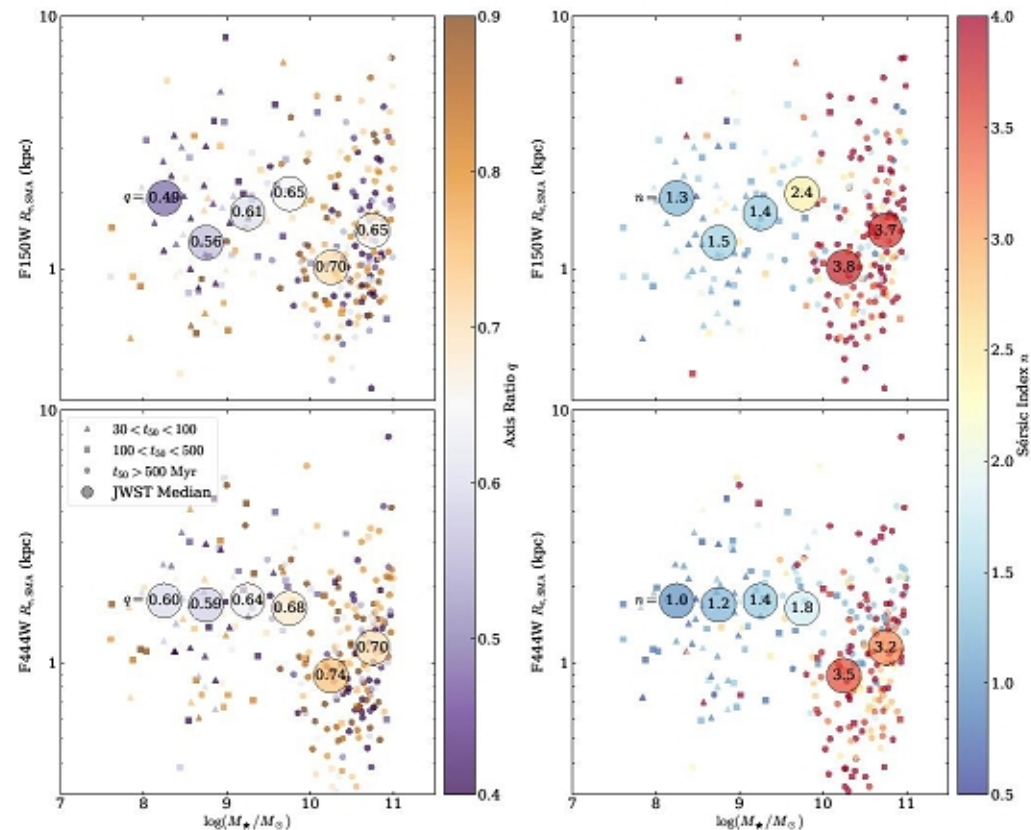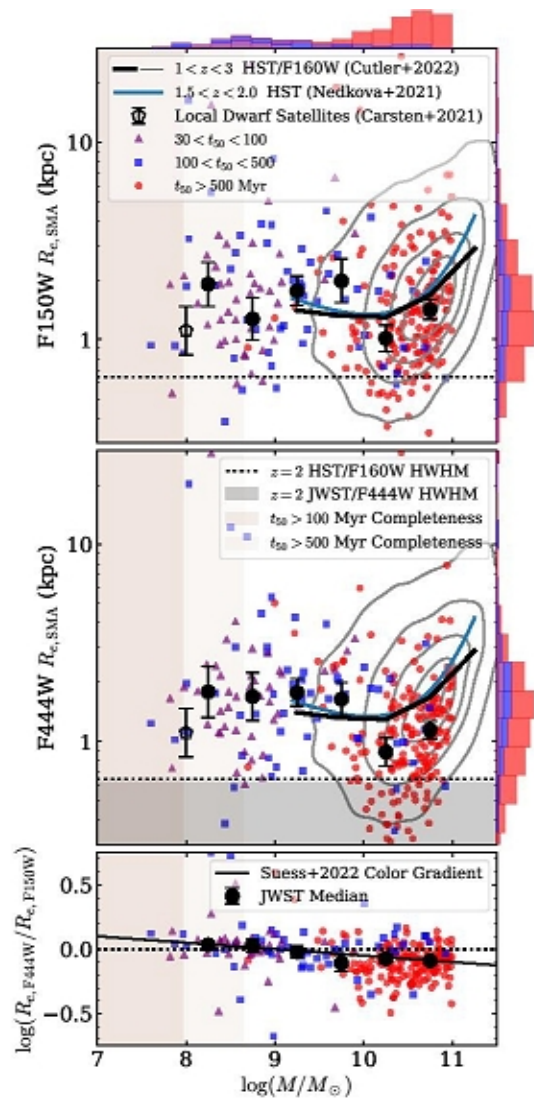
Figure 3. The size-mass relation for galaxies in our sample colored based on the axis ratio (left) and Sérsic index (right) for both F150W (top) and F444W (bottom). Galaxies in the flattened part of the size-mass relation have smaller axis ratios and Sérsic indices. Individual points have the same shape symbols as Figure 2. Large circles indicate the median size-mass for a given stellar mass bin, color-coded by the median axis ratio or Sérsic index. The median axis ratio and Sérsic index are also shown numerically in each point. Typical error bars on axis ratio are ± 0.10 at $\log(M_*/M_\odot) < 10$ and ± 0.04 at higher masses. For the Sérsic index, error bars are typically ± 0.4.

Классический downsizing
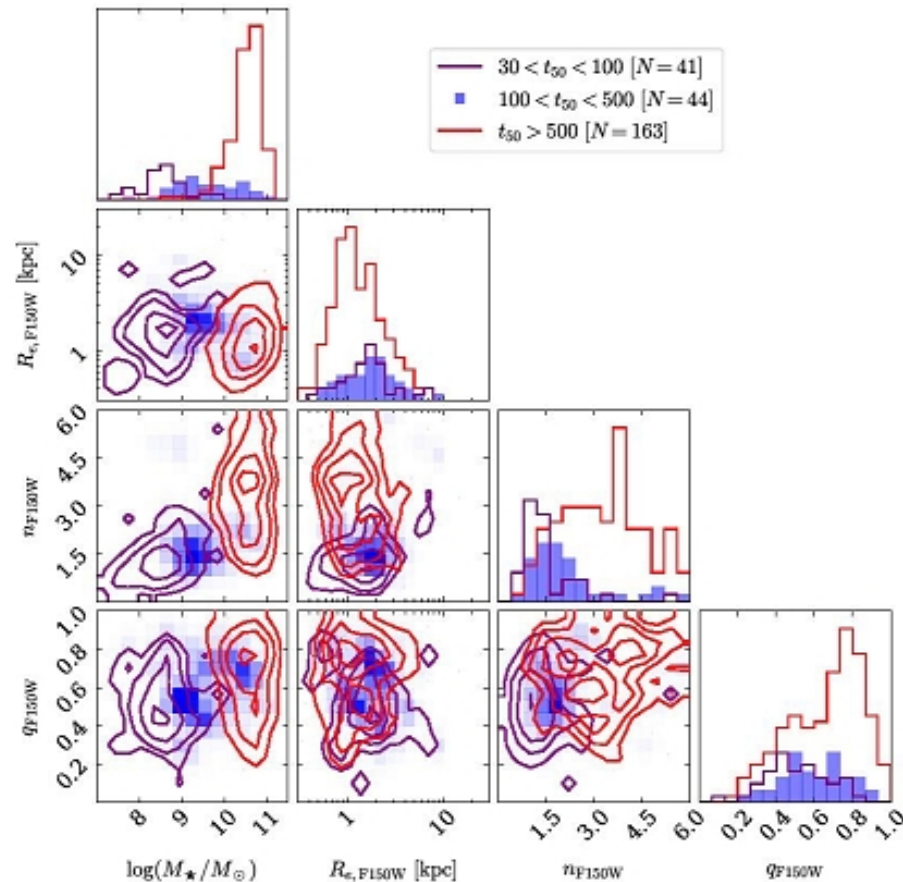
Figure 4. Structural parameters differ dramatically between low- and high-mass quiescent galaxies. Corner plots showing correlations between mass and structural parameters (R_e, n, q) for F150W. Individual distributions of $30 < t_{50} < 100$, $100 < t_{50} < 500$, and $t_{50} > 500$ Myr quiescent galaxies are shown with purple, blue and red contours/shading, respectively. The sample size of each population is indicated in the legend.

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An *AstroSat*/UVIT study of galaxies in the cluster Abell 2199

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Abstract. We present the newly acquired data for an *AstroSat*/UVIT field centered on a face-on spiral starburst galaxy UGC 10420, located in the X-ray bright cluster Abell 2199 ($z = 0.031$). We

Поле FUV/UVIT
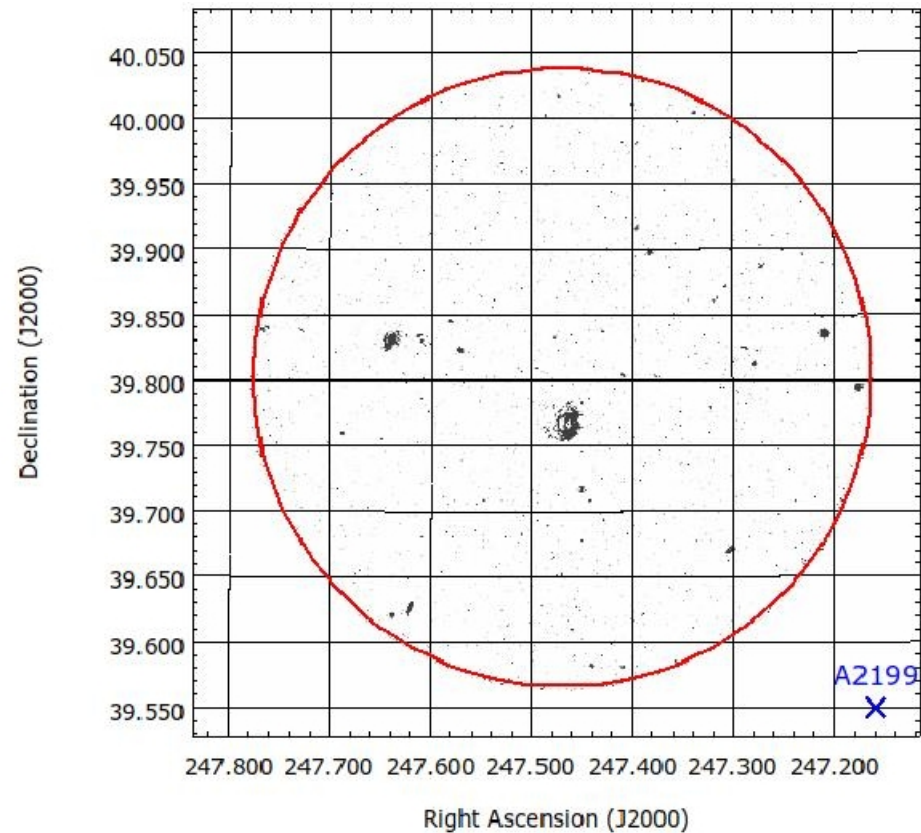
Figure 1: The UVIT field of view with the *red* circular region centred at $\alpha = 247.468°$ and $\delta = +39.802°$, having a radius of $14.15'$ analysed in this work. The blue 'X' symbol shows the x-ray centre of Abell 2199 [19]. The image is orientated such that north is up and east is on the left.

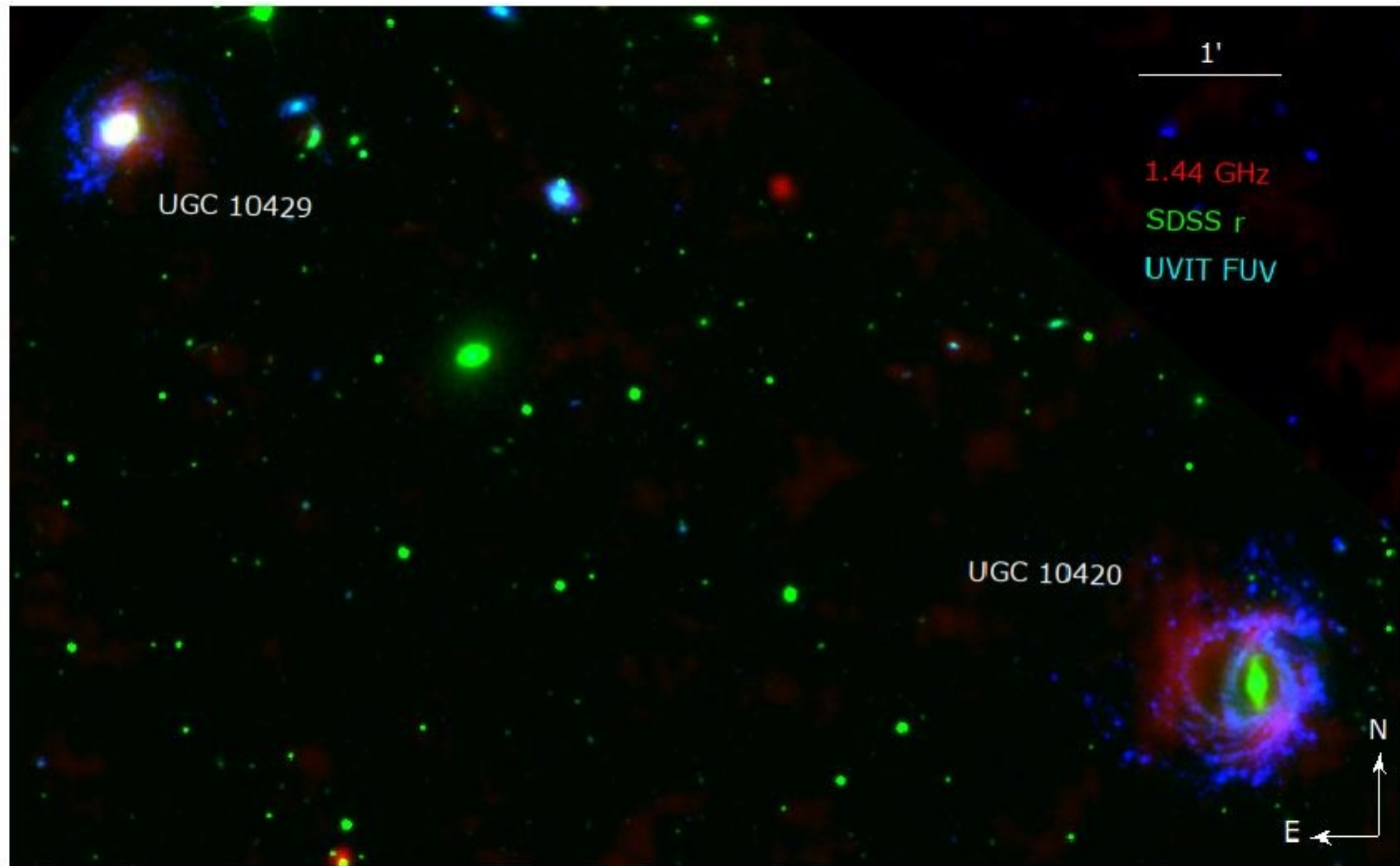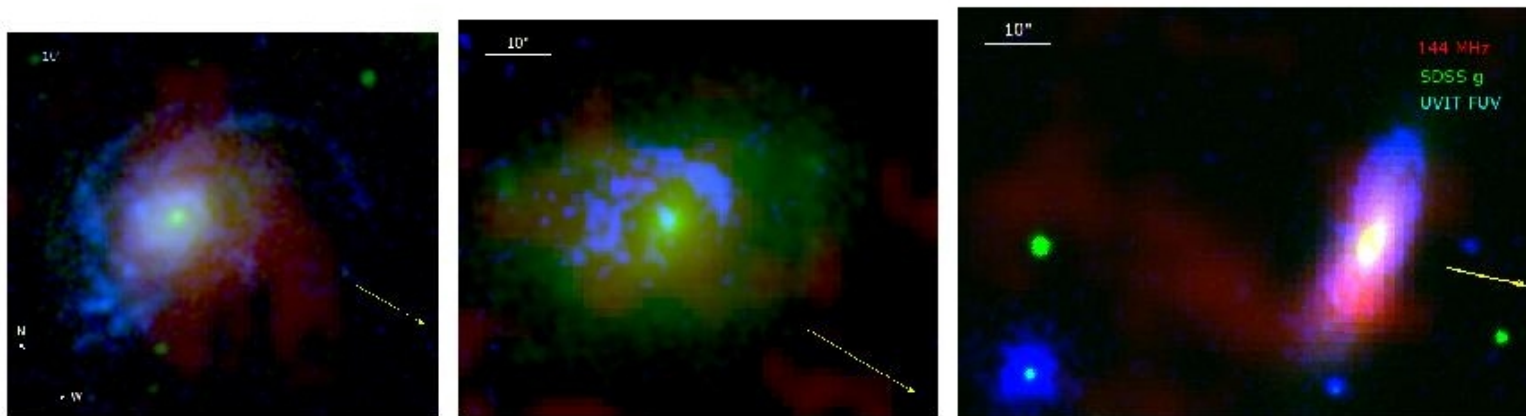# Комбинируем радио+оптика+УФ:

Figure 8: A multi-wavelength view of galaxies UGC 10420 and UGC 10429 in Abell 2199. The *rgb* colours represent 144 MHz emission *(red)*, SDSS *r*-band *(green)* and the UVIT *FUV (blue)*, respectively.

Ram Pressure:
Видно в радио, но не видно в УФ

Figure 9: Multi-wavelength view of RPS candidate galaxies in Abell 2199. *(left to right:)* UGC 10429, Z224-65 and Z224-55, respectively. The *yellow* arrow points in the direction of the cluster centre. While the radio tail of Z224-55 points opposite the cluster centre, the *FUV* emission in the other two galaxies follow suit, suggesting an outburst of star formation as a consequence of interaction with the intra-cluster medium.

Ram pressure усиливает звездообразование – но на какой временной шкале?
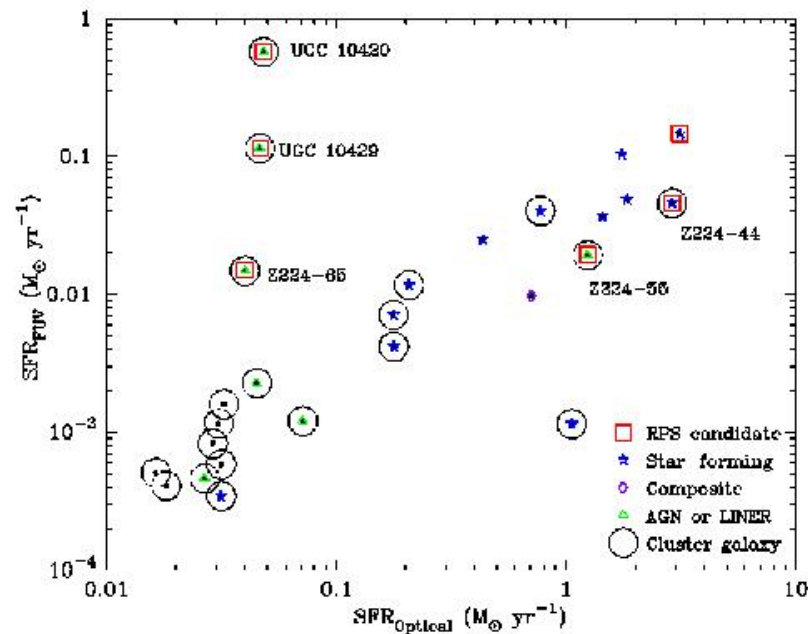
Figure 11: SFR of galaxies estimated using *FUV* data plotted as a function of the SFR estimated using the SDSS optical data. 20 out of 28 galaxies plotted here are members of the cluster Abell 2199 (*black circles*). The RPS candidate galaxies are marked by *red squares*, while the BPT classification is represented as: AGN or LINER (*green triangles*), star-forming (*blue stars*) and composite (*purple diamond*), respectively.