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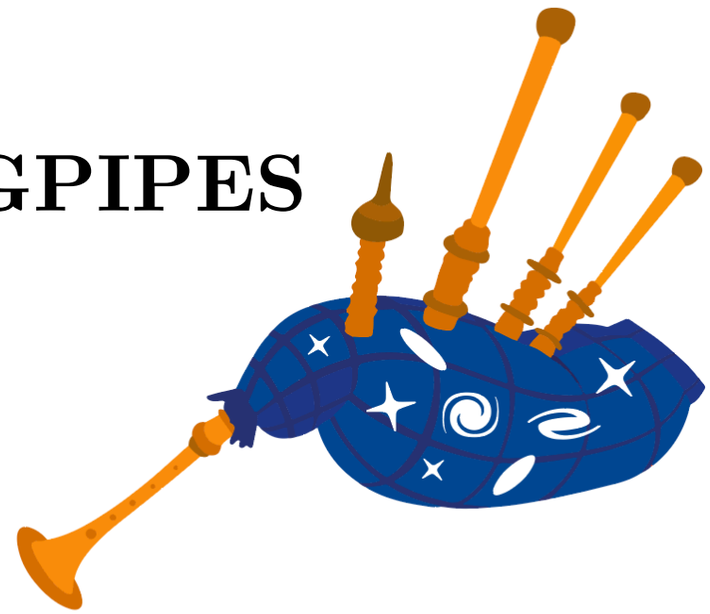
BAGPIPES



The Physical Properties of Massive Quiescent Galaxies at $1.0 < z < 1.3$

Adam Carnall, Ross McLure, Jim Dunlop + The VANDELS Team

ArXiv:1903.11082, 2001.11975, http://bagpipes.readthedocs.io

VANDELS

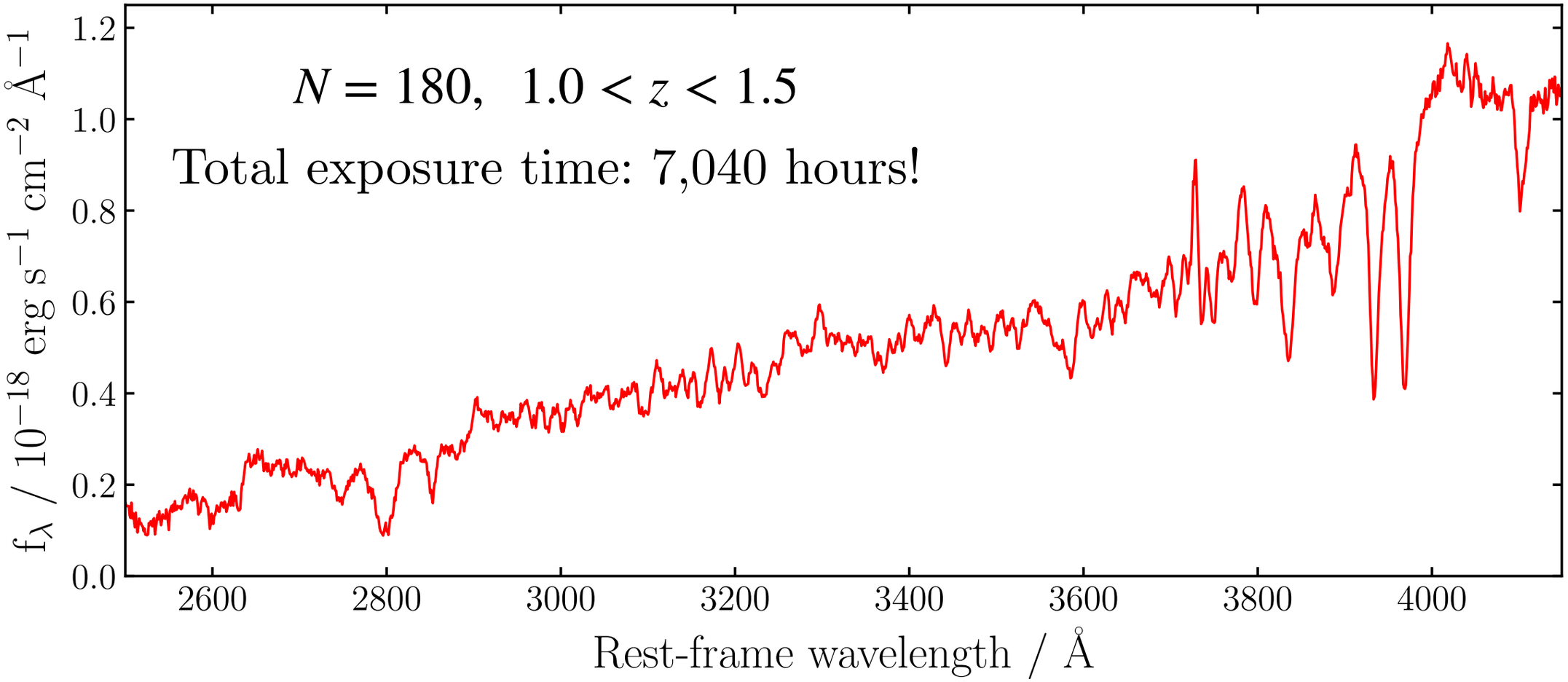
ESO VIMOS public spectroscopic survey of UDS and CDFS

2100 galaxies with average integration time of 45 hours

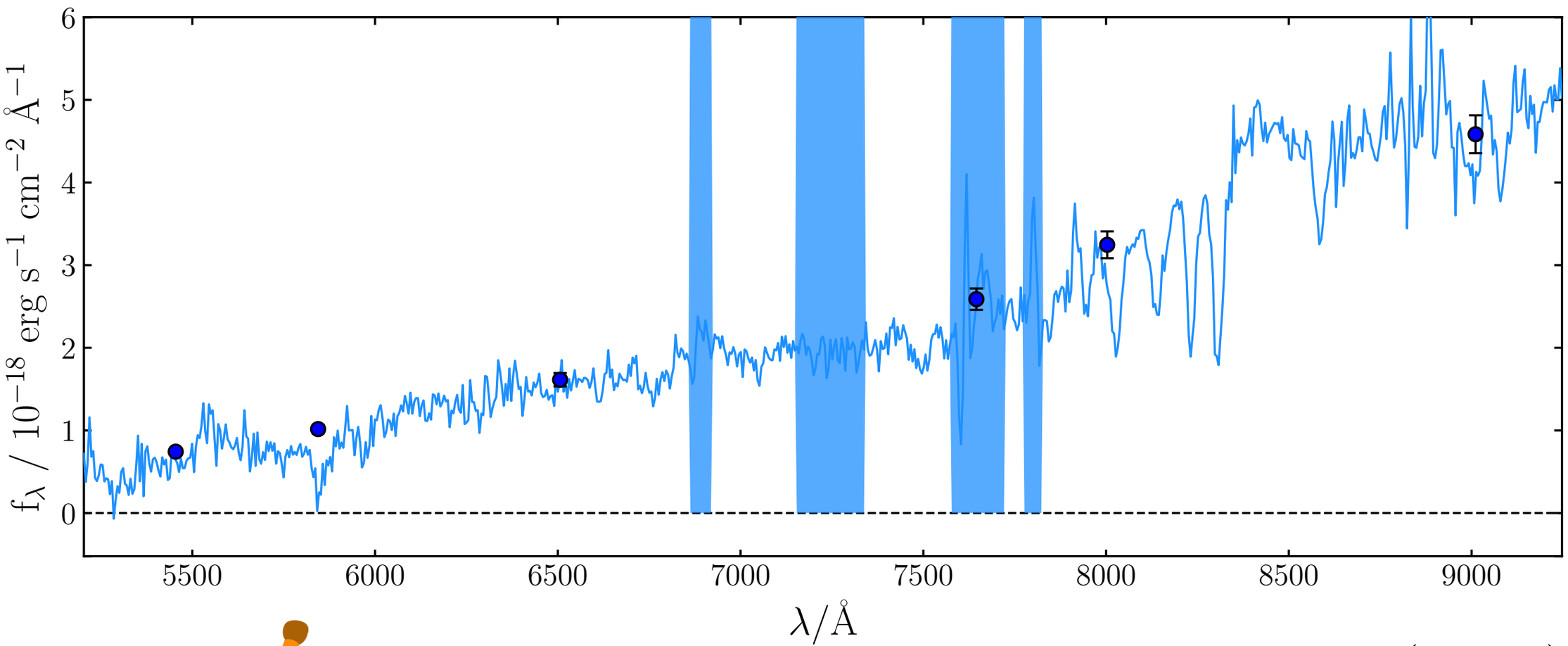
High-SNR spectroscopy for physical parameter recovery

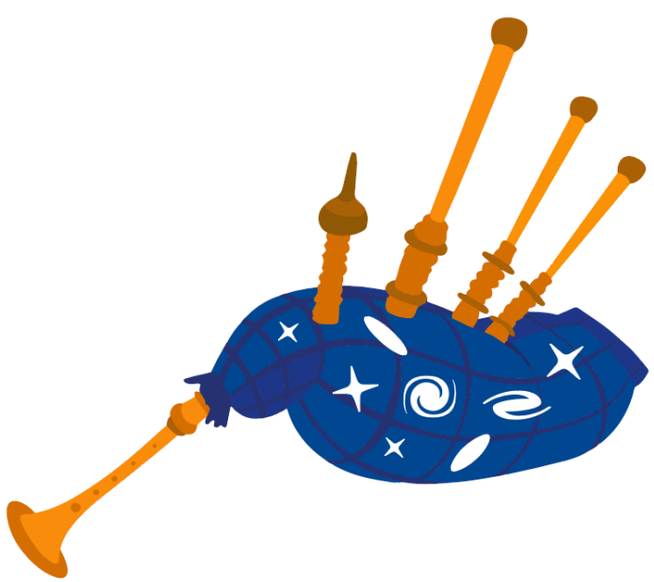
McLure et al. (2018)
Pentericci et al. (2018)
https://vandels.inaf.it
DR3 released Nov 2019

13 per cent (268) are massive quiescent galaxies at $1.0 < z < 2.5$



Bayesian Analysis of Galaxies for Physical Inference and Parameter EStimation

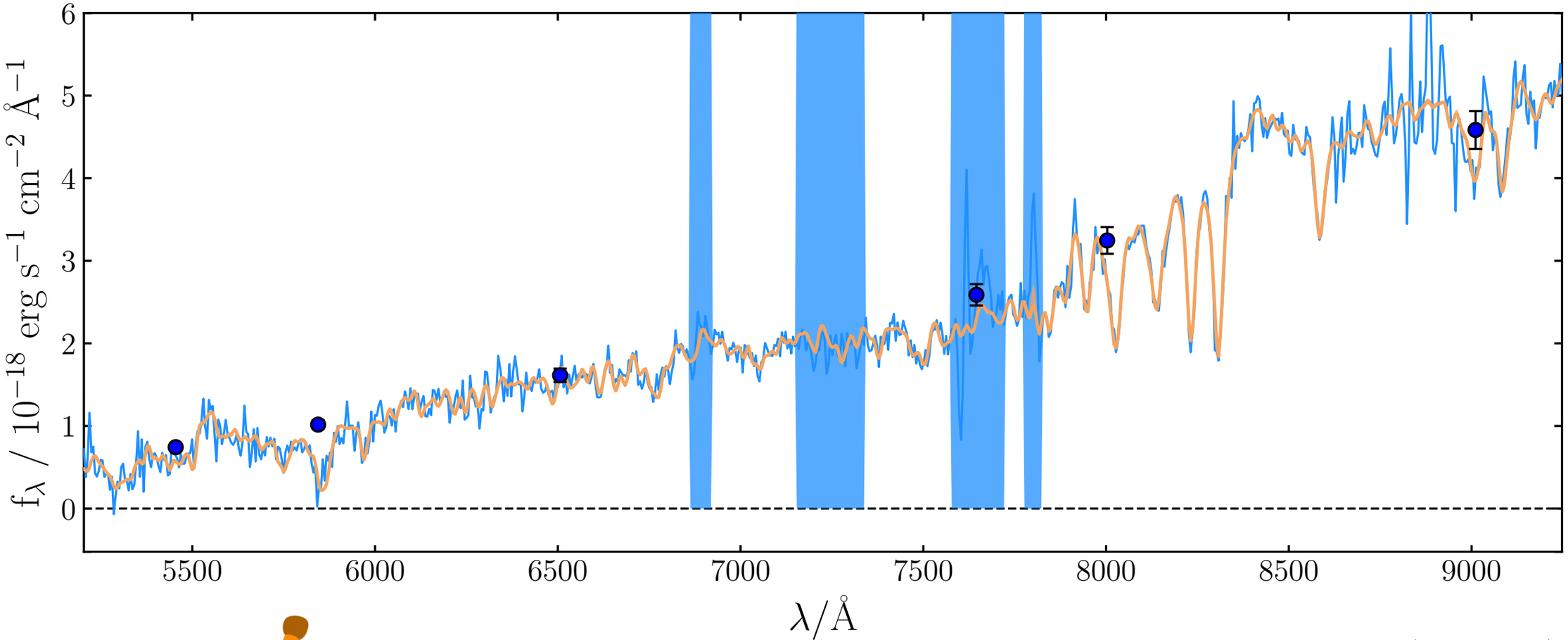


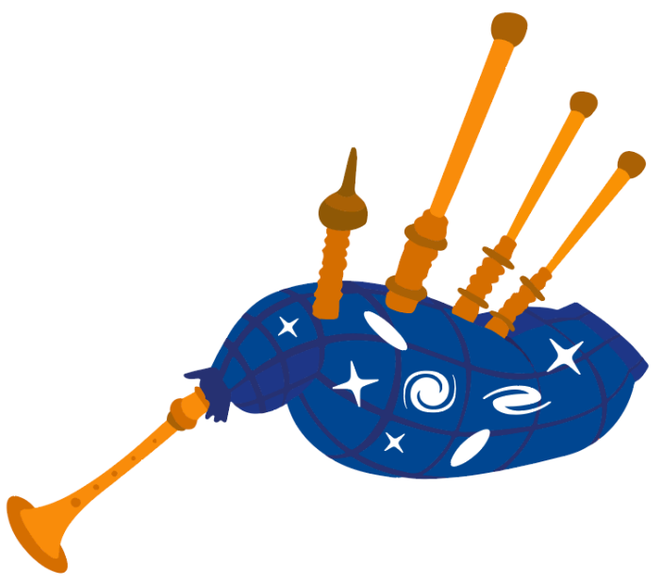


Carnall et al. (2019b)

http://bagpipes.readthedocs.io

Bayesian Analysis of Galaxies for Physical Inference and Parameter EStimation





Carnall et al. (2019b)

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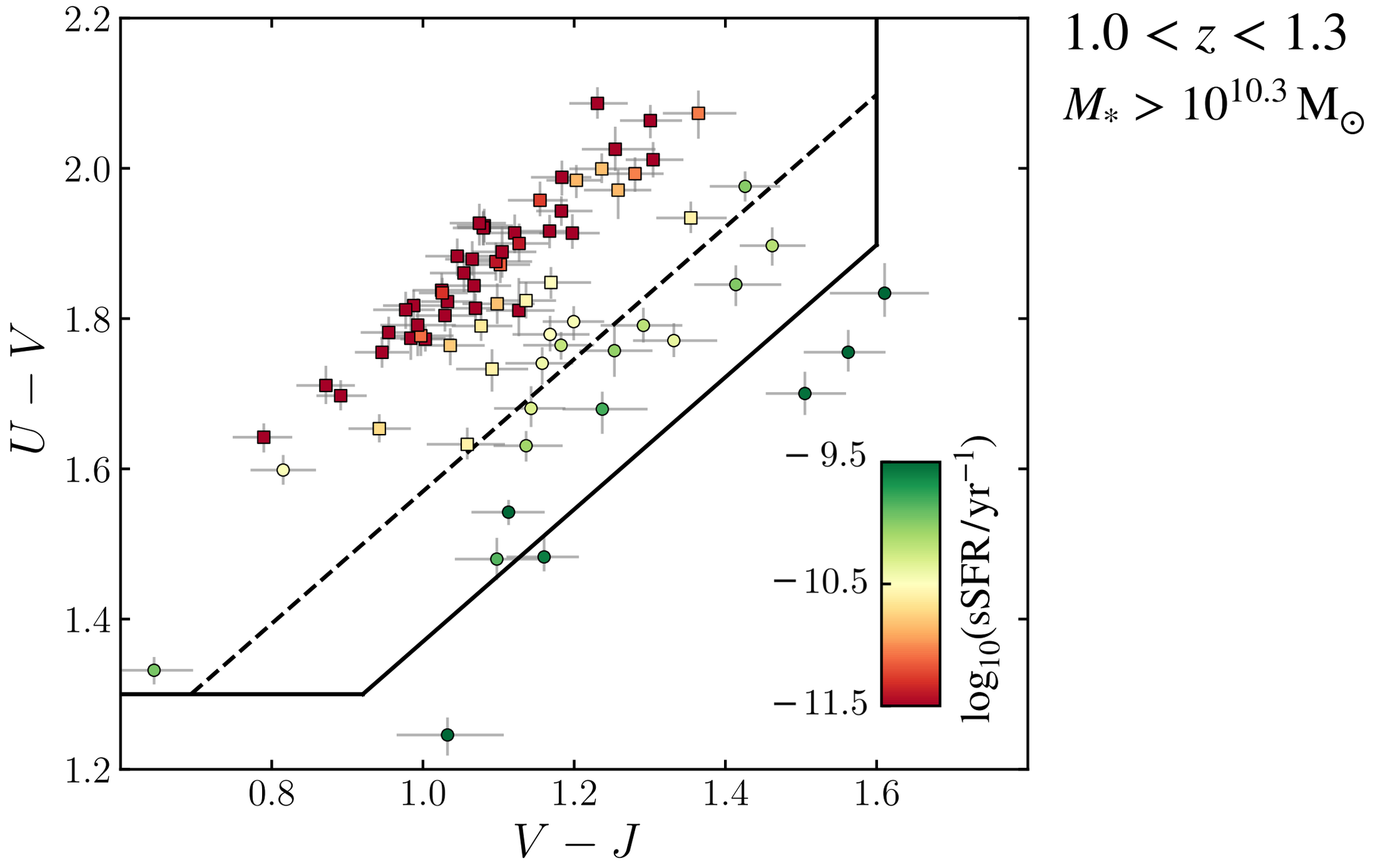
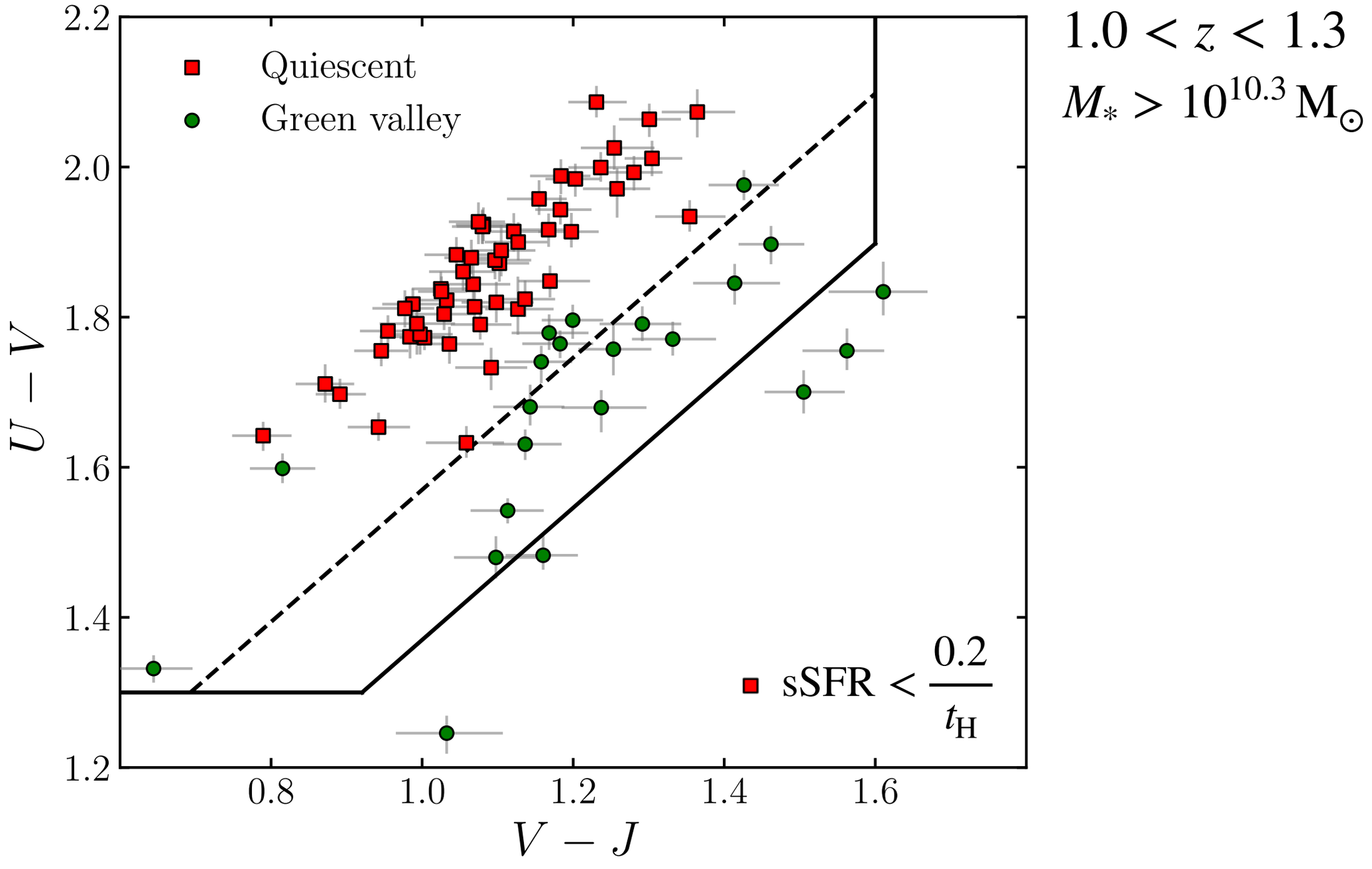
Trends with UVJ Colours



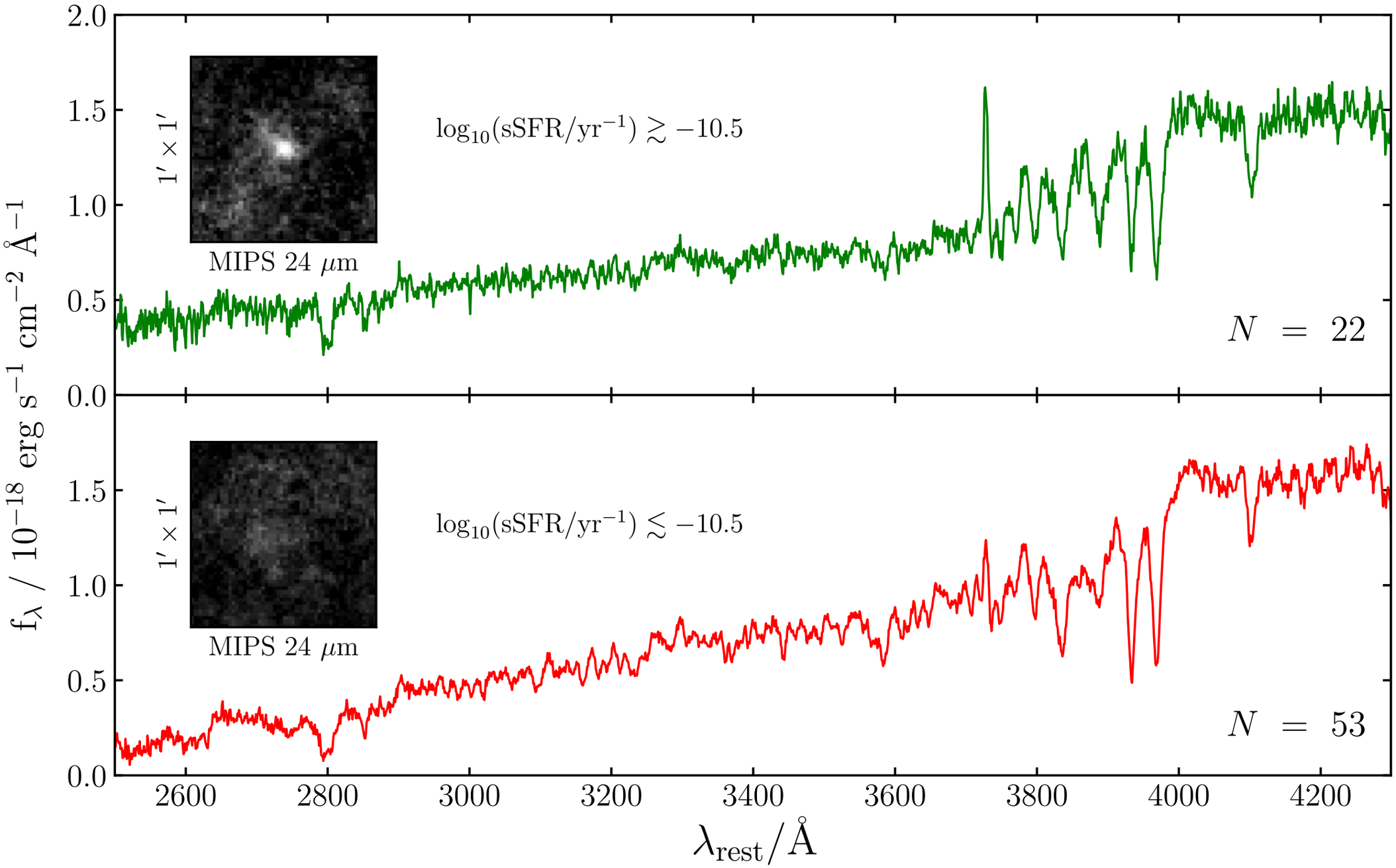
Carnall et al. (2019b)

Trends with UVJ Colours



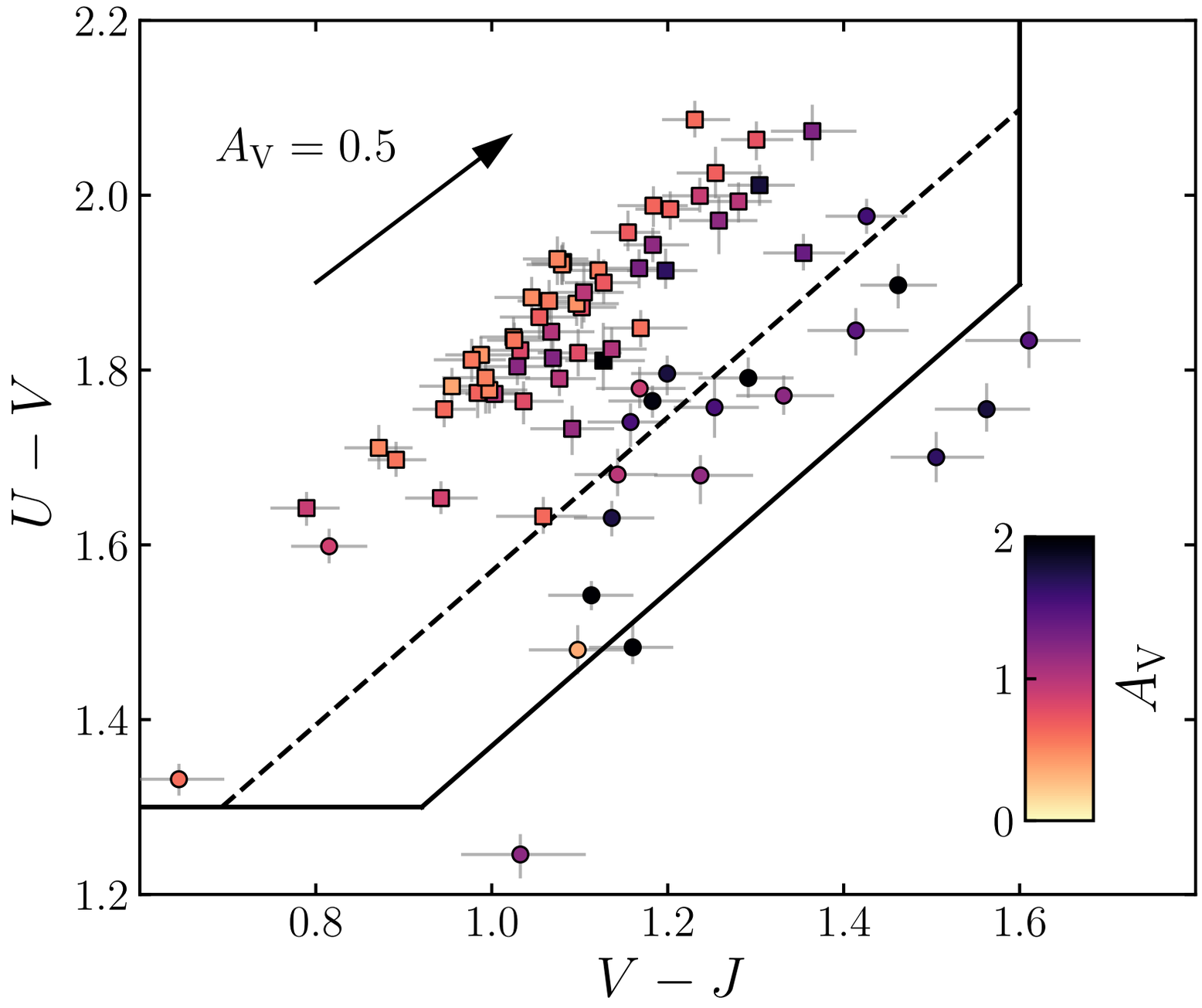
Carnall et al. (2019b)

Trends with UVJ Colours



Carnall et al. (2019b)

Time Evolution of UVJ Colours

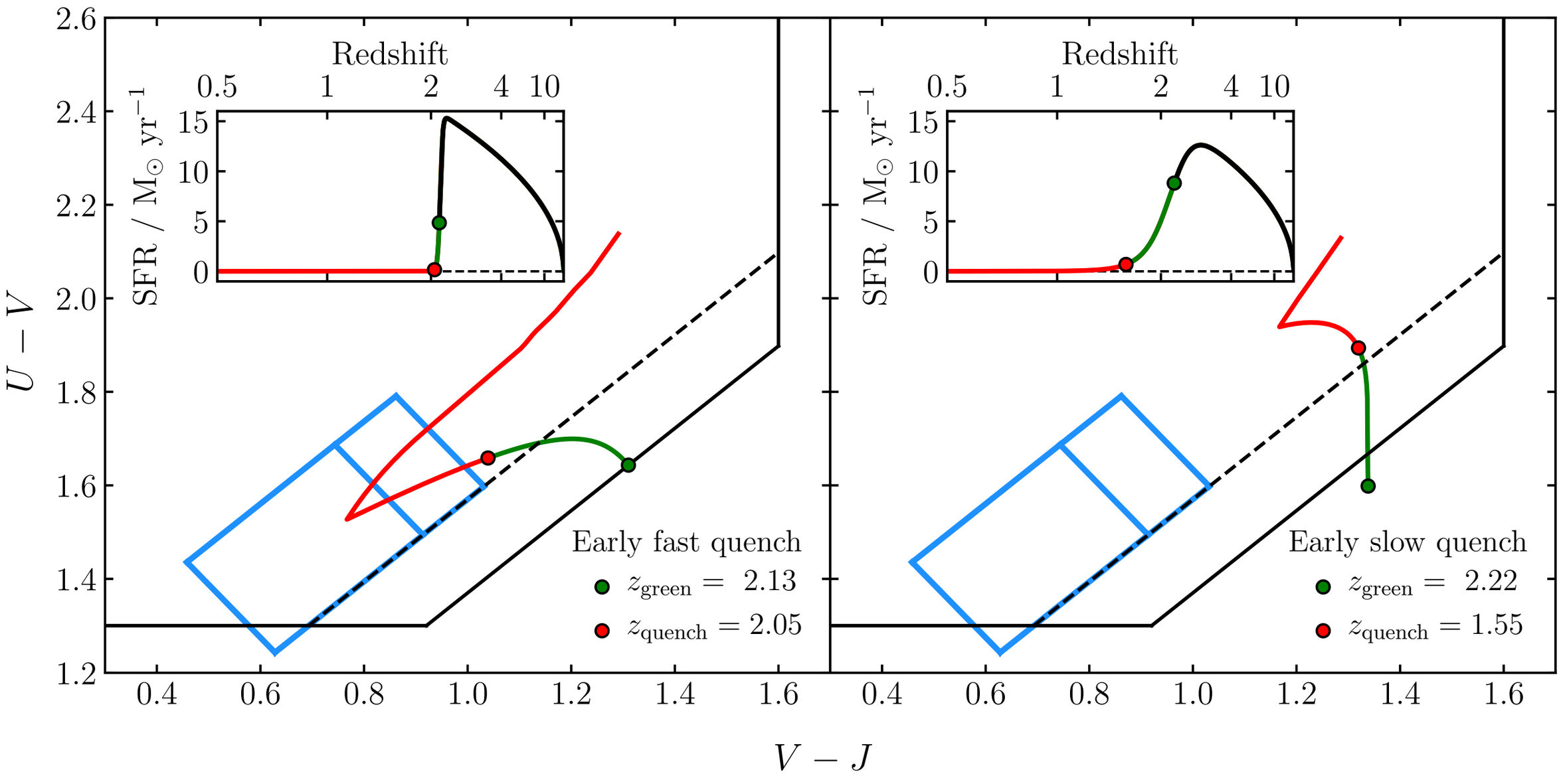


$1.0 < z < 1.3$

$M_* > 10^{10.3}\,\mathrm{M}_\odot$

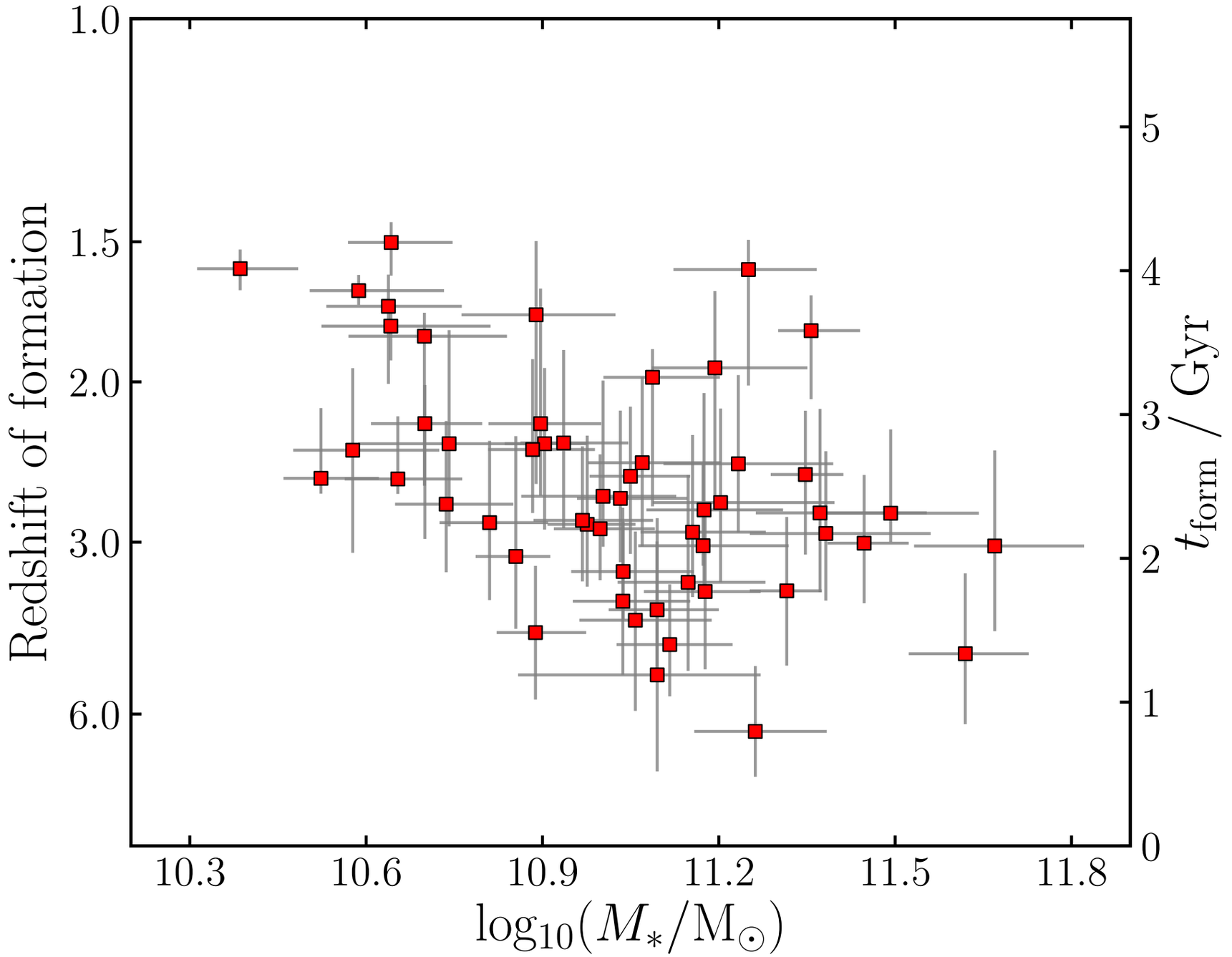
Carnall et al. (2019b)

Time Evolution of UVJ Colours



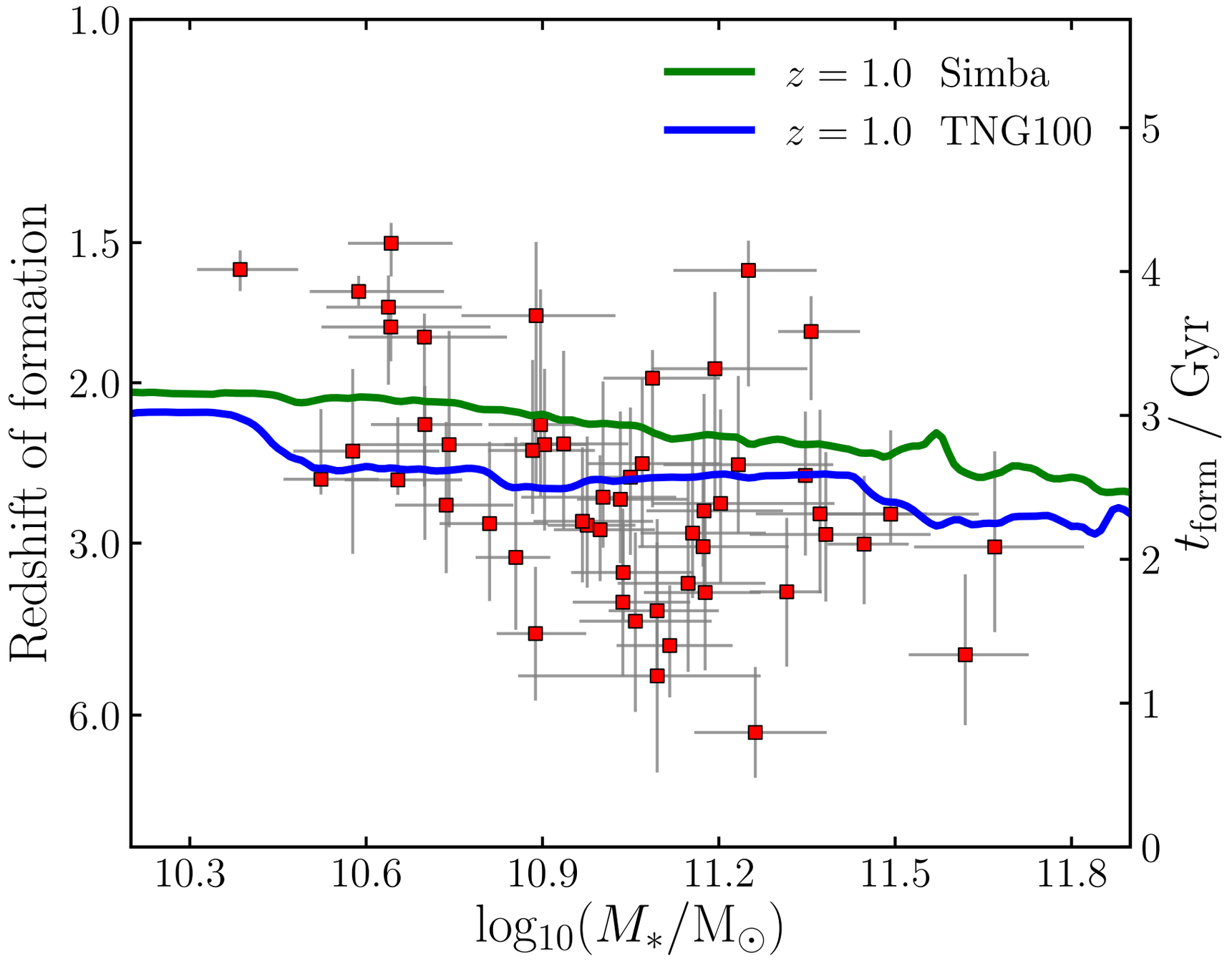
Carnall et al. (2019b)

Formation Redshifts



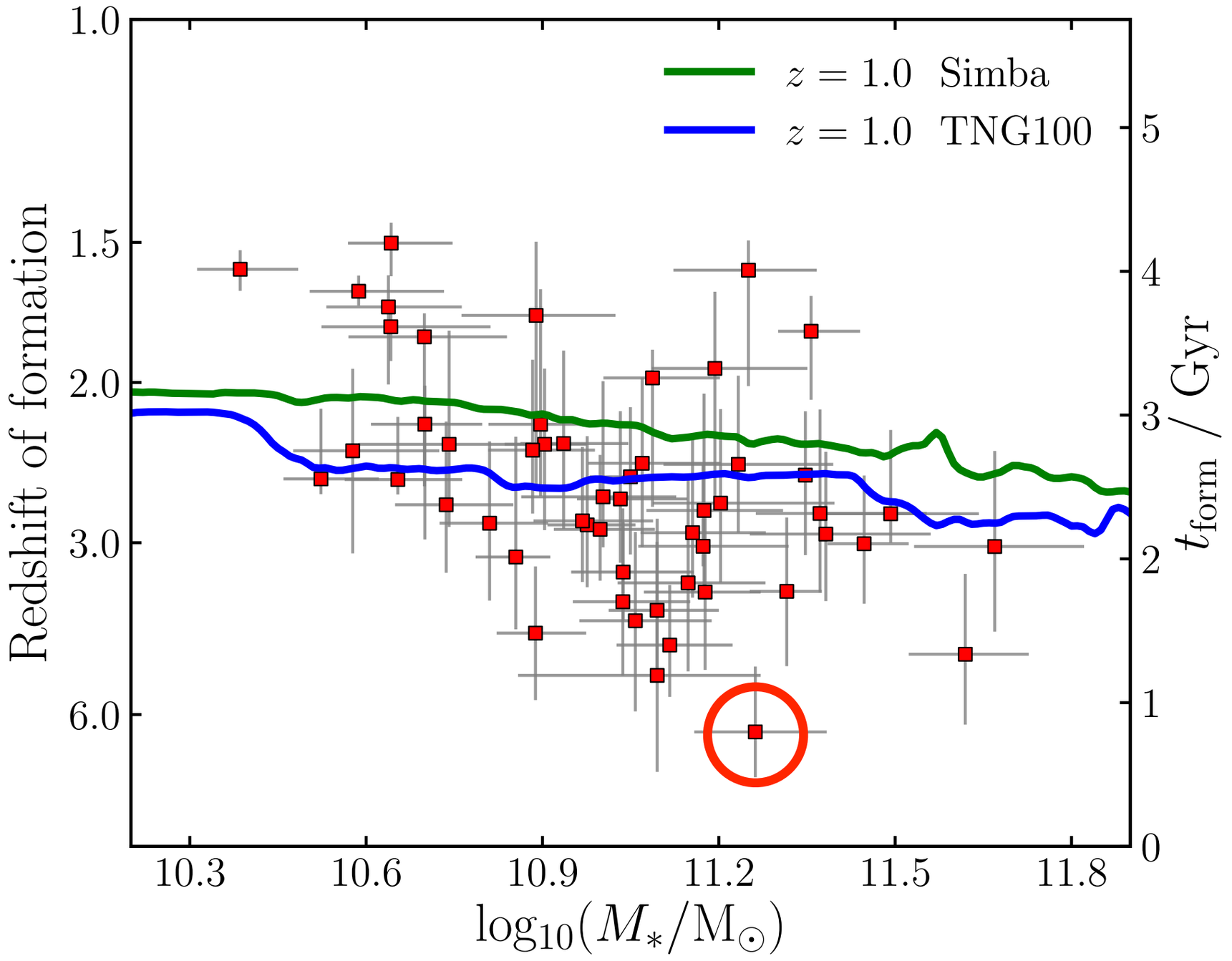
Carnall et al. (2019b)

Formation Redshifts



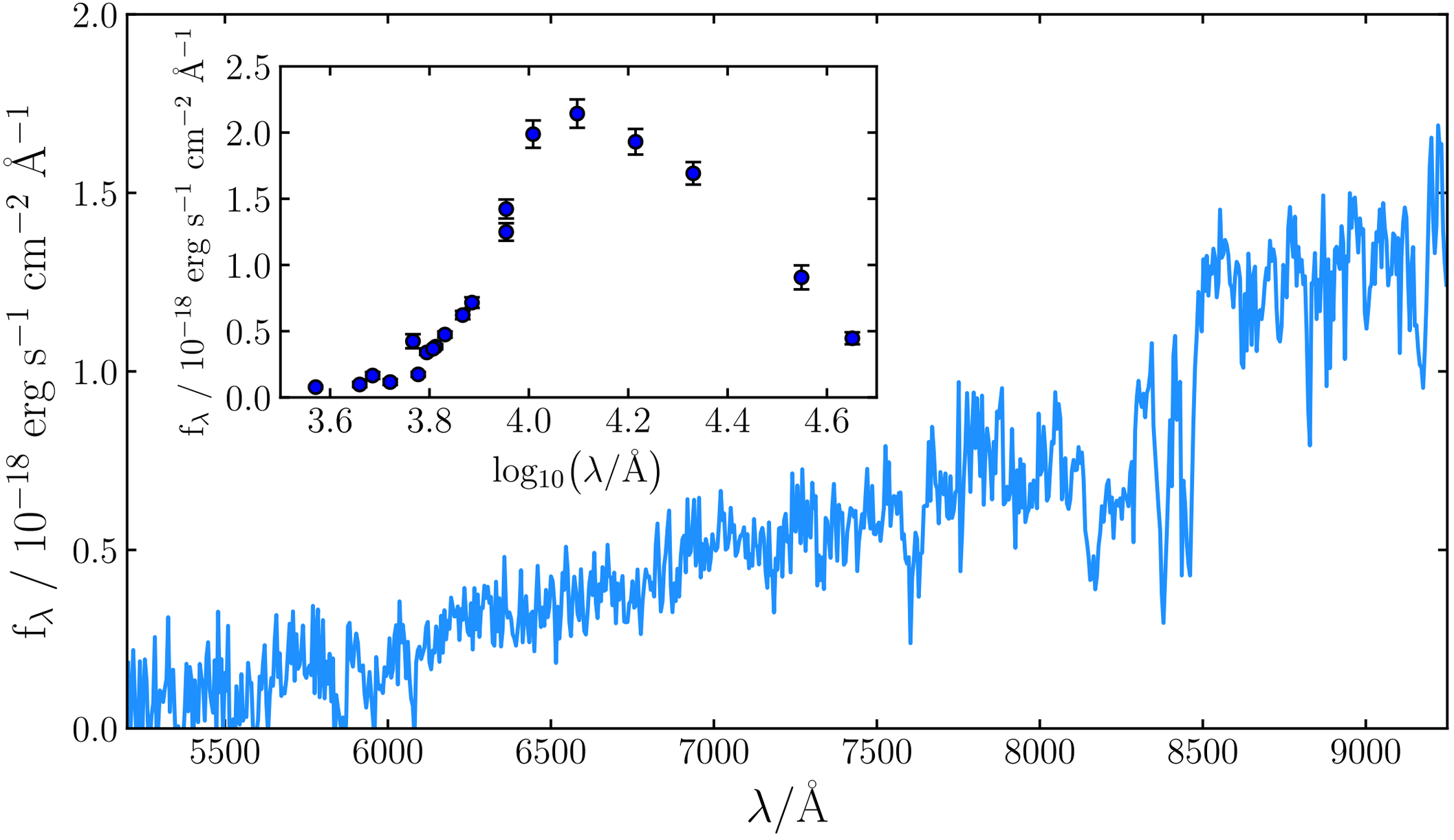
Carnall et al. (2019b)

Formation Redshifts



Carnall et al. (2019b)

The Oldest Galaxies at $z=1$



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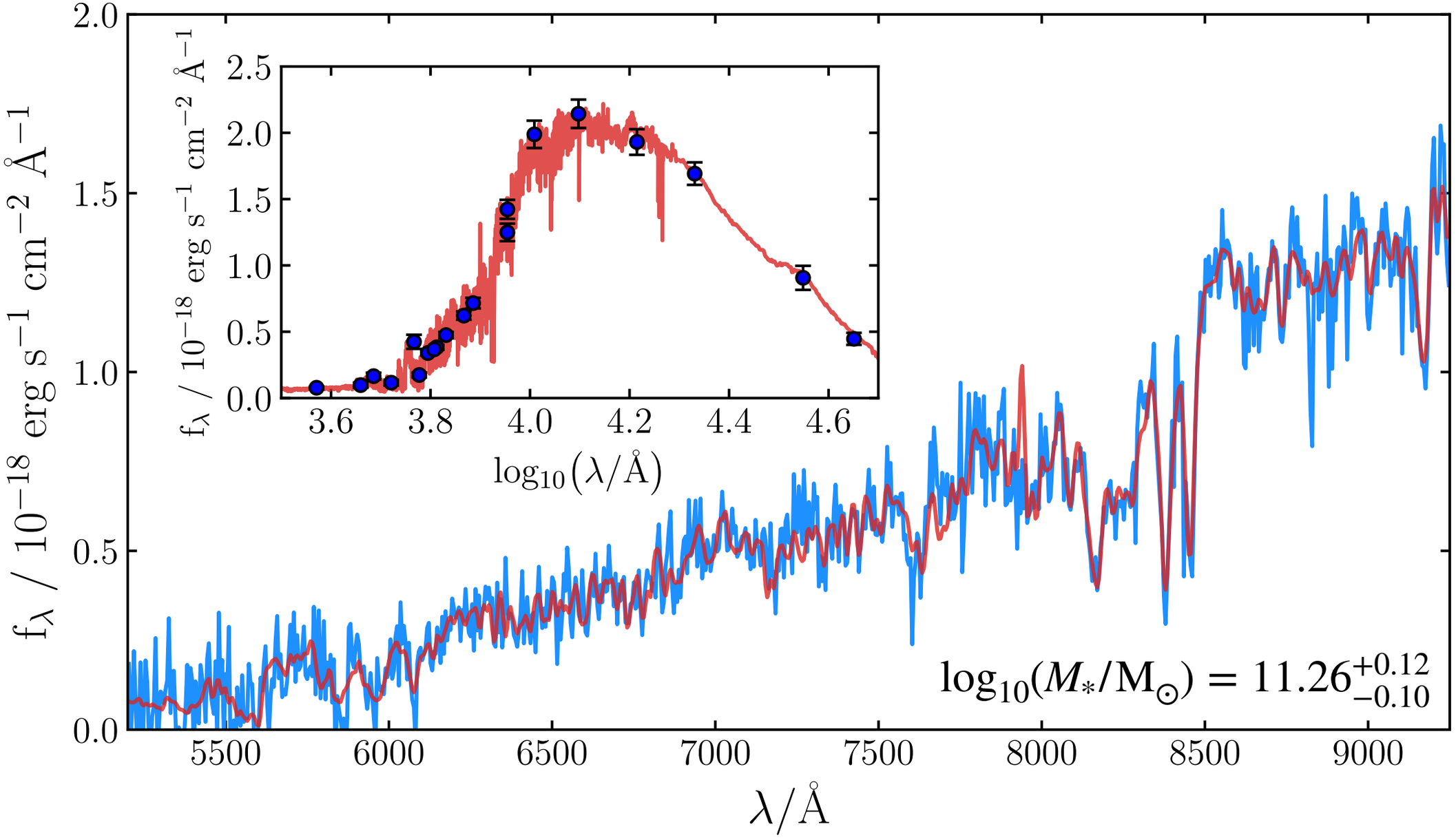

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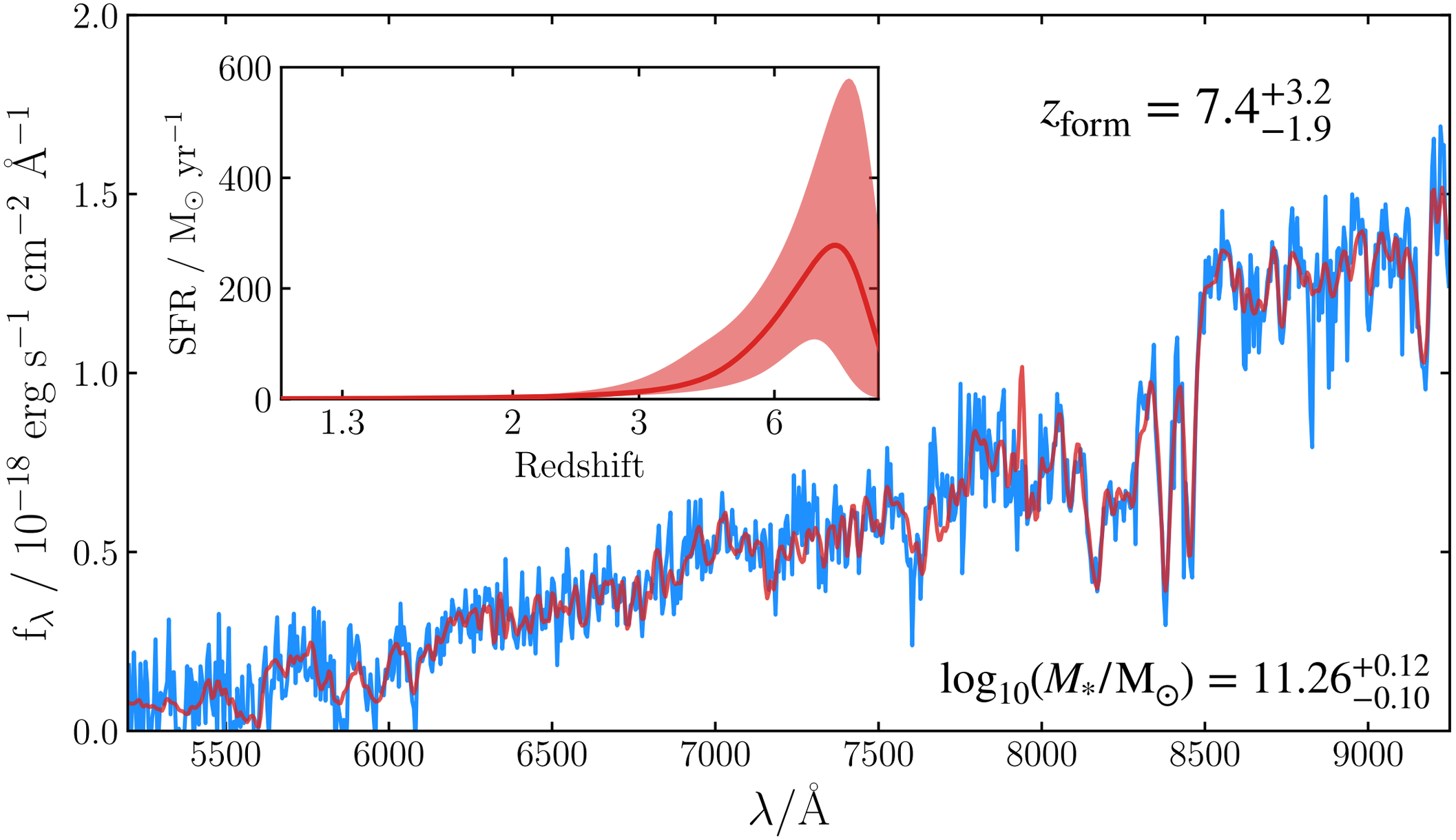

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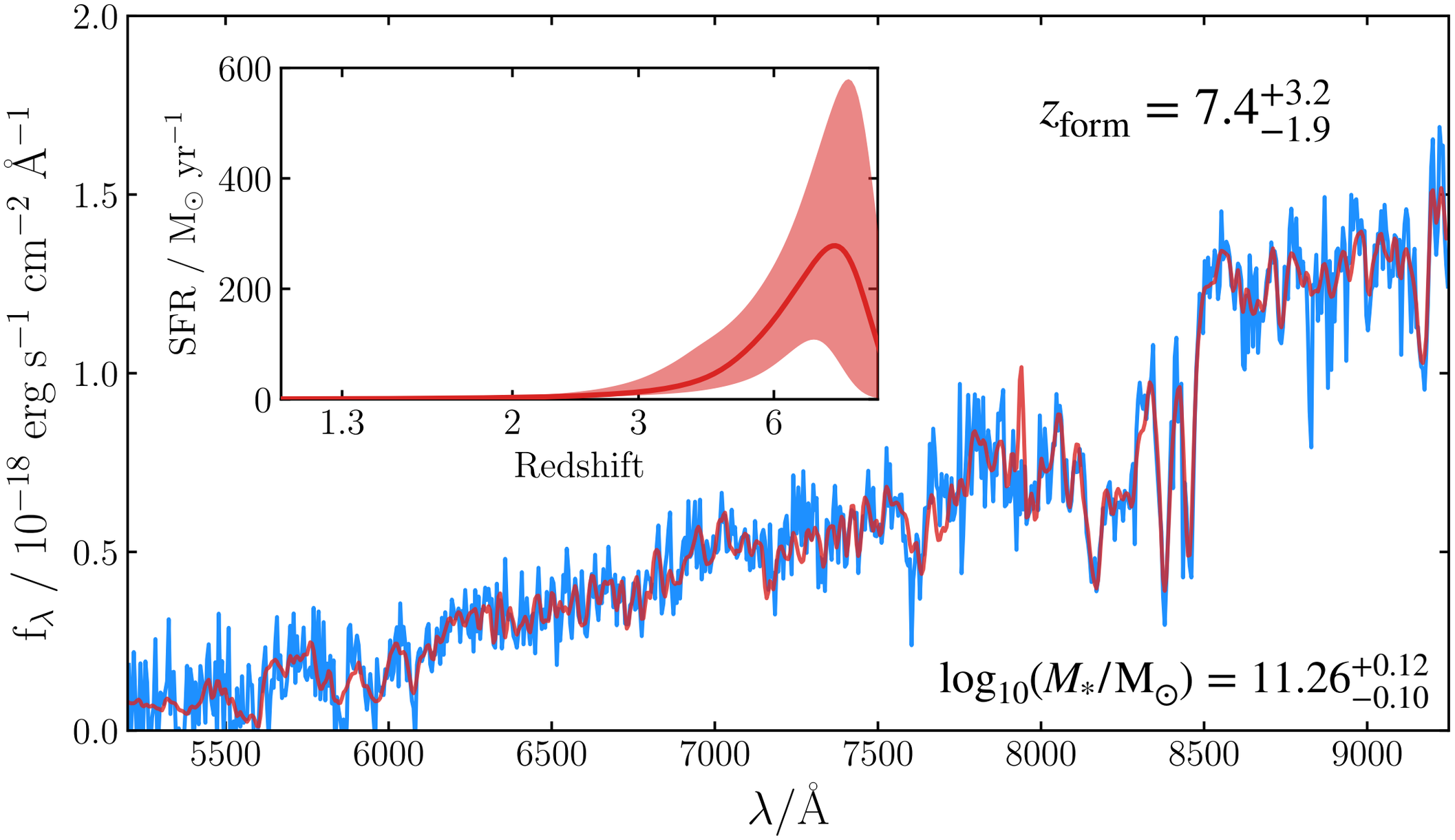
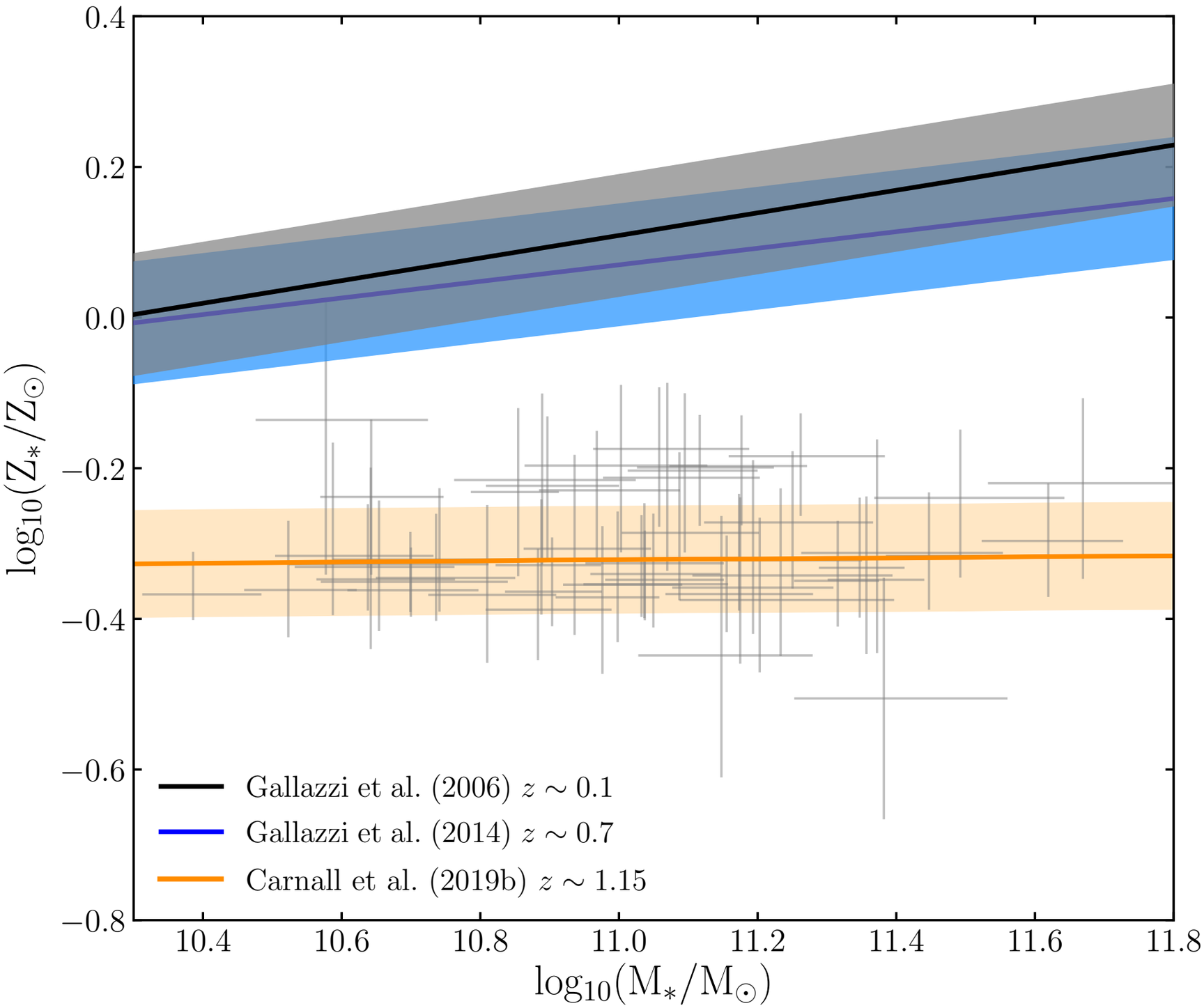
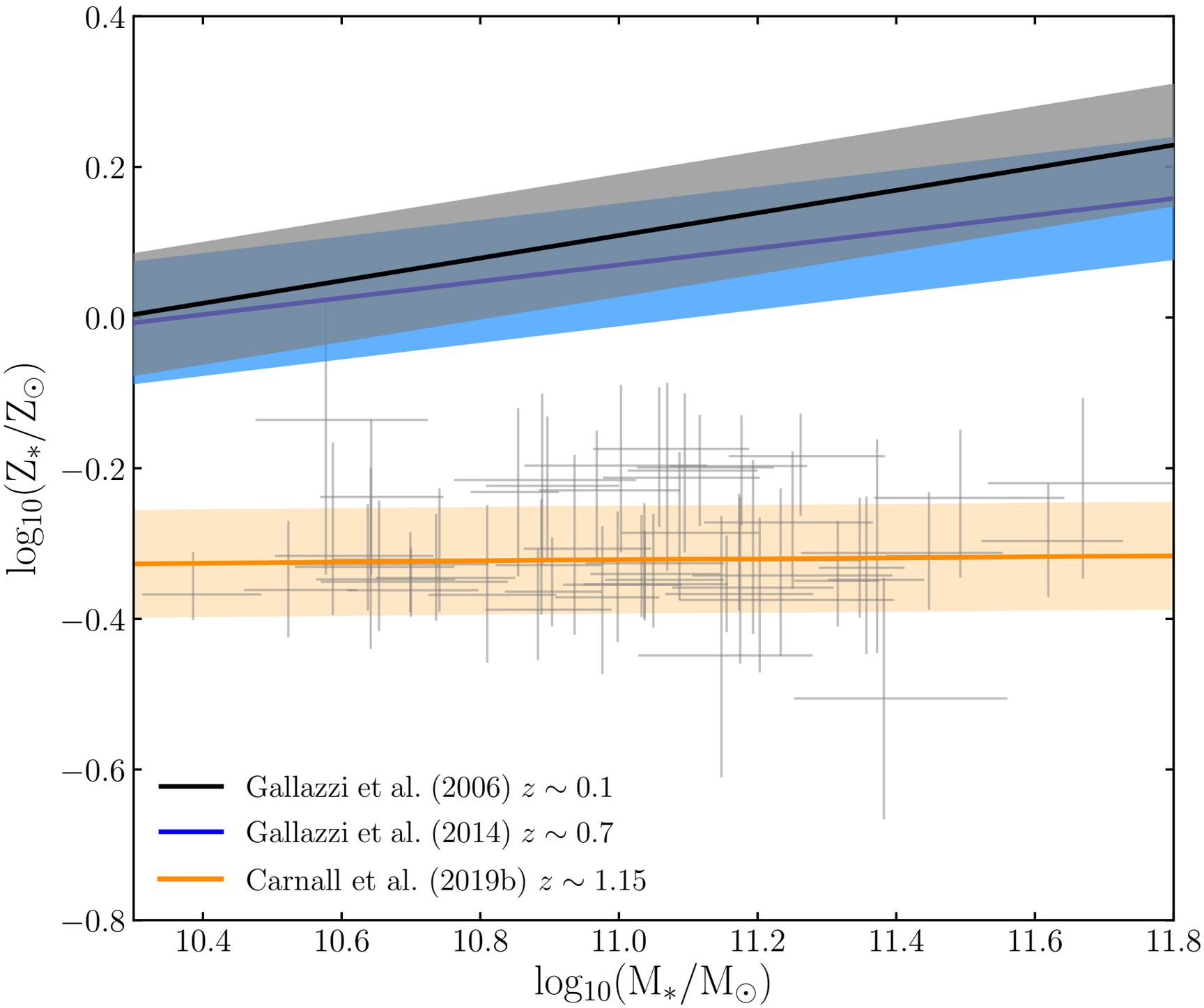


Carnall, Walker et al. (2020): photometric selection and physical properties of $2 < z < 5$ massive quiescent galaxies in CANDELS UDS and GOODS-South

Stellar Metallicities



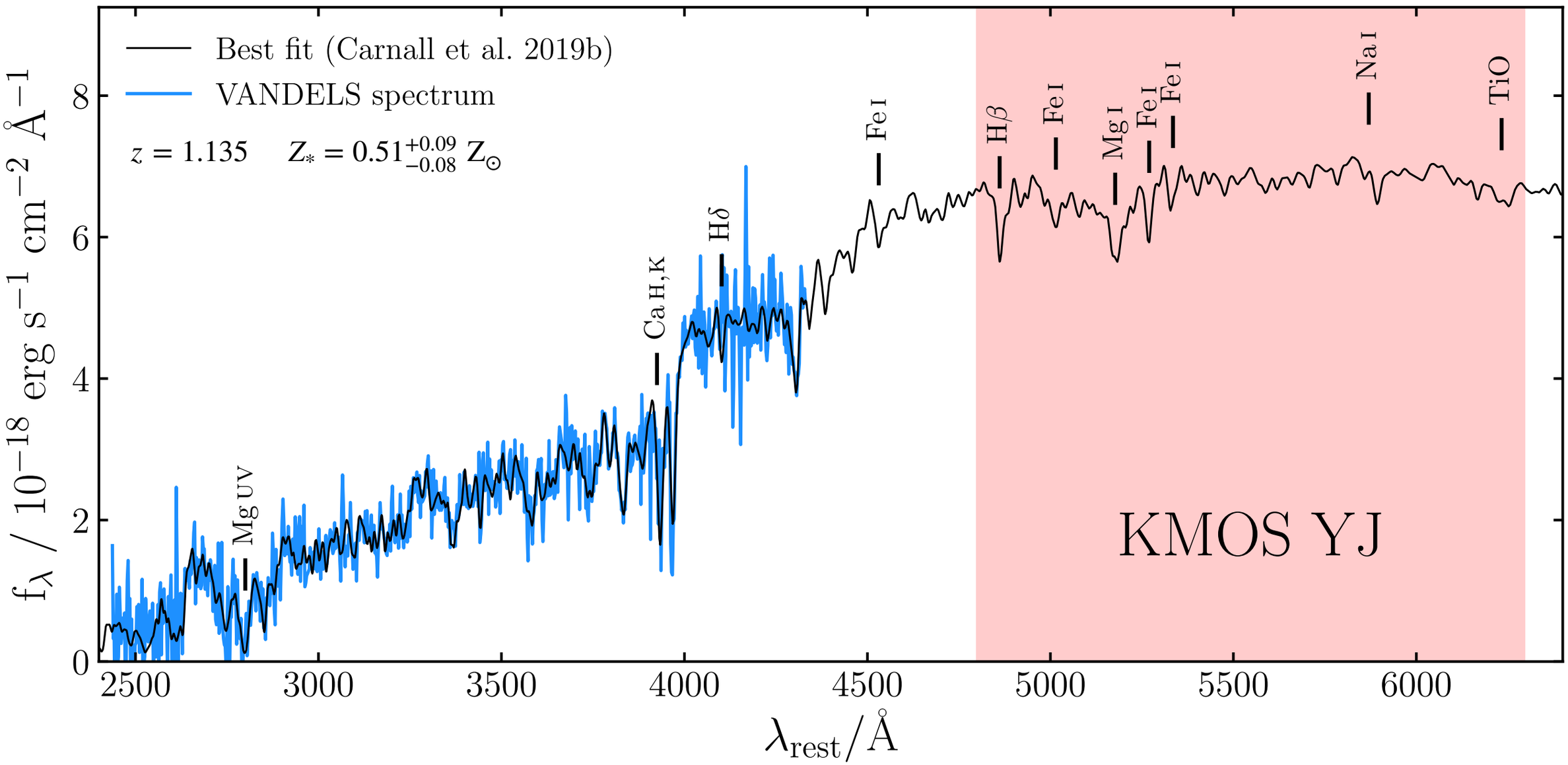
Stellar Metallicities



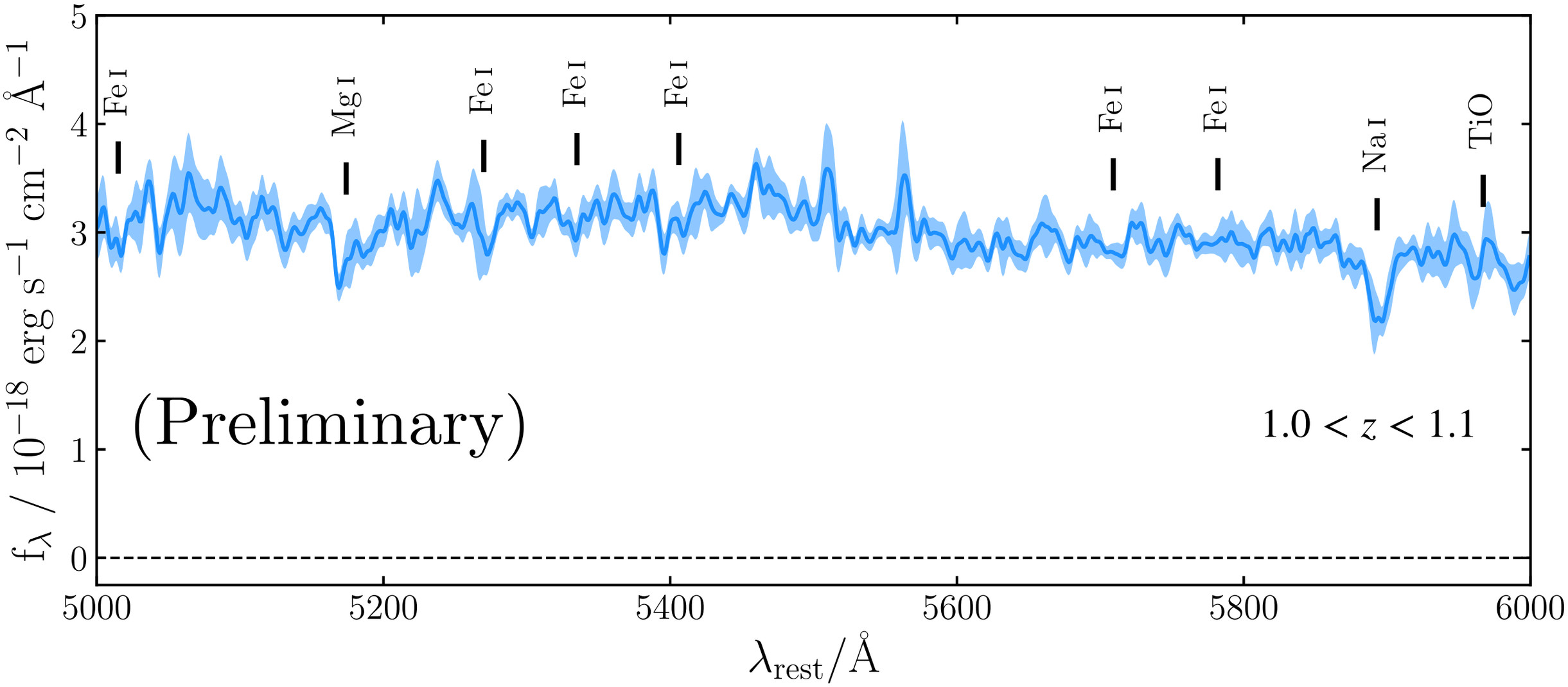
Optical

UV

Stellar Metallicities



Stellar Metallicities



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Conclusions

Full spectral fitting is the right way to learn about galaxy physical properties, a Bayesian approach with flexible noise modelling can make this possible

The $z \gtrsim 1$ quiescent population already has a diverse range of SFHs, upcoming surveys will provide the statistics to constrain high redshift quenching models

Evidence for the earliest massive quiescent galaxies forming at $z \sim 6$

See arXiv:1903.11082 + 2001.11975 and upcoming stellar metallicities paper for more details