Summary

Bianca Poggianti:
Different selections give you different types of objects, E+A,K+A finds truly quenching objects (and we still want to see the rest of the MUSE images!)

David Koo:
The central region is key parameter in identifying blue to red transitions
SF/MS -> compaction -> quenching -> passive core (Guillero Barro+2015)

Decker French:
~1/2 E+A/K+As have *molecular* gas
A new selection: TDEs seem to select PSBs

Shooby Hemmati:
Sample selection!!! SED fitting for BOTH stellar mass and SFR!

Louis Abramson:
The arrow of time. Progenitors of modern ETGs not modern LTGs

Josh Argyle:
Bulge size matters for whether a galaxy is quenched or not.

Crystal Martin:
It’s hard to keep galaxies blue in the first place
Gas accreted into halo, then halo to CGM - new data suggesting inflow along plane of disk

Greg Snyder:
Poststarburst phase not an inevitable phase for a post-merger system

Becky Smethurst:
Quenching is not the same as morphology and rapidly quenched galaxies host AGN

Marja Seidel:
Bars can encourage star formation through gas inflow - stelpops in bars are younger!

Alison Crocker:
Lower SFE in gas in early-type galaxies - central concentration impacts how efficiently gas turns to stars
Bars may change the central region of the galaxy, by creating gas “dead zones"

Tim Davis:
Regeneration vs transition - gas-rich ETGs tend to be replenished, not first time quenchers

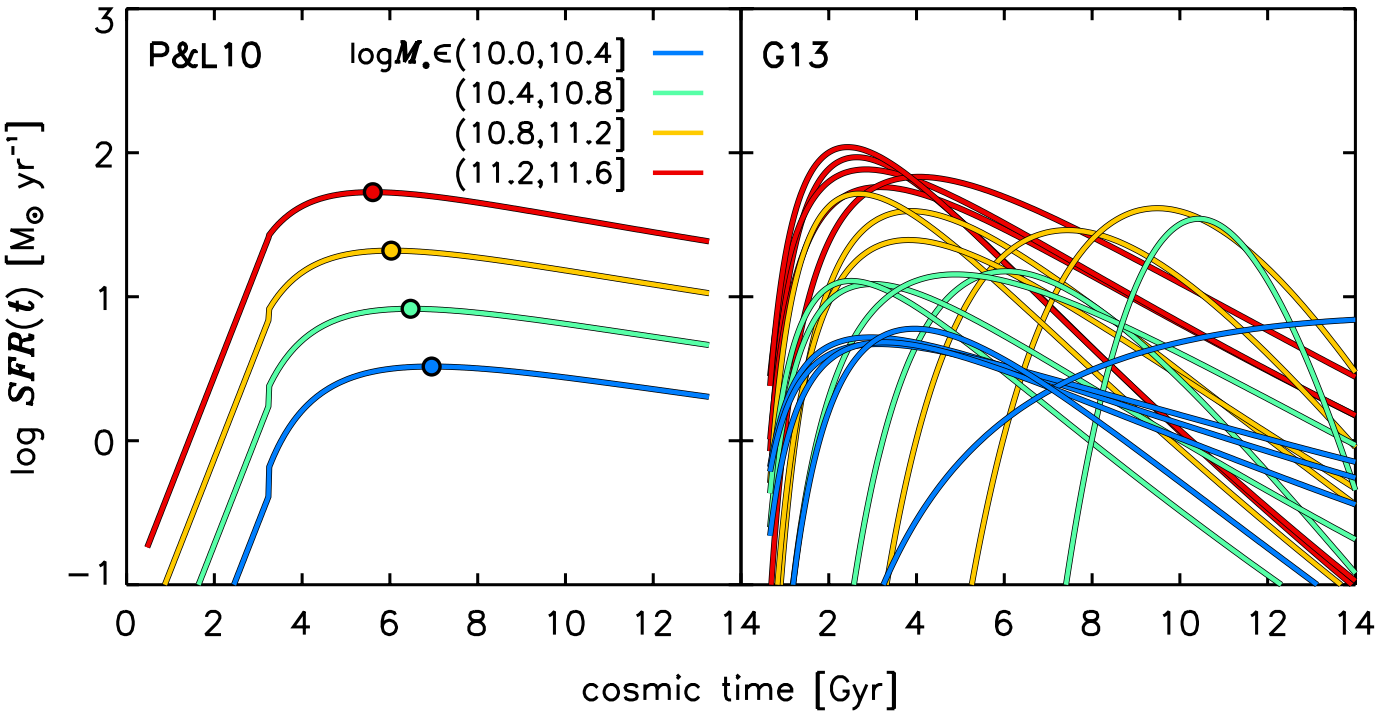
Dressler+2016 arXiv:1606127

"Demonstrating Diversity in Star Formation Histories with the CSI Survey"

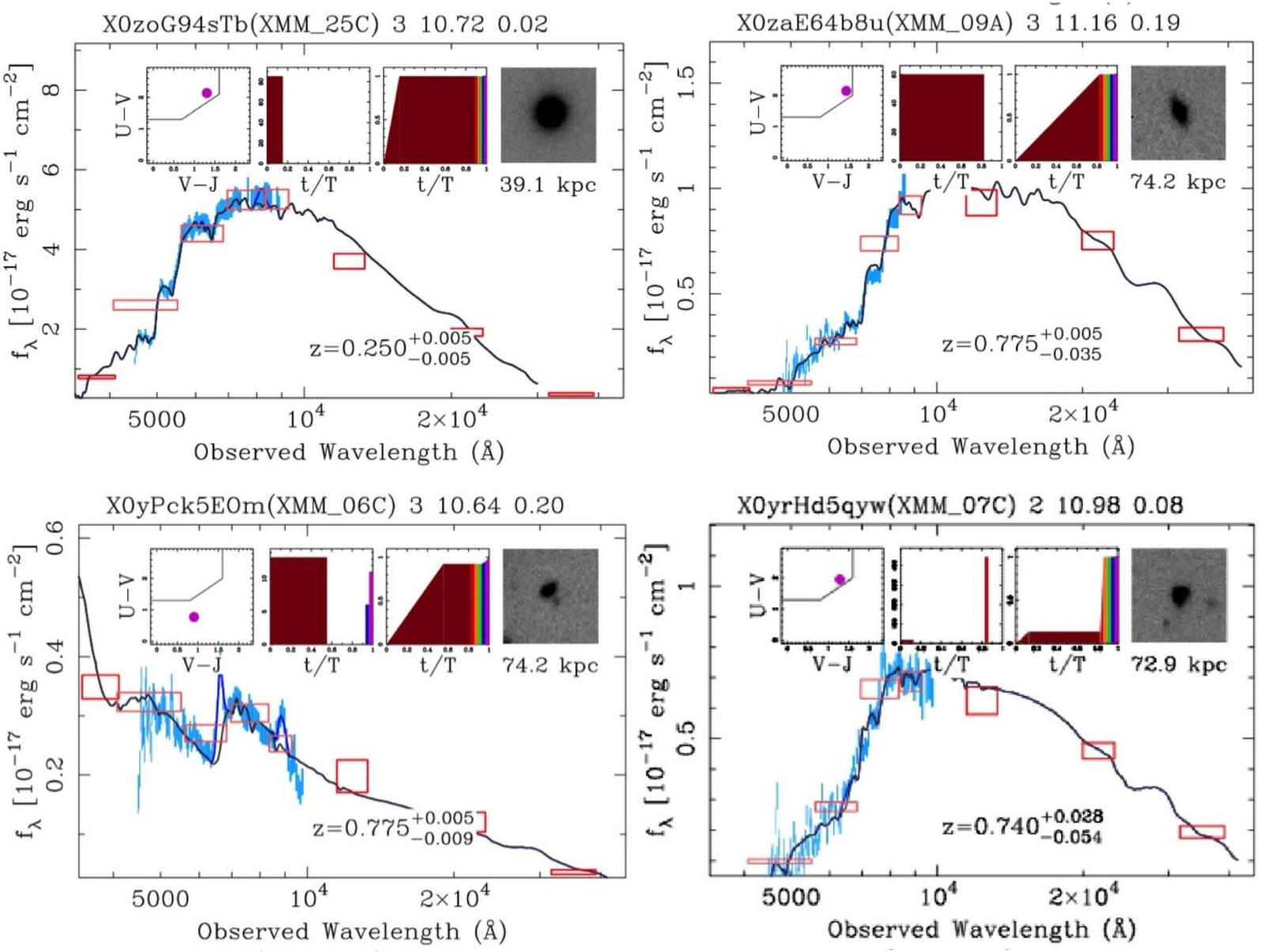
Disputing the notion that galaxies follow similar histories of stellar growth until 'quenching.'

Example of a *conformal* model, with 'downsizing'

SFH Diversity and 'downsizing' In the lognormal model.



We analyzed the SEDs of 22,494 galaxies, 0.3 < z < 0.9, from the CSI (Carnegie Spitzer IMACS) Survey (Kelson+2014, ApJ783 110)



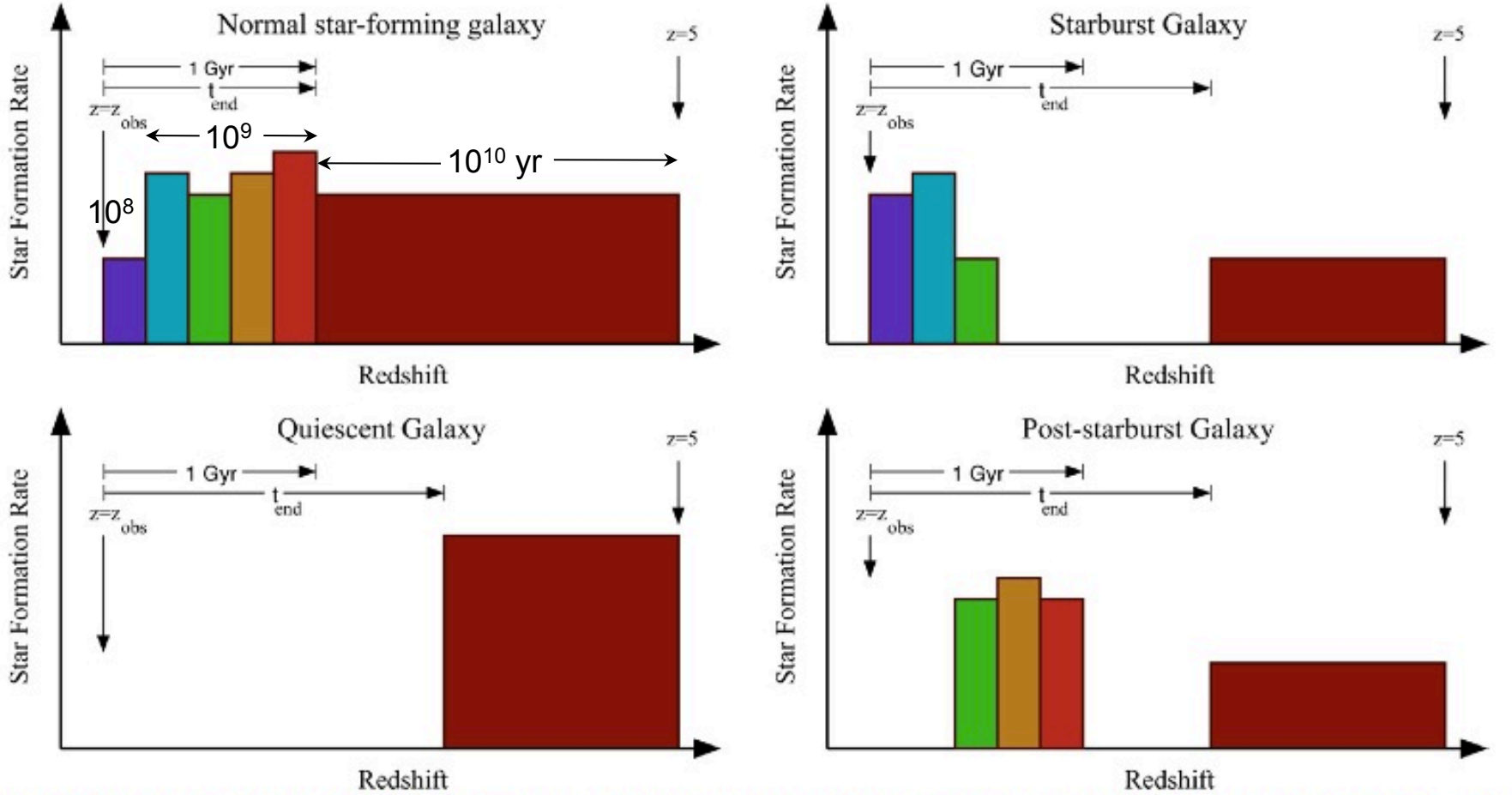
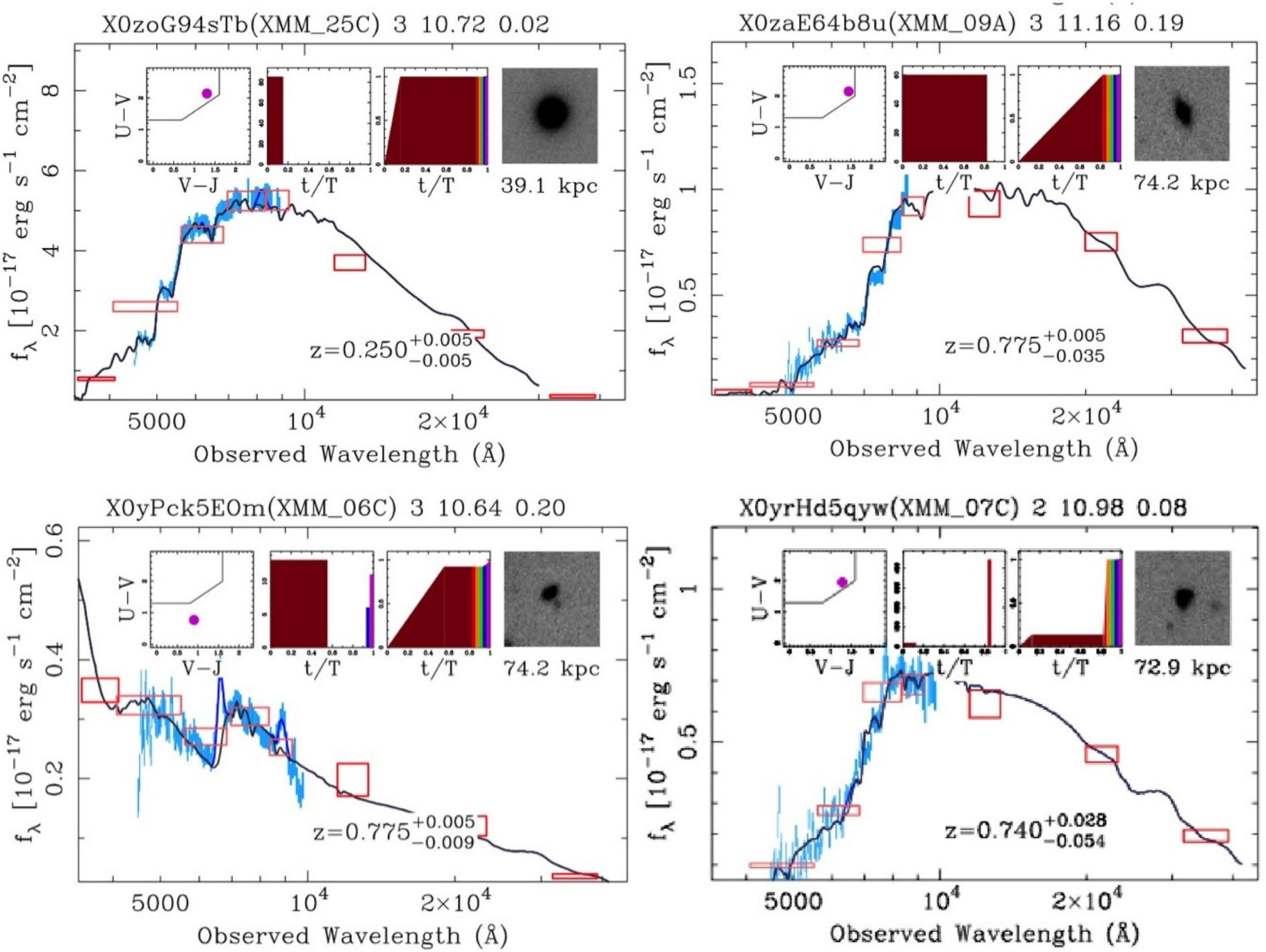
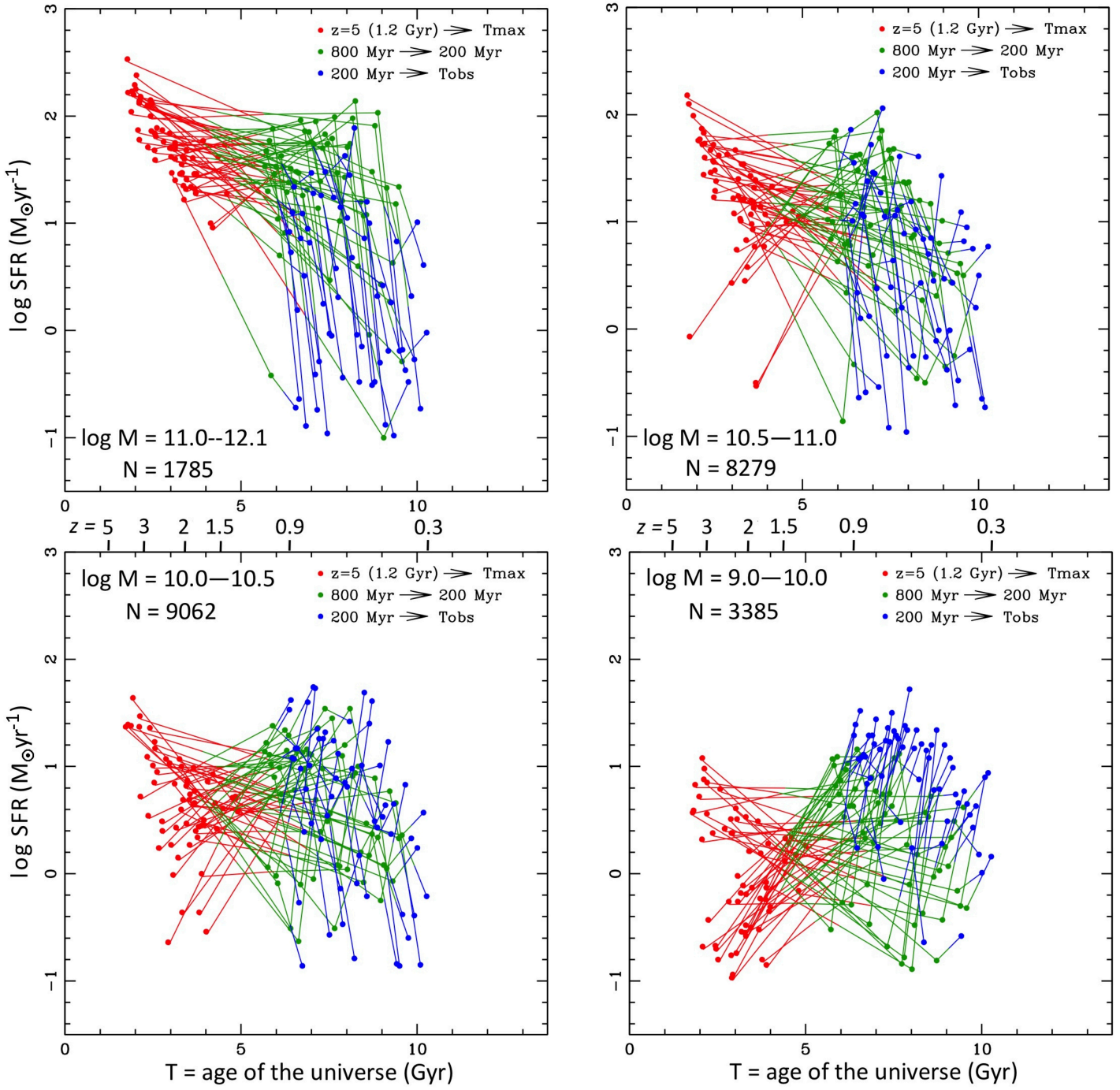
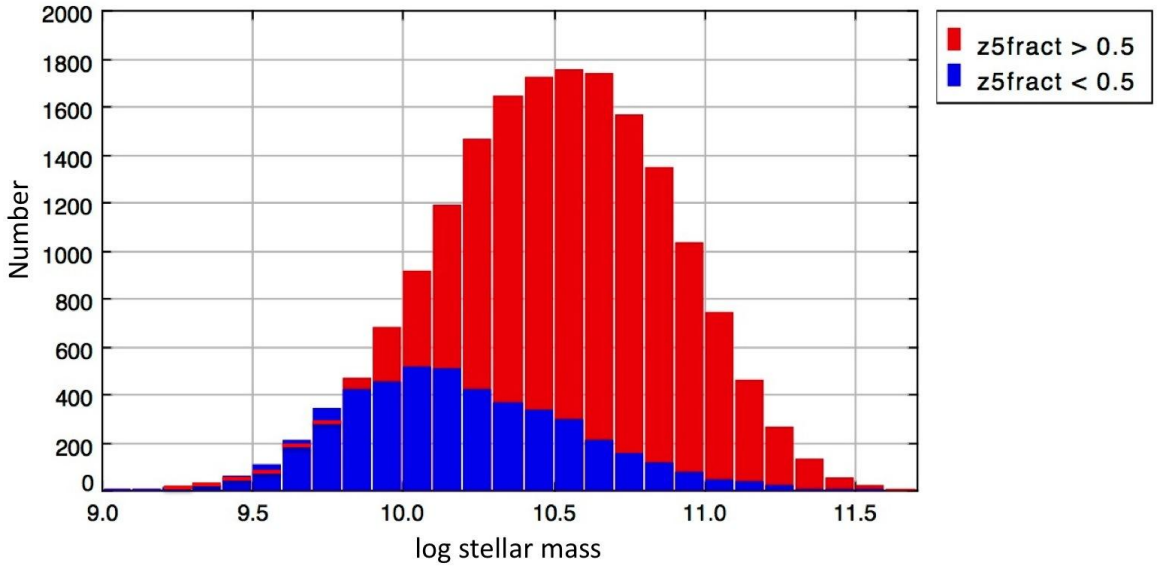


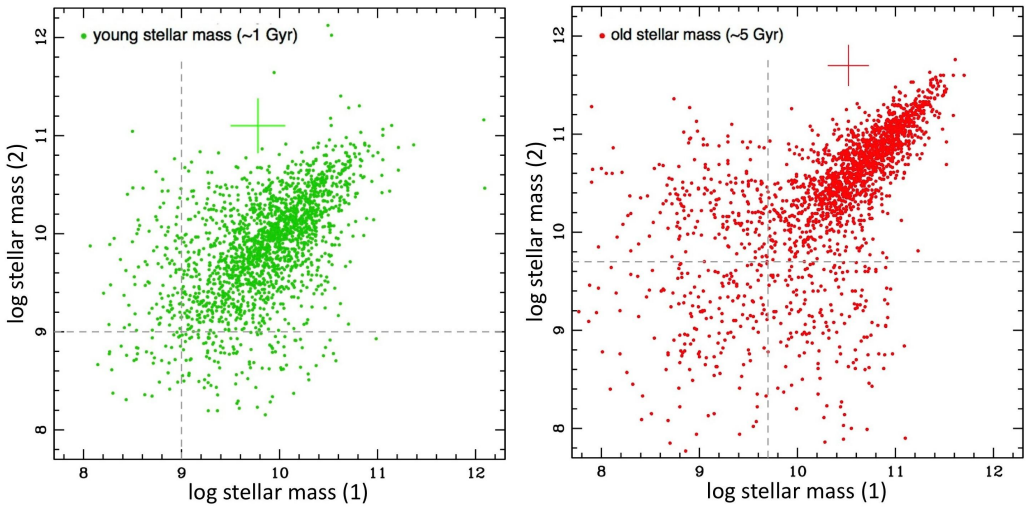
Figure 6. Cartoon star formation histories for four representative galaxy types. Because optical passbands provide poor leverage on star formation histories earlier than 1 Gyr prior to the epoch of observations, we have reduced the complexity of galaxy star formation histories to non-negative combinations of discrete components such as those illustrated in these cartoons. For our purposes, each galaxy is modeled with six age-related components, as described in the text, with the oldest component starting at $z = 5$ and continuing down to some time t_{end} prior to the epoch of observation. Five younger, discrete components of duration 200 Myr allow for the broad possible range of complex histories in a galaxy's recent past. Each of these six components is quadrupled, with four different levels of extinction, $Av \in \{0, 0.5, 1, 2\}$ mag, leading to a total of 24 stellar components with non-negative contributions to the stellar mass of a galaxy. With redshift, metallicity, and t_{end} as our gridded parameters, there are 24 stellar coefficients at each location in the grid. By abstracting star formation histories in this way, we have retained the essential information content of on-going star formation, intermediate-age populations, and an old, underlying stellar population.

(A color version of this figure is available in the online journal.)

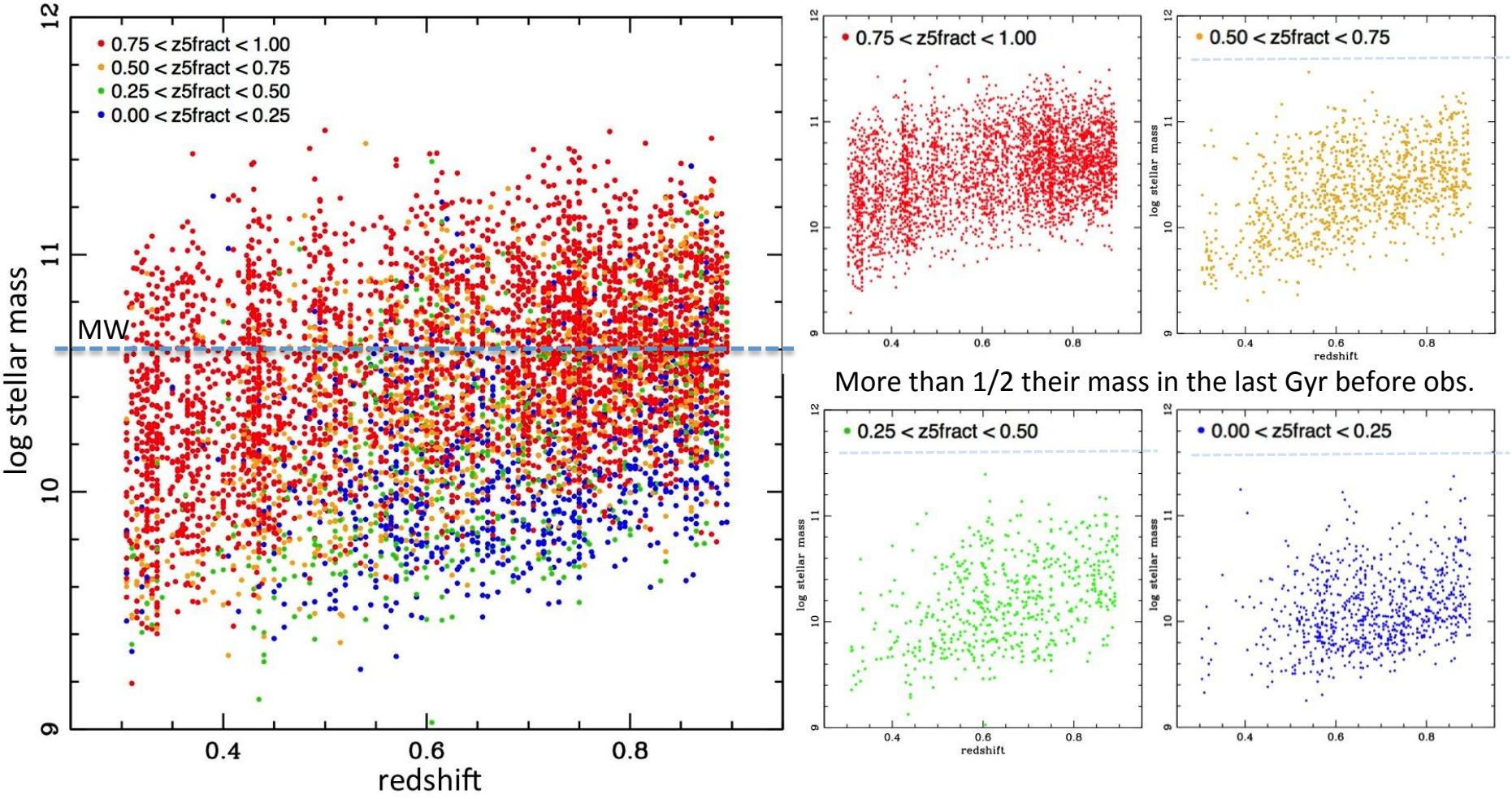

X0zoG94sTb(XMM_25C) 3 10.72 0.02
U−V
V−J
t/T
t/T
39.1 kpc
f_λ [10^{-17} erg s^{-1} cm^{-2}]
$z=0.250^{+0.005}_{-0.005}$
5000
10^4
2×10^4
Observed Wavelength (Å)
X0zaE64b8u(XMM_09A) 3 11.16 0.19
U−V
V−J
t/T
t/T
74.2 kpc
f_λ [10^{-17} erg s^{-1} cm^{-2}]
$z=0.775^{+0.005}_{-0.035}$
5000
10^4
2×10^4
Observed Wavelength (Å)
X0yPck5EOm(XMM_06C) 3 10.64 0.20
U−V
V−J
t/T
t/T
74.2 kpc
f_λ [10^{-17} erg s^{-1} cm^{-2}]
$z=0.775^{+0.005}_{-0.009}$
5000
10^4
2×10^4
Observed Wavelength (Å)
X0yrHd5qyw(XMM_07C) 2 10.98 0.08
U−V
V−J
t/T
t/T
72.9 kpc
f_λ [10^{-17} erg s^{-1} cm^{-2}]
$z=0.740^{+0.028}_{-0.054}$
5000
10^4
2×10^4
Observed Wavelength (Å)

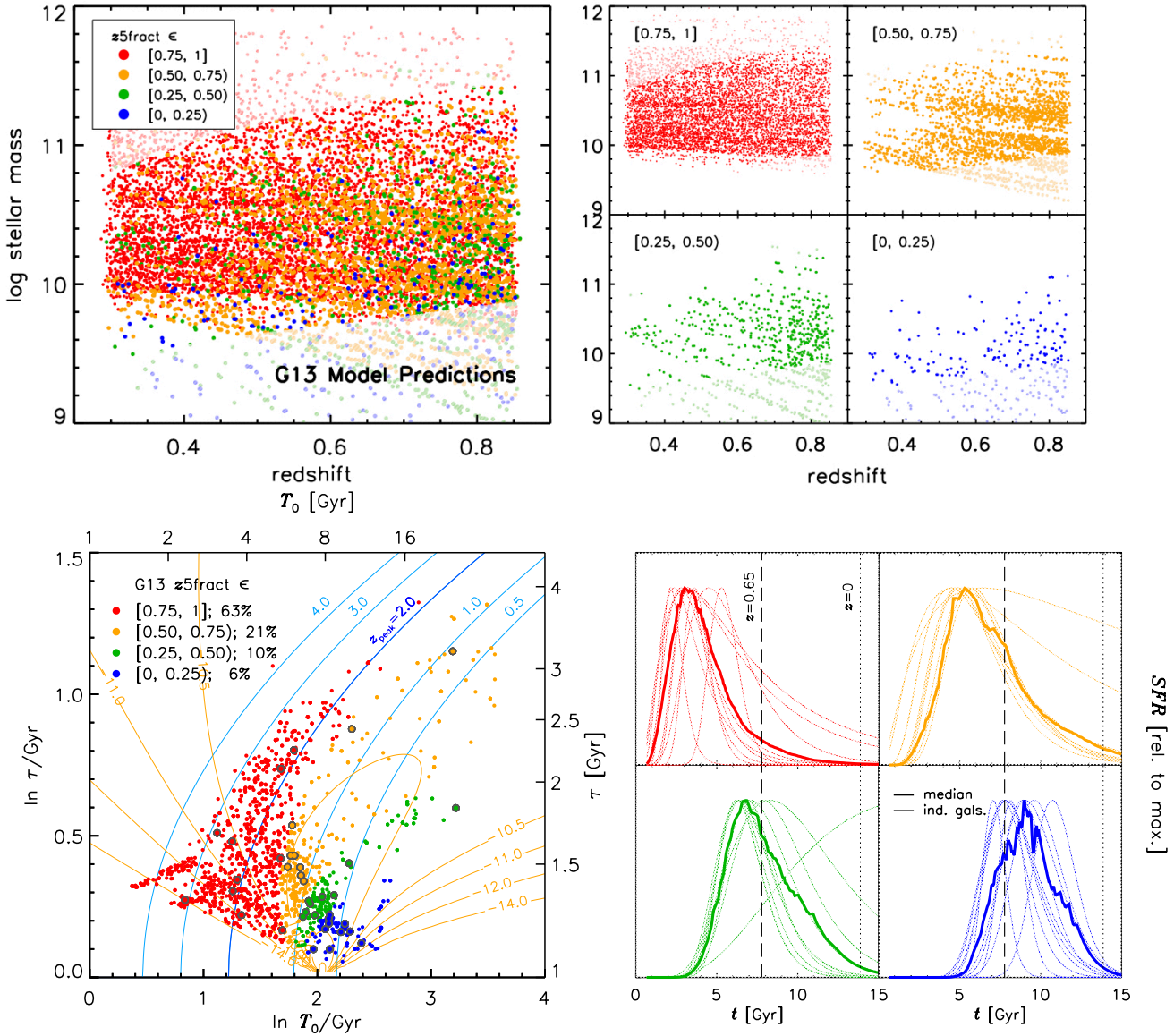

z=5 (1.2 Gyr) → Tmax
800 Myr → 200 Myr
200 Myr → Tobs
log M = 11.0--12.1
N = 1785
log M = 10.5—11.0
N = 8279
log M = 10.0—10.5
N = 9062
log M = 9.0—10.0
N = 3385
log SFR (M⊙yr-1)
z = 5 3 2 1.5 0.9 0.3
T = age of the universe (Gyr)


z5fract > 0.5
z5fract < 0.5
Number
log stellar mass
2000
1800
1600
1400
1200
1000
800
600
400
200
0
9.0
9.5
10.0
10.5
11.0
11.5


young stellar mass (~1 Gyr)
old stellar mass (~5 Gyr)
log stellar mass (2)
log stellar mass (1)
8
9
10
11
12

z5fract = the fraction of stellar mass formed before the final Gyr before observation.




z5fract ∈
[0.75, 1]
[0.50, 0.75)
[0.25, 0.50)
[0, 0.25)
G13 Model Predictions
log stellar mass
redshift
T_0 [Gyr]
[0.75, 1]
[0.50, 0.75)
[0.25, 0.50)
[0, 0.25)
redshift
G13 z5fract ∈
[0.75, 1]; 63%
[0.50, 0.75); 21%
[0.25, 0.50); 10%
[0, 0.25); 6%
$z_{peak}=2.0$
ln τ/Gyr
ln T_0/Gyr
τ [Gyr]
z=0.65
z=0
median
ind. gals.
t [Gyr]
t [Gyr]
SFR [rel. to max.]

Same *z5fract* plots for the densest 10% of CSI sample, by number and mass density

Diversity of SFHs is a weak function of environment, exclusive of rich clusters!