Characterizing Satellite Quenching in The Local Group

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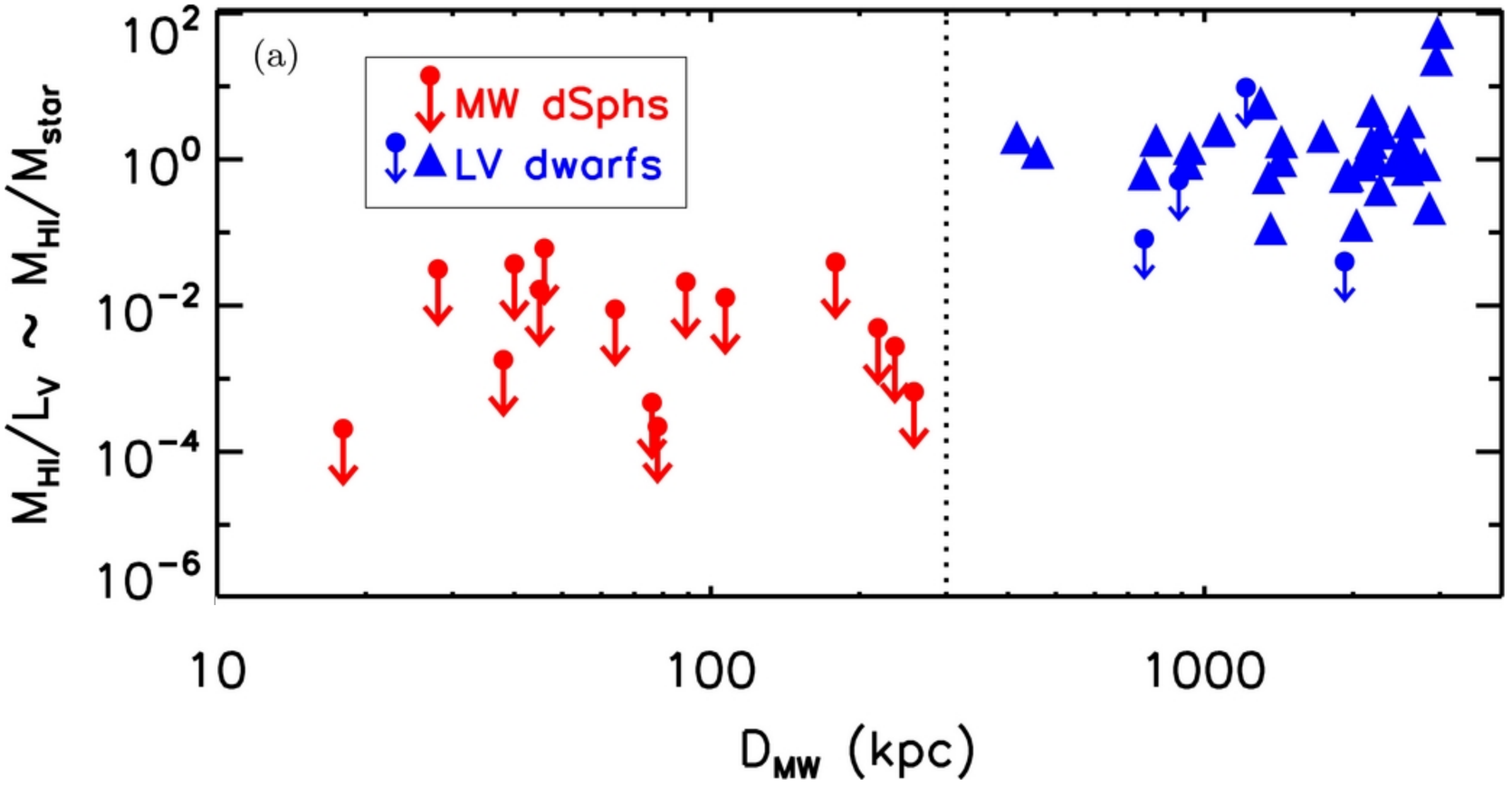
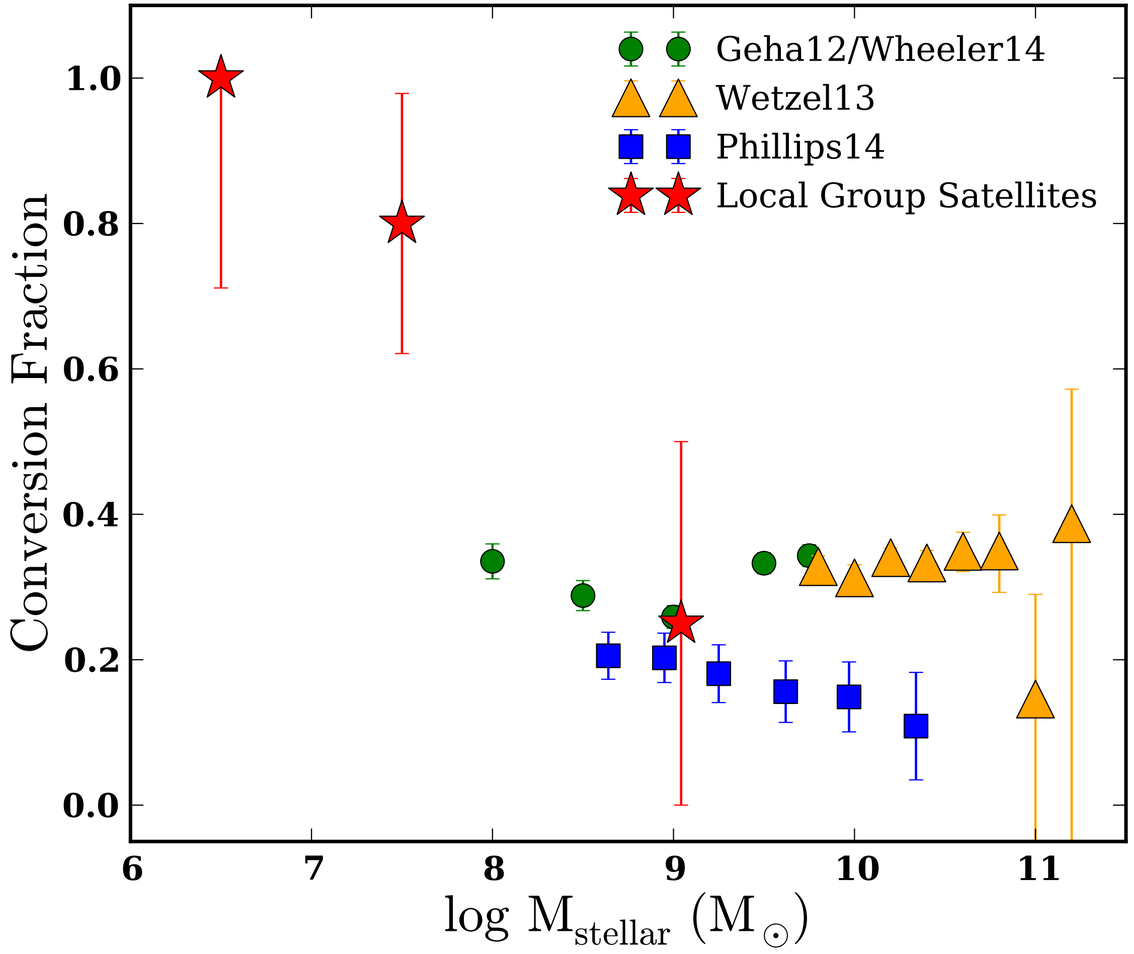
Science in Our Own Backyard with WFIRST
Wednesday, June 19, 2019

Local Volume Dwarf Galaxies



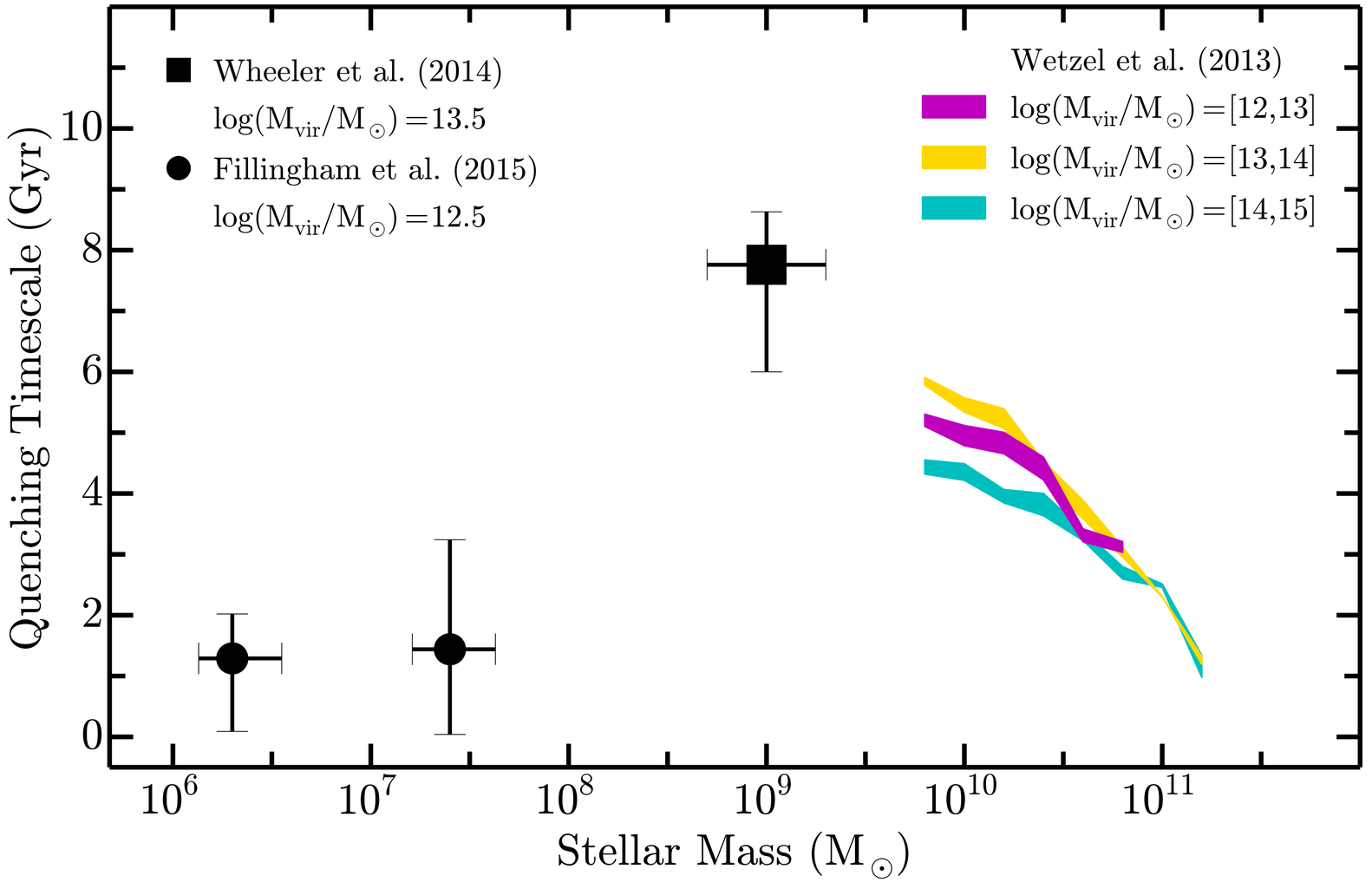
Spekkens et al. (2014)

Satellite Quenching Efficiency



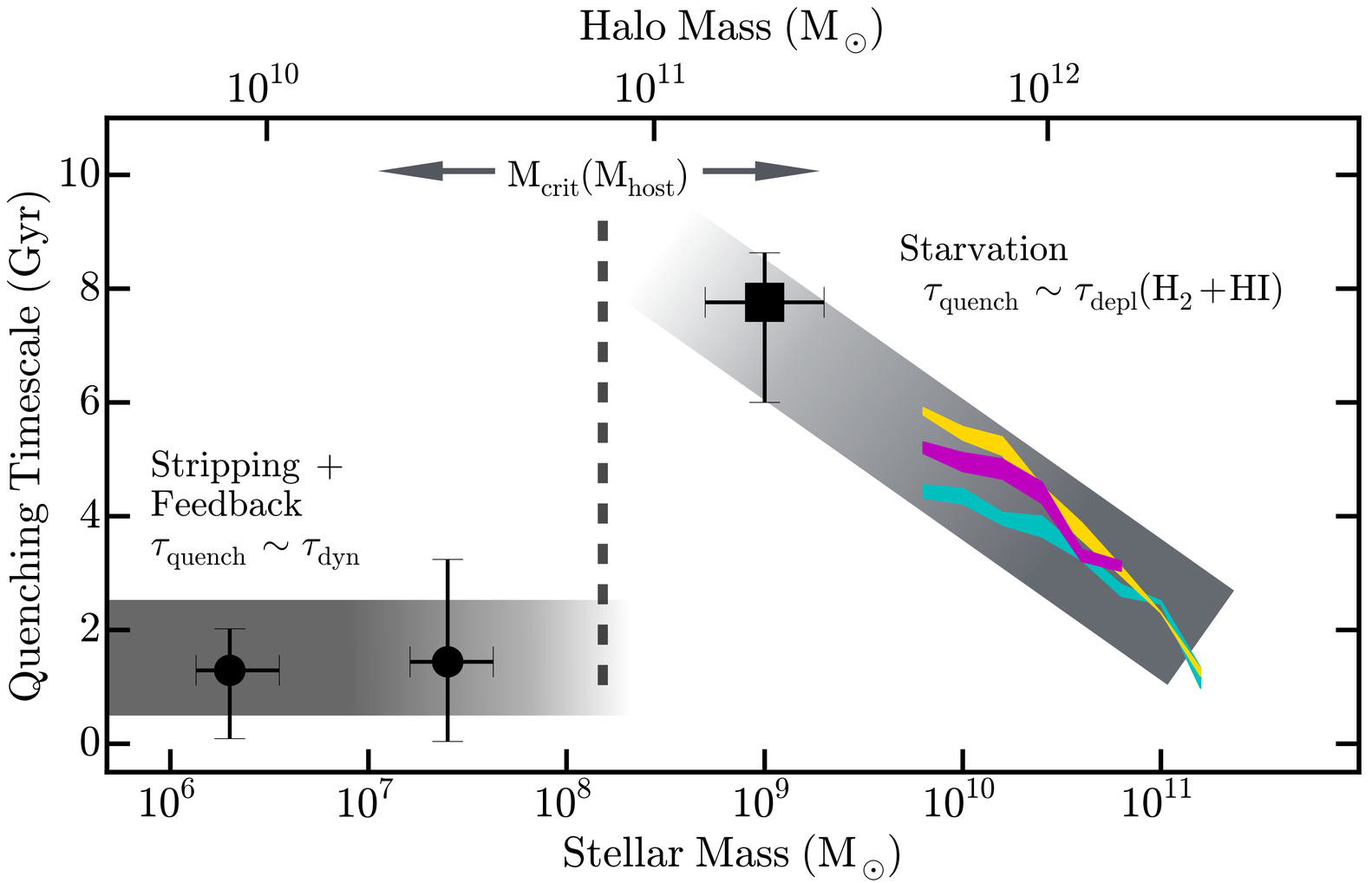
Wheeler et al. (2014)
Phillips et al. (2015)

Satellite Quenching Timescales



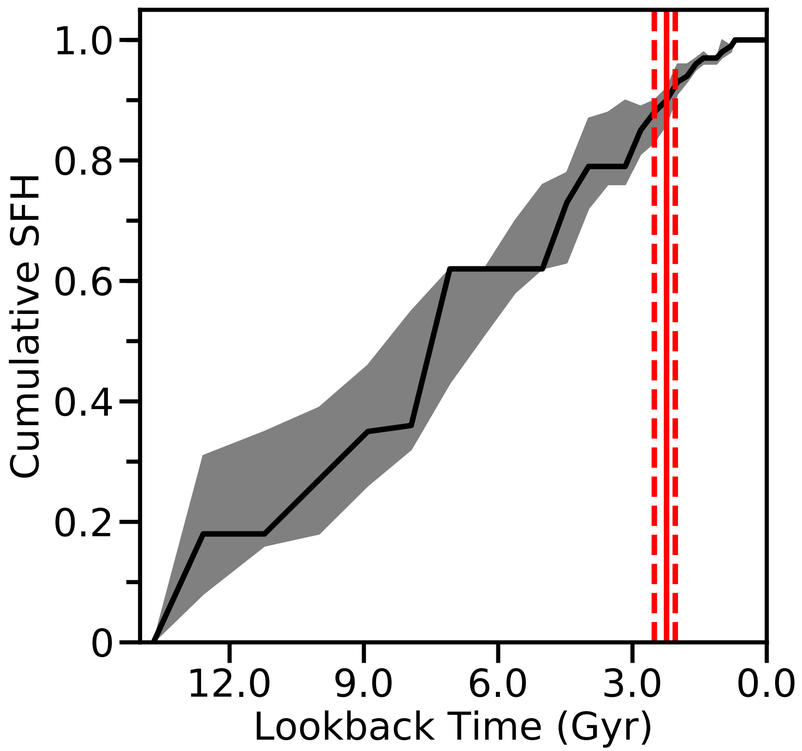
Fillingham et al. (2015)
Wetzel et al. (2013, 2015)
De Lucia et al. (2012)

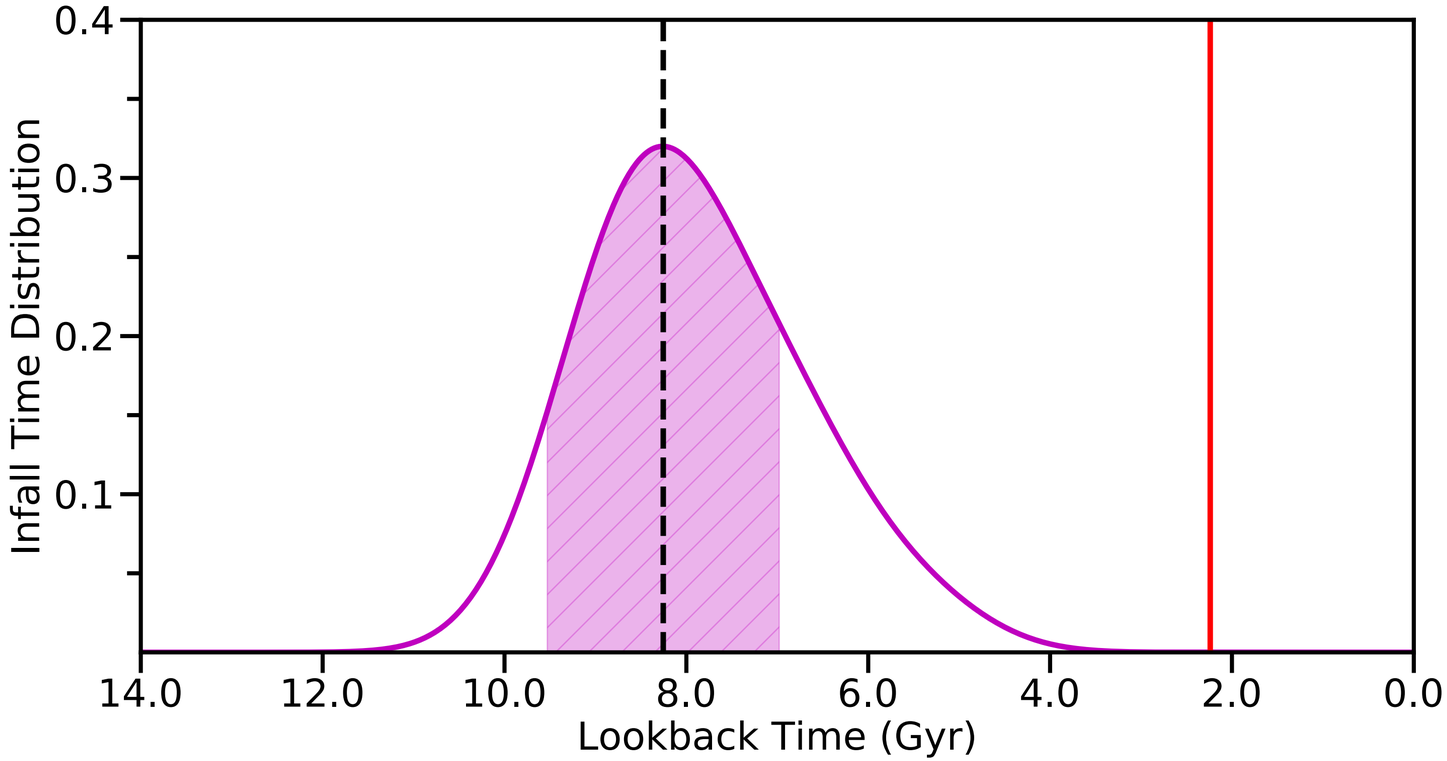
Environmental Quenching



Fillingham et al. (2015, 2016)

Fornax





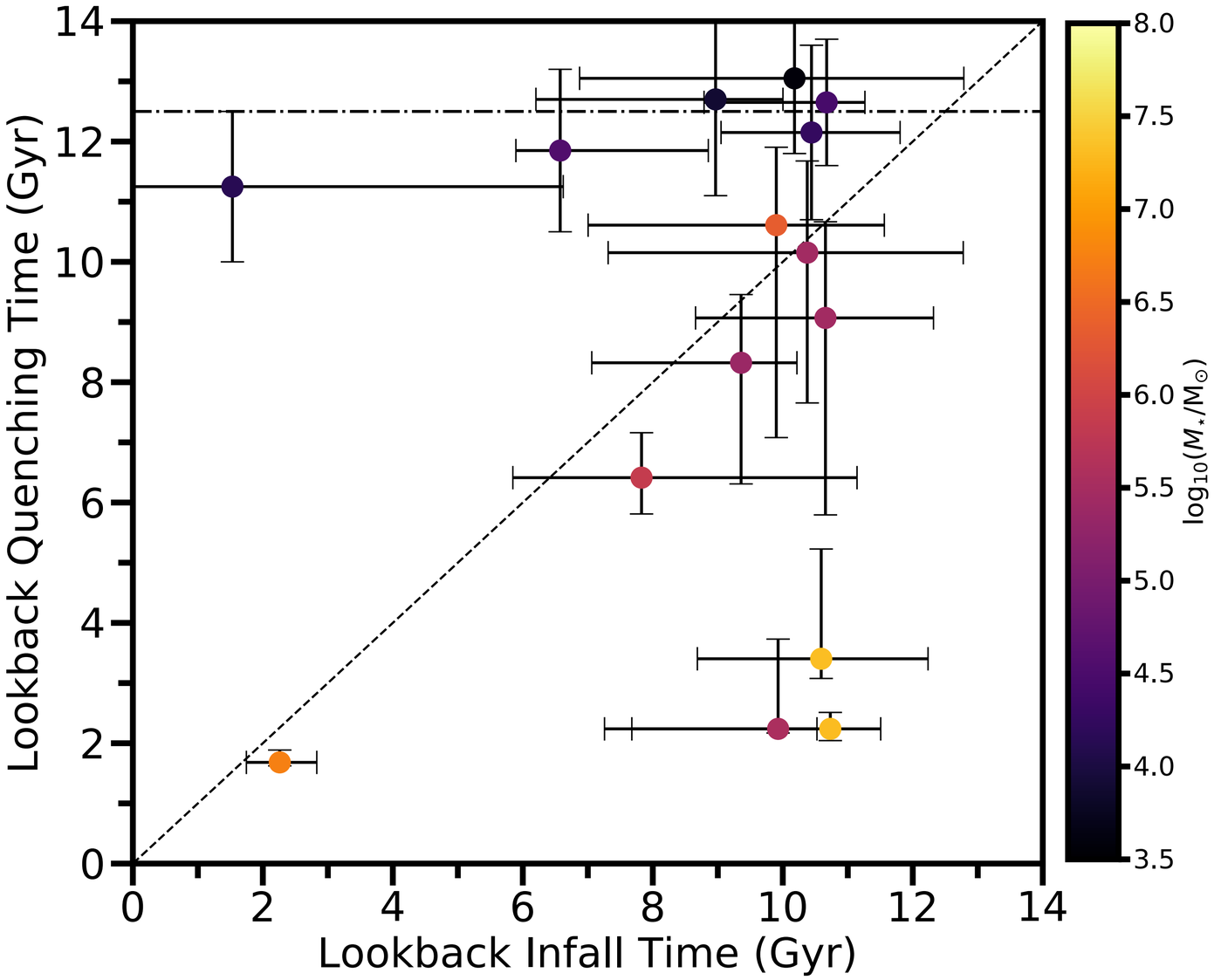
Quenching Times

Infall Times

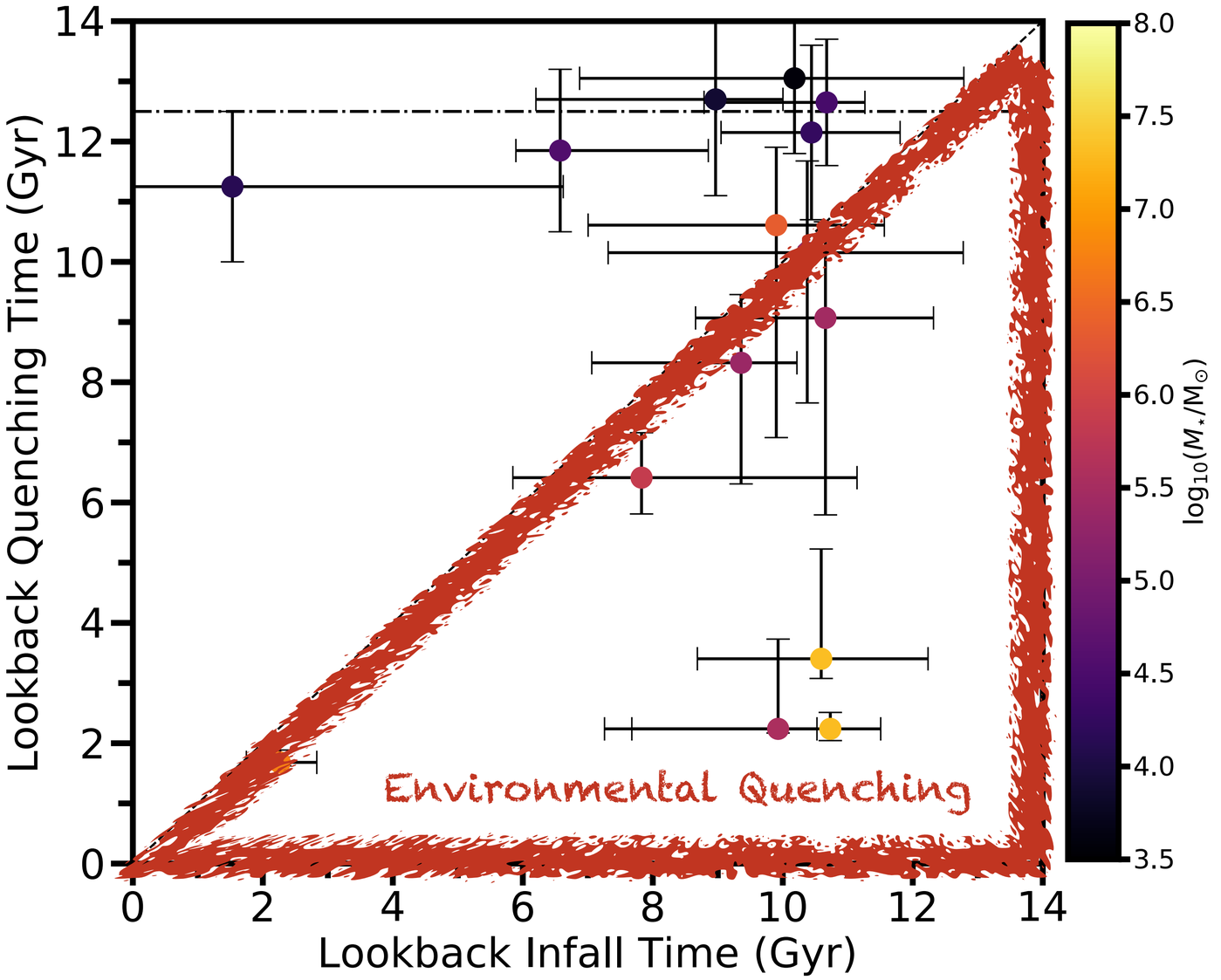
Star Formation Histories – HST, WFIRST

Proper Motions – Gaia, HST, WFIRST

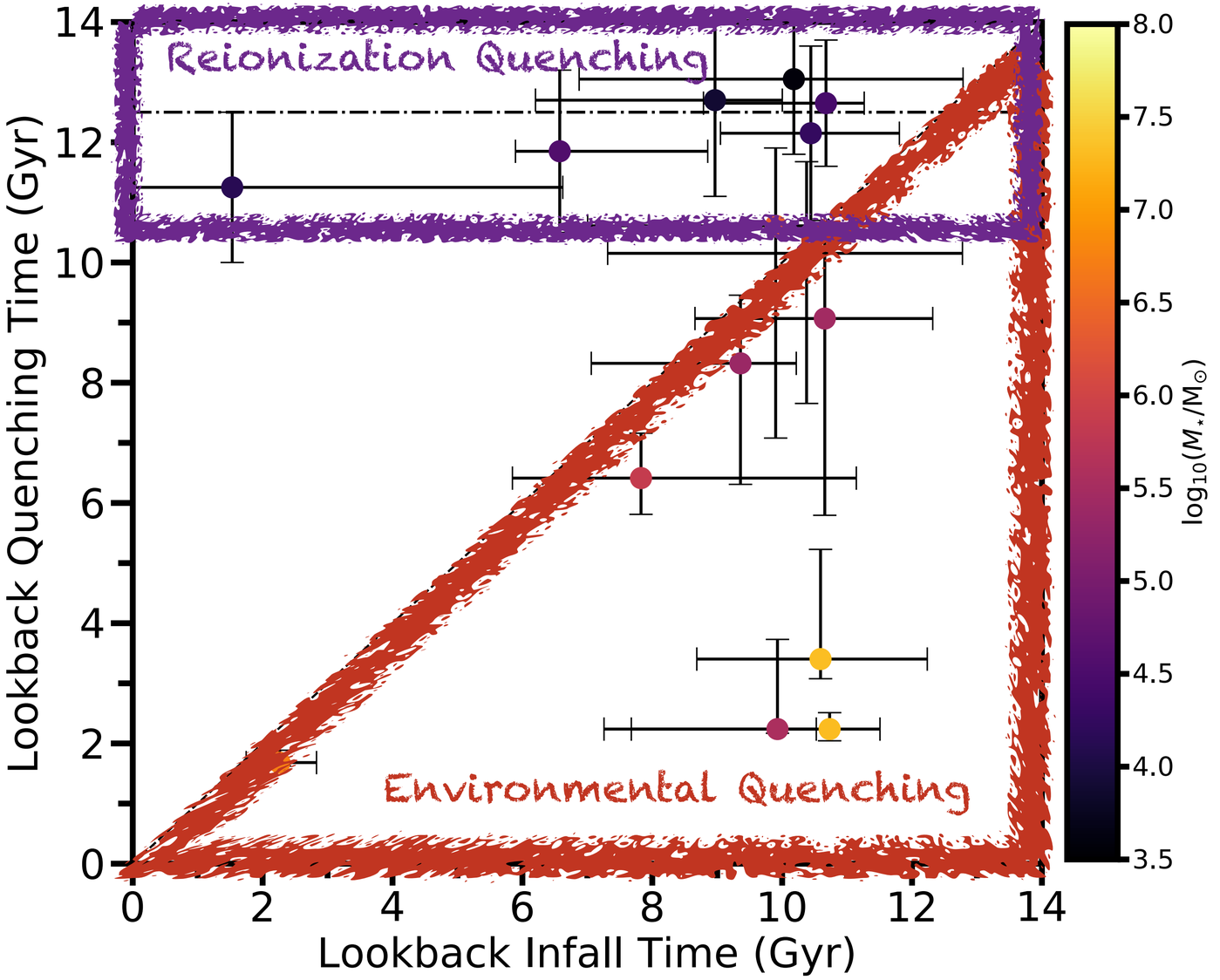
Fillingham et al. (MNRAS submitted, arXiv:1906.04180)
Weisz et al. 2014
Brown et al. 2014



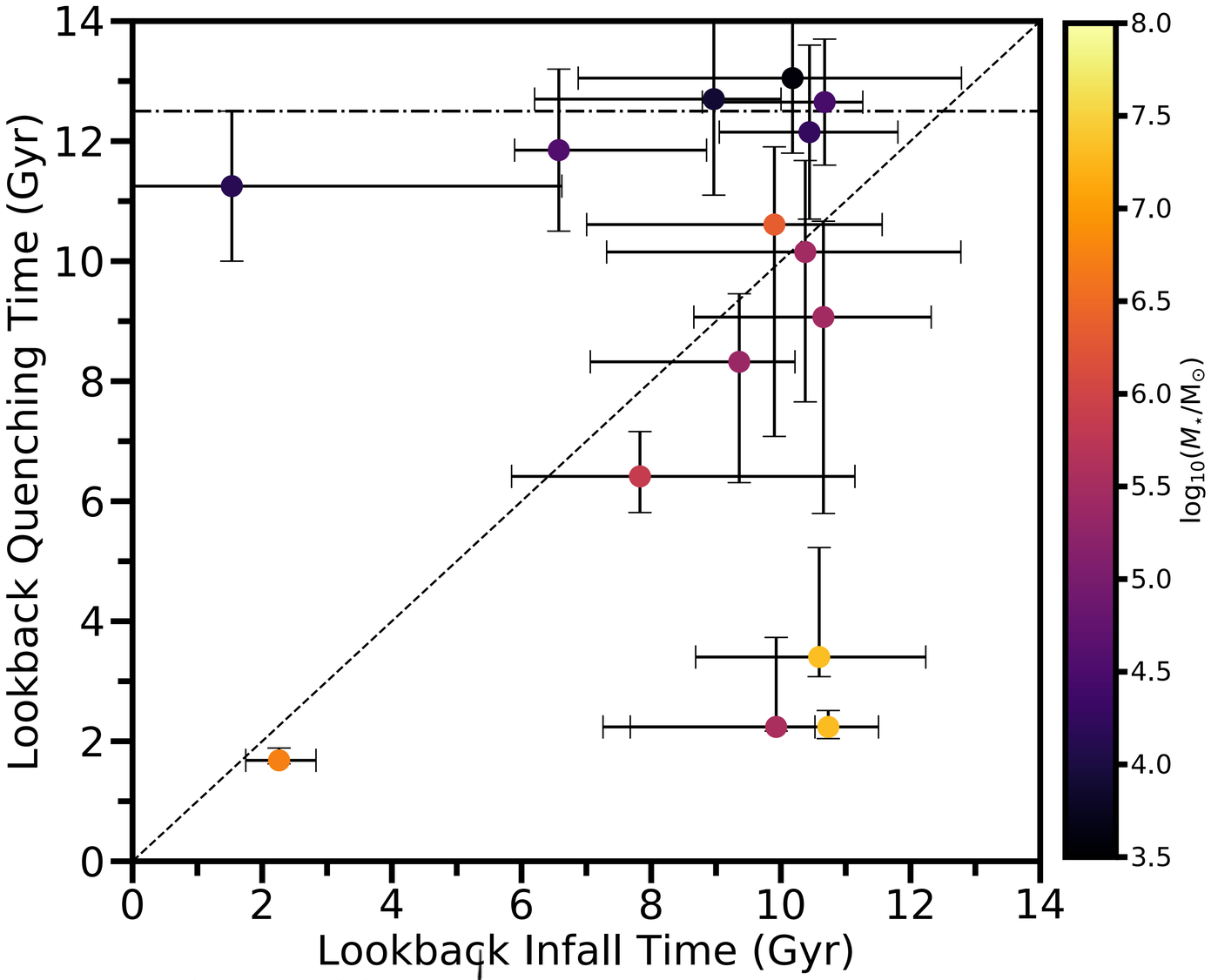
Fillingham et al. (MNRAS submitted, arXiv:1906.04180)



Fillingham et al. (MNRAS submitted, arXiv:1906.04180)

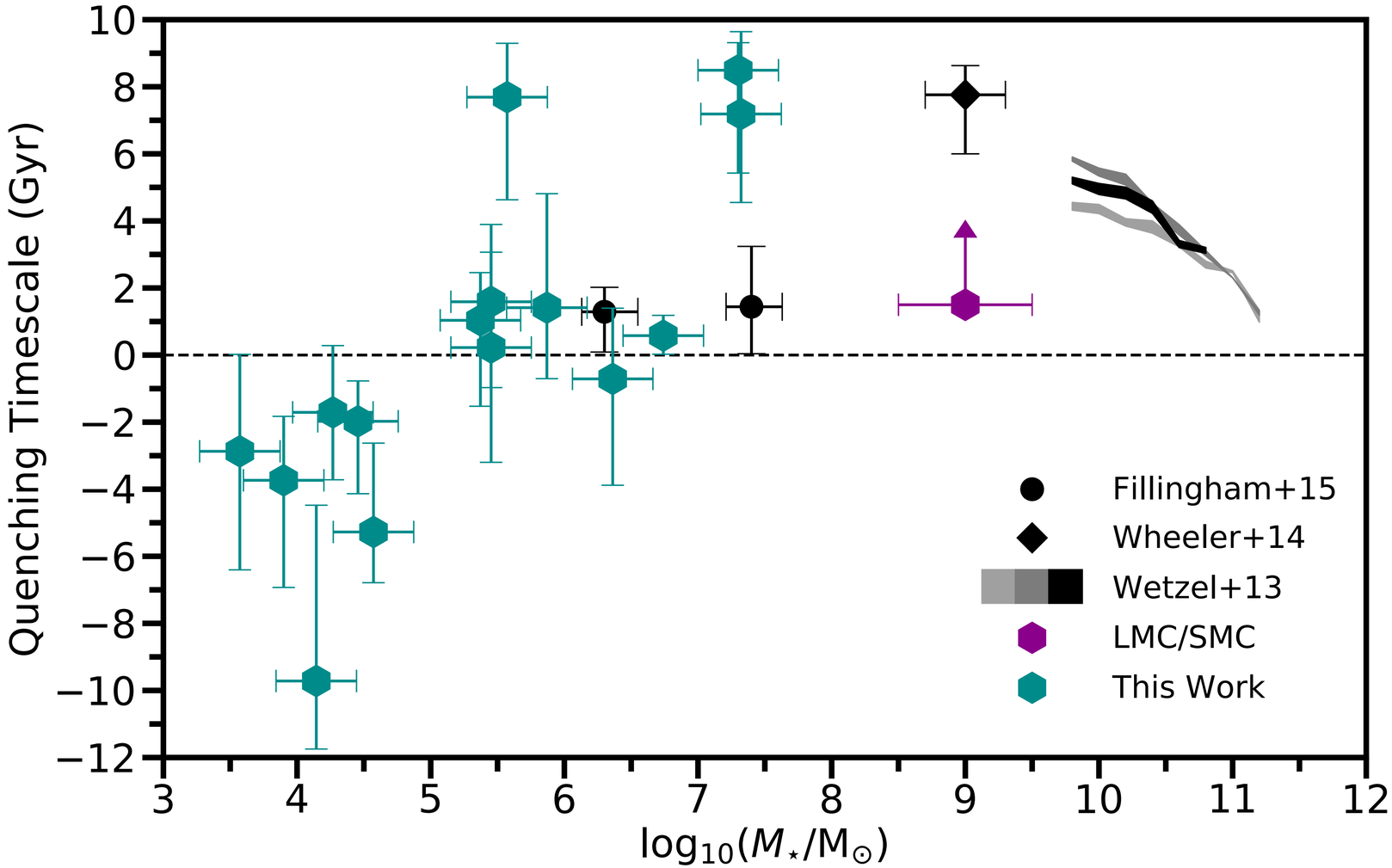


Fillingham et al. (MNRAS submitted, arXiv:1906.04180)



$$\tau_{quench} = t_{infall} - t_{quench}$$

Fillingham et al. (MNRAS submitted, arXiv:1906.04180)



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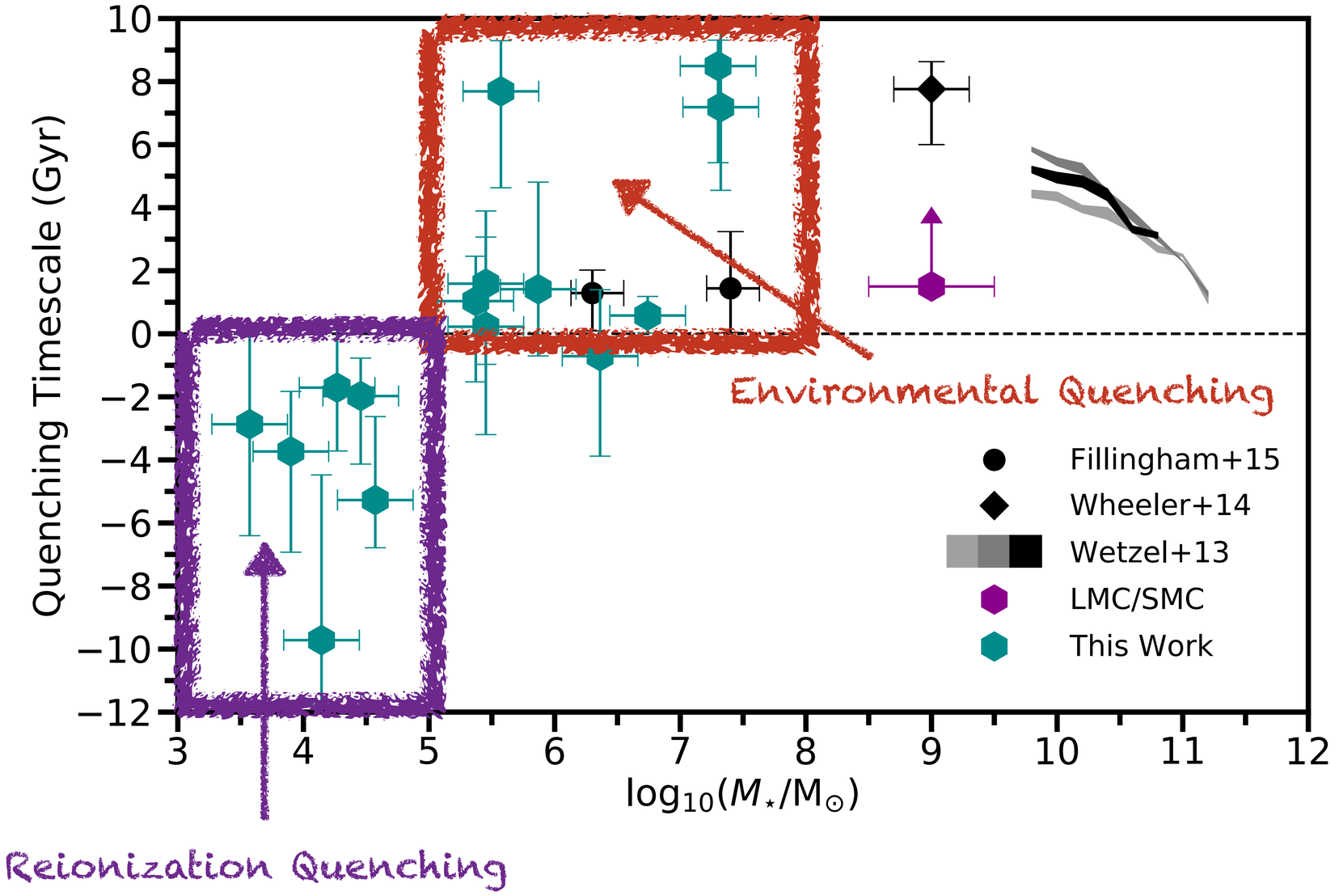
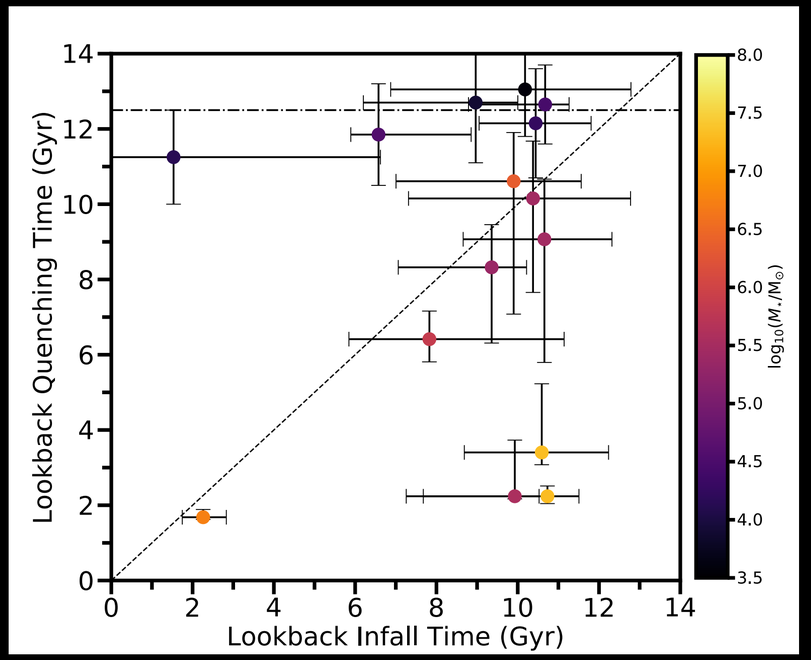


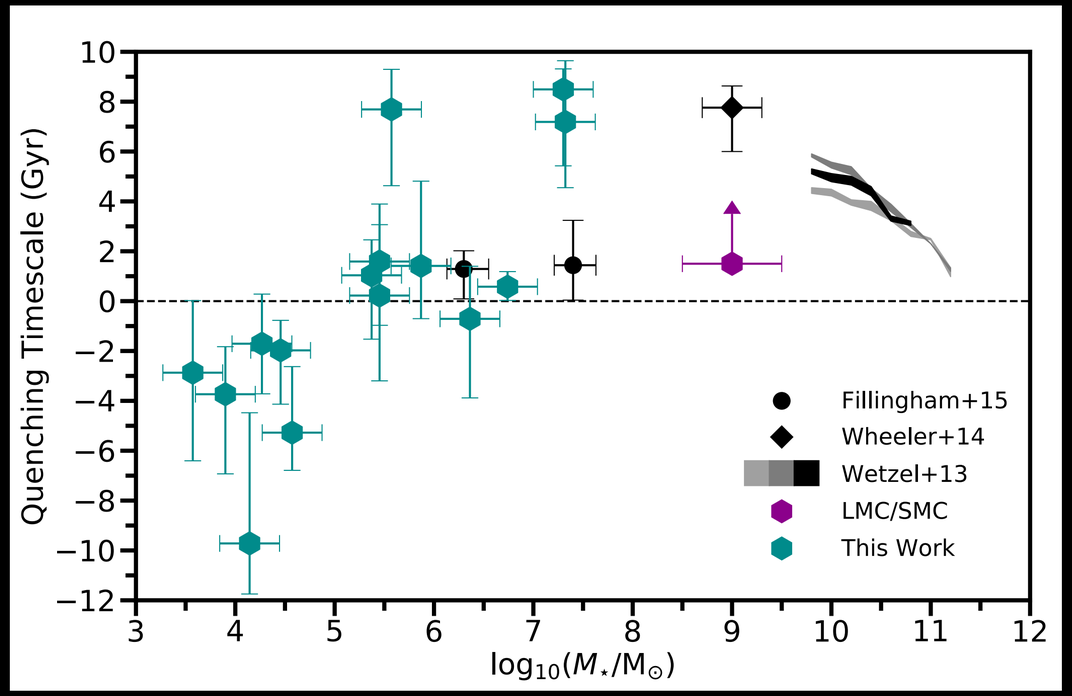
Fillingham et al. (MNRAS submitted, arXiv:1906.04180)

Summary:

- Object-by-object studies around the MW are generally consistent with previous work.

- Space-Based (*WFIRST, JWST, HST*) resolved stellar population studies can strongly constrain the quenching times for LV galaxies.





Thanks!