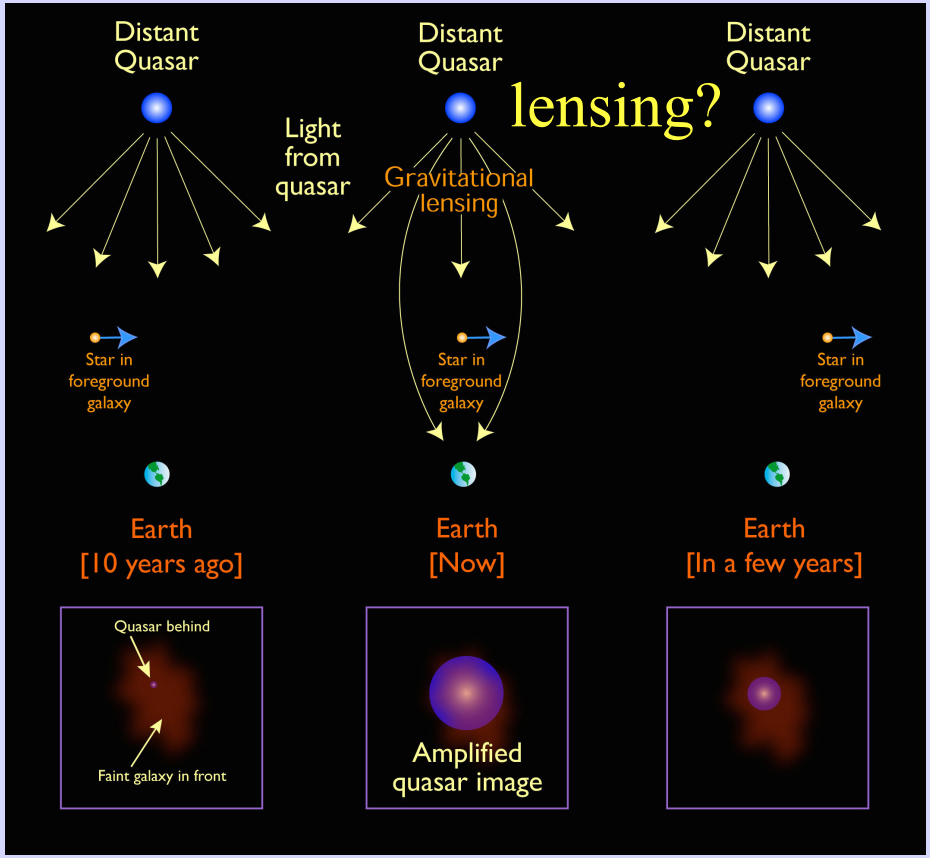
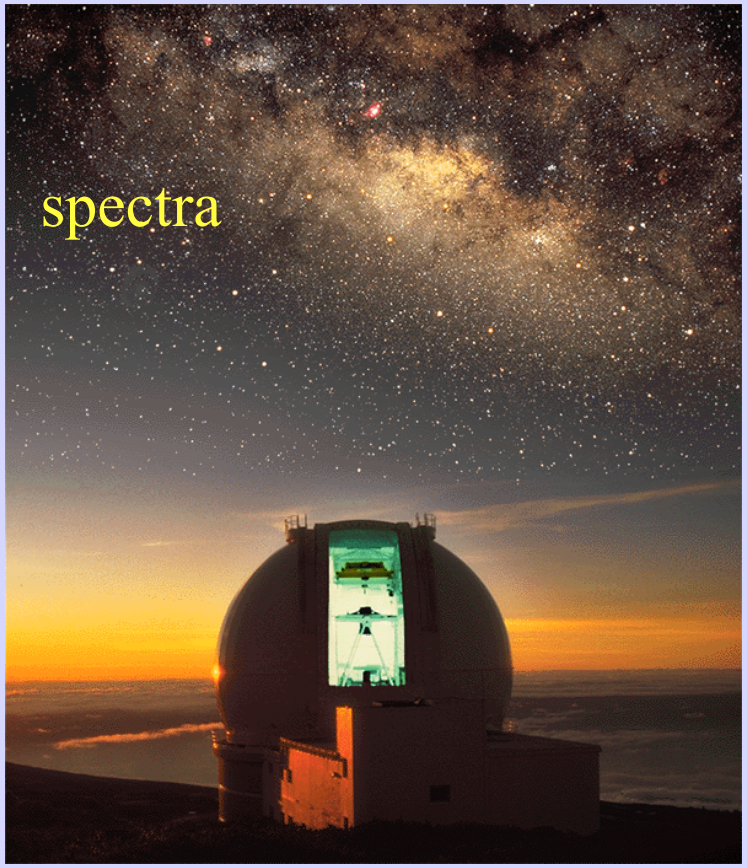
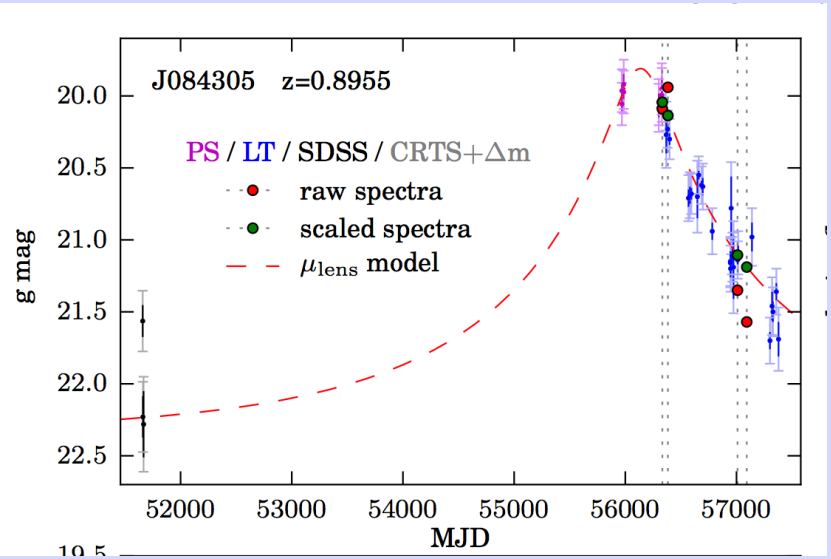
AGN hypervariables:

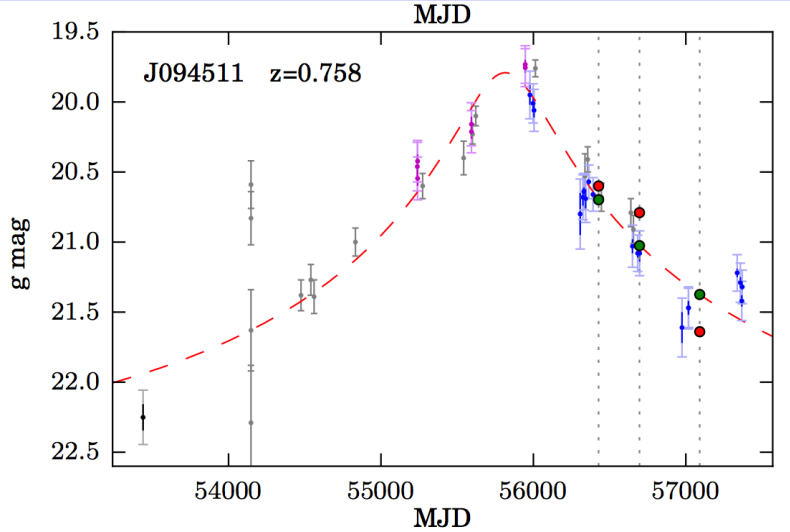
Three models





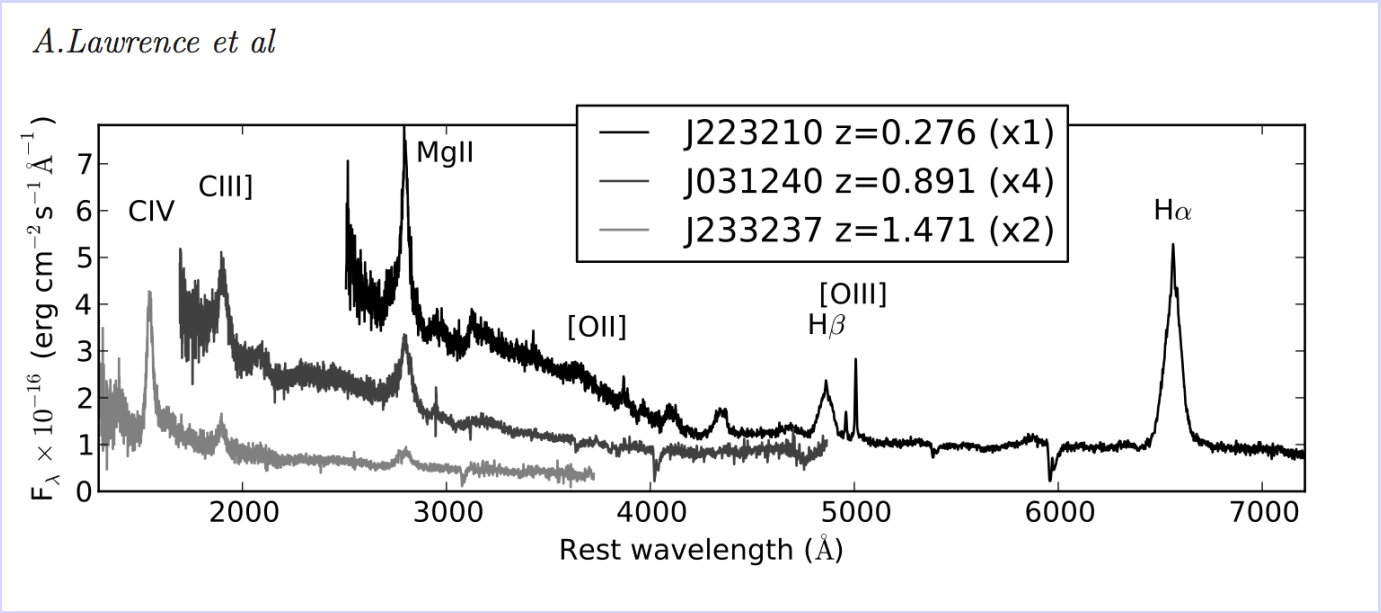
methods so far





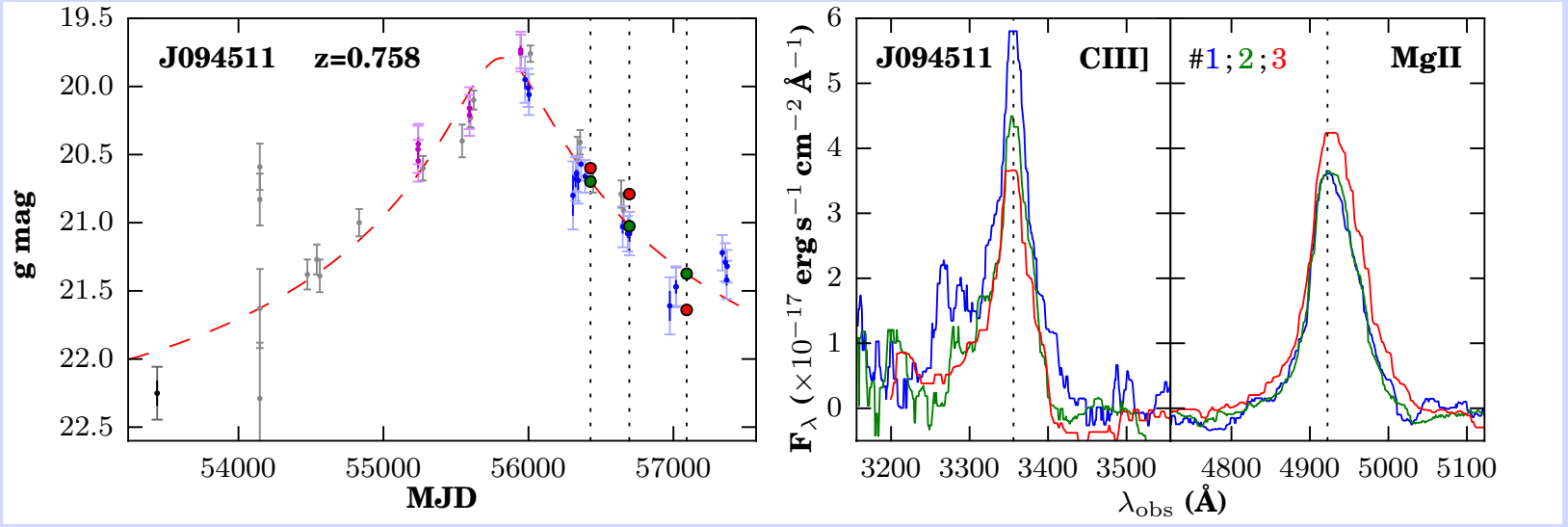
slow: but may be missing sharp peaks

Lawrence et al 2016
Bruce et al 2017



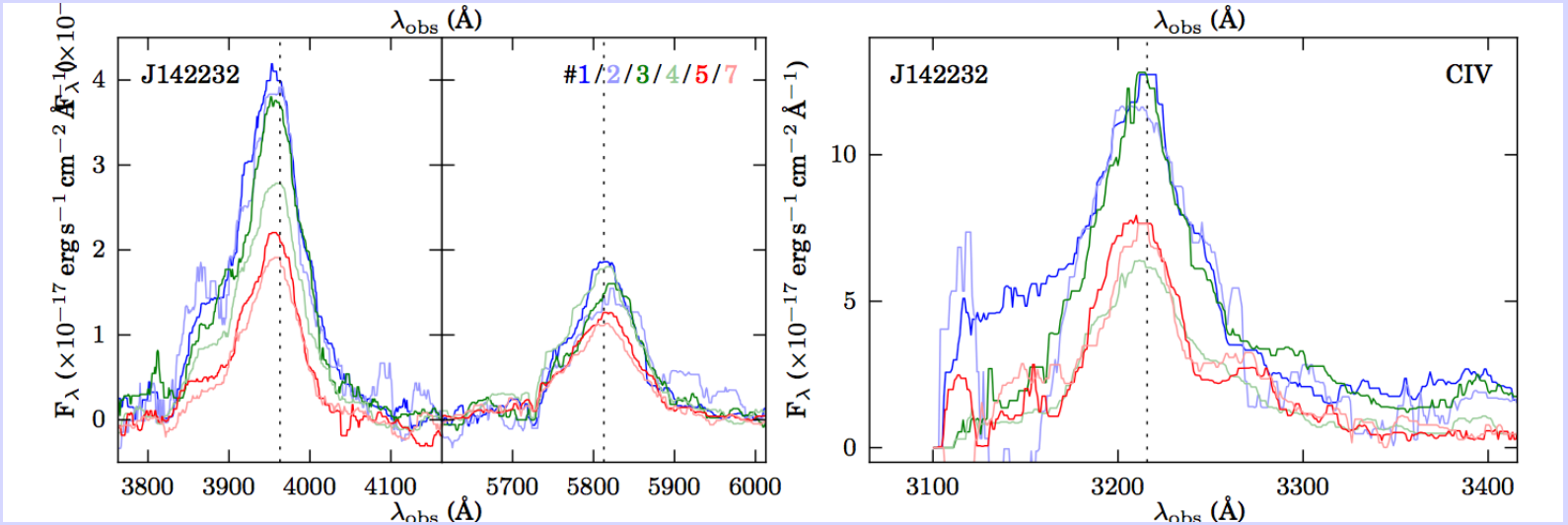
mulens:
easy to spot

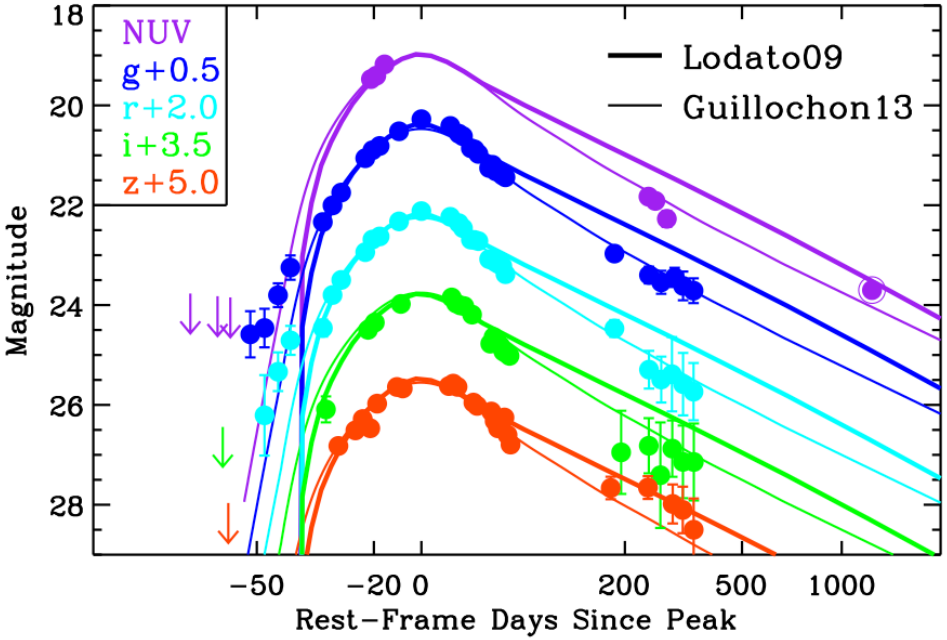
look like
normal AGN



so far, only have spectra **after peak**

continuum and BLR evolve differentially

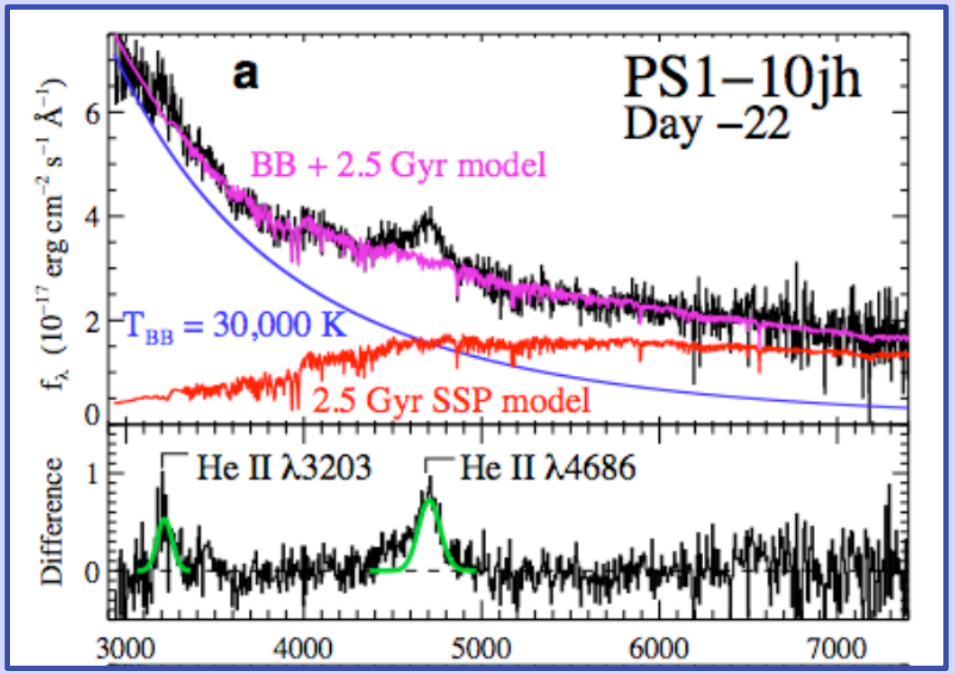




TDEs:
fast rise, slow decay

Gezari et al 2012, 2015

Weird PS1-10jh spectrum!



Arcavi et al 2014

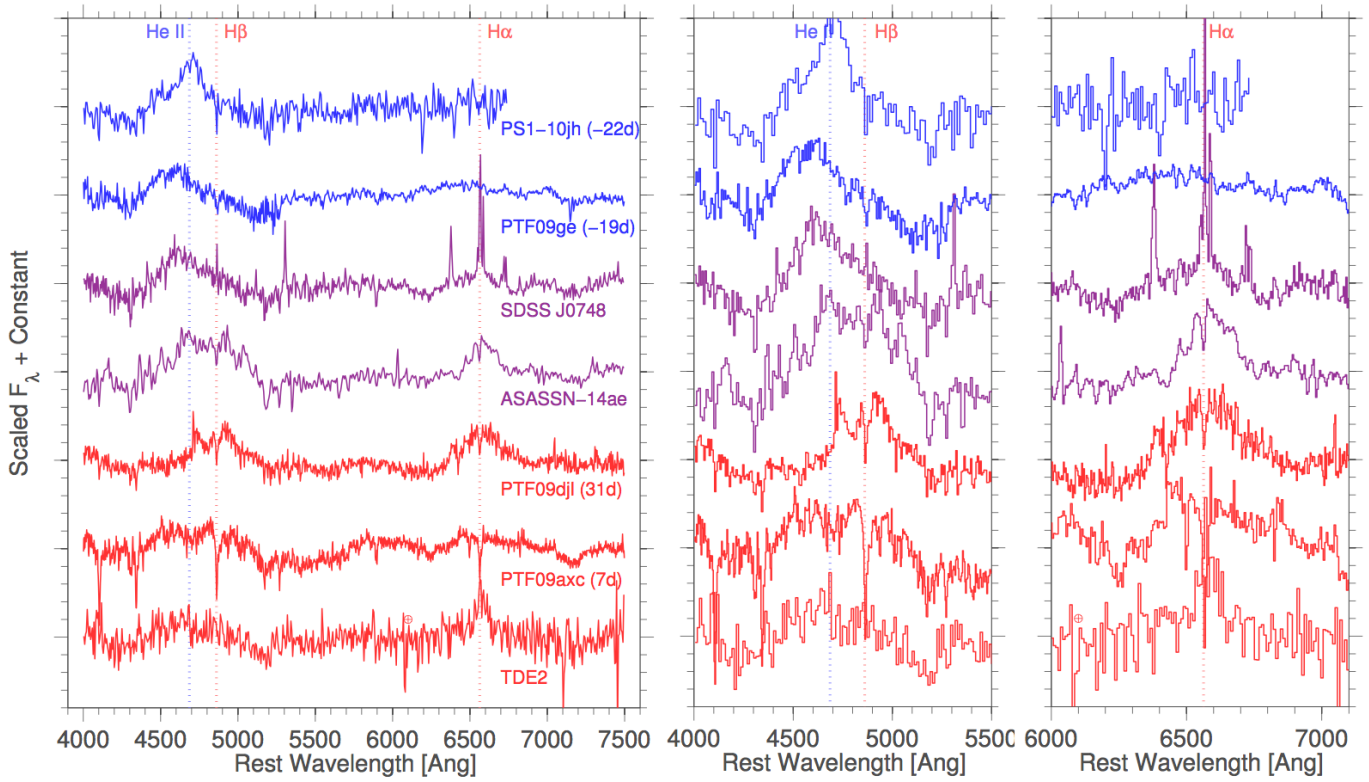
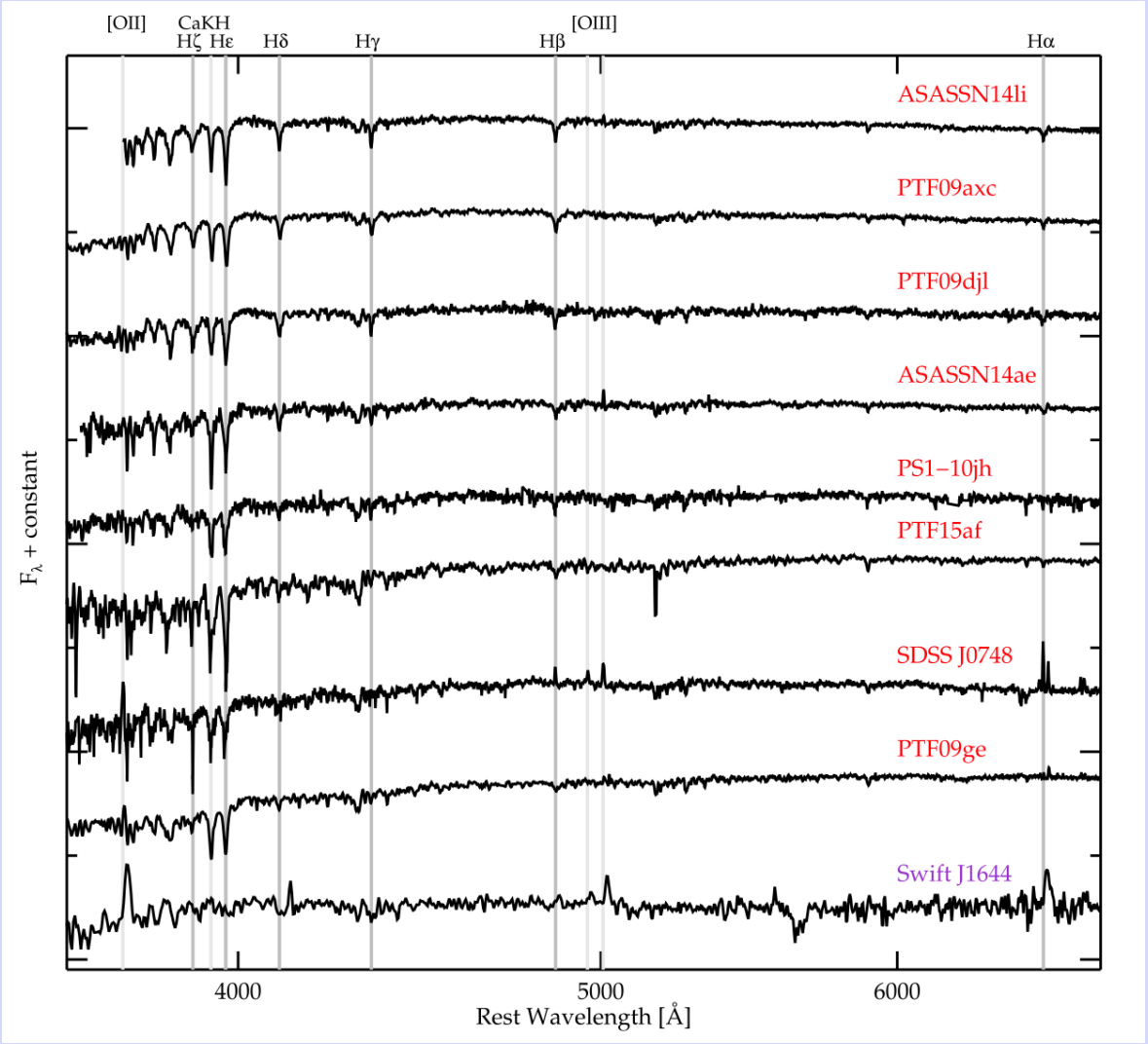


Figure 14. Continuum-subtracted spectra of our three PTF TDE candidates together with PS1-10jh (G12), ASASSN-14ae, SDSS J0748 (Wang et al. 2011) and TDE2 (van Velzen et al. 2011). Phases are shown relative to peak. A progression from He-rich to H-rich events is apparent. The middle and right panels present more detailed views of the regions around the marked lines.

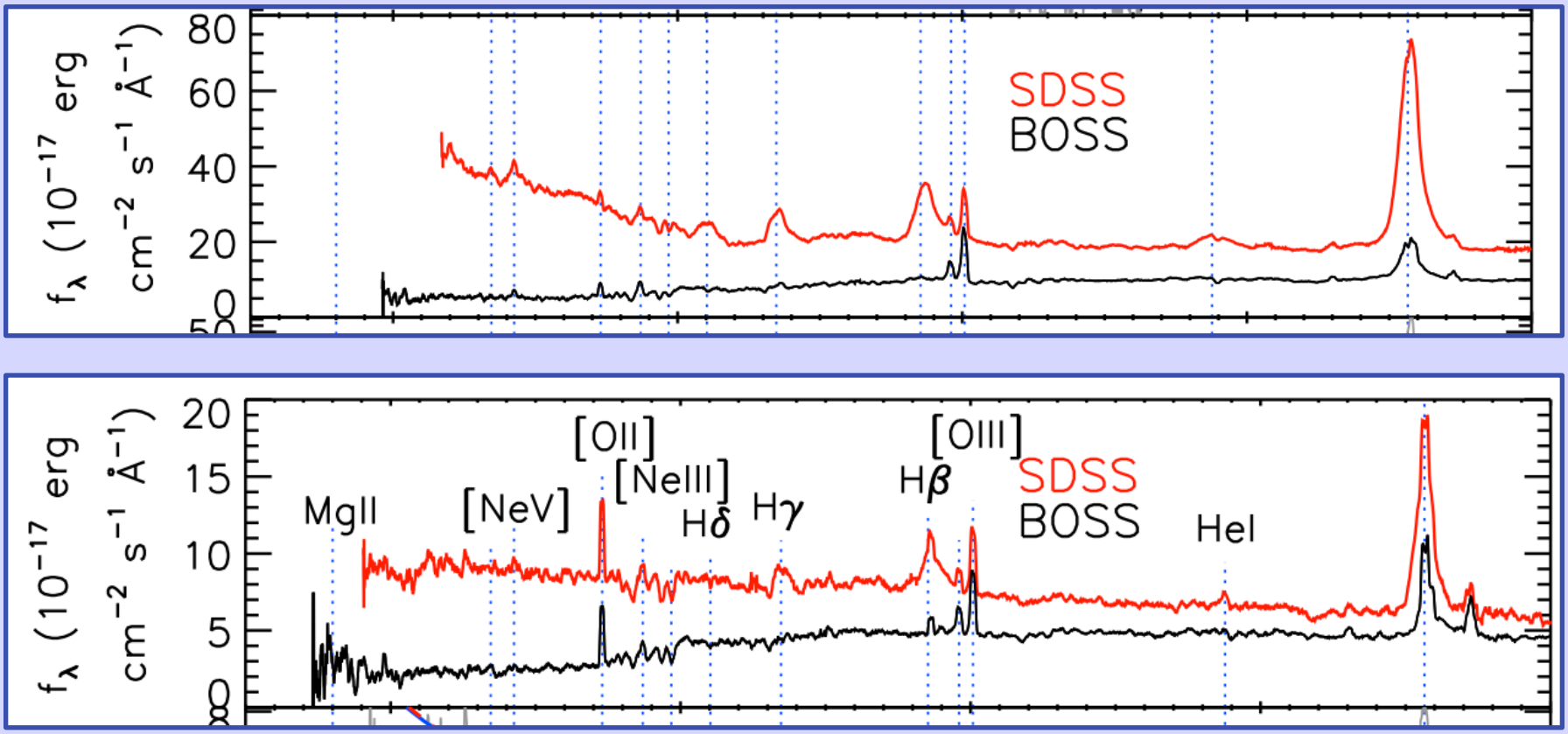
TDEs have He/H range?

French et al 2017



TDEs have post-starburst hosts?

MacLeod et al 2015



CLQs:

pre-existing AGN: not TDE

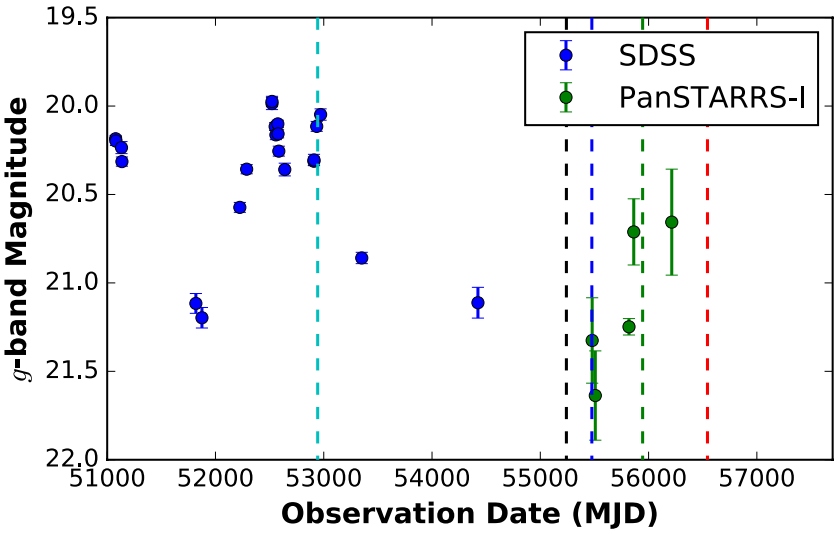
often nearby: not mulens

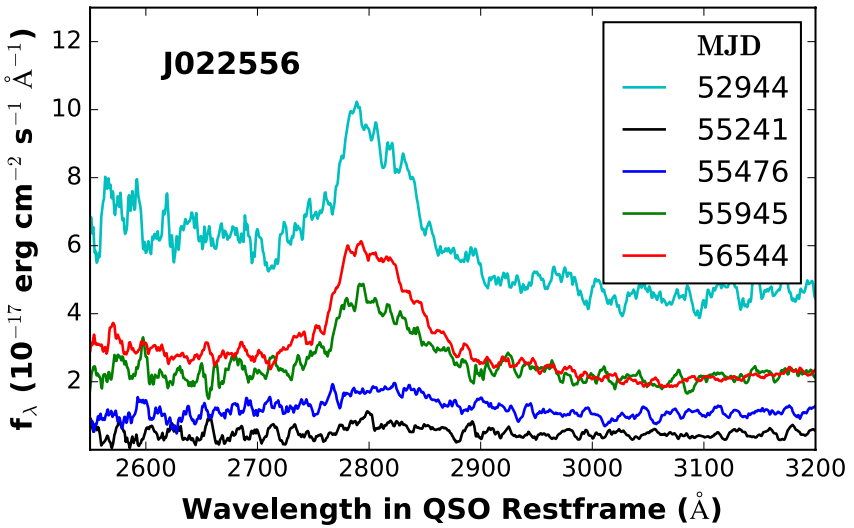
timescales challenge accretion discs

rare weirdos?

or do all AGN do sometimes?

Homan et al in prep





light curves more erratic than TDE or mulens

BLR responds dramatically very different to standard reverb

Desires:

setting hypervariables in context
catching peak of rare high-amp mulens events
catching fast TDEs
getting spectra pre-peak
predictive microlensing

Worries:

TDEs rarer than expected
TDEs very low total E
CLQs disturbingly fast
mulens small BLR sizes