Reionization at z≃2–6 — Whose dunnit: Dwarfs or Giants?

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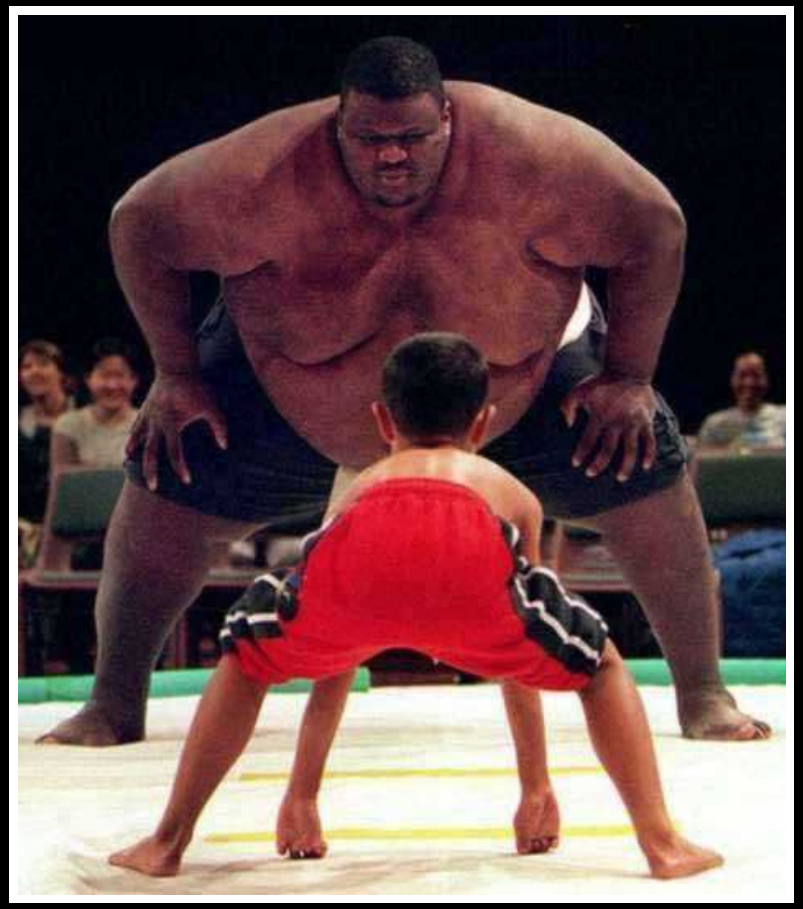
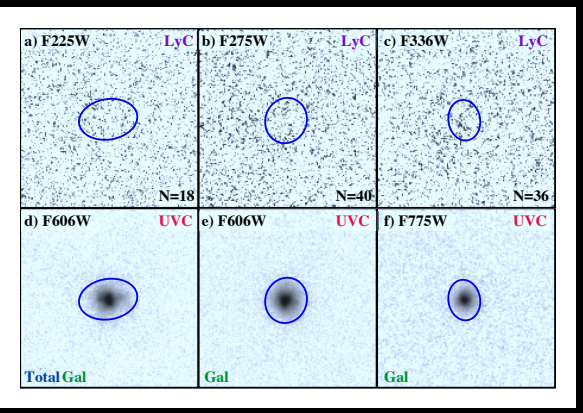


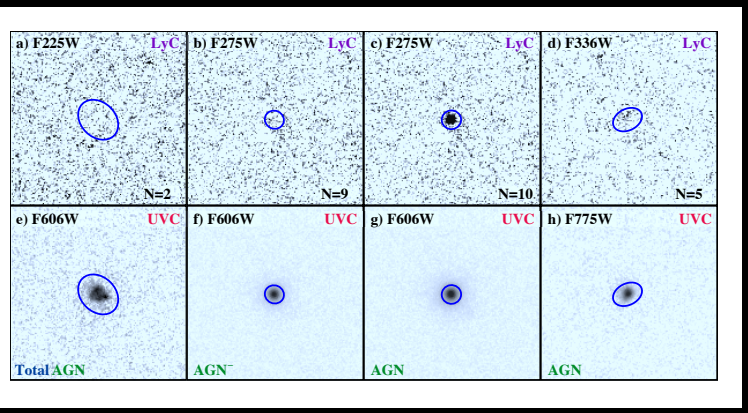
Summary Talk Princeton Bahcall Lunch, Princeton (NJ; via Zoom); Tu. Nov. 10, 2020

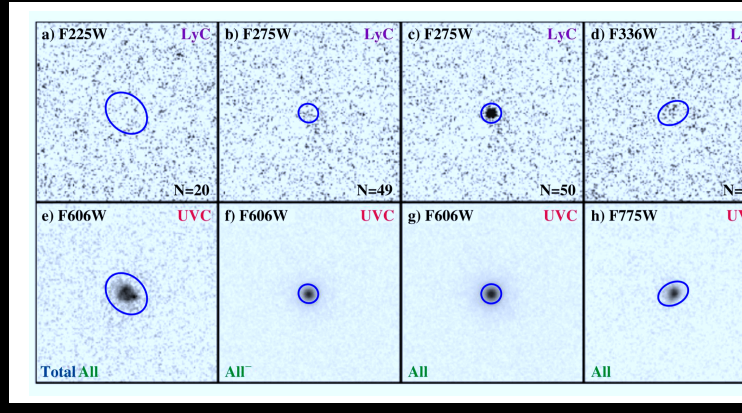
Talk is on: http://www.asu.edu/clas/hst/www/jwst/jwsttalks/princeton20_Bahcall_lunch.pdf

Answer: Weak AGN at z≃2.3–3.5, but galaxies with $<f_{esc}>\simeq 0.4$ at z≃6

HST WFC3 UVIS image stacking of galaxies & weak AGN at z≃2.3–3.5:

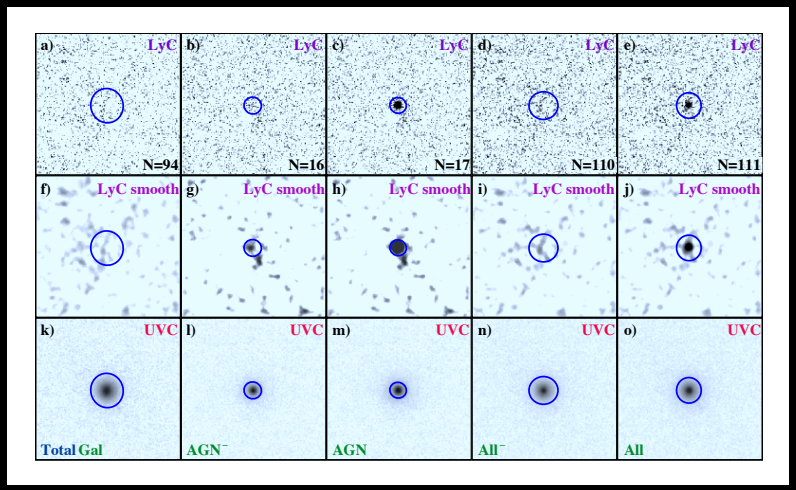


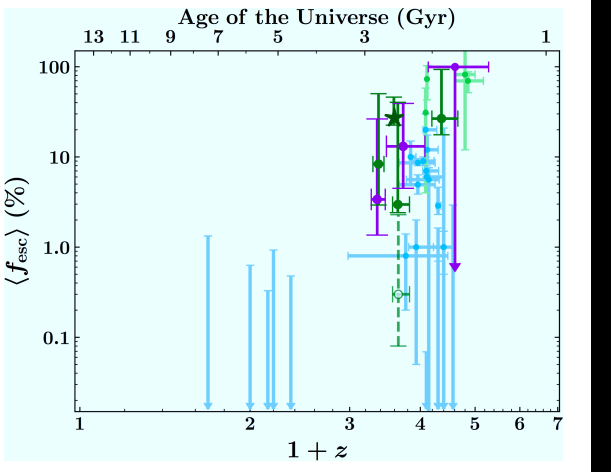


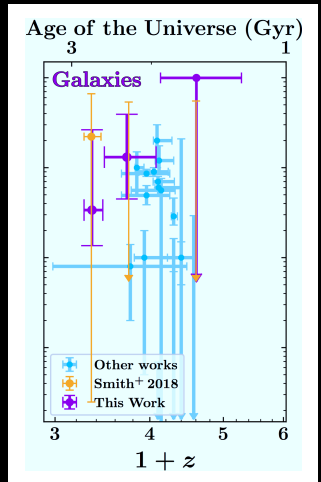


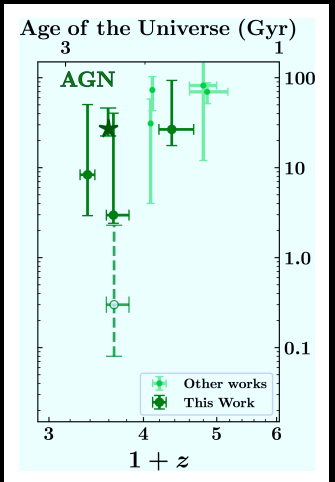
B. Smith et al. (2018, ApJ, 853, 191; 2020 ApJ, 897, 41):

- Weak AGN (1 out of 17) dominate reionizing flux at z≃2.3–3.5!
- Faint galaxies (94 objects) in GOODS-N+S contribute marginal LyC flux.

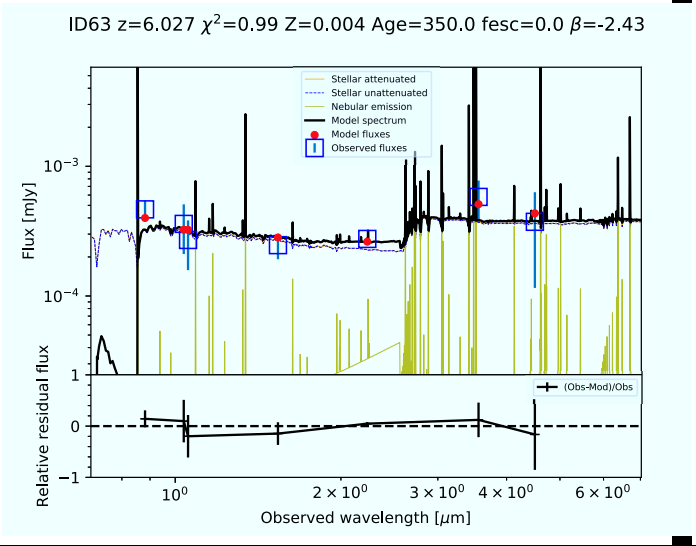


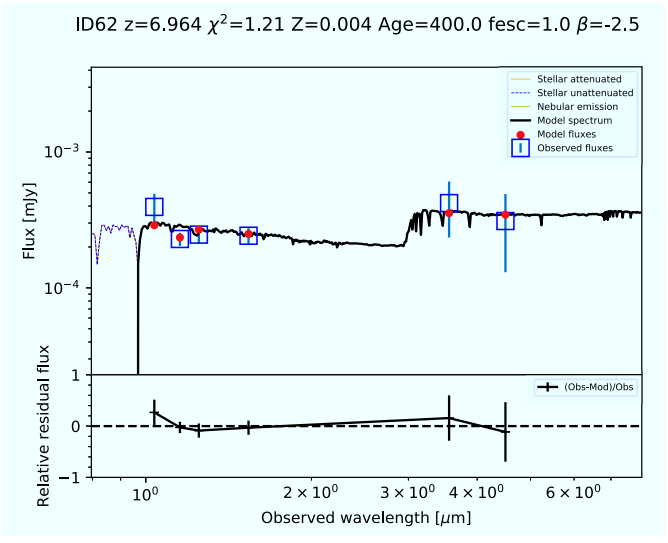


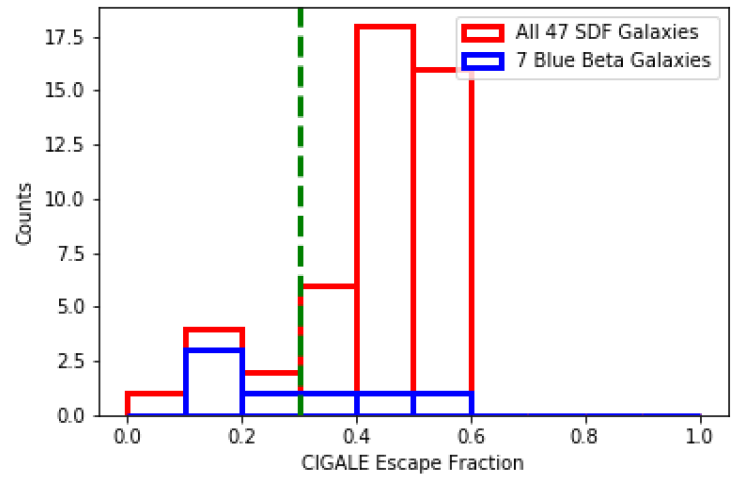




- One lucky AGN has f_{esc} ≃24±4%, higher than most galaxies.
- Ensemble LyC of 111 objects has f_{esc} ≃3–30% at z≃2.3–3.
- Large (IGM τ induced) errors, but f_{esc} trending higher with redshift?

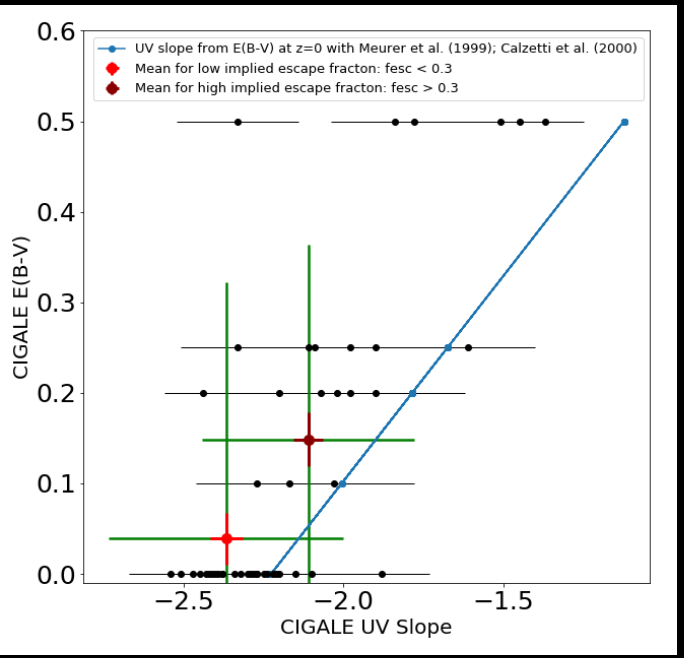


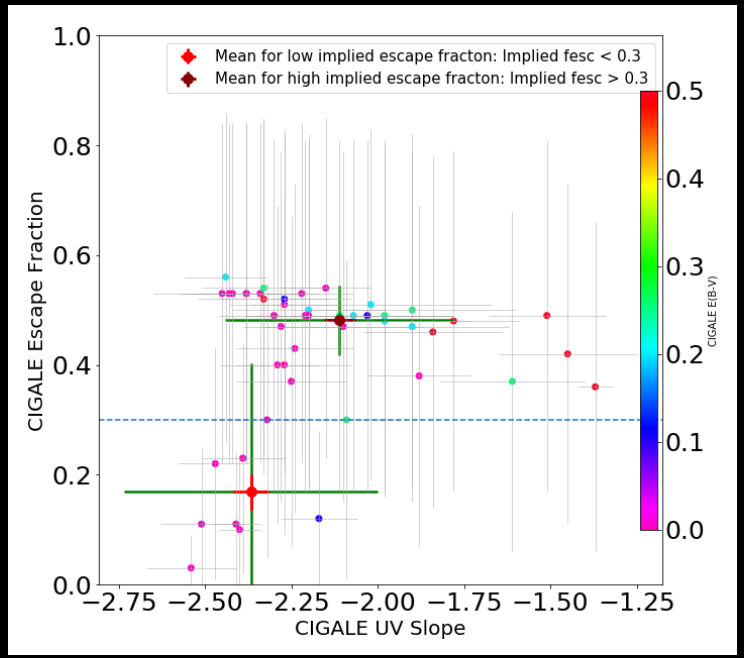


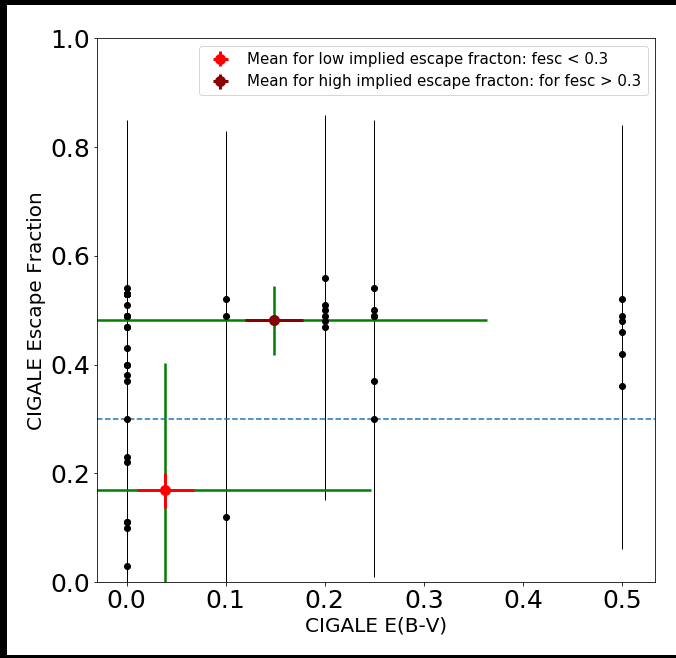


J. Jeon et al. (2020, astro-ph/2011; AJ subm): 47 SDF Lyα galaxies at z$\simeq$6:

- CIGALE fits of Subaru-HSC/WFC3-IR/Spitzer SEDs: $<f_{esc}>\simeq$0.4 at z$\simeq$6.







- CIGALE model E_{B-V} vs. UV-slope offset from Calzetti/Meurer z$\simeq$0 relation: JWST NIRSpec targets!
- f_{esc} may trend *higher* for redder β-slopes and higher E_{B-V} (!): Older, dustier SEDs have more ISM holes?