

Reference:

A. U. Enders, D. J. Bomans and A. Wittje, 2023,
A&A, 672, A11

doi: 10.1051/0004-6361/202245167



DFG Deutsche
Forschungsgemeinschaft
German Research Foundation



Lyman Continuum Emitter candidates from Hell

Escape of Lyman radiation from galactic labyrinths
Kolympari, Crete | April 17th – 21st, 2023

Adam Enders | AIRUB
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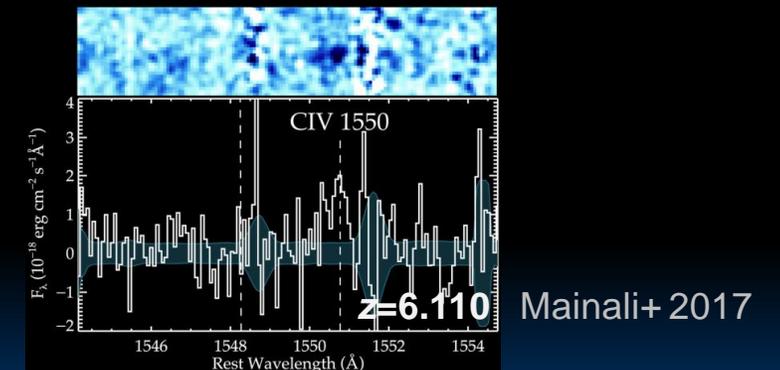
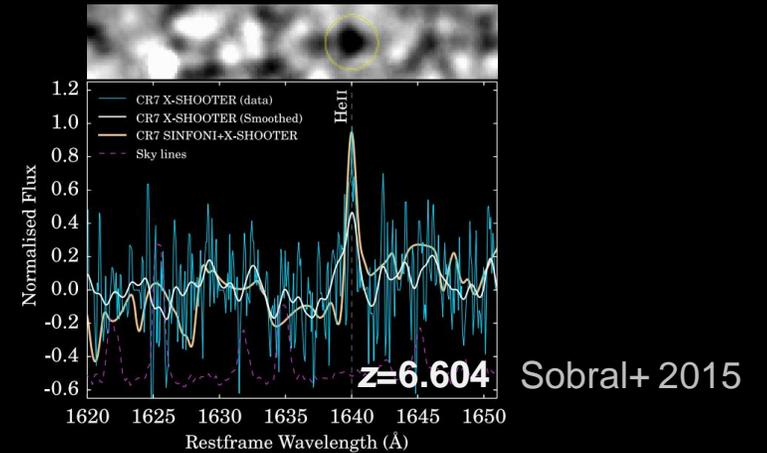
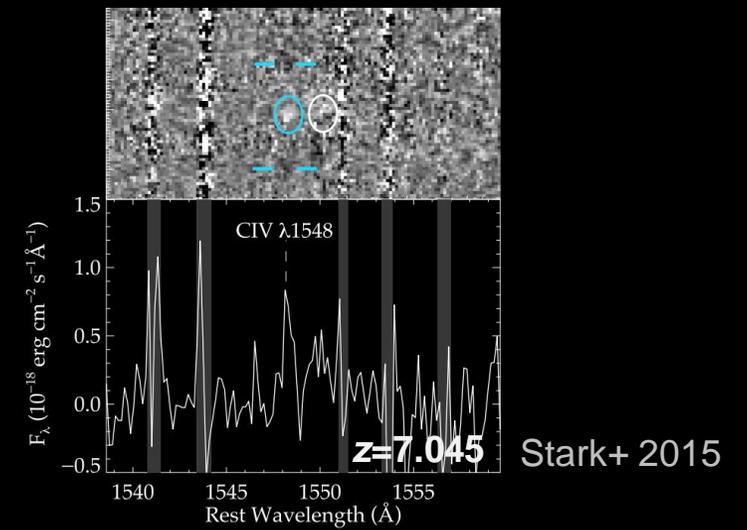
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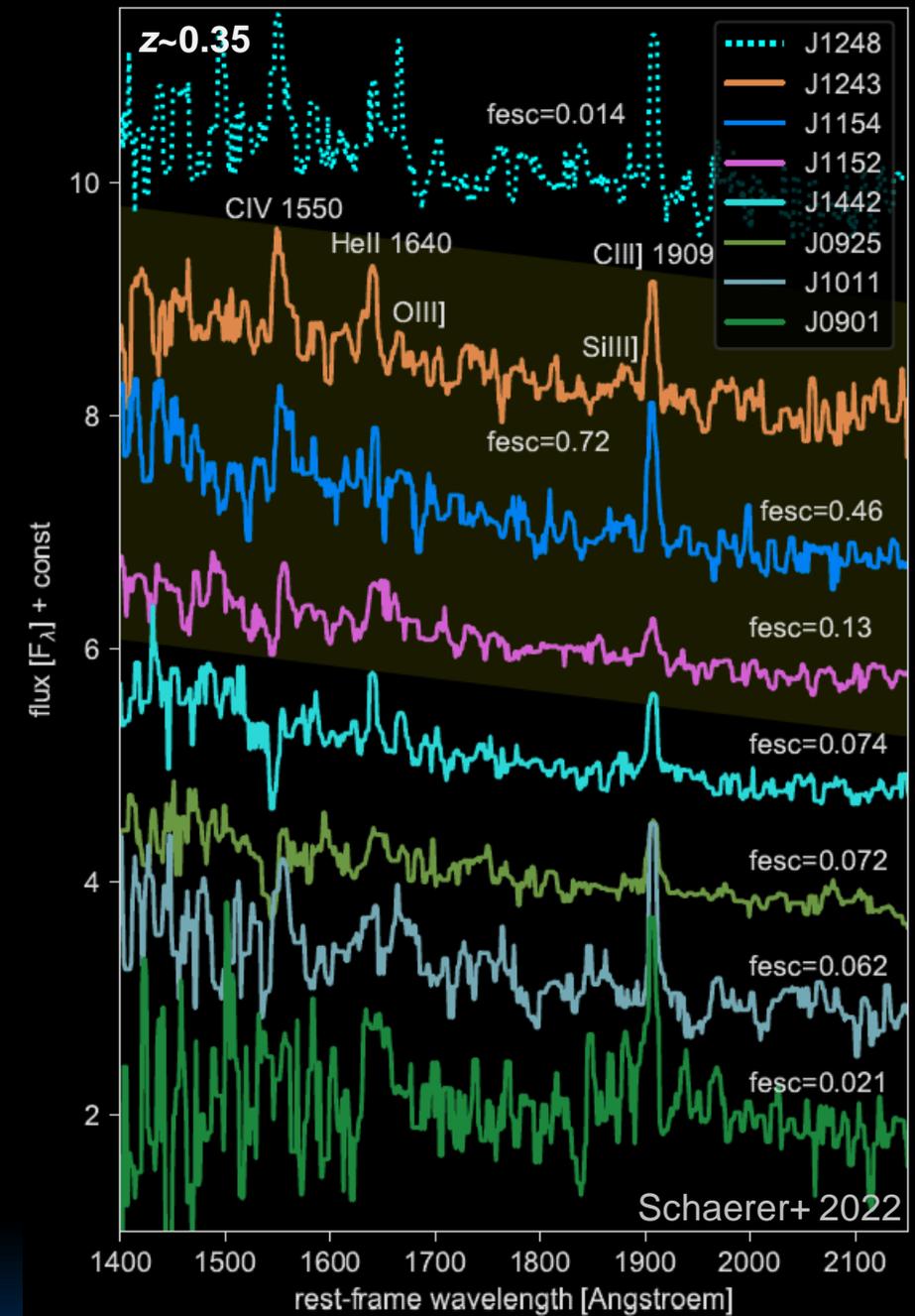
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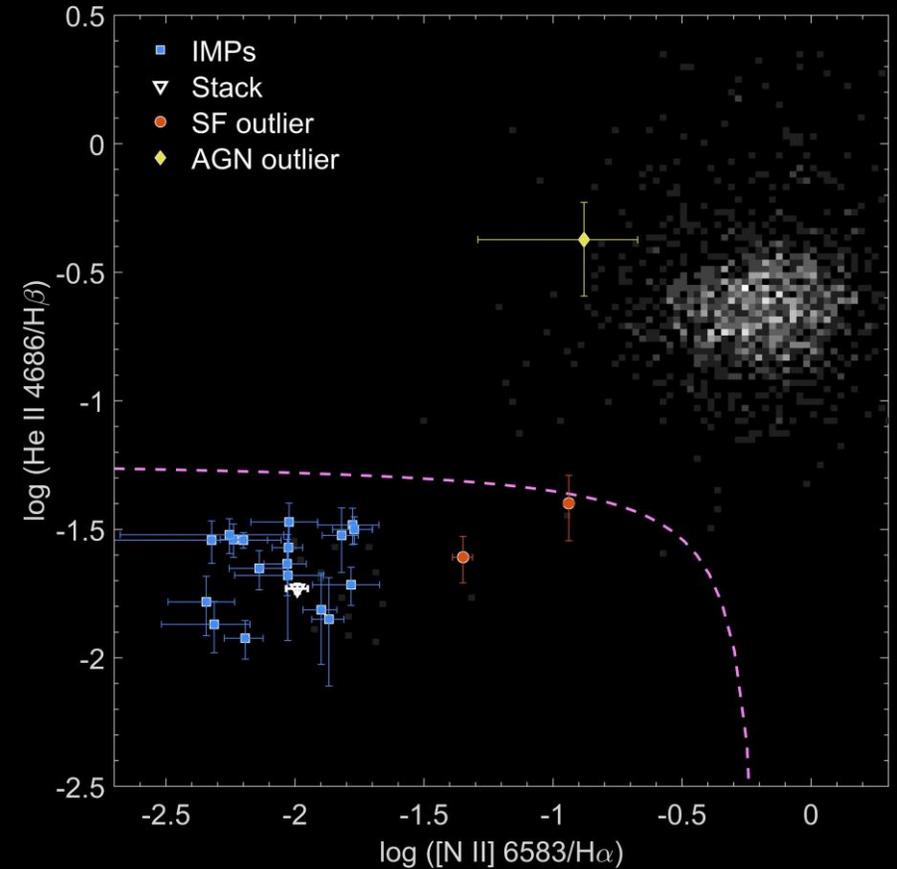
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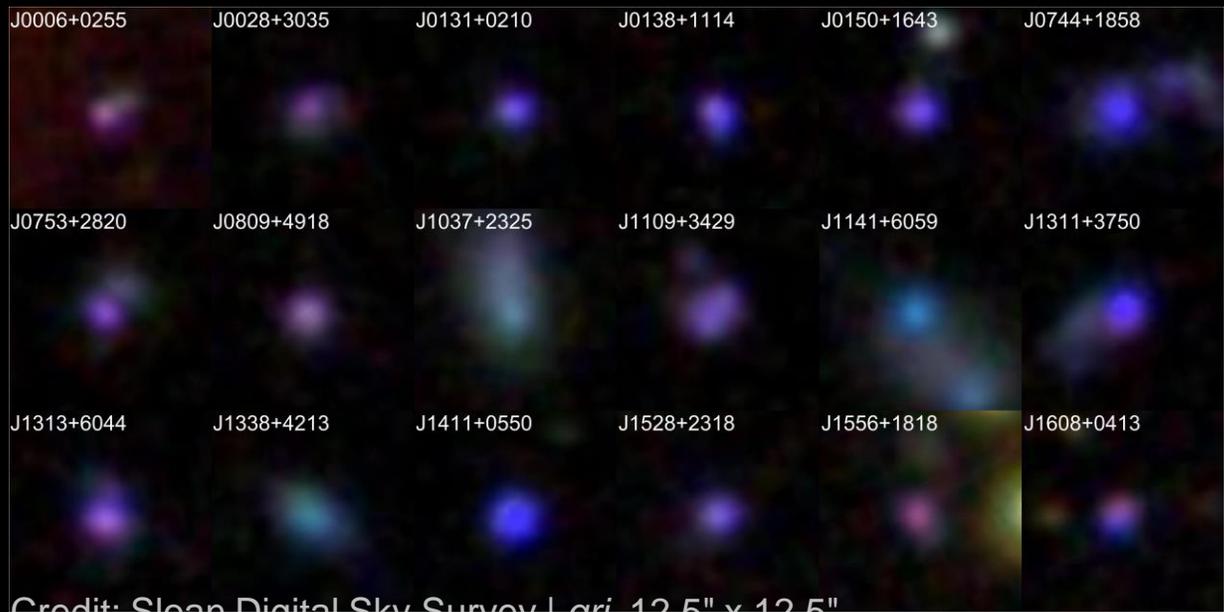
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applied to SDSS-III / BOSS data
yields **18 SFGs** with He II emission



Credit: Sloan Digital Sky Survey | *gri*, 12.5" x 12.5"



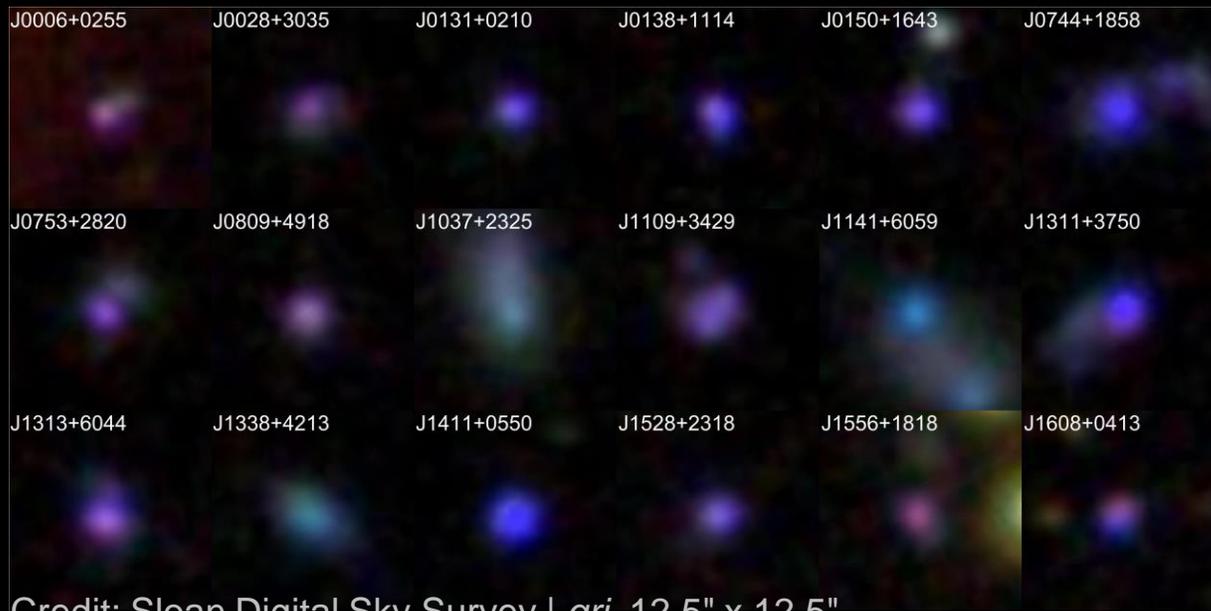
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Average properties well in line with high-*z* SFGs:

$$z = 0.061 \quad \log s\text{SFR}/\text{yr}^{-1} = -8.15$$

$$\log M/M_{\odot} = 7.91 \quad O_{32} = 6.58$$

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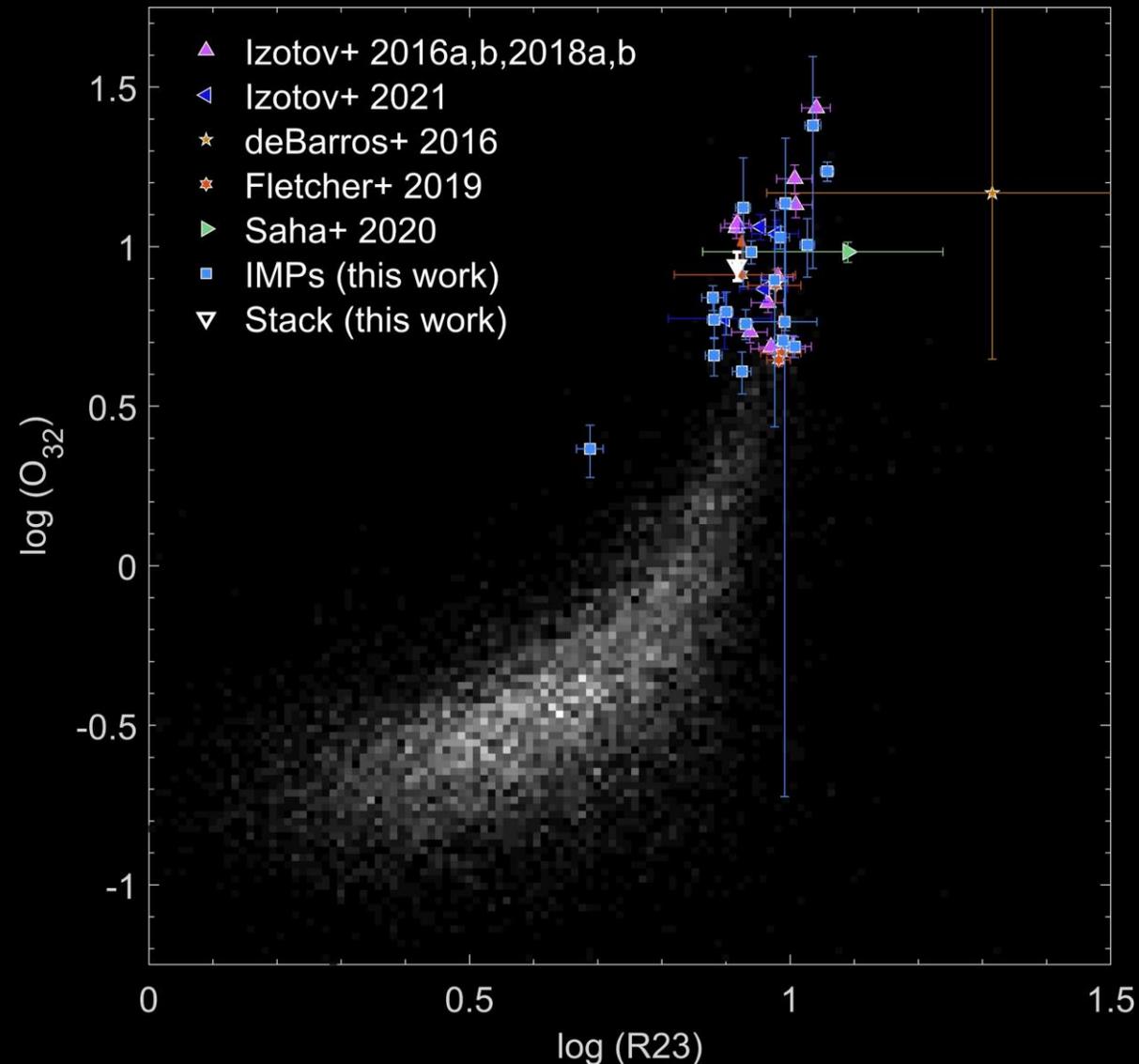
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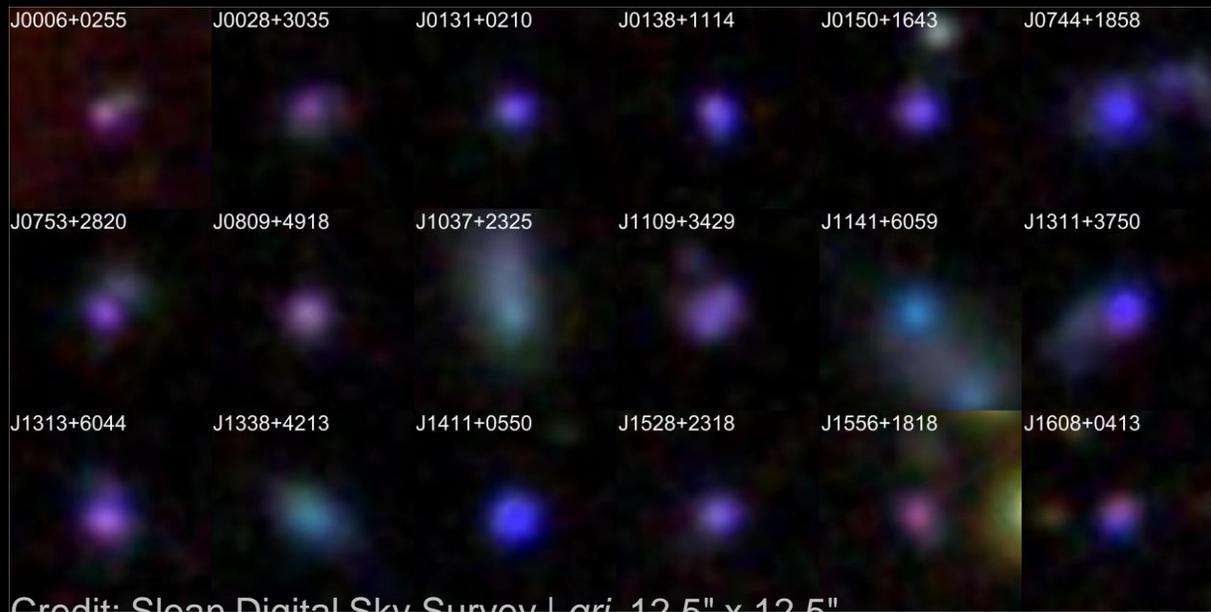
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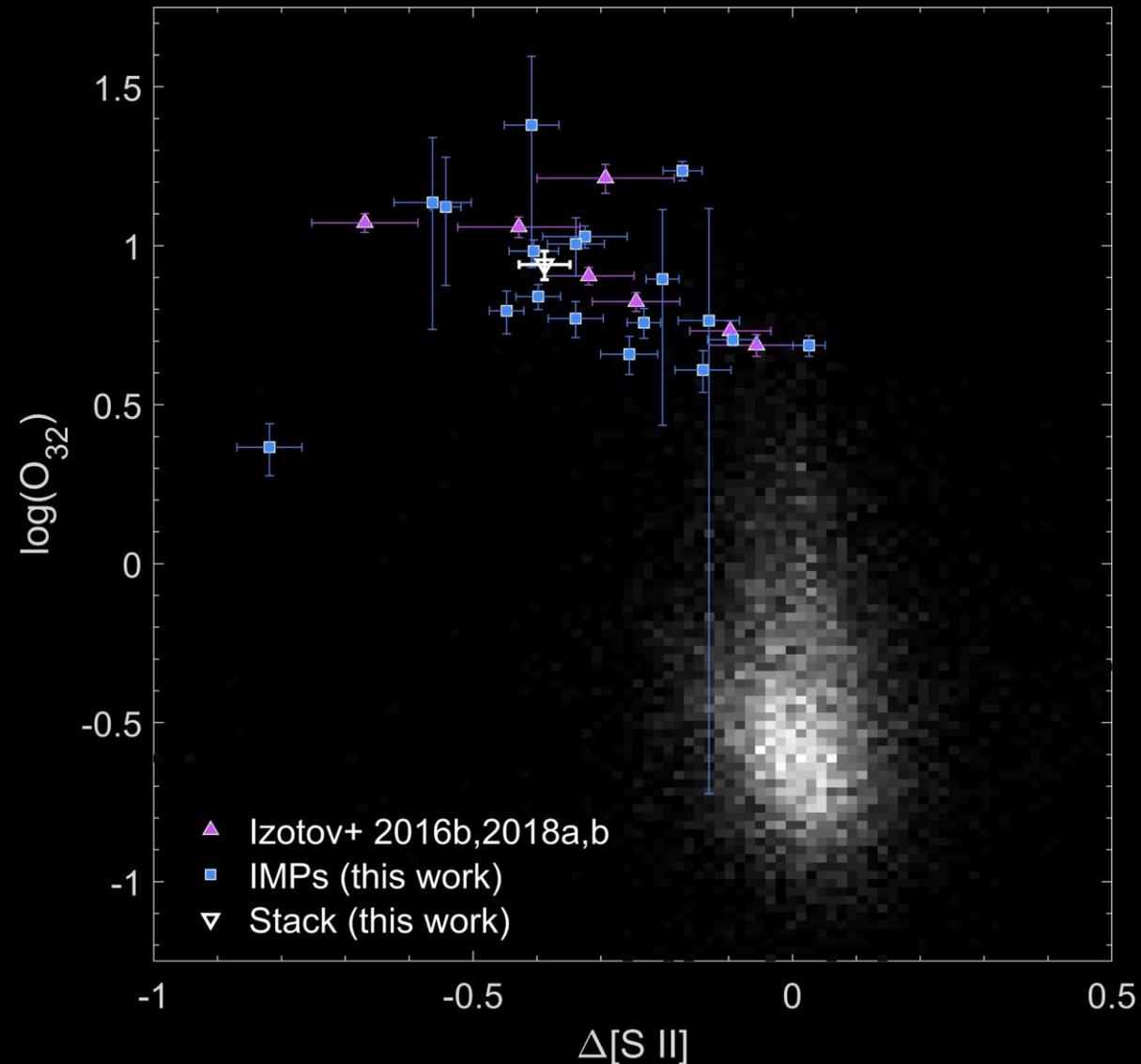
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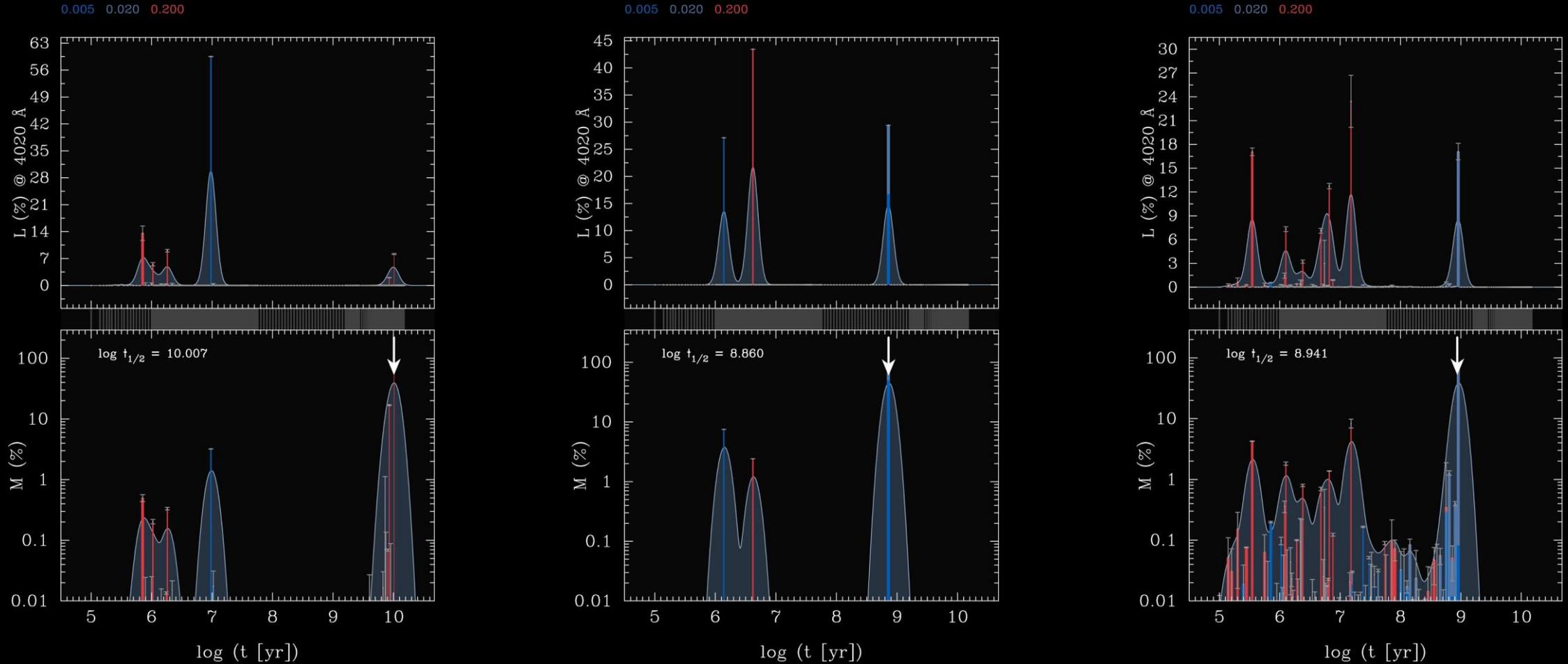
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- large O_{32} ratios
- deficient in [S II] emission (Wang et al., 2019, ApJ, 885, 57)

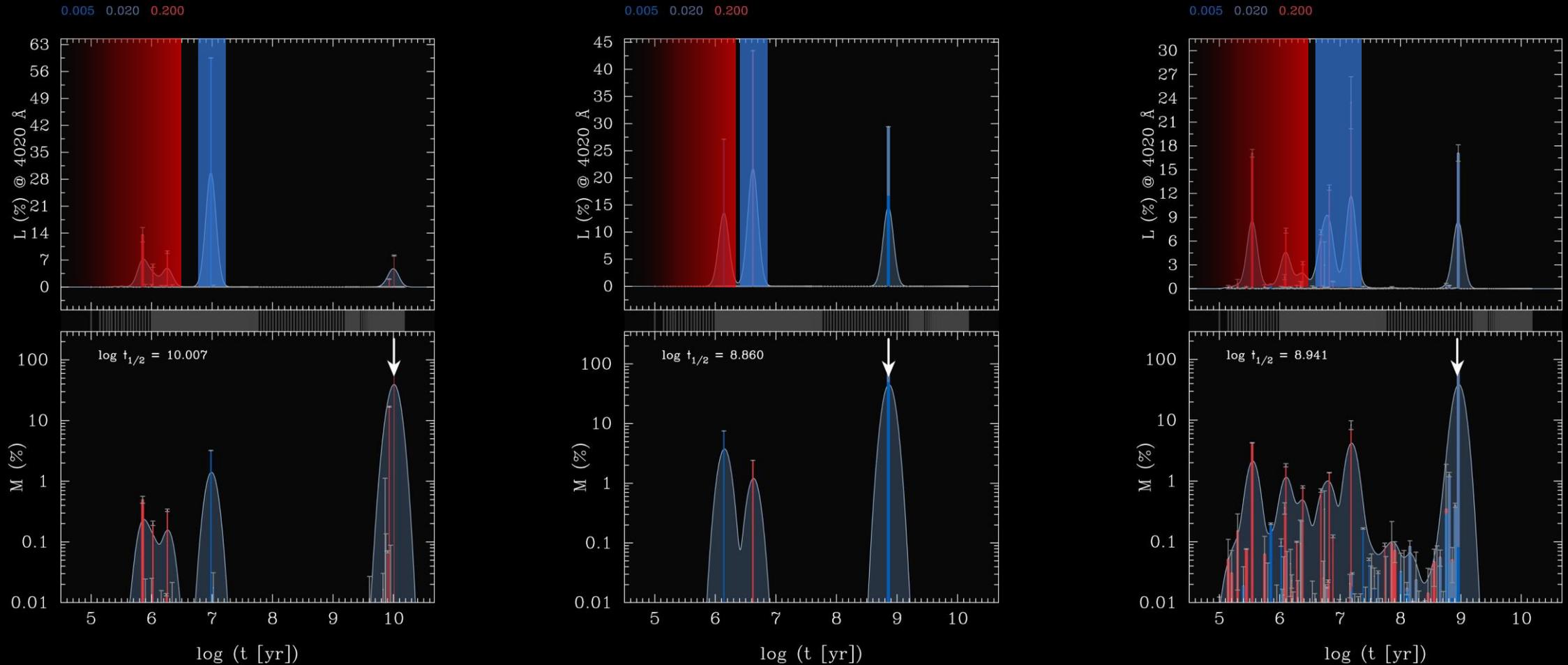


Population spectral synthesis with FADO (Gomes & Papaderos, 2017, A&A, 603, 63)
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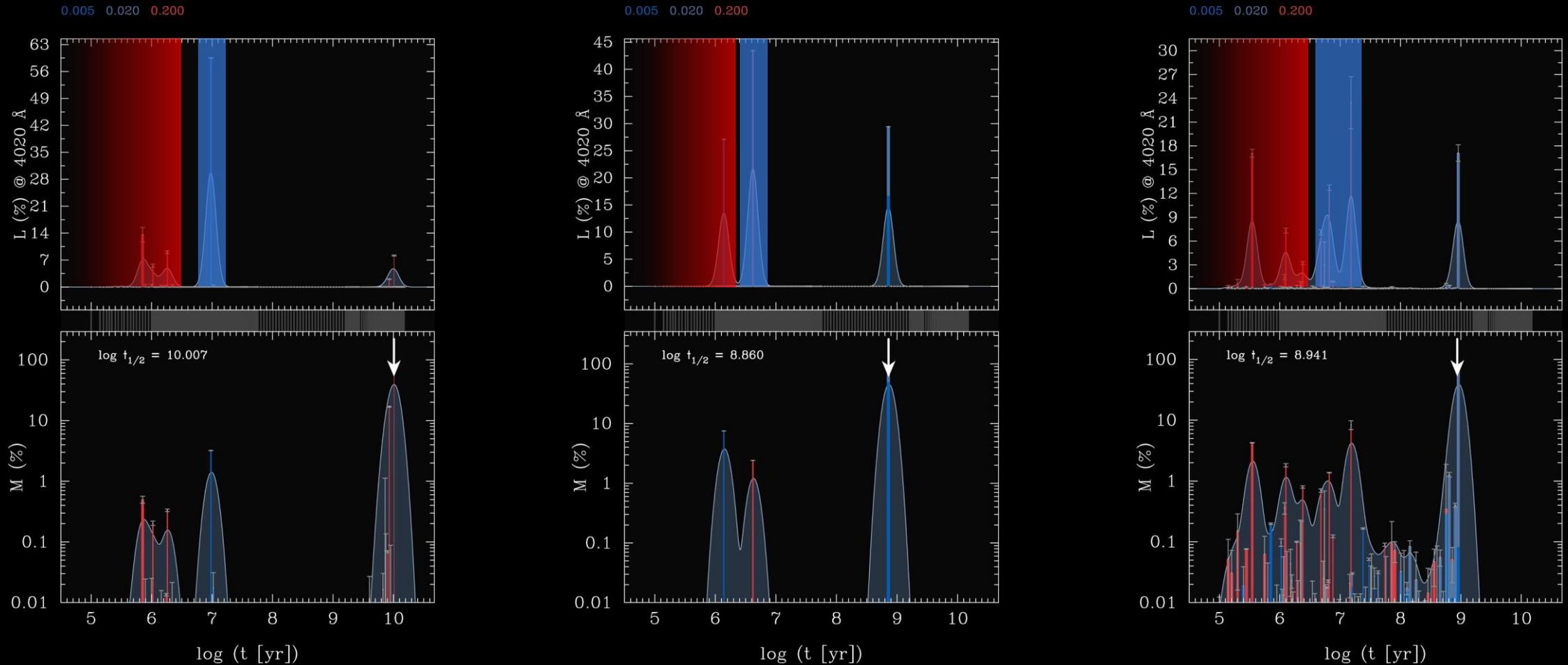


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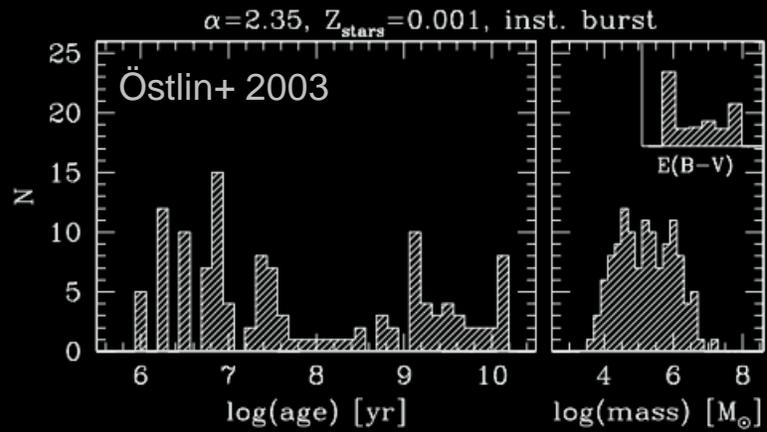
→ many recent **Supernovae** and **LyC radiation** from young population

...a pattern seen before:

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ESO 338-IG04

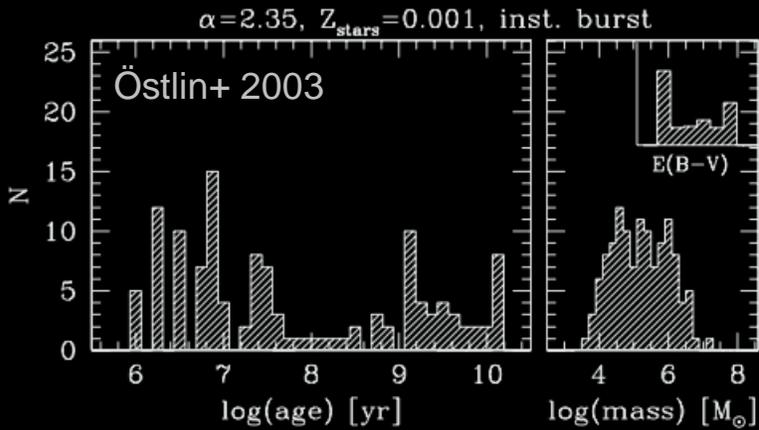
- candidate LCE @ d=37.5 Mpc



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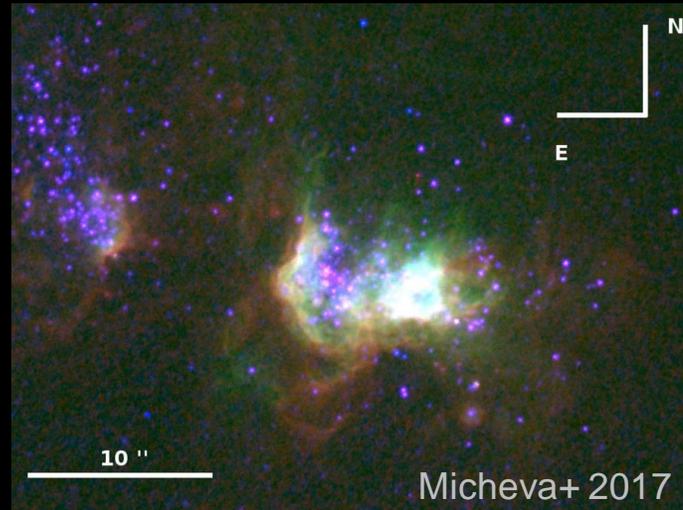
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Mrk 71 / NGC 2366

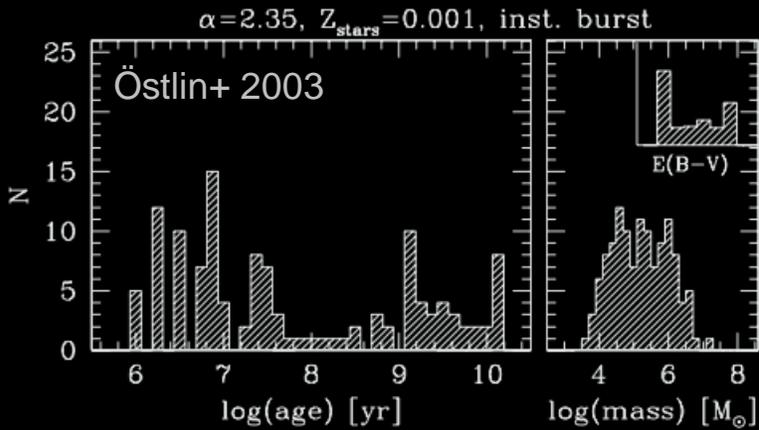
- candidate LCE @ d=3.4 Mpc
- 2 SSCs @ 3-5 Myr, <1 Myr



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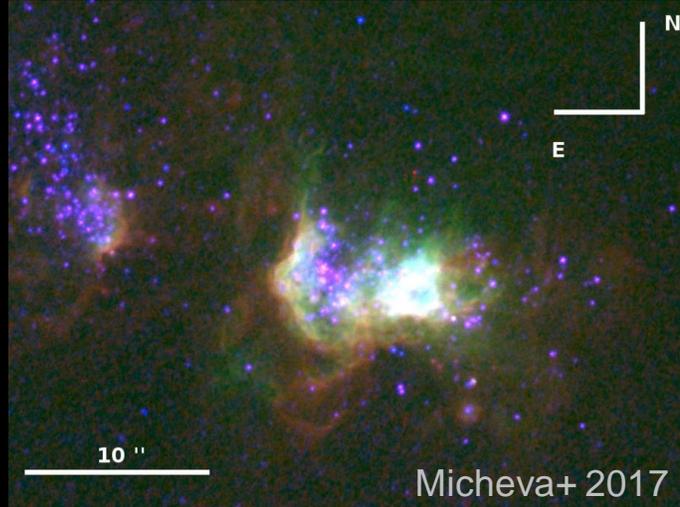
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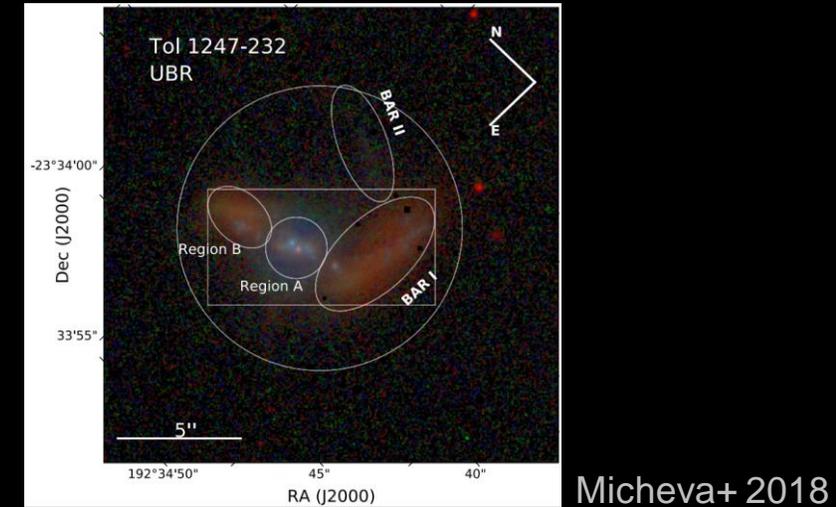
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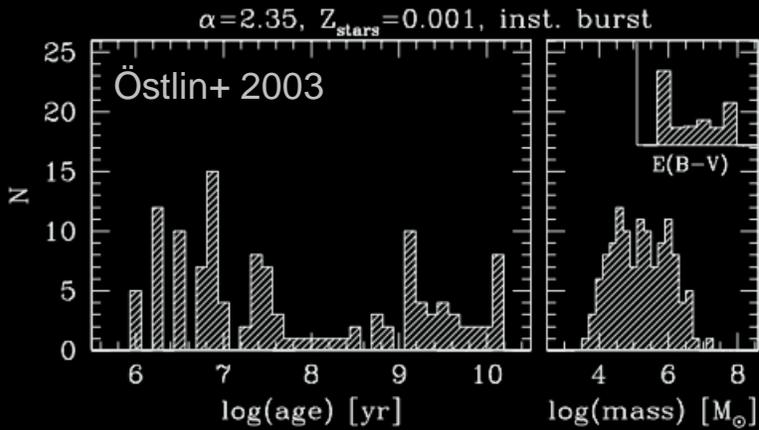
- LCE @ z=0.048
- 26 SCs @ 12 Myr, <4 Myr



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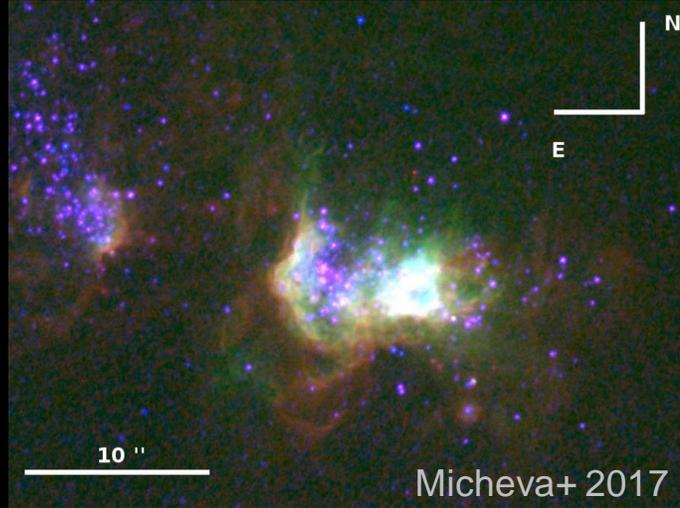
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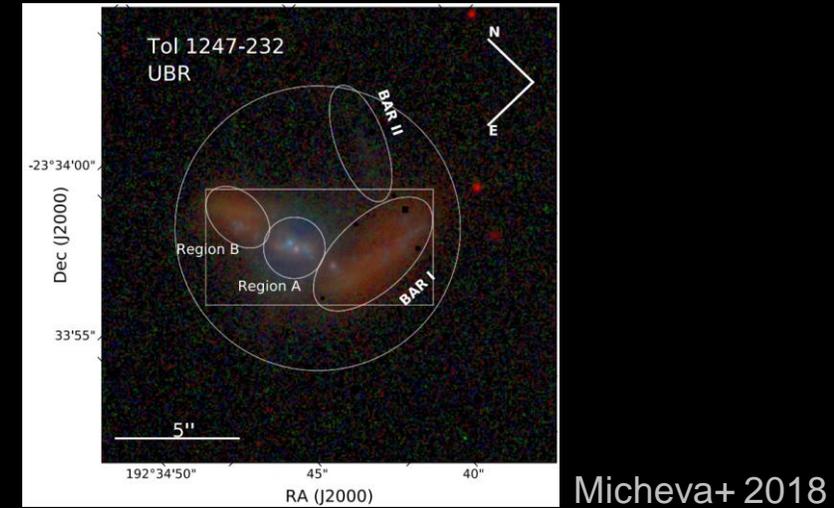
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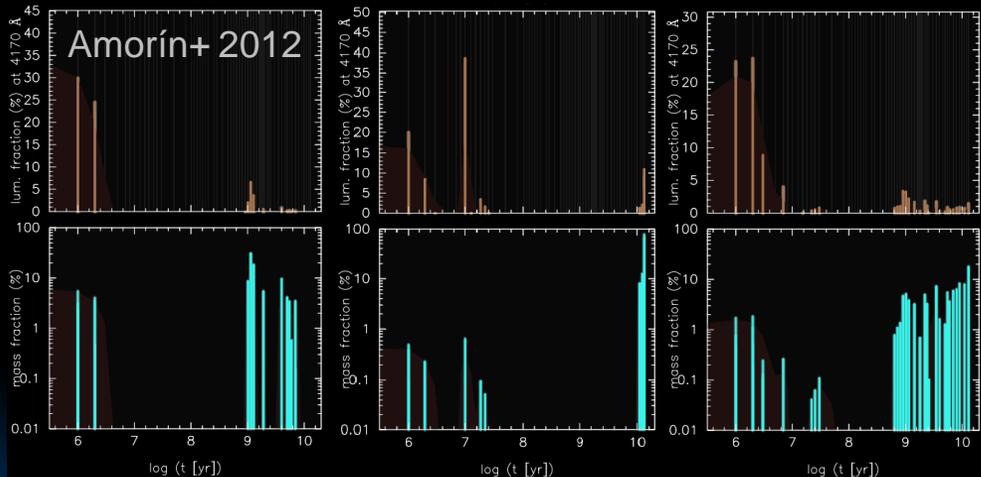
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Three Green Peas

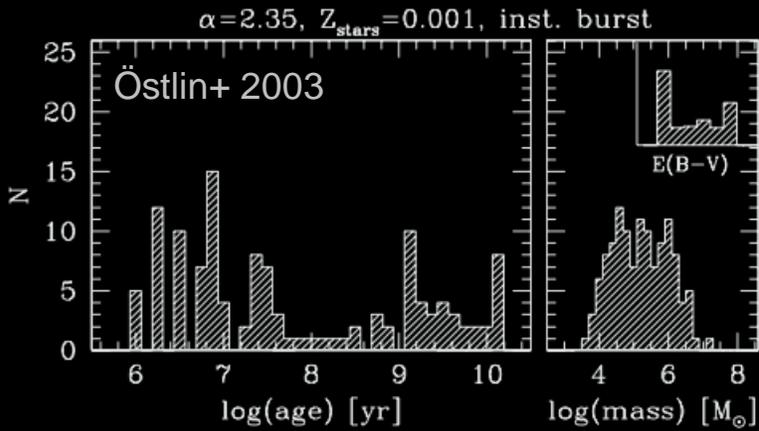
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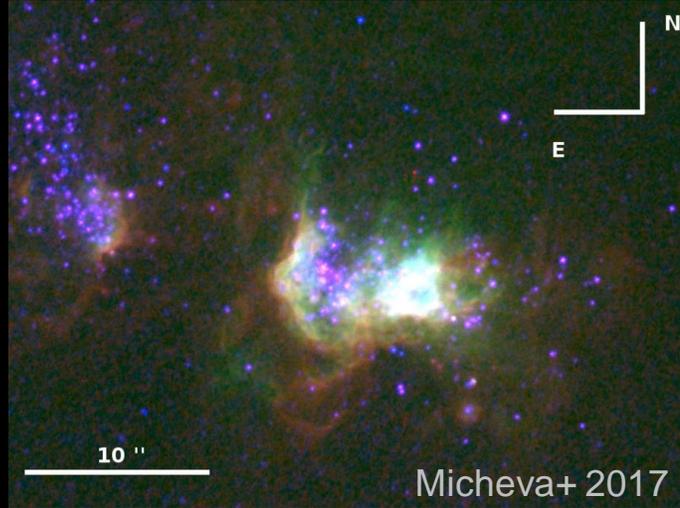
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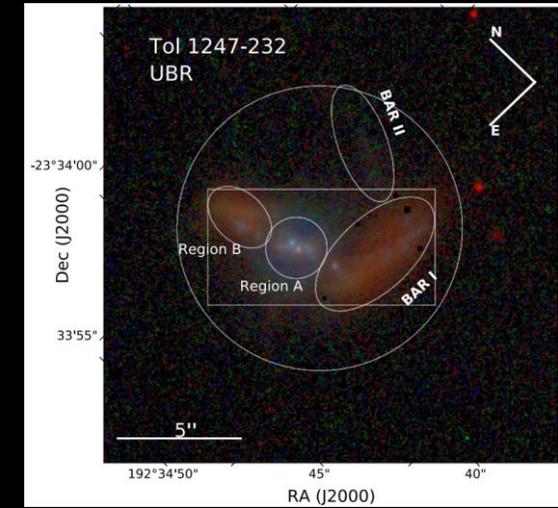
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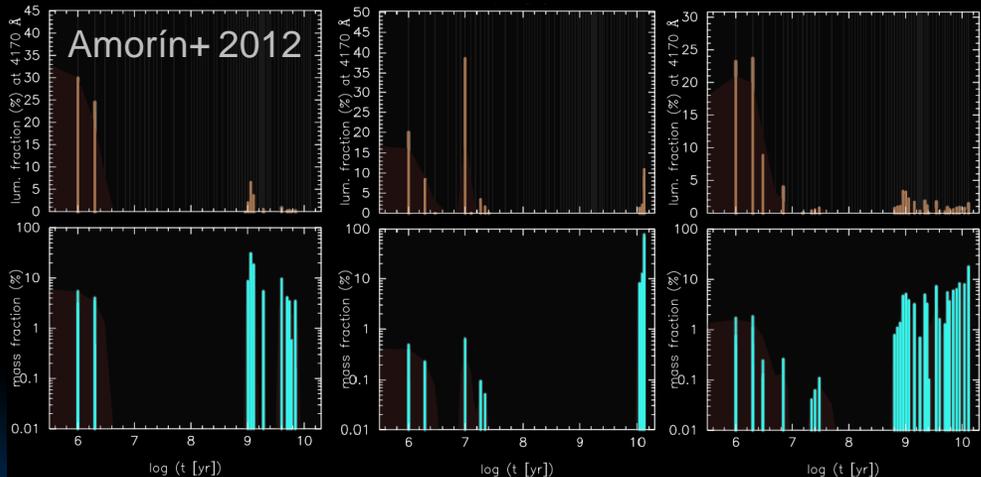
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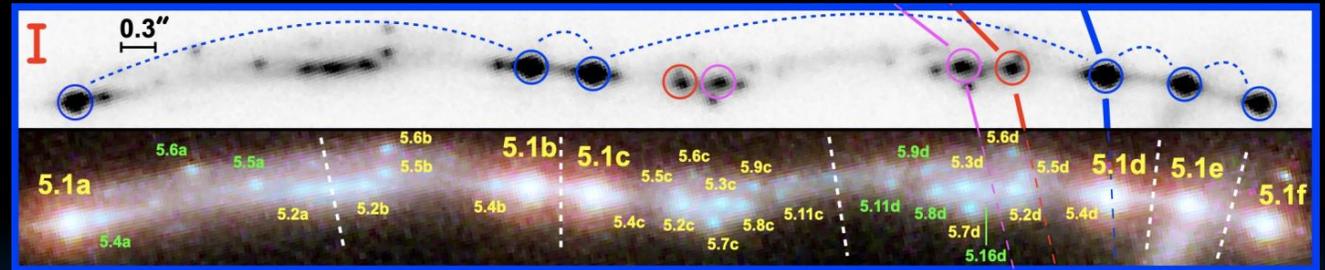
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Sunburst Arc

- LCE @ z=2.37
- 13 SCs @ <50 Myr
- decent fit: "dual population" @ 7 Myr, 2.5 Myr

Vanzella+ 2022



LCE candidates from Hell

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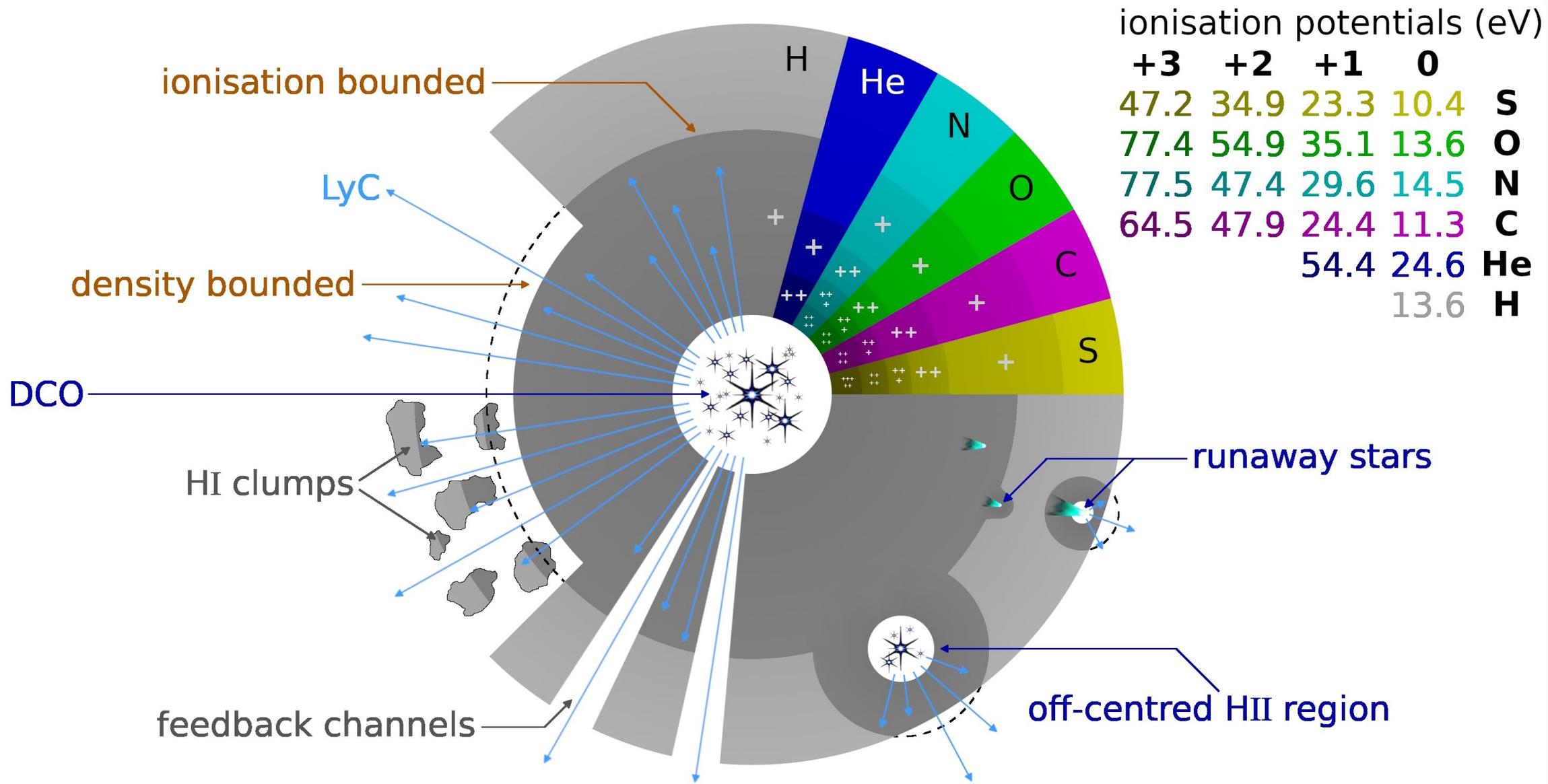
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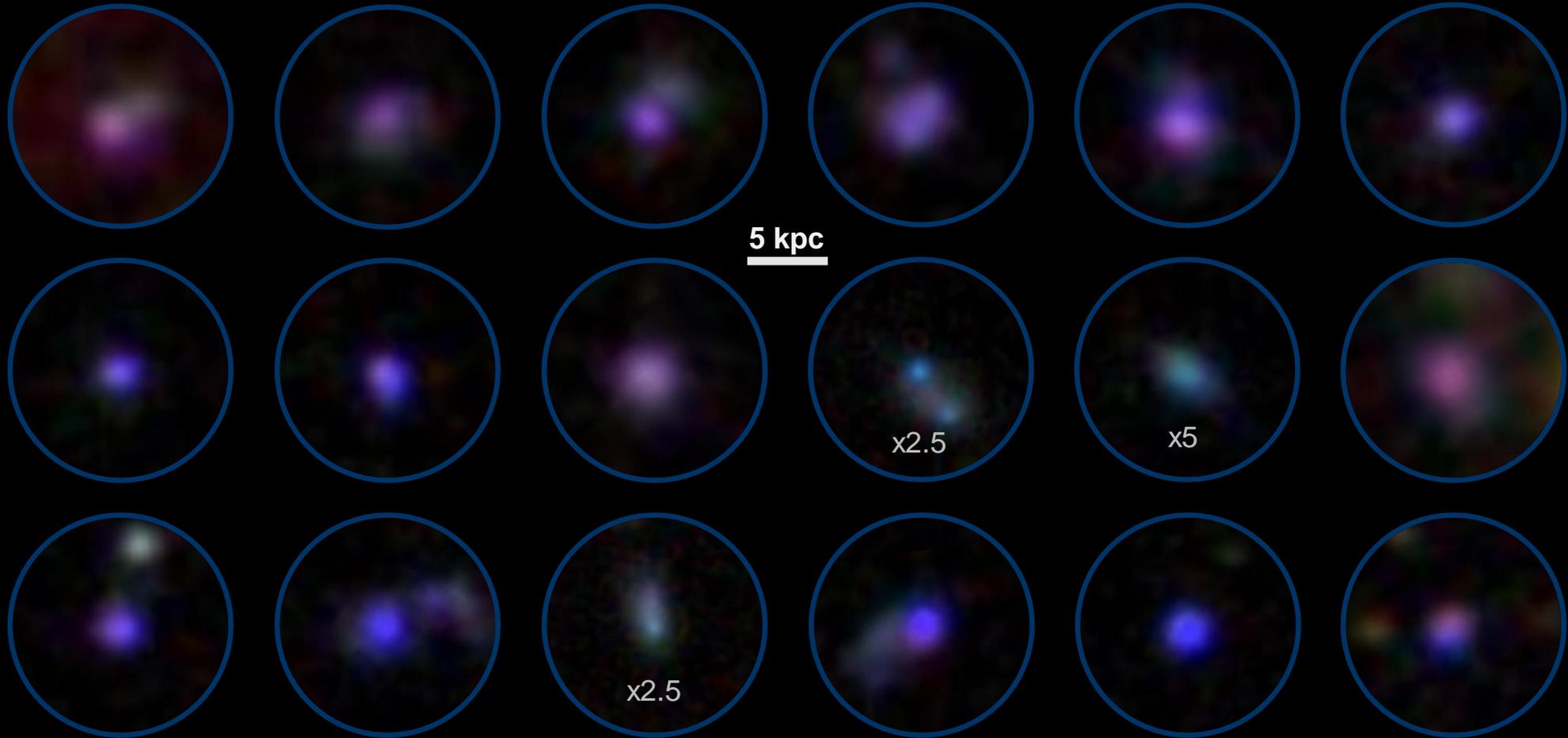
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Thank you for your attention!

Ancillary Slide I: LCE sketch (annotated)

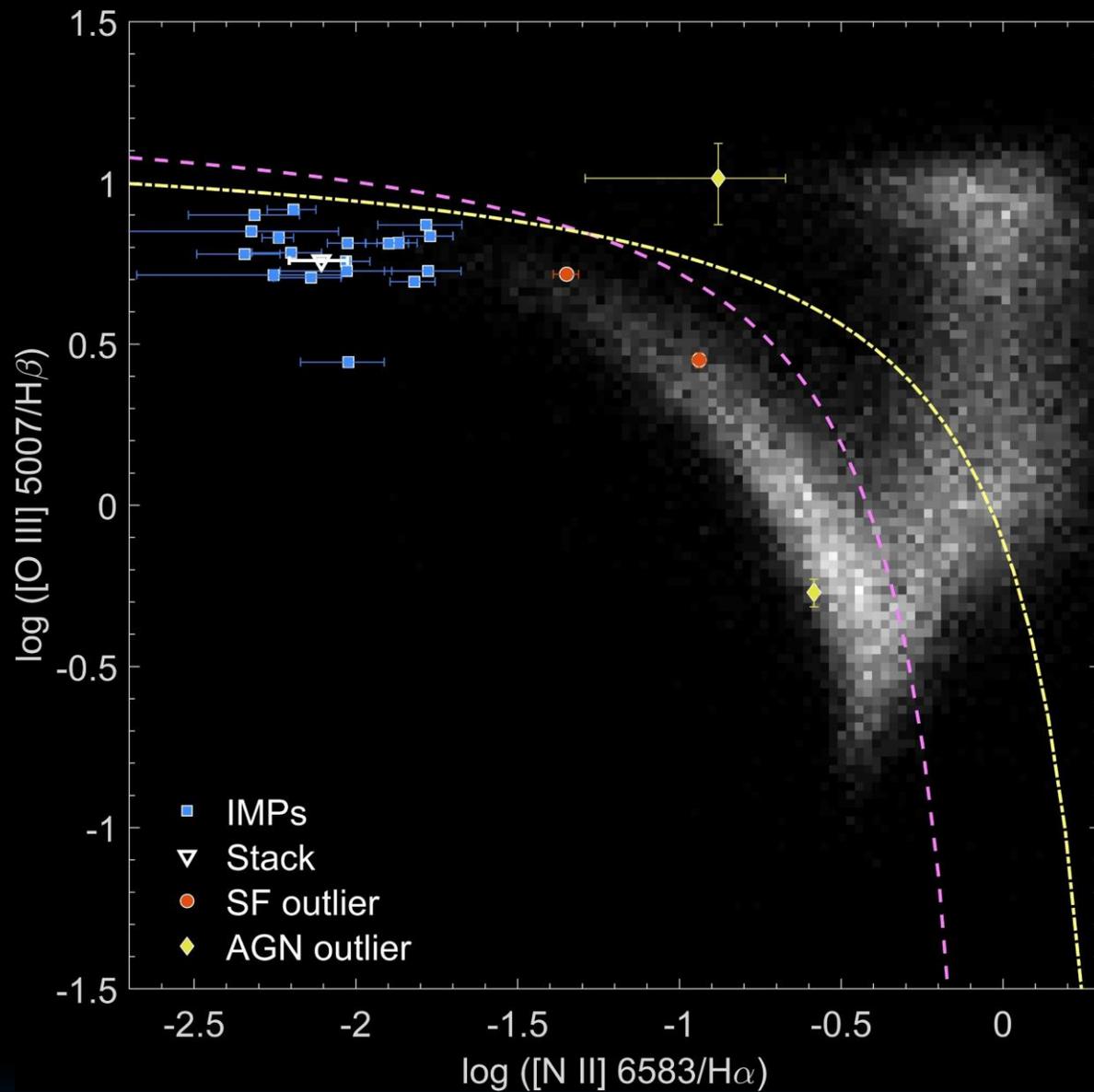


Ancillary Slide II: Images (to Scale)

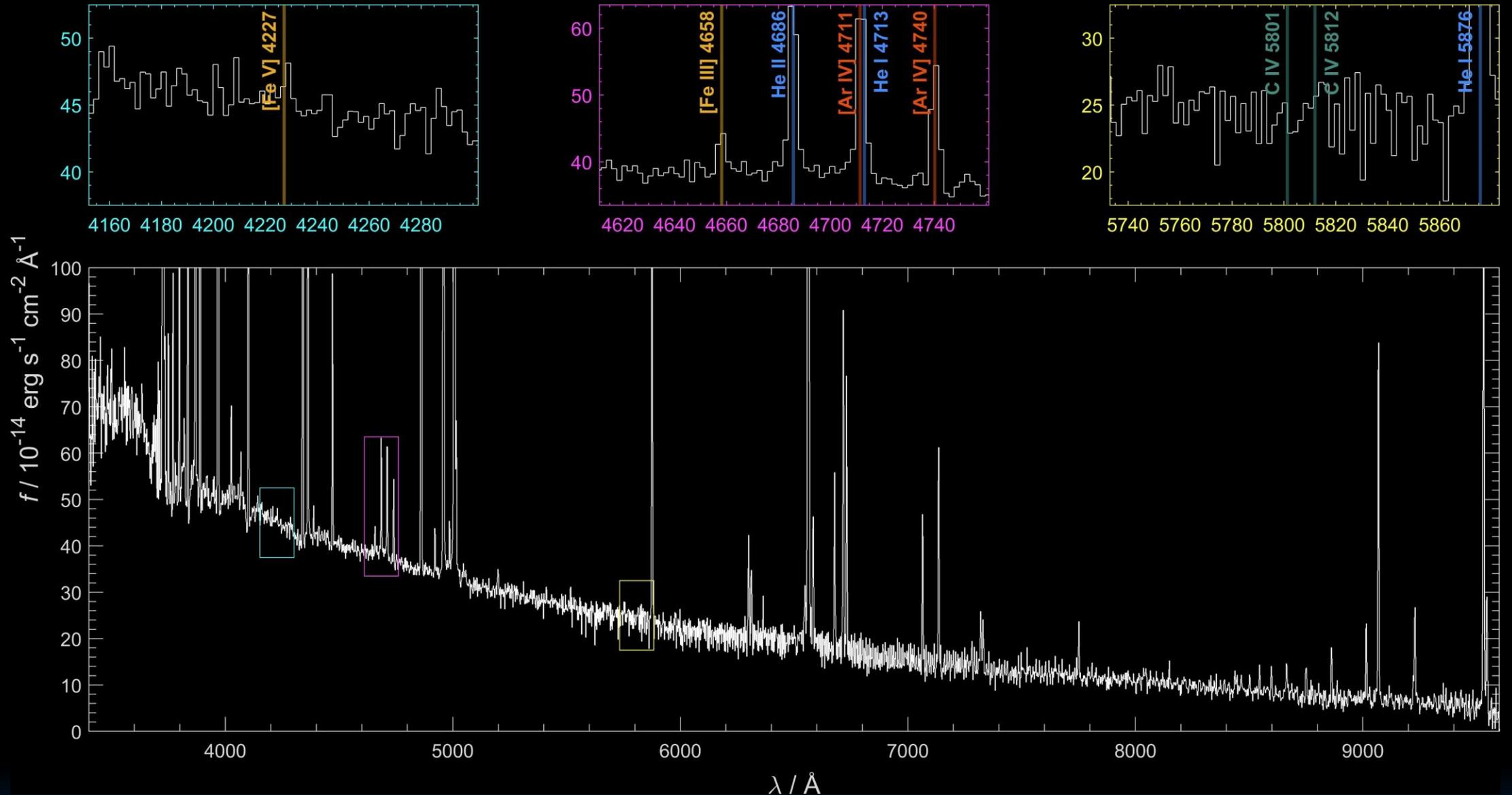


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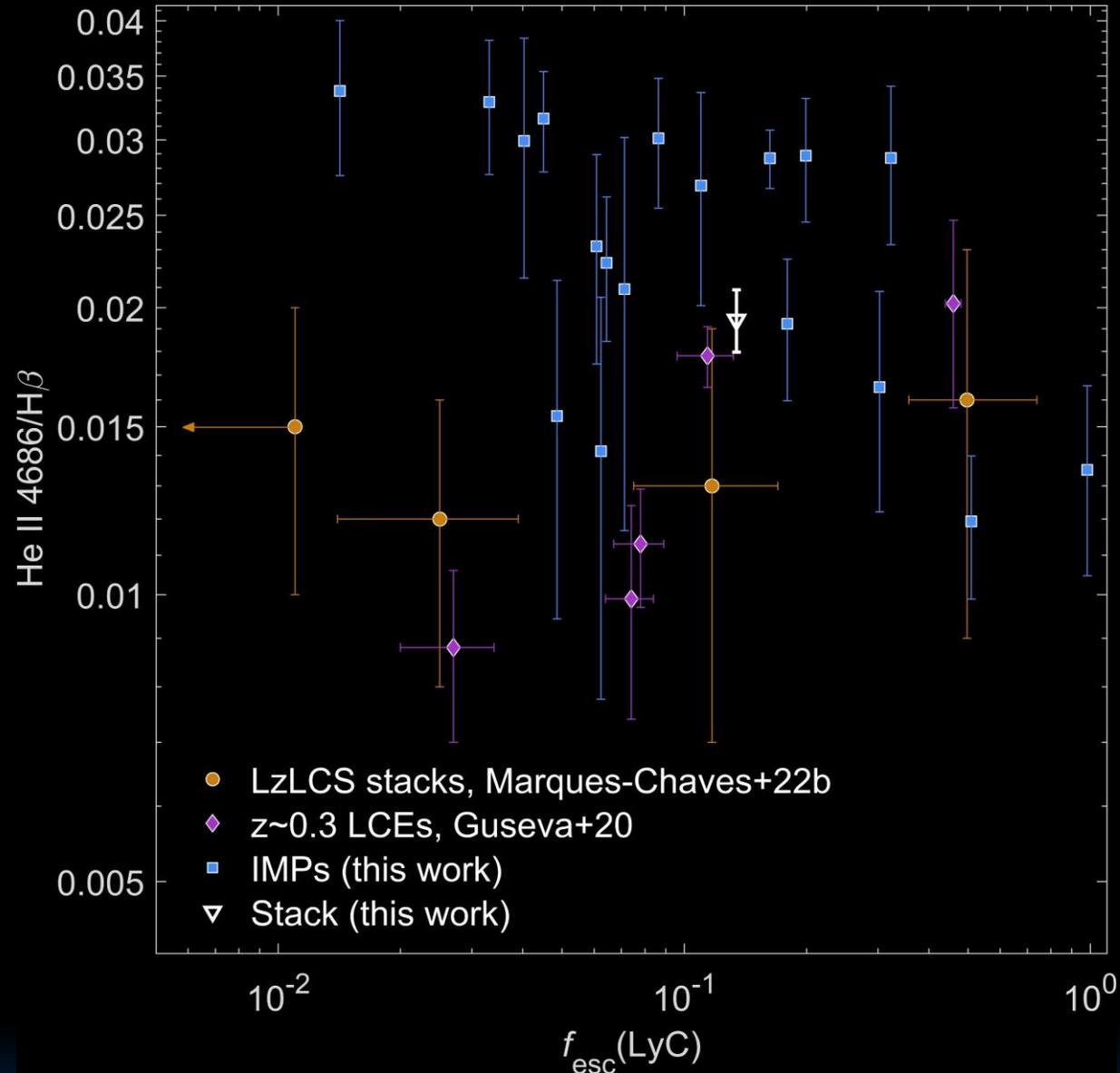
Ancillary Slide III: BPT diagram



Ancillary Slide IV: Stacked Spectrum



Ancillary Slide V: no f_{esc} – He II correlation



Ancillary Slide VI: SFHs

