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SFB1491



Astronomisches Institut
RUHR-UNIVERSITÄT BOCHUM

RUB

Back to He II: ISM properties in and around candidate LCEs with nebular He II emission

Escape of Lyman radiation from galactic labyrinths
Kolympari, Crete | April 07th – 11th, 2025

Adam Enders | AIRUB
enders@astro.rub.de



Introduction / Recap

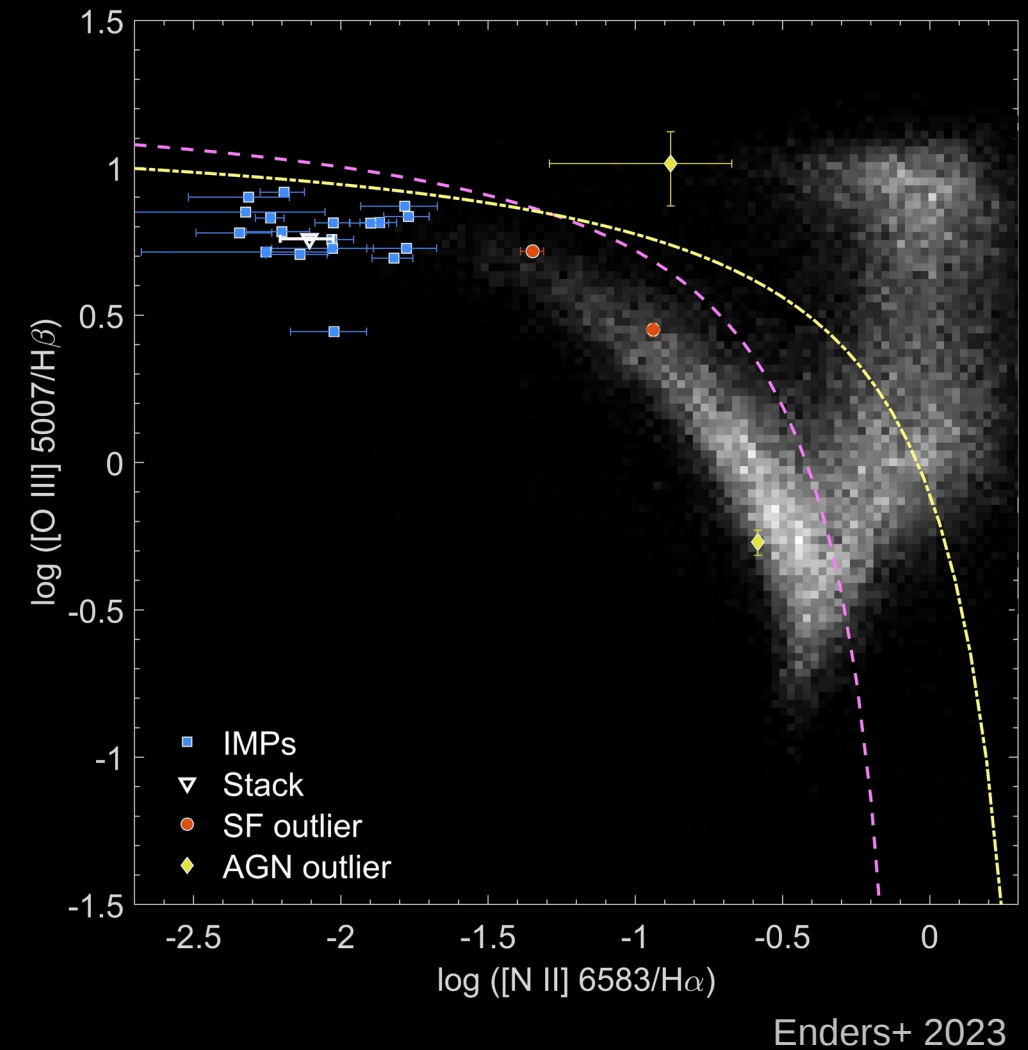
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- **Follow-up to previous work:**
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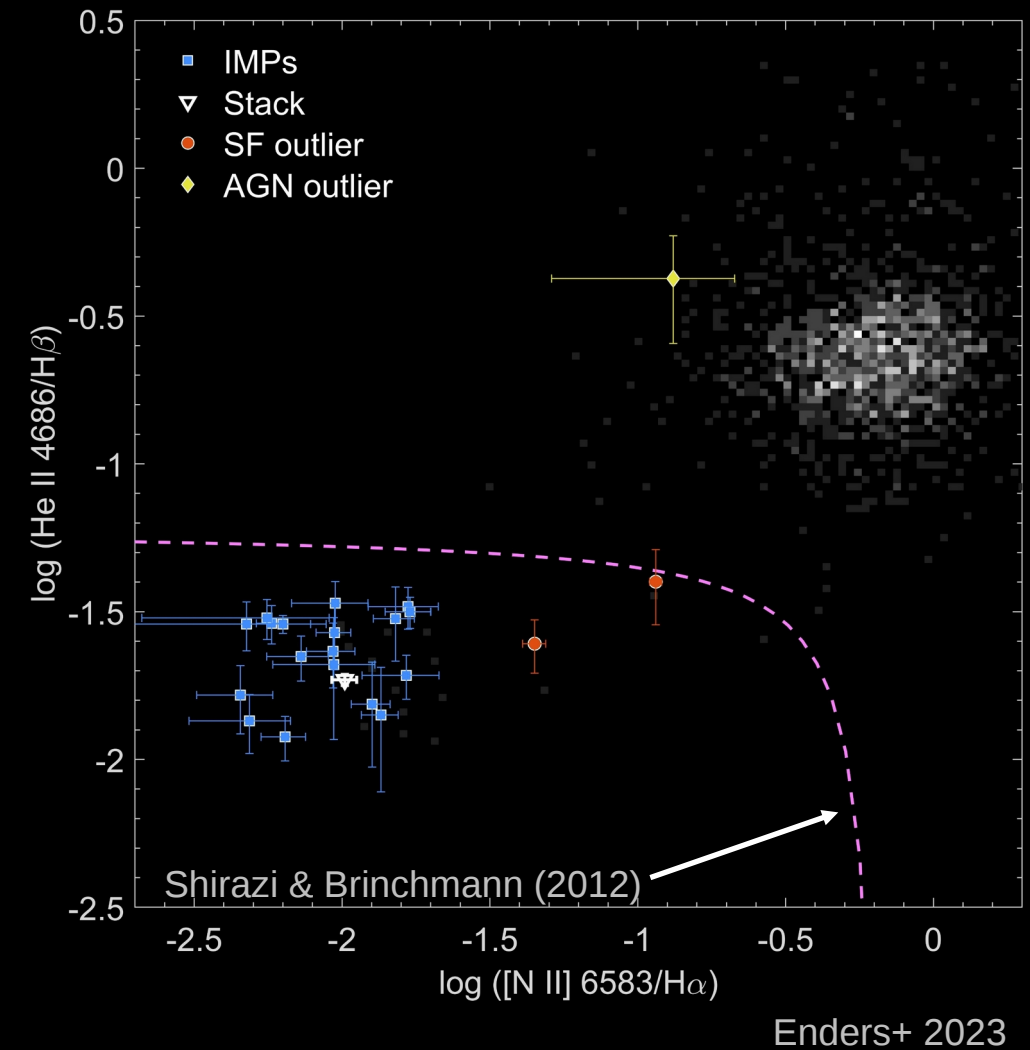
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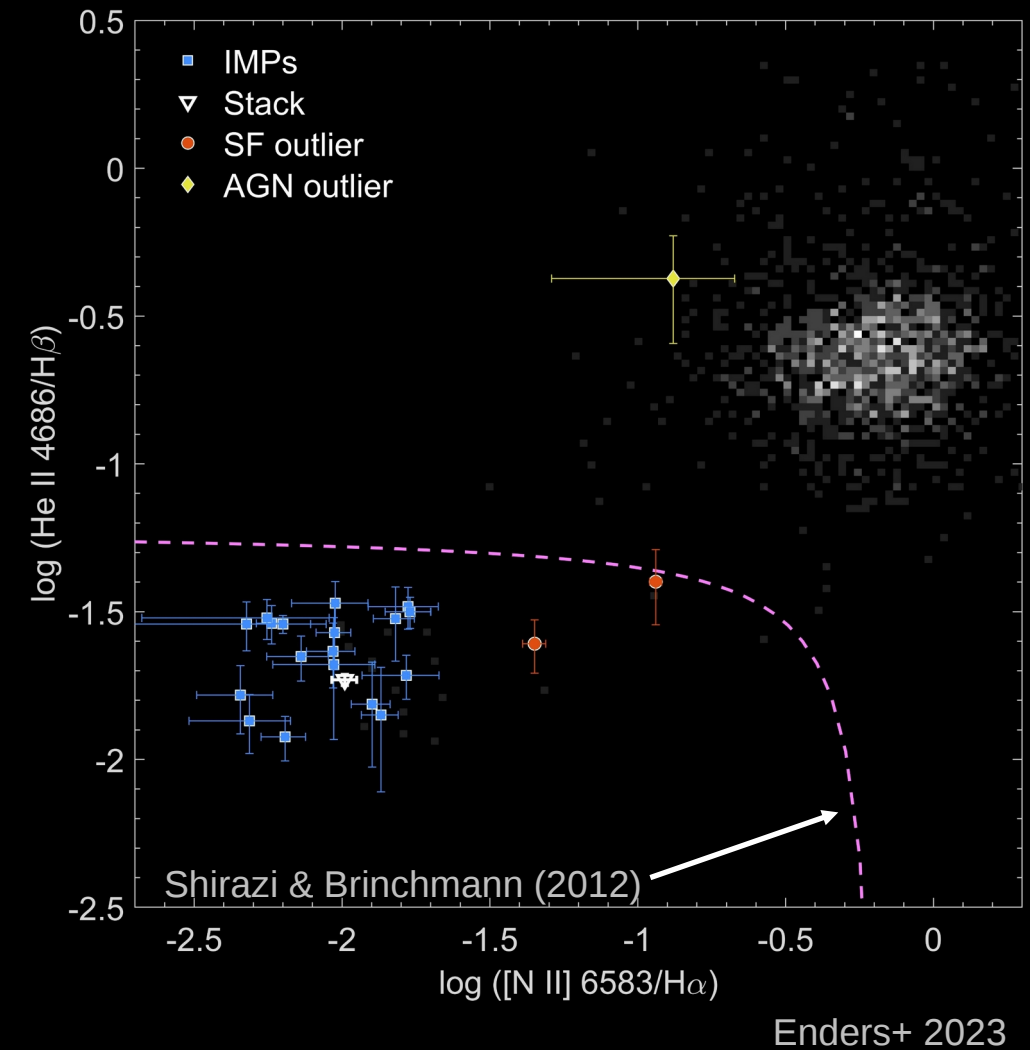
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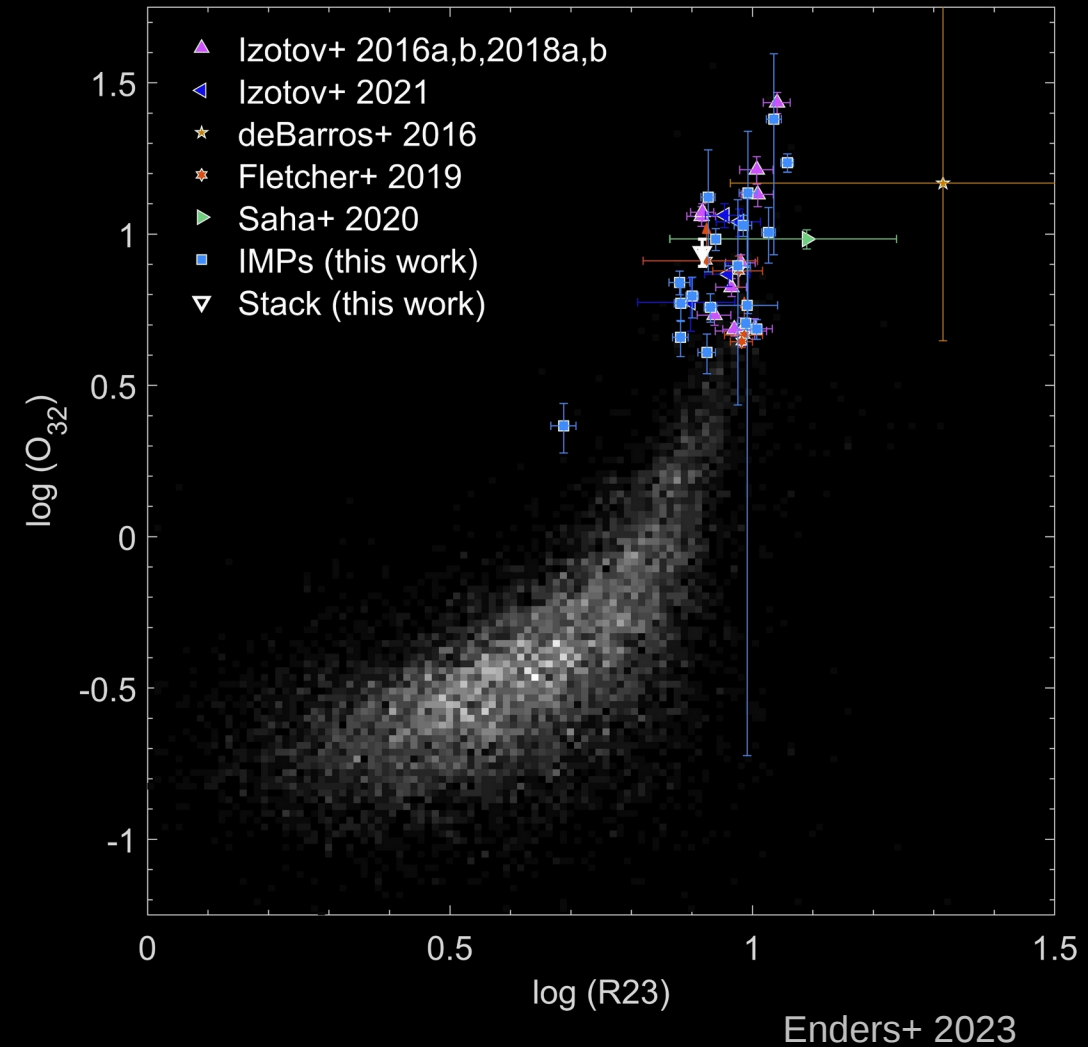
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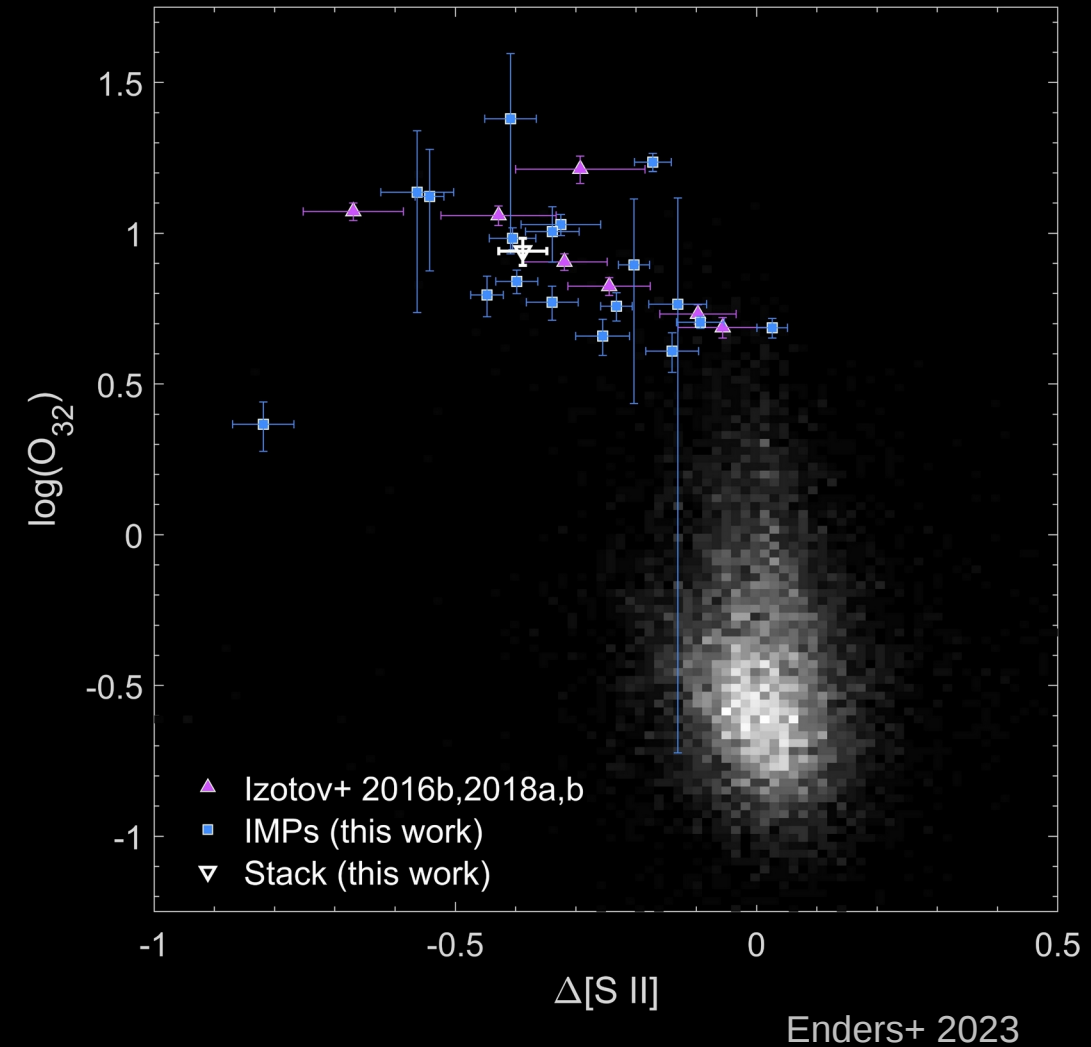
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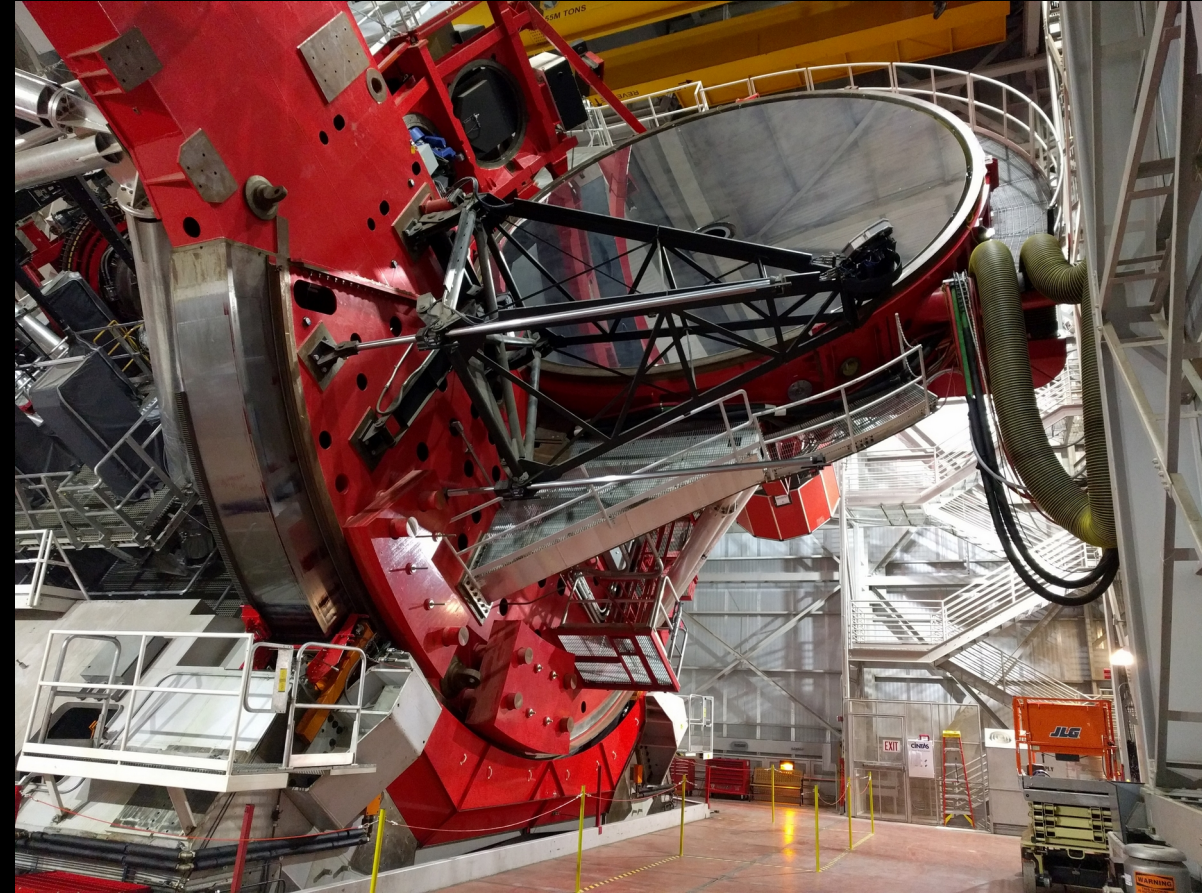
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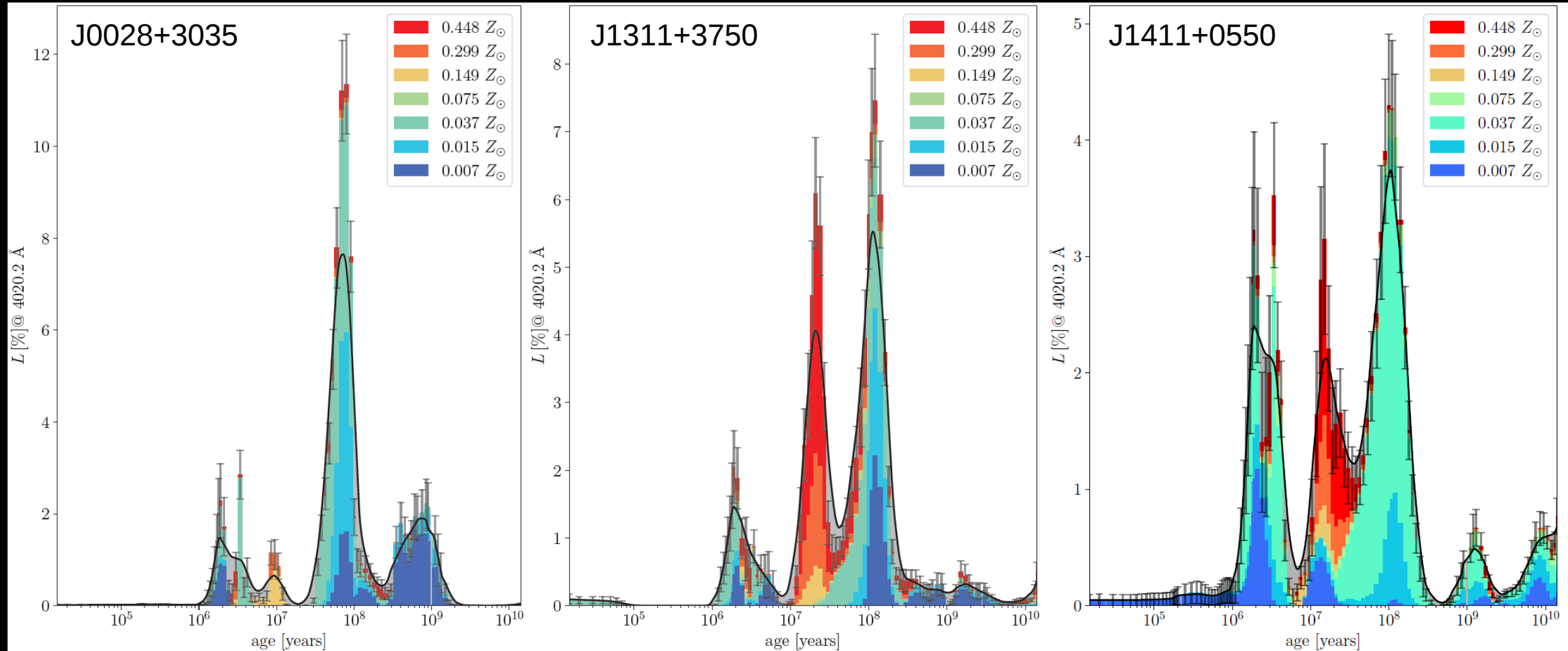
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Work in progress!



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Results (I): Star-Formation Histories

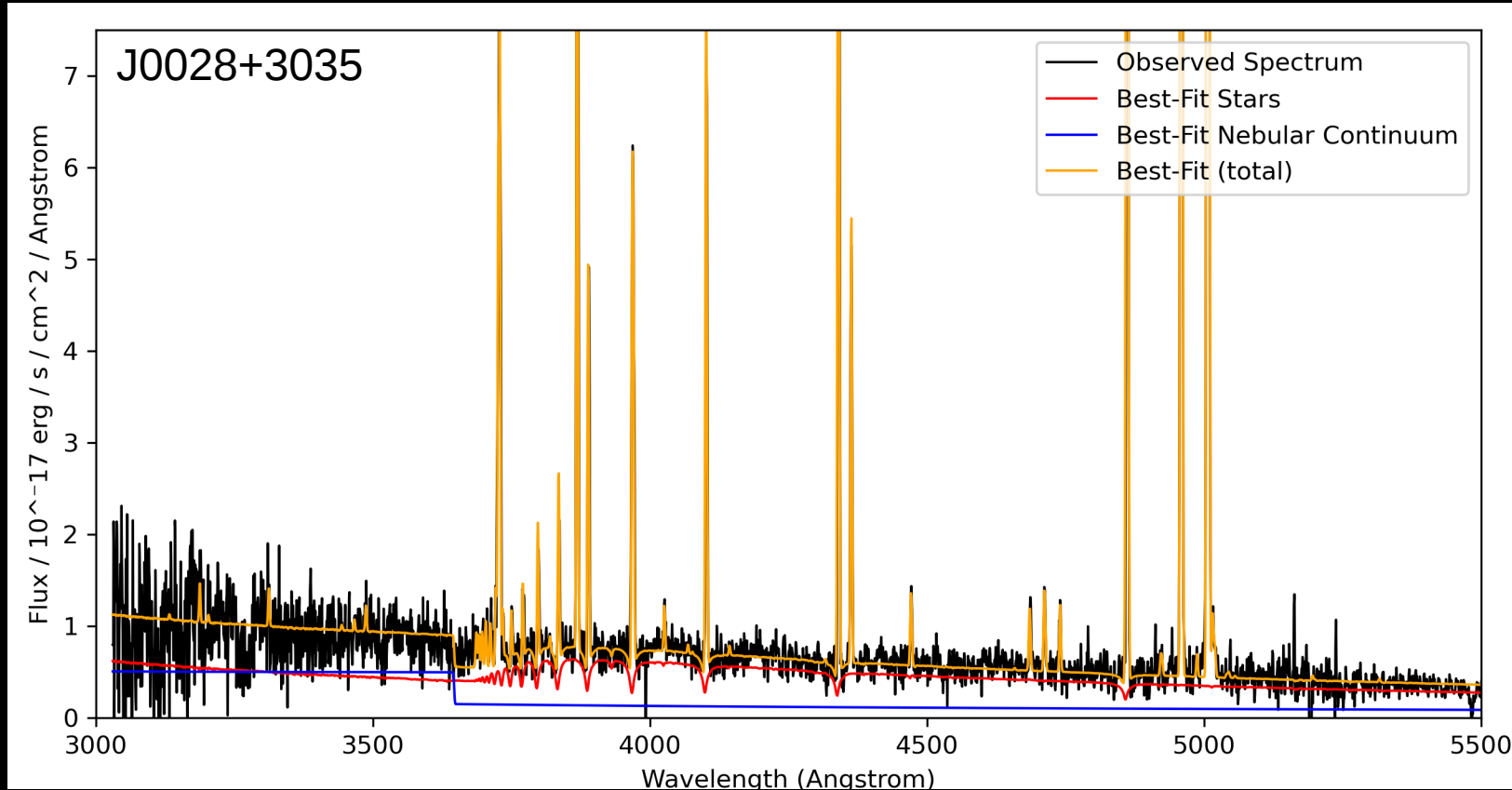


Enders+ 2025, in prep.

- two-stage starburst confirmed (!)

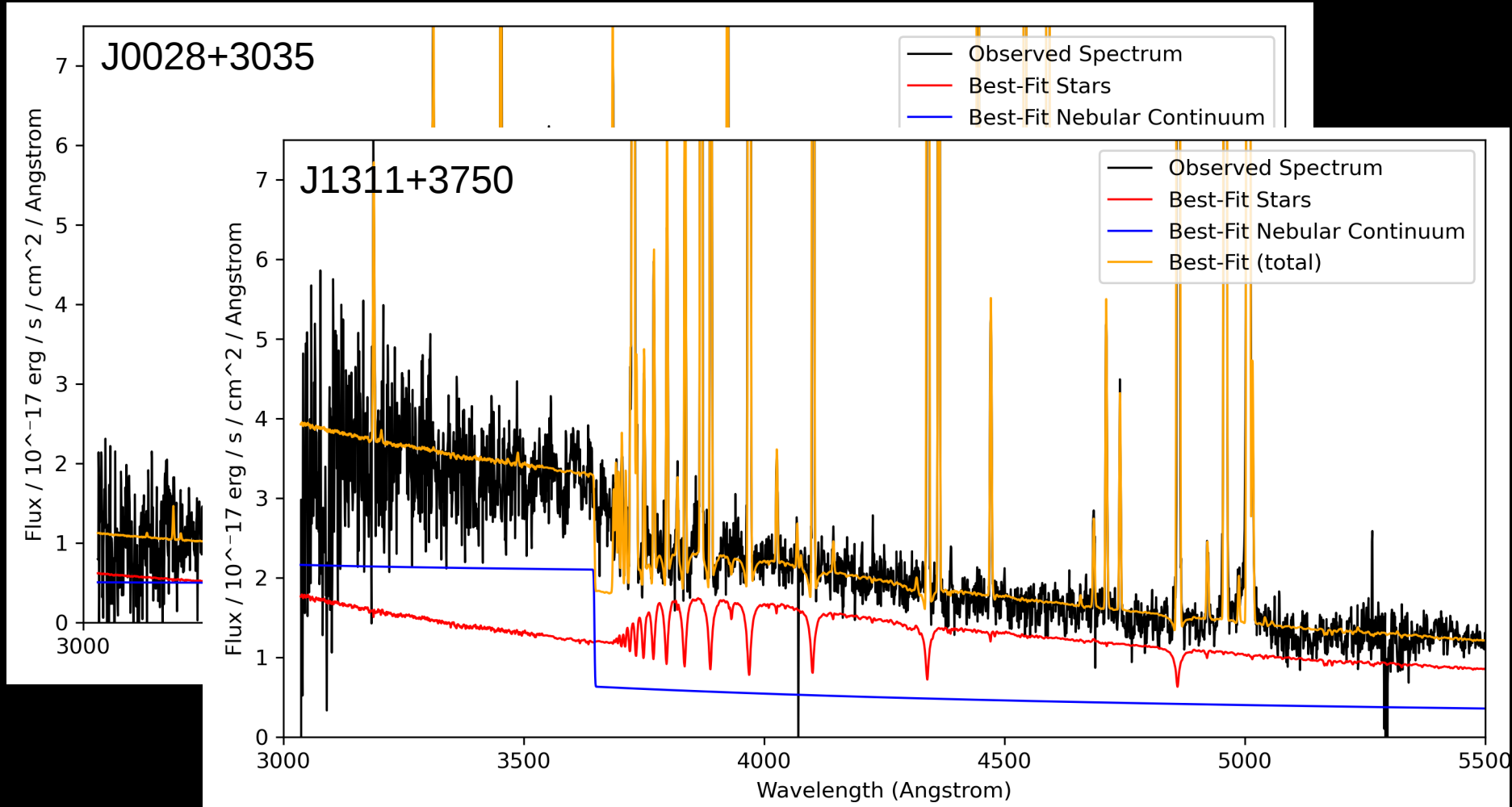
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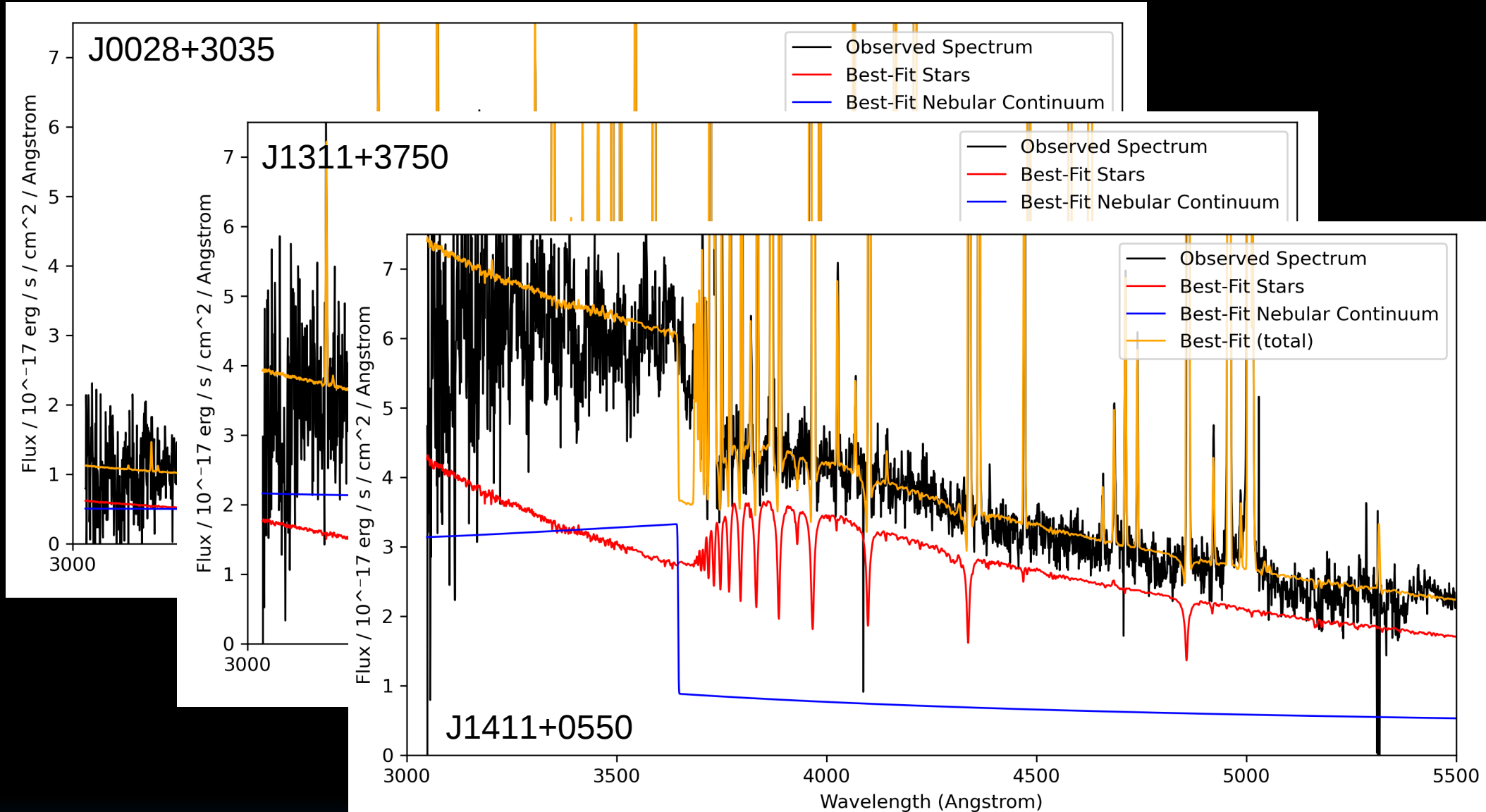
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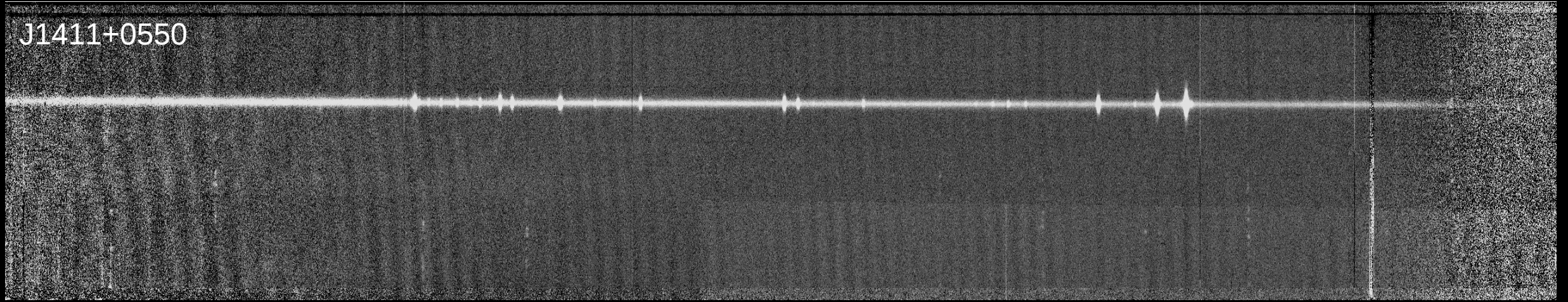


Enders+ 2025, in prep.

Results (III): Extraplanar Nebular Emission

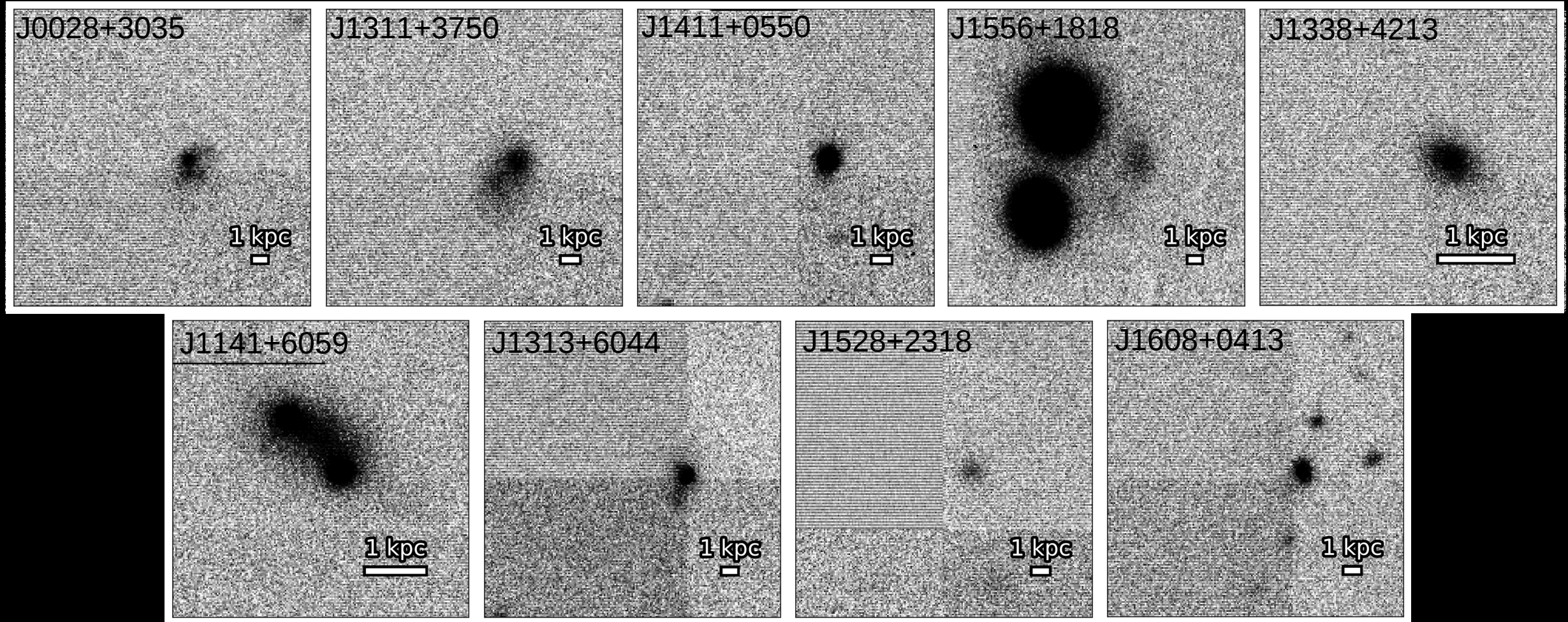
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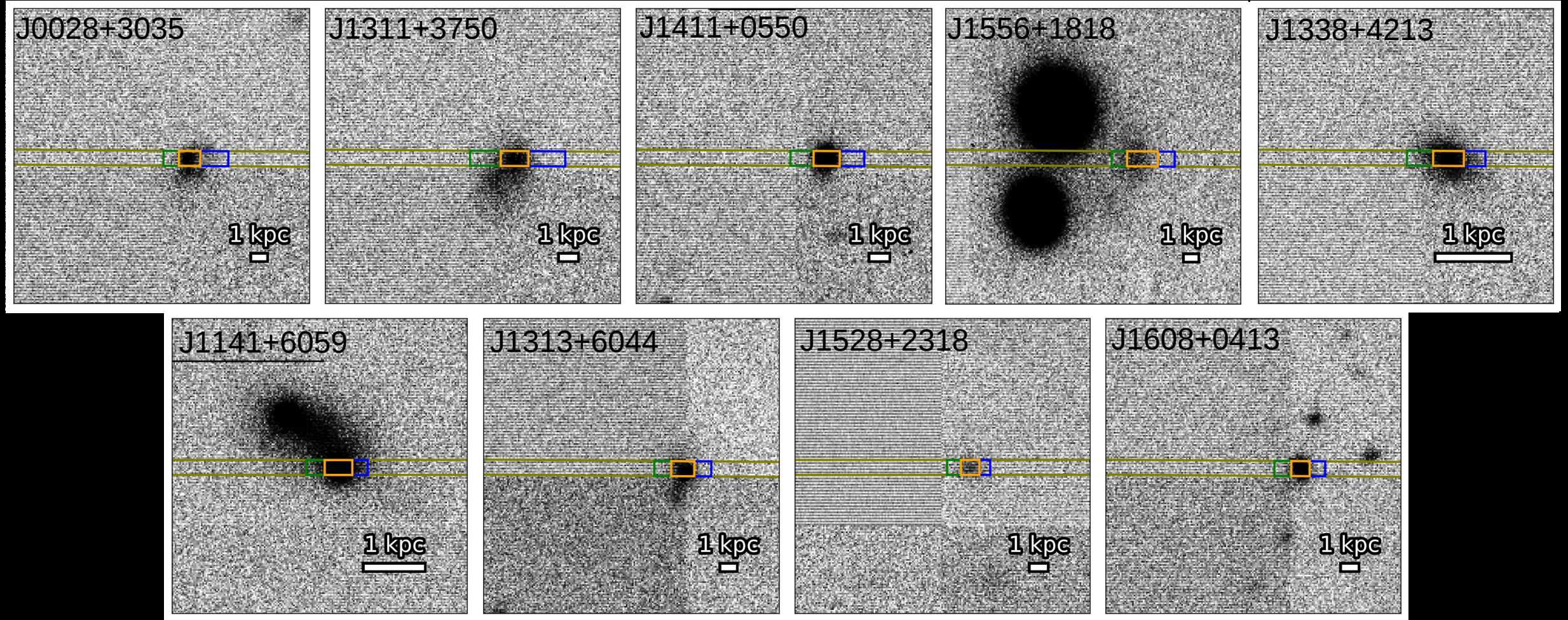
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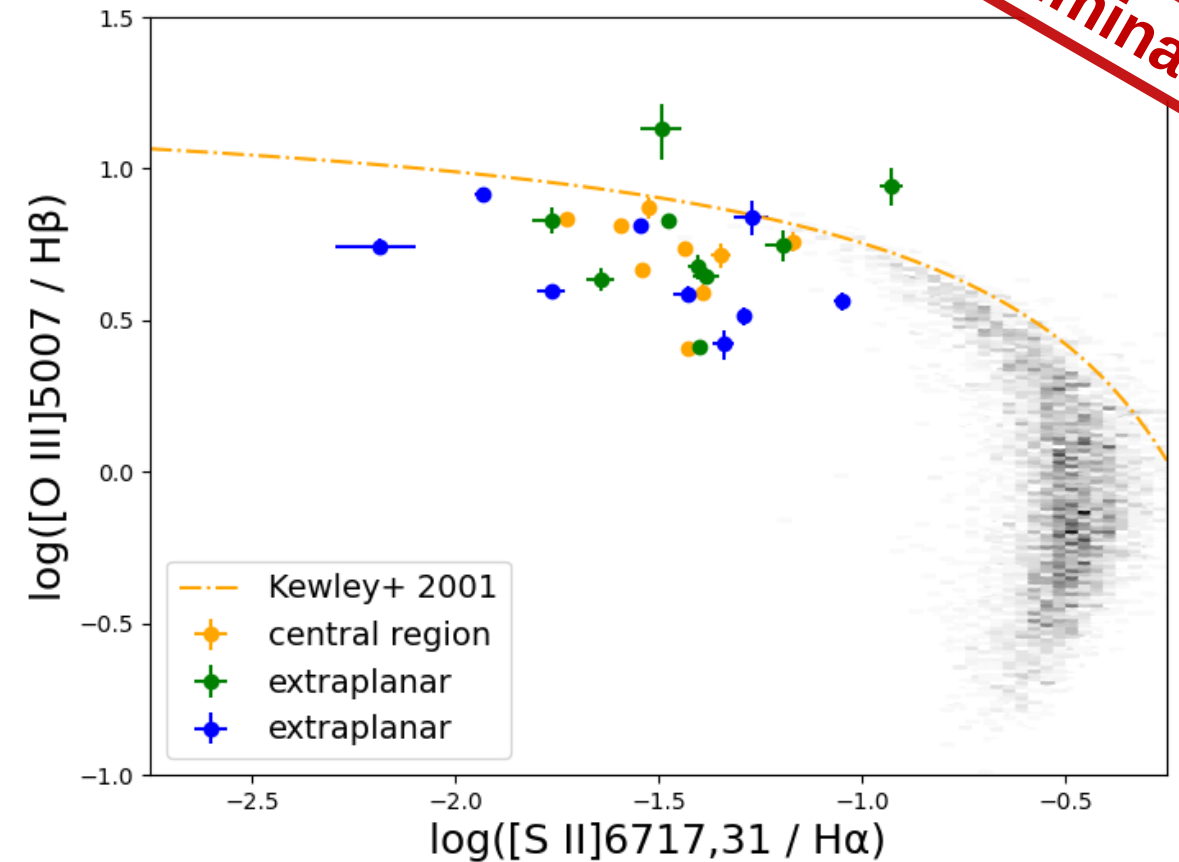
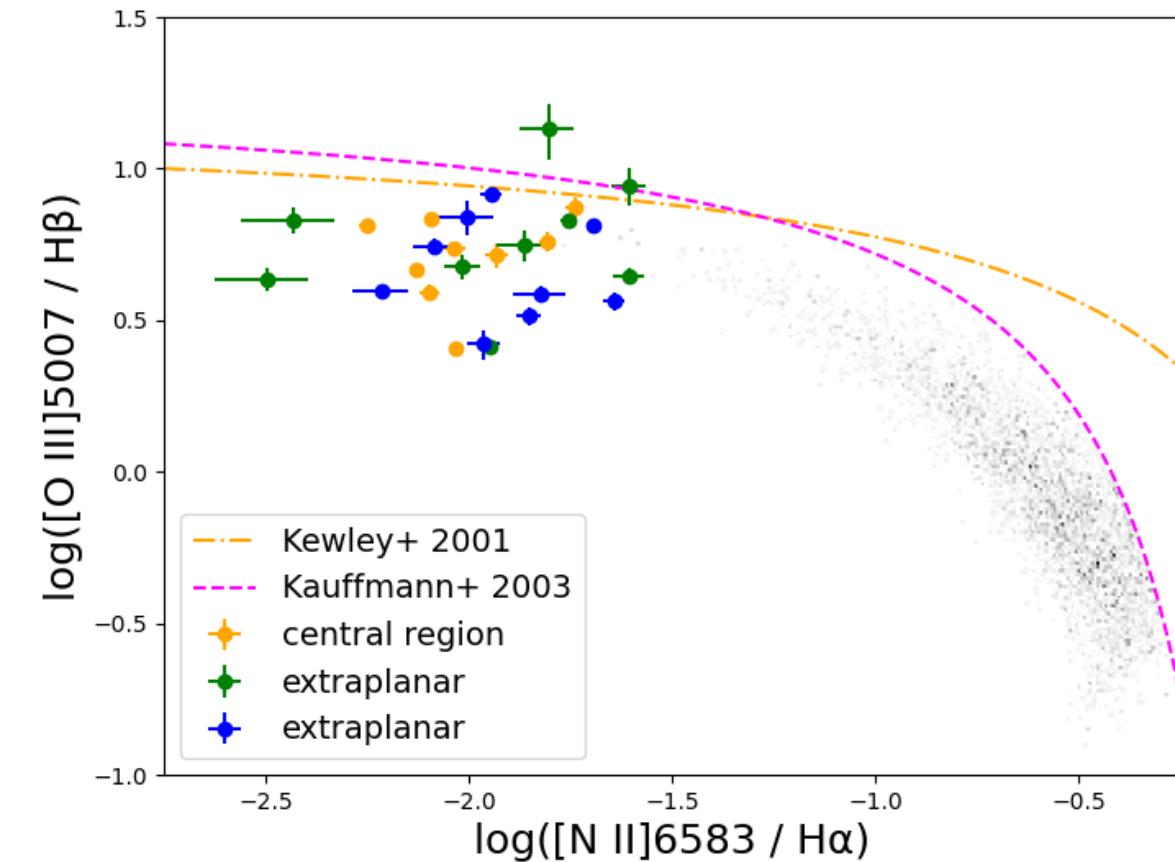
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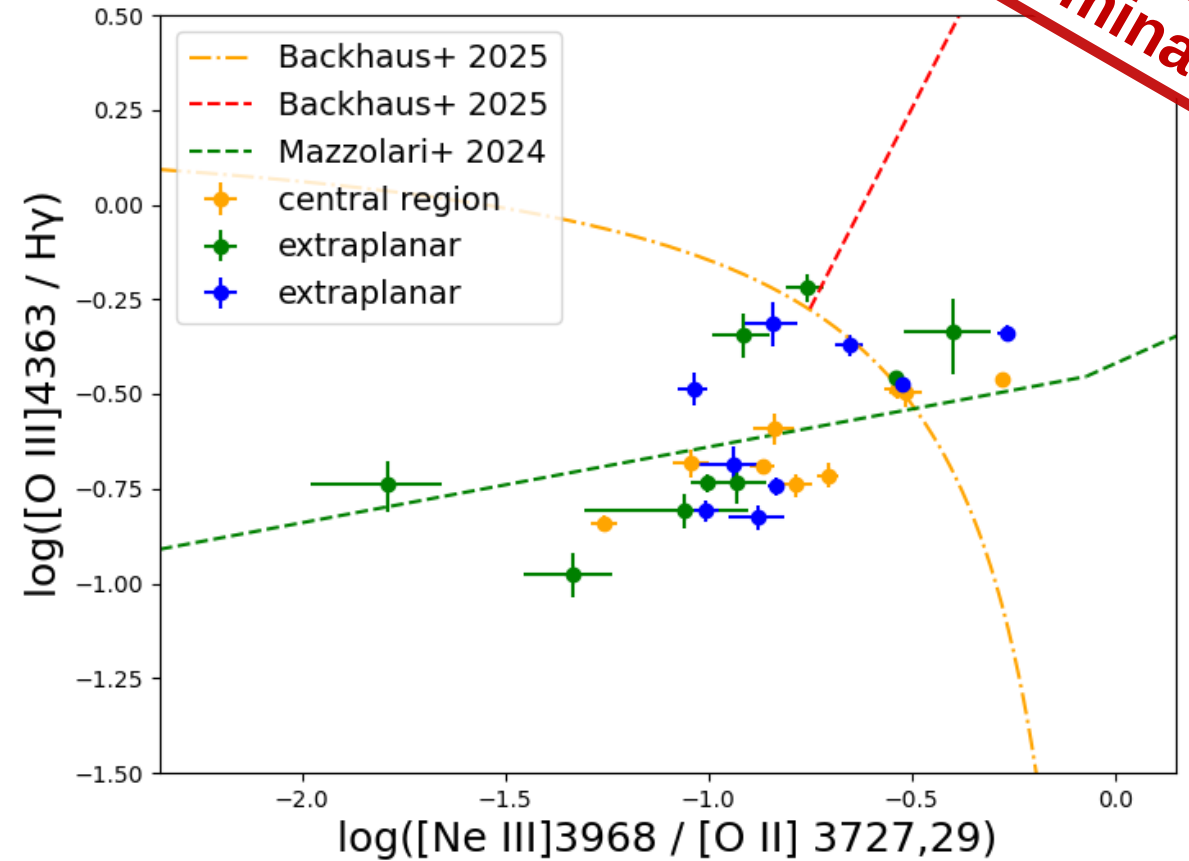
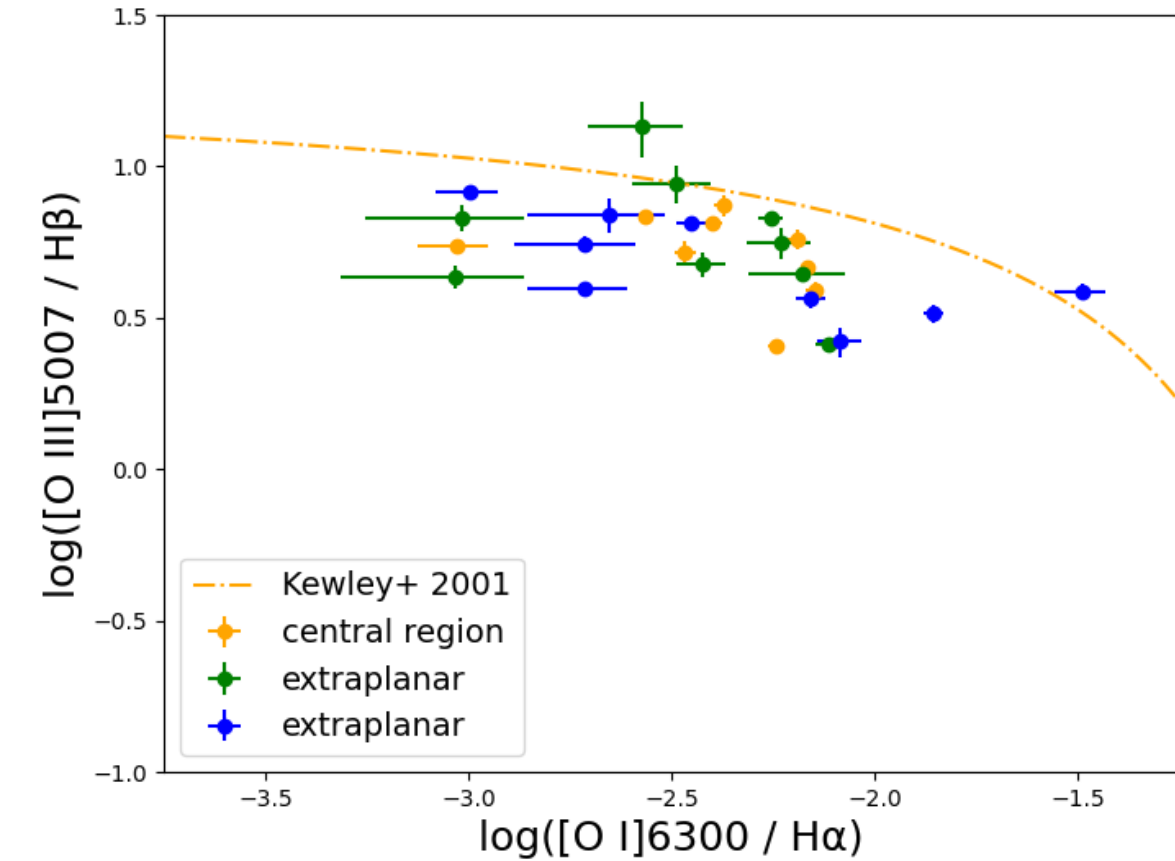
Preliminary



Enders+ 2025, in prep.

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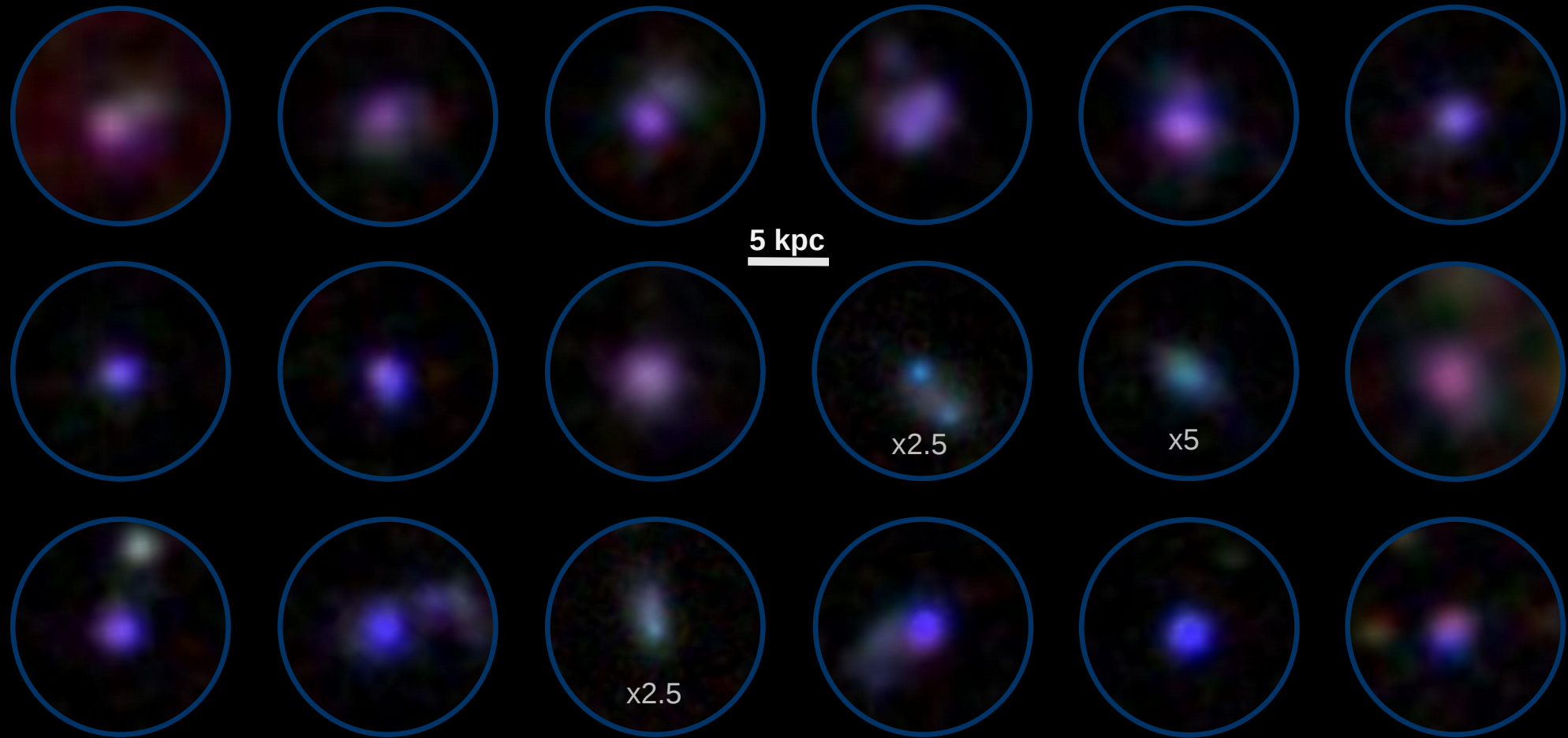
Enders+ 2025, in prep.

Summary

- purely star-forming galaxies with nebular high-ionisation lines → promising LCE candidates
- young **two-stage starburst** confirmed → **LyC leakage scenario**:
 - ~ 10 Myr population: **ISM restructuring** (cavities, tunnels)
 - ~ 1 Myr population: **LyC radiation**
- common spectral feature: strong Balmer Jump
- nebular emission often extends significantly beyond the galactic disk
- **Stay tuned for more!**

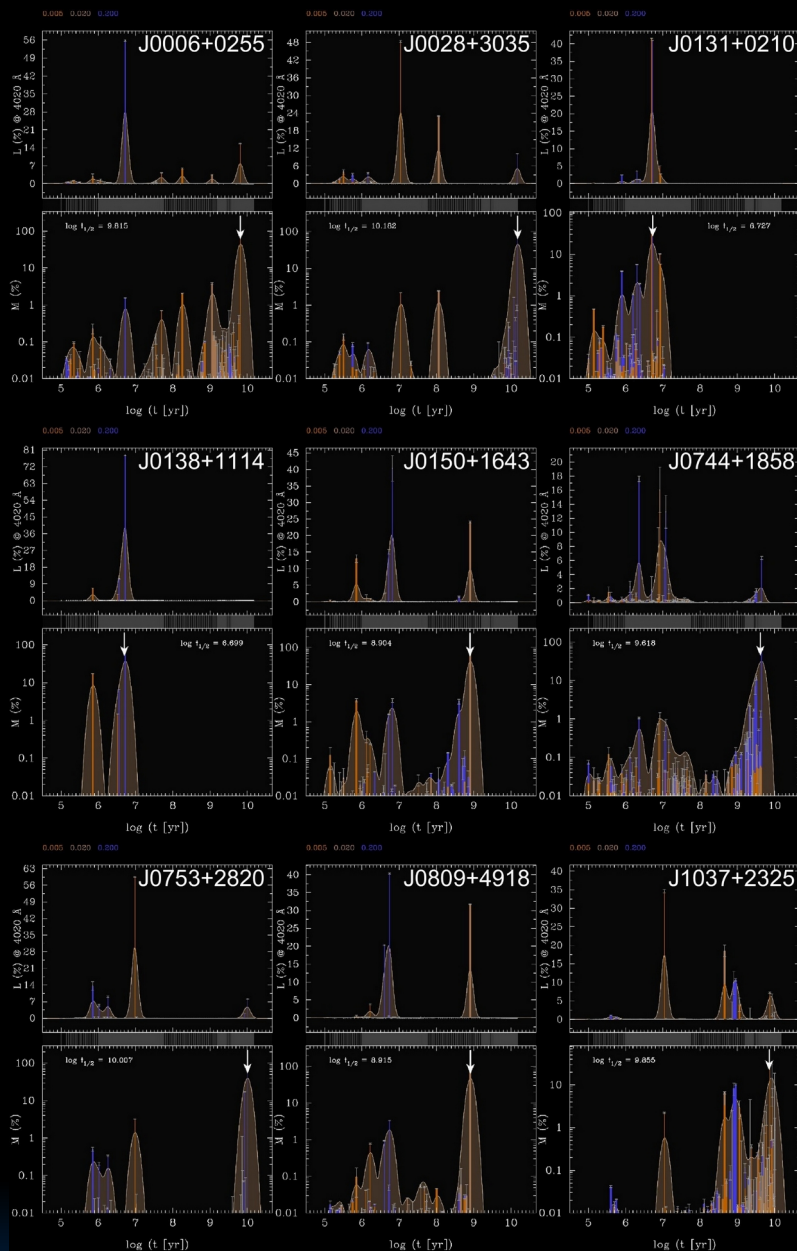
Thank you for your attention!

Ancillary Slide: SDSS Images (to scale)



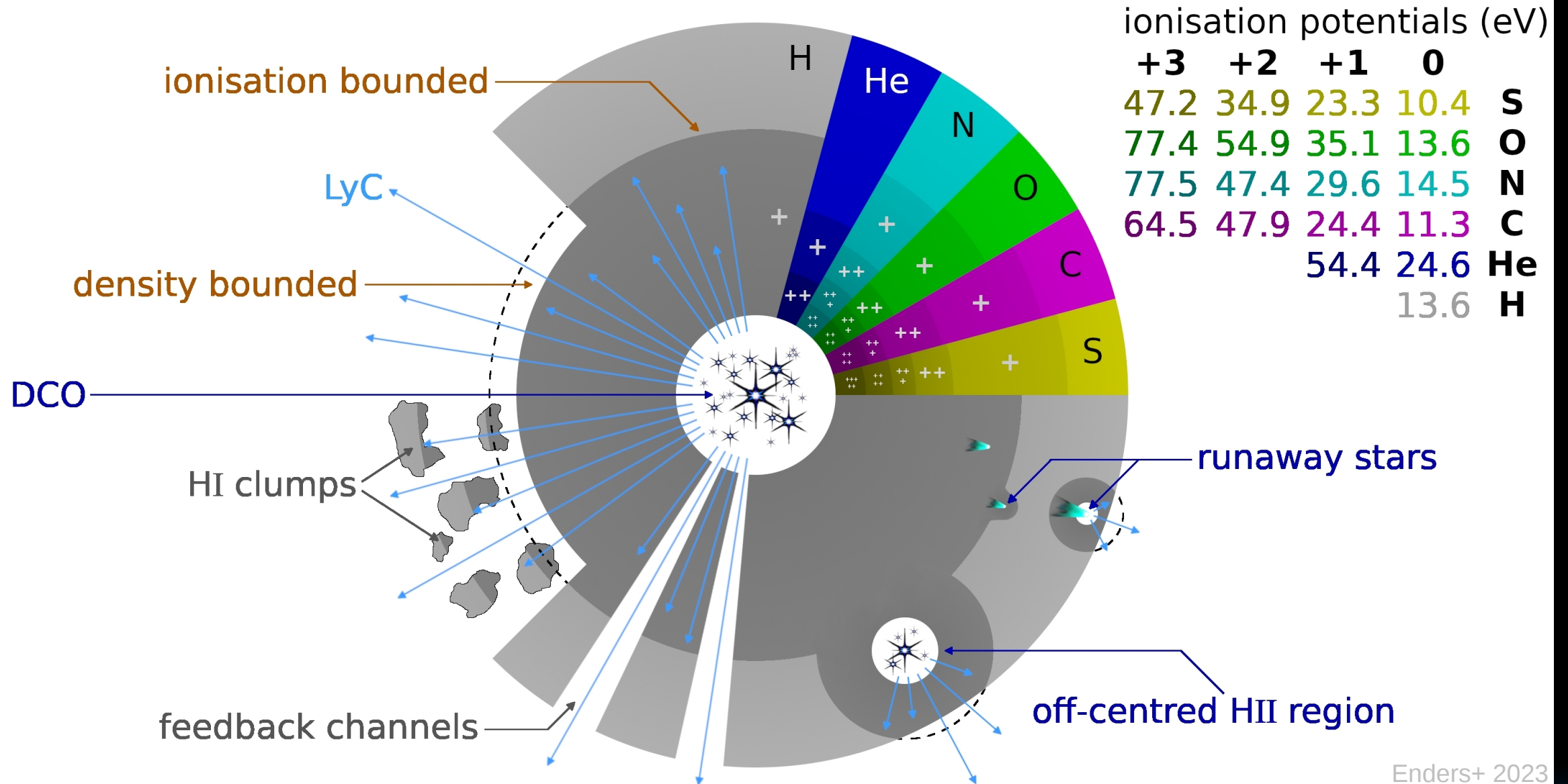
Credit: Sloan Digital Sky Survey | *gri*

Ancillary Slide: SFHs (FADO + SDSS spectra)



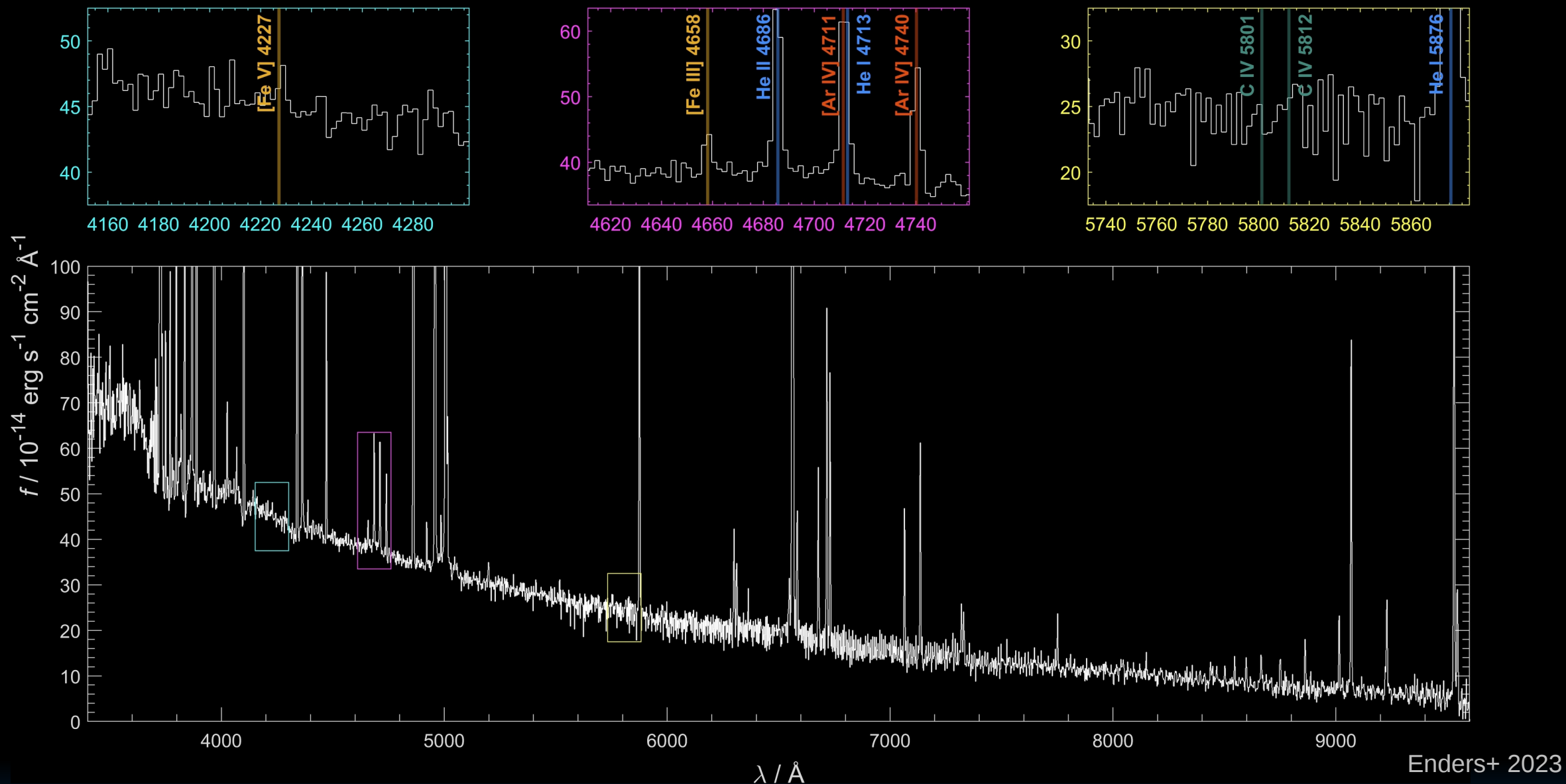
Enders+ 2023

Ancillary Slide: LCE sketch (annotated)

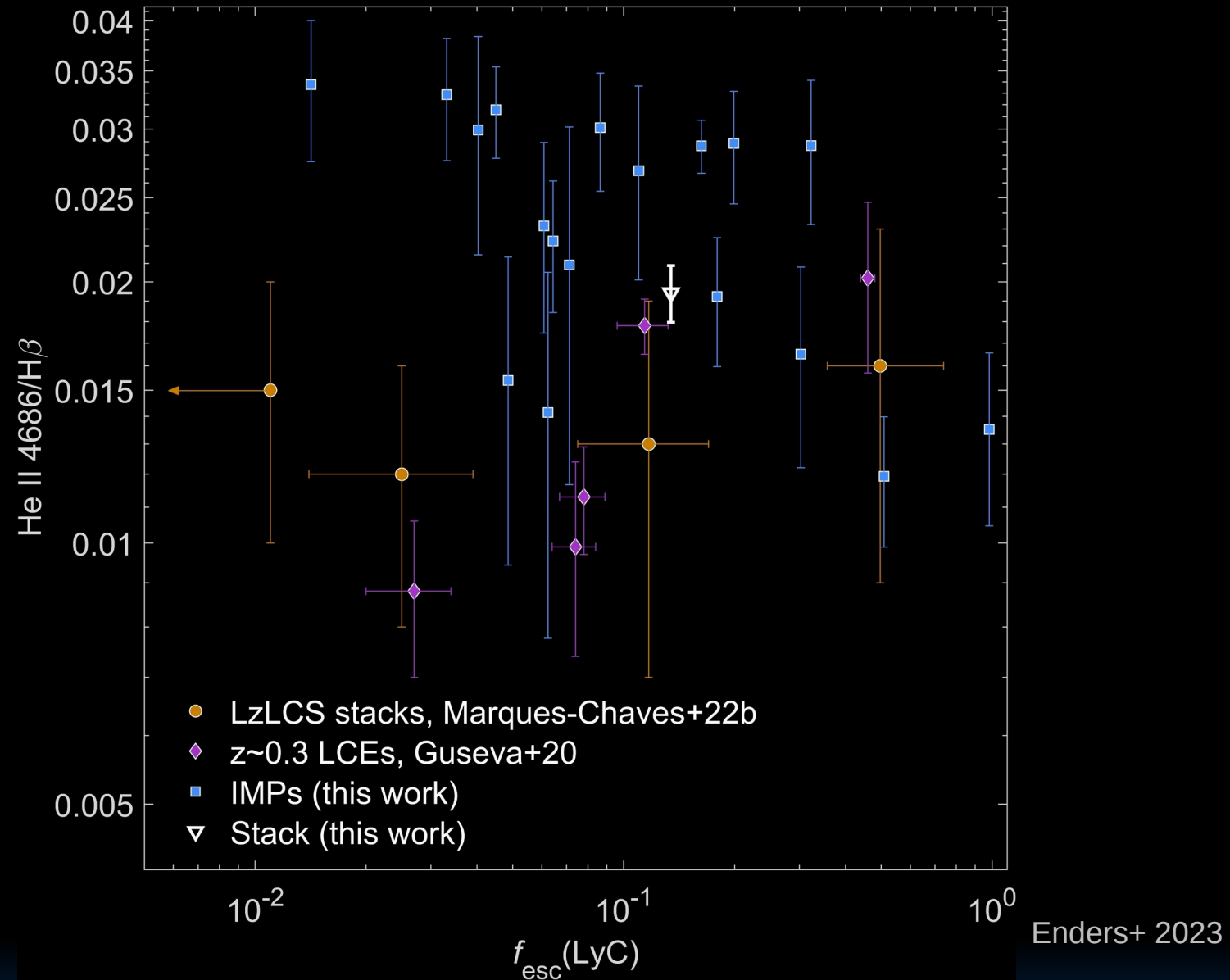


Enders+ 2023

Ancillary Slide: SDSS Spectrum Stack



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



Enders+ 2023