



***Connecting Ly α and LyC escape
with a gravitationally lensed,
super star cluster at cosmic noon***

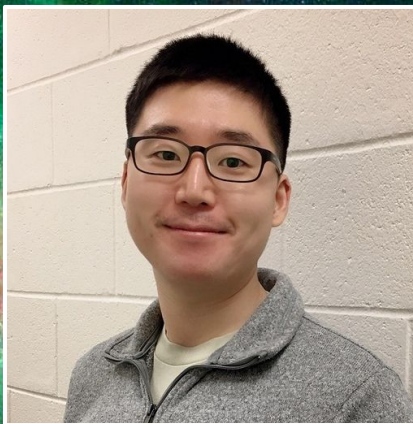
Riley Owens, University of Cincinnati

m.riley.owens@gmail.com



SGAS
Sloan Giant Arcs Survey

Alexander Navarre, Brian Welch, Emil Rivera-Thorsen,
Gourav Khullar, Guillaume Mahler, Håkon Dahle, Jane
Rigby, John Chisholm, Josh Roberson, Kate Napier,
Keren Sharon, Keunho Kim, Matthew Bayliss, Michael
Florian, Michelle Berg, Michael Gladders, Raven Gassis,
Suhyeon Choe, Taylor Hutchison



Keunho Kim

University of Cincinnati
Postdoc

HST photometry of the Sunburst Arc
Today at 12:40



Alex Navarre

University of Cincinnati
PhD student

High-z lensed LAEs
Today at 9:40

Emil Rivera-Thorsen

Stockholm University
Researcher

What is a typical LyC leaker?
Today at 14:40



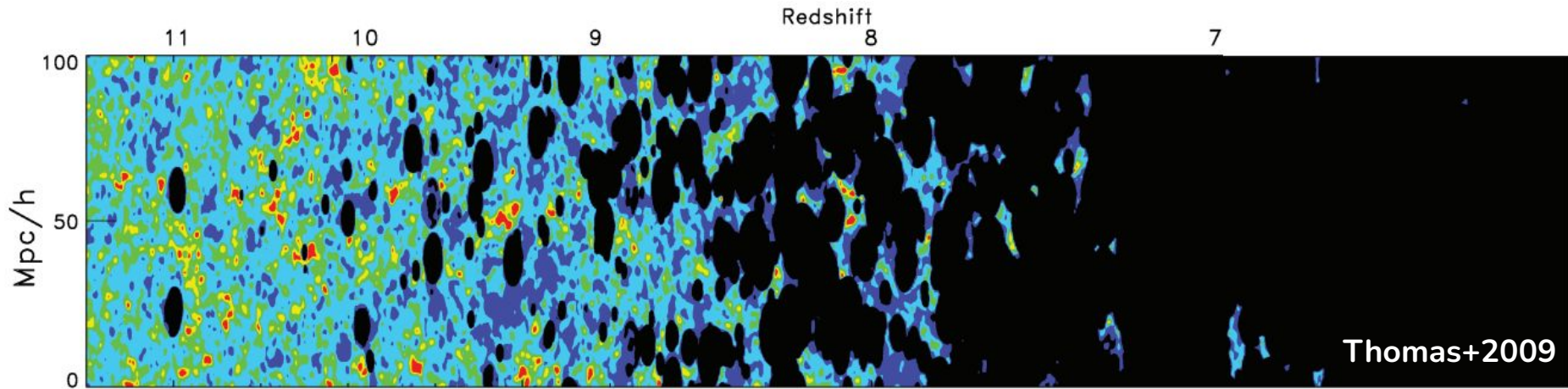
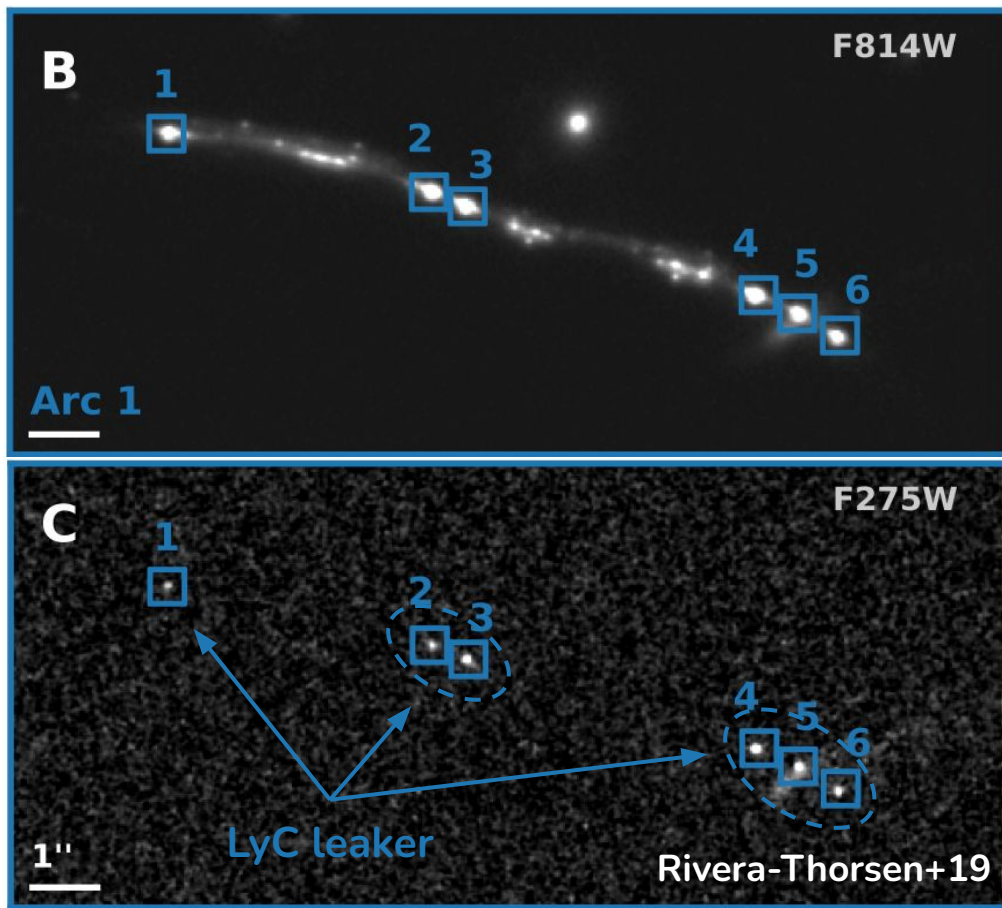
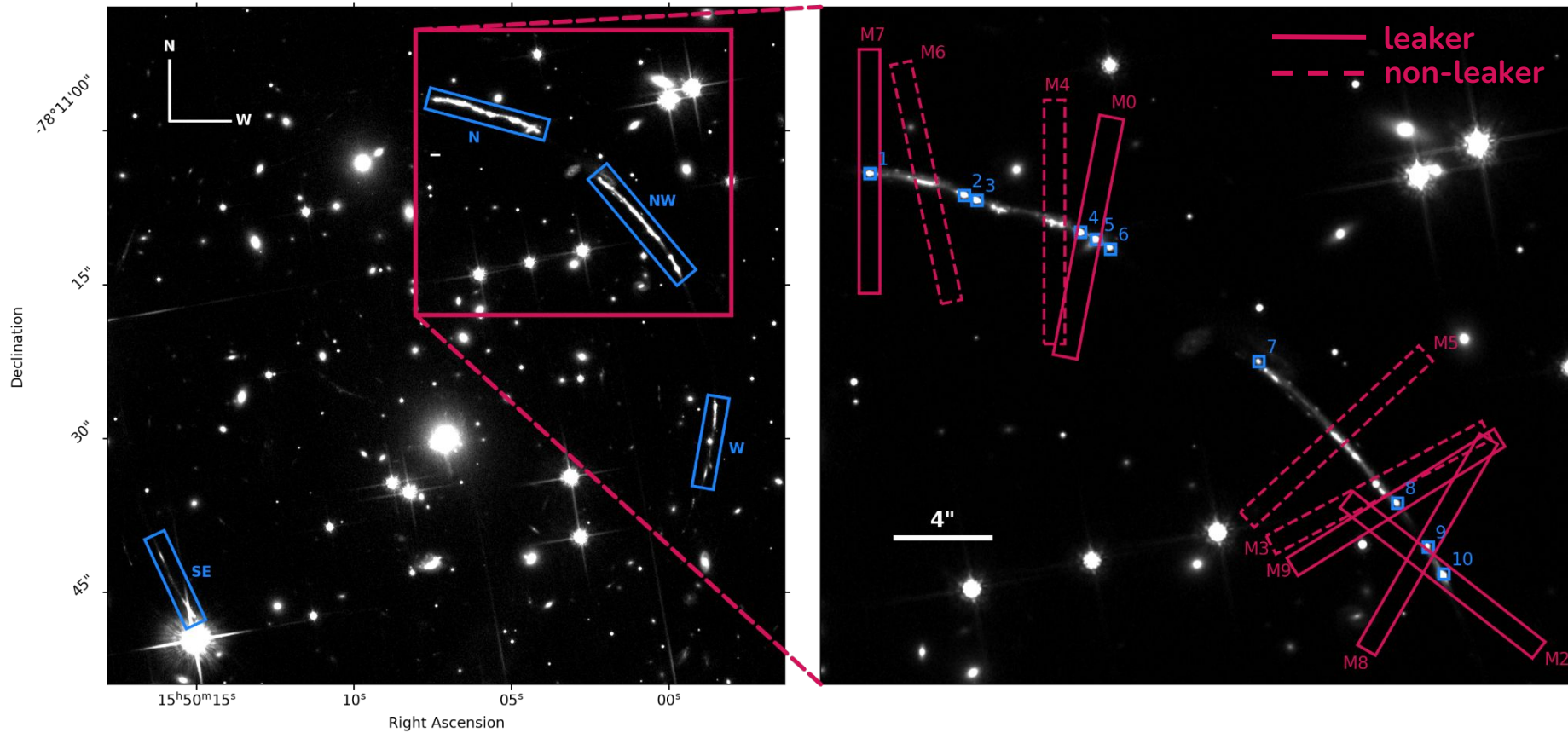
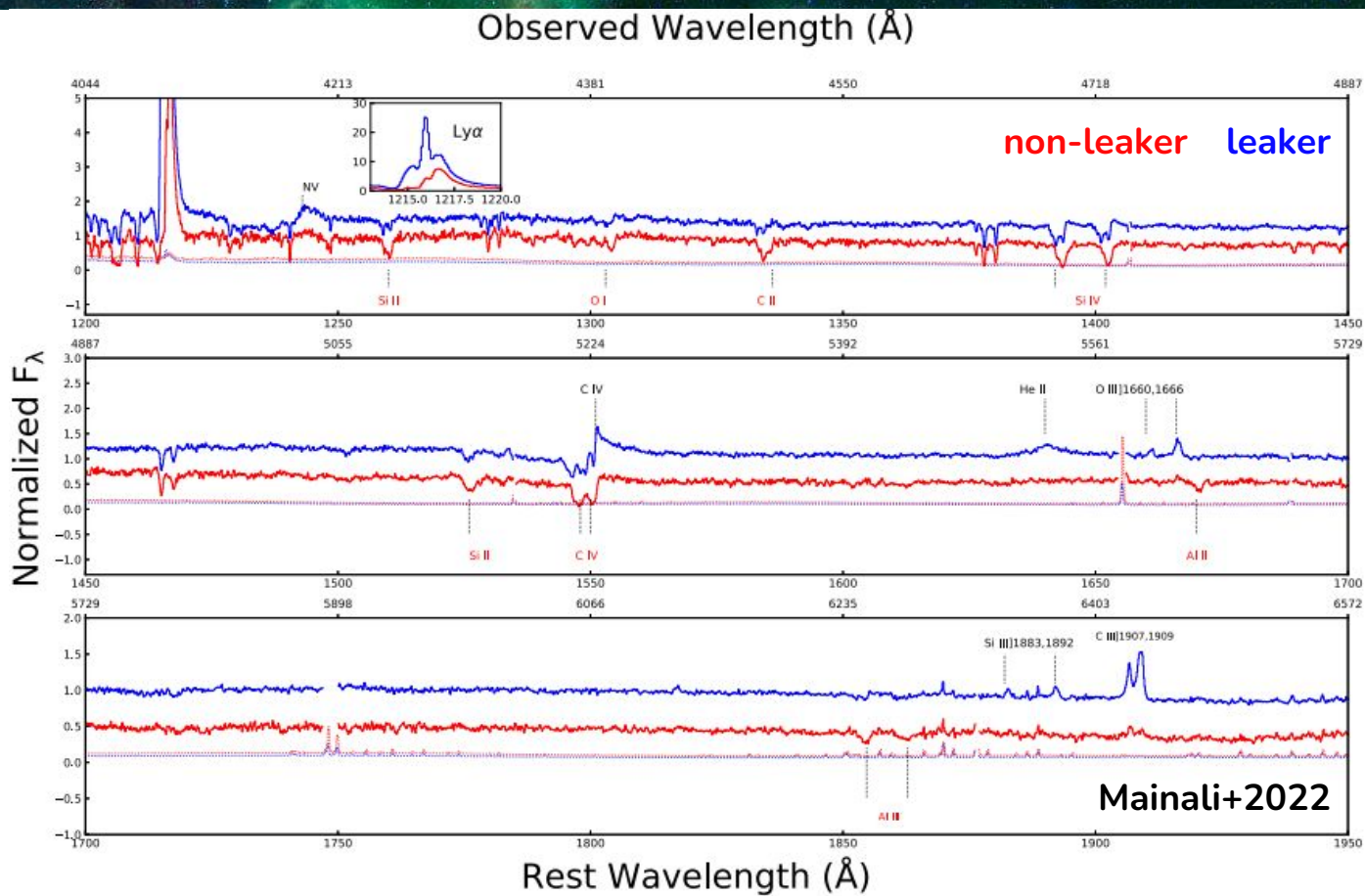
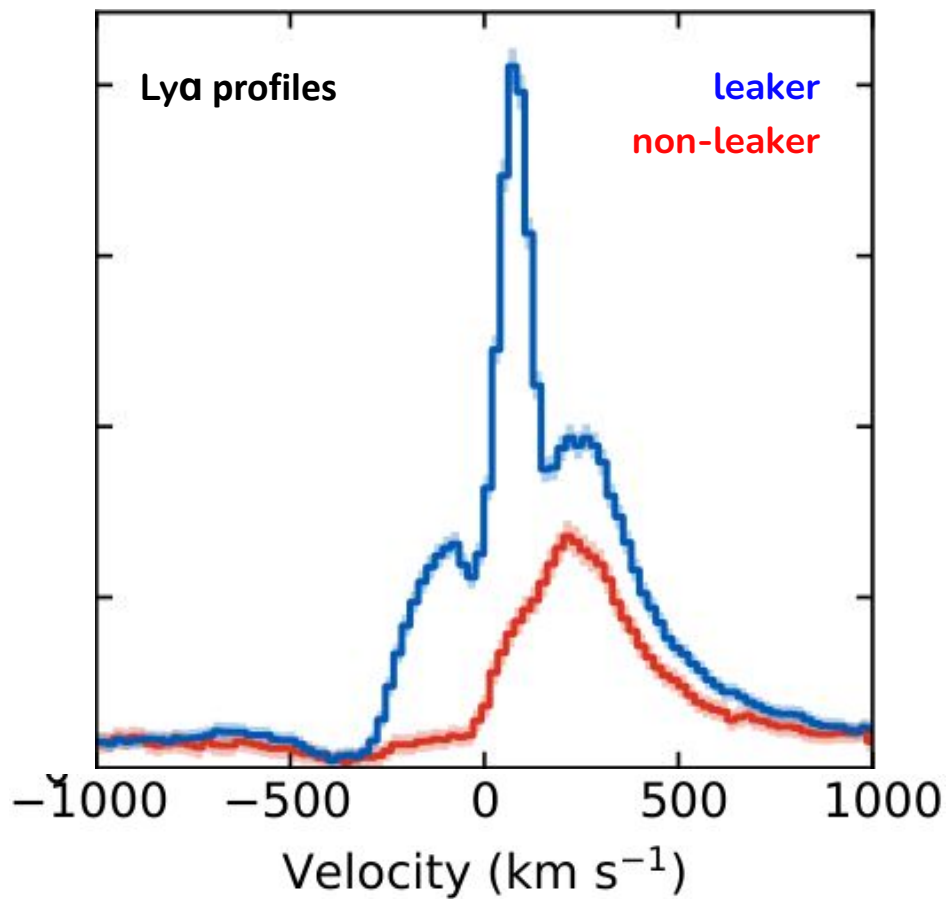


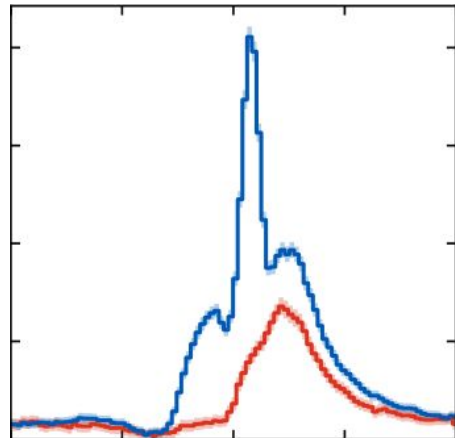
Figure: Simulated HI 21cm signal during reionization.



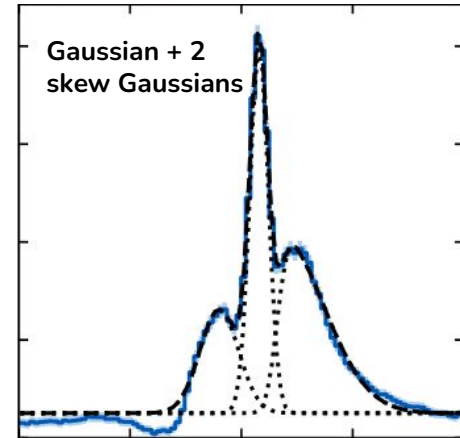
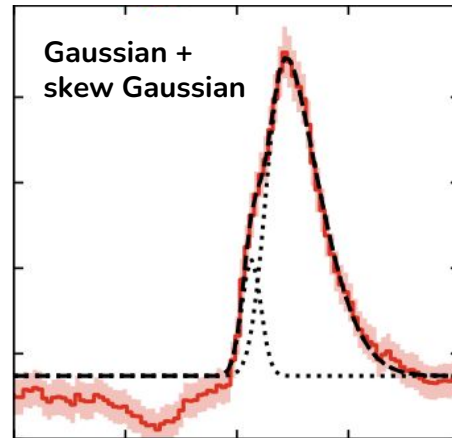


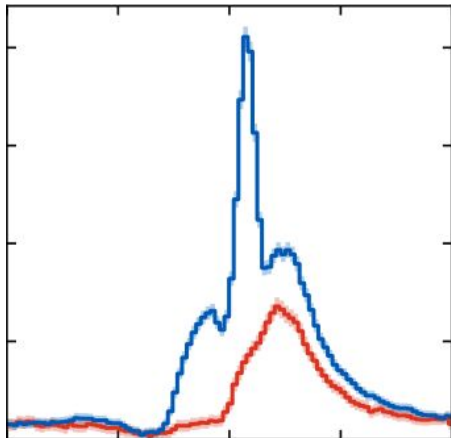




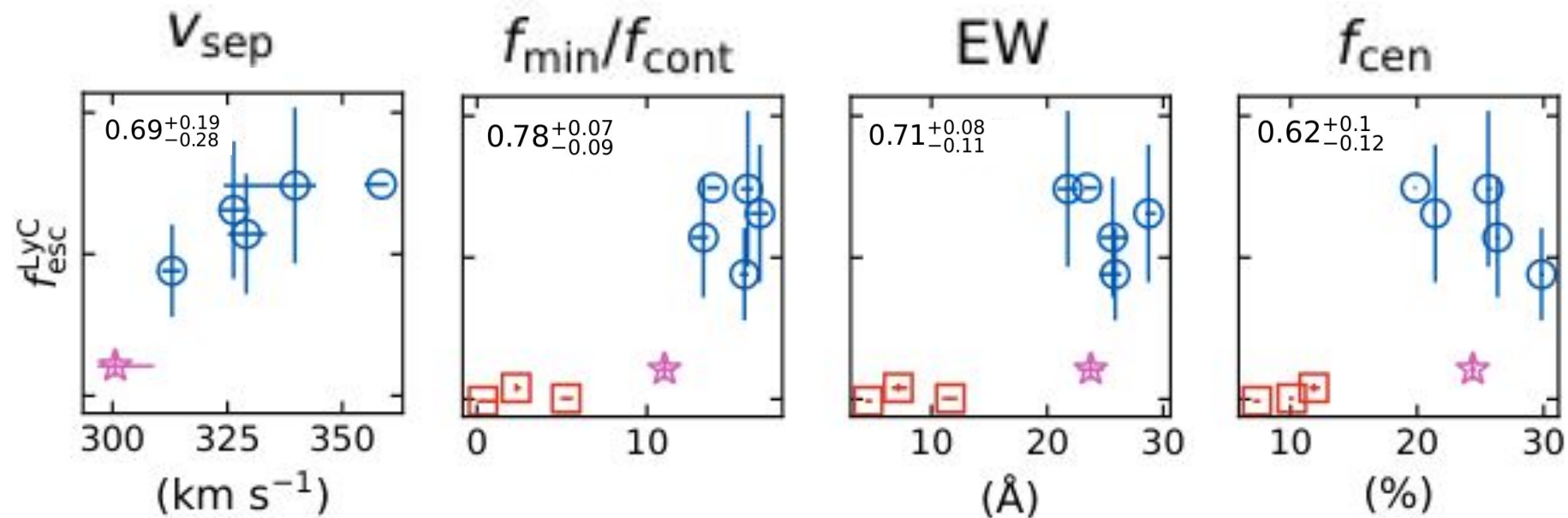


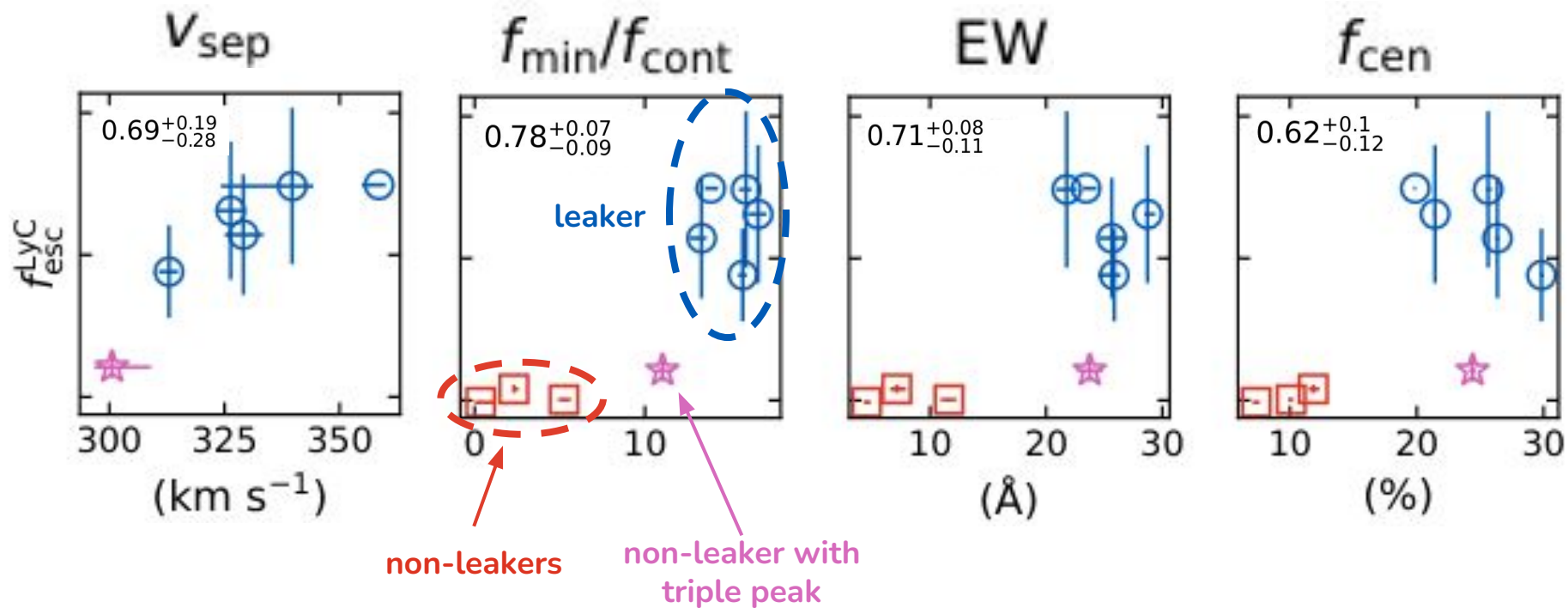
MC fitting



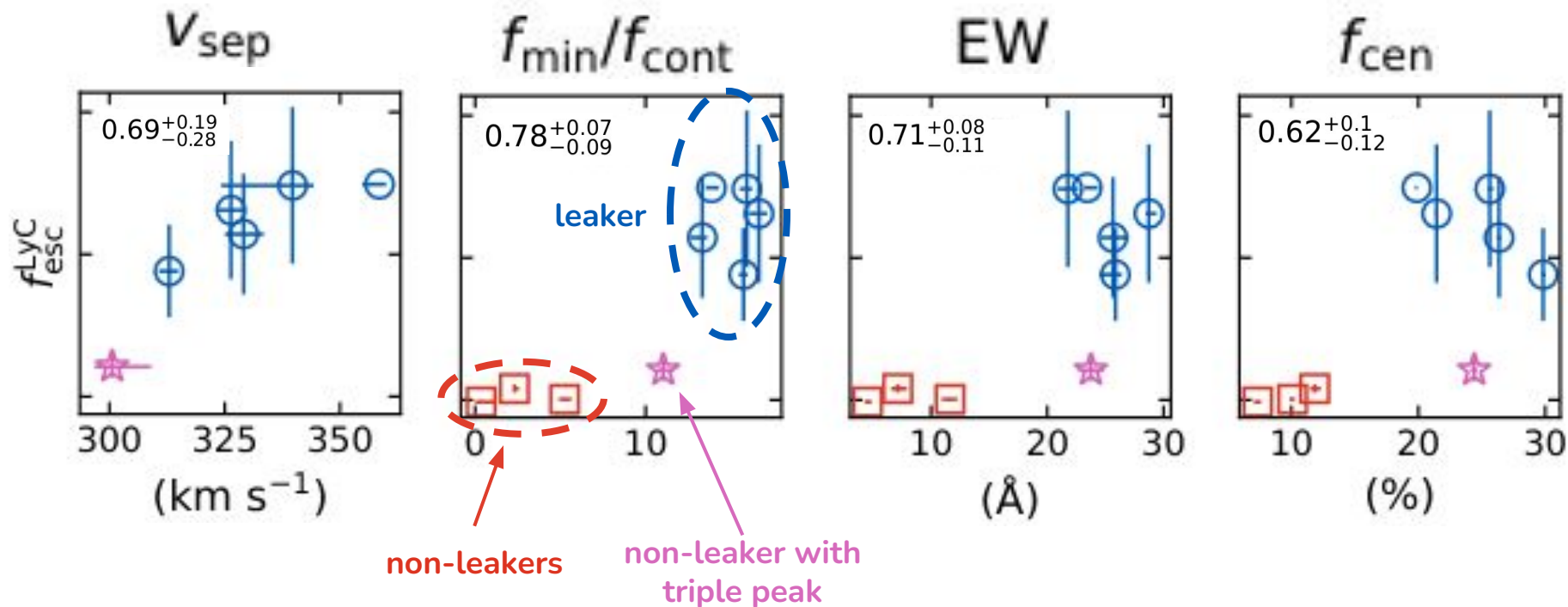


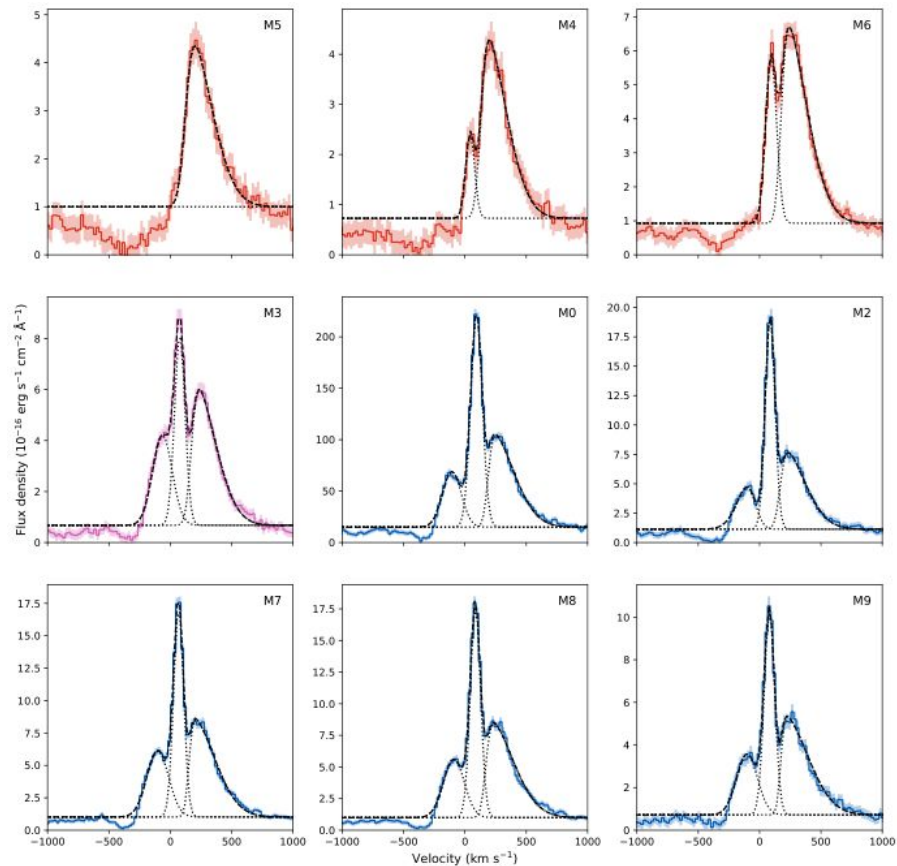
- Peak separation (v_{sep}),
- peak widths (FWHMs),
- $f_{\text{min}} / f_{\text{cont}}$,
- equivalent width,
- central escape fraction (f_{cen}),
- and luminosity

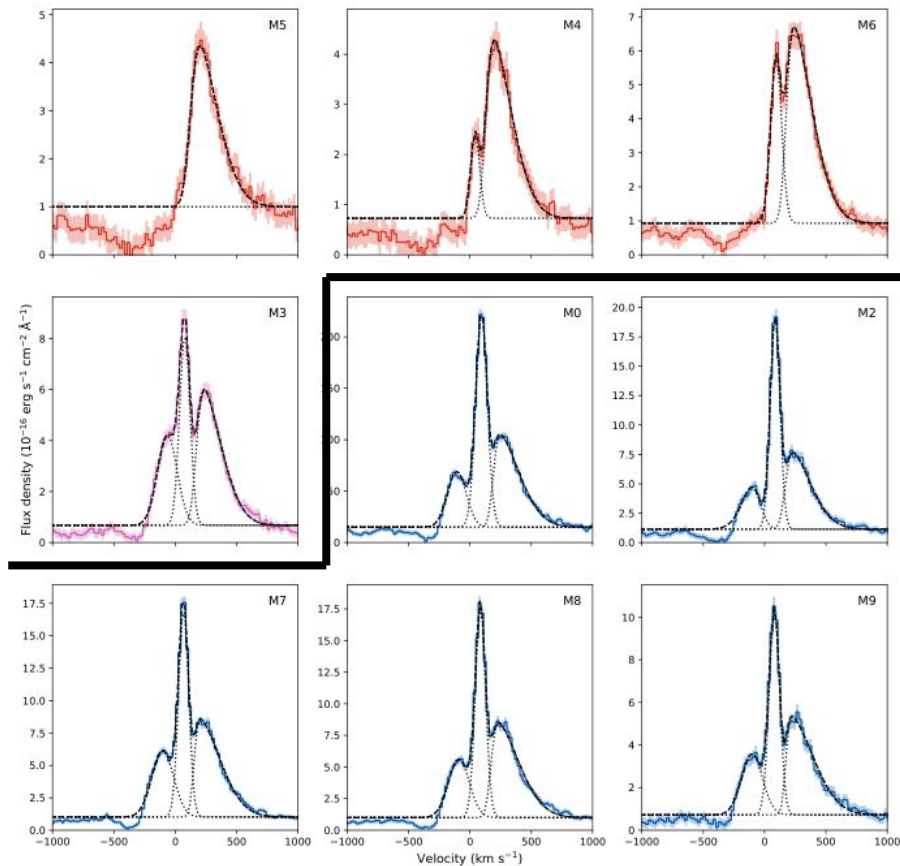




More interesting correlations and non-correlations in the upcoming paper!

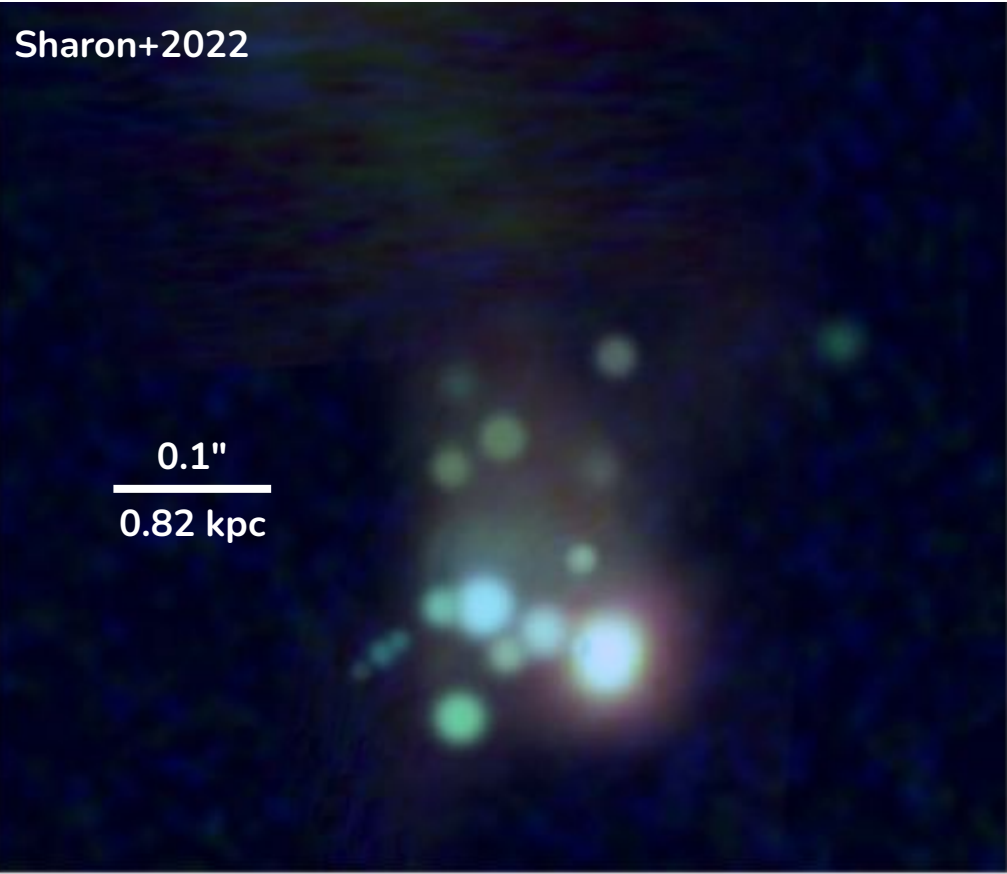


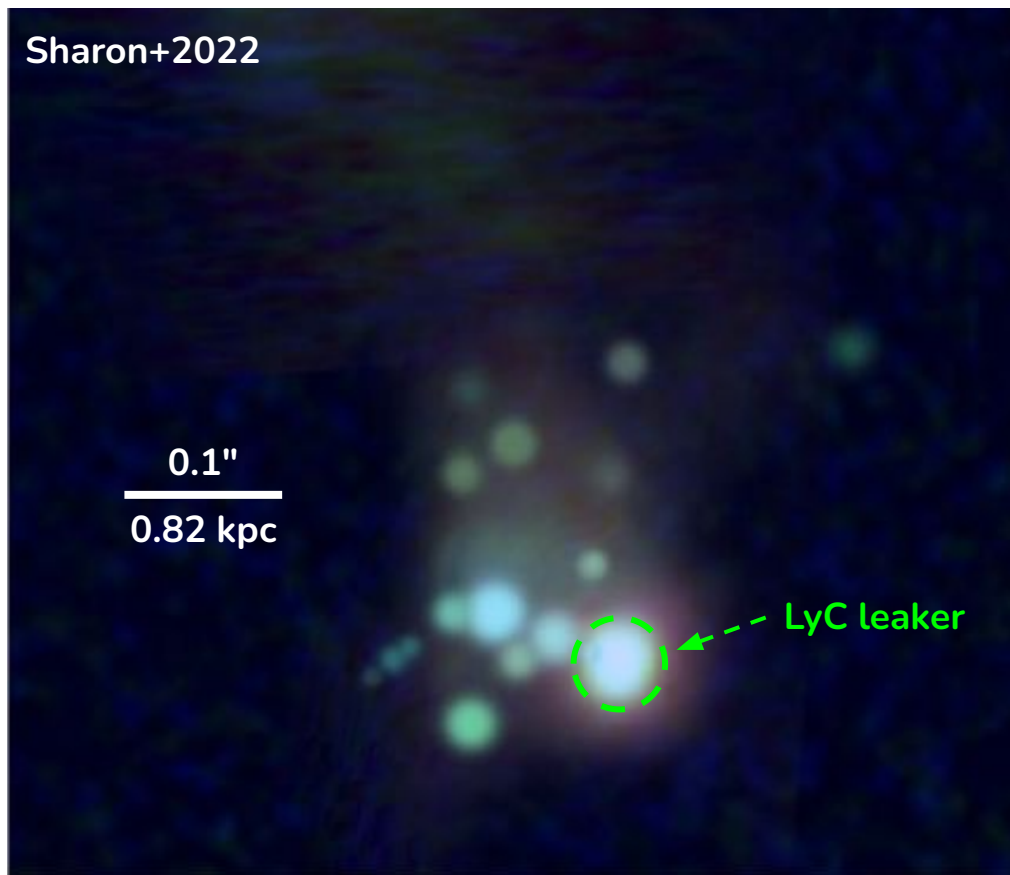


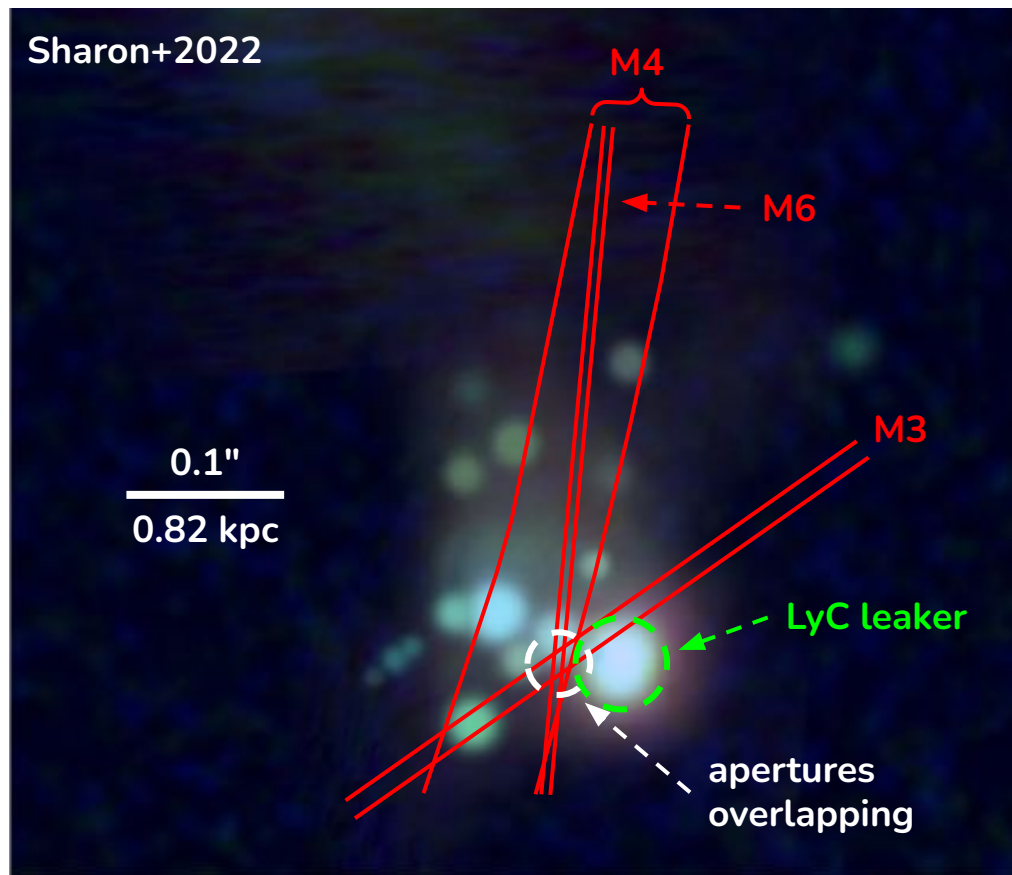


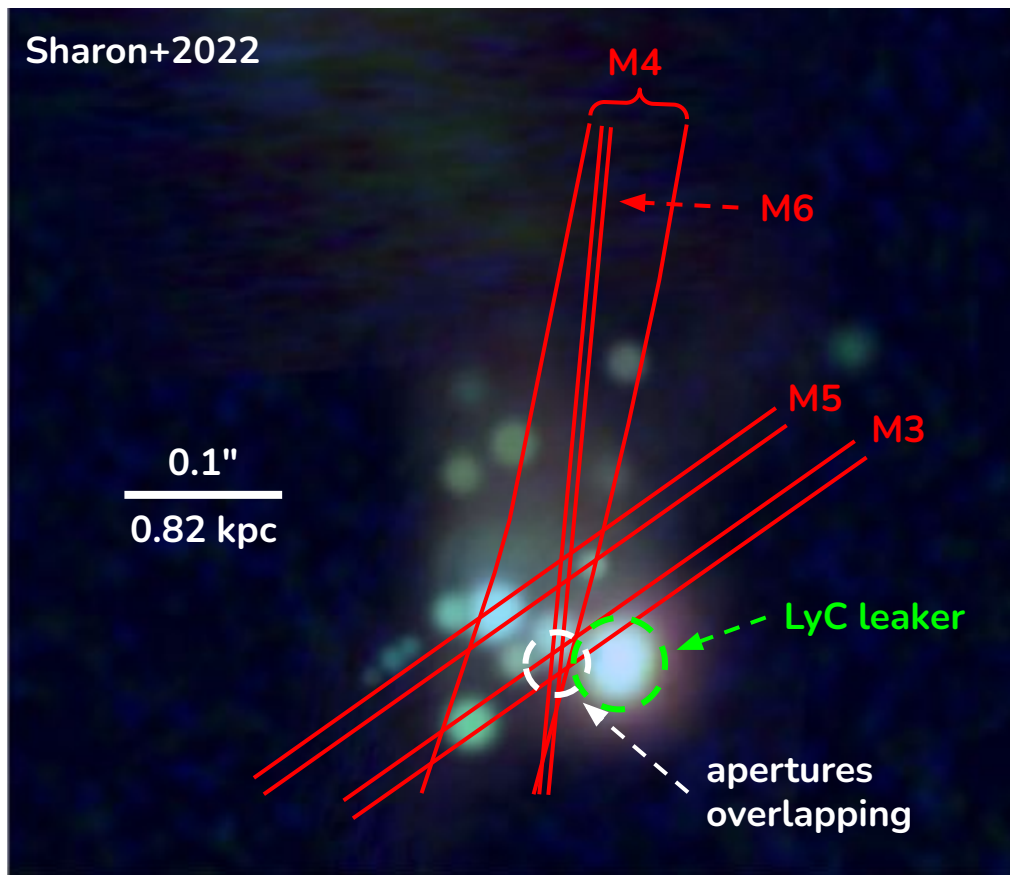
Sharon+2022

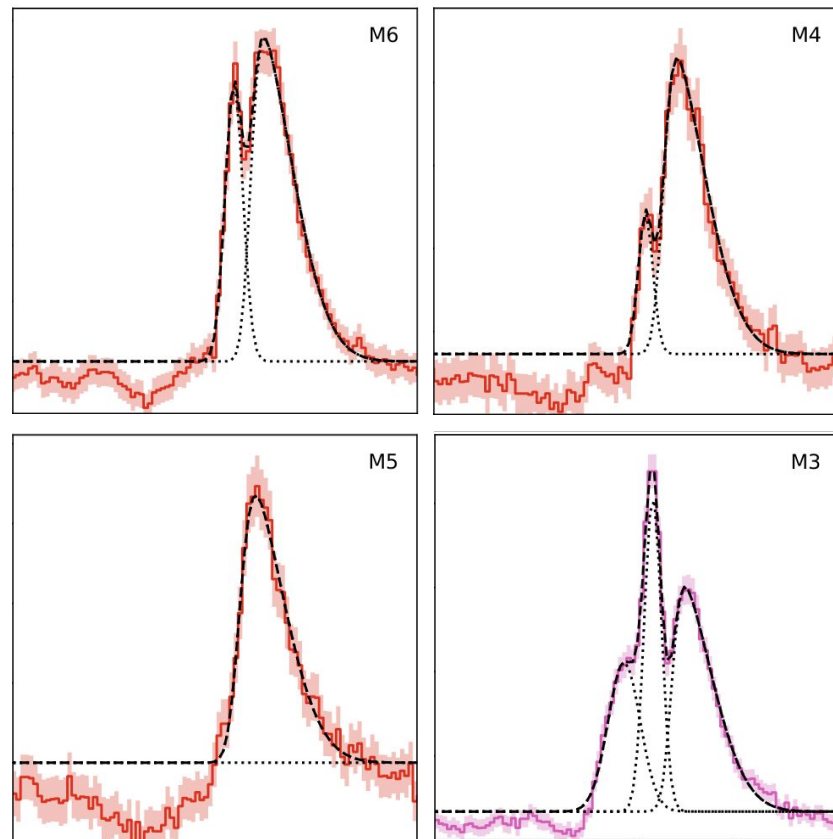
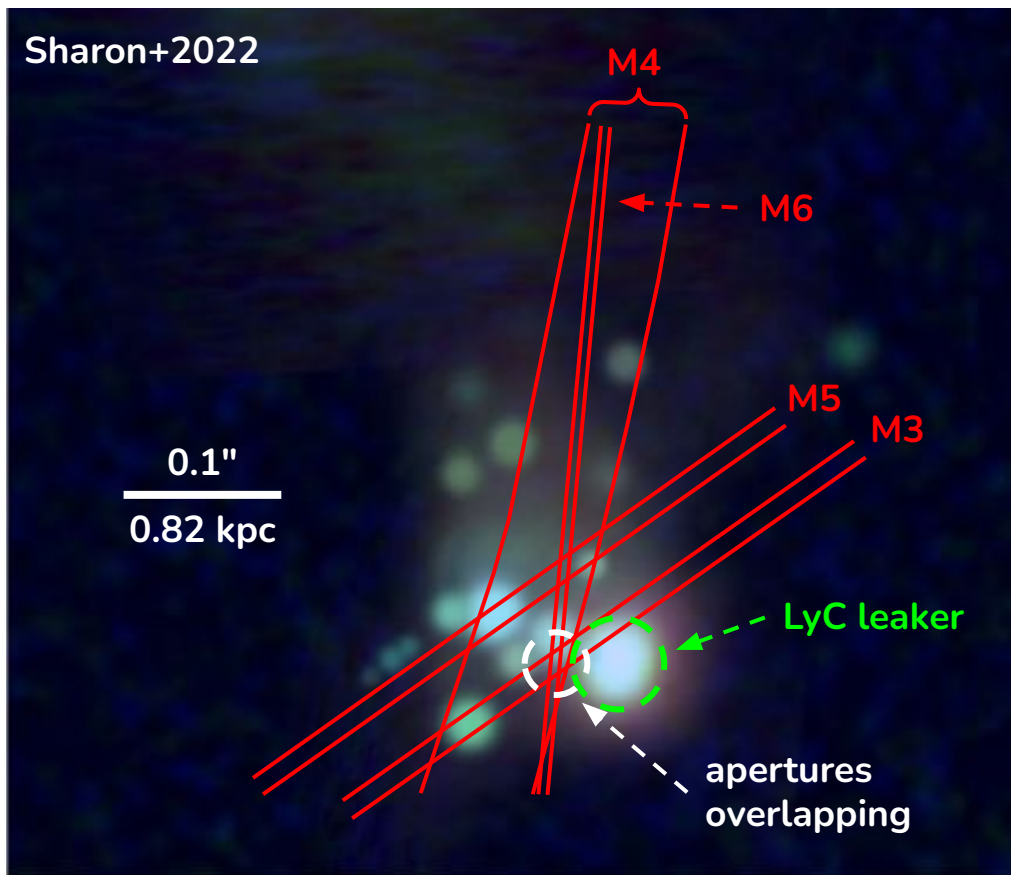
0.1"
0.82 kpc

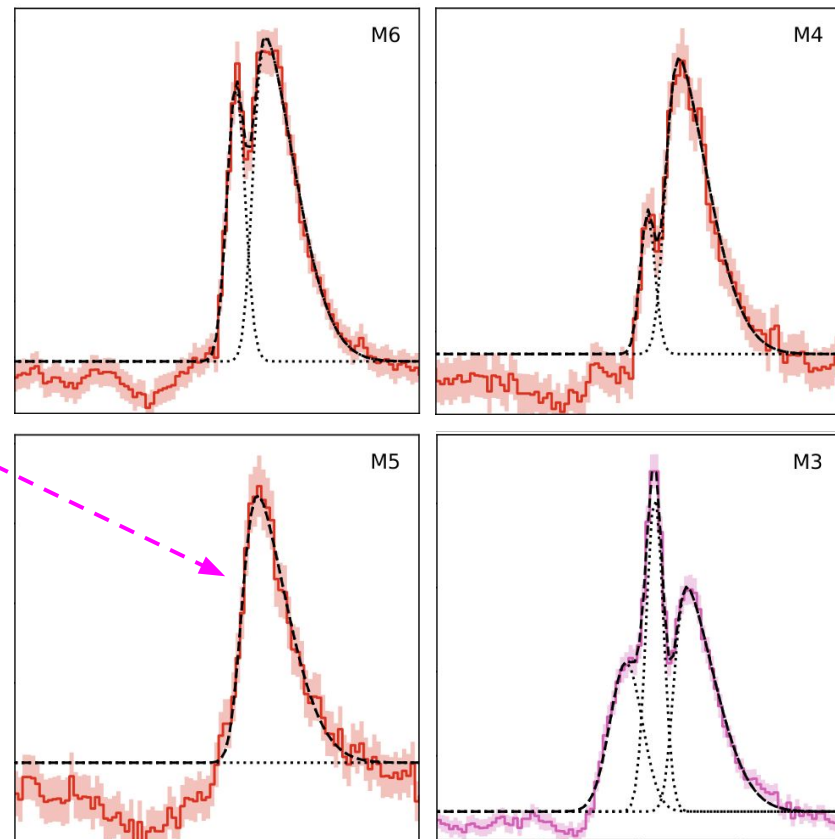
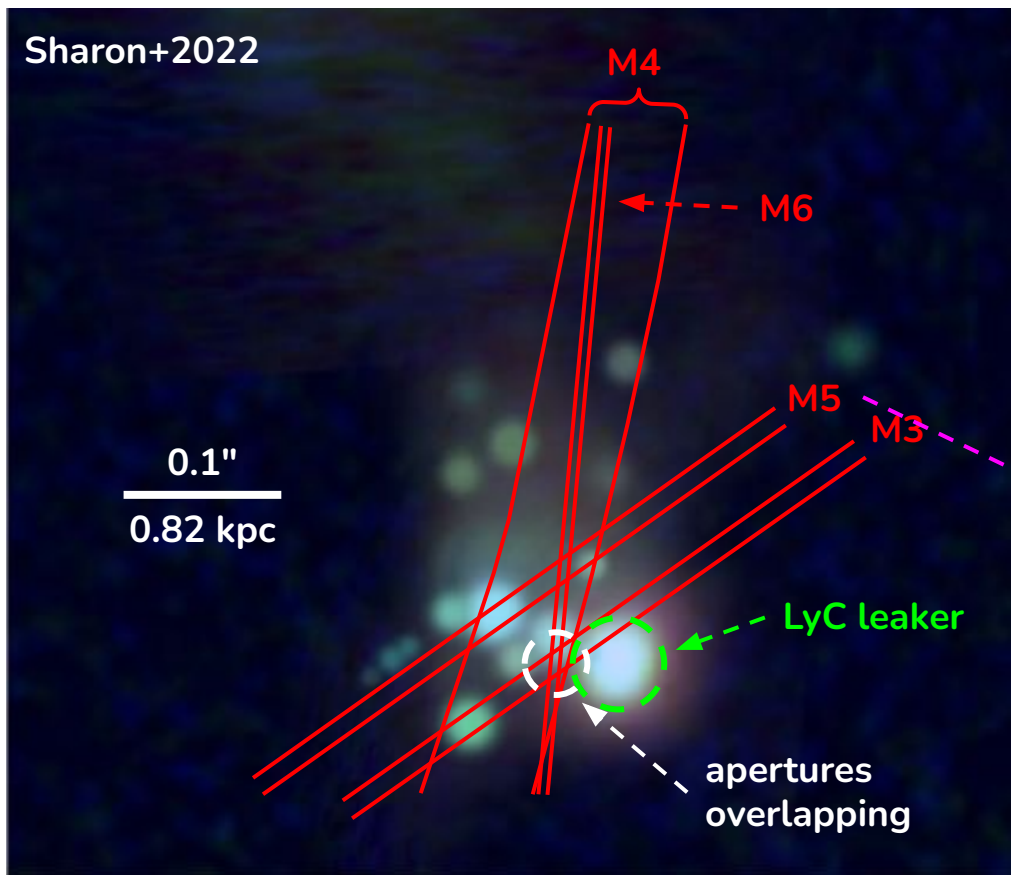


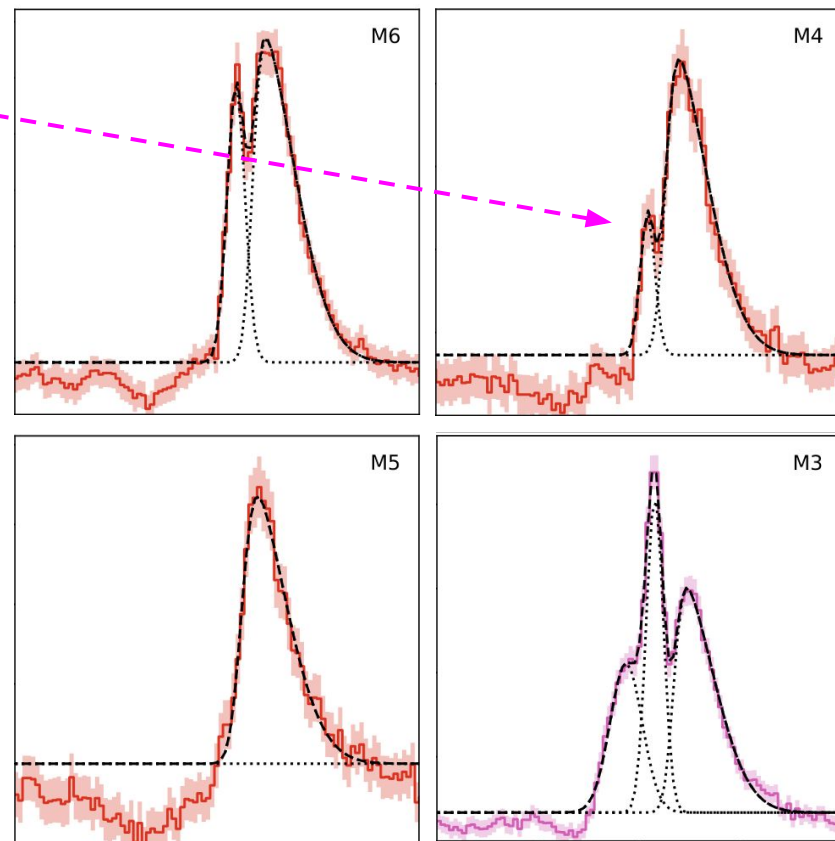
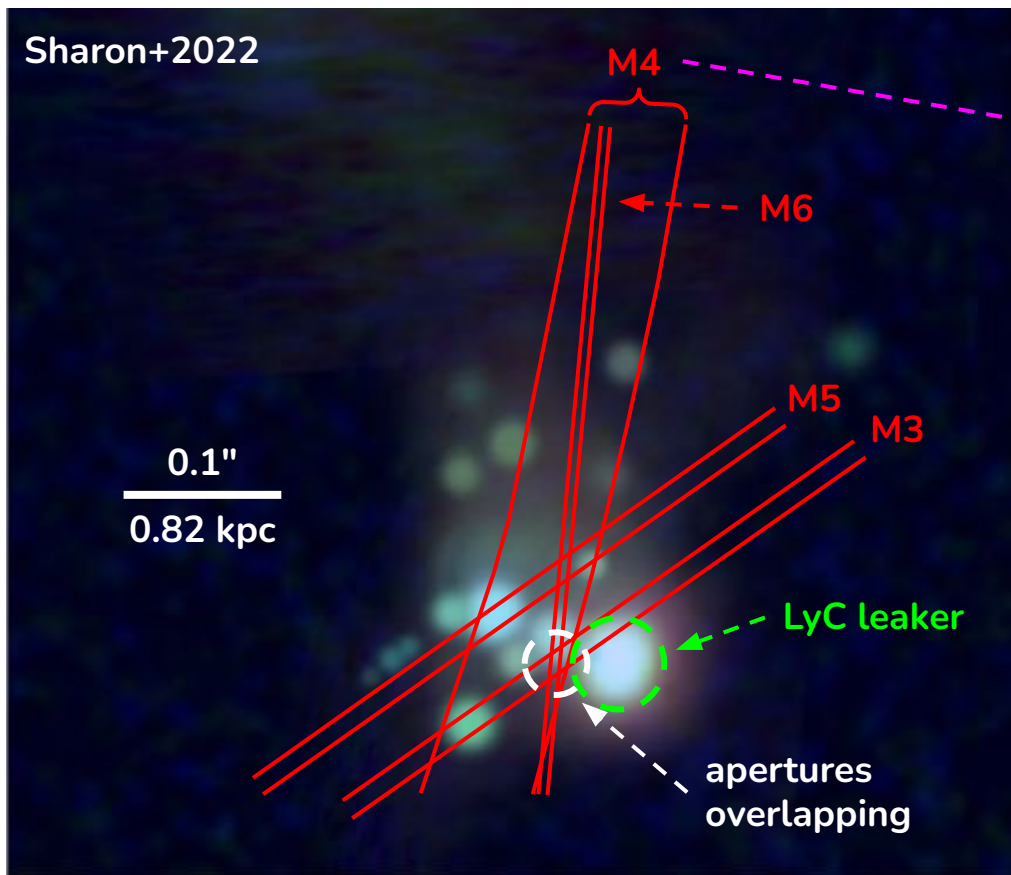


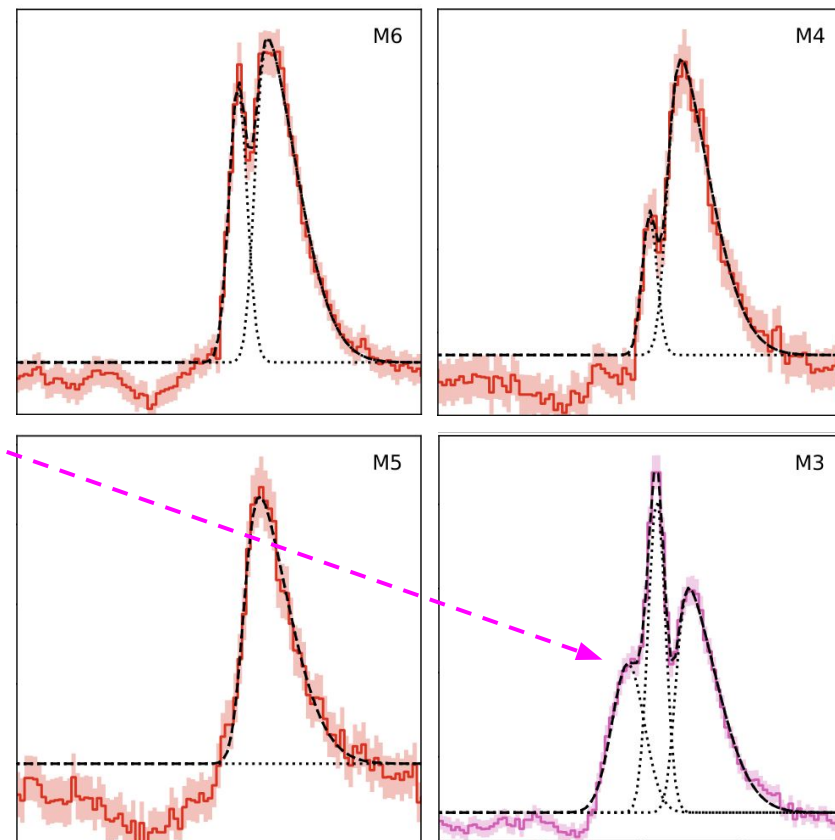
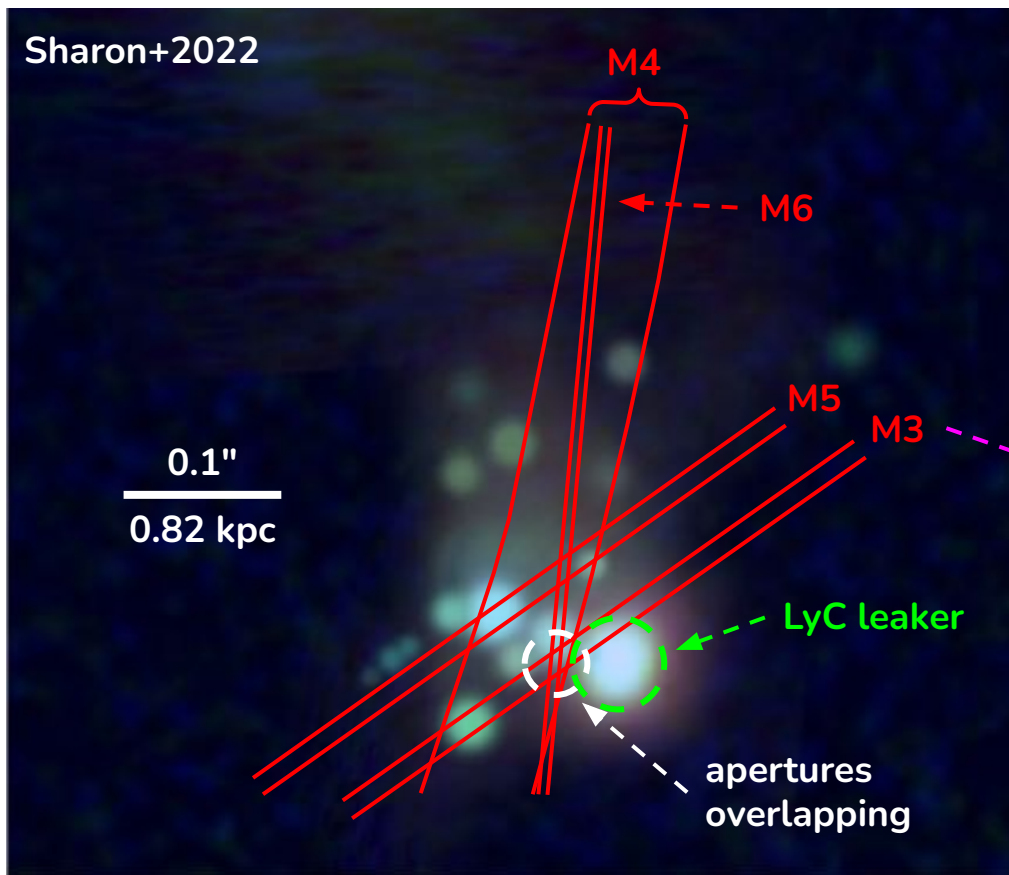


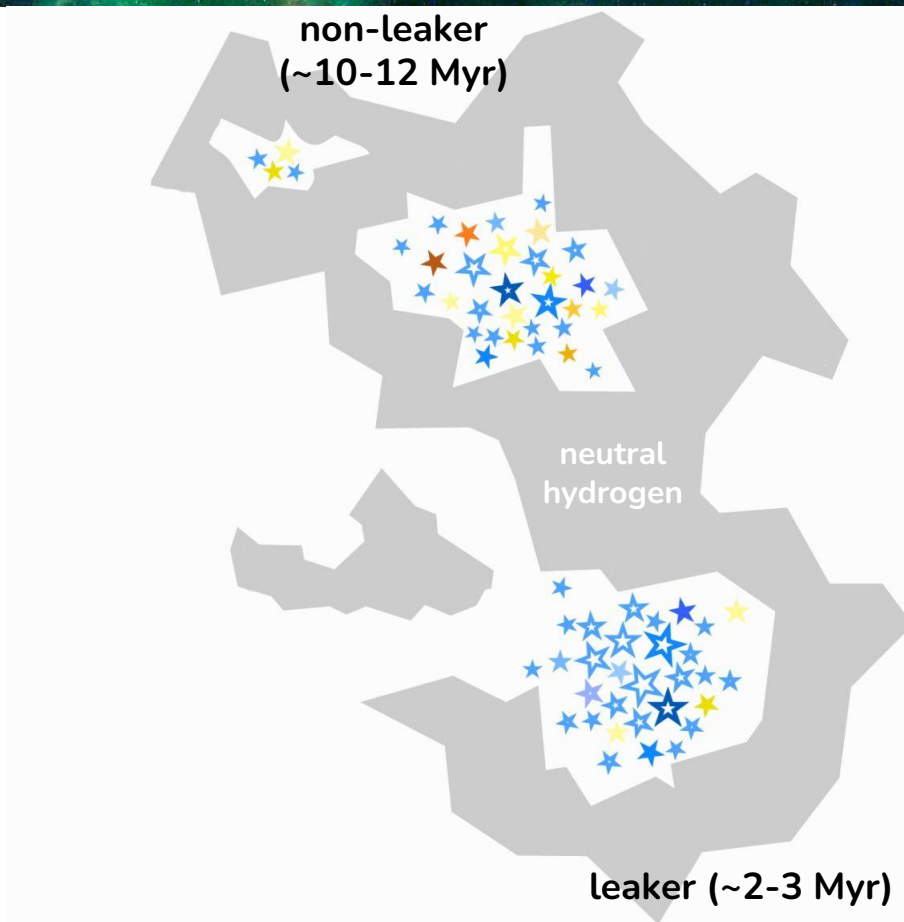


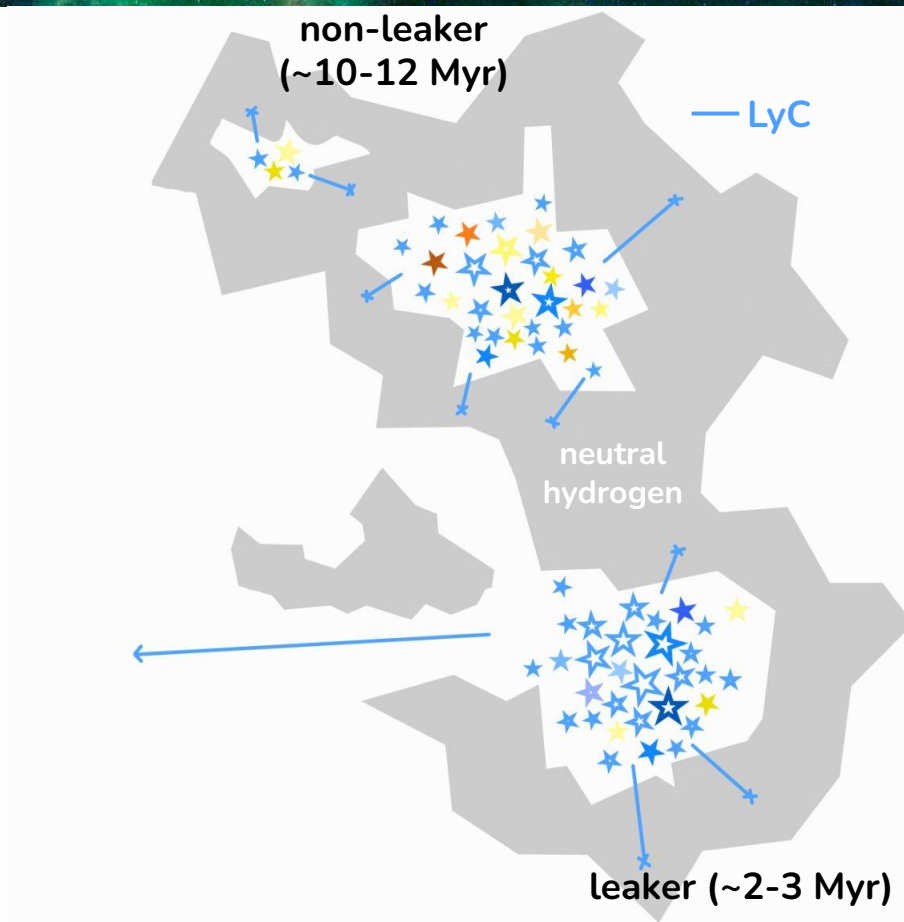


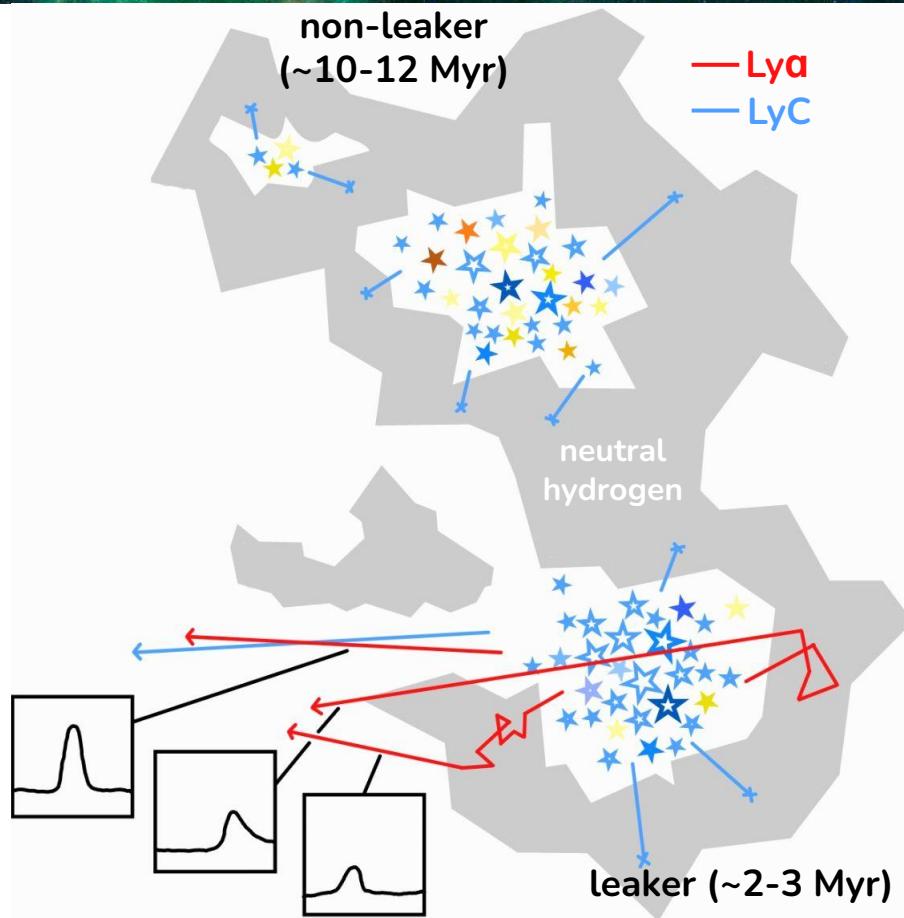


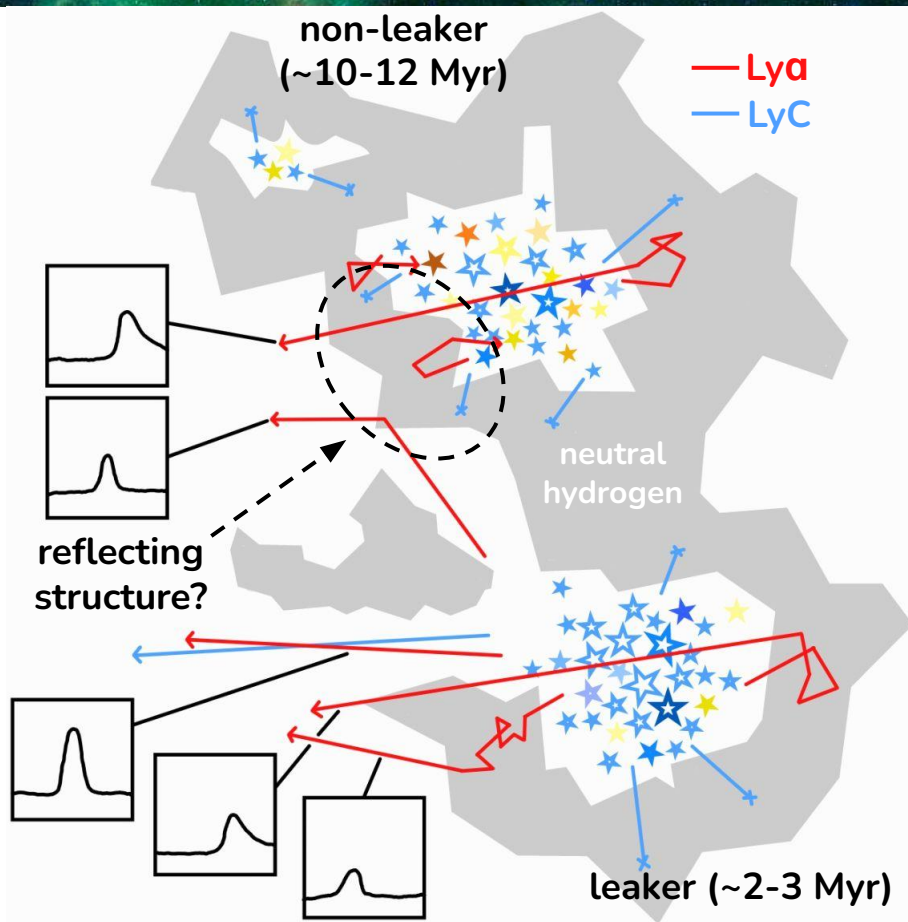












Takeaways

- Post-hoc MC fitting to multi-component Ly α profiles extracts key parameters, resolving sub-galactic differences in Ly α
- Common indirect indicators of LyC escape correlate with LyC escape on sub-galactic scales
- Source plane reconstruction and aperture raytracing hints at novel modes of Ly α escape
 - Are we seeing another complex anisotropy in the Sunburst Arc?