

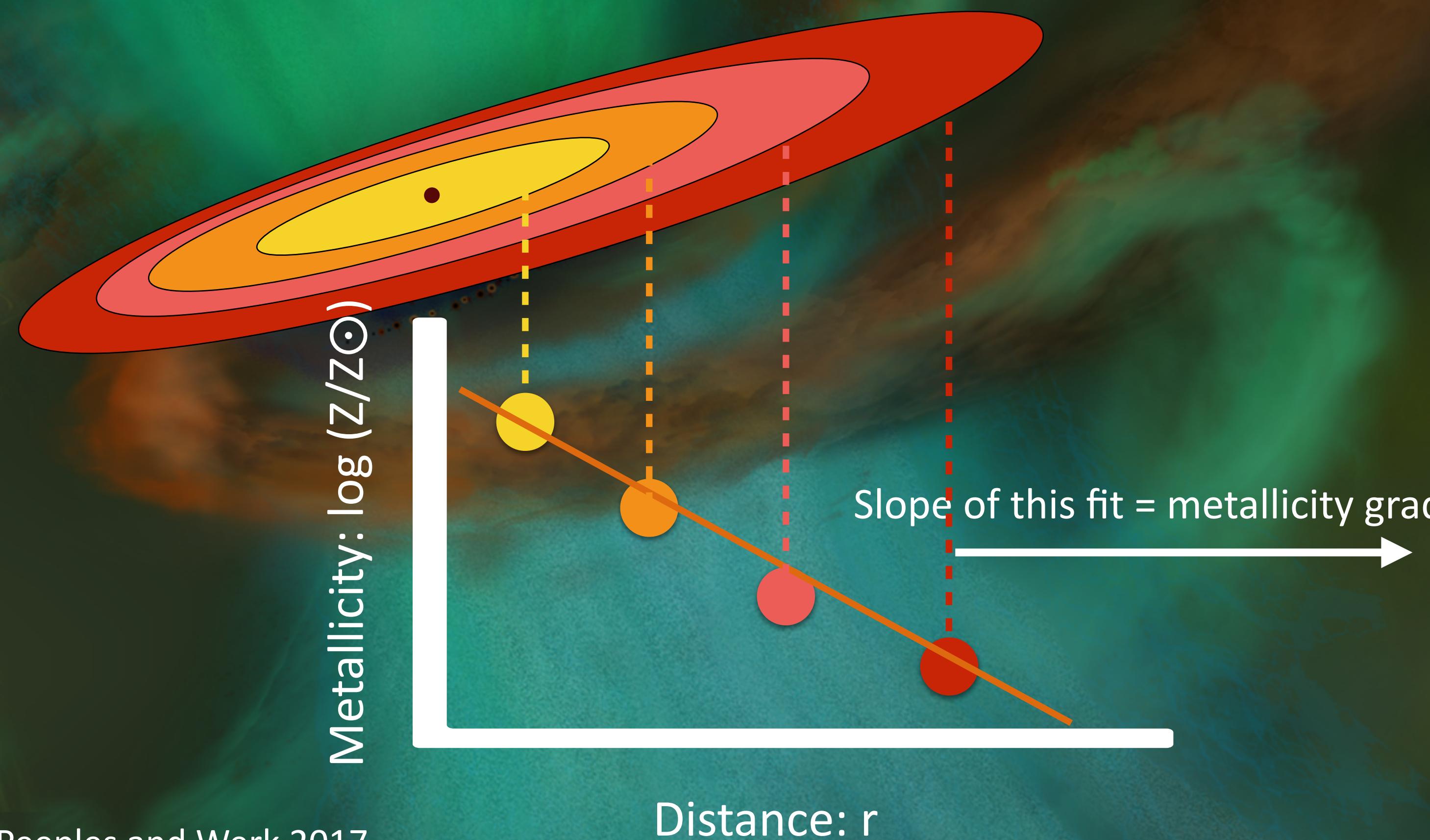
Things I did NOT do this week (but tried):

# Gas-phase metallicity distribution with NIRSpec



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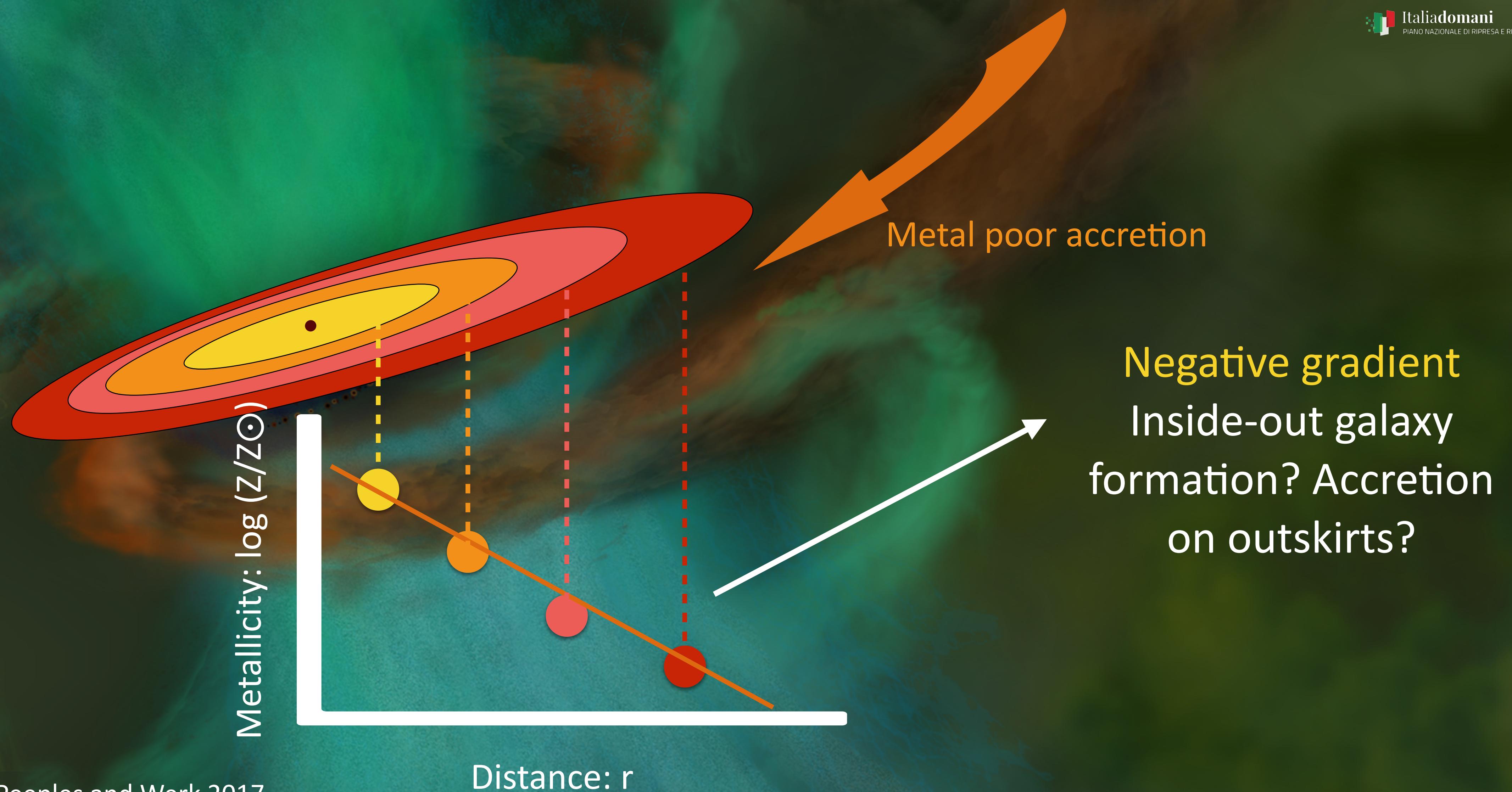
# Significance of metallicity distribution



**Metallicity gradient =  
slope of azimuthally  
averaged, radial  
profile of the gas  
phase metallicity**

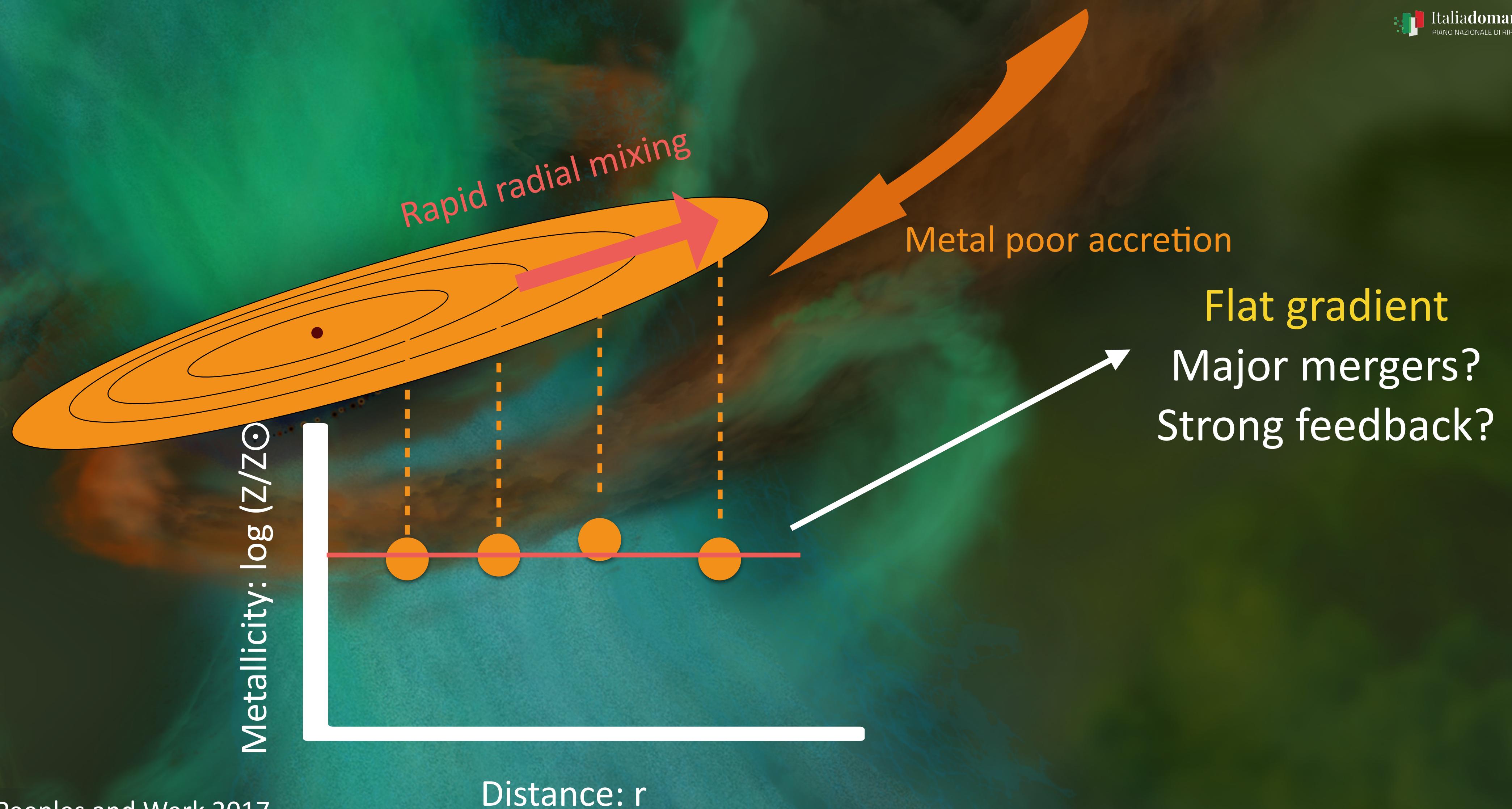
Background: Tumlinson, Peeples and Werk 2017

# Significance of metallicity distribution



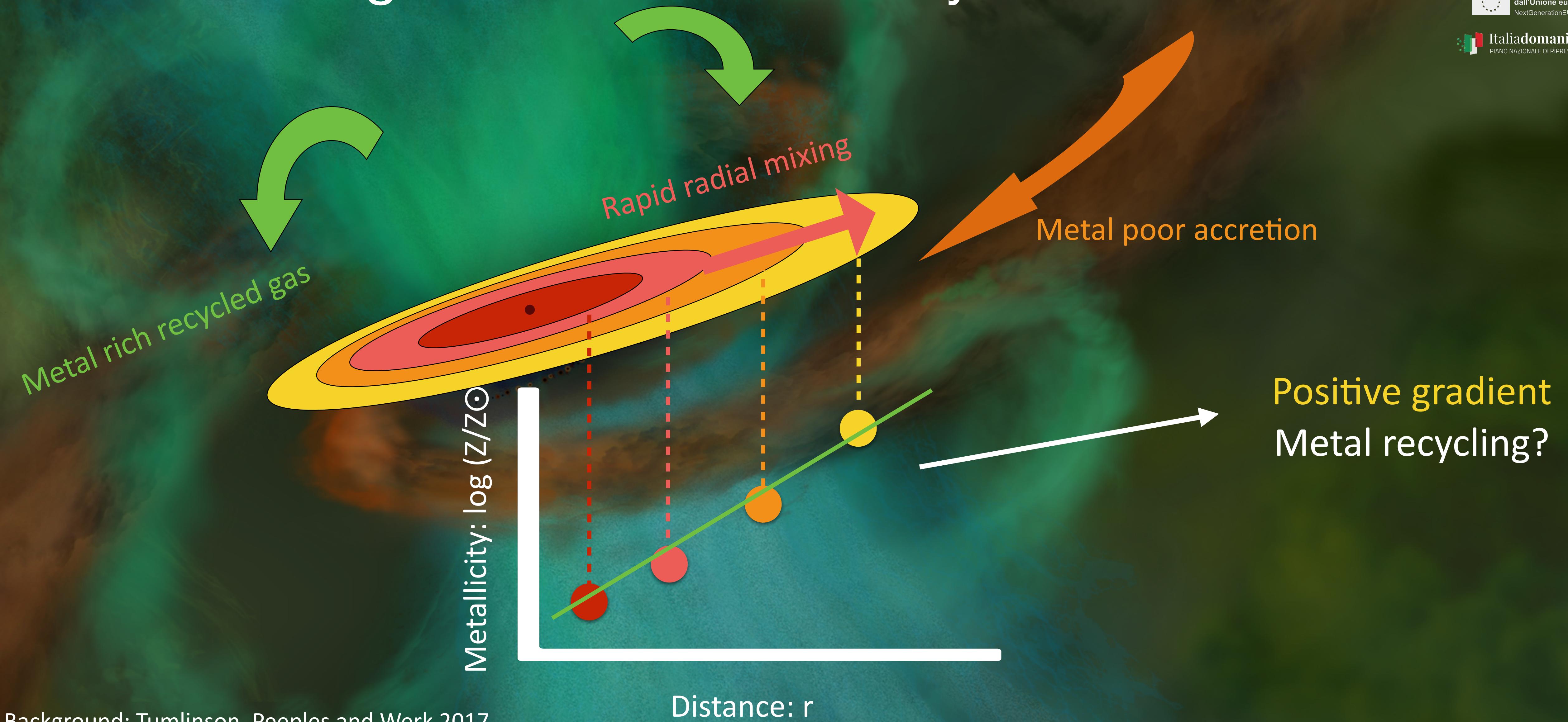
Background: Tumlinson, Peeples and Werk 2017

# Significance of metallicity distribution



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# So, what did I do this week to understand metallicity distribution?

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## IFU-like data with MSA slit-stepping?

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~~IFU-like data with MSA slit stepping?~~



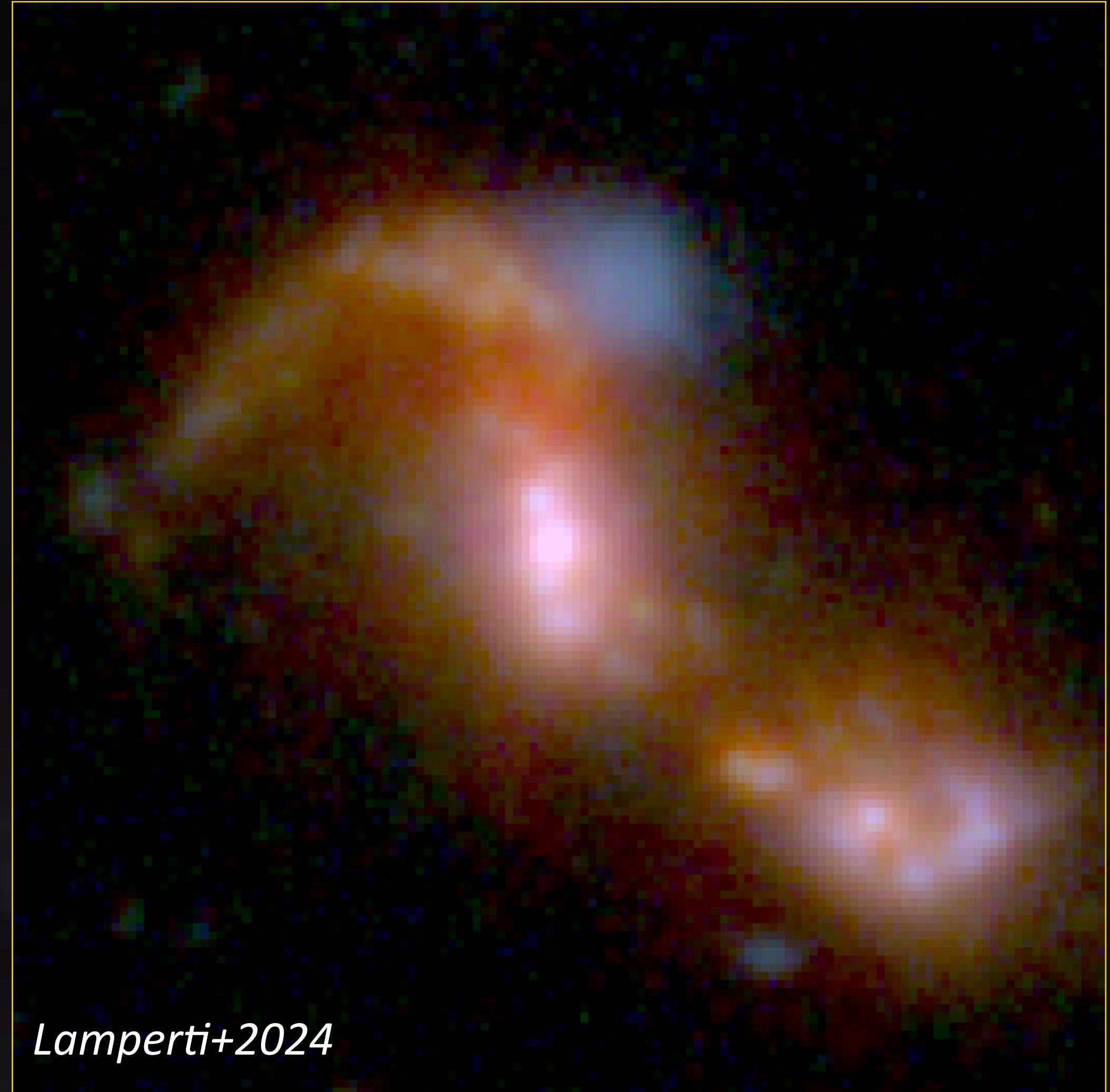
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~~IFU-like data with MSA slit stepping?~~

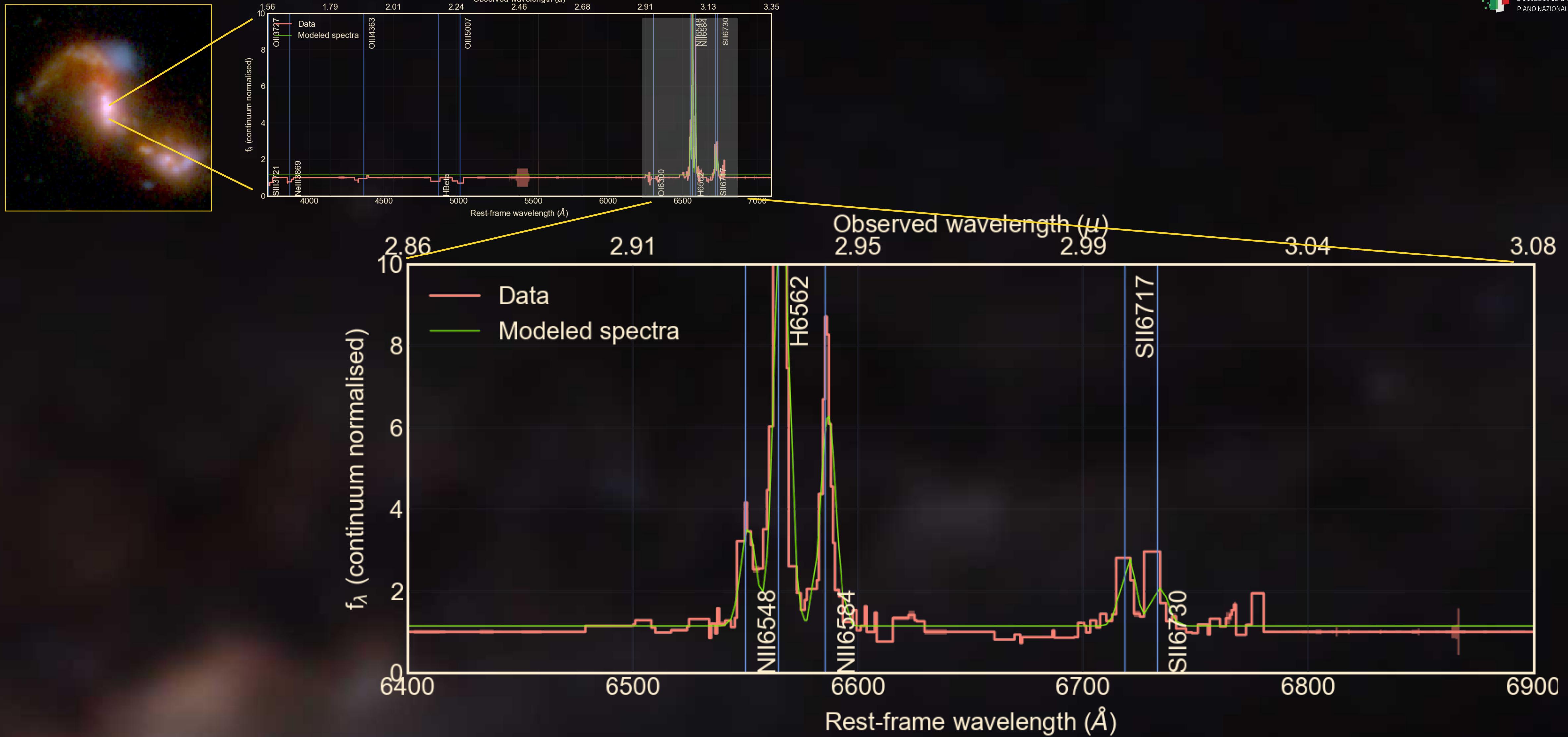
NIRSpec IFU!

# Target object

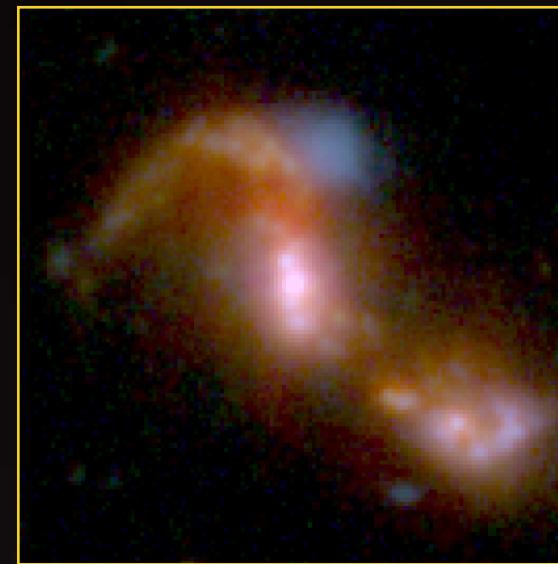
- Candidate protocluster at  $z \sim 3.4$
- Archival (GA-NIFS survey) observations with **NIRSpec IFU** (G235H + Prism)



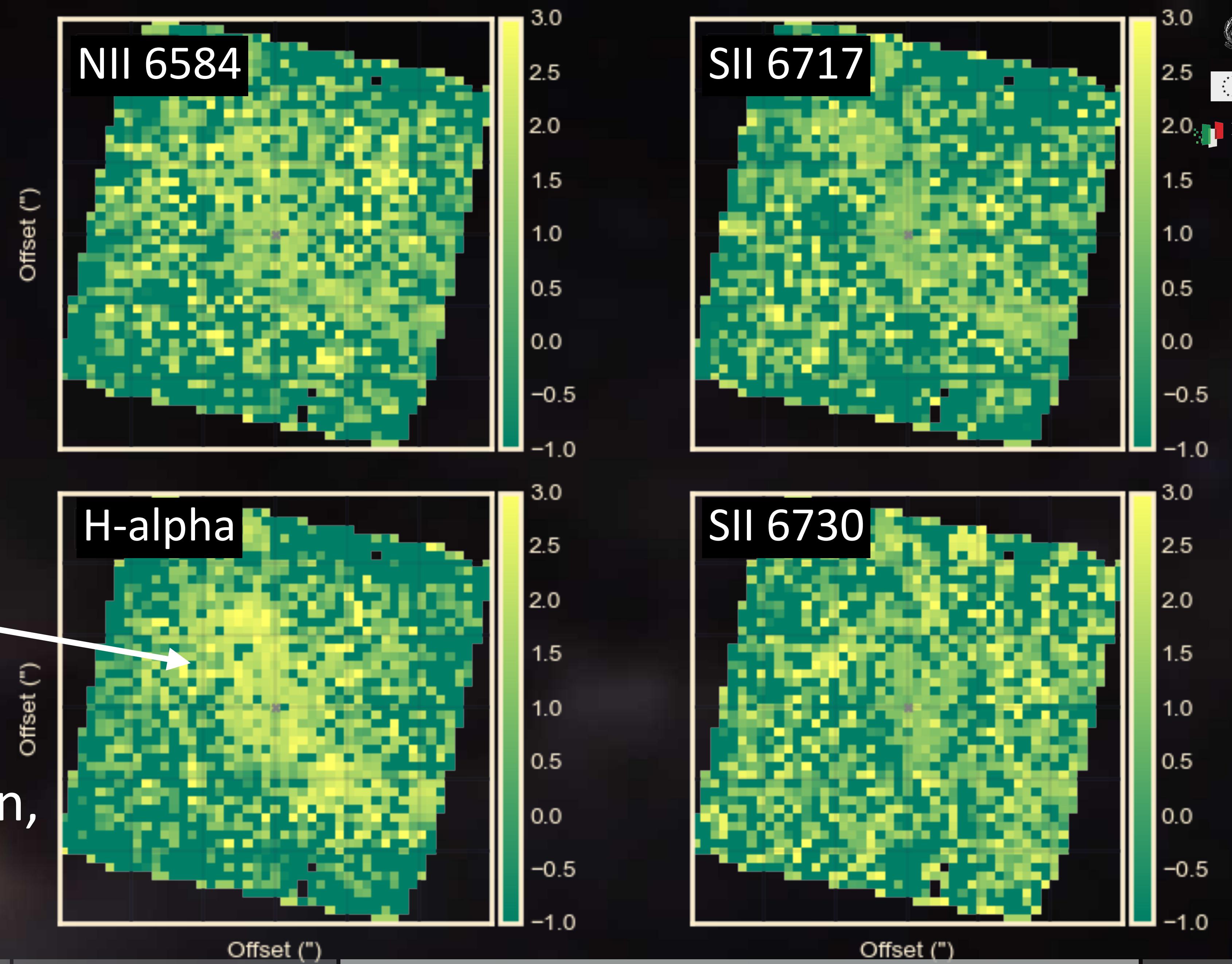
# Emission line fitting



# Emission line maps



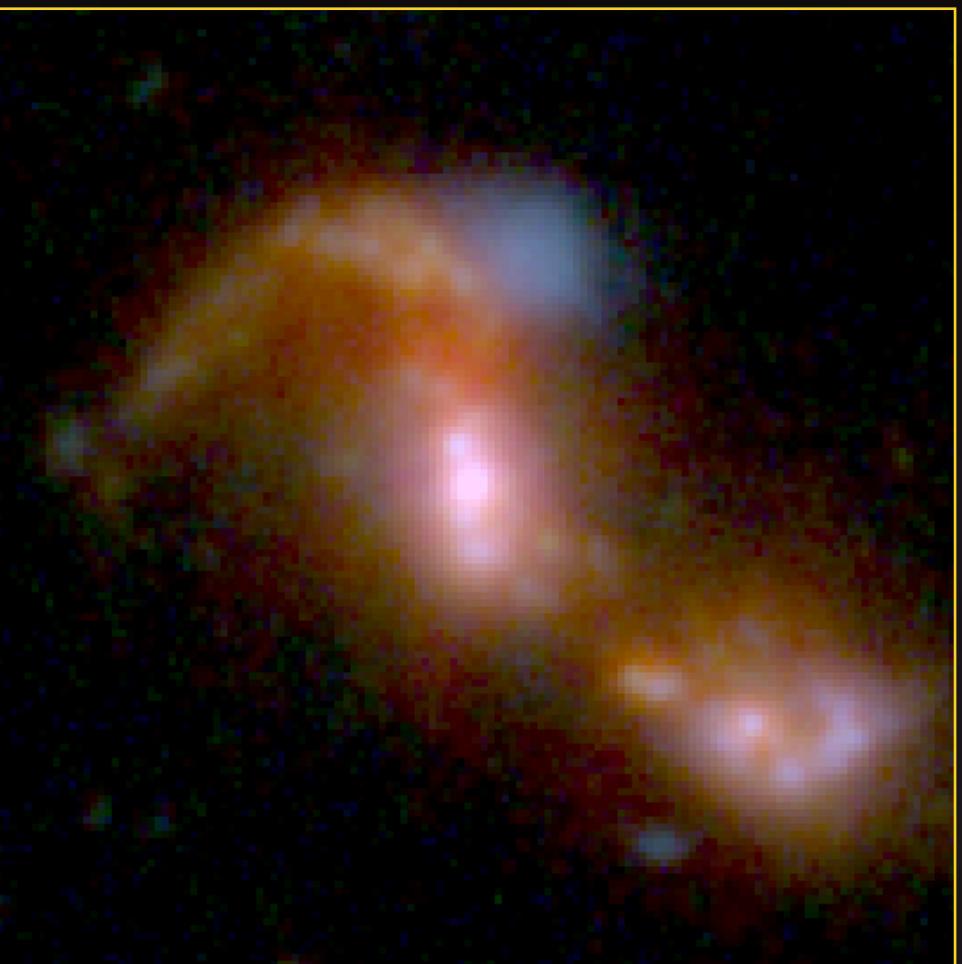
Can kinda see the  
maps... Need to fine  
tune the range, the  
continuum subtraction,  
and fix the units!





# Take home messages

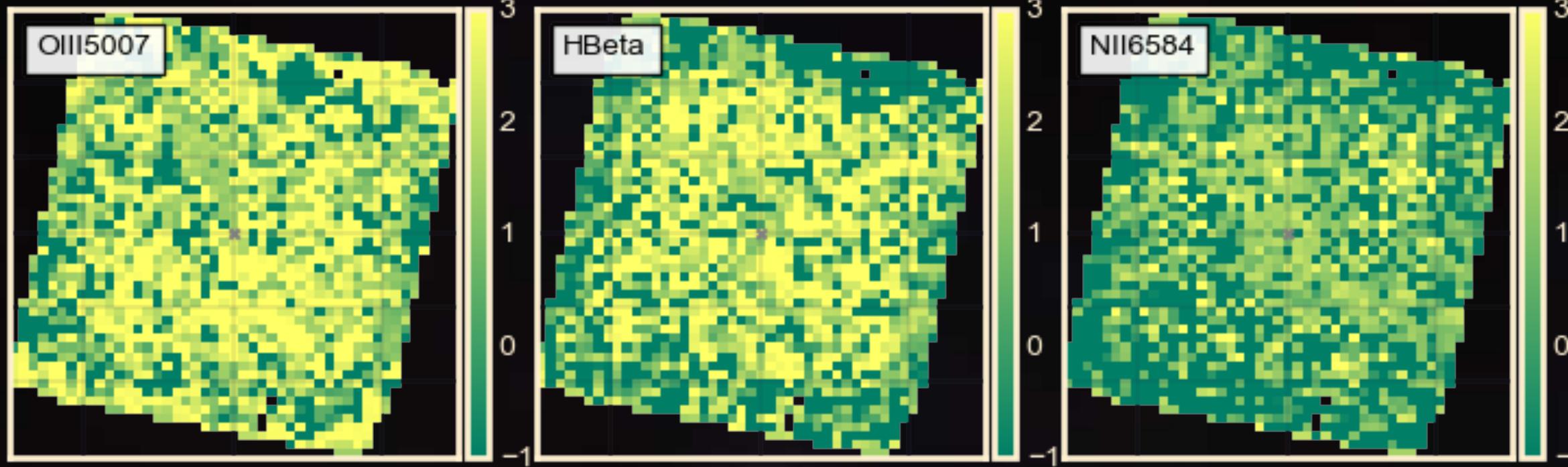
- JWST is challenging, but fun!
- VERY preliminary so far, lots of things need to be fixed
- Next steps (lots of potential science!):
  - Dust extinction map (H-alpha, H-beta)
  - Electron density map (SII doublet)
  - Metallicity distribution (using OIII, Hb, H-alpha, NII, SII lines)
  - SFR map (H-alpha)
  - The last two will give us metal-transport timescale in this protocluster (this has not been done before!)



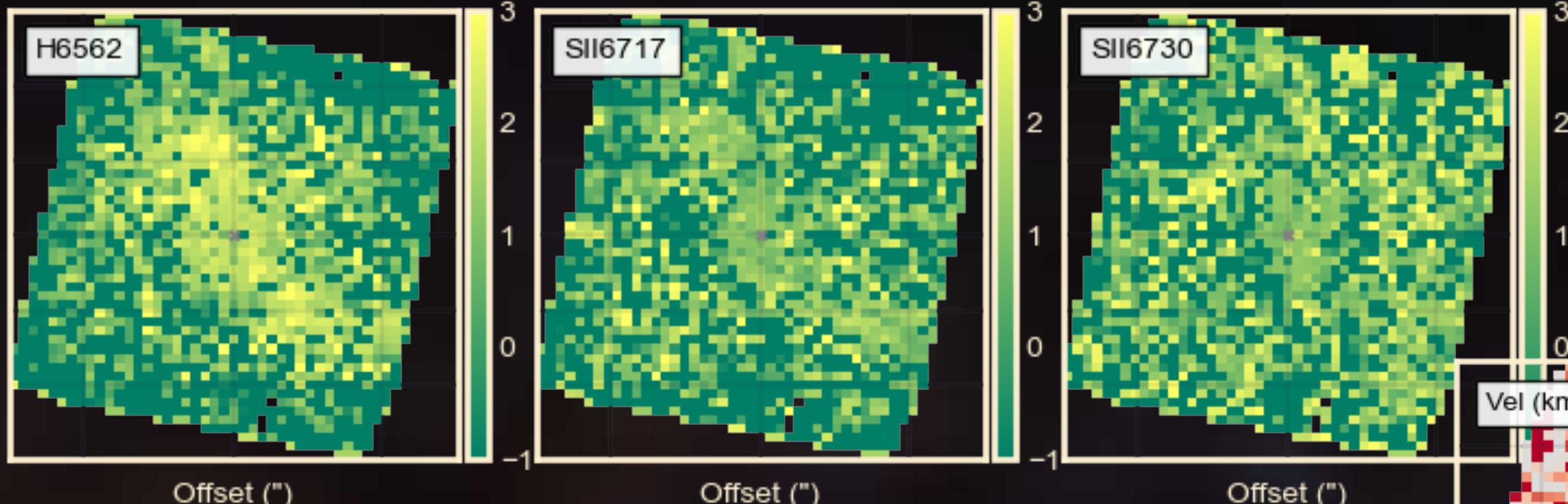


# Bonus slides

Offset (")



Offset (")



Offset (")

