Exploring JWST IFU Data: A Case Study of Galaxy Gs5001

CHRIST COSPAR 2025

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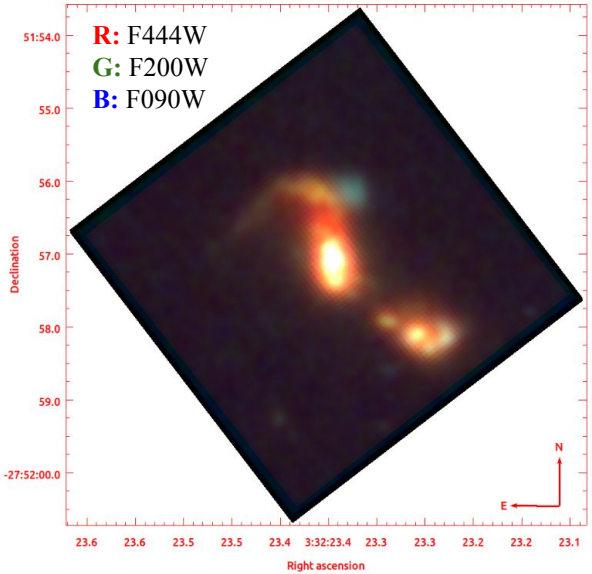
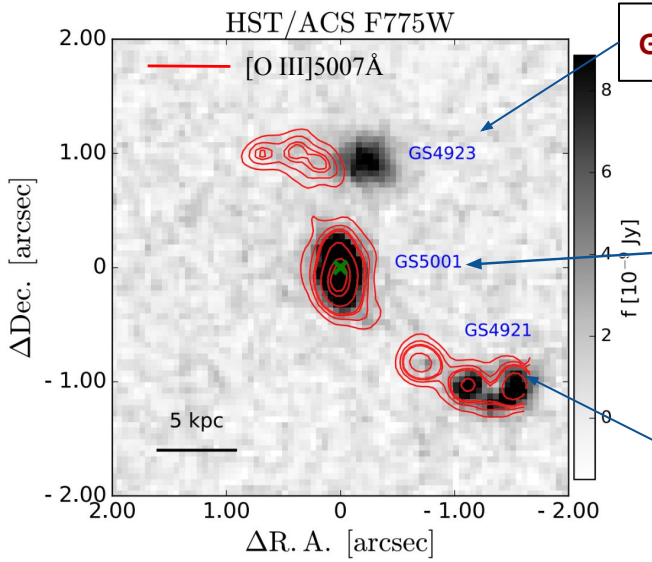
Motivation

To learn JWST IFU data reduction and analyze the NIRSpec data cube.

- **GS5001** is part of the *Galaxy Assembly with NIRSpec IFS (GA-NIFS)* GTO program.
- **NIRSpec:** both high (R ~ 2700) and low (R~ 100) spectral resolution data, and **NIRCam:** Imaging data.
- A **spatially resolved outflow** is detected in the main galaxy, extending ≈ 3 kpc.





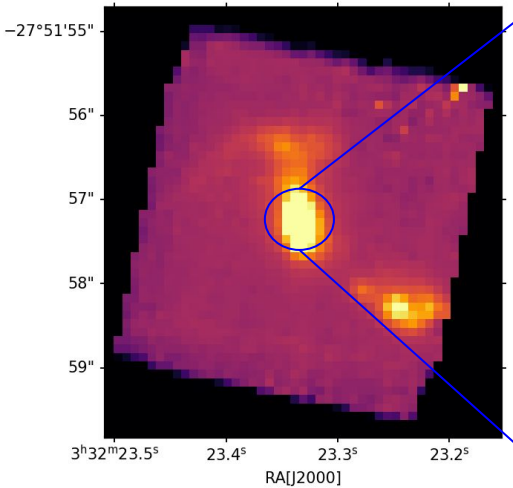
GS4923 (z_{ph} ~ 0.2; [OIII] emission at z ~ 3.47)

GS5001 (z ~ 3.473)

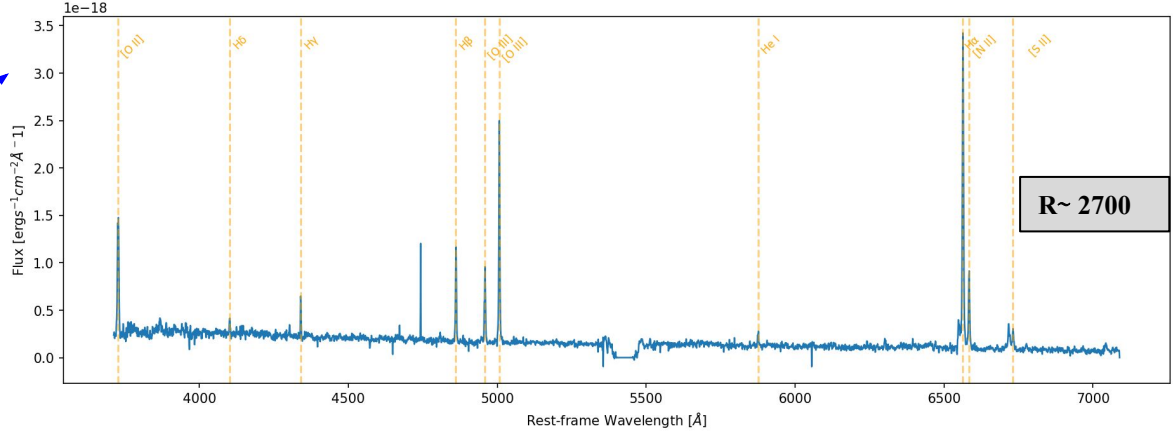
GS4921 (z ~ 3.471)

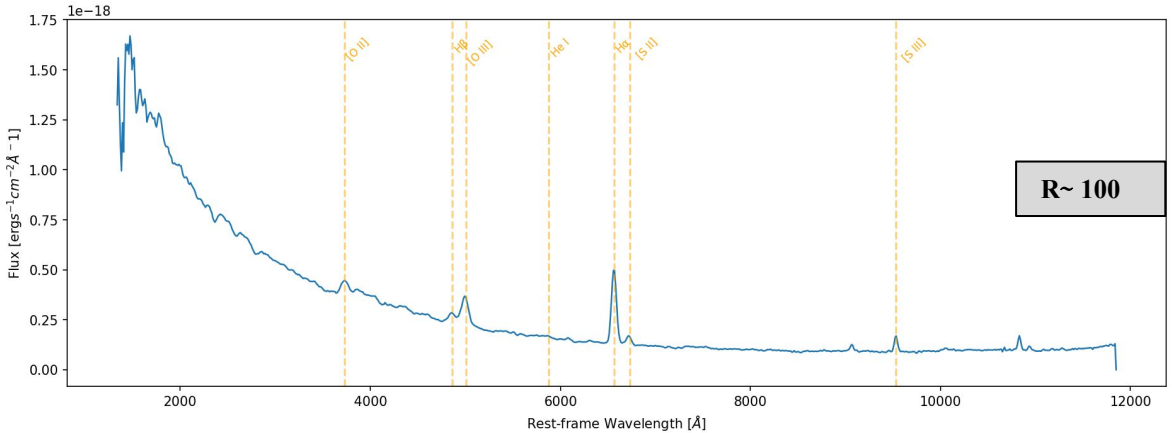
Lamperti et al. (2024)

Data Reduction and Cube Overview



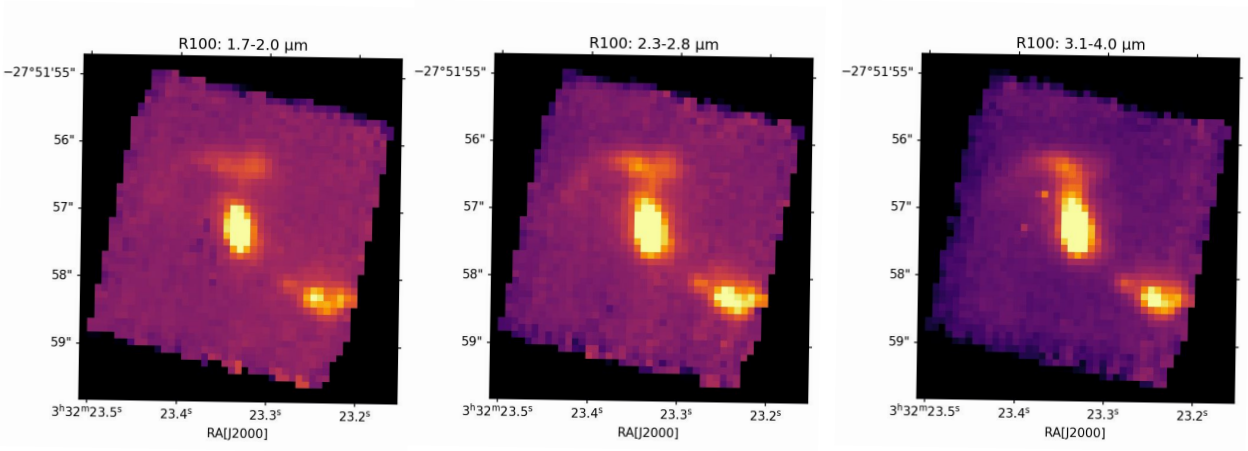
Central 3x3 spaxels



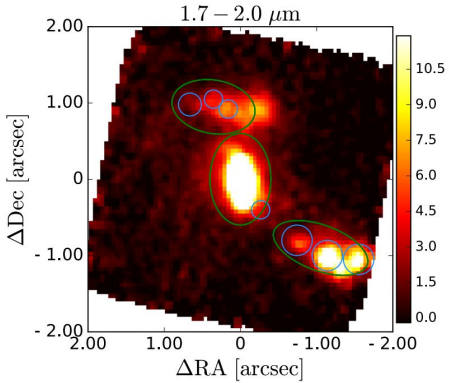


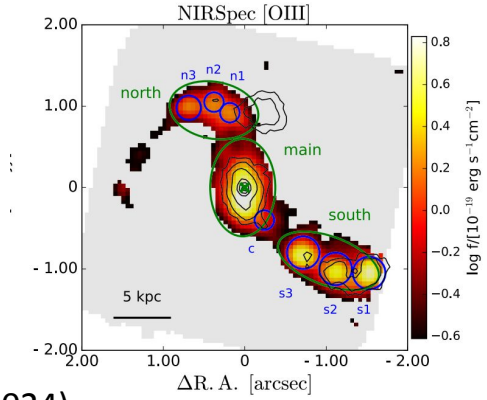
Collapsed image + spectra from central 3×3 spaxels.

Continuum Maps from the R ≈ 100 Cube



Continuum Maps

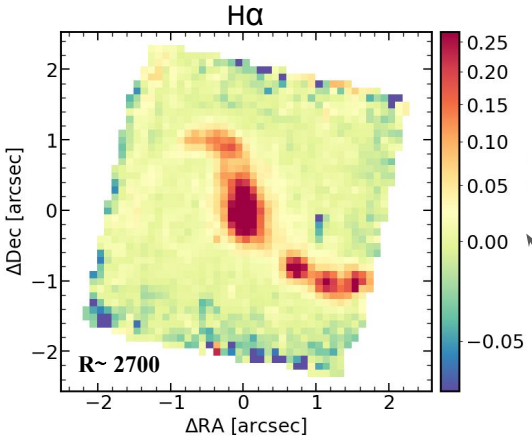


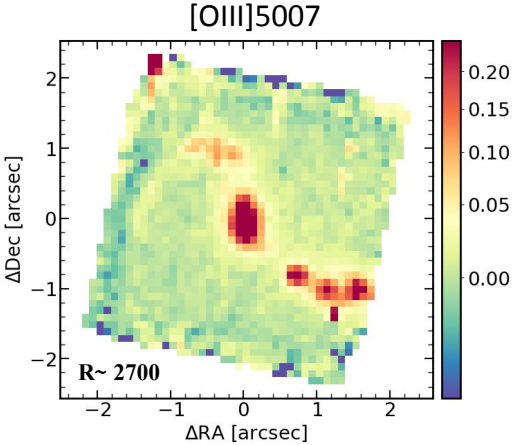


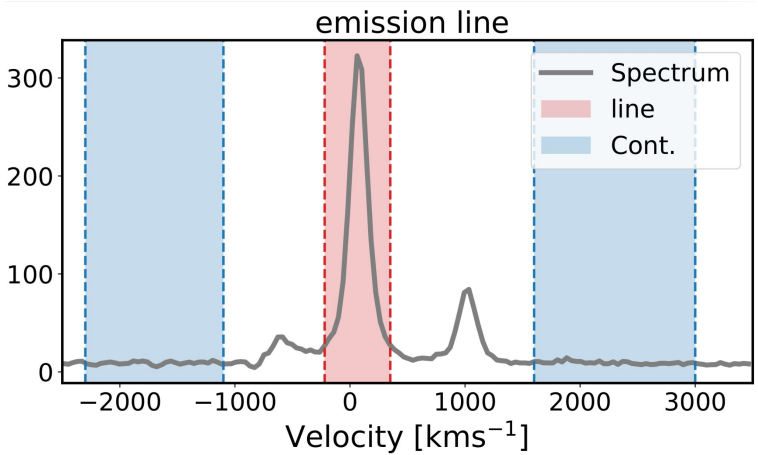
Lamperti et al. (2024)

Continuum maps trace the stellar emission, avoiding strong line contamination present in NIRCam bands.

Emission Line Maps



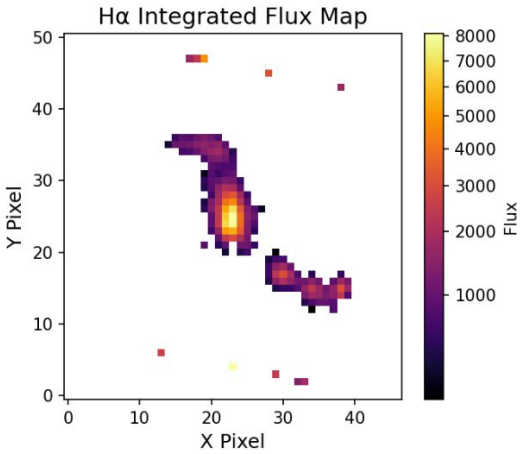


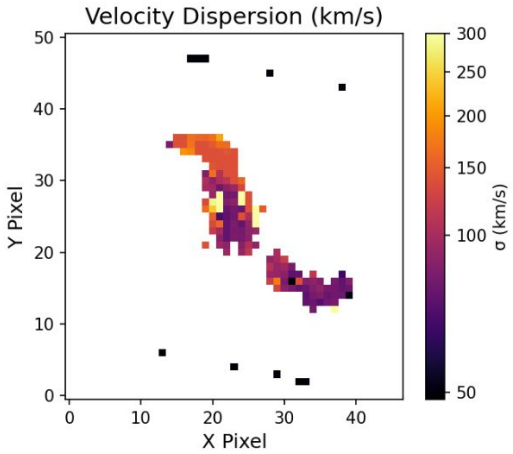


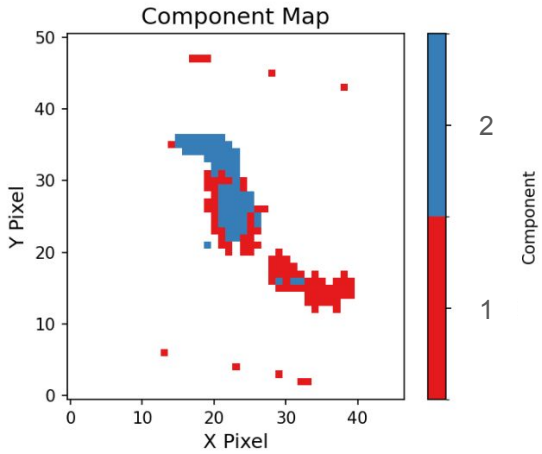
Code: Dr Javier Alvarez Marquez

Continuum-subtracted emission-line maps from the R~2700 cube.

Kinematics







Thank You !!!