A Study of Star Forming Regions in MACS1149-JD1

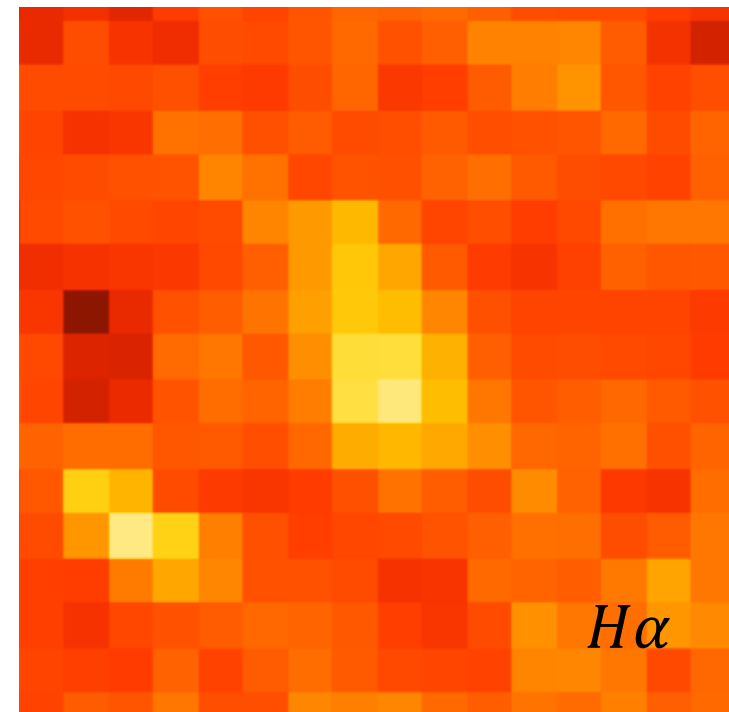## Mohammad Hossein Amiri

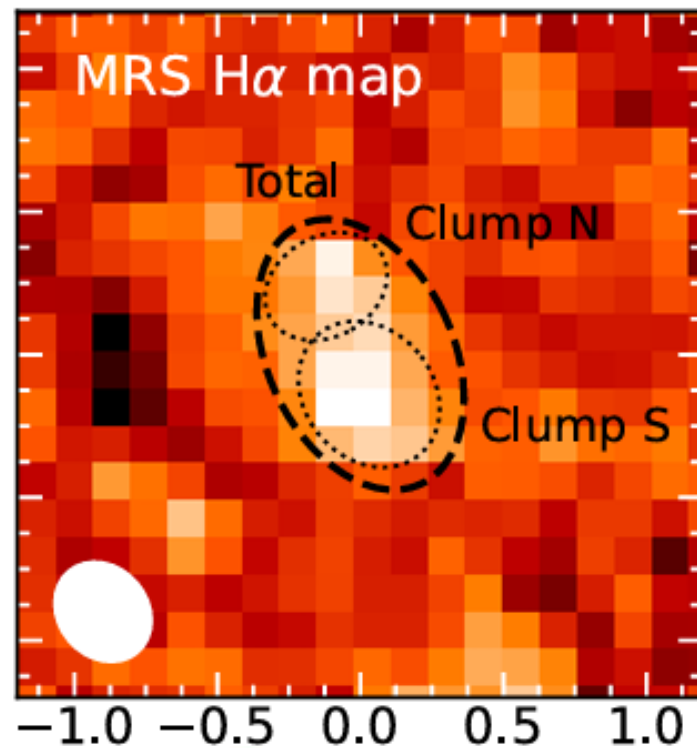COSPAR 2025

Christ University

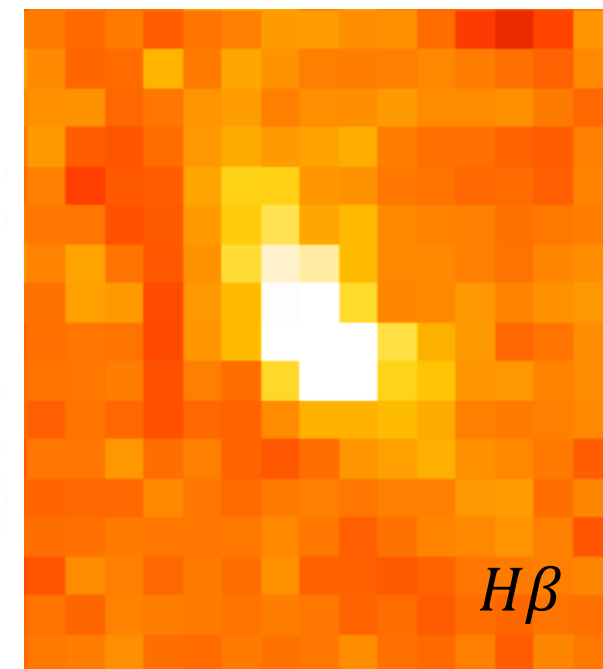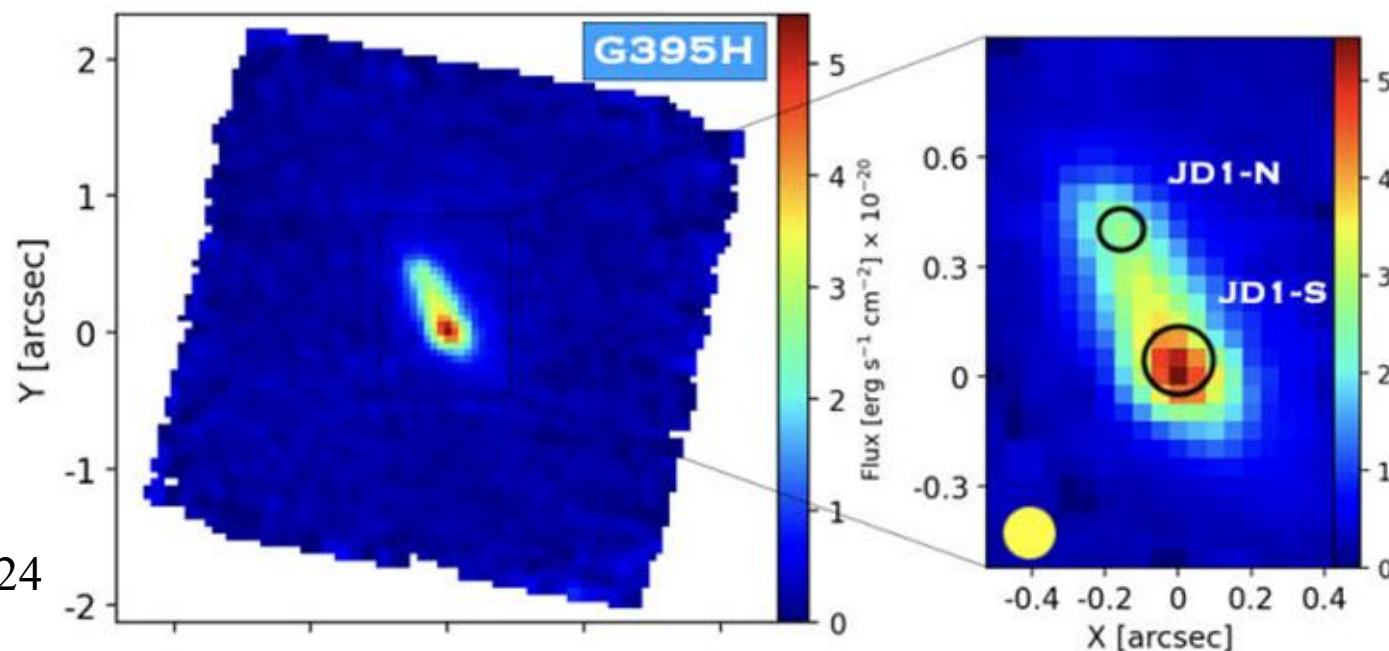# Main Idea

- Why MACS1149-JD1?
- A young galaxy with a redshift of 9.1

- MIRI channel 1(4.9 to 7.65 μm) for $H\alpha$

- NIRSpec G395H(2.87 to 5.14 μm) for $H\beta$

Comparing the reference images with my image

MRS Hα map

Total
Clump N
Clump S

Alvarez-Marquez et al 2024
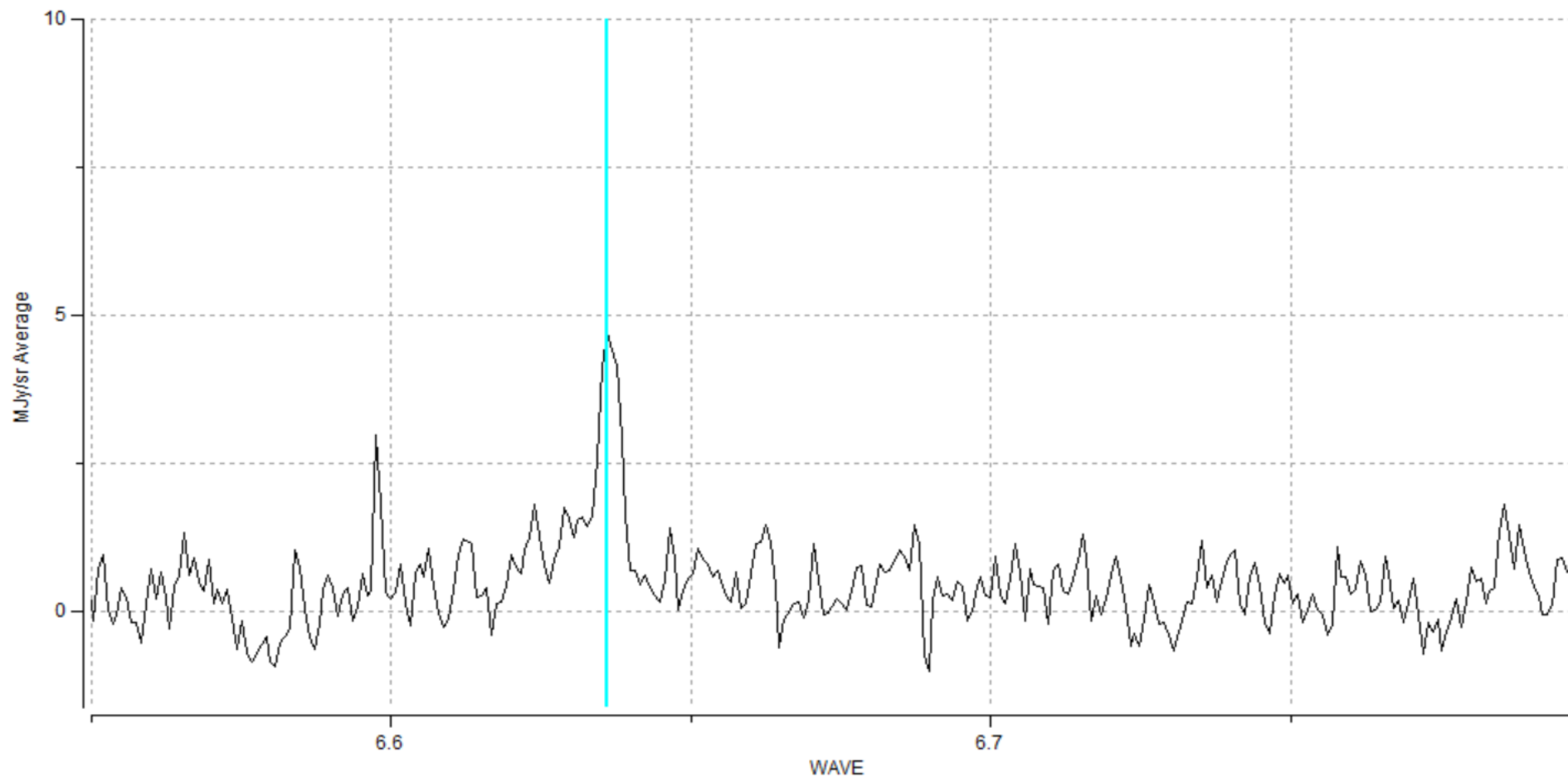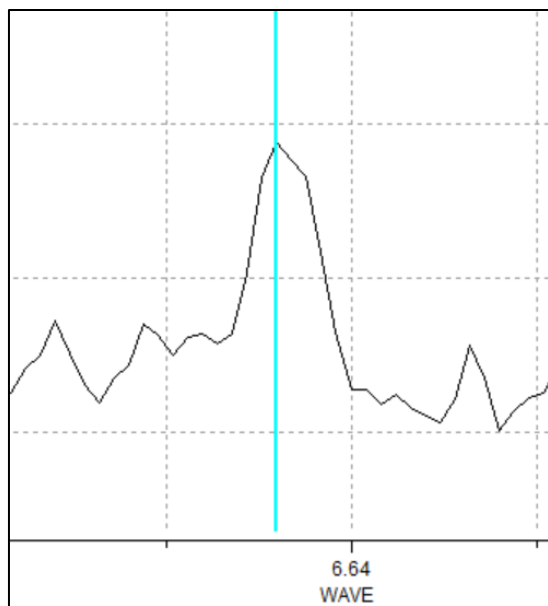
Hα

G395H

JD1-N
JD1-S

Marconini et al 2024

Hβ

Hα Spectrum

Peak at $6.636 \pm 0.0008\ \mu m$

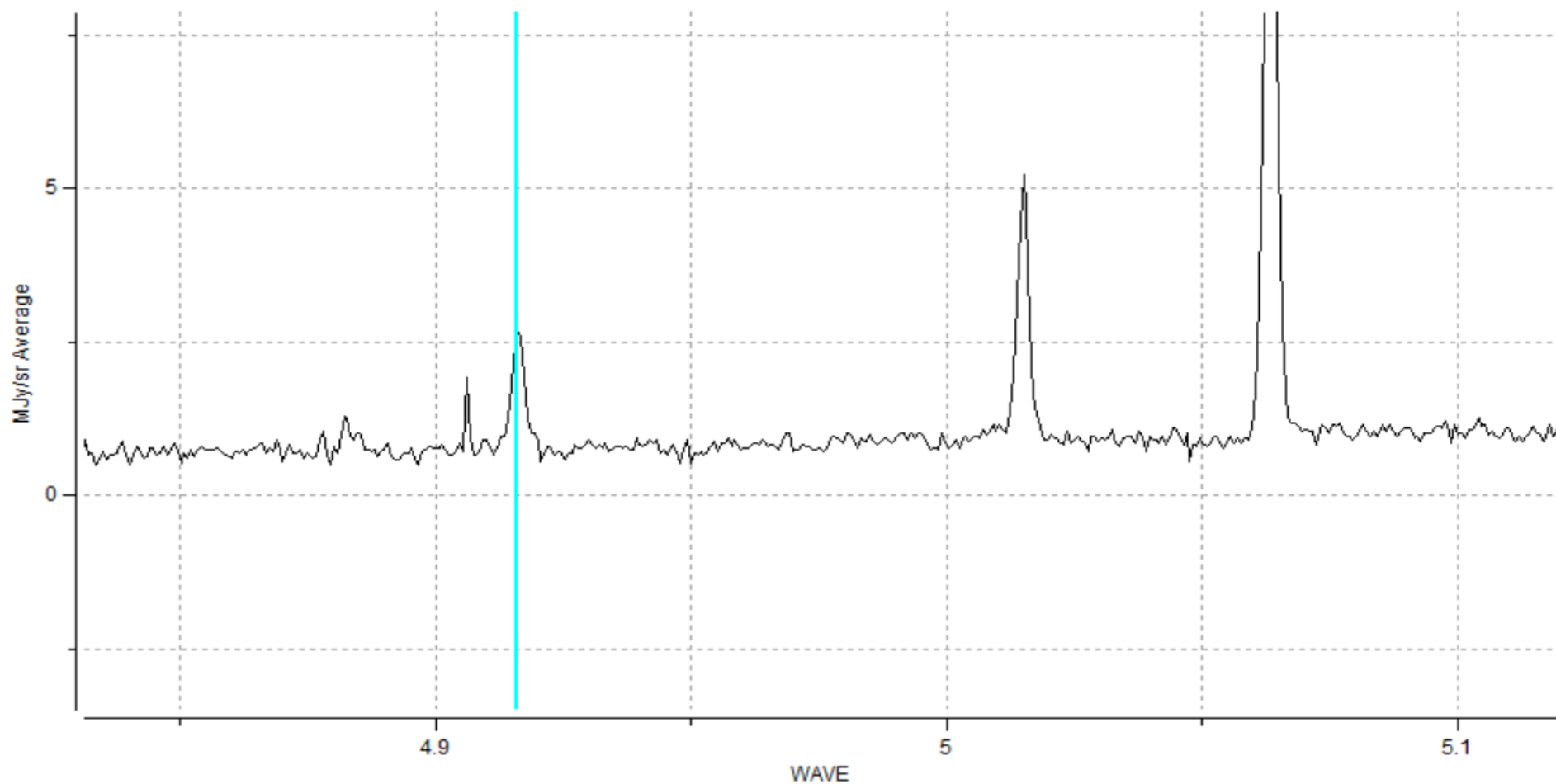$Z = 9.1088 \pm 0.0012$

0.2 arcsec radius

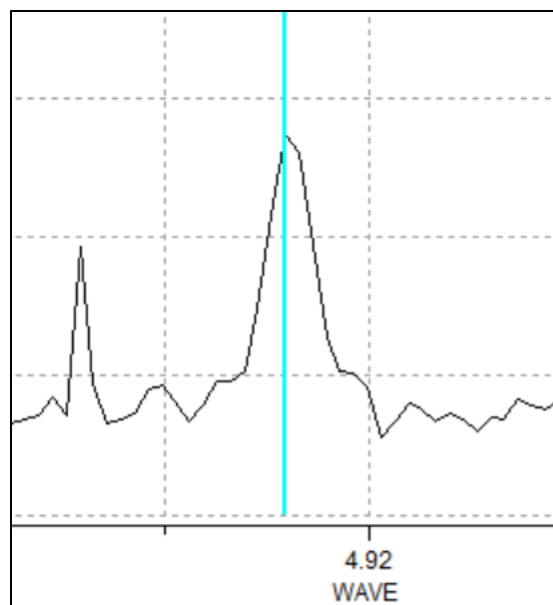# *Hβ* Spectrum

Peak at 4.91587 $\pm$0.00066 *μm*

Z = 9.1129 $\pm$ 0.0013

0.2 arcsec radius

Thank you for your attention