The first 1000 galaxies of the SAMI Galaxy Survey

James Allen and the SAMI Galaxy Survey team

The SAMI Galaxy Survey team

85 full members
8 associate members

Here in Vienna:

James Allen, Joss Bland-Hawthorn, Scott Croom, Simon Ellis, Lisa Fogarty, Caroline Foster, Madusha Gunawardhana, I-Ting Ho, Lisa Kewley, Baerbel Koribalski, Sarah Leslie, Angel Lopez-Sanchez, Sebastian Sanchez, Julia Scharwaechter, Nic Scott, Tiantian Yuan

Talk to us about membership!

What is SAMI?

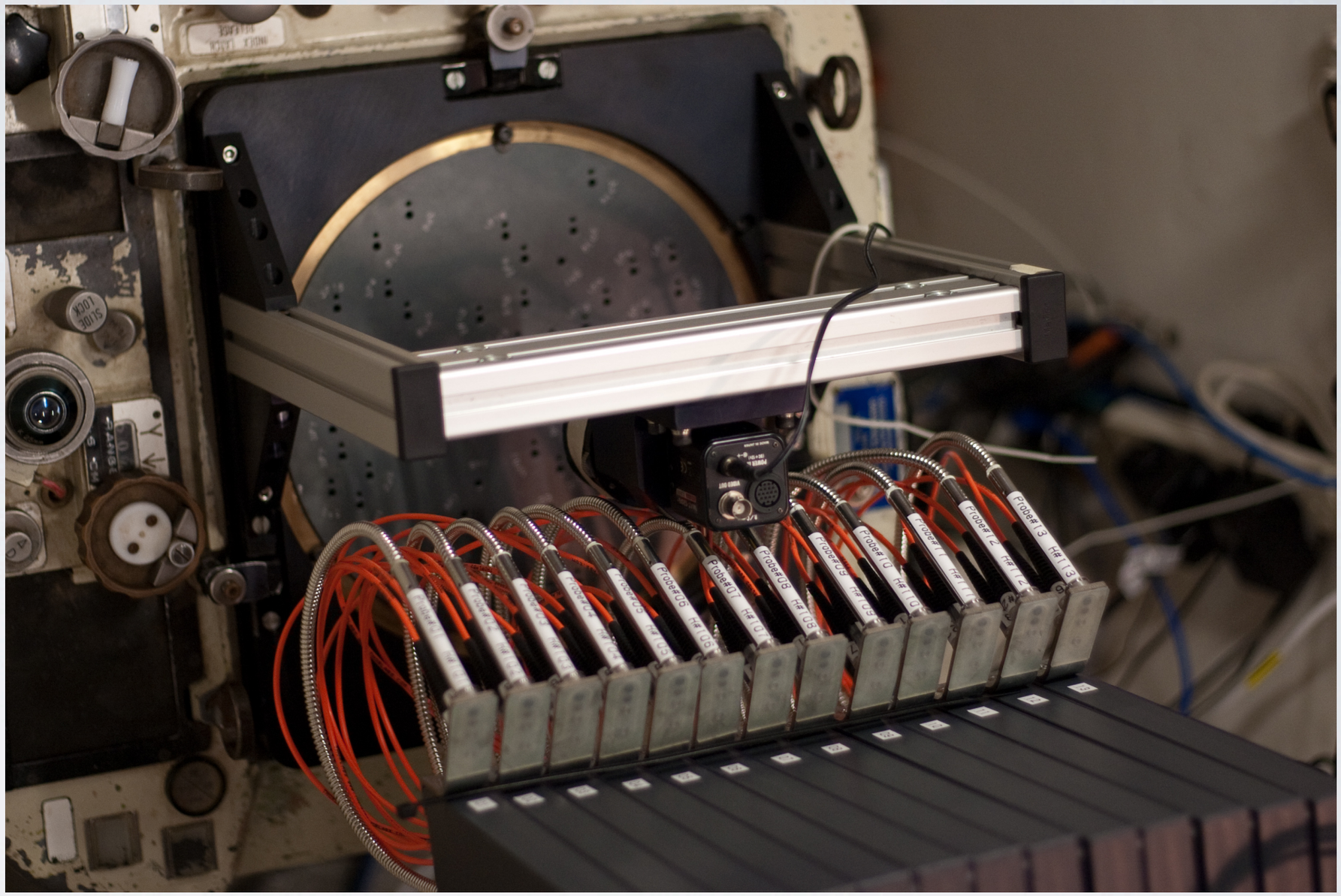
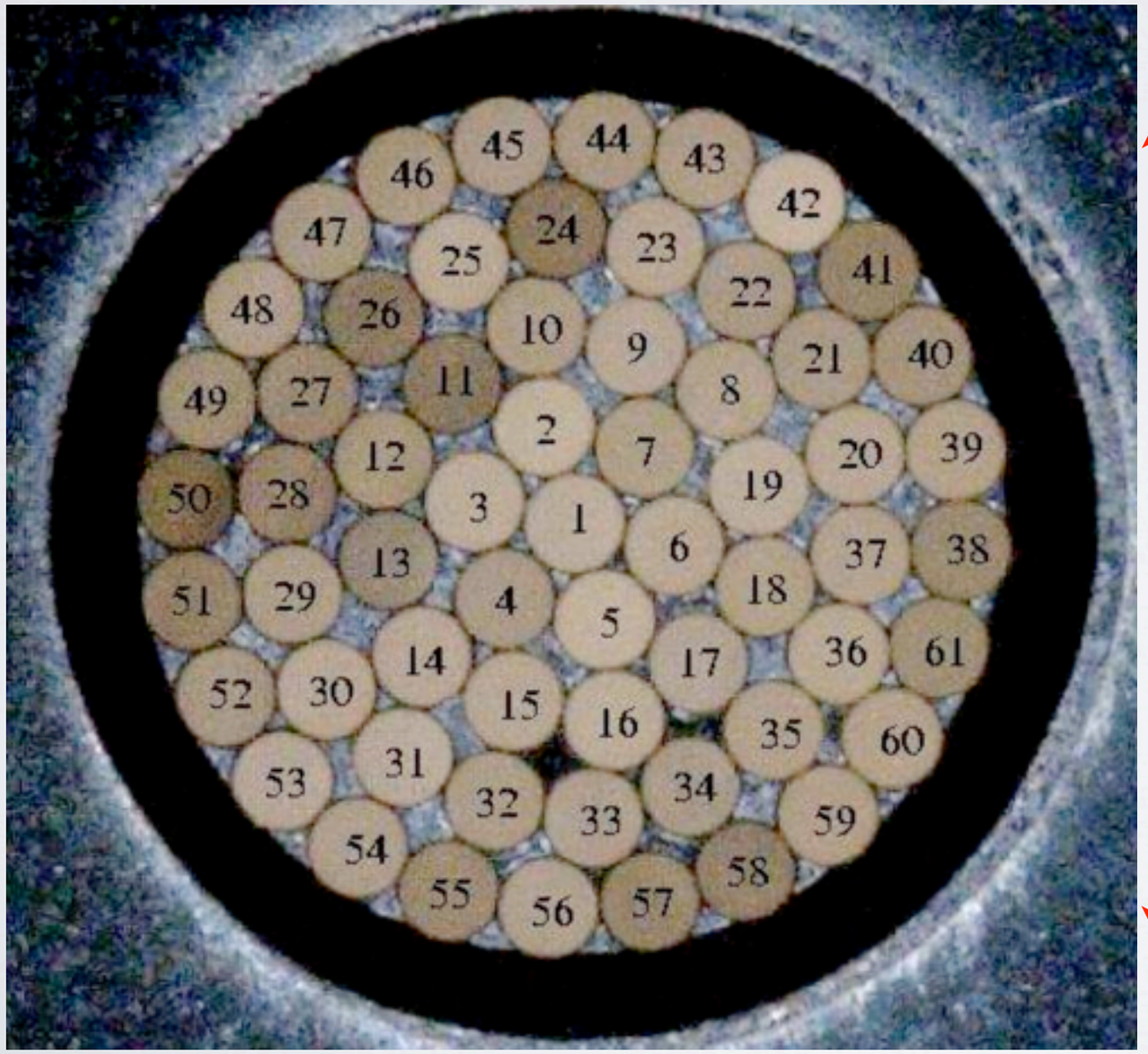


Image: Julia Bryant

Sydney-AAO Multi-object Integral field spectrograph

SAMI characteristics

Observe 12 galaxies at once, with 1 star
1-degree patrol field



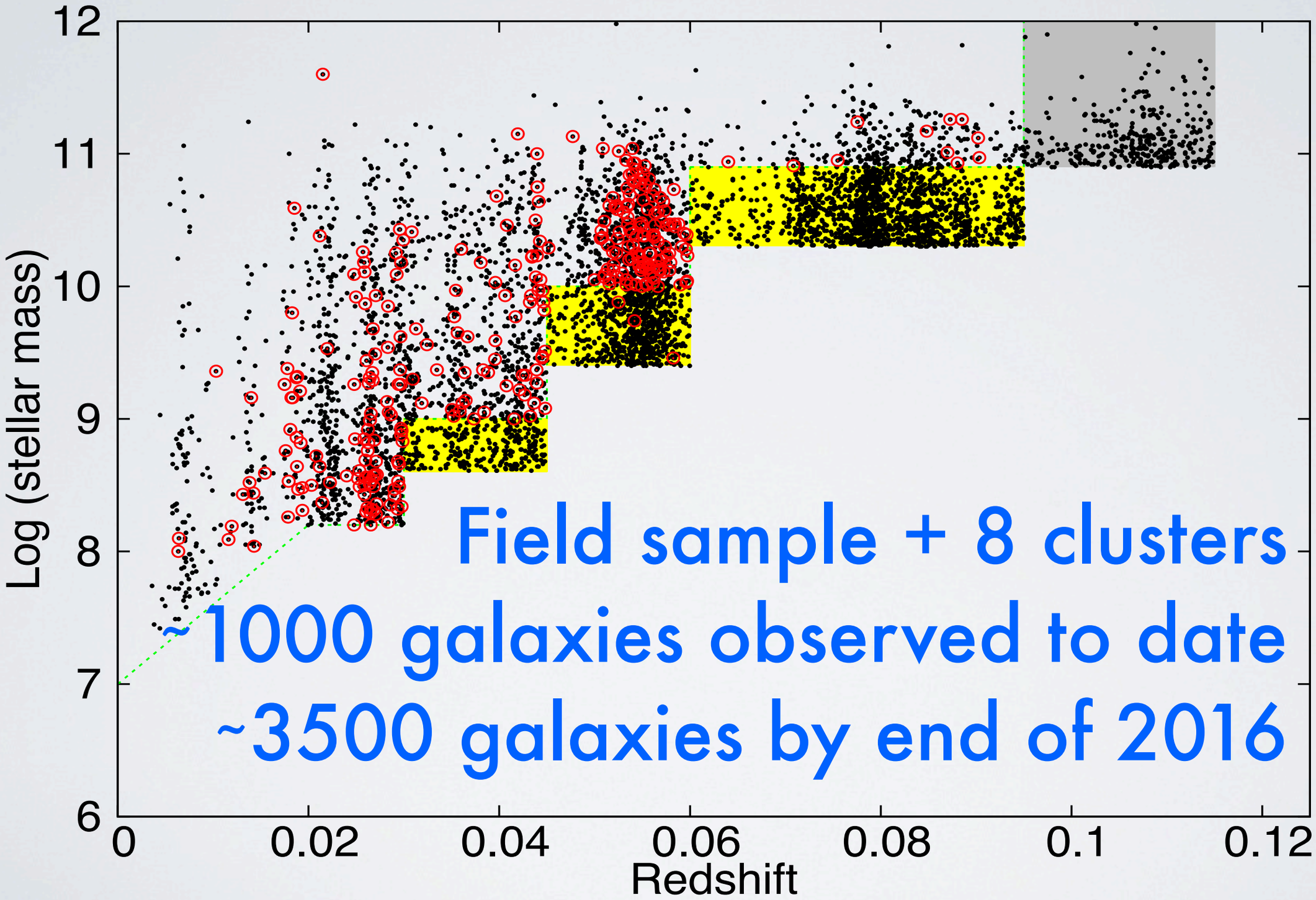
R≈1730 (blue)
R≈4500 (red)

15″ field of view
75% fill factor

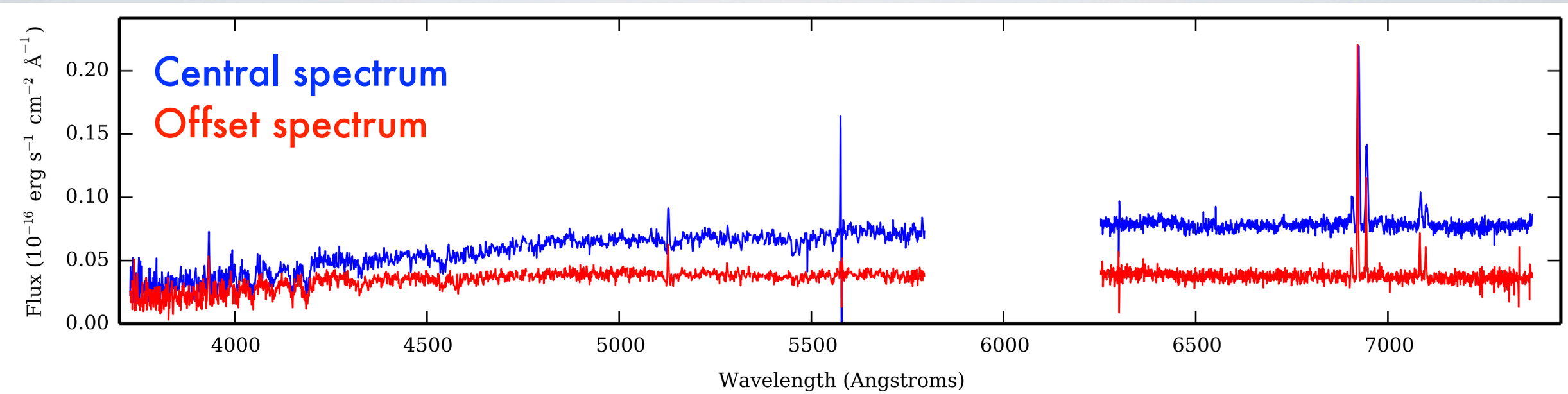
↕1.6″ fibres

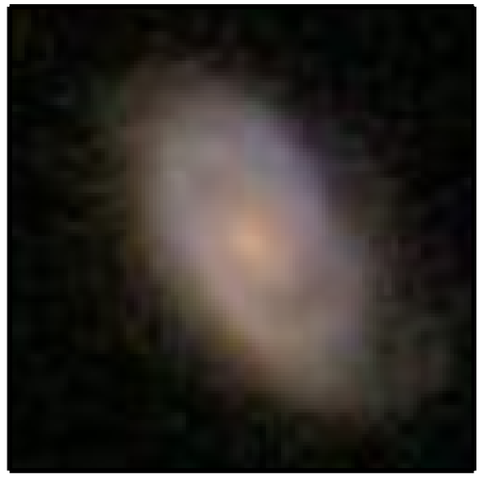
Croom et al. (2012)
Bryant et al. (in prep)

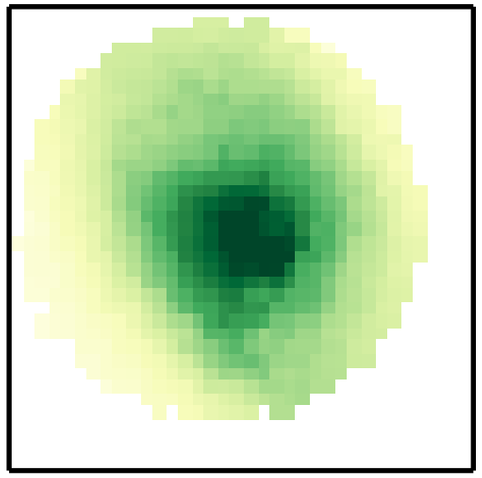
The SAMI Galaxy Survey



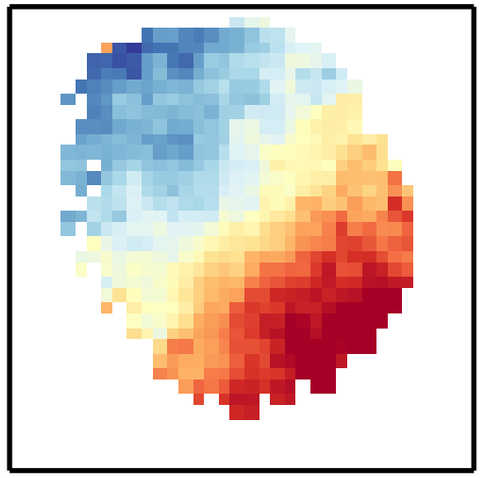
The data



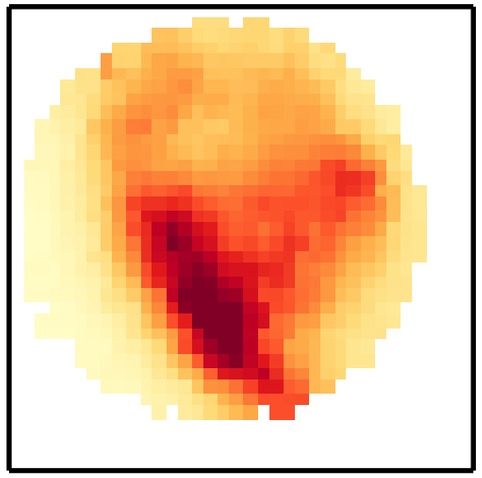




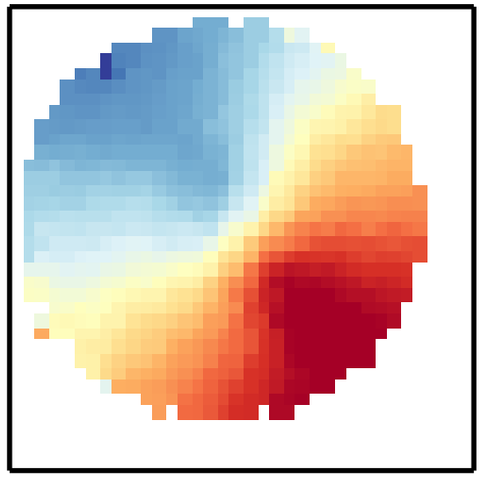
Continuum map



Stellar velocity



Hα map



Gas velocity

GAMA 511867
(z=0.055, M*=10^10.68 M_{sol})

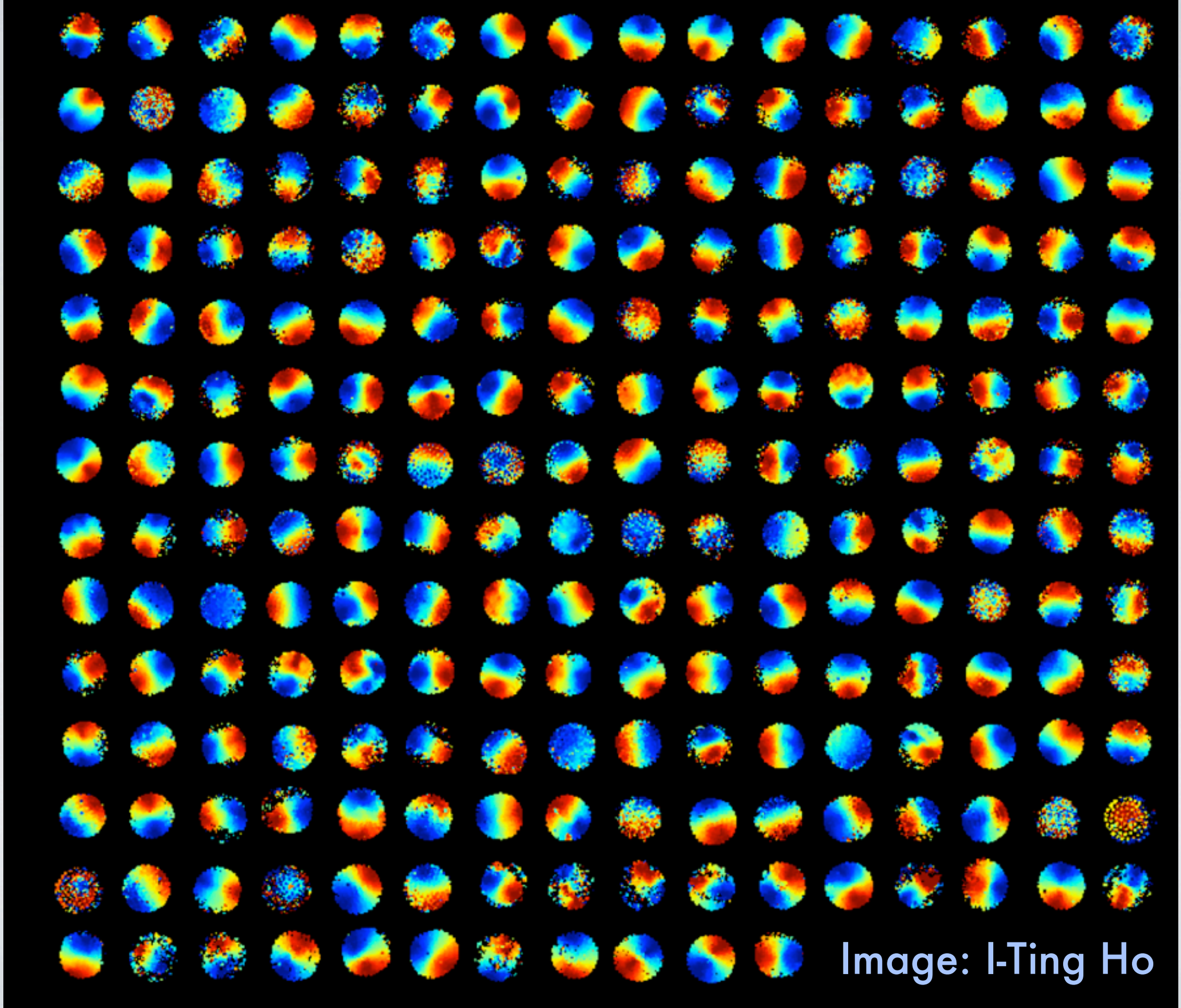


Image: I-Ting Ho

Ancillary data

Spectroscopy: GAMA and dedicated data

X-ray: Chandra, XMM-Newton

UV: GALEX

Optical: SDSS, VST-KiDS

IR: VISTA-VIKING, WISE, Herschel-Atlas

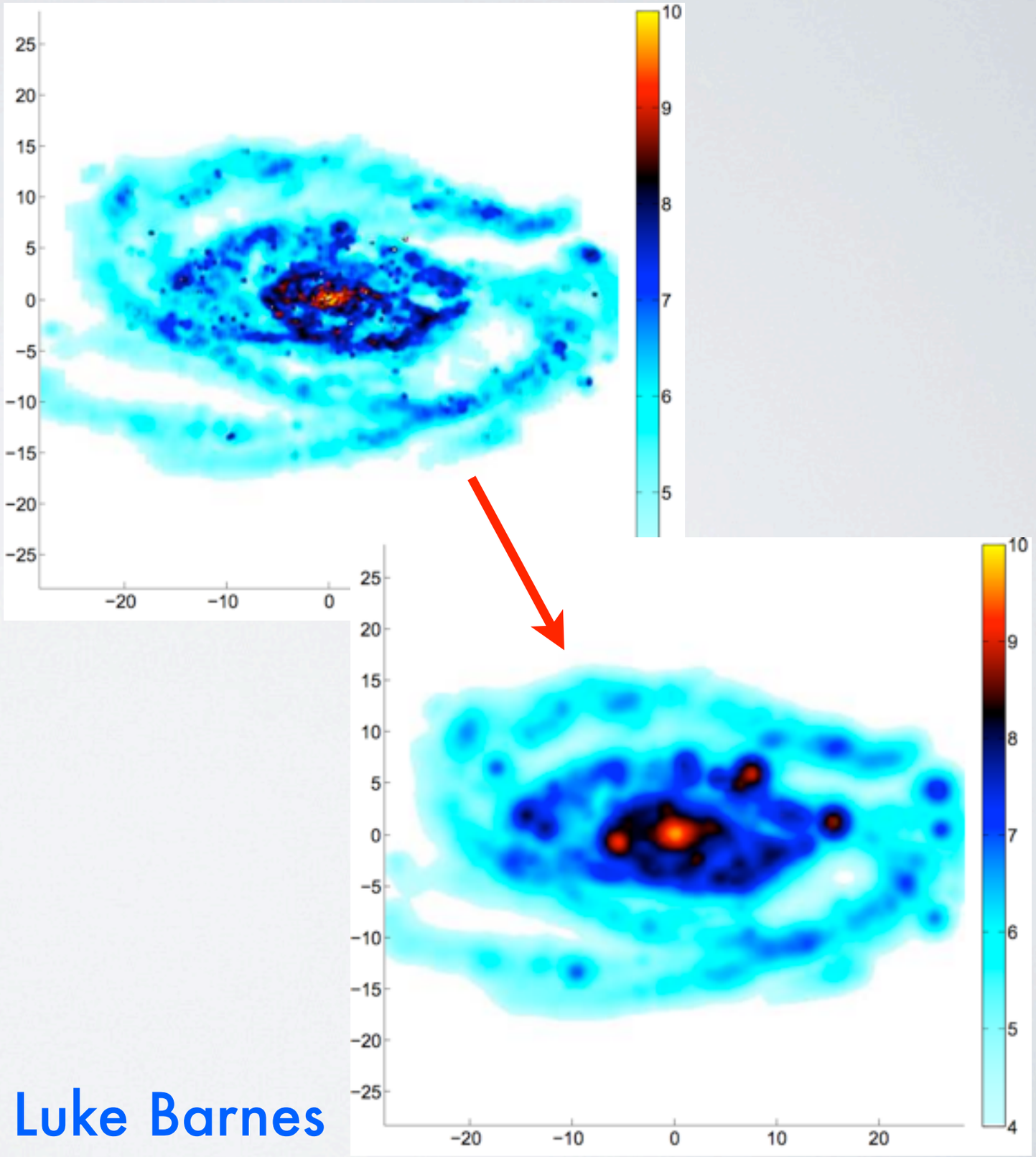
Radio continuum: GMRT, FIRST, NVSS

HI: ALFALFA, VLA

Simulations

Dedicated simulations effort to convert SPH into SAMI data

Allows direct comparison to observations



Images: Luke Barnes

Key science

How does environment affect galaxies?

How common are galactic winds?

How does gas move in and around galaxies?

How are mass and angular momentum built up?

Key science

Spatially resolved star formation profiles vs environment and mass (Adam Schaefer)
Ram-pressure stripping in galaxy clusters (Michael Drinkwater)
Tidal dwarf galaxies and the SAMI luminosity–metallicity relation (Sarah Sweet)
The impact of the cluster environment on resident and infalling galaxies (Matt Owers)
Interlocking resonances in galaxy disc kinematics (Simon Ellis)
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The kinematic morphology-density relation (Lisa Fogarty)
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The formation of lenticular galaxies in SAMI groups (Luca Cortese)
The angular momentum and stellar populations of brightest group and cluster galaxies (Sarah Brough)
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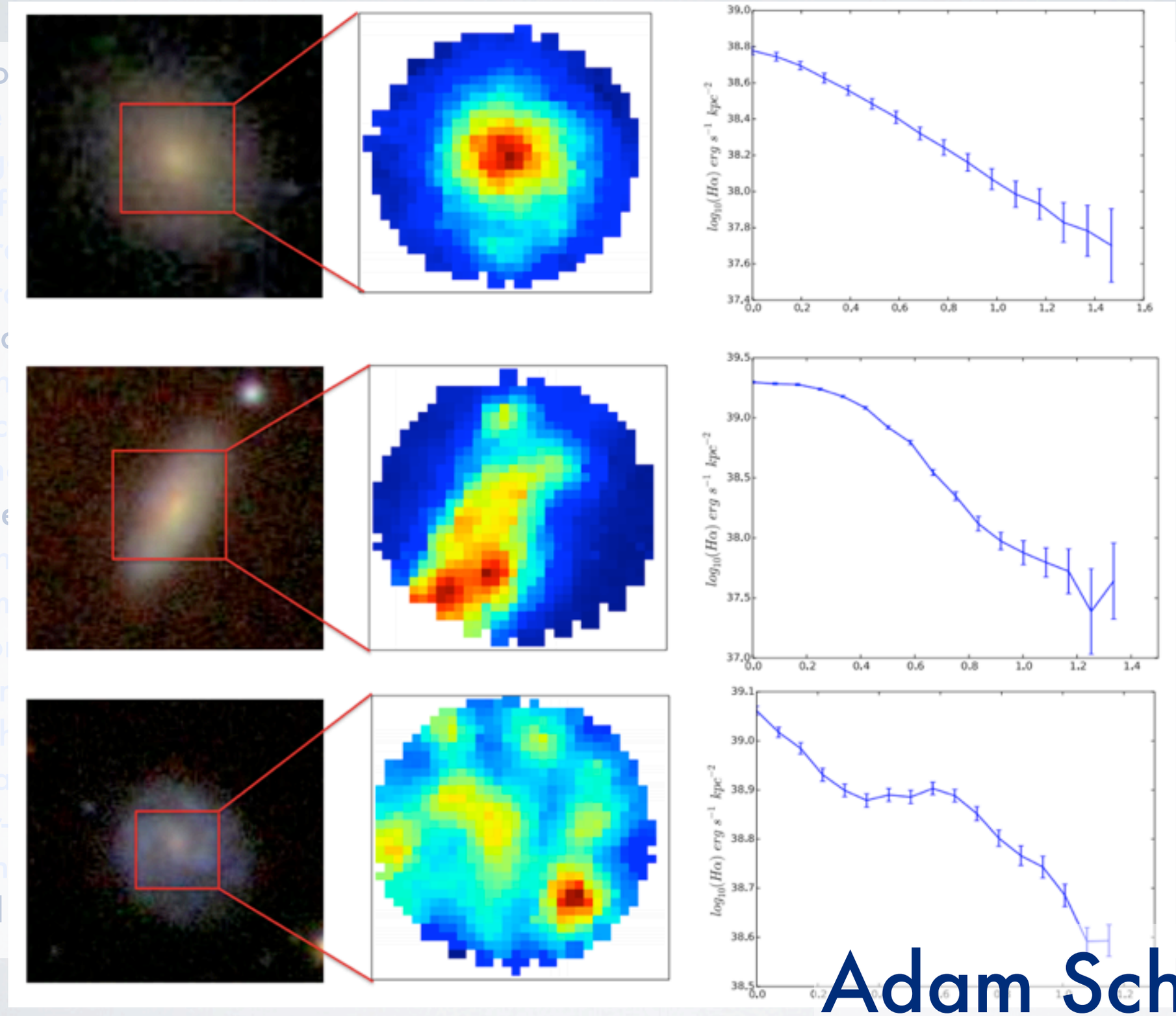

Adam Schaefer

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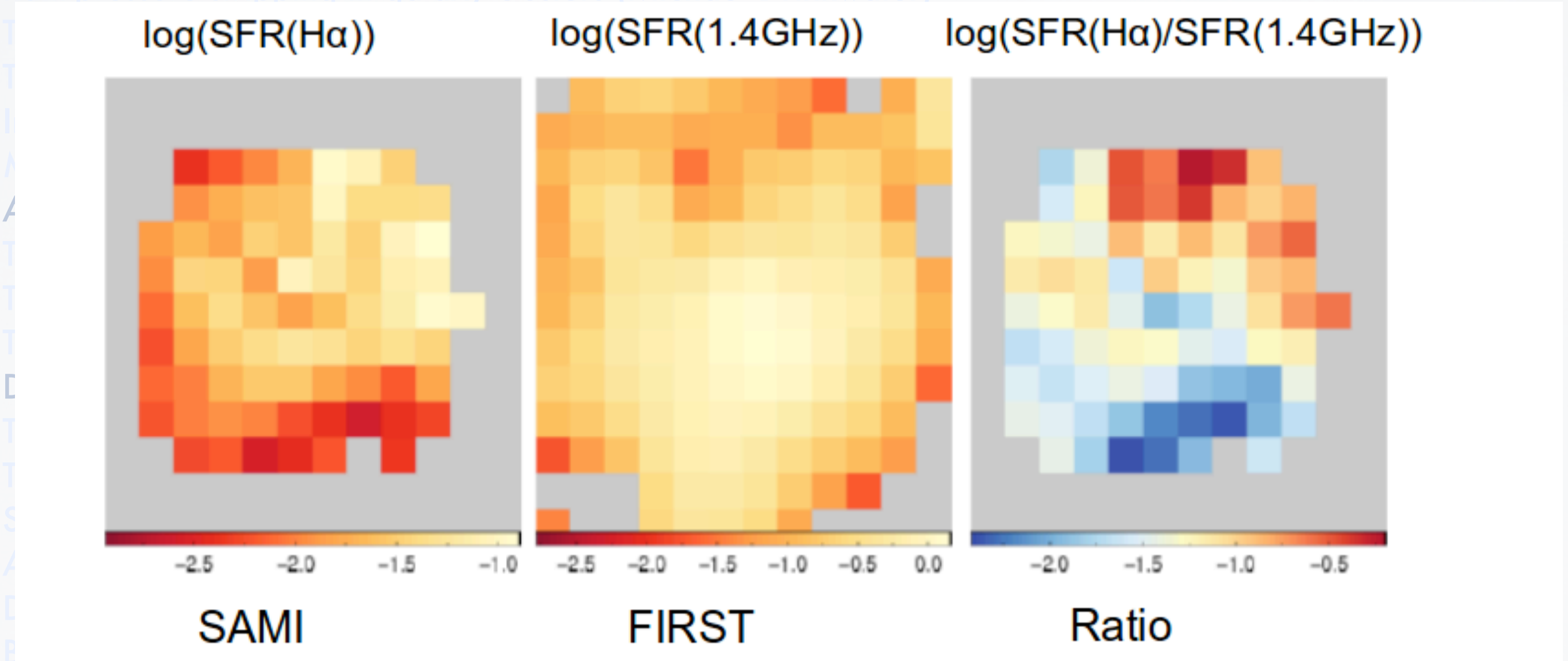

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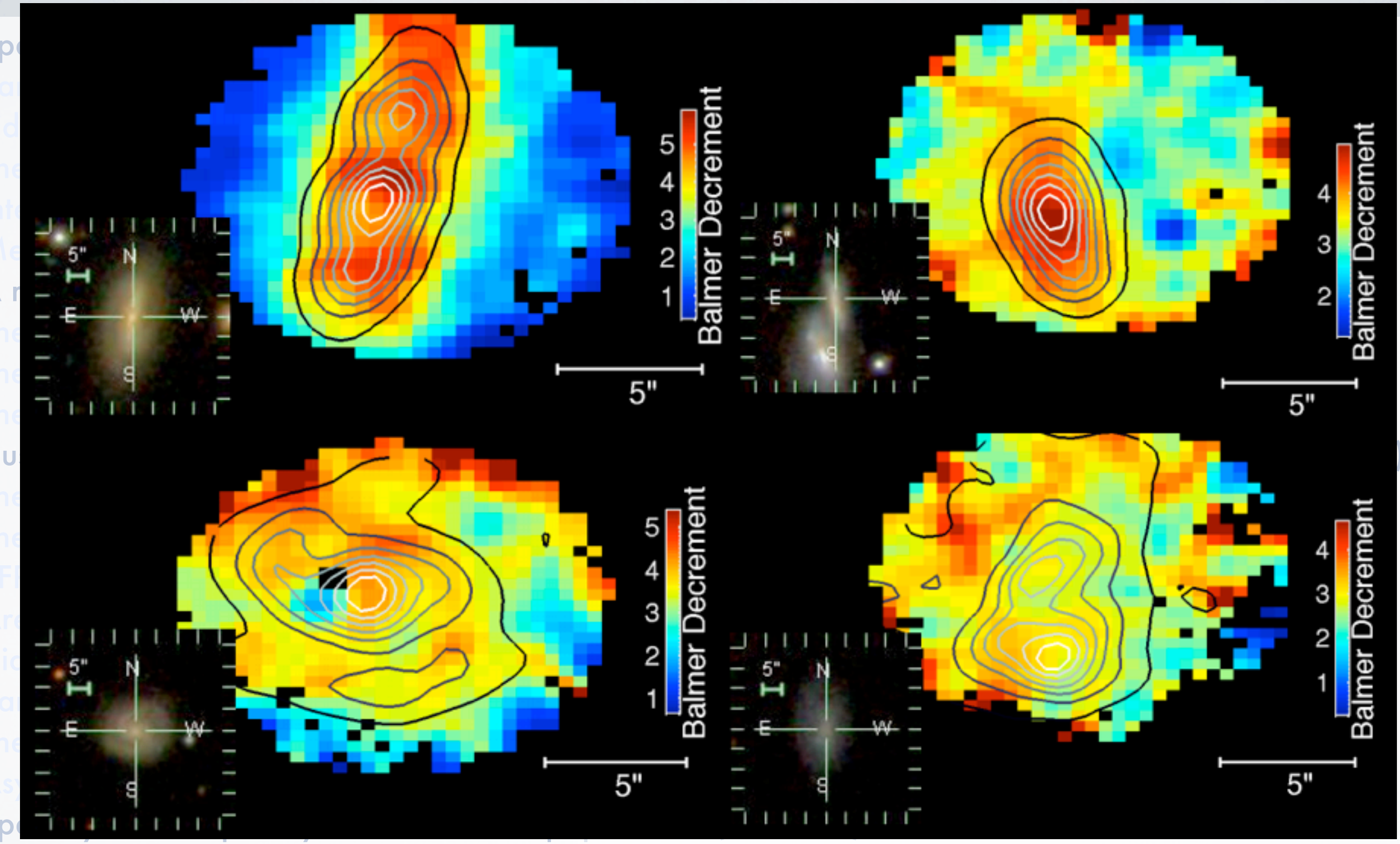
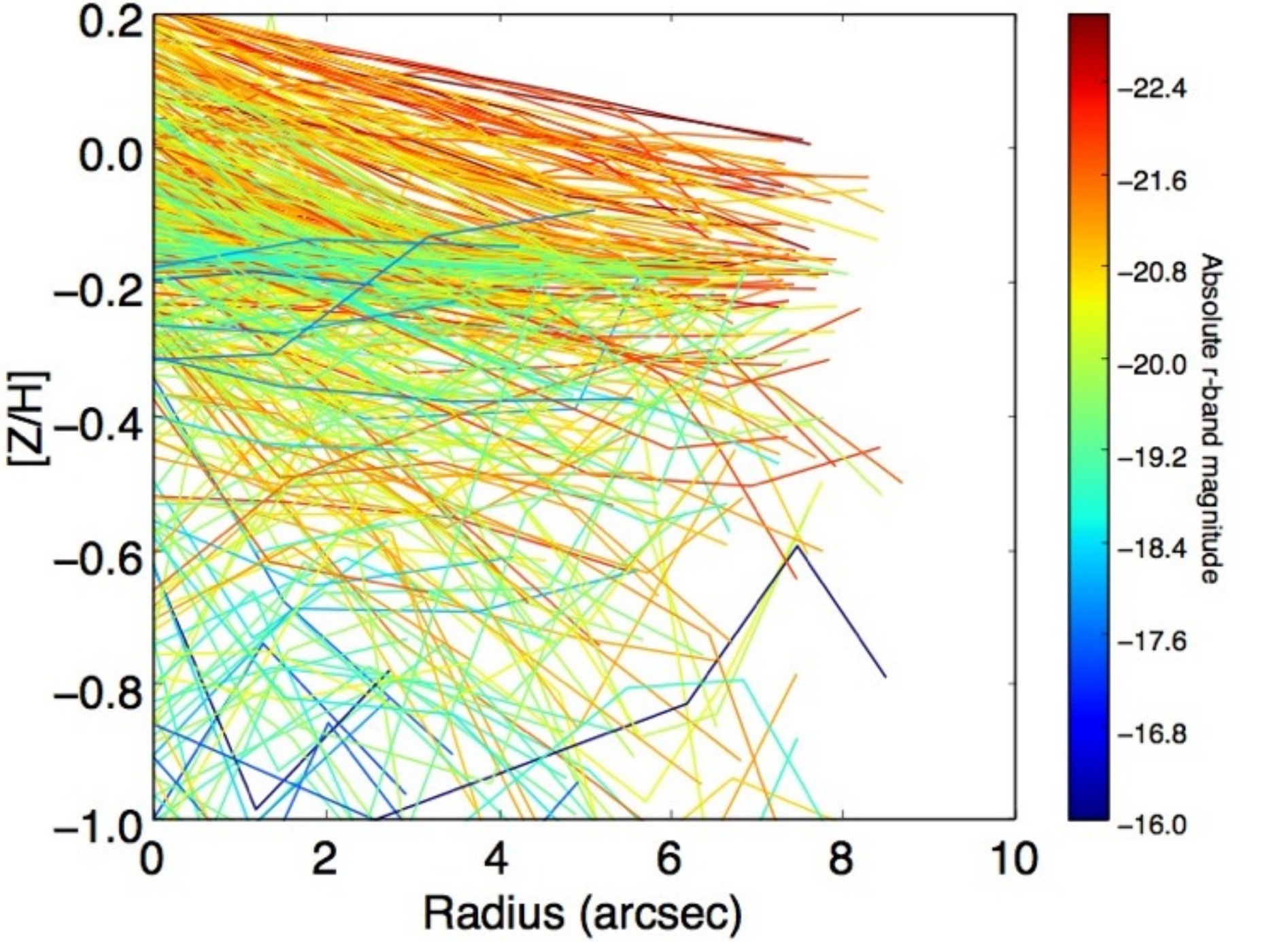


Madusha Gunawardhana

Key science



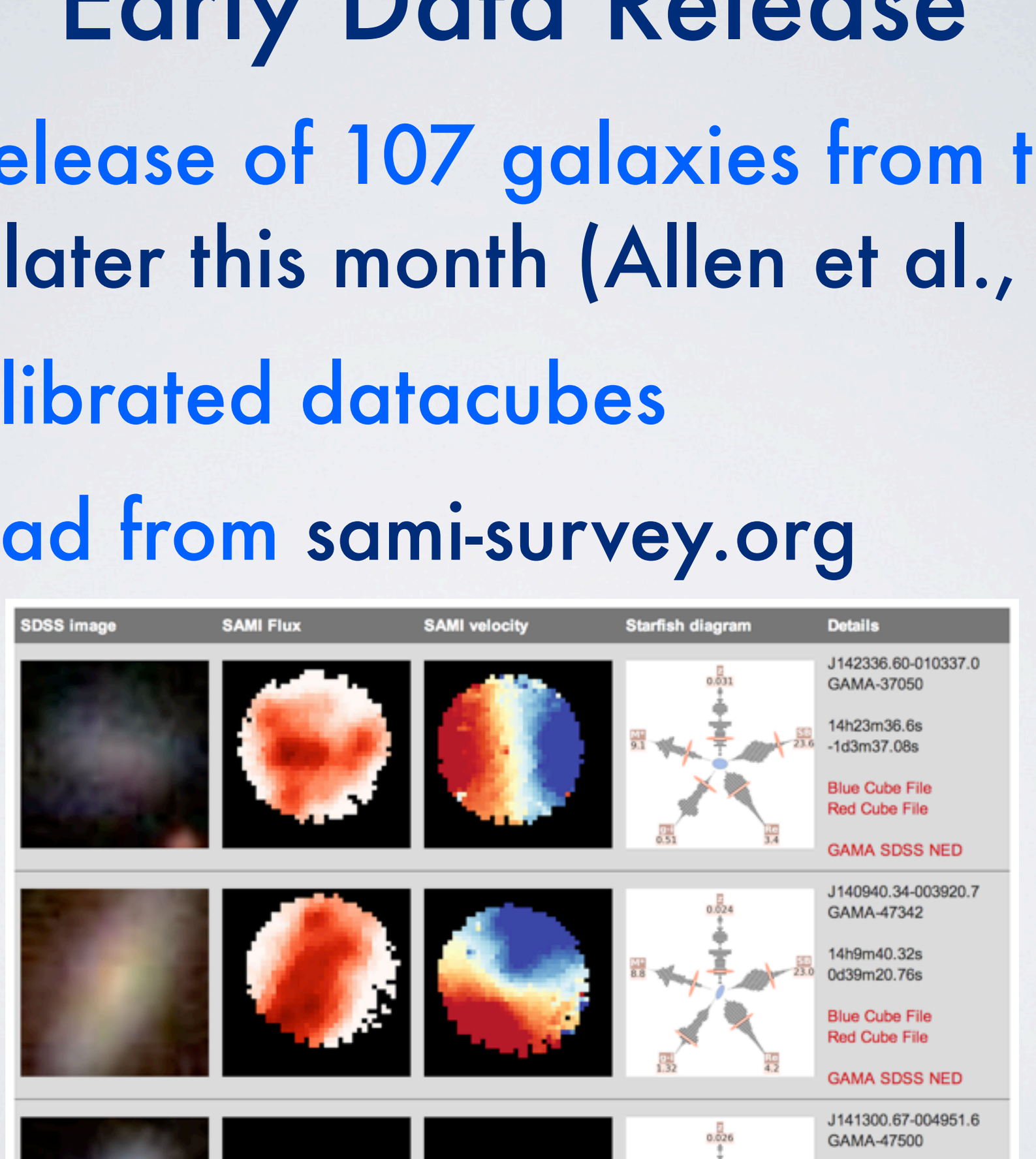
Nic Scott

Early Data Release

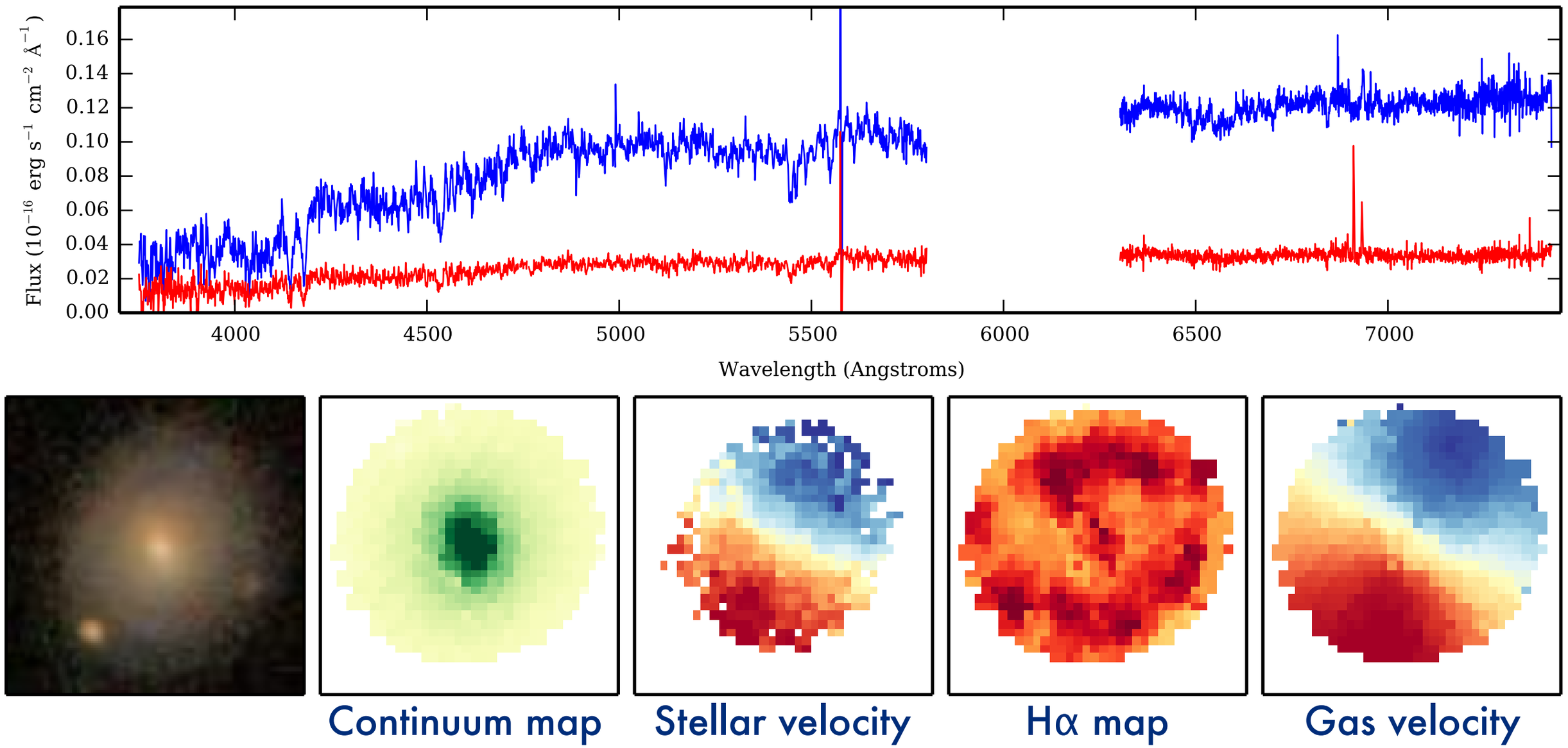
Public release of 107 galaxies from the field sample later this month (Allen et al., prep)

Fully calibrated datacubes

Download from sami-survey.org



Summary



1000 observed, 2500 to go

107 released this month!

Quality control

Comprehensive set of quality control metrics presented in Allen et al. (in prep)

Flat fielding: 0.3–2.0%

Wavelength calibration: 0.1Å and better

Sky subtraction: typically 1.3–1.4%

Flux calibration: 6.5±6.6% (relative)

PSF: Median FWHM 2.1″