面分光研究会2019、10月30日

KMOS^{3D} Survey

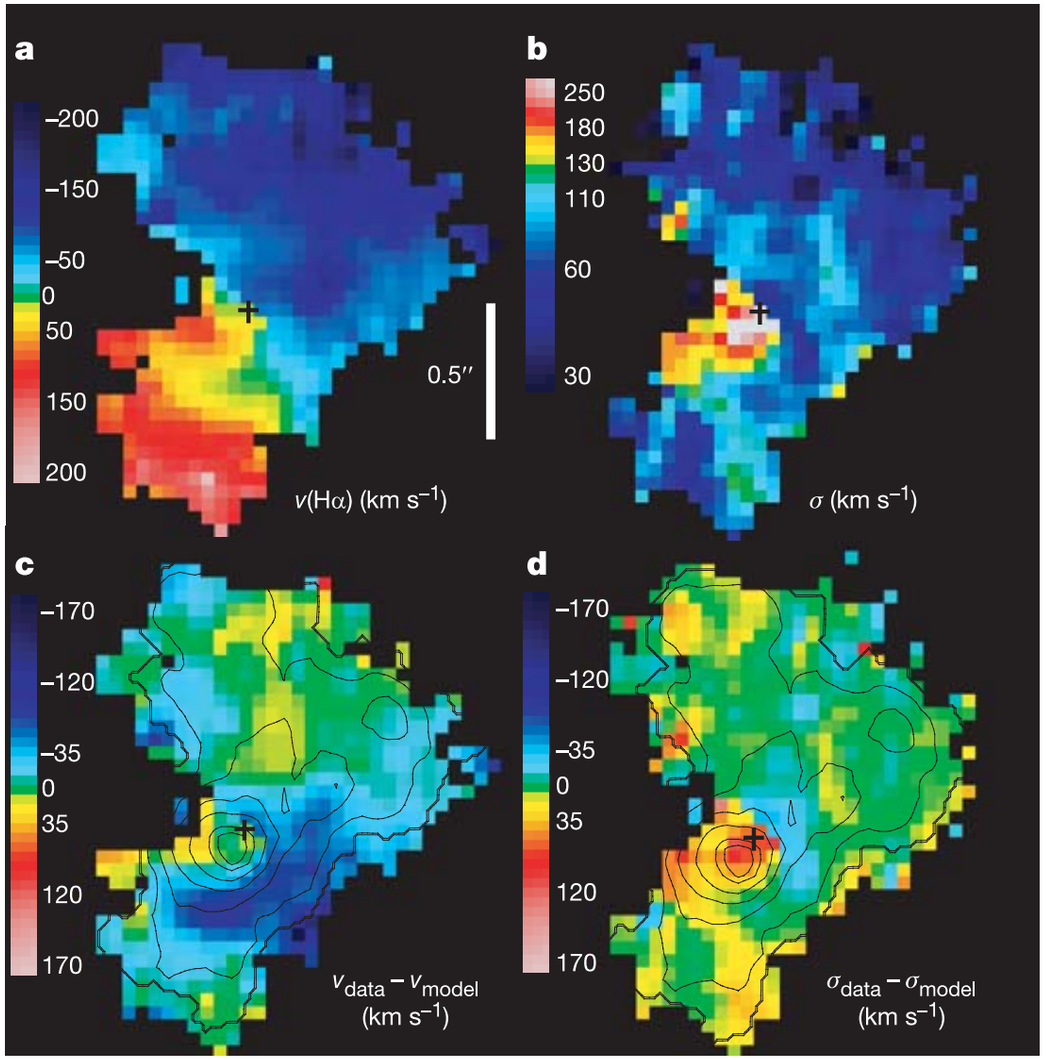
但木謙一（国立天文台）

Data release and final survey paper:

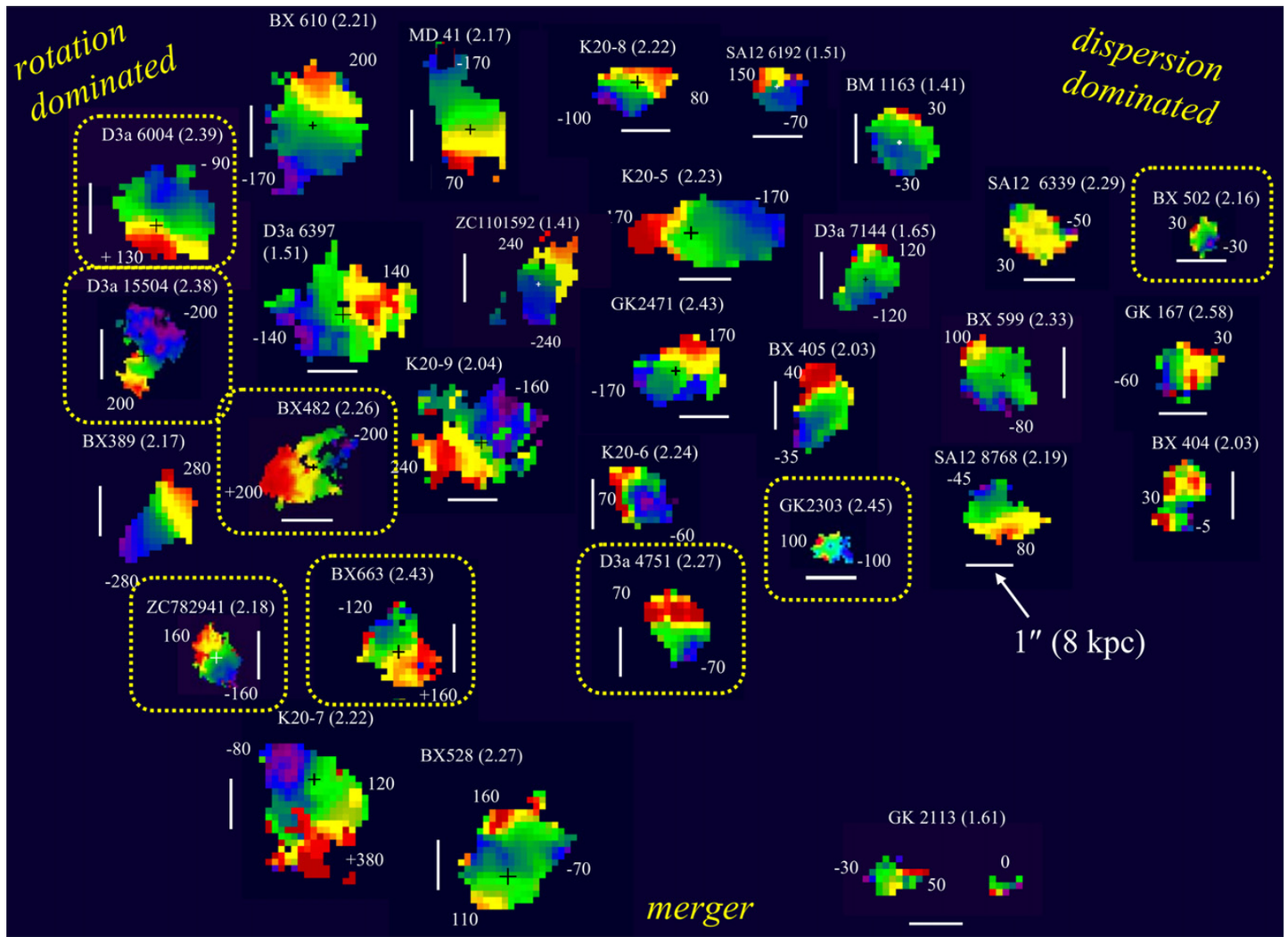
Wisnioski et al. 2019, accepted, arXiv: 1909.11096

Before KMOS^{3D} survey

Genzel+06



Förster Schreiber+09

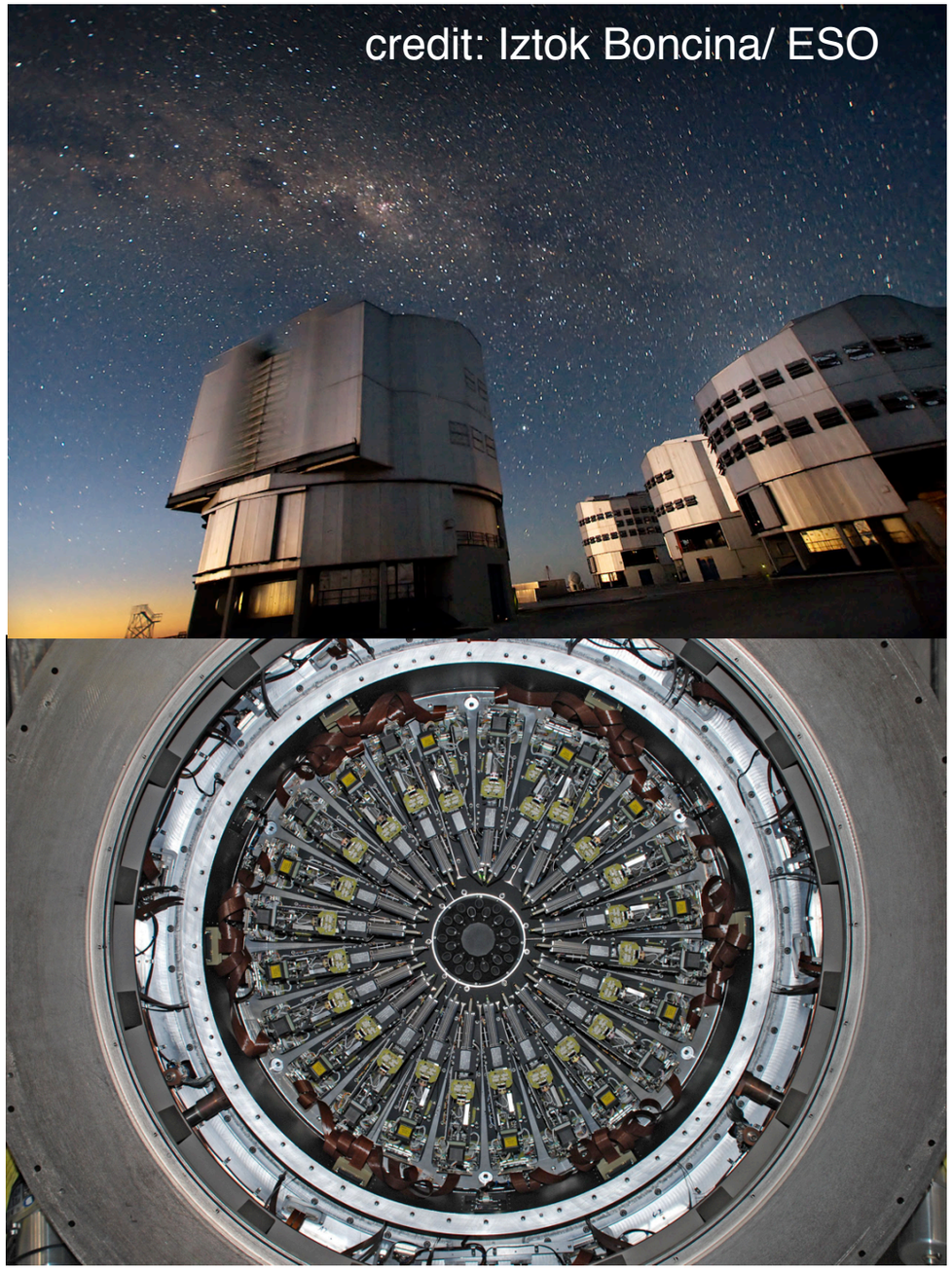


近赤外面分光観測によって、z=1-3にある星形成銀河の運動学的性質を明らかにした。

基本的には回転している。

KMOS^{3D} survey

VLT/KMOS



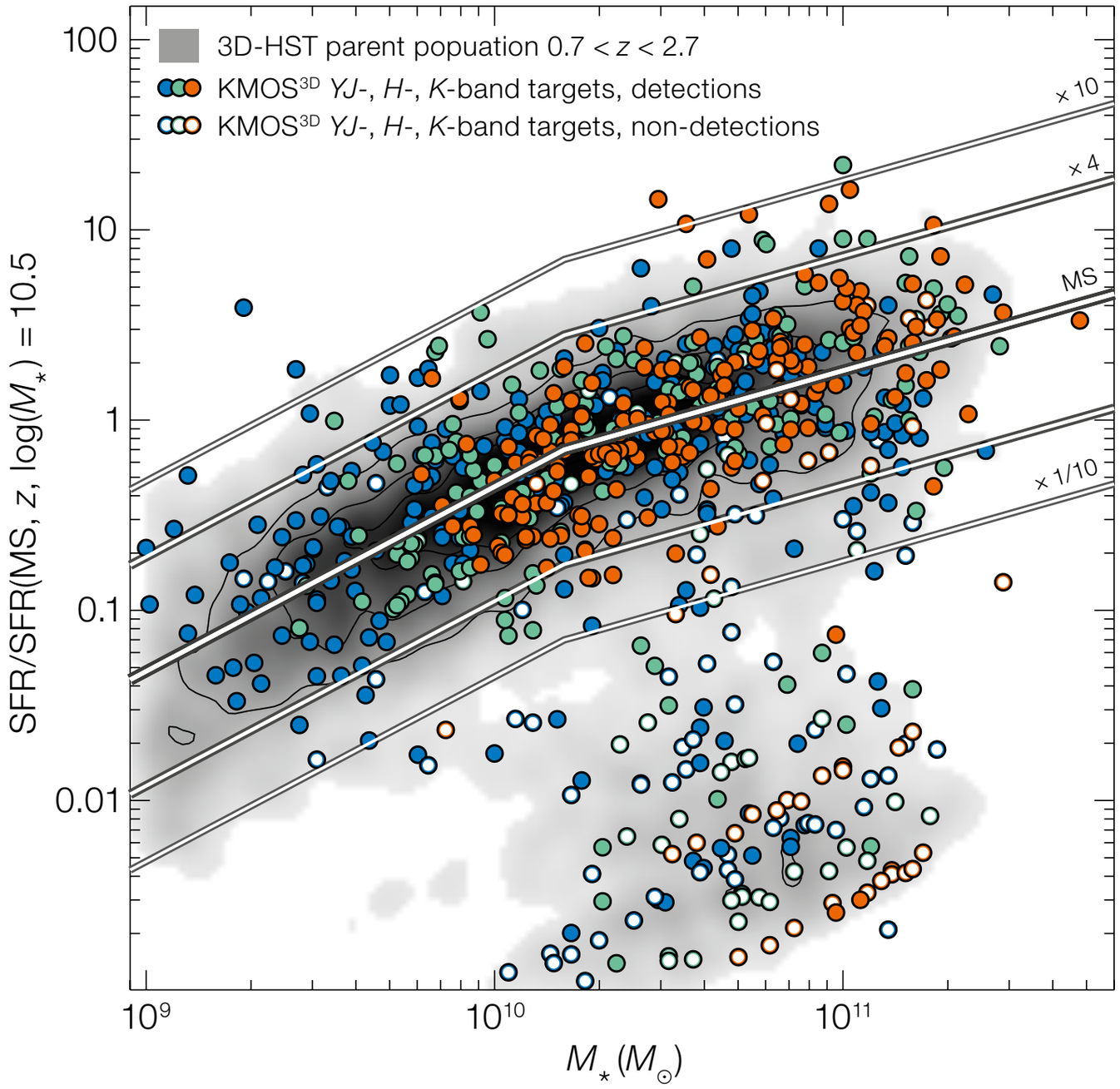
Wavelength coverage	0.8um to 2.5um
Spectral bands	IZ, YJ, H, K, H+K
Spectral resolving power	R = 3400 (IZ), 3600 (YJ), 4000 (H), 4200 (K), 2000 (H+K)
Number of IFUs	**24**
Extent of each IFU	2.8" x 2.8"
Spatial sampling	0.2" x 0.2"
Patrol field	7.2 arcmin diameter circle

2013-2018年にかけて、全部で75晩が割り当て（GTOプログラム）

0.6<z<2.7にある739個の銀河を観測

KMOS^{3D} survey

Förster Schreiber+18



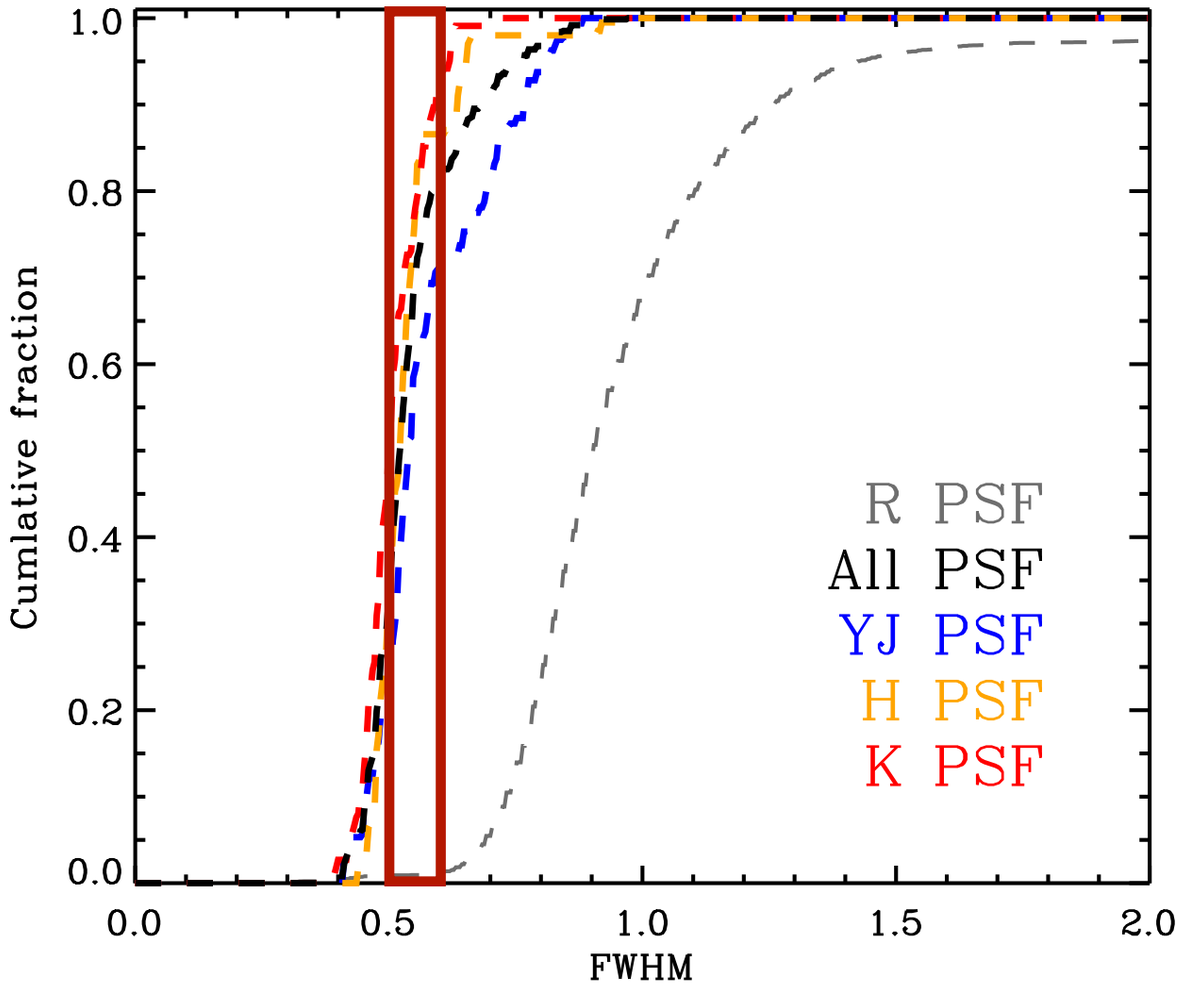
2013-2018年にかけて、全部で75晩が割り当て（GTOプログラム）

0.6<z<2.7にある739個の銀河を観測

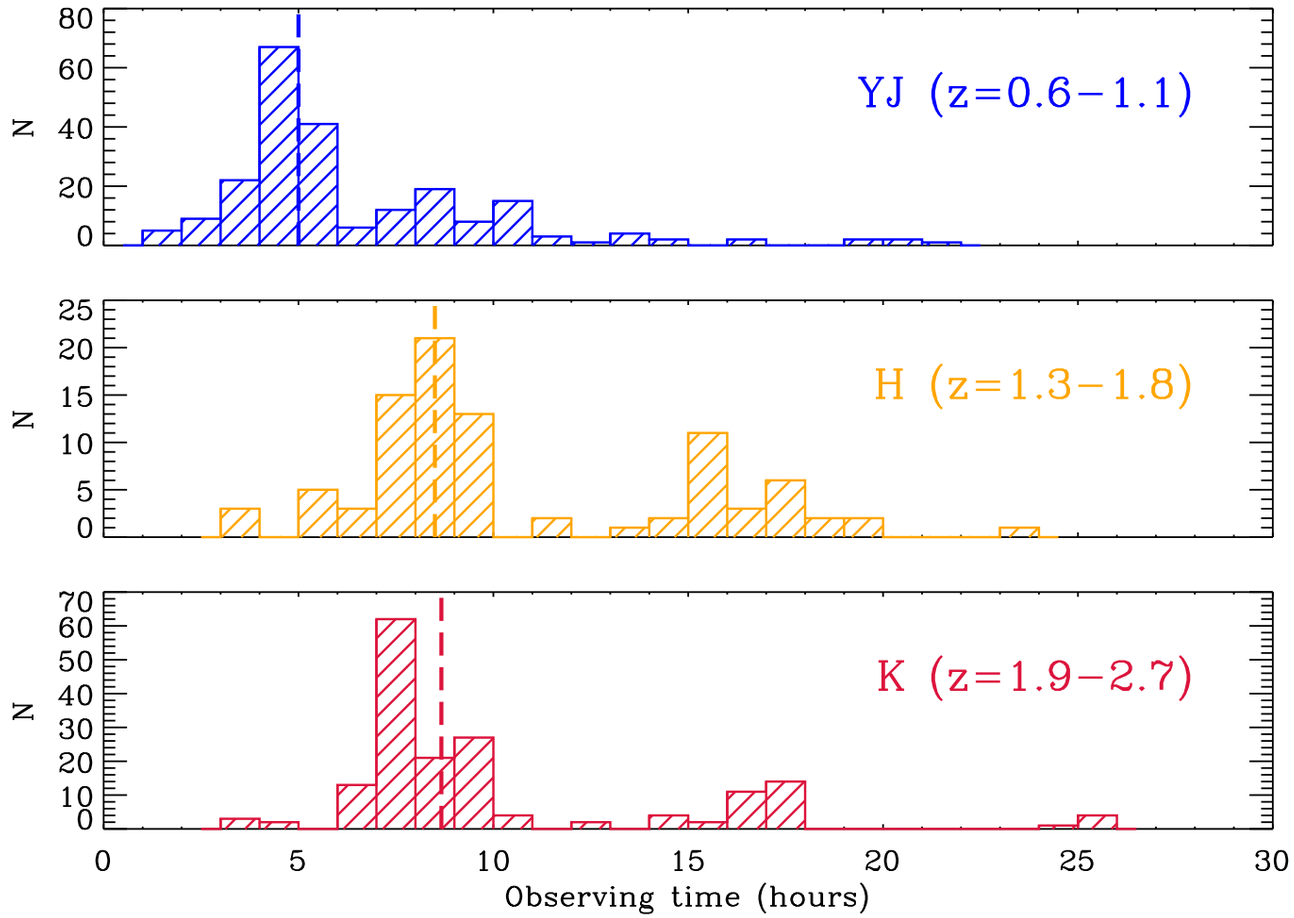
KMOS^{3D} survey

Wisnioski+19

PSF = 0.5-0.6″ (~4 kpc)

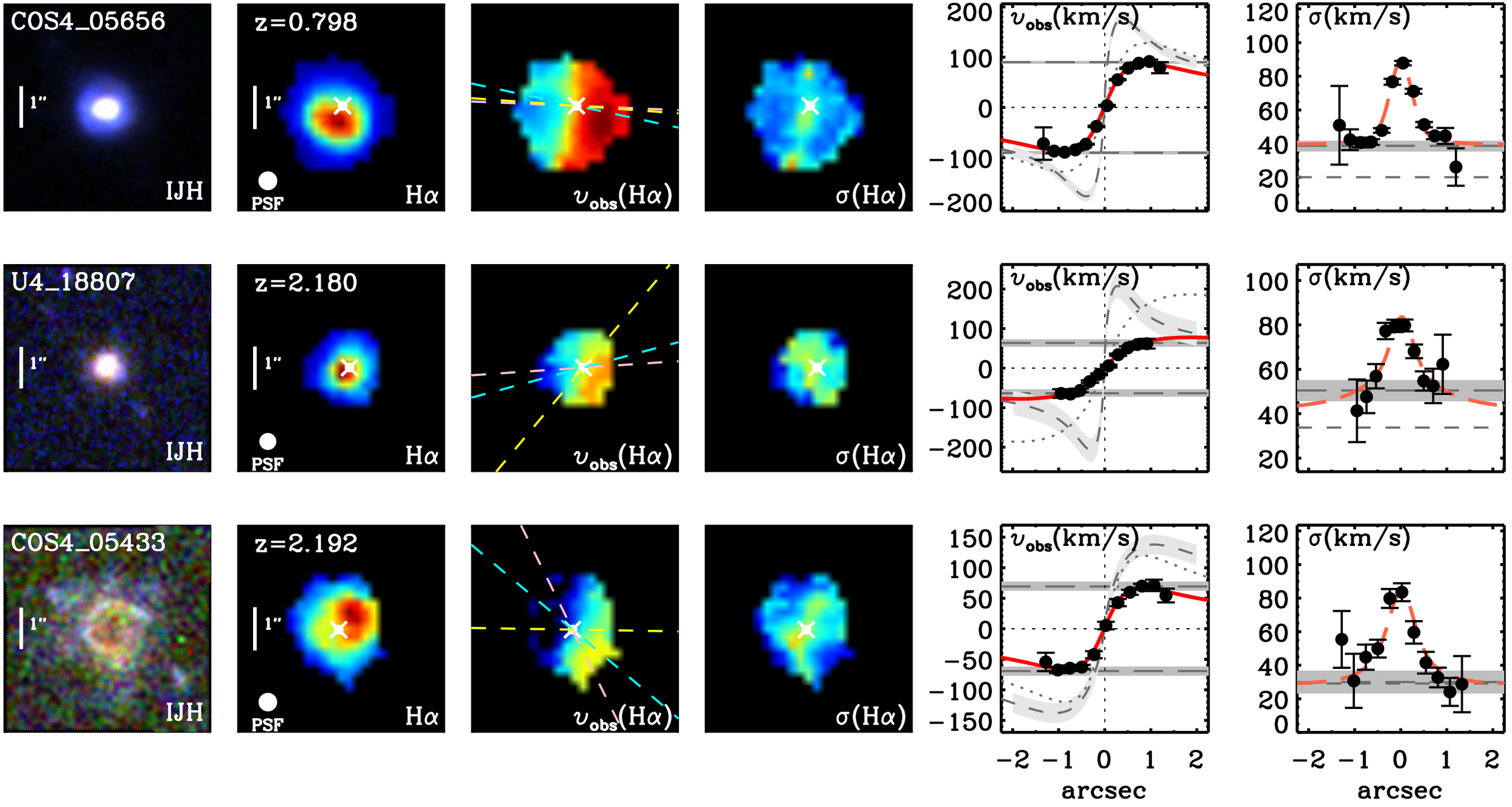


t_{int} = 7-10 hours



IFUデータの解析

Wisnioski+19

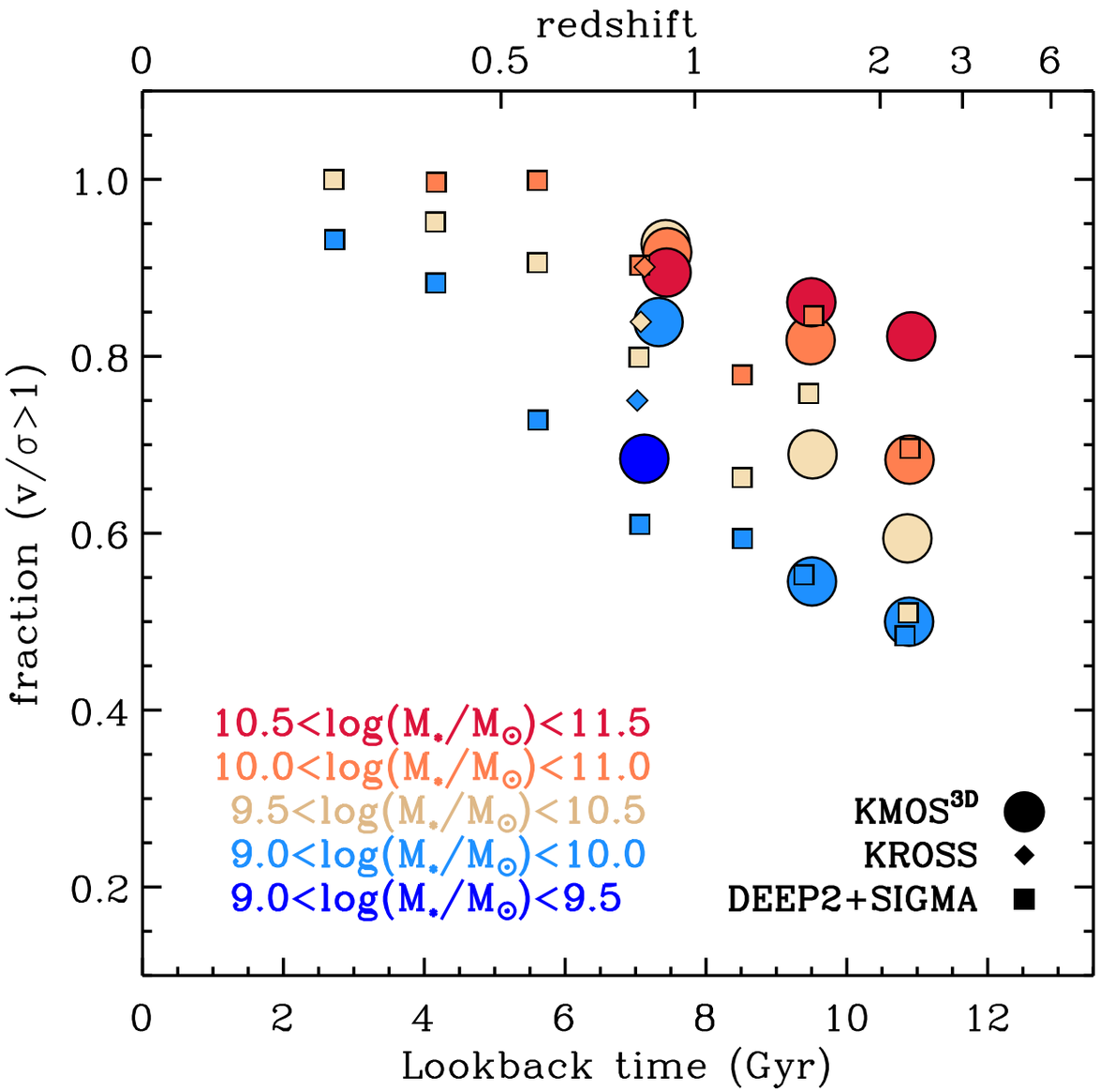


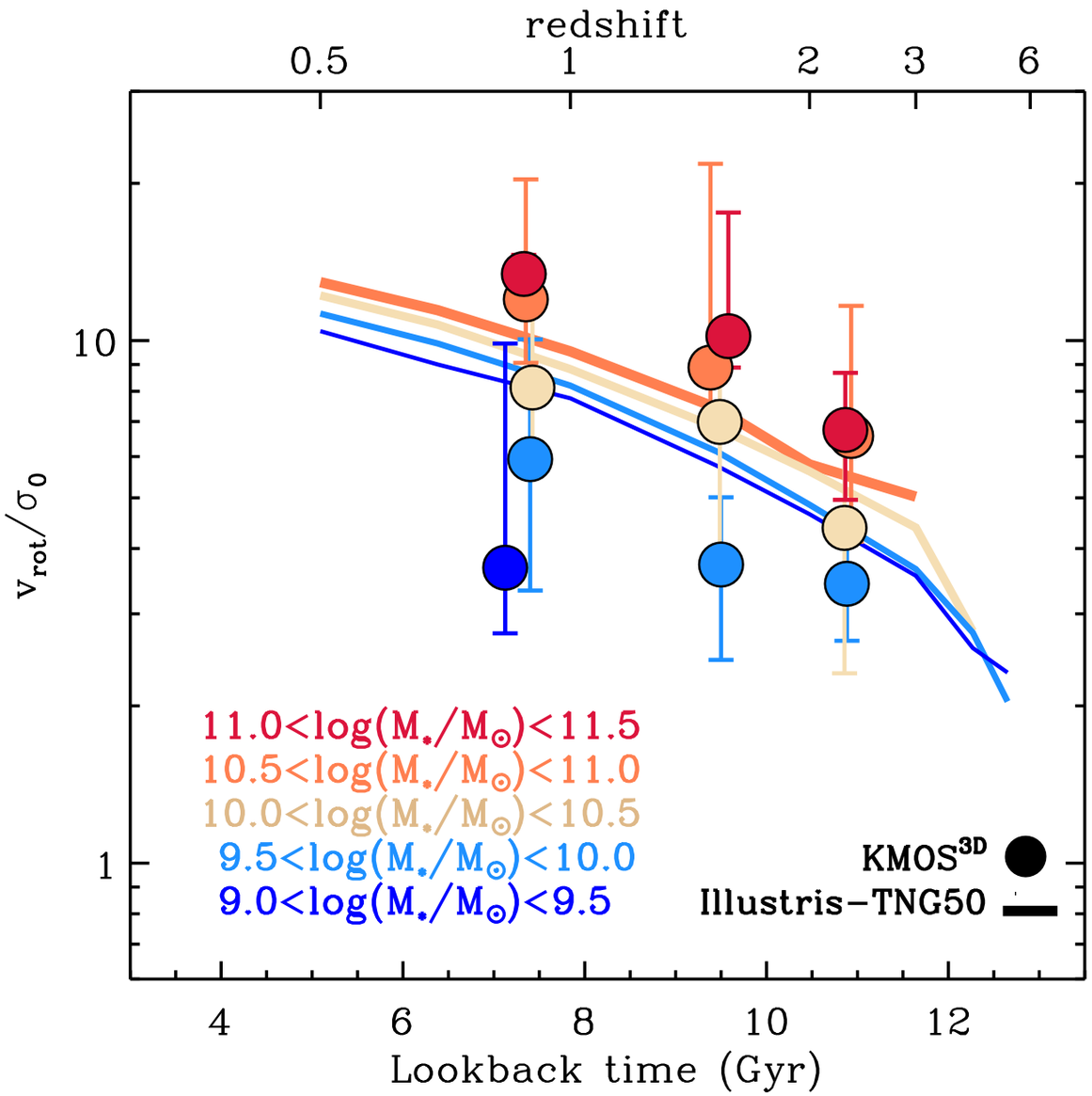
581/739 are detected in the Hα emission line

~470 are resolved

Science results from KMOS^{3D} survey

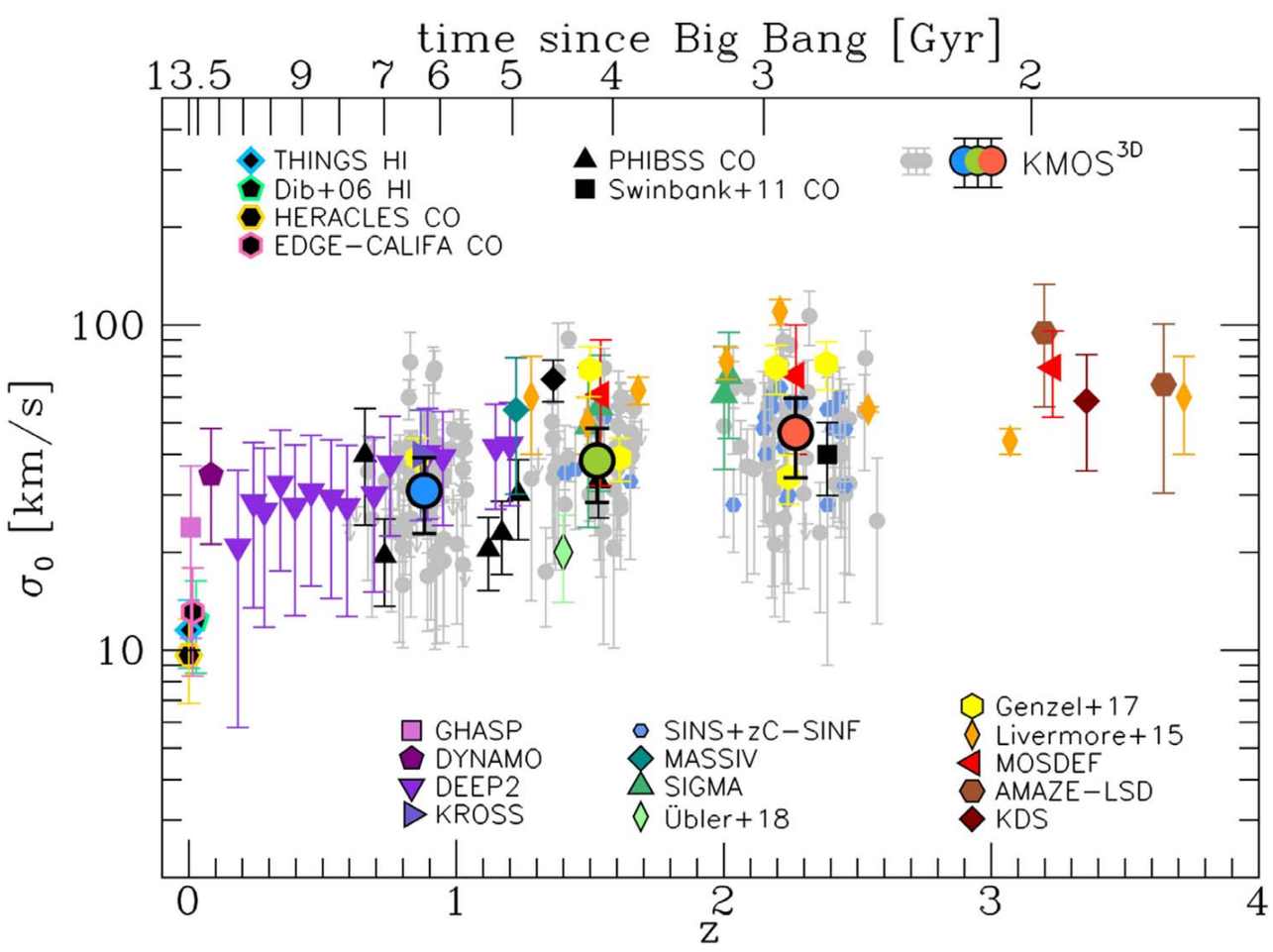
Wisnioski+19



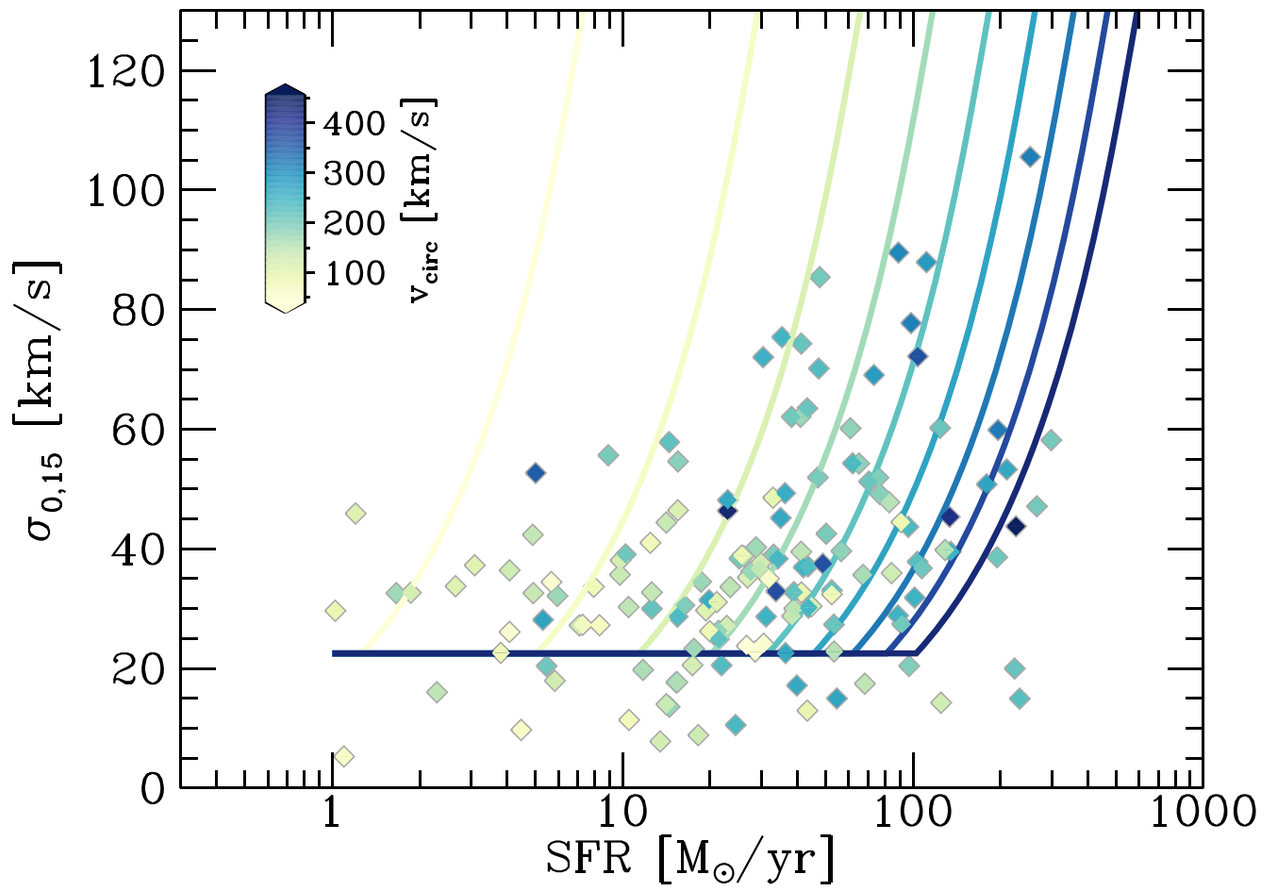


8割の銀河で、回転運動が卓越している

Science results from KMOS^{3D} survey

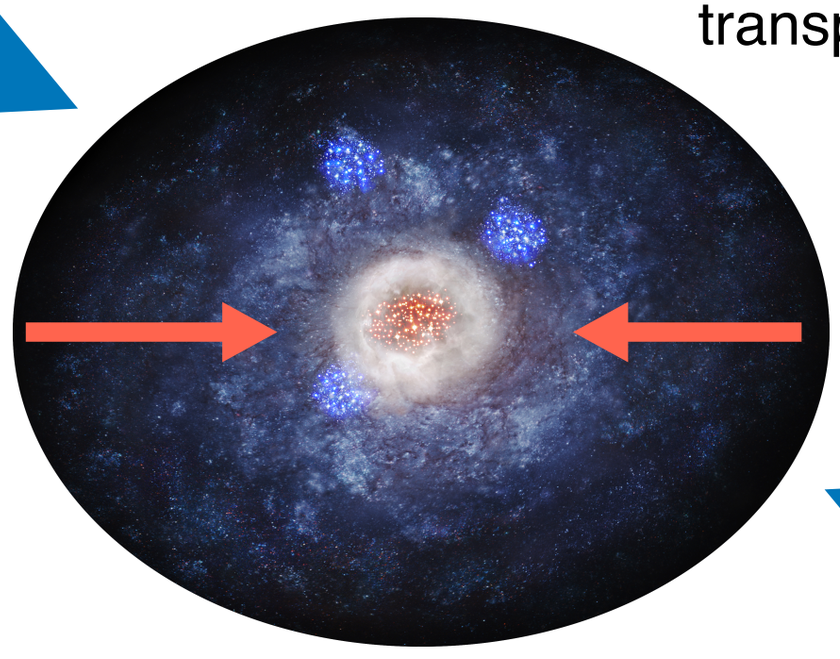


Übler+19



transport+feedback high-z model
(Krumholz+18)

radial flows (internal)



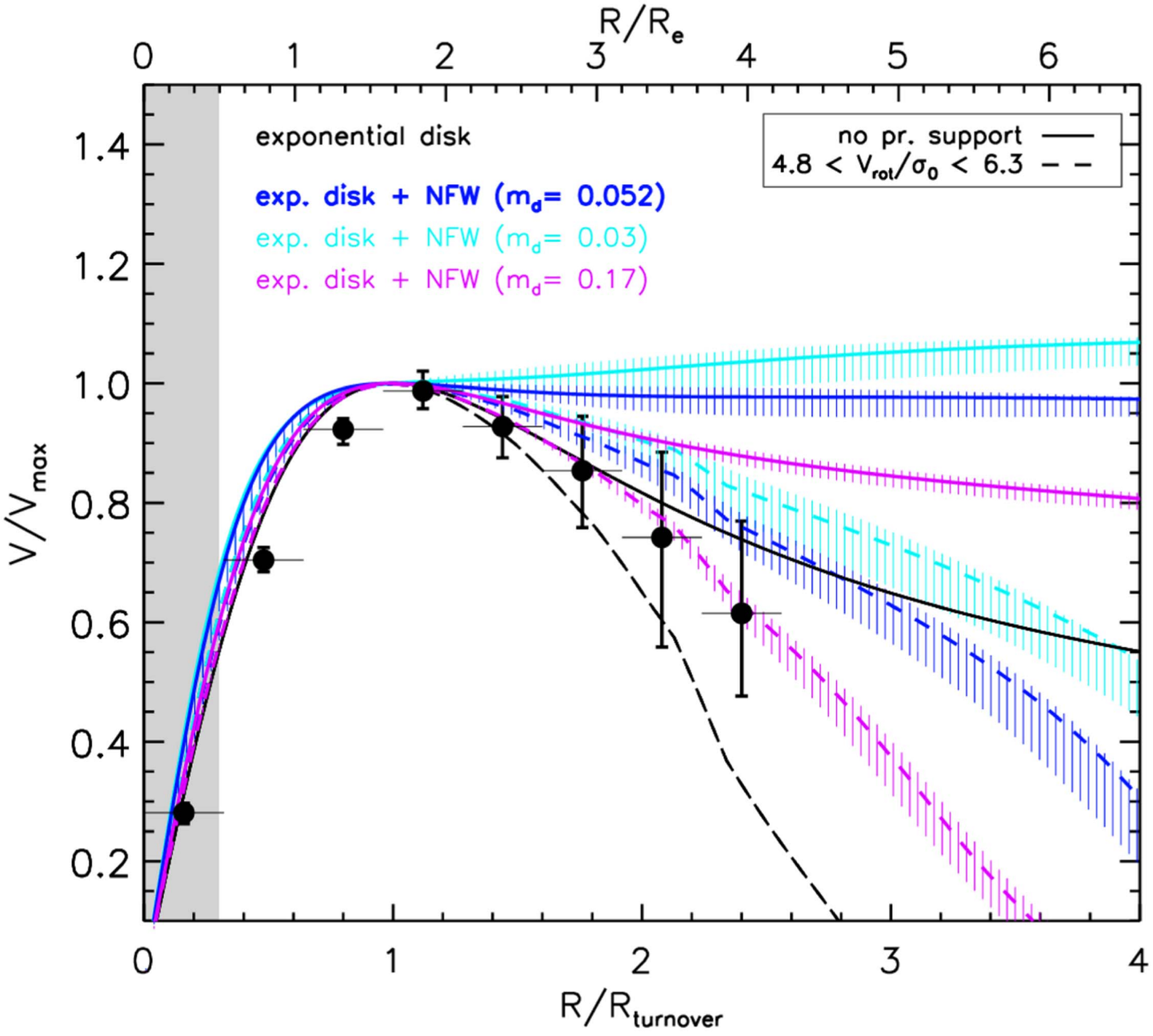
gas accretion (external)

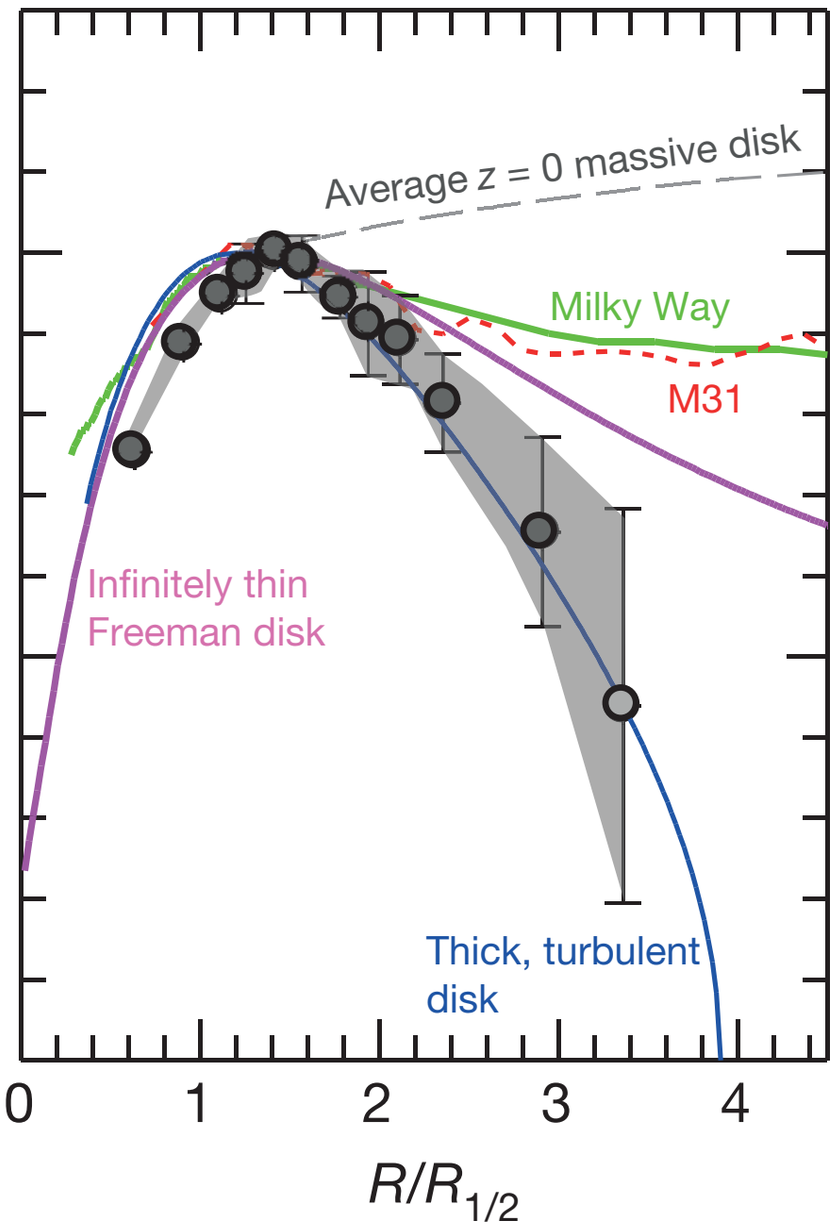
Science results from KMOS^{3D} survey

Lang+17

stacking of 101 high-z SFGs

Genzel+17





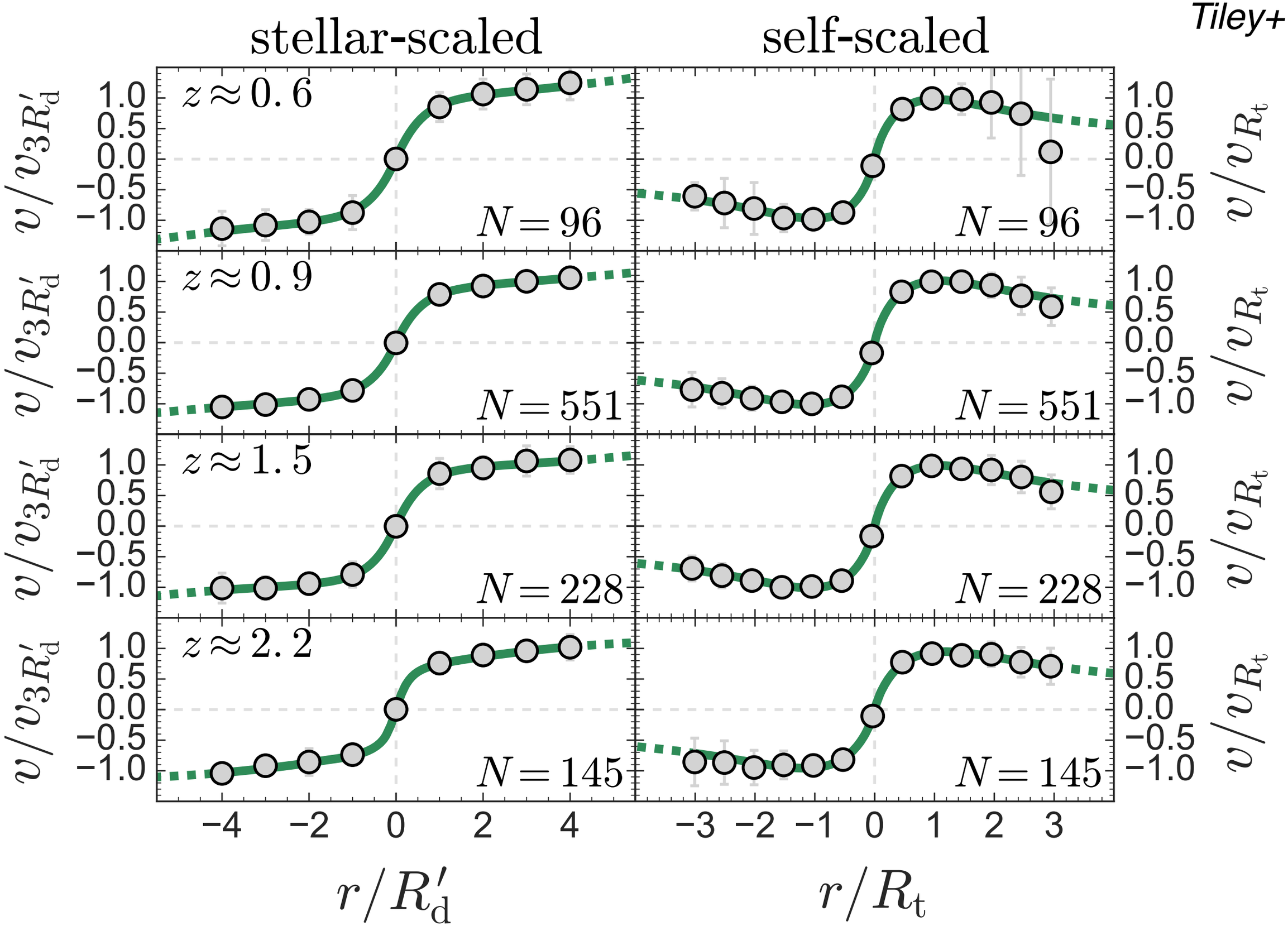
falling rotation curves can be explained by two affects

1. high baryonic fraction

2. pressure support

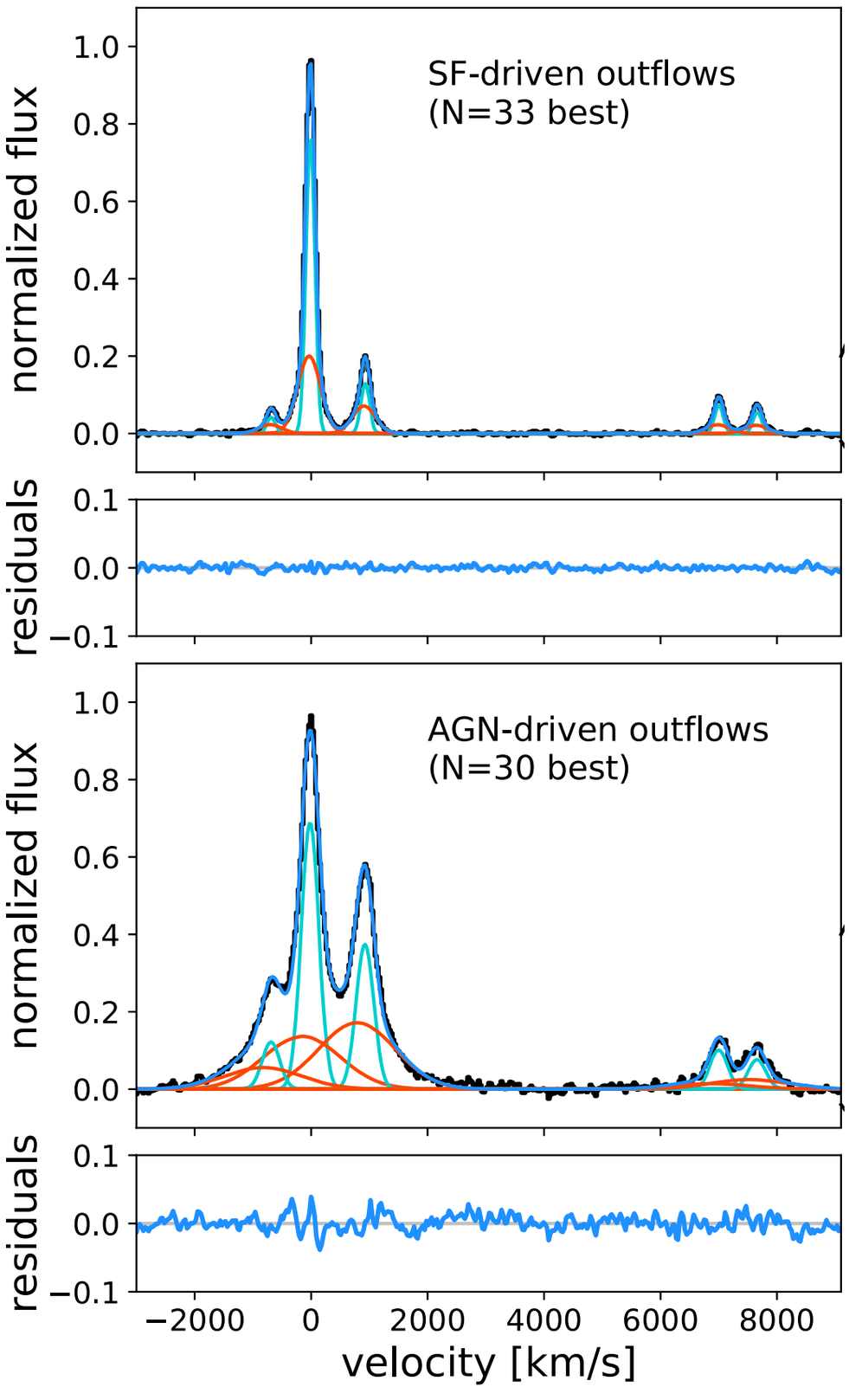
Science results from KMOS^{3D} survey

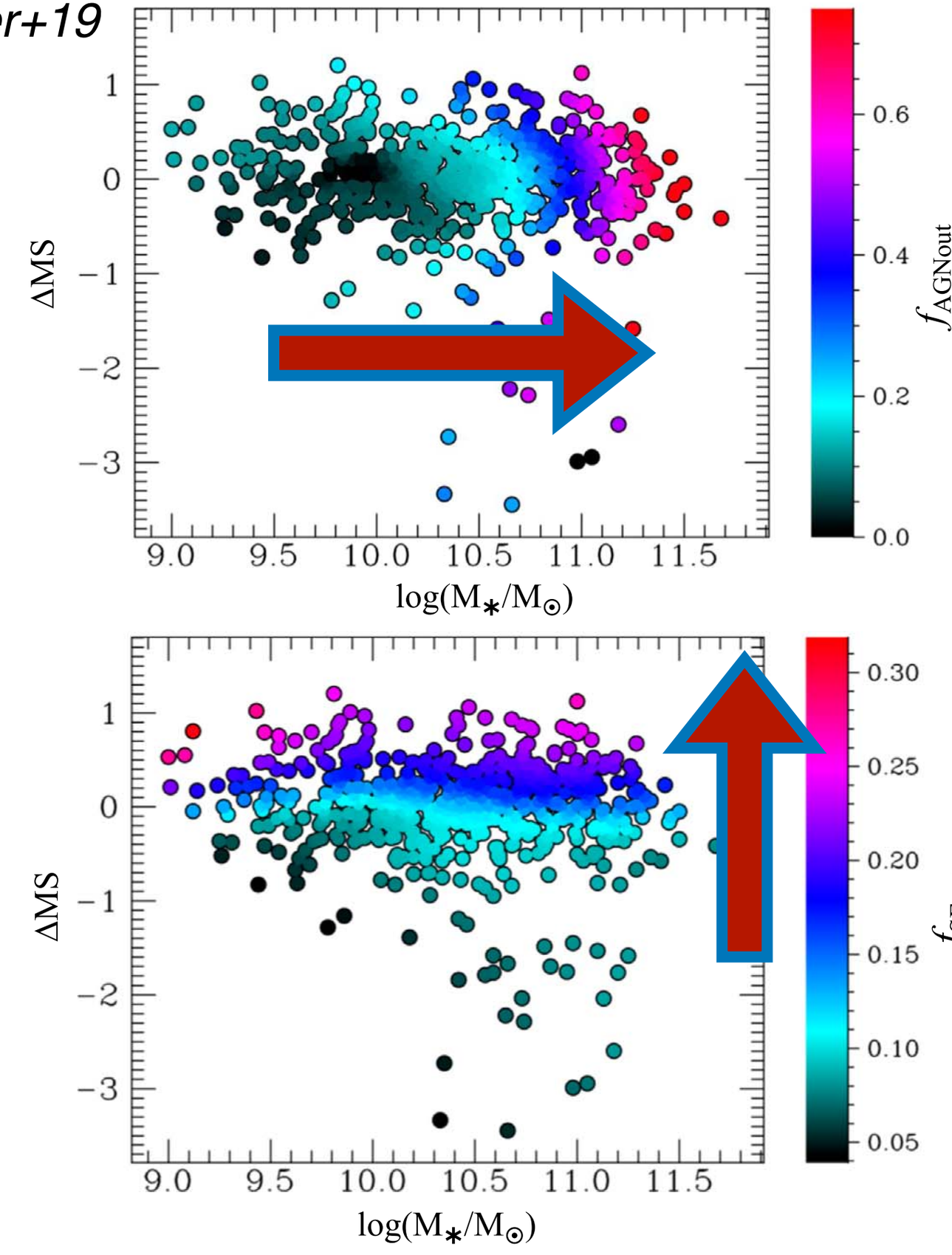
Tiley+19



Science results from KMOS^{3D} survey

Förster Schreiber+19





KMOS^{3D} data release

MAX PLANCK INSTITUTE FOR EXTRATERRESTRIAL PHYSICS

Search

NEWS | INSTITUTE | SCIENCE | PUBLIC OUTREACH

Overview
Survey & Science
Publications
Data
Team

DATA DOWNLOAD

This data release provides the final reduced cubes observed in the KMOS^{3D} survey of galaxies at redshift 0.7 < z < 2.7. The released data include 739 unique cubes in the band encompassing Hα+[NII]+[SII] line emission of 739 galaxies. The information on the structure and the four extensions of each cube along with description of KMOS^{3D} specific header keywords are presented in the KMOS 3D RELEASE GUIDE document and in Wisnioski et al. 2019.

We also release a GALAXY CATALOG with relevant physical parameters for each galaxy. The presented parameters in the released table are explained in Section II.3 of the release guide document. Aperture fluxes for all galaxies with detected Hα line emission and upper limits for non-detections are published in the Hα FLUX CATALOG The catalog data are stored in FITS format, and the file is a gzipped tarball (to unpack, run e.g. "tar xvfz 3d_fnlsp_table_v3.fits.tgz").

You can download all the observed galaxies, or only the targets in the COSMOS, GOODS-S, and UDS fields- **Released as of July 12, 2019. Credit:** When using KMOS3D data products release and derived parameters released here please cite Wisnioski et al. 2019.

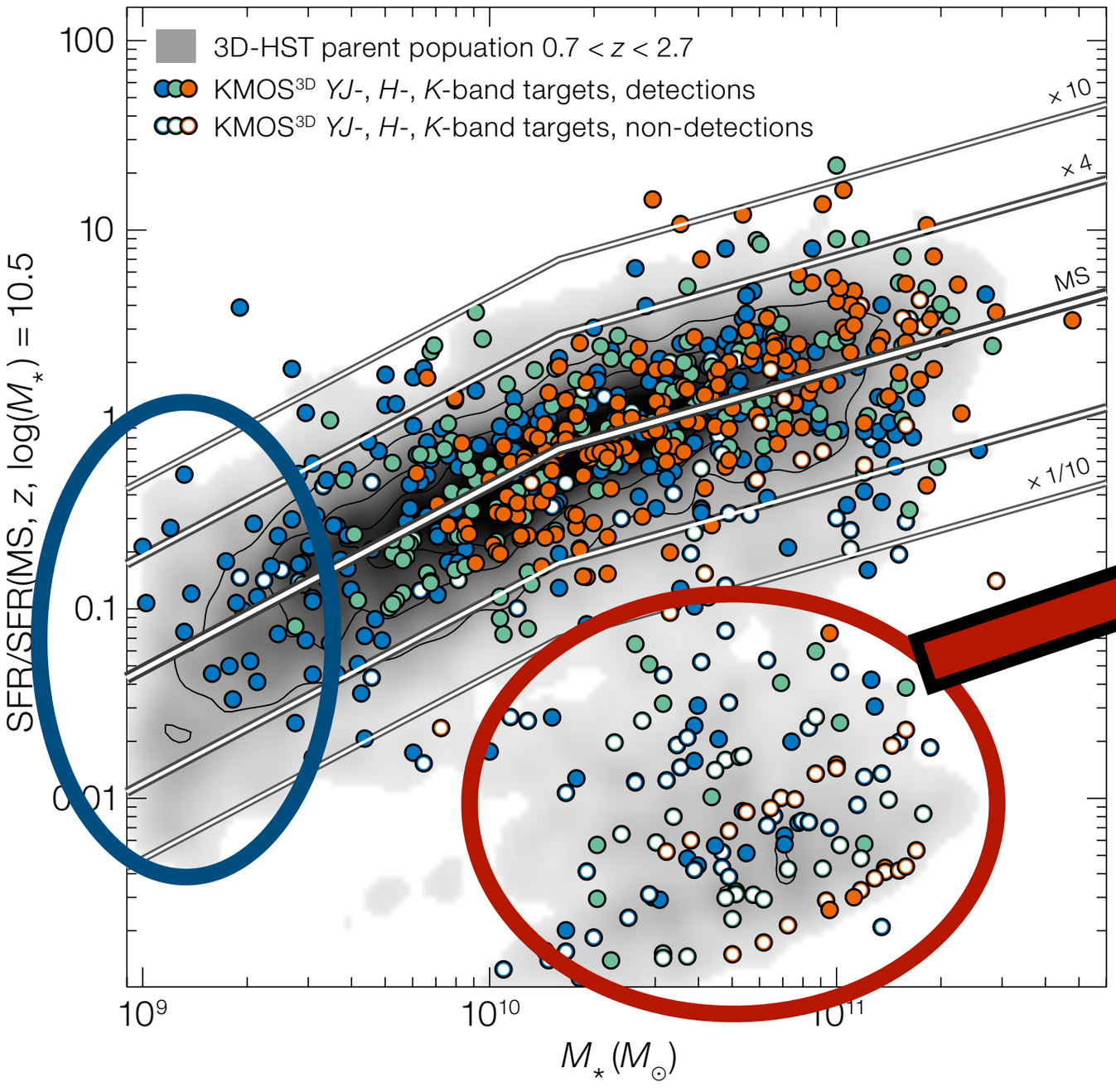
All KMOS^{3D} CUBES	**739 targets, 3 GB**
COSMOS FIELD CUBES	275 targets, 1.10 GB
GOODS-S FIELD CUBES	224 targets, 0.96 GB
UDS FIELD CUBES	240 targets, 0.95 GB

http://www.mpe.mpg.de/ir/KMOS3D

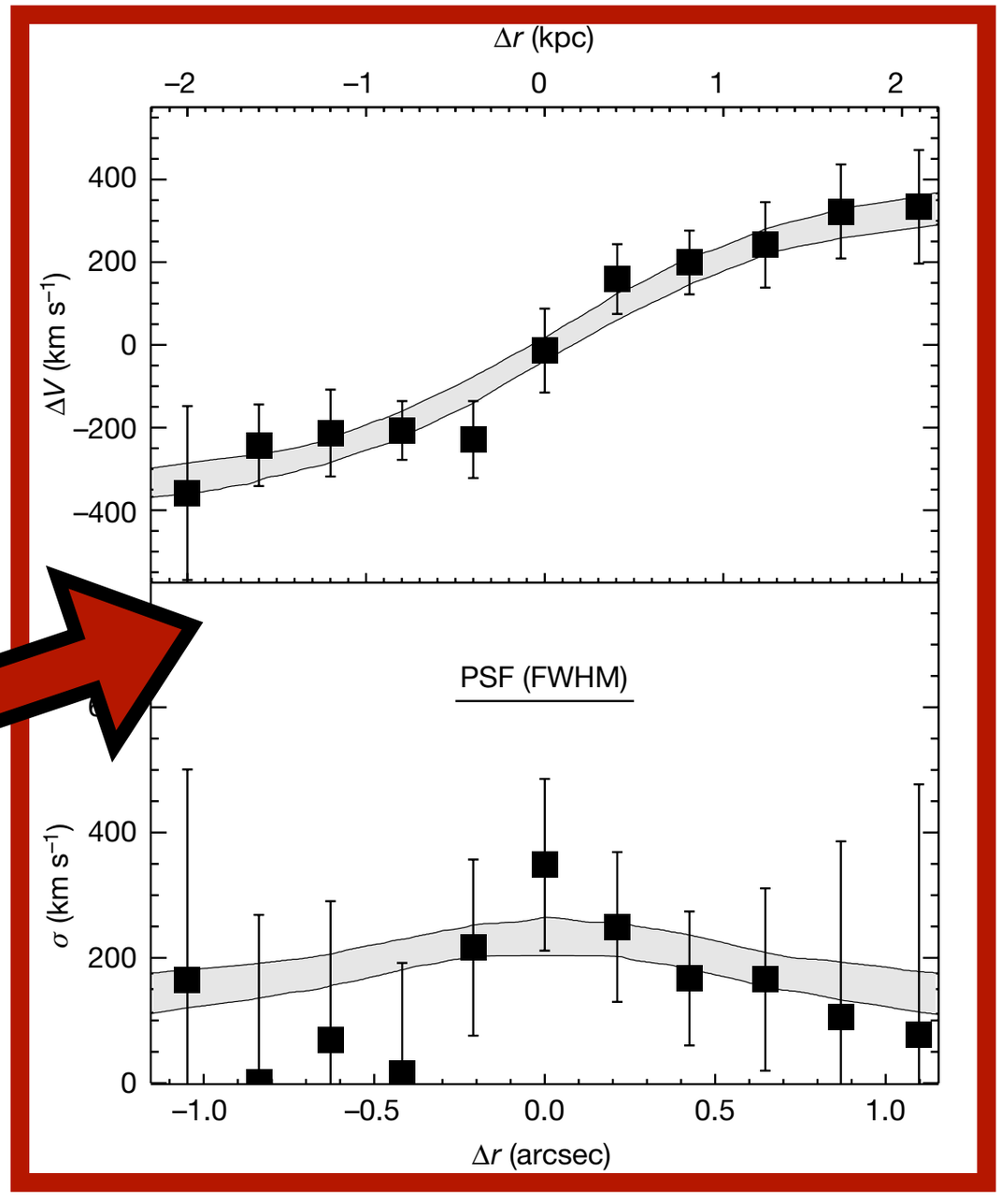
TMTで何をするか？

1. これまで感度の限界で観測できなかった銀河種族を観測する

Förster Schreiber+18



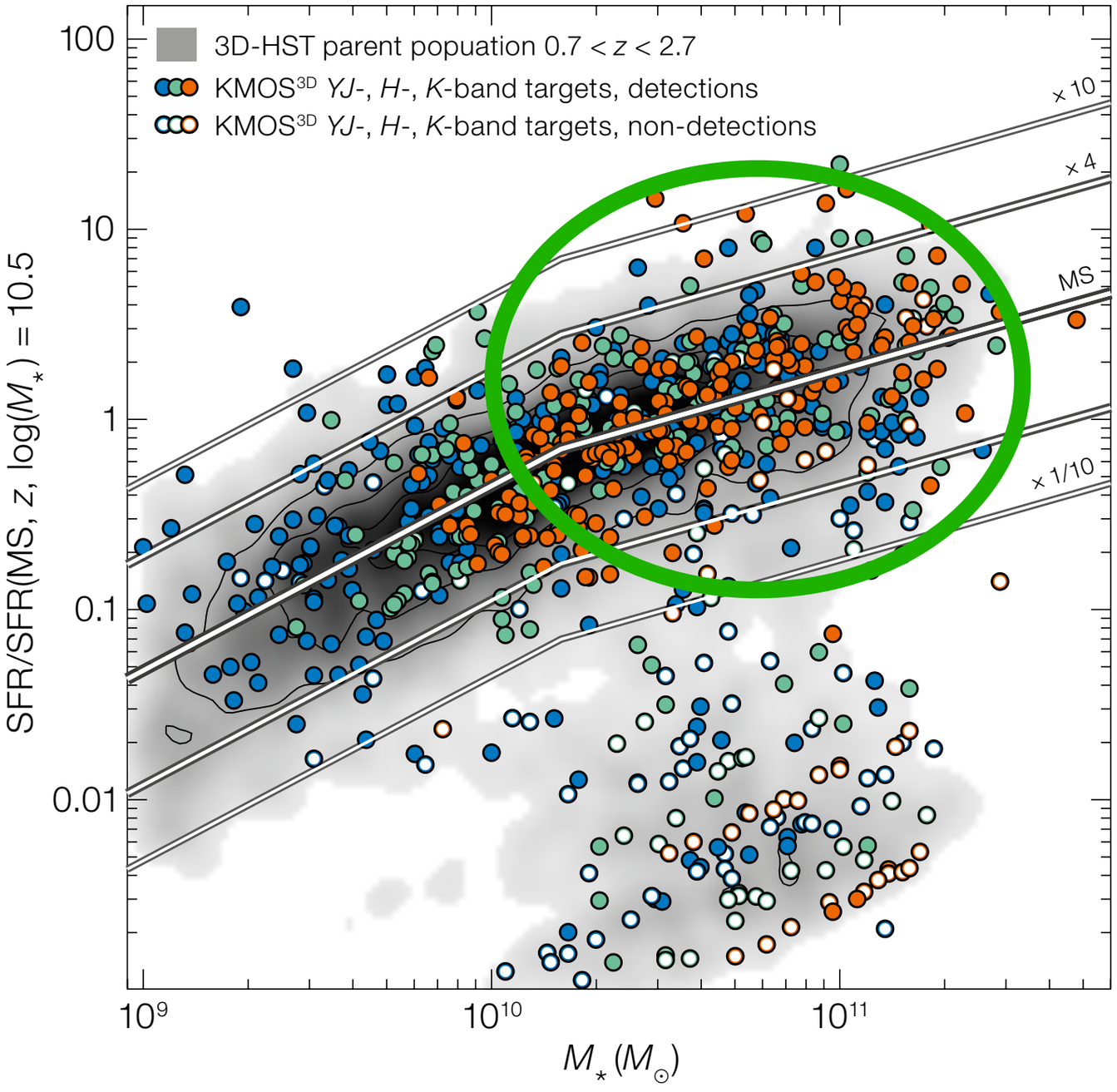
Toft+17



TMTで何をするか？

2. これまで観測してきた銀河種族をさらに高い分解能で観測する

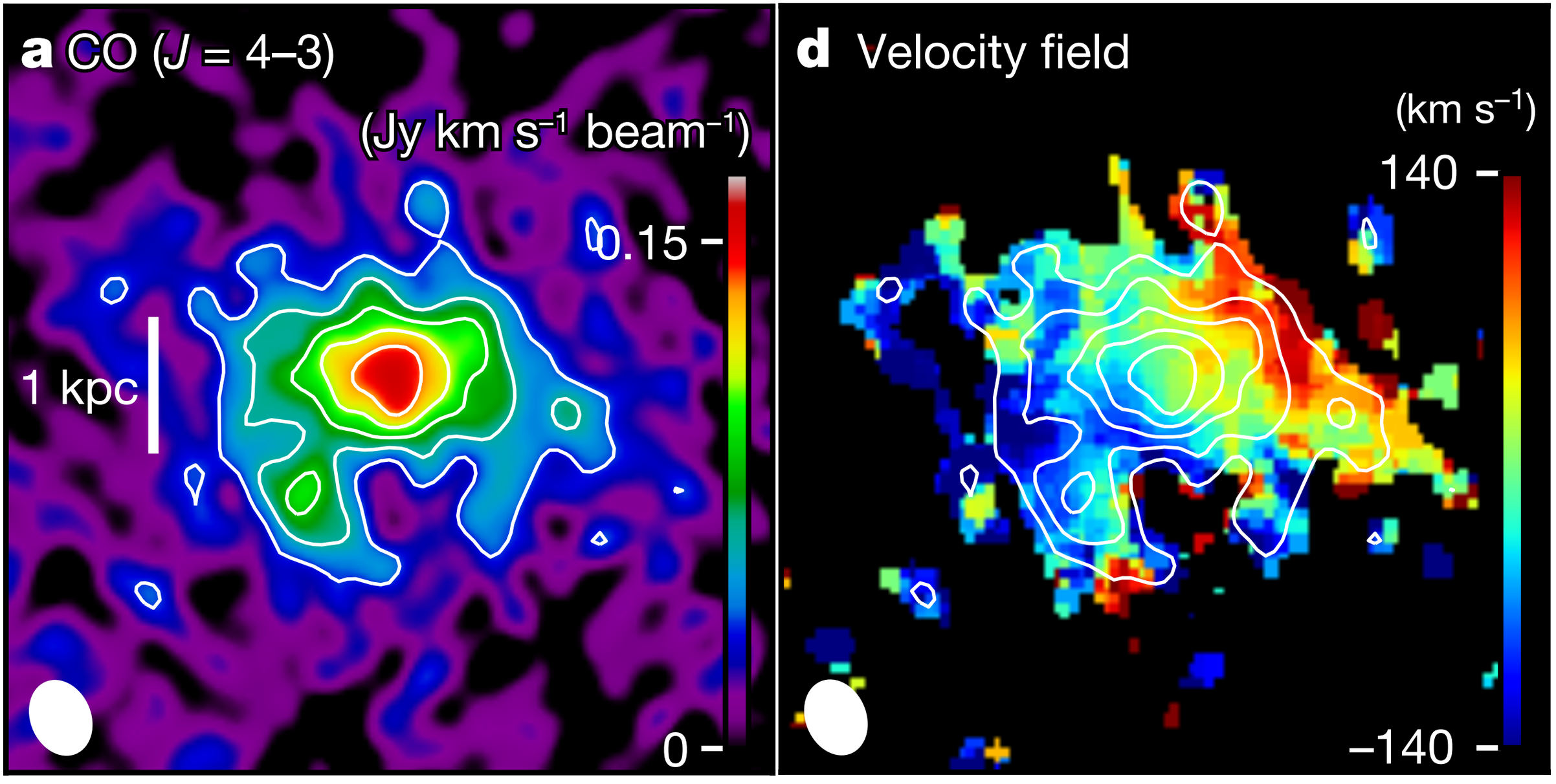
Förster Schreiber+18



KMOS: 0.5″ (4 kpc)
SINFONI+AO: 0.15″ (1 kpc)
TMT/IRIS: 0.05″ (400 pc)

ALMAによる0.08″分解能の観測

z=4.3 サブミリ波銀河



Tadaki+18, Nature