

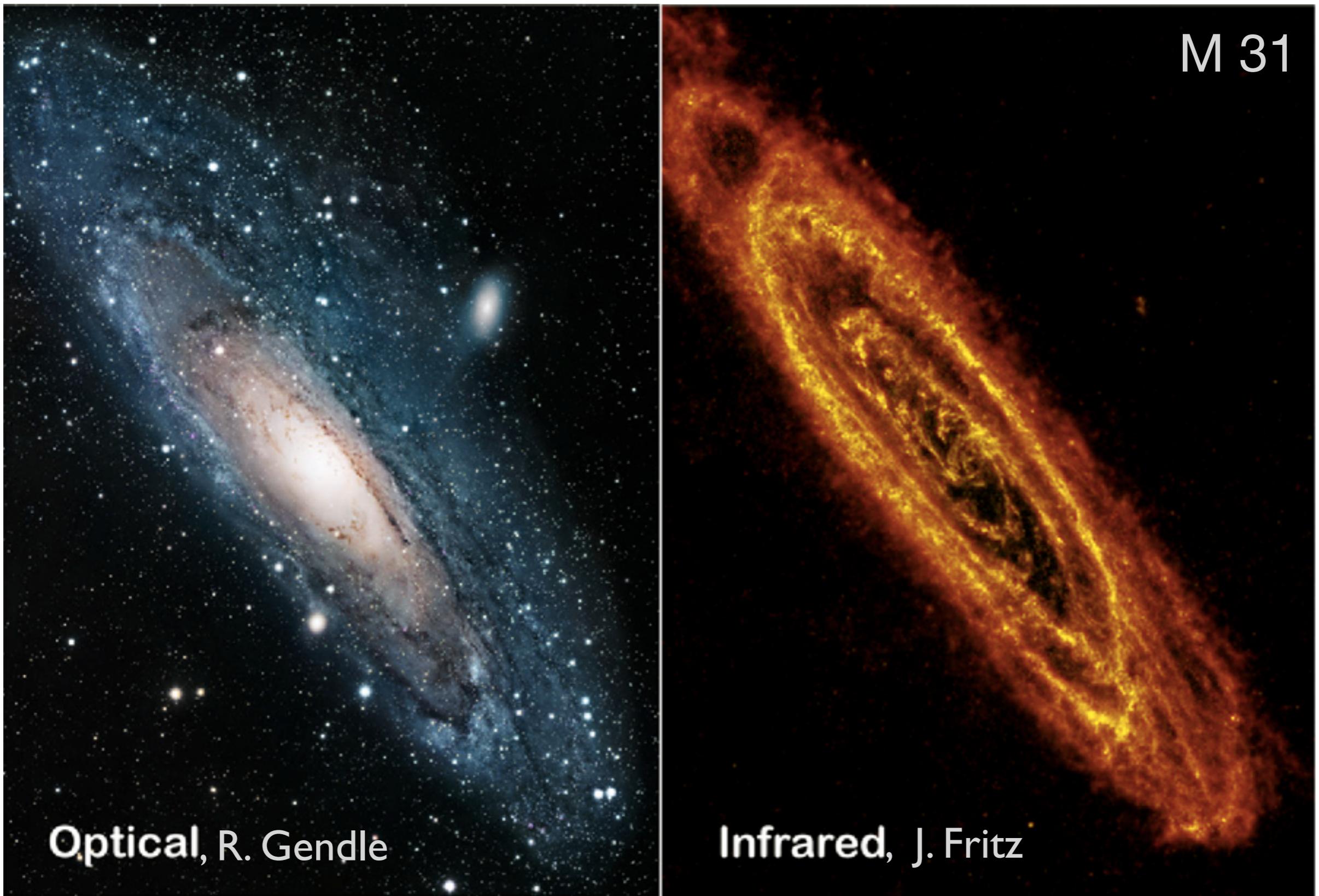


HerS

HeLMS

HerS and HeLMS: Herschel/SPIRE Submillimeter surveys in the SDSS Stripe 82

Marco Viero - Caltech

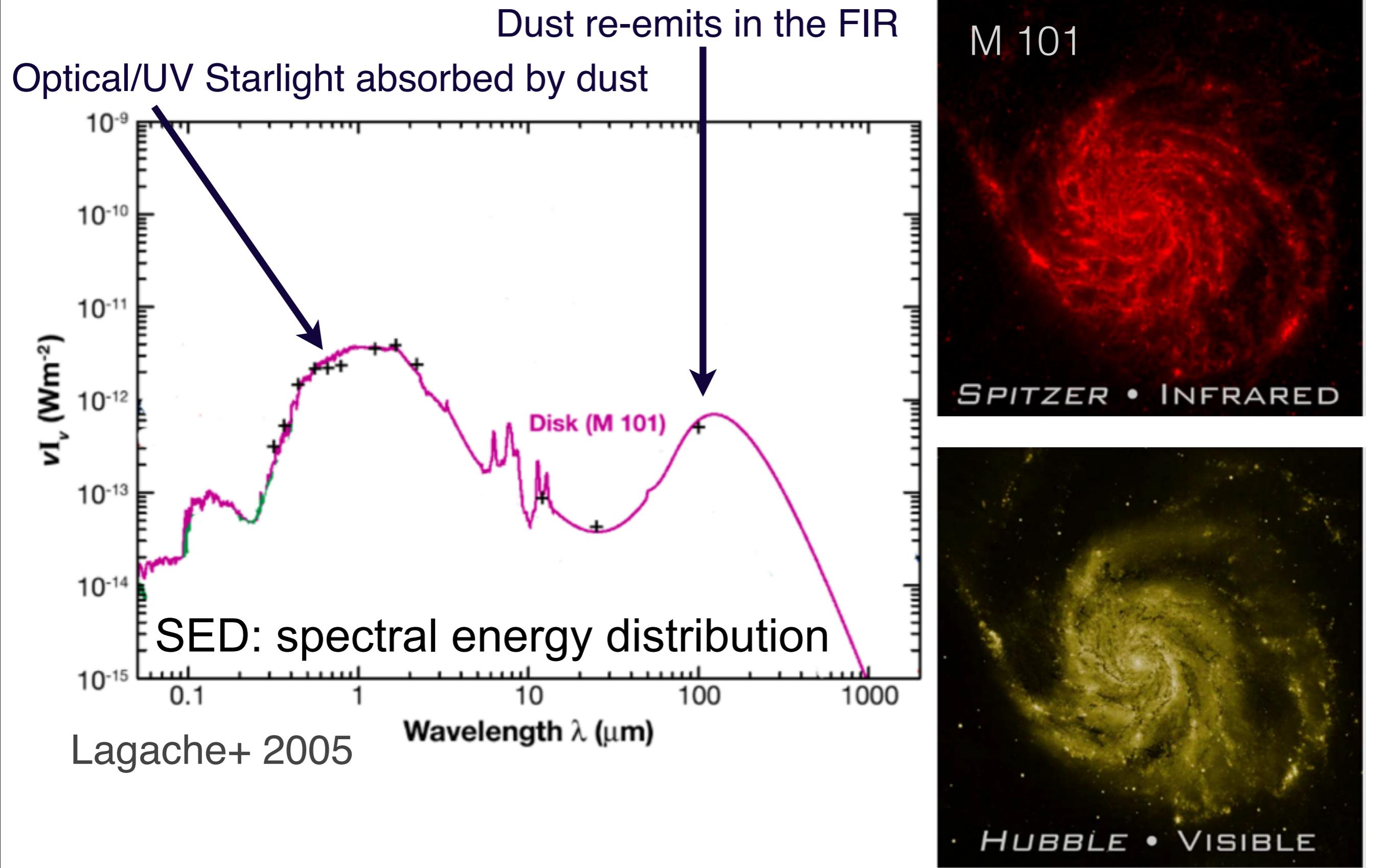


M 31

Optical, R. Gendle

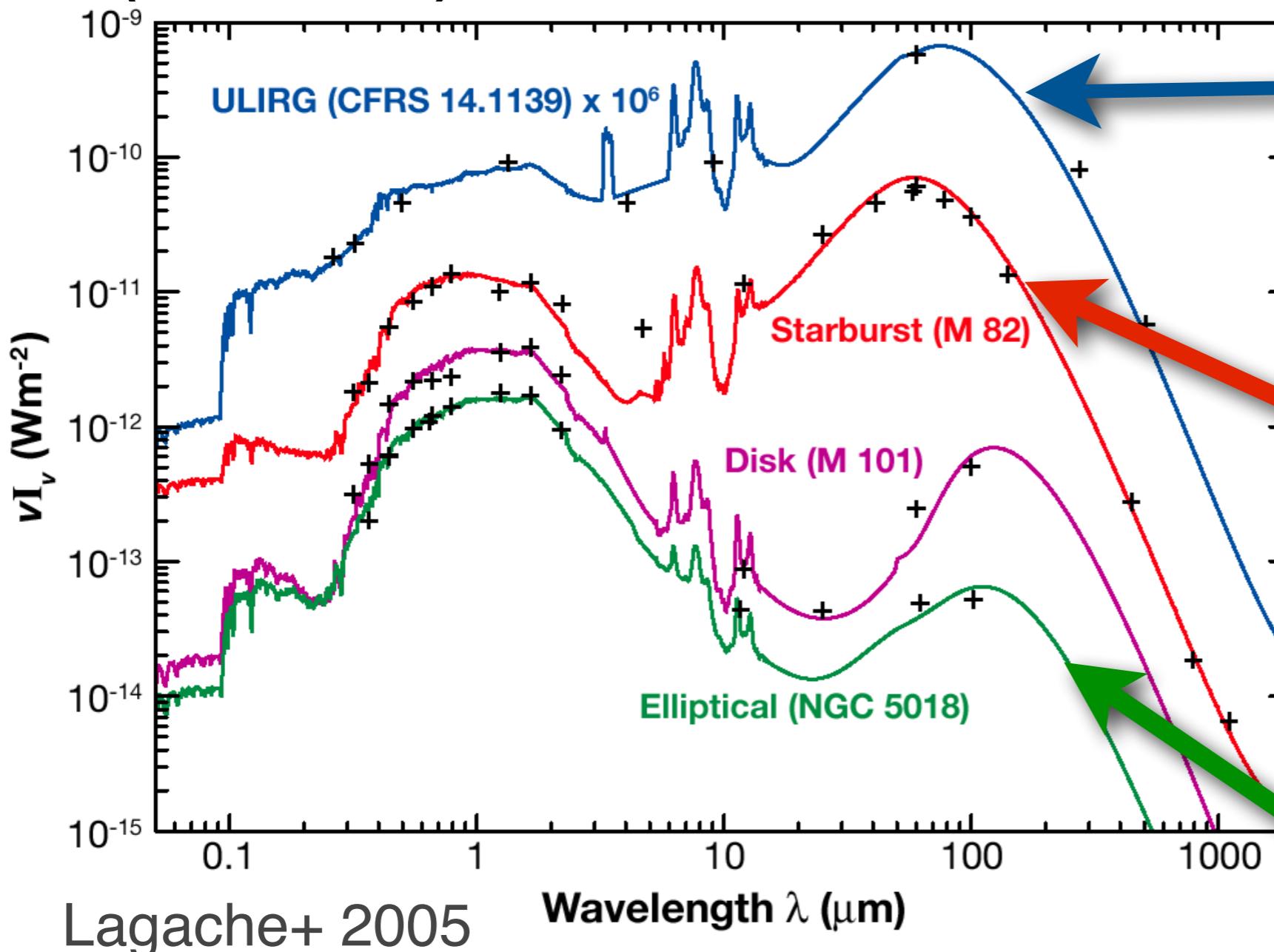
Infrared, J. Fritz

far-infrared/submillimeter:
dust warmed by stars

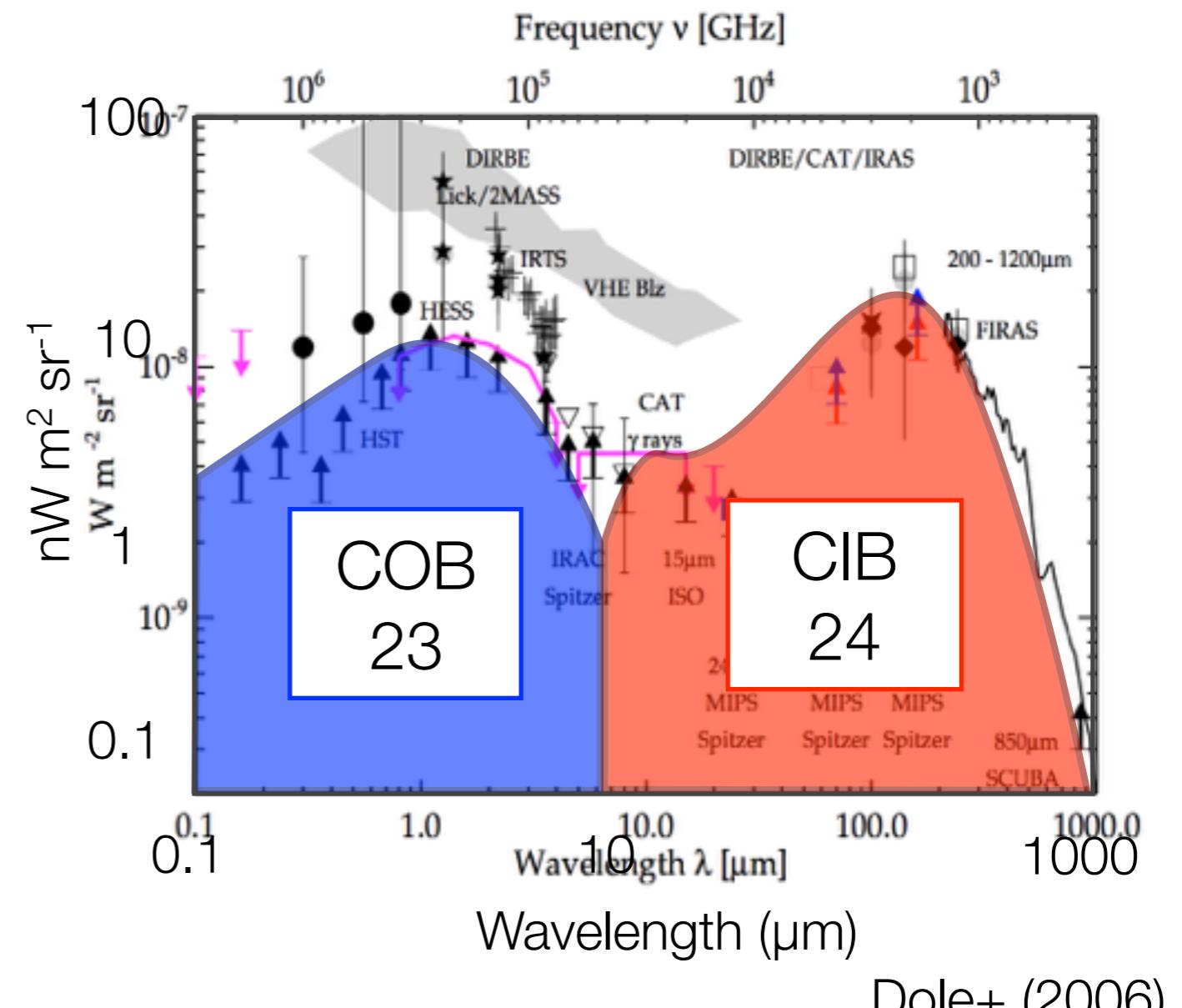


UV/Optical and FIR/submm SED

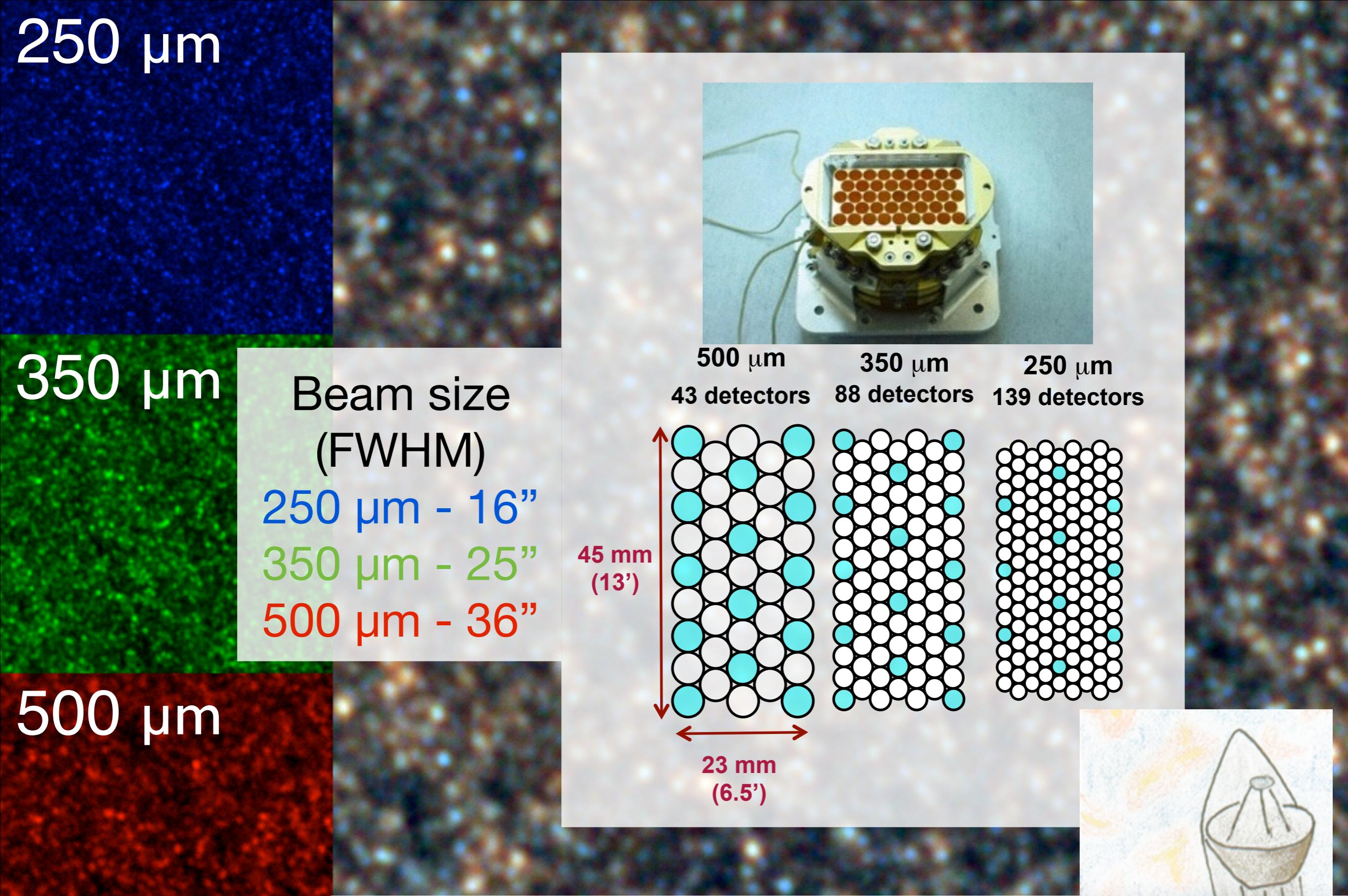
Dusty Star-Forming Galaxies (DSFGs)



Optical and FIR SED

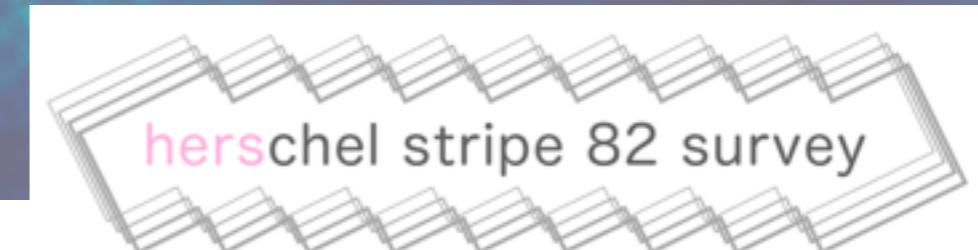
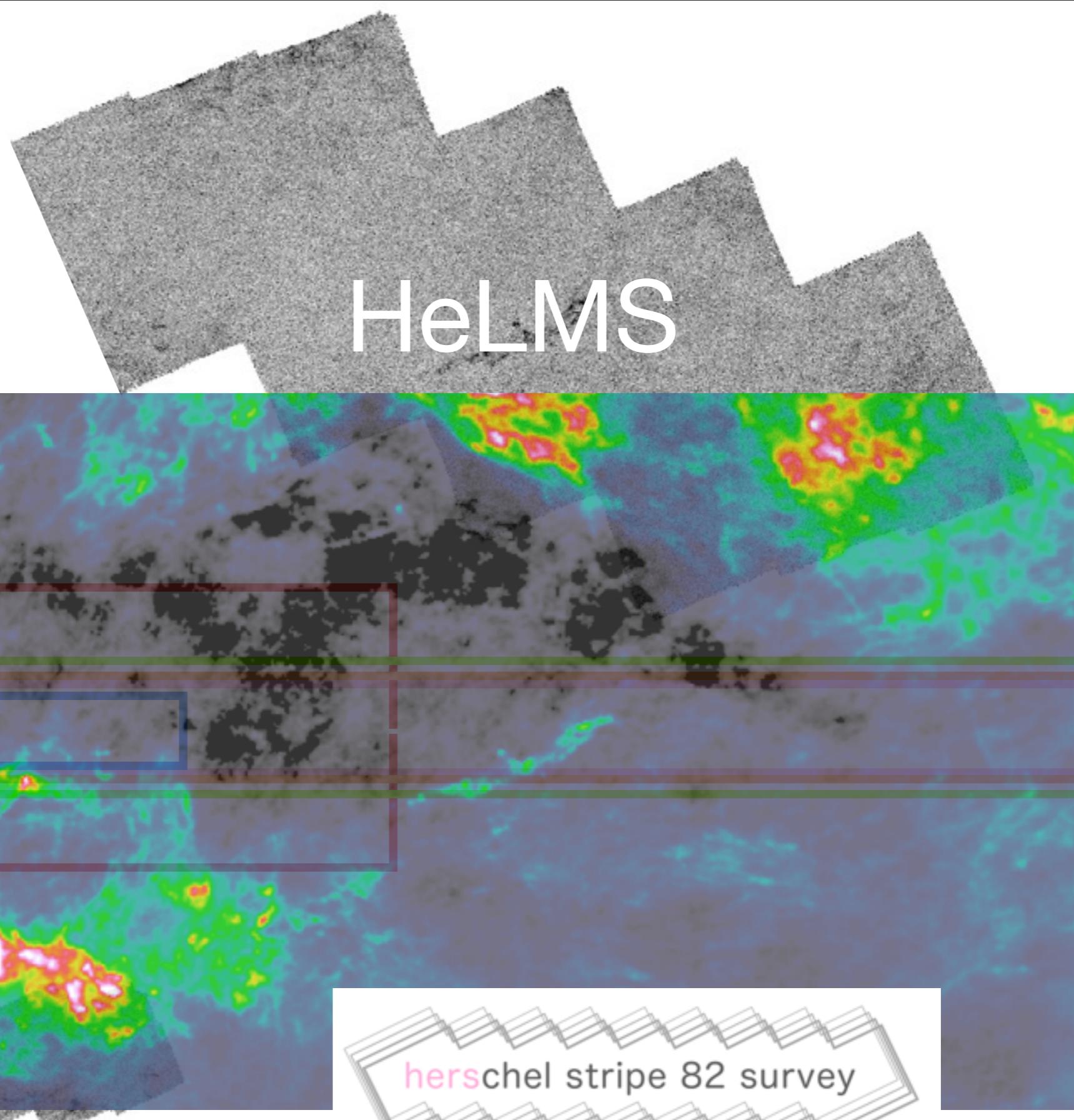


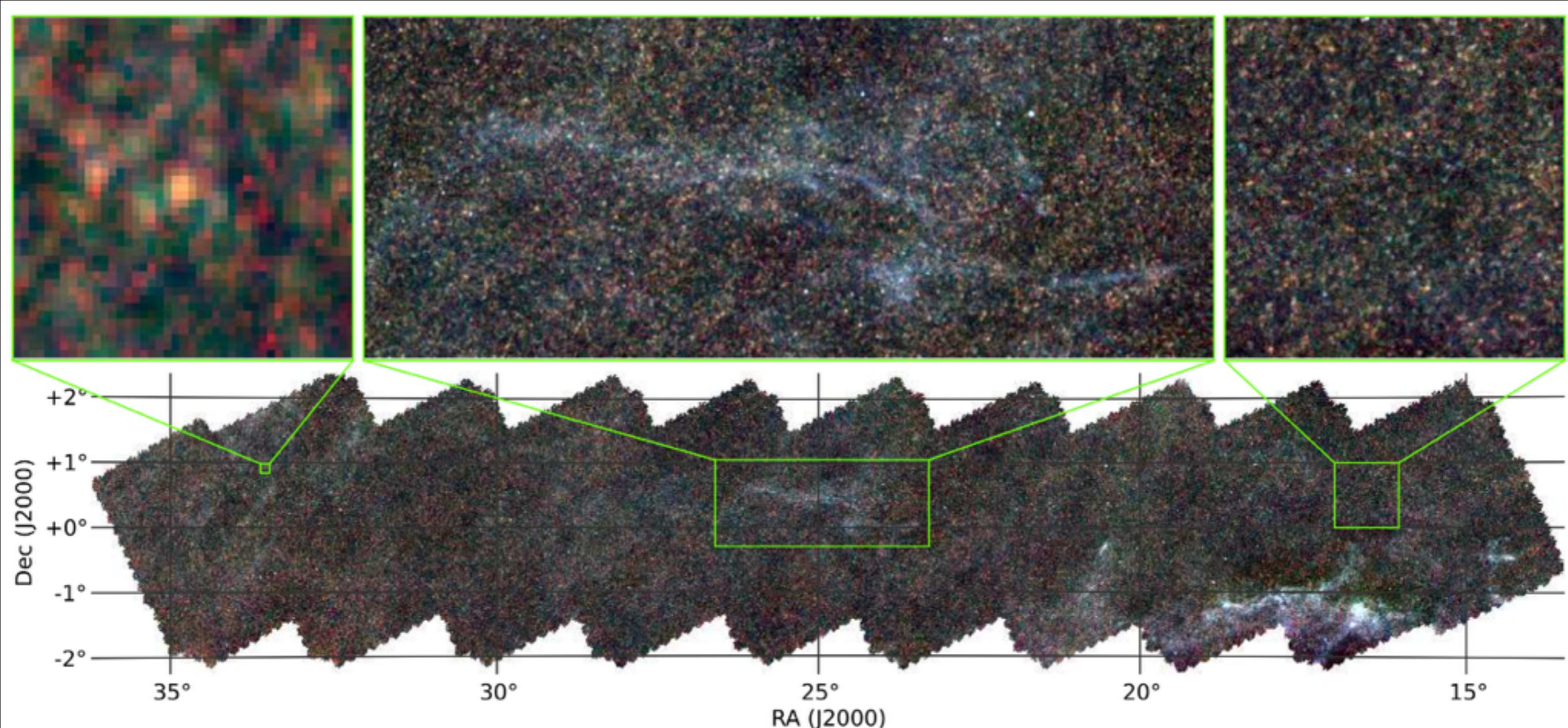
optical and infrared backgrounds



Herschel/SPIRE

ACT HERMES
SHELA
SpIES
HETDEX
SDSS Stripe 82



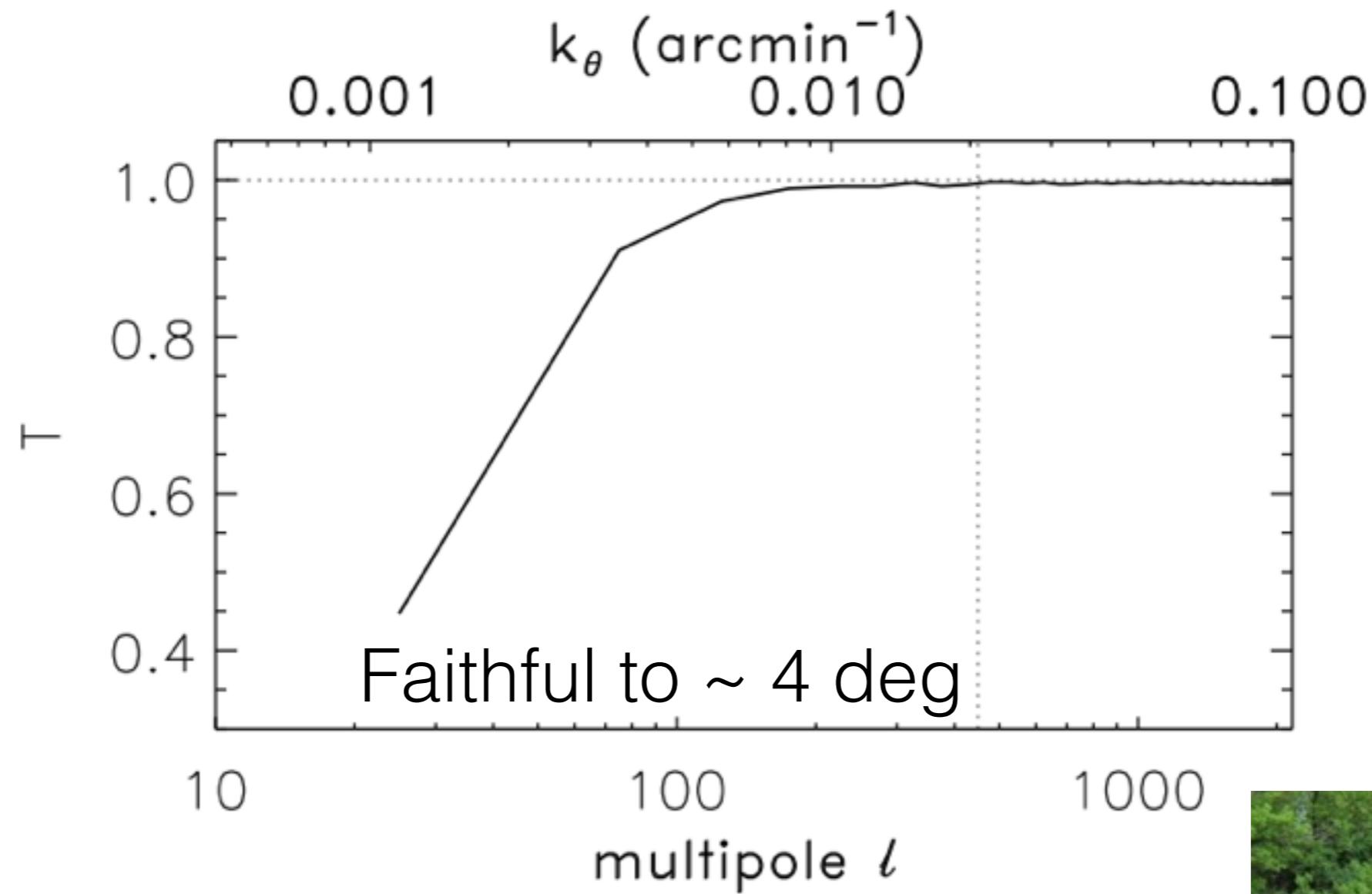


- HerS - 70 deg² (~20 deg along S82)
- HeLMS - 280 deg² (~25 deg along S82)

SANEPIC maps made by Viktoria Asboth (UBC) and the SMAP team.



Transfer Function



SANEPIC maps made by Viktoria Asboth
(UBC) and the SMAP team.





Viero+ 2014
arXiv:1308.4399

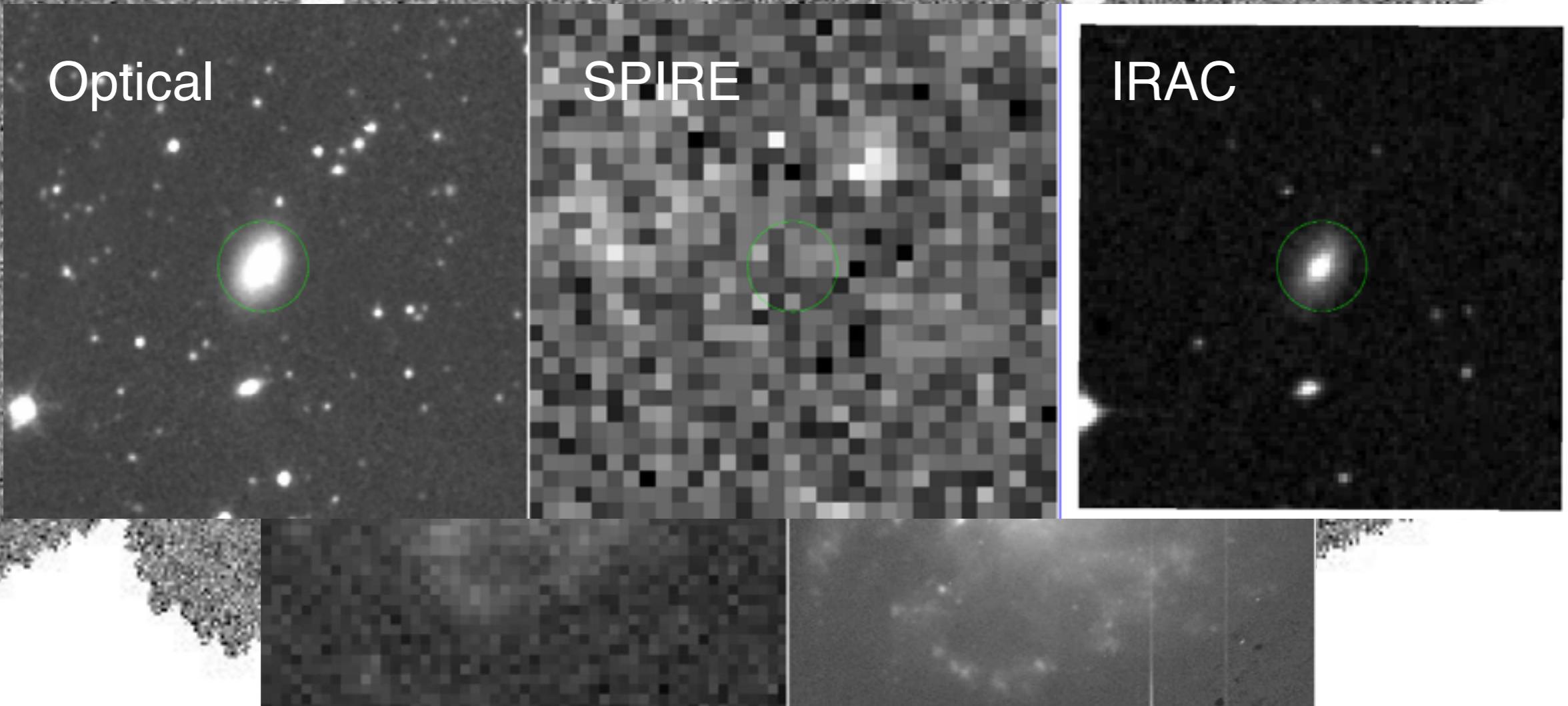


Oliver+ 2012
arXiv:1203.2562



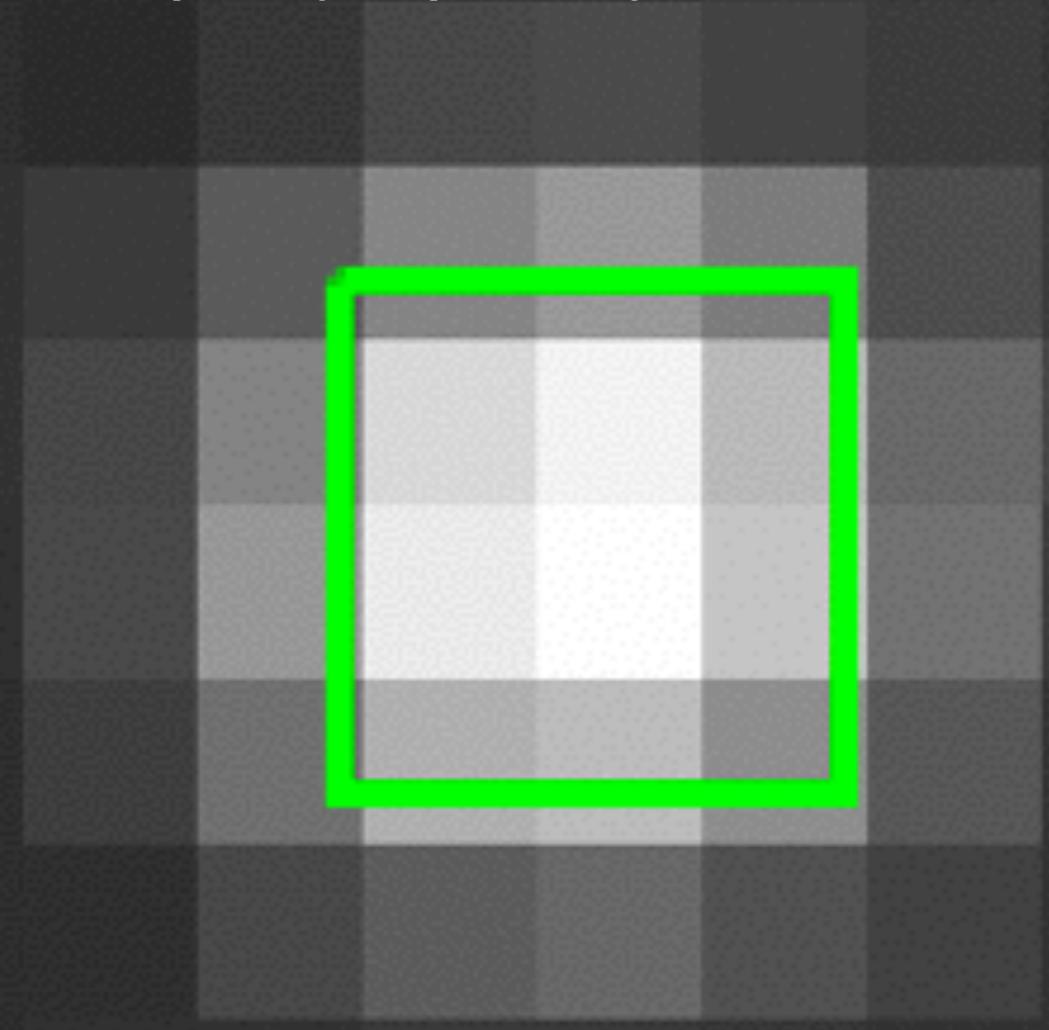
Find Maps/Catalogs at:
(available now!) <http://www.astro.caltech.edu/hers>
(coming in June) <http://hedam.lam.fr/HerMES/>

Local Galaxies

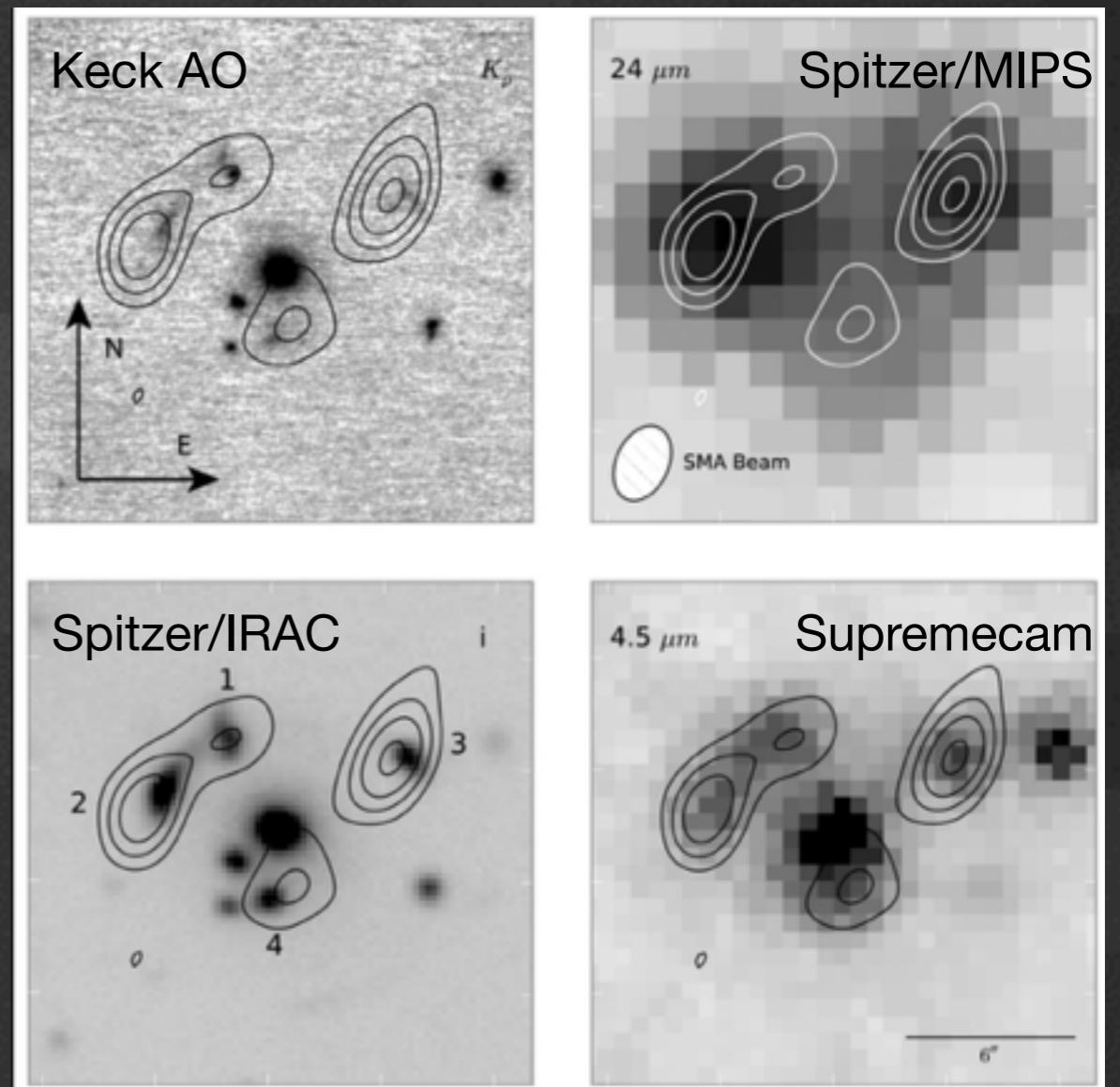


Lensed Sources

SPIRE 250 μ m (6" pixels)



$z=2.97$ from spectroscopic follow-up

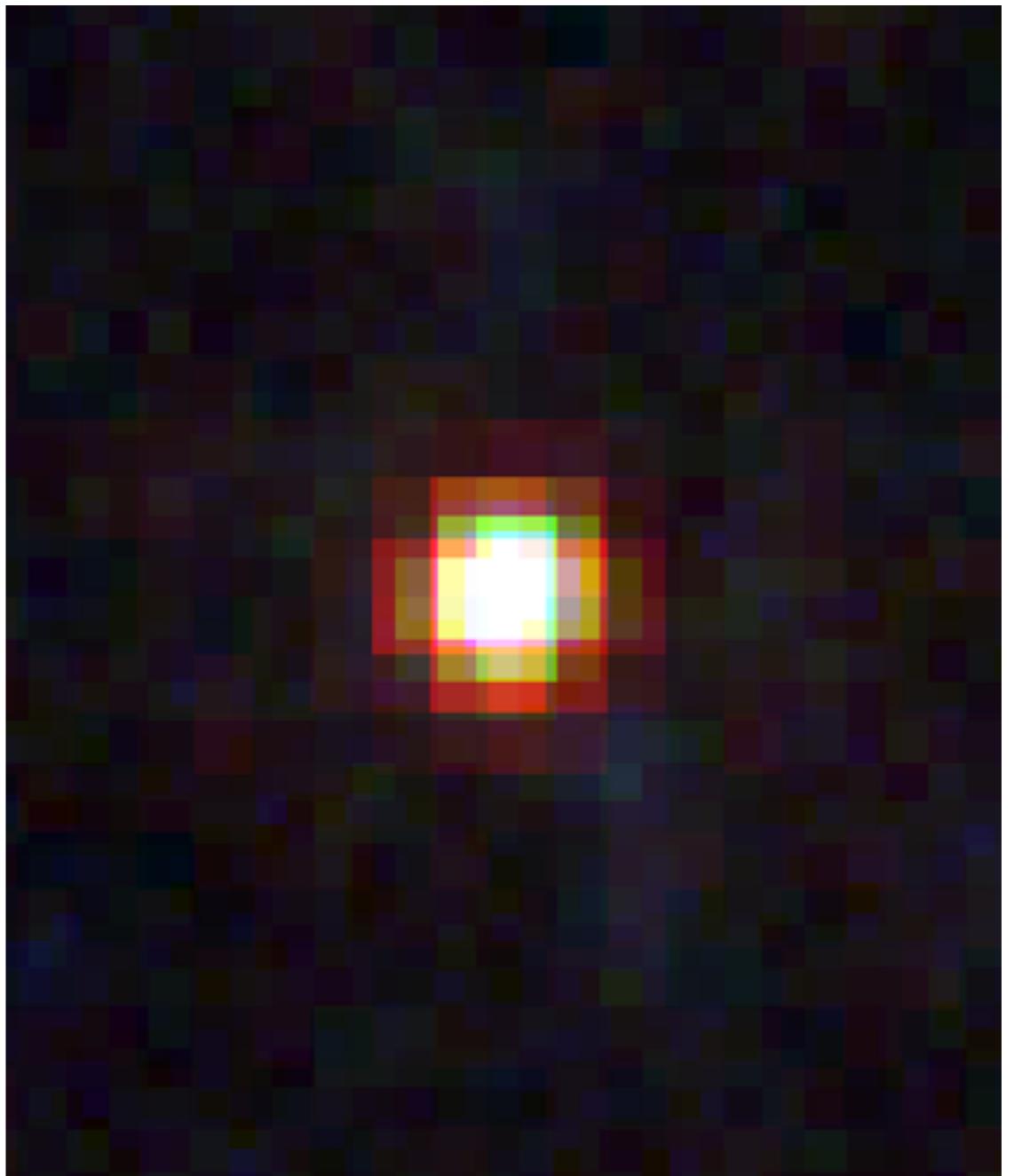


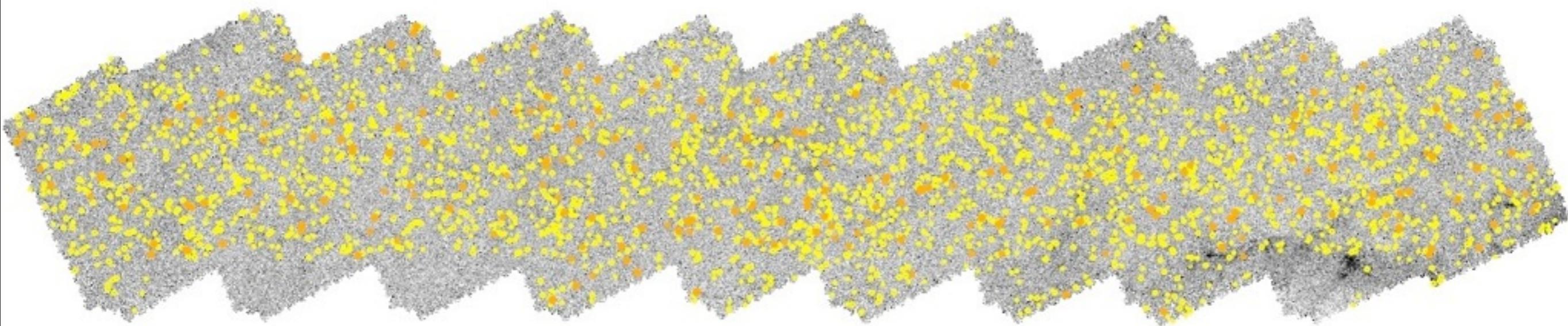
Conley et al. (2011)

also see: Vieira+ 2013, Gonzalez-Nuevo+ 2012, Wardlow+ 2012, Fu+ 2013

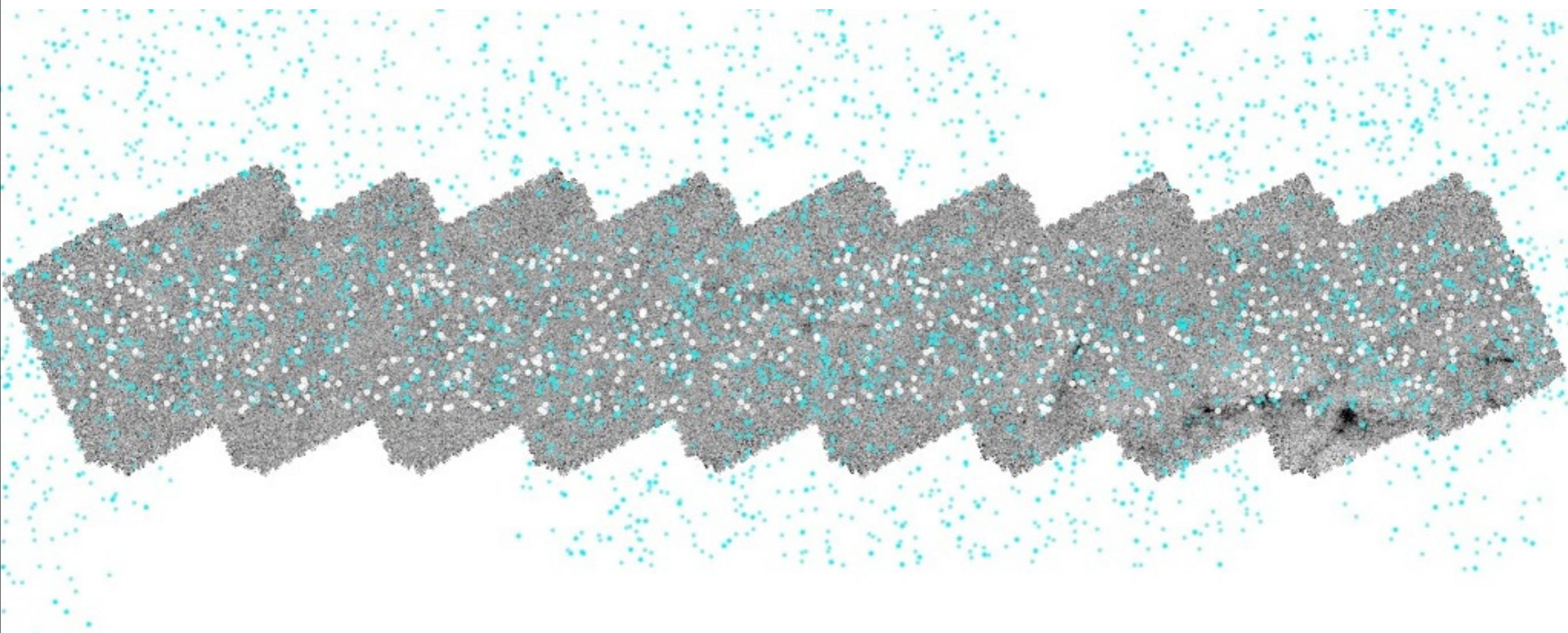
Citizen Science!

- SpaceWarps discovery
(Jim Geach)
- Also part of HerS/ACT
GBT/Zpectrometer obs

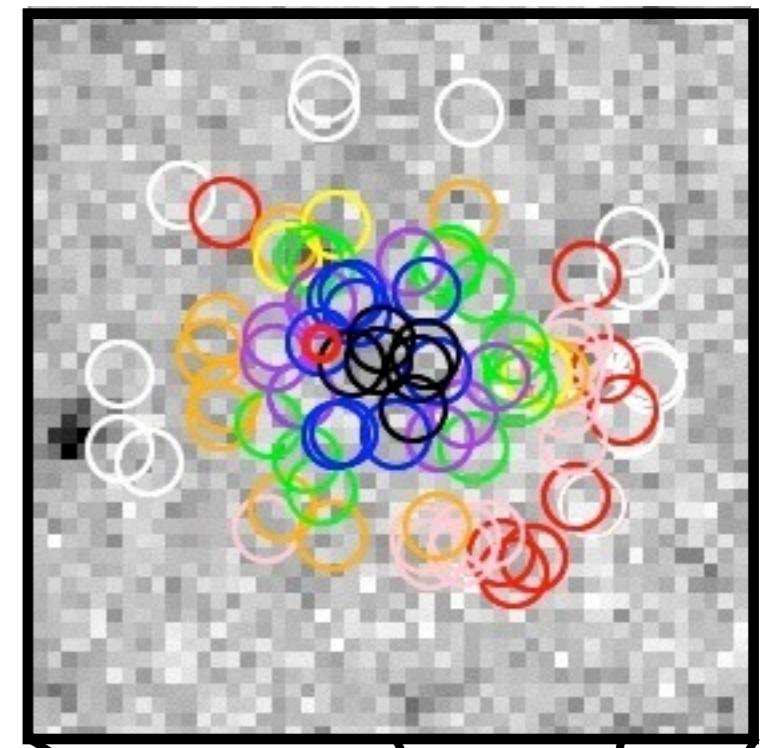
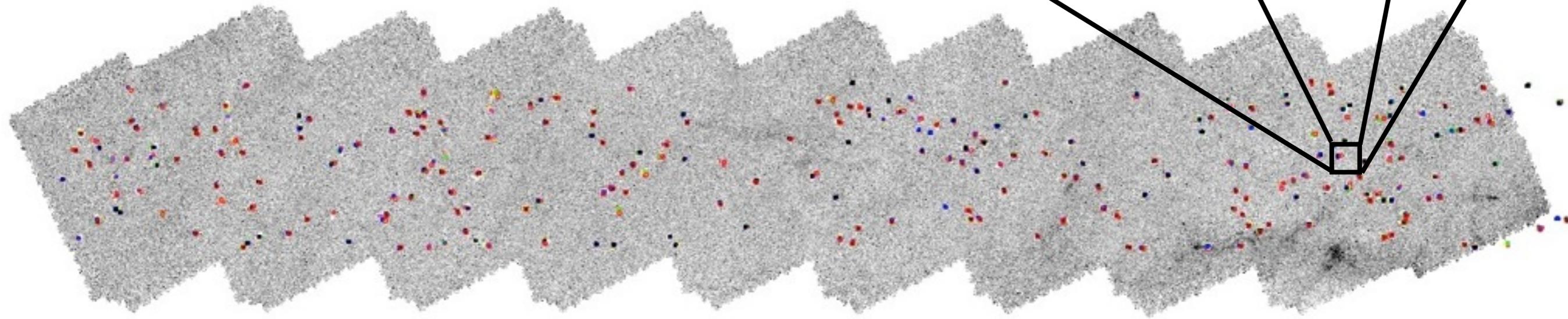




- BOSS QSOs
- DLAs



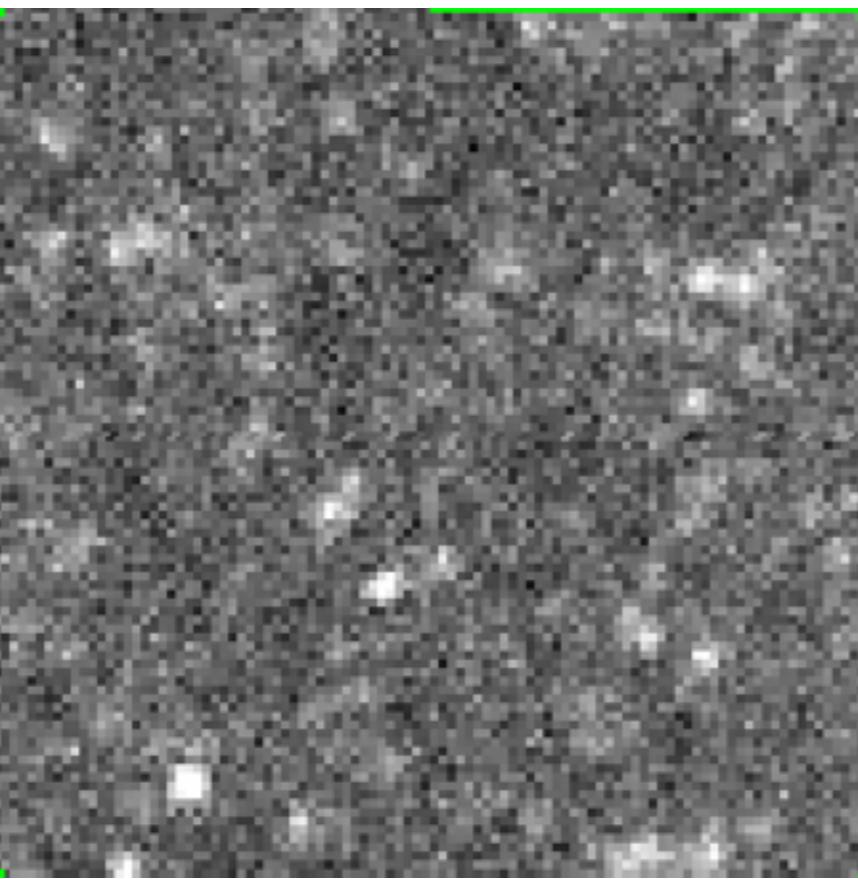
- Clusters (Geach et al. 2012)
- BOSS quasars



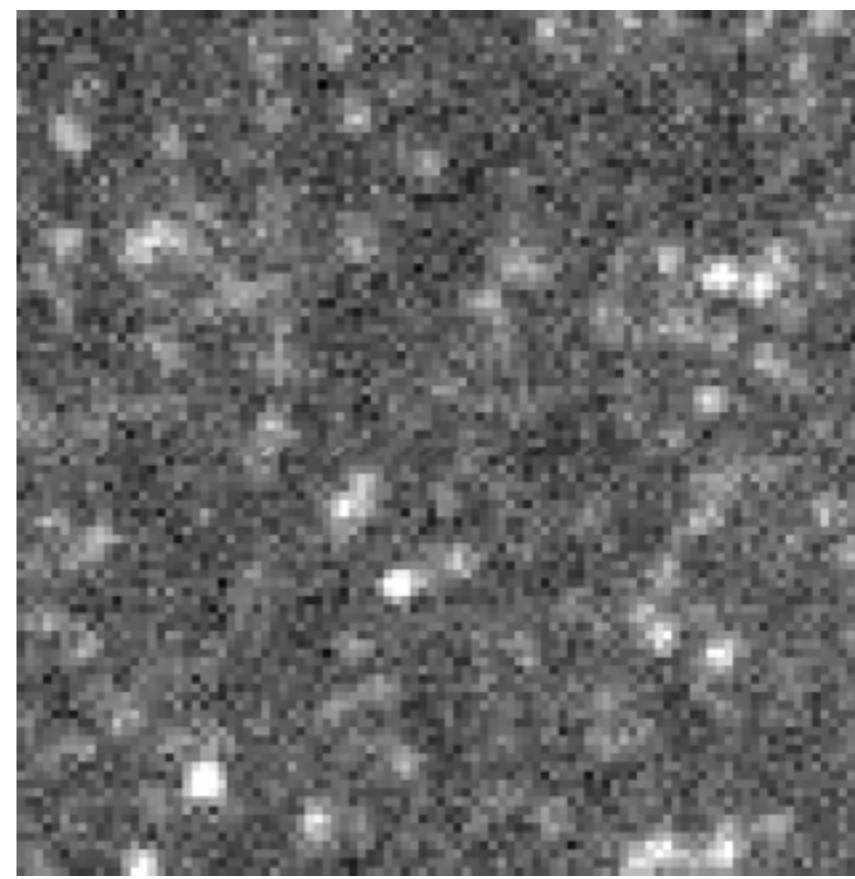
Cluster Members

Instrument Noise

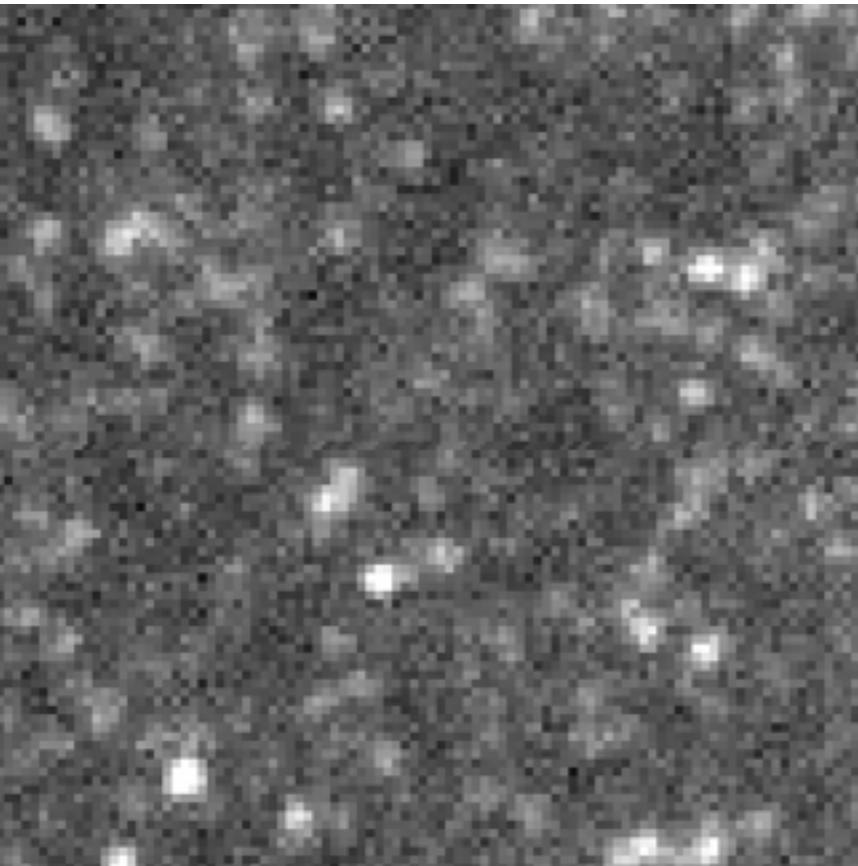
2 scans



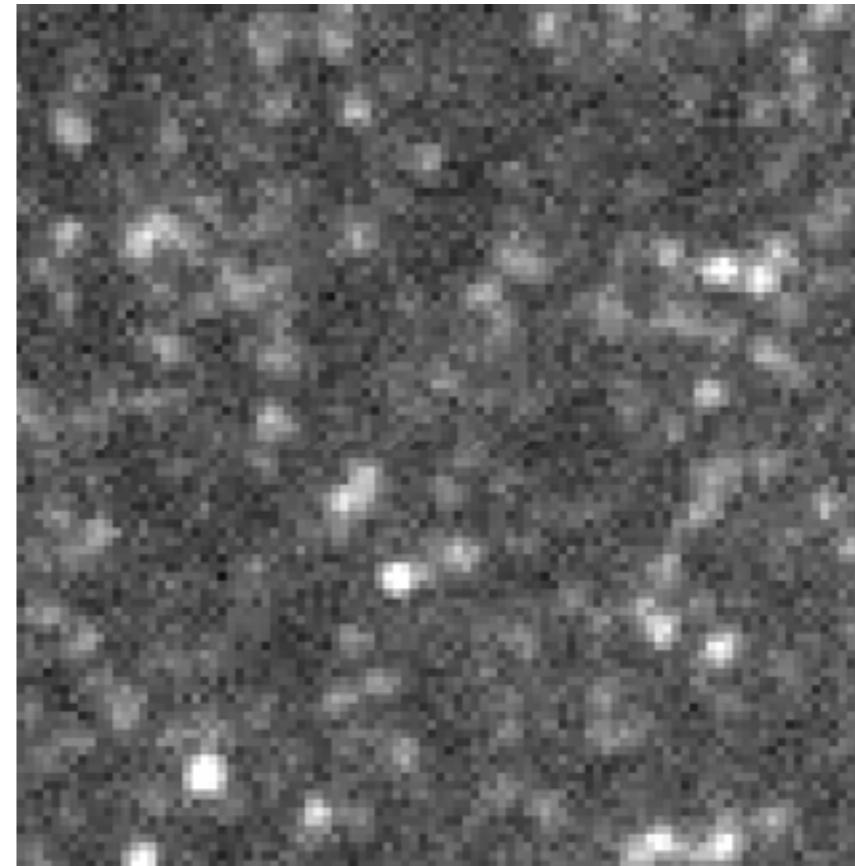
4 scans



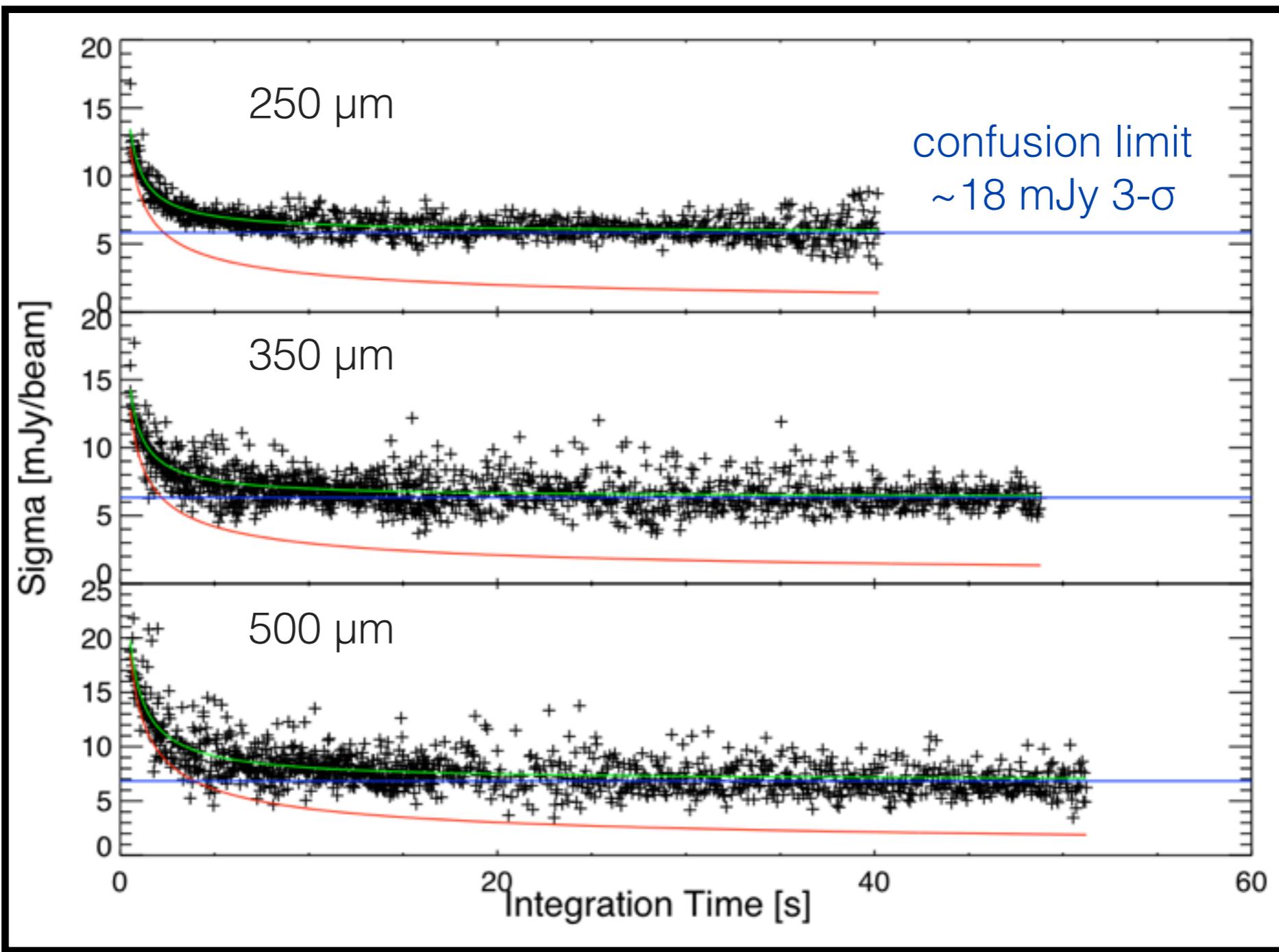
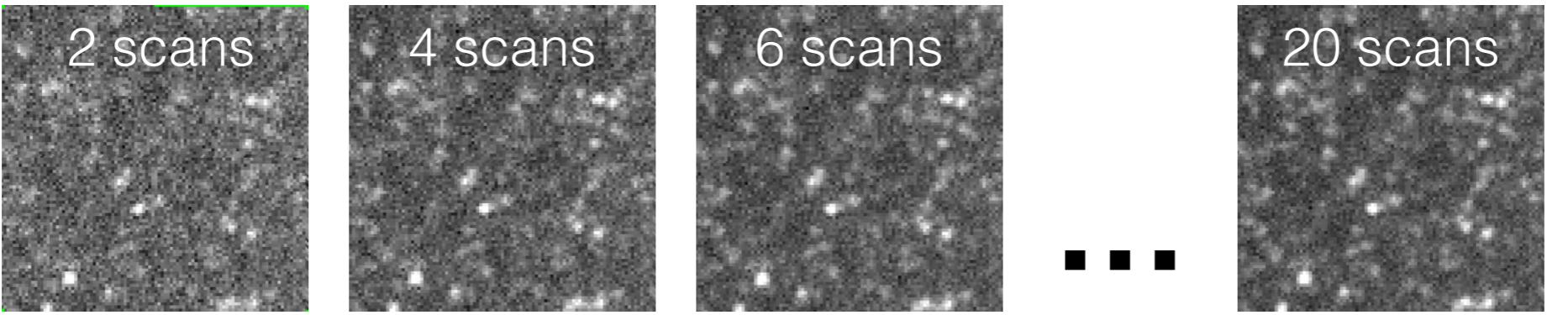
6 scans



20 scans

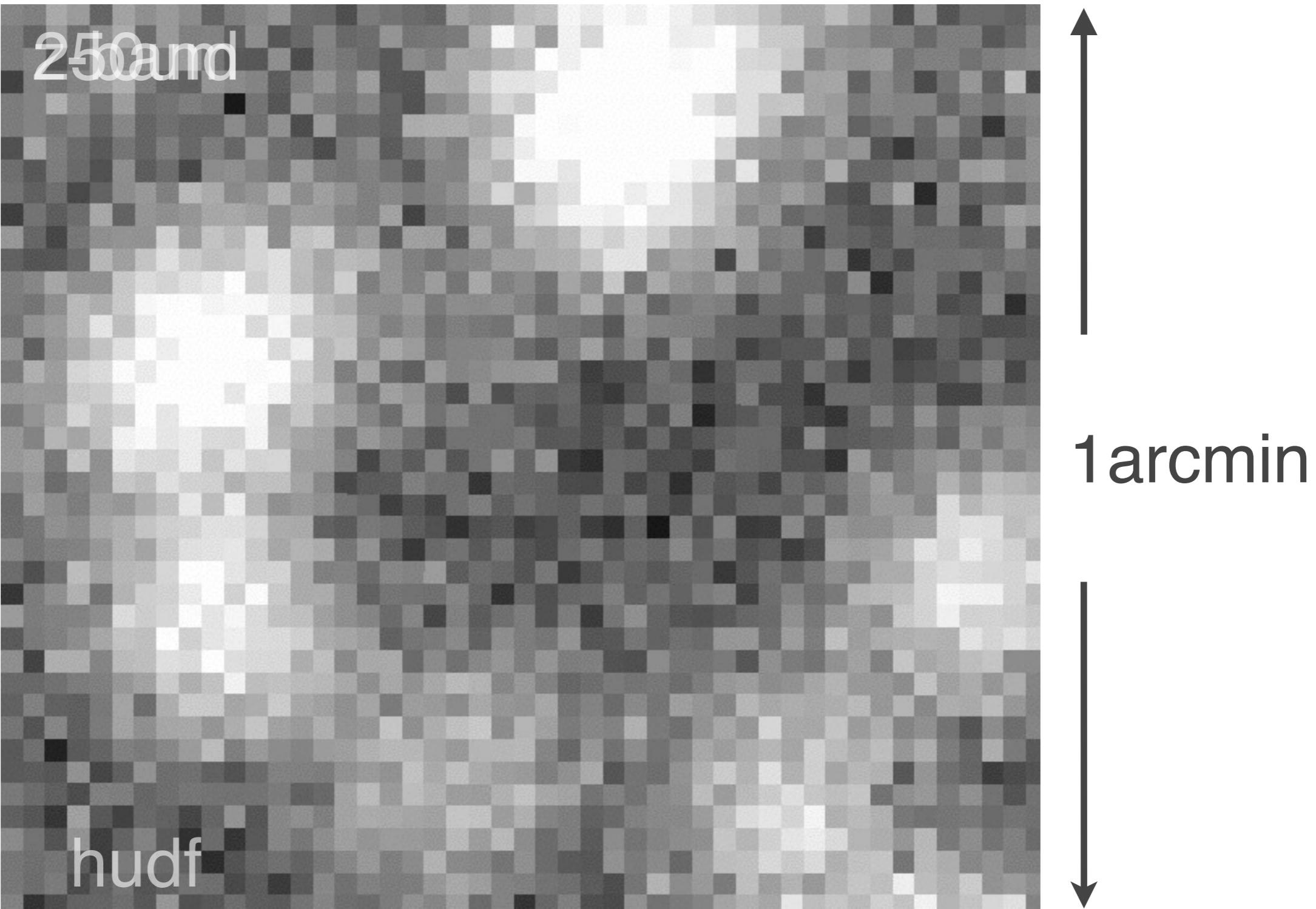


Confusion Noise

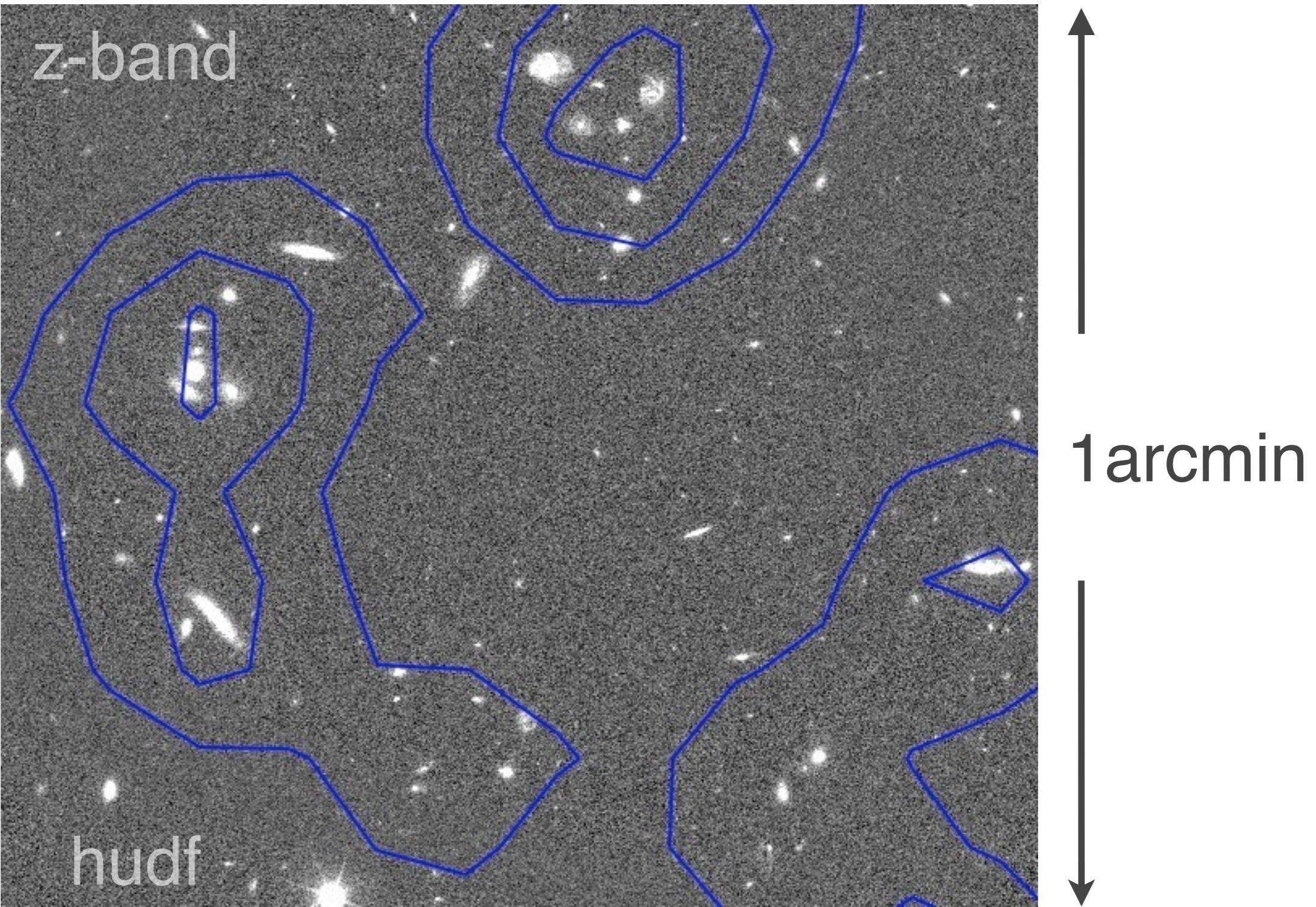


Nguyen et al. (2009)

Confusion Noise

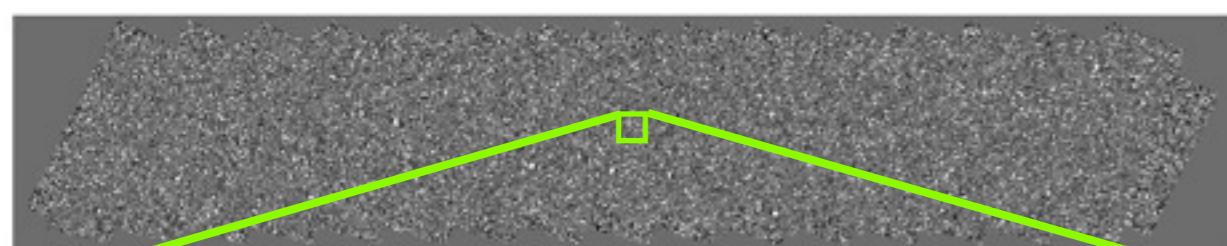


Confusion Noise

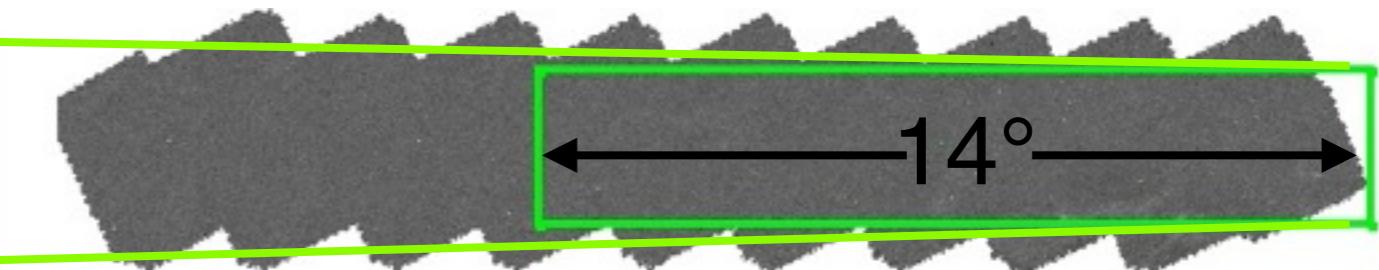


Dealing with Confusion

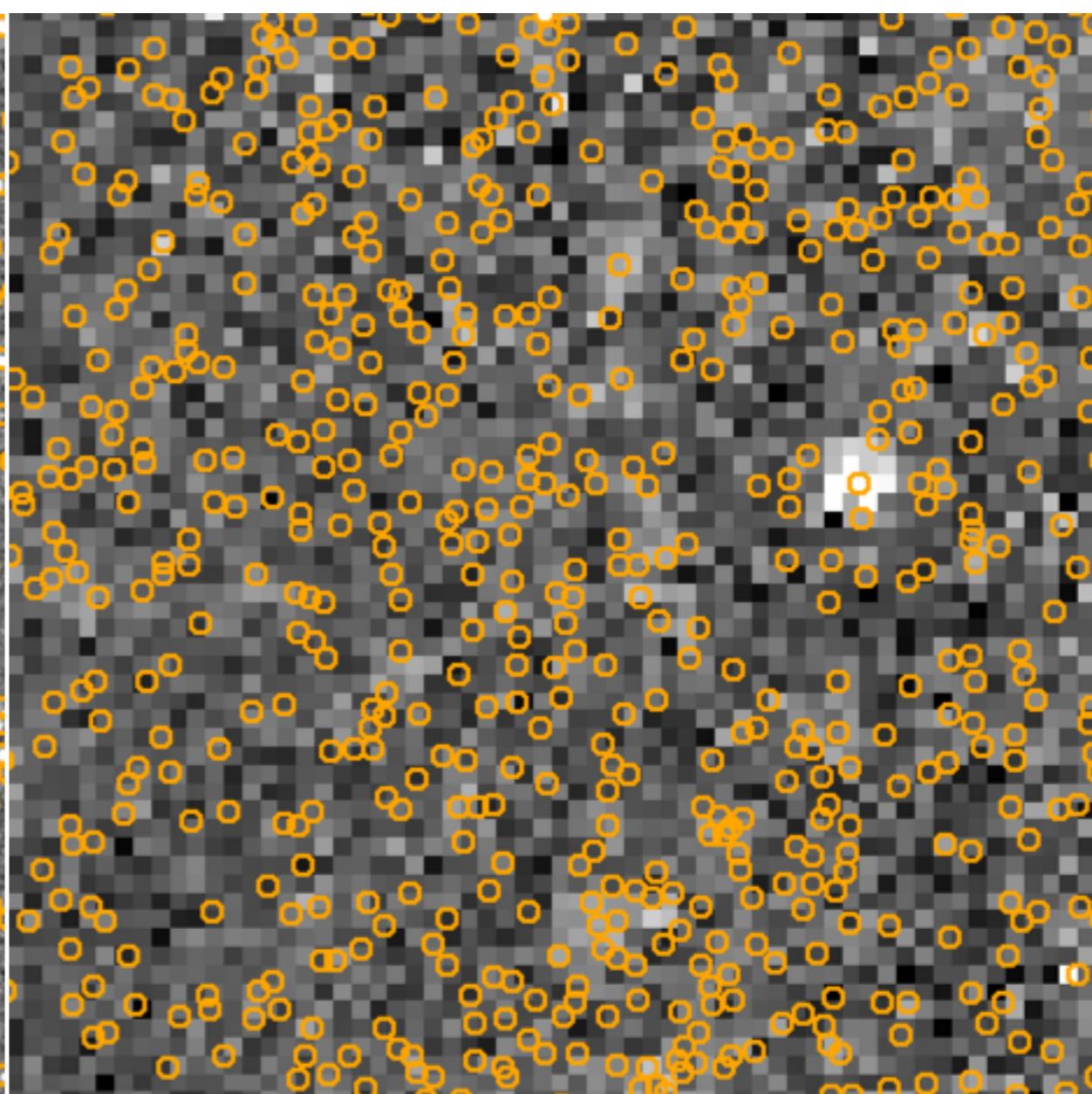
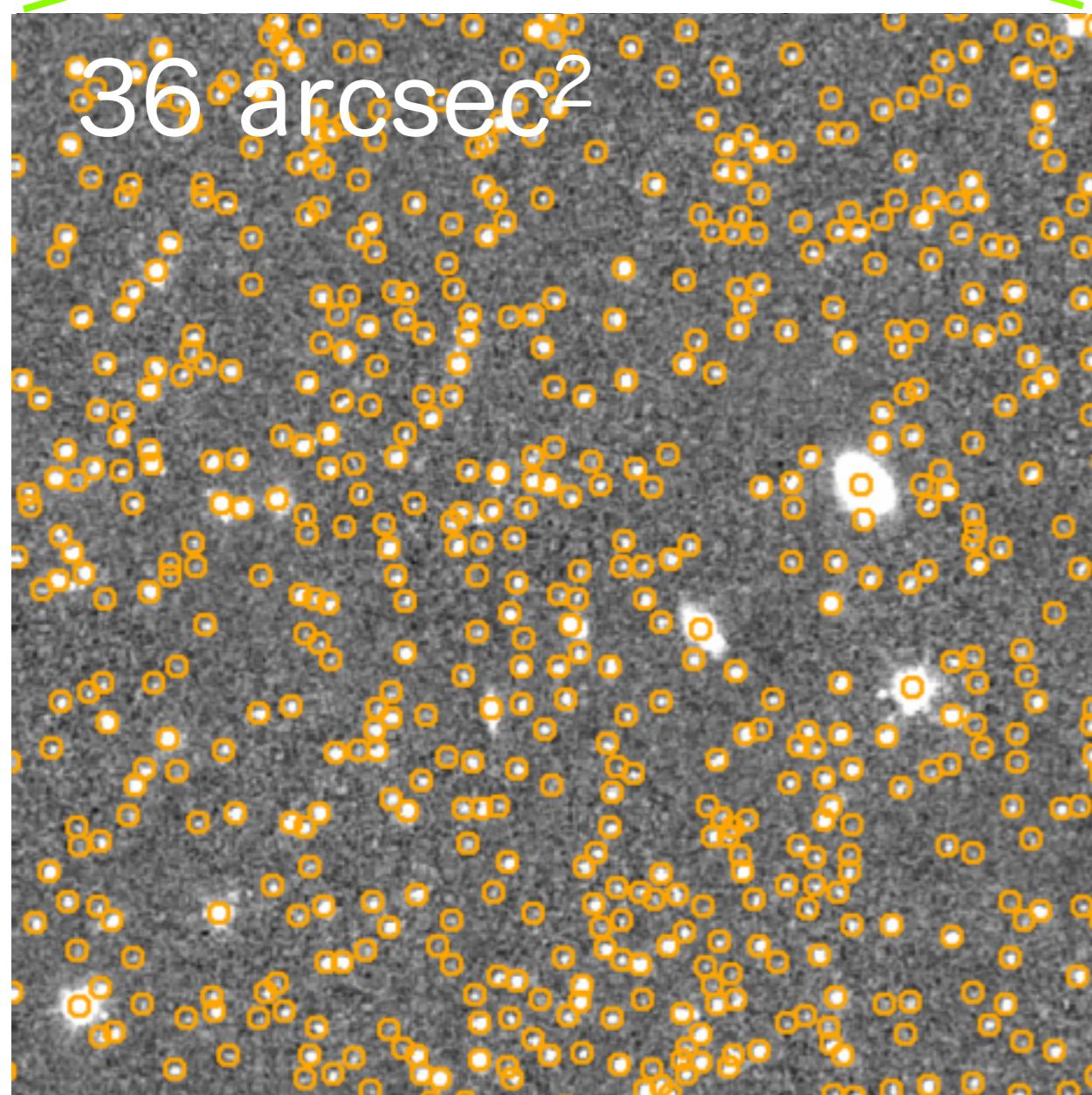
SHELA IRAC 3.6 μm

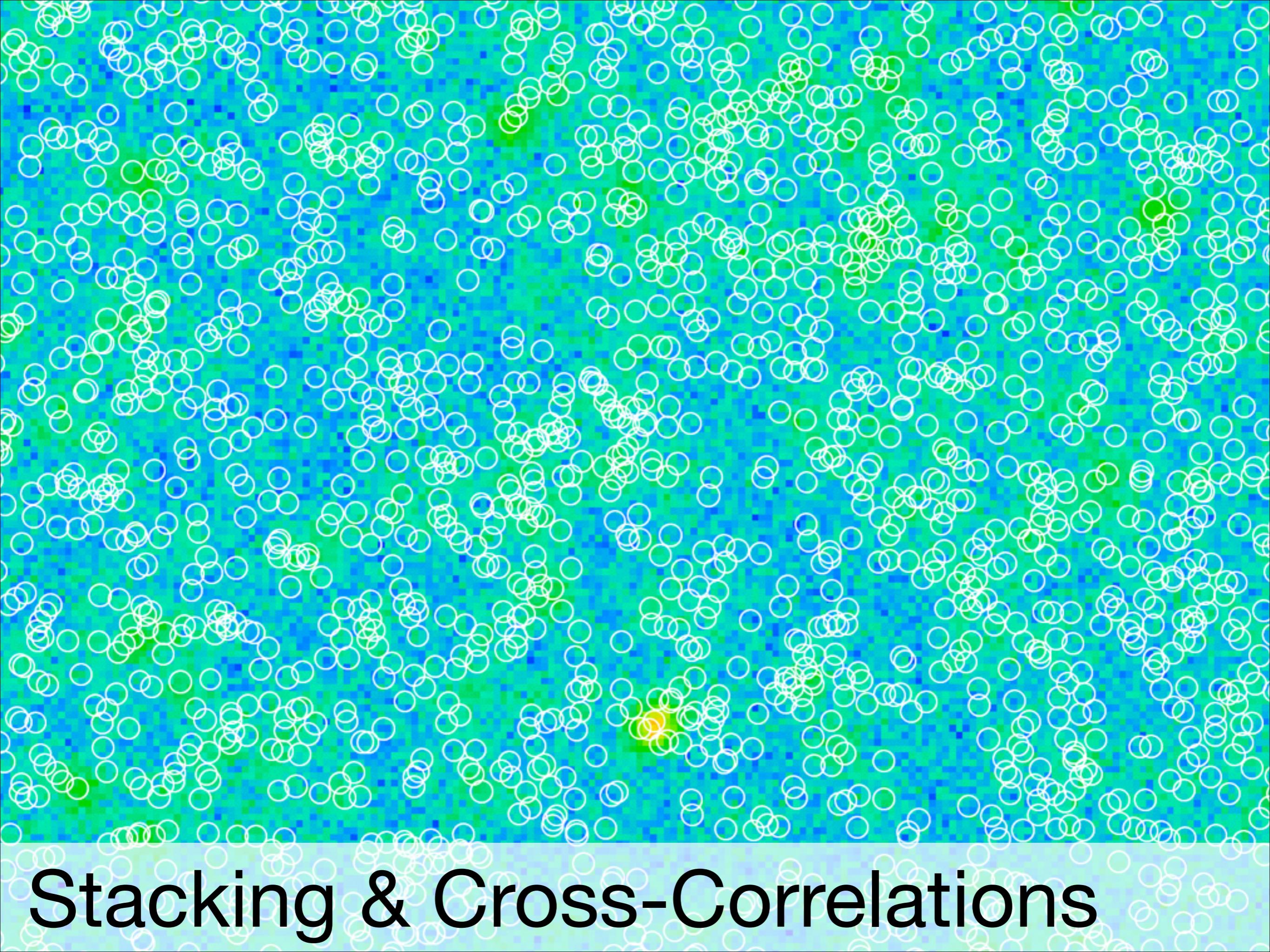


HerS SPIRE 250 μm

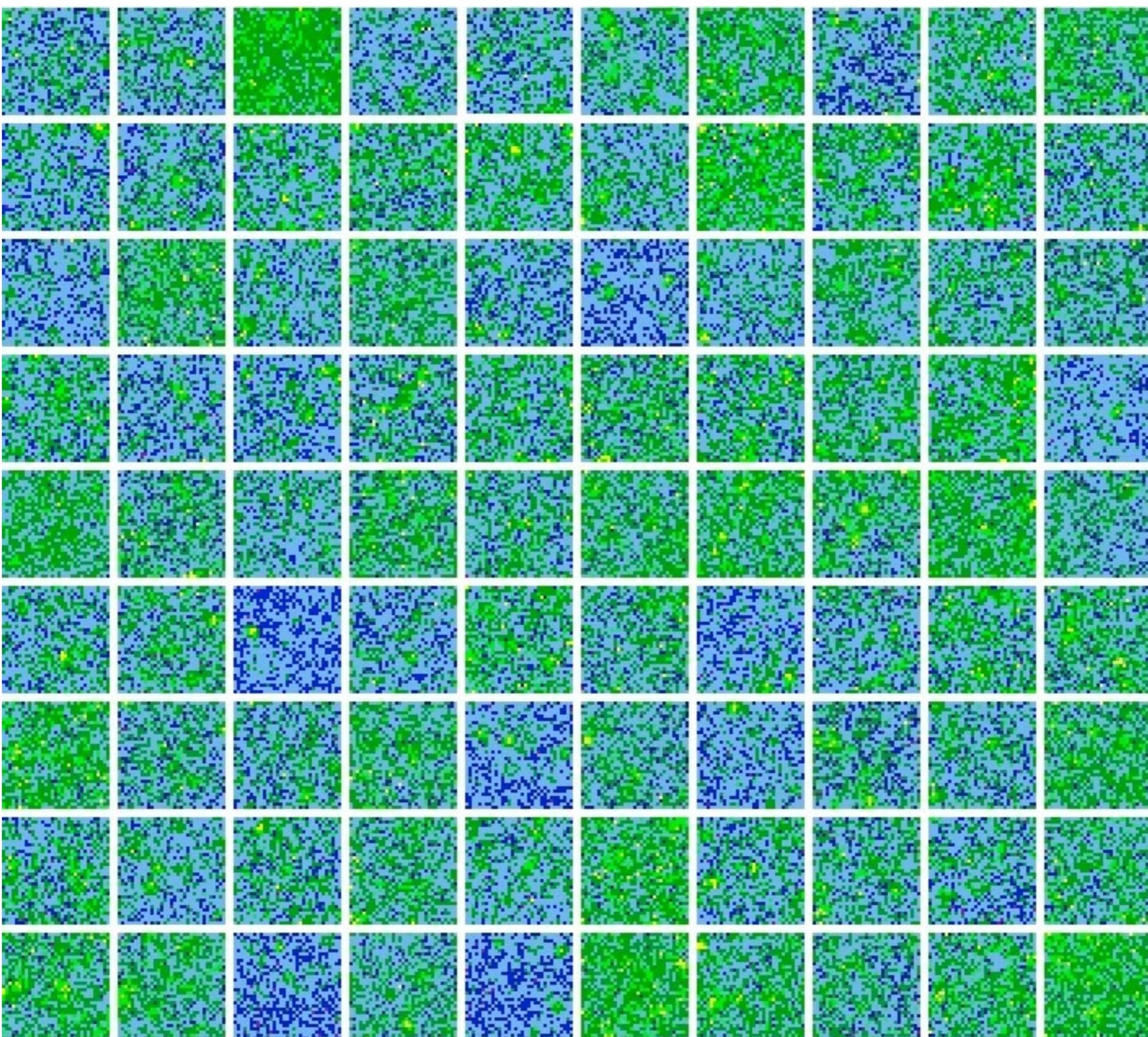


36 arcsec^2





Stacking & Cross-Correlations

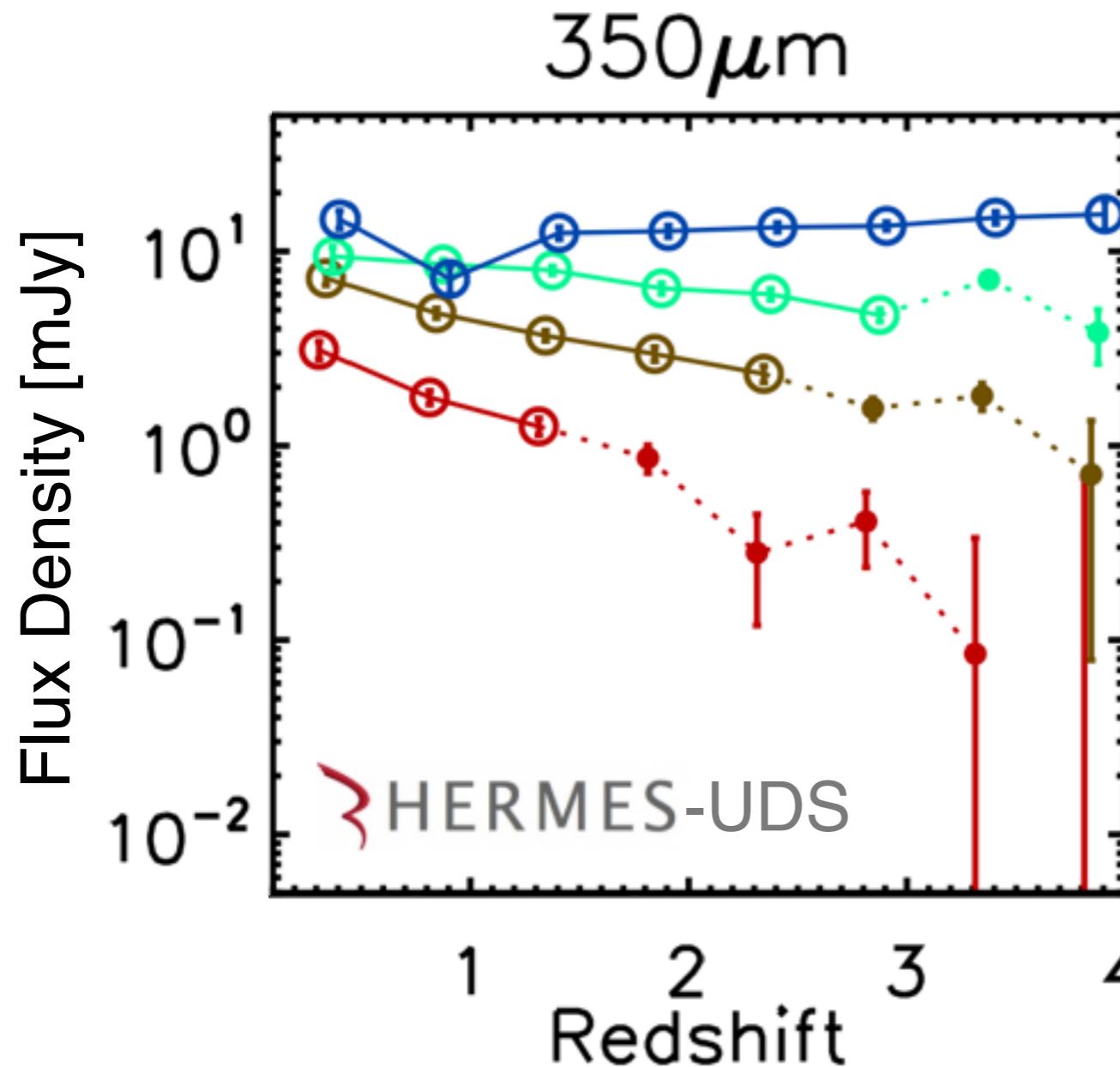


thumbnail stacking

thumbnail stacking

Phil Korngut (Caltech)

stacked flux densities



Viero, Moncelsi, Quadri et al. (2013)
arXiv:1304.0446

catalog (Williams & Quadri, in prep.)

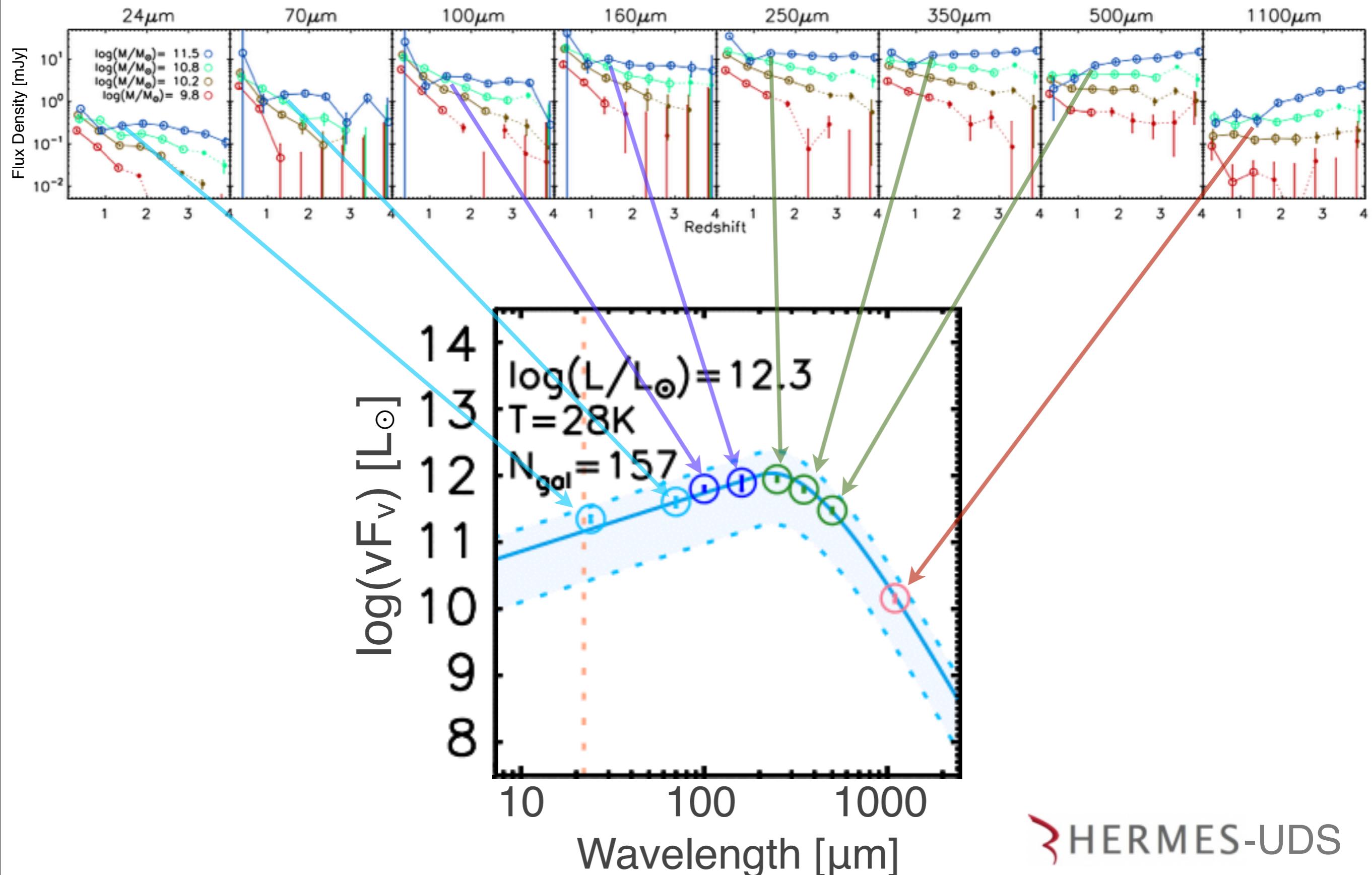
- UKIDSS/UDS [2/3 deg²]
 - uBVRizJHK + IRAC ch1234
- K-band magnitude cut 24 AB
- 81,000 sources in ~0.63 deg²
- redshifts - EAZY (Brammer 2008)
- masses - FAST (Kriek 2009)

HERMES-UDS

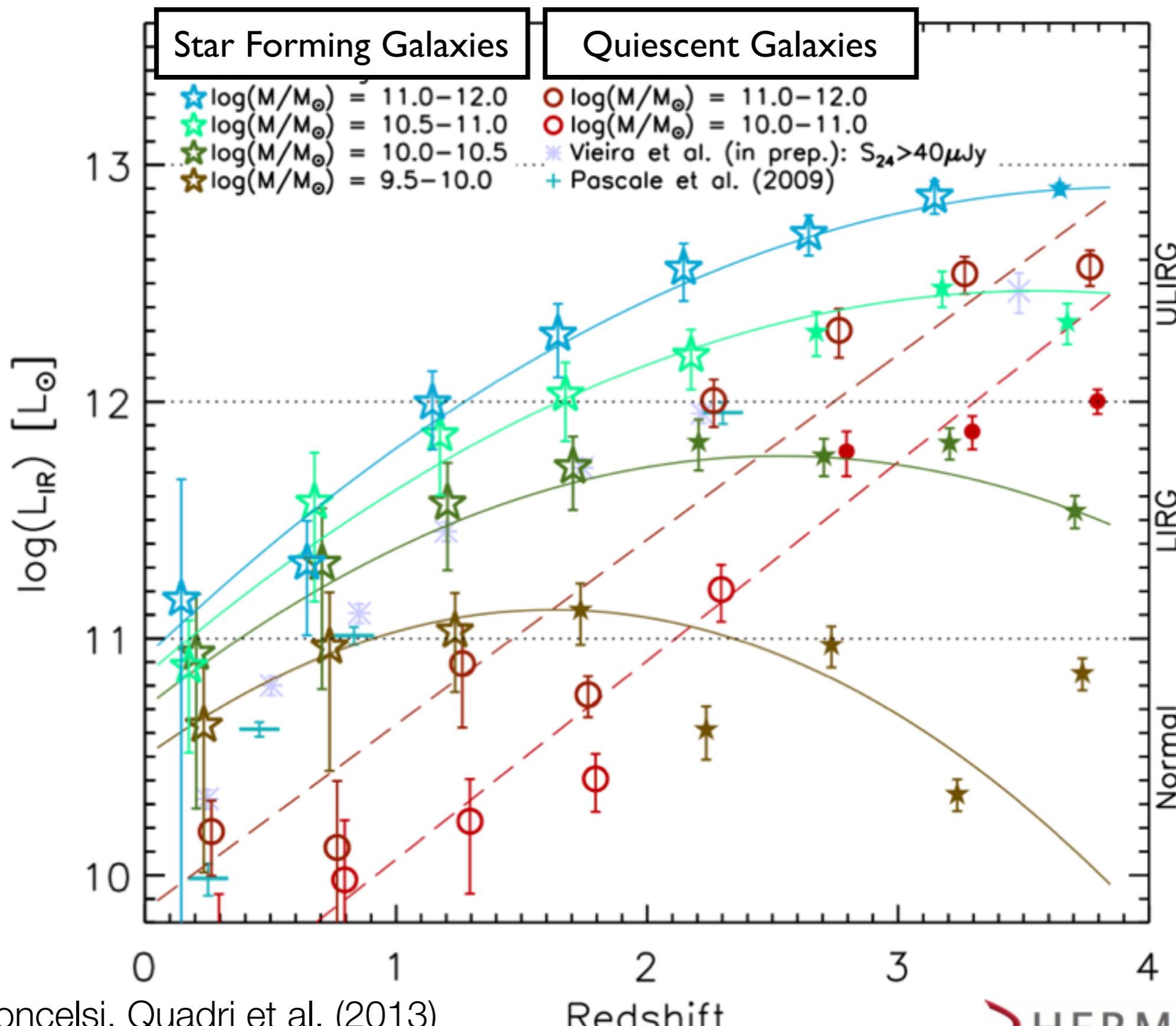
maps (HerMES; Oliver et al. 2012)

- *Spitzer*/MIPS
 - 24, 70um
- *Herschel*/PACS
 - 100, 160um
- *Herschel*/SPIRE
 - 250, 350, 500um
- ASTE/AzTEC
 - 1100um

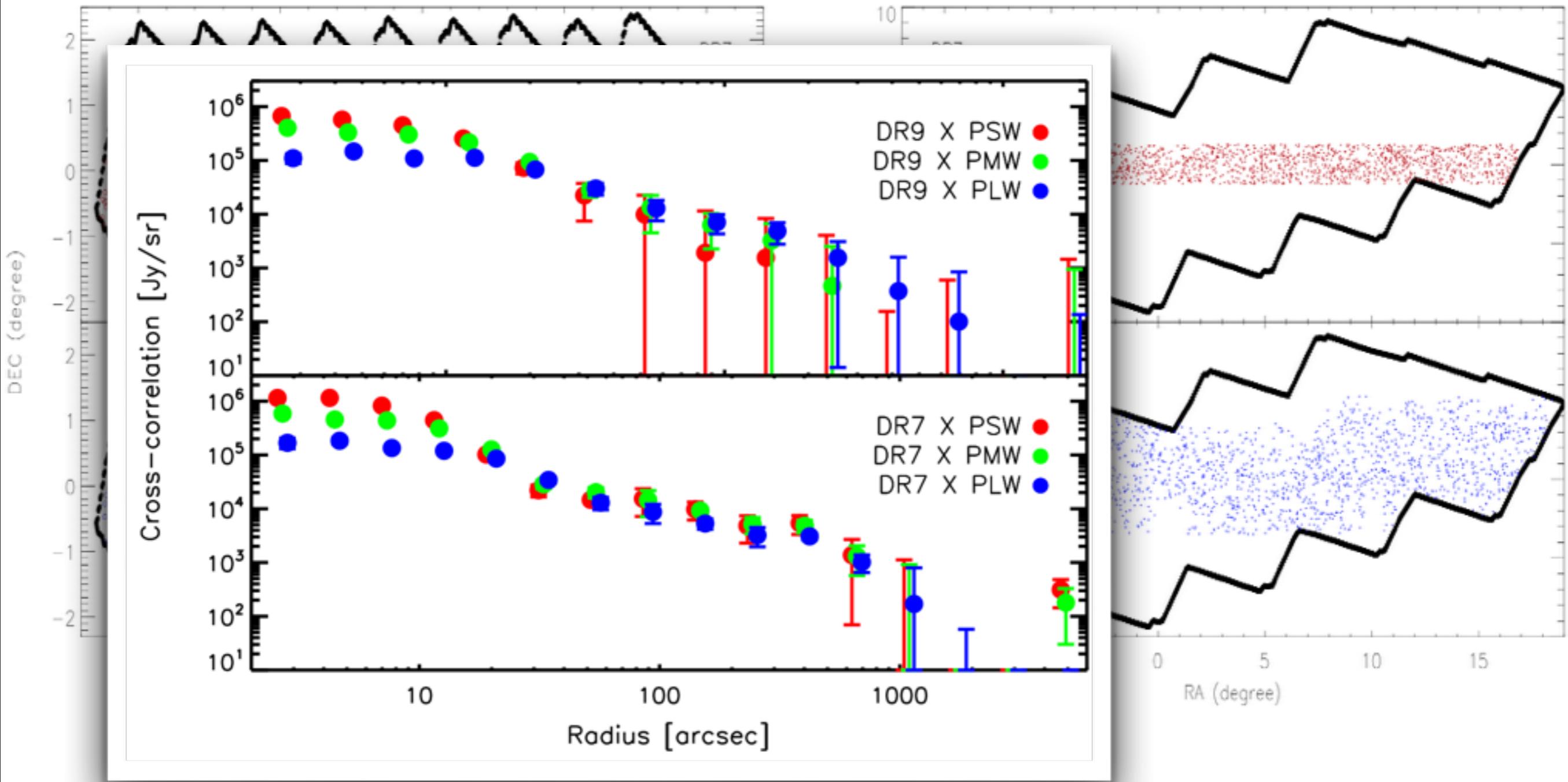
stacked flux density



Infrared Luminosities



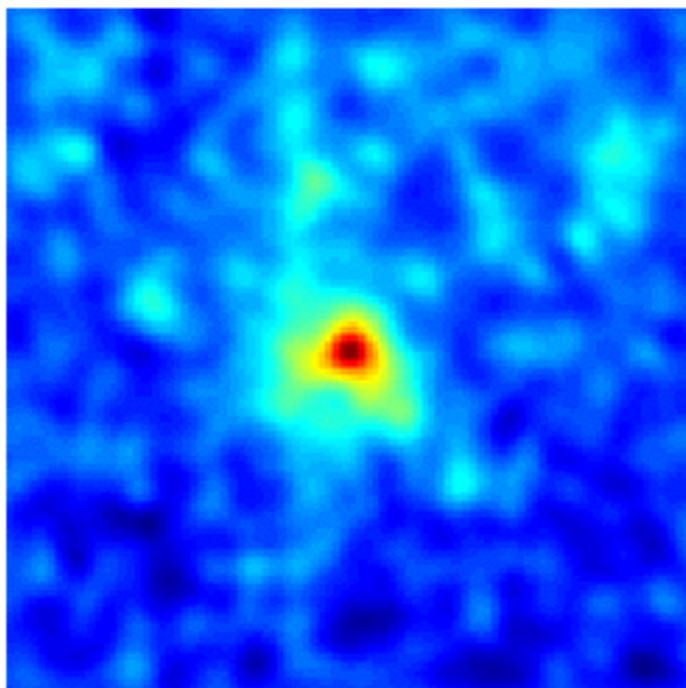
X-Correlations with SDSS QSOs



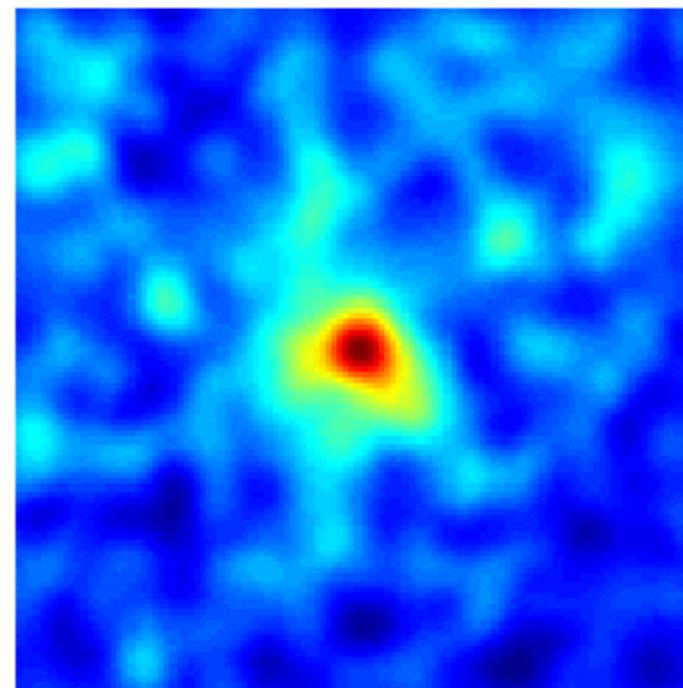
Wang et al. (in prep.)

Cluster Stack

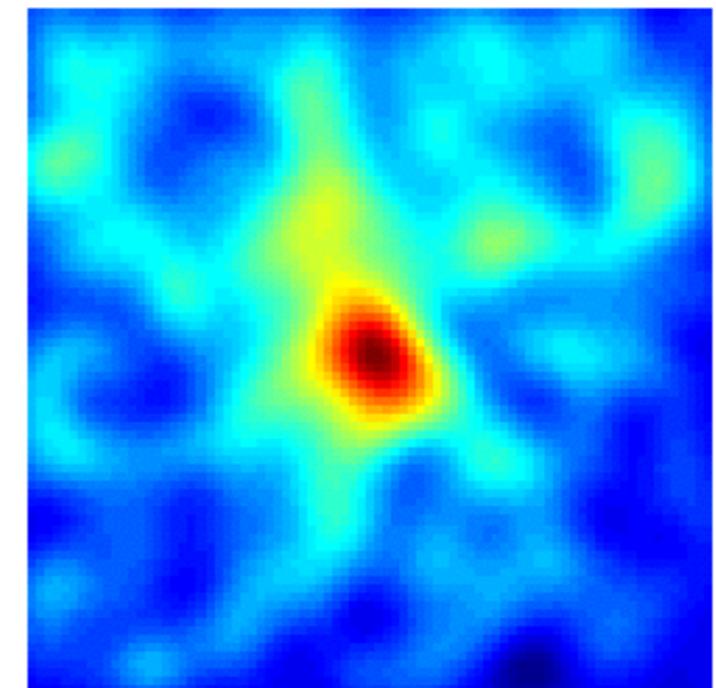
250 μ m



350 μ m

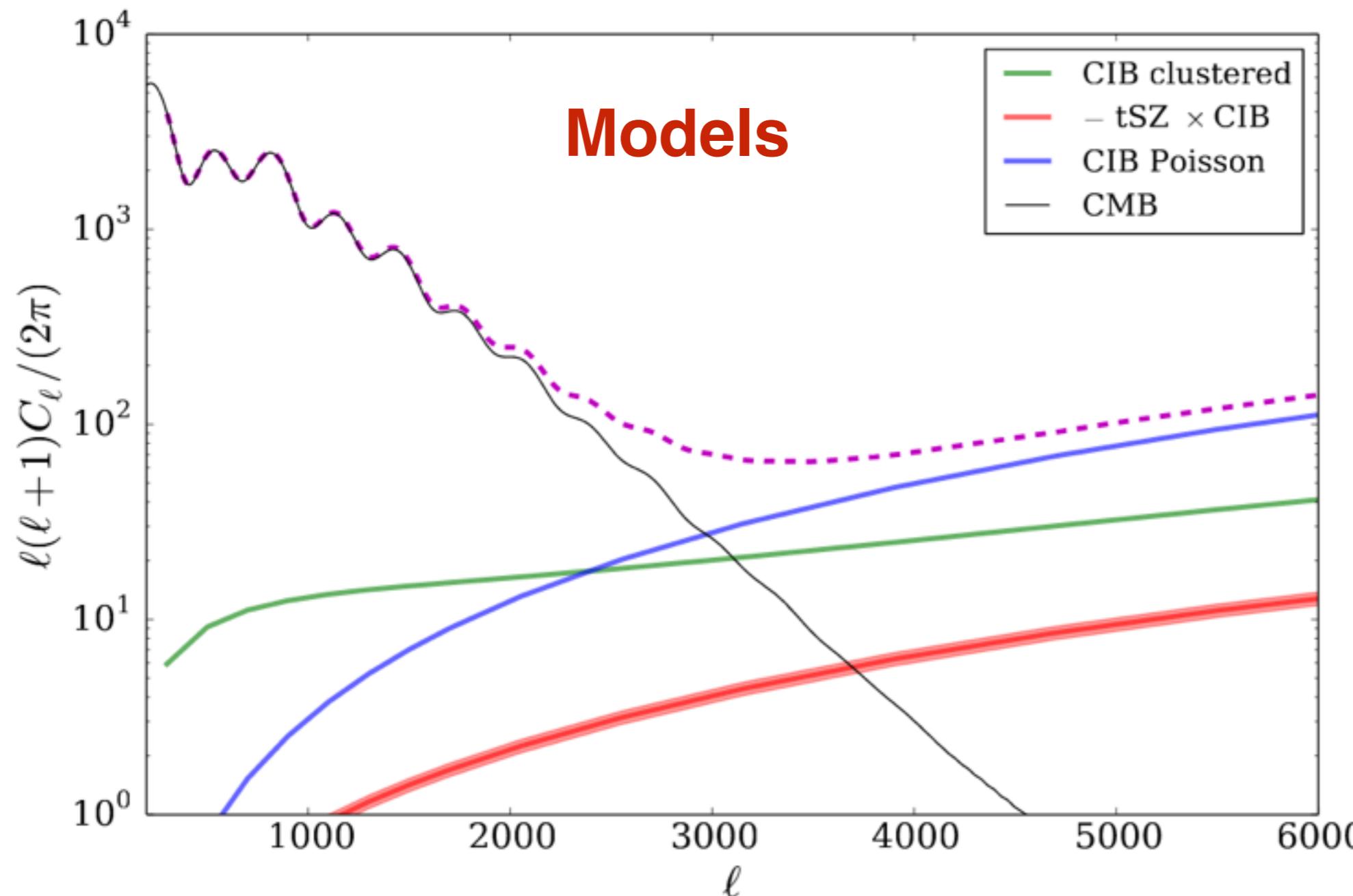


500 μ m



Phil Korngut using Rykoff et al. 2013 redMapper positions

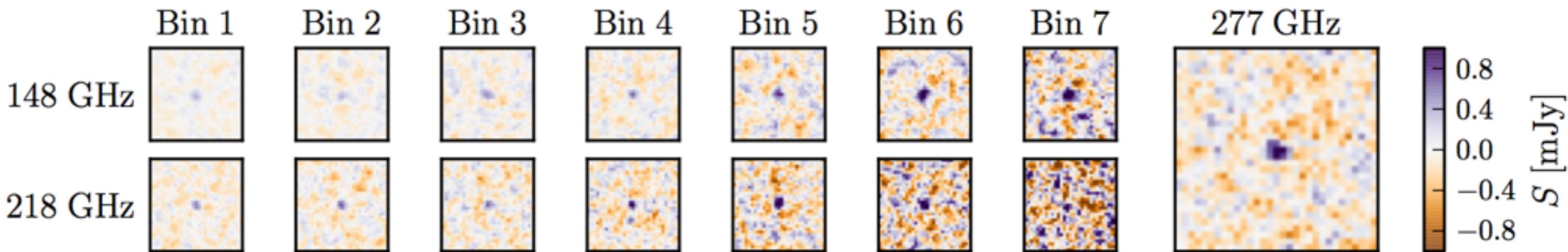
ACT x Herschel



- SZ correlates with DSFGs
- coming soon!

Hajian, Wang et al. (in prep.)

HerS Submillimeter and ACT SZ detections in Radio Stacks



- Stacked ~4400 Radio galaxies in HerS/ACT
- Detection of SZ in $\log(M/M_{\odot}) \sim 13$ halos

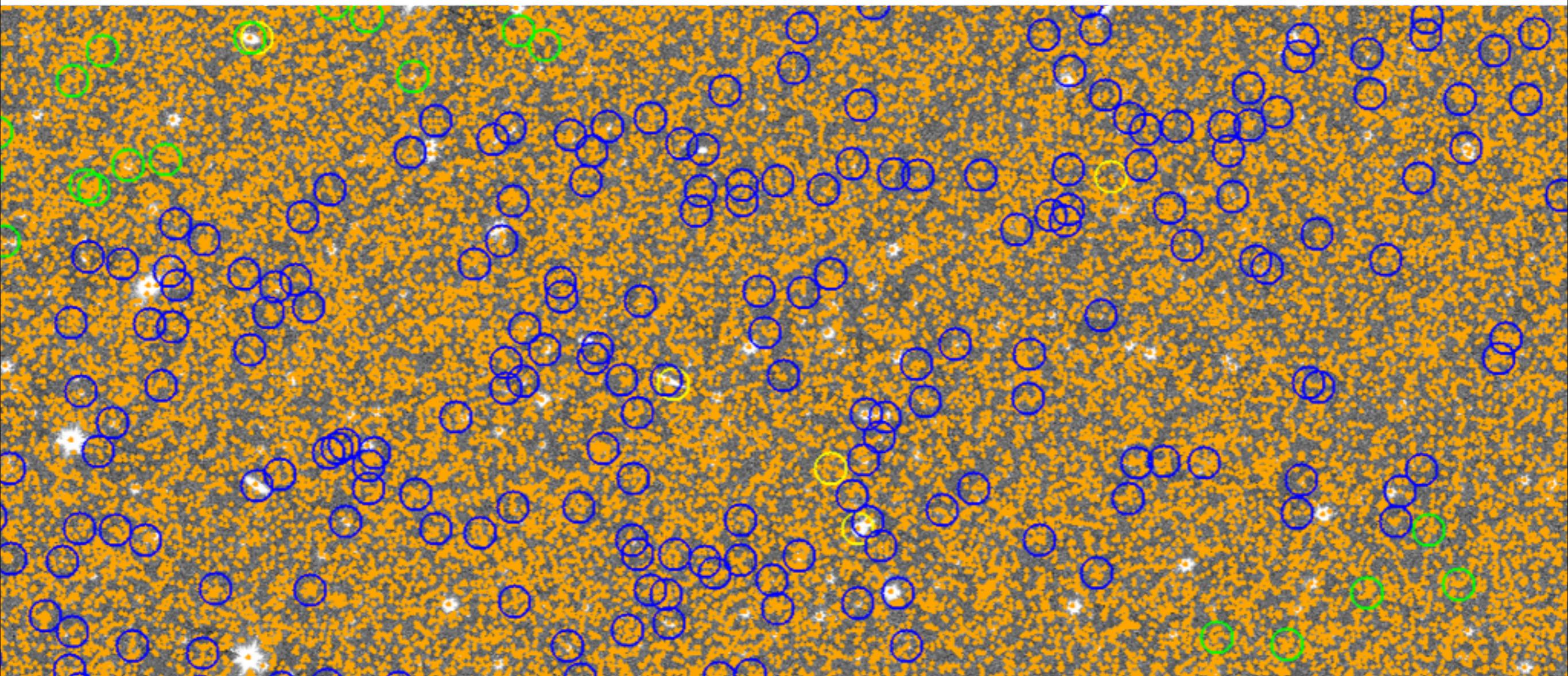
HerS x ACT

Gralla et al. 2013; arXiv:1310.8281

Catalog Matching: be careful!

HerS SPIRE 250 μ m

SHELA IRAC 3.6 μ m





Viero+ 2014
arXiv:1308.4399



Oliver+ 2012
arXiv:1203.2562

HerS

HeLMS

Find Maps/Catalogs at:

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(coming in June) <http://hedam.lam.fr/HerMES/>