Roberto Decarli
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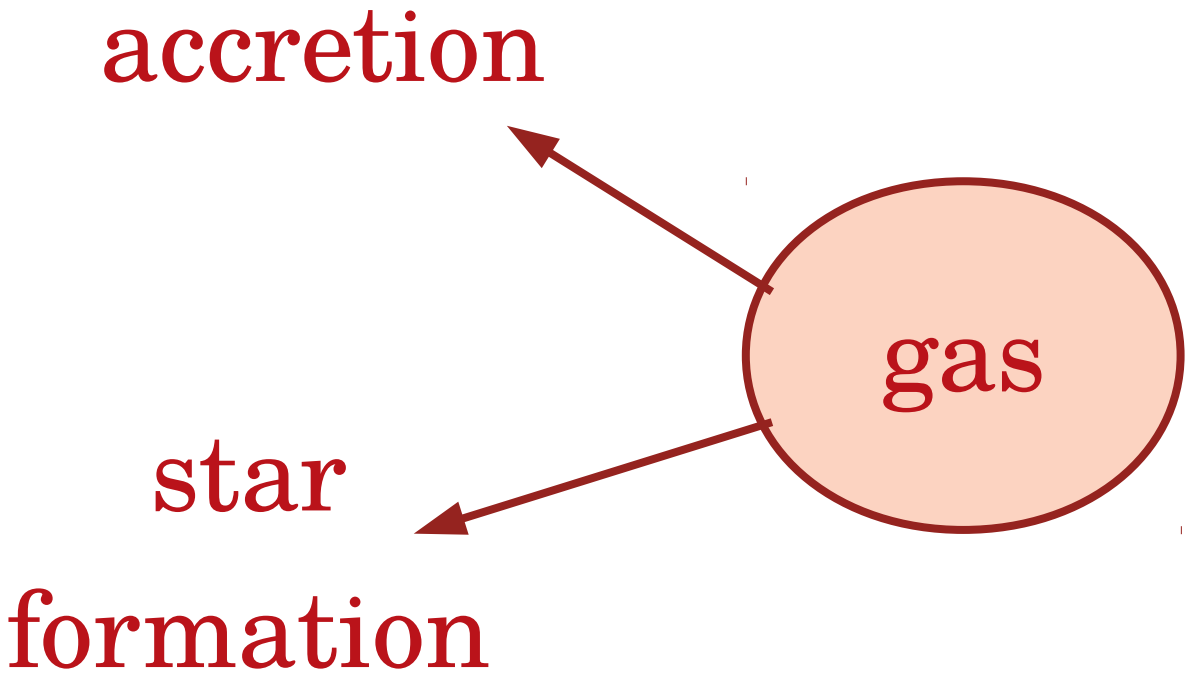
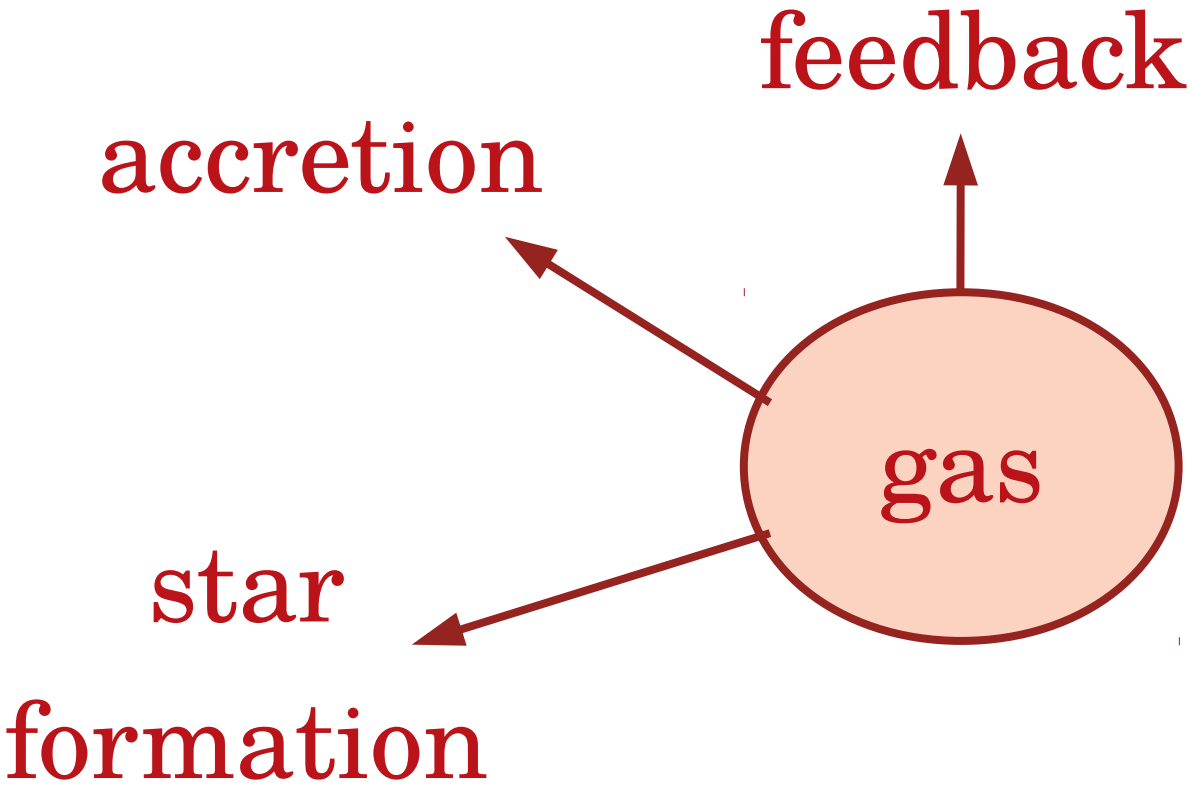
(roberto.decarli@inaf.it)

The cold side of AGN

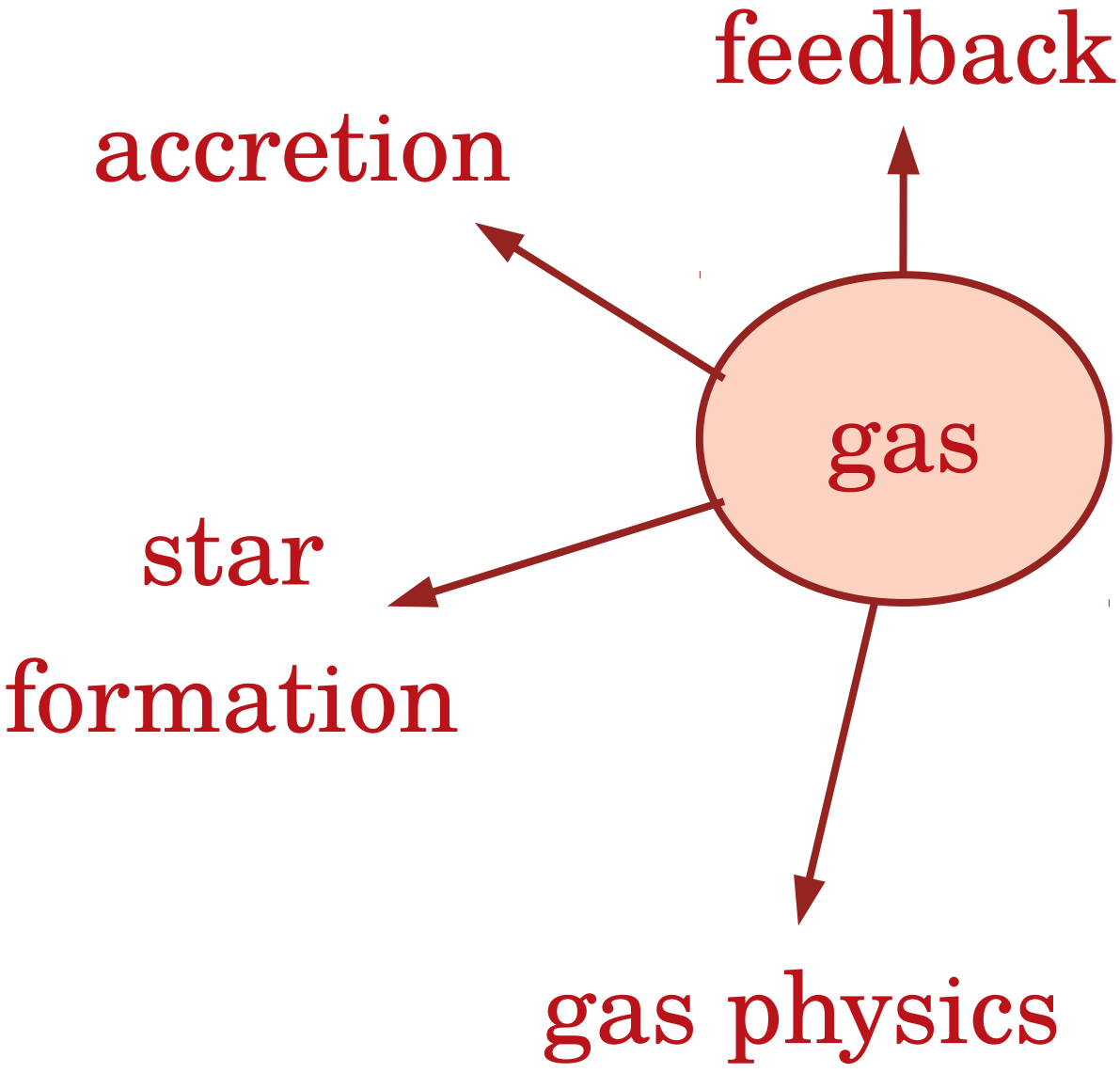
ISM in AGN host galaxies



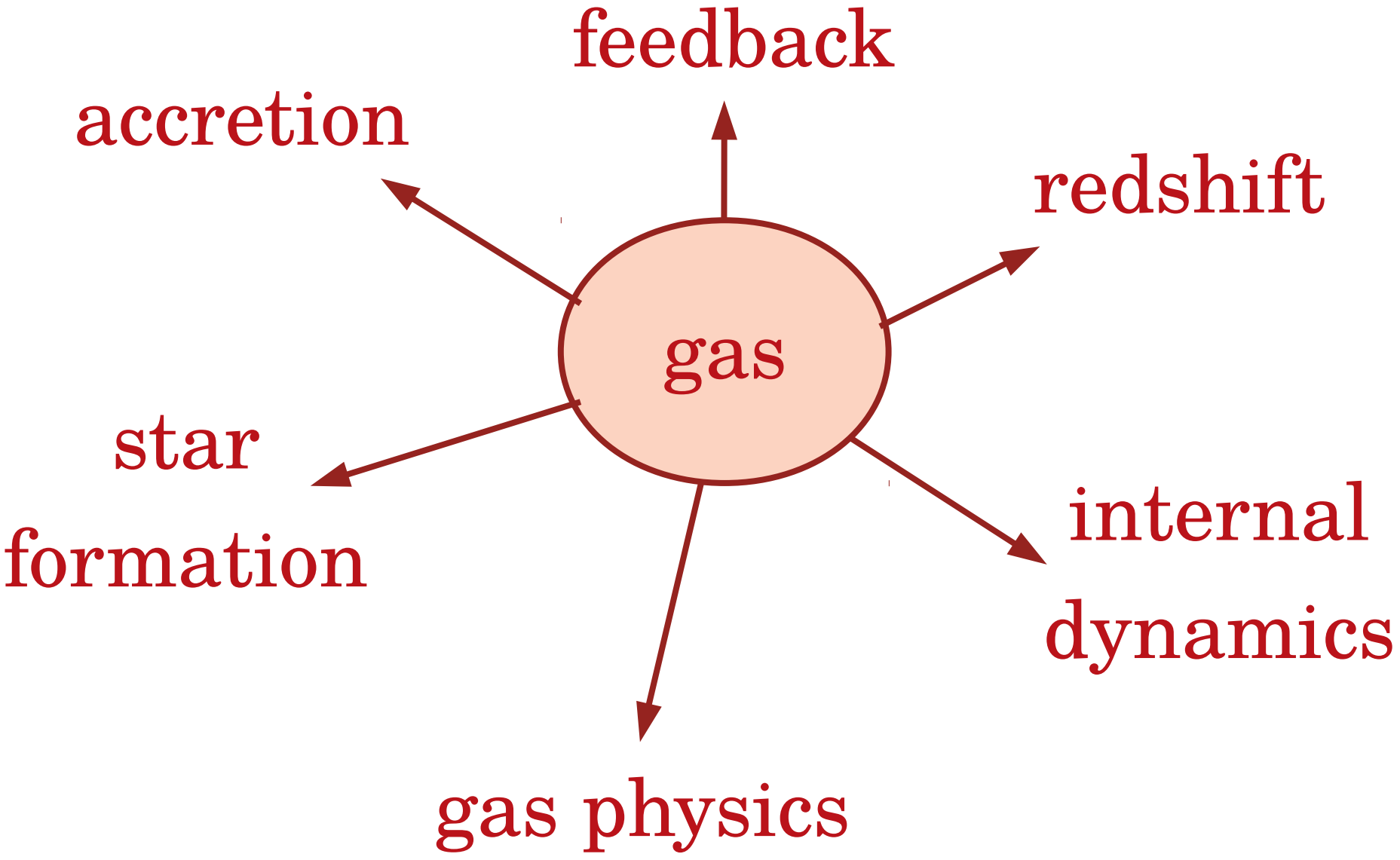
ISM in AGN host galaxies



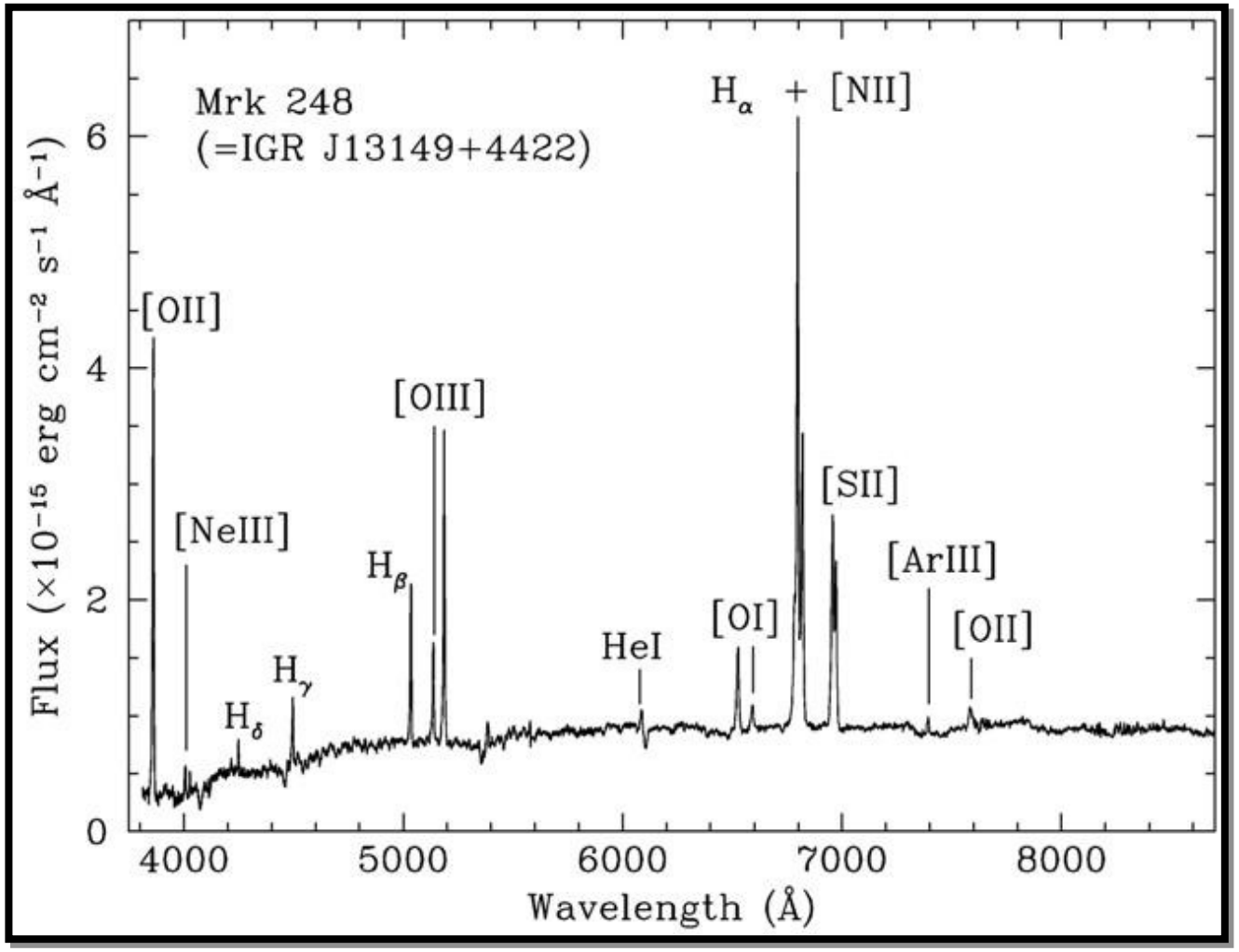
ISM in AGN host galaxies



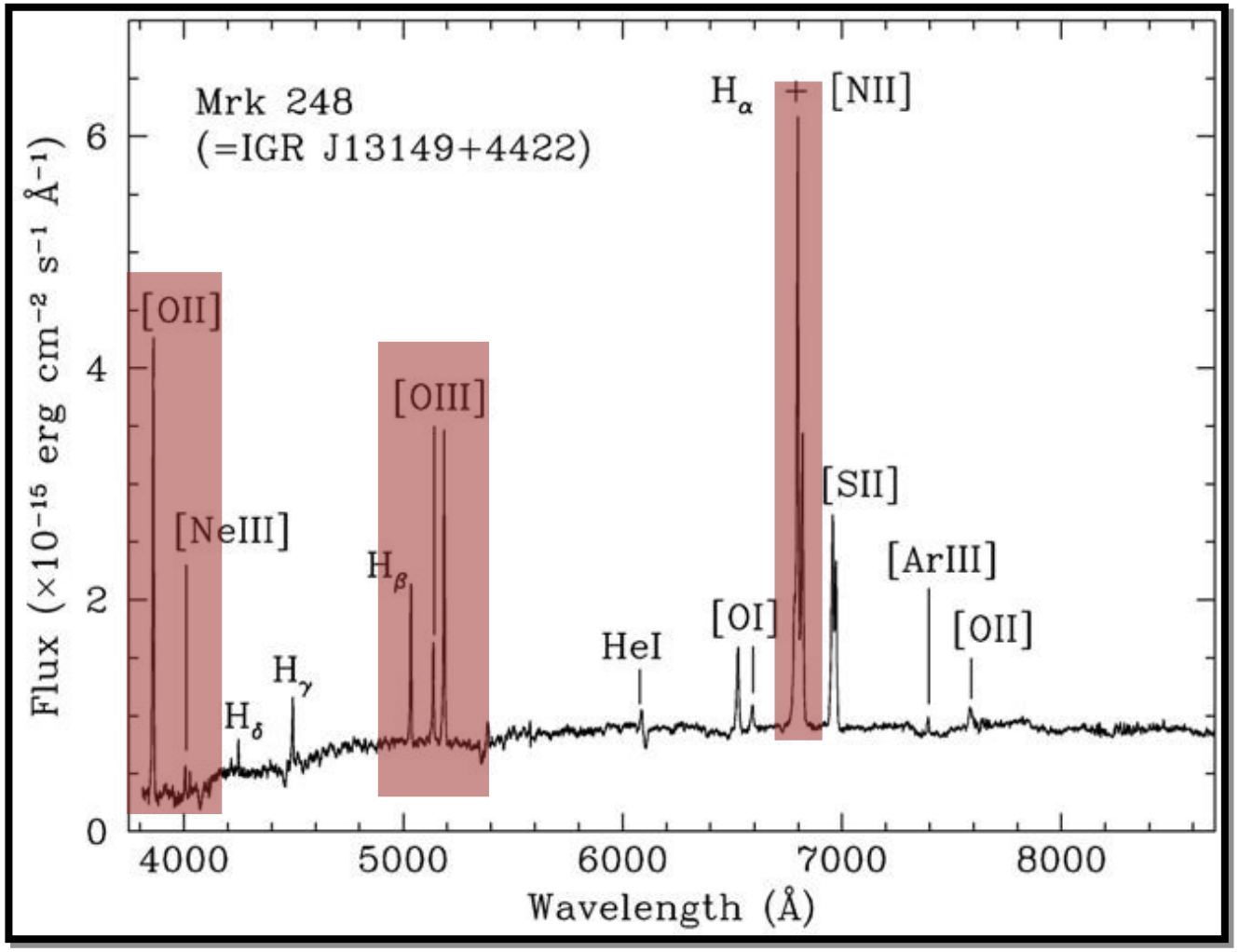
ISM in AGN host galaxies



Optical nebular lines

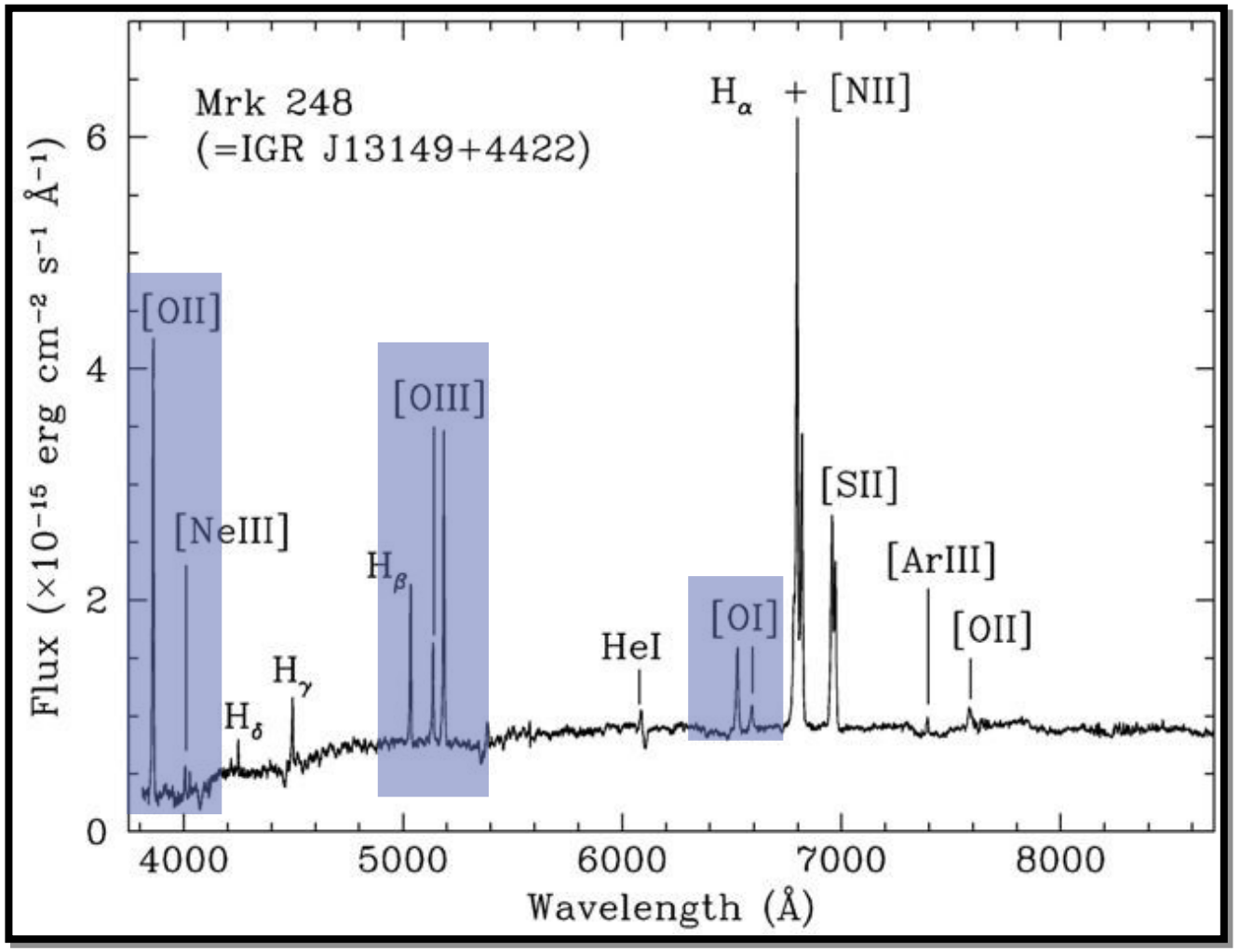


Optical nebular lines



Star formation

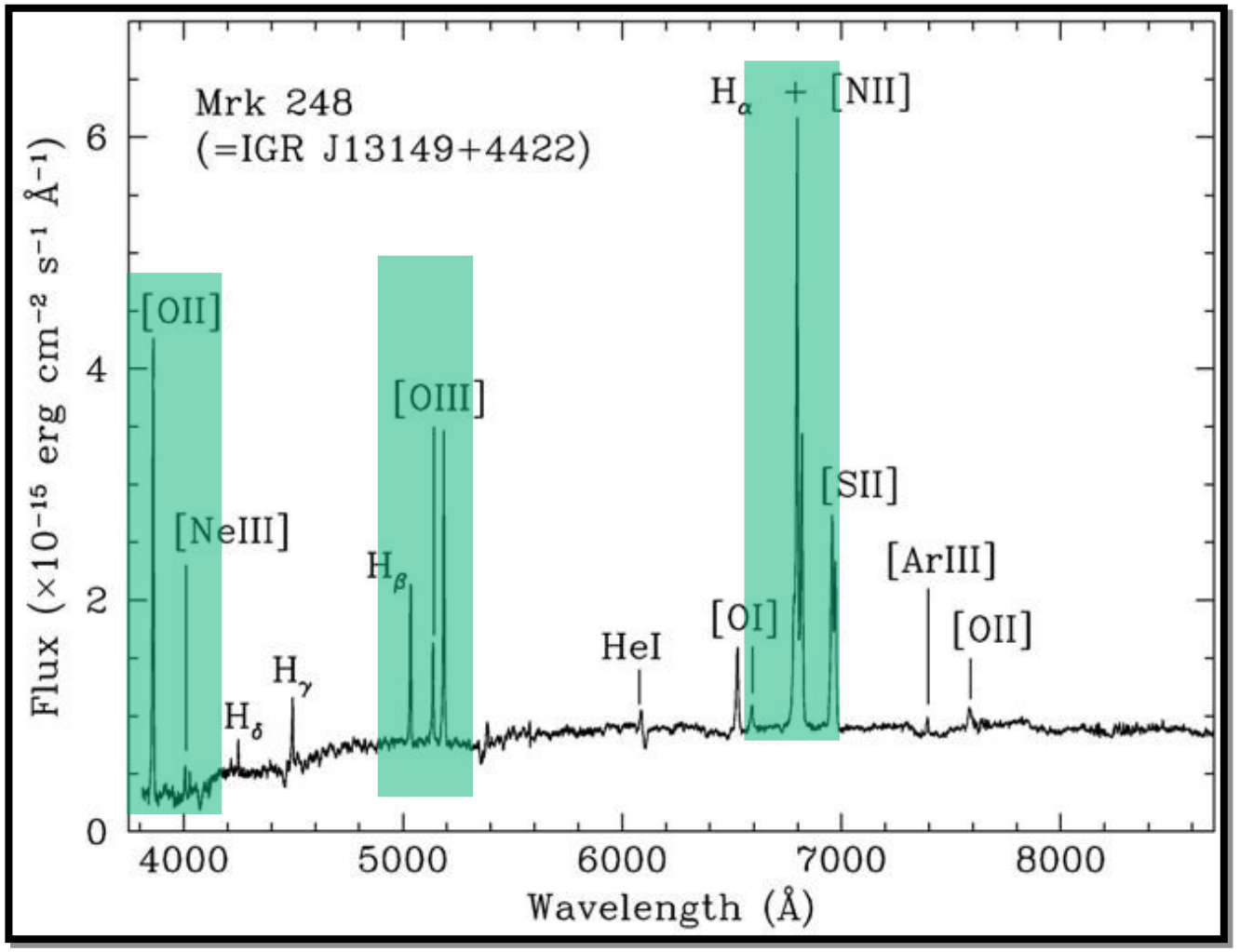
Optical nebular lines



Star formation

Ionization

Optical nebular lines

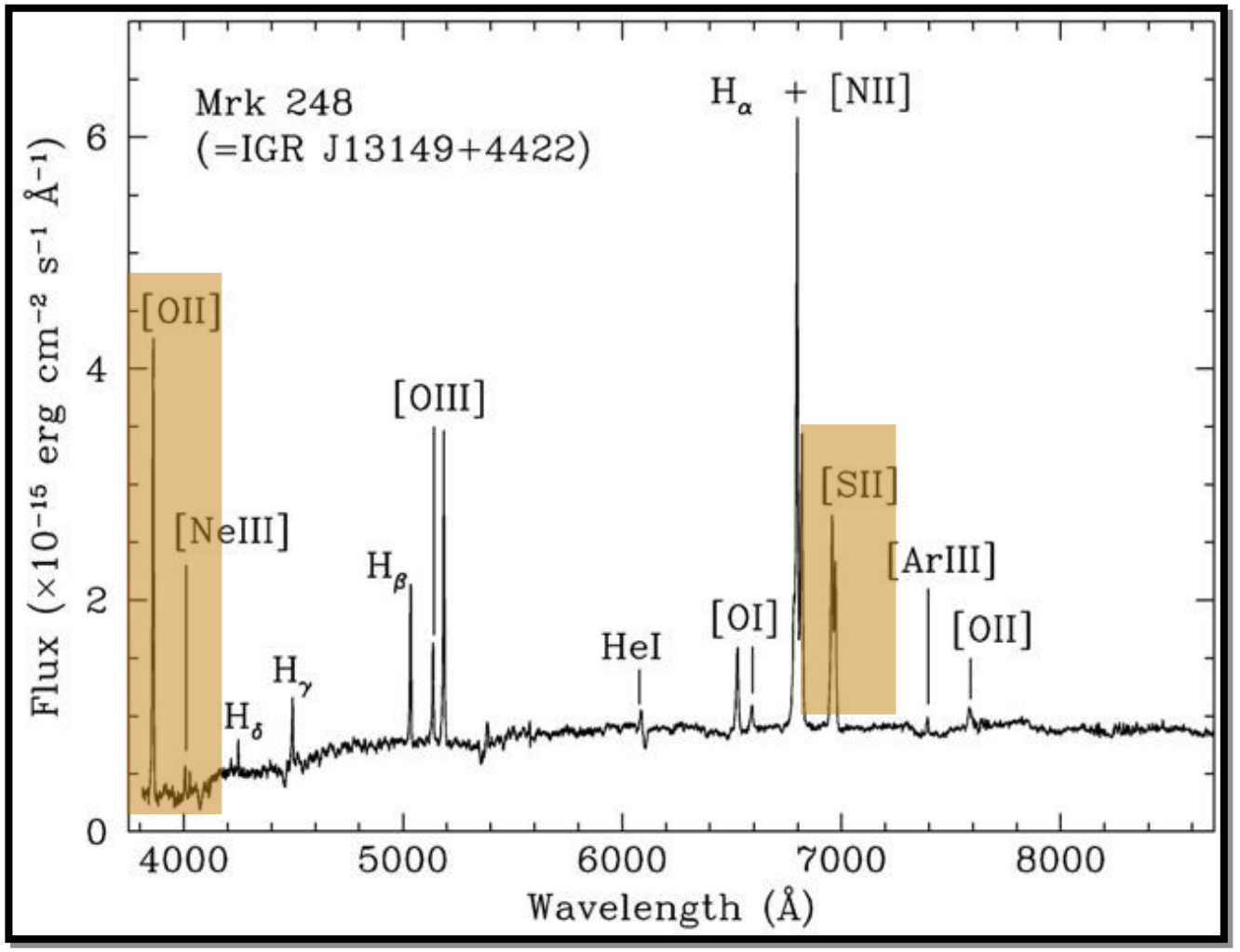


Star formation

Ionization

Metallicity

Optical nebular lines



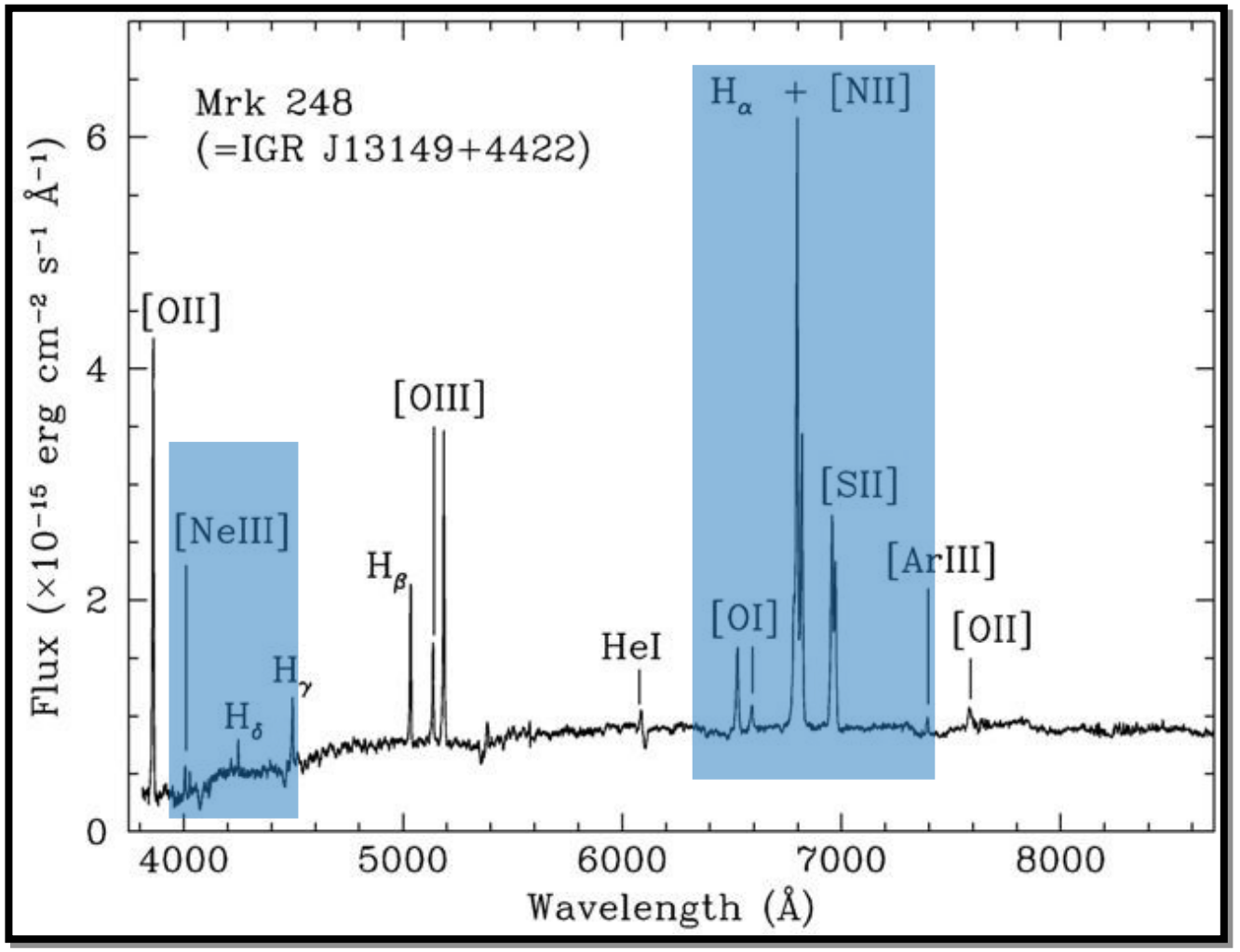
Star formation

Ionization

Metallicity

Gas density

IR and optical nebular line



Star formation

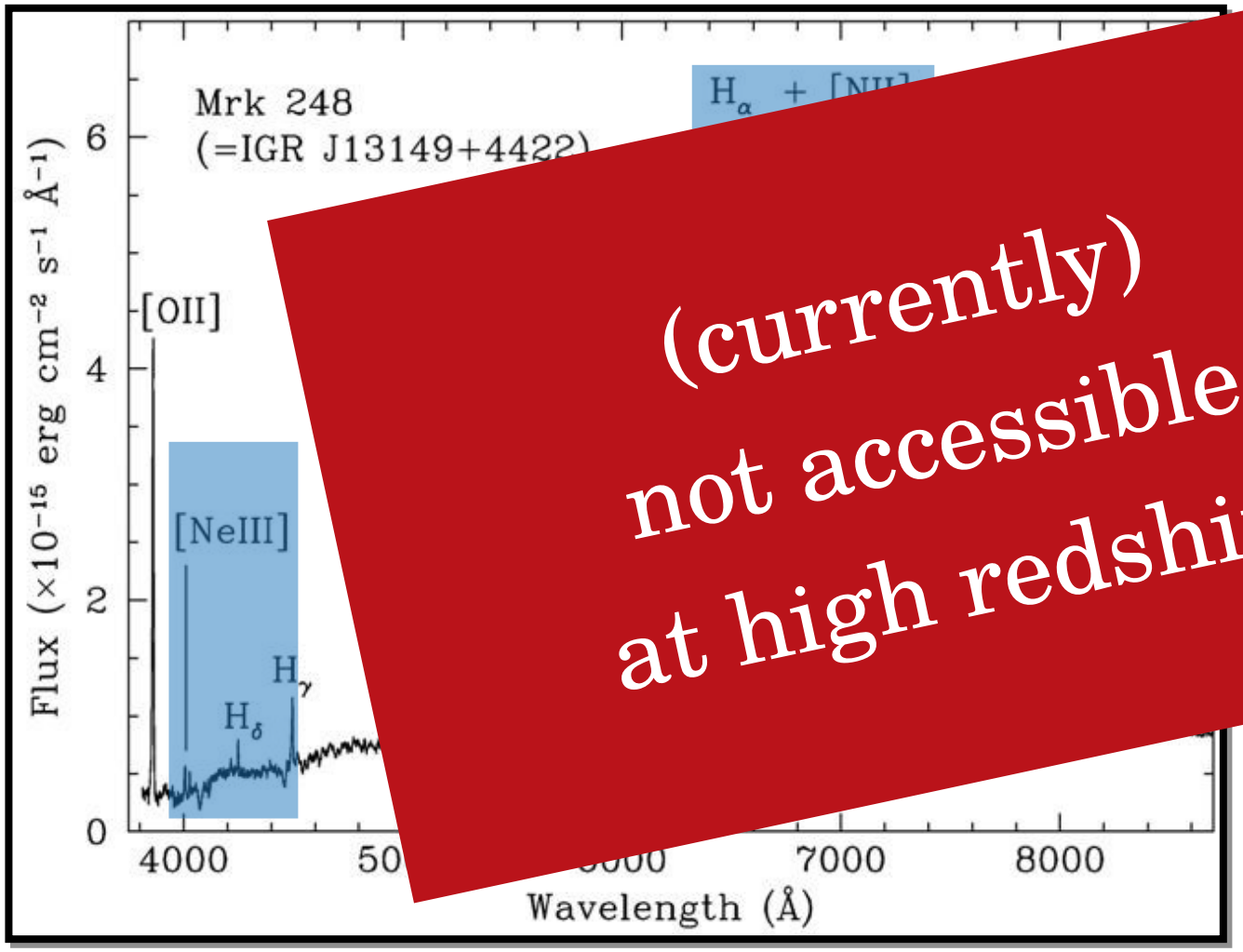
Ionization

Metallicity

Gas density

Nuclear activity

Optical nebular lines



(currently)
not accessible
at high redshift

ormation

tion

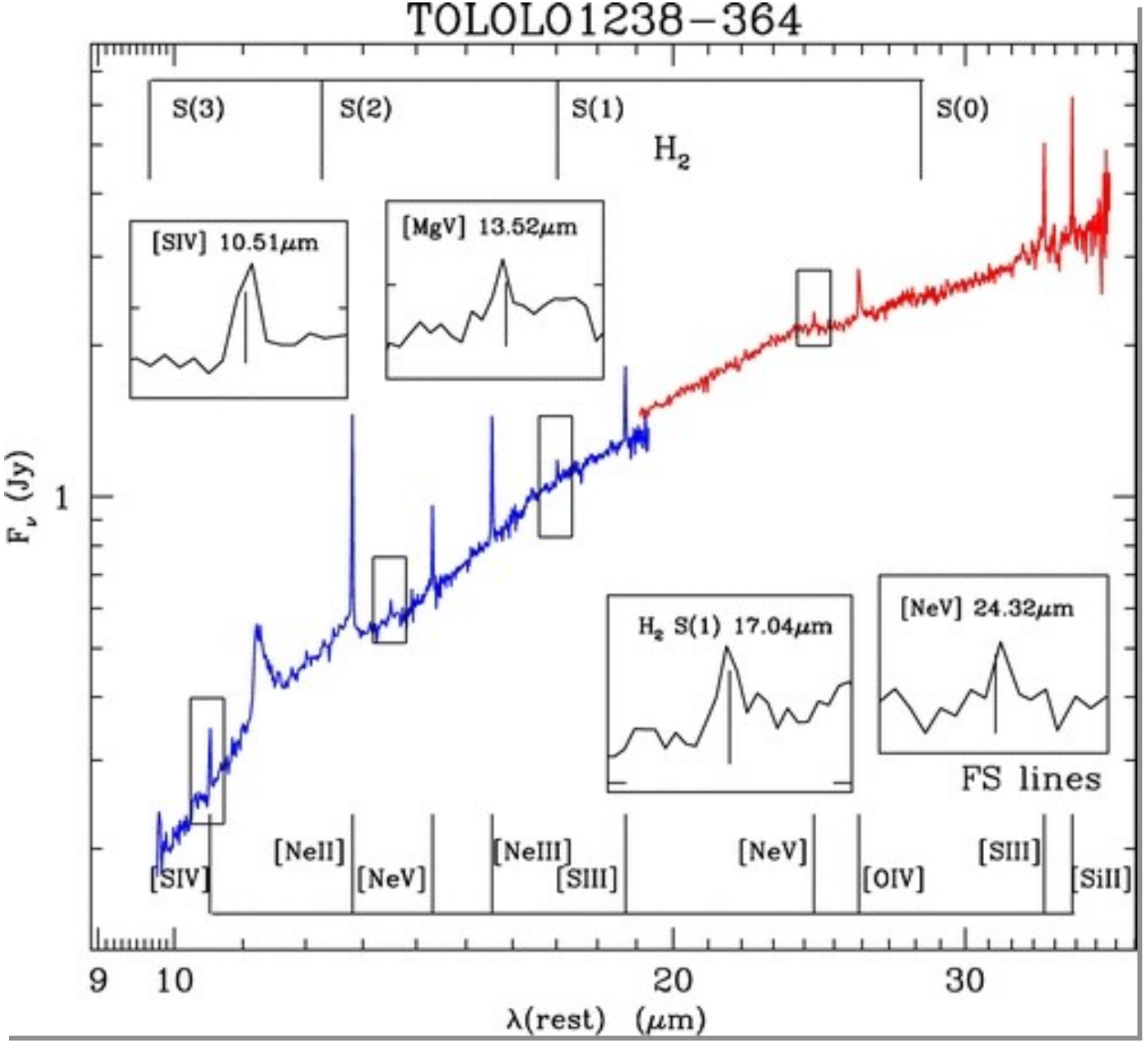
city

sity

uclear activity

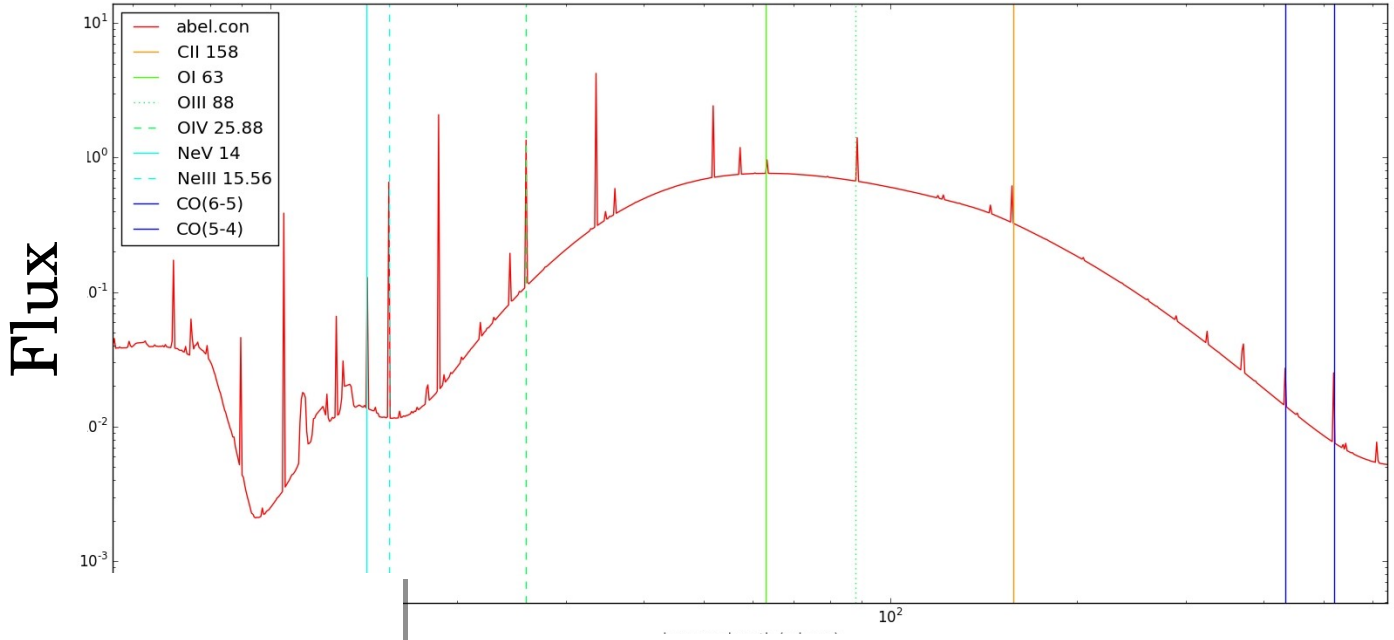
IR lines

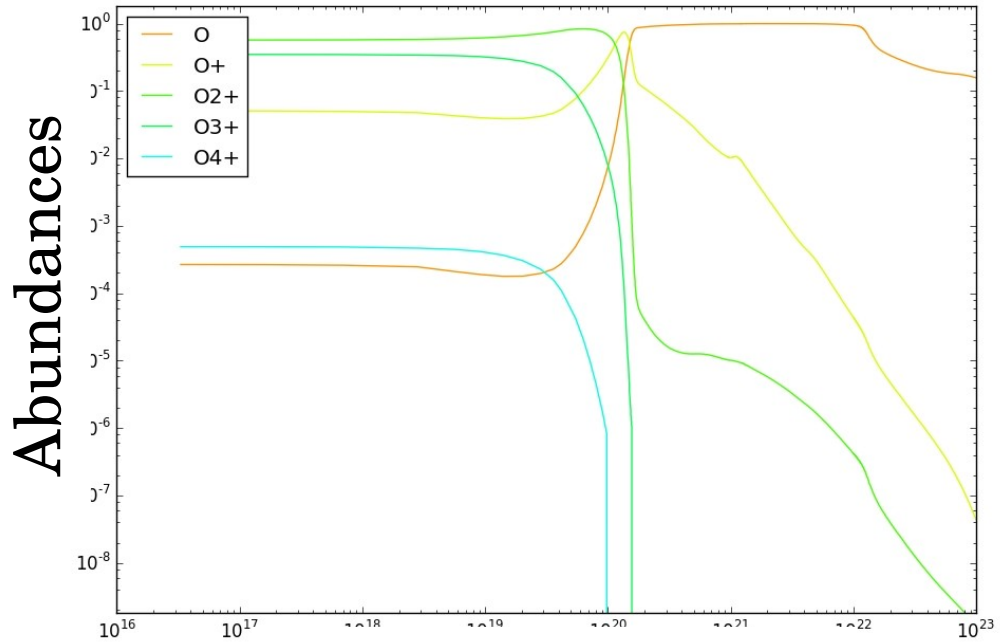
IR lines



MIR and FIR lines provide additional tracers of the ISM

Models to connect optical and IR tracers





Project 1

Comparison and calibration of diagnostics

Same species (e.g., [OI], [NeII], [NeIII], [OIII])
but different transitions

Optical spectra with SALT 10m telescope of
46 nearby Seyfert galaxies with MIR obs

Supervision: Carlotta Gruppioni
(carlotta.gruppioni@inaf.it)
DIFA reference: Francesca Pozzi

Quasars at z>6: Why should we care?

Quasars at z>6: Why should we care?

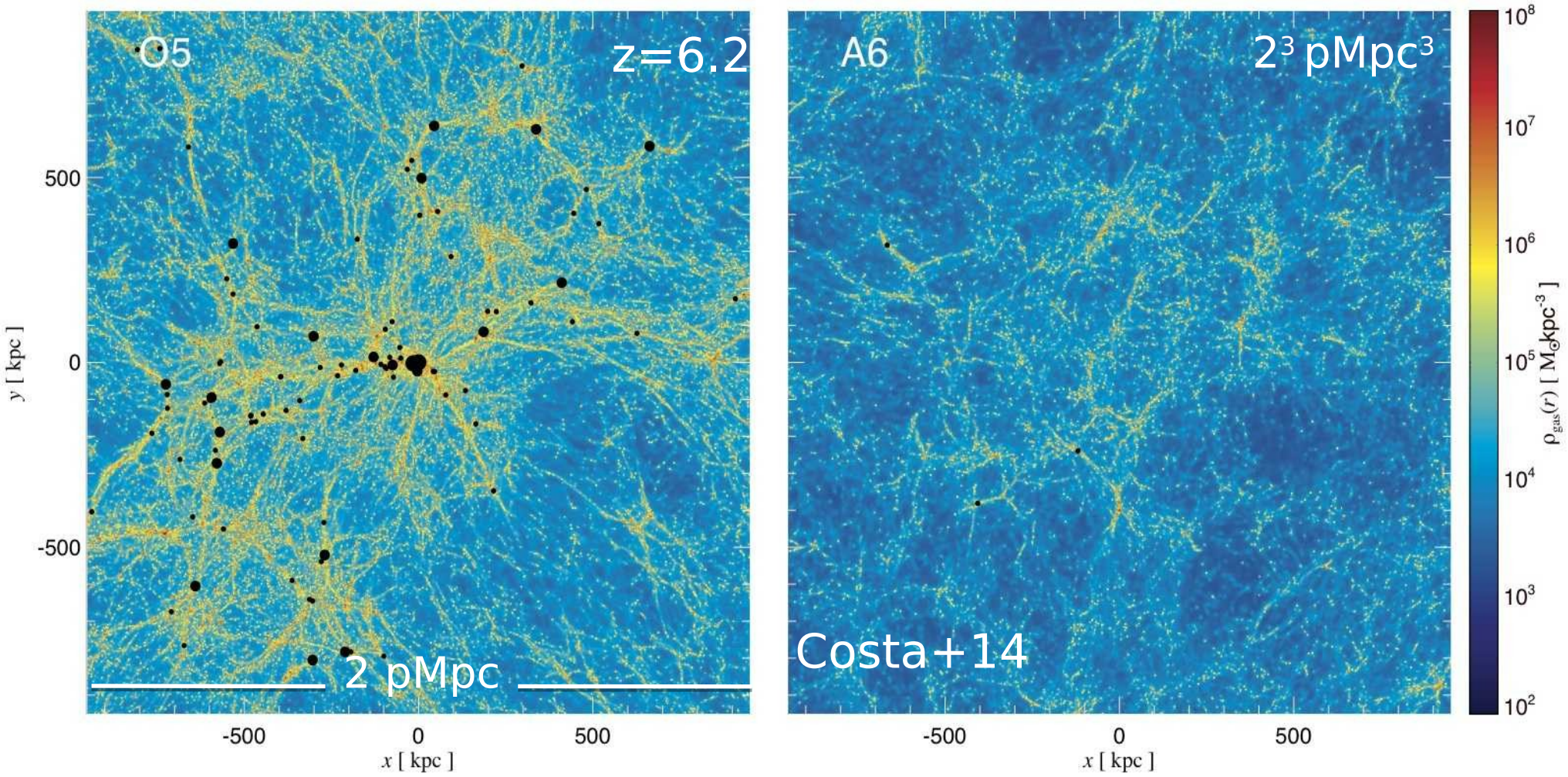
z=6 → age of the universe: <1 Gyr

Not much time

Extremely luminous and star-forming

A few observational benefits

Efficient fueling needs rich environment



SDSS J1030+0524: the most promising large-scale structure around a z>6 QSO

Stack of 20 z~6 gal. cand.

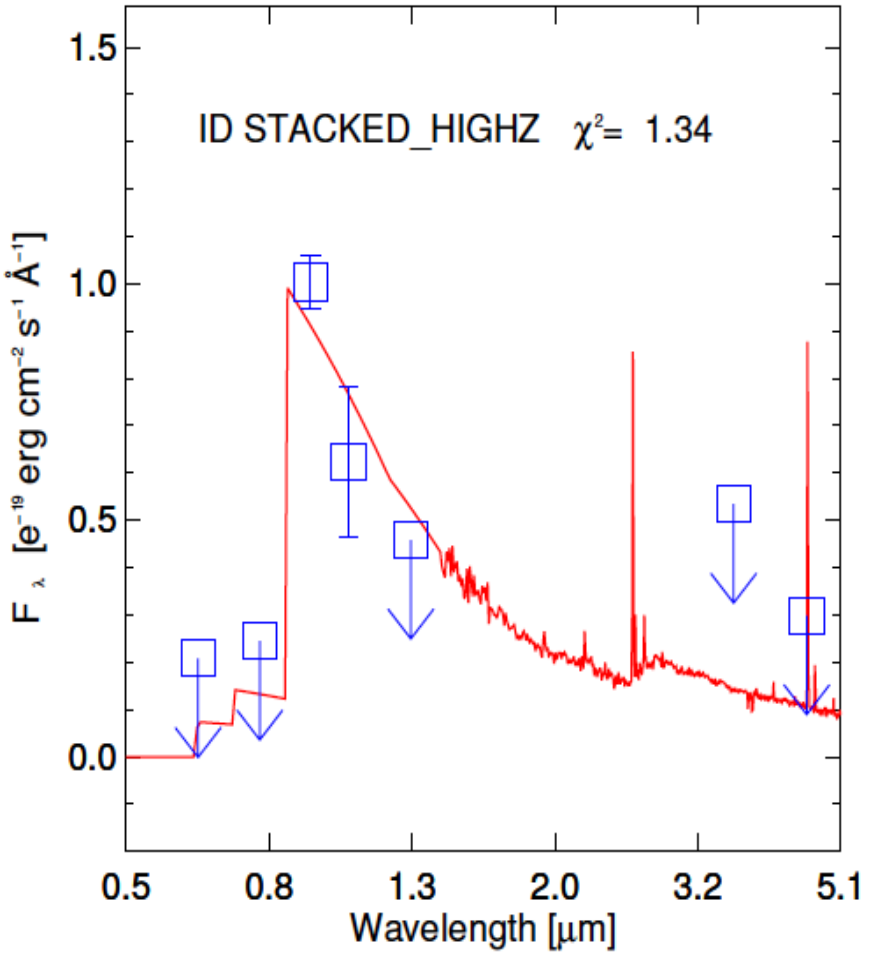
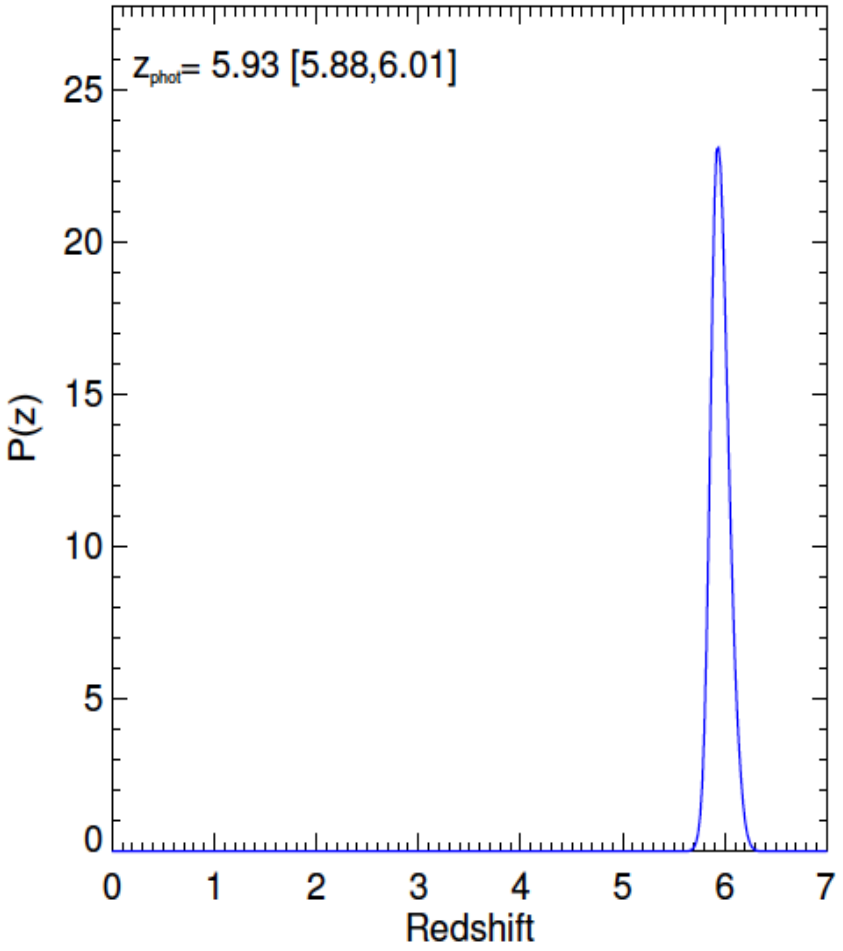
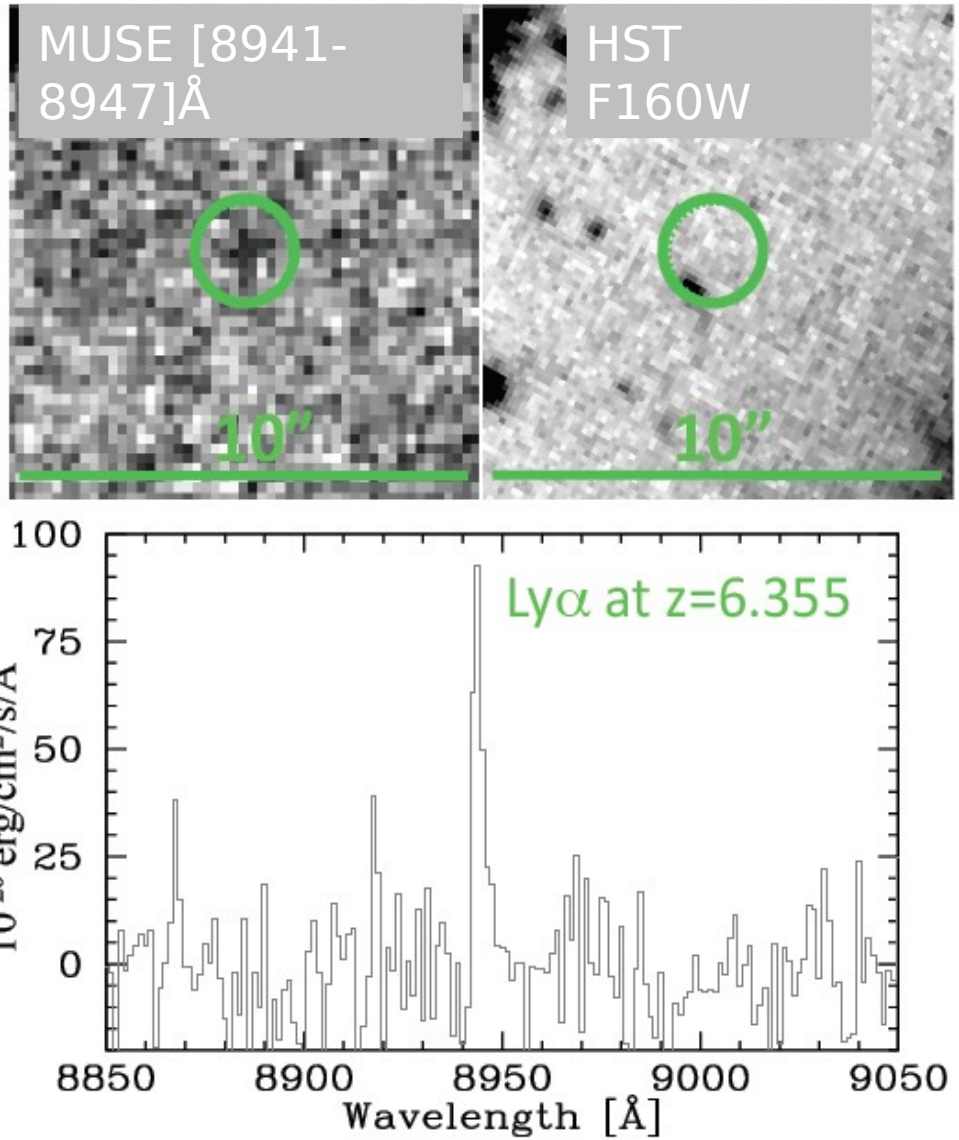


Photo-z of the stack

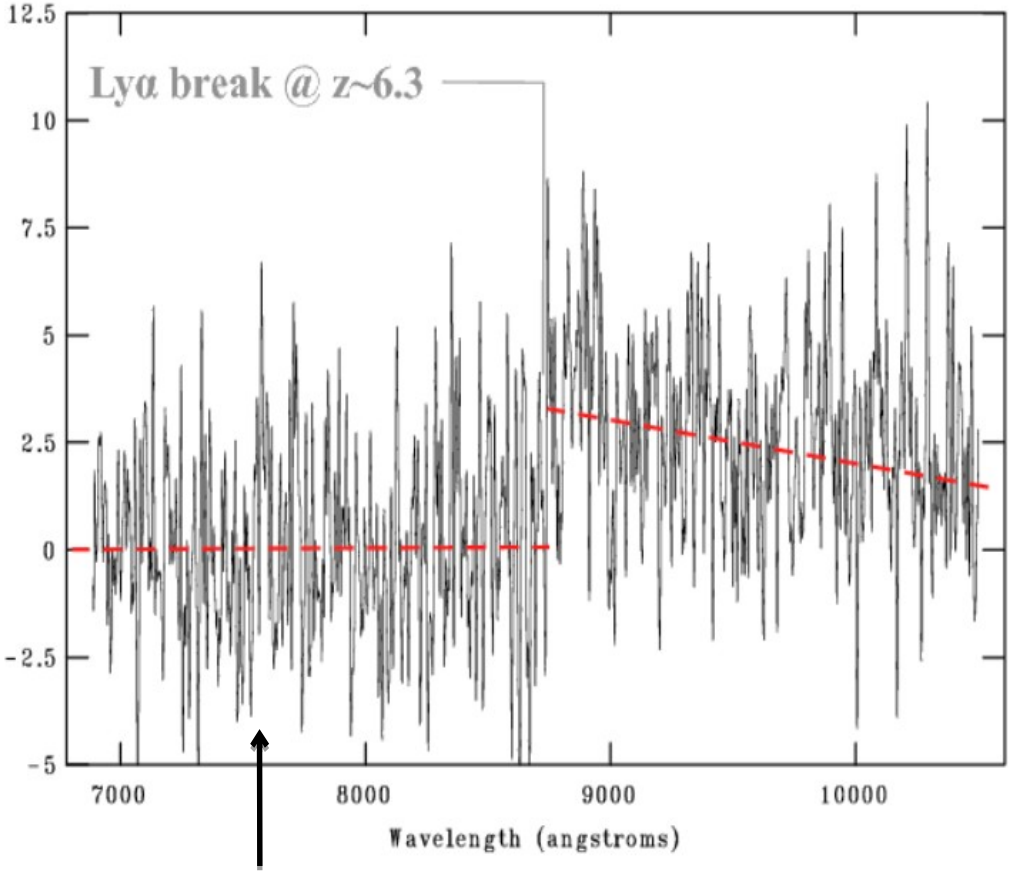


Balmaverde+17

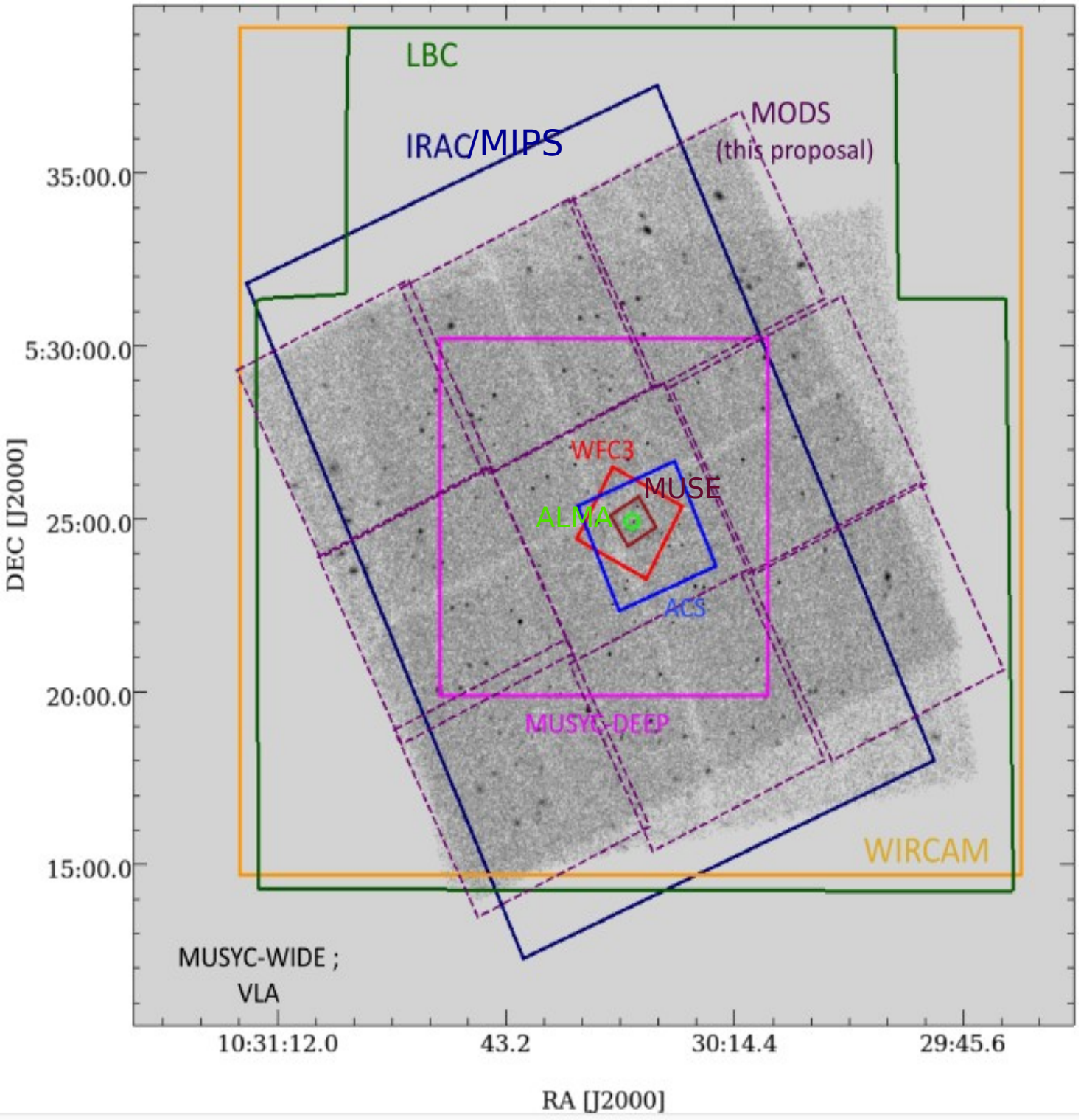
MUSE Lya emitter



Keck Lyman Break Galaxy



[CII]-based redshift determination with NOEMA



>200 X-ray sources

Opt/NIR spectra of X-ray sources and z~6 galaxy candidates (Keck, MUSE, LBT)

LBT strategic program (52hr)

~180 redshifts exp.: AGN demography and evolution

Project 2

- Opt/NIR spectroscopy of X-ray sources

(LBT MODS+LUCI data)

- Opt spectroscopy of z~6 galaxy candidates

(Keck DEIMOS data)

- mm spectroscopy of a z~6.3 galaxy candidate

(NOEMA data)

- Individual studies of multi-band AGN

Supervision: Roberto Gilli, Marco Mignoli

(roberto.gilli@inaf.it, macro.mignoli@inaf.it)

DIFA reference: Cristian Vignali