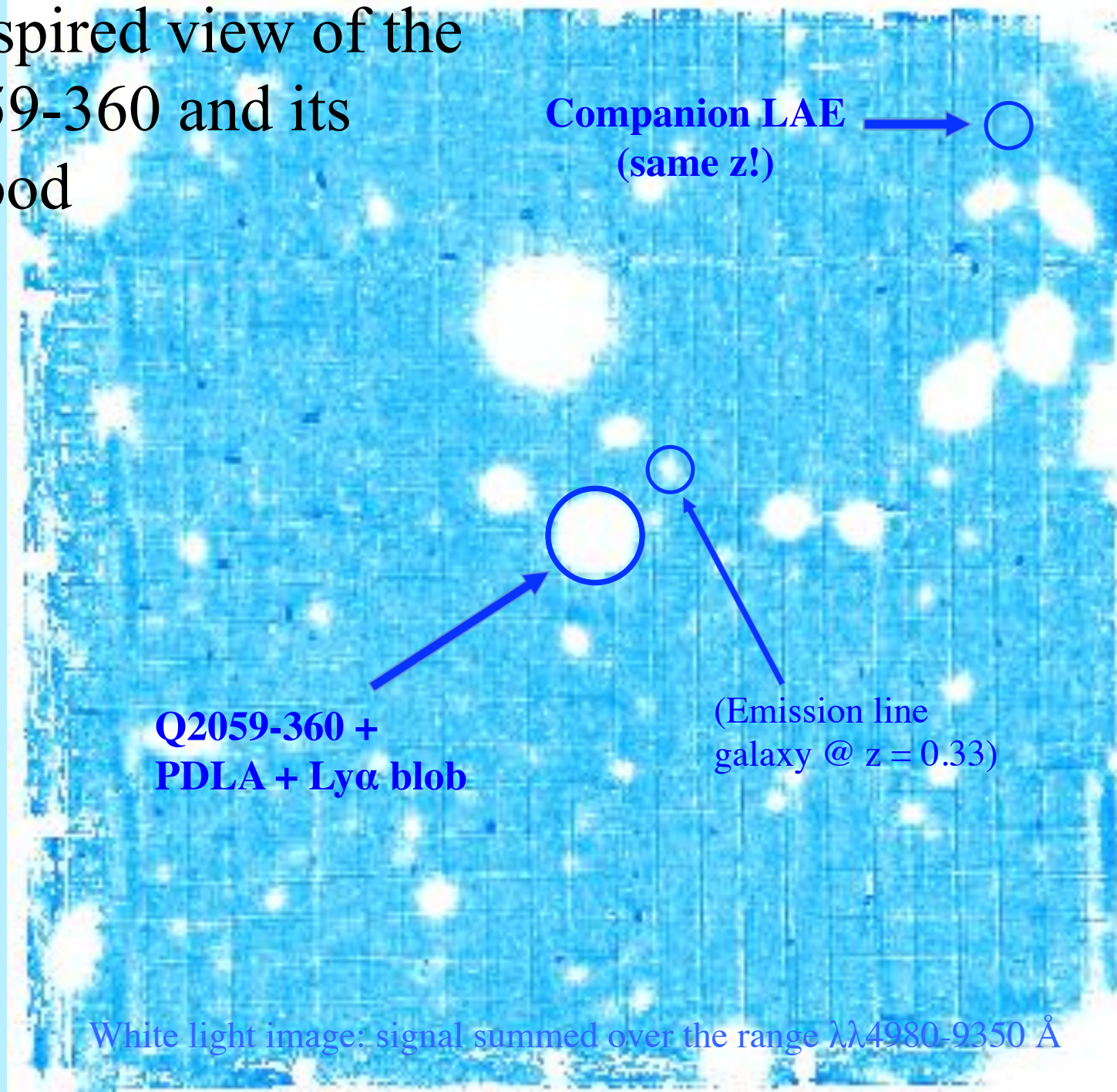


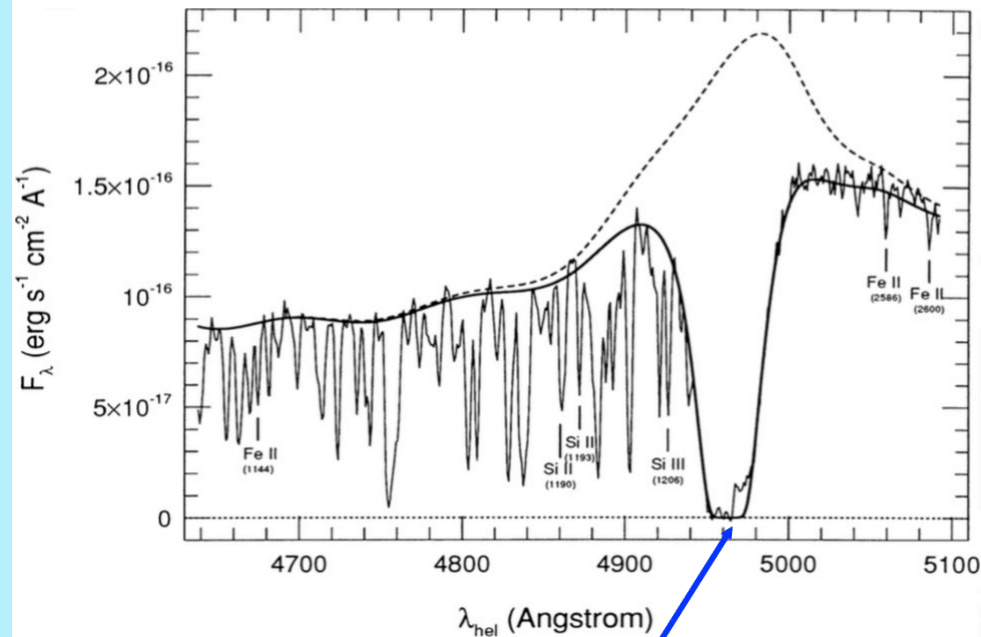
A MUSE-inspired view of the quasar Q2059-360 and its neighbourhood

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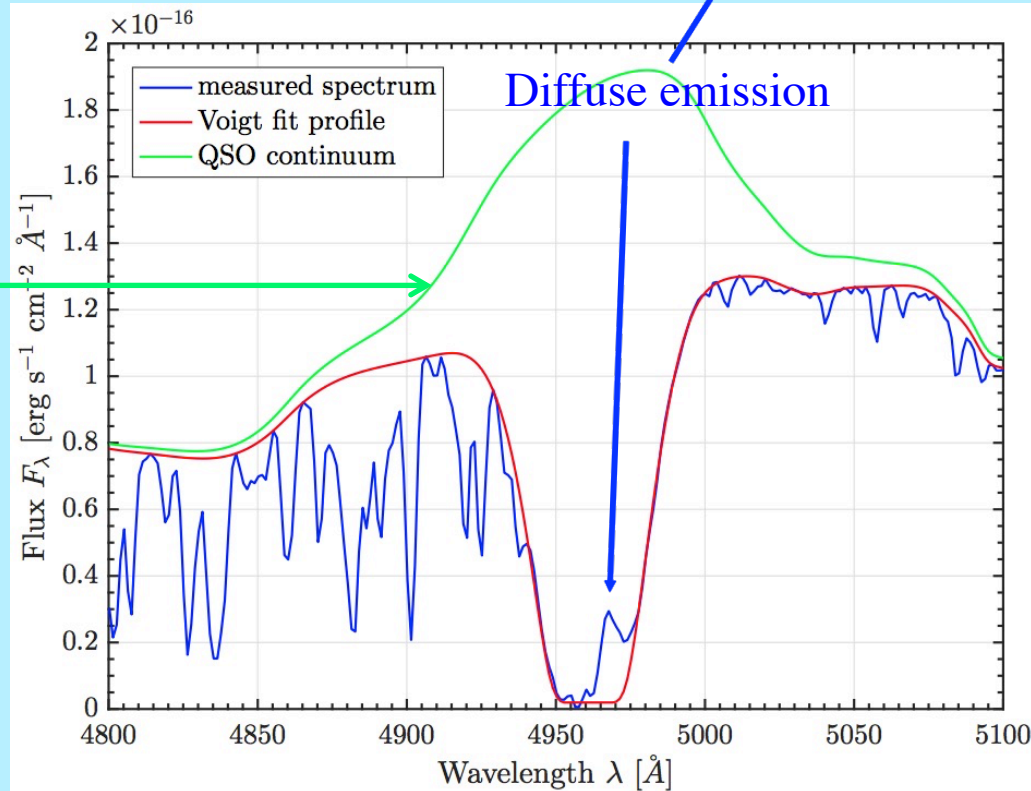
White light image: signal summed over the range $\lambda\lambda 4980-9350 \text{ \AA}$

Leibundgut & Robertson 1999 (LR99):
EMMI@NTT, $t_{\text{exp}}=5$ hours, slit width $1.2''$



MUSE@VLT, $t_{\text{exp}}=3\text{h}20\text{mn}$,
 $2.3 \times 2.8''$ area

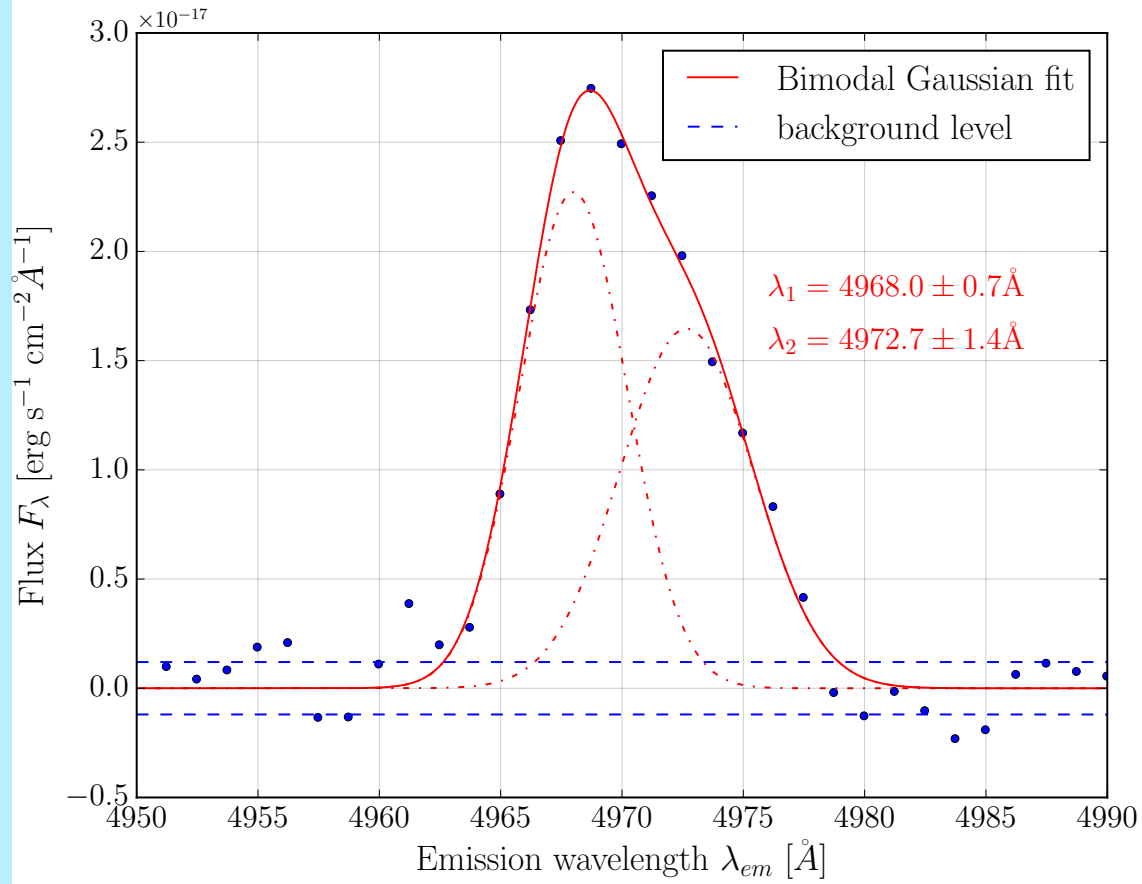
QSO « continuum » (actually broad Ly α line) reconstructed using the wings of the DLA line (method of LR99)



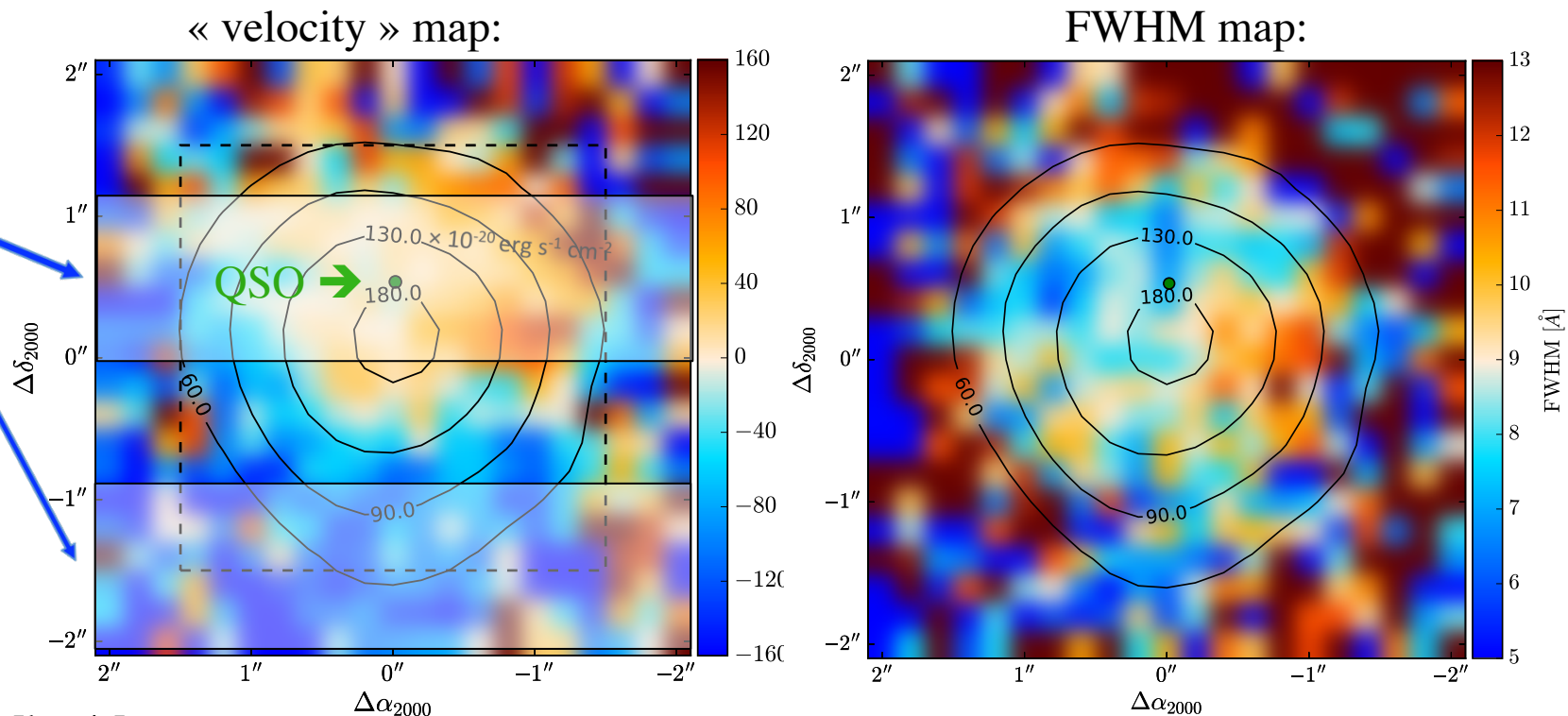
Some properties of Q2059-360, its LAB and the PDLA:

Object	z	logN(HI)	F(Ly α)[erg/s/cm ²]	L(Ly α) [erg/s]	ΔV [km/s]/ $\Delta\delta$ ["]
QSO	3.09	-	-	-	-
PDLA	3.0818(1)	20.863(5)	-	-	-
LAB(core)	3.0885(2)	-	$(2.4 \pm 0.4) \times 10^{-16}$	$(2.1 \pm 0.4) \times 10^{43}$	-60 ± 10 ($\sim$ LR99)
Comp. LAE	3.0884(4) (main comp.)	-	$(8.9 \pm 1.7) \times 10^{-17}$	$(7.7 \pm 1.5) \times 10^{43}$	-

Integrated
over a
whole
2.8'' $\times$ 2.3''
elliptical
area



2 LR99
slit
positions

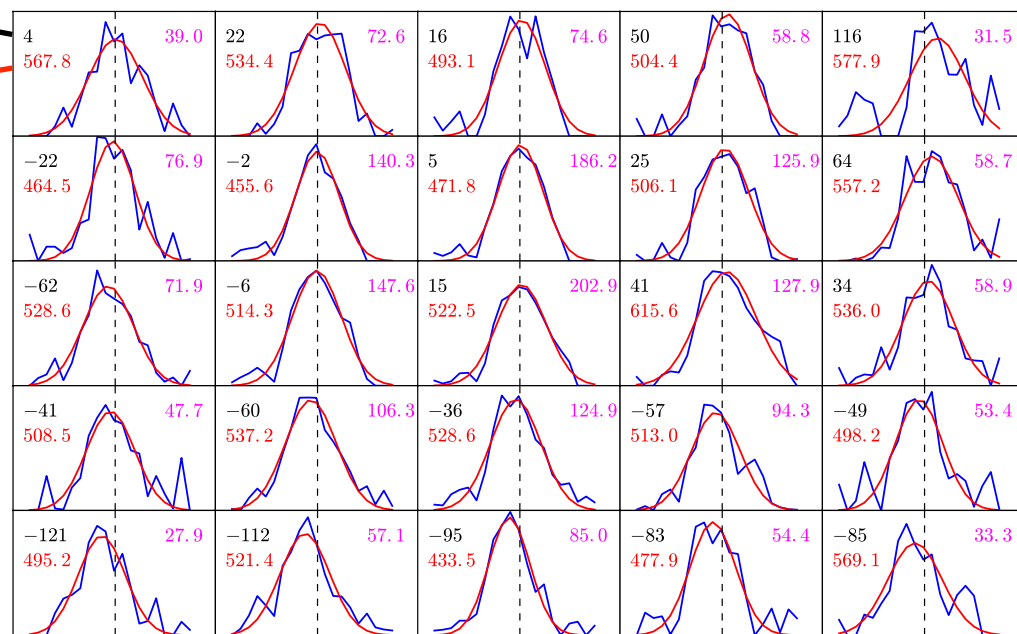


« velocity » [km/s]

FWHM [km/s]

Each panel refers to
a 3×3 spaxels area
($0.6'' \times 0.6''$)

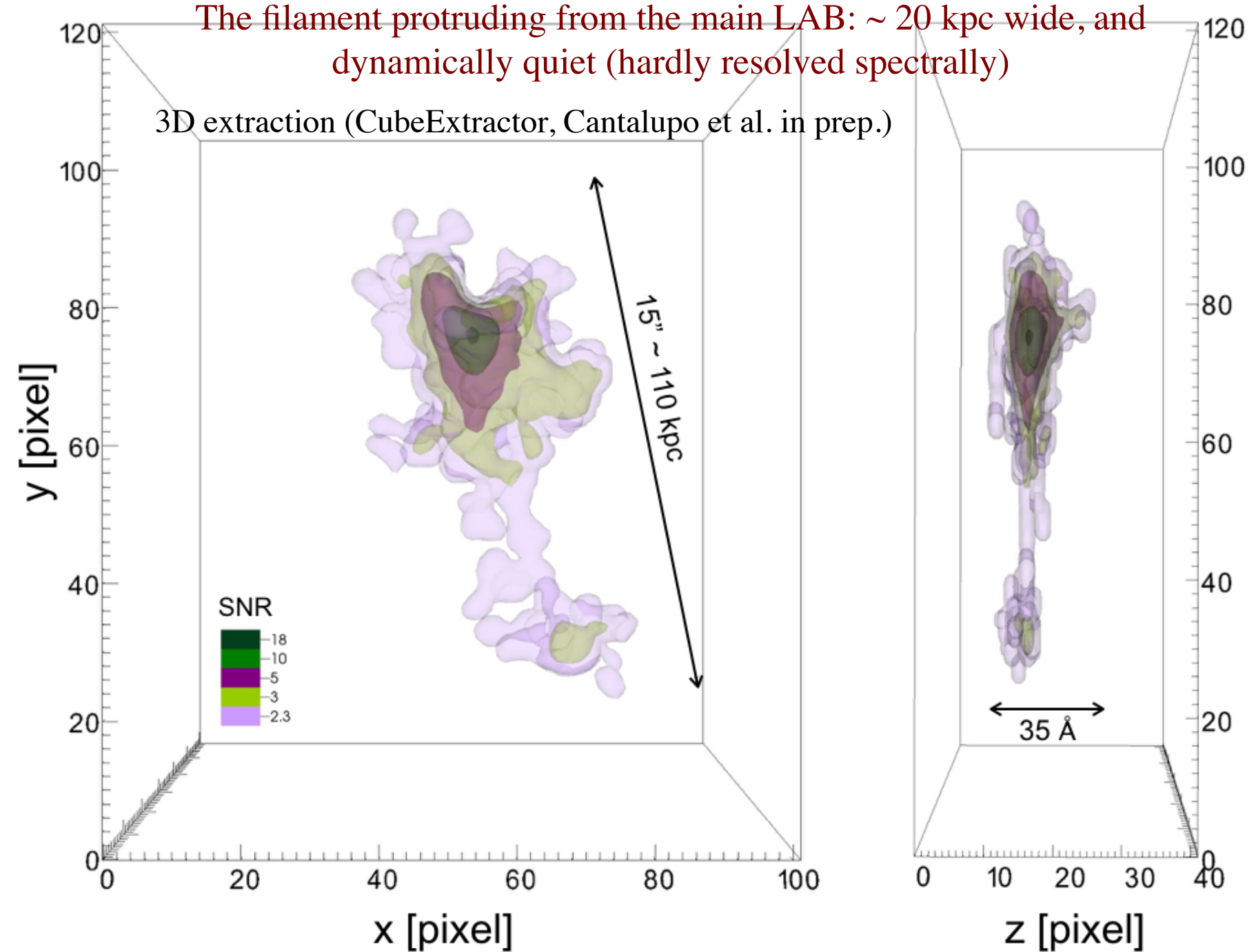
FWHM $\leq \sim 600$ km/s
=> no violent outflow
or turbulence



Amplitude
[$10^{-20} \text{ erg/s/cm}^2$]

The filament protruding from the main LAB: ~ 20 kpc wide, and dynamically quiet (hardly resolved spectrally)

3D extraction (CubeExtractor, Cantalupo et al. in prep.)

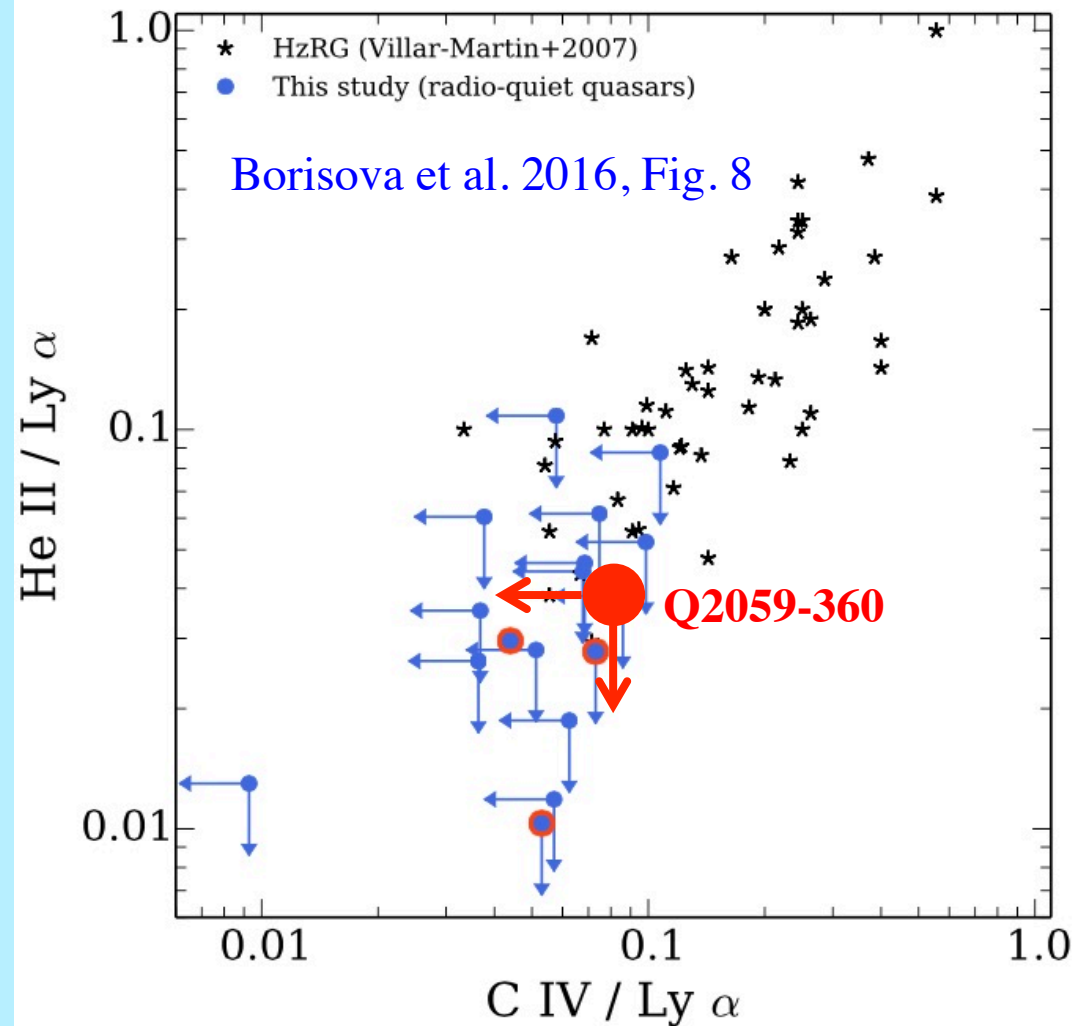


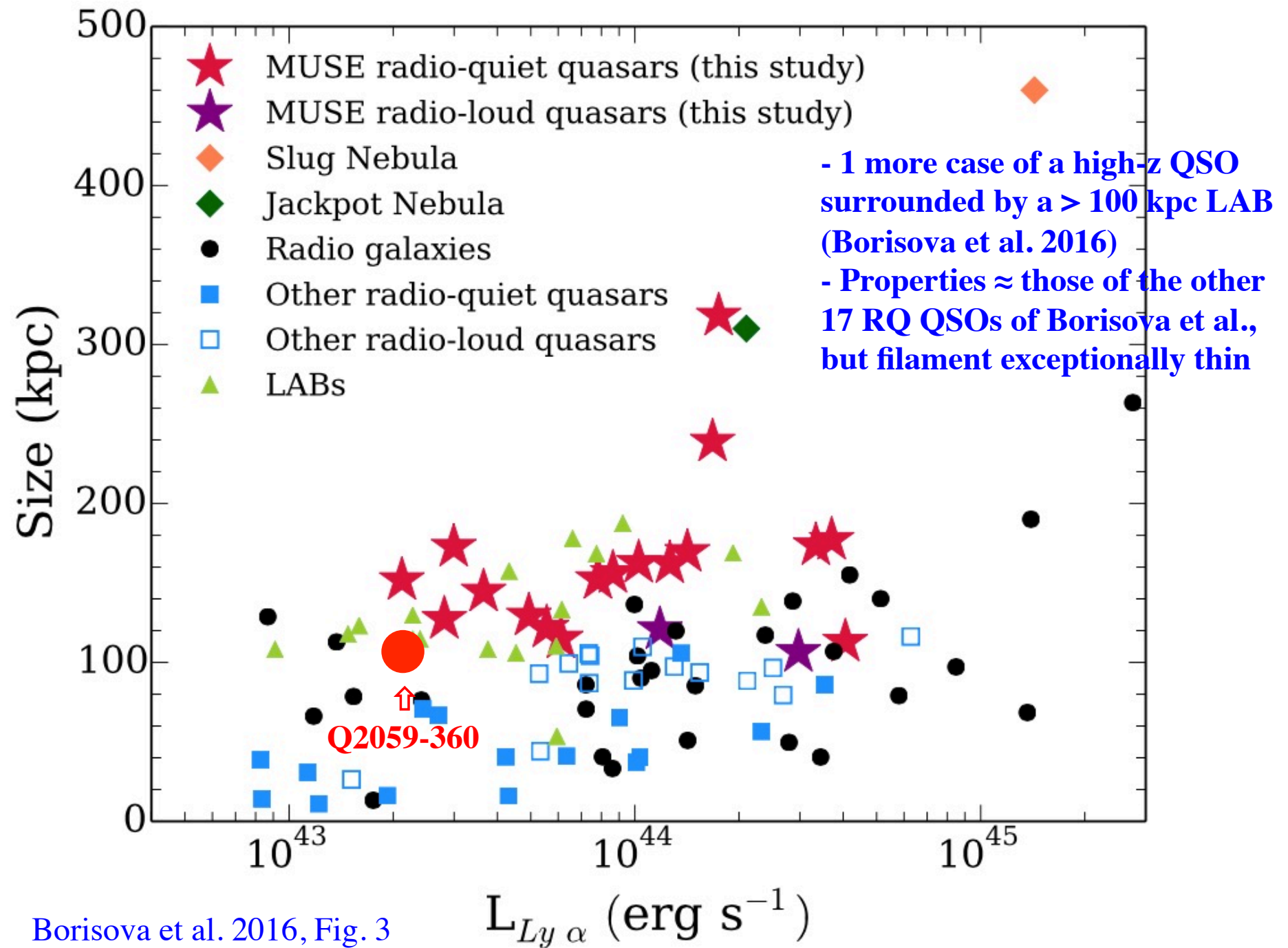
Upper limits on the N V, C IV, He II and C III] lines:

Line, wavelength (vac.)	Flux [$\text{erg s}^{-1}\text{cm}^{-2}\text{arcsec}^{-2}$]	Flux(Line)/Flux(Ly α)
N V 1238.8-1242.8	$< 2.3 \times 10^{-18}$	< 0.08
C IV 1548.2-1550.8	$< 2.3 \times 10^{-18}$	< 0.08
He II 1640.4	$< 1.2 \times 10^{-18}$	< 0.04
C III] 1908.7	$< 3.5 \times 10^{-18}$	< 0.12

Limits on the average surface brightness measured in a disk with $r = 4$ pixels, i.e. on a surface of $\sim 2 \text{ arcsec}^2$, with the disk centre $1''$ south of the QSO, and assuming a 500 km/s FWHM (visual estimate).

The LAB surrounding Q2050-360 clearly differs from most HzRGs, while it appears similar to the 17 other RQ quasars examined by Borisova et al. 2016.

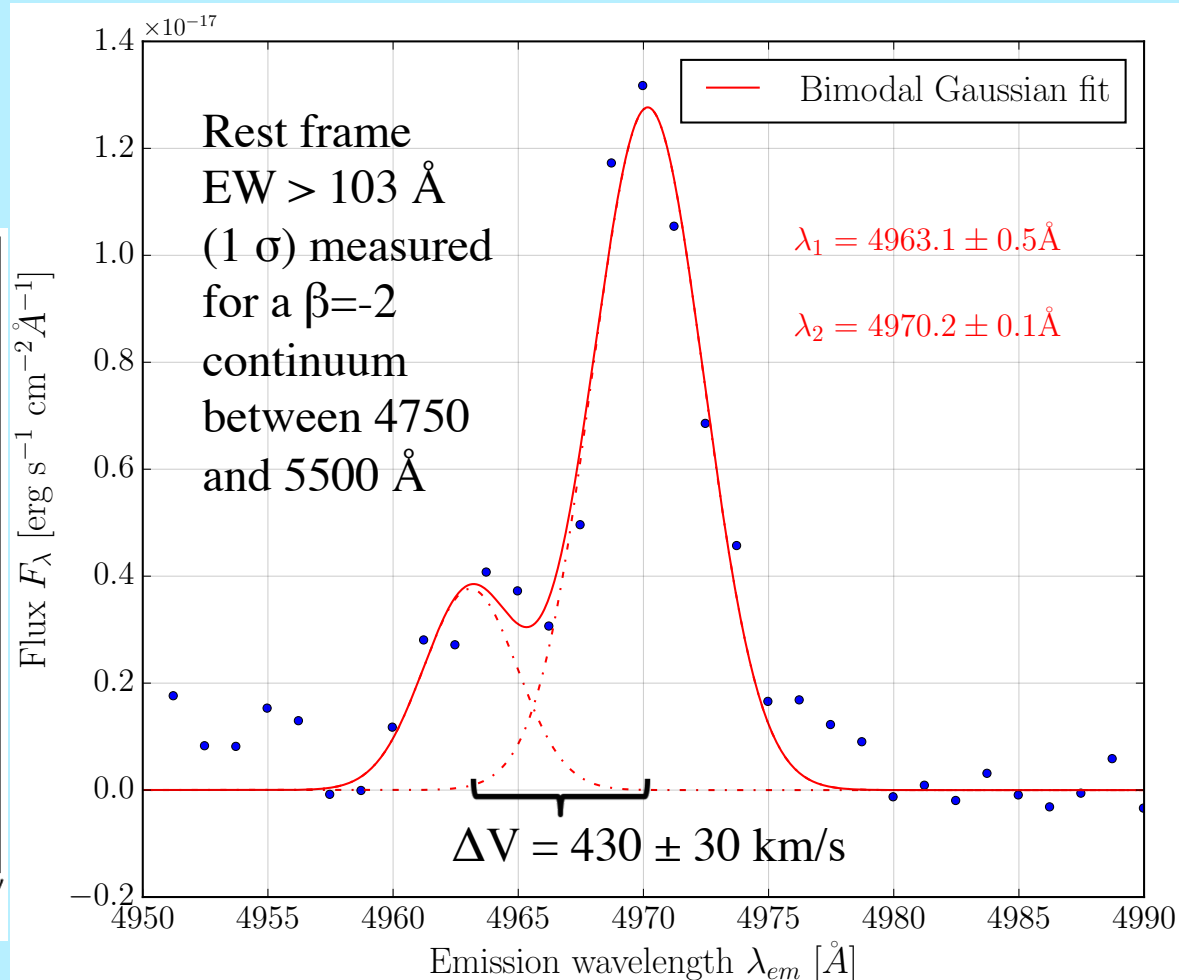
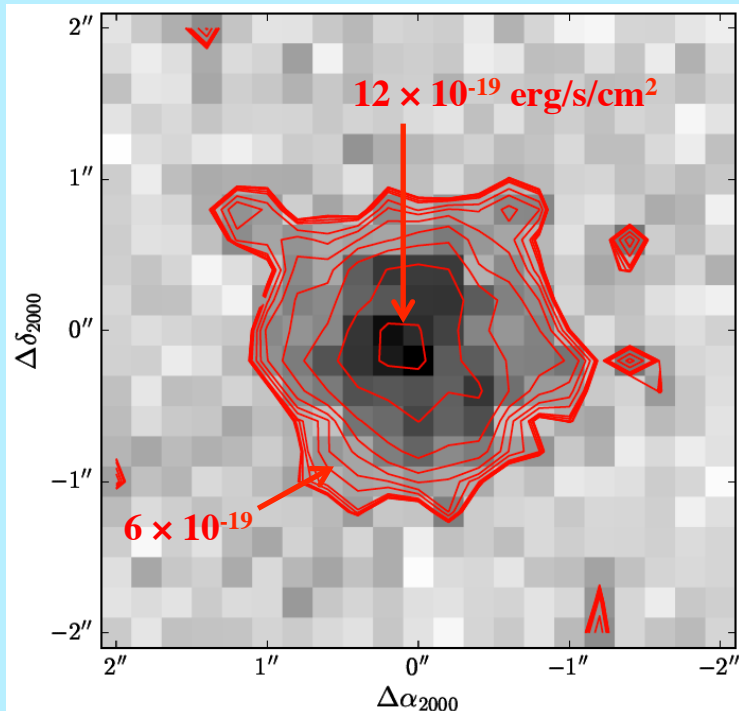




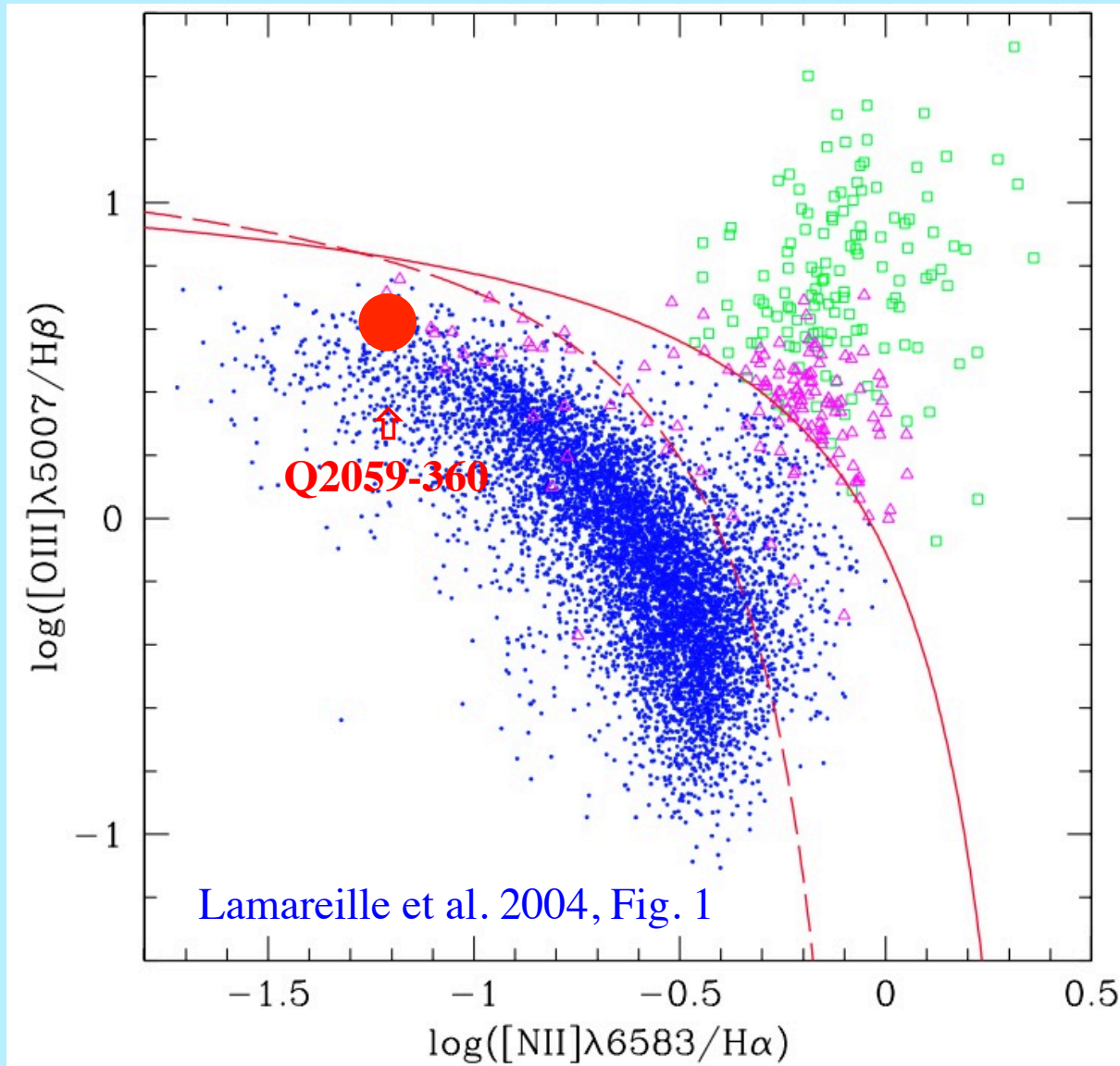
The companion LAE at 34'' (265 kpc) to the NW:

z	F(Ly α) [erg/s/cm ²]	L(Ly α) [erg/s]	FWHM[km/s]
3.0826 $\pm$ 0.0004 (blue comp.)	(8.9 $\pm$ 1.7) $\times 10^{-17}$	(7.7 $\pm$ 1.5) $\times 10^{43}$	267 $\pm$ 68
3.0884 $\pm$ 0.0001 (red comp.)			317 $\pm$ 23

This object presumably shines in Ly α ; it is hardly resolved (seeing $\sim 1.1''$):



The emission line galaxy at $\alpha_{2000}=21:02:44.316$, $\delta_{2000}=-35:53:02.55$:
a starburst galaxy



- Blue dots: star forming galaxies
- green squares: AGNs
- Magenta triangles: galaxies with discrepant classification (OIII5007/H β vs SII6717+6731/H α diag.)