



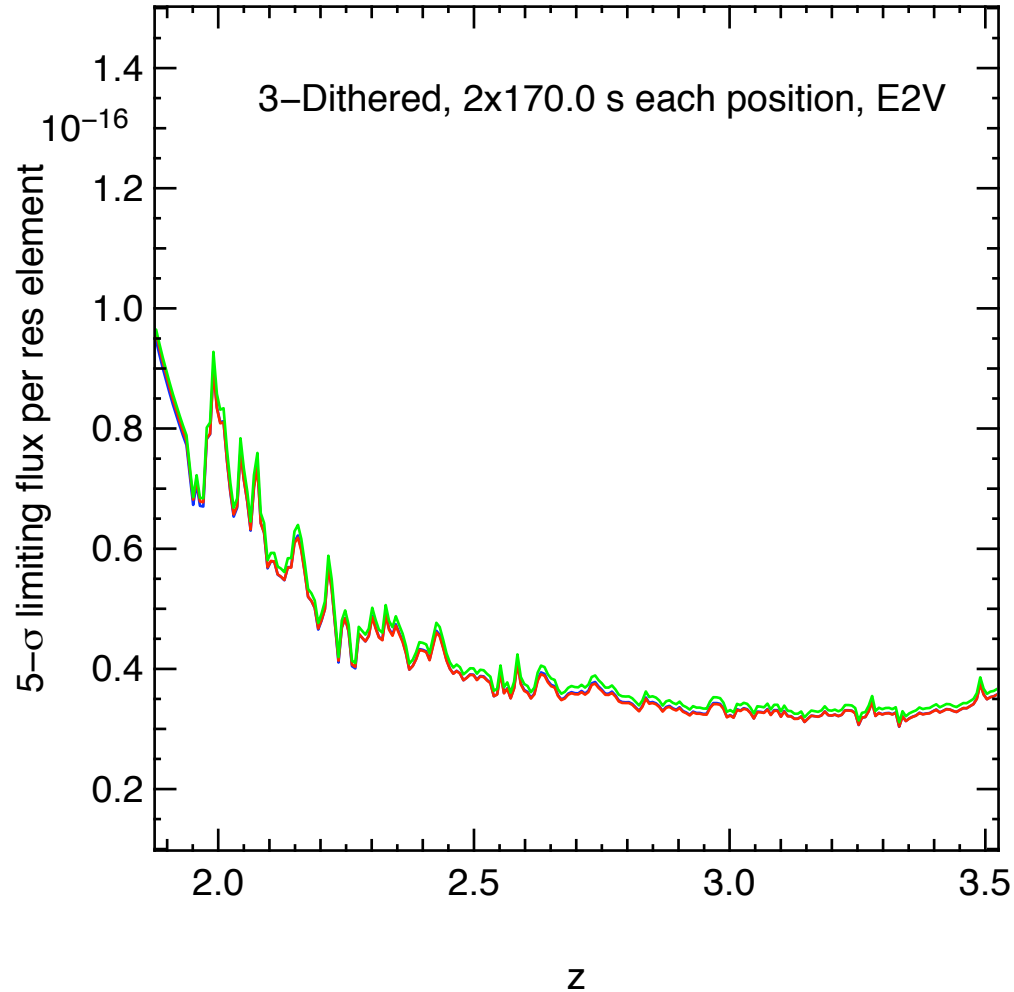
# Extragalactic Content of the HETDEX Survey: An Overview

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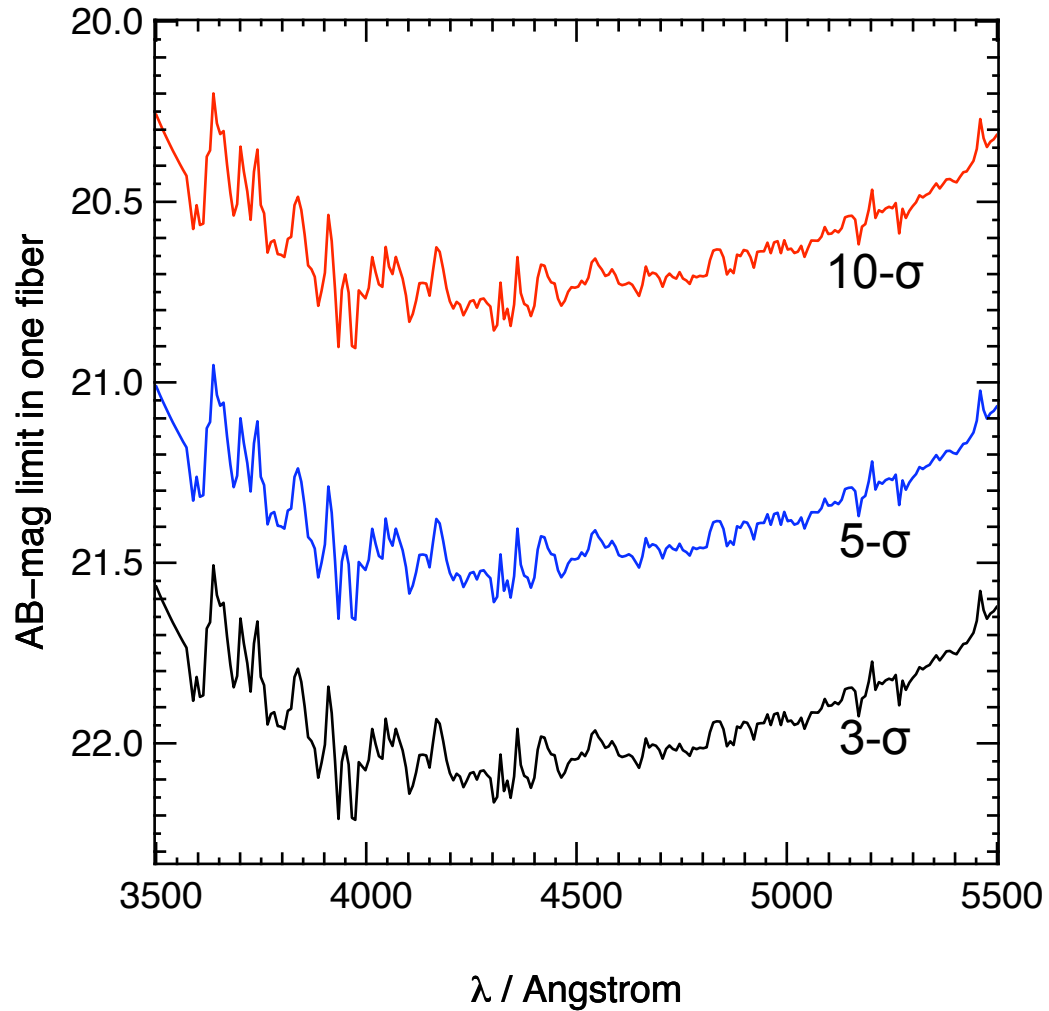
MPE



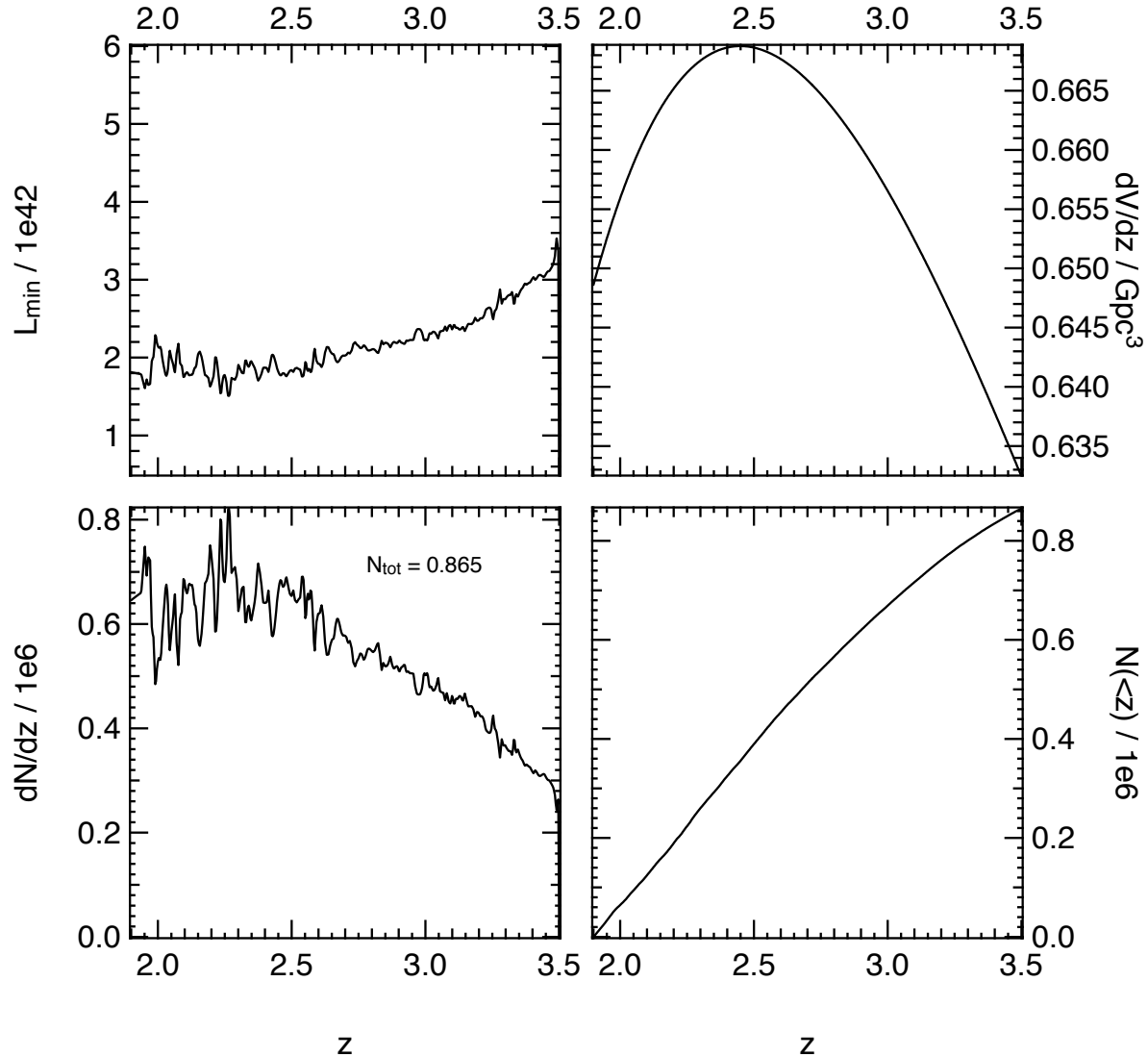
# Line Flux Limit



# Continuum Limits

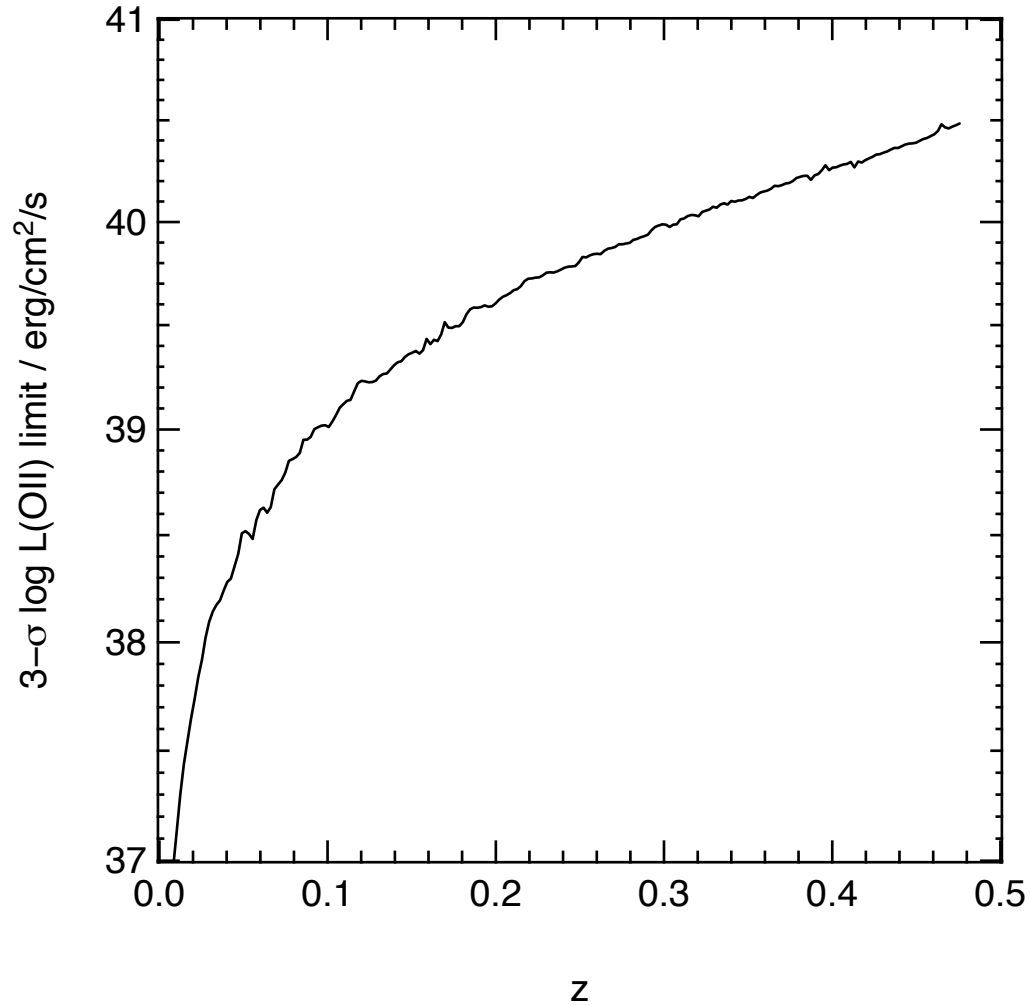


# LAE Sensitivity



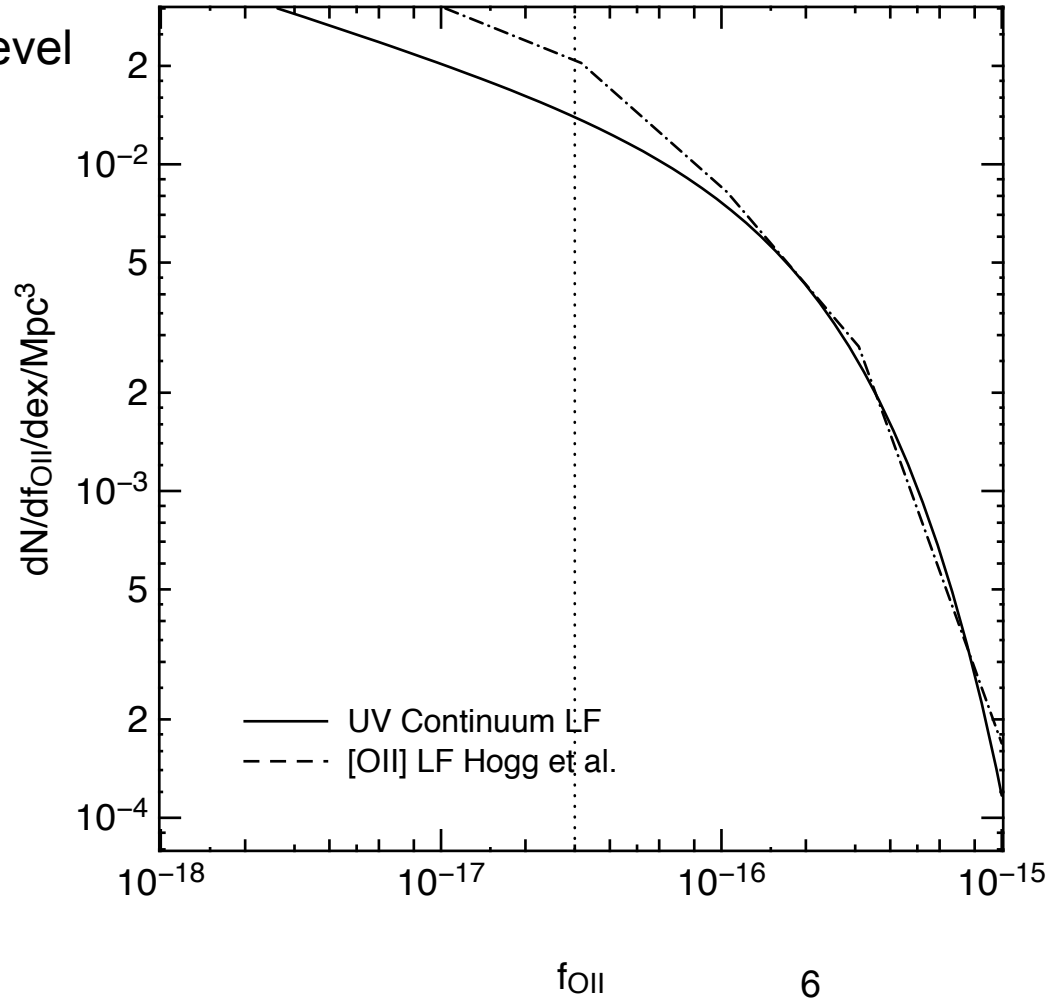


# [OII] Sensitivity



# [OII] Luminosity Function

3.9 [OII] emitters/arcmin<sup>2</sup>  
down to 25.1 AB-mag continuum level



$f_{OII}$

6



# HETDEX Field

## HETDEX Field

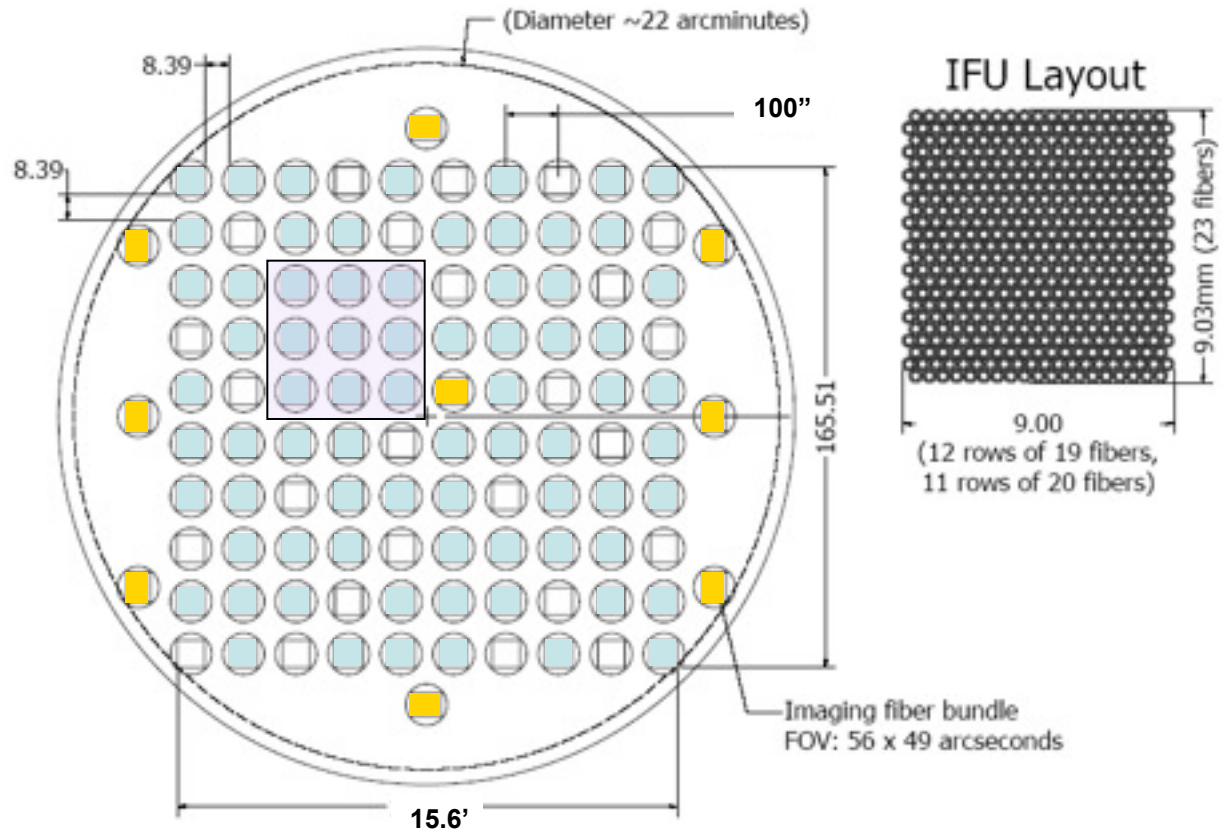
- Center RA 12 48 00 DEC +58 00 00
- RA =  $147^\circ - 237^\circ$  @ DEC= $63^\circ$
- RA =  $156^\circ - 226^\circ$  @ DEC= $53^\circ$ )
  
- 4894 Possible pointings

## Randomized pointings with the following constraints:

- No star brighter than  $g=8$  in the field
- Stars with  $10 < g < 8$  can be in the field, but not in an IFU
- No galaxy brighter than  $g=10$  in the field
- At least one guide star ( $g < 17$ )
- At least one wavefront sensing star ( $g < 17$ )
- Sufficient number ( $\geq 3$ ) of (blue) stars in IFUs for calibration verification

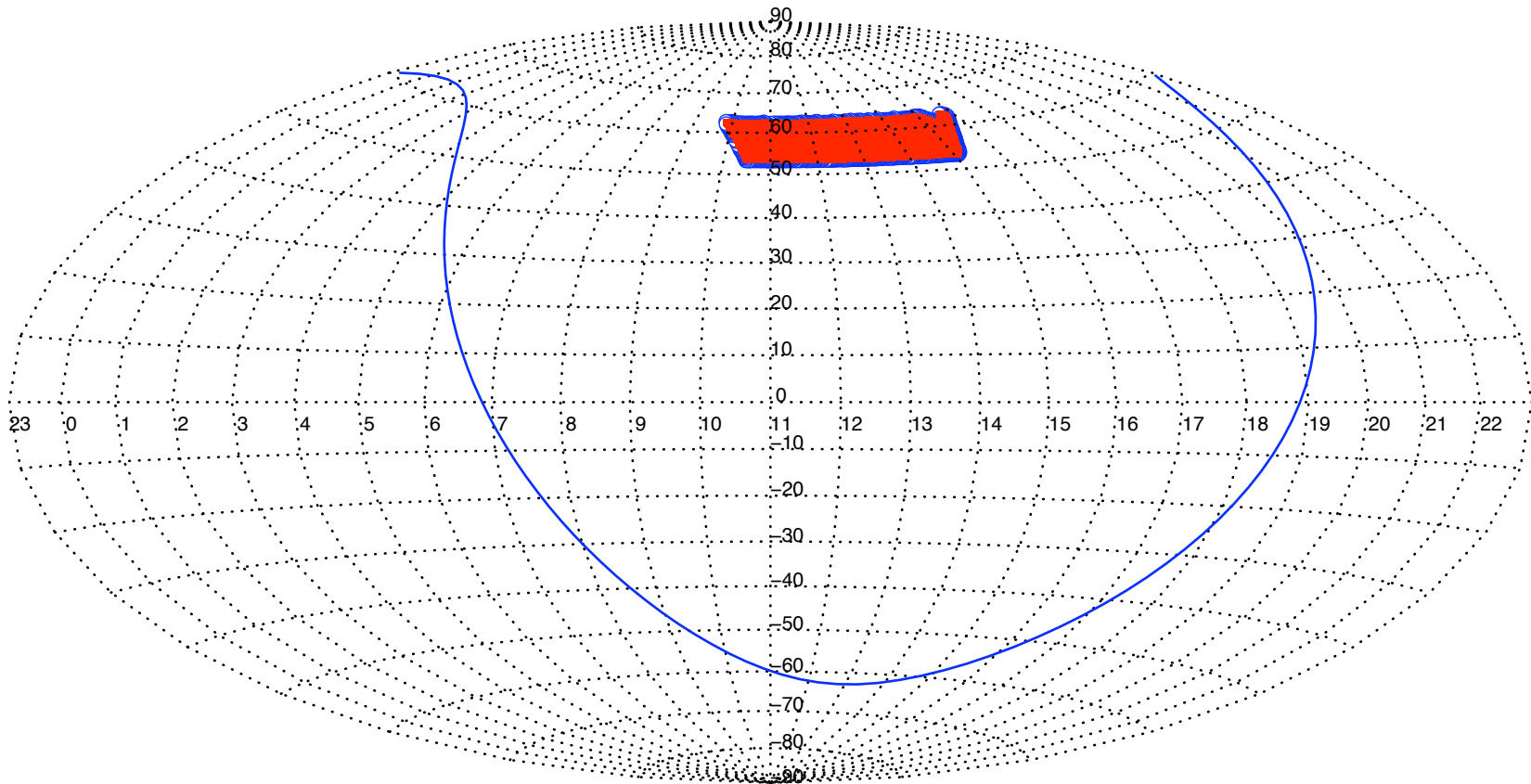
# IFU layout on sky

- HETDEX Layout
- 75 IFUs random layout
- 150 spectrographs
- Contiguous 9 IFU block can allow full coverage of 17.4 sq. arcmin area

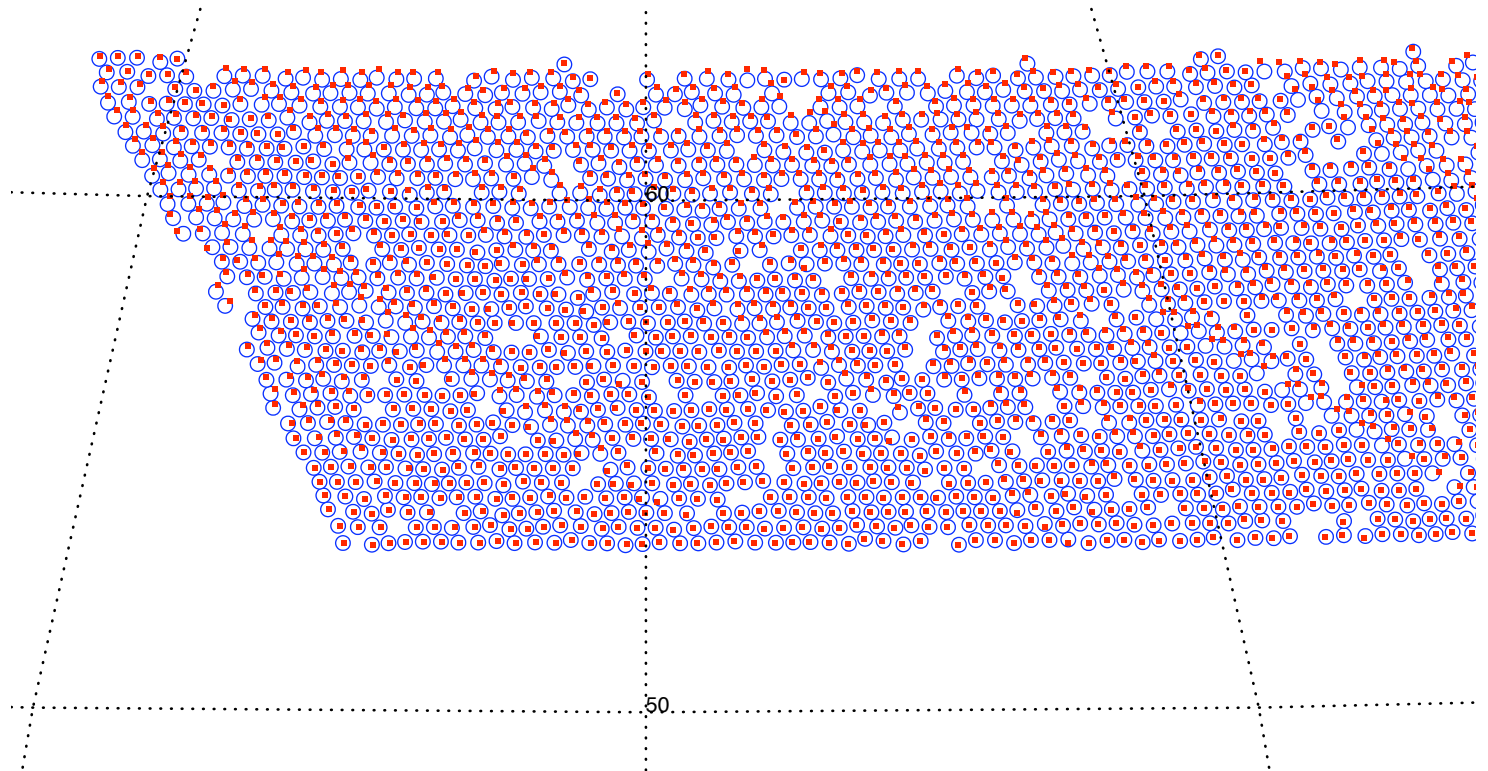




# HETDEX Footprint



# HETDEX Footprint



# HETDEX $\cap$ SDSS

## HETDEX objects in SDSS:

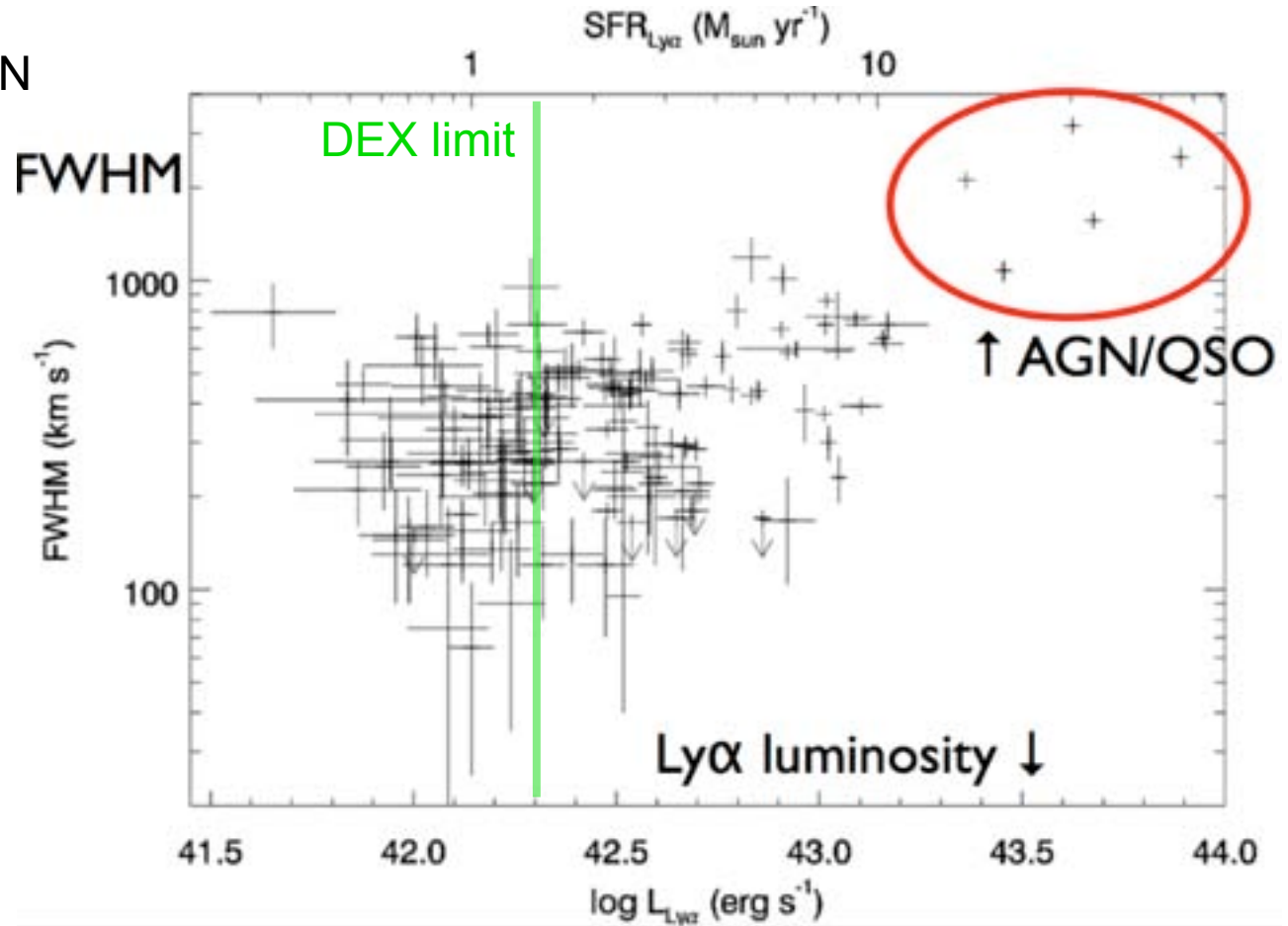
227458	stars $g < 22$ in field
3961	stars with SDSS spectrum in field
262873	galaxies $g < 22$ in field
22174	galaxies with SDSS spectrum in field

44714	stars with $g < 22$ in IFUs (S/N $\approx 3$ )
50579	galaxies with $g < 22$ in IFUs (S/N $\approx 3$ )
789	stars with SDSS spectrum in IFUs
4204	galaxies with SDSS spectrum in IFUs

# AGN Fraction of LAEs

~1% of LAEs show AGN  
in MUSYC

~5% in spectroscopic  
sample of  
Venemans et al. (VLT  
large program)



Venemans et al. @ VLT z~3

## **HETDEX AGN Content:**

60	$z > 2$ SDSS Quasars
2500	$z > 2, g < 23$ Quasars
10000	AGN among HETDEX LAEs (based on MUSYC estimates, ~1%)
50000	AGN among HETDEX LAEs (based on Venemans et al., ~5%)