# ALBA:
# Detecting the first sources that illuminated the Universe

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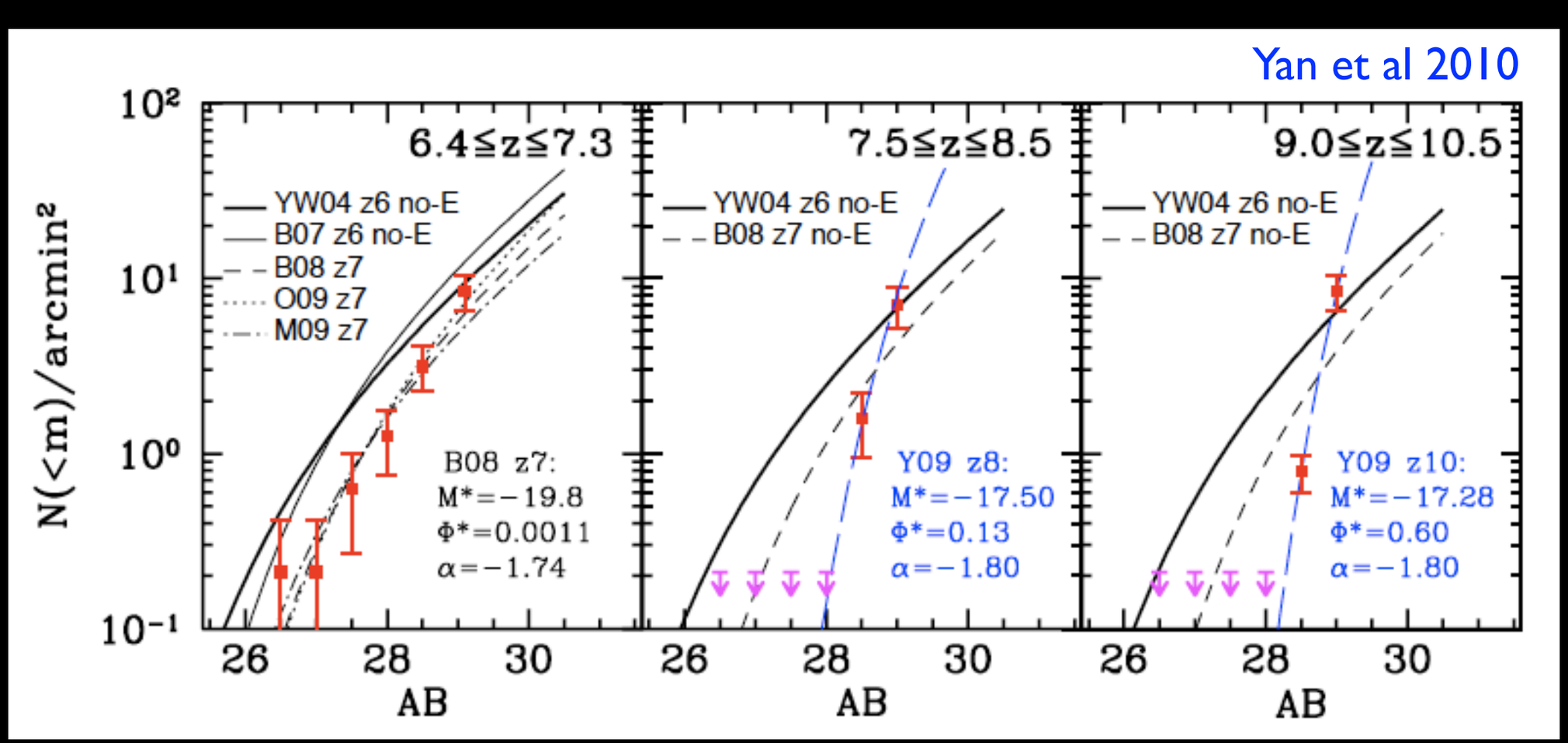
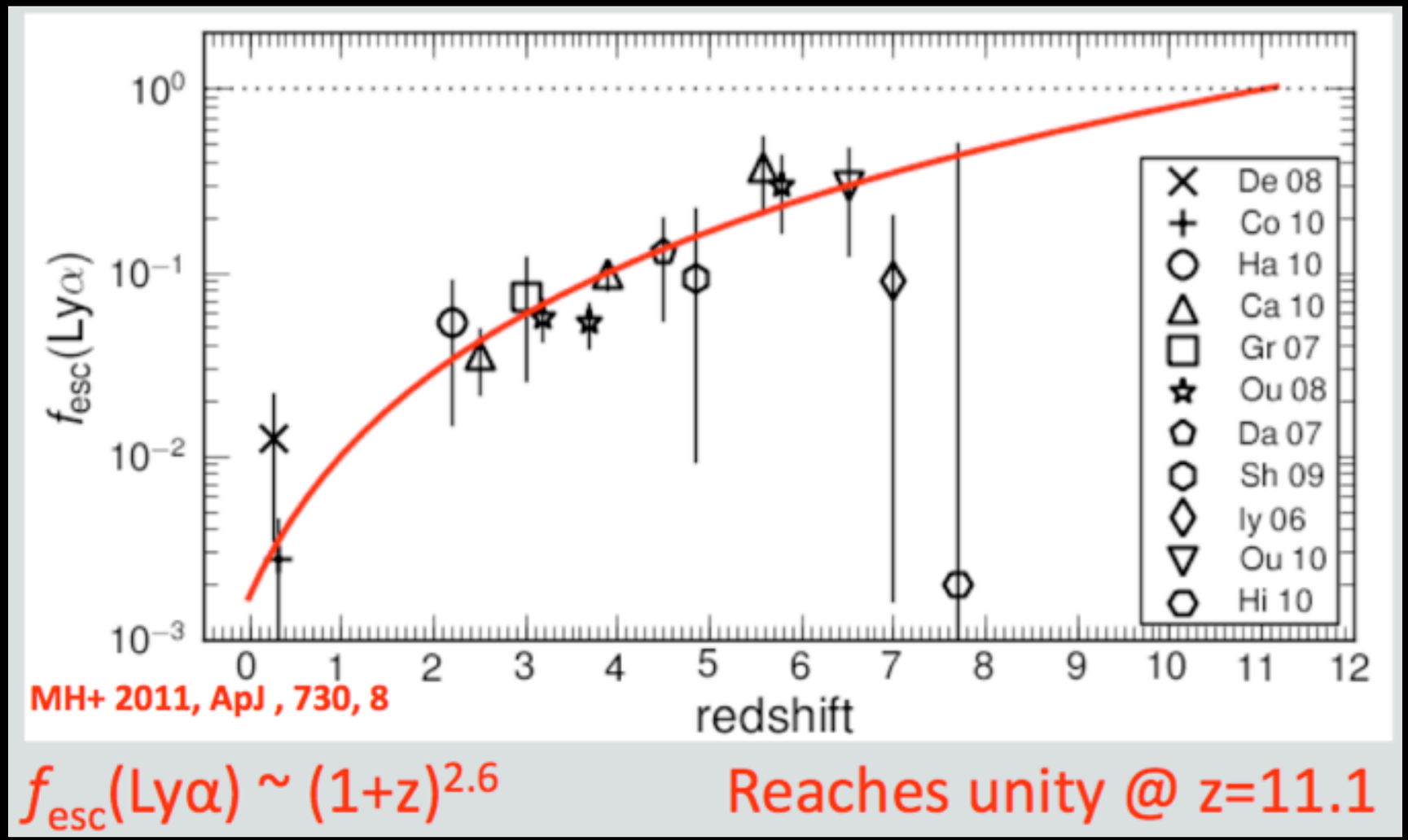
# Where are the faint sources accounting for the missing ionising photons?

- LFs computed with just a few sources
- LFs steepen with z (again with small number counts)
- Large numbers of low luminosity sources are missing!

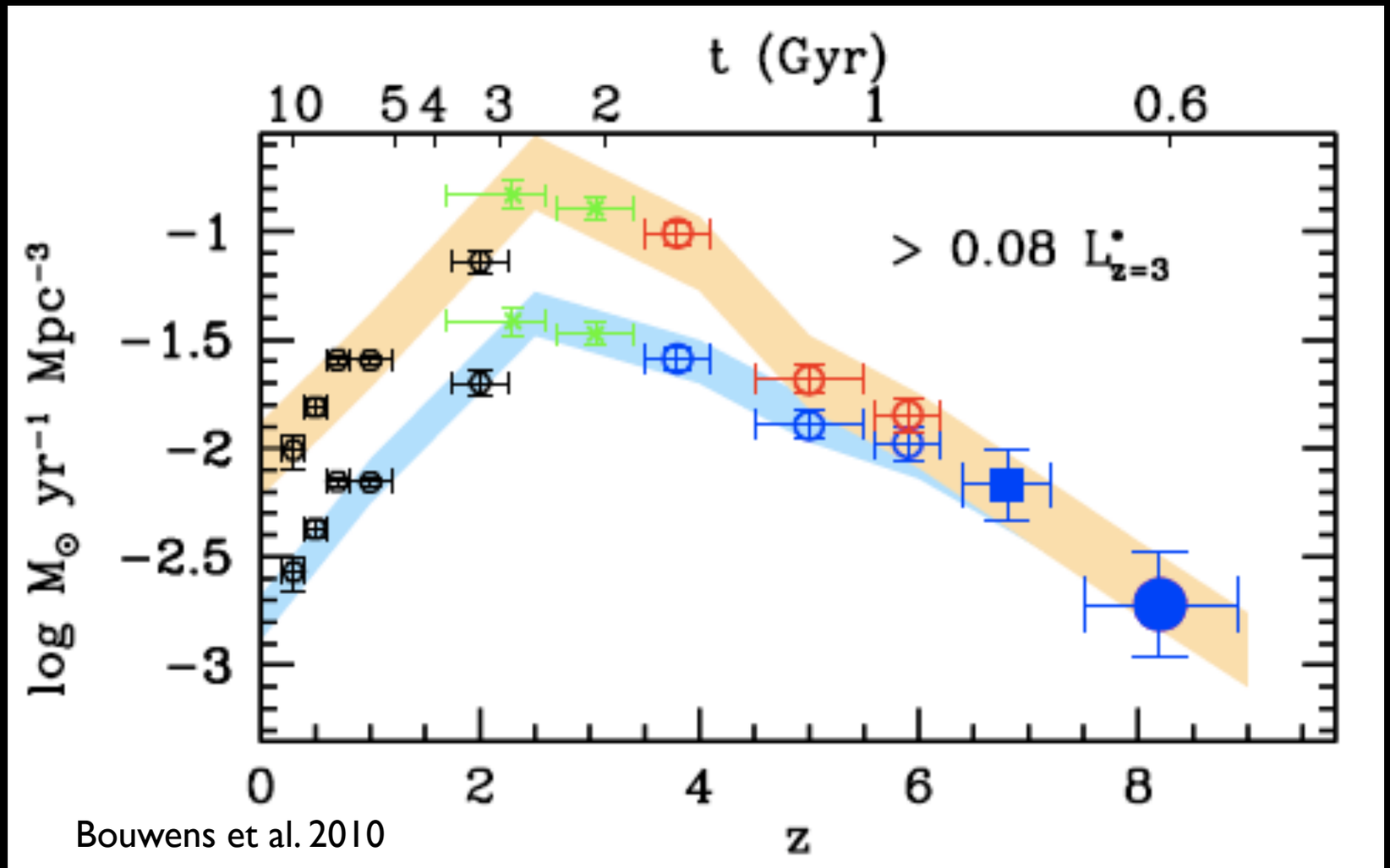


# Evolution of the extinction law




- $Ly_\alpha$ escape fraction as a function of z
- Explained as evolution of the dust content in the Universe
- Beyond z~6.5 the law breaks down

# Setting the stage



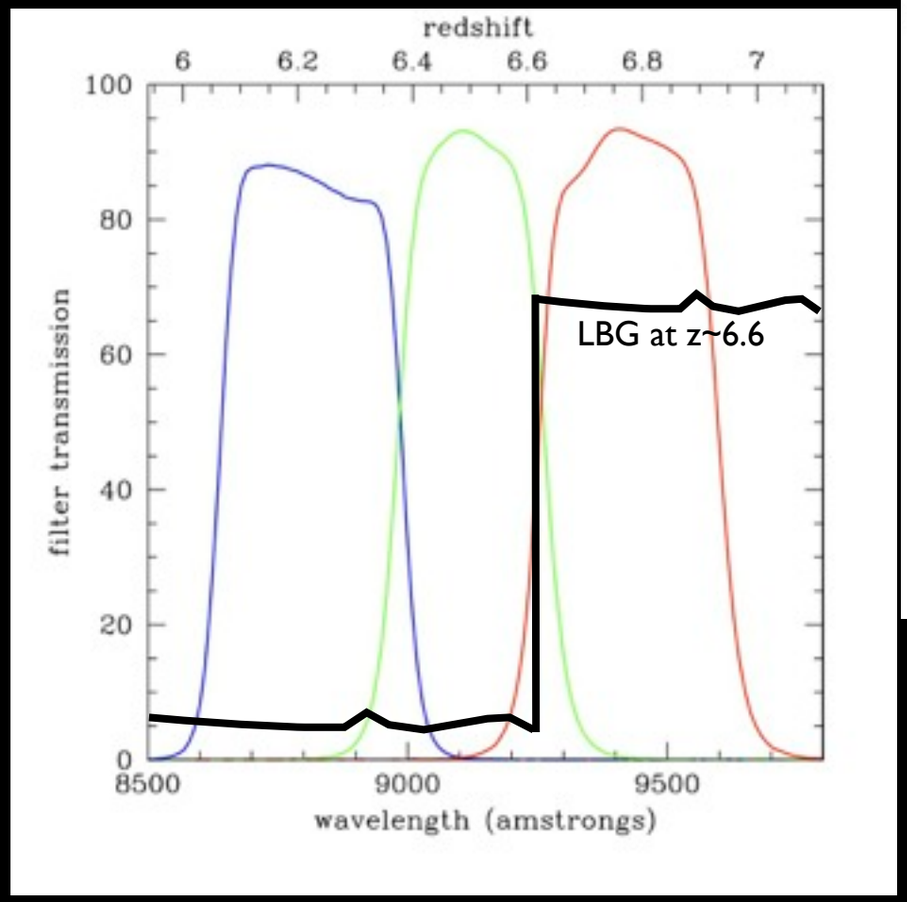

Bouwens et al. 2010

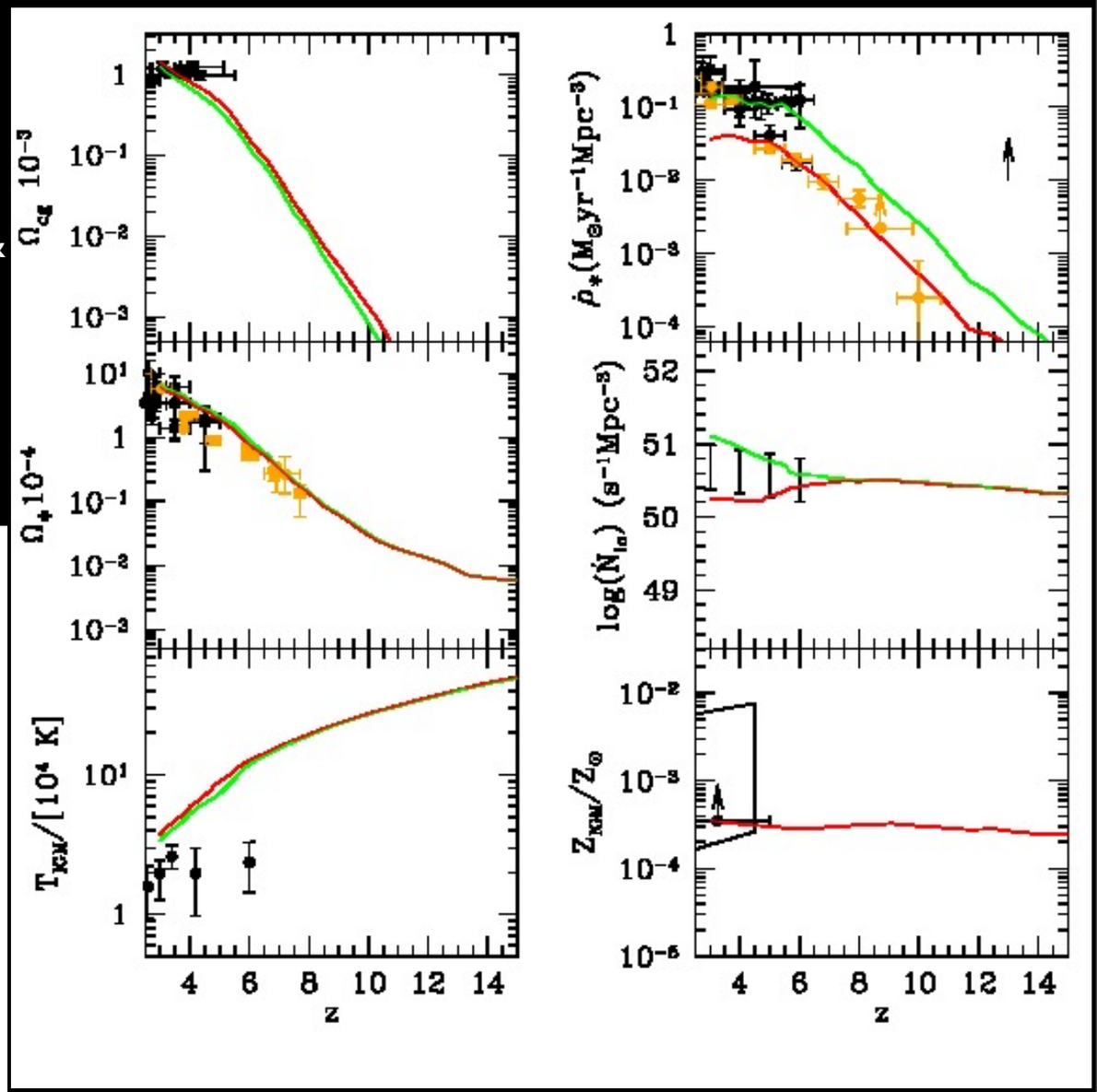
# Meanwhile

- There are tests we can do:
  - Determination of the ionising photon density at z=6.5
  - We have applied for ESO/GTC time (without success) & GTC time (successful!)
  - Using three SHARDS filters, one on the Ly$\alpha$ wavelength, one on the blue side, plus one third on the red side

Actually using:

- FW883W17
- FW913W17
- FW941W35



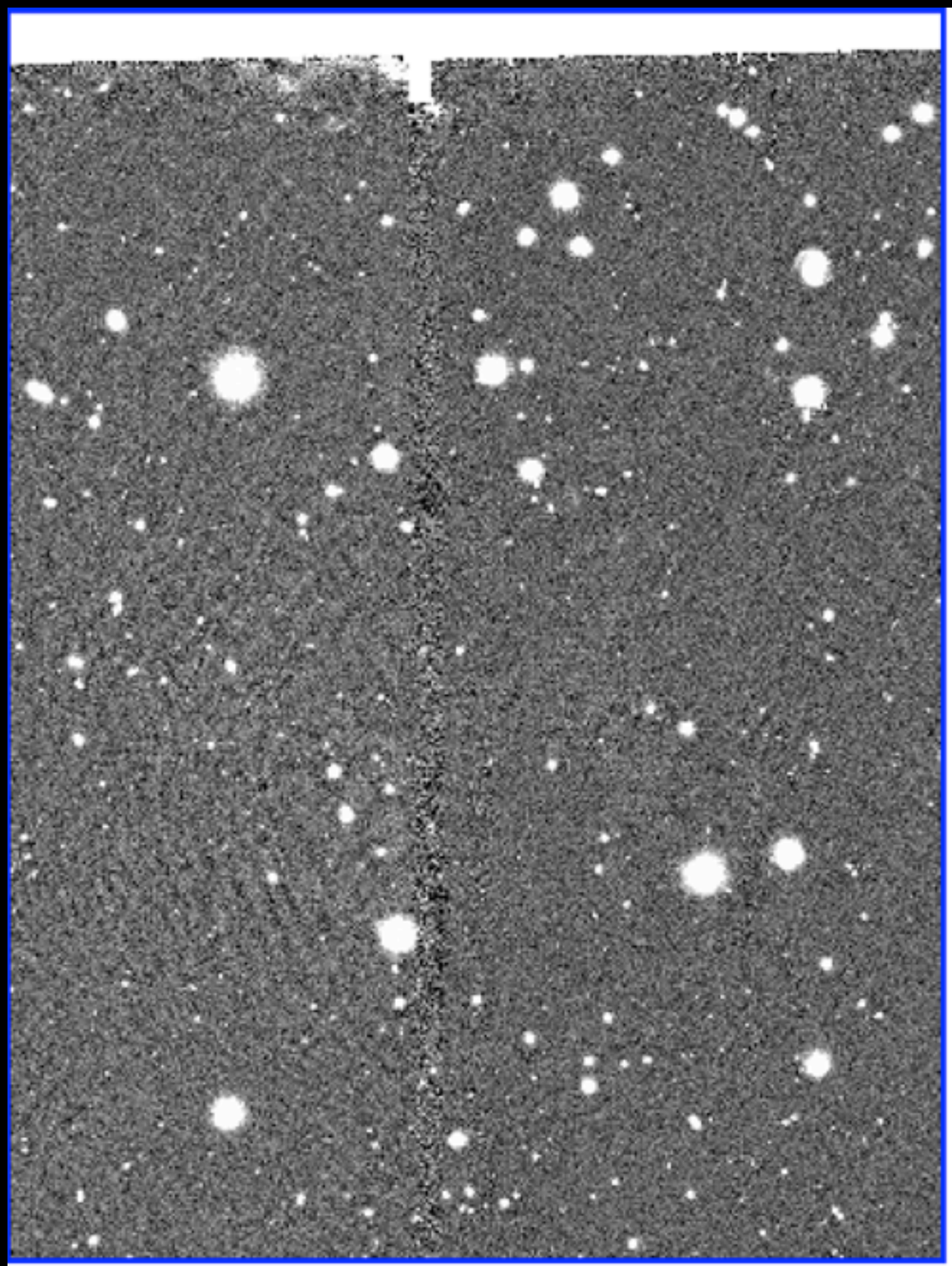



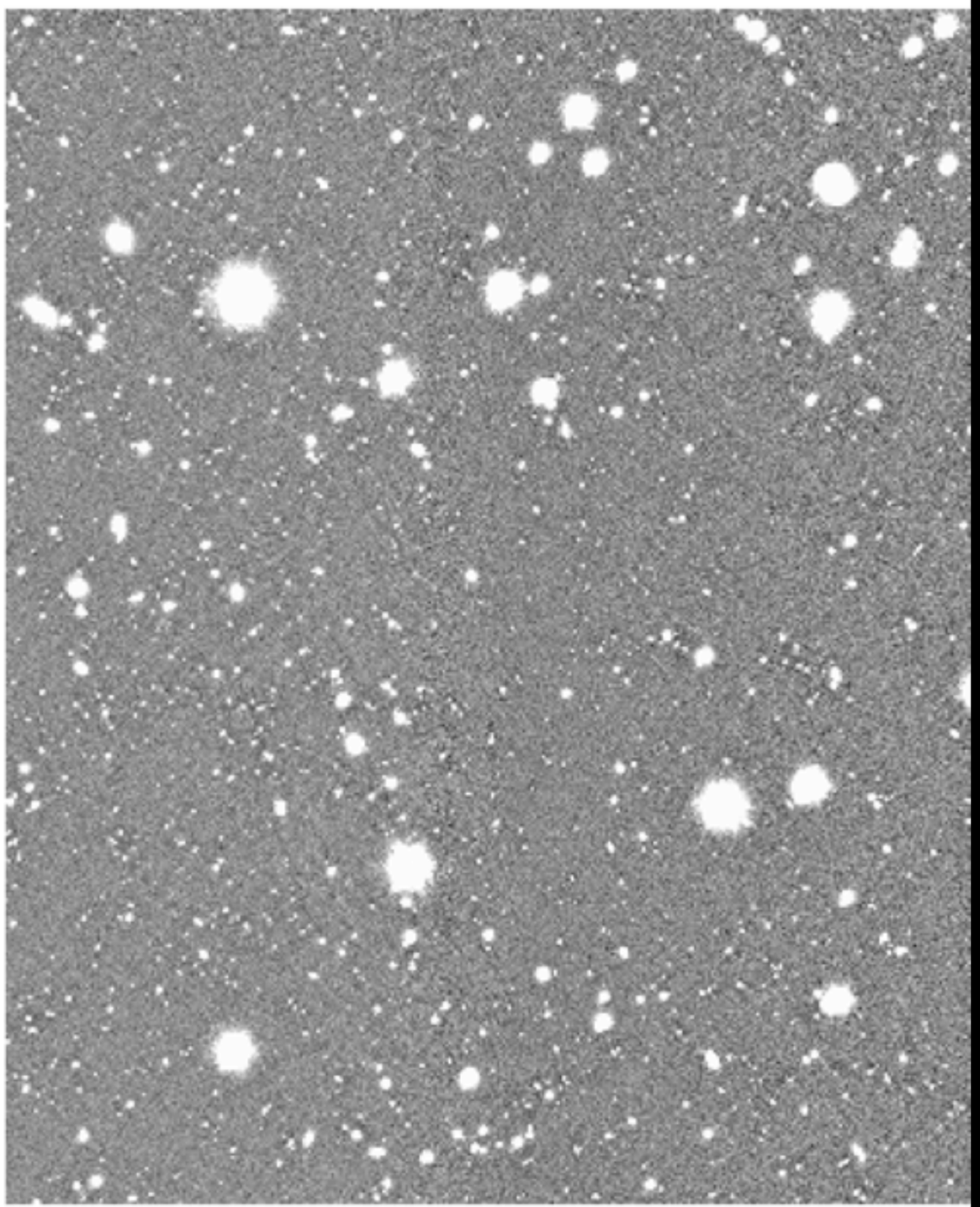
# Observations

- Got GTC time through various channels
  - JMRE: 22 hours
    - Devoted mostly to F883W17, plus completing F941W35 and F913W17
  - Spain-Florida: 16 hours in two semesters
    - Devoted to F941W35
  - Spain-Mexico: 8 hours
    - Devoted to F913W17

F941W35

F913W17





# Summary

A very challenging project awaiting for an IR imager at GTC

Using SHARDS filters “while we wait” to test our models

Data in hands, however fringing is jeopardizing our sensitivity