Previous papers on z=6-10 sources in Abell2744 FF:

*Zitrin+14 and Zheng+ 14: detection on full IR mosaic (=Y+J+JH+H), 1.5sigma over a minimum of 4 pixels

*Oesch+14: detection on Chi^2 JH+H mosaic

*Atek+ 14/15: detection on full IR mosaic.

*McLeod+ 15: detection on all single band WFC3 images and on different IR stacks

*Ishigaki+ 15: detection on J+JH+H and on JH+H mosaics.

A total of 76 objects (many objects appear in more than one paper).

We checked against our catalogue with latest photozs.

H-detected (our HOT+COLD) cat.:

Our COLD mode is the “HOT CANDELS” mode: 2.2 sigma detection over 10 pixel minarea

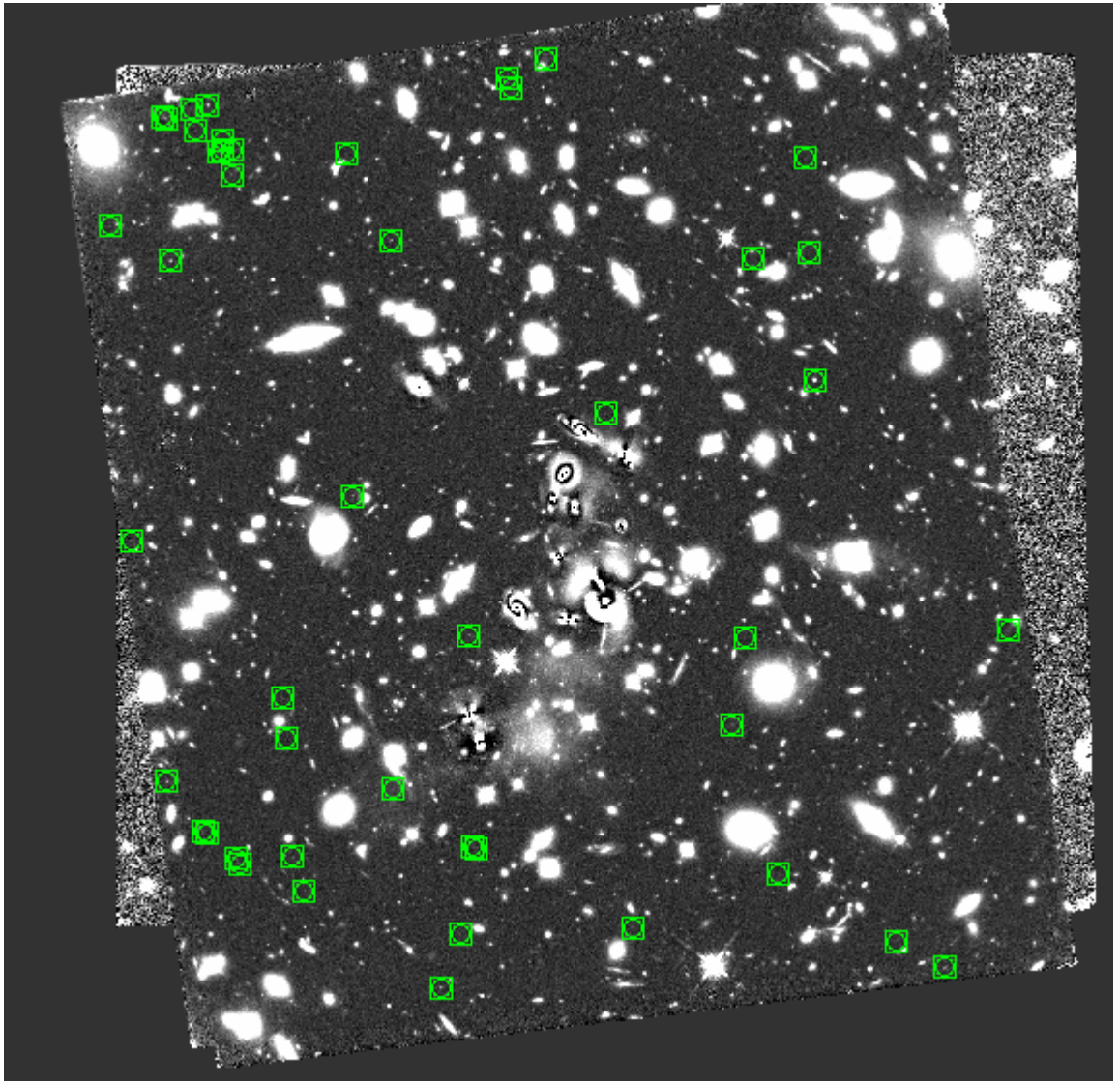
Our HOT mode is a “very HOT” version of the “HOT CANDELS” mode: 2.0 sigma detection over 6 pix minarea with more aggressive background mesh (32 pixels)

2596 sources

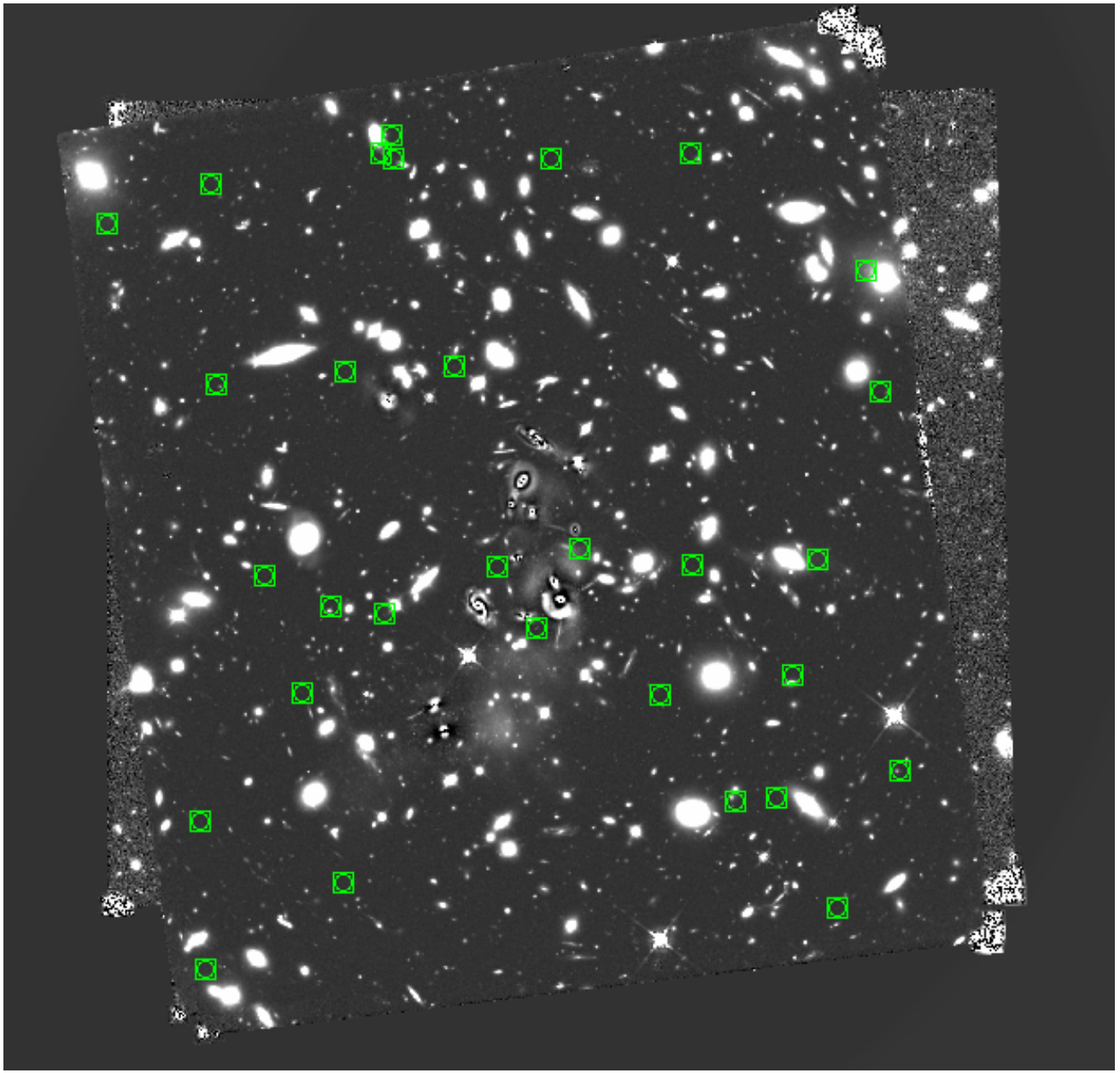
Results on z>6 public samples:

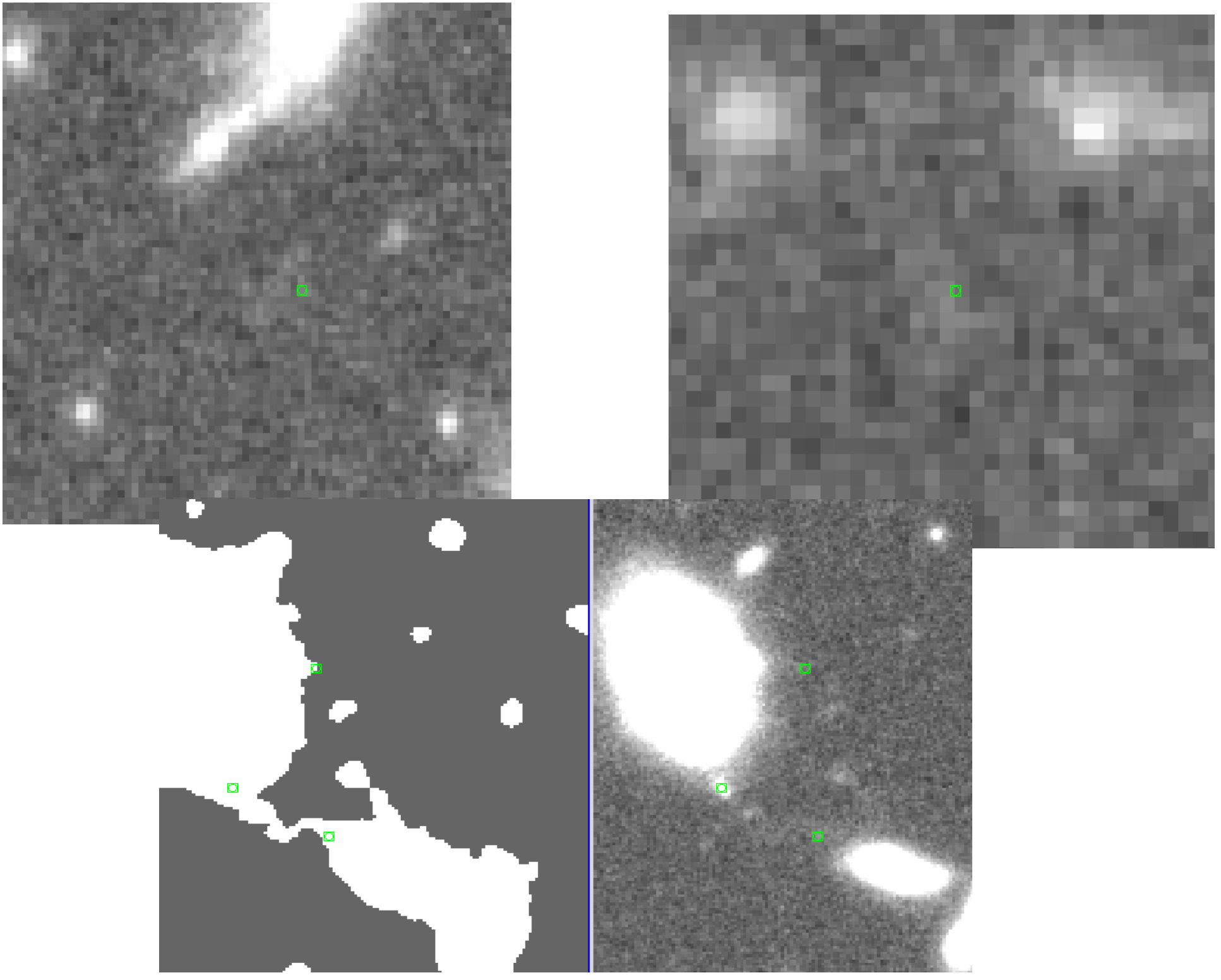
Matched=46 objects (figure)
Missed=30 objects

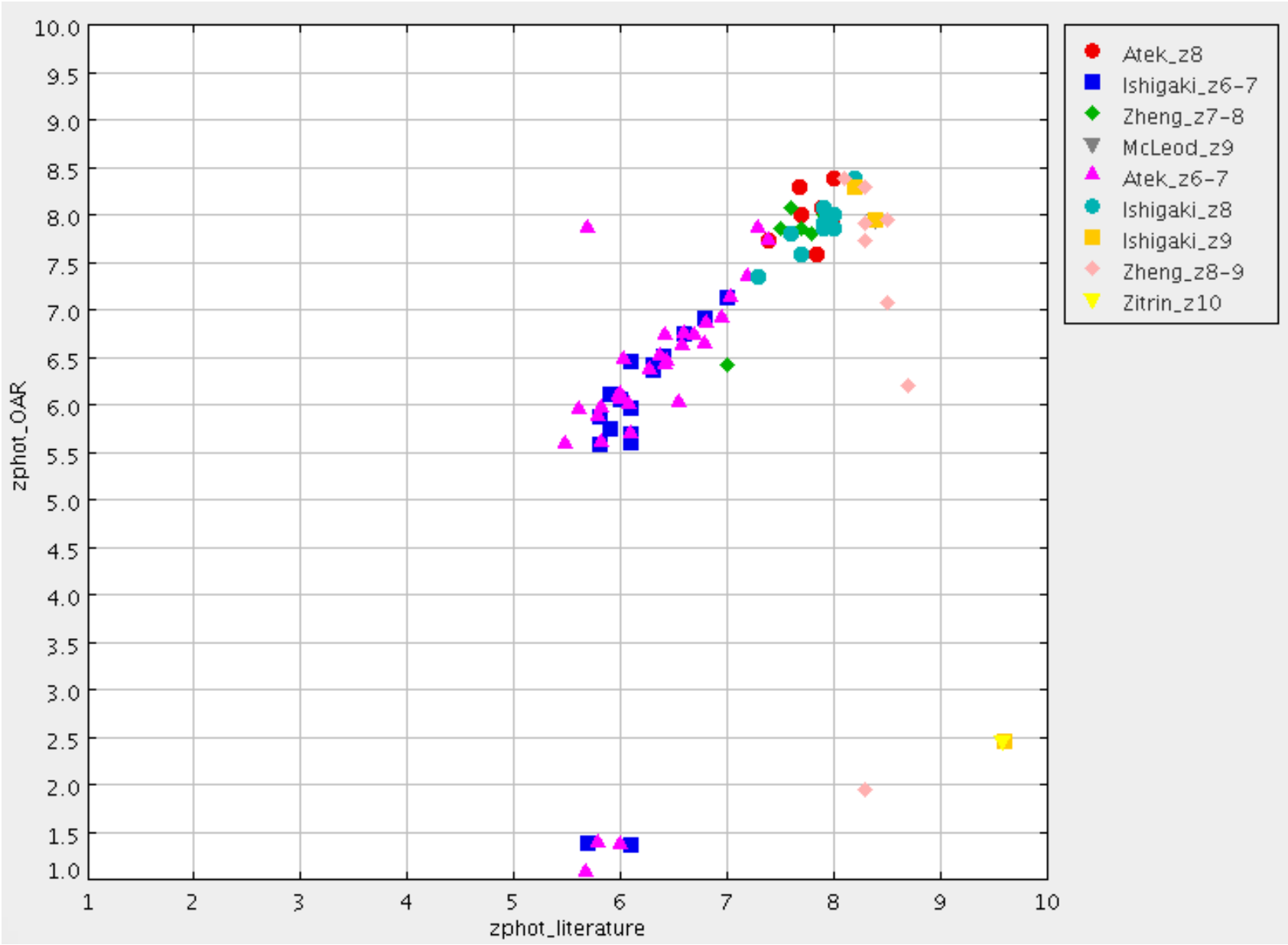
+ 3 new zphot>6 sources not in literature



Missed from Hdet cat.






zphot_OAR
zphot_literature
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1
2
3
4
5
6
7
8
9
10
Atek_z8
Ishigaki_z6-7
Zheng_z7-8
McLeod_z9
Atek_z6-7
Ishigaki_z8
Ishigaki_z9
Zheng_z8-9
Zitrin_z10

Test on “normal” IR-detected cat.:

COLD mode and HOT mode same parameters as for H-detected one: ~2 sigma detections

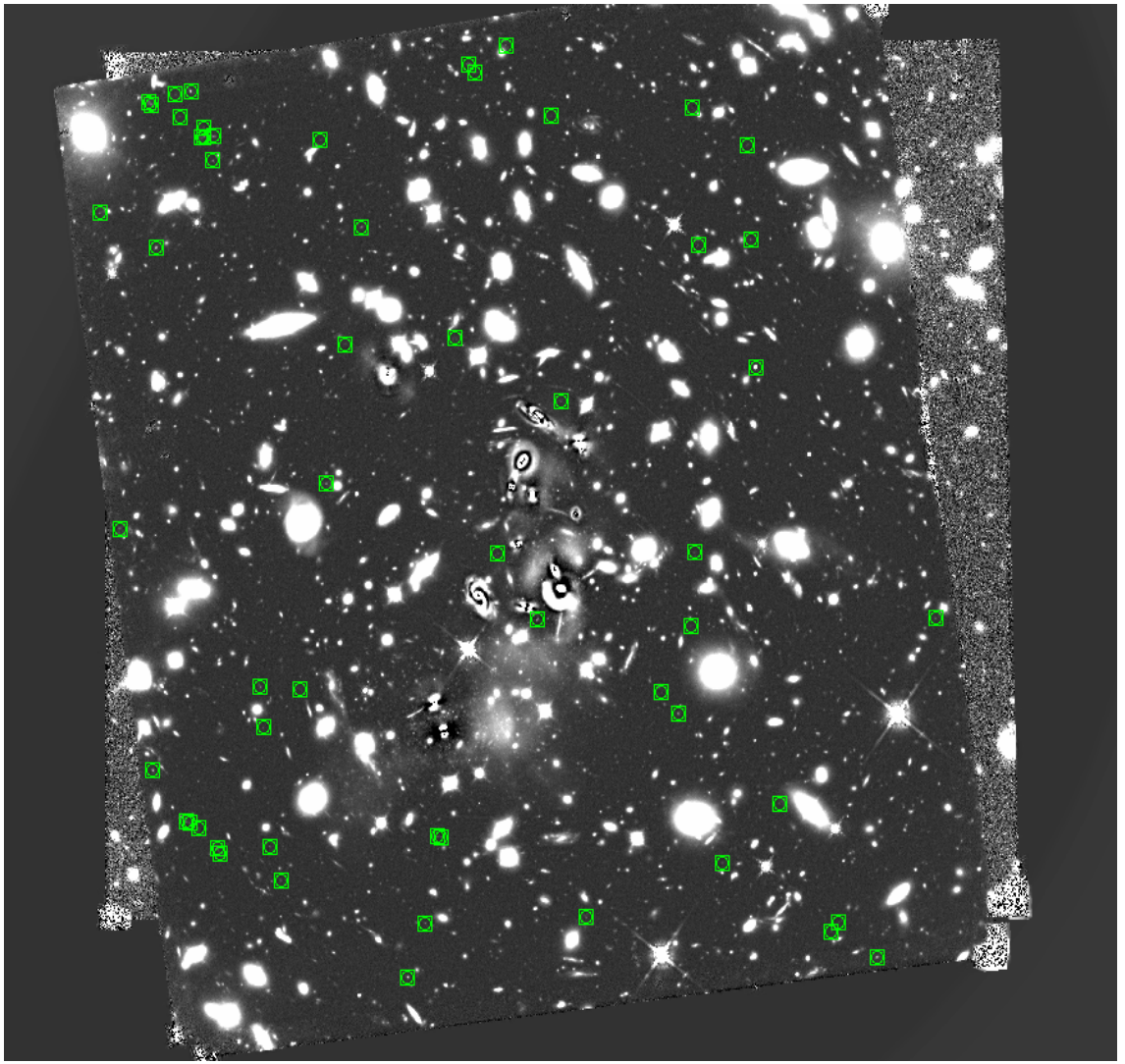
3541 sources

(~1000 more than with H-detection)

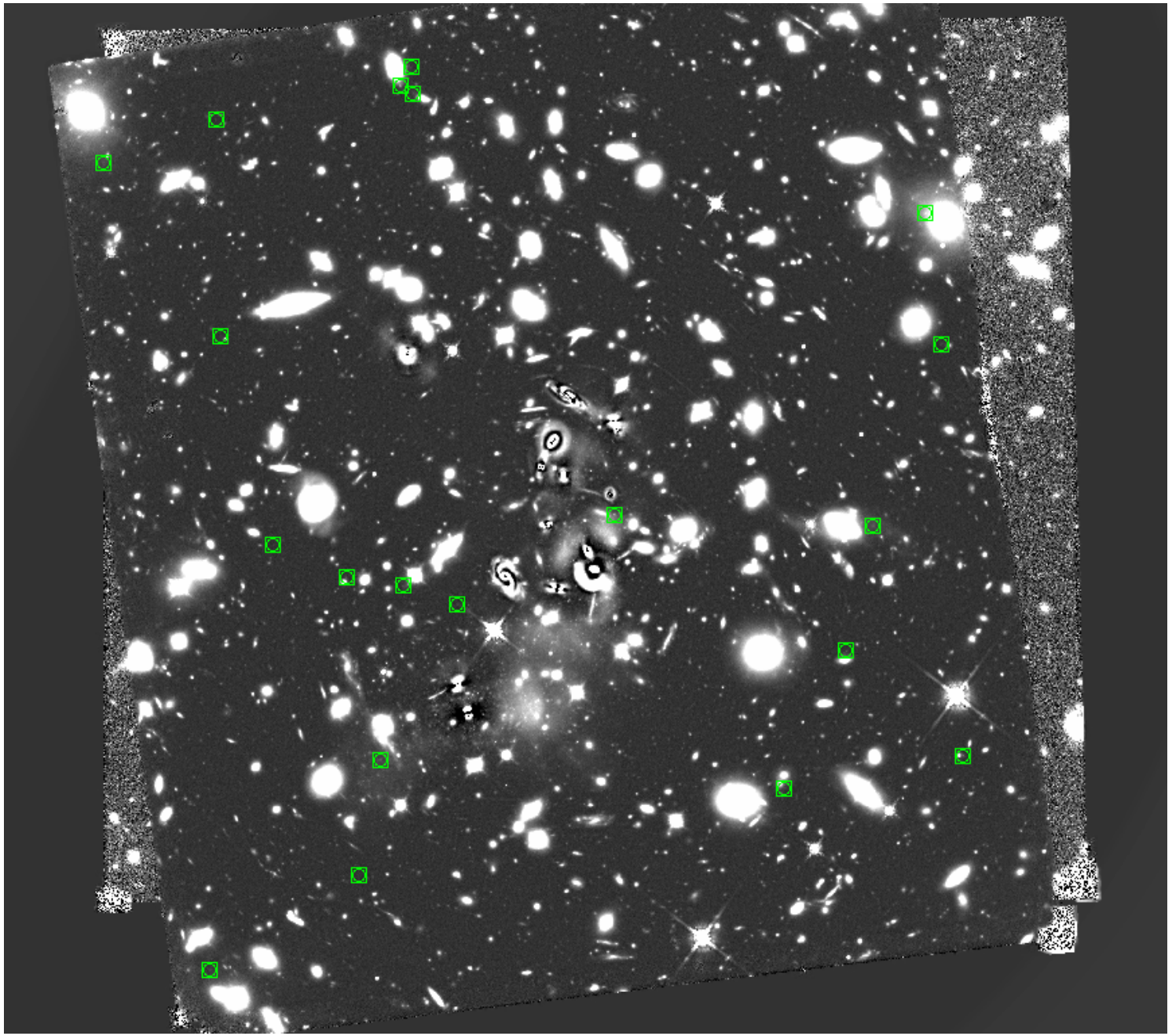
Results on z>6 public samples:

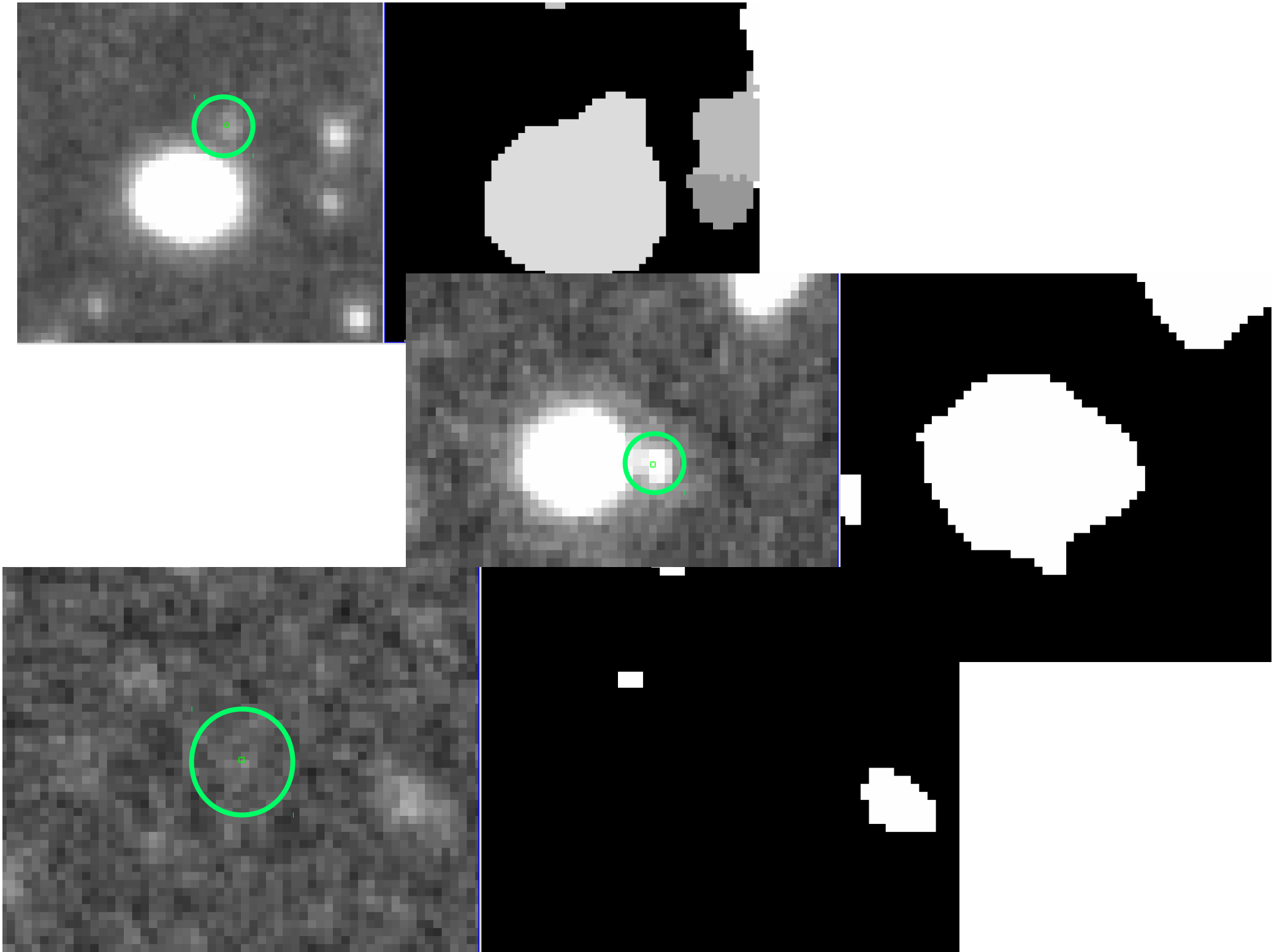
Matched=56

(10 more than with H-detection)



Missed from IR-det cat. (mostly deblending issues, few isolated sources)





Test on an aggressive IR-detected cat.:

COLD mode again is “HOT CANDELS” mode: 2.2 sigma detection over 10 pixel minarea.

HOT mode is ultra-aggressive: 1.5 sigma detection over 5 pix minarea.

3779 sources

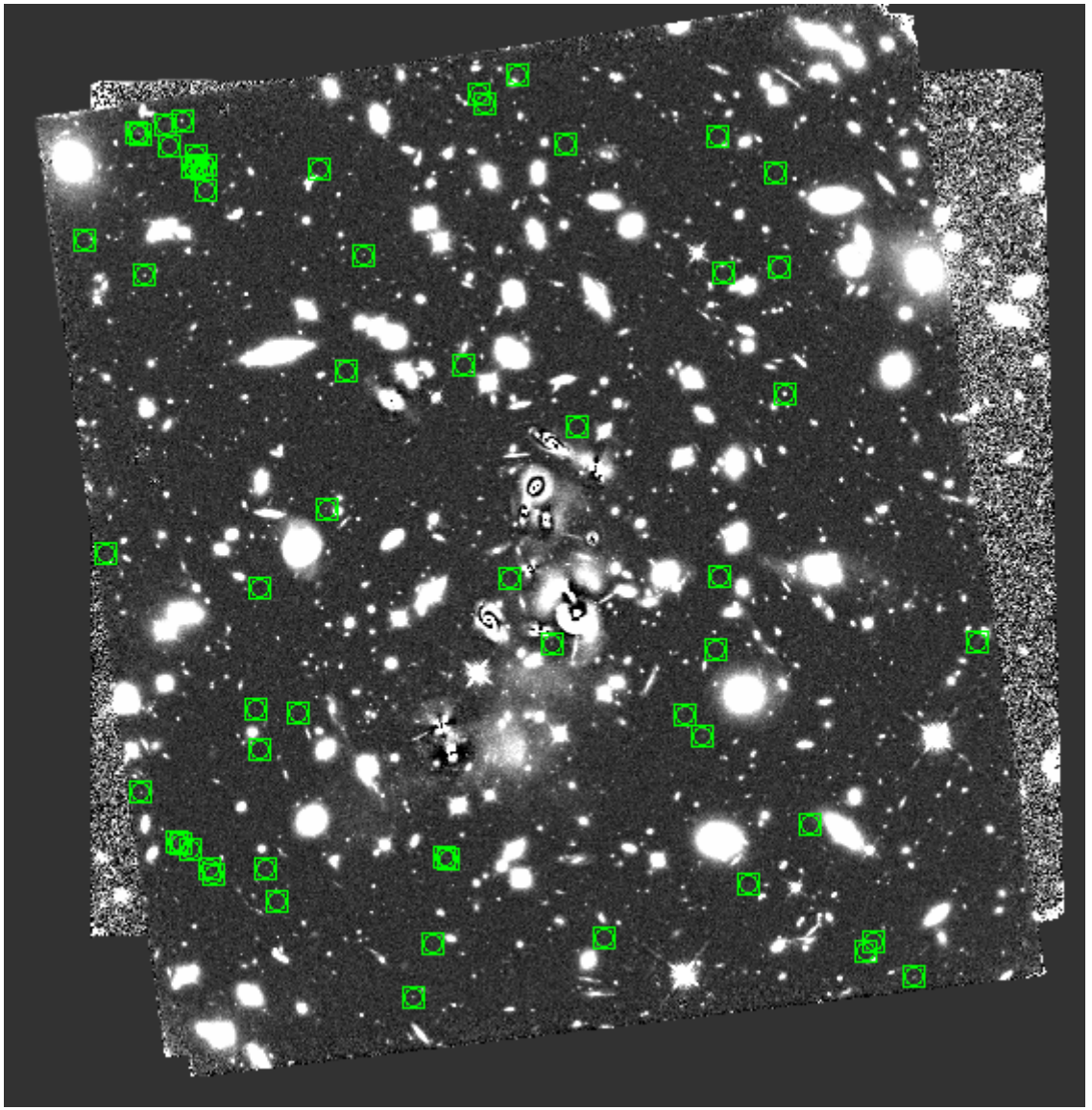
(~230 more than IR-det at 2sigma)

Results on z>6 public samples:

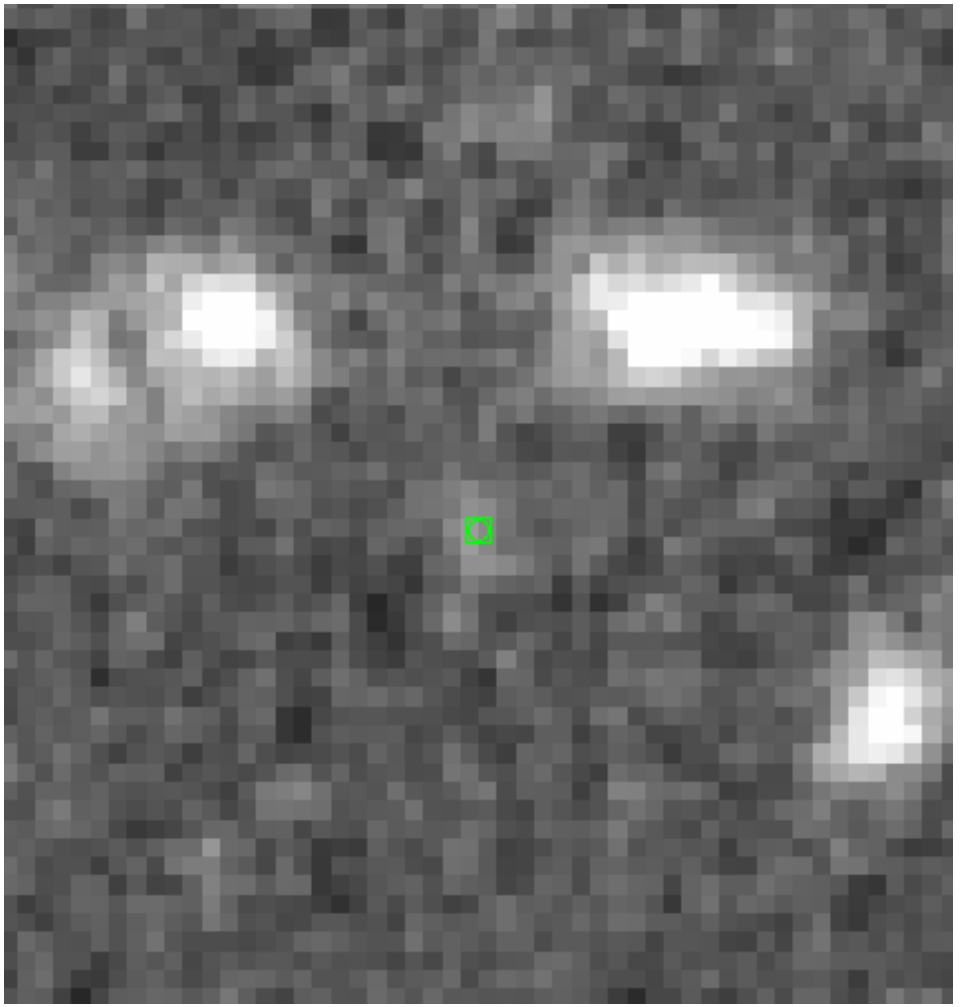
Matched=58

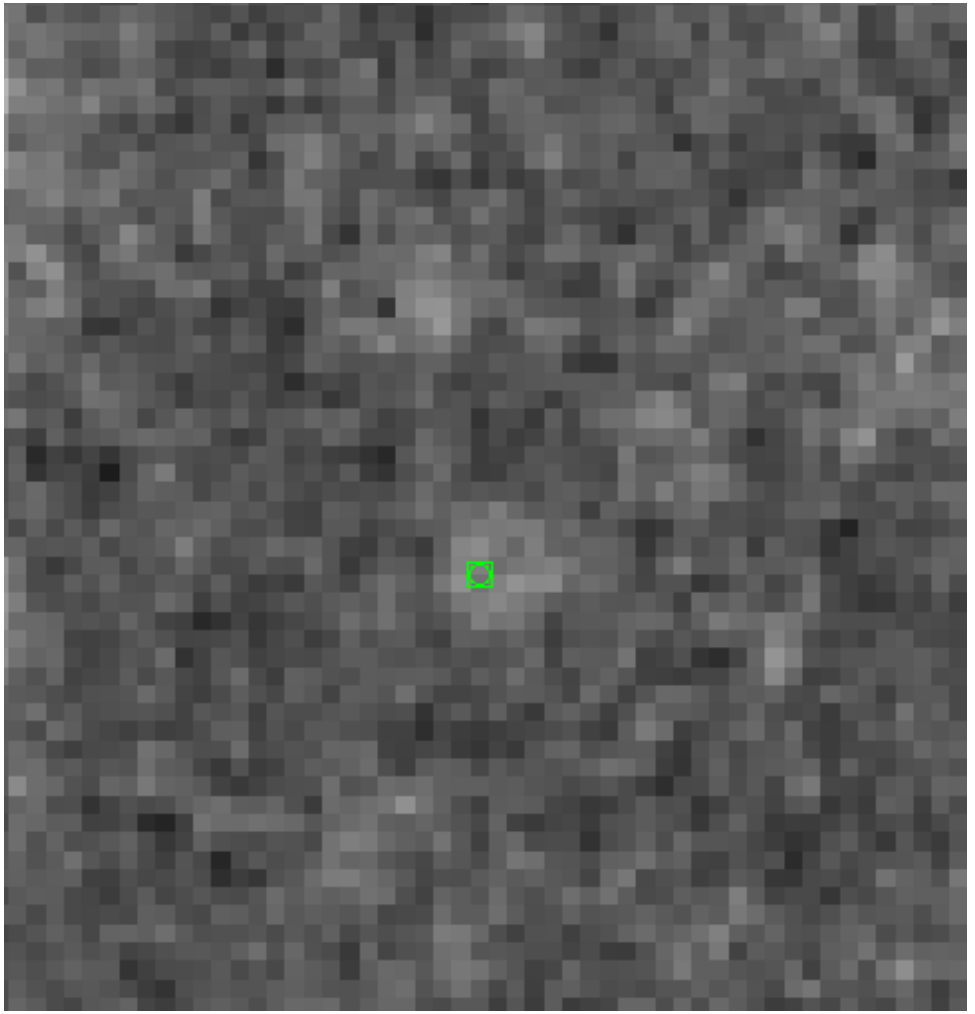
(2 more than IR-det at 2sigma)

Matched=62 considering HOT mode catalogue alone.

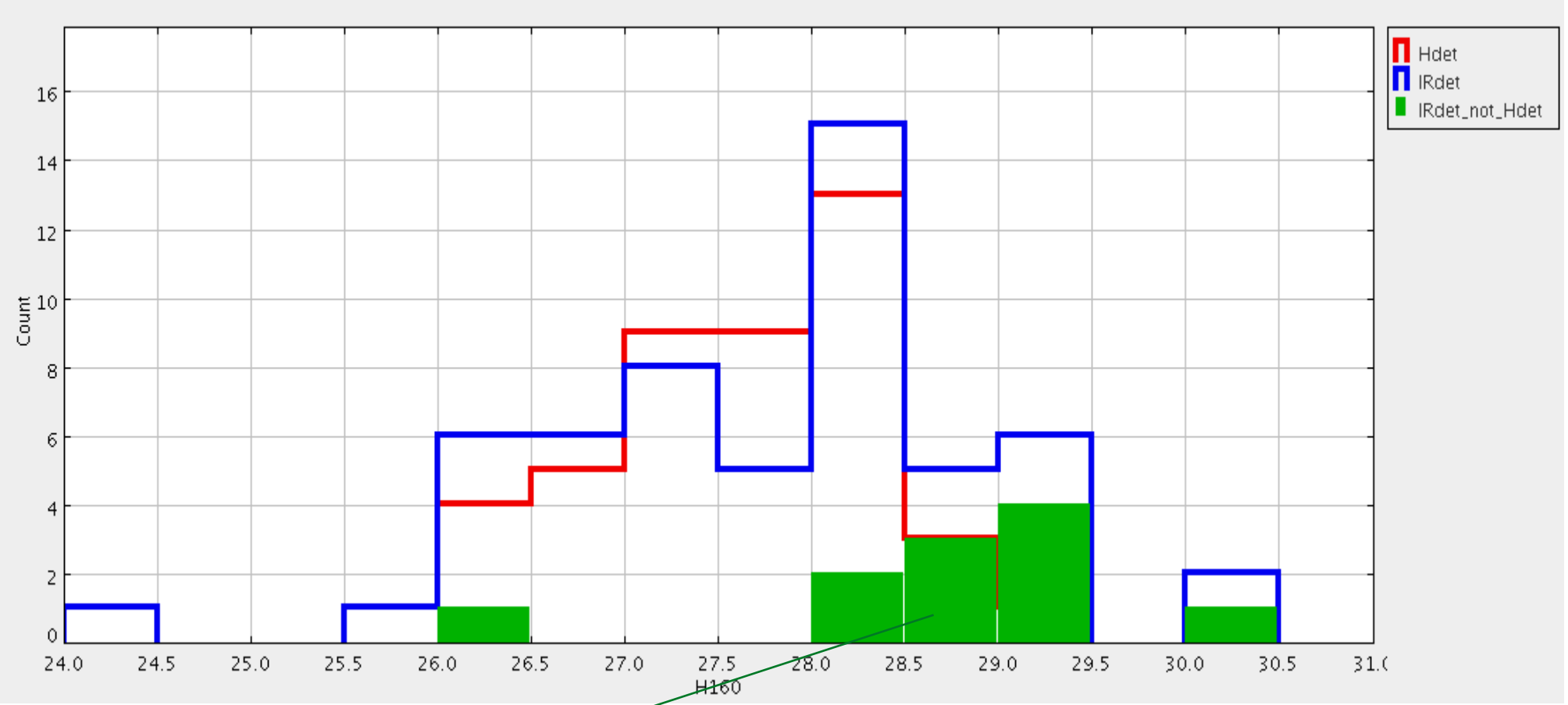


The two isolated sources recovered thanks to aggressive detection on IR mosaic





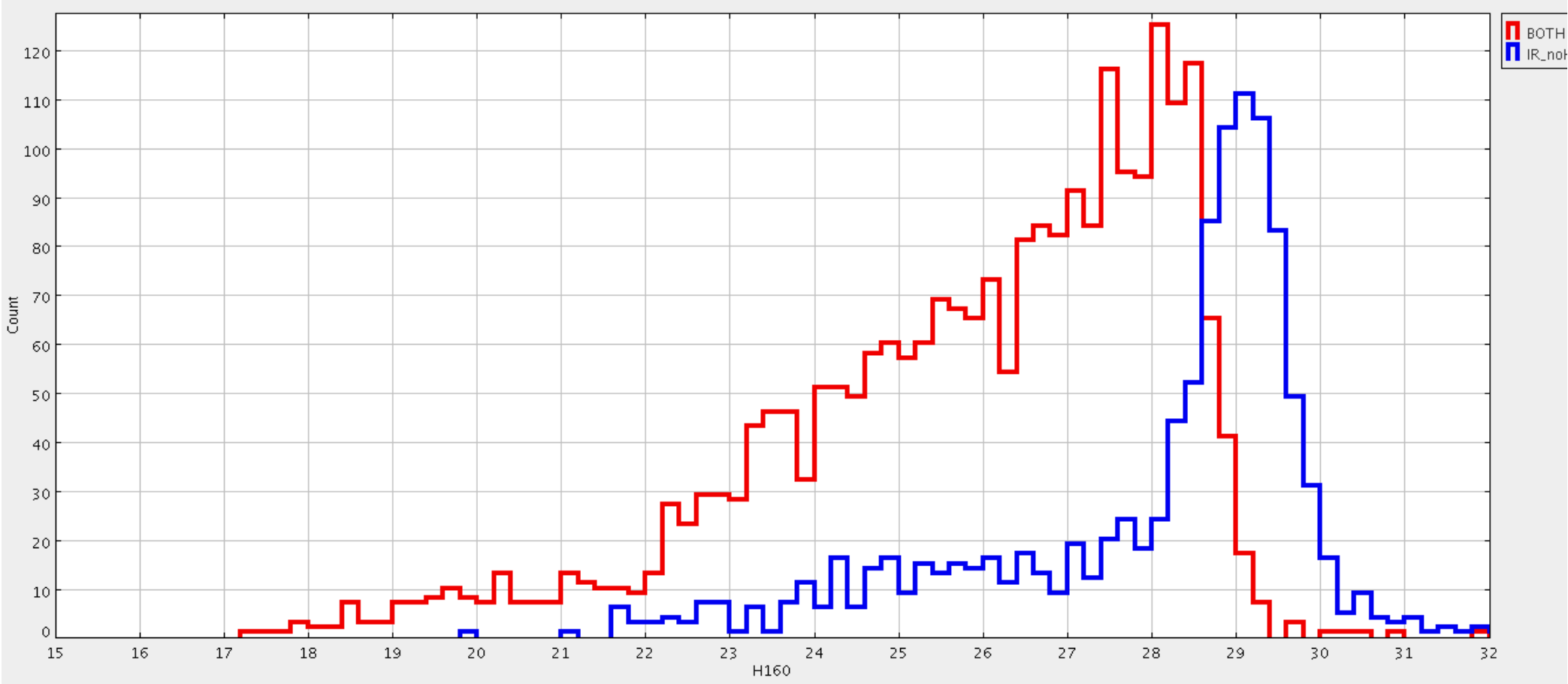
Number counts of matched high-z sources in H-det and IR-det (2sigma det.) catalogues:



Detected only thanks to IR stack

NB: some objects in common have different H band magnitude...

Global comparison H-detected vs IR detected catalogues:



(bright “IR no H” sources are mostly due to different deblending and/or centroids)

SUMMARY

1) H-detected catalogue (~2sig detections):

46 z>6 published sources matched, 30 missed

*photozs in good agreement

2) IR-detected catalogue (~2sig detections):

Adds 10 high-z sources at H~28-30

3) aggressive IR-detection (1.5sigma) adds 2 more

Considerations:

* H-detected catalogue is more straightforward and general purpose (e.g. CANDELS), selection function is cleaner. But it is shallower and misses some ultra-faint known sources.

* IR-detected catalogue adds ~1000 sources, and 10 known z>6 ones. We have still to explore effects of new detection on T-PHOT extraction, photozs etc...

* “aggressive” IR-detected catalogue adds ~230 sources more, and 2 known z>6. Probably too aggressive, do we trust 1.5sig detections on 5 pixels??? (I don't).