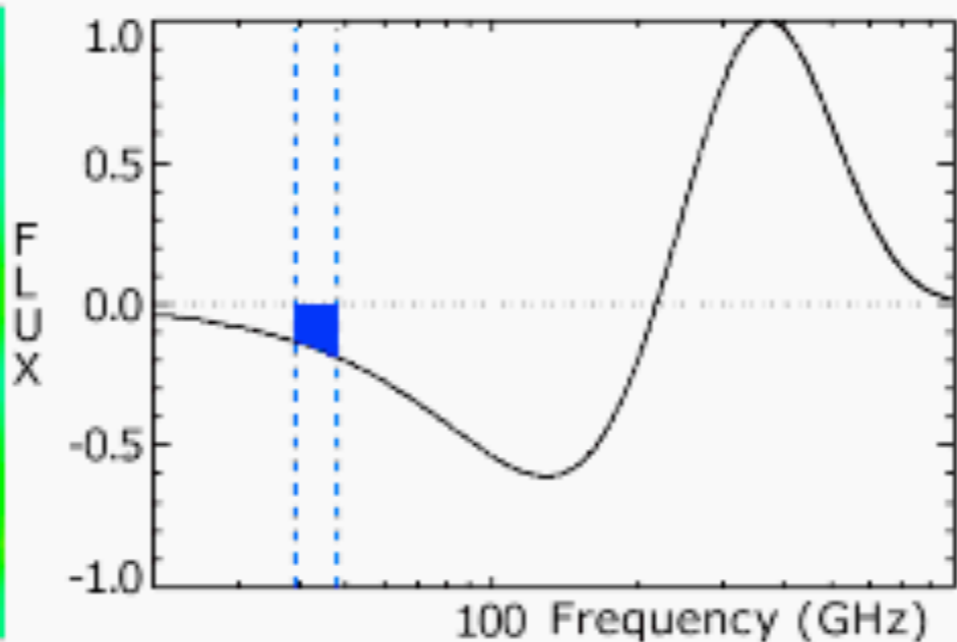
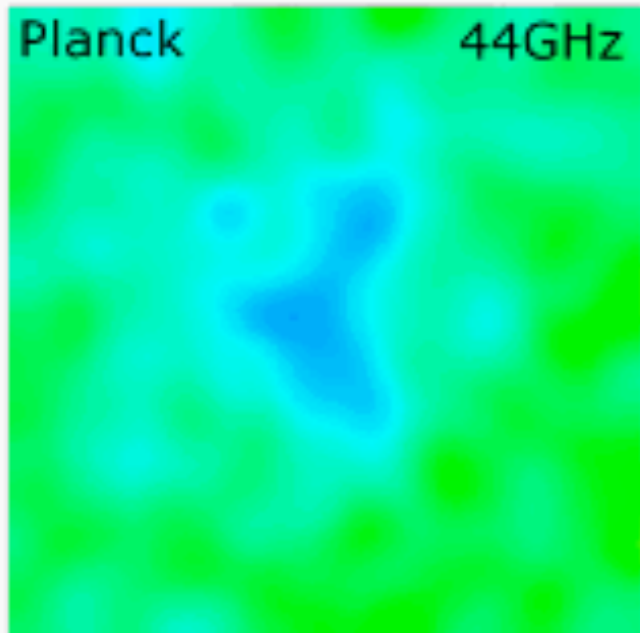
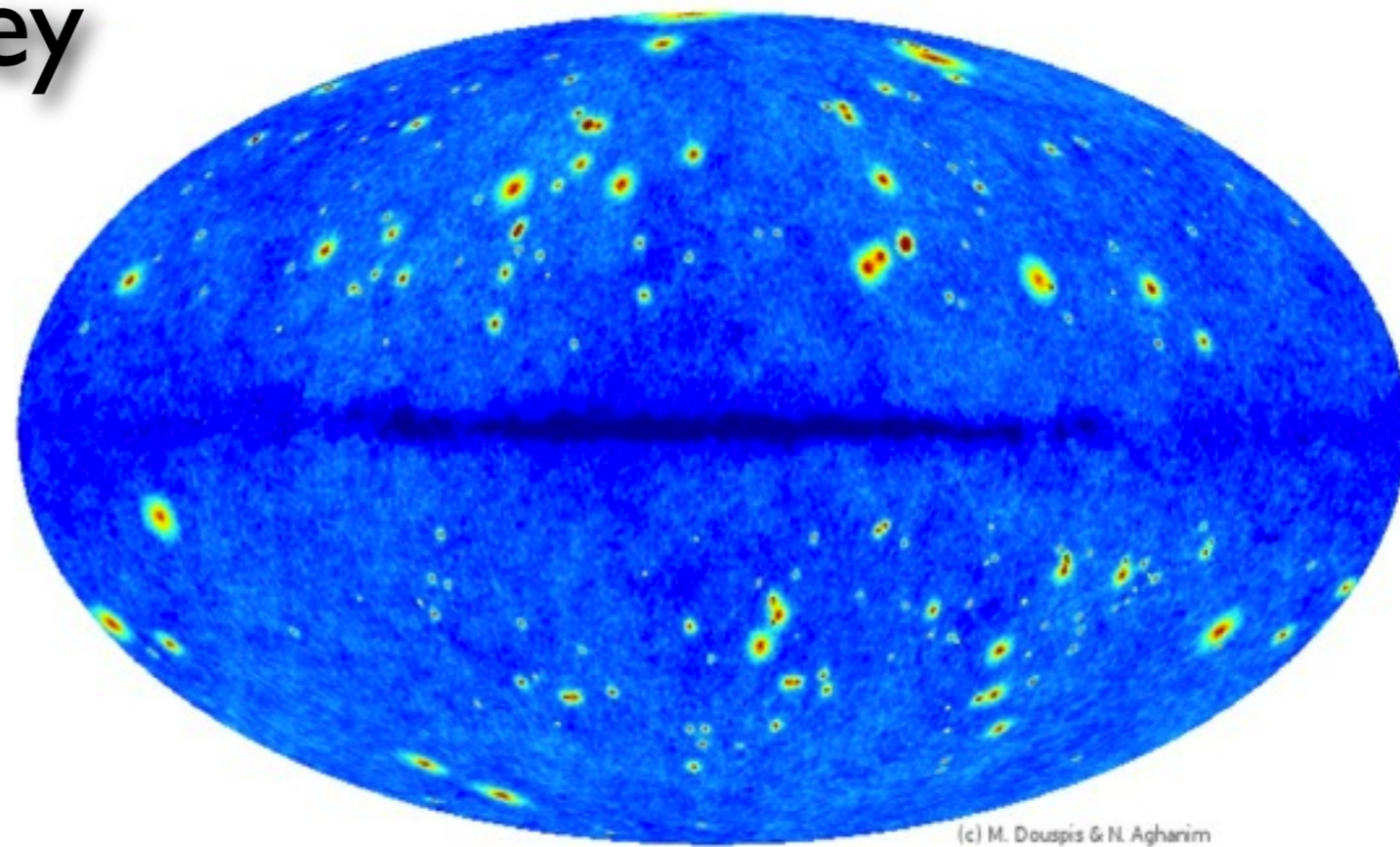




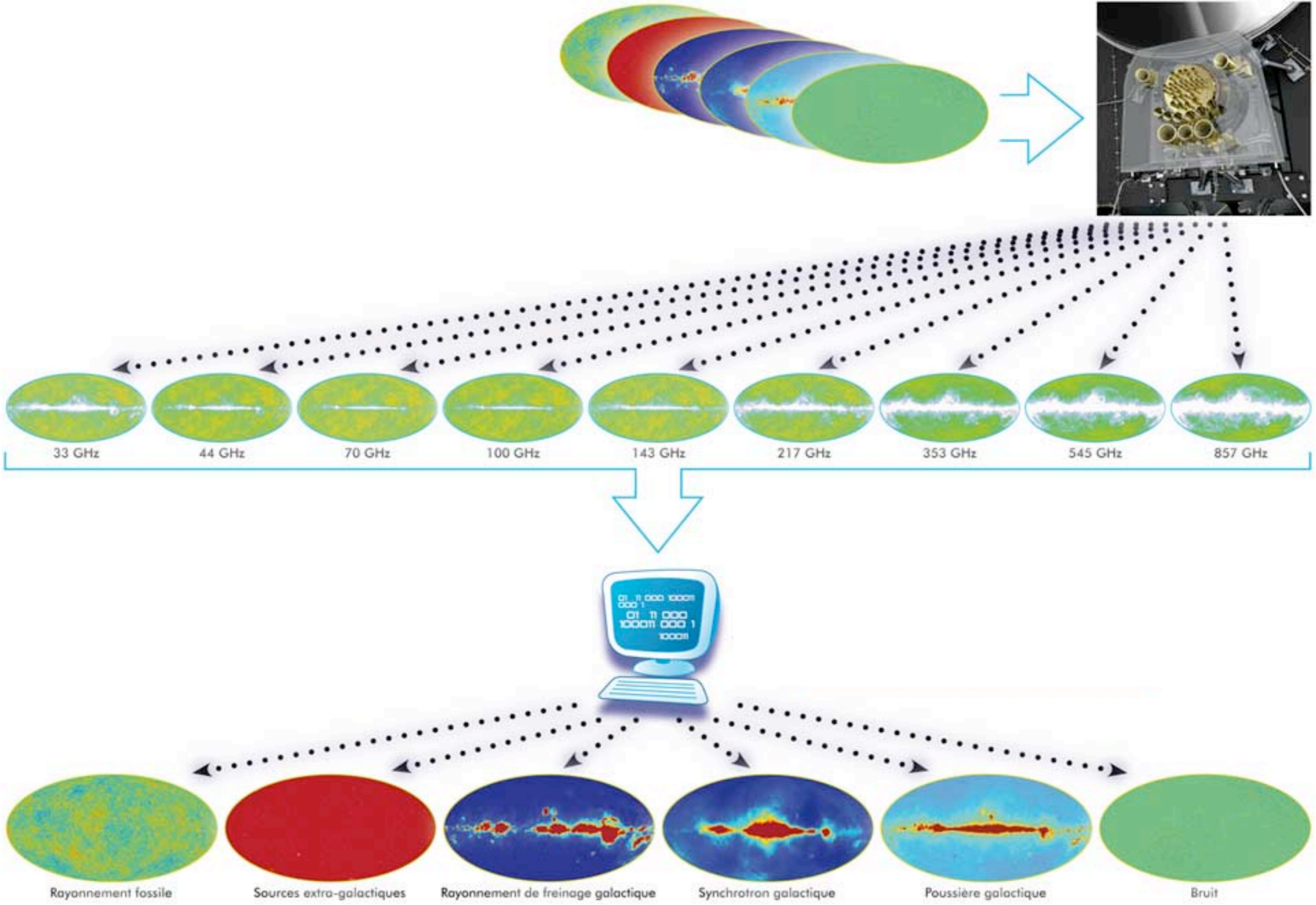
The Planck Survey

* All sky survey



* 9 frequency bands from 30 to 857 GHz

Unique catalogue ; only all sky cluster catalogue since RASS



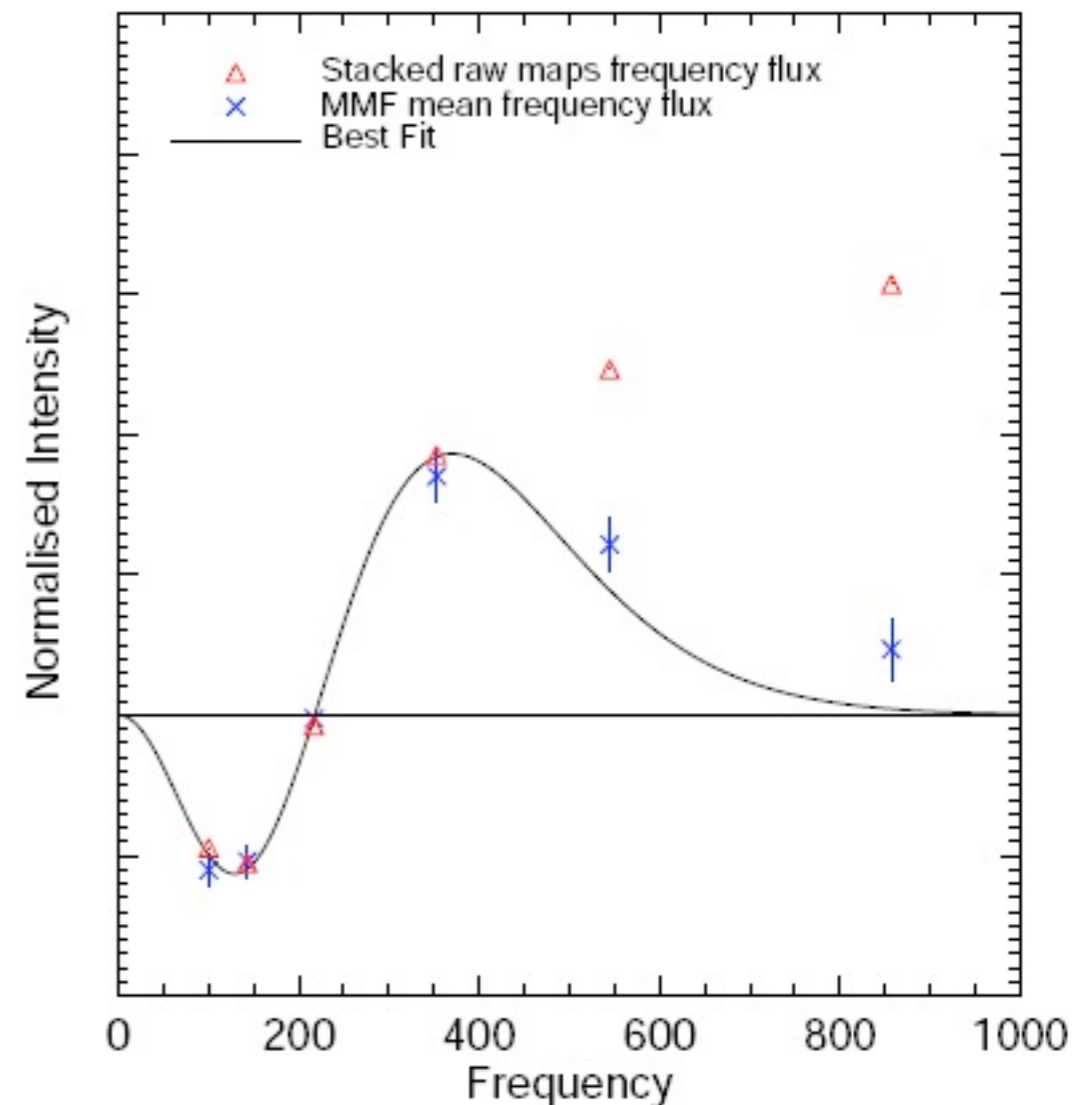


Detection of clusters

ESZ based on Matched Multi-Filter algorithm [Melin et al. 2006]

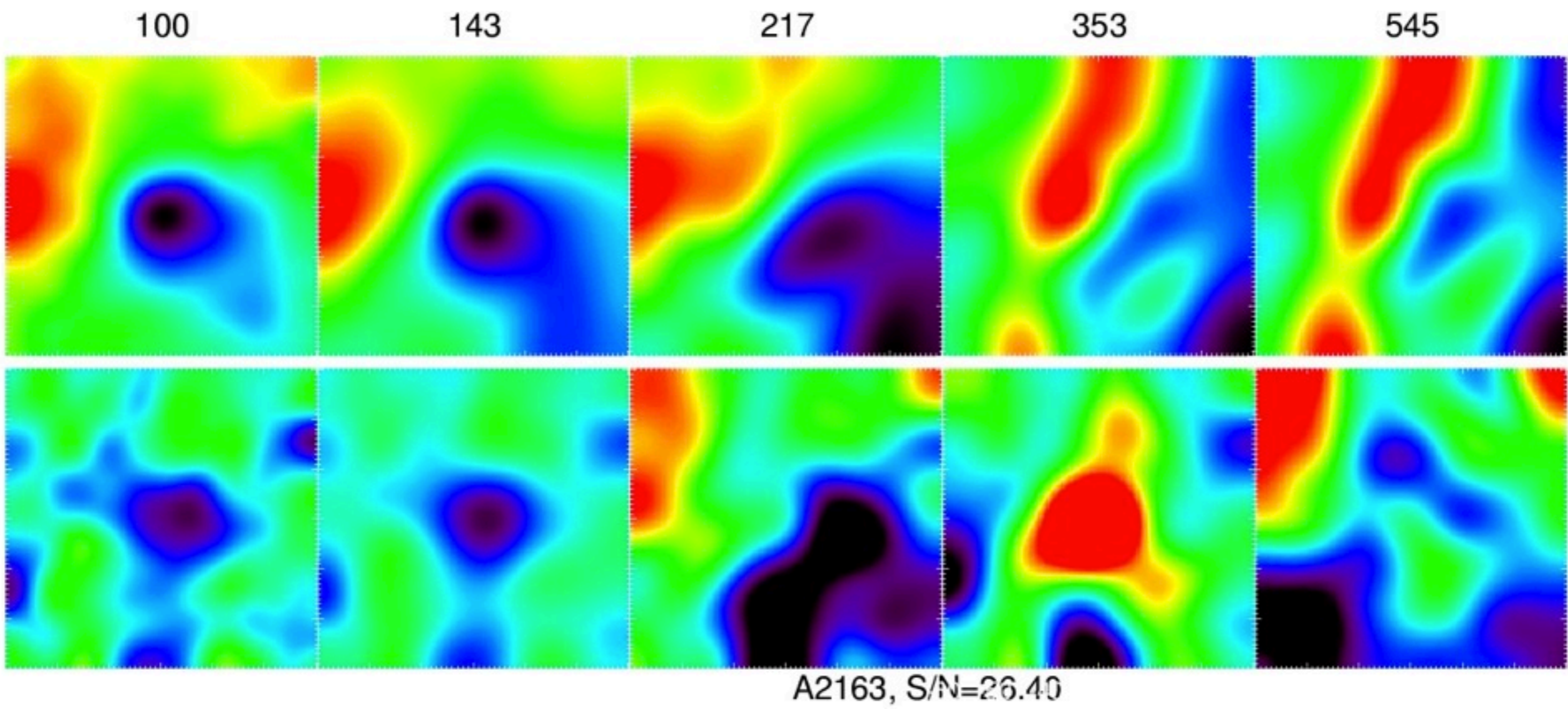
- known spectral shape
→ non-relativistic SZ
- known cluster spatial distribution
→ GNFW pressure profile
[Arnaud et al. 2010]

→ Need a thorough validation process



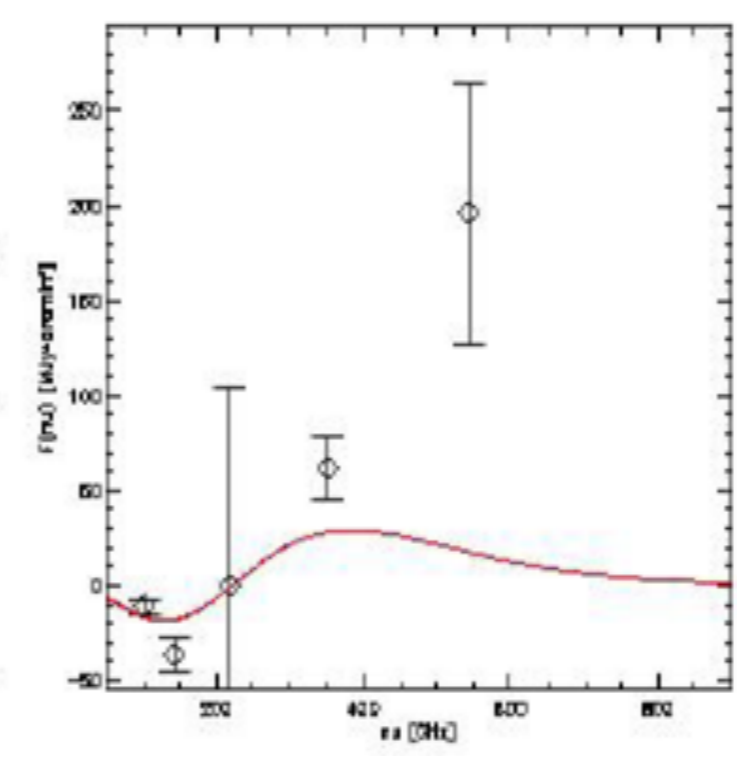
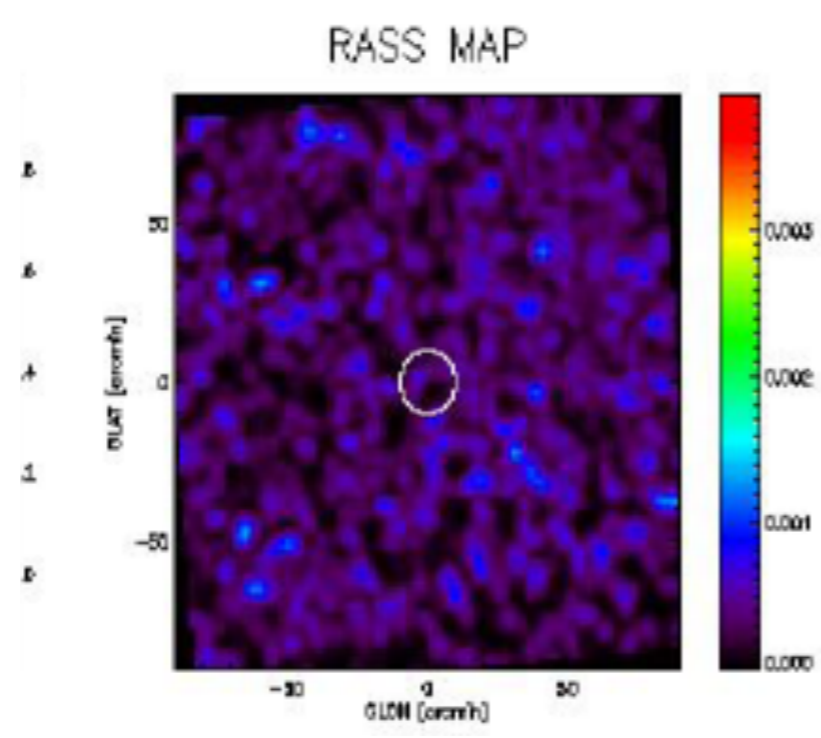
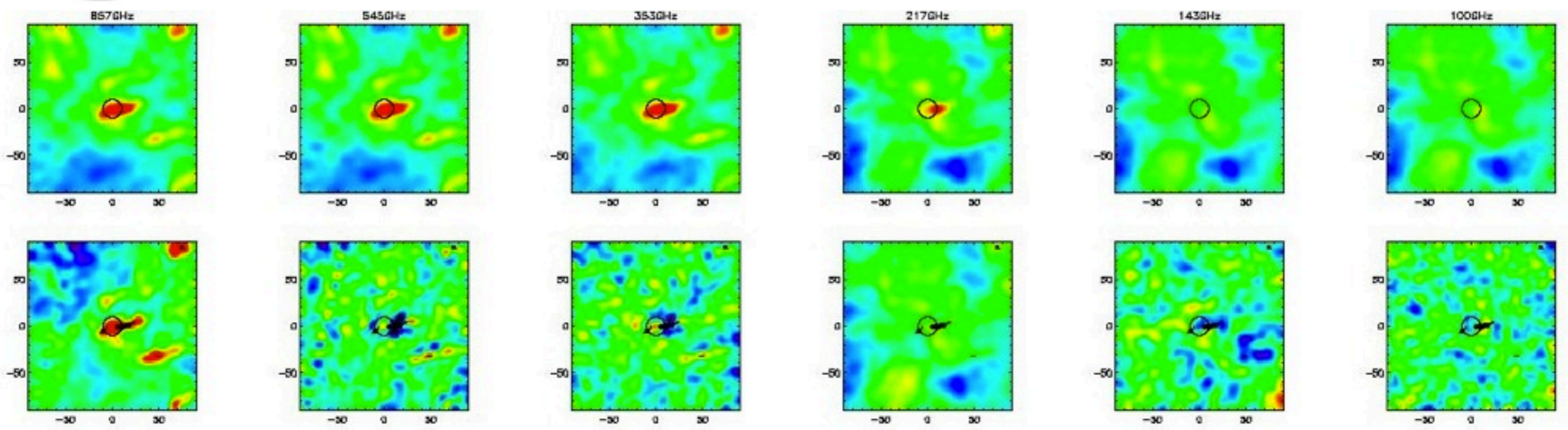


Strong detection





False detection





Validation

* Redundancy in detection methods

* Internal consistency check:

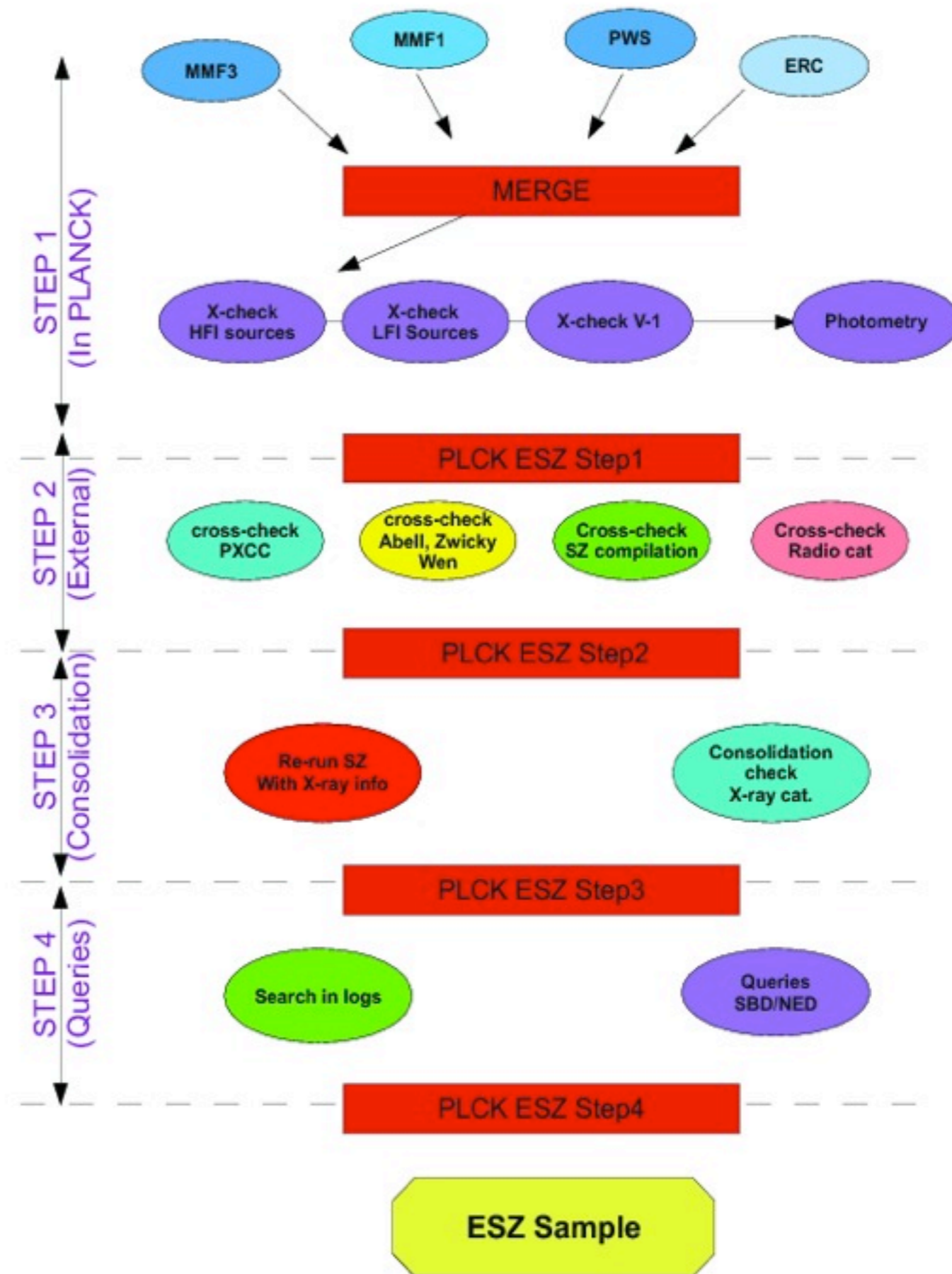
- artifact, solar systems objects
- galactic sources (cold-cores)
- photometry check

* X-correlations with catalogues:
MCXC, RX BSC+FSC, PSPC-WGA
Abell, Zwicky, NSCS, maxBCG, Wen,
NVSS, SUMSS, IRAS, AKARI

* Direct RASS search

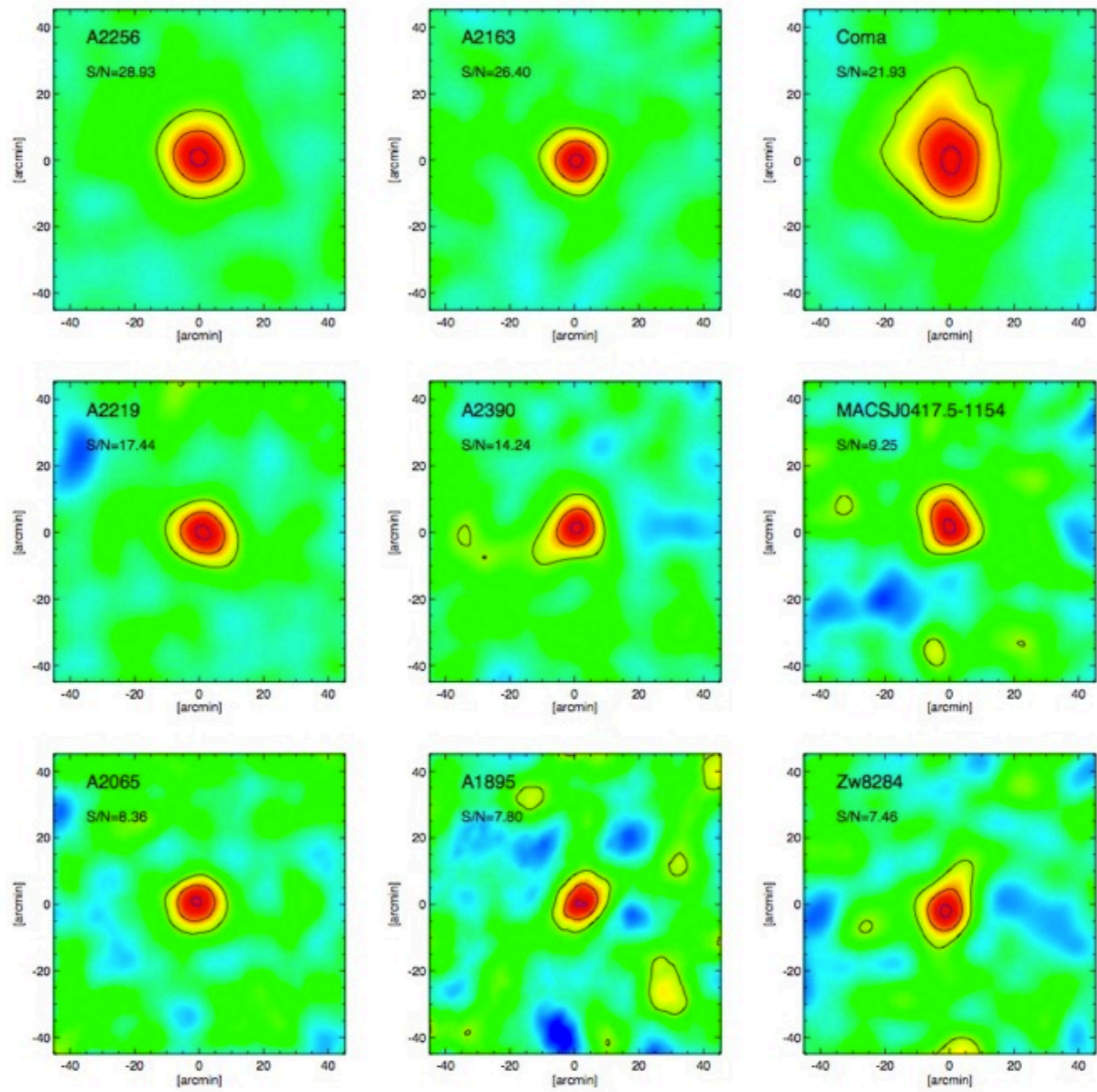
* Logs: XMM, Chandra, Suzaku, ESO,
ENO, NOAO

* DB queries: SIMBAD, NED





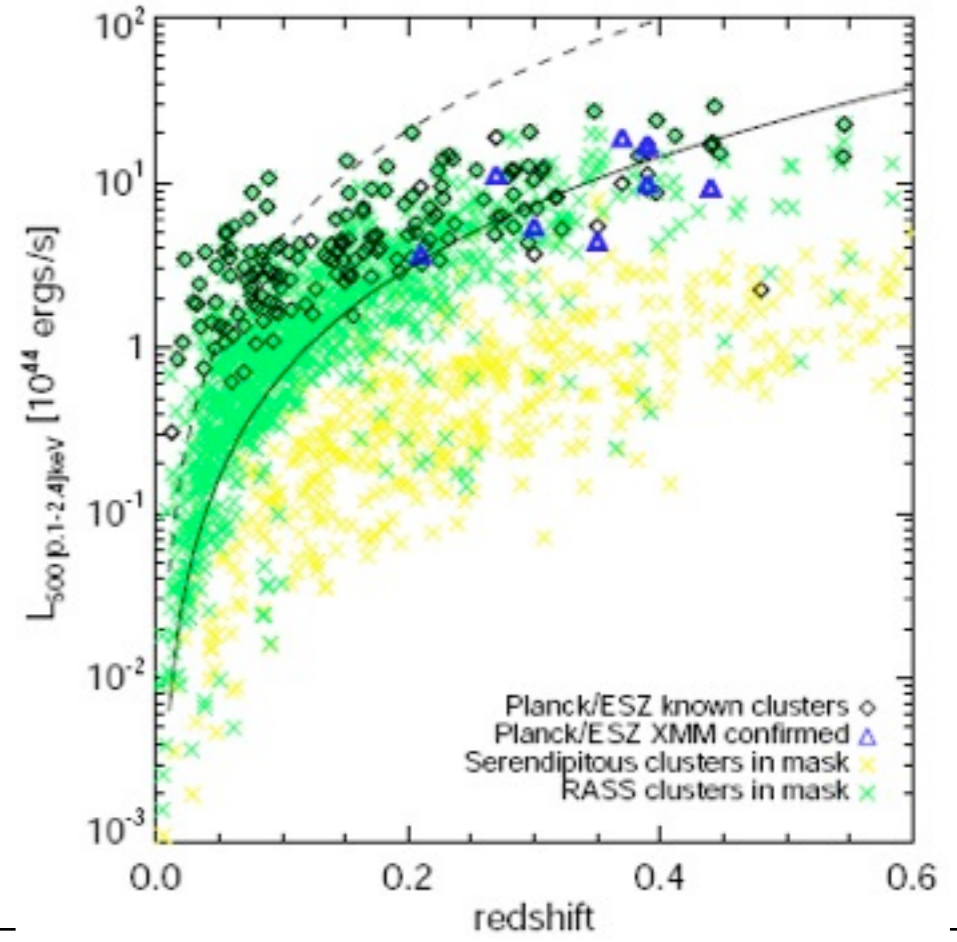
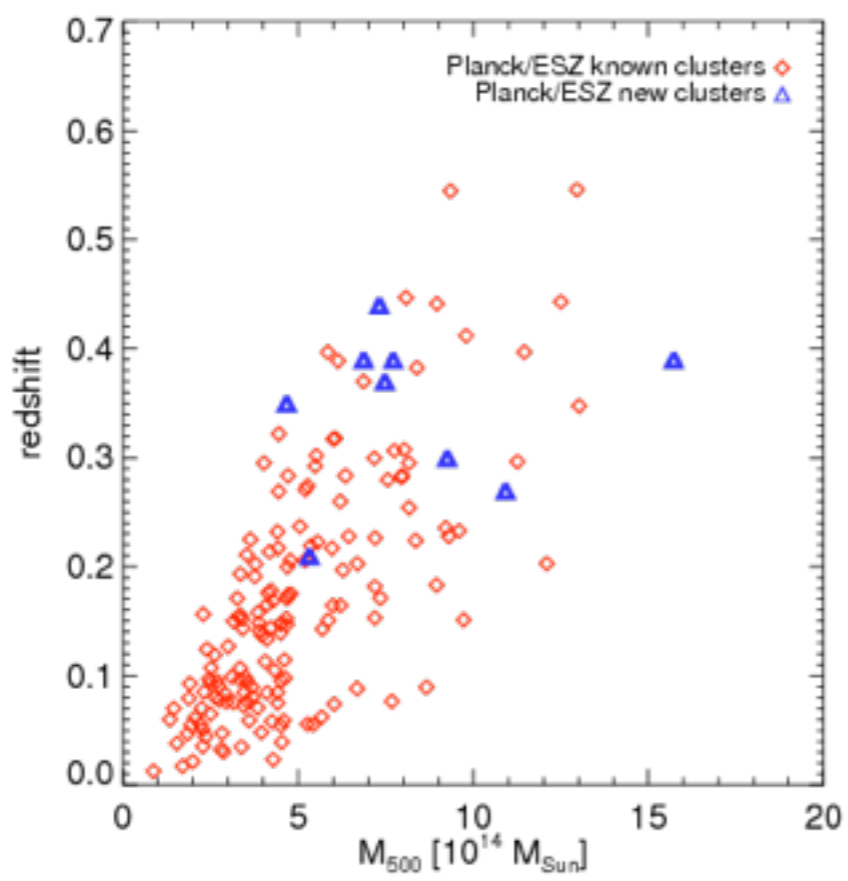
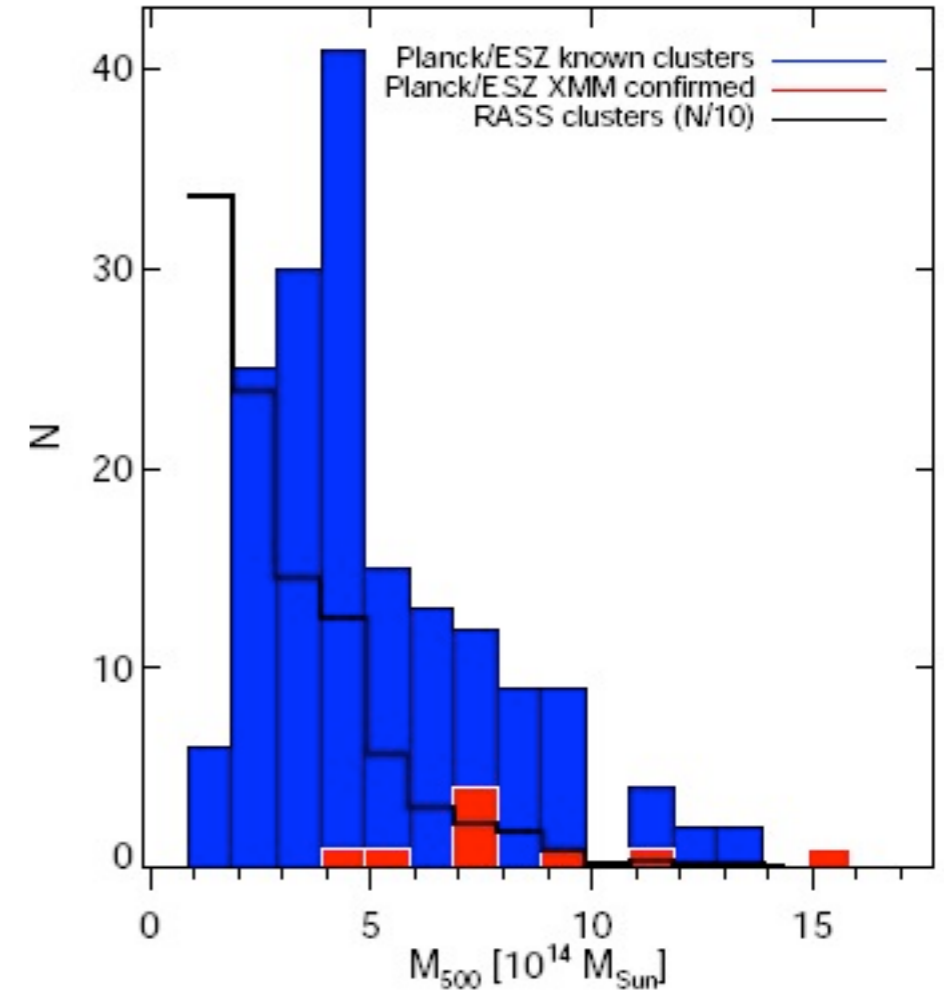
Reconstructed SZ maps





ESZ in a nutshell

- * 189 SZ sources
- * $S/N > 6$
- * 20 new clusters
- * 8 unconfirmed candidates
(now 6 confirmed with SPT & AMI)
- * 169 known in optical or X-rays





Validation of Planck clusters with XMM

■ XMM FU 1

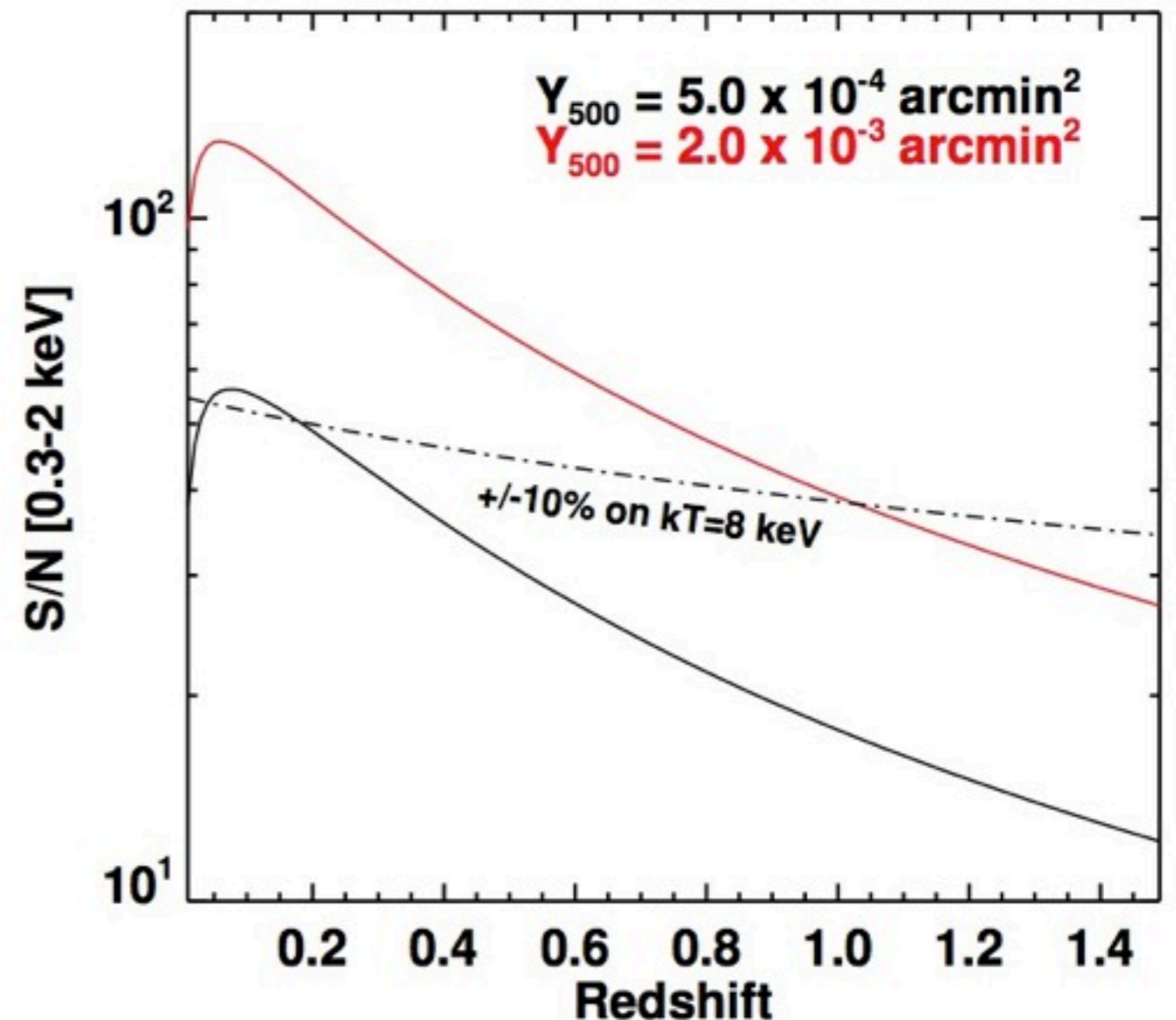
- Pilot study from v3.0_marsfpg
- Investigation of the SNR range
- Better understanding of the Planck SZ signal

■ XMM FU 2

- Systematic validation based on a SNR-cut selection of SZ candidates

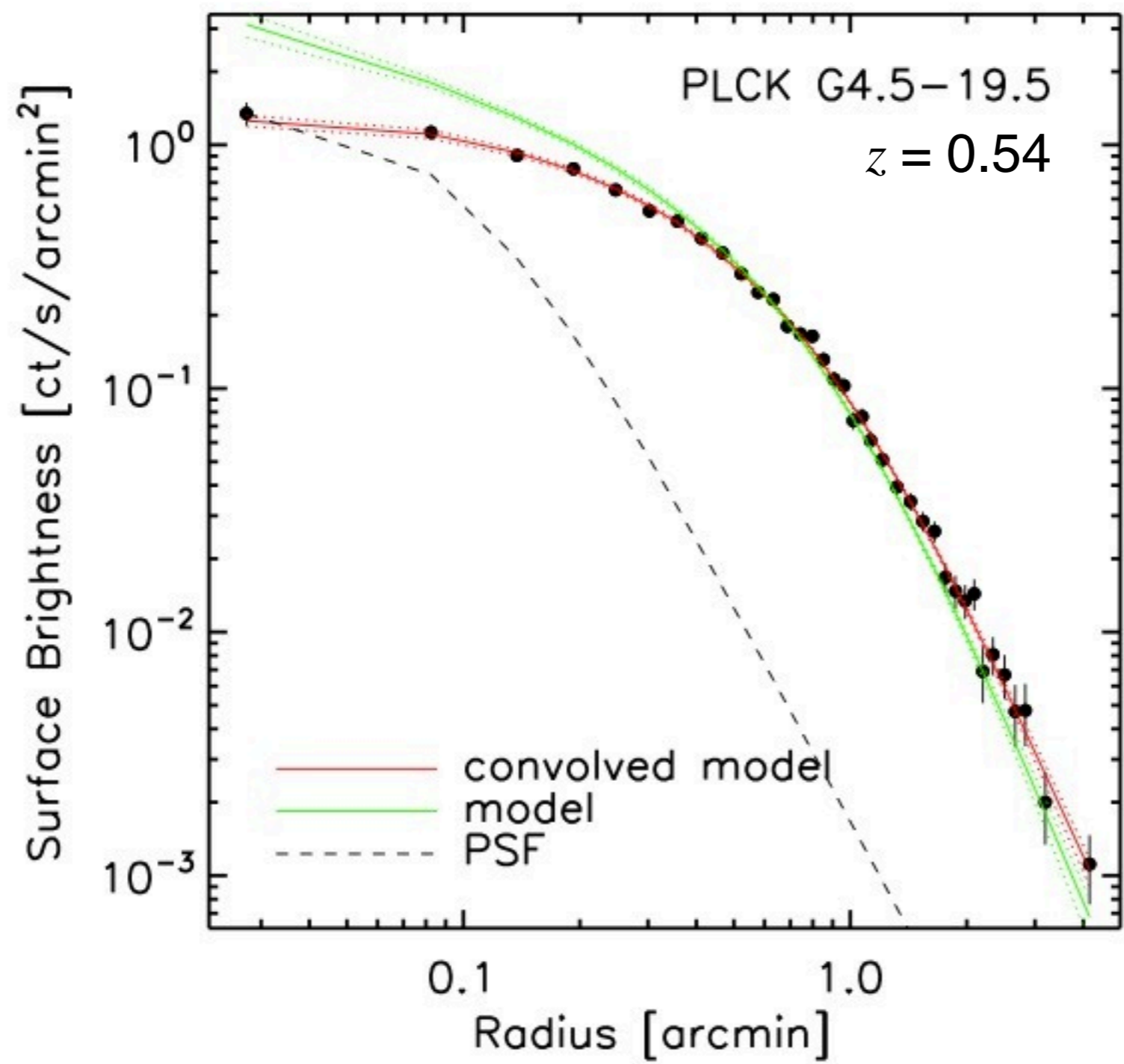
■ 500ks of XMM DDT

- Science case and observing strategy approved by XMM ESA scientist, N.Schartel (09/02/10)
- Validation of Planck targets via snapshot observations
- Service to the community





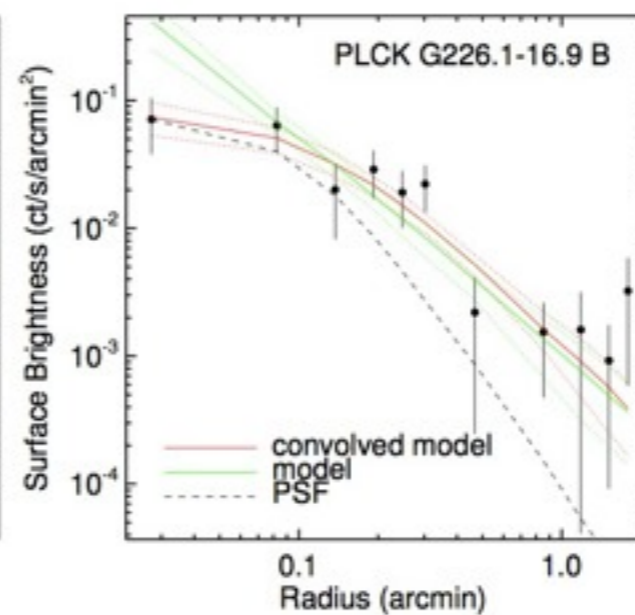
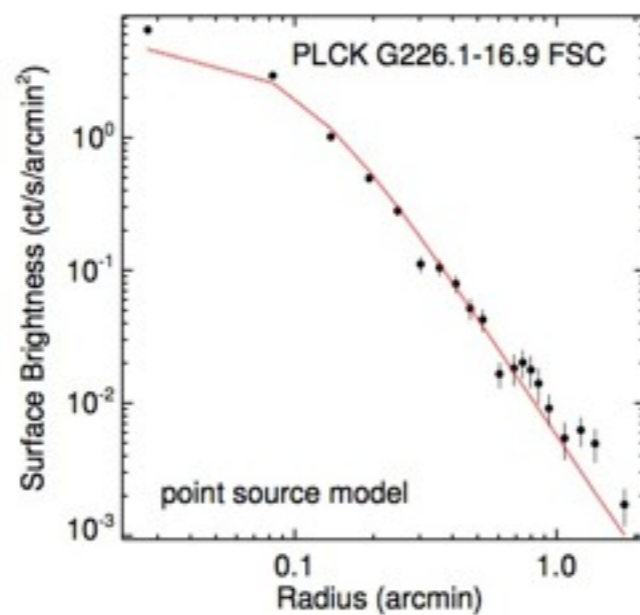
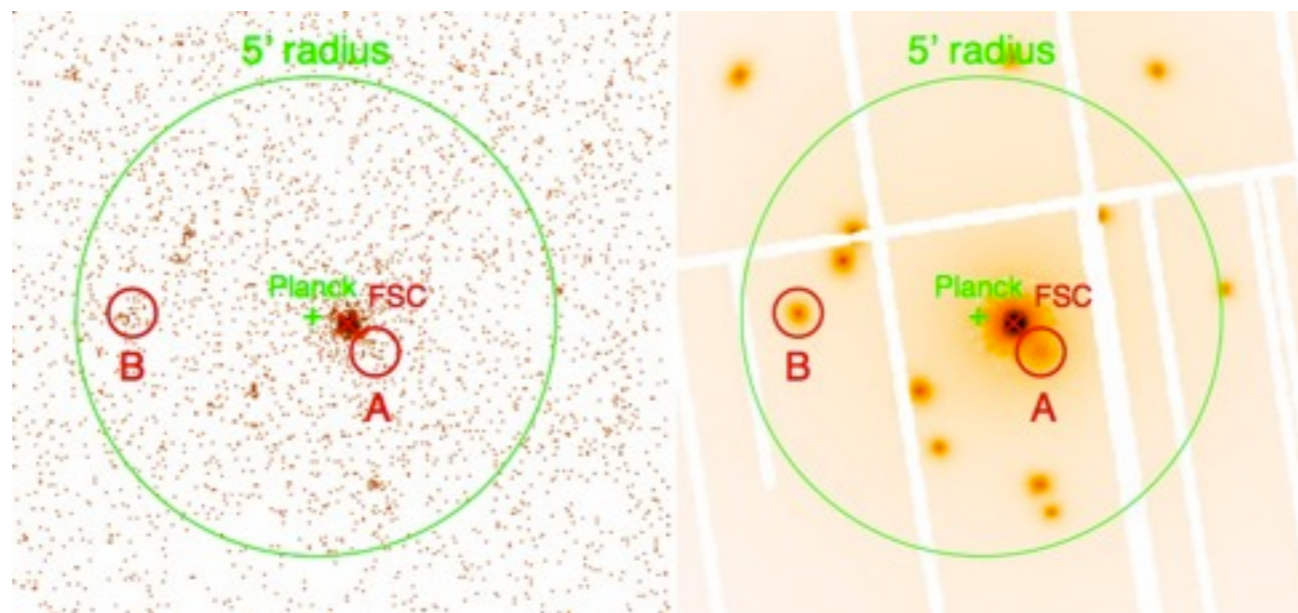
Confirmation



21 out of 25, all with SNR > 4.1



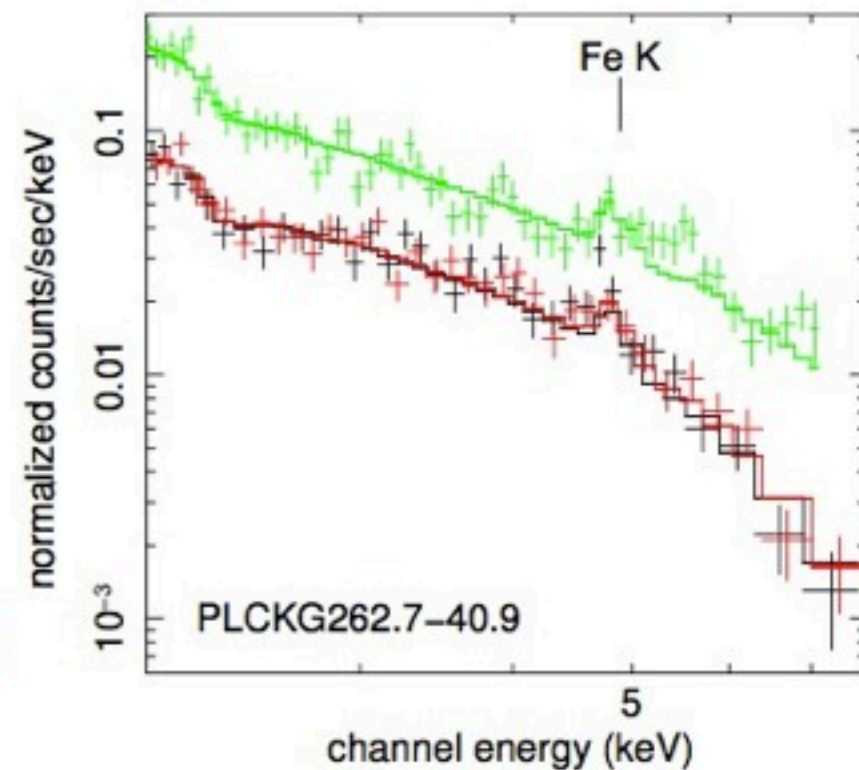
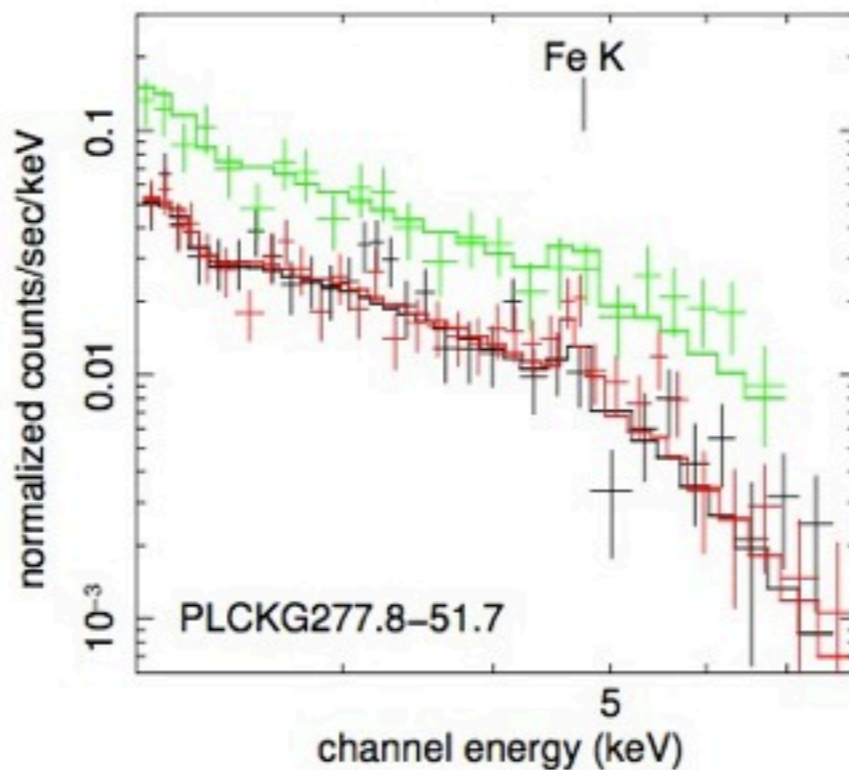
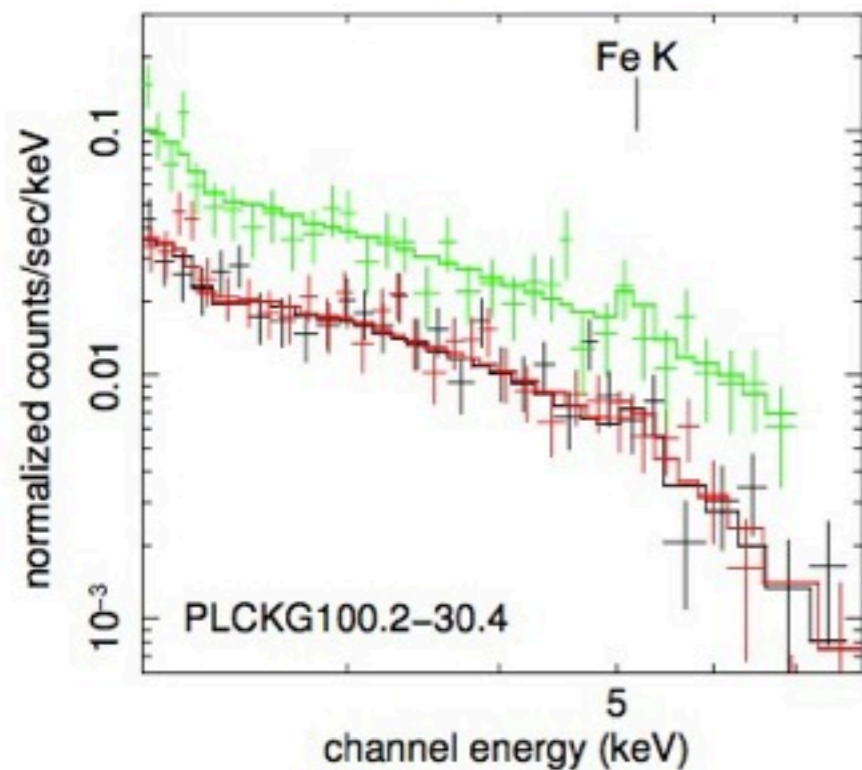
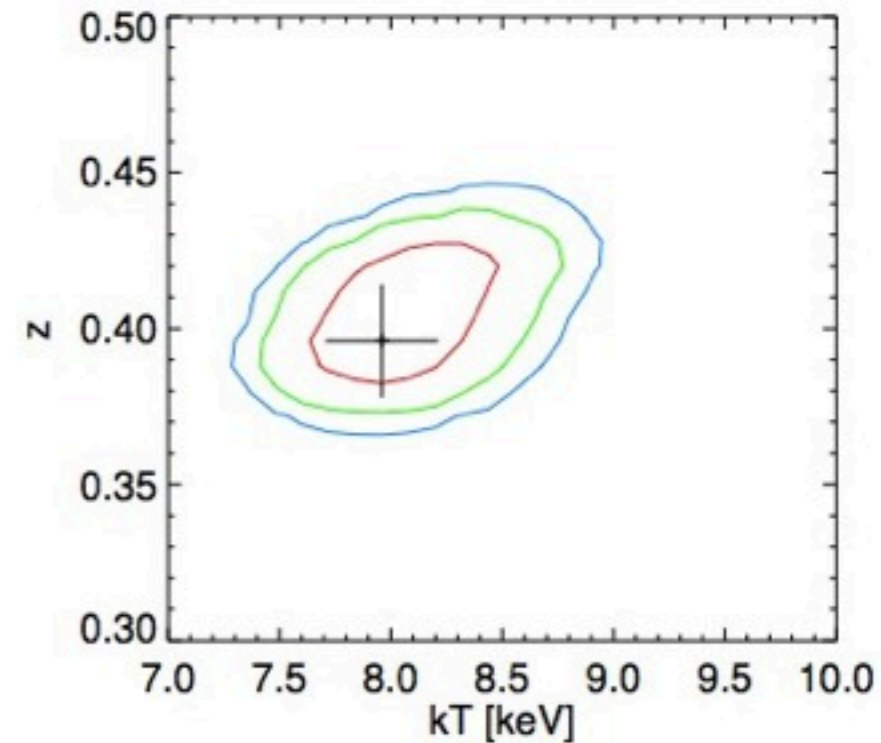
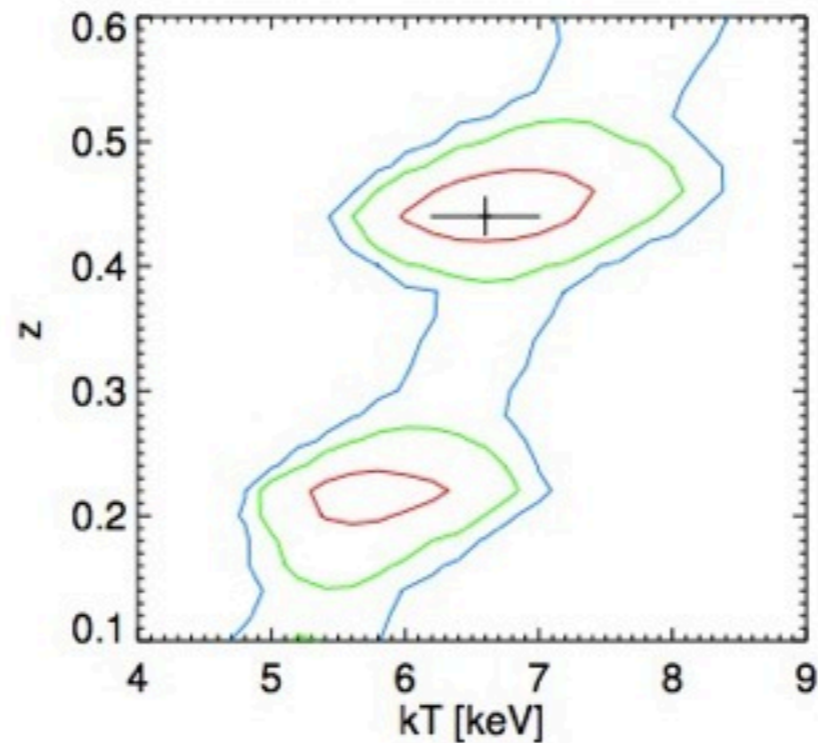
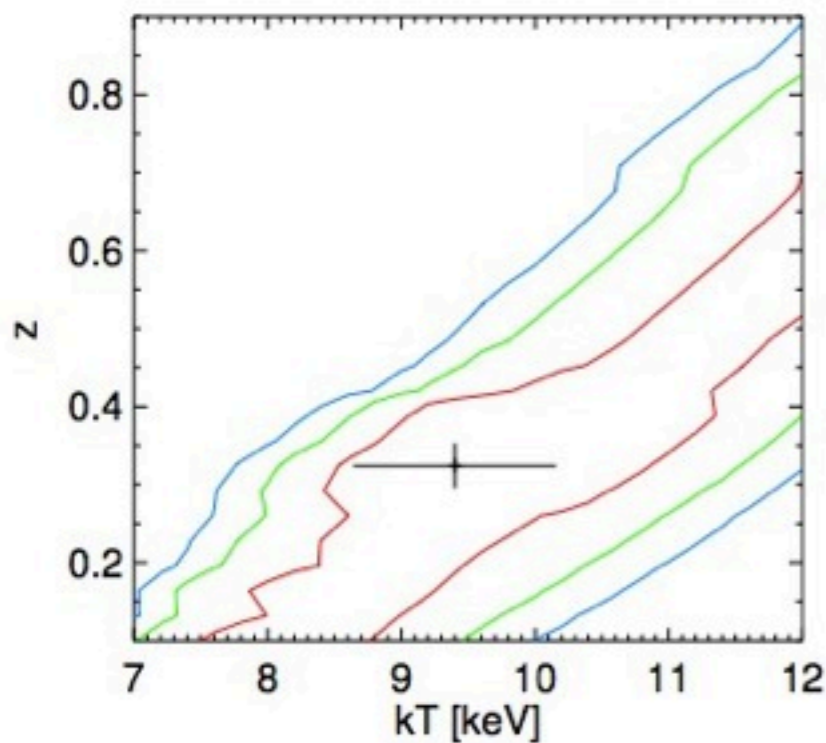
False candidate



4 out of 25, all with $\text{SNR} < 4.1$, all in pilot program

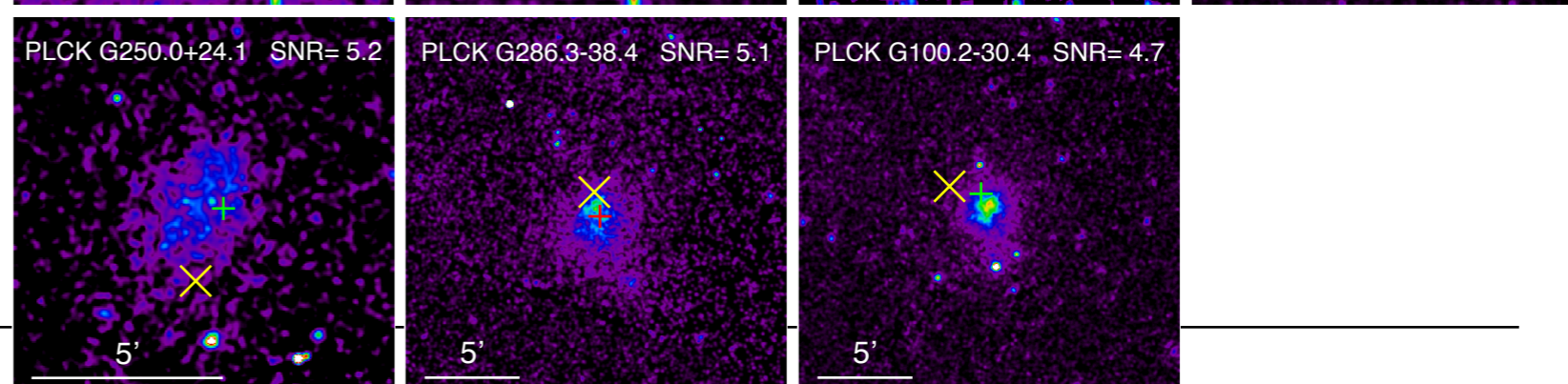
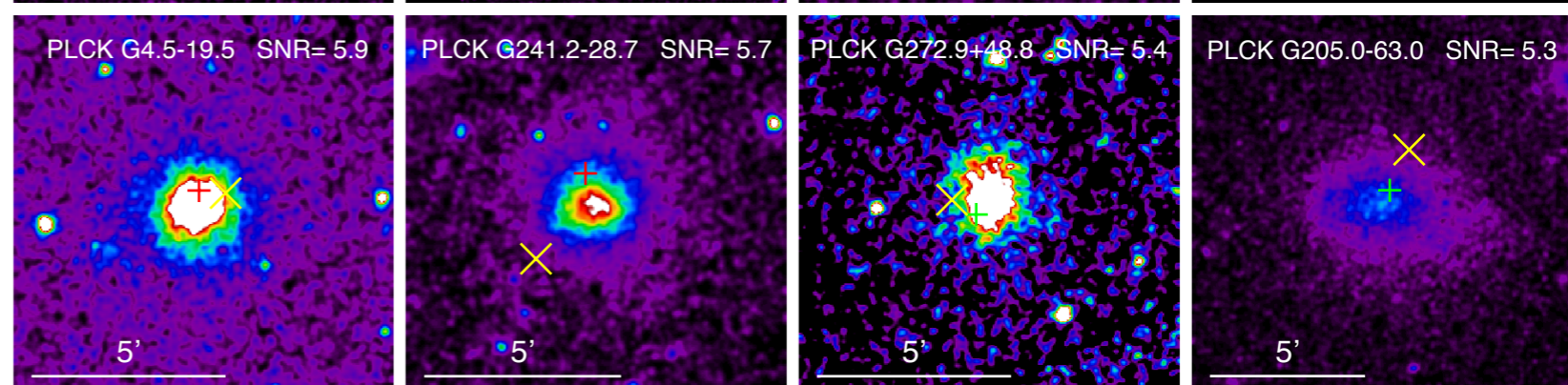
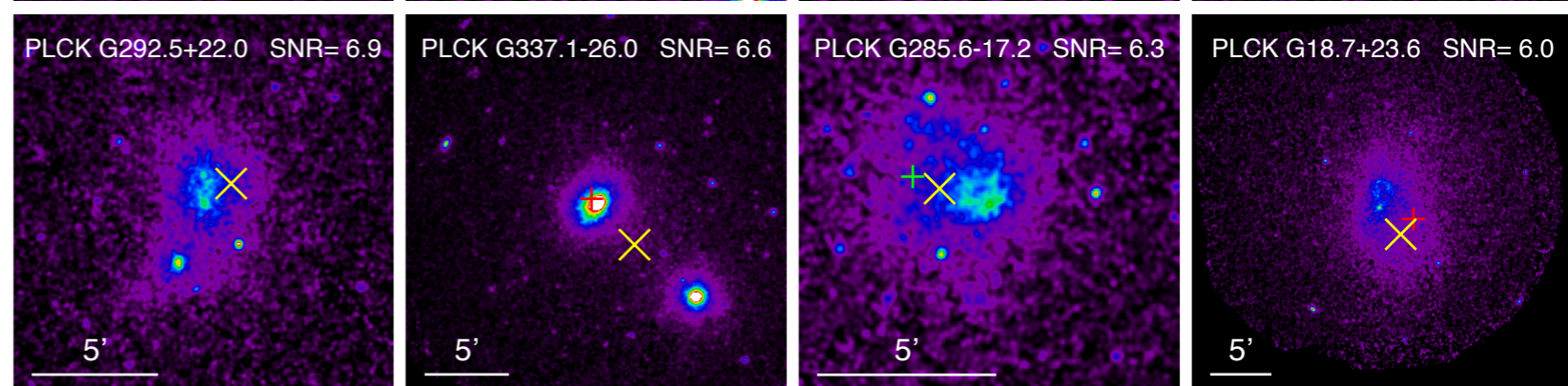
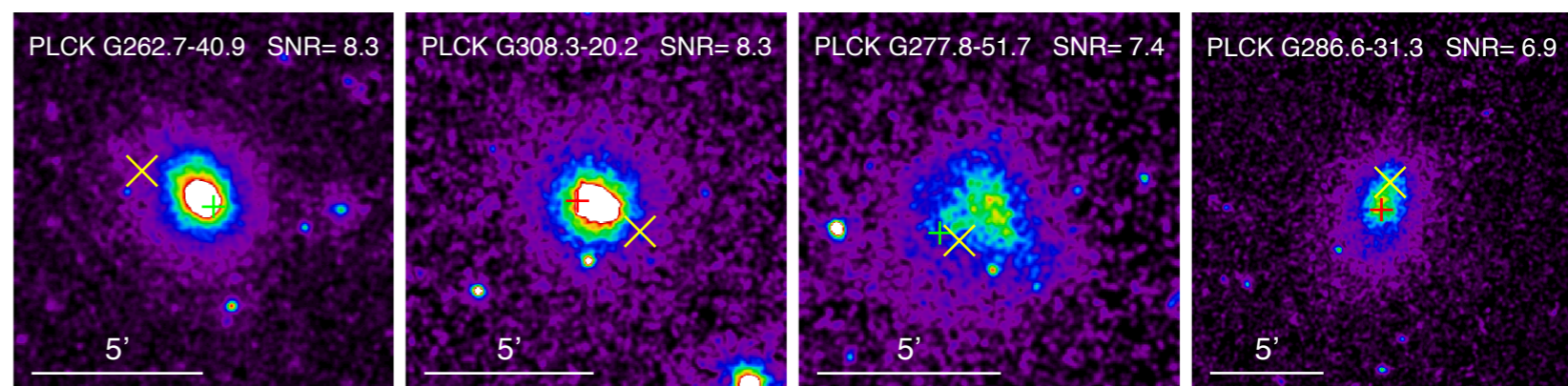
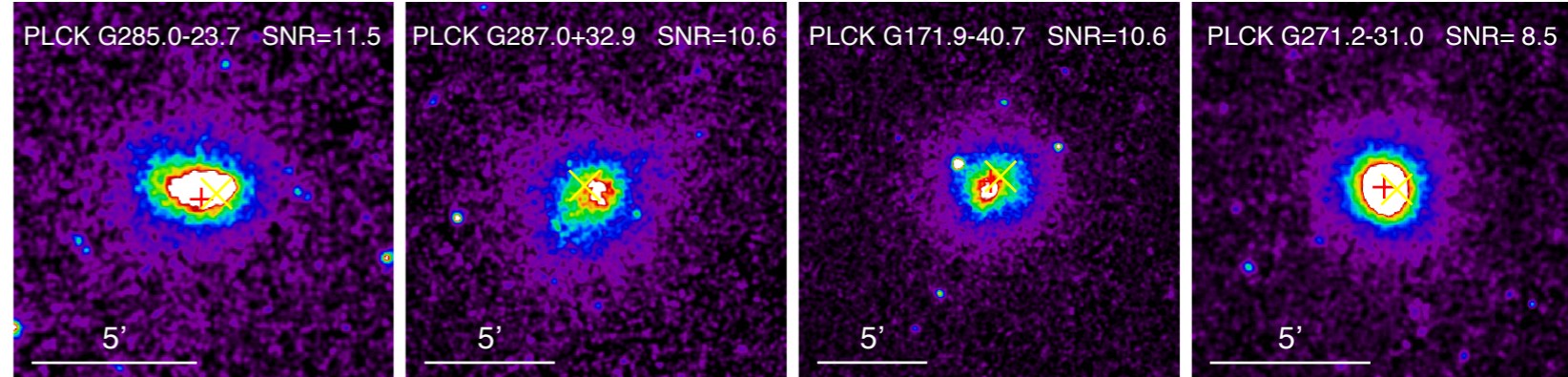


X-ray spectroscopic redshifts



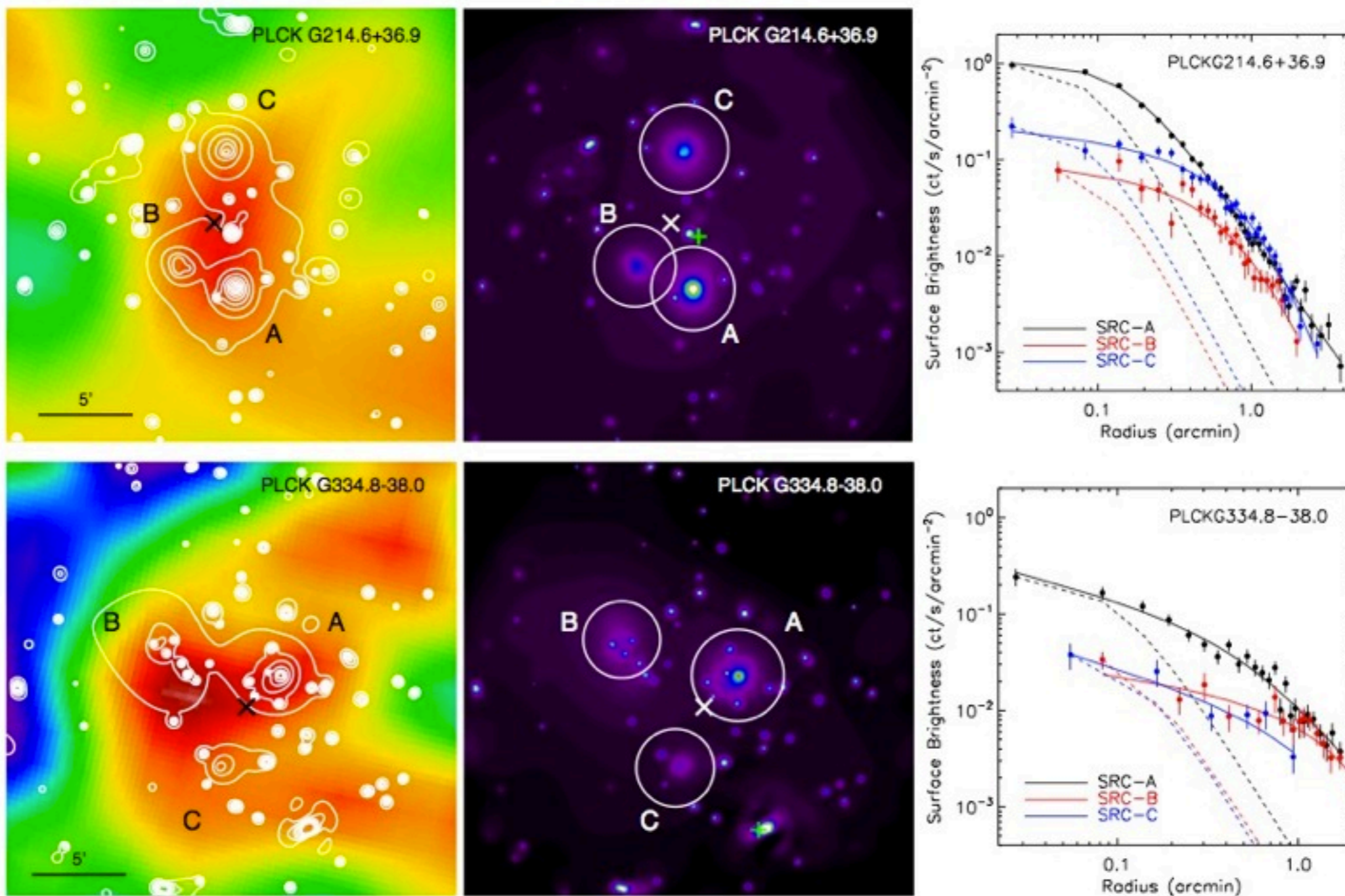


- * 21 out of 25
 - * SNR > 4.1
 - * 17 single systems
 - * 2 double clusters
 - * 3 triple systems
-
- * ~70 % morphologically disturbed





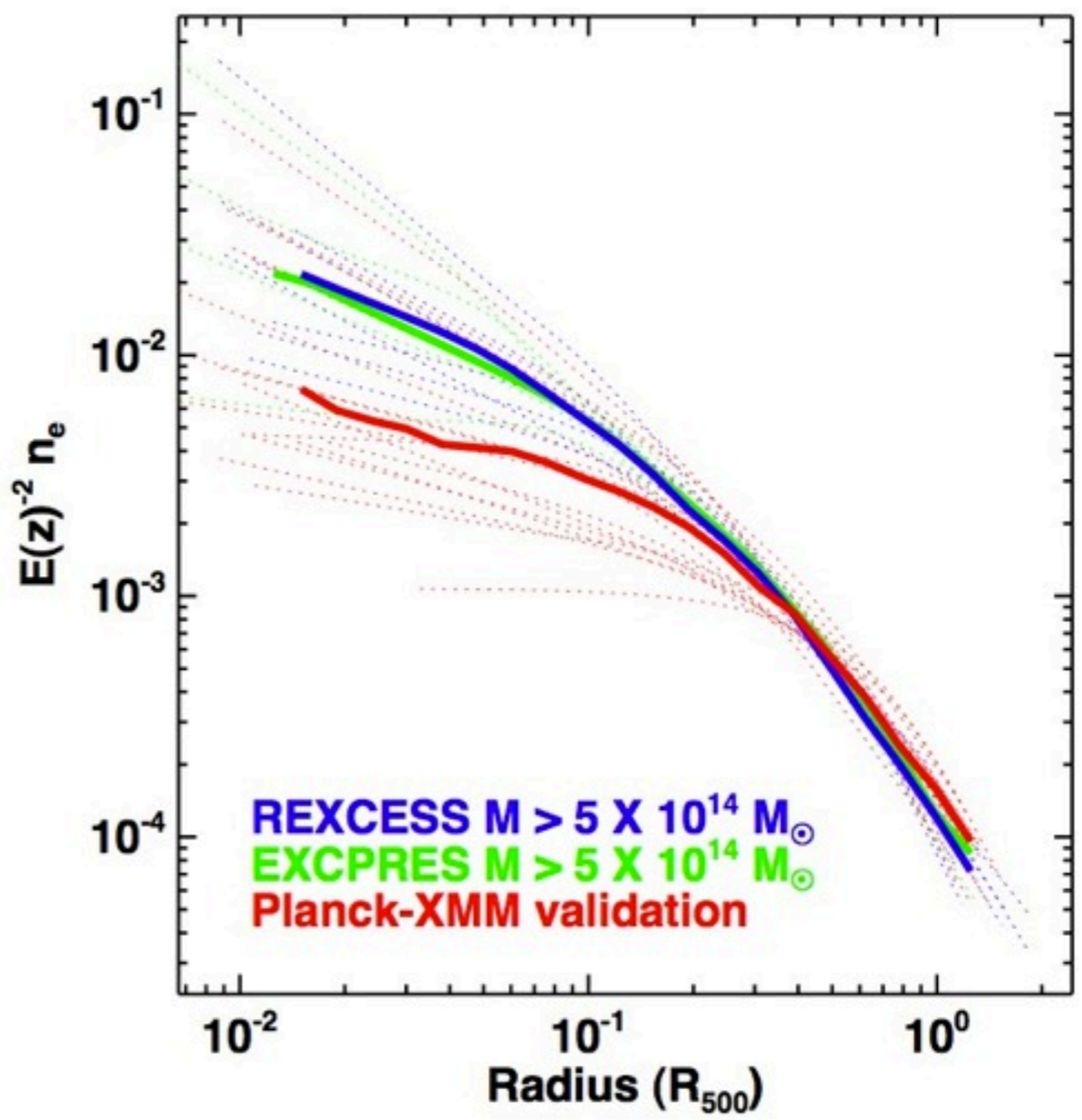
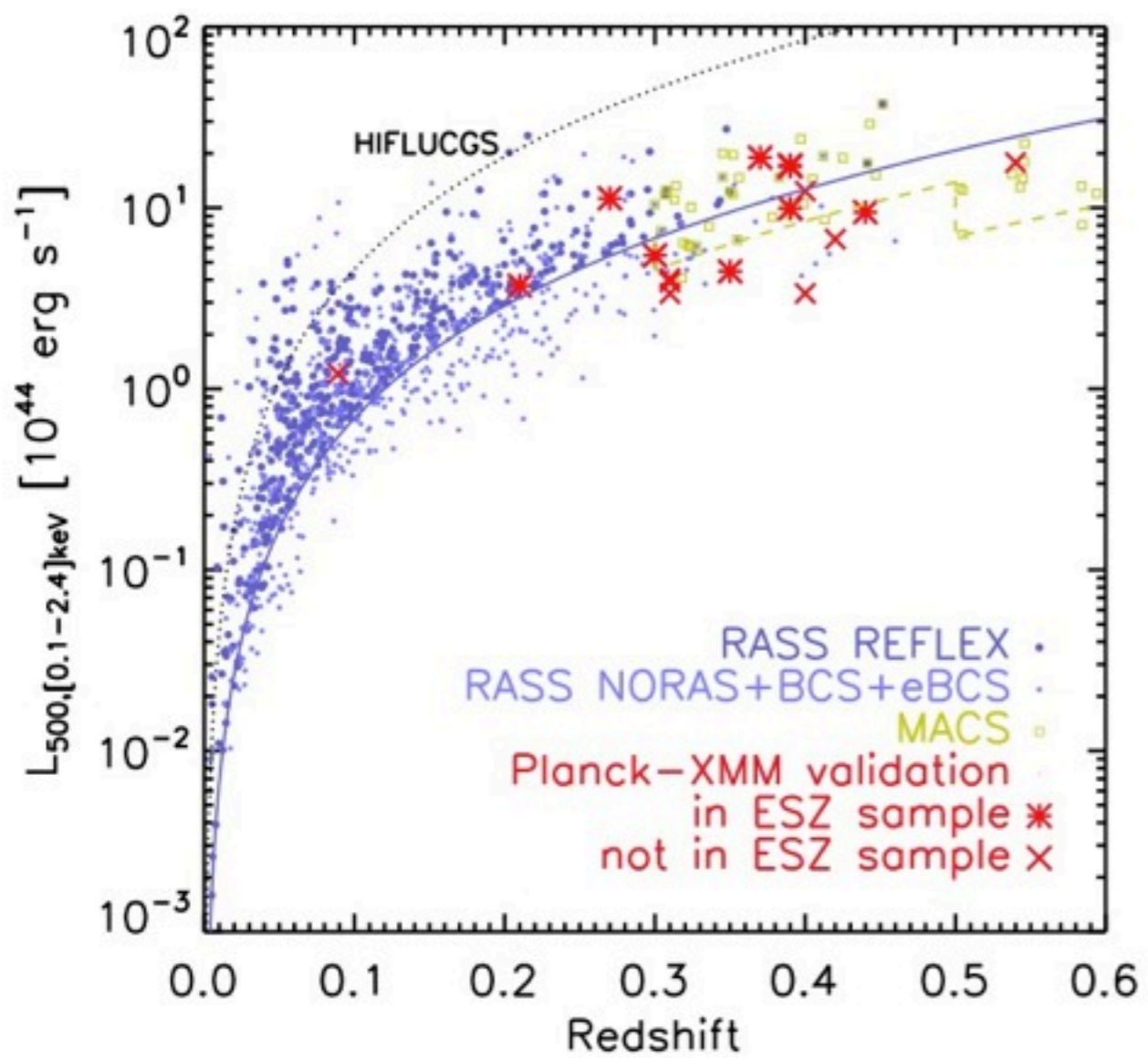
Triple systems: forming clusters ?



XMM-newton/VLT GO follow-up accepted



Blue elephants or pink mammoth ?!?



XMM-newton LP follow-up accepted

