A star field with 24 numbered stars circled in green or red. The stars are numbered 1 through 24. Stars 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 are circled in green. Stars 1, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 are circled in red. The background is a dark field of stars.

The UKIDSS DXS:
where we got to in the end...

Alastair Edge (Durham) and the
DXS Working Group

DXS Science Objectives

The aims of the DXS were to map a cosmologically significant volume at $z=1-2$ through the detection of galaxies over a representative range of the galaxy luminosity function in the rest-frame optical bands.

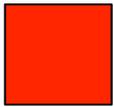
"The imaging for a $z=1-2$ SDSS....."

Total Covered to now

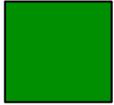
In total there are 37 complete J+K WFCAM fields (~28 sq.deg.) and another 6 with full K coverage (~32 sq.deg.).

The J+K data for two areas (Elais-N1 and SA22) are complete, Lockman Hole is missing just one field in J and XMM-LSS is complete in K but only has 3 in J.

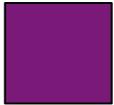
We also have four fields in H in SA22 taken in 2011 to fill the queue.



= K



= JK



= JHK

XMM LSS

8	7	6
4	3	5
1	2	UDS

Lockman Hole

5	6	7
2	3	8
1	4	9
10	11	

Elais N1

	9	10	
	5	4	3
11	6	1	2
	7	8	

SA22

3	4	5	10
2	1	6	11
9	8	7	12

What did we ask for in 2001?

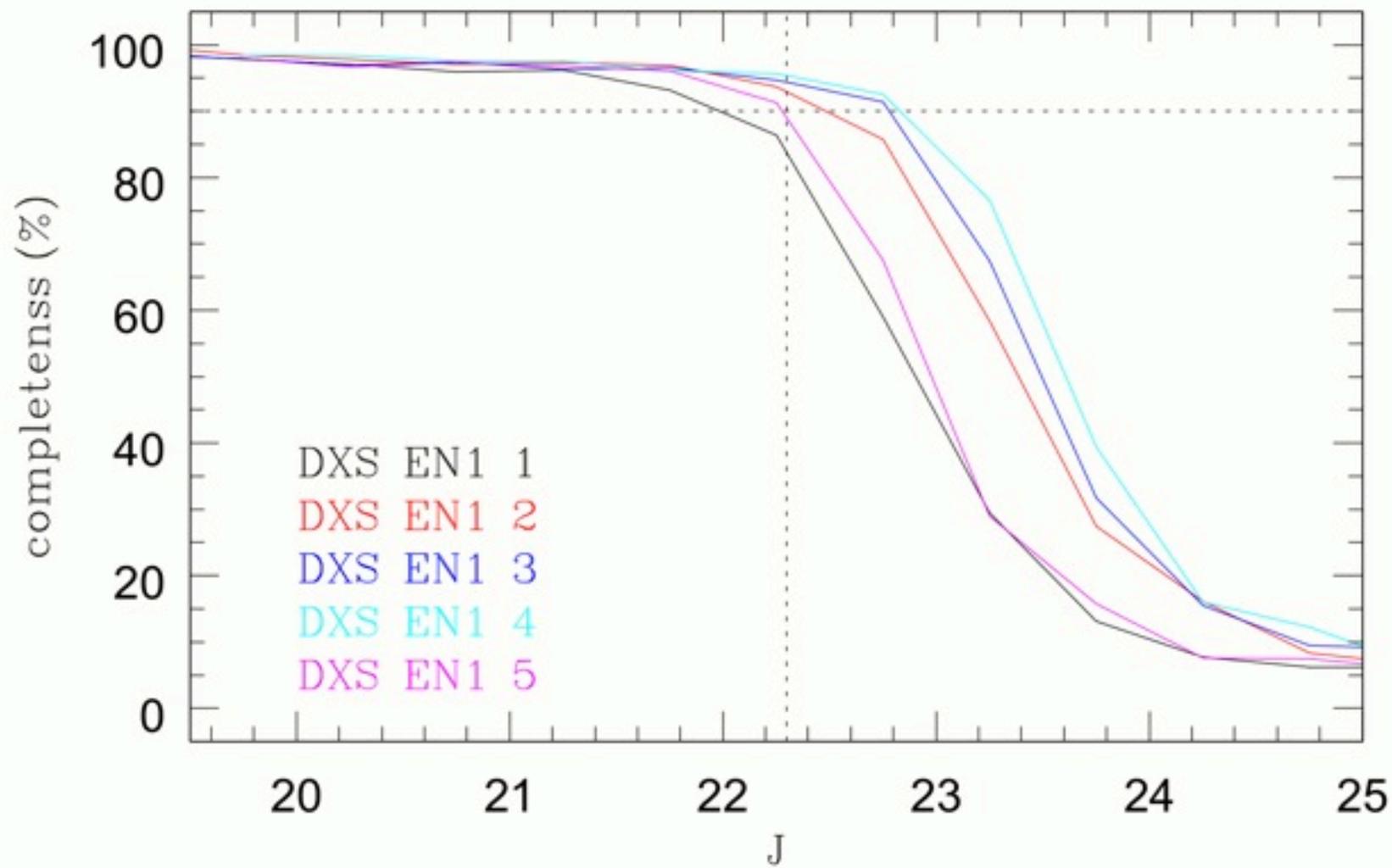
Looking back at the original DXS proposal last night I noticed that we originally requested 35 sq.deg. in J and K and 5 sq.deg. in H.

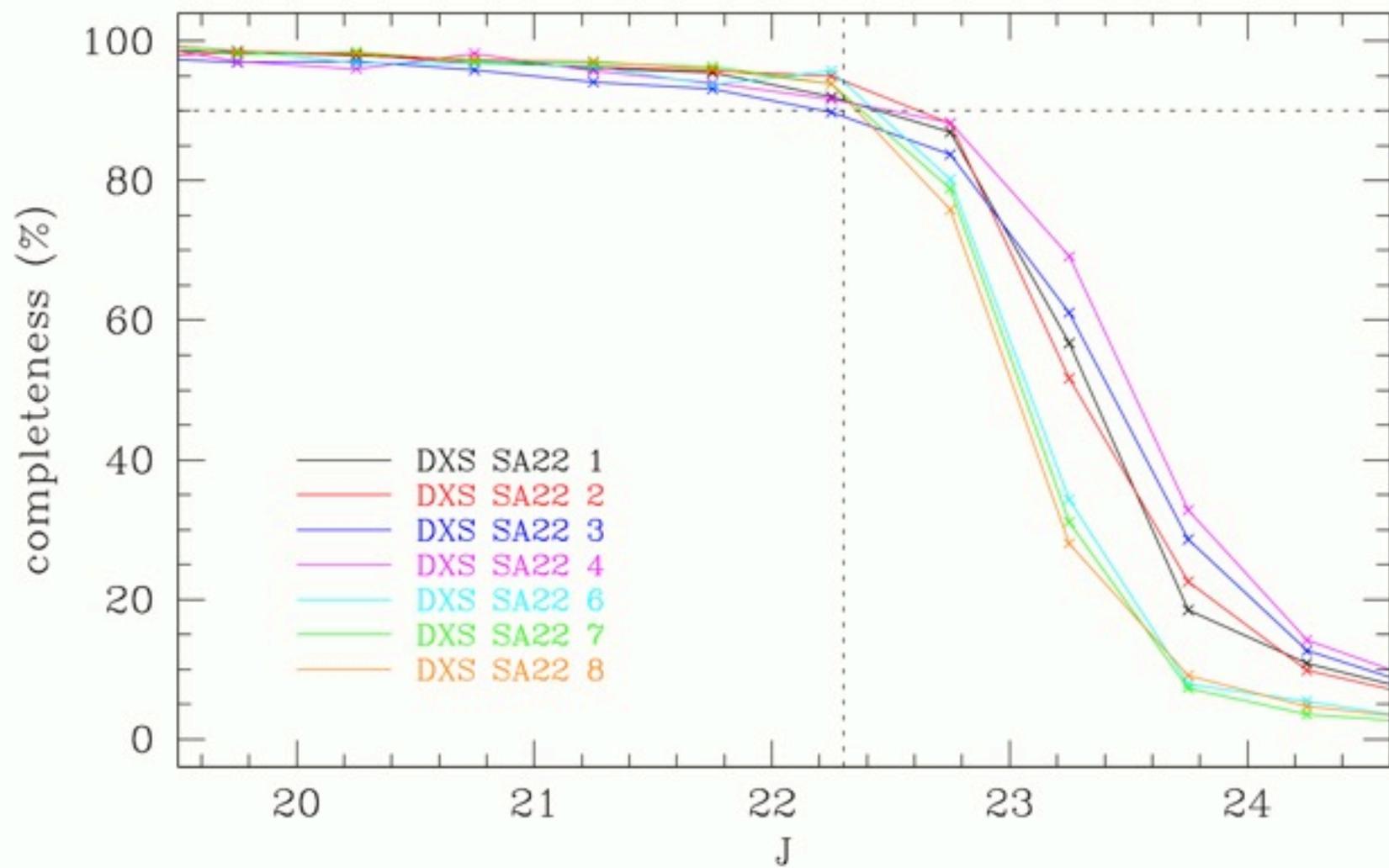
So we are in area now at 80 and 90% complete in J+K and K alone and 60% in H!

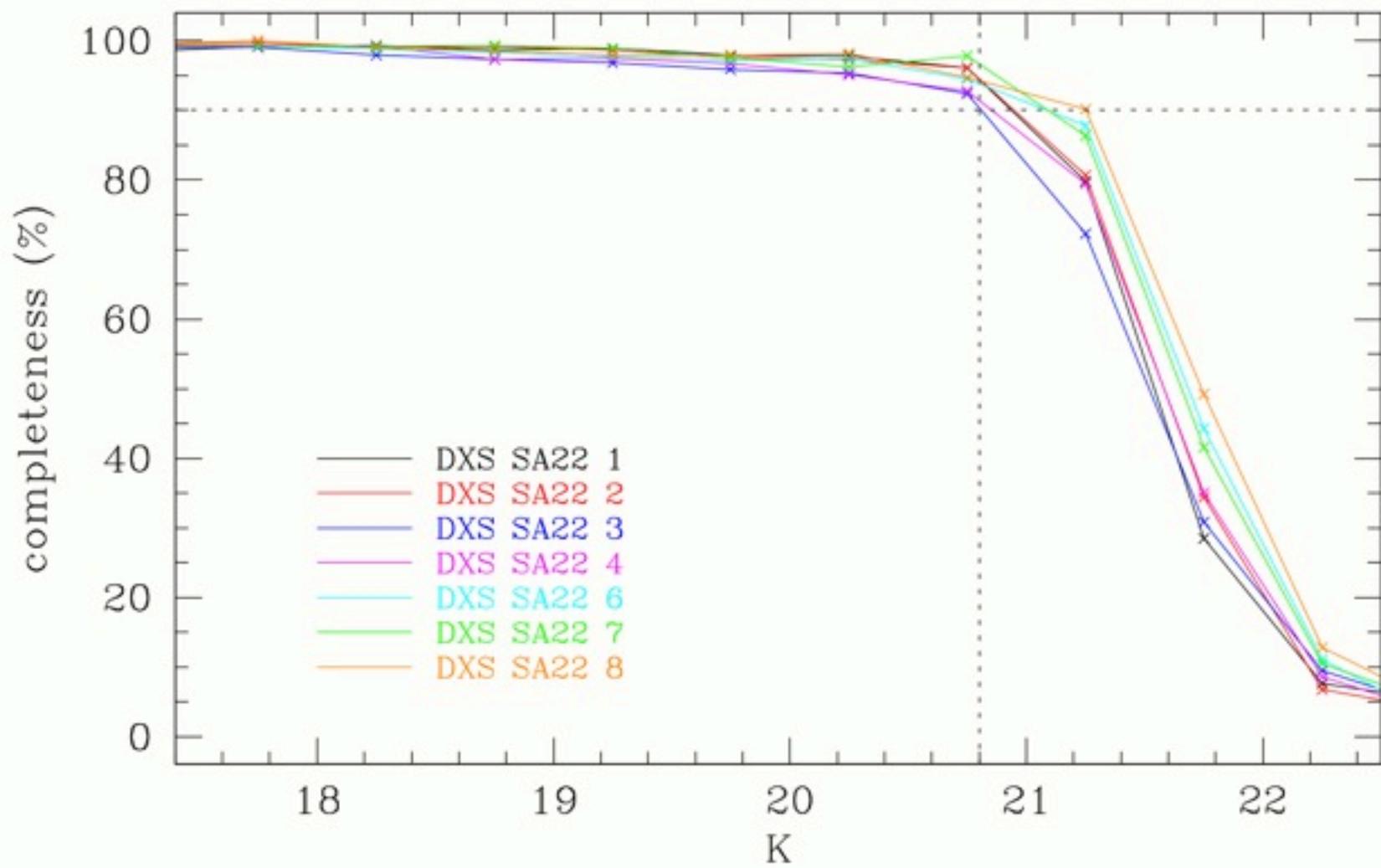
DXS depth estimates

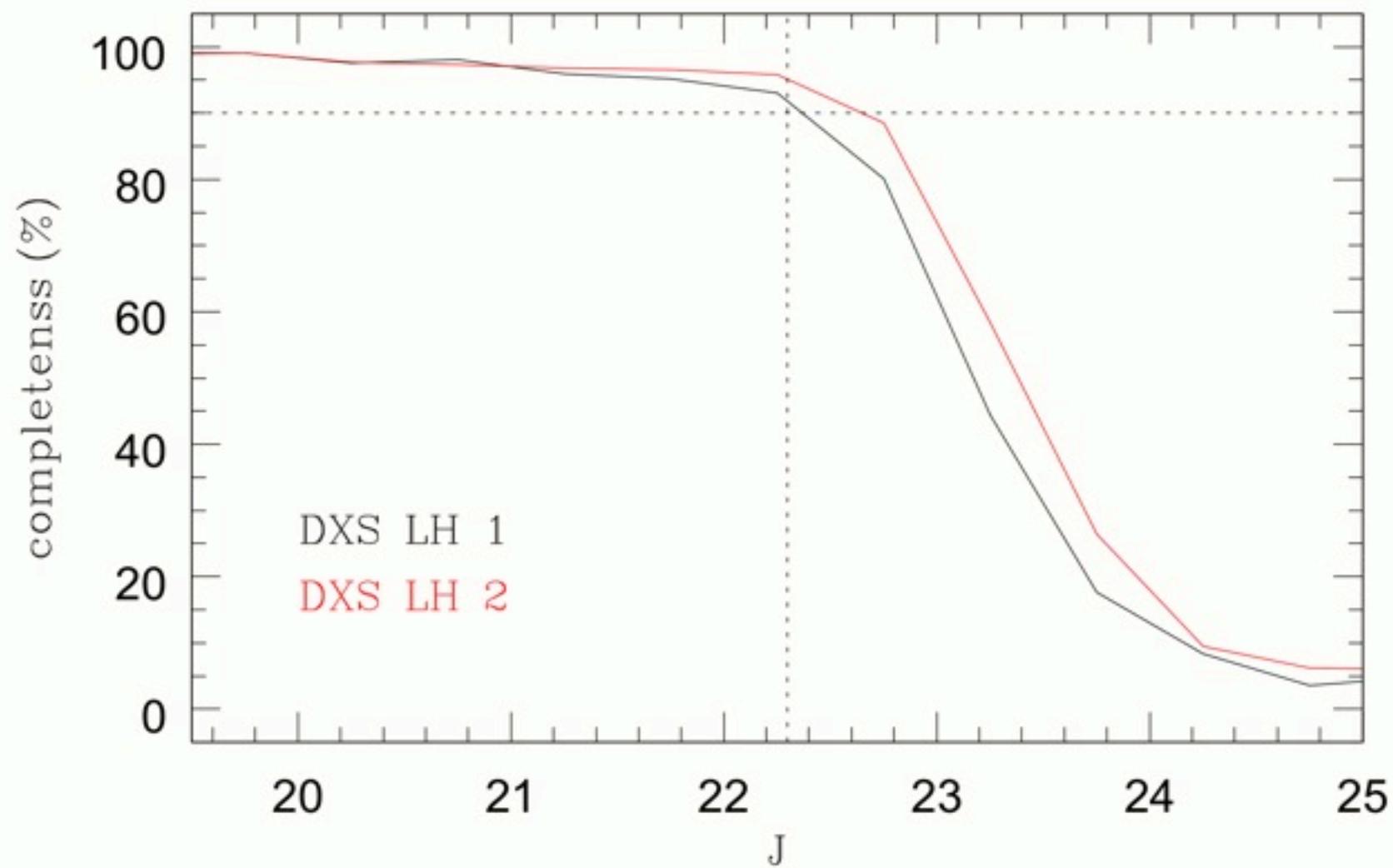
Using the recovery statistics of artificial stars and galaxies, Jae-Woo Kim has determined that the 90% completeness for point sources at 5σ is $K > 20.8$ and $J > 22.3$ for the large majority of the DXS fields screened in DR8.

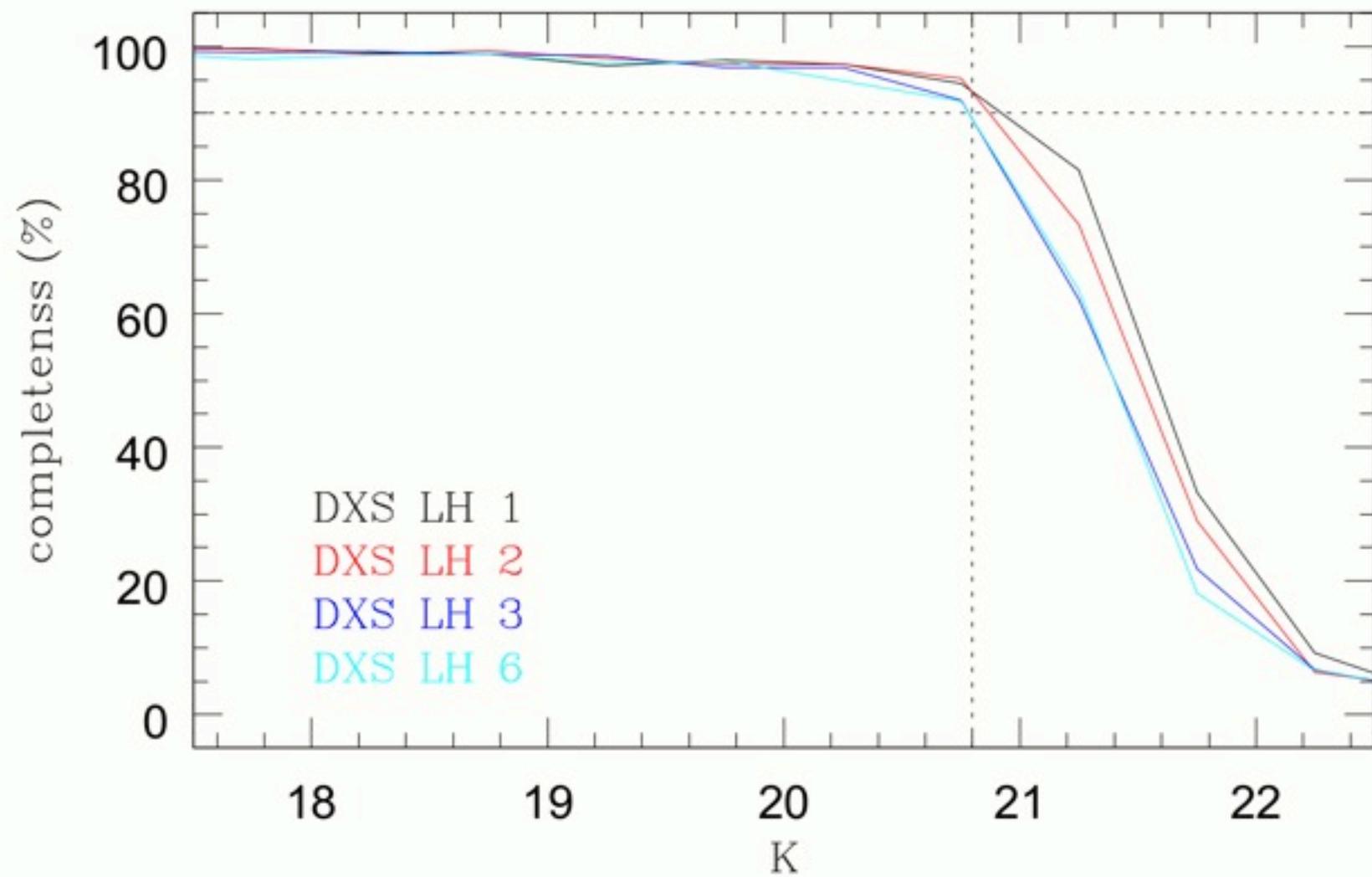
This compares well with the original





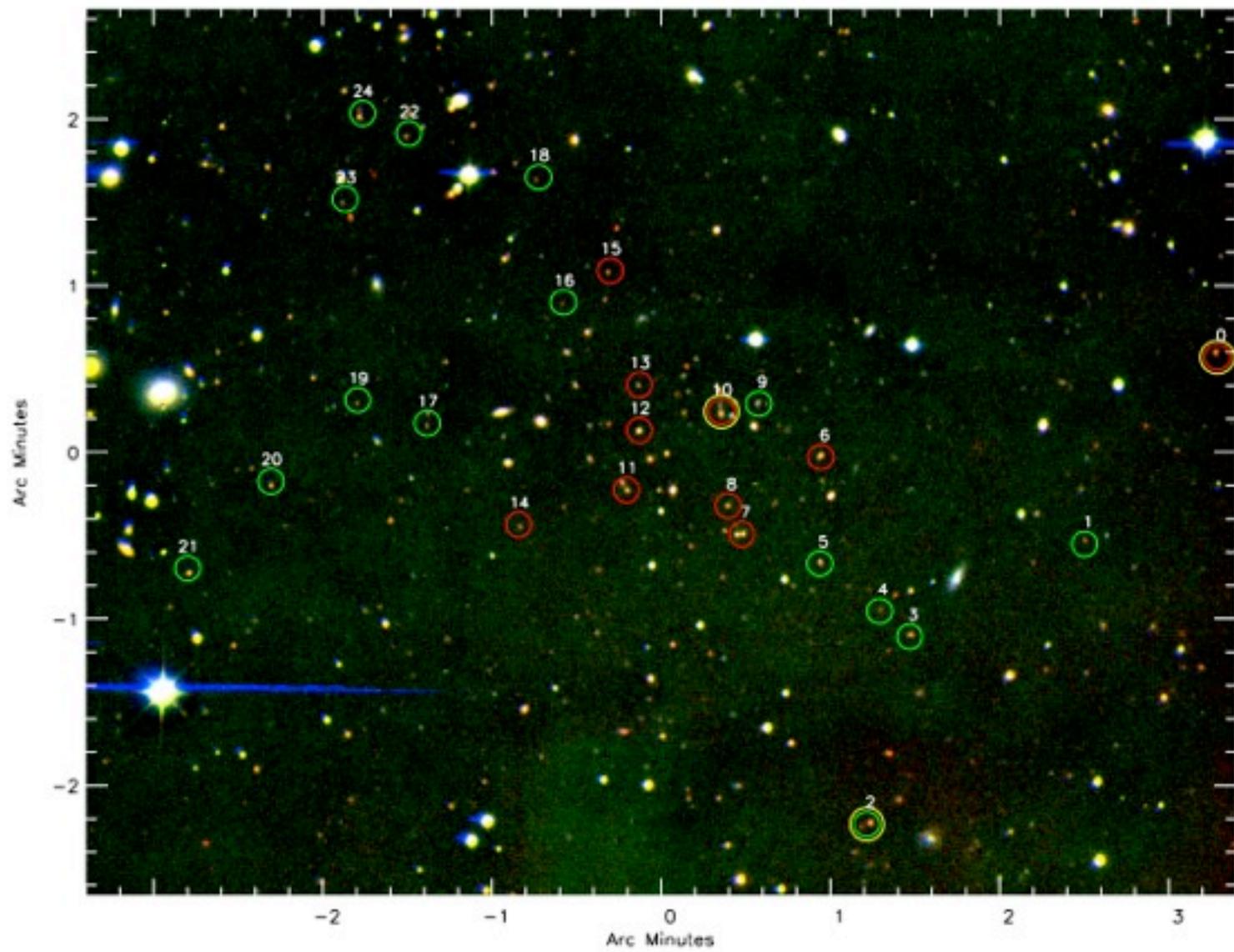






Science Highlights

The discovery of a $z=0.9$ supercluster in the first DXS field released (Swinbank et al 2007).



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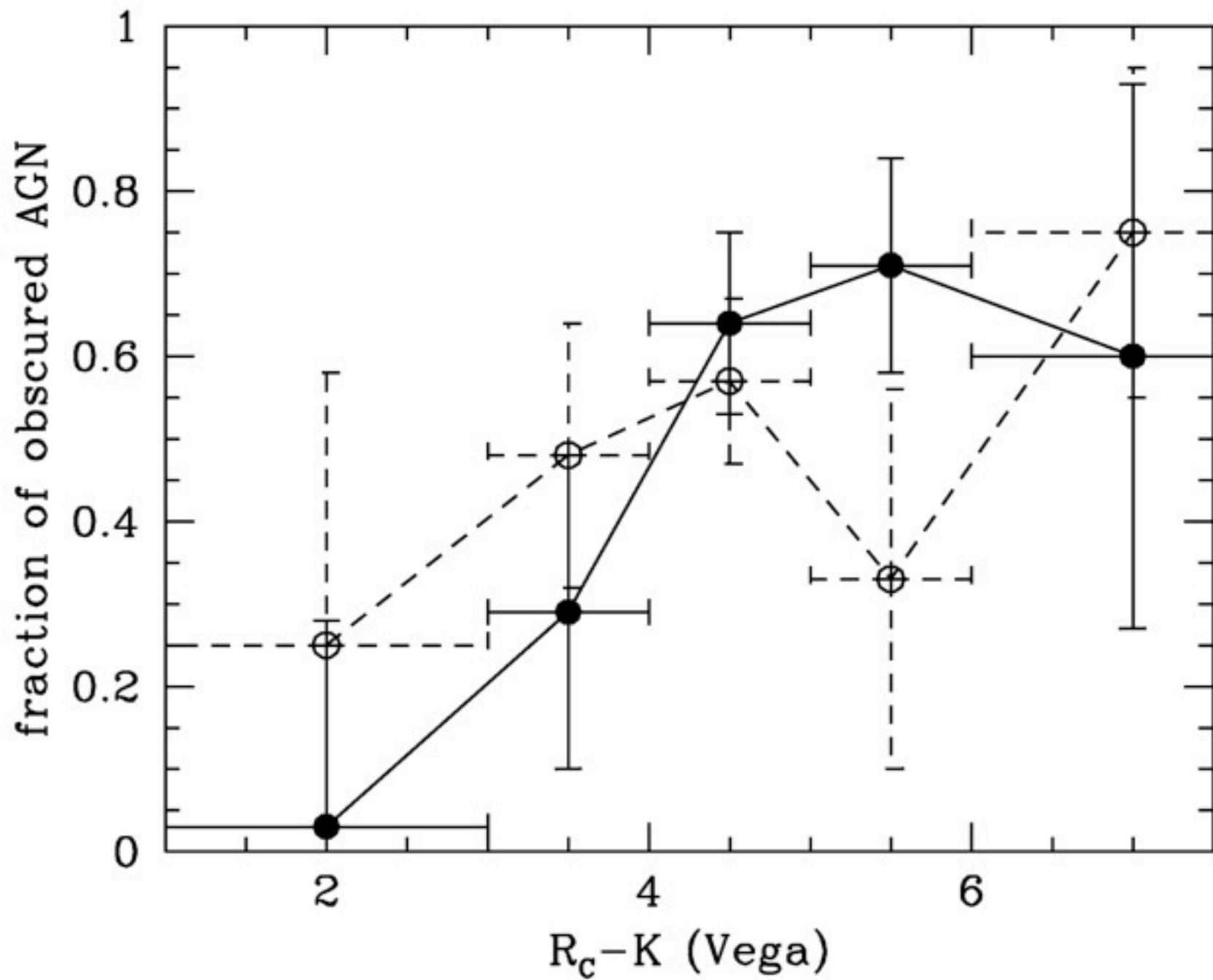
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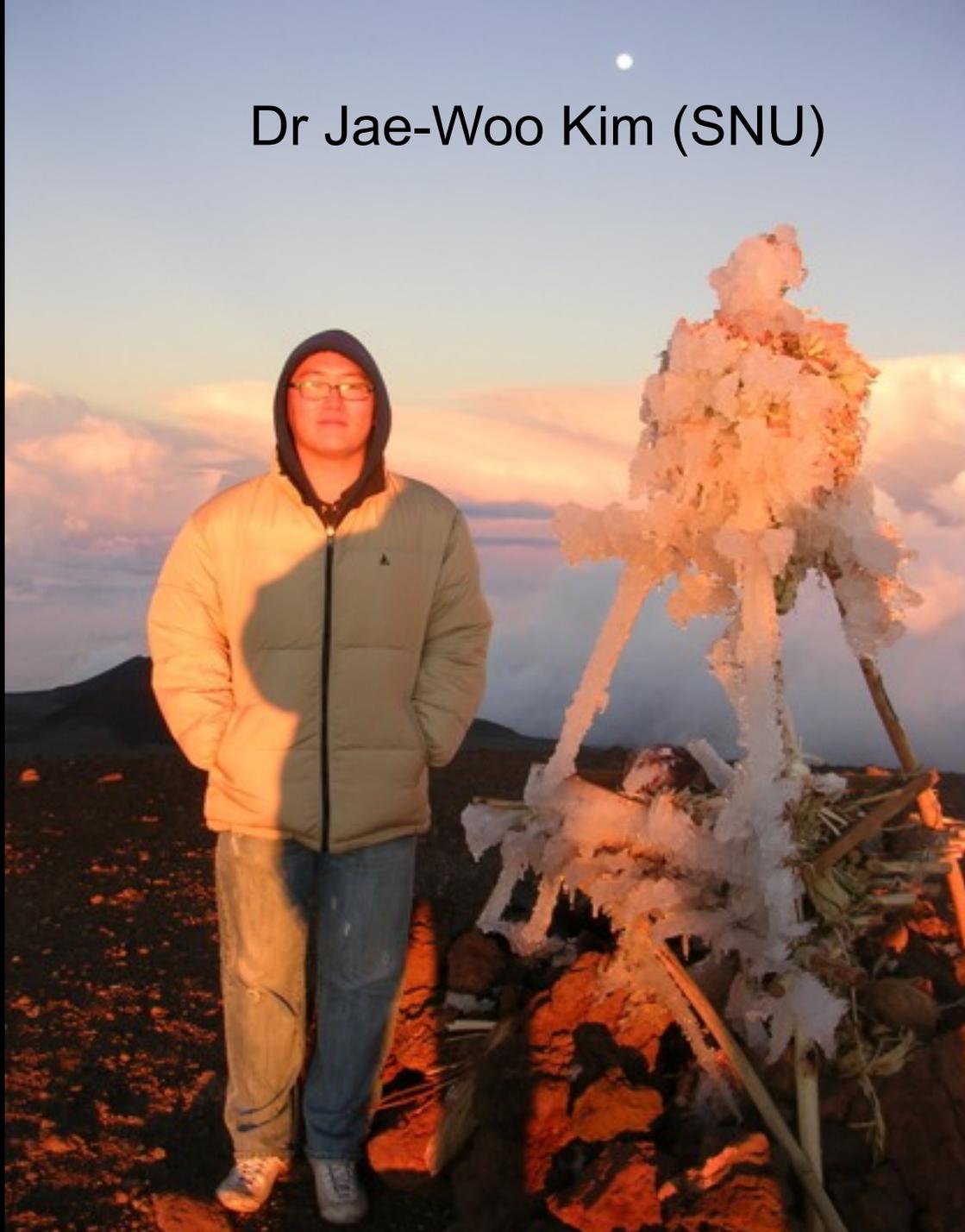
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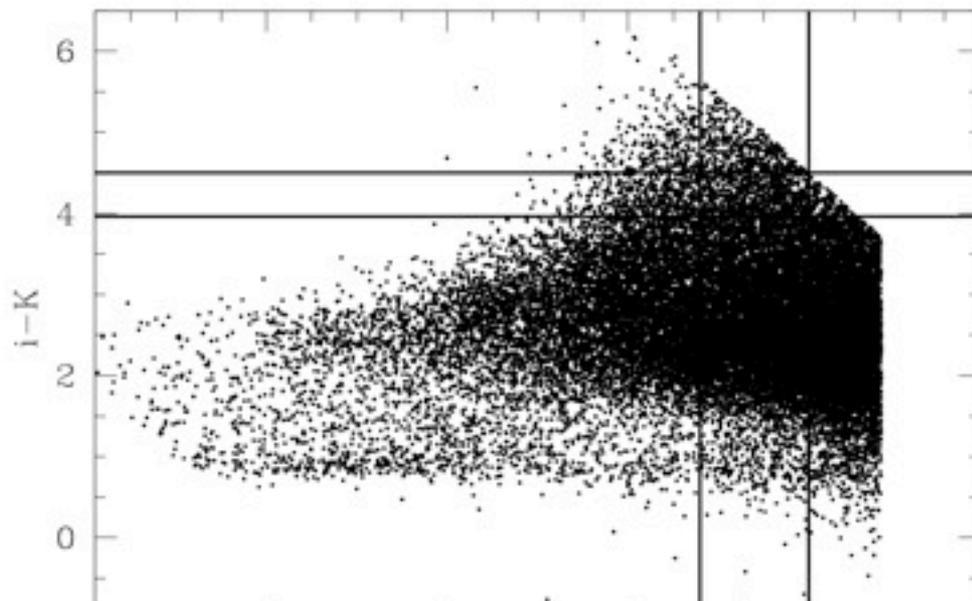
Discovery of 2 faint T-dwarfs (Lodieu et al 2009)

Angular clustering of massive $z>1$ galaxies (Kim et al 2011 and 2012)

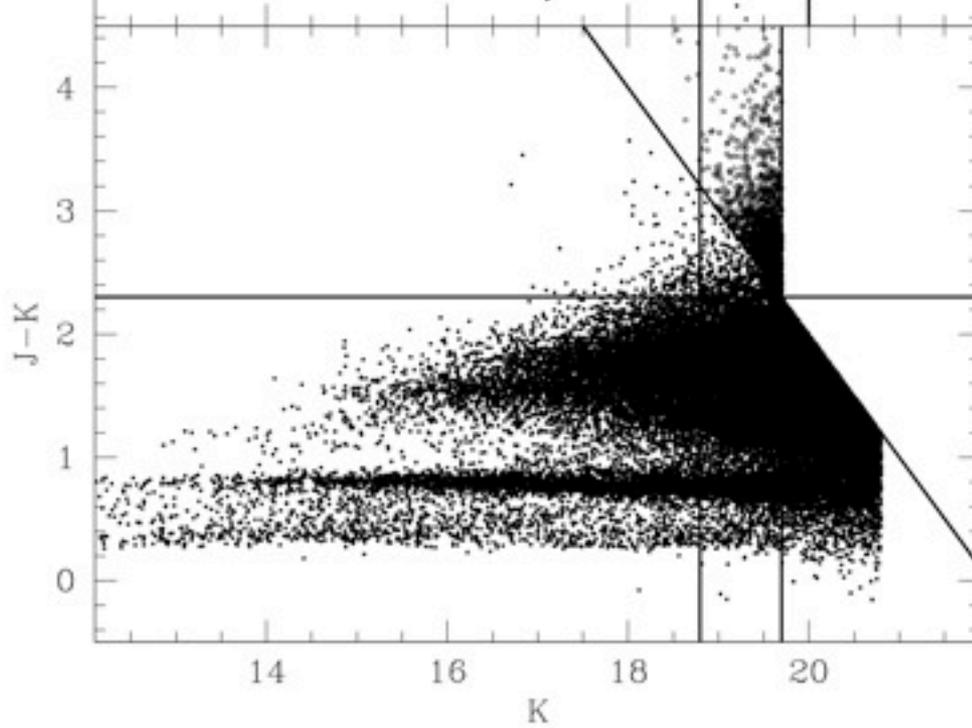
Dr Jae-Woo Kim (SNU)

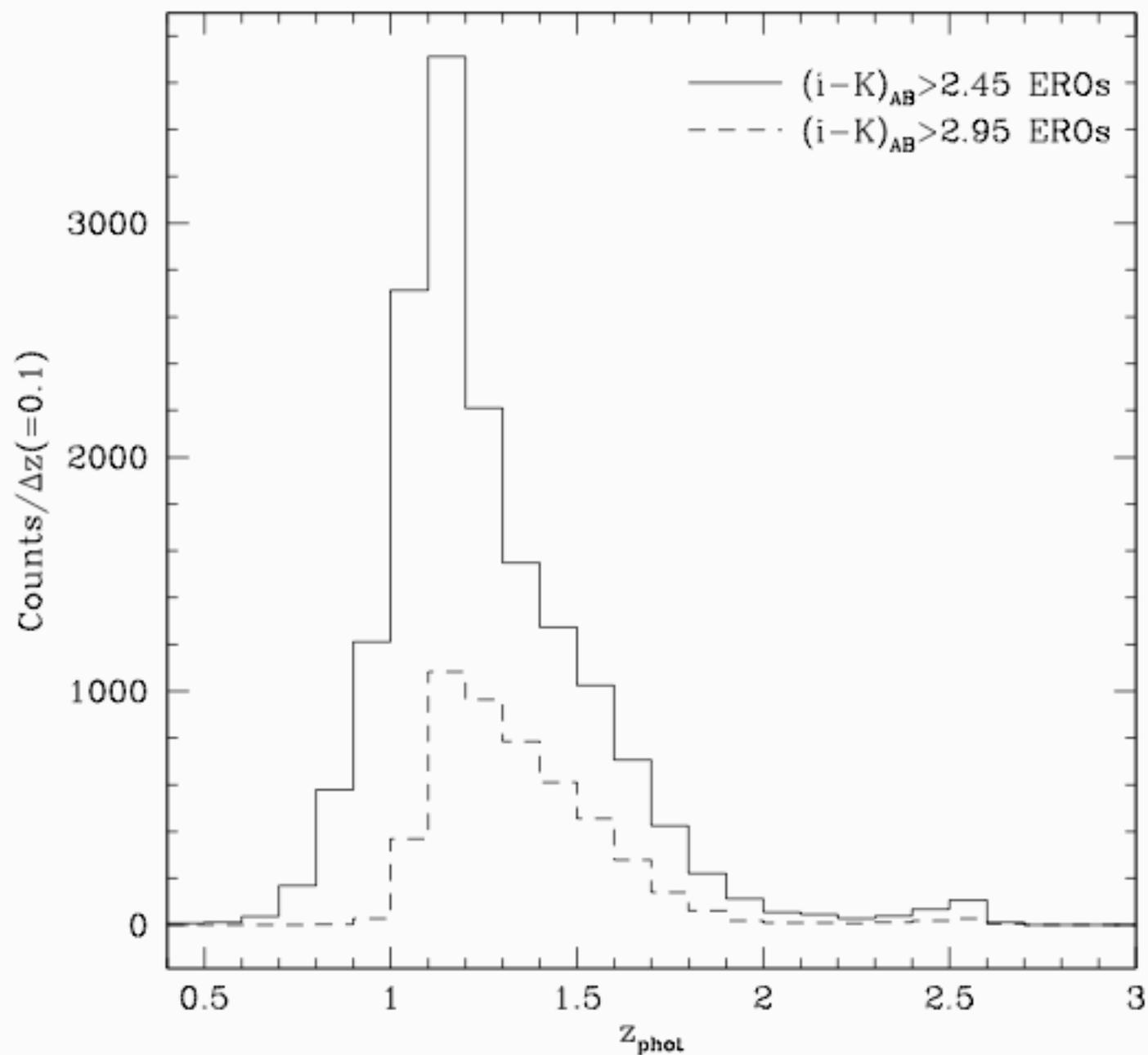


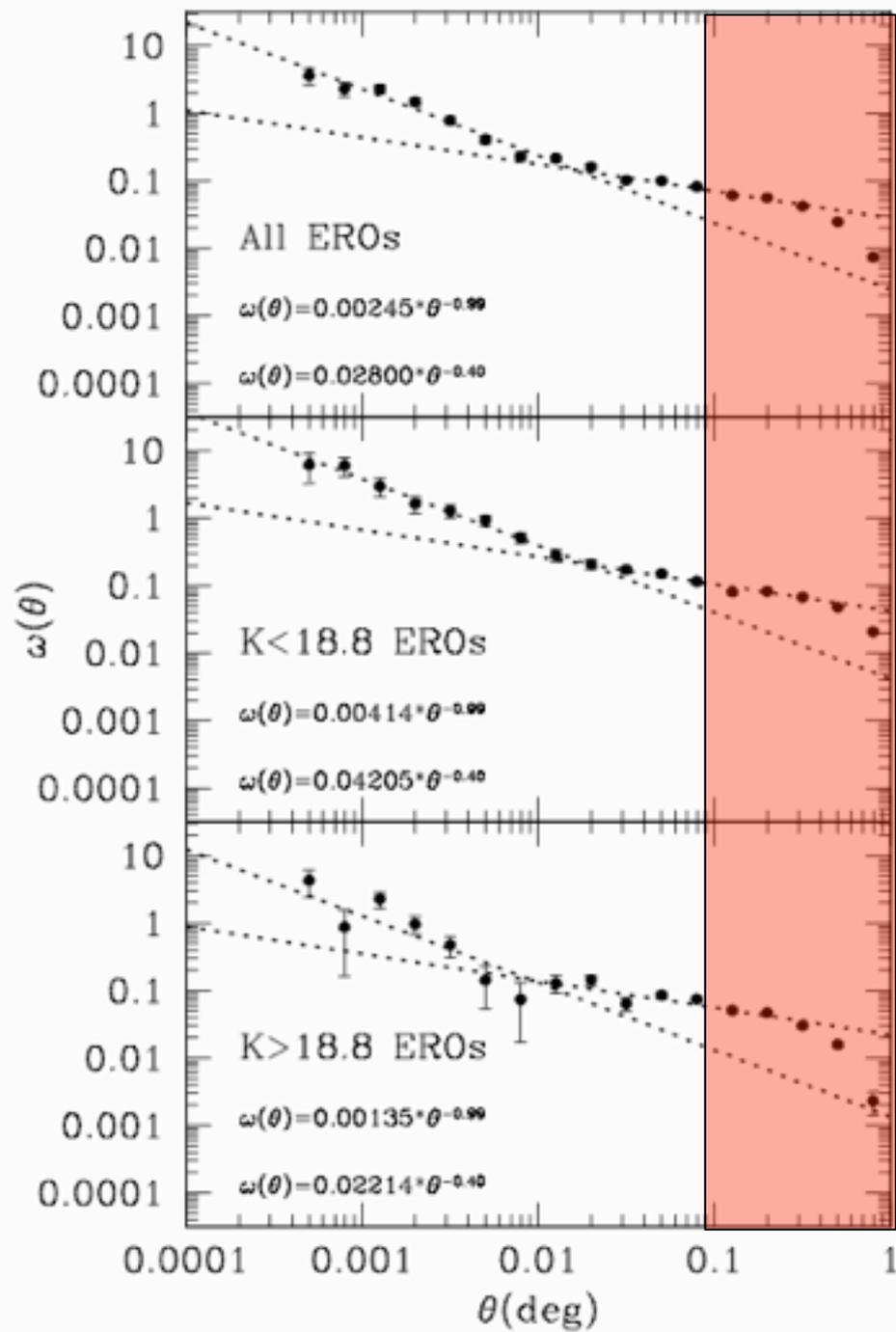
EROs

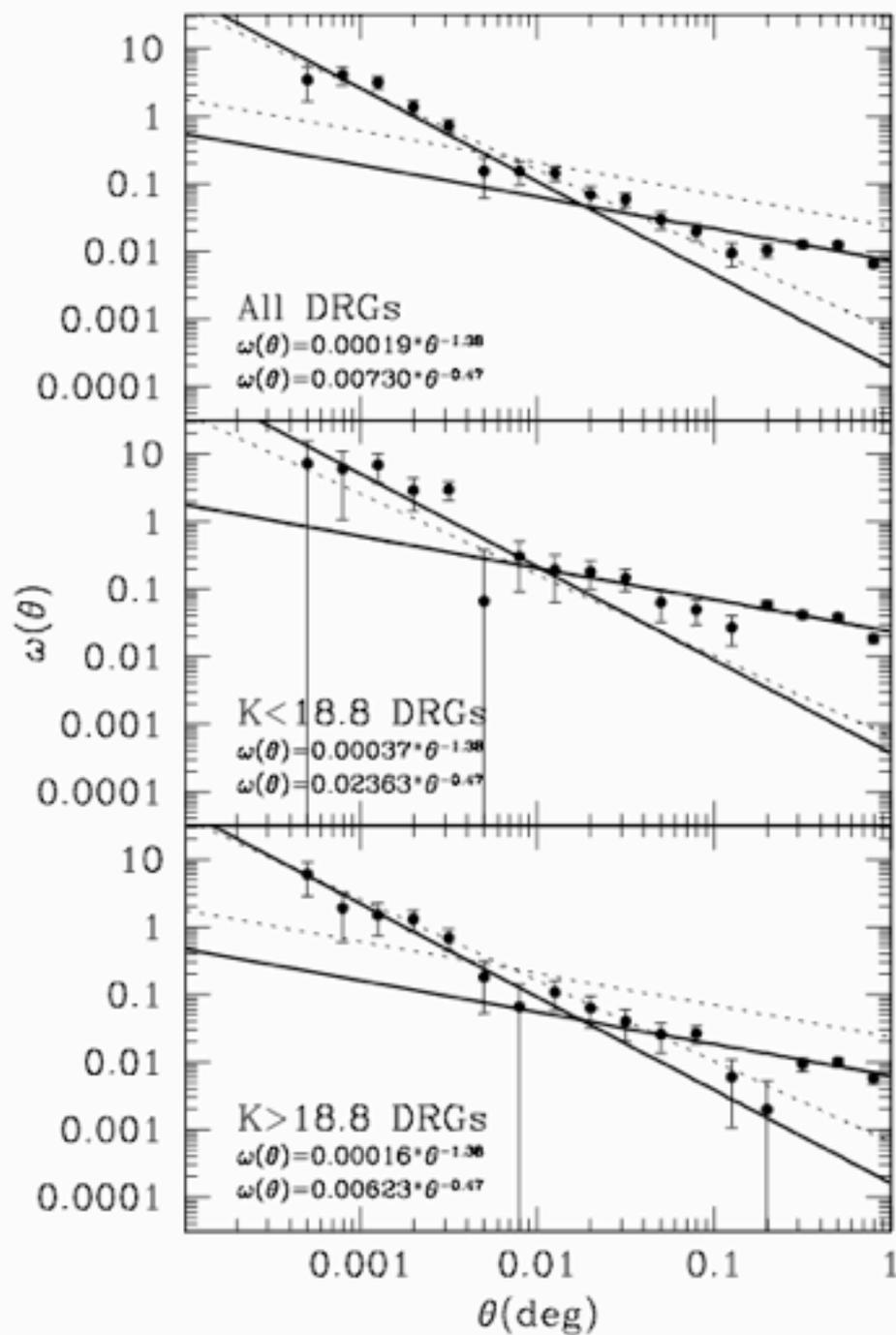


DRGs

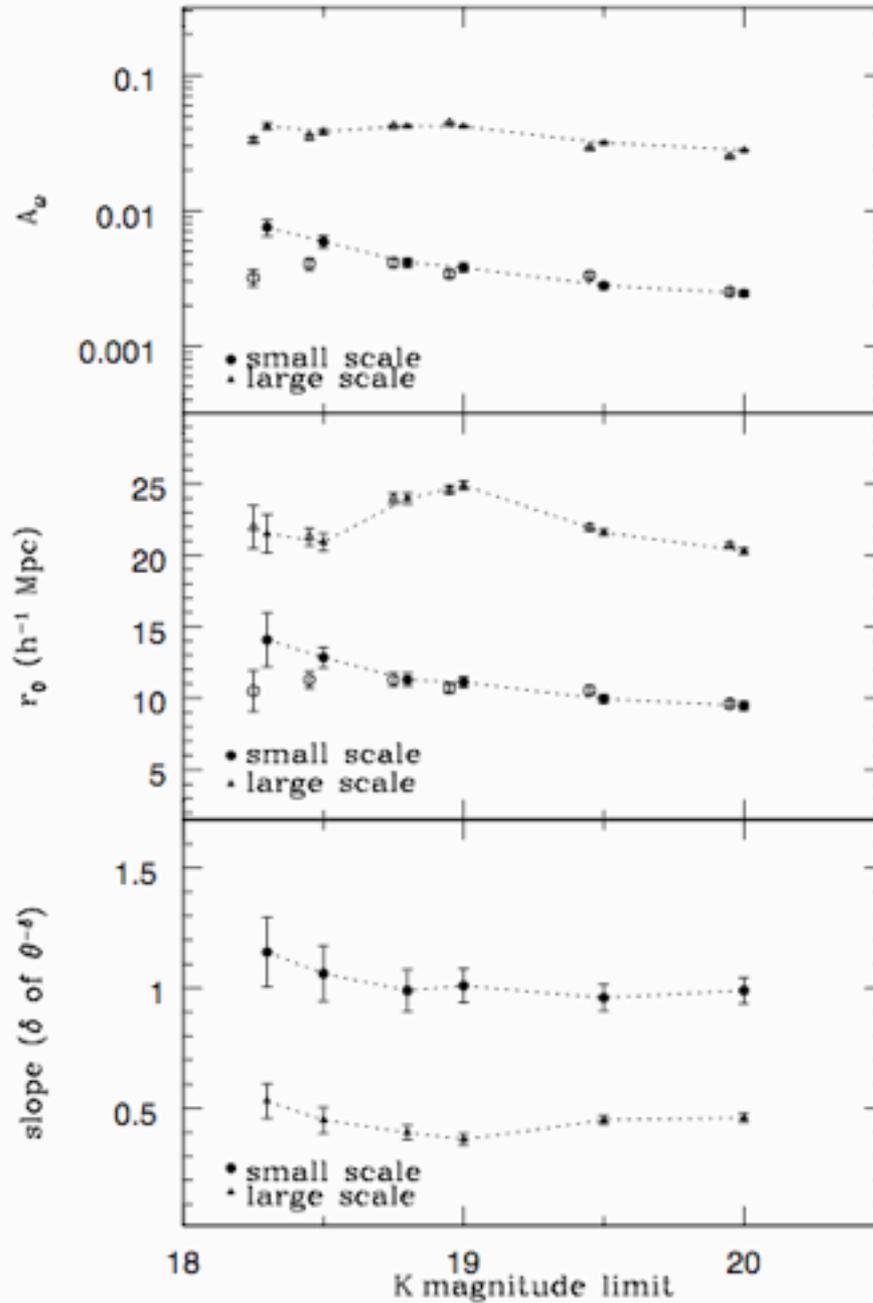




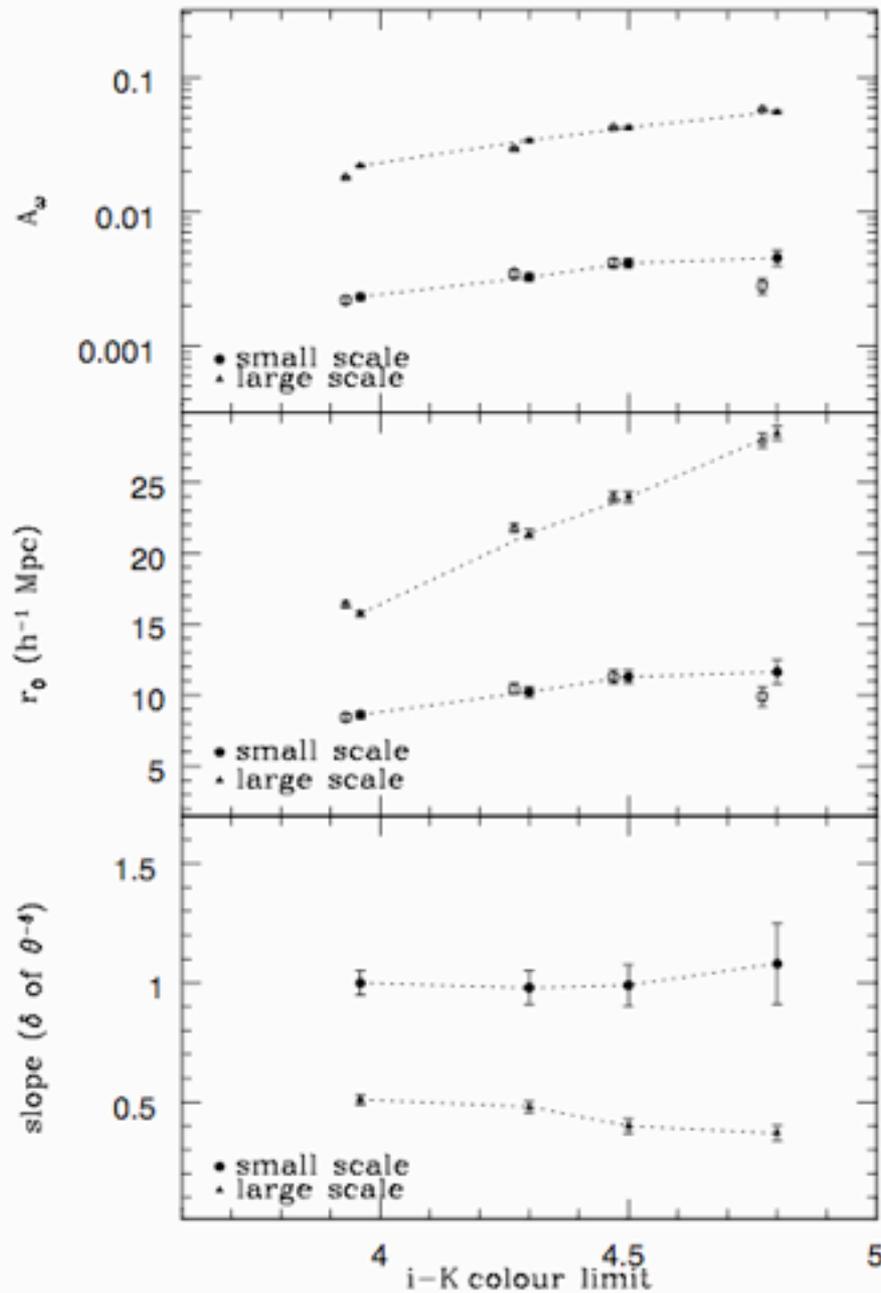




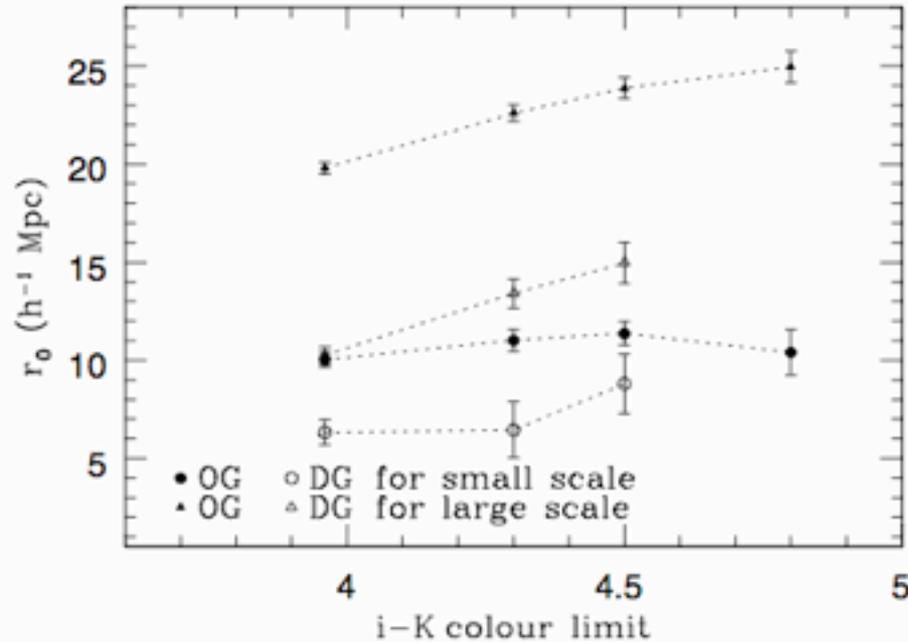
Depth Matters for clustering



So does the colour limit EROs are selected to

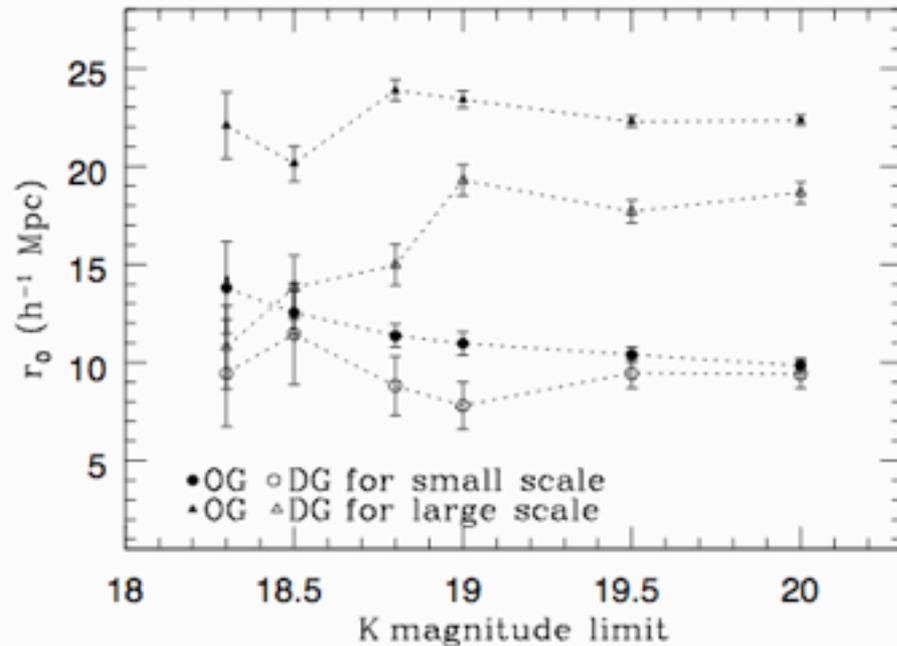


Dusty EROS are much less clustered

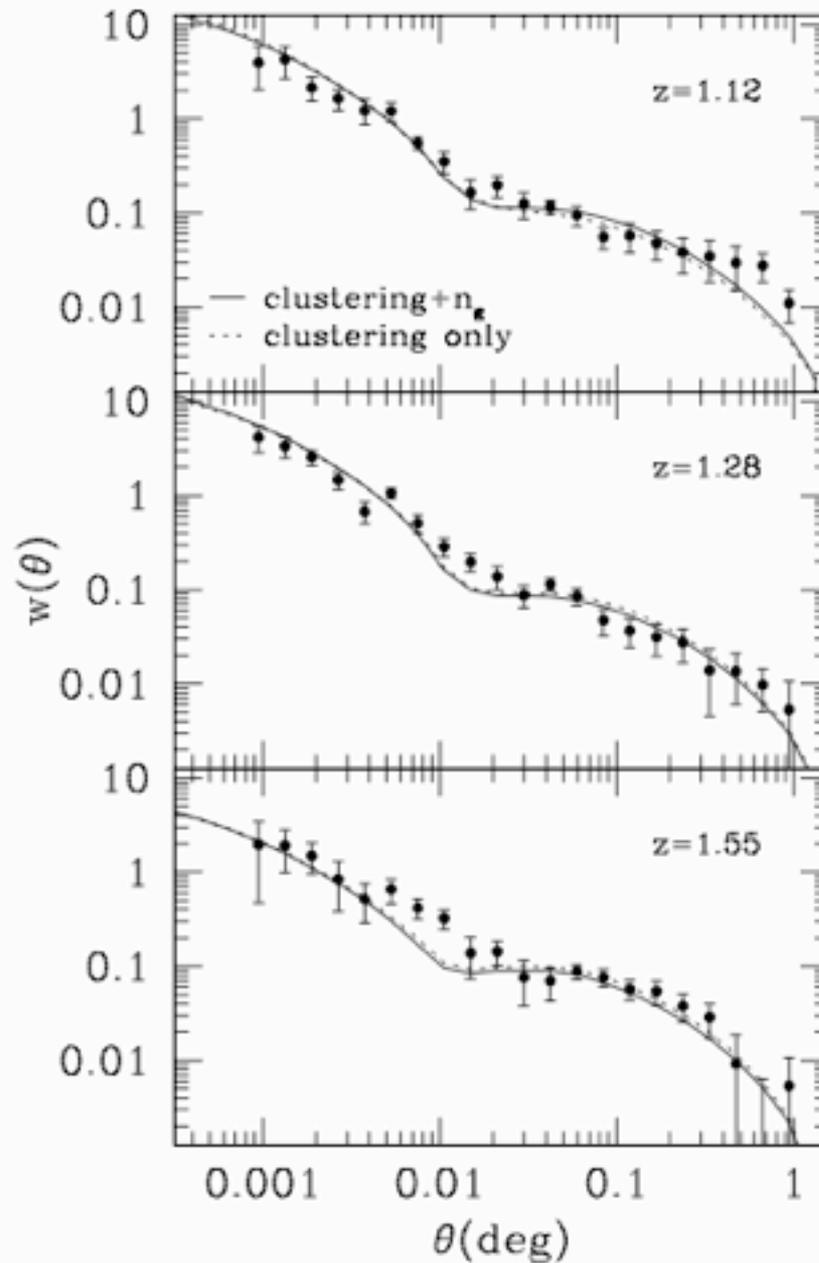


DGs $J-K > \sim 2$

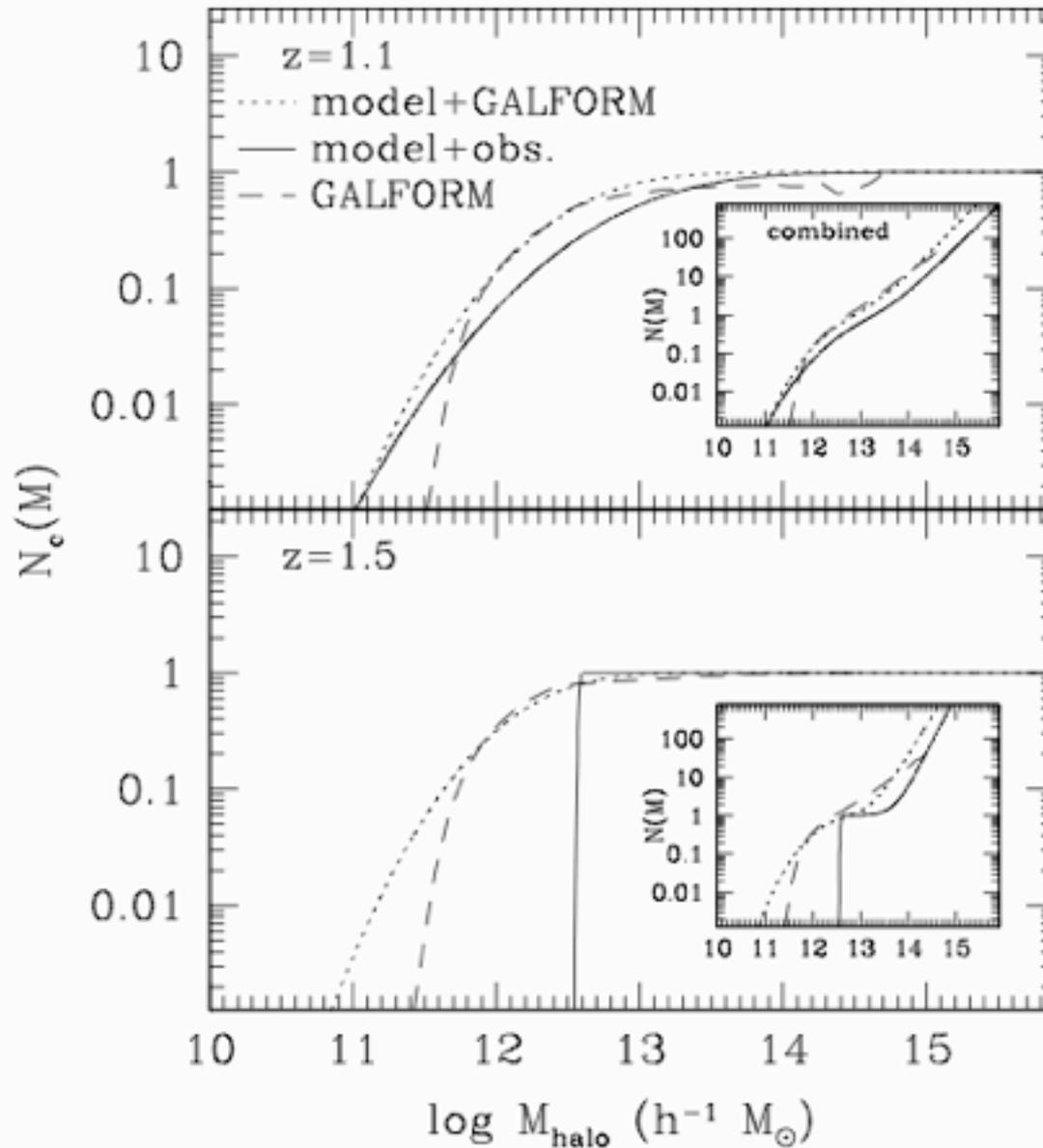
OGs $J-K < \sim 2$



The clustering matches HOD model predictions



And we can use them to constrain semi-analytic models



Highlights yet to come?

AMI S-Z clusters

Four full PS1 MDS + DXS fields

Three HyperSuprimeCam + DXS fields

SCUBA-2/HERMES/SERVS comparison

Large spectroscopic samples (FMOS/
AAOmega/KMOS/MOSFIRE)

De facto large (>1sq.deg.) survey areas

Conclusions

The DXS is close to the original size and depth and will be a key ingredient of many future multiwavelength surveys.

