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

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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.....“
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

Lockman Hole

Elais N1

SA22
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 $5\sigma$ 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
The graph shows the completeness (%) as a function of $J$. The graph includes multiple curves, each labeled with 'DXS SA22 1' to 'DXS SA22 8'. The x-axis represents $J$ and the y-axis represents completeness (%). The completeness decreases as $J$ increases, with each curve showing a different trend and magnitude of decrease.
Science Highlights

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

![Graph showing various parameters against K magnitude limit]

- $A_\sigma$
- $r_0 \ (h^{-1} \text{Mpc})$
- Slope ($\delta$ of $\theta^2$)

Small scale vs. large scale markers indicate differences between scales.
So does the colour limit EROs are selected to
Dusty EROS are much less clustered

DGs J-K>~2

OGs J-K<~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.