The VIDEO Survey
ESO Phase 3 Meeting
Garching, 30 Nov 2010

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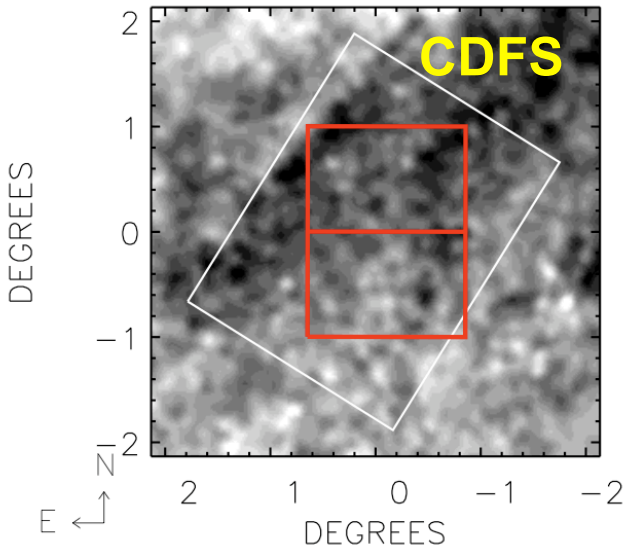
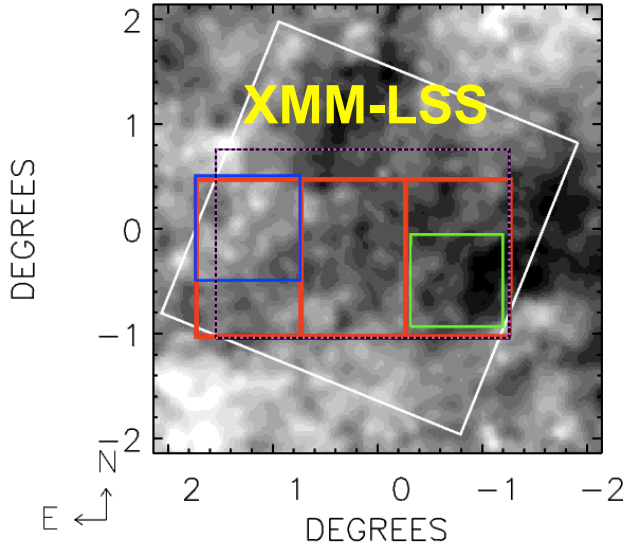
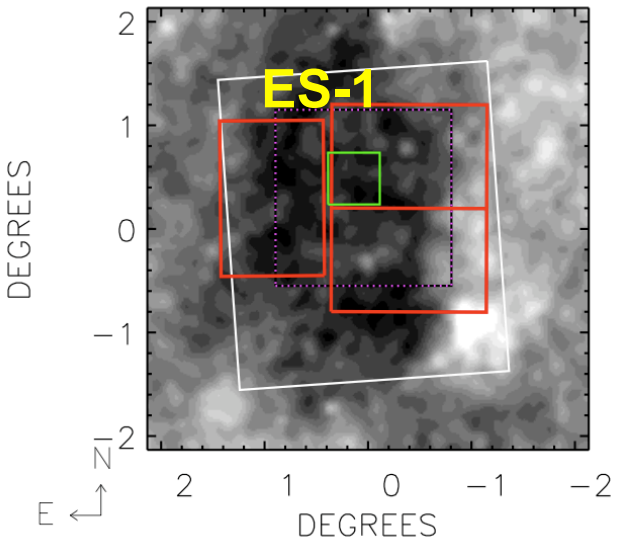
University of Hertfordshire

The VIDEO Survey







Filter	Time (per source)	Time (full survey)	5σ AB	5σ Vega	UKIDSS -DXS	Seeing	Moon
Z	17.5 hours	456 hours	25.7	25.2	-	0.8	D
Y	6.7 hours	175 hours	24.6	24.0	-	0.8	G
J	8.0 hours	209 hours	24.5	23.7	22.3	0.8	G
H	8.0 hours	221 hours	24.0	22.7	22	0.8	B
K_s	6.7 hours	180 hours	23.5	21.7	20.8	0.8	B

Survey Progress

At end of dry run:

- Approximately half exposure time in YJHKs in one XMM tile (xmm3)

  (this is slightly different from the SMP to take advantage of the CFHTLS deep optical data within this tile)

  5-sigma depth, 2” aperture, point source, AB mags:

  Y=24.4, J=24.5, H=23.8, Ks=23.5 (BUT seeing 0.9”)

- CASU pawprint stacks used to create deep tile stacks – now available to VIDEO consortium

- Tile stacks also passed to WFAU, who will generate catalogues for each tile and store in VSA.

The VIDEO Survey

http://star.herts.ac.uk/~dgb/video/

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The VIDEO Survey

The VIDEO proposal

The Team

VIDEO Fields:

- Elais-S1
- XMM-LSS
- ECDF-S

Survey progress (CASU webpage)

Project Wiki (password required)

DATA ACCESS (password required)

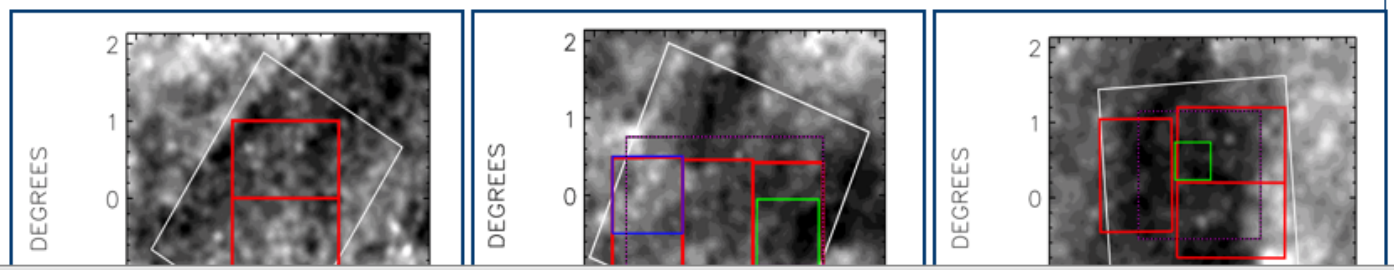
VIDEO publications

The VISTA Deep Extragalactic Observations (VIDEO) Survey

PI: Dr Matt Jarvis (University of Hertfordshire)

The VIDEO survey is a 12 sq.degree, Z,Y,J,H,K survey specifically designed to enable galaxy and cluster/structure evolution to be traced as a function of both epoch and environment from the present day out to z=4, and AGN and the most massive galaxies up to and into the epoch of reionization. With its depth and area, VIDEO will be able to fully probe the *epoch of activity* in the Universe, where AGN and starburst activity were at their peak and the first galaxy clusters were beginning to virialise. VIDEO therefore offers a unique data set with which to investigate the interplay between AGN, starbursts and environment, and the role of *feedback* at a time when it is most crucial. The multi-band nature of the survey ensures many key science drivers can be tackled using the survey alone, without recourse to data from other wavebands. However, the survey fields have been carefully selected to ensure a good RA spread and mix of fields with existing multi-band data thereby enhancing the usefulness of the survey to the whole of the astronomical community, and with an eye to future use of other ESO facilities such as APEX and ALMA. The area and depth means that VIDEO fits naturally between the VIKING and Ultra-VISTA surveys, and has been allocated >200 nights over the next five years.

The VIDEO Survey Fields



Done

VIDEO data

http://star.herts.ac.uk/videodata/index.html

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VIDEO data access

24 Nov 2010: First stacks and catalogues – xmm3 tile

We currently have approximately half the full survey depth (in terms of exposure time) in each of the Y, J, H, and Ks filters for the "xmm3" tile of the **XMM-LSS** field. This tile includes the whole of the **CFHTLS** D1 deep optical field, so we have made extra stacks to match that data.

Image stacks have been made using **SWarp** and are a weighted mean combine of pawprint stacks produced from the raw data by **CASU**, rejecting pawprint stacks with seeing worse than 0.9" FWHM. The current stacks include data up to the end of the VISTA dry-run, which took place at the end of 2009 and early 2010.

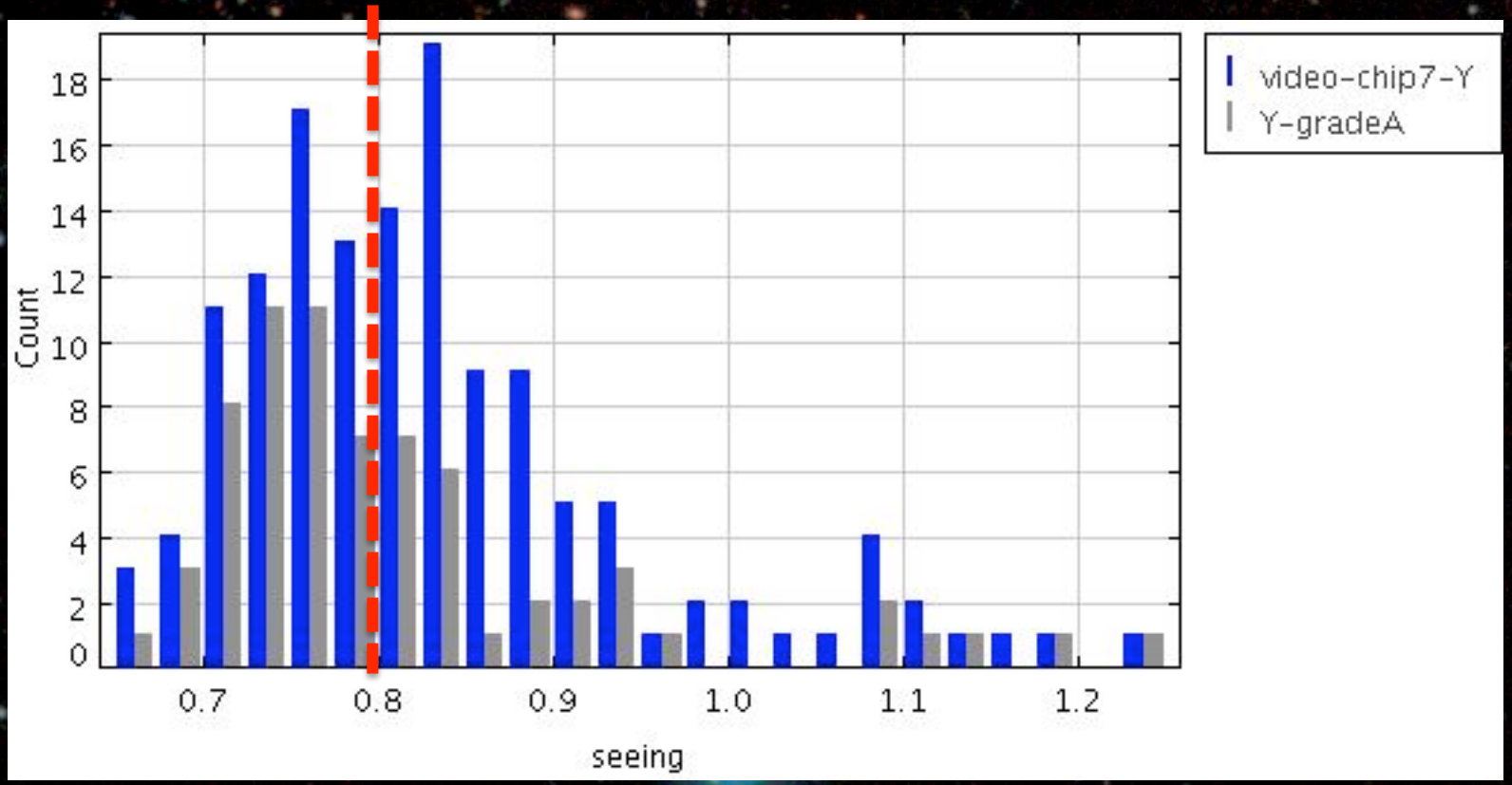
- The standard set of images has a pixel scale of 0.2"/pixel, and includes the full VIDEO tile area. Each image is ~2.3 GB in size.
  - Y-band **image**, **confidence map**, and **SWarp xml log** (click the log to view it)
  - J-band **image**, **confidence map**, and **SWarp xml log**
  - H-band **image**, **confidence map**, and **SWarp xml log**
  - Ks-band **image**, **confidence map**, and **SWarp xml log**
- The extra set of images has been projected to match the pixel scale (0.186"/pixel), projection centre, and total image size of the CFHTLS D1 images, for convenience in combining it with this optical data; **but note this stack does not cover the full area of the VIDEO tile**. Each image is ~1.4 GB in size.
  - Y-band **image**, **confidence map**, and **SWarp xml log**
  - J-band **image**, **confidence map**, and **SWarp xml log**
  - H-band **image**, **confidence map**, and **SWarp xml log**
  - Ks-band **image**, **confidence map**, and **SWarp xml log**

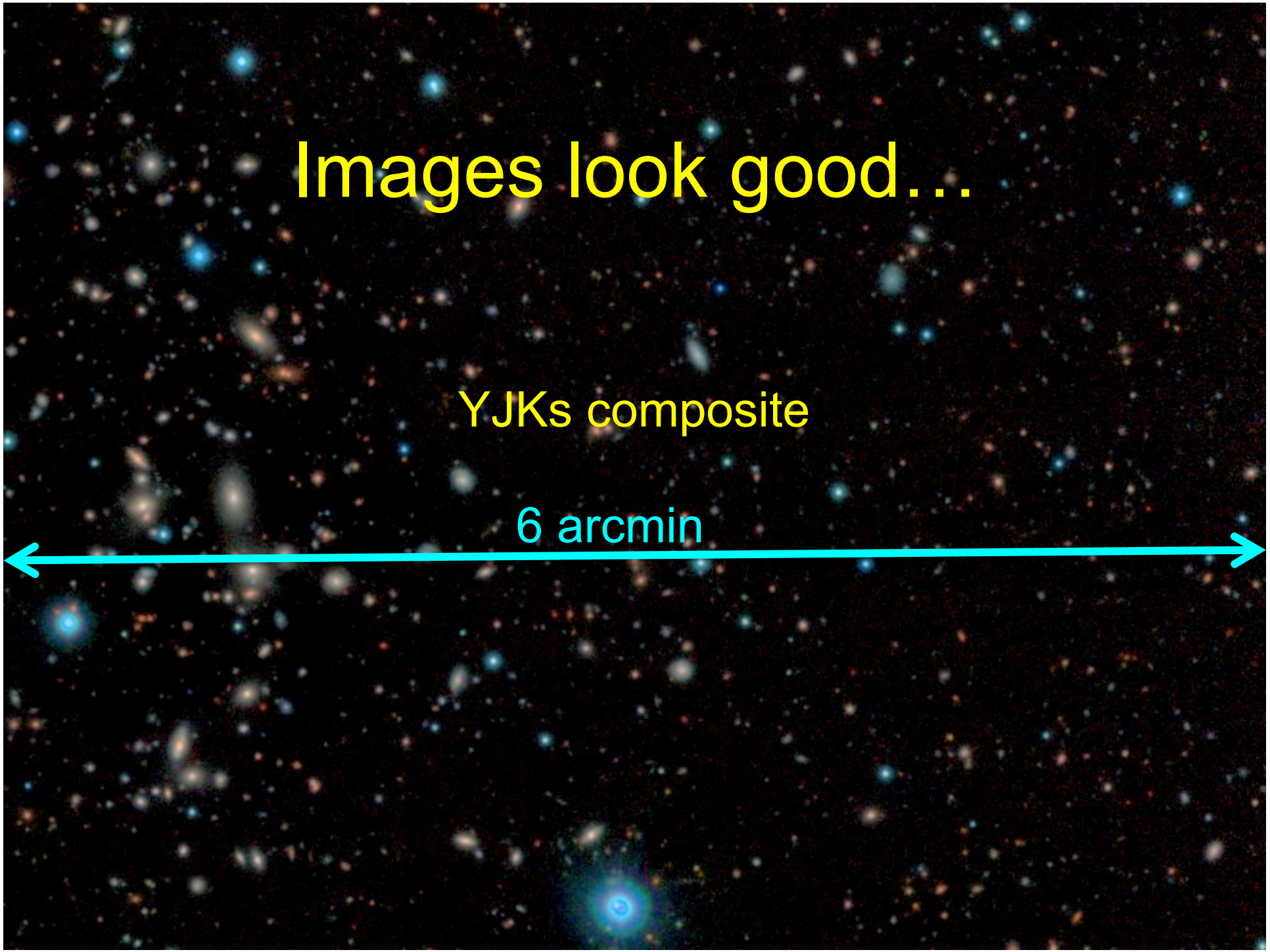
Done

Confusion over grading

ESO grading of OBs not consistent with measured seeing in reduced data.

(Are there enough stars to measure in QC0 data?)




Images look good…
YJKs composite
6 arcmin