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Southern Vistas of the Local Universe: A 6dF Galaxy Survey Update

At ASA 2005:

S. Brough, V. Kilborn: **Galaxy Groups**

T. Mauch, E. Sadler: **Local Radio Sources**

C. Murrowood, M. Johnston-Hollitt: **A Nearby Supercluster**

M. Doyle, M. Drinkwater: **Optical Counterparts for HIPASS galaxies**



- **100 000 redshifts** (March)
- **Second Data Release** (June)
- **Workshop 2005** (May)

Heath Jones
ANU / AAO

The 6dF Galaxy Survey:

- The 6dFGS is designed to be the first of a new generation of combined z+v-surveys, combining...
 - NIR-selected redshift survey of the local universe
 - Peculiar velocity survey using FP distances
 - Additional redshift surveys of other 'interesting' source samples.

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- Survey strategy...
 - survey whole southern sky with $|b| > 10^\circ$
 - primary z-survey: 2MASS galaxies to $K_{\text{tot}} < 12.75$
 - secondary samples: $H < 13$, $J < 13.75$, $r < 15.6$, $b < 16.75$
 - 11 additional samples: radio, X-ray, IRAS...
 - v-survey: ~15,000 brightest early-type galaxies

6dFGS 2nd Data Release: April 2005



- Jan 2002 – October 2004 for public release
→ 89211 spectra; 83014 unique redshifts; 936 fields
- 36540 more redshifts (37163 more spectra) than DR1

6dF GS

Database

Database Home

Introduction

Database Schema

FITS files

Database Access

AAO 6dF pages

RSAA 6dFGS pages

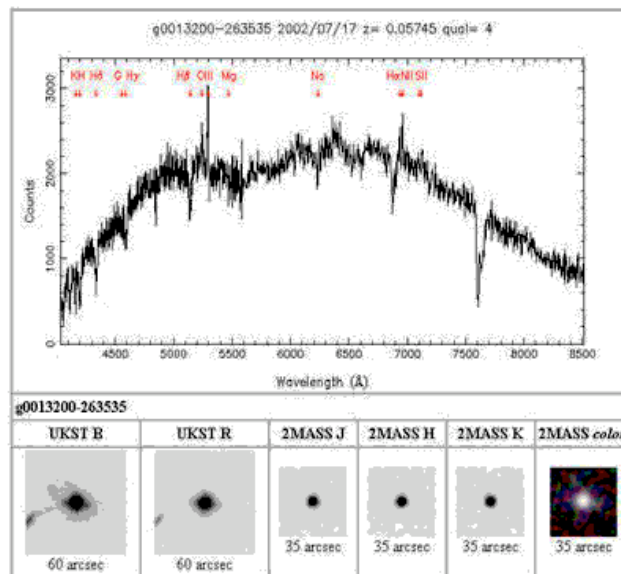
Publications



IFA ROE

6dF Galaxy Survey Database

<http://www-wfau.roe.ac.uk/6dFGS/>



[Home](#) | [Intro](#)
[Schema](#) | [Access](#) | [FITS files](#) |

6dFGS Online Database:

- Searchable using either SQL query commands or a WWW form
- Each source has its own multi-extension FITS file
- The different target catalogues are also fully searchable online

6dFGS 2nd Data Release: April 2005

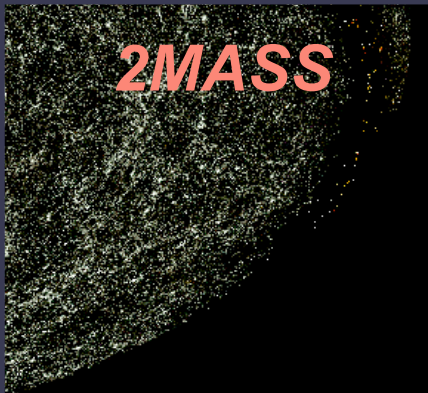
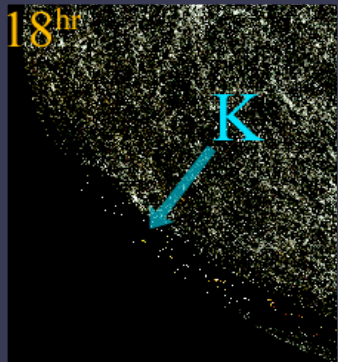
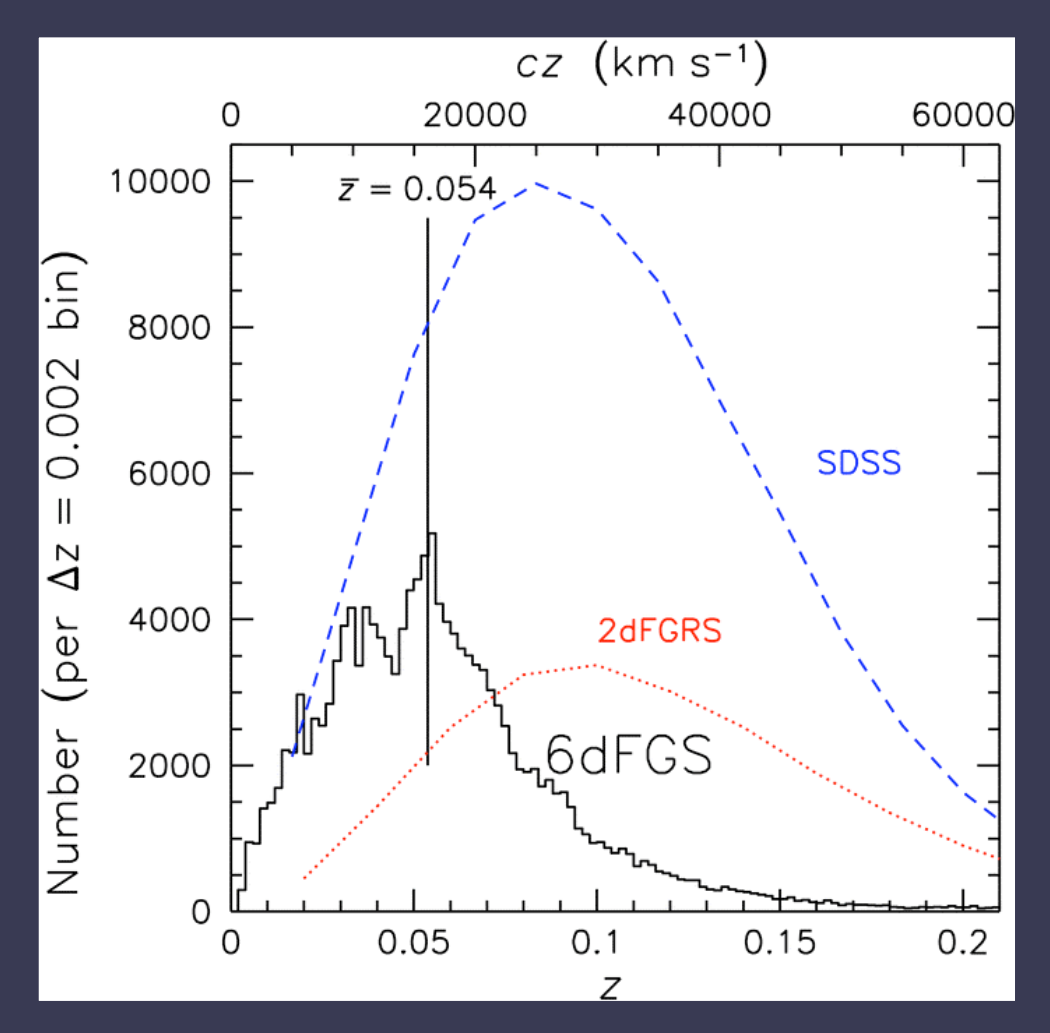
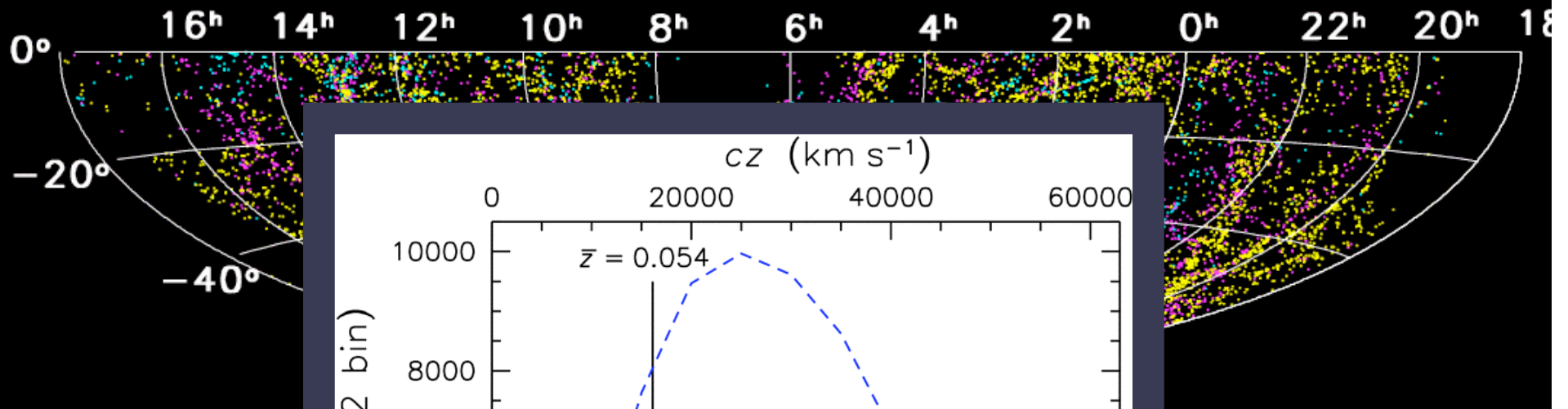


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What's New Since DR1

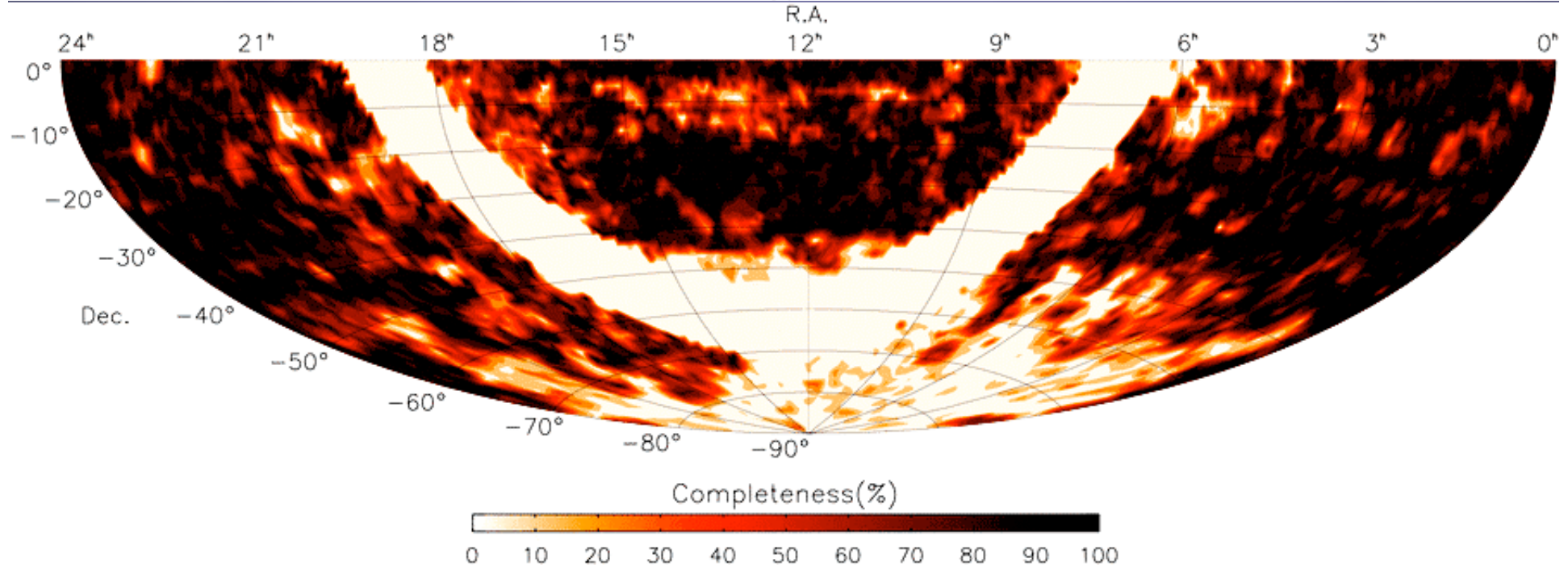
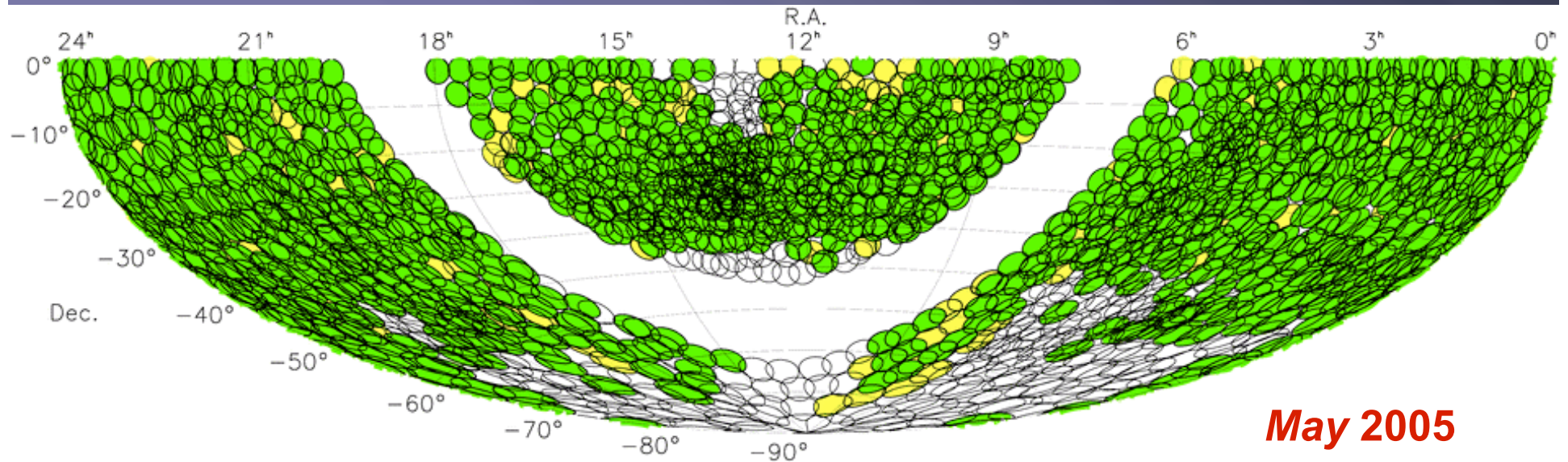
- Recent introduction of a QSO template for redshifting (Aug 05 onwards)
- Recalibrated *BR* SUPERCosmos photometry (BMAG, RMAG) and the preservation of the old selection magnitudes (BMAGSEL, RMAGSEL)

Redshift Maps: ~90k redshifts



- A: Galactic Plane
- B: Perseus-Pisces Supercluster
- C: Coma Cluster
- D: Virgo Cluster
- E: Hercules Supercluster
- F: Shapley Concentration/Hydra-Centaurus Supercluster
- G: "Great Attractor"/Abell 3627
- H: "Local Void"
- I: Fornax/Fornax Clusters
- J: Pavo-Indus Supercluster
- K: Galactic Center

Survey Sky Coverage



K-band LF

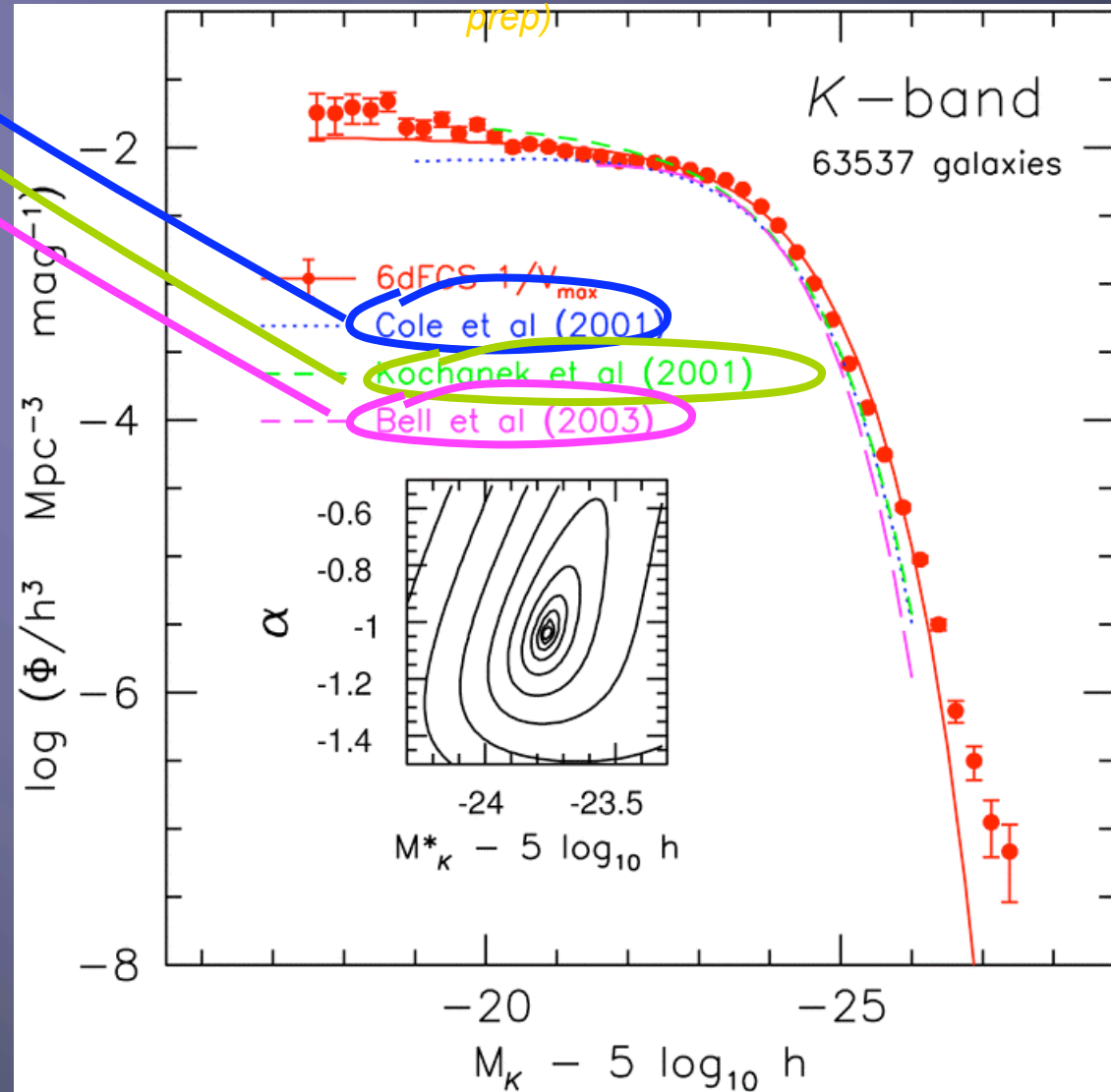
2MASS + 2dF

2MASS + ZCAT

2MASS + SDSS

Jones, Peterson, Colless, Saunders (in prep)

- Agrees with previous measures (up to the differences between magnitude systems employed)
- 6dFGS K-band LF extends 1.5-2 mags further at both the bright and faint ends



9500 sq deg

6dFGS

63537 galaxies

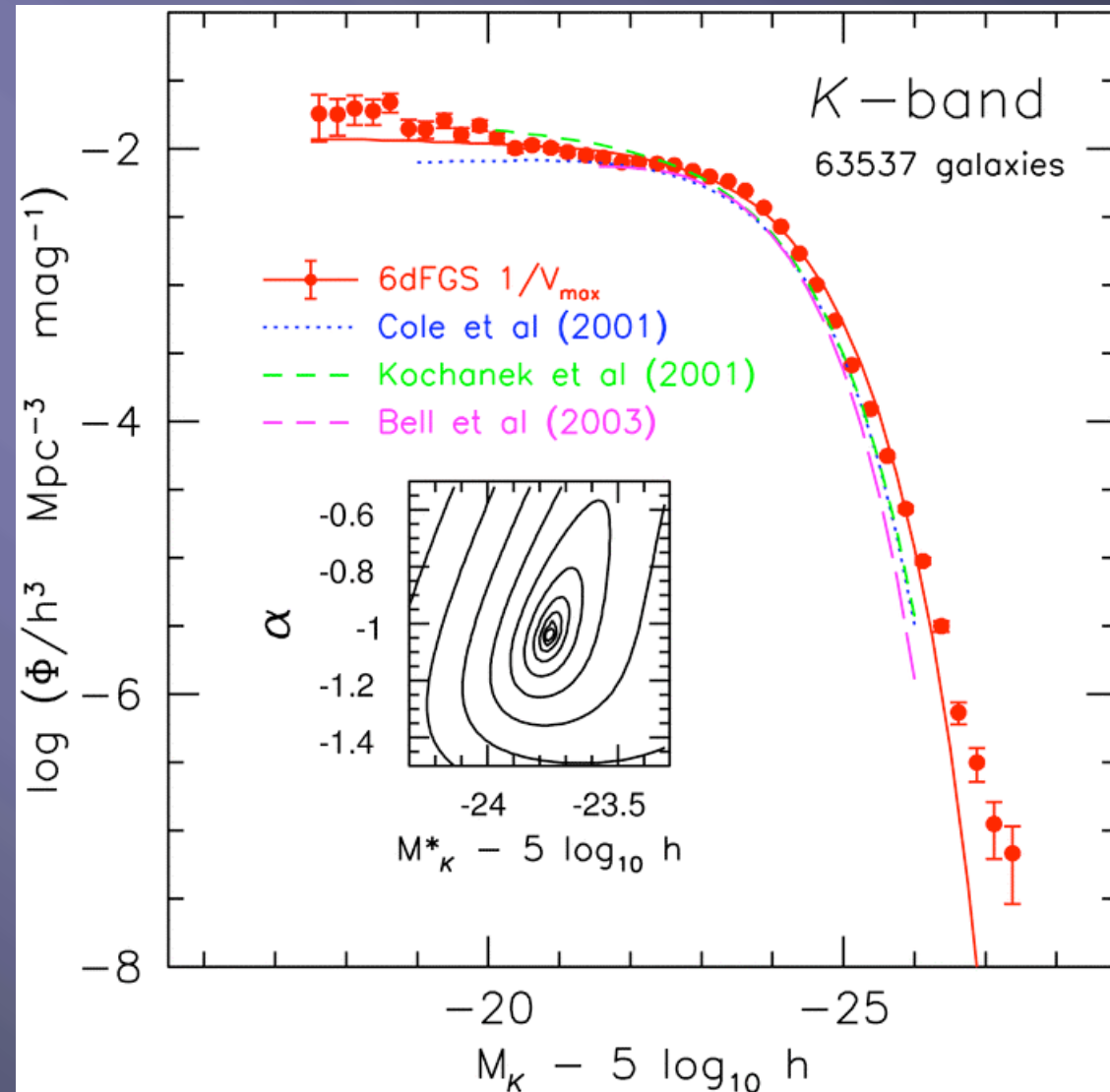
K-band LF

2MASS + 2dF

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- Agrees with previous measures (up to the differences between magnitude systems employed)
- 6dFGS K-band LF extends 1.5-2 mags further at both the bright and faint ends
- The smaller redshift surveys have larger uncertainties about the normalisation

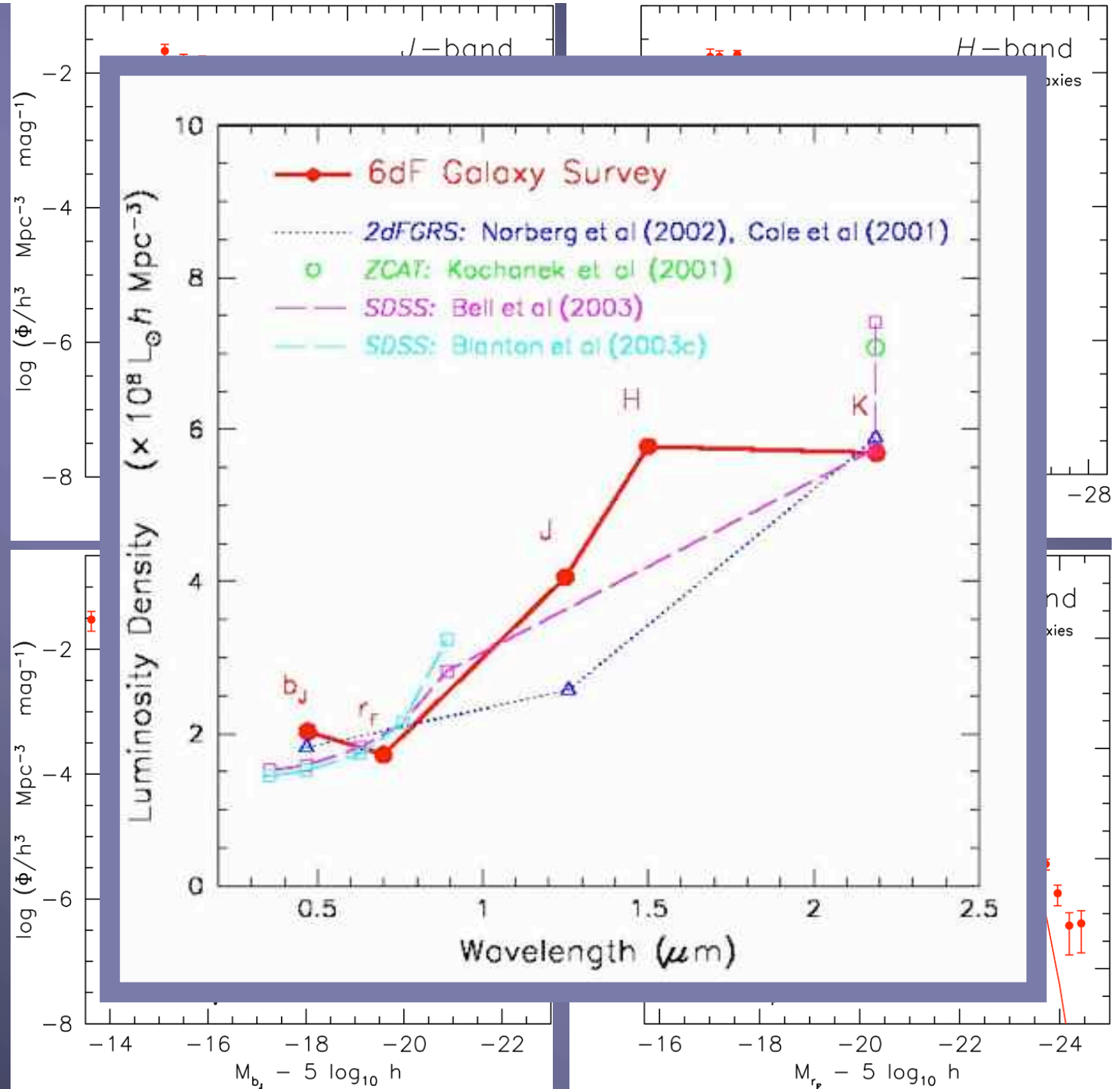


Other Bands: J, H, b_J , r_F :

In general, STY follows $1/V_{\text{max}}$ to high precision

Schechter function satisfactory as a general approximation of the luminosity distribution.

However, we have found significant deviations from the Schechter form across the range



6dFGS: Summary and Credits

- **Second Data Release: Jan 2002 – October 2004**
→ 89211 spectra; 83014 unique redshifts; 936 fields
- **Definitive 6dF Survey Paper (DR1):**
→ Jones et al (2004), *MNRAS* **355**, 747
- **DR2 paper** → Jones et al, *PASA*, (in press) *astro-ph/0505068*

MOVED!

6dFGS Home → www.aao.gov.au/local/www/6df/

- 6dFGS Database → www-wfau.roe.ac.uk/6dFGS/

Second Data Release / Luminosity Functions: H. Jones, W. Saunders, M. Read, M. Colless, B. A. Peterson

6dFGS Science Advisory Group: M. Colless, J. Huchra, T. Jarrett, O. Lahav, J. Iucey, G. A. Mamon, Q. A. Parker, D. Proust, E. M. Sadler, W. Saunders, F. G. Watson, K. Wakamatsu

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Redshifting: E. Westra, M. Williams, H. Jones, L. Campbell, M. Colless, T. Mauch, E. Kirby, L. Francombe, V. Safouris, S. Prior

