http://askap.org/possum/Meetings/BeijingIAU

Attendees:
Ray Norris
Cormac Purcell
Takuya Akahori
Tim Robishaw
Mario Magalhaes
Peter Frick
Rodion Stepanov
Dmitry Sokoloff
George Heald
Marijke Haverkorn
Michael Pavel
Roland Kothes
Russ Taylor
Craig Anderson
Xiaohui Sun
Bryan Gaensler

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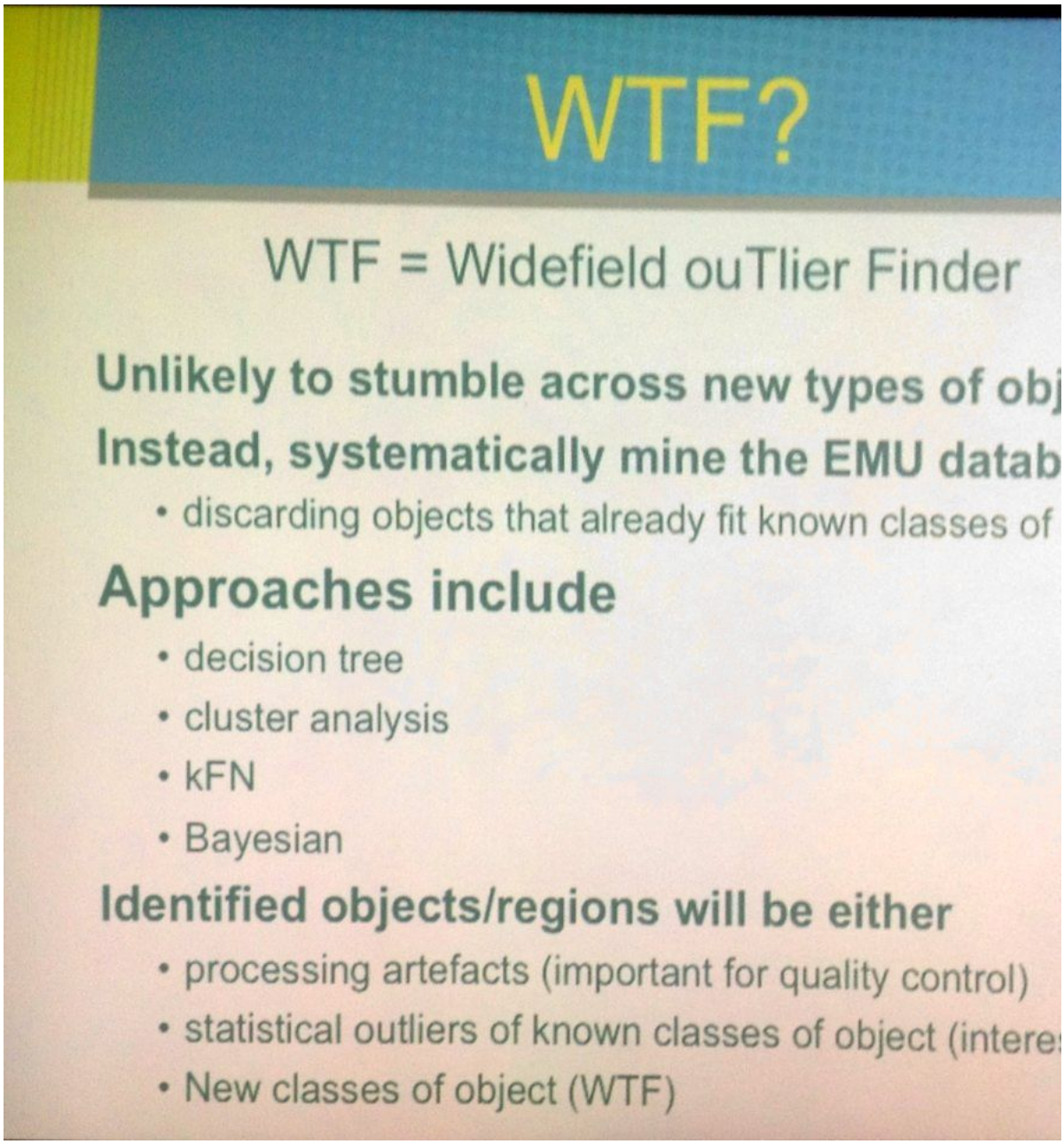
* Ray Norris:

EMU has four phases

Phase 1: Design Study 2009-2012
Phase 2: Commissioning 2012-2013
Phase 3: EMU early science with ASKAP-n (11<n<36) 2013-2014?
Phase 4: EMU full survey 2014-2016?
(Phase 5: EMU-96?)

EMU specs: 40x deeper than NVSS, ~70 million galaxies at 20cm; 1.5-year integration time

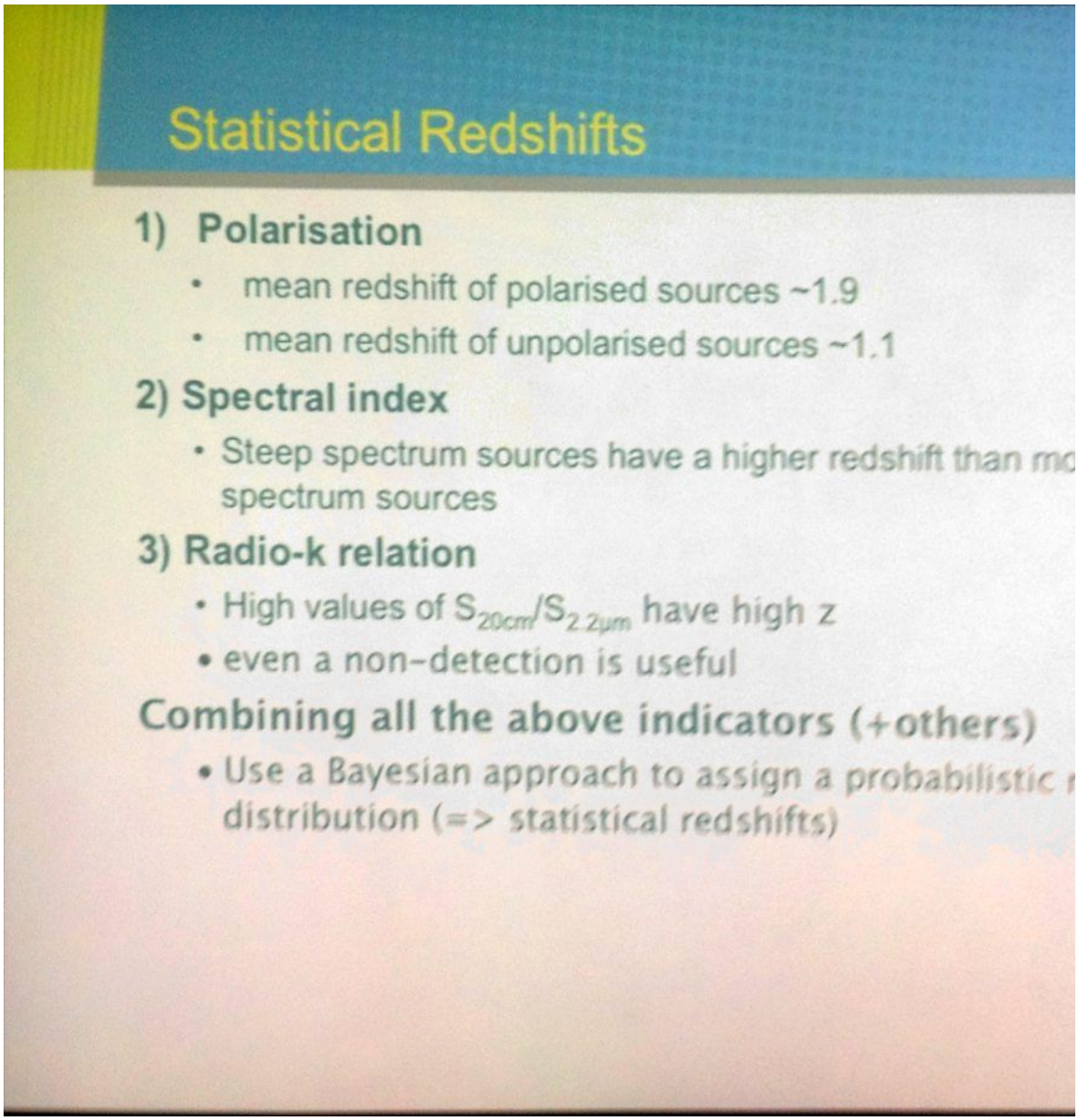
Complementary surveys: WODAN, LOFAR, MIGHTEE



"WTF" project will need polarisation to get the full story.

Challenge: difficult to get redshifts, c optical/IR photometry

urvey Name	Area (deg^2)	Wavelength Bands	Limiting Mag. or flux[a]	EMU Dete (%)
VISE[1]	40000	3.4, 4.6, 12, 22 μm	80 μJy	23
Pan-Starrs[2]	30000	g, r, i, z, y	$r < 24.0$	54
Wallaby[3,b]	30000	20 cm (HI)	1.6 mJy[c]	1
LSST[4]	20000	u, g, r, i, z, y	$r < 27.5$	96
Skymapper[5]	20000	u, v, g, r, i, z	$r < 22.6$	31
VHS[6]	20000	Y, J, H, K	K< 20.5	49
SDSS[7]	12000	u, g, r, i, z	$r < 22.2$	28
DES[8]	5000	g, r, i, z, y	$r < 25$	71
VST-ATLAS[9]	4500	u, g, r, i, z	$r < 22.3$	30
Viking[10]	1500	Y, J, H, K	K< 21.5	68
Pan-Starrs Deep[2]	1200	$0.5 - 0.8$, g, r, i, z, y	$g < 27.0$	57



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* Cormac Purcell - POSSUM Pipeline

Pipeline: now largely done, running on machine at USyd

Request to all: give Cormac good cases to test the pipeline on

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* George Heald - Evolving the POSSUM Science Case

PPC density: POSSUM should increase RM density from 1/deg^2 (NVSS) to ~100/deg^2
- will this help us on large-scale magnetic field? probably not; need pulsars to advance things further
- can we do a super-version of the Oppermann et al. (2012) foreground map? What will be required to do this given the CPU requirements?
- improve angular correlation function of RM
- search for correlations with small-scale structure of Milky Way; is H-alpha map of 6' resolution sufficient?

Extended sources
- Stepanov et al. (2008) reconstruct galaxy magnetic fields using small number of background sources per galaxy
- if we have 100 RMs/deg^2 and need 20-30 RMs per galaxy, can only do this for galaxies with angular size D > 20'
- could we do statistical study, like what was done by Tracy Clarke (2001) for galaxy clusters?

Source counts
- huge leverage on source counts and extension to still fainter (polarised) flux densities

Diffuse emission in galaxies
- how the imaging is done (final image resolution) is crucial to recovery of faint diffuse structures
- calibration and imaging issue carries info about typical fluctuation angular scales in (Q,U)

Synergy w WALLABY
- comparison between HI structures and RM variations can give new leverage on physics of magnetised ISM (Heald 2012)

Complicated Faraday dispersion functions
- RM spectra of complicated sources (e.g. turbulent sources; Beck et al. 2012) shows up as increased variance within a certain RM range
- for best recovery, combination with 800-1100 MHz from FLASH is essential

IGM magnetic field
- spread in RM as function of z probes IGM magnetic field
- requires low measurement errors (~1 rad/m^2) - e.g. Akahori & Ryu (2011)

POSSUM report #18 on science case
- needs further work
- update with Stil, followed by distribution to WG9 for additions and improvements

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* Naomi McClure-Griffiths - Single-dish data for POSSUM

STAPS (1300-1800 MHz, 2 MHz channels, dec < 0 deg)
- needs a postdoc to advance this, Haverkorn is trying to get funding for this but no success as yet.

GASKAP tests suggest post-deconvolution combination works as well as pre-deconvolution combination

POSSUM needs to confirm GASKAP diffuse imaging and single-dish combination with polarisation data
- how well can we determine the cross-calibration factor?

Large single-dish data for 0 < dec < +30 deg? Effelsberg?