

**ACGC**

## **Astrophysics, Cosmology and Gravitation Centre**

Accredited mid 2009 by UCT as a Research Centre

**Conformed of**

- (a) The Astronomy Department**
- (b) The Cosmology & Gravity Group (MAM)**
- (c) Host of NASSP**

*National Astrophysics and Space Science Postgraduate  
Honours & Masters Program*

*Form a major research hub in astrophysics, cosmology and gravitation  
in Southern Africa and African Continent  
with particular emphasis on projects involving the new facilities SALT and MeerKAT  
that will require the expertise from both observers and theorists*

**An invite for affiliated members of the astronomical community in the Western Cape  
will follow**

**(other departments at UCT, SAAO, KAT office, UWC)**

# Core Members of the ACGC (UCT)

(19 acad. staff; 12 (+4) postdocs; 36 postgrad students)

## Academic staff (10):

- **Renée C. Kraan-Korteweg**
- Erwin de Blok (SARChI Chair)
- Patrick A. Woudt
- Thebe Medupe (joint SAAO/UCT)
- Kurt van der Heyden
- Sarah L. Blyth (SA SKA funded)
- Patricia Whitelock (joint SAAO/UCT)
  
- Brian Warner (Emeritus Dist. Prof)
- Michael Feast (Honorary Professor)
- Ian Stewart (Hon. Research Ass.)

## *Affiliated Honorary Professors:*

- Phil A Charles (Director SAAO)

## Postdoctoral fellows (4 + 2new in 2010):

Antoine Bouchard, Benne Holwerda, Se-Heon Oh, Matthew Schurch

## Postgraduate students:

22 (8 PhD, 14 MSc) students (2009)

## Academic staff (9):

- **Peter Dunsby**
- Bruce Bassett (joint SAAO/UCT)
- Chris Clarkson
- Charles Hellaby
- Jeff Murugan
- Bob Osano
- Deon Solomons
- Amanda Weltman
  
- George Ellis (Emeritus Dist. Prof)

## Postdoctoral Fellows (8 + 2new in 2010)

Krzysztof Bolejko, Naureen Goheer, Rituparno Goswami, Alex Hamilton, Julien Larena, Marco Regis, Petja Salmi, Mat Smith

## Postgraduate students:

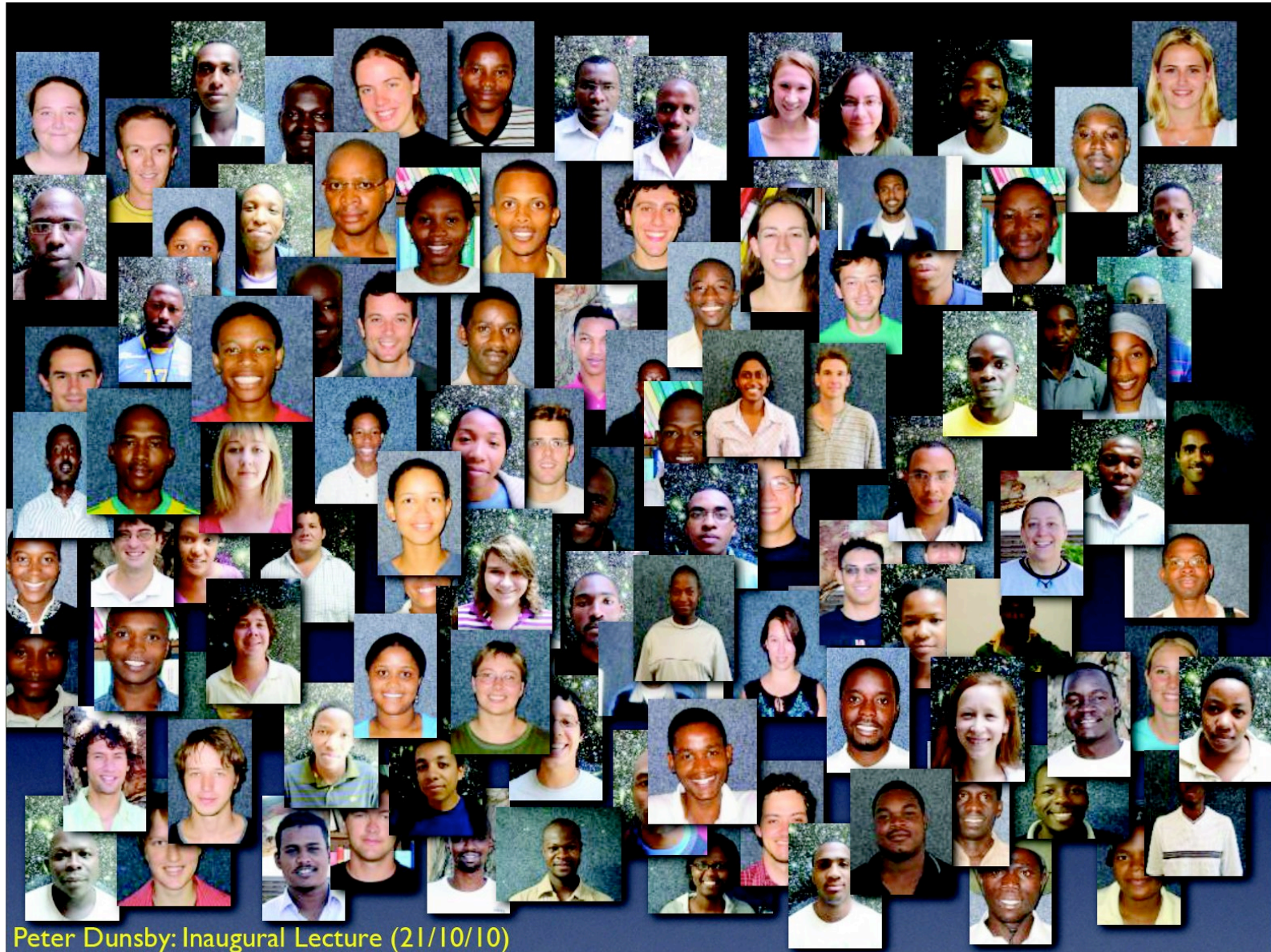
14 (7 PhD + 7 MSc) students in 2009

# Research areas of the ACGC

- galaxy evolution and transformation
- extragalactic large-scale structures, distance scale and cosmic flow fields
- neutral hydrogen (HI) and dark matter content of nearby galaxies
- Galactic structure
- high-speed stellar photometry and spectroscopy of variable stars (CV's)
- stellar pulsations
- history of astronomy
- observational cosmology
- dark energy & Chamaleon DE
- modified gravity
- inhomogeneous cosmology
- string theory and cosmology
- early universe physics
- modelling inhomogeneity
- gravitational wave physics



# NASSP students since 2003



Peter Dunsby: Inaugural Lecture (21/10/10)

Friday, 23 October 2009

# Activities within the NASSP programme



Friday, 23 October 2009

# 2009: Call for 5 SKA SARChI Chairs: South African Research Chairs Initiative

## **End September 2009: Call for proposals for South African Research Chairs**

- Undertake and manage SKA and MeerKAT related research projects
- Develop one or more of the following research fields pertinent to SKA and/or MeerKAT:
  - **Observational radio astronomy;**
  - **Observational multi-wavelength astronomy;**
  - **Radio astronomy instrumentation** (*Digital signal processing; Distributed data processing; RF broadband feeds, receivers and cryogenic packages; and/or EMC and EMI.*)

For 3 cycles of 5 years each, i.e. 15 years total.

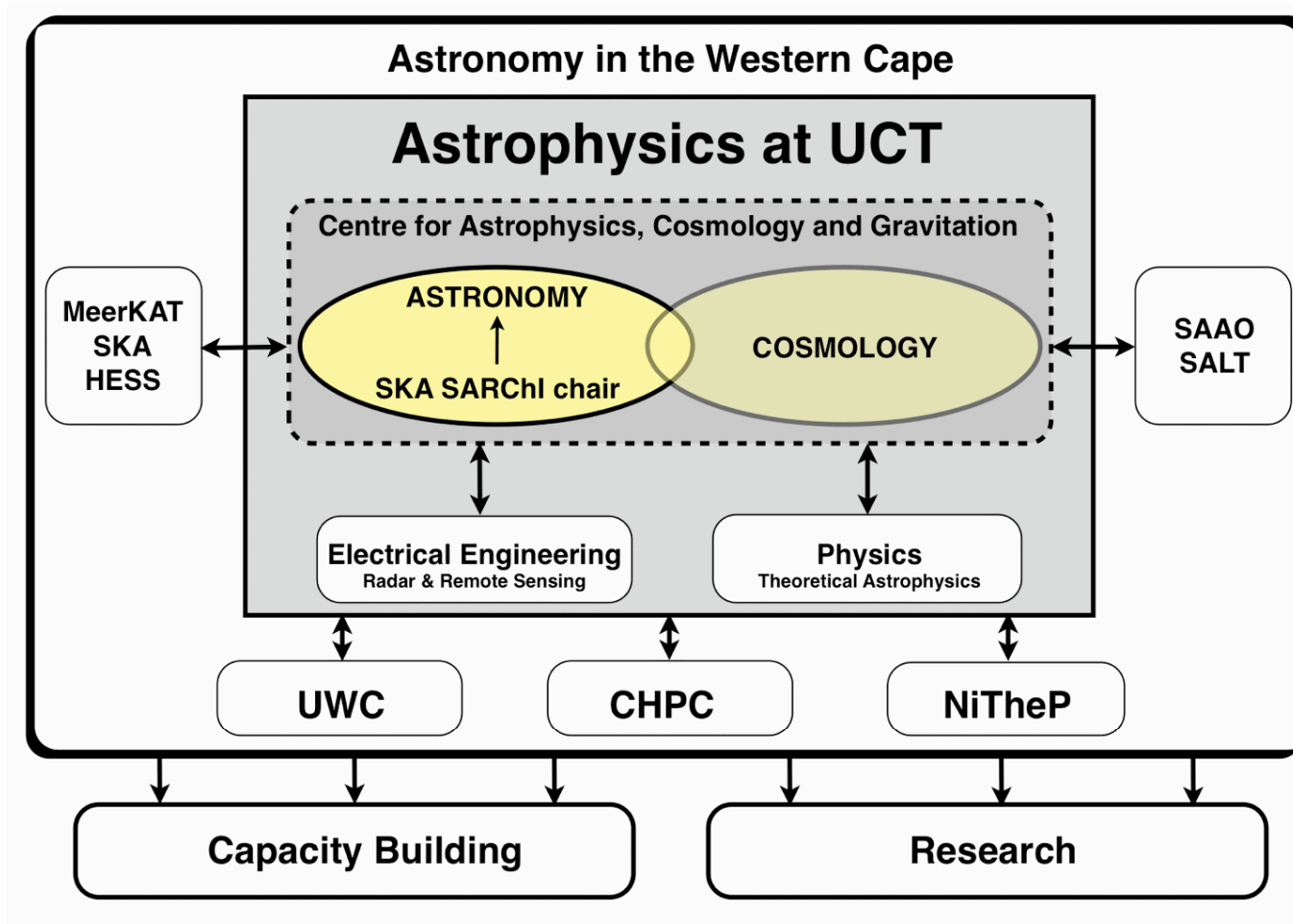
3 million ZAR/year (~430'000 AUD) for salary, equipment, travel money, competitive postgraduate & postdoc bursaries, some admin support

→18 bids for these Chairs were submitted

# Allocation of the 5 SKA SARChI Chairs:

- **Stellenbosch University:**  
Electromagnetic Systems and EMI Mitigation for SKA
- **Rhodes University:**  
RA Techniques and Technologies
- **University of the Witwatersrand:**  
Radio Astronomy
- **University of the Western Cape:**  
Astronomy and Astrophysics
- **University of Cape Town (hosted at Astronomy Department/ACGC):**  
Extragalactic Multi-wavelength Astronomy  
*with emphasis on galaxy formation, evolution and cosmology through radio observations with MeerKAT and synergies with ground and/or space-based observations in the optical, infra-red and mm-domain*  
  
→ **Independent: two postdoc positions available at Astronomy UCT**

# The Research Chair in Multi-wavelength Astronomy at the Astronomy Department (UCT)



**UWC:** *University of the Western Cape*

**NiTheP:** *National Institute for Theoretical Physics*

**CHPC:** *Centre for High Performance Computing*