

# PHISCC 2016: Upgrading our HI Toolkit

## Programme

(31/01/16)

| <b>Monday 1 February</b>  |  |
|---|--|
| <b>Registration from 8:30 at SAAO Auditorium</b>  |  |
| <b>Session 1: Updates on SKA pathfinder Facilities (technical) and Software (Pipelines / data reduction / calibration / RFI mitigation. What is being/has been done?)</b> |  |
| <b>Session Chair: Sarah Blyth</b>   |  |
| 9:00 – 9:15   | Welcome by UCT Astronomy Head of Department (Prof. Patrick Woudt) and Dean of the Faculty of Science (Prof. Anton le Roex) |
| 9:15 – 9:30   | MeerKAT: Willem Esterhuysen  |
| 9:30 – 10:00  | MeerKAT HI Pipeline: Sharmila Goedhart & Tom Mauch   |
| 10:00 – 10:25   | ASKAP: Ian Heywood   |
| 10:25 – 10:50   | APERTIF: Tom Oosterloo   |
| 10:50 – 11:15   | JVLA/CHILES: D.J. Pisano   |
|   |  |
| 11:15 – 11:45   | <b>Coffee break</b>  |
|   |  |
| <b>Session 2: Survey Updates (What are the main things still to be done / what do the survey teams still need to prepare?)</b>  |  |
| <b>Session Chair: Claude Carignan</b>   |  |
| 11:45 – 12:00   | MHONGOOSE: Erwin de Blok   |
| 12:00 – 12:15   | FORNAX: Brad Frank   |
| 12:15 – 12:30   | WALLABY: Lister Staveley-Smith   |
| 12:30 – 12:45   | DINGO : Attila Popping   |
|   |  |
| 12:45 – 13:45   | <b>LUNCH</b>   |
|   |  |
| <b>Session 2 continued...</b>   |  |
| <b>Session Chair: Lister Staveley-Smith</b>   |  |
| 13:45 – 14:00   | LADUMA: Benne Holwerda   |
| 14:00 – 14:15   | MIGHTEE: Natasha Maddox  |
| 14:15 – 14:30   | APERTIF SURVEYS: Marc Verheijen  |
| 14:30 – 14:45   | CHILES: Kelley Hess  |
| 14:45 – 15:00   | FLASH: James Allison   |
| 15:00 – 15:15   | MALS: Neeraj Gupta   |
|   |  |
| <b>15:15 – 15:45</b>  | <b>Coffee break</b>  |
|   |  |
| 15:45 – 16:05   | SKA HI Science Working Group Update: Martin Meyer  |
| 16:05 – 16:30   | <b>Discussion</b>  |
|   |  |
| 17:00   | PHISCC Business Meeting  |

| <b>Tuesday 2 February</b>  |  |
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| <b>Session 1: Visualisation</b>  |  |
|  | <b>Session Chair: Tom Oosterloo</b>  |
| 9:00 – 9:20  | Thijs van der Hulst: <i>Visualisation in Spectral Line Astronomy</i>   |
| 9:20 – 9:40  | Russ Taylor: <i>Visual Analytics of Remote Big Data in Radio Astronomy</i>   |
| 9:40 – 9:55  | Davide Punzo: <i>SlicerAstro, a 3-D interactive viewer</i>   |
| 9:55 – 10:15   | Lourdes Verdes-Montenegro: <i>The X3D path applied to disentangling the HI component in Compact Groups of galaxies</i> |
| 10:15 – 10:30  | J.T. Malarecki: <i>Organisation and Exploration of Very Large Imagery Data in the SKA</i>                              |
|  |  |
| <b>10:30 – 11:00</b>   | <b>Coffee break</b>  |
|  |  |
| <b>Session 2: HI Data Analysis Techniques, Methods &amp; Tools</b>         |  |
|  | <b>Session Chair: Marc Verheijen</b>   |
| 11:00 – 11:15  | Tobias Westmeier: <i>3-D source-finding challenges in the era of big data</i>  |
| 11:15 – 11:30  | Nadine Giese: <i>Non-parametric characterization of HI in galaxies</i>   |
| 11:30 – 11:45  | Toby Brown: <i>HI Stacking and the Effect of Environment on Gas Content</i>  |
| 11:45 – 12:00  | Barbara Catinella: <i>Galaxy evolution with HI spectral stacking</i>   |
| 12:00 – 12:15  | Julia Healy: <i>HI Stacking: Software and Applications</i>   |
|  |  |
| <b>12:15 – 13:30</b>   | <b>Lunch</b>   |
|  |  |
| <b>Session 2 contd... HI Data Analysis Techniques, Methods &amp; Tools</b> |  |
|  | <b>Session Chair: Erwin de Blok</b>  |
| 13:30 – 13:50  | Kristine Spekkens: <i>Measuring disk galaxy kinematics from future HI surveys</i>                                      |
| 13:50 – 14:10  | Se-Heon Oh: <i>2D Bayesian Automated Tilted-ring Fitter (2DBAT)</i>  |
| 14:10 – 14:30  | Gyula Jozsa: <i>Fully Automated TiRiFiC</i>  |
| 14:30 – 14:45  | Toky Randriamampandry: <i>Accounting for non-circular motion in barred-spiral galaxies</i>                             |
|  |  |
| <b>14:45 – 15:15</b>   | <b>Coffee break</b>  |
|  |  |
|  | <b>Session Chair: Ian Heywood</b>  |
| 15:15 – 15:35  | Martin Zwaan: <i>Tools for measuring galaxy space densities from HI surveys</i>  |
| 15:35 – 15:55  | Oleg Smirnov: <i>3C147 &amp; CygA &amp; friends: high dynamic range imaging and the software ecosystem</i>             |
| 15:55 – 16:10  | Jan-Willem Steeb: <i>Spatial Filtering of Radio Frequency Interference</i>   |
|  |  |
| 16:10 – 16:45  | <b>Discussion:</b> <i>Are we on track? Are we missing any vital tools? Is there somewhere we need to focus more?</i>   |

**18:30 Conference Dinner (Braai at SAAO Auditorium)**

## Wednesday 3 February

### Session 1: Modeling & Simulations

#### Session Chair: Attila Popping

|               |   |
|---------------|---|
| 9:00 – 9:20   | Chris Power: <i>Galaxy Formation Modeling for the SKA and its Pathfinders</i>       |
| 9:20 – 9:40   | Charlotte Welker: <i>Gas accretion onto galaxies: the imprint of the cosmic web</i> |
| 9:40 – 10:00  | Romeel Dave: <i>Hydrodynamic Simulations of HI Evolution in Galaxies</i>            |
| 10:00 – 10:20 | Daniel Cunnamea: <i>Mocking Astrophysics</i>  |
| 10:20 – 10:40 | Danail Obreschkow: <i>Update on HI-driven angular momentum science</i>              |

**10:40 – 11:10**

**Coffee break**

### Session 2: Simulated data products & ancillary multi-wavelength observations to support surveys

#### Session Chair: Martin Meyer

|               |   |
|---------------|---|
| 11:10 – 11:30 | Ed Elson: <i>A suite of new synthetic data products for the SKA precursors</i>                      |
| 11:30 – 11:50 | Sphesihle Makhathini: <i>HI-Inator: A tool for platform independent radio telescope simulations</i> |
| 11:50 – 12:10 | Mattia Vaccari: <i>HELP-ing HI Surveys: The Herschel Extragalactic Legacy Project</i>               |

**12:10 – 13:15**

**Lunch**

### Session 3: HI Science

#### Session Chair: Michelle Cluver

|               |   |
|---------------|---|
| 13:15 – 13:30 | Ximena Fernandez: <i>Highest redshift neutral hydrogen image in emission: A CHILES detection of a starbursting spiral at <math>z=0.376</math></i> |
| 13:30 – 13:45 | Mpati Ramatsoku: <i>Preparing for Apertif: A WSRT mosaic of a nearby rich galaxy cluster</i>  |
| 13:45 – 14:00 | Betsey Adams: <i>Apertif Surveys and the Smallest Galaxies</i>  |
| 14:00 – 14:15 | Danielle Lucero: <i>KAT-7 HI Science Highlights</i>   |
| 14:15 – 14:30 | Brenda Namumba: <i>Survey of Southern Local Group Dwarf Galaxies</i>  |
| 14:30 – 14:45 | Jamie Bok: <i>Exploring galaxy evolution with HI profile asymmetries</i>  |

**14:45 – 15:15**

**Coffee break**

#### Session Chair: Thijs van der Hulst

|               |  |
|---------------|--|
| 15:15 – 15:30 | Moses Mogotsi: <i>MHONGOOSE Galaxies in other wavelengths and determining their kinematics</i> |
| 15:30 – 15:45 | Amidou Sorgho: <i>Observing 5 MHONGOOSE galaxies with KAT-7</i>                                |
| 15:45 – 16:00 | Elizabeth Mahony: <i>A search for HI absorption in the brightest southern radio galaxies</i>   |
| 16:00 – 16:15 | Spencer Wolfe: <i>Observing very low column density HI within the Local Group</i>              |
| 16:15 – 16:30 | Nickolas Pingel: <i>A Phased Array Feed for the Green Bank Telescope</i>                       |

16:30

**Closing remarks**