

REPORT ON THE RADIONET3 NETWORKING ACTIVITY

TITLE: Transformational Science with the SKA and Synergies with ALMA and other Contemporary Instruments

DATE: *17-21 FEBRUARY 2014* **TIME:** (WHOLE DAY)

LOCATION: *STELLENBOSCH, SOUTH AFRICA*

MEETING WEBPAGE [*http://ska2014.ska.ac.za/*](http://ska2014.ska.ac.za/)

HOST INSTITUTE: *SKA OFFICE, SOUTH AFRICA*
STELLENBOSCH INSTITUTE FOR ADVANCED STUDIES

PARTICIPANTS NO: *160*

MAIN LEADER: *NRF*

REPORT:

Rationale:

2014 sees the 24th anniversary of the first discussions of the SKA and the ambitious call for a radio telescope with a considerable increase in sensitivity (two orders of magnitude) over the then existing instruments. In addition it is ten years since the publication of the scientific case for the SKA in '[Science with the SKA](#)' (Carilli and Rawlings). These years have seen much progress in radio astronomy; especially in the development of instruments covering the full radio wavelength range from millimetres to metres (ALMA to LOFAR) and an update of the SKA science seemed appropriate.

Additionally, during 2014, it will be 40 years since the publication of the, much discussed, paper on Radio Galaxies by Bernie Fanaroff and Julia Riley, which led to the FR1/FR2 classification - another reason to take time to review progress in Radio Astronomy

Finally, the sites for the SKA having been decided, with the bulk of the collecting area to be built in Africa we thought it appropriate to host a scientific meeting in this rapidly developing region.

Originally, this meeting was planned as an IAU Symposium but it was not supported by the IAU Executive, despite the fact that most of the IAU Commission Chairs (all but 3) were in favour of the proposal.

The aim of the symposium was to discuss progress in SKA science, as well as its relationship to new scientific results from other contemporary instruments. The meeting sessions encompassed all aspects of modern radio astronomy, including the early Universe, Cosmic Magnetism, HI in galaxies, galaxy evolution, the Milky Way galaxy and the ISM, pulsars and transients, right across the radio spectrum (see the attached programme)

Given the great interest in the SKA project among South Africans, young and old, we decided to include two special events:

1. a lecture for the general public - a talk on Pulsars and Transients, given enthusiastically by Dame Jocelyn Bell to a full lecture hall with an, equally enthusiastic audience, who asked many questions
1. an opportunity for high school students to discuss astronomy with the younger astronomers.

The latter programme, set up with the help of the Outreach officers of the SAAO and the SKA, took the form of mini-poster (5-6 posters) presentations of their work, by young research fellows. The presentations were given, interactively, to several small (circa 6) groups of 16 year-olds. 8 groups of 6 learners spent about 15-20 minutes with each of the postdocs. The interest and involvement of both presenters and students was great and in every case, it was hard to extract the learners and send them on to the next postdoc. After the session, taking all of the Wednesday afternoon (while the other participants viewed the local vineyards and sampled their produce), the students were really enthused by what they had learned, as were their teachers, who also formed an additional group.

Individual Sessions (readers are referred to the abstract book, which is attached to this report as well as the summaries of talks, also available on the conference web site)

Introduction

We were honoured that Prof. Roger Blandford was able to attend the symposium to 'Set the Scene', and sum up at the end. His comments were generally apt, reminding us of the scene from the perspective of other wavelengths and importantly introduced an American viewpoint, which is useful since the US is not part of SKA any longer. Roger gave an excellent talk on aspects of cosmology at the University of Cape Town on the eve of the Symposium.

1. Programme of the meeting

Day 1

Monday, February 17, 2014

Opening session

09:00 - 09:10 Bernie Fanaroff (SKA-SA)
Welcome

09:20 - 09:50 Roger Blandford (Stanford, USA)
Setting the scene

Session 1: The New Instruments

Invited papers

09:50 - 10:30 Phil Diamond (SKA, UK)
The SKA, an overview of its status, its precursors and its science

10:30 - 11:00 **Tea/Coffee**

11:00 - 11:40 Pierre Cox (ALMA, Chile)
Alma science and synergies with the SKA

11:40 - 12:10 Rendong Nan (NAO, China)
FAST

12:30 - 13:30 **Lunch**

Contributed papers on instruments

13:30 - 13:45 Justin Jonas (SKA SA + Rhodes Univ, RSA)
MEERKAT – A progress update

13:45 - 14:00 Steve Tingay (ICRAR – Curtin University, Australia)
The Murchison Widefield Array: Low Frequency Precursor for the SKA

14:00 - 14:15 Catherine Vlahakis (Joint ALMA Observatory, Chile)
An overview of ALMA Science Verification

14:15 - 14:30 Arpad Szomoru (Jive, NI) and Anton Zensus (MPIfR, Bonn, De)
VLBI: the EVN and mm VLBI in the years towards the SKA and beyond.

Session 2: Cosmology, Cosmic Dawn and Reionisation

14:40 - 15:10 Mario Santos (UWC, RSA)
Cosmology and the role of the SKA and the new generation of telescopes

15:10 - 15:40 **Tea/Coffee**

15:40 - 16:10 Leon Koopmans (Kapteyn, Netherlands)
Cosmic dawn and the epoch of reionisation

16:10 - 17:10 **Contributed papers**

- 16:10 - 16:25 Kaustuv Basu (Univ Bonn, DE)
Radio halos in galaxy clusters: a new cosmic probe for SKA and its pathfinders.
- 16:25 - 16:40 Ilian Iliev (Univ Sussex, UK., and Bulgaria)
Large scale simulations of the Dark Ages and the Epoch of Reionisation.
- 16:40 - 16:55 Marta Silva (Centra-Ist – Technical University of Lisbon, Portugal – and RSA)
Three-dimensional ‘Intensity Mapping’ of the Universe during EoR.
- 16:55 - 17:10 Gianni Bernadi (SKA SA, Rhodes Univ & CfA (RSA))
Studying the epoch of reionisation with large-N radio arrays

Day 2

Session 3: HI in the Early Universe

- 09:00 - 09:40 Tzu-Ching Chang (ASIAA, Taiwan)
HI in the early universe
- 09:40 - 10:10 Mark Verheijen (Kapteyn, Netherlands)
HI surveys
- 10:10 - 10:30 Baerbel Koribalski (ATNF, Australia)
The Wallaby HI survey
- 10:30 - 10:50 Sarah Blyth (UCT, RSA)
The MeerKAT HI survey (Laduma)
- 10:50 - 11:20 **Tea/Coffee**
- 11:20 - 11:45 Ragnuth Srianand (IUCAA, India)
Deep absorption line surveys and the constancy of the Fundamental Physical Constants as a function of red-shift.
- 11:45 - 13:00 **Contributed papers**
- 11:45 - 12:00 Anastasia Fialkov (Ecole Normale Supérieure, France)
Towards a complete understanding of the 21 cm signal from high red-shifts.
- 12:00 - 12:15 Michelle Cluver (UCT, RSA)
From feast to famine: Understanding Active Transformation in Galaxy Groups
- 12:15 - 12:30 Kelly Hess (UCT, RSA)
CHILES: the COSMOS HI Large Extragalactic Survey
- 12:30 - 12:45 Manolis Papastergis (Kapteyn Institute, Univ Groningen, NL)
Insights in galaxy formation from combined ALFALFA 21 cm and SDSS survey data.
- 12:45 - 13:00 Thijs van der Hulst (Kapteyn Institute, Univ Groningen, NL)
The challenges of HI science with SKA1 and its pathfinders
- 13:00 - 14:00 **Lunch**

Session 4: The Role of Magnetism

- 14:00 - 14:35 George Heald (Astron, Netherlands)
Rotation Measure Synthesis
- 14:35 - 15:10 Dongsu Ryu (CNU, Korea)
Large Scale Structure Theory
- 15:10 - 15:40 Tiziana Venturi (INAF, Italy)
Clusters: structure and magnetism
- 15:40 - 16:00 **Tea/Coffee**
- 16:00 - 16:30 Anna Scaife (Southampton, UK)
Magnetic science from SKA pathfinders
- 16:30 - 17:30 **Contributed papers**
- 16:30 - 16:45 Jungyeon Cho (Chungnam National University, Korea)
The growth of Magnetic Fields in the Large-Scale structure of the Universe
- 16:45 - 17:00 Gabriele Giovannini (Bologna Univ. and IRA/INAF, Italy)
Magnetic fields in intergalactic filaments
- 17:00 - 17:15 Marcus Bruggen (Univ Hamburg, Germany)
Galaxy clusters with LOFAR and the SKA
- 17:15 - 17:30 Rossella Cassano (INAF – Istituto di Radioastronomia, Italy)
Radio Halos in galaxy clusters: update and outlook for future radio surveys

Day 3

Session 5: Structure Formation and the First Galaxies

- 09:00 - 09:30 Paolo Padovani (ESO, Germany)
AGN
- 09:30 - 10:00 Raffaella Morganti (ASTRON, Netherlands)
AGN and feedback
- 10:00 - 10:30 Kotaro Kohno (Tokyo, Japan)
Extreme starburst activity in the Early Universe
- 10:30 - 11:00 **Tea/Coffee**
- 11:00 - 11:30 Katherine Blundell (Oxford, UK)
The FR1- FR2 enigma
- 11:30 - 12:00 Matt Jarvis (Oxford, UK/UWC, RSA)
Deep Radio Continuum Surveys
- 12:00 - 13:15 **Contributed papers**
- 12:00 - 12:15 Ray Norris, CSIRO, Australia
The value of wide radio surveys: Legacy and Serendipity
- 12:15 - 12:30 Margherita Bonzini (ESO, Germany)
Radio emission mechanisms in the faint radio sky

- 12:30 - 12:45 Salom Martos (Royal Observatory, Edinburgh, UK)
Star formation at the edge of the Universe
- 12:45 - 13:00 Ivan Agudo (JIVE, Netherlands)
High Energy physics of Blazars with SKA and other facilities along the spectrum
- 13:00 - 13:15 Carole Jackson (Curtin Institute of Radio Astronomy, Australia)
Wide field continuum surveys – extragalactic radio sources and the SKA
- 13:15 - 14:30 **Lunch**
- 14:30 - 17:30 School for high school teachers and pupils (**see below**)
- 18:30 - 20:00 Jocelyn Bell Burnell (Oxford, UK)
Public talk (Introduced by Zhang Chengmin)

Day 4

Session 6: Galaxy Evolution

- 09:00 - 09:30 Danail Obreschkow (ICRAR, Australia)
The evolution of HI and H₂ in galaxies
- 09:30 - 10:00 Ian Heywood (CSIRO, Australia/Rhodes Univ., RSA)
Molecules at high red shift
- 10:00 - 10:30 Linda Tacconi (MPE, Germany)
Starburst galaxies
- 10:30 - 11:00 **Tea/Coffee**
- 11:00 - 12:30 Contributed papers
- 11:00 - 11:15 Paolo Ciliegi (INAF, Bologna Observatory, Italy)
The COSMOS VLA Radio Survey: past, present and future.
- 11:15 - 11:30 Mattia Vaccari (UWC, RSA)
The obscured star formation history of the Universe: from Herschel to the SKA.
- 11:30 - 11:45 Danielle Lucero (UCT, RSA)
New Frontiers: cold gas in early type galaxies with ALMA and the SKA.
- 11:45 - 12:00 Thomas Jarrett (UCT, RSA)
Exploring past to present star formation in the Local Universe.
- 12:00 - 12:15 Jeff Wagg (SKA, UK)
The ALMA and Jansky VLA view of massive galaxy formation at $z=4.7$.
- 12:15 - 12:30 Roger Deane (UCT, RSA)
A candidate triple super-massive black hole system at intermediate red-shift.
- 12:30 - 13:30 **Lunch**

Session 7: The Galaxy and the ISM (Galactic structure and dynamics)

- 13:30 - 14:00 Marijke Haverkorn (Radboud Univ, Netherlands)
The Galactic magnetic field
- 14:00 - 14:30 John Black (Chalmers Univ, Sweden)
ALMA/Herschel and developments in Interstellar chemistry
- 14:30 - 15:00 Andrea Isella (Caltech, USA)
Star formation and circumstellar discs
- 15:00 - 15:30 **Tea/Coffee**
- 15:30 - 16:10 Karl Menten (MPI, Bonn)
Masers, astrometry, Galactic structure and other remarks
- 16:10 - 17:30 Related contributed papers
- 1610 - 1630 Hiroshi Imai (Kagoshima Univ., Japan)
OH maser astrometry with the SKA
- 1630 - 1645 Wen Wu Tian (NAOC, China)
Radio and X-ray observations of TeV gamma-ray emitting super-nova remnants.
- 1645 - 1710 Paula Bengalia (Instituto Argentino de Radioastronomía y UNLP, Argentina)
Colliding winds as particle acceleration laboratories
- 1710 - 1730 Toshihiro Handa, Kagoshima University, Japan.
Japanese activity for SKA: a status report from the Japanese consortium.
- 19:00 **Conference dinner**

Day 5

Session 8: Pulsars, Transients and Extreme Physics

- 09:00 - 09:30 Michael Kramer (MPIfR, Germany)
Pulsar science with the SKA and its precursors - an overview
- 09:30 - 10:00 Scott Ransom (NRAO, USA)
Millisecond Pulsars and constraints for super-dense matter
- 10:00 - 10:30 Norbert Wex (MPI, Bonn)
Tests of theories of gravity with binary pulsars
- 10:30 - 11:00 **Tea/Coffee**
- 11:00 - 12:30 Contributed papers
- 11:00 - 11:15 Jason Hessels (ASTRON/Univ. Amsterdam, Netherlands)
LOTAAS: The LOFAR Tied Array All-Sky Survey for Pulsars and Fast Transients
- 11:15 - 11:30 Chryssa Kouveliotou (NASA/MSFC, RSA)
Magnetars in the SKA Era
- 11:30 - 11:45 Jacobus Dierker (National Institute for Theoretical Physics, RSA)
Magnetised nuclear matter and its influence on the behaviour of magnetars

11:45 - 12:00	Pawel Hensel (Nicolaus Copernicus Astronomical Centre, Warsaw, Poland) Maximum Pulsar mass and the structure of the neutron star core
12:30 - 13:30	Lunch
13:30 - 14:10	Heino Falcke (Radboud Universiteit, Netherlands) Black hole properties from radio astronomical observations
14:10 - 14:40	Patrick Woudt (UCT, RSA) Transient Radio Sources
14:45 - 15:50	Contributed papers
14:45 - 15:00	Joeri van Leeuwen (ASTRON / U Amsterdam, Netherlands) ARTS, the Apertif Radio Transient System and SKA
15:00 - 15:15	Giancarlo Ghirlanda (INAF-Osservatorio Astronomico di Brera, Italy) Accessing Gamma Ray Burst physics through SKA
15:15 - 15:30	Steve Croft (UC Berkeley, USA) Probing Super-massive Black Hole growth with SKA pathfinders
15:30 - 15:45	Jeandrew Brink (Cornell and RSA) Resonance effects around black holes
15:50 - 16:20	Roger Blandford (Stanford, USA) Conference summary

2. Scientific Summary

The conference was opened by Bernie Fanaroff, the SKA-SA director. He especially welcomed the large international contingent at the meeting. He referred to the MeerKAT project and the imminence of the assembly and erection of the first antenna, which was subsequently described in a talk by Justin Jonas.

The session programmes are listed above. Talks were well focused on the individual session themes and most are now recorded on the conference web site. The session themes were mostly related to the SKA science but synergies with ALMA and other current projects were well represented. It was especially exciting to hear from Pierre Cox about the current status of ALMA; he presented some stunning, early scientific results, as did Catherine Vlahakis in her discussion of the commissioning of the array.

Essentially all of the SKA key science was discussed, (as were the precursor projects proposed for ASKAP and MeerKAT) - from the Epoch of reionisation, cosmic magnetism (was there a primordial magnetic field?) through galaxy formation and evolution to the Milky Way galaxy, its interstellar medium, (Herschel results on new molecules), masers and its stellar content. In this session the Japanese interest in SKA was made clear!

The final session - on Pulsars was especially exciting to this reviewer and the talks on 'super-dense matter' and 'tests of theories of gravity' and even the use of radio observations to determine the properties of black holes, emphasise the real transformational science that the SKA will bring.

As mentioned earlier, Roger Blandford, both 'set the scene' for the meeting and 'summed up' at the end. He sent a set of slides which I attach at the end of this report.



Conference Picture

3. Attendance list (incl. participant names, affiliation and country) signed by the participants and confirmed by the organizer

The list of participants is attached to this report and can be found also on the conference web site.

There were approximately 160 attendees with some 68 from South Africa, 11 from the Netherlands, 10 from Germany, 8 from each of the UK, Italy, USA and Australia, 5 from China, 4 from each of Sweden and Japan, 3 from each of France, Argentina, Korea, with representatives from Canada, Cameroon, Ethiopia, India, Kenya, Mexico, Nigeria, Poland and Switzerland.

4. Financial Report / RadioNet3 contribution

Radionet3 supported the meeting with Euros 13400, which were used to cover registration fees for students and postdocs (see attached list), part of the cost of coffee breaks and conference dinner, and part of the travel costs for one invited speaker.

5. Conference Proceedings and Web page

No proceedings will be published. All talks are available in pdf format at:
<http://ska2014.ska.ac.za/programme>

<i>Name</i>	<i>Institute</i>	<i>Country</i>
Filipe Abdalla	UCL	United Kingdom
Ivan Agudo	JIVE	Netherlands
Zambou Yemdjy Lekoka Ancel Loic	IDEV Institute	Cameroon
Richard Armstrong	UCT/SKA Africa	South Africa
Bernard Duah Asabere	University Of Johannesburg	South Africa
Ghion Ashenafi	Entoto Observatory and Research Center	Ethiopia
Domingos Barbosa	Instituto de Telecomunicações	Portugal
Kaustuv Basu	University of Bonn	Germany
Tony Beasley	NRAO	United States
Girish Kumar Beeharry	University of Mauritius	Mauritius
Jocelyn Bell Burnell	University of Oxford	United Kingdom
Gianni Bernardi	SKA Africa, Rhodes University & CfA	South Africa
John Black	Chalmers University of Technology, Dept. of Earth and Space Sciences	Sweden
Katherine Blundell	Oxford University	United Kingdom
Sarah Blyth	University of Cape Town	South Africa
Margherita Bonzini	ESO	Germany
Roy Booth	SKA Africa / University of Pretoria	South Africa
Tyler Bourke	SKA Organisation	United Kingdom
Jeandrew Brink	National Institute for Theoretical Physics	South Africa
Marcus Bruggen	University of Hamburg	Germany
Sarah Buchner	HartRAO	South Africa
Rossella Cassano	INAF-Istituto di Radioastronomia	Italy
Tzu-Ching Chang	ASIAA	Taiwan, Province of China
Jungyeon Cho	Chungnam National University	Korea, Republic of
Paolo Ciliegi	INAF - Bologna Observatory	Italy
Michelle Cluver	University of Cape Town	South Africa
John Conway	Onsala Space Observatory, Chalmers University of Technology	Sweden
Pierre Cox	ALMA	Chile
Catherine Cress	CHPC / UWC	South Africa

Steve Croft	UC Berkeley	United States
Virginia Cuciti	INAF-IRA	Italy
Daniel Cunnama	UWC	South Africa
David Davidson	Stellenbosch University	South Africa
Bonita de Swardt	SKA SA	South Africa
Aletha de Witt	HartRAO	South Africa
Roger Deane	University of Cape Town	South Africa
Philip Diamond	SKA Organisation	United Kingdom
Jacobus Diener	National Institute for Theoretical Physics	South Africa
Gloria Dubner	Institute of Astronomy and Space Physics	Argentina
Ed Elson	University of Cape Town	South Africa
Heino Falcke	Radboud University Nijmegen/ASTRON/MPIfR Bonn	Netherlands
Bernie Fanaroff	SKA Africa	South Africa
Sean February	University of Cape Town	South Africa
Luigina Feretti	INAF Istituto di Radioastronomia	Italy
Anastasia Fialkov	Ecole Normale Supérieure	France
Gerald Fishman	University of Missouri	United States
Anthony Foley	SKA-SA	South Africa
Michael Garrett	ASTRON / University of Leiden	Netherlands
Marisa Geyer	Rhodes University	South Africa
Giancarlo Ghirlanda	INAF-Osservatorio Astronomico di Brera	Italy
Elsa Giacani	Institute of Astronomy and Space Physics	Argentina
Gabriele Giovannini	Bologna University and IRA/INAF	Italy
Ian Glass	SA Astronomical Observatory	South Africa
Sharmila Goedhart	SKA Africa	South Africa
Keith Gottschalk	SA Space Association; UWC; ASSA	South Africa
Ferdl Graser	Space Advisory Company	South Africa
Pawel Haensel	Nicolaus Copernicus Astronomical Centre, Warsaw, Poland	Poland
Toshihiro Handa	Kagoshima University	Japan
D. E. Harris	Smithsonian Astrophysical Observatory	United States

Marijke Haverkorn	Radboud University Nijmegen	Netherlands
George Heald	ASTRON	Netherlands
Kelley Hess	University of Cape Town	South Africa
Jason Hessels	ASTRON / University of Amsterdam	Netherlands
Ian Heywood	CSIRO Astronomy \& Space Science / Rhodes University	Australia
Jasper Horrell	SKA South Africa	South Africa
David Hughes	Large Millimeter Telescope / INAOE	Mexico
Hiroshi Imai	Kagoshima University	Japan
Andrea Isella	Caltech	United States
Carole Jackson	ICRAR - Curtin University	Australia
Thomas Jarrett	University of Cape Town	South Africa
Matt Jarvis	University of Oxford / University of the Western Cape	United Kingdom
Justin Jonas	Rhodes University	South Africa
Gyula I. G. Jozsa	ASTRON	South Africa
Tamar Kahn	Science and Health Editor, Business Day newspaper	South Africa
Hyesung Kang	Pusan National University	Korea, Republic of
Aris Karastergiou	University of Oxford / Rhodes University	United Kingdom
Brian Kirk	University of KwaZulu-Natal - Westville	South Africa
Kechil Kirkham	Space Advisory Company	South Africa
Declan Kirrane	AERAP	Belgium
Kenda Knowles	University of KwaZulu-Natal	South Africa
Hideyuki Kobayashi	National Astronomical Observatory of Japan	Japan
Kotaro Kohno	The University of Tokyo	Japan
Leon Koopmans	Kapteyn Astronomical Institute	Netherlands
Baerbel Koribalski	CSIRO ATNF	Australia
Renee Kraan-Korteweg	University of Cape Town	South Africa
Busaba Kramer	Max-Planck Institute for Radio Astronomy	Germany
Michael Kramer	Max-Planck-Institut fuer Radioastronomie	Germany
Chris Laidler	University of Cape Town	South Africa
Lerothodi Leeuw	UNISA	South Africa

Michael Lindqvist	Onsala Space Observatory	Sweden
Danielle Lucero	University of Cape Town	South Africa
Roy Maartens	University of the Western Cape	South Africa
Jean-Pierre Macquart	ICRAR/Curtin University	Australia
Natasha Maddox	University of Cape Town	South Africa
Nikhita Madhanpall	University of the Western Cape	South Africa
Lindsay Magnus	SKA Africa	South Africa
Jabulani Maswanganye	HartRAO	South Africa
Salomé Matos	Royal Observatory of Edinburgh	United Kingdom
Tom Mauch	SKA Africa	South Africa
Kim McAlpine	University of the Western Cape	South Africa
Karl Menten	MPIfR	Germany
Georges Meylan	Ecole Polytechnique Federale Lausanne (EPFL)	Switzerland
Rob Millenaar	ASTRON	Netherlands
Kavilan Moodley	University of KwaZulu-Natal	South Africa
Raffaella Morganti	ASTRON/Kapteyn Institute (Groningen)	Netherlands
Peter Mwangi		Kenya
Rendong Nan	National Astronomical Observatories, CAS	China
Takalani Nemaungani	DST (Department of Science and Technology)	South Africa
Rahul Nigam	BITS Pilani, India	India
Peter Njenga	Bonage Enterprise Ltd	Kenya
Ray Norris	CSIRO	Australia
Danail Obreschkow	UWA/ICRAR	Australia
Olasunkanmi Ogunmakin	Obafemi Aololwo University	Nigeria
Hans Olofsson	Onsala Space Observatory	Sweden
Nadeem Oozeer	SKASA	South Africa
Paolo Padovani	ESO	Germany
Manolis Papastergis	Kapteyn Institute/Univ. of Groningen	Netherlands
Zsolt Paragi	JIVE	Netherlands
Viral Parekh	University of Cape Town	South Africa
Sean Passmoor	SKA Africa	South Africa
Prina Patel	UCT/UWC/SKA	South Africa
Matt Prescott	University of The Western Cape	South Africa
Chris Pritchett	University of Victoria	Canada

Scott Ransom	National Radio Astronomy Observatory (NRAO)	United States
Valerio A. R. M. Ribeiro	University of Cape Town	South Africa
Laura Richter	SKA Africa	South Africa
Anthony Rushton	Universities of Oxford and Southampton	United Kingdom
Dongsu Ryu	Chungnam National University	Korea, Republic of
Mario Santos	UWC/SKA SA/CENTRA-IST	South Africa
Anna Scaife	University of Southampton	United Kingdom
Anja Schroeder	SAAO	South Africa
Matthew Schurch	University of Cape Town	South Africa
Sarrvesh Seethapuram Sridhar	Kapteyn Institute, Univ of Groningen	Netherlands
Nick Seymour	CSIRO/CASS	Australia
Jonathan Sievers	UKZN	South Africa
Marta Silva	CENTRA- IST - University of Lisbon	Portugal
Oleg Smirnov	Rhodes University / SKA Africa	South Africa
Mathew Smith	UWC	South Africa
Arpad Szomoru	JIVE	Netherlands
Russ Taylor	University of Cape Town \& University of the Western Cape	South Africa
Wen Wu Tian	NAOC	China
Steven Tingay	ICRAR - Curtin University	Australia
Adrian Tiplady	SKA South Africa	South Africa
Obinna Umeh	University of the Western Cape	South Africa
Mattia Vaccari	University of the Western Cape	South Africa
Jason van Aardt		South Africa
Arnold van Ardenne	ASTRON	Netherlands
Ilse van Bemmelen	ASTRON	Netherlands
Thijs van der Hulst	University of Groningen, Kapteyn Institute	Netherlands
Elmarie van Heerden	Rhodes University	South Africa
Joeri van Leeuwen	ASTRON / U. Amsterdam	Netherlands
Gustaaf van Moorsel	National Radio Astronomy Observatory	United States
Laetitia van Wyk	RSA Dept of Tourism	South Africa
Tiziana Venturi	Inaf, Istituto di Radioastronomia	Italy
Marc Verheijen	Kapteyn Astronomical Institute, University of Groningen	Netherlands

Catherine Vlahakis	Joint ALMA Observatory	Chile
Bernd Vollmer	CDS, Observatoire de Strasbourg	France
Jeff Wagg	SKA Organisation	United Kingdom
Norbert Wex	Max Planck Institute for Radio Astronomy	Germany
Gundolf Wieching	Max-Planck-Institut für Radioastronomie	Germany
Patrick Woudt	University of Cape Town	South Africa
Li Xiao	National Astronomical Observatories, CAS	China
Anton Zensus	Max-Planck-Institut für Radioastronomie	Germany
Chengmin Zhang	National Astronomical Observatories, CAS	China
Albert Zijlstra	University of Manchester	United Kingdom
Jonathan Zwart	University of the Western Cape	South Africa

