November 2012

SKA NEWS

"The SKA will propel our continent to the frontline of radio astronomy and it will open many doors for Africa in decades to come." — President Zuma, 9 October 2012, Carnarvon

SKA AFRICA
SQUARE KILOMETRE ARRAY

CELEBRATING AN AFRICAN SCIENCE SUCCESS STORY

(Photos by Siyabulela Dada & Marina Joubert)

On 9 October 2012 President Jacob Zuma touched down by helicopter at the South African SKA site, about 100 km from Carnarvon. Following a tour of the KAT-7 dishes and a demonstration of the cutting-edge technologies involved in operating a modern radio telescope, President Zuma joined nearly 4 000 local residents in Carnarvon for a community engagement event.

SEVERAL DIGNITARIES accompanied the President, including the newly appointed Minister of Science and Technology, Mr Derek Hanekom, as well as his predecessor who played a key role in securing the SKA bid for Africa, Ms Naledi Pandor (who is now South Africa's Minister of Home Affairs). A large group of journalists covered the event, with live broadcasts from the KAT-7 site by SABC2 (Morning Live) and SAFM.

"Welcoming the SKA to Africa is a major step towards using science and technology to transform African economies and allowing African countries to participate fully in the global knowledge economy," President Zuma said. "The SKA will propel our continent to the frontline of radio astronomy and it will open many doors for Africa in decades to come." He congratulated the SKA South Africa team on winning the SKA bid and thanked them for the hard work that was necessary to achieve this.

In his address, Minister Hanekom thanked Minister Pandor for her hard work in leading the SKA project to the point where South Africa successfully secured the major share of this iconic radio telescope that will be designed and built over the next 12 years. "This is a fabulous celebration of the SKA project that we are proud to share with the people of Carnarvon and neighbouring towns, all South Africans and the rest of the continent," he said.

Minister Pandor told the community that the "SKA could be a game-changer for Africa, bringing about a science Renaissance across the continent. "The SKA has put Carnarvon on the world map! Let's continue using it to make South Africans proud and to inspire young people about a future in science and technology," she added. "This project is giving effect to our dream that Africa must become a global science and technology destination and that cutting-edge science will be done in Africa by African scientists. Our SKA success is also reversing brain drain into brain gain by bringing top researchers to the continent to do cutting edge work on African soil."

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President Zuma with other dignitaries and the SKA South Africa team.

Jason Slaverse, a grade 12 learner at Carnarvon High School with Acting Premier of the Northern Cape Grizelda Cjiekella. Ms Cjiekella emphasized that she was determined to use this project as a catalyst for encouraging young people in the region to work hard at science and mathematics at school so that they will be able to benefit from SKA bursaries to pursue SKA-related tertiary studies and become part of the SKA project team. Jason was interviewed on SABC2 and spoke passionately about his dream of becoming an SKA scientist.

SKA SA Infrastructure manager Tracy Cheetham interviewed live from KAT-7 site in the Karoo for Morning Live on SABC2.

About 4 000 residents of the Kareeberg district in the Karoo attended the SKA South Africa community engagement event on 9 October 2012. "I am absolutely excited to be here and see this area making such a significant contribution to global science," President Zuma told them. "I'm also very happy to see young people speaking so confidently and passionately about the project, and already building their careers in science and technology."

The SKA office's MeerKAT fact-finding mission

PROJECT UPDATE

Dr Michiel van Haarlem, SKA interim director, led a team of scientific and technical staff from the SKA Organisation in a visit to SKA South Africa from 10 to 14 September 2012. The main purpose of the visit was to get to grips with South Africa's progress on the MeerKAT since it will be integrated into the first phase of the SKA.

"THEY NEEDED to have a good understanding of the various subsystems that make up the MeerKAT, like the science data processor, the correlator, antennas and in particular infrastructure developments," said Jasper Horrell, General Manager of Science Computing and Innovation at SKA SA.

In addition to intensive discussions at the Pinelands MeerKAT engineering office, the visitors spent two days on site in the Karoo to look at the MeerKAT's infrastructure, including power and fibre installation, existing and emerging roads and buildings, construction camps, the support base and the KAT-7 precursor, all with the aim of understanding how the SKA is going to work in Africa.

"It was a very positive visit and I'm confident that they gained a much greater understanding of where we are with our programme here," said Horrell. "We discussed all aspects, including technical and organisational details, possibilities for integration, science programmes, operational aspects and decision-making structures." •

"We are getting to grips with what is required to deliver the SKA and we remain confident that we will be able to do it successfully," says Dr Bernie Fanaroff, Director of SKA South Africa. "We are now entering a period of intensive planning and negotiations, working closely with the international SKA office."

During September 2012 staff members from the SKA office in Manchester joined the South African SKA team on a visit to Africa's core site where the SKA will be constructed. Standing, left to right: Rob Millenaar, Dawie Fourie, Wallace Turner, Peter Dewdney, André Gunst, Minh Huynh, Adrian Tiplady, Michiel van Haarlem, Gerrit Coreejes, Roshene McCool, Carel van der Merwe, Tim Stevenson, Justin Jonas, Bernie Fanaroff and Georgina Harris; and kneeling from left to right: Jasper Horrell, Kobus Cloete, Bruce Wallace, Tracy Cheetham, Willem Esterhuyse.

(Photo: Jaco Marais, *Die Burger*)

HARD WORK AHEAD ON THE ROAD TO THE SKA

WHILE KAT-7 – the seven prototype telescope dishes already in place on the Karoo site – is impressive, it will be dwarfed by the sheer number of telescope dishes that will blossom across the Karoo from 2013 onwards.

Following the construction of 64 dishes that will make up the MeerKAT telescope, another 190 dishes will be added during phase 1 of the SKA from 2016 to 2019. By 2024 about 3 000 dishes will be spread across South Africa and its eight African partner countries, with about 2 000 of these at the core SKA site in the Karoo. The core site will also host a large number of flat mid-frequency antennas, each about 60 m in diameter – the so-called "fish eye lenses" that will be used for full-sky surveys.

The 64 MeerKAT dishes will form an integral part of SKA phase 1 – further recognition of South Africa's excellence in designing and planning the MeerKAT project and the success of its KAT-7 precursor telescope.

The first MeerKAT dish – about 13,5 m diameter and with a novel "offset" design – will be installed by the end of 2013. The new dish design will allow the telescope to be even more sensitive.

"It was an enormous achievement for Africa to win the right to build the SKA here, but now the really challenging work starts," SKA project director Dr Bernie Fanaroff explains. "The implementation phase ahead of us, including the extensive infrastructure, engineering and computing solutions that the SKA will require, will present us with a series of formidable challenges."

The enormous data volumes that the SKA will generate are expected to extend the frontiers of technology and deliver numerous beneficial spin-off technologies. The SKA will require processing speeds up to 1 000 times faster than the best supercomputers available today, as well as novel approaches to computer programming and the processing of complex data.

Building the SKA will be a global project paid for jointly by all member countries, but the fact that the dishes and fish eye lenses will be built here in Africa places local industry in a strong position to compete for these huge contracts.

Ready for a site inspection at the SKA site in the Karoo:
The newly-appointed Director General of the SKA Organisation, Prof Philip Diamond (right) with Prof Justin Jonas, Associate Director of SKA South Africa. Prof Diamond visited South Africa during November 2012 to see South Africa's SKA site and the infrastructure being developed for MeerKAT. He met with the local SKA team and well as political leaders in South Africa's science system for intensive discussions around the future of the SKA project in South Africa. Prof Diamond said that he was impressed by the progress at site, and the commitment and competence of the project team.

INFRASTRUCTURE UPDATE

Upgrade to the Karoo substation, Carnarvon

Tracy Cheetham (infrastructure manger) and Dawie Fourie (site manager) inspecting the bulk excavations at the site.

MEERKAT INFRASTRUCTURE AND CONSTRUCTION UPDATE

The Karoo MeerKAT site, about 100 km from Carnarvon, is a hive of activity as preparation for building the 64-dish telescope is underway. The roads, civil works, landing strip, electrical and fibre reticulation and construction camps are all progressing ahead of schedule.

AN UPGRADE TO THE KAROO SUBSTATION is almost complete and Eskom will take over during November 2012. Group Five Coastal (Pty) Ltd has started casting the foundations for all buildings and Schneider Electric South Africa (Pty) Ltd has won the contract for the Building Management System. Work should start on the MeerKAT Local Area Network (LAN) early during 2013. So far site operations have created 164 job opportunities and local businesses have supplied SKA South Africa with R2.3 million worth of goods.

Marking out foundations for the MeerKAT dish assembly shed

NO FATAL FLAWS FOR MEERKAT RECEIVER DESIGN

The design of the MeerKAT receiver was found to be both "innovative" and "mature" by a panel of reviewers who were hosted by EMSS, the developers of the receiver, in Stellenbosch during August.

THE REVIEW PANEL, chaired by ASTRON project manager Jan-Geralt Bij de Vaate, was conducting a preliminary design review (PDR) for the cryogenically cooled, single pixel L-band receiver.

The panel, including Prof Peter Dewdney (SKA Project Engineer), Robert Hayward (NRAO), and HartRO's George Nicolson and Keith Jones, saw progress "on the ground" during a tour through the MeerKAT core.

KAT-7 project manager and systems engineer Richard Lord turned tour guide for the day as a cherry-picker hoisted the team for a close-up inspection of the L-band receivers. They examined the KAT-7 system in detail right down to the fibre optic cable in Cape Town, and were impressed by the quality of the hardware. A 4x4 trip up the slope of Losberg, arranged by SKA SA site manager Dawie Fourie, also gave the team an "inspiring" aerial view of the construction, according to LJ du Toit, managing director of EMSS.

The next step for the design team at EMSS is to proceed to the critical design review phase. They will also begin constructing pre-production prototypes of the receiver. •

The PDR panel did inspections on the ground at the MeerKAT site. From left to right, standing: Prof. Peter Dewdney (SKA Project Engineer), LJ du Toit (EMSS), Justin Jonas, Robert Hayward (NRAO), Jan-Geralt Bij de Vaate (Chairperson, ASTRON Scientific Project Manager), Keith Jones (HartRAO, RF-Engineer), Philip la Grange (EMSS). Kneeling: Richard Lord.

INDUSTRY UPDATE

LOCAL COMPANY AWARDED MEERKAT DISH TENDER

South African company Stratosat Datacom has successfully bid for the highest value contract of the MeerKAT Project. Stratosat will design, build, install and commission the 64 MeerKAT antennas, with technical support from leading international antenna manufacturer, General Dynamics SATCOM Technologies.

"I AM EXCEPTIONALLY PROUD to have been part of the MeerKAT Telescope proposal team for Stratosat, and it was a very rewarding moment when it became known that we will be selected by SKA SA as the successful bidder to supply the antenna positioners for the epic MeerKAT project," said Stratosat owner Alan Geldenhuys.

The first dish should be up by January 2014, and all 64 will be completed by the end of 2016. The contract is worth R632 million, of which 75% will be spent within South Africa on design, testing and manufacturing. The company has also committed to invest in local skills development. After the qualification unit (the first dish) all manufacturing (including dish panels) will be fabricated in South Africa with assistance from General Dynamics SATCOM Technologies.

"Our obligation towards the empowerment of the local community, Carnavon and surroundings, is going to be a rewarding part of this project and we are excited about the future developments of small Micro Enterprises that will fulfil the demands of our technical team operating on the ground during the execution of the contract," said Geldenhuys.

The "proudly South African" 13.5 Dual-Offset-fed Gregorian radio telescope dishes will be built especially for the Karoo environment and SKA South Africa will own the intellectual property rights. The MeerKAT will form 25% of the first phase of the SKA. "We look forward to working with SKA and the other local sub-system and infrastructure providers to deliver a world-class radio telescope array," said Geldenhuys.

"The Stratosat/GDSatcom consortium presented an implementation at a competitive price that exceeded the technical specifications defined by the MeerKAT project office. One can upgrade receivers and software during the life of the instrument, but the dishes are very difficult and expensive to upgrade – therefore this solution will enable us to maximize the science return from MeerKAT", said Willem Esterhuyse, the MeerKAT Project Manager. •

AFRICAN UNIVERSITIES UNITE BEHIND THE SKA

SKA partner countries engaged on human capital development for a second time at the SKA's Cape Town offices from 11 to 14 September 2012. This year's meeting focused on extending collaborations between universities and on what has happened in astronomy development since last year's workshop.

REPRESENTATIVES from academic institutions in Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Namibia and Zambia were updated on the SKA site bid and on the status of the African VLBI network.

"It was more than exciting to hear about the winning of the SKA. [It is] good news to all the university staff and students. It is an opportunity for us in Zambia to take science to a higher level," said Zambian student Nchimunya Mwiinga.

Partner countries were encouraged to participate in exchanges of lecturers, postdoctoral fellows and course material. International collaboration would also involve the co-supervision of postgraduate students and academic sabbaticals.

"SKA Africa will revolutionise science, technology and astronomy in Africa and the world. And we are very proud to be part of the partnership since the beginning," said Prof Somanah Radhakrishna from the University of Mauritius. •

SKA BID TEAM AWARDED FOR STERLING WORK

The Square Kilometre Array (SKA) bid team has been presented with the inaugural Science Team Award at the annual National Research Foundation Awards ceremony, held in Cape Town on Wednesday 12 September 2012.

"FOLLOWING THE RECENT LANDMARK EVENTS in the science and technology space, it is with much excitement that this year the awards also included a special award to recognise the efforts of our SKA bid team, whose tireless work placed South Africa and Africa on the international astronomy and science map," said NRF President Albert van Jaarsveld. "Their achievements over the nine-year bid process are worthy of recognition."

SKA South Africa site bid team (from left to right): Kim de Boer, Bruce Wallace, Luzuko Sofeya, Bernie Fanaroff (director), Adrian Tiplady, Ntokozo Sosibo, George Nicolson, Justin Jonas and Cecilia van der Merwe.

The award was an acknowledgement of the commitment, creativity and achievements of the SKA bid team in securing the majority of the SKA project for South Africa and its partner countries. It also recognises the team's contribution to the advancement of human knowledge in the fields of science and technology for the benefit of South African society and humanity, and the role it played in raising South Africa's stature in the arena of international scientific research. •

Elsabe Brits, Specialist Journalist: Science at *Die Burger* Newspaper, with Dr Bernie Fanaroff. Elsabe has reported extensively on South Africa's SKA bid and the science of the SKA project over the last decade. (Photo: Marina Joubert)

FANAROFF HONOURED AS SOUTH AFRICA'S AMBASSADOR OF THE YEAR

DR BERNIE FANAROFF, DIRECTOR of South Africa's SKA Project, was honoured as South Africa's Ambassador of the Year at a gala event in the Cape Sun Hotel on 24 August 2012. He received this award from *Die Burger* newspaper and the *"Kaapstad Sakekamer"* (Cape Town Chamber of Commerce) in recognition of his leading role in attracting the mid-frequency component of the SKA to South Africa and African partner countries. Dr Fanaroff highlighted three key success factors for winning the SKA bid: (1) a great vision of South Africa and Africa as a success story in cutting- edge science, (2) an excellent site for hosting the telescope, and (3) a great team that worked like slaves! •

TOP SCIENCE STUDENTS AT RHODES' RATT **TO SOLVE SKA CHALLENGES**

Rhodes University has been awarded an SKA Research Chair, and has used it as a base for the new Centre For Radio Astronomy Techniques & Technologies (RATT). Minister Naledi Pandor opened the centre on 27 August 2012 in Grahamstown as part of celebrating South Africa's successful SKA bid. The new centre will see top postgraduate students in mathematics, statistics, computer science, physics and electronics applying their minds to the real-world challenges of processing the massive amounts of data that will go through the SKA.

Prof Makaiko Chithambo (left) congratulates Prof Justin Jonas on securing the major part of the SKA bid for Africa. Prof Jonas is the Associate Director for Science and Engineering of South Africa's SKA programme and Professor of Physics at Rhodes University.

Here's what some of the students had to say about RATT:

"I'm pleased to have been selected for a PhD Scholarship programme at Rhodes. It is such a wonderful initiative not only for the country South Africa, but for the whole African continent. This is a field of study where the research is complex and challenging and researchers are very few." **– Atemkeng Teufack Marcellin, PhD student, Cameroon**

"The SKA Project, being the world's biggest scientific project, definitely involves the work of a big team of professors, post-doctoral students, postgraduate students and undergraduate students. RATT will prove to be very beneficial towards sharing the workload." **– Nunhokee Chuneeta Devi, MSc student, Mauritius**

"I count this event as a really great achievement. This will facilitate the work of research students and provide direct, 'on the spot' experiences of the phenomena of the sky. It is fascinating. Congratulations!" **– Emmanuel Gazoya, PhD student, Ghana**

SKA BURSARIES "REKINDLE" INTEREST IN MATHS AND SCIENCE

The SKA Human Capital Development Programme has so far awarded 425 bursaries to deserving students. Of the 301 bursaries that were awarded to men, 138 went to black men. Black women received 48 of the bursaries, while 56 went to white women.

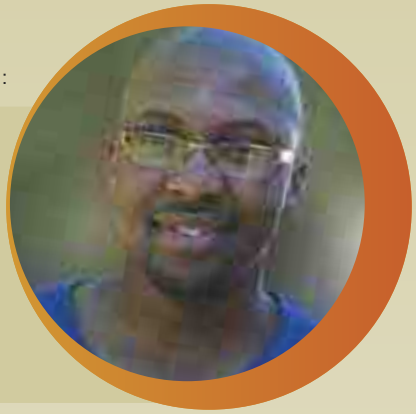
"A KEY GOAL IS TO CREATE INTEREST and excitement among our youth, across the full spectrum of science and technology, so that more young people become interested in science and maths at school level and then go on to become technicians and engineers of every discipline, and research scientists," explains Willem Esterhuyse, SKA South Africa's MeerKAT project manager. "This programme has already produced technically skilled people who can do useful work on SKA projects."

MOSES MOGOTSI is a PhD student working on star formation and the dynamics of gas in nearby galaxies. Commenting on the value of support from the SKA South Africa project, he said:

"As part of my thesis I was involved in analysis of world-leading extragalactic astronomy surveys. The funding allowed me to complete my MSc and meet and interact with other astronomers from around the world at international conferences and astronomy schools. This has contributed greatly to my research and allowed me to get involved in international projects."

ITUMELENG MONAGENG is in the final year of his master's:

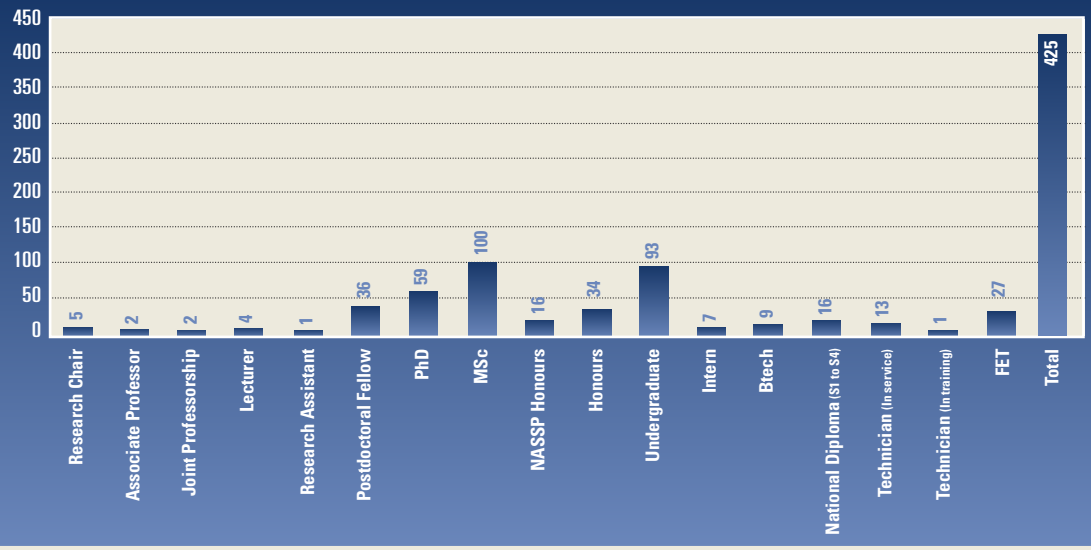
"The financial assistance received from the SKA is greatly appreciated, as it has eased most of the financial pressure on my family and I can put my focus solely on doing well in my academics".



Mathematics honours student at the University of the Free State, **BEN-EBEN DE KLERK**, said he enjoyed the opportunities made possible by his SKA bursary to bring maths and science to disadvantaged communities in South Africa.

"Unfortunately lots of learners believe science to be boring and useless in helping them escape from poverty. It is therefore such a privilege to rekindle their interest in science."

The South African SKA Project's human capital development programme: Cumulative statistics of intake by academic level



KIM McALPINE, currently a post-doctoral researcher at the University of the Western Cape, said:

"SKA travel grants have allowed me to travel and participate in numerous schools and conferences around the globe providing me with invaluable opportunities to enhance my skills and develop contacts in the international astronomical community. The annual bursary conference where leading experts in the field of radio astronomy engage with SKA bursars has also been extremely valuable. By facilitating contact with a huge range of experts around the globe, the SKA bursary scheme has enriched my PhD experience immeasurably."

The 2012 SKA SA Bursary Conference will take place from 26 to 30 November, in Stellenbosch. •

CONSORTIA TO BID FOR SKA WORK PACKAGES

The International Conference on Electromagnetics in Advanced Applications (ICEAA '12) was hosted in Cape Town in early September and provided a perfect opportunity to discuss SKA work packages. Since many people who could potentially form consortia to bid for SKA development contracts were in town for the conference, they made use of the time to explore ways in which they might work together.

JASPER HORRELL, General Manager of Science Computing and Innovation at SKA SA, said that a work breakdown structure is under refinement to define exactly what activities would be needed over the next year and a half towards setting down the requirements for the SKA.

"The so-called PEP (Project Execution Plan) phase is to take all the work that has been defined and allocate it to consortia that bid to do the work," he explained. These work packages will include all aspects of technical development, including the dishes for the SKA, aperture arrays, computing, signal and data transport, power supply and other infrastructure.

"There is still a lot of work to be done on early design work, requirements definition, basic architecture work and weighing different options against one another."

The central SKA office will decide on which consortia would be most suited to each specific work package. Most of the funding for the work packages will come from the countries themselves.

Apart from the fruitful PEP talks at the conference, two other successful meetings were held in Cape Town in the same week as the ICEAA '12. These were the IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC '12), and the Electromagnetic Environment and Interference Symposium (EEIS '12). •

AFRICA AND EUROPE PARTNER FOR RADIO ASTRONOMY

Europe's leading radio astronomers met in Brussels in September 2012 to discuss funding opportunities for collaborative research between Africa and Europe. Earlier this year the European parliament adopted a declaration to promote science capacity building in Africa in light of new the new radio astronomy research opportunities offered by the SKA.

Following the declaration, this latest workshop sought to address how the African-European Radio Astronomy Platfrom (AERAP) could assist researchers in finding partners and preparing funding proposals. The workshop focused on funding opportunities for training networks, partnerships and international exchanges through funding vehicle Marie Curie Actions.

The overall goals of the AERAP are to promote scientific discovery in the field of radio astronomy and to improve knowledge transfer and competitiveness across Europe and Africa. The platform will also enable effective dialogue to build a shared vision for international cooperation in radio astronomy.

Read the AERAP press release on radio astronomy as a driver for innovation in renewable energy here: http://www.ska.ac.za/releases/20121011.php

Find out more about AERAP at **www.aerap.org** •


Francois Kapp

CASPER WORKSHOP FOSTERS COLLABORATION

(Article by Francois Kapp)

The annual CASPER (Centre for Radio Astronomy Signal Processing and Electronics Research) workshop, held in Green Bank, West Virginia this year during August was another success for the on-going international collaboration.

CASPER is a large collaborative project with groups from the USA, UK, France, South Africa, Germany, Italy, India, Australia, Spain, Canada and more. CASPER's primary goal is to streamline and simplify the design flow of radio astronomy instrumentation.

The Robert C Byrd Green Bank Telescope (GBT), the largest fully steerable dish in the world, set in the picturesque mountains of West Virginia, was the perfect backdrop for the workshop. It saw a number of new collaborators join up with industry and long established CASPER-ites in a great exchange of collected data, proven techniques and new ideas that have come to characterise this event.

"The SKA South Africa/MeerKAT team sent a large team to the workshop this year and everyone in the team presented a talk. The response to the South African contribution was very positive and a number of new collaborators expressed interest in working with our team," said Francois Kapp, Sub-system Manager at SKA SA.

"The one disappointing piece of news received during that week was the NSF (National Science Foundation) Portfolio Review Report, published on the Friday of our visit, which suggests that the NSF should divest from a number of iconic facilities, including the relatively youthful GBT," he said.

The talks covered most of the activities of the DBE team, including System Engineering work, which is often new to CASPER.

Wesley New opened the South African contribution with "Next Generation FPGA Design Flows" – a key challenge facing not just CASPER, but everyone using the latest, greatest FPGA technology, said Kapp.

There were also a number of industry contributions, notably from Xilinx, Arista Networks, Hittite Corporation, DataDirect Networks and Ettus Research.

A few non-astronomy talks included "ROACH Radar Backend" by Luis Quintero from Arecibo, and "First Passive Radar Receiver Implementation with ROACH" by Laura Vertatschitsch from the University of Washington.

Kapp said they would like to welcome Australia's Swinburne University of Technology's Prof Matthew Bailes into his newly elected role of chair for the CASPER advisory board. "Matthew also continued his habit of interesting science talks, when he announced that a new large, dispersed pulse had been detected in Parkes data," said Kapp.


Prof Matthew Bailes

This year also saw the first time that the workshop was streamed via live video in its entirety. Some of the videos are available online on the workshop's web page:

https://science.nrao.edu/science/meetings/casper2012.

STRONG PRESENCE FOR SKA SOUTH AFRICA AT GLOBAL ASTRONOMY MEETING

Prof Roy Booth (front row, second from right) with other delegates at the XXXVIII General Assembly of the IAU.

INTERNATIONAL COLLABORATION

Prof Renée Kraan-Korteweg, head of astronomy at UCT, has been named the vice-president of the International Astronomical Union (IAU) during its XXXVIII General Assembly held in China in August 2012. Kraan-Korteweg is also the chair of astronomy at UCT, which has strong ties to SKA South Africa.

TWO SESSIONS at the meeting were particularly relevant to South Africa. One focused on future large scale facilities (including the SKA and MeerKAT), while the other dealt with the IAU Strategic Plan and the Global Office for Development that is now based in Cape Town.

"I am excited by the prospects of large strides in our understanding of cosmic magnetism through observations with the new instruments MeerKAT, ASKAP, LOFAR and SKA."

In a special series on new instruments, Prof Roy Booth, acting science director of SKA SA, focussed on the science behind the MeerKAT and other related radio astronomy programmes in South Africa. The MeerKAT will be integrated into the first phase of the SKA.

Dr Adrian Tiplady, Site Bid Manager at SKA SA, gave a short talk on the MeerKAT to scientists of the radio astronomy division of the IAU.

One of the MeerKAT's key projects on pulsating radio sources also came up during 'Probing Gravitation with Pulsars', by Prof Micheal Kramer, Director of the Max-Planck-Institüt für Radioastronomie (MPIfR) and Professor of Astrophysics at the University of Manchester.

Prof Booth said he enjoyed the discussions on cosmic magnetic fields, which are important for the formation of stars and galaxies. "I am excited by the prospects of large strides in our understanding of cosmic magnetism through observations with the new instruments MeerKAT, ASKAP, LOFAR and SKA," he said.

China's vice president, Xi Jinping, had opened the meeting and his presence there was taken as a token of the high value China places on science. Xi Jinping spoke about the importance of astronomy to society, and of public outreach programmes that would encourage people to respect, love, learn and use science.

The IAU is an international astronomical organisation of almost 11 000 professional astronomers from 90 countries.

Robert Williams (IAU President in 2009-2012) and Xi Jinping (at the occasion, the Vice-President of the People's Republic of China) during the IAU General Assembly 2012 held in Beijing, China.

SYNTHESIS IMAGING SCHOOL ON SOUTH AFRICA'S WEST COAST

(Article by Kelley Hess and photo by Sean Passmoor)

Saldanha, South Africa — 34 participants from South Africa, Nigeria, DRC, Mozambique, Namibia, Mauritius, Ethiopia, Sudan, UK, Canada, and USA descended on a beautiful beach-side retreat on South Africa's west coast during October 2012 to attend the 2nd Synthesis Imaging School for Radio Astronomy. The event was hosted by SKA South Africa, the Hartebeesthoek Radio Astronomy Observatory (HartRAO), and the University of Cape Town (UCT).

The astronomy and engineering students and postdocs were introduced to the fundamental concepts of radio interferometry by expert lecturers with decades of experience in the field. The students went away with hands-on experience in calibrating and imaging data recently captured by the KAT-7 telescope.

Further advanced topics such as wide-field imaging, spectral line imaging, and polarisation meant that participants with all levels of experience gained a deeper understanding of radio astronomy and the capabilities of current and future instruments.

The 20 tutors, facilitators, and speakers were recruited from South Africa, Netherlands, Canada, and USA. They drew on local and international expertise to not only help prepare the current and upcoming generations of African astronomers for MeerKAT and the SKA, but to strengthen ties across the African continent and globally. •

When **Máire Geoghegan-Quinn**, Member of the European Commission in charge of Research, Innovation and Science visited South Africa during November 2012, her itinerary included a stop at the MeerKAT engineering office in Cape Town. In addition to discussing future collaboration with the EU in the field of radio astronomy, SKA SA Project Director Dr Bernie Fanaroff used the opportunity to introduce her to the popular "Mission MeerKAT" comic series that tells the story of South Africa's SKA project from the viewpoint of a young girl living in a small Karoo town. Download Mission MeerKAT at **http://www.ska.ac.za/education/index.php**

News

STAMP SERIES COMMEMORATES SOUTH AFRICA'S ROLE IN ASTRONOMY

A stamp series celebrating South Africa's contribution to Astronomy was launched at the Johannesburg Observatory in June 2012. The stamps were designed by local artist and amateur astronomer Marcus Neustetter.

When the South African Post Office approached him for the series, Neustetter sought to combine art, science and technology into tiny visual representations of South Africa's rich astronomy heritage.

The stamps feature the Radio Astronomy Observatory, the Southern African Large Telescope (SALT), the Sumbandila Satelite, the KAT-7 and the South African Astronomical Observatory. They also celebrate the new South African Space Agency and indigenous knowledge of the sky.

"The intention of the stamp artworks is to capture the intangible and magical elements of astronomy and to find a way to illustrate and translate this through visual representation," Neustetter explained to the South African Post Office's *Setempe* magazine. "The individual stamps are however not just a representation, but an attempt to stimulate the imagination of the public about the wonder that accompanies the exploration of unknown space."

Astronomy centenary celebrated in Cape Town:
During October 2012, the Astronomical Society of Southern Africa (ASSA) celebrated 100 years of amateur astronomy in the country and the decision to host a major part of the SKA in Africa with a three-day symposium entitled "Looking back, Looking forward". The home page of the society is at http://assa.saao.ac.za/

www.ska.ac.za
www.dst.gov.za
www.skatelescope.org
www.nrf.ac.za

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