



Space Science and Technology Researcher Training in South Africa

South Africa-European Union Space Dialogue Workshop
19-20 Nov 2013, Pretoria
Zama Katamzi

Space Science Training: South Africa

- Key focus areas: geomagnetism and plasma, ionospheric, magnetospheric, and heliospheric physics
- Key institutes: SANSA, North West University (NWU), University of the Western Cape (UWC), University of KwaZulu Natal (UKZN)
 - Different institutes have different focus areas, although often collaborate
- Space science training introduced only at postgraduate level
 - Honours: 1 year, 80% course work and 20% project
 - MSc
 - Pure research and full dissertation (2 years)
 - Course work and research, NASSP: course work (6 months) and dissertation (1 year)
 - PhD: pure research (3 years)

Space Science Training: SANSA

- SANSA researchers teach **postgraduate courses** at local universities
 - 4 space physics courses at NASSP:
 - Magnetohydrodynamics, Geomagnetism, Aeronomy, Space Weather
 - 2 courses at CPUT:
 - Space weather and electric field theory
- **postgraduate research projects and scholarships**
 - Students have a choice to be based at SANSA or partner university
 - UWC, UKZN, NWU, Cape Peninsula University of Technology (CPUT), Rhodes University and University of Stellenbosch,
 - All student supported to attend national conferences and workshops
 - PhD students supported to attend at least 1 international conference or institutional visit
 - Soft skills training (e.g. presentation skills, writing skills courses)

Space Science Training: SANSa

- SANSa students:
 - Since 2011, SANSa has supported 36 postgraduate students in space science per year; 14 have graduated
 - In 2014 36 students will be awarded scholarships
- Internship training:
 - 1 year
 - 2 SANSa interns and 2 DST interns per year
- Vacation students: ad-hoc, summer, 2 students per year



Challenges

- Still facing a challenging in getting students
 - Space science is not very famous
 - Coordinated effort to market a career in space science to undergraduate and postgraduate students
 - For example: summer and winter schools, road show, public engagements
 - SANSa Space Science in a semi-remote location, very limited public transportation
 - Offer student accommodation on site



**SANSa SPACE SCIENCE
WINTER SCHOOL**

Learn all about the world of space physics
1-5 July 2013 at SANSa Space Science
Hermanus, Western Cape.

Open to all final
year BSc students
majoring in physics,
maths or engineering.

Fascinating presentations and practical demonstrations, providing students with a basic introduction to the near-earth space environment. Accommodation, food and travel expenses will be provided. See website below for details.

Please apply online before 12:00 on 30 April 2013
at <http://www.sansa.org.za>
Contact us for more information at
space@sanse.org.za or 028 312 1196
Space is limited apply today




science & technology
Department of Science and Technology
REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF SCIENCE AND TECHNOLOGY

NATIONAL SCIENCE WEEK

SPACE AGENCY OPEN DAY
3 August 2013

10:00 - 10:15 Registration
10:15 - 10:50 Space Science Tour
11:00 - 12:00 Space Talk "Living on the Ice"
12:00 - 12:30 Space Science Tour
12:30 - 13:00 Snacks & Refreshments

Space Science Activities
10:00 - 11:15 Planet Building (Age 6 - 8)
11:20 - 12:30 Magnet Man (Age 6 - 8)
10:00 - 11:15 LED Flash Circuit (Age 9 +)
11:20 - 12:30 Techno Motor (Age 9 +)

Please RSVP to 028 312 1196 or email cwebster@sansa.org.za

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Challenges

- Student not completing within funding period
 - Some students take longer to complete their research degrees
 - Funding needed to address extensions (e.g. 6 months funding)
 - English lessons to help with dissertation writing
 - SANSa currently funding on ad-hoc basis
- Retaining expertise
 - MSc and PhD graduates leave the field to more lucrative opportunities
 - Definitive career trajectory
 - Offer longer term research assistant and postdoctoral posts
 - Offer more appealing packages
- Lack of collaboration with industry and para-statal
 - Plan to collaborate with South African Weather Services on HCD programs

Future Plans

- National Space Program
 - Increase number of scholarships
 - Increase scholarship level to attract top-level students
- Expansion of NASSP- 2 additional nodes at UKZN and NWU
- Student exchange programs with international institutes
 - Exposure to diverse and high level projects
 - Build international collaborations
 - Fast track career growth and skills development
 - E.g.: NASA international internship program



Thank You

