

ZAMBIA REPORT ON THE DEVELOPMENT OF RADIO ASTRONOMY UNDER THE SKA PROJECT

H V Mweene

N Mwiinga

K Hansingo

Department of Physics, University of Zambia

Background

- Three public universities in Zambia (UNZA, CBU, Mulungushi)
- Only the University of Zambia (UNZA) has a School of Natural Sciences
- There is no Astronomy of any kind at UNZA

Department of Physics

- Development of Astrophysics at UNZA must be through the Department of Physics
- Department has an establishment of 23, with 13 members of staff currently in post
- The Department must initially host Astrophysics, but this should become independent later

Human Manpower Development

- The nucleus of staff in Astrophysics has been formed:
- 1. Dr. Patrick Sibanda has a PhD in Space Science
- 2. Mr. Chigomezzyo Ngwira is shortly to get his PhD and is expected to join the Department
- 3. Mr. Nchimunya Mwiinga is pursuing PhD studies in Space Science

Manpower Development conti'd

- Others currently undergoing training related to SKA needs are:
 1. Ms Brenda Namumba, pursuing a Masters at the South African National Space Academy (SANSA)
 2. Mr. Temwani J Phiri, also pursuing a Masters at SANSA

Manpower Development in the School of Engineering

- Several individuals in the School of Engineering are interested in the SKA project:
- 1. Mr Daniel Ngoyi is interested in a PhD in an engineering field
- 2. Mr. Brilliant Habeenzu is interested in a Masters place

Graduates Ready for SKA Scholarships

- Several recent Physics graduates have been identified for SKA training in radio astronomy. These include Mr. Abel Kabele, Mr. Martin Kafula, Mr. Amon Mutesi, Mr. Kelvin Mpatisha, Mr. Ernest Miyombo, Mr. Miracle Moonga and Mr. Edmond Kalulu.
- These would form the core of the scientific research team for work in radio astronomy

Academic Developments

- The lack of astronomy studies in Zambia is being addressed
- This is being done at both undergraduate and postgraduate level
- New courses and programmes are being developed
- There is already the manpower needed to teach these new courses

Undergraduate

- Two new undergraduate courses in Astronomy are being introduced in the Department of Physics
- These will facilitate the transfer of graduates to Astronomy programmes in South Africa and other countries either at Honours or Masters level
- These two courses are already in the process of being approved by the UNZA Senate

Undegraduate Courses cont'd

- The two courses being introduced are:
- 1. Introduction to Space Science
- 2. Basic Astronomy
- These will be electives at fourth year

Postgraduate: Masters in Space Science

- This programme is being finalized.
- The following courses will be given: Plasma Physics, Magnetohydrodynamics, Geomagnetism and Aeronomy, Time Series And Data Analysis, Space Weather, Introduction to Space Technology and Computational physics
- In addition there will be a thesis

Research

- Efforts have been made to kick-start research in radio astronomy at UNZA by joining the MITRA project currently being undertaken by the Durban University of Technology and the University of Mauritius
- The Ministry declined to furnish the required funds
- With the success of the SKA bid, the request for funds may succeed

Research cont'd

- UNZA will need the assistance of SKA partners with established programmes in radio astronomy to make a start in both teaching and research
- This will become possible when the Government of Zambia furnishes the money for collaborative activities
- Certain colleagues from other SKA partner countries have already expressed interest in regular visits to UNZA to teach

The End

- Thank You For Your Attention