Publication
MAIL & GUARDIAN

Page	Date	AVE (ZAR)
44	Fri 06 Sep 2019	31352.49

Dreaming of the stars: How a long-term dream is bearing fruit in South African astronomy

By: Paul Kennedy, Science Link

Twenty-five years ago, political activist and astronomer Dr Bernie Fanaroff and colleagues had a dream that South Africa could be a world leader in astronomy; in those heady days after the fall of apartheid, it seemed a vague and distant possibility. Today, those dreams are solidifying rapidly as South Africa steps onto the world stage as the best place in the world to study the stars, galaxies and empty spaces beyond our earth's atmosphere.

South Africa's delegates to the 69th Lindau Nobel Laureates Meeting, taking place in Lindau, Germany this week, are walking, talking proof that long-term government commitment to astronomy research is paying off in South Africa. Take Dr Itumeleng Monageng, postdoctoral researcher at the South African Astronomical Observatory (SAAO).

"I always say I'm lucky to be born when I was," he says. "I happen to be doing my research at the best time ever in South African astronomy."

Monageng, along with fellow South African #LiNo19 delegates like Julia Healy, Kimeel Sooknunan, Tanita Ramburuth-Hurt, and Tariq Blecher, all rely on big South African astronomy initiatives like the Square Kilometre Array (SKA), MeerKAT, the South African Large Telescope (SALT) or Hartebeesthoek Radio Astronomy Observatory (HartRAO) for funding, astronomical data, and research infrastructure. And they're not alone.

The SKA alone funds hundreds of students and researchers, and has helped grow nascent South African industries like engineering, data science, and high performance computing, without the telescope even being built yet. This is the power of South Africa's long-term commitment to global big science initiatives.

"We're so lucky that our government is in support of these efforts," says Monageng.

The MeerKAT radio telescope in South Africa's Karoo region started gathering data in 2018, and is already changing the way we see the universe. Image credit: SKA.

At a breakfast event hosted by South Africa in early in the week in Lindau, panellists discussed the importance of a concerted effort between research communities and government in getting this sort of big project off the ground, and highlighted the exponential positive effects this type of project can have on a country. The panellists at this breakfast event included Dr Beverley Damonse, Group Executive, Science Engagement and Corporate Relations, National Research Foundation; Dr Buyisiwe Sondezi, University of Johannesburg; Dr Bradley Frank, SKA; Prof Thebe Medupe, North-West University and Nobel Laureate Prof Brian Schmidt.

"A project like the SKA pulls people together," says Nobel Laureate Brian Schmidt. "These global initiatives see a huge return on investment in the long term, through growing human capacity, and by growing related sectors like engineering."

Monageng knows how good he has it as a South African astronomer, and says the future is bright.

"South Africa has fantastic conditions right now for astronomy: we have the right location at Sutherland in the Karoo, where it is very dry and very dark. And with MeerKAT and SKA being built, this brings funding to support students as well as postdocs. As a Senior Young Researcher, I am now supporting and growing a new generation of researchers using these same facilities and funds."

From a distant dream more than two decades ago, the reality and future of South African astronomy is shining brighter than the stars.

Twenty young Academy of Science South Africa (ASSAf)-nominated South African (SA) scientists are at Lindau this year. Funding for the SA young scientists has been provided by the Department of Science and Innovation (DSI)

The South African young scientists are: Tariq Blecher, Rhodes University/Square Kilometre Array (SKA); Stive Djiokop, Nelson Mandela University (NMU); Jake Gordin, University of Cape Town (UCT); Thandi Gumede, Central University of Technology (CUT); Justin Harrisson, University of Pretoria (UP); Julia Healy, UCT/ South African Radio Astronomy Observatory (SARAO); Jan Louw, Stellenbosch University; Genevéve Marx, NMU; Itumeleng Monageng, UCT/ South African Astronomical Observatory (SAAO); Francis Otieno, University of the Witwatersrand (Wits); Valentine Saasa, UP/Council for Scientific and Industrial Research (CSIR); Michael Sarkis, Wits; Hester Schutte, North-West University (NWU); Katekani Shingange, University of the Free State (UFS); Sinenhlanhla Sikhosana, University of KwaZulu-Natal (UKZN); Kimeel Sooknunan, UCT; Tanita Ramburuth-Hurt, Wits; Johannes Thiersen, NWU; Nicole Thomas, University of the Western Cape (UWC)/ SARAO; Danielle Venter, NMU.