

presented by

Koketso V. Mophahlane,  
PhD, RATT



BREAKTHROUGH  
LISTEN



AfAS  
African Astronomical Society



RHODES UNIVERSITY  
Where leaders learn



Alive in the Community



Kwalata Community Development Initiative



#DinalediTsaHammanskraal

Hammanskraal  
Astronomy  
Outreach

register here  
for the Saturday  
event

7 – 11 April: Schools Visit  
12 April: Cliff Café and (09:00—16:00)  
Kwalata Game Lodge (17:00—22:00)



# *Content*

## **1. Historical Foundation & Social Transformation**

- The Origins of Hammanskraal
- Socio-Economic Transformation from Apartheid Era
- Dinokeng Game Reserve

## **2. Launch of TART in Hammanskraal**

## **3. Outreach**

- Hammanskraal School's Outreach (11 Secondary Schools, ~2000 students)
- The 13th Annual Science Unlimited Expo 2025 at Kwalata Game Lodge in the Dinokeng Game Reserve (3 Primary schools, ~1000 students).

## **4. Astronomy Outreach & Astro-Tourism Center**

- Building a permanent facility for public stargazing and scientific literacy with
- Business Network Integration

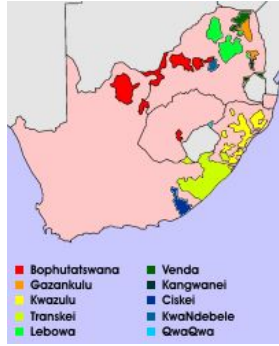
## **5. Impact & Future Roadmap**

- Quantifying Impact
- Specialized Training
- Africa Ikalafe

*A Regional Pilot Astronomy Outreach  
Programme for Education and Socio-Economic  
Development: Piloted in Hammanskraal*

# Bophuthatswana was a "Bantustan" (or "homeland")

created by the apartheid government of South Africa for the Tswana people. It existed as a nominally independent, disconnected enclave from 1977 until 1994



Mr Lucas Manyane Mangope (1923–2018)  
Former and only president of Bophuthatswana



# Pan-Tswana(“ism ”)

Lucas Mangope claimed Bophuthatswana was a restoration of Tswana independence that had been lost during the colonial era, positioning himself as a traditional leader (Paramount Chief of the Bahurutshe) similar to Botswana’s royalty.

**1884:** Battle of Khutiyabasadi (Thariyabasadi)



**1979–1982:** Ethnic Cleansing (Ga-Rankuwa → KwaNdebele)



Please pretend this is a photo of a Bophuthatswana-era Ndebele woman from Fofung, North-West.

# Babelegi Industrial Park: Legacy of Decentralization and Deindustrialization

**collapsed** due to the post-1994 removal of apartheid-era industrial subsidies, leading to mass factory closures, high unemployment, and severe economic decline in surrounding Temba and Hammanskraal.



At its peak in the 1980s, Babelegi employed over 20,000 people.



# The Carousel Casino: Apartheid's "Sin City" and Homelands Economic Strategy



## Gambling Act, etc

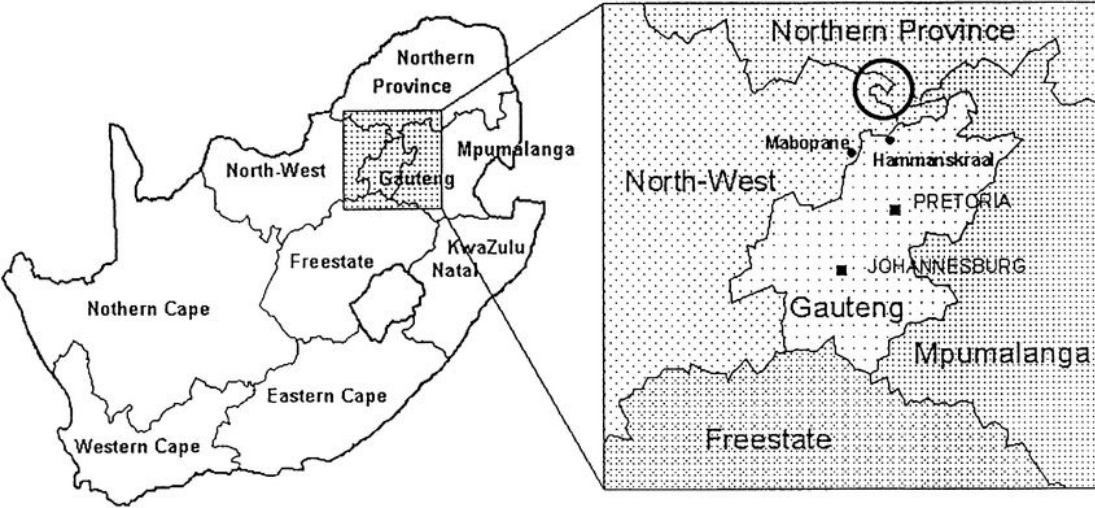
To Circumvent Gambling Bans: At the time, the South African government's strict Calvinist laws banned gambling and "risqué" entertainment within its borders.



June 2020 declining, 615% to R885 million



*The Carousel Casino was the entertainment counterpart to Babelegi's industrial hub. While Babelegi provided the "work," the Carousel provided the "play"—but both were built on the exact same foundation of apartheid-era border politics.*



# Temba, Hammanskraal, in New South Africa, mid 90s

**Interprovincial gateway**

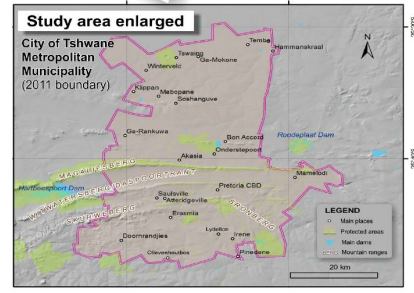
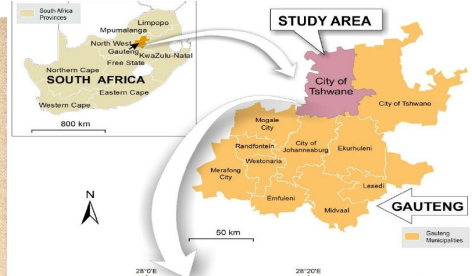
**Indigenous roots:** Tswana/Bakgatla chieftaincy landscapes.

**Cultural mix:** chiefly authority + rural-urban settlement history.

**Apartheid shaping:** forced removals, decentralisation, border-making.

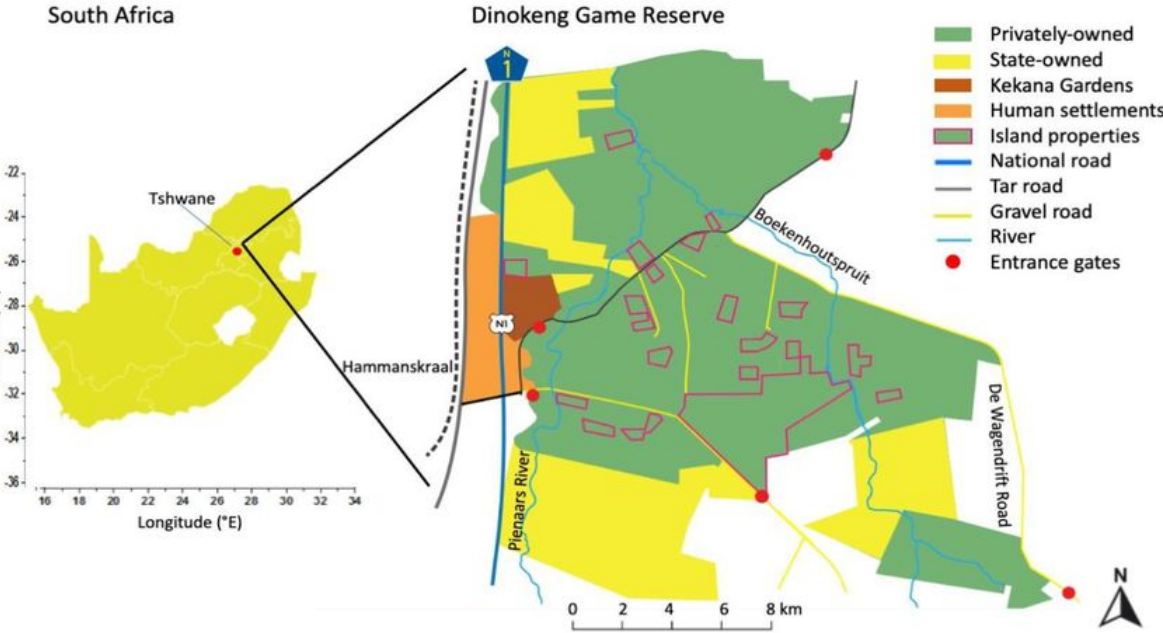
**Bophuthatswana legacy**

**Name origin (commonly cited):** from a farmer "Hamman" and his kraal/stockade.



# Dinokeng Game Reserve

was officially opened on September 22, 2011, by the Gauteng Provincial Government. It is the province's first free-roaming Big Five game reserve.



Van de Water, Antoinette et al., (2003) Diversity. 15. 1041. 10.3390/d15101041.

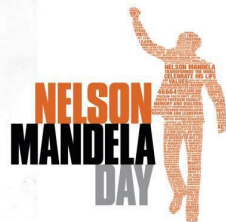
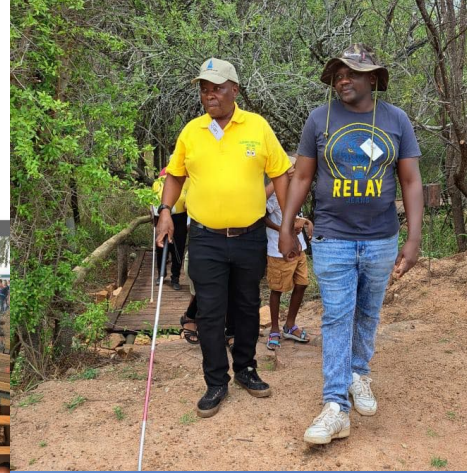
(Conserving inequality: How private conservation and property developers 'fix' spatial injustice in South Africa)



Kualata Community Development Initiatives



Alive in the Community



BOOK YOUR SUMMER HOLIDAY!

# *The 46th Silamba Commemoration Celebration,*

hosted by the proud Ndebele Nation to celebrate the legacy of King Silamba, a respected historical leader of the Ndebele people, whose leadership and influence remain an important part of Ndebele heritage and identity today.



# Lifestyle Tourism



## *Hammankraal Astronomy Outreach Program:*

- *Wildlife-Tourism,*
- *Township-, Lifestyle-Tourism,*
- *Astro-Tourism*
- *Education,*
- *Healing historical divisions,*
- *Celebrating the diverse indigenous perspectives that unite us under one sky.*

*This outreach programme draws inspiration from the work of  
FeedMore Foundations (Mr Philmoo Matshwantsha Seema Kekana) &  
Rebao ICT Foundation and Youth Development (Dr Gina Tebatso Moape)*



# Hammankraal Astronomy Outreach Team

Koketso Mophahlane

Katlego Morakile

Basetsana Sepale

Nashawn KomeLo

Tswai Abduljami

RATT

Project founder,  
SARAO-funded PhD  
student



UP

SARAO-funded PhD  
student



MBA

Outreach administration,  
HR



MBA

Outreach administration,  
Tourism



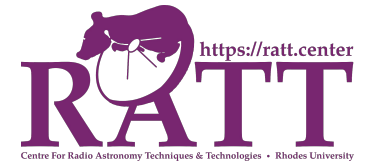
Strategic  
Liaison

Cliff Cafe, Royal Kursi





# First Meeting

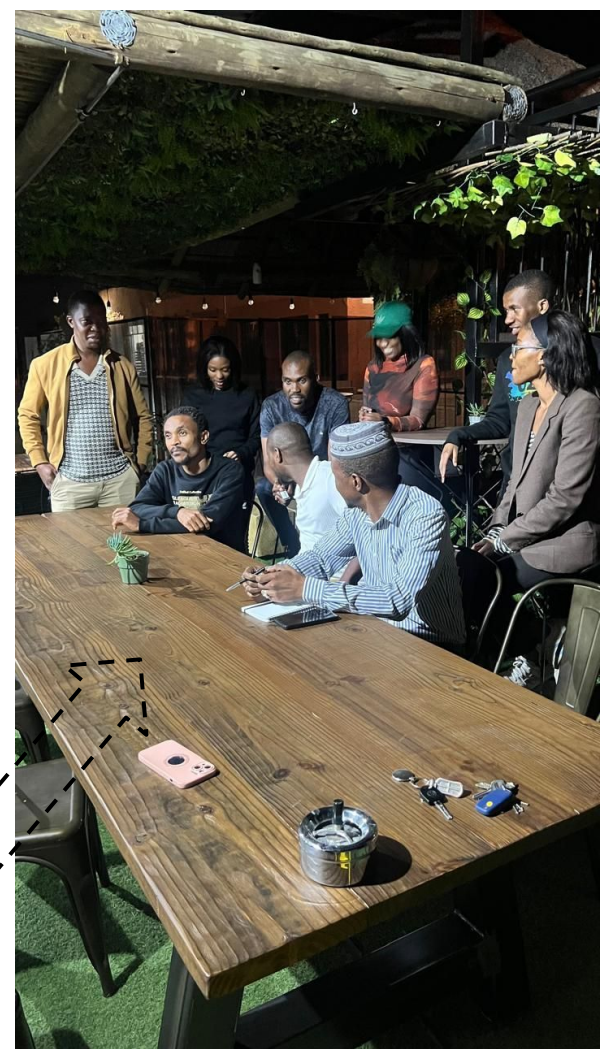


UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Initial Site Survey Meeting



RATT, SARAO, Cliff Café



# Esteemed Guests

- **Prof Oleg Smirnov** – RATT, SARAO, Breakthrough Listen
- **Prof. James Chibueze** – University of South Africa
- **Dr. Stanley Kuja** – TART Project Expert (RATT, Rhodes University)
- **Dr. Anton Binneman** – South African Radio Astronomy Observatory (SARAO)
- **Dr. Tebatso G. Moape** – University of South African
- **Dr Musa Hlongwane** – Department of Education, Tshwane District
- **Honourable Ms Thea Coetse** – Director, Department of Education, Tshwane North District,



**BREAKTHROUGH  
INITIATIVES**



**SARAO**  
South African Radio  
Astronomy Observatory

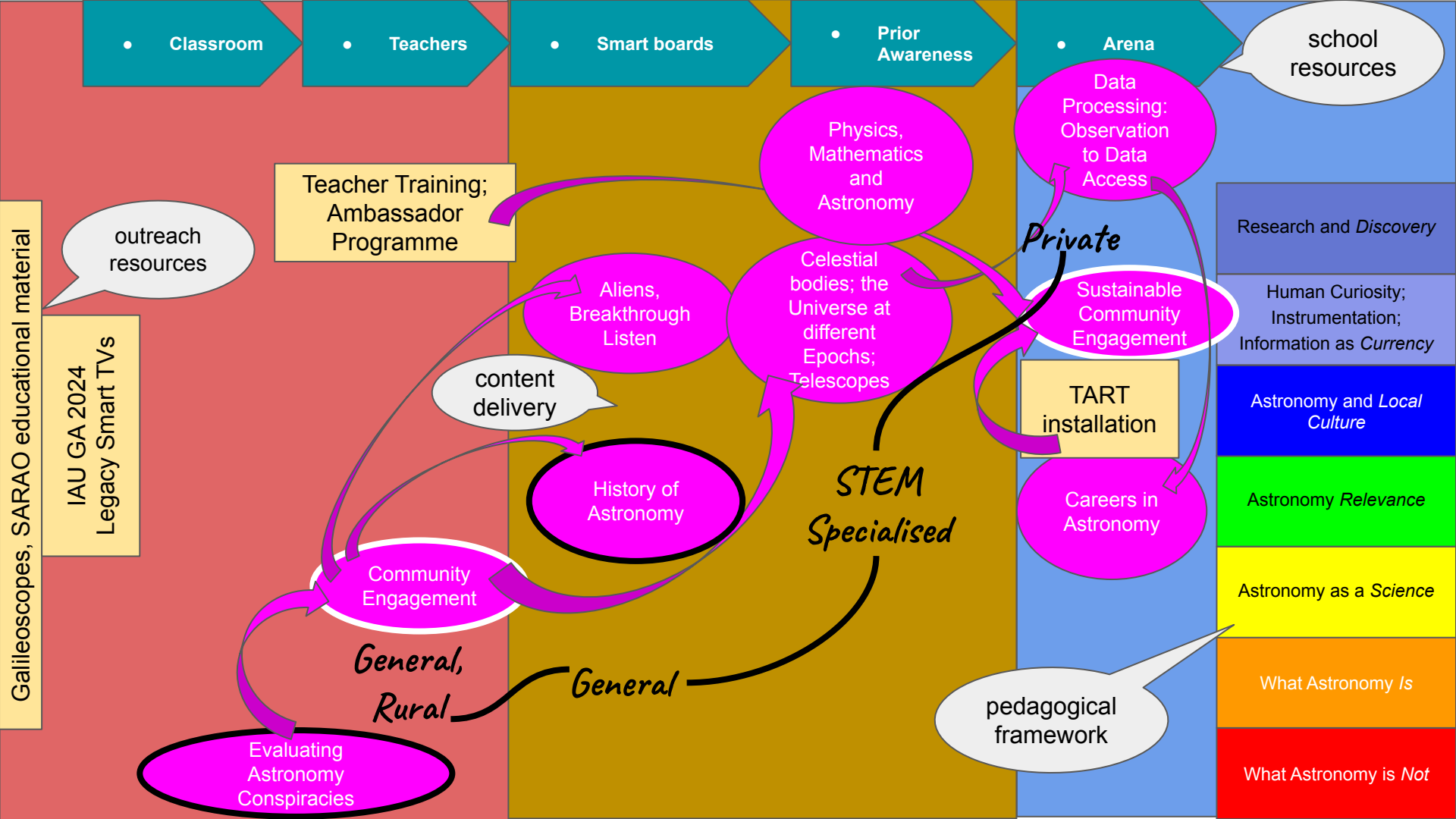
**AfAS**  
African Astronomical Society

**Kwalaba**

**AFRICA**



*Topics Presented During School Outreach Sessions*



# Astronomy introduced for the first time in Hammanskraal

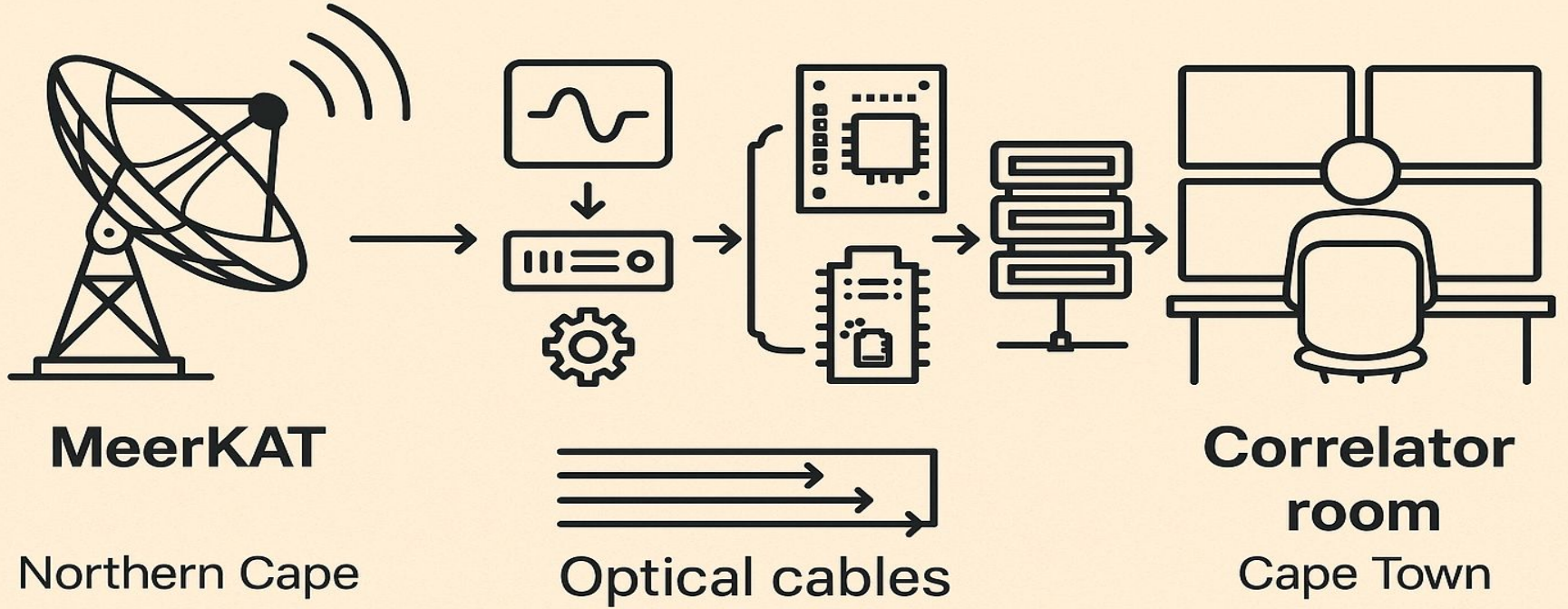


Dr Ntsikelelo Charles



Dr Lexy Andati





Observation is 

# CAREERS IN ASTRONOMY





## Tuesday

- Lehwelereng Secondary School
- Ratshepo Secondary School
- PHL Morake Secondary School



**BREAKTHROUGH  
INITIATIVES**



## Wednesday

- Sikhululekile Secondary School
- Hans Kekana Secondary School



<https://ratt.center>

**BREAKTHROUGH  
INITIATIVES**

# Thursday



- Lethabong Maths, Science and ICT School of Specialisation
- Makgetse Secondary School
- Adam Masebe Secondary School
- Madisong Secondary School



**BREAKTHROUGH  
INITIATIVES**



Friday

- Prestige College
- Mmamethlake Secondary School



**BREAKTHROUGH  
INITIATIVES**

# Saturday



- Cliff Cafe—Funded by RATT, Breakthrough Listen, and with support from SARAO, Africa Science Stars and AfAS
  1. Presentations and Q&A from experts
  2. Over 100 attendees
- Kwalata Game Lodge—RATT, Breakthrough Listen, and Kwalata Game Lodge
  1. Braai
  2. Stargazing
  3. Open Bar
  4. Game Drive



# Quantifying Impact

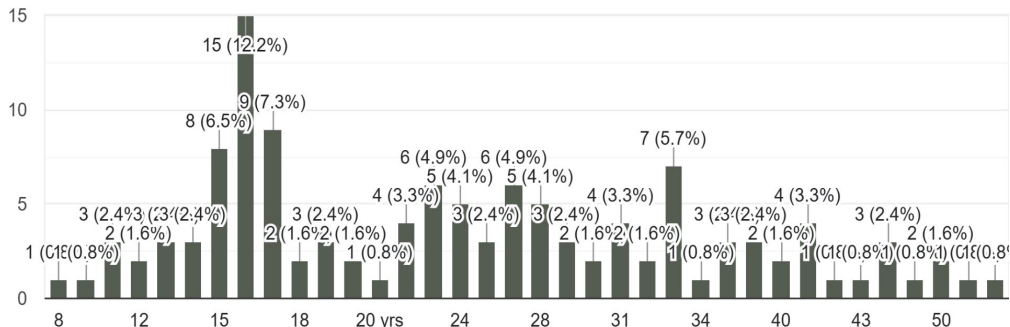
- Socio-economic
- Education
- Astronomy



Day	School Name	School Type	Number of Students	Donations, Prizes
<b>Tuesday</b>	Lehwelereng Secondary School	General	222	* SRAO-EM
	Ratshepo Secondary School	General	67	* SRAO-EM, AfAS Galileoscope
	PHL Morake Secondary School	General	147	SRAO-EM, AfAS Galileoscope
<b>Wednesday</b>	Sikhululekile Maths, Science and ICT School of Specialisation	Specialized	31	SRAO-EM, AfAS Galileoscope, IAU GA 2024 Legacy Smart TV
	Hans Kekana Secondary School	General	55	* SRAO-EM
<b>Thursday</b>	Lethabong Maths, Science and ICT School of Specialisation	Specialized	139	* SRAO-EM, AfAS Galileoscope, IAU GA 2024 Legacy Smart TV
	Makgetse Secondary School	General	67	* SRAO-EM, AfAS Galileoscope
	Adam Masebe Secondary School	General	62	* SRAO-EM
	Madisong Secondary School	General	77	* SRAO-EM, AfAS Galileoscope
<b>Friday</b>	Prestige College	Private	244	* SRAO-EM, AfAS Galileoscope
	Mmamethake Secondary School	General (Rural)	85	* SRAO-EM, AfAS Galileoscope

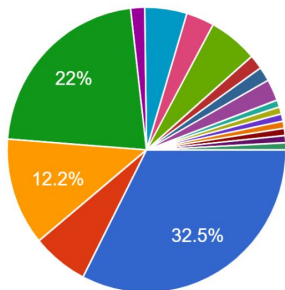
Age

123 responses



Attending as ...

123 responses



- High school student
- Parent
- University student
- Hammanskraal community member
- Astronomy enthusiast
- Educator
- Prospective contributor
- Other

▲ 1/3 ▼

# Kwalata Game Lodge & Cliff Cafe

- Over 100 attendees at Cliff Cafe
- Over 30 attendees accommodated at Kwalata Game Lodge for a braai, complimentary Game Drive at Dinokeng Game Reserve and an Open Bar
- Kwalata Game Lodge Sponsored the braai and complimentary Game Drive at R21 400
- Breakthrough Listen sponsored the open bar at R6000
- RATT sponsored venue hire and food at Cliff Cafe at over R24000



## BREAKTHROUGH INITIATIVES



# First Telescope Donation: TART



# Quantifying Impact



We've had the absolute pleasure hosting international guests all the way from Germany, USA, Peru and as well as local guests from Cape Town who are visiting Dinokeng.

Grateful to Maredi from [Kwalata Game Lodge](#) for always advocating for us and bringing safari to the kasi.





# 13TH ANNUAL SCIENCE EXPO

5 - 8 August 2025

Kwalata Lodge

Join us in advancing education, sparking a passion for science, and exploring the exciting careers and opportunities that science and education can offer.



## OBJECTIVES

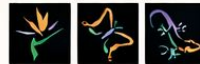
- Ignite passion
- Enhance skills
- Create awareness
- Career opportunities

## FOCUS AREAS

- Technology
- Engineering
- Mathematics
- Science



South African National Biodiversity Institute



Biodiversity for Life



# Random Slide 1



# Random Slide 2

(Vasco, Simon, Eric, etc)

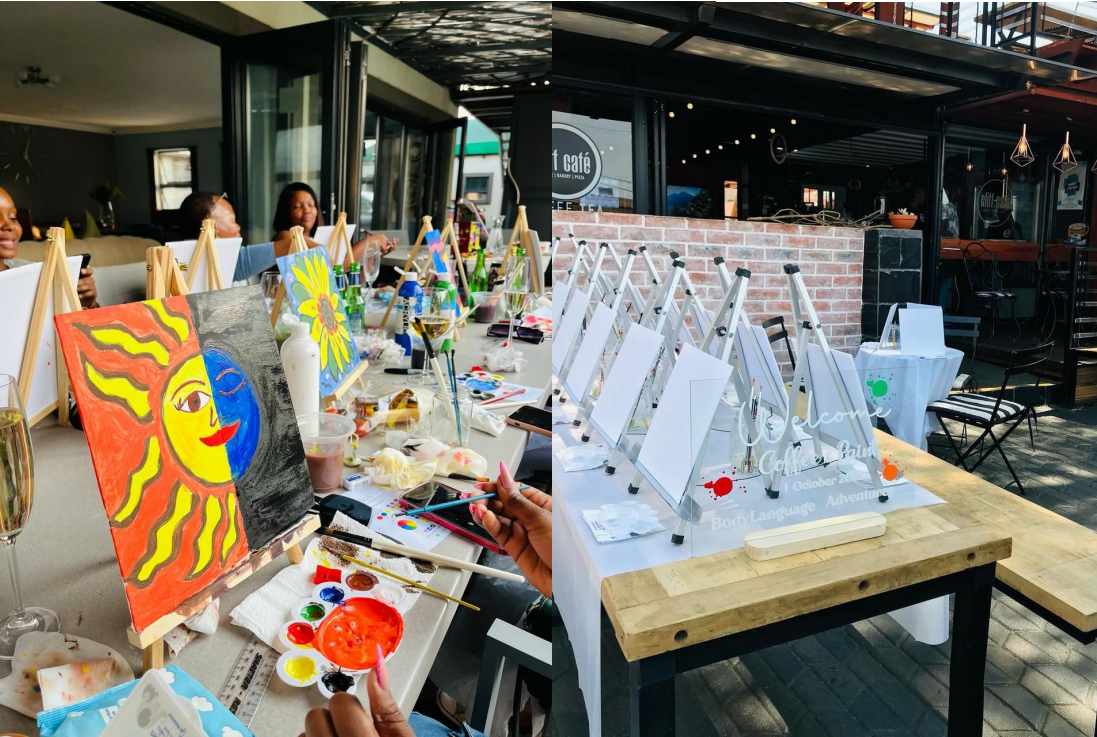


# Random Slide 3

(Nashawn Dalton Komelo)



ADVENTURE | CAMPING | LIFESTYLE



Random Slide 4: The Weather Hooligan and south african polar research infrastructure



# Astronomy Outreach Center at Dinokeng Game Reserve

Phase 3—training and indigenous cultures:

- Radio Astronomy vs Astronomy
- TART,
- The night sky (in general)
- Astronomy through the lens of local indigenous cultures, languages and history (Africa Ikalafe)
- Telescope donations



## Desired Collaborations

- **SARAO, RATT, Breakthrough Listen and AfAS:** Continued academic and scientific collaboration for telescope setup, school visits, and speaker participation.
- **IAU Office of Astronomy for Development (OAD):** Support for curriculum integration, grant assistance, and international outreach amplification.
- **Department of Basic Education:** Partnership to formalise the program's place in school science enrichment and educator development.
- **WSEC, Kwalata, and Cliff Café:** Strengthen ties with local science and hospitality hubs for events, workshops, and community engagement.
- **Universities (RU, UP, UNISA, etc):** Student volunteer mobilization.
- **NGO's, NPO's and Community Organisations:** Collaborations for logistics, event facilitation, youth clubs, and teacher support.
- **Private Sector Partners:** Sponsorships for equipment (e.g., EduTouch smart boards, laptops), catering, transportation, and branded outreach kits.
- **TART team, DARA:** For resource-sharing, technical support, and exchange programs to strengthen global linkages.

**Thank you**

**RATT,  
RARG,  
SARAO,  
Cliff Cafe,  
Breakthrough Listen,  
Kwalata Game lodge,  
Dinokeng Game Reserve,  
AfAS,  
UNISA,  
Africa Science Stars,  
Each 1 Tshwara 1,  
IAU GA 2024 Legacy, . . .**

