



# MeerKAT Experience

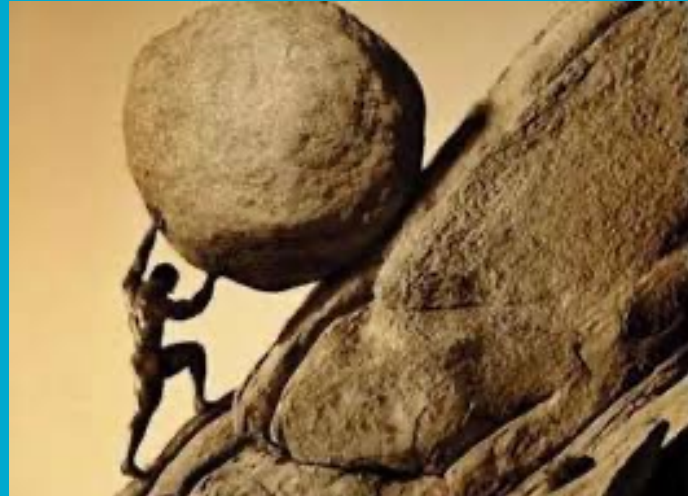
Sep 2018 – Jul 2020

Xinyu Wu | Dec 2020

Australia's National Science Agency



**SARAO**  
South African Radio  
Astronomy Observatory



# The Place - expectation



# The Place - reality







30°44'22.1"S 21°26'34.5"E - Google Maps

google.com/maps/place/30°44'22.1"S+21°26'34.5"E/@-28.3416638,26.1068896,6.29z/data=!4m5!3m4!1s0x0:0x0!8m2!3d-30.739475!4d21.442909



Google





# Technical Specs

- 64 antennas
- Offset Gregorian
- 13.5m diameter
- Up to 7 subarrays

## MeerKAT ANTENNA

TOTAL HEIGHT: 19.5 m; TOTAL STRUCTURE WEIGHT: 42 TONS

The antenna consists of the main reflector (effective diameter 13.5 m) plus the sub-reflector (diameter 3.8 m). The main reflector is made up of 40 panels, made of aluminium. The sub-reflector is a single piece composite structure.

Lightning conductors around the reflector protect the structure during lightning strikes.

Steel support framework and connecting back-up structure.

The L-Band receiver and the UHF-Band receiver are mounted on the receiver indexer. The indexer can accommodate up to four receivers.

The yoke and elevation bearing actuator allows the reflectors to tilt and down.

The receiver indexer can rotate each receiver to the desired focal position.

The azimuth bearing/actuator allows the structure to rotate in a horizontal plane.

The L-Band digitiser and the UHF-Band digitiser are mounted on the indexer.

The pedestal contains the drive control system.

An underground network of fibre optic cables links each receptor to the Karoo Array Processor Building (KAPB) on site.

The pedestal is anchored and bolted to a concrete foundation.



## CAM Team – team bonding





# Technologies

- Front end
  - Angular 5
  - Angular 9 with Typescript
  - Angular Material
- Backend
  - Python
- Docker and docker-compose









# African Experience







## CAM Team- busy working







Thank you