

# VLBI in Africa

Jonathan Quick<sup>1</sup>, Jasper Horrel<sup>2</sup>,  
Venkatasubramani L. Thondikulam<sup>2,3</sup>

<sup>1</sup>Hartebeesthoek Radio Astronomy Observatory

<sup>2</sup>SKA-SA project, <sup>3</sup>AVN

# The Hartebeesthoek Radio Astronomy Observatory



26 metre telescope

15 metre telescope

Satellite Laser Ranger

GPS base station

# New VGOS Antenna



Traffic Latitude 25° 53' 27.1" South  
Longitude 027° 41' 12.7" East.

Existing HartRAO Site

Hartebeesthoek  
RAO, HartRAO

End of tar road

Proposed Antenna Location

# New VGOS Antenna



Funding for antenna secured

Call for proposals imminent

EIA requirements being assessed

Geotechnical siting study complete

RFI survey on site in progress

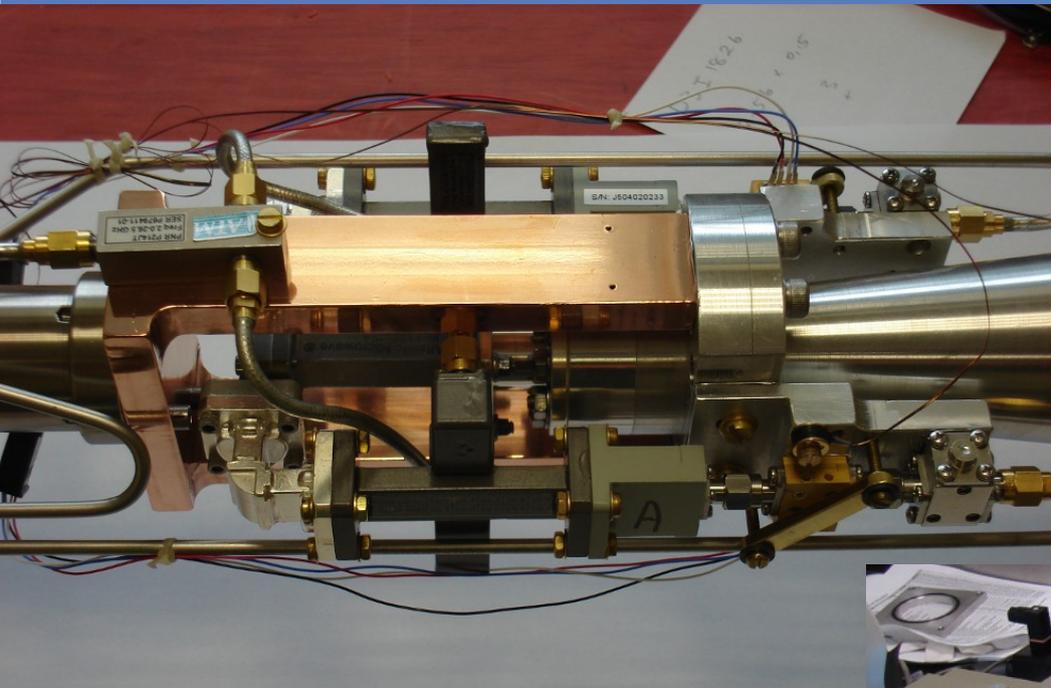
# Cryogenic K-band receiver



**NRF**  
National Research  
Foundation

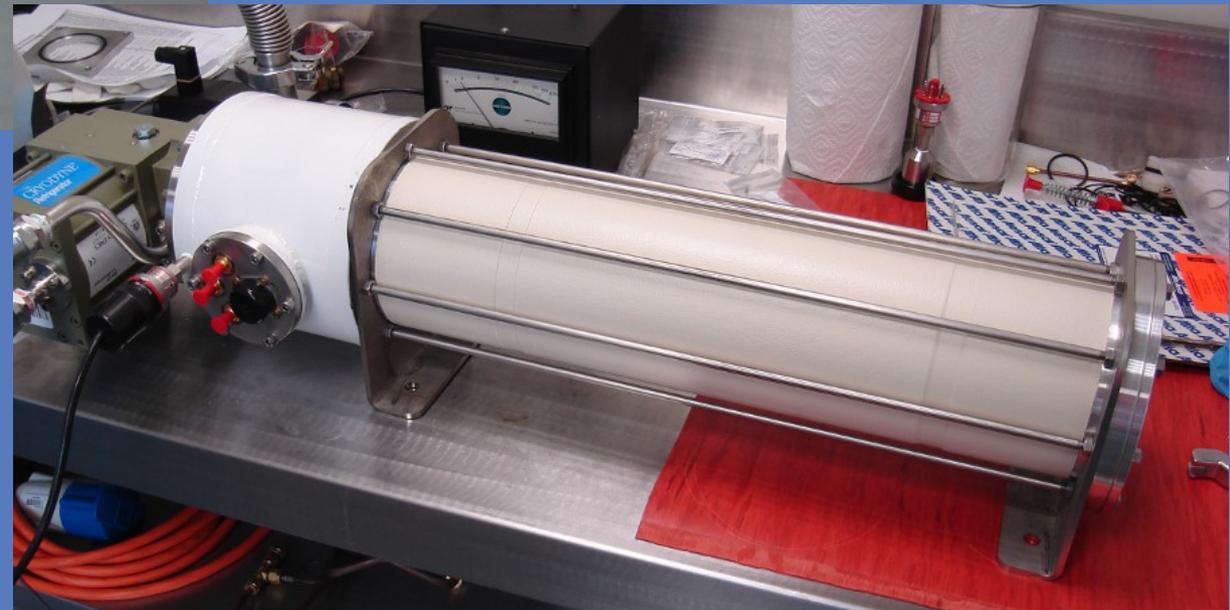
**HartRAO**

Hartebeesthoek Radio  
Astronomy Observatory



SEFD  $\sim 1000\text{Jy}$

Installed May 2014  
(still improving  
pointing)



# KAT-7



Busy commissioning coherent beamformer

No FS control to be implemented

Ability to write to disk in VDIF format

For testing in late 2014

Receiver lifetime estimated to be till end 2015

10GE link to Cape Town

# MeerKAT



## HartRAO

Hartebeesthoek Radio  
Astronomy Observatory



Array infrastructure at  
advanced stage

One antenna erected with L-  
band (and Ku) feeds

Next antenna by year end, two  
more by Mar/Apr 2015

16 station backend (with  
coherent beamformer) by  
Aug 2015



# MeerKAT



# AVN



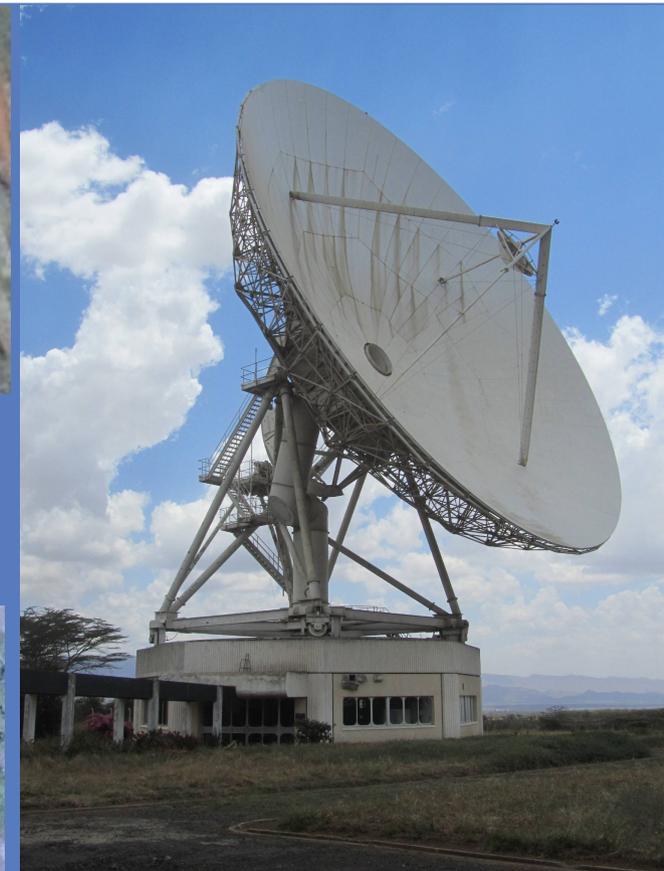
**Kuntunse,  
Ghana**



**Tsirinana,  
Madagascar**



**Mwembeshi , Zambia**



**Longonot,  
Kenya**

# Kutunse, Ghana



Mechanical work party  
October 2014

# Kutunse, Ghana



Two input DBBC2 under test at Hartebeesthoek  
Matching Mark5B+ recorder about to be delivered

Recabling/repainting being handled by Ghanaian GSTTI

SA signal chain work party visit delayed due to non-  
essential travel ban in place for Ebola

Antenna control & monitoring still being (re-)developed  
on mock ups in Cape Town

# VLBI in Africa



Questions?