

# MeerKAT open time call 3 December - Proposal summary

MeerKAT observation of the Saraswati Supercluster (MOSS)	
<b>Proposal number</b> 9	Thu Jan 31 2019 02:21:18 GMT+0200 (SAST)
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## Abstract:

In the present paradigm of large scale structure formation, clusters of galaxy form hierarchically, with smaller objects (galaxies and groups of galaxies) forming first. High resolution simulations of large scale structure formation reveal that in the standard  $\Lambda$ CDM cosmology, clusters mainly form within filaments of enhanced density and that the biggest clusters often form at the intersection of these filaments. Recent optical and X-ray observations also support this structure formation idea. In this open cycle, we are proposing a pilot observation of the Saraswati supercluster, which is located within the Stripe 82 region. This supercluster is unique regarding its shape, huge mass, richness, and in the detection of localised non-thermal diffuse radio emission, relating to its complex dynamical state. We are requesting a total 14 hours of observations of two galaxy clusters - Abell 2631 and ZwCl 2341.1+0000 - located within one of the filaments of the Saraswati supercluster. Abell 2631 is situated at the centre of the dense core of this supercluster. This observation aims to detect and study cosmic shock driven diffuse radio sources associated with identified optical filaments (beyond virial radii of clusters) and probe any diffuse extended radio sources associated with galaxy clusters. The success of this pilot observation will inform planned future MeerKAT follow-up observations, which will ideally entail a full survey of the Saraswati supercluster.

## Observation parameters:

<b>Targets</b>	ABELL 2631 : 23h37m40.6s +00d16m36s ZwCl 2341.1+0000 : 23h43m39.7s +00d19m51s		
<b>Total time</b>	14 in 2 epochs	<b>Dump rate</b>	8 s
<b>Daytime</b>	Nighttime required	<b>Variable/Transient</b>	No
<b>Baselines</b>	As per our science goal, we need high resolution observation. So no more than one or two of the nine outer ring antennas may be excluded from the array. In total we are requesting for atleast 60 antennas.		

**List of files uploaded.** Files in order of upload. Usually just revising their proposal, so click the last one, but some people attached several different files, so they may all be useful.  
[https://drive.google.com/open?id=1qmWBwk\\_QMqJGH0XzJCiSw4dTE9SmzDcT](https://drive.google.com/open?id=1qmWBwk_QMqJGH0XzJCiSw4dTE9SmzDcT) .

## File comments: