

MeerKAT open time call 3 December - Proposal summary

Cluster Formation & Galaxy Evolution in Hydra I	
Proposal number 28	Thu Jan 31 2019 10:53:54 GMT+0200 (SAST)
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Abstract:

Galaxy clusters are complex systems that are rarely truly virialized, and are frequently still in the process of assembling as they accrete galaxies from the surroundings through large-scale structure filaments. Clusters are also important environments for driving galaxy evolution, which is easily recognised in images of galaxy gas disks interacting with the intracluster medium. However, an outstanding question for the cluster galaxy population is to what degree have galaxies been "pre-processed" in the galaxy group environment before reaching the cluster? Further, what are the dominant physical mechanisms that drive evolution in the filament, group, and cluster environments? With these questions in mind, we propose a blind 13-pointing MeerKAT mosaic of the Hydra I Cluster covering the entire volume out to just beyond its virial radius and including connections to the main LSS filaments that feed the cluster. Combined with infrared, optical spectroscopy, and X-ray data, we aim to resolve the HI morphology of galaxies as they fall into the cluster from the surrounding filaments, map the ongoing interactions between galaxies and the intracluster medium, and unravel the history of assembly through the identification and relative dating of cluster substructures. These MeerKAT observations will provide a complete overview of the Hydra I Cluster in HI and radio continuum, provide tests for early spectral line commissioning, and ultimately motivate for deeper, high spectral resolution observations enabling one of the most detailed and complete studies of cluster formation in the nearby Universe.

Observation parameters:

Targets	10h36m41.8s -27d31m28s		
Total time	16 in 2 epochs	Dump rate	8 s
Daytime	Nighttime required	Variable/Transient	No
Baselines	None		

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=1xwFgv4M-uknI02WbuwQUOYz1Og89R9Jh> .

File comments:

This proposal was submitted by Dr. Hess on behalf of the PI, Prof. Carignan, who is traveling in Rwanda with limited internet capability.