

MeerKAT open time call 3 December - Proposal summary

Deep MeerKAT HI imaging of the southern interacting galaxy pair NGC 1512/1510	
Proposal number 37	Thu Jan 31 2019 12:35:25 GMT+0200 (SAST)
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Abstract:

Interactions between galaxies are an important driver of their formation and evolution. Deep, high-resolution observations of the neutral atomic hydrogen (HI - the dominant cold gas component) are essential ingredients of observational efforts to better understand evolutionary processes.

NGC 1512/1510 is a nearby ($D \sim 10$ Mpc), southern (Dec. = -43 deg) interacting galaxy pair that can be used to study various processes. Previous ATCA imaging suggests it to have an extended HI morphology linked to the ongoing interaction processes. However, the data do not offer the high spatial resolution required to effectively quantify the important characteristics of the HI structures.

We propose using a single-track MeerKAT observation of the system to produce the highest-resolution HI images ever obtained for the NGC 1512/1510 system, which will also be sensitive to the low column densities that will unveil the underlying HI morphology of extended environment. MeerKAT will revolutionise our view of the system, potentially making it the southern hemisphere analogue of the well-known M81 triplet observed various times in HI with the JVL. High spatial resolution MeerKAT imaging will also allow us to use the NGC 1512/1510 system as a unique laboratory in which to study the processes driving star formation at various physical scales.

A major focus for this project will be the development of human capital in the form of South African postgraduate students. Two UWC-based M.Sc. students have already been identified to lead the main analysis components of this project.

Observation parameters:

Targets	NGC 1512/1510, RA = 04h 03m 54.6s, Dec. = -43 deg 21' 03"		
Total time	16 in 1 epochs	Dump rate	8 s
Daytime	Nighttime preferred	Variable/Transient	No
Baselines	Maximum number of the 9 "outer ring" antennas included in the array to ensure maximum spatial resolution.		

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=1mnPcJW2jHJrP0Kh8l_X5C1hC3i0cc7ux .

File comments:

None.