

MeerKAT open time call 3 December - Proposal summary

HI Imaging of the ram-pressure stripped ESO 137-001 with MeerKAT	
Proposal number 31	Thu Jan 31 2019 13:16:40 GMT+0200 (SAST)
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Abstract:

Prototypical ram-pressured stripped galaxies interacting with the extreme and harsh cluster environment are key to understating the complex and rich physics responsible for their hydrodynamic and gravitational transformation. These objects are perfect systems to study in detail the efficiency with which gas is removed and its effect on the star formation activity, consequently the galaxy morphological transformation/evolution in these environments. Theoretical and observational studies have not yet reached consensus into whether this gas removal process quenches or enhances star formation in these galaxies.

We propose to use MeerKAT to fully image the HI gas phase of a quintessential ram-pressure stripped galaxy, ESO 137-001. We will study how ram-pressure stripping operates on the cold and hot gas, and how star formation is affected under these conditions. Most of the diffuse extraplanar gas in the stripped tails of the galaxy will typically have HI column densities of $\sim 10^{19}$ atoms cm^{-2} . We aim to detect HI down to a column density of $N_{\text{HI}} = 2.9 \times 10^{19}$ atoms cm^{-2} at a resolution of ~ 7 kpc. To achieve these sensitivities we require 16 hours of MeerKAT time including calibrations.

Observation parameters:

Targets	ESO137-001, 16h15m11s -60d54m21s		
Total time	15.75 in 2 epochs	Dump rate	8 s
Daytime	Nighttime preferred	Variable/Transient	No
Baselines	No more than one of the nine 'outer ring' antennas may be excluded from the array		

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=1cl9Y9NSGNEXSq0TyoilLHdIgb90OTpgL>,

<https://drive.google.com/open?id=1oGJZdvKFVsl4Sy1SiTJNw9Gw4-IZmTpC>,

<https://drive.google.com/open?id=1BMwjINxjKHDK1HaLyBjpJZghSv5IRpUk> .

File comments: