

# MeerKAT open time call 3 December - Proposal summary

HI observations of the nearest gravitationally lensed galaxy	
<b>Proposal number</b> 43	Thu Jan 31 2019 14:07:28 GMT+0200 (SAST)
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## Abstract:

As cm-wave radio telescopes become increasingly sensitive towards the SKA-era, new opportunities will arise in the study of galaxy evolution and cosmology. One area which has potential is the use of gravitational lensing to better understand the neutral hydrogen (HI) in distant galaxies. To demonstrate this case, we propose a MeerKAT-64 HI lensing pilot observation of the nearest gravitationally lensed galaxy at a redshift of  $z = 0.073$ . It is highly probable that MeerKAT would be able to detect the source within 16 hours, even for very low magnification factors, which would make it the first undisputed detection of lensed HI to date. The measured HI properties could also provide a resolution over a long-standing disagreement on the nature of the source galaxy and lensing mass distribution.

## Observation parameters:

<b>Targets</b>	Abell 3408, 07h08m31.7s -49d12m52s		
<b>Total time</b>	16 in 2 epochs	<b>Dump rate</b>	8 s
<b>Daytime</b>	Nighttime preferred	<b>Variable/Transient</b>	No
<b>Baselines</b>	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=1nz4HuXwlATNX4pK4Goi28nOH3tmRNURf> .

## File comments:

The number of observing epochs can be increased if needed.