

MeerKAT open time call 3 December - Proposal summary

Mixing it up: probing radiative and mechanical feedback processes through HI in two nearby dual supermassive black hole systems	
Proposal number 46	Thu Jan 31 2019 14:57:28 GMT+0200 (SAST)
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Abstract:

Dual or binary supermassive black hole (SMBH) systems have long been predicted to be common in the Universe, the expected combined result of (a) hierarchical galaxy formation, and (b) all massive galaxies hosting a nuclear black hole. Understanding the role dual/binary AGN play feedback processes is an important, often overlooked ingredient in confronting observations with semi-analytic and hydrodynamical models of galaxy evolution. Here we propose to do exactly that through a previously unexploited window on dual SMBH effects: the neutral hydrogen distribution and dynamics - now readily enabled by MeerKAT. We select two of the prototypical dual AGN systems, which are likely to be examples of radiative and mechanical feedback. As far as the authors are aware, this would be the first attempt to detection HI emission a confirmed dual AGN system and MeerKAT is ideally suited to do so. Both targets are in the very nearby Universe, so are well spatially resolved at MeerKAT angular resolution and are easily detected in HI within a few hours of MeerKAT time, even under very conservative assumptions. Not only is this important for investigating the individual systems themselves, but given the key point that these are confirmed dual AGN with the nuclei positions known, these data may well assist in searching for similar systems at higher redshifts through the deep MeerKAT HI surveys of LADUMA and MIGHTEE.

Observation parameters:

Targets	NGC 6240 16h52m59s +02d24m04s NGC 326 00h58m24s +26d52m00s		
Total time	16 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=1tEC4Kxpnkzh4D7TROZfxWxhYR6JlpxP5> .

File comments: