MeerKAT open time call 3 December - Proposal summary

Deep MeerKAT radio observations of the transition pulsar candidate CXOU J110926.4-650224	
Proposal number 47	Tue Feb 05 2019 05:23:24 GMT+0200 (SAST)
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Abstract:
The unexpected discovery of three binary millisecond pulsars that swing between accretion and rotation powered states has provided the conclusive evidence for the recycling scenario, but at the same time, raised numerous questions on the exact mechanism of mass accretion onto a magnetised star. When in the accretion state, "transitional millisecond pulsars" (tMSPs) are highly peculiar in their radio-to-gamma-ray emissions. Increasing the number of systems in this state is crucial to understand the physical processes at work, in particular the interaction between the pulsar magnetic field and the mass inflow. With an intensive multi-wavelength observing campaign spanning the optical, X-ray and gamma-ray bands, we identified the source CXOU J110926.4-650224 (J1109) as a candidate tMSP in a sub-luminous disk state. J1109 was undetected in the radio band during previous, shallow ATCA observations. However, these limits were still consistent with the low radio luminosities expected for tMSPs at similar X-ray luminosities. Therefore we request observations with MeerKAT to assess the presence of the radio counterpart of J1109 and tightly constrain its nature. Specifically, we request 16 hours of observing time which could be split into multiple observing blocks, making them ideal for so-called '"filler" observations.

Observation parameters:

Targets	CXOU J110926.4-650224 R.A = 11h09m26.4s Dec=-65d02m24s			
Total time	16 in 4 epochs		**Dump rate**	8 s
Daytime	No preference	**Variable/Transient**	Variable or Transient	
Baselines	We ask for the largest number of far antennas to be added			

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=1f68j2XkpESZOBaQrc-AJKBm7E5CJyotg .

File comments: