# Commensal Searches of Radio Transient in the field of V603 Aql

## Background

Transient surveys are vital in exploring the dynamic universe, with radio transients acting as beacons for explosive and highly energetic astrophysical phenomena. Thus, searching for transient radio emission will allow us not only to constrain the population of known source types but also discover new types (e.g. Fast Radio Bursts (FRBs); see Lorimer et al. 2007) and investigate the associated sources for these events and study the resulting kinetic feedback in the local environment (e.g., Fender et al., 2016). The studies of radio transients allow us to gain insight into the nature of these events and better understand the processes giving rise to them. The rapid development of new instrumentation, such as MeerKAT and ASKAP, has enabled us to conduct large-scale surveys to systematically explore the radio transient sky over a range of timescales.

## Project outline

In this project, the student will reduce and analyze several epochs of MeerKAT radio observations, obtained as part of the ThunderKAT daily monitoring of cataclysmic variables, using the OXKAT pipeline. Then, search for any radio variables and transients in the field from the resulting images using the LOFAR Transient Pipeline. The student will also search for multi-wavelength counterparts from other surveys for each transient candidate.

## Requirements

Basic Python coding and familiarity with the Linux environment are a must. Access to a laptop is required.

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## References

Fender R., et al., 2016, in MeerKAT Science: On the Pathway to the SKA. p. 13 (arXiv:1711.04132), doi:10.22323/1.277.0013

Lorimer D. R., Bailes M., McLaughlin M. A., Narkevic D. J., Crawford F., 2007, Science, 318, 777