

MeerKAT open time call 3 December - Proposal summary

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| Tracing star formation in groups and filaments around a young active galaxy cluster at $z = 1.46$ | |
| Proposal number 22 | Thu Jan 31 2019 07:52:15 GMT+0200 (SAST) |
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Abstract:

We propose to use MeerKAT to map star-forming galaxies in the large scale structure surrounding the young galaxy cluster XCS J2215 at $z = 1.46$. The 0.5-Mpc core of this cluster has one of the highest integrated star formation rates known ($> 1400 \text{ MSun/yr}$), and hosts a number of starburst galaxies that have been detected with ALMA. With MeerKAT, we will detect galaxies that are forming stars at a similar rate to the ALMA sources, but out to 15 Mpc from the cluster centre. When combined with existing deep, wide-field optical and IR data, this may reveal similarly active star formation in structures such as filaments and groups, which will act to build up XCS J2215 to a massive cluster by the present day. One possible reason for the high star formation rate in the core of XCS J2215 is its disturbed dynamical state. We will also use the surface brightness sensitivity of our MeerKAT observations to search for radio relics, which trace shock fronts due to cluster mergers. If found, these would be the most distant discovered to date.

Observation parameters:

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| Targets | XMMXCS J2215.9-1738 (22:15:59.743, -17:38:14.60) | | |
| Total time | 16 in 2 epochs | Dump rate | 4 s |
| Daytime | Nighttime preferred | Variable/Transient | No |
| Baselines | Minimum of 7 outer ring antennas must be available | | |

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=1ufqVkbahjj23eRmJvn5qL2UQwdlsSx-g> .

File comments: