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A Search for Transient and Variable Radio Sources in the NGC 5068 field Using MeerKAT MHONGOOSE data.

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Transient surveys play a crucial role in understanding the dynamic Universe, with radio transients serving as indicators of explosive and energetic astrophysical events. Despite their importance, conducting commensal radio imaging surveys for transients often demands extensive computational resources, data storage, and processing time. The MeerKAT radio telescope, with its high sensitivity and large field of view, presents an excellent opportunity to explore the transient radio sky efficiently. This study analysed MeerKAT observations of the NGC 5068 field from the MHONGOOSE Large Survey Project (LSP) to search for radio transient and variable sources. The dataset comprises ten distinct epochs, spanning timescales from approximately one month to over a year. The analysis was carried out using the Transients Pipeline (TraP) on the Inter-University Institute for Data Intensive Astronomy (IDIA) cloud computing platform. While no transient sources were detected, we identified 12 variable radio sources within the field.

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