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Observation planning tool for the MeerKAT radio telescope

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The South African Radio Astronomy Observatory (SARAO) allocates time on the MeerKAT Radio Telescope to the international scientific community to maximize its impact on radio astronomy while fostering South African scientific leadership and human capital development. To streamline and optimize this process, SARAO has developed an Observation Planning Tool (OPT), which allows astronomers to define and plan observations on the telescope. Submitted observations are then processed by an Astronomer on Duty (AOD), before being scheduled.

In this paper, we detail how the OPT supports SARAO's broader mission of effectively operating its radio telescope to produce usable scientific data by enhancing the efficiency, transparency, and scientific utility of the scheduling process. We describe the tool's functionality, design rationale, and ongoing improvements. Key features include a calibrators' catalogue; the ability to simulate or dry-run observations; a scheduling assistant to aid the Scheduler's optimization efforts and future schedule plan of observations.

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Footnotes

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