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Science Operations for the VLA and VLBA; Application to SKA

The Very Large Array (VLA) and Very Long Baseline Array (VLBA) have been operated by the National Radio Astronomy Observatory for several decades now. Both instruments comprise distributed operations at some level, requiring coordination across sites, departments, divisions, and groups. We illustrate the complexity of a distributed operational model using the example of Science Operations, which encompasses all aspects of operations required to deliver science-quality data from the telescopes through to interfacing with the user community. We split the topic into three main areas: telescope performance and support, time allocation and scheduling, and user support. Telescope support includes maintenance of individual antenna pointing, electronics, the correlator, and calibration data, as well as commissioning activities for new observing modes and instrumentation. These activities are array-specific, but require communication with, and understanding of, telescopes that can be geographically separated by thousands of miles. Time allocation is performed through Observatory-wide processes across multiple telescopes, while the scheduling of each of those telescopes has its own characteristics and challenges. User support can encompass elements common to all NRAO instruments, such as the software tools used by both staff and users, at the same time as requiring technical expertise in each individual telescope. We will present an overview of the current status of Science Operations for the VLA and VLBA, and will describe lessons learned from the decades of experience gained so far.

Suggested duration

30 minutes

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