

# Opening up the radio sky with VLBI

*Thursday, 9 May 2024 13:30 (25 minutes)*

In the past few decades, radio surveys have provided us with unique insights into many areas of astrophysics such as star formation, supernovae, active galactic nuclei, pulsars, cosmology and much more. A key aspect of these surveys is the technique of Very Long Baseline Interferometry (VLBI) which can provide some of the highest resolutions possible in astronomy. This method has been crucial in understanding the inner workings of galaxies such as AGN-star-formation feedback, dark-matter substructures in gravitational lenses, and providing the first two direct images of a black hole shadow. VLBI has been typically limited where the largest surveys require many years of observations to build up an extensive sample. However, computational improvements have enabled us to map multiple sources within a single VLBI survey and push into the lower frequency regime through the International LOFAR telescope. In this talk, I will talk about the scientific and technical discoveries arising from such surveys and focus on the bright future of VLBI surveys. This includes the transition from the current modus operandi of a small number of surveys of a few ‘famous’ deep fields to a ubiquitous VLBI survey instrument. I will conclude the talk by talking about the upcoming developments in VLBI, such as the incorporation of SKA and MeerKAT, ultra-wideband receivers, and GPU-accelerated correlation and calibration.

## keywords

surveys, future instruments, AGN

## In-person or online?

online

## Career level

ECR

**Primary author:** Dr RADCLIFFE, Jack (University of Pretoria / University of Manchester)

**Presenter:** Dr RADCLIFFE, Jack (University of Pretoria / University of Manchester)

**Session Classification:** VLBI