



Botswana/Namibia - Unit 4

Introduction & Overview

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Science & Technology
Facilities Council



National
Research
Foundation

A little about ourselves

- Joe to include something

Dr Jack Radcliffe

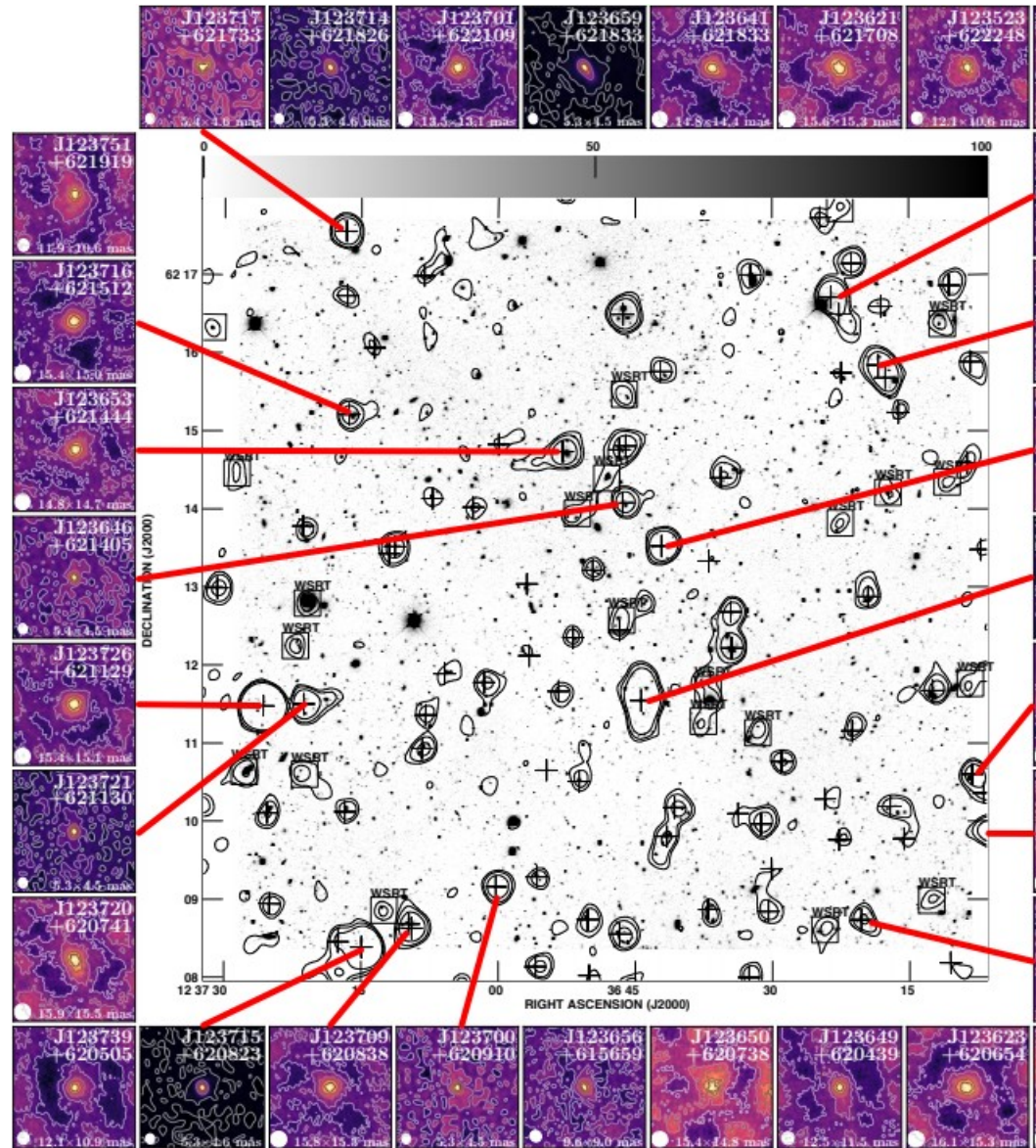
- Postdoc at University of Pretoria & South African Radio Astronomy Observatory (SARAO)
- Previously at Groningen, Netherlands and Manchester, UK
- From the north/mid of England so **if you don't understand my accent let me know please!**
- **I love pies!**



My research

Radcliffe+2018

- Specialises in niche blobology aka wide-field VLBI to track Active Galactic Nuclei (AGN)
- Aim is to investigate the relationship between supermassive black holes and their host galaxy
- Mostly at high redshift $z > 1$, so try to track how galaxies evolve.
- Also interested in AGN fuelling via time-variability studies,



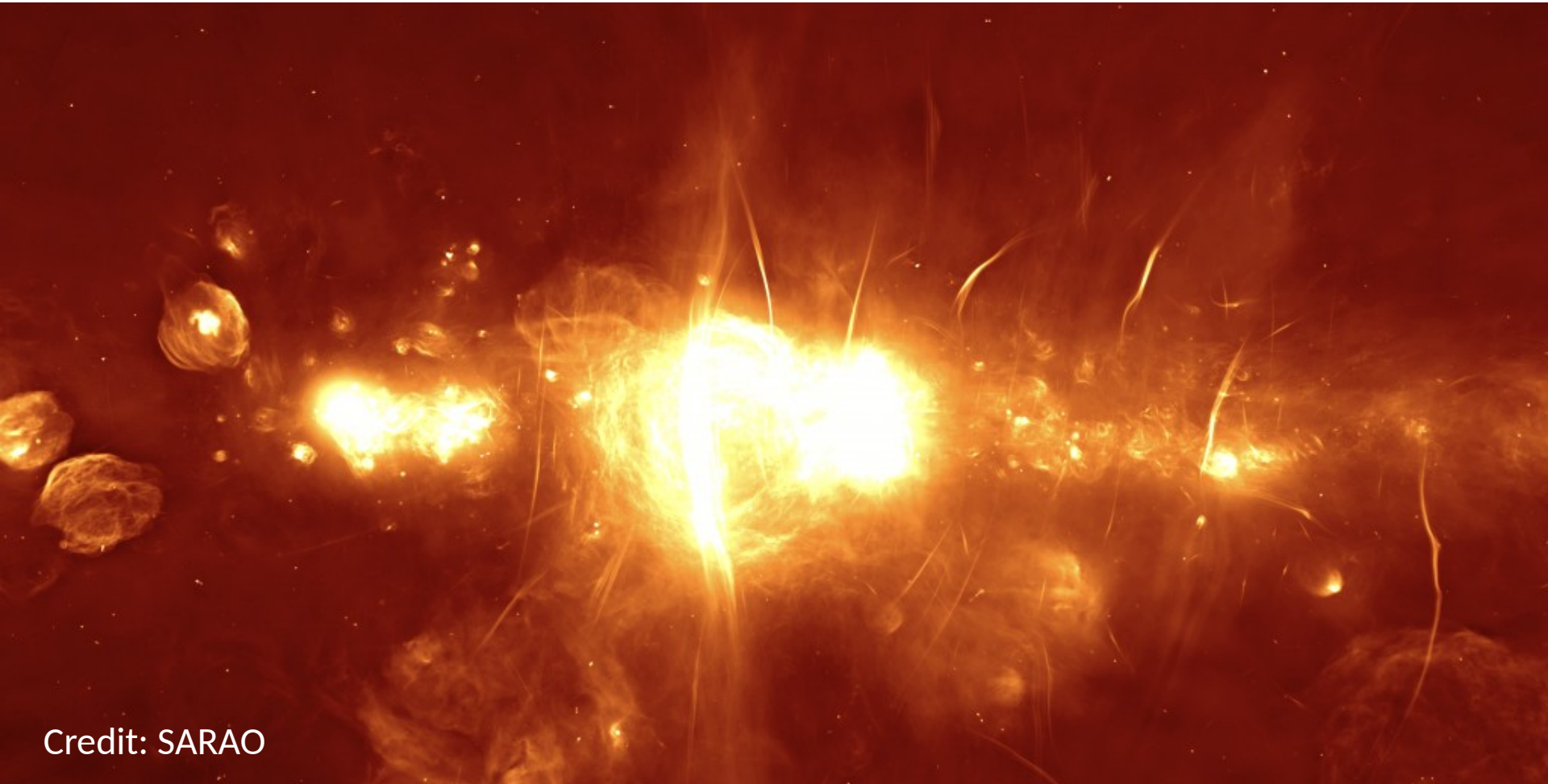
Aim of this unit

How do we get from telescope to science images?



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What will we cover?

- Introduction / refresh of UNIX and Python
- Fundamentals of radio interferometry
- Continuum data calibration & imaging
- Self calibration
- Spectral lines data
- Error recognition
- Image analysis
- Writing your own telescope proposals

By the end of the unit you should:

- (Begin to) Understand the basic principles of radio interferometry data reduction including
 - Flagging
 - Calibration
 - Imaging
- Appreciate the applications of interferometry to astronomy research
- Have a knowledge of the tools used to reduce and analyse radio interferometry data
- Understand the telescope proposal, observing and data reduction process.

Benefits of this unit to you

- Hands on experience with radio data which will be similar to the data received with the AVN
- Programming experience is invaluable in many job areas e.g. finance, software development etc etc.
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- Signals processing can be applied to electronic engineering and hardware development
- PLUS lots of SKA jobs coming up!!