Introductions and Overview

Development in Africa with Radio Astronomy - Data Reduction Workshop

Martin Hardcastle and Hannah Stacey

Martin Hardcastle

- Professor and Director of the Centre for Astrophysics Research at the University of Hertfordshire
- From Leicester in the English Midlands
- Married with two children
- I like cycling and hiking (and relaxing afterwards with a glass of wine)

Martin Hardcastle

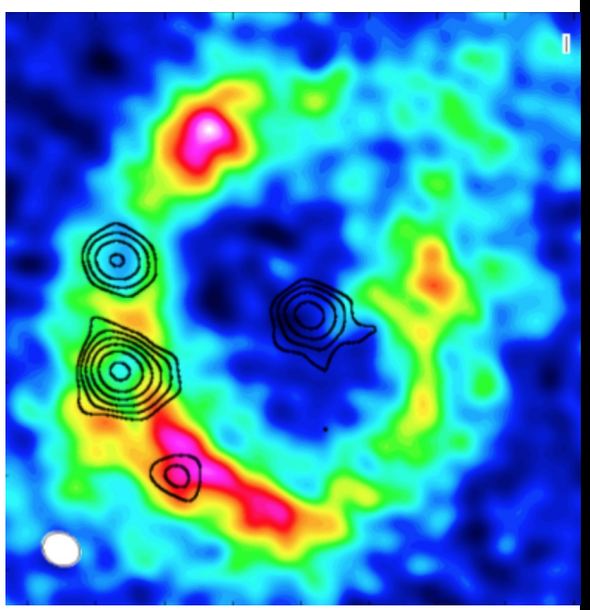
- I work mostly on radio-loud active galaxies ('radio galaxies') with observations from low-frequency radio through to X-ray
- Much of my working life for the past decade has involved LOFAR commissioning and science

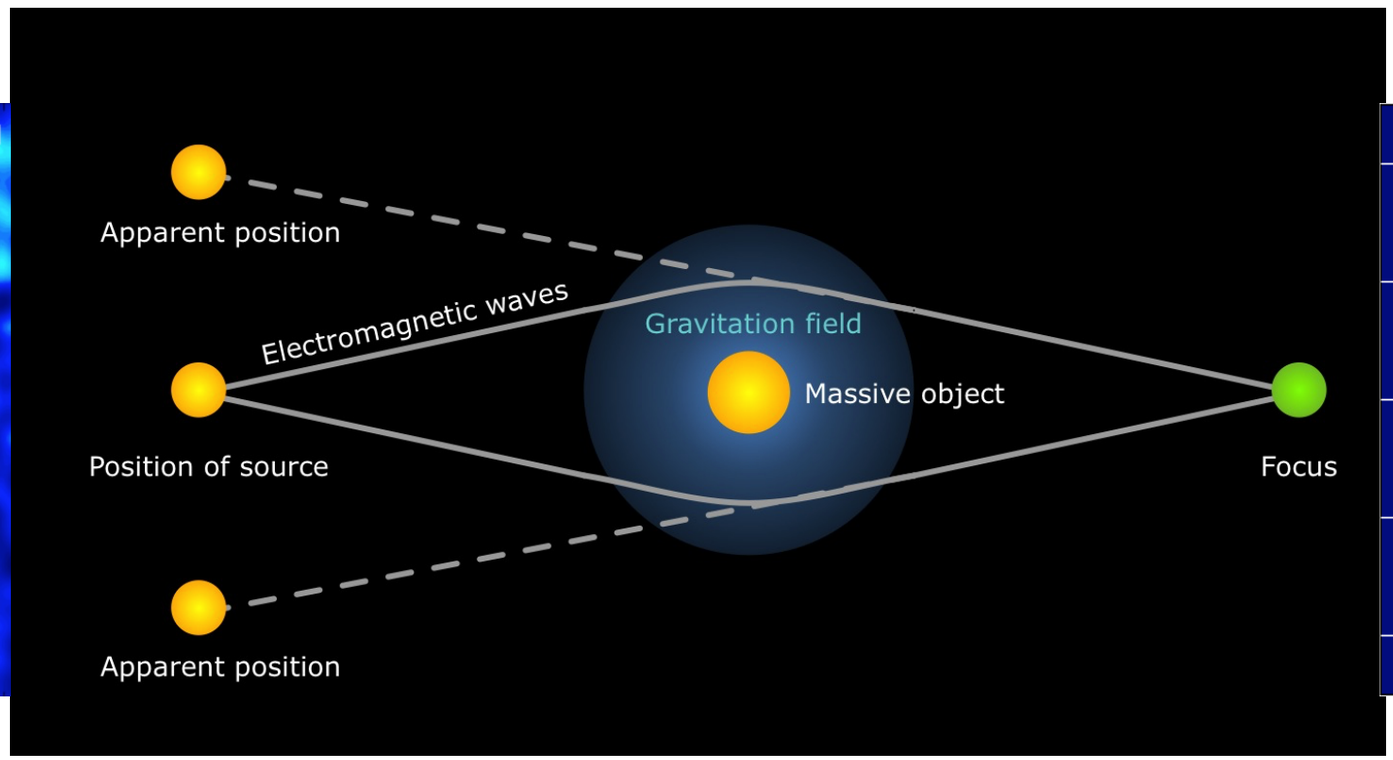
Hannah Stacey

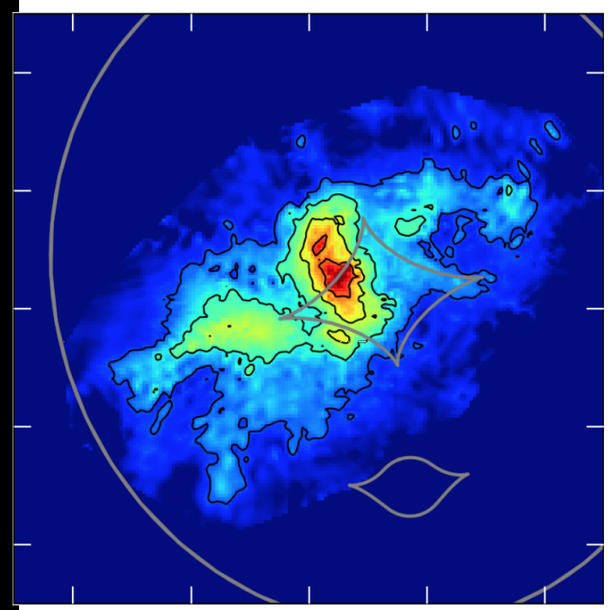
- PhD student at the University of Groningen and ASTRON
- From Manchester in the North of England
- I love tea and cats

Hannah Stacey

- My research is on gravitationally-lensed sources
- I investigate Active Galactic Nuclei (AGN) and star-formation in distant galaxies
- I work mostly in sub-millimetre to radio wavelengths with ALMA and e-MERLIN







Overview

- (re)introduction to Unix and Python
- Introduction to interferometry
- Continuum calibration
- Imaging and self-calibration
- Spectral lines
- Error recognition
- Image analysis

Aims of the workshop

- (Begin to) understand the basics of
  - Flagging
  - Calibration
  - Imaging
- Appreciate the applications of radio data
- Understand how to use tools to reduce and analyse radio data
  - CASA
  - DS9
  - Python

Benefits

- Hands-on experience with data similar to data that will be received with the AVN
- Programming experience useful for many job areas outside astronomy, e.g. software development
- Signal processing experience useful for jobs in electronic engineering, hardware development
- SKA jobs in the future…