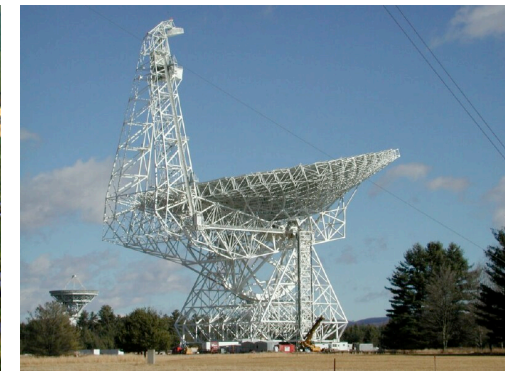




Radio Astronomy

Block 5: Apr-May 2017



Course Goals

Get you excited about radio astronomy!

Give a broad overview of the science, techniques and context of radio astronomy.

Enable the student to feel comfortable with using radio astronomical observations as part of their multi-wavelength science approach or set them on the path to being a radio astronomer.

Resources

Course Wiki

https://www.astron.nl/astrowiki/doku.php?id=uva_msc_radioastronomy_2017

Main resource for the course, and includes:

- Schedule
- Lecture slides
- Practicum materials
- Materials from other similar courses
- Recommended books

Lecturers

Coordinator: Jason Hessels (j.w.t.hessels@uva.nl)

Joeri van Leeuwen (leeuwen@astron.nl)

Michael Wise (wise@astron.nl)

Teaching Assistant

Daniele Michilli (danielemichilli@gmail.com)

Marking Scheme

35% - Observing proposal and presentation
(written proposal: 20%, oral presentation 15%)

35% - Other Practica
(simulate interferometer: 10%, VLA imaging: 15%, pulsar search: 10%)

30% - Final exam

Lectures

(and other important sessions)

Lecture 1: Apr 3, 2017 - The History of Radio Astronomy: Past to Present - Joeri

Lecture 2: Apr 7, 2017 - The Science of Radio Astronomy: Extragalactic - Michael

Lecture 3: April 10, 2017 - The Science of Radio Astronomy: Galactic and Solar System - Joeri

Lecture 4: April 21, 2017 - Emission Mechanisms in Radio Astronomy - Jason

Lecture 5: April 24, 2017 - The Radio Telescope - Joeri

Lecture 6: May 1, 2017 - The Techniques of Radio Interferometry I: The Basics - Jason

Lecture 7: May 8, 2017 - The Techniques of Radio Interferometry II: Calibration - Michael

Lecture 8: May 12, 2017 - The Techniques of Radio Interferometry III: Imaging - Michael

Lecture 9: May 15, 2017 - The Techniques of Time-Domain Radio Astronomy I: Single-dish techniques - Joeri

May 18, 2017 - Field Trip to LOFAR and Westerbork - Michael + Joeri + Jason + Daniele

Lecture 10: May 19, 2017 - The Techniques of Time-Domain Radio Astronomy II: High time resolution with interferometers - Jason

Lecture 11: May 22???, 2017 - The Future of Radio Astronomy - Michael **(NAC: May 22-24)**

May 24???, 2017 - Observing proposal presentations - All (NAC: May 22-24)

Jun 2, 2017 - Final Exam - Jason + Daniele

Practica

(follow lectures; work also required outside “lab” time)

Practicum 1 - Apr 3 - Joeri + Daniele - Short lecture on how to write an observing proposal (see slides below).

Practicum 2 - Apr 7 - Jason + Joeri + Michael + Daniele - Discuss observing proposal ideas in a group (outside if possible!).

Practicum 3 - Apr 10 - Arrange appt. w your advisor - Discuss observing proposal ideas one-on-one.

Practicum 4 - Apr 21 - Jason - Work on observing proposal yourself.

Practicum 5 - Apr 24 - Jason + Daniele - Setup computing environment.

Practicum 6 - May 1 - Jason - Simulate your own interferometer - session I.

Practicum 7 - May 8 - Michael - Simulate your own interferometer - session II.

Practicum 8 - May 12 - Michael - Calibrate and image VLA data - session I.

Practicum 9 - May 15 - Joeri - Calibrate and image VLA data - session II.

RA Field Trip - May 18 - All day

Practicum 10 - May 19 - Jason - Search and time pulsar in LOFAR data - session I.

Practicum 11 - May 22??? - Michael - **(NAC: May 22-24)** - Search and time pulsar in LOFAR data - session II.

Final Presentations - May 24??? - All - **(NAC: May 22-24)**