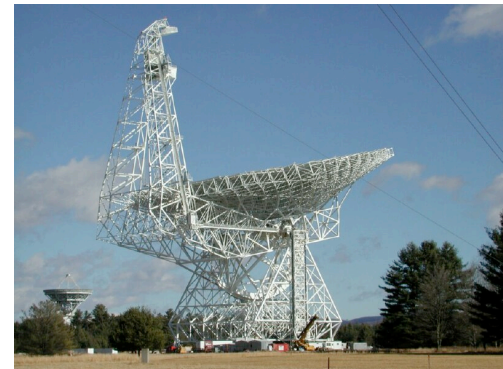


# Radio Astronomy

**Block 5: Mar-May 2015**



# 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\\_2015](https://www.astron.nl/astrowiki/doku.php?id=uva_msc_radioastronomy_2015)

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](mailto:j.w.t.hessels@uva.nl))

Joeri van Leeuwen ([leeuwen@astron.nl](mailto:leeuwen@astron.nl))

Michael Wise ([wise@astron.nl](mailto:wise@astron.nl))

# Teaching Assistants

Daniele Michilli ([danielemichilli@gmail.com](mailto:danielemichilli@gmail.com))

Amruta Jaodand ([amruta.jaodand@gmail.com](mailto:amruta.jaodand@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: March 30, 2015 - The History of Radio Astronomy: Past to Present - Jason

Lecture 2: April 1, 2015 - The Science of Radio Astronomy: Extragalactic - Michael

Lecture 3: April 8, 2015 - The Science of Radio Astronomy: Galactic and Solar System - Joeri

Lecture 4: April 13, 2015 - Emission Mechanisms in Radio Astronomy - Jason

Lecture 5: April 15, 2015 - The Radio Telescope - Joeri

Lecture 6: April 20, 2015 - The Techniques of Radio Interferometry I: The Basics - Jason

Lecture 7: April 22, 2015 - The Techniques of Radio Interferometry II: Calibration - Michael

Lecture 8: April 29, 2015 - The Techniques of Radio Interferometry III: Imaging - Michael

May 6, 2015 - Field Trip to LOFAR and Westerbork - Michael + Joeri + Jason + Dario

Lecture 9: May 11, 2015 - The Techniques of Time-Domain Radio Astronomy I: Single-dish techniques - Joeri

Lecture 10: May 13, 2015 - The Techniques of Time-Domain Radio Astronomy II: High time resolution with interferometers - Jason

Lecture 11: May 18, 2013 - The Future of Radio Astronomy - Michael

**May 19???, 2015 - Observing proposal presentations - All (NAC: May 20-22)**

**May 27, 2015 - Final Exam - Jason + Daniele + Amruta**

# Practica

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

Practicum 1: March 30, 2015 - Basic computer account setup etc. - Jason + Daniele + Amruta

Practicum 2: April 1, 2015 - Writing of mock observing proposal I - Michael + Jason? + Daniele + Amruta

Practicum 3: April 8, 2015 - Writing of mock observing proposal II - Joeri + Daniele + Amruta

Practicum 4: April 13, 2015 - Writing of mock observing proposal III - Jason + Daniele + Amruta

Practicum 5: April 15, 2015 - Simulate your own interferometer I - Joeri + Daniele + Amruta

Practicum 6: April 20, 2015 - Simulate your own interferometer II - Jason + Daniele + Amruta

Practicum 7: April 22, 2015 - Make a VLA interferometric image I - Michael + Daniele + Amruta

Practicum 8: April 29, 2015 - Make a VLA interferometric image II - Michael + Daniele + Amruta

Practicum 9: May 6, 2015 - Field Trip to Westerbork and LOFAR - All

Practicum 10: May 11, 2015 - “Discover” and characterize a radio pulsar - Joeri + Daniele + Amruta

Practicum 11: May 13, 2015 - “Discover” and characterize a radio pulsar - Jason + Daniele + Amruta

Practicum 12: May 18, 2015 - Writing of mock observing proposal IV - Michael + Daniele + Amruta

**Practicum 13: May 19???, 2015 - Observing proposal presentations - All (NAC: May 20-22)**