Curriculum Vitae



Personal information

- Dr. ing. Hubertus Theodorus (Huib) Intema
- Senior Research Fellow at ICRAR-Curtin, Perth, Australia
- PhD in astrophysics, senior software engineer, electronics engineer
- Born on April 2, 1971, in Leiden, Netherlands
- Citizen and resident of the Netherlands
- Fluent in Dutch and English, basic in German and French
- Work address (AUS): Curtin Institute of Radio Astronomy, 1 Turner Avenue, Bentley WA 6102, Australia
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Summary of research interests

- Large-scale structure – merging galaxy clusters: Mpc-scale diffuse radio sources (halos, relics), tailed radio galaxies, ICM physics
- Radio sky surveys: low-frequency radio sky, large-area surveys, high-redshift radio galaxies
- Radio interferometry: wide-field calibration and imaging, automated data processing, algorithm development, the ionosphere

Professional and academic history

- 01/2019 – now: Senior research fellow, Curtin institute of Radio Astronomy, Perth, Australia
- 07/2015 – 12/2018: Research scientist, Leiden Observatory, Netherlands

- 09/2012 – 06/2015: VLA research associate, NRAO Socorro, USA
- 11/2014: CAASTRO visitor, ATNF Sydney / Uni Melbourne / UWA Perth, Australia
- 06/2011: Visiting scientist, OCA Nice, France
- 09/2009 – 08/2012: Jansky research fellow (prize fellowship), NRAO Charlottesville, USA
- 01/2005 – 08/2009: PhD in astrophysics, Leiden University, Netherlands; supervised by Röttgering and Miley
- 09/2000 – 12/2004: BSc & MSc in astrophysics, Leiden University, Netherlands (8.3/10 grade average)
- 09/1996 – 07/2000: Senior software engineer, High Tech Automation (now Ordina), The Netherlands
- 01/1994 – 06/1996: Engineering degree in electronics, Hogeschool Utrecht, Netherlands
- 04/1993 – 12/1993: Military service, Royal Dutch Army, Netherlands
- 09/1989 – 12/1992: BSc in electronics, Delft University of Technology, Netherlands

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Publication statistics

(derived from ADS on Dec 11, 2019)

- 184 publications (120 refereed)
- 3720 citations (526 to first author publications)
- h-index = 27, i10-index = 73

Links to publications

- Publication list on ADS
- Publication pre-prints on arXiv
- PhD thesis at Leiden University Digital Library (2009)

Current research projects

Low-frequency radio surveys

- Processing of the GMRT 150 MHz continuum survey (TGSS ADR) covering 37,000 square degrees (PI)
- TGSS-NVSS spectral index map of 80 percent of the radio sky (co-I with de Gasperin)
- GMRT Archive Processing Project (GAPP; co-I with Wadadekar and Ishwara-Chandra)
- 610 MHz imaging of the XXL-North field, part of the Ultimate XMM Extragalactic (XXL) Survey (PI Smolcic, Zagreb)
- 610 / 325 MHz imaging of the COSMOS field for the VLA-COSMOS project (PI Smolcic, Zagreb)
- 610 MHz imaging of the ELAIS-S1 field, part of the Australia Telescope Large Area Survey (ATLAS) (PI Norris, ATNF)
- 150 MHz transient survey of the STRIPE82 region (PI Mooley, Oxford)
- Pulsar and transient searches using TGSS, GLEAM and MSSS (with Frail, Gupta, Mooley, van der Horst, Murphy, Kaplan)
- HzRG searches using TGSS (with Saxena, Duncan, de Gasperin)

Diffuse radio emission in galaxy clusters

- 325 MHz radio follow-up of the SPT-Chandra galaxy cluster sample (PI)
- 610 MHz radio follow-up of the ACT/ACTPol galaxy cluster sample in the STRIPE82 region (PI Knowles, UKZN)
- 325 MHz radio follow-up of clusters discovered by PLANCK (PI Bonafede, IRA/INAF)
- Ultra-steep spectrum radio halo and relic searches using TGSS ADR (co-I with de Gasperin)
- Various other low-frequency studies of merging galaxy clusters

Algorithms and Pipelines

- SPAM: automated data reduction path for low-frequency interferometry data, including ionospheric calibration (PI)
- C-SPAM: SPAM in CASA for processing wide-bandwidth uGMRT and JVLA-lowband observations (co-I with de Gasperin)
- Analysis and modeling of the ionosphere for radio interferometer calibration purposes
- Complex pipeline optimization for LOFAR surveys using high-throughput computing

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Education and Supervision

- 2017: Lecturer at the NCRA Radio Astronomy School, Pune, India
- 2017: Co-lecturer of MSc course on Radio Astronomy at Leiden University (nominated for Faculty of Science Teaching Award)
- 2015 – now: Supervisor of 3 PhD students at Leiden University
- 2015 – now: Supervisor of 3 MSc students at Leiden University
- 2015 – now: Supervisor of 1 summer student at Leiden University
- 2014: Lecturer at the SKA School, Durban, South Africa
- 2014: Tutorial assistant at the NRAO synthesis imaging workshop, Socorro NM, USA
- 2013: Tutorial leader at the 3GC3 workshop, Port Alfred, South Africa
- 2013: Tutorial assistant at the NRAO data reduction workshop, Socorro NM, USA
- 2010 – 2011: Data reduction instructor for 2 visiting postdocs and 1 PhD student
- 2007: Project mentor of MSc student
- 2007: Teaching assistant for the under-graduate course Modern Research, Leiden University
- 2006: Teaching assistant for the graduate course Radio Astronomy, Leiden University
- 2005 – 2007: Member of the astrophysics education committee, Leiden University

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Referee

- 2016 - now: PhD thesis examiner, Leiden University and University of Sydney
- 2015 - now: Journal referee for MNRAS
- 2015: Journal referee for Space Physics
- 2014: Journal referee for New Astronomy
- 2013 – 2015: Proposal referee and TAC member for the LWA1
- 2013 – 2015: Proposal technical referee for the JVLA
- 2012: Journal referee for the Astrophysical Journal
- 2011 – now: Proposal referee for the (u)GMRT

Committees and Memberships

- 2018 - now: Junior member of the IAU
- 2016 - now: Member of the SKA extragalactic continuum science working group
- 2016 - now: Member of the SKA ionospheric calibration resolution team
- 2016 - now: Member of the SKA1-LOW data analysis and calibration team
- 2016 – now: Project manager of SKA-NL roadmap project Calibrating the ionosphere over the SKA
- 2015 – now: Member of the LOFAR HBA and LBA Surveys KSP, ASTRON / Leiden Observatory
- 2012 – 2015: Member of the VLA low-band commissioning group, NRAO Socorro
- 2009 – now: Participant in various SKA Workshops on Calibration and Imaging (CALIM)
- 2005 – 2009: Member of the LOFAR Surveys KSP, ASTRON / Leiden Observatory
- 2005 – 2009: Member of the LOFAR ionosphere and simulations (LIONS) group, ASTRON / Leiden Observatory

Observing and Data Processing

- Extensive experience with using GMRT in all bands. PI or co-PI on 30+ GMRT proposals (including several DDT proposals). Expert data reducer. Post-observing collaborator in many projects. Regular user of the GMRT archive.
- Experienced user of the VLA. Commissioner of the low-band system (60-80 MHz and 230-480 MHz). Expert data reducer. PI or co-PI on 30+ proposals (including several DDT proposals) including 4-band, P-band, low-band, L-band, S-band, and C-band.
- Co-I on 6 proposals for GBT at S-band, C-band, and MUSTANG 90 GHz.
- Basic experience with processing WSRT LFFE observations at 150 MHz.
- Basic experience with processing LOFAR HBA observations at 150 MHz. Co-PI on 8 HBA/LBA proposals.
- Basic experience with processing Subaru SuprimeCam optical and near-infrared observations (B, Rc and i band).

Software skills

- Radio data reduction: AIPS (expert), ParselTongue (advanced), CASA (intermediate), Obit (basic), LOFAR software (basic)
- Optical data reduction: IRAF (basic)
- Programming: Python (advanced), C (advanced), IDL (intermediate), Linux shell scripting (intermediate), C++ (basic), Maple (basic)

Scientific meetings

- 2012 – 2015: Colloquium organizer, NRAO Socorro
- 2011: Postdoc symposium organizer, NRAO Charlottesville
- 2010 – 2011: Lunch talk organizer, NRAO Charlottesville
- 2007: Ionosphere meeting organizer, Leiden Observatory
- 2006: Young LOFAR meeting organizer, Leiden Observatory
- 2006: Radio astronomy lunch talk organizer, Leiden Observatory

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Outreach

- 2009 – 2015: Volunteer at various public events organized by NRAO
- 2009 – 2015: Visiting scientist at local elementary schools
- 2007 – 2008: Invited speaker for the royal Dutch amateur astronomy organization (KNVWS)

Extracurricular courses

- 2006: Research management training, Leiden University
- 1999: Professional effectivity training, FranklinCovey
- 1998: Structured analysis and design for real-time systems, Philips CTT
- 1997: OS-9 workshop, High Tech Automation
- 1997: Design of technical systems, ISES International

Referees (in no particular order)

Dr. S. Bhatnagar, National Radio Astronomy Observatory: radio data reduction, wide-field calibration and imaging
e-mail: sbhatnag [at] nrao [dot] edu, tel: +1 575 835 7376

Dr. W.D. Cotton, National Radio Astronomy Observatory: radio surveys, automated radio data processing, ionospheric calibration
e-mail: bcotton [at] nrao [dot] edu, tel: +1 434 296 0319

Dr. C. Ferrari, Observatoire de la Côte d'Azur: diffuse radio emission in merging galaxy clusters, image deconvolution
e-mail: chiara [dot] ferrari [at] oca [dot] eu, tel: +33 4 9200 3028

Dr. N.E. Kassim, Naval Research Laboratory: VLA low-band system, remote sensing of the ionosphere
e-mail: namir [dot] kassim [at] nrl [dot] navy [dot] mil, tel: +1 202 767 066

Prof. R.P. Norris, CSIRO Astronomy and Space Science: GMRT continuum surveys of the ATLAS fields
e-mail: ray [dot] norris [at] csiro [dot] au

Dr. F.N. Owen, National Radio Astronomy Observatory: commissioning VLA low-band system, low-frequency radio astronomy
e-mail: fowen [at] nrao [dot] edu, tel: +1 575 835 7304

Prof. H.J.A. Röttgering, Leiden Observatory: Ph.D. supervisor, LOFAR, radio surveys, high-redshift radio galaxies
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