Leah K. Morabito

Durham University
UKRI Future Leaders Fellow

Personal Details

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Employment History

Nov 2020 - Present	UKRI Future Leaders Fellow, *Durham University*
Oct 2019 - Present	Assistant Professor, *Durham University*
Oct 2016 - Sep 2019	Hintze Fellow & PDRA in Galaxy Evolution, *University of Oxford*
Apr 2005 - Aug 2011	Air Battle Manager (highest rank: Captain), *United States Air Force*

- Electronic Combat Officer (ECO) *Sep 2008 - Aug 2011*
- Air Weapons Officer (AWO) *Jun 2005 - Aug 2008*

Education

Sep 2012 - Sep 2016	**Leiden University**, Astronomy PhD Researcher Thesis: *'Radio Galaxies at Low Frequencies'*
Sep 2009 - Apr 2012	**University of Oklahoma**, M.Sc. Astronomy (with Honours. 1 equiv.) Thesis: *'AGN: From Supermassive Black Holes to Rare FeLoBALs'*
Sep 2001 - Apr 2005	**University of Michigan**, B.Sc. Physics & B.Sc. Astrophysics (2i equiv.)

Science Highlights

- Led special issue of Astronomy & Astrophysics on high resolution imaging with LOFAR
- Linked radio emission in broad absorption line quasars with AGN activity
- First spatially resolved maps of high redshift radio galaxies, $1''$ resolution at 55 MHz

Research Goals

My main goal is to answer fundamental questions on how super-massive black holes co-evolve with the galaxies in which they reside. I do this by using low frequency radio observations coupled with multi-wavelength data. Over the next five years, I will lead the use of high-resolution, wide-field radio imaging at low frequencies to clearly distinguish two main components in galaxy evolution: star formation, and processes associated with active galactic nuclei. This unique approach will help change our view of how active galactic nuclei help shape galaxy evolution.

Leadership

UK Square Kilometre Array (SKA) Science Committee. Selected as member for 2 year period.	Jan 2020 - Jan 2020
e-MERLIN Time Allocation Group Chair. Appointed chair for 3 year period.	Sep 2021 - Aug 2024
Leadership of Long Baseline Working Group. Chair since Jan 2020; previously co-leadership. Training of 10+ postdocs, PhD, and MSc students working on technical challenges for high-resolution imaging with LOFAR.	2016 - present
The Supernova Foundation. Mentor for young women in STEM fields.	Jan 2021 - present
Core team member, LOFAR Surveys KSP. Help with leadership / management of KSP.	Jan 2020 - present
Aurora Leadership programme. Advance HE's leadership development initiative for women; participant.	Nov 2019 - Mar 2021
President of Oxford Women in Physics Society. Leadership of committee of 10+ women, focused on providing a supportive network for women in Physics at Oxford, from the undergraduate to the faculty level.	Jan 2018 - Aug 2019
Member of Department Equality & Diversity Committee. Contributing member of committee as President of Oxford Women in Physics Society, heading up mentoring programme reform.	Jan 2018 - 2019

Galaxies Coffee Organizer. Weekly journal club meeting of about 10 - 15 active participants. Oct 2017 - Aug 2019

Head of AWACS PEX Implementation. Spearheaded transition to new program tracking training and flying hours for 1,800 aircrew (largest implementation in the Air Force). Apr - June 2011

Chair of Electronic Support Team. Led and trained a team of 15 to prepare for, support and conduct electronic combat in a deployed location. Won team award at highest level for all organisations at deployed location. This work improved intelligence databases across entire Air Force. Jan - Sep 2009

Package Commander for Command, control, intelligence, surveillance and reconnaissance (C2ISR). Led collection of aircraft providing C2ISR functions for multiple large training exercises (total of 100+ air assets on average). Feb - Mar 2009

Operations Group Commander. Designed and conducted entire training programme for corps of 150+ US Air Force cadets. Sep - Dec 2004

Co-Founder/President, Society of Women in Physics (SWiP). Wrote constitution, secured University funding, and started program focused on mentorship of younger women undergraduate students, and promoting women and girls in STEM fields. Sep 2004 - Apr 2005

Professional Experience

e-MERLIN Time Allocation Group member. Appointed member for 3 year period. Nov 2020 - Oct 2023

Scientific Organising Committee, VLBI in the SKA Era. Helping organise scientific programme for upcoming symposium. Feb 2022

Scientific Organising Committee, EAS SS16: New Physics with Gravitational Cluster Lenses. Helped define scope, invited speakers, and select contributed talks. Jun 2021

Scientific & Local organising committee, UK SKA Town Hall. Helped organise scientific programme and logistics for online workshop. Feb 2021

Organiser, LOFAR-VLBI Mini-symposium. Organised 7 talk mini-symposium for LOFAR Surveys Collaboration. Jun 2020

Scientific Organising Committee, EAS SS4: Radio-loud AGN. Helped define scope, invited speakers, and select contributed talks. Jun 2020

Lorentz Centre Workshop: High Resolution Surveying with LOFAR. Main organiser: including writing proposal and securing funding. Mar 2018

LOFAR Long Baseline Workshops. Helped with and then co-led developing the LOFAR long baseline data reduction pipeline, and training of new users. 2015 - present

LOFAR Low Band Antenna Busy Week. Led first busy week exclusively devoted to working on challenges for the LOFAR Low Band Antenna. Mar 2016

LOFAR Commissioning Busy Weeks. Participated in 10 busy weeks to commission software for low-frequency, wide-field imaging. Jul 2012 - 2017

Chair of Local Organising Committee, LOFAR Busy Week 21. Workshop with specialized talks / training for new users; 40+ global participants. Jan 2013

Evaluator/Instructor Electronic Combat Officer (ECO), USAF, Capt. Operated Passive Detection System on E-3 Airborne Warning And Control System (AWACS). Culminated career as Chief Evaluator / subject matter expert. Aug 2008 - Aug 2011

Air Weapons Officer, USAF, 1Lt. Controlled tactical aircraft from AWACS. Deployed in support of combat missions in Southwest Asia. Jun 2005 – Aug 2008

Indicators of esteem

- **Mock Interviewer**. Helped with mock interview for James Webb Space Telescope Fellowship (Jul 2021)
- **Degree Examiner**. PhD theses: Dudzevičiūtė (Sep 2021), Madhanpall (Dec 2019). MSc theses: O'Brien (May 2021), Bempong-Manful (Feb 2018)

- **Member of LOFAR 2.0 Science Advisory Panel**. Expert on using LOFAR international stations for high resolution imaging. (2018 - present)
- **Referee for papers in peer-reviewed journals**. Monthly Notices of the Royal Astronomical Society, Journal of Astrophysics and Astronomy. (2018 - present)
- **Technical review of observing proposals**. The Low Frequency Array, the Giant Metre-wave Radio Telescope, and e-MERLIN. (2017 - present)
- **Resident Shared Risk Observing, JVLA**. Granted telescope time as an expert user and assessed P-band spectroscopic utility on-site with staff at National Radio Astronomy Observatory. (Apr 2015)
- **Early upgrade to ECO instructor**. Hand-picked based on performance and ability to teach to become an instructor after only 8 months (minimum requirement 1 year).

Funding Awards

Mar 2021	Computing resources on SURFsara (EINF-262; 300k cpu hours)
Apr 2021	LOFAR-UK Request for Continued funding (3yr Software technician)
Nov 2020	UKRI Future Leaders Fellowship (∼1m GBP; PDRA and PhD student)
Mar 2018	Lorentz Center workshop: High-Resolution Imaging with LOFAR (10,985 Euro)
	• RadioNet funding to support early-career researchers (2,000 Euro)
	• Funding from ASTRON to support minority researchers (1,000 Euro)
	• Lorentz Center support for workshop (7,985 Euro)
Dec 2017	Grant for 100 TB disk for working on data, Christ Church Research Centre (8,580 GBP)
Oct 2017	Millard & Lee Alexander Post-Doctoral Fellowship, Christ Church, 2 year room & board
Jun 2014	Leids Kerkhoven-Bosscha Fonds grant for travel to international conference (1,000 Euro)
Nov 2013	Award for contribution to successful NWO-TOP1 grant (total grant 4 million Euro)
Sep 2001	Reserve Officer Training Corps Scholarship (approximately 120,000 USD)
May 2001	University of Michigan Regents Merit Scholarship (3,000 USD)

Honours

Jul 2020	Nominated for Student Choice Award: Excellent Project Supervisor in Physics Teaching
Oct 2018	Better Satellite World Award for Development in Africa with Radio Astronomy
Apr 2017	Top 5% of applicants for L'Orèal-UNSECO For Women in Science Awards
2010	Electronic Combat Officer of the year
Mar 2010	'Exceptionally Qualified' Rating (top 1%), Initial Electronic Combat Officer Evaluation
Feb 2010	Distinguished Graduate, Instructor Electronic Combat Officer Training
Dec 2008	Distinguished Graduate, Electronic Combat Officer Training (perfect exam score average)
Sep 2009	Air Medal (Oak leaf cluster), for flying combat hours
Sep 2009	Air Force Achievement Medal, for leadership of Deployed Electronic Support Team
May 2008	Air Medal, for flying combat hours
May 2007	Distinguished Graduate, Initial Air Weapons Officer Qualification Training
Jul 2006	Top Scope Award, Undergraduate Air Battle Management Training
Apr 2005	College of Literature, Science & the Arts 'Angell Scholar'

Professional Society Memberships

Aug 2018 – present	Junior member of International Astronomical Union
Jan 2018 – present	Oxford Society of Women in Physics, President
Feb 2017 – present	Member of Royal Astronomical Society, by election
Oct 2016 – Jan 2018	Oxford Society of Women in Physics, Outreach Officer

Sep 2011 – Dec 2015	Member of American Astronomical Society
Apr 2005 – present	Member of Sigma Pi Sigma, National Physics Honors Society, by election
2004 - 2005	Co-President/founder of Society for Women in Physics, University of Michigan

Large survey membership

- **Member of:** LOFAR Surveys Key Science Project, SKA Extragalactic Continuum Surveys Working Group, WEAVE-LOFAR, HETDEX, MIGHTEE, AGES-XL, RadioNet RINGS

Allocation of Telescope time

- **LOFAR:** 150+ hours PI projects; 250+ hours co-I projects; 1500+ hours for LOFAR Surveys
- **JVLA:** 17 hours PI projects; 230+ hours co-I projects
- **VLBA:** 450 hours co-I project (JWST NEP field)
- **GMRT:** 116 hours co-I projects
- **INT:** 12 nights co-I projects

Observing Experience

- GMRT radio telescope, Pune, India, 5 nights
- INT 2.5 m optical telescope, Roque de los Muchachos, La Palma, 18 nights
- MDM 2.4 m Hiltner optical telescope, Tucson, AZ, USA, 7+ nights

Computing Skills

- **High Performance Computing:** TORQUE and slurm queuing systems, PBS scripting, processing hundreds of TB of data simultaneously
- **Data interfacing:** Implemented Google Earth for intelligence fusion used during combat flights
- **Operating systems:** Linux, Mac, Windows, and standard packages therein
- **Programming Languages:** R, Python, IDL, Bash, FORTRAN
- **Data pipelines:** Written end-to-end pipelines for LOFAR data (high resolution / ultra low frequency)
- **Astronomical Software:** LOFAR software, AIPS, CASA, ParselTongue, HEASOFT, PIMMS, XSELECT, IRAF, CIAO, SHERPA, XSPEC, FTOOLS, STILTS

Teaching Experience

Postgraduate Certificate in Academic Practice, Module 1. Successful completion of first (of two) modules required for HEA fellowship.	Sep 2021
Unit 4 DARA training (virtual; Ghana). Delivered lectures as part of Development in Africa with Radio Astronomy (DARA) course, held in Ghana but lecturing virtually.	May 2021
Radio Astronomy Lectures. For first year PhD students, added topic to module for the first time.	Feb 2021
Physics Tutorials. Led tutorial groups for first year Physics course.	2019/2020
LOFAR Data School. Invited lecturer and subject matter expert in high resolution imaging (50 students).	Sep 2018, Mar 2021
Lecturer, Oxford Prospects Programme. Lecturer on the topic of astrophysics for groups of about 50 students, 2 week programme repeated 3x per year for Chinese students.	2017 - 2019
Unit 2 & 3 DARA training at HartRAO. Delivered lectures, tutorials, and an invited talk as part of Development in Africa with Radio Astronomy (DARA) course at Hartebeesthoek Radio Astronomy Observatory, South Africa.	Apr 2018
Teaching Assistant, Radio Astronomy MSc class. Developed tutorials and practical project for 14 students, supervised hands-on sessions, organized and conducted field trip to Dutch radio observatories.	Jan - Jul 2015
Instructor, Initial Electronic Combat Officer Training. Primary instructor for 4 month lecture/practical course, repeated every 5 months for 4-8 students. Delivered lectures, led discussions, and helped students with simulated missions to learn critical tasks.	Sep 2009 - Aug 2011

ECO Syllabus Review Conference. Led ECO training syllabus review amongst instructors/evaluators, identified 50 updates to the Training Task list. Jul 2010

Squadron ECO continuing education program. Designed and implemented squadron ECO continuing education program, adopted by two other squadrons. Feb 2009

Electronic Support Fundamentals Class. Designed curriculum, coordinated guest speakers, and taught 5-day course to correct training deficiencies. Jun 2011

Student Supervision

Supervision of students. Currently supervising 2 PhD students. Formally supervised 3 MSc and 3 summer students to successful completion of research projects using low frequency radio data. Informally supervise 2 PhD students working on LOFAR high resolution projects. Sep 2013 – present

Co-supervision of PhD minor project. Collaboration with Prof. Gal in Computer Science department at Oxford to supervise PhD project on topic of using machine learning to cross-match multi-wavelength surveys. Apr – Jun 2018

Instructor, Initial Electronic Combat Officer Flight Training. Trained individuals on-the-job during flights (6 per student). Trained 35 students with an unprecedented 40% rate of Distinguished graduates (top 10% of class). Sep 2009 - Aug 2011

Public Engagement

Media coverage, high resolution imaging with LOFAR. Extensive international coverage including BBC interview on 6pm / 10pm news; YouTube feature (Dr. Becky's channel, 320,000+ subscribers). Release of 10 papers detailing LOFAR high-resolution imaging and scientific results Aug 2021

Invited Public Lectures. Lectures for general public on super-massive black holes and galaxy evolution.

- Cleveland and Darlington Astronomical Society (35 people; 10 Sep 2021)
- Sunderland Astronomical Society (40 people; 17 Jan 2021)
- Guildford Astronomical Society (85 people; 7 Nov 2019)
- Green Templeton College, Oxford (65 people; 21 Feb 2018)

Soapbox Science, Reading. Designed and ran interactive public engagement activity on super-massive black holes for Soapbox Science, which showcases women scientists as role models for the public. 8 Jun 2019.

Outreach Coordinator, Oxford Women in Physics. New position in the organisation, planning two major upcoming events within the next eight months. Contributed to events like Somerville Girls into Science Day 2017. Oct 2016 – Jan 2018

Public Outreach, Leiden Old Observatory. Helped with open day for public to view the observatory, visitor's center, and participate in outreach activities. Oct 2012, 2014

Physics Girls' Inreach. Developed content for and organized all logistics for public inreach targeted to 10/11 year old girls with the intent to interest them in science and show them strong female role models. Apr 2005

Angell Hall Public Viewing Nights. Operated 0.6 meter telescope, Celestron 8 telescopes, and planetarium at Angell Hall Observatory for public viewing nights with the Student Astronomical Society. Jan 2003 - Apr 2005

Physics Public Outreach. Taught multiple hour-long workshops on various physical principles with the Society of Physics Students. Aug 2004 - Apr 2005

Scientific Presentations

Invited talks at Conferences and Workshops

- LOFAR2.0 Large Programmes Information Sessions (virtual) 7 & 12 Oct 2021
  LOFAR Long baseline status
- LOFAR Magnetism KSP Annual Meeting (virtual) 5 Jul 2021
  Sub-arcsecond imaging with LOFAR

- SKA Precursor workshop, Extragalactic Continuum meeting (virtual) 19 Mar 2021
  Sub-arcsecond imaging with the Low Frequency Array
- European Astronomical Society Annual Meeting Special Session 16 (Virtual) 29 Jun 2020
  High resolution at low frequencies: sub-arcsecond imaging with LOFAR
- SKA-VLBI Workshop (SKA Headquarters) 15 Oct 2019
  AGN Surveys at low frequencies with the International LOFAR Telescope
- Multi-messenger astronomy with SKA precursors and pathfinders (Aveiro, PT) 13 May 2019
  The Low Frequency Array and the power of radio surveys
- Oxford Scientist launch event (Oxford, UK) 2 Jun 2019
  My Journey in Science
- Astronomy and Science from the Moon (Paris Observatory, FR) 22 Jun 2017
  LOFAR to SKA: an observer's perspective
- Google Tech Talk (Munich, DE) 11 Oct 2013
  High Redshift Radio Galaxies and the Advent of LOFAR

Invited Colloquia and seminars, typically on *A Low Frequency Radio Perspective on AGN*

- ICRAR / Curtain University, AU 27 May 2021
- University of Hertfordshire, UK 14 Jul 2021
- Liverpool John Moores University, UK 30 Oct 2019
- University of Sheffield, UK 12 Jun 2019
- Jodrell Bank Centre for Astrophysics, UK 1 May 2019
- ASTRON, NL 25 Oct 2018
- University of Southampton, UK 16 Oct 2018
- University College Dublin, IE 4 Oct 2018
- Oskar Klein Centre, SE 12 Jun 2018
- University of Sussex, UK 26 May 2017
- University of Hertfordshire, UK 13 Nov 2015
- University of Oxford, UK 12 Nov 2015
- Carnegie Observatory, USA 24 Jul 2015
- IPAC/Caltech, USA 22 Jul 2015
- University of Oklahoma, USA 16 Dec 2013
- National Radio Astronomy Observatory (Socorro), USA 25 Jul 2012

Publication Record

11 first-author, 4 second-author, and 50 co-author peer-reviewed publications; also 8 conference proceedings. Total of 1798 citations as of 28 Sep 2021.

First Author

(1) **Morabito**, L. K., Jackson, N. J., Mooney, S., and 71 colleagues *Sub-arcsecond imaging with the International LOFAR Telescope I. Foundational calibration strategy and pipeline.* arXiv e-prints,. **2021**, cit. 0

(1) **Morabito**, L. K. and Silk, J. *Reaching small scales with low-frequency imaging: applications to the Dark Ages.* Philosophical Transactions of the Royal Society of London Series A, 379,. **2021**, cit. 2

(3) **Morabito**, L. K., Matthews, J. H., Best, P. N., and 14 colleagues *The origin of radio emission in broad absorption line quasars: Results from the LOFAR Two-metre Sky Survey.* A&A, 622,. **2019**, cit. 10

(4) **Morabito**, Leah K. and Harwood, Jeremy J. *Investigating the cause of the α-z relation.* MNRAS, 480, 2726-2732. **2018**, cit. 7

(5) **Morabito**, Leah K., Williams, W. L., Duncan, Kenneth J., and 17 colleagues *Investigating the unification of LOFAR-detected powerful AGN in the Boötes field.* MNRAS, 469, 1883-1896. **2017**, cit. 10

(6) **Morabito**, Leah K., Deller, Adam T., Röttgering, Huub, and 8 colleagues *LOFAR VLBI studies at 55 MHz of 4C 43.15, a z = 2.4 radio galaxy.* MNRAS, 461, 2676-2687. **2016**, cit. 16

(7) **Morabito**, Leah K., Oonk, J. B. R., Salgado, Francisco, and 30 colleagues *Discovery of Carbon Radio Recombination Lines in M82.* ApJ, 795,. **2014**, cit. 20

(8) **Morabito**, Leah K., Dai, Xinyu, Leighly, Karen M., Sivakoff, Gregory R., and Shankar, Francesco *Unveiling the Intrinsic X-Ray Properties of Broad Absorption Line Quasars with a Relatively Unbiased Sample.* ApJ, 786,. **2014**, cit. 13

(9) **Morabito**, Leah K., van Harten, Gerard, Salgado, Francisco, and 3 colleagues *Exact bound-bound Gaunt factor values for quantum levels up to n = 2000.* MNRAS, 441, 2855-2860. **2014**, cit. 3

(10) **Morabito**, Leah K. and Dai, Xinyu *A Bayesian Monte Carlo Analysis of the M-σ Relation.* ApJ, 757,. **2012**, cit. 9

(11) **Morabito**, Leah K., Dai, Xinyu, Leighly, Karen M., Sivakoff, Gregory R., and Shankar, Francesco *Suzaku Observations of Three FeLoBAL Quasi-stellar Objects: SDSS J0943+5417, J1352+4239, and J1723+5553.* ApJ, 737,. **2011**, cit. 16

Second Author

(1) Sweijen, Frits, **Morabito**, Leah K., Harwood, Jeremy, and 6 colleagues *High-resolution international LOFAR observations of 4C~43.15 – Spectral ages and injection indices in a high-z radio galaxy.* arXiv e-prints,. **2021**, cit. 1

(2) Salgado, F., **Morabito**, L. K., Oonk, J. B. R., and 4 colleagues *Low-frequency Carbon Radio Recombination Lines. I. Calculations of Departure Coefficients.* ApJ, 837,. **2017**, cit. 19

(3) Salgado, F., **Morabito**, L. K., Oonk, J. B. R., and 4 colleagues *Low-frequency Carbon Radio Recombination Lines. II. The Diffuse Interstellar Medium.* ApJ, 837,. **2017**, cit. 13

(4) Oonk, R., **Morabito**, L., Salgado, F., and 4 colleagues *The Physics of the Cold Neutral Medium: Low-frequency Radio Recombination Lines with the Square Kilometre Array.* Advancing Astrophysics with the Square Kilometre Array (AASKA14),. **2015**, cit. 6

Co-Author

(1) Tasse, C., Shimwell, T., Hardcastle, M. J., and 29 colleagues *The LOFAR Two-meter Sky Survey: Deep Fields Data Release 1. I. Direction-dependent calibration and imaging.* A&A, 648,. **2021**, cit. 45

(2) Duncan, K. J., Kondapally, R., Brown, M. J. I., and 21 colleagues *The LOFAR Two-meter Sky Survey: Deep Fields Data Release 1. IV. Photometric redshifts and stellar masses.* A&A, 648,. **2021**, cit. 15

(3) de Gasperin, F., Williams, W. L., Best, P., and 38 colleagues *The LOFAR LBA Sky Survey. I. Survey description and preliminary data release.* A&A, 648,. **2021**, cit. 9

(4) Delhaize, J., Heywood, I., Prescott, M., and 31 colleagues *MIGHTEE: are giant radio galaxies more common than we thought?.* MNRAS, 501, 3833-3845. **2021**, cit. 7

(5) Calistro Rivera, G., Alexander, D. M., Rosario, D. J., and 11 colleagues *The multiwavelength properties of red QSOs: Evidence for dusty winds as the origin of QSO reddening.* A&A, 649,. **2021**, cit. 6

(6) Jimenez-Gallardo, A., Massaro, F., Paggi, A., and 20 colleagues *Extended X-Ray Emission around FR II Radio Galaxies: Hot Spots, Lobes, and Galaxy Clusters.* ApJS, 252,. **2021**, cit. 4

(7) Macfarlane, C., Best, P. N., Sabater, J., and 9 colleagues *The radio loudness of SDSS quasars from the LOFAR Two-metre Sky Survey: ubiquitous jet activity and constraints on star formation.* MNRAS, 506, 5888-5907. **2021**, cit. 3

(8) Rankine, Amy L., Matthews, James H., Hewett, Paul C., and 3 colleagues *Placing LOFAR-detected quasars in C IV emission space: implications for winds, jets and star formation.* MNRAS, 502, 4154-4169. **2021**, cit. 3

(9) Bonnassieux, Etienne, Sweijen, Frits, Brienza, Marisa, and 11 colleagues *Spectral analysis of spatially-resolved 3C295 (sub-arcsecond resolution) with the International LOFAR Telescope.* arXiv e-prints,. **2021**, cit. 0

(10) Badole, Shruti, Venkattu, Deepika, Jackson, Neal, and 7 colleagues *High-resolution imaging with the International LOFAR Telescope: Observations of the gravitational lenses MG 0751+2716 and CLASS B1600+434.* arXiv e-prints,. **2021**, cit. 0

(11) Kukreti, Pranav, Morganti, Raffaella, Shimwell, Timothy W., and 10 colleagues *Unmasking the history of 3C 293 with LOFAR sub-arcsecond imaging.* arXiv e-prints,. **2021**, cit. 0

(12) Timmerman, R., van Weeren, R. J., Callingham, J. R., and 18 colleagues *Origin of the ring structures in Hercules A – Sub-arcsecond 144 MHz to 7 GHz observations.* arXiv e-prints,. **2021**, cit. 0

(13) Groeneveld, C., van Weeren, R. J., Miley, G. K., and 12 colleagues *Pushing subarcsecond resolution imaging down to 30 MHz with the trans-European International LOFAR Telescope.* arXiv e-prints,. **2021**, cit. 0

(14) Jackson, Neal, Badole, Shruti, Morgan, John, and 69 colleagues *Sub-arcsecond imaging with the International LOFAR Telescope: II. Completion of the LOFAR Long-Baseline Calibrator Survey.* arXiv e-prints,. **2021**, cit. 0

(15) Rosario, D. J., Alexander, D. M., Moldon, J., and 5 colleagues *Fundamental differences in the radio properties of red and blue quasars: kiloparsec-scale structures revealed by e-MERLIN.* MNRAS, 505, 5283-5300. **2021**, cit. 0

(16) Fawcett, V. A., Alexander, D. M., Rosario, D. J., and 5 colleagues *Fundamental differences in the radio properties of red and blue quasars: enhanced compact AGN emission in red quasars.* MNRAS, 494, 4802-4818. **2020**, cit. 10

(17) Rosario, D. J., Fawcett, V. A., Klindt, L., and 5 colleagues *Fundamental differences in the radio properties of red and blue quasars: insight from the LOFAR Two-metre Sky Survey (LoTSS).* MNRAS, 494, 3061-3079. **2020**, cit. 10

(18) Muxlow, T. W. B., Thomson, A. P., Radcliffe, J. F., and 37 colleagues *The e-MERGE Survey (e-MERLIN Galaxy Evolution Survey): overview and survey description.* MNRAS, 495, 1188-1208. **2020**, cit. 8

(19) Shimwell, T. W., Tasse, C., Hardcastle, M. J., and 104 colleagues *The LOFAR Two-metre Sky Survey. II. First data release.* A&A, 622,. **2019**, cit. 211

(20) de Gasperin, F., Dijkema, T. J., Drabent, A., and 17 colleagues *Systematic effects in LOFAR data: A unified calibration strategy.* A&A, 622,. **2019**, cit. 68

(21) Williams, W. L., Hardcastle, M. J., Best, P. N., and 38 colleagues *The LOFAR Two-metre Sky Survey. III. First data release: Optical/infrared identifications and value-added catalogue.* A&A, 622,. **2019**, cit. 59

(22) Hardcastle, M. J., Williams, W. L., Best, P. N., and 20 colleagues *Radio-loud AGN in the first LoTSS data release. The lifetimes and environmental impact of jet-driven sources.* A&A, 622,. **2019**, cit. 55

(23) Mingo, B., Croston, J. H., Hardcastle, M. J., and 15 colleagues *Revisiting the Fanaroff-Riley dichotomy and radio-galaxy morphology with the LOFAR Two-Metre Sky Survey (LoTSS).* MNRAS, 488, 2701-2721. **2019**, cit. 54

(24) Sabater, J., Best, P. N., Hardcastle, M. J., and 18 colleagues *The LoTSS view of radio AGN in the local Universe. The most massive galaxies are always switched on.* A&A, 622,. **2019**, cit. 52

(25) Duncan, K. J., Sabater, J., Röttgering, H. J. A., and 24 colleagues *The LOFAR Two-metre Sky Survey. IV. First Data Release: Photometric redshifts and rest-frame magnitudes.* A&A, 622,. **2019**, cit. 36

(26) O'Sullivan, S. P., Machalski, J., Van Eck, C. L., and 27 colleagues *The intergalactic magnetic field probed by a giant radio galaxy.* A&A, 622,. **2019**, cit. 26

(27) Mahatma, V. H., Hardcastle, M. J., Williams, W. L., and 19 colleagues *LoTSS DR1: Double-double radio galaxies in the HETDEX field.* A&A, 622,. **2019**, cit. 25

(28) Croston, J. H., Hardcastle, M. J., Mingo, B., and 13 colleagues *The environments of radio-loud AGN from the LOFAR Two-Metre Sky Survey (LoTSS).* A&A, 622,. **2019**, cit. 23

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(30) Hale, C. L., Williams, W., Jarvis, M. J., and 12 colleagues *LOFAR observations of the XMM-LSS field.* A&A, 622,. **2019**, cit. 10

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(32) Stacey, H. R., McKean, J. P., Jackson, N. J., and 15 colleagues *LoTSS/HETDEX: Disentangling star formation and AGN activity in gravitationally lensed radio-quiet quasars.* A&A, 622,. **2019**, cit. 4

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(34) Nyland, K., Harwood, J. J., Mukherjee, D., and 19 colleagues *Revolutionizing Our Understanding of AGN Feedback and its Importance to Galaxy Evolution in the Era of the Next Generation Very Large Array.* ApJ, 859,. **2018**, cit. 19

(35) Read, S. C., Smith, D. J. B., Gürkan, G., and 14 colleagues *The Far-Infrared Radio Correlation at low radio frequency with LOFAR/H-ATLAS.* MNRAS, 480, 5625-5644. **2018**, cit. 16

(36) Shimwell, T. W., Röttgering, H. J. A., Best, P. N., and 69 colleagues *The LOFAR Two-metre Sky Survey. I. Survey description and preliminary data release.* A&A, 598,. **2017**, cit. 240

(37) Sobral, David, Matthee, Jorryt, Best, Philip, and 6 colleagues *The CALYMHA survey: Lyα luminosity function and global escape fraction of Lyα photons at z = 2.23.* MNRAS, 466, 1242-1258. **2017**, cit. 74

(38) Calistro Rivera, G., Williams, W. L., Hardcastle, M. J., and 20 colleagues *The LOFAR window on star-forming galaxies and AGNs - curved radio SEDs and IR-radio correlation at 0<z<2.5.* MNRAS, 469, 3468-3488. **2017**, cit. 65

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