

Robert A. Main

RESEARCH ASSOCIATE – MCGILL UNIVERSITY

✉ robert.main@mcgill.ca | 🏠 <https://ramain.github.io/> | 📄 <https://github.com/ramain>

Research

Programme Manager for CERC in Transient Astrophysics (McGill University)

2026-present

- Programme Manager for Jason Hessels' Canada Excellence Research Chair in Transient Astrophysics. Guiding scientific vision on expanding the discovery space of fast radio bursts and pulsars, using CHIME, CHIME/Outriggers, and CHORD.

Research Associate (McGill University)

2023-2025

- Leading 'CHAMPSS', the CHIME All-Sky Multiday Pulsar Stack Search, a real-time survey monitoring the northern sky every day. Involved with CHIME/FRB and CHIME/Pulsar in analysis and theoretical background in scintillation/lensing. Co-supervised two Master's students, and two undergraduate theses.

Post Doctoral Researcher (Max-Planck-Institut für Radioastronomie)

2018-2023

- Fundamental Physics in Radio Astronomy group. Developed methods of scintillometry applied to pulsar binaries, with applications to pulsar timing arrays, and applications to fast radio bursts. Co-supervised two PhD students and two Master's students.

PhD Student (University of Toronto)

2014 - 2018

- Studies of scintillation/lensing of pulsars in dense environments, where pulse emission is resolved. Regular (2-3x per year), self-devised VLBI experiments and hands-on observing with the Algonquin Radio Observatory.

Master's Student (University of Waterloo)

2012 - 2014

- Study of galaxy clusters using Chandra X-ray data. ALMA analysis of molecular outflows driven by Active Galactic Nuclei.

Research Assistant (University of Waterloo)

Summer 2012

- Early analysis of cycle 0 ALMA data, assisting writing successful ALMA and Hubble proposals.

Education

University of Toronto

Toronto, Canada

PHD IN ASTRONOMY AND ASTROPHYSICS

2014 - 2018

- Advisors: Prof. Marten van Kerkwijk & Prof. Ue-Li Pen
- Thesis: Resolving Pulsar Magnetospheres using Cosmic Microscopes

University of Waterloo

Waterloo, Canada

MASTERS OF PHYSICS

2012 - 2014

- Advisor: Prof. Brian McNamara
- Thesis: The Dependence of Radio-mode Feedback on Baryonic and Halo Mass

University of Waterloo

Waterloo, Canada

HONOURS MATHEMATICAL PHYSICS, ASTROPHYSICS SPECIALIZATION

2007 - 2011

Successful Telescope Proposals as PI

- 2024-25 **MeerKAT** 60 hours over 2 projects.
- 2018-25 **Effelsberg 100-m telescope** >300 hours over 6 projects as PI, and for supervised graduate students.
- 2018-24 **Low Frequency Array (LOFAR)** 56 hours over 4 projects
- 2017-22 **Giant Metrewave Radio Telescope (GMRT)** 45 hours over 4 projects
- 2019 **Parkes Observatory / Murriyang** "An Ultra Wide-Band study of plasma lensing in eclipsing binaries"
- 2019 **Long Baseline Array** "Imaging the Scattering Screens of PSR J0437-4715"
- 2016 **Very Long Baseline Array** "Measuring the Distance to the Crab Pulsar's Scattering Screen"
- 2018 **Arecibo Observatory** "The extreme lensing of the Black Widow's radio eclipse"
- **Co-I of X-ray TOO proposals with NICER, NUSTAR, Chandra, XMM-Newton**, search for X-ray flares after radio glitches detected from daily timing, from current MSc Wenke Xia
- **Co-I on many other successful proposals**, including the above telescopes, Chandra, ALMA, HST, VLA, GBT, and the EVN. I also led several VLBI experiments using the Algonquin Radio Observatory alongside other radio telescopes.

Scholarships & Awards

2017-18	Allen Yen Award , DAA, University of Toronto	\$ 2,000
2016-18	NSERC PGS-D Research Grant , NSERC	\$ 21,000 /year
2015-16	Queen Elizabeth II Graduate Scholarship , University of Toronto	\$ 15,000

Teaching Experience

2026W	Phys 602 - Intro to Grad Studies in Physics , Lectures on version control and scientific computing, main course taught by Prof. Lily Childress	<i>McGill U.</i>
2025W	Phys 645 - High Energy Astrophysics , Taught jointly with Prof. Victoria Kaspi, post docs	<i>McGill U.</i>
2015 - 18	Various Undergraduate Courses , “Campus Observer” organizing/running astronomy labs	<i>U. Toronto</i>
2015W	AST 201 - Stars and Galaxies , Teaching Assistant	<i>U. Toronto</i>
2014F	AST 101 - The Sun and its Neighbours , Teaching Assistant	<i>U. Toronto</i>
2014W	SCI 238 - Introductory Astronomy , Teaching Assistant	<i>U. Waterloo</i>
2012F,13F	SCI 237 - Exploring the Universe , Teaching Assistant	<i>U. Waterloo</i>
2013W	PHYS 125 - Physics for Engineers , Teaching Assistant	<i>U. Waterloo</i>

Supervision

2024-	Remi Tellier , BSc project, co-supervised with Pros. Victoria Kaspi. Candidate confirmation with CHIME/Pulsar tracking beams	<i>McGill U.</i>
2024-	Wenke Xia , MSc, co-supervised with Profs. Victoria Kaspi & Jason Hessels. Algorithmic Timing of newly discovered CHAMPSS Pulsars	<i>McGill U.</i>
2024-25	Laurent Tarabout , Bachelor’s thesis, co-supervised with Prof. Victoria Kaspi. “Implementing a Fast Folding Algorithm for Pulsar Discovery at the CHIME Telescope”	<i>McGill U.</i>
2023-2025	Magnus L’Argent , MSc, co-supervised with Prof. Victoria Kaspi. “Confirming pulsar candidates using a multi-day phase alignment search”	<i>McGill U.</i>
2023-24	Abigail Denney , Bachelor’s thesis, co-supervised with Prof. Victoria Kaspi, “Monitoring High Magnetic Field Pulsars with CHAMPSS”	<i>McGill U.</i>
2022-23	Senate Lekomola , MSc, co-supervised with Dr. Marisa Geyer. “Studying a southerly eclipsing millisecond pulsar, J1748–2446A, using MeerKAT”	<i>U. Cape Town</i>
2020-2026	Geetam Mall , PhD, co-supervised with Profs. Ue-Li Pen & Marten van Kerkwijk. “Using scintillation to measure pulsar orbits and probe the structure of the interstellar medium”	<i>U. Toronto</i>
2019-20	Geetam Mall , MSc Student. “Using scintillation to study the variable scattering and orbital motion of PSR J1643-1224”	<i>MPIfR</i>
2019-23	Tim Sprenger , PhD, co-supervised with Dr. Olaf Wucknitz. “Pulsar Scintillation and Interstellar Lenses”	<i>MPIfR</i>

Invited Presentations

Sep. 2025 **INAF-Observatory of Cagliari, Pulsar 2025**, “Present Results and Perspectives of Scintillometry”
 Jul. 2025 **McGill University, FRB 2025**, “Propagation Effects in Fast Radio Bursts”
 Jan. 2025 **Université de Montréal**, “Recent Developments in Precision Scintillometry”
 Oct. 2024 **Florida Space Institute, Scintillometry 2024**, “Scintillometry Review”, opening talk at conference
 Mar. 2023 **CSIRO Sydney**, “Scattering screens and surprises: A survey and study of scintillation arcs”
 Dec. 2021 **Presentation to ASIAA FRB group, (remote)**, “Scintillation velocities of the highly active FRB 20201124A”
 Mar. 2021 **Oxford Pulsar Group Seminar, (remote)**, “Modelling evolution and variation of scintillation arcs”
 Feb. 2020 **Colloquium, ASTRON, Dwingeloo**, “Using Pulsar Scintillation as an Interstellar Interferometer”
 Oct. 2018 **Global Radio Scintillometry Astrophysics 2018, Tsung-Dao Lee Institute, Shanghai, China**, “Pulsar emission amplified and resolved by plasma lensing in an eclipsing binary”
 Nov. 2017 **RAL Seminar, Department of Astronomy, Berkeley**, “Resolving Pulsar emission using Cosmic Microscopes”

Conference Organization

Nov. 2025	Scintillometry 2025 , Member of SOC	<i>McGill</i>
July 2025	FRB 2025 , Member of LOC	<i>McGill</i>
Sep. 2022	XV Bonn Neutron Star Workshop , Member of SOC	<i>MPIfR</i>
Mar. 2020	EPTA Meeting, Spring 2020 , Member of LOC	<i>Remote</i>
Nov. 2019	Scintillometry 2019, >70 participants , Head member of SOC and LOC	<i>MPIfR</i>
Oct. 2018	Scintillometry 2018, >50 participants , Invited Member of SOC	<i>Shanghai</i>
Oct. 2017	Scintillometry 2017, >50 participants , Member of LOC	<i>U. Toronto</i>

Academic Reviewing

- Science Review Panel (SRP) for GBT, VLA, VLBA proposals
- Scientific Reviewer for GMRT proposals
- Regular reviewer for ApJ, ApJL, MNRAS, A&A

Outreach & Professional Development

Aug. 2025 **Summer internship talk program**, “Data presentation: the good, the bad and the ugly”
 Dec. 2024 **McGill Physics Lunch Talk**, “Step-by-step Scintillation”
 Nov. 2023 **Trottier Space Institute Public Talk**, “Harnessing the Power of Interstellar Plasma Lenses”
 Mar. 2023 **MPIfR Fundi Tutorials**, “Scintillation and You! Theory and Applications”,
<https://github.com/ramain/FundiScintTutorial2023>
 Oct. 2021 **MPIfR Fundi Tutorials**, “Scintillation and You! Theory and Applications”,
<https://github.com/ramain/FundiScintTutorial2021>
 July 2020 **NenuFAR Busy Week**, Lecture and tutorial on applications of scintillation using NenuFAR
 Jan. 2020 **MPIfR Lunch Colloquium**, Introductory Lecture — “Pulsar Scintillation: Friend or Foe?”
 July 2017 **Astrotours Puclic Lecture**, “Using interstellar plasma lenses as billion kilometer telescopes”
 Aug. 2017 **Observations of Solar Eclipse at Canadian National Exhibition**, Telescope Coordinator
 May 2016 **Public observations of the Transit of Mercury**, Telescope Coordinator
 2015 - 17 **University of Toronto Astrotours**, Telescope Coordinator — opening 8” and 16” dome telescopes to public
 2014 - 15 **University of Toronto Astrotours**, Technology Demo Coordinator — exploring the universe in virtual reality

Publications

H-index of 36, 12 papers as first or corresponding author (denoted in **blue**), 20 papers as second or third author (denoted in **green**)

REFEREED PAPERS

- Kaitlyn Shin et al. (30 additional authors including **Robert Main**), “The CHIME/FRB Discovery of the Extremely Active Fast Radio Burst Source FRB 20240114A”, 2026ApJ...997..334S
- The CHIME/FRB Collaboration (73 authors including **Robert Main**), “The Second CHIME/FRB Catalog of Fast Radio Bursts”, Accepted in ApJS, arXiv:2601.09399
- Swarali Patil, **Robert Main**, et al (26 additional authors), “A Spatial Gap in the Sky Distribution of Fast Radio Burst Detections Coinciding with Galactic Plasma Overdensities”, 2026ApJ...997L...5P
- Kaitlyn Shin et al. (33 additional authors including **Robert Main**), “Investigating the sightline of a highly scattered FRB through a filamentary structure in the local Universe”, 2025ApJ...993..208S
- CHIME/FRB Collaboration (68 authors including **Robert Main**). “CHIME/FRB Outriggers: Design Overview”, 2025ApJ...993...55C
- Alice Curtin et al. (27 additional authors including **Robert Main**), “Morphology of 35 Repeating Fast Radio Burst Sources at Microsecond Time Scales with CHIME/FRB”, 2025ApJ...992..206C
- Surya Bethapudi et al. (6 additional authors inc. **Robert Main**) “Constraining the origin of the long term periodicity of FRB 20180916B with Polarization Position Angle”, 2025A&A...702A.248B
- CHIME/FRB Collaboration (64 authors including **Robert Main**) “A Catalog of Local Universe Fast Radio Bursts from CHIME/FRB and the KKO Outrigger”, 2025ApJS..280....6C
- Fenqiu Adam Dong et al. (23 additional authors including **Robert Main**), “CHIME/FRB/Pulsar discovery of a nearby long period radio transient with a timing glitch”, 2025ApJ...990L..49D
- The CHAMPSS Collaboration (27 authors, corresponding author **Robert Main**), “CHIME All-Sky Pulsar Stacking Search - System Overview and First Discoveries”, 2025ApJ...990...50A
- The CHIME/FRB Collaboration (authors including **Robert Main**), “FRB 20250316A: A Brilliant and Nearby One-Off Fast Radio Burst Localized to 13 parsec Precision”, 2025ApJ...989L..48C
- Sachin Pradeep, Tim Sprenger, Olaf Wucknitz, **Robert Main**, Laura Spitler. “Scintillometry of Fast Radio Bursts: Resolution effects in two-screen models”, 2025A&A...700A..99P
- Thierry Serafin Nadeau et al. (6 additional authors including **Robert Main**), “Echoes in Different Tempo: Long-Term Monitoring of Crab Echoes with CHIME”. Submitted to ApJ 2025, arXiv:2507.23201
- Alice Curtin et al. (29 additional authors including **Robert Main**), “Discovery and Localization of the Swift-Observed FRB 20241228A in a Star-forming Host Galaxy”, Accepted in ApJ, 2025
- Daniel Reardon, **Robert Main** et al. (11 additional authors), “Unveiling inner plasma structures of a pulsar bow shock and the Local Bubble”, 2025NatAs...9.1053R
- Fenqiu Adam Dong et al. (22 additional authors including **Robert Main**), “CHIME/FRB Discovery of an Unusual Circularly Polarized Long-Period Radio Transient with an Accelerating Spin Period”, 2025ApJ...988L..29D
- Cherry Ng. et al. (23 additional authors, including **Robert Main**), “Polarization properties of 28 repeating fast radio bursts sources with CHIME/FRB”, 2025ApJ...982..154N
- Nataliya Poryako et al. (73 additional authors, including **Robert Main**), “Searches for signatures of ultralight axion dark matter in polarimetry data of the European Pulsar Timing Array”, 2025PhRvD.111f2005P
- V. Shah et al. (48 additional authors including **Robert Main**). “A repeating fast radio burst source in the outskirts of a quiescent galaxy”, 2025ApJ...979L..21S
- Ketan R. Sand et al. (23 additional authors including **Robert Main**) “Morphology of 137 Fast Radio Bursts down to Microseconds Timescales from The First CHIME/FRB Baseband Catalog”. 2025ApJ...979..160S
- S. Bethapudi et al. (6 additional authors including **Robert Main**). “Rotation Measure study of FRB 20180916B with the uGMRT”, 2025A&A...694A..75B

- Kenzie Nimmo et al (28 additional authors including **Robert Main**), “Magnetospheric origin of a fast radio burst constrained using scintillation”, 2025Natur.637...48N
- Ryan Mckinven et al. (43 additional authors including **Robert Main**), “A pulsar-like swing in the polarisation position angle of a nearby fast radio burst”, 2025Natur.637...43M
- M. Brionne et al. (17 additional authors including **Robert Main**) “The NenuFAR Pulsar Blind Survey (NPBS): I. Survey overview, expectations, and first redetections”, 2025A&A...693A..96B
- Iuliana Nitu et al. (19 additional authors, including **Robert Main**), “Periodicity search in the timing of the 25 millisecond pulsars from the second data release of the European Pulsar Timing Array”, 2024MNRAS.534.1753N
- Jakob T. Faber et al. (25 additional authors including **Robert Main**) “Morphologies of Bright Complex Fast Radio Bursts with CHIME/FRB Voltage Data”, 2024ApJ...974..274F
- Alice P. Curtin et al. (14 additional authors including **Robert Main**). “Constraining Near-simultaneous Radio Emission from Short Gamma-Ray Bursts Using CHIME/FRB”. 2024ApJ...972..125C
- J. Jang, **Robert Main** et al. (8 additional authors), “Timing and scintillation studies of PSR J1439-5501”, 2024A&A...689A.296J
- IPTA Collaboration, “Comparing Recent Pulsar Timing Array Results on the Nanohertz Stochastic Gravitational-wave Background” 2024ApJ...966..105A
- Iuliana et al. (28 additional authors including **Robert Main**) “A Gaussian-processes approach to fitting for time-variable spherical solar wind in pulsar timing data”, 2024MNRAS.528.3304N
- Zi-Wei Wu, **Robert Main** et al. (22 additional authors), “Scintillation Arc from FRB 20220912A”, 2024SCPMA..6719512W
- Alan Wood et al. (9 additional authors including **Robert Main**) “Quasi-stationary substructure within a sporadic E layer observed by the Low Frequency Array (LOFAR)”. 2024JSWSC..14...27W
- Hippolyte Quelquejay Leclerc et al. (71 additional authors, including **Robert Main**). Second Data Release from the European Pulsar Timing Array: Challenging the Ultralight Dark Matter Paradigm. 2023PhRvD.108l3527Q
- Yulan Liu, **Robert Main** et al. (12 additional authors) “Periodic interstellar scintillation variations of PSRs J0613–0200 and J0636+5128 associated with the Local Bubble shell”, 2023SCPMA..6619512L
- R. A. Main** et al. (23 additional authors) “Variable Scintillation Arcs in Millisecond Pulsars observed with the Large European Array for Pulsars”, 2023MNRAS.525.1079M
- EPTA Collaboration, “The second data release from the European Pulsar Timing Array. Challenging the ultralight dark matter paradigm”, 2023PhRvL.131q1001S
- EPTA Collaboration and InPTA Collaboration, “The second data release from the European Pulsar Timing Array V. Search for continuous gravitational wave signals”, 2024A&A...690A.118E
- EPTA Collaboration and InPTA Collaboration, “The second data release from the European Pulsar Timing Array. IV. Implications for massive black holes, dark matter, and the early Universe”. 2024A&A...685A..94E
- EPTA Collaboration, “The second data release from the European Pulsar Timing Array. III. Search for gravitational wave signals”, 2023A&A...678A..50E
- EPTA Collaboration, “The second data release from the European Pulsar Timing Array. II. Customised pulsar noise models for spatially correlated gravitational waves”, 2023A&A...678A..49E
- EPTA Collaboration, “The second data release from the European Pulsar Timing Array. I. The dataset and timing analysis”, 2023A&A...678A..48E
- IPTA Collaboration, “Searching for continuous Gravitational Waves in the second data release of the International Pulsar Timing Array”, 2023MNRAS.521.5077F
- S. Bethapudi, L. G. Spitler, **R. A. Main**, D. Z. Li, R. S. Wharton, “High frequency study of FRB20180916B using the 100-m Effelsberg radio telescope”, 2023MNRAS.524.3303B
- Dongzi Li; Anna Bilous; Scott Ransom; **Robert Main**; Yuan-Pei Wang, “A highly magnetized environment in a pulsar binary system”, 2023Natur.618..484L
- R. A. Main** et al. (7 additional authors) “Modelling Annual Scintillation Variations of FRB20201124A”, 2023MNRAS.522L..36M

- Z. Wu et al. (25 authors including **R. A. Main**) “Pulsar Scintillation Studies with LOFAR: II. Dual-frequency scattering study of PSR J0826+2637 with LOFAR and NenuFAR, 2023MNRAS.520.5536W
- B. Posselt et al. (16 additional authors, including **R. A. Main**) “The Thousand-Pulsar-Array programme on MeerKAT – IX. The time-averaged properties of the observed pulsar population”, 2023MNRAS.520.4582P
- X. Song et al. (15 authors, including **R. A. Main**) “The Thousand-Pulsar-Array programme on MeerKAT - VIII. The subpulse modulation of 1198 pulsars”, 2023MNRAS.520.4562S
- Rebecca Lin, Marten H. van Kerkwijk, **Robert Main**, Nikhil Mahajan, Ue-Li Pen, “Resolving the Emission Regions of the Crab Pulsar’s Giant Pulses II. Evidence for Relativistic Motion.”, 2023ApJ...945..115L
- Fang Xi Lin; **Robert Main**; Dylan Jow; Dongzi Li; Ue-Li Pen; Marten H. van Kerkwijk. “Plasma lensing near the eclipses of the Black Widow pulsar B1957+20”, 2023MNRAS.519..121L
- R. A. Main** et al. (11 additional authors) “The Thousand-Pulsar-Array programme on MeerKAT — X. Scintillation arcs of 107 pulsars”, 2023MNRAS.518.1086M
- Tim Sprenger; **Robert Main**; Olaf Wucknitz; Geetam Mall; Jason Wu, “Double-lens Scintillometry: The variable scintillation of pulsar B1508+55”. 2022MNRAS.515.6198S
- Lin, Hsiu-Hsien; **Main, Robert**; Wharton, Robert; Bause, Marlon Luis ; Bethapudi, Suryarao ; Li, Dongzi ; Lin, Fang Xi ; Marthi, Visweshwar Ram ; Pen, Ue-Li ; Spitler, Laura G, “DM-power: an algorithm for high precision dispersion measure with application to fast radio bursts”, submitted to MNRAS, arXiv:2208.13677
- Yulan Liu; Joris Verbiest; **Robert Main** et al. (16 additional authors). “Long-term scintillation studies of EPTA pulsars”. 2022A&A...664A.116L
- Kuo Liu et al. (27 additional authors including **Robert Main**) “Detection of quasi-periodic micro-structure in three millisecond pulsars with the Large European Array for Pulsars”. 2022MNRAS.513.4037L
- Ziwei Wu; Joris Verbiest; **Robert Main** et al. (14 additional authors). “Pulsar Scintillation Studies with LOFAR: I The Census”. 2022A&A...663A.116W
- G. Mall; **R. A. Main** et al. (29 additional authors). “Modelling annual scintillation arc variations in PSR J1643–1224 using the Large European Array for Pulsars”. 2022MNRAS.511.1104M
- Antoniadis, J. et al. (127 authors including **R. A. Main**). “The International Pulsar Timing Array second data release: Search for an isotropic Gravitational Wave Background”. 2022MNRAS.510.4873A
- Daniel Baker; Walter Briskin; Marten H. van Kerkwijk; **Robert Main**; Ue-Li Pen; Tim Sprenger; Olaf Wucknitz. “Interstellar Interferometry: Precise Curvature Measurement from Pulsar Secondary Spectra”. 2022MNRAS.510.4573B
- A. Chalumeau et al. (52 authors including **R. A. Main**) “Noise analysis in the European Pulsar Timing Array data release 2 and its implications on the gravitational-wave background search”. 2022MNRAS.509.5538C
- S. Johnston; A. Parthasarathy; **R. A. Main** et al. (15 additional authors). “The Thousand-Pulsar-Array programme on MeerKAT VII: Polarisation properties of pulsars in the Magellanic Clouds”. 2022MNRAS.509.5209J
- R. A. Main**; G. H. Hilmarsson; V. R. Marthi; L. G. Spitler; R. S. Wharton; S. Bethapudi; D. Z. Li; H. -H. Lin. “Scintillation timescale measurement of the highly active FRB20201124A”. 2022MNRAS.509.3172M
- V. R. Marthi; S. Bethapudi; **R. A. Main**; H.-H. Lin; L. G. Spitler; R. S. Wharton; D. Z. Li; T. Gautam; U. -L. Pen; G. H. Hilmarsson. “Burst properties of the highly active FRB20201124A using uGMRT”. 2022MNRAS.509.2209M
- G. H. Hilmarsson; L. G. Spitler; **R. A. Main**; D. Z. Li “Polarization properties of FRB 20201124A from detections with the 100-m Effelsberg Radio Telescope”. 2021MNRAS.508.5354H
- S. Chen et al. (52 authors including **R. A. Main**). “Common-red-signal analysis with 24-yr high-precision timing of the European Pulsar Timing Array: Inferences in the stochastic gravitational-wave background search”. 2021MNRAS.508.4970C
- V. R. Marthi*; D. Simard*; **R. A. Main***; U. -L. Pen; M. H. van Kerkwijk; Y. Gupta; C. Roberts; B. M. Quine, (* denotes corresponding authors). “Scintillation of PSR B1508+55 – the view from a 10,000-km baseline”. 2021MNRAS.506.5160M
- F. X. Lin et al. (8 authors, including **R. A. Main**). “Profile changes associated with DM events in PSR J1713+0747”. 2021MNRAS.508.1115L
- Akanksha Bij et al (10 authors, including **Robert Main**), “Kinematics of Crab Giant Pulses”. 2021ApJ...920...38B
- F. X. Lin; **R. A. Main**; J.P.W. Verbiest; M. Kramer; G. Shaifullah. “Discovery and modelling of broad-scale plasma lensing in black-widow pulsar J2051-0827”. 2021MNRAS.506.2824L

- M. Geyer et al. (11 authors, including **R. A. Main**). “Thousand-Pulsar-Array programme on MeerKAT III: Giant pulse characteristics of PSRJ0540-6919”. 2021MNRAS.505.4468G
- E. Platts; M. Caleb; B. W. Stappers; **R. A. Main** et al. (14 additional authors). “An analysis of the time-frequency structure of several bursts from FRB121102 detected with MeerKAT”. 2021MNRAS.505.3041P
- L. Bondonneau et al. (31 additional authors including **R. A. Main**). “Pulsars with NenuFAR: Backend and pipelines”. 2021A&A...652A..34B
- Robert Main**; Marten van Kerkwijk; Ue-Li Pen; Alexei G. Rudnitskii; Mikhail V. Popov; Vladimir A. Soglasnov; Maxim Lyutikov. “Resolving the Emission Location of the Crab Pulsar’s Giant Pulses”. 2021ApJ...915...65M
- C. Tiburzi et al (25 additional authors, including **R. A. Main**). “The impact of solar wind variability on pulsar timing ”. 2021A&A...647A..84T
- Tim Sprenger; Olaf Wucknitz; **Robert Main**; Daniel Baker; Walter Brisken. “The $\theta - \theta$ diagram: transforming pulsar scintillation spectra to coordinates on highly anisotropic interstellar scattering screens”. 2021MNRAS.500.1114S
- R. A. Main** et al. (22 authors). “Measuring interstellar delays of PSR J0613-0200 over 7 yr, using the Large European Array for Pulsars”. 2020MNRAS.499.1468M
- V. R. Marthi*; T. Gautam; D. Z. Li; H. -H. Lin; **R. A. Main***; A. Naidu; U. -L. Pen; R. S. Wharton* (* denotes corresponding authors). “Detection of 15 bursts from the fast radio burst 180916.J0158+65 with the upgraded Giant Metrewave Radio Telescope”. 2020MNRAS.499L..16M
- Dongzi Li; Fang Xi Lin; **Robert Main**; Ue-Li Pen; Marten H. van Kerkwijk; I. -Sheng Yang. “Constraining magnetic fields through plasma lensing: application to the Black Widow pulsar”. 2019MNRAS.484.5723L
- Nikhil Mahajan; Marten H. van Kerkwijk; **Robert Main**; Ue-Li Pen. “Mode Changing and Giant Pulses in the Millisecond Pulsar PSR B1957+20”. 2018ApJ...867L...2M
- Robert Main**; I. -Sheng Yang; Victor Chan; Dongzi Li; Fang Xi Lin; Nikhil Mahajan; Ue-Li Pen; Keith Vanderlinde; Marten H. van Kerkwijk. “Pulsar emission amplified and resolved by plasma lensing in an eclipsing binary”. Natur.557..522M
- M. T. Hogan et al. (10 authors including **R. A. Main**). “The Onset of Thermally Unstable Cooling from the Hot Atmospheres of Giant Galaxies in Clusters - Constraints on Feedback Models”. 2017ApJ...851...66H
- Robert Main**; Marten van Kerkwijk; Ue-Li Pen; Nikhil Mahajan; Keith Vanderlinde. “Descattering of Giant Pulses in PSR B1957+20”. 2017ApJ...840L..15M
- M. T. Hogan et al. (8 authors including **R. A. Main**). “Mass Distribution in Galaxy Cluster Cores”. 2017ApJ...837...51H
- Robert Main**; Brian McNamara; Paul Nulsen; Helen Russell; Adrian Vantyghem. “A relationship between halo mass, cooling, active galactic nuclei heating and the co-evolution of massive black holes”. 2017MNRAS.464.4360M
- A. N. Vantyghem et al. (20 authors, including **R. A. Main**). “Molecular Gas Along a Bright H α Filament in 2A 0335+096 Revealed by ALMA”. 2016ApJ...832..148V
- H. R. Russell et al. (20 authors, including **R. A. Main**). “ALMA observations of cold molecular gas filaments trailing rising radio bubbles in PKS 0745-191”. 2016MNRAS.458.3134R
- A. N. Vantyghem et al. (8 authors including **R. A. Main**). “Cycling of the powerful AGN in MS 0735.6+7421 and the duty cycle of radio AGN in clusters”. 2014MNRAS.442.3192V
- B. R. McNamara et al. (20 authors, including **Main, R. A.**). “A 10^{10} Solar Mass Flow of Molecular Gas in the A1835 Brightest Cluster Galaxy”. 2014ApJ...785...44M
- H. R. Russell, et al. (17 authors, including **R. A. Main**). “Massive Molecular Gas Flows in the A1644 Brightest Cluster Galaxy”. 2014ApJ...784...78R
- H. R. Russell, B. R. McNamara, A. C. Edge, M. T. Hogan, **R. A. Main**, A. N. Vantyghem. “Radiative efficiency, variability and Bondi accretion on to massive black holes: the transition from radio AGN to quasars in brightest cluster galaxies”. 2013MNRAS.432..530R

OTHER RELEVANT PUBLICATIONS

- Alice Curtin et al. (7 additional authors including **Robert Main**) “One Attempt at Building an Inclusive & Accessible Hybrid Astronomy Conference: FRB 2025”, arXiv:2601.14357

Yash Bhusareet al. (8 additional authors including **Robert Main**) “uGMRT detection of more than a hundred bursts from FRB 20220912A in 300 - 750 MHz frequency range”, 2022ATel15806....1B

Robert Main, Suryarao Bethapudi, Viswesh Marthi. “Detection of 9 new bursts from FRB20201124A with the 100 m Effelsberg Telescope”. 2021ATel14933...1W

Robert Wharton; Suryarao Bethapudi; Viswesh Marthi; **Robert Main**; Dongzi Li; Tasha Gautam; Hsiu-Hsien Lin; Laura Spitler; Ue-Li Pen. “uGMRT localization of FRB20201124A”. 2021ATel14538....1W

Robert Wharton; Suryarao Bethapudi; Tasha Gautam; Dongzi Li; Hsiu-Hsien Lin; **Robert Main**; Viswesh Marthi; Laura Spitler; Ue-Li Pen. “uGMRT detection of a persistent radio source coincident with FRB20201124A”. 2021ATel14529....1W

T. Kitayama et al. (24 additional authors including **R. Main**) “ASTRO-H White Paper - Clusters of Galaxies and Related Science”. 2014arXiv1412.1176K