Robert A. Main — Curriculum Vitae

Research Associate

McGill University

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My main research interests are in pulsars and fast radio bursts, how to use them as a probe of intervening plasma, and in turn, use intervening plasma as a tool for precision measurements of the source's emission and dynamics.

On the quest to discover many new pulsars, I am currently leading 'CHAMPSS' - the CHIME All-sky Multiday Stack Search - which will harness the CHIME/FRB datastream for a full-sky search for pulsars in the north.

Research

Research Associate (McGill University) *2023-present*
- 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. Currently co-supervising two Master's students, and an undergraduate thesis.

Post Doctoral Researcher (Max-Planck-Institut für Radioastronomie) *2018-2023*
- Fundamental Physics in Radio Astronomy group. Developing and applying methods of scintillometry applied to pulsar binaries, with applications to pulsar timing arrays. This primarily used data I proposed for with Effelsberg and LOFAR, and re-purposing LEAP and MeerKAT data for scintillation. Co-supervised two PhD students and one Master's student.

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

- **Effelsberg 100-m telescope** >300 hours over 6 projects as PI, and for supervised graduate students
- **MeerKAT** 36 hours "Understanding the Origin of Interstellar Scintillation"
- **Low Frequency Array (LOFAR)** 56 hours over 4 projects
- **Giant Metrewave Radio Telescope (GMRT)** 45 hours over 4 projects
- **Parkes Observatory / Murriyang** "An Ultra Wide-Band study of plasma lensing in eclipsing binaries"
- **Long Baseline Array** "Imaging the Scattering Screens of PSR J0437-4715"
- **Very Long Baseline Array** "Measuring the Distance to the Crab Pulsar's Scattering Screen"
- **Arecibo Observatory** "The extreme lensing of the Black Widow's radio eclipse"
- **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

2017-2018	**Allen Yen Award**, DAA, University of Toronto	*$ 2,000*
2016-2018	**NSERC PGS-D Research Grant**, NSERC	*$ 21,000 / year*
2015-2016	**Queen Elizabeth II Graduate Scholarship**, University of Toronto	*$ 15000*

Teaching Experience

2015 - 2018	**Various Undergraduate Courses**, "Campus Observer" organizing/running astronomy labs	*U. Toronto*
Winter 2015	**AST 201 - Stars and Galaxies**, Teaching Assistant	*U. Toronto*
Fall 2014	**AST 101 - The Sun and its Neighbours**, Teaching Assistant	*U. Toronto*
Winter 2014	**SCI 238 - Introductory Astronomy**, Teaching Assistant	*U. Waterloo*
Fall 2012,13	**SCI 237 - Exploring the Universe**, Teaching Assistant	*U. Waterloo*
Winter 2013	**PHYS 125 - Physics for Engineers**, Teaching Assistant	*U. Waterloo*

Supervision

2024-	**Laurent Tarabout**, Bachelor's thesis, co-supervised with Prof. Victoria Kaspi	*McGill*
2024-	**Wenke Xia**, MSc, co-supervised with Profs. Victoria Kaspi & Jason Hessels	*McGill*
2023-	**Magnus L'Argent**, MSc, co-supervised with Prof. Victoria Kaspi	*McGill*
2023-2024	**Abigail Denney**, Bachelor's thesis, co-supervised with Prof. Victoria Kaspi	*McGill*
2022-2023	**Senate Lekomola**, MSc, co-supervised with Dr. Marisa Geyer	*U. Cape Town*
2020-	**Geetam Mall**, PhD, co-supervised with Profs. Ue-Li Pen & Marten van Kerkwijk	*U.Toronto*
2019-20	**Geetam Mall**, MSc Student	*MPIfR*
2019-23	**Tim Sprenger**, PhD, co-supervized with Dr. Olaf Wucknitz	*MPIfR*

Selection of Presentations

Nov. 2024	**Université de Montréal**, "Recent Developments in Precision Scintillometry"
Oct. 2024	**Florida Space Institute, Scintillometry 2024**, "Scintillometry Review - opening talk at conference"
Mar. 2023	**Swinburne University of Technology**, "Scattering screens and surprises: A survey and study of scintillation arcs"
Mar. 2023	**CSIRO Sydney**, "Scattering screens and surprises: A survey and study of scintillation arcs"
Oct. 2022	**Jodrell Bank Centre for Astrophysics**, "Screens, orbits, and surprises: long-term scintillation arc analyses"
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"
2017 -	**Regular speaker at scintillometry, EPTA meetings, and GLOW symposium series**,

Conference Organization

July 2024	**FRB 2024**, Member of LOC	*McGill*
Sept. 2022	**XV Bonn Neutron Star Workshop**, Member of SOC	*MPIfR*
Mar. 2020	**EPTA Meeting, Spring 2020**, Member of LOC	*Remote*
Nov. 2019	**Scintillometry 2019, >70 participants**, Head member of SOC and LOC	*MPIfR*
Oct. 2018	**Scintillometry 2018, >50 participants**, Invited Member of SOC	*Shanghai*
Oct. 2017	**Scintillometry 2017, >50 participants**, Member of LOC	*U. Toronto*

Outreach & Professional Development

Nov. 2023	**Trottier Space Institute Public Talk**, “Harnessing the Power of Interstellar Plasma Lenses”
Mar. 2023	**MPIfR Fundi Tutorials**, Hands on Tutorial with Students — https://github.com/ramain/FundiScintTutorial2023 “Scintillation and You! Theory and Applications”
Oct. 2021	**MPIfR Fundi Tutorials**, Hands on Tutorial with Students — https://github.com/ramain/FundiScintTutorial2021 “Scintillation and You! Theory and Applications”
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 - 2017	**University of Toronto Astrotours**, Telescope Coordinator — opening 8” and 16” dome telescopes to public
2014 - 2015	**University of Toronto Astrotours**, Technology Demo Coordinator — exploring the universe in virtual reality

Publications

H-index of 30, 10 papers as first or corresponding author, 18 papers as second or third author

Published

Cherry Ng. et al. (23 additional authors, including **Robert Main**), "Polarization properties of 28 repeating fast radio bursts sources with CHIME/FRB", submitted to ApJ

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

V. Shah et al. (48 additional authors including **Robert Main**). "A repeating fast radio burst source in the outskirts of a quiescent galaxy", 2024arXiv241023374S

Daniel Reardon, **Robert Main** et al. (11 additional authors), "Unveiling inner plasma structures of a pulsar bow shock and the Local Bubble", accepted in Nature Astronomy, https://arxiv.org/pdf/2410.21390

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", 2024arXiv241007307S

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

S. Bethapudi et al. (6 additional authors including **Robert Main**). "Rotation Measure study of FRB 20180916B with the uGMRT", Submitted to MNRAS 2024, 2024arXiv240912584B

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

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". 2024arXiv240813215S

Kenzie Nimmo et al (28 additional authors including **Robert Main**), "Magnetospheric origin of a fast radio burst constrained using scintillation ", accepted in Nature, 2024arXiv240611053N

IPTA Collaboration, "Comparing Recent Pulsar Timing Array Results on the Nanohertz Stochastic Gravitational-wave Background" 2024ApJ...966..105A

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", accepted in Nature 2024, 2024arXiv240209304M

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"

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 Leclere 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

IPTA Collaboration, "Comparing recent PTA results on the nanohertz stochastic gravitational wave background", 2023arXiv230900693T

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

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 Brisken; 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 Hα 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

Unrefereed or In Review

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

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

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