

2020 - Refereed publications with the INAF-IRA radio telescopes

In the following list, refereed publications involving the Medicina 32-m, Noto 32-m and Northern Cross radio telescopes have been divided in three categories according to the observing technique/telescope network: VLBI/interferometric publications, Single-Dish publications and International VLBI Service for Geodesy and Astrometry (IVS) publications.

VLBI

- 1) Asadi, S., Zackrisson, E., Varenius, E., et al. 2020, MNRAS 492, 742. "The case against gravitational millilensing in the multiply-imaged quasar B1152+199"
- 2) Atri, P., Miller-Jones, J. C. A., Bahramian, A., et al. 2020, MNRAS 493, L81. "A radio parallax to the black hole X-ray binary MAXI J1820+070"
- 3) Bartkiewicz, A., Sanna, A., Szymczak, M., et al. 2020, A&A 637, A15. "The nature of the methanol maser ring G23.657-00.127. II. Expansion of the maser structure"
- 4) Blinov, D., Casadio, C., Mandarakas, N., et al. 2020, A&A 635, A102. "Global alignments of parsec-scale AGN radio jets and their polarization planes"
- 5) Bobylev, V. V., Krisanova, O. I., Bajkova, A. T. 2020, AstL 46, 439. "Study of the Galactic Rotation Based on Masers and Radio Stars with VLBI Measurements of Their Parallaxes"
- 6) Boccardi, B., Perucho, M., Casadio, C., et al. 2020, accepted for publication on A&A, <https://arxiv.org/abs/2012.14831> . "Jet collimation in NGC 315 and other nearby AGN"
- 7) Bruni, G., Savolainen, T., Gómez, J. L., et al. 2020, Advances in Space Research 65, 712. "Active galactic nuclei imaging programs of the RadioAstron mission"
- 8) Chen, H., Garrett, M. A., Chi, S., et al. 2020, A&A 638, A113. "Searching for obscured AGN in $z \sim 2$ submillimetre galaxies"
- 9) Chime/Frb Collaboration 2020, Nature 582, 351. "Periodic activity from a fast radio burst source"
- 10) Fan, L., Chen, W., An, T., et al. 2020, ApJL 905, L32. "The Hyperluminous, Dust-obscured Quasar W2246-0526 at $z = 4.6$: Detection of Parsec-scale Radio Activity"
- 11) Giroletti, M., Munari, U., Körding, E., et al. 2020, A&A 638, A130. "Very long baseline interferometry imaging of the advancing ejecta in the first gamma-ray nova V407 Cygni"
- 12) Gusinskaia, N. V., Hessels, J. W. T., Degenaar, N., et al. 2020, MNRAS 492, 2858. "Quasi-simultaneous radio and X-ray observations of Aql X-1 : probing low luminosities"
- 13) Kool, E. C., Reynolds, T. M., Mattila, S., et al. 2020, MNRAS 498, 2167. "AT 2017gbl: a dust obscured TDE candidate in a luminous infrared galaxy"
- 14) Kovalev, Yu. A., Kardashev, N. S., Kovalev, Y. Y., et al. 2020, Advances in Space Research 65,

745. "RATAN-600 and RadioAstron reveal the neutrino-associated blazar TXS 0506+056 as a typical variable AGN"

15) Kovalev, Y. Y., Kardashev, N. S., Sokolovsky, K. V., et al. 2020, *Advances in Space Research* 65, 705. "Detection statistics of the RadioAstron AGN survey"

16) Kravchenko, E. V., Gómez, J. L., Kovalev, Y. Y., et al. 2020, *Advances in Space Research* 65, 720. "The jet of S5 0716 + 71 at μ as scales with RadioAstron"

17) Kravchenko, E. V., Gómez, J. L., Kovalev, Y. Y., et al. 2020, *ApJ* 893, 68. "Probing the Innermost Regions of AGN Jets and Their Magnetic Fields with RadioAstron. III. Blazar S5 0716+71 at Microarcsecond Resolution"

18) Krezinger, M., Frey, S., Paragi, Z. et al. 2020, *Symmetry* 12, 527. "High-Resolution Radio Observations of Five Optically Selected Type 2 Quasars"

19) Lee, K. H., Bartos, I., Privon, G. C., et al. 2020, *ApJL* 902, L23. "FIRST J1419+3940 as the First Observed Radio Flare from a Neutron Star Merger"

20) Liu, N., Lambert, S., B., Zhu, Z., et al. 2020, *A&A* 634, A28. "Systematics and accuracy of VLBI astrometry: A comparison with Gaia Data Release 2"

21) Locatelli, N. T., Bernardi, G., Bianchi, G., et al. 2020, *MNRAS* 494, 1229. "The Northern Cross fast radio burst project - I. Overview and pilot observations at 408 MHz"

22) Losacco, M., Di Lizia, P., Massari, M., et al. 2020, *Acta Astronautica* 167, 374. "Initial orbit determination with the multibeam radar sensor BIRALES"

23) MAGIC Collaboration 2020, *MNRAS* 492, 5354. "Monitoring of the radio galaxy M 87 during a low-emission state from 2012 to 2015 with MAGIC"

24) Marcote, B., Nimmo, K., Hessels, J. W. T., et al. 2020, *Nature* 577, 190. "A repeating fast radio burst source localized to a nearby spiral galaxy"

25) Mohan, P., An, T., Yang, J. 2020, *ApJL* 888, L24. "The Nearby Luminous Transient AT2018cow: A Magnetar Formed in a Subrelativistically Expanding Nonjetted Explosion"

26) Muxlow, T. W. B., Thomson, A. P., Radcliffe, J. F., et al. 2020, *MNRAS* 495, 1188. "The e-MERGE Survey (e-MERLIN Galaxy Evolution Survey): overview and survey description "

27) Olech, M., Szymczak, M., Wolak, P., et al. 2020, *A&A* 634, A41. "Long-term multi-frequency maser observations of the intermediate-mass young stellar object G107.298+5.639"

28) Pashchenko, I. N., Plavin, A. V., Kutkin, A. M., et al. 2020, *MNRAS* 499, 4515. "A bias in VLBI measurements of the core shift effect in AGN jets"

29) Peng, H., Wu, Z., Zhang, B., et al. 2020, *A&A* 638, A78. "Radio properties of the OH megamaser galaxy IRAS 02524+2046"

- 30)** Plavin, A. V., Kovalev, Y. Y., Kovalev, Y. A., et al. 2020, accepted for publication on ApJ. <https://arxiv.org/abs/2009.08914> . “Directional association of TeV to PeV astrophysical neutrinos with radio blazars”
- 31)** Plavin, A., Kovalev, Y. Y., Kovalev, Y. A., et al. 2020, ApJ 894, 101. “Observational Evidence for the Origin of High-energy Neutrinos in Parsec-scale Nuclei of Radio-bright Active Galaxies”
- 32)** Schulz, R., Morganti, R., Nyland, K., et al. 2020, accepted for publication in A&A, <https://arxiv.org/abs/2010.05996> . “The parsec-scale HI outflows in powerful radio galaxies”
- 33)** Shakhvorostova, N. N., Sobolev, A. M., Moran, J. M., et al. 2020, Advances in Space Research 65, 772. “RadioAstron probes the ultra-fine spatial structure in the H₂O maser emission in the star forming region W49N”
- 34)** Shen, J., Zheng, X.-W. 2020, Research in Astronomy and Astrophysics 20, 159. “The bar and spiral arms in the Milky Way: structure and kinematics”
- 35)** Stacey, H. R., Lafontaine, A., McKean, J. P. 2020, MNRAS 493, 5290. “Smoke on the water: CO and H₂O in a circumnuclear disc around a quasar at redshift 2.64”
- 36)** Surcis, G., Tarchi, A., Castangia, P. 2020, A&A 637, A57. “VLBI observations of the H₂O gigamaser in TXS 2226-184”
- 37)** Tavani, M., Verrecchia, F., Casentini, C., et al. 2020, ApJL 893, L42. “Gamma-Ray and X-Ray Observations of the Periodic-repeater FRB 180916 during Active Phases”
- 38)** Traianou, E., Krichbaum, T. P., Boccasardi, B., et al. 2020, A&A 634, A112. “Localizing the γ -ray emitting region in the blazar TXS 2013+370”
- 39)** Vallée, J., P. 2020, MNRAS 494, 1134. “Interarm islands in the Milky Way - the one near the Cygnus spiral arm”
- 40)** Vega-García, L., Lobanov, A. P., Perucho, M., et al. 2020, A&A 641, A40. “Multiband RadioAstron space VLBI imaging of the jet in quasar S5 0836+710”
- 41)** Veres, P., M., Gabányi, K. E., Frey, S. 2020, Symmetry 12, 1516. “Very Long Baseline Interferometry Observations of the Proposed Radio Counterpart of an EGRET Source”
- 42)** Zakhvatkin, M. V., Andrianov, A. S., Avdeev, V. Yu., et al. 2020, Advances in Space Research 65, 798. “RadioAstron orbit determination and evaluation of its results using correlation of space-VLBI observations”
- 43)** Yang, J., Gurvits, L. I., Paragi, Z., et al. 2020, MNRAS 495, 71. “A parsec-scale radio jet launched by the central intermediate-mass black hole in the dwarf galaxy SDSS J090613.77+561015.2”
- 44)** Yang, J., Paragi, Z., An, T., et al. 2020, MNRAS 494, 1744. “A two-sided but significantly beamed jet in the supercritical accretion quasar IRAS F11119+325”
- 45)** Zhang, Y., An, T., Frey, S. 2020, Science Bulletin 65, 525. “Fast jet proper motion discovered

in a blazar at $z=4.72$ ”

46) Zhang, Q., Hallinan, G., Brisken, W., et al. A. 2020, ApJ 897, 11. “Multiepoch VLBI of L Dwarf Binary 2MASS J0746+2000AB: Precise Mass Measurements and Confirmation of Radio Emission from Both Components”

Single-Dish

1) Brand, J., Engels, D., Winnberg, A. 2020, A&A 644, A45. “Water vapour masers in long-period variable stars. II. The semi-regular variables R Crt and RT Vir”

2) Giroletti, M., Righini, S. 2020, MNRAS 492, 2807. “A flat-spectrum flare in S4 0444+63 revealed by a new implementation of multiwavelength single-dish observations”

3) Larionov, V. M., Jorstad, S. G., Marscher, A. P., et al. 2020, MNRAS 492, 3829. “Multiwavelength behaviour of the blazar 3C 279: decade-long study from γ -ray to radio”

4) Levshakov, S. A., Kozlov, M. G., Agafonova, I. I. 2020, MNRAS 498, 3624. “Constraints on the electron-to-proton mass ratio variation at the epoch of reionization”

5) Losacco, M., Di Lizia, P., Massari, M., et al. 2020, Acta Astronautica 167, 374. “Initial orbit determination with the multibeam radar sensor BIRALES”

6) MAGIC Collaboration 2020, accepted for publication on MNRAS, <https://arxiv.org/abs/2012.01348> . “Multiwavelength variability and correlation studies of Mrk 421 during historically low X-ray and γ -ray activity in 2015–2016”

IVS

1) Abbondanza, C., Chin, T. M., Gross, R. S., et al. 2020, Advances in Space Research, 65, 1235. “2A sequential estimation approach to terrestrial reference frame determination”

2) Behrend, D., Thomas, C., Gipson, J. et al. 2020, J Geod 94, 100. “On the organization of CONT17”

3) Charlot, P., Jacobs, C. S., Gordon, D., et al. 2020, A&A 644, A159. “The third realization of the International Celestial Reference Frame by very long baseline interferometry”

4) Clivati, C., Aiello, R., Bianco, G., et al. 2020, Optica 7, 1031. “Common-clock very long baseline interferometry using a coherent optical fiber link”

5) Glomsda, M., Bloßfeld, M., Seitz, M., et al. 2020, Geod 94, 90. “Benefits of non-tidal loading applied at distinct levels in VLBI analysis”

6) Jagoda, M., Rutkowska, M., Suchocki, C., et al. 2020, Journal of Applied Geodesy 14, 121. “Determination of the tectonic plates motion parameters based on SLR, DORIS and VLBI stations positions”

- 7) Malkin, Z. M. 2020, *Astronomy Reports* 64, 168. "Statistical Analysis of the Results of 20 Years of Activity of the International VLBI Service for Geodesy and Astrometry"
- 8) Nurul Huda, I., Lambert, S., Bizouard, C., et al. 2020, *Geophysical Journal International* 220, 759 "Nutation terms adjustment to VLBI and implication for the Earth rotation resonance parameters"