

## 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: VLBI publications, Single-Dish publications, International VLBI Service for Geodesy and Astrometry (IVS) publications and interferometric publications with the Northern Cross radio telescope.

### 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  $\mu$  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) Losacco, M., Di Lizia, P., Massari, M., et al. 2020, *Acta Astronautica* 167, 374. "Initial orbit determination with the multibeam radar sensor BIRALES"
- 22) MAGIC Collaboration 2020, *MNRAS* 492, 5354. "Monitoring of the radio galaxy M 87 during a low-emission state from 2012 to 2015 with MAGIC"
- 23) 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"
- 24) Mohan, P., An, T., Yang, J. 2020, *ApJL* 888, L24. "The Nearby Luminous Transient AT2018cow: A Magnetar Formed in a Subrelativistically Expanding Nonjetted Explosion"
- 25) 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 "
- 26) 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"
- 27) 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"
- 28) Peng, H., Wu, Z., Zhang, B., et al. 2020, *A&A* 638, A78. "Radio properties of the OH megamaser galaxy IRAS 02524+2046"
- 29) 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”

**30)** 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”

**31)** 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”

**32)** 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 H<sub>2</sub>O maser emission in the star forming region W49N”

**33)** 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”

**34)** Stacey, H. R., Lafontaine, A., McKean, J. P. 2020, MNRAS 493, 5290. “Smoke on the water: CO and H<sub>2</sub>O in a circumnuclear disc around a quasar at redshift 2.64”

**35)** Surcis, G., Tarchi, A., Castangia, P. 2020, A&A 637, A57. “VLBI observations of the H<sub>2</sub>O gigamaser in TXS 2226-184”

**36)** Traianou, E., Krichbaum, T. P., Boccardi, B., et al. 2020, A&A 634, A112. “Localizing the  $\gamma$ -ray emitting region in the blazar TXS 2013+370”

**37)** Vallée, J., P. 2020, MNRAS 494, 1134. “Interarm islands in the Milky Way - the one near the Cygnus spiral arm”

**38)** 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”

**39)** 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”

**40)** 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”

**41)** 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”

**42)** 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”

**43)** Zhang, Y., An, T., Frey, S. 2020, Science Bulletin 65, 525. “Fast jet proper motion discovered in a blazar at  $z=4.72$ ”

**44)** 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 Crv 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  $\gamma$ -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  $\gamma$ -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"

## Northern Cross

- 1) 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"
- 2) Pilia, M., Burgay, M., Possenti, et al 2020, ApJ Letters 896, L40. "The Lowest-frequency Fast Radio Bursts: Sardinia Radio Telescope Detection of the Periodic FRB 180916 at 328 MHz"
- 3) 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"