

# Maciek Wielgus

Complete list of papers. Updated: November 2023

## Journal papers

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105. *Circular Polarization of Simulated Images of Black Holes*, Yoshi, A., Prather, B., Chan, C.-K., **Wielgus, M.**, and Gammie, C., under internal EHTC review,
104. *The putative center in NGC 1052*, Baczkó A.-K., Kadler, M., Ros, E., Fromm, C. M., **Wielgus, M.**, et al. + EHTC, under internal EHTC review,
103. *Extreme Light Bending in Spherically-Symmetric Black Hole Spacetimes: Universal Characteristics and Strong-Field Tests of Gravity*, Kocherlakota, P., Rezzolla, L., Roy, R., and **Wielgus, M.**, under internal EHTC review, arXiv:2307.16841,
102. *Ordered magnetic fields around the 3C 84 central black hole*, Paraschos, G. F., Kim, J.-Y., **Wielgus, M.**, et al. + EHTC, submitted to A&A,
101. *Fitting Sagittarius A\* light curves with a hot spot model: Bayesian modeling of QU loops in millimeter band*, Yfantis, A., Moscibrodzka, M., **Wielgus, M.** + 2 authors, submitted to A&A, arXiv:2310.07762,
100. *Polarized signatures of orbiting hot spots: special relativity impact and probe of spacetime curvature*, Vincent, F., **Wielgus, M.** + 3 authors, submitted to A&A, arXiv:2309.10053,
99. *Orbital Polarimetric Tomography of a Flare Near Sagittarius A\* Supermassive Black Hole*, Levis, A., Bouman, K., Chael, A., **Wielgus, M.**, and Srinivasan, P., submitted to Nature Astronomy, arXiv:2310.07687,
98. *Energy distribution and substructure formation in astrophysical MHD simulations*, Kayanikhoo, F., Cemeljic, M., **Wielgus, M.**, and Kluzniak, W., submitted to MNRAS, arXiv:2308.16062,
97. *The internal Faraday screen of Sagittarius A\**, **Wielgus, M.**, Issaoun, S., Marti-Vidal, I., + 5 authors, accepted in A&A, arXiv:2308.11712,
96. *A search for pulsars around Sgr A\* in the first Event Horizon Telescope dataset*, Torne, P. et al. + EHTC, accepted in ApJ, arXiv:2308.15381,
95. *Polarimetric geometric modeling for mm-VLBI observations of black holes using calibration-invariant data products*, Roelofs, F., Johnson, M., Chael, A., Janssen, M., **Wielgus, M.** et al. + EHTC, ApJL 957, L21 (2023),
94. *First M87 Event Horizon Telescope Results IX: Limits on Near-Horizon Circular Polarization*, EHTC, ApJL 957, L20 (2023),
93. *Reference Array and Design Consideration for the next-generation Event Horizon Telescope*, Doeleman, S. S. et al., Galaxies 11(5), 107 (2023), arXiv:2306.08787,
92. *Orbital configurations of spaceborne interferometers for studying photon rings of supermassive black holes*, Hudson, B., Gurvits, L., **Wielgus, M.** + 3 authors, Acta Astronautica 213, 681–693 (2023), arXiv:2309.17127,
91. *The EB-correlation in Resolved Polarized Images: Connections to Astrophysics of Black Holes*, Emami, R., Doeleman, S., **Wielgus, M.**, et al., ApJ 955, 6 (2023), arXiv:2305.00387,
90. *Polarimetry and Astrometry of NIR Flares as Event Horizon Scale, Dynamical Probes for the Mass of Sgr A\**, GRAVITY Collaboration et al., A&A 677, L10 (2023), arXiv:2307.11821,
89. *Unraveling Twisty Linear Polarization Morphologies in Black Hole Images*, Emami, R., Ricarte, A., Wong, G., + 26 authors, ApJ 950, 38 (2023), arXiv:2210.01218,
88. *Comparison of Polarized Radiative Transfer Codes used by the EHT Collaboration*, Prather, B., Dexter, J., Moscibrodzka, M., + 270 authors, ApJ 950, 35 (2023), arXiv:2303.12004,
87. *Key Science Goals for the Next-Generation Event Horizon Telescope*, Johnson, M., Akiyama, K., Blackburn, L., et al., Galaxies 11(3), 61 (2023), arXiv:2304.11188,
86. *Spectra of Puffy Accretion Discs: the kynbb Fit*, Lancova, D., Yilmaz, A., **Wielgus, M.**, + 3 authors, Astronomical Notes 344, e20230023 (2023), arXiv:2209.03713,
85. *The Event Horizon Telescope Image of the Quasar NRAO 530*, Jorstad, S., **Wielgus, M.**, Lico, R., + 267 authors, ApJ 943, 170 (2023), arXiv:2302.04622,
84. *Tracing hot spot motion using the next generation Event Horizon Telescope*, Emami, R., Tiede, P., Doeleman, S. S., Roelofs, F., **Wielgus, M.**, + 17 authors, Galaxies 11(1), 23 (2023), arXiv:2211.06773,

83. *Probing plasma composition with the next generation Event Horizon Telescope (ngEHT)*, Emami, R., Anantua, R., Ricarte, A., + 15 authors, *Galaxies* 11(1), 11 (2023), arXiv:2211.07306,
82. *Polarimetric signatures of hot spots in black hole accretion flows*, Vos, J., Moscibrodzka, M., and **Wielgus, M.**, *A&A* 668, A185 (2022), arXiv:2209.09931,
81. *Photon ring test of the Kerr hypothesis: variation in the ring shape*, Pagnat, H., Lupsasca, A., Vincent, F., and **Wielgus, M.**, *A&A* 668, A11 (2022), arXiv:2206.02781,
80. *Images and photon ring signatures of thick disks around black holes*, Vincent, F., Gralla, S., Lupsasca, A., and **Wielgus, M.**, *A&A* 667, A170 (2022), arXiv:2206.12066,
79. *Collimation of the relativistic jet in the quasar 3C 273*, Okino, H., Akiyama, K., Asada, K., +32 authors, *ApJ* 940, 65 (2022), arXiv:2112.12233,
78. *A first search of transients in the galactic center from 230 GHz ALMA observations*, Mus, A., Marti-Vidal, I., **Wielgus, M.**, and Stroud, G., *A&A* 666, A39 (2022), arXiv:2208.08248,
77. *Orbital motion near Sagittarius A\*. Constraints from polarimetric ALMA observations*, **Wielgus, M.**, Moscibrodzka, M., Vos, J., Gelles, Z., + 5 authors, *A&A* 665, L6 (2022), arXiv:2209.09926,
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75. *The photon ring in M87\**, Broderick, A., Pesce, D., Gold, R. + 48 authors, *ApJ* 935, 61 (2022), arXiv:2208.09004,
74. *Resolving the inner parsec of the blazar J1924–2914 with the Event Horizon Telescope*, Issaoun, S., **Wielgus, M.**, Jorstad, S., Krichbaum, T. + 264 authors, *ApJ* 934, 145 (2022), arXiv:2208.01662,
73. *Observational properties of puffy disks: radiative GRMHD spectra of mildly sub-Eddington accretion*, **Wielgus, M.**, Lancova, D., Straub, O., Kluzniak, W. + 6 authors, *MNRAS* 514, 780 (2022), arXiv:2202.08831,
72. *Characterizing and Mitigating Intraday Variability: Reconstructing Source Structure in Accreting Black Holes with mm-VLBI*, Broderick, A., Gold, R., Georgiev, B., + 264 authors, *ApJL* 930, L21 (2022),
71. *A Universal Power-law Prescription for Variability from Synthetic Images of Black Hole Accretion Flows*, Georgiev, B., Pesce, D., Broderick, A., Wong, G., Dhruv, V., **Wielgus, M.** + 263 authors, *ApJL* 930, L20 (2022),
70. *Millimeter Light Curves of Sagittarius A\* Observed during the 2017 Event Horizon Telescope Campaign*, **Wielgus, M.**, Marchili, N., Marti-Vidal, I., Keating, G. K. + 263 authors, *ApJL* 930, L19 (2022), arXiv:2207.06829,
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68. *First Sagittarius A\* Event Horizon Telescope Results. VI. Testing the Black Hole Metric*, EHT Collaboration (270 authors), *ApJL* 930, L17 (2022),
67. *First Sagittarius A\* Event Horizon Telescope Results. V. Testing Astrophysical Models of the Galactic Center Black Hole*, EHT Collaboration (274 authors), *ApJL* 930, L16 (2022),
66. *First Sagittarius A\* Event Horizon Telescope Results. IV. Variability, Morphology, and Black Hole Mass*, EHT Collaboration (269 authors), *ApJL* 930, L15 (2022),
65. *First Sagittarius A\* Event Horizon Telescope Results. III. Imaging of the Galactic Center Supermassive Black Hole*, EHT Collaboration (270 authors), *ApJL* 930, L14 (2022),
64. *First Sagittarius A\* Event Horizon Telescope Results. II. EHT and Multiwavelength Observations, Data Processing, and Calibration*, EHT Collaboration (337 authors), *ApJL* 930, L13 (2022),
63. *First Sagittarius A\* Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole in the Center of the Milky Way*, EHT Collaboration (388 authors), *ApJL* 930, L12 (2022),
62. *The science case and challenges of space-borne sub-millimeter interferometry*, Gurvits, L., Paragi, Z. + 52 authors, *Acta Astronautica* 196, 314–333 (2022), arXiv:2204.09144,
61. *MeqSilhouette v2: Spectrally-resolved polarimetric synthetic data generation for the Event Horizon Telescope*, Natarajan, I., Deane, R., Marti-Vidal, I., Roelofs, F., Janssen, M., **Wielgus, M.** +14 authors, *MNRAS* 512, 490 (2022), arXiv:2202.11478,
60. *The intrinsic structure of Sagittarius A\* at 1.3 cm and 7 mm*, Cho, I., Zhao, G.-Y., Kawashima, T., +63 authors, *ApJ* 926, 108 (2022), arXiv:2112.04929,

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58. *Photon rings of spherically symmetric black holes and robust tests of non-Kerr metrics*, **Wielgus, M.**, *PRD* 104, 124058 (2021), arXiv:2109.10840,
57. *Event Horizon Telescope observations of the jet launching and collimation zone in Centaurus A*, Janssen, M., Falcke, H., Kadler, M., Ros, E., **Wielgus, M.**, +266 authors, *Nat Astron* 5 1017-1028 (2021), arXiv:2111.03356,
56. *Persistent Non-Gaussian Structure in the Image of Sagittarius A\* at 86 GHz*, Issaoun, S., Johnson, M., Blackburn, L., Broderick, A., Tiede, P., **Wielgus, M.**, + 23 authors, *ApJ* 915, 99 (2021), arXiv:2104.07610,
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51. *Polarimetric Properties of Event Horizon Telescope Targets from ALMA*, Goddi, C., + 249 authors, *ApJL* 910, L14 (2021),
50. *First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon*, EHT Collaboration (240 authors), *ApJL* 910, L13 (2021),
49. *First M87 Event Horizon Telescope Results. VII. Polarization of the Ring*, EHT Collaboration (239 authors), *ApJL* 910, L12 (2021),
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40. *Closure Statistics in Radio Interferometric Data*, Blackburn, L., Pesce, D., Johnson, M., **Wielgus, M.**, Chael, A., Christian, P., Doeleman, S., *ApJ* 894, 31 (2020), arXiv:1910.02062,
39. *SYMBA: An end-to-end VLBI synthetic data generation pipeline. Simulating Event Horizon Telescope observations of M 87*, Roelofs, F., Janssen, M., + 207 authors, *A&A* 636, A5 (2020)
38. *Universal Interferometric Signatures of a Black Hole's Photon Ring*, Johnson, M., + 16 authors, *Science Advances* 6, eaaz1310 (2020), arXiv:1907.04329,
37. *Optically thin outbursts of rotating neutron stars can not be spherical*, **Wielgus, M.**, *MNRAS*, 488, 4937 (2019), arXiv:1907.11268,
36. *Puffy Accretion Disks: Sub-Eddington, Optically Thick, and Stable*, Lančová, D., Abarca, D., Kluźniak, W., **Wielgus, M.**, + 5 authors, *ApJL* 884, L37 (2019), arXiv:1908.08396,
35. *EHT-HOPS Pipeline for Millimeter VLBI Data Reduction*, Blackburn, L., Chan, C.-K., Crew, G., Fish, V., Issaoun, S., Johnson, M. D., **Wielgus, M.**, + 8 authors, *ApJ* 882, 23 (2019), arXiv:1903.08832,
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## Other publications

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32. *Od obserwacji Eddingtona do obrazu czarnej dziury (From Eddington's observation to the shadow of a black hole)*, **Wielgus, M.**, Delta, March 2020, link,
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