

Aleksandra Olejak



Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences

18 Bartycka Street, 00-716 Warsaw, Poland



✉ aolejak@camk.edu.pl

🌐 <https://orcid.org/0000-0002-6105-6492>

Work experience in Science









- 10/2019 –  **Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences.** PhD candidate and contractor under the MAESTRO research grant: *Astrophysics of Gravitational Waves* (PI K. Belczynski). Supervisor: prof. Krzysztof Belczynski.
- 10/2018 – 10/2019  **Center of Theoretical Physics, Polish Academy of Sciences.** A scholarship student and contractor under the MAESTRO research grant: *Constraints on the dark energy properties from observations of active galactic nuclei* (PI B. Czerny). Supervisor: prof. Bozena Czerny.

Education

- 2019  **University of Warsaw, Faculty of Physics.** M.Sc. in Astronomy.
- 2017  **Warsaw University of Technology, Faculty of Physics.** B.Sc. in Applied Physics.

Research Publications

Refereed Journal Articles









-  **Olejak, A., & Belczynski, K.** (2021). The Implications of High BH Spins on the Origin of BH-BH Mergers. *The Astrophysical Journal Letters*, 921(1), L2. Cited: 2.
-  **Olejak, A., Belczynski, K., & Ivanova, N.** (2021). Impact of common envelope development criteria on the formation of LIGO/Virgo sources. *Astronomy Astrophysics*, 651, A100. Cited: 9.
-  **Olejak, A., Fishbach, M., Belczynski, K., Holz, D. E., Lasota, J. P., Miller, M. C., & Bulik, T.** (2020). The Origin of Inequality: Isolated Formation of a $30+10 M_{\odot}$ Binary Black Hole Merger. *The Astrophysical Journal Letters*, 901(2), L39. Cited: 33.
-  **Olejak, A., Belczynski, K., Bulik, T., & Sobolewska, M.** (2020). Synthetic catalog of black holes in the Milky Way. *Astronomy Astrophysics*, 638, A94. Cited: 24.
-  Czerny, B., **Olejak, A.**, Rałowski, M., Kozłowski, S., Martinez Aldama, M. L., Zajacek, M., . . . Sarna, M. (2019). Time Delay Measurement of Mg II Line in CTS C30.10 with SALT. *The Astrophysical Journal*, 880(1), 46. Cited: 27.
-  Belczynski, K., Klencki, J., Fields, C. E., **Olejak, A.**, Berti, E., Meynet, G., . . . Lasota, J. P. (2020). Evolutionary roads leading to low effective spins, high black hole masses, and O1/O2 rates for LIGO/Virgo binary black holes. *Astronomy Astrophysics*, 636, A104. Cited: 213.
-  Zajaček, M., Czerny, B., Martinez-Aldama, M. L., Rałowski, M., **Olejak, A.**, Przyłuski, R., . . . Genade, A. (2021). Time Delay of Mg II Emission Response for the Luminous Quasar HE 0435-4312: toward Application of the High-accretor Radius-Luminosity Relation in Cosmology. *The Astrophysical Journal*, 912(1), 10. Cited: 9.
-  Zajaček, M., Czerny, B., Martinez-Aldama, M. L., Rałowski, M., **Olejak, A.**, Panda, S., . . . Sarna, M. (2020). Time-delay Measurement of Mg II Broad-line Response for the Highly Accreting Quasar HE 0413-4031: Implications for the Mg II-based Radius-Luminosity Relation. *The Astrophysical Journal*, 896(2), 146. Cited: 12.

Other Articles




- 1 **Olejak, A.**, Fryer, C., Belczynski, K., & Baibhav, V. (2022). *in preparation*.
- 2 Belczynski, K., Romagnolo, A., **Olejak, A.**, Klencki, J., Chattopadhyay, D., Stevenson, S., ... Crowther, P. A. (2021). *The Uncertain Future of Massive Binaries Obscures the Origin of LIGO/Virgo Sources*. Eprint arXiv:2108.10885, accepted for publication in *The Astrophysical Journal*. Cited: 9.
- 3 Romagnolo, A., **Olejak, A.**, Hypki, A., Wiktorowicz, G., & Belczynski, K. (2021). *Testing the presence of a dormant black hole inside HR 6819*. Eprint arXiv:2107.08930, submitted to *Astronomy & Astrophysics*.
- 4 Czerny, B., **Olejak, A.**, Ralowski, M., Kozłowski, S., Aldama, M. L. M., Zajacek, M., ... Sarna, M. (2021). *VizieR Online Data Catalog: Spectroscopy & V-band monitoring of CTS C30.10 (Czerny+, 2019)*.
- 5 Belczynski, K., Bulik, T., **Olejak, A.**, Chruslinska, M., Singh, N., Pol, N., ... Holz, D. E. (2018). *Binary neutron star formation and the origin of GW170817*. Eprint arXiv:1812.10065. Cited: 23.

Other Activity

Conferences

- 16/09/2021  **Online**, Talk during *XL Congress of the Polish Astronomical Society 2021*. Presentation title: *Impact of common envelope development criteria on the formation of LIGO/Virgo sources*.
- 30/08/2021  **Lisbon, Portugal**, Talk during *Global meeting of the GWVerse COST action Lisbon*. Presentation title: *Impact of common envelope development criteria on the formation of LIGO/Virgo sources*.
- 9/07/2021  **Online**, Talk during *Sixteenth Marcel Grossman Meeting*. Presentation title: *Binary neutron star formation and the origin of GW170817*.
- 22/03/2021  **Online**, Poster presentation during conference *Triple Evolution and Dynamics 3*. Poster title: *Isolated Formation of a $30 + 10M_{\odot}$ Binary Black Hole Merger*.
- 2/07/2020  **Online**, Poster presentation during *European Astronomical Society Annual Meeting 2020*. Poster title: *Impact of common envelope development criteria on the formation of LIGO/Virgo sources*.
- 6/09/2019  **Warsaw, Poland**, Talk during *Astrophysics with GW detections*. Presentation title: *Synthetic catalog of black holes in the Milky Way*.
- 24/06/2019  **Sanata Barbara, USA**, Poster presentation during conference *Merging Visions: Exploring Compact-Object Binaries with Gravity and Light*. Poster title: *Synthetic catalog of black holes in the Milky Way*.
- 26/06/2018  **Portland, USA**. Poster presentation during conference *Astrophysical Frontiers in the Next Decade and Beyond: Planets, Galaxies, Black Holes, & the Transient Universe*. Poster title: *Synthetic catalog of black holes in the Milky Way*.

Business trips and workshops

- 2/08/2021-6/08/2021  **Copenhagen, Denmark**. Participation in *NBIA Summer School on Gravitational Wave Astrophysics*.
- 10/11/2019-16/11/2019  **China, Beijing**. Consultations with research group from the Chinese Academy of Sciences.
- 14/01/2019-18/01/2019  **Tokio, Japan**. Consultations with the research group from the Kavli Institute for the Physics and Mathematics of the Universe (IPMU).

Other Activity (continued)

9/09/2018-18/09/2018 **Loiano, Italy.** Astronomical observations at Osservatorio Astronomico di Loiano (5 nights).

Invited talks

25/11/2021 **Torun, Poland,** Invited talk for Thursday seminars in Nicolaus Copernicus Astronomical Center Torun.

9/11/2021 **Online,** Invited informal talk for the high-energy group of the Institut d'Astrophysique de Paris.

Popular science

5/10/2020 **Nature Research Highlights.** Interview for Nature Research Highlights: *The odd couple: how a pair of mismatched black holes formed.*

2/10/2020 **Nauka W Polsce.** Interview for Nauka W Polsce: *O tym, jak doszło do spotkania dwóch odmiennych czarnych dziur .*

18/11/2019 **Warsaw, Poland.** Lecture for general public organised by Nicolaus Copernicus Astronomical Center *Czarne dziury w Drodze Mlecznej.*

21/09/2019 **Warsaw, Poland.** Lecture for physics teachers organised by Nicolaus Copernicus Astronomical Center *Czarne dziury w Drodze Mlecznej.*

Administrator of the research group website: <https://startrackworks.camk.edu.pl/> and Nicolaus Copernicus Astronomical Center facebook profile.