

Dr. Koraljka Mužić

Curriculum Vitae and list of publications

RESEARCH EXPERIENCE

CENTRA – Center for Astrophysics and gravitation Faculty of Science, University of Lisbon, Portugal FCT Investigator Starting Grant	since 01/2017
The Royal Observatory, Edinburgh Visiting researcher	08/2018 - 10/2018
Universidad Diego Portales, Santiago, Chile Postdoctoral researcher	05/2015 – 12/2016
European Southern Observatory (ESO), Chile Postdoctoral fellow with duty station Paranal	05/2012 – 04/2016
Department of Astronomy & Astrophysics, Univeristy of Toronto, Canada Postdoctoral researcher	01/2010 – 04/2012
1. Physikalisches Institut, University of Cologne, Germany Postdoctoral researcher	06/2008 – 12/2009

EDUCATION

University of Cologne & Max Planck Institute for Radio Astronomy, Germany International Max Planck Research School (IMPRS) Ph.D. in Physics Thesis title: “The central parsec of the Milky Way at 3.8 μ m” Supervisor: Prof. Andreas Eckart	2005 – 2008
Faculty of science and math, University of Zagreb, Croatia M.Sc. in Physics Thesis title: “CCD photometry of the open cluster NGC 6913” Supervisor: Prof. Krešimir Pavlovski	1998 – 2004

RESEARCH PROJECTS AND COLLABORATION

- Young brown dwarfs as testbeds for star and planet formation (PI)
- SONYC - Substellar Objects in Nearby Young Clusters (co-I)
- SOLA (Soul of Lupus with ALMA), sub-lead of the protoplanetary disk team
- VISIONS - VISTA Star Formation Atlas (co-I)
- METIS/Extremely Large Telescope consortium member (Science and Operation teams)

PROFESSIONAL EXPERIENCE

Author or co-author of 50 refereed articles with >1400 citations (10/2019)

H-index 23 (source: Astrophysics Data System, ADS)

(Co-)author of multiple accepted observing proposals (VLT, Subaru, Gemini, CTIO-4m, IRTF, Calar Alto, NTT, Magellan, APEX, and ALMA): ~20 as PI, >60 as co-I

Observing experience at large astronomical facilities, >250 nights (VLT, Subaru, Gemini South, CTIO-4m, NTT, Magellan)

Scientific talks at conferences, workshops and seminars (~40)

PROFESSIONAL ACTIVITIES AND MEMBERSHIP

Referee for **Astrophysical Journal**, **Astronomy and Astrophysics**, **Monthly Notices of Royal Astronomical Society**

METIS Consortium meeting (co-chair), Lisabon, Portugal 12/2017

Star formation from cores to clusters, conference (SOC and LOC) 03/2017

The Universe under the Microscope - Astrophysics at High Angular Resolution, conference (LOC) 04/2008

Seminar organizer (**Astro-technology seminar**, **Seminario do DF**) since 10/2017
University of Lisbon

Member of **Portuguese Astronomical Society (SPA)**

Evaluator of the scientific and professional activities of the Institute of the Czech Academy of Science 2015

Member of student and fellow selection committees at ESO 2013 - 2014

SUPERVISION

Supervisor of a **postdoc** researcher Karolina Kubiak since 04/2019

Supervisor of a **PhD project** of Victor Almendros Abad since 02/2019
"Young brown dwarfs as testbeds for star and planet formation"

Supervisor of a undergrad student project, course **Astrophysical Laboratory** 2017-2018
"Stellar population of the massive young cluster RCW 36",
student Afonso do Vale, University of Lisbon (3+3 months)

Supervisor of a undergrad student project, course **Astrophysical Laboratory** 2017
"Spectroscopic characterization of young free-floating planets",
student André Baptista, University of Lisbon (3 months)

Member of a Ph.D. thesis advisory committee for Christoph Rauch 2013 - 2015
Max Planck Institute for Radioastronomy, Bonn, Germany

Co-supervising M. Sc. student Christoph Rauch 2012
1. Physikalisches Institut, University of Cologne, Germany
Published in **Astronomy & Astrophysics**, **551**, **35**, **2013**

Co-supervising M. Sc. student Jochen Tackenberg 2009
1. Physikalisches Institut, University of Cologne, Germany

SELECTED CONFERENCES AND SEMINARS (last 2 years)

ENAA, XXIX Astronomy and Astrophysics National Meeting, Lisbon, Portugal 09/2019

Talk: Brown dwarf formation across environments	
Zooming in on Star Formation", Napflio, Greece Talk: Brown dwarf formation across environments	06/2019
XIII Meeting of the Spanish Astronomical Society, Salamanca, Spain Talk: "The transition from star to planet formation: brown dwarfs in young clusters"	07/2018
Seminar: "Brown dwarfs in young star clusters" Lisbon Polytechnic School of Engineering (ISEL), Lisbon, Portugal	06/2018
Seminar: "Brown dwarfs in young star clusters" 1. Physikalisches Institut, University of Cologne, Germany	06/2018
Seminar: "Brown dwarfs in young star clusters" Physics Department, University of Lisbon, Portugal	05/2018
Seminar: "Brown dwarfs in young star clusters" Physics Department, University of Aveiro, Portugal	05/2018
Conference: "Formation of substellar objects: Theory and observations", Madrid, Spain Talk: "Searching for brown dwarfs across environments"	05/2018
Seminar: "Young brown dwarfs: testing star formation across environments" Royal Observatory Edinburgh, UK	03/2018
Seminar: "Stellar clusters: laboratories for understanding how stars form and evolve" Seminario Astro-Tecnologia, University of Lisbon, Portugal	12/2017
Seminar: "Young brown dwarfs: testing star formation across environments" IA, Observatorio Astronomico de Lisboa, Lisbon, Portugal	10/2017
Seminar: "Young brown dwarfs: testing star formation across environments" CENTRA, Instituto Superior Técnico, Lisbon, Portugal	06/2017
Conference "Francesco's Legacy: Star Formation in Space and Time", Florence, Italy Talk: "Young brown dwarfs: testing star formation across environments"	06/2017
Conference: "Star formation from cores to clusters", Santiago, Chile Talk: "Young brown dwarfs: testing star formation across environments"	03/2017

REFEREED PUBLICATIONS (last 5 years)

full list available at Astrophysics Data System ([link](#))

total: 52, first author: 10, numer of citations: 1402 (10/2019)

- (1) Fontanive, C., **Mužić, K.**, Bonavita, M., Biller, B.: "A new method for target selection in direct imaging programmes with COPAINS", Monthly Notices of the Royal Astronomical Society, Volume 490, Issue 1, p.1120-1134, 2019
- (2) **Mužić, K.**, Scholz, A., Peña Ramirez, K., Jayawardhana, R., Schoedel, R., Geers, V. C., Cieza, L. A., & Bayo, A.: "*Looking deep into the Rosette Nebula's heart: the (sub)stellar content of the massive young cluster NGC 2244*", *Astrophysical Journal*, Volume 881, Issue 1, article id. 79, 22 pp. 2019,
- (3) Fontanive, C., Rice, K., Bonavita, M., Lopez, E., **Mužić, K.**, & Biller, B., "A high binary fraction for the most massive close-in giant planets and brown dwarf desert members", Monthly Notices of the Royal Astronomical Society, Volume 485, Issue 4, p.4967-4996, 2019
- (4) Principe, D. A., Cieza, L., Hales, A., Zurlo, A., Williams, J., Ruíz-Rodríguez, D., Canovas, H., Casassus, S., **Mužić, K.**, Perez, S., Tobin, J. J., Zhu, Z.: "*The ALMA early science view of FUor/EXor objects IV.*

- Misaligned outflows in the complex star-forming environment of V1647 Ori and McNeil's Nebula*", Monthly Notices of Royal Astronomical Society, 473, 879, 2018
- (5) **Mužić, K.**, Schoedel, R., Scholz, A., Geers, V. C., Jayawardhana, R., Acenso, J., & Cieza, L. A.: "*The low-mass content of the massive young star cluster RCW 38*", Monthly Notices of Royal Astronomical Society, 471, 3699, 2017
 - (6) Ruíz-Rodríguez, D., Cieza, L. A., Williams, J. P., Tobin, J. J., Hales, A., Zhu, Z., **Mužić, K.**, and 6 co-authors: "*The ALMA early science view of FUor/EXor objects - II. The very wide outflow driven by HBC 494*", Monthly Notices of Royal Astronomical Society, 466, 3519, 2017
 - (7) Zurlo, A., Cieza, L. A., Williams, J. P., Canovas, H., Perez, S., Hales, A., **Mužić, K.**, and 7 co-authors: "*The ALMA early science view of FUor/EXor objects - I. Through the looking-glass of V2775 Ori*", Monthly Notices of Royal Astronomical Society, 465, 834, 2017
 - (8) Zapatero Osorio, M. R., Lodieu, N., Béjar, et al. (incl. **Mužić, K.**): "*Near-infrared photometry of WISE J085510.74-071442.5*", Astronomy & Astrophysics, 592, 80, 2016
 - (9) Rauch, C., Ros, E., Krichbaum, T. P., Eckart, A., Zensus, J. A., Shahzamanian, B., & **Mužić, K.**: "*Wisps in the Galactic Center: NIR triggered observations of the radio source SgrA* at 43 GHz*", Astronomy & Astrophysics, 587, 37, 2016
 - (10) Zajacek, M., Eckart, A., Karas, V., Kunneriath, D., Shahzamanian, B., Sabha, N., **Mužić, K.**, & Valencia-Schneider, M.: "*Effect of an isotropic outflow from the Galactic centre on the bow-shock evolution along the orbit*", Monthly Notices of Royal Astronomical Society, 455, 1257, 2016
 - (11) Beamín, J. C., Ivanov, V. D., Minniti, D., Smart, R. L., **Mužić, K.**, and 5 co-authors: "*Spectrophotometric characterization of high proper motion sources from WISE*", Monthly Notices of Royal Astronomical Society, 454, 4054, 2015
 - (12) **Mužić, K.**, Scholz, A., Geers, V. C., & Jayawardhana, R.: "*Substellar Objects in Nearby Young Clusters (SONYC) IX: The planetary-mass domain of Chamaeleon-I and updated mass function in Lupus 3*", Astrophysical Journal, 810, 159, 2015
 - (13) Scholz, A., Kostov, V., Jayawardhana, R., & **Mužić, K.**: "*Rotation Periods of Young Brown Dwarfs: K2 Survey in Upper Scorpius*", Astrophysical Journal Letters, 809, 29, 2015
 - (14) Scholz, A., **Mužić, K.**, & Geers, V. C.: "*The young low-mass star ISO-Oph-50: Extreme variability induced by a clumpy, evolving circum-stellar disk*", Monthly Notices of Royal Astronomical Society, 451, 26, 2015
 - (15) Moulataka, J., Eckart, A., & **Mužić, K.**: "*Ice Cubes*" in the Center of the Milky Way: Water-ice and Hydrocarbons in the Central Parsec", Astrophysical Journal, 806, 212, 2015
 - (16) Huélamo, N., Ivanov, V. D., Kurtev, R., Girard, J. H., Borissova, J., Mawet, D., **Mužić, K.**, Cáceres, C., Melo, C. H. F., Sterzik, M. F., & Minniti, D.: "*WISE J061213.85-303612.5: a new T-dwarf binary candidate*", Astronomy & Astrophysics, 578, 1, 2015
 - (17) Ivanov, V. D., Vaisanen, P., Kniazev, A. Y., Beletsky, Y., Mamajek, E. E., **Mužić, K.**, Beamin, J. C., and 10 co-authors: "*Properties of the solar neighbor WISE J072003.20-084651.2*", Astronomy & Astrophysics, 574, 64, 2015
 - (18) **Mužić, K.**, Scholz, A., Geers, V. C., Jayawardhana, R., & López-Martí. B.: "*Substellar Objects in Nearby Young Clusters (SONYC) VIII: Substellar population in Lupus 3*", Astrophysical Journal, 785, 159, 2014
 - (19) Jalali, B., Pelupessy, F. I., Eckart, A., Portegies Zwart, S., Sabha, N., Borkar, A., Moulataka, J., **Mužić, K.**, & Moser, L.: "*Star formation in the vicinity of nuclear black holes: young stellar objects close to Sgr A**", Monthly Notices of Royal Astronomical Society, 444, 1205, 2014
 - (20) Beamín, J. C., Ivanov, V. D., Bayo, A., **Mužić, K.**, and 9 co-authors: "*Temperature constraints on the coldest brown dwarf known: WISE 0855-0714*", Astronomy & Astrophysics, 570, 8, 2014

- (21) Sanchez-Bermudez, J., Schödel, R., Alberdi, A., **Mužić, K.**, Hummel, C. A., & Pott, J.-U.: "*Properties of bow-shock sources at the Galactic center*", *Astronomy & Astrophysics*, 567, 21, 2014
- (22) Boffin, H. M. J., Pourbaix, D., **Mužić, K.**, Ivanov, V. D., Kurtev, R., Beletsky, Y., Mehner, A., Berger, J. P., Girard, J. H., & Mawet, D.: "*Possible astrometric discovery of a substellar companion to the closest binary brown dwarf system WISE J104915.57-531906.1*", *Astronomy & Astrophysics*, 561, 4, 2014