RNDr. Václav Pavlík, Ph.D.

Researcher | Scientific Editor | Lecturer | Science Communicator

Junior member of IAU (Division C, G, J, and Executive Committee WG Junior Members)

pavlik@asu.cas.cz | http://www.asu.cas.cz/~pavlik

WORK AND RESEARCH EXPERIENCE

01/2024 – present **Postdoctoral Researcher** *Astronomical Institute, Czech Academy of Sciences, CZE*
supported through **Marie Skłodowska-Curie Actions COFUND**, project "MERIT" (see Grants below)
Investigating the evolution of star clusters and their stellar remnant populations on cosmological time scales.

07/2023 – 12/2023 **Associate Scientific Editor** *Publishing house Aventinum s.r.o., Prague, CZE*
Editorial and referee work for a publishing house specialising in natural science publications (e.g., astronomy, botany, geology, zoology, etc.), encyclopedias, and children's literature.

08/2022 – 05/2023 **Visiting Lecturer** *Physics Department, Indiana University Bloomington, USA*
Primary instructor for two courses per semester with the supervision of one Assistant/Grader per course.
Spring 2023 **Physics 3: Modern Physics** (PHYS-P 301) | **Basic Physics of Sound** (PHYS-P 105)
Fall 2022 **Physics 3: Modern Physics** (PHYS-P 301) | **Basic Physics of Sound** (PHYS-P 105)

09/2020 – 05/2023 **Postdoctoral Researcher** *Astronomy Department, Indiana University Bloomington, USA*
mentor: Prof Enrico Vesperini
Investigating the impact of the initial kinematics of stars on the global dynamical evolution of star clusters.

11/2019 – 08/2020 **Researcher (part-time)** *Astronomical Institute, Czech Academy of Sciences, CZE*
mentors: Prof Vladimír Karas, Dr Peter Nemeth
Part-time employment for a transition period after PhD. Studying the early evolution of star-forming regions with numerical models.

EDUCATION

(all levels at Charles University, Prague, CZE)

2014 – 2019 **Ph.D. in Theoretical Physics, Astronomy and Astrophysics** *awarded Sep 6, 2019*
Thesis: *Perturbed stellar motions in dense star clusters* | advisor: Dr Ladislav Šubr

2017 – 2018 **Examen rigorosum in Natural Sciences** *(RNDr. – Rerum naturalium doctor)*

2012 – 2014 **Graduate studies in Astronomy and Astrophysics** *(Mgr. – Master's degree)*
Thesis: *Modelling the Orion Nebula Cluster* | supervisor: Dr Ladislav Šubr

2009 – 2012 **Undergraduate studies in Physics** *(Bc. – Bachelor's degree)*
Thesis: *Formation and evolution of dynamical binaries* | supervisor: Dr Ladislav Šubr

TEACHING ACTIVITIES

MSc theses supervision

2023 – present **Co-advisor** *Astronomical Institute, Charles University, Prague, CZE*
student: Matyáš Fuksa | advisor: Prof Vladimír Karas | another co-advisor: Prof Steven N. Shore
Thesis: *Long-term stability of captured planetary systems*

2021 – 2022 **Co-advisor** *Department of Physics, University in Pisa, ITA*
student: Paolo Suin (defended with honours on Feb 8, 2022) | advisor: Prof Steven N. Shore
Thesis: *Environmental influences on the dynamical evolution of star clusters in turbulent molecular clouds*

Student projects

11/2023 **Mentor** for "Astro-Pi Hackathon" astro-pi.org
24-hour coding marathon for students involved in the ESA and Raspberry Pi Foundation Education project Astro-Pi.

03/2022 **Future career advisor** *(for a student at Zionsville Middle School, IN, USA)*

2019 – 2020 **Mentoring on star cluster models analysis** *student: Daria-Teodora Harabor*
(Vasile Alecsandri National College, Galati, ROU | now at Harvard University)

Czech Astronomy Olympiad (AO)

2012 – present **Board member and co-organizer** olympiada.astro.cz

2016 – present **LOC member and lecturer** of yearly student workshops | **SOC chair (2018–2022)** *(see also section Grants)*

International Astronomy Olympiad (IAO)

2016 – 2019 **Czech team leader** at XXI – XXIV IAO
Czech student's awards: 3 Diploma-II, 9 Diploma-III and 1 Diploma for the best observational round

Planetarium Prague

01/2018 – 08/2020 **Educator & specialist** (full-time staff position) planetum.cz

Tutoring

09/2018 – 06/2019 **Lecturer** for "MUDRstart"
Intensive physics course for students applying to the Faculty of Medicine of Charles University.

CERTIFICATIONS

07/2022 **Teaching Science at University** *awarded Jul 26, 2022 (grade 96.66%)*
5-week online course authorised by University of Zurich[UZH] verify at Coursera

GRANTS, FUNDING & PROJECT SUPPORT

Scientific

01/2024 – 06/2026 **PI** of project "ECLIPSE – Exploring Compact stellar remnants and their Impact on Star Clusters Evolution" *~170 400 EUR*
30-month funding from the European Union's Horizon Europe and the Central Bohemian Region under the **Marie Skłodowska-Curie Actions – COFUND**, Grant agreement ID 101081195 ("MERIT", meritcb.eu)

01/2016 – 12/2018 **PI** of "Perturbed stellar motions in dense star clusters" *~20 700 EUR*
project GAUK-186216 (Grant Agency of Charles University)

05/2013 – 11/2013 "Searching for a 'runaway-mass' black hole in the Orion Nebula Cluster" *~3 600 EUR*
Trainee of ESAC project (PIs: M. Guianazzi, J. Svoboda, H. Bouy) *(declined due to personal reasons)*

Computational time

While this type of support is not conventional, it is specific to my research since numerical models require a lot of computational resources, often in parallel architectures. Access to "free" computational time usually requires similar processes as seeking funding, i.e., submitting applications, yearly summaries, and reporting publications.

03/2022 – present **PI** of "Dynamical evolution of star clusters with anisotropic velocity distributions"
Indiana University Information Technology Services *(CPUs and GPUs, with extended 15 TiB quota)*

12/2014 – present Access to the Czech national grid MetaCentrum (MetaVO, Cesnet, e-INFRA)
subject to yearly evaluation *(CPUs, 30 TiB quota | used 5 000+ CPU-days | 14 outcomes/publications)*

05/2010 – 05/2014 Access to the "KK" computer cluster of the Department of Physics
Department of Physics, Charles University, Prague, CZE *(CPUs, 1 TiB quota | used for Bc. thesis)*

Education

2022 **PI** of "Workshop for younger students of the Astronomy Olympiad" *~3 900 EUR*
"Giftedness strategy 2022" project 0025/7/NAD/2022 (Czech Ministry of Education, Youth and Sports)

2021 **PI** of "Workshop for younger students of the Astronomy Olympiad" *~3 900 EUR*
"Giftedness strategy 2021" project 0051/7/NAD/2021 (Czech Ministry of Education, Youth and Sports)

2020 **PI** of "Workshop for younger students of the Astronomy Olympiad" *~3 900 EUR*
"Giftedness strategy 2020" project 0018/7/NAD/2020 (Czech Ministry of Education, Youth and Sports)

2019 **PI** of "Workshop for younger students of the Astronomy Olympiad" *~3 900 EUR*
"Giftedness strategy 2019" project 0003/7/NAD/2019 (Czech Ministry of Education, Youth and Sports)

2018 **PI** of "Workshop for younger students of the Astronomy Olympiad" *~3 900 EUR*
"Giftedness strategy 2018" project 0043/7/NAD/2018 (Czech Ministry of Education, Youth and Sports)

AWARDS AND HONOURS

2021 **IU Bicentennial Public Science and Math Award Lecture**
from the College of Arts and Sciences, Indiana University Bloomington, IN, USA

2019, 2018, 2017, 2016 **Commemorative Diplomas for representing the Czech Republic in international competitions as a Czech Team Leader**
from the Czech Minister of education, youth and sports

2014 **Master's thesis awarded 3rd place in Czechoslovak Student Scientific Conference in Physics**
co-organised by the Faculty of Mathematics and Physics of Charles University, Prague, CZE

REFEREE WORK

I serve as a referee for **Astronomy & Astrophysics** and **MNRAS**, and I have been a content reviewer of several publications by **Aventinum**, **Albatros Media**, and **Slovart** publishing houses in the Czech Republic.

CONFERENCE ORGANISATION

Scientific

12/2018 **LOC** of "$(M+3)^{\text{rd}}$ Aarseth N-body Meeting"
Astronomical Institute, Charles University, Prague, CZE

Education & Public outreach

09/2019 **LOC and lecturer** at "Space Educational Festival" *(conference & workshop for teachers)*
Planetarium Prague, CZE

11/2019, 11/2018, 11/2017 **LOC** of "Day with Astropis"
Planetarium Prague, CZE; Czech Academy of Sciences, Prague, CZE

EXTENDED VISITS FOR WORK

01/2020 **University of Edinburgh, UK** *(invited by Dr Anna Lisa Varri)*

02/2024, 08/2019, 11/2018, 11/2017 **University in Pisa, ITA** *(invited by Prof Steven N. Shore)*

11/2017 **University of Rome, ITA** *(invited by Prof Roberto Capuzzo Dolcetta)*

04/2016 – 05/2016 **University of Edinburgh, UK** *(invited as a visiting student by Prof Douglas C. Heggie)*

LANGUAGES

Czech (native) | **English** (fluent) | **French** (advanced; DALF C1, Ministère Français de L'Education Nationale, 2009)

COMPUTER SKILLS

Programming	Python | LaTeX | shell scripting (e.g., Bash, AWK) | HTML5/CSS/PHP | C/C++ | Fortran
Software	Adobe Photoshop & InDesign | Office Suite | video editing | Blender 3D modelling
Operating systems	Linux | Windows | Mac
Miscellaneous	parallel computing (CPUs and GPUs) | digital planetarium operator (SkySkan DS2)

PUBLICATIONS

ORCID: 0000-0002-3031-062X. The full list of publications is also in my **ADS library**

Research

2023 Livernois, Vesperini & **Pavlík** *Evolution of binary stars in the early evolutionary phases of ultra-faint dwarf galaxies* MNRAS, vol. 521, no. 2, pp. 4395–4405 arXiv:2303.12841, DOI:10.1093/mnras/stad826

2022 Suin, Shore & **Pavlík** *Environmental influences on the dynamical evolution of star clusters in turbulent molecular clouds* A&A, vol. 667, id. A69 Shore and Pavlík were supervisors of Suin's MSc thesis. arXiv:2207.01634, DOI:10.1051/0004-6361/202243579

2022b **Pavlík** & Vesperini *Mass segregation and dynamics of primordial binaries in star clusters with a radially anisotropic velocity distribution* MNRAS, vol. 515, no. 2, pp. 1830–1838 arXiv:2206.11905, DOI:10.1093/mnras/stac1776

2022a **Pavlík** & Vesperini *Evolution towards energy equipartition in star clusters: effects of the tidal field, primordial binaries, and internal velocity anisotropy* MNRAS, vol. 509, no. 3, pp. 3815–3825 arXiv:2110.14646, DOI:10.1093/mnras/stab3157

2021 Shore & **Pavlík** *How a fake Kepler portrait became iconic* Physics Today, vol. 74, no. 9, pp. 10–11 Both authors are equal contributors. arXiv:2108.02213, DOI:10.1063/PT.3.4825

2021 **Pavlík** & Shore *Close encounters with the Death Star: Interactions between collapsed bodies and the Solar System* A&A Letters, vol. 648, id. L2 arXiv:2103.12745, DOI:10.1051/0004-6361/202140454

2021 **Pavlík** & Vesperini *New insights into star cluster evolution towards energy equipartition* MNRAS Letters, vol. 504, no. 1, pp. L12–L16 arXiv:2103.06272, DOI:10.1093/mnrasl/slab026

2020b **Pavlík** *Primordial mass segregation of star clusters with primordial binaries* A&A, vol. 638, id. A155 arXiv:2004.14389, DOI:10.1051/0004-6361/202037490

2020a **Pavlík** *Primordial mass segregation of star clusters: The role of binary stars* Contributions of the Astronomical Observatory Skalnaté Pleso, vol. 50, no. 2, pp. 456–460 arXiv:2001.01450, DOI:10.31577/caosp. 2020.50.2.456

2019 **Pavlík** *Perturbed stellar motion in dense star clusters* PhD thesis ADS:2019PhDT.....111P

2019 **Pavlík**, Kroupa & Šubr *Do star clusters form in a completely mass-segregated way?* A&A, vol. 626, id. A79 arXiv:1905.09289, DOI: 10.1051/0004-6361/201834265

with *VizieR Online Data Catalog: ONC stars masses from literature* (**Pavlík+**, 2019) J/A+A/626/A79

2018 **Pavlík** & Šubr *The hunt for self similar core collapse* A&A, vol. 620, id. A70 arXiv:1808.05230, DOI:10.1051/0004-6361/201833854

2018 Fragione, **Pavlík** & Banerjee *Neutron stars and millisecond pulsars in star clusters: implications for the diffuse γ-radiation from the Galactic Centre* MNRAS, vol. 480, no. 4, pp. 4955–4962 All authors are equal contributors. arXiv:1804.04856, DOI:10.1093/mnras/sty2234

2018 **Pavlík**, Jeřábková, Kroupa & Baumgardt *The black hole retention fraction in star clusters* A&A, vol. 617, id. A69 arXiv:1806.05192, DOI:10.1051/0004-6361/201832919

Invited reviews

2018 Varri, Cai, Concha-Ramírez, Dinnbier, Lützgendorf, **Pavlík**, Rastello, Sollima, Wang & Zocchi *A MODEST review* Computational Astrophysics and Cosmology, vol. 5, no. 1, id. 2 All authors are equal contributors and are listed in alphabetical order, the first author coordinated the manuscript writing. arXiv:1810.07532, DOI:10.1186/s40668-018-0024-6

Education

2024 **Pavlík**, Vošmera, Gráf & Křížová *Fostering innovation, inclusion, and diversity in astronomy education: The Czech Astronomy Olympiad experience* in proceedings of "III Workshop on Astronomy Beyond the Common Senses for Accessibility and Inclusion", to appear in "Revista Mexicana de Astronomía y Astrofísica Serie Conferencias (edición RevMexAA Conference Series)" arXiv:2401.12376, DOI:10.48550/arXiv.2401.12376

in prep Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kománek *Problem Booklet 2022/23* DOI:10.5281/zenodo.10214525 (reserved, not active yet)

in prep Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kománek *Problem Booklet 2021/22* DOI:10.5281/zenodo.8381055 (reserved, not active yet)

2021 Czech Astronomy Olympiad, ed. by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2019/20 and 2020/21* ISBN 978-80-907341-2-8, DOI:10.5281/zenodo.8368818

2019 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2018/19* ISBN 978-80-907341-1-1, DOI:10.5281/zenodo.8353720

2018 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2017/18* ISBN 978-80-907341-0-4, DOI:10.5281/zenodo.8353714

2017 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2016/17* ISBN 978-80-270-2697-5, DOI:10.5281/zenodo.8353652

2017 Kožuško & **Pavlík** *Information and communication technologies in Astronomy Olympiad* in proceedings of "Modern trends in physics teaching" (in Czech), vol. 8, pp. 105–107 ISBN 978-80-261-0797-2

2016 Czech Astronomy Olympiad, edited by Vošmera, **Pavlík**, Gráf, Kožuško *Problem Booklet 2015/16* DOI:10.5281/zenodo.8353642

2014 **Pavlík** *LaTeX style for typesetting exercises for Czech Astronomy Olympiad* https://github.com/pavlikva/astroolymp

Outreach

I have been involved in these activities: **reviewer and translator** for the publishing houses *Albatros Media*, *Slovart* and *Aventinum* | **editor and author** for *Astropis* magazine (ISSN 1211-0485) since 2012 | **author** for *Czechoslovak journal of physics* (ISSN 0009-0700) | **key speaker** for *Parabolic Vision Media* (in 2021) | **educator and specialist** at *Planetarium Prague* (2018 – 2020).

This following list includes a selection of my works (the original titles or their translations to English are given).

2023 **Pavlík** *Interview with Thomas Hertog: "On the origin of time"* Czechoslovak journal of physics, vol. 73, pp. 251–256

2022 – present Libý & **Pavlík** *Observations of the sky* Astropis 129–136, pp. 22–25

2022 **Pavlík** *Unique photo of the Solar eclipse* Astropis 134, pp. 22–23

2022 **Pavlík** *Interview with Nobel Prize laureate James Peebles* Astropis 132, pp. 15–19

2022 **book translation** (EN→CZ) *The World according to Physics* Slovart, author: Al-Khalili, ISBN: 978-80-2760-302-2

2022 **key speaker** *Hubble space telescope documentary* Parabolic Vision Media, educational film

2012 – 2021 **Pavlík** & Ondřich *Observations of the sky* Astropis, 4 volumes per year, pp. 22–25

2021 **Pavlík** & Shore *Is Betelgeuse the Death Star?* Astropis 128, pp. 17–19

2021 Shore (translation EN→CZ: **Pavlík**) *Microquasars* Astropis 128, pp. 31–33

2021 Shore & **Pavlík** *Supplement: How a fake Kepler portrait became iconic* Astropis 128, p. 33

2021 Shore & **Pavlík** *How a fake Kepler portrait became iconic* Astropis 127, pp. 39–40

2021 **Pavlík** *Star clusters and stellar kicks* Astropis 125, pp. 26–28

2021 **Pavlík** & Žďárská *Stellar dynamics – Interview with Václav Pavlík beyond astronomy* Czechoslovak journal of physics, vol. 71, pp. 402–409

2020 **Pavlík** *Mountaineering and star clusters (interview with Sverre Aarseth)* Astropis 123, pp. 29–34

2020 **Pavlík** *Can a star cluster collapse?* Astropis 122, pp. 29–31

2020 **Pavlík** *Interview with Nobel Prize laureates William Phillips and Wolfgang Ketterle* Astropis 1/2020,

pp. 12–14

2020 **book translation** (EN→CZ) *Stephen Hawking: A Memoir of Friendship and Physics* Slovart, author: Mlodinov, ISBN 978-80-2760-095-3

2020 translation cooperation (EN→CZ) *The Adventures of Rosetta & Philae* Planetarium Prague, movie

2019 **Pavlík** *How do star clusters form?* Astropis 4/2019, pp. 30–32

2019 book cover illustration *Prisoners of Mars* Aventinum, author: Pokorný, ISBN 978-80-7151-278-3

2019 **Pavlík** *Interview with Nobel Prize laureate Rainer Weiss* Astropis 3/2019, pp. 15–19

2019 review and update *Pocket planisphere* Aventinum, author: Rükl, ISBN 978-80-7151-277-6

2019 **full-dome show translation** (CZ→EN) and remake collaboration *Night Sky in 8K* Planetarium Prague

2019 **Pavlík** *Interview with Nobel Prize laureate Kip Thorne* Astropis 2/2019, pp. 11–14

2019 translation cooperation (EN→CZ) *Horizon* Planetarium Prague, full-dome show

2018 book editor *Astronomy: 100+1 intriguing questions* Aventinum, authors: Mikulášek, Pokorný & Gabzdyl, ISBN 978-80-7442-061-0

2018 **book translation** (EN→CZ) *Celestial Atlas: A Journey in the Sky through Maps* Slovart, author: Percivaldi, ISBN 978-80-7529-642-9

2018 **full-dome show translation** (EN→CZ) *Two Little Pieces of Glass* Planetarium Prague

2018 translation cooperation (EN→CZ) *Our Violent Planet* Planetarium Prague, full-dome show

2018 remake collaboration *Movements of the Earth* Planetarium Prague, Czech full-dome show

2018 remake collaboration *Maps of Foreign Worlds* Planetarium Prague, Czech full-dome show

2015 book editor *Constellations* Aventinum, author: Rükl, ISBN 978-80-7442-061-0

2015 **Pavlík** *Exoplanets* Astropis Special/2015, pp. 22–23

2012 **Pavlík**, Prouza & Ondřich *Observation of Venus transit* Astropis Special/2012, pp. 28–33

2012 **Pavlík** *Asterisms* Astropis 1/2012, pp. 20–21

CONFERENCES & LECTURES

I gave **12 invited talks/seminars/lectures**, and presented several contributed talks and posters at scientific conferences. I also presented a number of **invited public talks/lectures**. Some are listed below.

Scientific

02/2024 **invited seminar** "Anisotropic stellar velocities: A key factor in star cluster evolution" University in Bologna, INAF OAS Bologna, ITA

01/2024 **invited seminar** "The dance of planets and dying stars" University in Pisa, ITA

09/2023 poster "The impact of velocity anisotropy on the dynamics of star clusters and their binary stars" ESO conference "Two in a Million", Garching, GER *(Pavlík & Vesperini, DOI:10.5281/zenodo.8335237)*

06/2023 **invited talk** "Doomsday dynamical scenarios" General Meeting of the Indiana Astronomical Society, Mooresville, IN, USA

03/2023 **guest lecture** "The dance of planets and dying stars" within the course PHYS-P 508: "Current research in physics", Indiana University, USA

10/2022 **invited seminar** "Using GPU-accelerated systems in studying astrophysical systems" workshop "Big Red 200 and AI Day", Indiana University Research Technologies, Bloomington, IN, USA

08/2022 seminar "The role of velocity anisotropy in star clusters evolution" series "Tea Talks", Indiana University, IN, USA

04/2022 contrib. talk "Effects of radially anisotropic velocity distribution on the dynamics of star clusters" "DDA 53rd Annual Meeting", AAS, NY, USA *(Pavlík & Vesperini, ADS:2022DDA....5310103P)*

04/2022 poster "Environmental influences on the dynamical evolution of star clusters in turbulent molecular clouds" "DDA 53rd Annual Meeting", AAS, NY, USA *(Suin, Shore & Pavlík, ADS:2022DDA....5310807S)*

05/2021 **invited seminar** "Doomsday dynamical scenarios" Astronomical Inst., Charles University, Prague, CZE *(authors: Pavlík & Shore)*

05/2021 contributed talk "Energy equipartition in star clusters" "DDA 52nd Annual Meeting", AAS, online *(Pavlík & Vesperini, ADS:2021DDA....5220103P)*

03/2021 seminar "Close encounters of all kinds" series "Lunch Talks", Indiana University, IN, USA

01/2020 **invited seminar** "Life of a star cluster" series "Coffee Talk", Institute for Astronomy, University of Edinburgh, UK

01/2020 **invited seminar** "Mass segregation and binaries in young star clusters" series "Theory Lunch", Institute for Astronomy, University of Edinburgh, UK

12/2019 contributed talk "Star clusters: primordial mass segregation and binaries" "(M+4)th Aarseth N-body Meeting", Astronomical Inst., Charles University, Prague, CZE

09/2019 contributed talk "Primordial mass segregation of star clusters: The role of binary stars" Masaryk University, University Centre Telč, CZE

08/2019 **invited seminar** "Dynamical evolution of star clusters" Department of Physics, University in Pisa, ITA

12/2018 contributed talk "Do star clusters form completely mass segregated?" "(M+3)rd Aarseth N-body Meeting", Astronomical Inst., Charles University, Prague, CZE

11/2018 **invited seminar** "Cosmic Calcio: BH kicks and star clusters" Department of Physics, University in Pisa, ITA

06/2018 contributed talk "The black hole retention fraction in star clusters" "Modest-18", Santorini,

GRC

05/2017 seminar "The black hole retention fraction in star clusters" Astronomical Inst., Charles University, Prague, CZE

12/2017 contributed talk "The black hole retention fraction in star clusters" "$(M+2)^{\text{nd}}$ Aarseth N-body Meeting", Astronomical Inst., Charles University, Prague, CZE

11/2017 **invited seminar** "Core collapse in star clusters" Sapienza, Dept. of Physics, Univ. of Rome, ITA

11/2017 **invited seminar** "Introduction to N-body methods" Dept. of Physics, University in Pisa, ITA

09/2017 conference poster "The black hole retention fraction in star clusters" "Modest-17", Charles University, Prague, CZE *(authors: Pavlík & Jeřábková)*

09/2017 contributed talk "Fitting self-similar core collapse in N-body models" "Modest-17", Charles University, Prague, CZE *(authors: Pavlík & Šubr)*

01/2017 seminar "Core collapse in N-body clusters" Astronomical Inst., Charles University, Prague, CZE

12/2016 conference poster "Fitting self-similar core collapse to N-body models" "Stellar aggregates over mass and spatial scales", Bad Honnef, GER *(authors: Pavlík, Heggie & Šubr)*

Public education and outreach

11/2022 **invited talk** "Stellar Billiards – Revisited" Science Cafe, Bloomington, IN, USA

06/2021 **invited talk** "What do we learn from the stars?" College Public Science Symposium, Indiana University Bloomington, IN, USA

08/2021 **invited talk** "Stellar Billiards" series "Astronomy on Tap", Bloomington, IN, USA

02/2019 **invited lecture** "How to retain black holes" (in Czech) Observatory in Rokycany and Plzeň, CZE

11/2018 **invited lecture** "Evolution of black holes in star clusters" (in Czech) series "Day with Astropis", Czech Academy of Sciences, CZE

04/2018 **invited lecture** "Black holes and star clusters" (in Czech) Senec observatory, SVK

OTHER ATTENDED WORKSHOPS

03/2020	JWST Master Class	Czech Technical University, Prague, CZE
10/2017	Astro-GR 2017	Institute of Space Sciences, Barcelona, ESP
08/2014	3rd Scientific Writing for Young Astronomers	org. by EDP Sciences in Tihany, HUN