

Georgios Vasilopoulos

Contact Information

Postgraduate Associate

University of Athens, EKPA/IASA

Panepistimioupoli, Zografos

Athens, Greece

Email address: gevas@phys.uoa.gr

Email address 2: g.vas.astro@gmail.com



Professional Experience

- **Postgraduate Associate:** **2/2023 – present**
University of Athens, EKPA/IASA *Athens, Greece*
- **Postgraduate Associate:** **5/2021 – 1/2023**
Observatoire astronomique de Strasbourg, CNRS *Strasbourg, France*
- **Postgraduate Associate:** **9/2018 – 5/2021**
Department of Astronomy, YALE University *New Haven, CT, USA*
 Supervisor: Prof. Charles D. Bailyn
- **Ph.D student & Researcher at Max Planck Institute** **2012 – 2018**
Max Planck Institute for Extraterrestrial Physics *Garching, Germany*
 MPE work contract, funded by Deutsches Zentrum für Luft- und Raumfahrt (DLR)
- Extended collaborative visits**
- **Visiting Researcher at Giannios Lab**, multiple visits **2016 – 2017**
Purdue University *Purdue, IN, USA*
- **Visitor Researcher at Princeton University**, 1 year **2017 – 2018**
Princeton University *Princeton, NJ, USA*
- **Visitor Researcher/Lecturer at NKUA**, multiple visits **2021 & 2022**
NKUA, Physics department *Athens, GR*

Education

- Ph.D., Physics-Astrophysics** **Oct. 12/2018**
 The International Max Planck Research School on Astrophysics (IMPRS)
Technische Universität München *Garching, Germany*
 Thesis Topic: *Study of highly magnetised accreting neutron stars in the Magellanic Clouds and beyond*
 Advisers: Dr. Frank Haberl, Prof. Dr. Jochen Greiner
- M.Sc., Astrophysics, Astronomy & Mechanics** **7/2012**
National & Kapodistrian University of Athens (NKUA), Faculty of Physics *Athens, Greece*
 Thesis Topic: *Study of X-ray point sources populations in the direction of M31*
 Advisers: Prof. Dr. Despina Hatzidimitriou
- Bachelor, Physics** **2009**
National & Kapodistrian University of Athens (NKUA) *Athens, Greece*
 Thesis Topic: *Dynamical Study of Globular Clusters in the Small Magellanic Cloud*
 Advisers: Prof. Dr. Mary Kontizas

Publication Metrics

Statistics according to NASA ADS (updated on 03/04/23)

Total publications and proceedings: 125

Total Citations: 1233

H-index: 18

Refereed publications:

• **58** total; 15 as 1st Author • **6** lead by students under my direct supervision

Awards & Grants

Total funding: ~900,000\$; Funded as PI: ~425,000\$

• 3rd Call for H.F.R.I., Received as PI Research Projects to support Postdoctoral Researchers	Funded by H.F.R.I.: ~€118,800	2023 – 2025
• Chanda Cycle 24 GO Program, Unfunded CoI	Funded by NASA: ~\$250,000	2023 – 2024
• FERMI Cycle 15 GO Program, Unfunded CoI	Funded by NASA: ~\$60,000	2022 – 2023
• NICER Cycle 3 GO Program, Received as PI	Funded by NASA: ~\$37,500	2021 – 2022
• TESS Cycle 3 GO Program, Unfunded CoI	Funded by NASA: ~\$40,000	2020 – 2021
• NuSTAR Cycle 6 GO Program, Received as PI	Funded by NASA: ~\$81,000	2020 – 2021
• NICER Cycle 2 GO Program, Received as PI	Funded by NASA: ~\$20,000	2020 – 2021
• NICER Cycle 2 GO Program, Received as PI	Funded by NASA: ~\$21,000	2020 – 2021
• NICER Cycle 2 GO Program, Received as PI	Funded by NASA: ~\$40,000	2020 – 2021
• NICER Cycle 2 GO Program, Unfunded CoI	Funded by NASA: ~\$20,000	2020 – 2021
• Swift Cycle 16 GO Program, Received as PI	Funded by NASA: ~\$40,000	2020 – 2021
• Chanda Cycle 21 GO Program, Unfunded CoI	Funded by NASA: ~\$60,000	2020 – 2021
• XMM-Newton AO-18 GO Program, Received as PI	Funded by NASA: ~\$68,000	2019 – 2020
• Swift Cycle 14 GO Program, Unfunded CoI	Funded by NASA: ~\$40,000	2018 – 2019
• Hellenic Astronomical Society, Best PhD prize	€ 1000	2019

Successful Observing Proposals

Space observatories (■: PI, □: CoI, ✓: ToO or DDT)

Selected by review panels through open calls

Telescope	Proposal Title	Year/Cycle
□ Chandra	Using the LMC to Understand X-ray Binary Evolution: Mind the Metallicity Gap (PI: Antoniou, V.)	Cycle 24
□ Fermi	Enhancements and operation of an accreting pulsar program using GBM data (PI: Jenke, P.)	Cycle 15
□ Chandra	Probing Radiatively Inefficient Accretion Flow in the Neutron Star X-ray Binary System Aquila X-1 (PI: Maitra, D.)	Cycle 21-24
□ TESS	Probing the radiative losses in high-mass gamma-ray binary PSR B1259-63 with TESS, <i>Swift</i> and FERMI (PI: Coley, J. B.)	
■ <i>NuSTAR</i>	Follow-up major outbursts from hard X-ray transients in the MCs	Cycle 6
□ <i>NICER</i>	A <i>NICER</i> view of the radiative losses in the high-mass gamma-ray binary PSR B1259-63, <i>Swift</i> and FERMI (PI: Coley, J. B.)	Cycle 3
■ <i>NICER</i>	Exploring the nature of the prolonged low flux state of NGC 300 ULX1	Cycle 3
■ <i>NICER</i>	Follow-up hard X-ray transients in the Magellanic Clouds	Cycles 3 & 4
■ <i>NICER</i>	Investigating hard X-ray transients in the Magellanic Clouds	Cycle 2
■ <i>NICER</i>	Multi-wavelength study of the fast flaring properties of black-hole X-ray binaries	Cycle 2
■ <i>NICER</i>	Exploring the prolonged low flux state of NGC 300 ULX1	Cycle 2
□ <i>NICER</i>	Constraining the evolution of the geometry of the unstable warped accretion disc in SMC X-1 (PI: Brumback, M.)	Cycle 2
□ <i>XMM-Newton</i>	Delving into low luminosity persistent High Mass X-ray Binaries in the LMC (PI: Kaltenbrunner, D.)	AO-22
□ <i>XMM-Newton</i>	X-raying an Odd Radio Circle near the LMC (PI: Maggi, P.)	AO-21 & 22
■ <i>XMM-Newton</i>	Following the spectral and spin evolution of the longest-lived post-nova SSS	AO-20 & 22
□ <i>XMM-Newton</i>	Investigating new super-soft sources in the MC System (PI: Maitra, C.)	AO-20
□ <i>XMM-Newton</i>	Investigating hard X-ray transients in the MCs (PI: Haberl, F.)	AO-19,20,21
■ <i>XMM-Newton</i>	Investigating long period X-ray pulsars in the Large Magellanic Cloud	AO-18

<input type="checkbox"/>	<i>XMM-Newton</i>	In search of intermediate mass black holes in low luminosity AGN (PI: Koliopoulos, F.)	A0-18,20
<input checked="" type="checkbox"/>	<i>XMM-Newton</i>	Investigating long period X-ray pulsars in the Large Magellanic Cloud	AO-17
<input type="checkbox"/>	<i>XMM-Newton</i>	Exploring supergiant shells in the west of the LMC (PI: Maggi, P.)	A0s-16/17
<input checked="" type="checkbox"/>	<i>XMM-Newton</i>	A pulsating, possible type Ia supernova progenitor in the LMC	AO-16
<input checked="" type="checkbox"/>	<i>XMM-Newton</i>	Investigating hard X-ray transients in the Magellanic Clouds	AO-16
<input checked="" type="checkbox"/>	<i>Swift</i>	Exploring the prolonged low flux state of NGC 300 ULX1	Cycle 16
<input type="checkbox"/>	<i>Swift</i>	Revealing the transient X-ray binary population of the LMC (PI: Antoniou)	Cycle 14

Target of Opportunity Observations (ToO)

Observing time awarded through instruments Director Discretionary Time (DDT)

✓ *HST*, ✓ *NICER*, ✓ *XMM-Newton*, ✓ *NuSTAR*, ✓ *Chandra*, ✓ *ASTROSAT*

✓ *Swift*: over 50 TOOs for transient systems with over 500 ks awarded time (2012-2022)

Ground-based facilities

Allocated observing time:

• ESO P110	<i>Optical confirmation of the ultrashort compact binary candidate (CoI)</i>	ULTRACAM, 2 nights
• 2021A	<i>Study of the fast flaring properties of X-ray binaries (PI)</i>	Palomar 200" Hale, 2 nights
• 2020B	<i>Study of the fast flaring properties of active X-ray binaries (PI)</i>	Palomar 200" Hale, 2 nights
• 2020A	<i>Study of the fast flaring properties of active X-ray binaries (PI)</i>	Palomar 200" Hale, 3 nights
• 2016B	<i>GROND observations of "peculiar" binaries in the SMC</i>	MPE/ESO 2.2
• 2016B	<i>FEROS observations of new Be/X-ray binaries in the LMC/SMC</i>	MPE/ESO 2.2
• 2015B	<i>FEROS observations of two Be/X-ray binaries in the SMC</i>	MPE/ESO 2.2

Observational experience:

MPG/ESO 2.2m telescope	Observer (20+ nights)
Campus Observatory Garching:	Observer (20+ nights)
Skinakas Observatory:	Observer (4 nights)
PALOMAR 200" Hale Telescope	Remote observer (10+ nights)
SMARTS 1.3 m	Science Team, scheduling

Hard Skills

- OS: LINUX, UNIX
- Programming: Python, FORTRAN, C++, IDL, BASH/Shell scripting, HTML
- other: MCMC, Bayesian modelling, Machine Learning
- X-ray observational software and tools: e.g. ISIS, HEASoft, FTools
- Gamma-ray analysis tools: e.g. GammaPy

Soft Skills

- Communications: verbal, written, active listening
- Self-management: attitude, integrity, resilience, multi-tasking, accountability
- Team work: effective collaboration, ability to operate effectively in a team environment, adaptability to new and diverse environments, quick character assessment
- Strategies: decision making, problem solving, critical thinking, creativity, out-of-the box thinking
- Leadership: strategic planning, conflict management, cultural awareness, negotiation, delegation, empathy, building morale, stress management

Synergistic Activities & Professional Service

Review/Refereeing

- Chair & deputy for NASA review panels
- Proposal reviewer for NASA review panels.
- Referee for scientific journals: Monthly Notices of the Royal Astronomical (MNRAS), Nature Astronomy, The Astrophysical Journal (ApJ), Journal of Astrophysics and Astronomy

Organizing committees & Institutional responsibilities

- COSPAR 2022: Member of team for volunteers organization and supervision.
- Member of Strasbourg Observatory Astro-coffee talks organizing committee (2021-2022)
- Scientific organizer for EWASS 2019 special session:
From X-ray pulsars to pulsating ULXs: Accretion onto highly magnetized neutron stars
- Member of Yale Colloquium organizing committee (2019-2020)
- Introductory course organization for “The Yale Summer Program in Astrophysics” (2019)
- Development and organization of advanced laboratory course in Technical University of Munich.

Science working groups for current and future space missions

- *SVOM*: member of Working Group for General program, coordinator for the HMXB WG.
- *eROSITA*: External Collaborator in Nearby Galaxies, Compact Objects Working Group
- *STROBE-X*: *A probe-class concept mission*. Transients and ULXs working groups
- *AXIS*: Advanced X-ray Imaging Satellite, *A probe-class concept mission*. Compact Objects-Supernova Remnants Science Working Group
- The High Energy X-ray probe (*HEX-P*), *A probe-class concept mission*. Accretion working group on neutron stars
- *XMM-Newton*, member of the Survey Science Centre (SSC) group.

Contributions to public tools

- *XCATDB*: part of SSC team developing services and analysis tools for library of *XMM-Newton* data
- *XSASDB*: Amora Processor (Beta), tools for accessing/creating *XMM-Newton* products
- Github: repositories for analysis scripts for various projects

Press releases & Media

- The outburst of a neutron star reveals the nature of phenomena only observed in black holes
- UOA: X-ray tomography of our galaxy by a GRB
- UNISTRA/CNRS: Powerful warm winds seen blowing from a neutron star
- UOA: Radio emission from colliding mass outflows in X-ray binaries with strongly magnetized neutron stars
- Phys org: Ultra-luminous X-ray pulsar NGC 300 ULX1 experienced unprecedented spin evolution, study finds
- Science Nugget: *eROSITA* points NICER to a rare X-ray binary outburst in the Large Magellanic Cloud
- Science Nugget: NICER discovers 9.29 sec pulsations in RX J0209.6-7427

Memberships

- Member of the Hellenic Astronomical Society (Hel.A.S.)
- Member of the European Astronomical Society (EAS)
- Member of the American Astronomical Society (AAS)
- Member of the AAS High Energy Astrophysics Division (HEAD)

Other - Outreach

- Organization of volunteers at science meetings, e.g. Volunteering at COSPAR2022 (article in Greek)
- Judge at the New Haven Science Fair (05/2019)
- Astronomy on Tap: Chicago, New Haven

Supervision & Mentoring

Supervised or active co-supervision of more than 10 undergrad and graduate students (2019-2022) , that resulted in senior thesis, presentations in major conferences or publications in major journals. i.e.

- **Viala, A.:** undergraduate student, *University of Strasbourg* **09.2022 - 02.2023**
Supervision of research project for developing XCATDB.
An online tool for visualizing and analysing XMM-Newton X-ray data.
- **Tzavelas, A.:** undergraduate student, *University of Athens* **2022 - present**
Supervision of Undergrad research project and thesis in neural networks (Co-supervisor: M. Petropoulou)
- **Kouzis, M.:** undergraduate student, *University of Athens* **2022 - present**
Supervision of Bachelor thesis (official supervisor: D. Hatzidimitriou)
- **Zanias, F.:** undergraduate student, *University of Athens* **Summer 2022**
Supervision of summer research project (Co-supervisor: M. Petropoulou)
- **Vidali, S.:** undergraduate student, *University of Athens* **Summer 2022**
Supervision of summer research project
- **Karaferias, S. A.:** undergraduate student, *University of Athens* **2021 – 2022**
Supervision of Bachelor thesis (official supervisor: M. Petropoulou)
Multiple publications and presentations in conferences
- **Stathopoulos, S. I.:** graduate student, *University of Athens* **2021 – 2022**
Co-supervision during MSc, mentoring in PhD (official supervisor: M. Petropoulou).
Multiple publications and presentations in conferences
- **Rebecca McClain** undergraduate (Class of 2022), *Franklin & Marshall College* **Summer 2021**
Supervision of summer research project.
- **Helena Treiber** undergraduate student (Class of 2022), *Amherst College* **2020 – 2021**
Supervision of research project that resulted in multiple publications.
Multiple publications and presentations in conferences
- **Mark Polkas**, graduate student, *University of Athens* **2019 – 2021**
Co-supervision of Master thesis (supervisor: A. Mastichiadis & M. Petropoulou)
Work published in MNRAS, and presented in conferences)
- **Margaritis Chatzis**, undergraduate student, *University of Crete* **2019 – 2021**
Co-supervision of bachelor thesis (supervisor: M. Petropoulou)
Work published in MNRAS, and presented in conferences)
- **Alyssa Cassity**, undergraduate student (Class of 2020), *Smith College* **2019**
Supervision of summer research project. Resulted in senior thesis and presentation at AAS 235 meeting.
- **Sean Byrne**, undergraduate student, *Central Connecticut State University* **2019 – 2020**
Co-supervision of summer research project & senior thesis (Supervisor: Charles Bailyn)
Resulted in senior thesis and presentation at AAS 235 meeting.

Teaching Experience

For courses marked with “†” I was responsible fore developing the syllabus for more than 30% of the course.

- **Lecturer**, *Summer schools*
“4th Hel.A.S. Astrophysics Summer School”, graduate level (2 h) **2022**
- **Guest Lecturer**, *University of Athens*
†“Astrophysics Laboratory”, undergraduate level (senior year) **2022**
†“Methods in observational astrophysics”, graduate level **2022**
†“Advanced observational astrophysics lab”, undergraduate level **2021**
“Introduction to Astrophysics”, undergraduate level (2nd year) **2021**
“High-Energy Astrophysics”, undergraduate level (senior year) **2021**
†“Observational Astrophysics”, graduate level **2020**
Online seminar: programming with python, undergraduate level (8 h) **2020**

- **Guest Lecturer, Yale University**

- †20 h introductory course for Yale summer program in astrophysics, undergraduate level

2019

Laboratory Tutor

Physics department, University of Athens Athens, Greece

- Physics I (Classical Mechanics), 1st year undergraduate laboratory course.

2009 – 2011

- Physics II (Molecular Physics - Thermodynamics), 1st year undergraduate laboratory course.

2009 – 2011

Physics department, Technische Universität München, Munich, Germany

- Basic Lab Course, 2nd year undergraduate laboratory course.

2013 – 2014

- †Advanced Lab Course (FOPRA): Master & 3rd year undergraduate laboratory course.

2014 – 2015

Presentations, Conferences & Talks

1. The X-ray Universe 2023, Athens, Greece, 13-16 June 2023, *Contributed Talk, and posters by students*
2. X-ray Tracking of Magnetic Field Geometries in Accreting X-ray Pulsars (Workshop), Madrid, Spain, 16-17 Feb 2023, *Invited talk*
3. XMM2ATHENA consortium meeting, Athens, GR, 19 September 2022, *Contributed talk*
4. 35th XMM-SSC meeting, Athens, GR, 18 September 2022, *Invited talk*
5. COSPAR 2022, Athens, GR, 16-24 July 2022, *Contributed talk*
6. AXIS Compact objects science working group, Virtual, 11 June 2022, *Invited talk*
7. NuSTAR 2022, Cagliari, IT, 20-22 June 2022, *Contributed talk*
8. Strasbourg Observatory Astro coffee, March 2022, *seminar talk*
9. Yale, New Haven, CT, Nov 2021, *Invited Colloquium talk*
10. 15th Hel.A.S. conference (Virtually anywhere), 7 July 2021, *Contributed talk*
11. European Astronomical Society Annual Meeting (Virtually anywhere), 30 June 2021, *Contributed talk*
12. Strasbourg Observatory Astro Lunch, June 2021, *Invited talk*
13. 238th Meeting of the American Astronomical Society (Virtually anywhere), June 2021, *Contributed talk*
14. NICER Analysis Workshops (Virtual), May 2021, *Contributed talk*
15. NOA, IAASARS (Athens, GR), February 2021, *Invited Seminar talk*
16. UOI, University of Ioannina (Ioannina, GR), Nov 2020, *Invited Colloquium talk*
17. FORTH, institute for astrophysics (Crete, GR), Nov 2020, *Invited Seminar talk*
18. Chandra Frontiers in Time-Domain Science, Oct 2020, *Contributed talk*
19. 236th Virtual Meeting of the American Astronomical Society, June 2020. *Contributed talk*
20. 20 Years of Chandra, Boston (MA), USA, December 2019. *Contributed talk*
21. The 14th Hel.A.S. Conference, Volos, GR, July 2019. *Invited talk*
22. Seminar talk at NRL, Washington DC, USA, May 2019. *Invited talk*
23. HEAD 17, Monterey (CA), USA, March 2019. *Contributed*
24. Seminar talk at MPE, Garching, Germany, October 2018. *Invited talk*
25. Seminar talk at UMass Lowell (MA), USA, November 2017. *Invited talk*
26. BeXRBs 2017, Heraklion, GR, September 2017. *Contributed talk*
27. The 13th Hel.A.S. Conference, Heraklion, GR, July 2017. *Contributed talk*
28. The X-ray universe 2017, Rome, Italy, June 2017. *Contributed talk*
29. Seminar talk at CNRS, Toulouse, FR, February 2017. *Invited Seminar talk*
30. NOA, IAASARS (Athens, GR), February 2017, *Invited Seminar talk*
31. The 12th Hel.A.S. Conference, Thessaloniki, GR, July 2015. *Contributed talk*
32. HEG Retreat 2015, Bad Bayersoien, Germany, January 2015. *Invited talk*
33. BeXRB 2014, Valencia, Spain, July 2014. *Contributed talk*
34. Texas symposium, Dallas (TX), USA, December 2013. *Contributed talk*
35. The 11th Hel.A.S. Conference, Athens, GR, September 2013. *Contributed talk*
36. The 10th Hel.A.S. Conference, Ioannina, GR, September 2011. *Contributed Poster*

37. The X-ray Universe 2011, Berlin, Germany, June 2011. *Contributed Poster*
38. The 9th Hel.A.S. Conference, Athens, GR, September 2009. *Contributed Poster*

Professional references

Haberl, F. (MPE), fwh@mpe.mpg.de – PhD supervisor & collaborator
Bailyn, C. (Yale), charles.bailyn@yale.edu – PostDoc Supervisor
Ray, P. S. (NRL), paul.ray@nrl.navy.mil – Collaborator
Motch, C. (ObAS, CNRS) hristian.motch@astro.unistra.fr – Supervisor
Giannios, D. (Purdue), dgiannio@purdue.edu – Past Collaborator
Hatzidimitriou, D. (NKUA), deshatzi@phys.uoa.gr – Collaborator in research and Teaching projects

Other close Collaborators:

Jaisawal, G. K. (National Space Institute); Jenke, P. (UOH) Koliopanos, F. (NOA); Maggie, P. (ObAS); Maitra, C. (MPE); Petropoulou, M. (UOA); Udalski, A. (Warsaw U. Obs.); Wilson-Hodge, C. A. (NASA Marshall Space Flight Center)

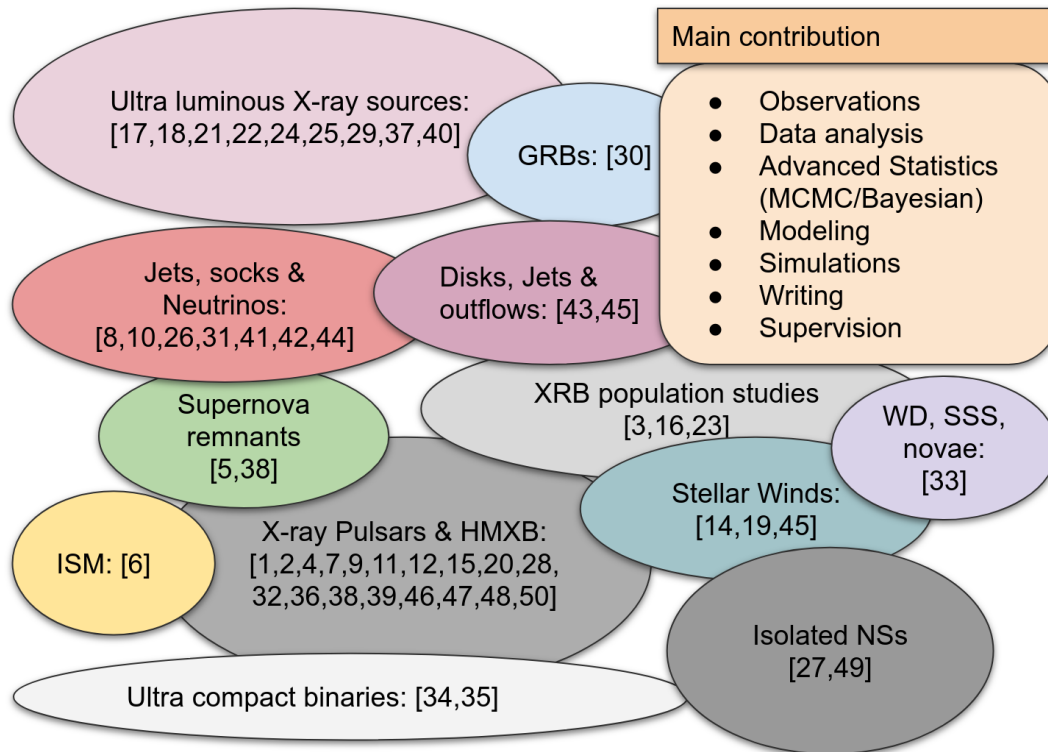


Figure 1: Concept cloud of refereed Publications where I had significant contribution

Publications

List of accepted publications in Peer-Reviewed Journals

Most important publications are marked by “***” before 1st author name.

Publications by students I supervised are marked by “†” before 1st author name.

List of accepted publications in Peer-Reviewed Journals

57. Jaisawal, G. K., **Vasilopoulos, G.** et al. (2023): *On the cyclotron absorption line and evidence of the spectral transition in SMC X-2 during 2022 giant outburst*, MNRAS accepted
 ☞ **My contribution:** main author, temporal analysis and writing significant part of paper.
56. **Vasilopoulos, G.** et al. (2023): *Dust-scattering rings of GRB 221009A as seen by the Neil Gehrels Swift X-ray Observatory: can we count them all?*, MNRAS, 521, 1590
55. ***Vincentelli, F. M. et al. (2023): *A shared accretion instability for black holes and neutron stars*, Nature, 615, 45
 ☞ **My contribution:** Analysis of Chimera and WASP data, writing of parts of text and discussion.
54. Haberl, F; **Vasilopoulos, G.**; et al. (2023): *SRG/eROSITA-triggered XMM-Newton observations of three Be/X-ray binaries in the LMC: Discovery of X-ray pulsations*, A&A, 671A, 90
 ☞ **My contribution:** contributed in obtaining observation part of the analysis and writing.
53. Haberl, F; **Vasilopoulos, G.**; et al. (2023): *eRASSt J040515.6–745202, an X-ray burster in the Magellanic Bridge*, A&A, 669A, 66
 ☞ **My contribution:** main author, led the writing of paper and analysis of significant part of project.
52. † Karaferias, A. S.; **Vasilopoulos, G.**; Petropoulou, M.; Jenke, P.; Wilson-Hodge, C. A.; Malacaria, C. (2023): *A Bayesian approach for torque modelling of BeXRB pulsars with application to super-Eddington accretors*, MNRAS, 520, 281
 ☞ **My contribution:** Supervision of undergrad student and general over-site of project.

51. Liu, J.; **Vasilopoulos, G.**; Ge M. Y.; Ji, L.; Weng S.; Zhang S.; Hou, X. (2022): *Comparing the Super-Eddington accretion of SMC X-3 and RX J0209.6-7427 with Swift J0243.6+6124*, MNRAS, 517, 3354
 🍃 **My contribution:** Writing text, discussion and interpretation of results.
50. Maitra, C. et al. (15 authors) (2022): *Broadband study and the discovery of pulsations from the Be/X-ray binary eRASSU J052914.9–662446 in the Large Magellanic Cloud*, A&A, accepted
 🍃 **My contribution:** Timing analysis, discussion and interpretation of results.
49. Ho, W. et al. (16 authors) (2022): *Timing six energetic rotation-powered X-ray pulsars, including the fast-spinning young PSR J0058-7218 and Big Glitcher PSR J0537-6910*, APJ, 939, 7
 🍃 **My contribution:** involved in X-ray observations of one system.
48. † Roy, A; Cappallo, R.; Laycock, S. G. T.; Bhattacharya, S.; **Vasilopoulos, G.**; Christodoulou, D. M. (2022): *Modeling the luminosity dependent pulse profile and emission geometry of SMC X-2 during a giant outburst*, APJ, 936, 90
 🍃 **My contribution:** paper written by mentee, I provided guidelines for analysis and discussion and interpretation of results.
47. **Vasilopoulos, G.**; Jaisawal, G. K.; Maitra, C.; Haberl, F.; Maggi, P.; Karaferias, A. S. (2022): *X-ray view of the 2021 outburst of SXP 15.6: constraints on the binary orbit and magnetic field of the Neutron Star*, A&A, 664A, 194
46. Haberl, F; Maitra, C; **Vasilopoulos, G.** et al. (2022): *Three new high-mass X-ray binaries in the LMC* A&A, accepted
 🍃 **My contribution:** one of main 3 authors, lead analysis/presentation/interpretation of one of 3 systems studied
45. *** Castro Segura, N. et al. (2022): *A persistent ultraviolet outflow from an accreting neutron star binary transient*, Nature, 603, 52–57, DOI: 10.1038/s41586-021-04324-2
 🍃 **My contribution:** participation in observational proposals, discussions of the results and commented on the manuscript.
44. † Stathopoulos, S; Petropoulou, M.; Giommi, P.; **Vasilopoulos, G.** et al. (2022): *Probing Neutrino Emission from X-ray Blazar Flares observed with Swift-XRT* MNRAS, 510, 4063
 🍃 **My contribution:** Supervision of master student, advisory role in their project.
43. † Chatzis M.; Petropoulou, M.; **Vasilopoulos, G.** (2022): *Radio emission from colliding outflows in high-mass X-ray binaries with strongly magnetized neutron stars*, MNRAS, 509, 2532
 🍃 **My contribution:** Supervision of Undergraduate student, advisory role in their project. This is a project I am really proud off since we worked with Mr. Chatzis in this idea for almost 2 years, and produced quite intriguing results about a dual origin (wind socks and Jet emission) of radio emission in HMXB pulsars, something that was only recently observed.
42. Oikonomou F.; Petropoulou, M.; Murase, K.; Tohuvavohu, Aaron; **Vasilopoulos, G.**; Buson, S.; Santander, M. (2021): *Multi-messenger emission from the parsec-scale jet of the flat-spectrum radio quasar PKS 1502+106 coincident with high-energy neutrino IceCube-190730A*, JCAP, 10, 0820
 🍃 **My contribution:** Analysis of X-ray data
41. † Polkas, M.; Petropoulou, M.; **Vasilopoulos, G.**; Mastichiadis, A.; Urry, C. M.; Coppi, P.; Bailyn, C. (2021): *A numerical study of long-term multi-wavelength blazar variability*, MNRAS, MNRAS, 505, 6103
 🍃 **My contribution:** Study lead by an master student at UOA under the co-supervision of me and Prof. Dr. Petropoulou M.
40. † Gúrpide, A.; Godet, O.; **Vasilopoulos, G.**; Webb, N.; Olive, J.-F. : *Discovery of superorbital periods and evolutionary cycles in the ultraluminous X-ray sources Holmberg II X-1 and NGC 5204 X-1*, A&A, 654A, 10

- ✍ **My contribution:** paper written by mentee, I was involved in development of project and all aspects of the paper.
39. †Treiber, H.; **Vasilopoulos, G.**; Bailyn, C. D.; Haberl, F.; Gendreau, K. C.; Ray, P. S.; Maitra, C.; Maggi, P.; Jaisawal, G. K.; Udalski, A.; Wilms, J.; Monageng, I. M.; Buckley, D. A. H.; König, O.; Carpano, S. (2021): *RX J0529.8–6556: a BeXRB pulsar with an evolving optical period and out of phase X-ray outbursts*, MNRAS, 503, 6187
 ✍ **My contribution:** Study lead by an undergrad student under my supervision. It was an amazing effort by Mrs. Treiber, that managed in only 6 months to learn about X-ray pulsars and observations, while producing her first paper as a 3rd yr undergrad.
38. Maitra, C.; Haberl, F.; P. Maggi; P. J. Kavanagh; **Vasilopoulos, G.**; Sasaki, M.; Filipović, M. D.; Udalski, A. (2021): *XMMU J050722.1–684758: Discovery of a new Be X-ray binary pulsar likely associated with the supernova remnant MCSNR J0507–6847*, MNRAS, 504, 326
 ✍ **My contribution:** Comparison of theoretical models with data, and writing parts of the discussion.
37. *** **Vasilopoulos, G.**; Koliopanos, Filippos; Haberl, Frank; Treiber, Helena; Brightman, Murray; Earnshaw, Hannah P.; Gúrpide, Andrés (2021): *Chandra probes the X-ray variability of M51 ULX-7: evidence of propeller transition and X-ray dips on orbital periods*, ApJ, 909, 50
 ✍ *: By analyzing archival X-ray data we found evidence of dips/eclipses by the companion star. This changes our understanding about ULX population properties.
36. Maitra, C.; Haberl, F.; **Vasilopoulos, G.**; Ducci, L.; Dennerl, K.; Carpano, S. (2021): *Fast flaring observed from XMMU J053108.3–690923 by eROSITA: an SFXT in the Large Magellanic Cloud*, A&A, 647A, 8
 ✍ **My contribution:** Comparison of theoretical models with data, and writing of the discussion.
35. Koliopanos, F.; **Vasilopoulos, G.**; Guillot, S.; Webb, N. (2021): *Disappearance of the Fe K α emission line in Ultra Compact X-ray Binaries 4U 1543-624 and Swift J1756.9-2508*, MNRAS, 500, 5603
 ✍ **My contribution:** Analysis of X-ray data, modeling, interpretation and writing of the text.
34. Koliopanos, F.; Peault, M.; **Vasilopoulos, G.**; Webb, N. (2021): *The chemical composition of the accretion disk and donor star in Ultra Compact X-ray Binaries: A comprehensive X-ray analysis*, MNRAS 501, 548
 ✍ **My contribution:** Analysis of X-ray data, modeling, interpretation and writing of the text.
33. *** **Vasilopoulos, G.**; Koliopanos, F.; Woods, T. E.; Haberl, F.; Soraisam, M. D.; Udalski, A (2020): *Discovery of a ~ 30 -Year-Duration Post-Nova Pulsating Supersoft Source in the Large Magellanic Cloud*, MNRAS, 499, 2007
 ✍ *: In this work we identified the longest lived post-nova super-soft source. Moreover, we found that the spin period evolution is consistent with the scenario where the White Dwarf is contracting under its own weight, only the second system where evidence of such behavior exists.
32. Jaisawal, G.; Nail, S.; Ho, W.; Kumari, N.; Epili, P.; **Vasilopoulos, G.** (2020): *Revisiting the spectral and timing properties of 4U 1909+07 with NuSTAR and Astrosat*, MNRAS, 498, 4830
 ✍ **My contribution:** Temporal analysis of X-ray data and contribution in discussion.
31. Petropoulou, Maria; Oikonomou, Foteini; Mastichiadis, Apostolos; Murase, Kohta; Padovani, Paolo; **Vasilopoulos, Georgios** ; Giommi, Paolo (2020): *Comprehensive Multimessenger Modeling of the Extreme Blazar 3HSP J095507.9+355101 and Predictions for IceCube*, ApJ 899, 113 (arxiv:2005.07218)
 ✍ **My contribution:** Analysis of observational data from Swift observatory.
30. Petropoulou, M.; Beniamini, P.; **Vasilopoulos, G.**; Giannios, D.; Barniol Duran, R. (2020): *Deciphering the properties of the central engine in GRB collapsars*, MNRAS, 496, 2910, arxiv:2006.07482
 ✍ **My contribution:** Participation in discussion and development of analysis scheme.
29. **Vasilopoulos, G.**; Ray, P. S.; Gendreau, K. C.; Jenke, P. A.; Jaisawal, G. K.; Wilson-Hodge, C. A.; Strohmayer, T. E.; Altamirano, D.; Iwakiri, W. B.; Wolff, M. T.; Guillot, S.; Malacaria, C.; Stevens, A. L. (2020): *The*

2019 super-Eddington outburst of RXJ0209.6–7427: Detection of pulsations and constraints on the magnetic field strength, MNRAS, 494, 5350

28. Tsygankov, Sergey S.; Doroshenko, Victor; Mushtukov, Alexander A.; Haberl, Frank; **Vasilopoulos, Georgios**; Maitra, Chandreyee; Santangelo, Andrea; (2020): *The unusual behaviour of the young X-ray pulsar SXP 1062 during the 2019 outburst*, A&A, 637A, 33
 ☞ **My contribution:** participation in temporal analysis and discussion of the paper
27. Chen, A. Y.; Yuan, Y. (2020); **Vasilopoulos, G.** : *A Numerical Model for the Multi-wavelength Lightcurves of PSR J0030+0451*, APJ, 893L, 38
 ☞ **My contribution:** X-ray data analysis and discussion of the paper
26. Petropoulou, M.; Murase, Kohta; Santander, Marcos; Buson, Sara; Tohuvavohu, Aaron; Kawamuro, Taiki; **Vasilopoulos, Georgios**; Negoro, Hiroshi; Ueda, Yoshihiro; Siegel, Michael H.; Keivani, Azadeh; Kawai, Nobuyuki; Mastichiadis, Apostolos; Dimitrakoudis, Stavros (2020): *Multi-Epoch Modeling of TXS 0506+056 and Implications for Long-Term High-Energy Neutrino Emission*, ApJ, 891, 115
 ☞ **My contribution:** Analysis of X-ray data
25. *** **Vasilopoulos, G.**; Lander, S. K.; Koliopoulos, F.; Bailyn, C. D. (2020): *M51 ULX-7: superorbital periodicity and constraints on the neutron star magnetic field*, MNRAS, 491, 4949
 ☞ *: We identified a super-orbital period for a ULXP, we investigated the origin of the period based on different models, and argue that Neutron Star free precession could play an important role that was previously overlooked in other systems.
24. *** **Vasilopoulos, G.**; Petropoulou, M.; Koliopoulos, F.; Ray, P. S.; Bailyn, C. B.; Haberl, F.; Gendreau, K. (2019): *NGC 300 ULX1: spin evolution, super-Eddington accretion, and outflows*, MNRAS, 488, 5225
 ☞ ***: By following the spin and flux evolution of a ULXP we showed for the first time that spin up of the NS is constant even though flux changed by a factor of 50, thus flux modulations are related to absorption and obscuration rather than changes in accretion rate.
23. Lazzarini, M.; Williams, B. F.; Hornschemeier, A. E.; Antoniou, V.; **Vasilopoulos, G.**; Haberl, F.; Vulic, N.; Yukita, M.; Zezas, A.; Bodaghee, A.; Lehmer, B. D.; Maccarone, T. J.; Ptak, A.; Wik, D.; Fornasini, F. M.; Hong, Jaesub; Kennea, J. A.; Tomsick, J. A.; Venters, T.; Udalski, A.; Cassity, A. (2019): *Neutron Stars and Black Holes in the Small Magellanic Cloud: The SMC NuSTAR Legacy Survey*, ApJ, 884, 2
 ☞ **My contribution:** Temporal analysis of NuSTAR data performed by Yale undergrad student A. Cassity, under my supervision.
22. Koliopoulos, F.; **Vasilopoulos, G.**; Buchner, J.; Maitra, C.; Haberl, F. (2019): *Investigating ULX accretion flows and cyclotron resonance in NGC 300 ULX1*, A&A, 621A, 118
 ☞ **My contribution:** Bayesian data analysis. Modelling of spectral models, whitening 50% of the text.
21. *** **Vasilopoulos, G.**; Haberl, F.; Maitra, C.; Carpano, S. (2018): *NGC 300 ULX1: A test case for accretion torque theory*, A&A, 620L, 12
 ☞ ***: This was my last paper of my PhD studies, and allow me to work freely and capitalize on all the effort I put over the years. A spectacular result was that by analyzing archival data over 4 years we found that the NS spin has changed from 126 to 18 seconds over that period, making it the fastest evolving NS ever observed.
20. Maitra, C.; Paul, B.; Haberl, F.; **Vasilopoulos, G.** (2018): *Detection of a cyclotron line in SXP 15.3 during its 2017 outburst*, MNRAS, volume 480L, 136
 ☞ **My contribution:** Spectral and temporal analysis of X-ray data. Writing of the text.
19. Maravelias, G.; Kraus, M.; Cidale, L. S.; Borges Fernandes, M.; Arias, M. L.; Curé, M.; **Vasilopoulos, G.** (2018): *Resolving the kinematics of the disks around Galactic B[e] supergiants*, MNRAS, volume 480, 320
 ☞ **My contribution:** Preparation and execution of optical spectroscopic observations for some targets.

18. ***Carpano, S.; Haberl, F.; Maitra, C.; **Vasilopoulos, G.** (2018): *Discovery of pulsations from NGC 300 ULX1 and its fast period evolution*, MNRAS, volume 476L, 45
 🍃 **My contribution:** All authors contributed equally.
17. Koliopanos, F.; **Vasilopoulos, G.** (2018): *Accreting, highly magnetized neutron stars at the Eddington limit: A study of the 2016 outburst of SMC X-3*, A&A, volume 614A, 23
 🍃 **My contribution:** All authors contributed equally.
16. van Jaarsveld, N.; Buckley, D. A. H.; McBride, V. A.; Haberl, F.; **Vasilopoulos, G.**; Maitra, C.; Udalski, A.; Miszalski, B. (2018): *Identification of High Mass X-ray Binaries selected from XMM-Newton observations of the LMC*, MNRAS, volume 475, 3253
 🍃 **My contribution:** Preparation of X-ray selected sample and selection of targets. Analysis of OGLE light curves.
15. **Vasilopoulos G.**; Maitra C.; Haberl F.; Hatzidimitriou D.; Petropoulou M. (2018): *Identification of two new HMXBs in the LMC: a ~ 2013 s pulsar and a probable SFXT*, MNRAS, volume 475, 220
14. Petropoulou M.; **Vasilopoulos G.**; Christie I. M.; Giannios D.; Coe M. J. (2018): *X-ray mapping of the stellar wind in the binary PSR J2032+4127/MT91 213*, MNRAS, volume 474L, 22
 🍃 **My contribution:** X-ray data analysis, modeling of the interaction of the inhomogeneous stellar wind with the Pulsar Wind.
13. ***Koliopanos F.; **Vasilopoulos G.**; Godet, Olivier; Bachetti, Matteo; Webb, Natalie A.; Barret, Didier (2017): *ULX spectra revisited: Accreting, highly magnetized neutron stars as the engines of ultraluminous X-ray sources*, A&A, volume 608A, 47
 🍃 **My contribution:** spectral modeling of ULX spectra, interpretation of the results, writing of the text.
12. **Vasilopoulos, G.**; Haberl, F.; Maggi, P. (2017): *Identification of IGR J01217-7257 with the transient SMC pulsar XTE J0119-731 (SXP 2.16) using XMM-Newton*, MNRAS, volume 470, 1971
11. **Vasilopoulos, G.**; Zezas, A.; Antoniou, V.; Haberl, F. (2017): *SXP 15.6: X-ray spectral and temporal properties of a newly discovered pulsar in the SMC*, MNRAS, volume 470, 4354
10. Petropoulou M., Coenders S., **Vasilopoulos, G.**, Kamble A., Sironi L. (2017): *Point-source and diffuse high-energy neutrino emission from Type II supernovae*, MNRAS, volume 470, 1881
 🍃 **My contribution:** implementation of the Monte Carlo simulation, statistical analysis of the data.
9. Haberl F.; Israel, G. L.; Rodriguez Castillo, G. A.; **Vasilopoulos, G.**; Delvaux, C.; De Luca, A.; Carpano, S.; Esposito, P.; Novara, G.; Salvaterra, R.; Tiengo, A.; D'Agostino, D.; Udalski, A. (2017): *EXTrAS discovery of two pulsators in the direction of the LMC: a Be/X-ray binary pulsar in the LMC and a candidate double-degenerate polar in the foreground*, A&A, volume 598A, 694
 🍃 **My contribution:** spectral and temporal analysis of X-ray data. Temporal analysis of optical light-curves.
8. Petropoulou M., **Vasilopoulos, G.**, Giannios, D. (2017): *The TeV emission of Ap Librae: a hadronic interpretation and prospects for CTA*, MNRAS, 464, 2213
 🍃 **My contribution:** Data analysis, and modeling of CTA predictions.
7. **Vasilopoulos, G.**; Haberl, F.; Delvaux, C.; Sturm, R.; Udalski, A. (2016): *Multi-wavelength properties of IGR J05007-7047 (LXP 38.55) and identification as a Be X-ray binary pulsar in the LMC*, MNRAS, volume 461, 1875
6. *** **Vasilopoulos, G.** & Petropoulou M. (2016): *The X-ray dust scattered rings of the black hole low mass X-ray binary V404 Cygni*, MNRAS, Volume 455, 4426
 🍃 ***: By following the 2015 major outburst of V404 cyg we identified dust scattering X-ray rings and were able to determine the distance and constrain the composition of gas clouds thus performing X-ray tomography to our Galaxy. This was my first project that I worked independent on my own idea, and a start of a long collaboration.

5. Maggi, P.; Haberl, F.; Kavanagh, P. J.; Sasaki, M.; Bozzetto, L. M.; Filipović, M. D.; **Vasilopoulos, G.**; Pietsch, W.; Points, S. D.; Chu, Y. -H.; Dickel, J.; Ehle, M.; Williams, R.; Greiner, J. (2016): *The population of X-ray supernova remnants in the Large Magellanic Cloud*, A&A, Volume 585A, 162M
 ☞ **My contribution:** Statistical properties of the SNR population, e.g. X-ray luminosity function.
4. **Vasilopoulos, G.**; Haberl, F.; Sturm, R.; Maggi, P.; Udalski, A. (2014): *Spectral and temporal properties of RX J0520.5-6932 (LXP 8.04) during a type-I outburst*, A&A, 567, A129
3. Williams, B. F.; Hatzidimitriou, D.; Green, J.; **Vasilopoulos, G.**; Covarrubias, R.; Pietsch, W. N.; Stiele, H.; Haberl, F.; Bonfìni, P. (2014): *A spectroscopic search for high-mass X-ray binaries in M31*, MNRAS, Volume 443, 2499
 ☞ **My contribution:** Part of my master thesis: Selection of the HMXB candidates that were used for the spectroscopic observations. Preparation of optical observations. Correlation of HMXB position and star formation history of M31.
2. Sturm, R.; Haberl, F.; **Vasilopoulos, G.**; Bartlett, E. S.; Maggi, P.; Rau, A.; Greiner, J.; Udalski, A. (2014): *Discovery of SXP265, a Be/X-ray binary pulsar in the Wing of the Small Magellanic Cloud*, MNRAS, volume 444, 3571
 ☞ **My contribution:** Temporal analysis of the optical light-curves.
1. **Vasilopoulos, G.**; Maggi, P.; Haberl, F.; Sturm, R.; Pietsch, W.; Bartlett, E. S.; Coe, M. J. (2013): *Swift J053041.9-665426, a new Be/X-ray binary pulsar in the Large Magellanic Cloud*, A&A, Volume 558, A74

White Papers: List of white paper prepared for the Decadal Survey on Astronomy and Astrophysics (Astro2020).

1. Ray, P. S., et al. (2019), *STROBE-X: X-ray Timing and Spectroscopy on Dynamical Timescales from Microseconds to Years*, (arXiv:1903.03035)

Phd Thesis:

Vasilopoulos, G., Technical University of Munich, 2018

Study of highly magnetised accreting neutron stars in the Magellanic Clouds and beyond

<https://ui.adsabs.harvard.edu/abs/2018PhDT.....60V/abstract>