

# Taeho Ryu

<http://taehoryu.com>

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CONTACT INFORMATION	The Max-Planck Institute for Astrophysics, Karl-Schwarzschild-Str. 1 85748, Garching, Germany	<i>E-mail:</i> tryu@mpa-garching.mpg.de <i>Phone:</i> +1 5515740406, +49 1743130001 <i>Citizenship :</i> Korean citizen U.S. legal permanent resident
RESEARCH	<b>Primary interests:</b> time domain astronomy, multi-messenger transients, tidal disruption events, gravitational waves, formation of runaway/hypervelocity stars, supermassive black hole binaries, formation and interaction of black holes in the early universe - AGN & high-mass X-ray binaries, dynamics of stellar clusters, exoplanets.  <b>Methods:</b> relativistic and Newtonian magnetohydrodynamics simulation, $N$ -body simulations, time-dependent Fokker-Planck integrator, stellar evolution simulation	
ACADEMIC APPOINTMENTS	<b>The University of Colorado, Boulder, USA</b> 2025– Assistant Professor	
	<b>JILA, the University of Colorado, Boulder, USA</b> 2025– Associate JILA fellow	
	<b>The Max-Planck Institute for Astrophysics - MPA, Germany</b> 2021– present MPA prize fellow	
	<b>Johns Hopkins University - JHU, USA</b> 2018 – 2021 Postdoctoral research fellow	
	<b>Korea Institute for Advanced Study - KIAS, South Korea</b> 2011 – 2012 Research assistant to Prof. Kimyeong Lee (Department of Physics)	
EDUCATION	<b>Stony Brook University - SBU, USA</b> 2012 – 2018 Ph.D., Physics, 2018 (Advisor: Prof. Rosalba Perna) M.A., Physics, 2014	
	<b>Seoul National University - SNU, South Korea</b> 2005 – 2011 B.S. in Chemistry & Physics (Double-major/Cum Laude) Teaching practicum in Chemistry ★2 years of mandatory military service	
HONORS, AWARDS AND AFFILIATION	<b>Dresden Prize</b> (for outstanding theoretical thesis), SBU 05/2018	
	<b>Peter B. Kahn Fellowship</b> , SBU 05/2016	
	<b>SNUANY Scholarship Award</b> , SNU Alumni Association of Greater New York 11/2014	
	<b>SNUANY Scholarship Award</b> , SNU Alumni Association of Greater New York 12/2013	
	<b>Benjamin Lee Award</b> , SBU 05/2013	
	<b>SNU Outstanding Student award</b> (Twice winner), SNU 2009 - 2010	
	<b>National Scholarship for Science &amp; Engineering</b> (Thrice winner) 2009 - 2010	
	<b>Scholarship for Superior Academic Performance</b> (Five-time winner),SNU 2005 - 2007	

GRANTS	<b>German-Israel Foundation:</b> (CoI) Mass transfer hydrodynamics in binary stars. Dates: Award Amount: €279,600	
SUPERCOMPUTING ALLOCATIONS	<b>Principal Investigator:</b> <i>HLRS</i> (Stuttgart tier 1), project name : <i>Global Relativistic Magneto-hydrodynamics Simulations of the Long-term Evolution of Tidal Debris in Tidal Disruption Events of Stars</i> , amount : <b>55M</b> cpu hours on Hawk ★ annual report selected for presentation with publication in the proceedings of 2023 HLRS Review workshop.	
	<b>Principal Investigator (Co-PI: Volker Springel):</b> <i>NHR@FAU</i> (tier 2), project name : <i>Transient formation in three-body encounters between stars and black holes</i> , amount : <b>3.6M</b> cpu hours on Fritz	
	<b>Project Manager (PI: Selma de Mink):</b> <i>NHR@FAU</i> (tier 2), project name : <i>3D hydrodynamics simulations of mass transfer in interacting binaries</i> , amount : <b>3.4M</b> cpu hours on Fritz	
INVITED TALKS	<b>CIERA colloquium</b> , CIERA, USA	3/2025
	<b>Astronomy seminar</b> , Stony Brook University, USA	3/2025
	<b>SCEECS Collaboration Meeting</b> , Flatiron Institute, USA	3/2025
	<b>GSSI Special Seminar</b> , the Gran Sasso Science Institute, Italy	11/2024
	<b>IMPRS Symposium</b> , Germany	11/2024
	<b>SCEECS Seminar</b> , USA	11/2024
	<b>GW/BH Seminar</b> , University of Zurich, Switzerland	10/2024
	<b>HEACOSS 2024</b> , Armenia	10/2024
	<b>Tea Seminar</b> , University of Heidelberg, Germany	7/2024
	<b>Institute Seminar</b> , MPA, Germany	7/2024
	<b>Seventeenth Marcel Grossmann meeting</b> , Italy	7/2024
	<b>Department Colloquium</b> , the University of Oklahoma, USA	3/2024
	<b>Department Colloquium</b> , the University of Colorado, Boulder, USA	2/2024
	<b>Department Colloquium</b> , the University of California, San Diego, USA	2/2024
	<b>Department Colloquium</b> , the Institute for Astronomy at the University at Hawaii, USA	2/2024
	<b>Department Seminar</b> , the Univeristy of the Balearic Islands, Spain	12/2023
	<b>Astronomy Seminar</b> , the Univeristy of Nova Gorica, Slovenia	11/2023
	<b>Department Colloquium</b> , Kyung Hee University, Korea	11/2023
	<b>Plasma Physics Seminar</b> , Max Planck Institute for Plasma Physics, Germany	11/2023
	<b>Department Colloquium</b> , SNU, Korea	10/2023
	<b>Colloquium</b> , Korea Astronomy & Space Science Institute, Korea	10/2023
	<b>Lagrange Seminar</b> , Lagrange Laboratoire, France	09/2023
	<b>Astronomy Seminar</b> , Max-Planck Institute for Gravitational Physics(AEI), Germany	09/2023

<b>Special Seminar</b> , New York University, USA	09/2023
<b>Astronomy Seminar</b> , Columbia University, USA	09/2023
<b>Astronomy Seminar</b> , Stony Brook University, USA	09/2023
<b>Special Seminar</b> , Northwestern University(CIERA), USA	08/2023
<b>MPA/Kavli Summer Program Seminar</b> , MPA, Germany	06/2023
<b>HUJI Astrophysics Seminar</b> , HUJI, Isreal	03/2023
<b>2022 MIAPP Conference “The Fundamental Role of Stellar Multiplicity in Stellar Dynamics and Evolution”</b> , MIAPP, Germany	11/2022
<b>Department Colloquium</b> , University of Tübingen, Germany	07/2022
<b>Black Hole Workshop</b> , Niels Bohr Institute, Denmark	06/2022
<b>MPA Seminar</b> , MPA, Germany	10/2021
<b>Astro UdeC Seminar</b> , the Universidad de Concepción, Chile	04/2021
<b>CTC Seminar</b> , University of Maryland, USA	06/2019
<b>Wine&amp; Cheese Seminar</b> , JHU, USA	04/2019
<b>Department Seminar</b> , SBU, USA	04/2018
<b>Numerical Scattering Workshop</b> , Flatiron Institute, USA	12/2017
<b>Black Hole Network Workshop</b> , Flatiron Institute, USA	12/2016
<b>MODEST-16 NYC Gas and Gravitational Dynamics</b> , USA	09/2016
<b>Frontier Research in Astrophysics – II</b> , Italy	05/2016
<b>Astronomy Seminar</b> , Columbia University, USA	05/2016
<b>CONTRIBUTED TALKS</b>	
<b>MODEST24</b> , Nicolaus Copernicus Astronomical Center, Poland	08/2024
<b>Korean Astronomical Society Fall Meeting</b> , KAS, Korea	10/2023
<b>Two in a Million</b> , ESO, Germany	09/2023
<b>MODEST23</b> , Northwestern University, USA	08/2023
<b>European Astronomical Society Annual Meeting</b> , Krakow, Poland	07/2023
<b>The Black Holes and Gravitational Waves Munich Day</b> , Germany	05/2023
<b>Aspen Workshop “Extreme Black Holes”</b> , USA	03/2023
<b>WE Heraeus-EAS Early Career Researchers in Astr. Workshop</b> , Germany	03/2023
<b>XMM-Newton Workshop 2022</b> , Spain	06/2022
<b>Growing Black Holes: Accretion and Mergers</b> , Nepal	05/2022
<b>SESTAS Meeting</b> , MPA	10/2021
<b>HotSci@JHU/STScI</b> , STScI	08/2021
<b>European Astronomical Society Annual Meeting</b> , Leiden	07/2021
<b>Tidal Disruptions in Kyoto: Confronting Theory with Observations</b> , Kyoto University, Japan	01/2020

POSTERS	<b>MODEST24</b> , Nicolaus Copernicus Astronomical Center, Poland	08/2024
	<b>Distorted Astrophysical disks</b> , University of Cambridge	05/2021
	<b>The 7<sup>th</sup> Annual Johns Hopkins Postdoctoral Conference</b> , JHU	04/2021
STUDENT SUPERVISION	Ian Johnson (Master's student, co-supervision with Prof. Rosalba Perna)	2024-present
	Institute: Stony Brook University, USA Project: Hydrodynamics simulations of tidal disruption encores Method: Hydrodynamics modeling with Arepo	
	Elias Mamuzic (PhD student, co-supervision with Prof. Sherry Suyu)	2023-present
	Institute: Technical University of Munich, Germany Project: Gravitational Lensing of Tidal Disruption Events Method: Monte-Carlo simulations for gravitational lensing with temperature- dependent luminosity models	
	Alonso Herrera (Master's student, co-supervision with Prof. Nathan Leigh) → Master's degree awarded	2022-2024
	Institute: Universidad de Concepción, Chile Project: Identification of runaway stars using Gaia data Method: Analytic estimates for ejection velocity, analysis of Gaia data	
	Magdalena Andrea Vilaxa Campos (Master's student, co-supervision with Prof. Nathan Leigh)	2022-2023
Institute: Universidad de Concepción, Chile Project: Stream penetration into mass accretor in Roche-lobe overflow in interacting binaries Method: Analytic estimates and hydrodynamics simulations		
Kaitlyn Szekerczes (PhD student, co-supervision with Prof. Sherry Suyu)	2022-2023	
Institute: formerly a fulbright fellow at MPA → PhD student at Pennsylvania State University Project: Estimate of strongly-lensed tidal disruption event detection rate by LSST Method: Monte-Carlo simulations for gravitational lensing		
Pavan Vynatheya (PhD student, co-supervision with Dr. Rüdiger Pakmor, Prof. Selma de Mink)	2022-2024	
Institute: Formerly a PhD student at MPA → Prize fellow at CITA Project: Remnant properties of partially disrupted stars by stellar-mass black holes Method: Stellar evolution and hydrodynamics simulations		
CERTIFICATION	Korean National Teacher Certification	2011

TEACHING EXPERIENCE	<b>Lecturer</b> , MPA, Germany	08/2017
	Delievered a lecture for hydrodynamics at the MPA/Kavli Summer Program	
	<b>Lecturer</b> , MPA, Germany	06/2017
	Delievered lectures for hydrodynamics and led tutorial sessions at a one-day workshop for hydrodynamics simulations at MPA	
	<b>Guest lecturer</b> , AST200 Course by Prof. Jin Koda, SBU, USA	02/2017
	Delivered a lecture for black holes to undergraduate students	
	<b>Teaching Assistant</b> , Department of Physics and Astronomy, SBU, USA	2012-2014
	Prepared physics lab experiments and assisted students in conducting experiments	
<b>Teacher</b> , Seoul National University Girls' Middle School, South Korea	Spring 2011	
Taught middle-school students chemistry as part of the teaching practicum course		
<b>Teaching Assistant</b> , Language Education Institute, SNU, South Korea	Spring 2011	
Volunteer work to assist students who are hearing impaired in their coursework.		
<b>Lecturer</b> , Central Library, SNU, South Korea	Spring 2009	
Voluneteer work to enhance librarians' grasp of basic scientific concepts in chemistry and physics		
<b>Lecturer</b> , Hansung high school, South Korea	Spring 2009	
Volunteer work to each mathematics for high-school students		
PROFESSIONAL SERVICE	Referee for <i>Monthly Notices of the Royal Astronomical Society</i> , <i>The Astrophysical Journal</i> , <i>Publications of the Astronomical Society of the Pacific</i>	
	<b>NASA</b> (2023), member of review panel	
	<b>IMPRS</b> (2023), member of PhD application review panel	
	<b>NSF</b> (2024), member of review panel	
PRESS RELEASE	<b>Close Encounters of stars with the black hole binaries kind</b>	2/2023
	- Astrobites: <a href="https://astrobites.org/2023/02/02/close-encounters-of-stars-with-the-black-hole-binaries-kind">https://astrobites.org/2023/02/02/close-encounters-of-stars-with-the-black-hole-binaries-kind</a>	
	<b>Supercomputer Simulations Test Star-destroying Black Holes</b>	11/2021
	- Making a movie in collaboration with NASA for the annual event "Black Hole Friday"	
	- Official webpage: <a href="https://svs.gsfc.nasa.gov/14000">https://svs.gsfc.nasa.gov/14000</a>	
	- ~0.3M views on YouTube in less than a week	
	(https://www.youtube.com/watch?v=ALnlZcRoQDY&t=23s)	
	- Articles in public science media: Phys.org, Sciencealert.com, the Jerusalem Post, SciTechDaily and so on.	
	<b>The NEW PHYSICS of Black Hole Star Capture — Extreme Tidal Disruption Events</b>	
	<b>- PBS Space</b>	11/2021
	- ~0.35M views on YouTube in two weeks	
	(https://youtu.be/x72uFhh3oek?si=Z74ZWDc0JeqxbrHm)	
SCIENTIFIC OUTREACH EXPERIENCE	<b>Open Day</b> , MPA	10/2024

Preparation and execution of a session rocket launching and public lecture about black holes.

**Girls' day**, MPA 04/2023 & 2024  
Preparation and execution of one of the five sessions where a group of high-school female students complete a given scientific task.

**SEDS Celestia**, BITS Pilani 01/2023  
Invited public lecture about black holes and tidal disruption events

**Member of the MPA Planetarium Team** 04/2022 - present  
Present a planetarium show, public science lecture or talk to students visiting MPA

**The Johns Hopkins Korean Graduate Student Association**, JHU 09/2019  
Invited public talk for Networking night (annual event)

LEADERSHIP  
EXPERIENCE

**Local Organizer of LISA AstroWG meeting**, MPA 11/2024  
more than 100 participants  
Role: Local organizer and social media coordinator

**Organizer of AREPO tutorial workshop**, MPA 06/2023  
Role: Organize and conduct 1-day AREPO tutorial workshop (20 participants) for stellar astrophysics application of AREPO, consisting of lectures for the introduction to hydrodynamics simulations and exercise

**Seminar organizer**, the Stellar Department at MPA 09/2021 - 09/2022  
Role: invite speakers (typically two speakers for each week), schedule seminars and chair the sessions for talks and discussions (along with two other organizers)

**Department of Chemistry**, SNU, South Korea 2005 - 2006  
Department Activities Representative and Organizer  
(Student competitions, membership training, freshmen welcoming, etcetera)

**SNU Campus Life and Culture Center**, SNU, South Korea 2010 - 2011  
Mentor-team Manager in SNU Compliance/Mentoring Program  
Elected Leader (20 members, My team chosen Best Team of the Year)

COMPUTATIONAL  
EXPERIENCE

**Computing Skills:** Fortran, C/C++, Python

**Code:** code-testing of multi-domain infrastructure PATCHWORKMHD, usage of GRMHD code HARM3D, Moving-mesh magnetohydrodynamics code AREPO (<https://arepo-code.org/>), Newtonian AMR hydrodynamics code CASTRO (<https://amrex-astro.github.io/Castro/>)

**Analysis:** Python, Matplotlib, Paraview, Mathematica

**High Performance computing:** USA (Frontera, Stampede, Rockfish, Seawulf), Germany (Hawk hls, SuperMUC Leibniz, Cobra, Raven, Freya)

AFFILIATION

**Junior Member** of the International Astronomical Union 06/2022 - present

**Member** of LISA consortium 11/2022 - present

**Member** of the Korean Science-Engineering Association 09/2014 - present

NON-SCIENTIFIC OUTREACH EXPERIENCE	<p><b>SNU Obstacle Person Support Center, SNU</b> <span style="float: right;">Spring 2009</span>  Assistant to a hearing-impaired student, and provider of study aid</p> <p><b>Kyujanggak Institute for Korean Studies, SNU</b> <span style="float: right;">Spring 2011</span>  Docent  Program: Improving public understanding of Documentary Heritage of Chosun Dynasty</p> <p><b>Museum of Art, SNU</b> <span style="float: right;">Spring 2011</span>  Docent  Program: Improving public understanding of interactive media art in the Garden of Forking Paths</p>
MILITARY SERVICE	<p><b>Military Required Service, South Korea</b> <span style="float: right;">2007 – 2009</span>  Honorable Discharged as a Sergeant  Served inter alia in Food/Water Inspectorate (Laboratory) plus assist. mgmt.</p>

## References

Professor Rosalba Perna (Associate Department Chair)  
Department of Physics and Astronomy, Stony Brook University  
Stony Brook, NY 11794-3800, USA  
Telephone: +1 (631) 632 1550  
Email: rosalba.perna@stonybrook.edu

Professor Selma de Mink (Scientific Director)  
The Max Planck Institute for Astrophysics  
Karl-Schwarzschild-Str. 1, 85748, Garching, Germany  
Telephone: +49 89 30000 - 2201  
Email: sedemink@MPA-Garching.MPG.DE

Professor Volker Springel (Scientific Director)  
The Max Planck Institute for Astrophysics  
Karl-Schwarzschild-Str. 1, 85748, Garching, Germany  
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Professor Sherry Suyu  
Technical University of Munich  
TUM School of Natural Sciences, Department of Physics  
James-Franck-Str. 1, 85748 Garching, Germany  
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Professor Zoltan Haiman  
Department of Astronomy and Astrophysics, Columbia University  
548 West 120th Street, Pupin Hall, Room 3128, New York, NY 10027  
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Professor Julian Krolik  
Department of Physics and Astronomy, Johns Hopkins University  
Bloomberg Center for Physics and Astronomy,  
3400 N. Charles Street, Baltimore, MD 21218, USA  
Telephone: +1 (410) 664 7077  
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Professor Tsvi Piran (Schwartzman Chair for Theoretical Physics)  
Racah Institute for Physics, The Hebrew University of Jerusalem  
Edmond J. Safra Campus, Jerusalem 9190401, Israel  
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## Publications

ads link: <https://ui.adsabs.harvard.edu/user/libraries/mbdD-GljSZ-nQ6a7LbzzQw>

### Books

47. **Ryu, T.**, Wever, T., *Tidal Disruption Events*, To appear in Chapter 5 in the review book *Black Holes in the Era of Gravitational Wave Astronomy*, ed. Arca Sedda, Bortolas, Spera, pub. Elsevier, arXiv: 2310.16879
46. Wang, C., **Ryu, T.**, *Blue Straggler Stars*, To appear in a chapter for *the Encyclopedia of Astrophysics*, ed. I. Mandel, F.R.N. Schneider, pub. Elsevier, arXiv: 2410.10314

### Submitted Articles

45. Mamuzic, E. **Ryu, T.**, Suyu, S. H., Szekerczes, K., Huber, S., Dai, L., Oguri, M., *Rates of Strongly Lensed Tidal Disruption Events*, submitted to A&A (2025), arXiv:2502.19495
44. **Ryu, T.**, Dessart, L. *Light curves and spectra for stellar collisions between main-sequence stars in galactic nuclei*, ()2025) arXiv:250205265
43. Krolik, J., Piran, T., **Ryu, T.**, *Follow the Mass - A Concordance Picture of Tidal Disruption Events*, submitted to ApJ (2024), arXiv: 2409.02894
42. Herrera-Urquieta, A., Leigh, N., Pinto, J., Díaz-Cerda, G., Grondin, S. Webb, J., Mathieu, R., **Ryu, T.**, Geller, A., Kounkel, M., Toonen, S., Vilaxa-Campos, M., *Systematic method to identify runaways from star clusters produced from single-binary interactions: A case study of M67*, submitted to MNRAS (2024).
41. Wang, Y., Graham, M.J., McKernan, B., Ford, K.E.S., **Ryu, T.**, Stern, D, *Conditions for Changing-Look AGNs from Accretion Disk-Induced Tidal Disruption Events*, submitted to ApJ (2024), arXiv: 2406.12096

### Articles in Refereed Journals

40. **Ryu, T.**, Sills, A., Pakmor, R., de Mink, S., Mathieu, R., *Magnetic Field Amplification during Stellar Collisions between Low-Mass Stars*, ApJL, 980,38 (2025), arXiv:2410.00148
39. Giustini, M. Miniutti, G., Arcodia, R., Goodwin, A., Alexander, K., Chakraborty, J., Buchner, J., Kosec, P., Saxton, R., Bonetti, M., Franchini, A., **Ryu, R.**, Shu, W., Kara, E., Ponti, G., Quintin, E., Vincentelli, F., Webb, N., Kajava, J., von Fellenberg, S., *Fragments of harmony amid apparent chaos: A closer look at the X-ray quasi-periodic eruptions of the galaxy RX J1301.9+2747*, A&A 692, 15 (2024)
38. Broggi, L., Stone, N., **Ryu, T.**, Bortolas, E., Dotti, M., Bonetti, M., Sesana, A., *Repeating partial disruptions and two-body relaxation*, OJAp 7, 48 (2024), arXiv: 2404.05786

37. Vynatheya, P., **Ryu, T.**, Pakmor, R., de Mink, S., Perets, H., *Simulating the Tidal Disruption of Stars by Stellar-mass Black Holes Using Moving-mesh Hydrodynamics*, A&A 685, 45 (2024), arXiv: 2310.14852
36. **Ryu, T.**, Perna, R., Cantiello, M., *Tidal Disruption Encores*, ApJ 965, 25 (2024), arXiv: 2402.15990
35. Lazzati, D., Perna, R., **Ryu, T.**, *Ephemeral Flaring Transients Following Supernova Explosions in Black-Hole Binary Systems*, accepted for publication in ApJL (2024), arXiv:2403.18911
34. **Ryu, T.**, Amaro Seoane, P., Taylor, A., Ohlmann, S., *Collisions of Red Giants in Galactic Nuclei*, MNRAS 528, 6193 (2024), arXiv: 2307.07338  
★ selected as the research highlight of the month in November 2023 by the Max Planck Institute for Astrophysics (<https://www.mpa-garching.mpg.de/1085421/hl202309>)
33. Liu, Z., **Ryu, T.**, Goodwin, A., Rau, A., Homan, D., Krumpke, M., Merloni, A., Grotova, I., Anderson, G., Malyali, A., Miller-Jones, J., *Rapid evolution of the recurrence time in the repeating partial tidal disruption event eRASSt J045650.3-203750*, A&A 683, 13 (2024), arXiv:2401.14091
32. Szekeerczes, K., **Ryu, T.**, Suyu, S. H., Huber, S., Oguri, M., Dai, L. *Strong lensing of tidal disruption events: Detection rates in imaging surveys*, accepted for publication in A&A (2024), arXiv:2402.03443
31. Xin, C., H. Haiman, Z., Perna, R., Wang, Y., **Ryu, T.** *Tidal Peeling Events: Low-eccentricity Tidal Disruption of a Star by a Stellar-mass Black Hole*, ApJ 961, 149 (2024), Arxiv: 2303.12846
30. Dessart, L., **Ryu, T.**, Amaro Seoane, P., Taylor, A., *Light curves and spectra for theoretical models of high-velocity red-giant star collisions*, A&A 682, 58 (2024), arXiv: 2310.07036
29. Avara, M., Krolik, J., Campanelli, M., Noble, S., Bowen, D., **Ryu, T.**, *Accretion onto a Supermassive Black Hole Binary Before Merger*, ApJ 974, 242 (2024), arXiv:2305.18538
28. **Ryu, T.**, McKernan, B., Ford, K.E.S., Cantiello, M., Graham, M.J., Stern, D., Leigh, N.W.C. *In-plane Tidal Disruption of Stars in Disks of Active Galactic Nuclei*, MNRAS 527, 8103 (2024), arXiv: 2310.00610
27. **Ryu, T.**, de Mink, S., Farmer, R., Pakmor, R., Perna, R., Springel, V., *Close Encounters of Star-black Hole Binaries with Single Stars*, MNRAS 527, 2734 (2024), arXiv:2307.03097
26. Bellinger, E., Caplan, M., **Ryu, T.**, Bollimpalli, D., Ball, W., Kühnel, F., Farmer, R., de Mink, S., Christensen-Dalsgaard, J, *Solar evolution models with a central black hole*, ApJ 959, 113 (2023)
25. **Ryu, T.**, Krolik, J., Piran, T., Noble, S., Avara, M., *Shocks Power Tidal Disruption Events*, 957, 12 ApJ (2023), arXiv:2305.05333
24. **Ryu, T.**, Valli, R., Pakmor, R., Perna, R., de Mink, S., Springel, V., *Close Encounters of Black Hole-star Binaries with Stellar-mass Black Holes*, MNRAS 525, 5752 (2023), arXiv:2304.01792

23. Franchini, A., Bonetti, M., Lupi A., Miniutti, G., Bortolas, E., Giustini, M. , Dotti, M., Sesana, A., Arcodia, R., **Ryu, T.** *QPEs from Impacts between the Secondary and a Rigidly Precessing Accretion Disc in an EMRI System*, A&A 675, 100 (2023), Arxiv: 2304.00775
22. Bortolas, E. , **Ryu, T.**, Broggi, L., Sesana, A. *Partial Stellar Tidal Disruption Events and Their Rates*, MNRAS 524, 3026 (2023), Arxiv: 2211.02734
21. **Ryu, T.**, Perna, R., Parkmor, R., Ma, J., Farmer, R., de Mink, S. *Close Encounters of Tight Binary Stars with Stellar-mass Black Holes*, MNRAS 519, 5787 (2023), arXiv: 2211.02734
20. **Ryu, T.**, Krolik, J., Piran, T. *Extremely Relativistic Tidal Disruption Events*, ApJL 946, 33 (2023), arXiv: 2211.00059
19. **Ryu, T.**, Perna, R., Wang, Y. *Close Encounters of Stars with Stellar-mass Black Hole Binaries*, MNRAS 516, 2204 (2022), arXiv: 2206.00603
18. **Ryu, T.**, Trani, A. A. , Leigh, N.W.C. *Tidal Disruption Events by Compact Supermassive Black Hole Binaries*, MNRAS 515, 2430 (2022), arXiv: 2202.07668
17. McKernan, B., Ford, K.E.S., Cantiello, M., Graham, M.J., Jermyn, A.S., Leigh, N.W.C., **Ryu, T.**, Stern, D. *Starfall: A Heavy Rain of Stars in 'Turning on' AGN*, MNRAS 514, 3 (2022), arXiv: 2110.03741
16. **Ryu, T.**, Krolik, J., Piran, T. *The Impact of Shocks on the Vertical Structure of Eccentric Disks*, ApJ 920.2, 130, arXiv: 2105.09434 (2021)
15. **Ryu, T.**, Krolik, J., Piran, T. *Measuring Stellar and Black Hole Masses of Tidal Disruption Events*, ApJ 904.1, 73 (2020), arXiv: 2007.13765
14. Krolik, J., Piran, T., **Ryu, T.** *Tidal Disruptions of Main Sequence Stars – V. The Varieties of Disruptions*, ApJ 904.1, 68 (2020), arXiv: 2001.03234
13. **Ryu, T.**, Krolik, J., Piran, T., Noble, N. *Tidal Disruptions of Main Sequence Stars – IV. Relativistic Effects and Dependence on Black Hole Mass*, ApJ 904.2, 101 (2020), arXiv: 2001.03504
12. **Ryu, T.**, Krolik, J., Piran, T., Noble, N. *Tidal Disruptions of Main Sequence Stars – III. Stellar Mass Dependence of the Character of Partial Disruptions*, ApJ 904.2, 100 (2020), arXiv: 2001.03503
11. **Ryu, T.**, Krolik, J., Piran, T., Noble, N. *Tidal Disruptions of Main Sequence Stars – II. Simulation Methodology and Stellar Mass Dependence of the Character of Full Tidal Disruptions*, ApJ 904.2, 99 (2020), arXiv: 2001.03502
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