Multiple Planet Systems (EXO-MPS 2026)

Conference Program

Sofia University, 31 August - 4 September 2026

MONDAY 31.08.26

09:00 - 10:00: Registration/Reception
10:00 - 11:00: Opening of the conference:
10:00 - 10:10: Prof. Sonia Mileva, Vice-Rector of Sofia University "St. Kl. Ohridski"
10:10 - 10:20: Prof. Georgi Rainovski, Dean of the Faculty of Physics, Sofia University "St. Kl. Ohridski"
10:20 - 10:30: Prof. Georgi Valchev, Minister of Education and Science of Bulgaria
10:30 - 10:40: Prof. Yuriy Kalvachev, Manager of the Bulgarian National Science Fund
10:40 - 11:00: Trifon Trifonov, The EXO-RESTART Project and Logistics

Session 1: Planet formation and migration (Chair: Gabriele Pichierri)

11:00 - 11:30: Michiel Lambrechts - Forming systems of protoplanets with diverse core and envelope compositions by pebble accretion.
11:30 - 11:45: Tamami Okamoto - Formation histories of hot Jupiters with low-mass nearby companions via disk migration.
11:45 - 12:00: Linghong Lin - Capture and stability of resonant planet pairs in turbulent disks.
12:00 - 12:15: (short) Coffee break
12:15 - 12:30: Eiichiro Kokubo - Orbital architectures of multiple-planet systems formed by gravitational scattering and collisions.
12:30 - 12:45: Sergei Nayakshin - The puzzle of planets within the tightest binary systems: formation via Core Accretion or Gravitational Instability?
12:45 - 13:00: Luyao Zhang - The importance of type I to II migration switch in formation of planets in the growing binary systems
13:00 - 14:00: Lunch break

Session 2: Radial-velocity multiple-planet systems (Chair: Stefan Dreizler)

14:00 - 14:30: Stephane Udry - Multi-giant planet systems from decade-long radial-velocity planet search programs.
14:30 - 14:45: Deepa Mukhija - Radial-velocity evidence for additional companion planets in HD4208 and HD188015.
14:45 - 15:00: Denitza Stoeva - GJ1137 as a multiple-planet system: disentangling planets from magnetic cycles.
15:00 - 15:15: Jonay I. Gonzalez Hernandez - Stellar activity and a sub-Earth planetary system in Barnard's star.
15:15 - 15:30: Vladimir Bozhilov - Updated dynamical solution for the 2:1 MMR giant-planet system TIC 279401253.
15:30 - 16:10: Coffee break

Session 3: Radial-velocity multiple-planet systems (Chair: Trifon Trifonov)

16:10 - 16:40: Andreas Quirrenbach - Multiple Planet Systems around Low-Mass Stars.
16:40 - 16:55: Jorge Lillo-Box - Five years of RV monitoring of late 50 K-dwarfs.
16:55 - 17:10: Atanas Stefanov - A super-Earth in the habitable zone of the GJ 3998 multi-planetary system.
17:10 - 17:25: Dawid Jankowski - Revisiting the HD 37124 planetary system with three Jupiters and the 2:1 MMR.
17:25 - 17:40: Stefan Dreizler - Architectures of nearby multi-planetary systems.
17:40 - 17:55: Wei Zhu - Know thy Jupiter, know thy Earth.

TUESDAY 01.09.26

Session 4: Transiting multiple-planet systems and TTVs (Chair: Amaury Triaud)

09:00 - 09:30: Adrien Leleu - Insight into planetary formation pathways from resonant architectures.
09:30 - 09:45: Judith Korth - SnowLEOPARDS: probing planetary migration through transit-timing variations in near-resonant systems with CHEOPS.
09:45 - 10:00: Alejandro Suárez Mascareño - Constraining the masses of the terrestrial planets in the LHS 1678 system with ESPRESSO and transit-timing variations.
10:00 - 10:15: George Dransfield - A newly discovered pair of dynamically interacting super-puffs.
10:15 - 10:30: Samuel Gill - A three-planet warm system from TESS single transits: NGTS recovery and evidence for dynamical interactions.
10:30 - 11:10: Coffee break

Session 5: Transiting multiple-planet systems and TTVs (Chair: Judith Korth)

11:10 - 11:40: Daniel Yahalomi - Welcome to the TTV Circus: searching for unseen worlds via transit-timing variations.
11:40 - 11:55: Marylyn Rosenqvist - Refined masses and orbital architecture of the six-planet system HD110067.
11:55 - 12:10: Michaela Vitkova - The diversity of close-in gas giants and their companions: Insights from TOI-4504 and beyond
12:10 - 12:25: Stefan Stefanov - The Strong TTVs of TOI-2361: An Inner or Outer Perturber?
12:25 - 12:35: Conference Photo
12:35 - 14:10: Lunch break

Session 6: Resonant and near-resonant systems (Chair: Hanno Rein)

14:10 - 14:40: Anne-Sophie Libert - Stability of compact resonant chains.
14:40 - 14:55: Jeremy Couturier - Dynamics of three-planet zeroth-order resonances.
14:55 - 15:10: Zhecheng Hu - Near-resonant and metastable states of young multiplanet systems.
15:10 - 15:25: Yannick Eyholzer - Resonant planetary systems: rare or hard to detect?
15:25 - 15:40: Kevin Schlaufman - Terrestrial exoplanets in mean-motion-resonant multiple-planet systems are water-rich.
15:40 - 16:20: Coffee break

Session 7: Resonant and near-resonant systems (Chair: Anne-Sophie Libert)

16:20 - 16:50: Gabriele Pichierri - Resonant systems as a lens on dynamics, formation, and architectures.
16:50 - 17:05: Sonya Liu - Dynamic Duo(s): surveying potential 2:1 Jovian planet pairs.
17:05 - 17:20: Yingyi Cao - Dynamical analysis of the 5:1 mean-motion resonance of the HD 202206 system.
17:20 - 17:35: Kangrou Guo - Impact of cold-Jupiter scattering on the mean-motion resonance of inner small planets.
17:20 - 17:35: Emma Turtelboom - The long-term survival of a four-planet resonant chain around TOI-1246.

WEDNESDAY 02.09.26

Session 8: Planets in binary-star systems (Chair: Michiel Lambrechts)

09:00 - 09:30: Malena Rice - Exoplanet orbital architectures in binary-star systems.
09:30 - 09:45: Ho Wan Cheng - A retrograde planet in a tight binary-star system with a white dwarf.
09:45 - 10:00: Alan Cefali Signor - Constraining the orbit of the retrograde planet in the nu Octantis system.
10:00 - 10:15: Angelica Psaridi - TOI-1699: a sub-Neptune and a massive companion in an S-type stellar binary.
10:15 - 10:30: Lina Messamah - Mind the companion: demographics of transiting S-type exoplanets.
10:30 - 11:10: Coffee break

Session 9: Planets in binary-star systems (Chair: Nader Haghighipour)

11:10 - 11:40: Amaury Triaud - Lessons learned from discovering circumbinary exoplanets with radial velocities.
11:40 - 11:55: Benjamin Davies - Finding circumbinary planets one transit at a time.

11:55 - 12:10: Carolina Charalambous - Planetary architectures under the influence of a stellar binary.
12:10 - 12:25: Nikita Doukhanin - Stability of exoplanet pairs in binary-star systems.
12:25 - 12:40: Nikolaos Georgakarakos - Planetary survival zones in stellar binaries.
12:40 - 13:00: Poster session.
13:00 Lunch break, free afternoon, and free evening
Sightseeing options (self-paid):
- Dragalevtsi Monastery, Vitosha mountain, approx. 15 km from the Sofia centre
- Boyana Church, Boyana, Sofia
- The National Museum of History, Boyana Residence, Sofia
- Sofia City Centre

19:00 - Conference Dinner downtown Sofia
- Self-paid, informal gathering of the EXO-MPS 2026 participants in one of the cult Sofia restaurants, the Q-ftetaria restaurant (see https://q-ftetaria.bg/)

THURSDAY 03.09.26

Session 10: Transit follow-up surveys (Chair: Matias Jones)

09:00 - 09:30: Solene Ulmer-Moll - Expanding the population of transiting multi-planetary systems with TESS.
09:30 - 09:45: Marcelo Tala Pinto - The WINE collaboration.
09:45 - 10:00: Daniel Bayliss - Bridging the gap: connecting exoplanets from TESS, NGTS, and Gaia.
10:00 - 10:15: Keith Baka - What two distinct multi-planet systems can teach us?
10:15 - 10:30: Djemma Ruseva - A well-characterised eccentric warm Jupiter with TTVs orbiting TOI-3309.
10:30 - 11:10: Coffee break

Session 11: Post-main-sequence planetary-system dynamics (Chair: Lauren Weiss)

11:10 - 11:40: Dong Lai - Planet-star interactions during stellar evolution.
11:40 - 11:55: Dang Pham - Polluting white dwarfs with Oort-cloud comets.
11:55 - 12:10: Lev Tal-Or - Rethinking long-period planets around giant stars.
12:10 - 12:25: Matias Jones - An extreme Jovian planet orbiting a giant star in a compact binary system.
12:25 - 14:10: Lunch break

Session 12: Secular dynamics and chaos (Chair: Adrien Leleu)

14:10 - 14:40: Rosemary Mardling - Long-term stability of planetary systems: “breaking the chains”
14:40 - 14:55: Nader Haghighipour - On secular resonances in systems with multiple giant planets and multiple stars.
14:55 - 15:10: Luis Thomas - Planet multiplicity across the Neptune desert, ridge, and savanna.
15:10 - 15:25: Leon Ka-Wang Kwok - Influence of stellar dynamical tides on mean-motion resonances and. resonant-chain stability
15:25 - 15:40: Shuo Huang - A resonant beginning for the Solar System terrestrial planets.
15:40 - 16:20: Coffee break

Session 13: Numerical tools and instruments (Chair: Lev Tal-Or)

16:20 - 16:50: Hanno Rein - Testing long-term stability of multiplanetary systems with the world’s fastest N-body integrator.
16:50 - 17:05: Mangesh Daspute - Interpretable Gaussian-process periodogram to identify and differentiate rotational and Keplerian signals in RV data.
17:05 - 17:20: Trifon Trifonov - The Exo-Striker: a toolbox for modelling exoplanetary systems.
17:20 - 17:35: Paul Dooley - PlanSim: a 3D n-body simulation program for the visualisation and analysis of exoplanetary and multi-stellar systems
17:35 - 17:50: Uli Scheuss - CurveSimulator: A Flexible nBody Python Library for Orbital Parameter Determination and Visualisation.
17:50 - 18:05: Yuichiro Ishida - A machine-learning emulator for planet formation in the giant-impact stage.

FRIDAY 04.09.26

Session 14: Solar System dynamics: lessons for exoplanetary systems (Chair: Dong Lai)

09:00 - 09:30: Daniel Fabrycky - Solar System ideas fit for export.
09:30 - 09:45: Lauren Weiss - The origin of Earth: lessons from multi-planet systems.
09:45 - 10:00: Ian Brunton - The origin of the Laplace resonance.
10:00 - 10:15: Natasa Todorovic - Dynamical environment of Halley's Comet.
10:15 - 10:30: Elena Vchkova Bebekovska - Physical and dynamical characteristics of asteroids.
10:30 - 11:10: Coffee break

Session 15: Astrometry, characterization, and planetary-system demographics (Chair: Daniel Bayliss)

11:10 - 11:25: Quanyi Liu - The shape and spin of giant exoplanets revealed by JWST.
11:25 - 11:40: Emmanuel Greenfield - Detection biases due to multiple planets in Gaia astrometry.
11:40 - 11:55: Chris Ormel - Resonant multi-planet systems: 1. Fitting astrometric data with periodic orbits.
11:55 - 12:10: Tian Yi - Resonant multi-planet systems: 2. Improved astrometric fitting with resonance priors.
12:10 - 12:25: Mika Kontiainen - By Jove, what a crowd! On the prevalence of hot Jupiters in M67.
12:25 - 12:40: Qingru Hu - Is the Galactic velocity dispersion a robust age indicator for planetary systems?
12:40 - 12:50: Closing remarks
12:50 - 14:00: Lunch break
14:00 End of conference

Posters

1. Dawid Jankowski, A new look at the Neptune Desert.
2. Desislava Antonova, An updated dynamical analysis of the HD 82943 planetary system.
3. Hans J. Deeg, Science on Circumbinary Planets from PLATO.
4. Justine Bodart, General AMD-stability criterion for multi-planet systems.
5. Nikola Antonov, The TESS Follow-up Program from the Perspective of Small Observatories: The Case of Meshtitsa Observatory.
6. Pavol Gajdos, Discovery of three warm Jupiter planets using PLATOSpec.
7. Zachary William Gilbert-Murphy, Resonant capture and stability in inviscid protoplanetary discs.
8. Marcelo Tala Pinto, Beyond the Seeing Limit: iLocater as a Facility for Resolving Multi-Planet Systems and Close Binaries.
9. Lixian Shen, Hunting for Transit Timing Variations in TESS Objects of Interest.
10. Petar Eftimov, Planetary and Exoplanetary Research - Highlights From the SU Astrobiology Master Program.
11. Uli Scheuss, CurveSimulator - A Flexible nBody Python Library for Orbital Parameter Determination and Visualisation.
12. Amber Sedgley, Warm giant systems with TESS and NGTS.
13. Nicola Nari, The RoPES project: a search for Earth-like planets around solar-type stars.
14. Selçuk Yalçınkaya, TOI-5799 b and c: Discovery and Future Prospects of Two Exoplanets in the Radius Valley.
15. Bestha Manjunath, Exoplanet Transmission Spectroscopy Using the 2m Himalayan Chandra Telescope.
16. Yared Reinarz, TOI-375: A Post-Main-Sequence Star Hosting Three Gas Giant Planets.
17. Rumen Bachev, Searching for Chaos in Astrophysical Time Series: Analysis of the TESS light curve of the blazar S5 0716+714.
18. Hana Ali, Refined Orbital Architectures and Dynamical Stability of the HD 75784 and HD 24040 Planetary Systems.

19. David Palatz, Orbital Architecture and Dynamical Stability of the Two-Planet System TIC 13093071.
20. Siegfried Vanaverbeke, Joint TTV and Radial-Velocity Modeling of the Resonant Two-Planet System TOI-3686
21. Amaury Triaud, Exoplanets from Antarctica
22. Tian Yi, The Dynamical History of Barnard's Star Planet System Explained by "Break-the-Chain" Event
23. Lauren Weiss, Biases From Missing a Small Planet in High Multiplicity Systems
24. Lauren Weiss, A Candidate Long-Period Giant Planet in the Kepler-9 System
25. Carolina Charalambous, Dynamical constraints on planet engulfment as the origin of lithium enhancement in TOI-5882
26. Emma V. Turtelboom, Metallicity-dependent formation of sub-Neptune-systems around M dwarfs
27. Veselin Kostov, NASA's Pandora SmallSat: a Dedicated Survey of Exoplanet Atmospheres and Stellar Variability
28. Nader Haghighipour, Regulating the Supply and Population of the Galactic Interstellar Objects
29. Nader Haghighipour, Using Supervised Machine Learning to Predict and Classify Orbital Stability
30. Sonya Liu, Dynamic Duo(s) Diversity? The Resonant Hamiltonian to Characterise Jovian Pairs
31. Deyan Mihaylov, A warm massive pair of planets around TOI-1232
32. Aleksandar Ivanov, Study of a potential hierarchical quadruple stellar system.
33. Abolfazl Elsaghi, Refining the Physical Parameters of the Hot Jupiter HAT-P-20 b via Transit Light Curve Modeling
34. Lina Messamah, In the Company of Two : NIRPS Hunts Planets in Binary Systems: