ExoPlanet News
An Electronic Newsletter

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https://nccr-planets.ch/exoplanetnews

Contents

1 Editorial

Welcome to Edition 192 of ExoPlanet News!

This month, as usual, we bring you abstracts of scientific papers, job ads, conference announcements, and an overview of exoplanet-related articles on astro-ph. Thanks a lot to all of you who contributed to this issue of the newsletter!

For next month, we look forward to continuing receiving your submissions of paper abstracts, job ads, or meeting announcements. Special announcements are also welcome. As always, we would also be happy to receive feedback concerning the newsletter. The LaTeX template (v2.0) for submitting contributions, as well as all previous editions of ExoPlanet News, can be found on the ExoPlanet News webpage (`https://nccr-planets.ch/exoplanetnews/`).

The next issue will appear on Tuesday, July 8th (with a submission deadline ending on Sun July 6th, 2025 CEST).

Thanks again for your support, and best wishes from the editorial team.

Haiyang Wang
Leander Schlarmann
Jeanne Davoult
Timm-Emanuel Riesen

2 Abstracts of refereed papers

Detecting Atmospheric CO_2 Trends as Population-Level Signatures for Long-Term Stable Water Oceans and Biotic Activity on Temperate Terrestrial Exoplanets

J. Hansen[1,2], D. Angerhausen[1,2,3,4], S. P. Quanz[1,2,5], D. Vance[6], B. S. Konrad[1,2], E. O. Garvin[1,2], E. Alei[7], J. Kammerer[8], F. A. Dannert[1,2]

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[8] European Southern Observatory, Karl-Schwarzschild-Straße 2, 85748 Garching, Germany

The Astrophysical Journal, in press (arXiv:2505.23230)

Identifying key observables is essential for enhancing our knowledge of exoplanet habitability and biospheres, as well as improving future mission capabilities. While currently challenging, future observatories such as the Large Interferometer for Exoplanets (LIFE) will enable atmospheric observations of a diverse sample of temperate terrestrial worlds. Using thermal emission spectra that represent conventional predictions of atmospheric CO_2 variability across the Habitable Zone (HZ), we assess the ability of the LIFE mission - as a specific concept for a future space-based interferometer - to detect CO_2 trends indicative of the carbonate-silicate (Cb-Si) weathering feedback, a well-known habitability marker and potential biological tracer. Therefore, we explore the feasibility of differentiating between CO_2 trends in biotic and abiotic planet populations. We create synthetic exoplanet populations based on geochemistry-climate predictions and perform retrievals on simulated thermal emission observations. The results demonstrate the robust detection of population-level CO_2 trends in both biotic and abiotic scenarios for population sizes as small as 30 Exo-Earth Candidates (EECs) and the lowest assessed spectrum quality in terms of signal-to-noise ratio, $S/N = 10$, and spectral resolution, $R = 50$. However, biased CO_2 partial pressure constraints hinder accurate differentiation between biotic and abiotic trends. If these biases were corrected, accurate differentiation could be achieved for populations with ≥ 100 EECs. We conclude that LIFE can effectively enable population-level characterization of temperate terrestrial atmospheres and detect Cb-Si cycle driven CO_2 trends as habitability indicators. Nevertheless, the identified biases underscore the importance of testing atmospheric characterization performance against the broad diversity expected for planetary populations.

Download/Website: `http://arxiv.org/pdf/2505.23230`

Contact: `jahansen@phys.ethz.ch`

Dynamical evolution of the Uranian satellite system I. From the 5/3 Ariel–Umbriel mean motion resonance to the present

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[1] CFisUC, Departamento de Física, Universidade de Coimbra, 3004-516 Coimbra, Portugal
[2] IMCCE, Observatoire de Paris, PSL Université, 77 Av. Denfert-Rochereau, 75014 Paris, France

Icarus, published (2024Icar..42416282G)

Mutual gravitational interactions between the five major Uranian satellites raise small quasi-periodic fluctuations on their orbital elements. At the same time, tidal interactions between the satellites and the planet induce a slow outward drift of the orbits, while damping the eccentricities and the inclinations. In this paper, we revisit the current and near past evolution of this system using a $N-$body integrator, including spin evolution and tidal dissipation with the weak friction model. We update the secular eigenmodes of the system and show that it is unlikely that any of the main satellites were recently captured into a high obliquity Cassini state. We rather expect that the Uranian satellites are in a low obliquity Cassini state and compute their values. We also estimate the current variations in the eccentricities and inclinations, and show that they are not fully damped. We constrain the modified quality factor of Uranus to be $Q'_U = (1.2 \pm 0.4) \times 10^5$, and that of Ariel to be $Q'_A = (7 \pm 3) \times 10^4$. We find that the system most likely encountered the 5/3 mean motion resonance between Ariel and Umbriel in the past, at about (0.7 ± 0.2) Gyr ago. We additionally determine the eccentricities and inclinations of all satellites just after the resonance passage that comply with the current system. We finally show that, from the crossing of the 5/3 MMR to the present, the evolution of the system is mostly peaceful and dominated by tides raised on Uranus by the satellites.

Download/Website: `https://arxiv.org/abs/2403.17896`

Contact: `alexandre.correia@uc.pt`

Dynamical evolution of the Uranian satellite system II. Crossing of the 5/3 Ariel–Umbriel mean motion resonance

S. R. A. Gomes[1], *A.C.M. Correia*[1,2]

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Icarus, published (2024Icar..42416254G)

At present, the main satellites of Uranus are not involved in any low order mean motion resonance (MMR). However, owing to tides raised in the planet, Ariel and Umbriel most likely crossed the 5/3 MMR in the past. Previous studies on this resonance passage relied on limited time-consuming $N-$body simulations or simplified models focusing solely on the effects of the eccentricity or the inclination. In this paper, we aim to provide a more comprehensive view on how the system evaded capture in the 5/3 MMR. For that purpose, we developed a secular resonant two-satellite model with low eccentricities and low inclinations, including tides using the weak friction model. By performing a large number of numerical simulations, we show that capture in the 5/3 MMR is certain if the initial eccentricities of Ariel, e_1, and Umbriel, e_2, are related through $(e_1^2 + e_2^2)^{1/2} < 0.007$. Moreover, we observe that the eccentricity of Ariel is the key variable to evade the 5/3 MMR with a high probability. We determine that for $e_1 > 0.015$ and $e_2 < 0.01$, the system avoids capture in at least 60% of the cases. We also show that, to replicate the currently observed system, the initial inclinations of Ariel and Umbriel must lay within $I_1 \leq 0.05^\circ$ and $0.06^\circ \leq I_2 \leq 0.11^\circ$, respectively. We checked these results using a complete $N-$body model with the five main satellites and did not observe any significant differences.

Download/Website: `https://arxiv.org/abs/2403.17897`

Contact: `alexandre.correia@uc.pt`

3 Jobs and Positions

POSTDOC POSITION in ML supported cloud formation modelling

Prof. Dr. Christiane Helling

Space Research Institute (IWF) of the Austrian Academy of Sciences, Graz, Austria, Nov 1, 2025

The Space Research Institute in Graz invites applications for a POSTDOC POSITION in ML supported cloud formation modelling.

The successful candidate will be part of Prof Christiane Helling's research group "Exoplanets: Weather & Climate". The project is conducted in collaboration with Prof Robert Peharz from the Graz University of Technology.

In this project, we are interested in understanding cloud formation in exoplanets and specifically the formation of molecular cluster as pre-coursers of cloud formation in the diversity of exoplanets. We aim to explore advanced neural network architectures, particularly Graph Neural Networks (GNNs) and generative models, to predict the 3D structures and thermo-chemical properties of large molecular clusters-tasks that are computationally prohibitive using traditional methods like Density functional theory (DFT) and molecular dynamics. Our modelling efforts support JWST and CHEOPS in physically interpreting observational data. We further contribute to science case studies and science preparation for PLATO, the high-energy space mission NewATHENA as well as HWO.

Which domain competence are we looking for:

- astrochemistry (incl. carbo-hydrates),
- cloud formation modelling (incl. solar system, exoplanets, brown dwarfs, AGB stars),
- computational chemistry (incl. molecular cluster simulations), or
- theoretical physics (quantum chemistry, material sciences).

Application Deadline: June 30, 2025

Download/Website: `https://www.oeaw.ac.at/jobs?jh=7tvqzbob8sjpkd9ak187ayc34tv7j68`
Contact: `cosima.muck@oeaw.ac.at`

4 Conferences and Workshops

Exploring Tatooine and beyond: Circumbinary planets with ESA missions

Matthew Standing [1]*, Camilla Danielski* [2]*, Hans Deeg* [3]*, David Martin* [4]*, Johannes Sahlmann* [1]*, Amaury Triaud* [5]*, Julia Venturini* [6]

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ESAC, Madrid, 10-12th December 2025

Dear Colleagues,

We are excited to announce a workshop on circumbinary planets, scheduled to take place from December 10th to 12th, 2025, at ESAC Madrid.

This event will bring together experts in the field to discuss the latest advancements, share insights, and foster collaborations with a focus on observations of circumbinary planets. The workshop will feature short talks, updates on observing efforts, hands on sessions, and ample opportunities for discussion and networking.

We aim to address observing and data analysis challenges in the field. There will be time dedicated to meetings for international teams, allowing for updates and the formation of new projects.
Abstracts can be submitted through the website below, note: attendees will be limited to 40 people and so registration will be on a first come first served basis.

Abstract and travel grant submission deadline: 21st September 2025
Registration deadline: 21st October 2025

Kind regards,
From the SOC: Matthew Standing, Camilla Danielski, Hans Deeg, David Martin, Johannes Sahlmann, Amaury Triaud, Julia Venturini

Download/Website: `https://www.cosmos.esa.int/web/circumbinary-planets-with-esa-missions/home`

Contact: `matthew.standing@esa.int`

FU Berlin Computational Planetary Science Summer School

Iris Boer, Philipp Baumeister, Lena Noack

Freie Universität Berlin (GeoCampus Lankwitz), Berlin, Germany, August 4-9 2025

This summer, we are organising the first edition of the FU Berlin Computational Planetary Science Summer School on the topic of 'Computational Planet Formation: Accretion to Interiors'. The summer school will take place from 4th of August to 9th of August 2025 at the FU Berlin, Lankwitz Campus in Berlin.
In the framework of the summer school we aim to provide young scientists (Masters, PhDs, and early Postdocs) with a comprehensive introduction to different aspects of planet formation from a numerical perspective.
We aim to structure the program with an equal focus on lectures in the morning and hands-on numerical exercises in the afternoon. To conclude the week, we aim to organize a social activity with a private guided tour of the Museum für Naturkunde, where participants can see concepts from the summer school in action within the museum's collections.
Throughout the week, this Summer School aims to explore a wide range of topics related to planetary formation — from early dynamical processes and pebble accretion to internal structure and planetary chemistry. Key subjects will include N-body simulations, pebble accretion, disk chemistry and planetary structures.
Confirmed speakers: Remo Burn (Max Planck Institute for Astronomy), Joanna Drążkowska (Max Planck Institute for Solar System Research), Daniel Kitzmann (Universität Bern), Philipp Baumeister (FU Berlin) and Lena Noack (FU Berlin).
More information and the registration form can be at the link below.
The registration is open!
Best regards, Iris Boer, Philipp Baumeister, Lena Noack

Download/Website: `https://geodynchic.userpage.fu-berlin.de/SummerSchool2025/`

Contact: `iris.boer@fu-berlin.de`

The Roman Science Collaboration

Scott Gaudi (Co-Chair, RSC Exoplanets and Solar System Science Group)
The Ohio State University, Columbus, OH

The Roman Science Collaboration (RSC) has recently been formed with the goal of fostering science with Roman Space Telescope data by providing a communication framework and tools for supporting collaborative teams that may range from a handful of members to dozens or hundreds, depending on the scope of the investigations. These tools include dedicated Slack channels, email lists, and wiki pages for internal communications. Much of the activity of the collaboration will take place through the Science Groups, including the Exoplanets and Solar System working group. In contrast the project's technical working groups, these Science Groups are focused primarily on doing science with the data rather than providing infrastructure to produce the data, though of course these two categories overlap.

If you are potentially interested in joining the RSC, now is a great time to do so. Please take a look at the information on the RSC's public web page linked below and follow the signup instructions there if you decide to join. It takes roughly a week to get added to the various RSC communication channels.

Download/Website: `\https://outerspace.stsci.edu/display/RSCPUB/Roman+Science+Collaboration+(RSC)+Public+Page+Home`

Contact: `gaudi.1@osu.edu`

5 As seen on astro-ph

The following list contains exoplanet related entries appearing on astro-ph in May 2025.
Disclaimer: The hyperlinks to the astro-ph articles are provided for the convenience of the reader, but the ExoPlanet News cannot be responsible for their accuracy and perpetuity.

May 2025

astro-ph/2505.06251: **Accessing the dipole-multipole transition in rapidly rotating spherical shell dynamos** *by Andrew T. Clarke et al.*
astro-ph/2505.00207: **On the secular evolution of the semi-major axis in canonical formalism** *by Barnabás Deme*
astro-ph/2505.00090: **Can Close-In Exoplanets form by Pebble Accretion?** *by Jayashree Narayan et al.*
astro-ph/2505.00092: **Reconstructing the Free-floating Planet Mass Function with the Nancy Grace Roman Space Telescope** *by William DeRocco et al.*
astro-ph/2505.00064: **Quantum-inspired exoplanet detection in the presence of experimental imperfections** *by Tomasz Linowski et al.*
astro-ph/2505.00898: **HD 35843: A Sun-like star hosting a long period sub-Neptune and inner super-Earth** *by Katharine Hesse et al.*
astro-ph/2505.00880: **A Model of UV-Blue Absorbance in Bulk Liquid of Venusian Cloud Aerosols Is Consistent with Efficient Organic Absorbers at High Concentrations** *by Jan Spacek et al.*
astro-ph/2505.00794: **The JWST weather report from the nearest brown dwarfs II: Consistent variability mechanisms over 7 months revealed by 1-14 μm NIRSpec + MIRI monitoring of WISE 1049AB** *by Xueqing Chen et al.*
astro-ph/2505.00775: **Characterizing the Radiative-Convective Structure of Dense Rocky Planet Atmospheres** *by Jessica Cmiel et al.*
astro-ph/2505.00692: **Multi-wavelength JWST observations of (3200) Phaethon show a dehydrated object with an aqueously altered origin** *by Cristina A. Thomas et al.*
astro-ph/2505.00363: **Dust density enhancements and the direct formation of planetary cores in gravitationally unstable discs** *by Ken Rice et al.*
astro-ph/2505.00762: **Can planet-planet binaries survive in star-forming regions?** *by Richard J. Parker et al.*
astro-ph/2505.01581: **From Tides to Currents: Unraveling the Mechanism That Powers WASP-107b's Internal Heat Flux** *by Konstantin Batygin*
astro-ph/2505.01544: **Dark skies of the slightly eccentric WASP-18 b from its optical-to-infrared dayside emission** *by A. Deline et al.*
astro-ph/2505.01496: **Seismic Oscillations Excited by Giant Impacts in Directly-Imaged Giant Planets** *by J. J. Zanazzi et al.*
astro-ph/2505.01512: **Comparative Biosignatures** *by Tereza Constantinou et al.*
astro-ph/2505.01154: **Benchmark stars for mean stellar density and surface gravity estimates of solar-type stars** *by P. F. L. Maxted*
astro-ph/2505.01102: **Instrumentation prospects for rocky exoplanet atmospheres studies with high resolution spectroscopy** *by Surangkhana Rukdee*
astro-ph/2505.00978: **A Survey Of Model Fits to Brown Dwarf Spectra Through the L-T Sequence** *by Savanah K. Turner et al.*
astro-ph/2505.01397: **Bridging the Atmospheric Circulations of Hot and Warm Giant Exoplanets** *by J. W. Skinner, S. Wei*
astro-ph/2505.01470: **Gaia search for stellar companions of TESS Objects of Interest V** *by M. Mugrauer et al.*
astro-ph/2505.01844: **The impact of rates of reactions with cosmic ray induced photons on chemical composition of protoplanetary discs** *by L. N. Zwicky, T. S. Molyarova*

astro-ph/2505.02157: **Toward A General Theory of Grain Alignment and Disruption by Radiative Torques and Magnetic Relaxation** *by Thiem Hoang*

astro-ph/2505.02976: **The Disks In Scorpius-Centaurus Survey (DISCS) I: Four Newly-Resolved Debris Disks in Polarized Intensity Light** *by Justin Hom et al.*

astro-ph/2505.03028: **On the spin-orbit problem for highly elliptical orbits and recursive excitation** *by Erica Scantamburlo et al.*

astro-ph/2505.02818: **Closeby Habitable Exoplanet Survey (CHES). IV. Synergy between astrometry and direct imaging missions of the Habitable World Observatory for detecting Earth-like planets** *by Chunhui Bao et al.*

astro-ph/2505.02641: **Earths composition: origin, evolution and energy budget** *by William F McDonough*

astro-ph/2505.03200: **Monosilane Worlds: Sub-Neptunes with Atmospheres Shaped by Reduced Magma Oceans** *by Yuichi Ito et al.*

astro-ph/2505.03604: **Self-limited tidal heating and prolonged magma oceans in the L 98-59 system** *by Harrison Nicholls et al.*

astro-ph/2505.03628: **The True Stellar Obliquity of a Sub-Saturn Planet from the Tierras Observatory and KPF** *by Patrick Tamburo et al.*

astro-ph/2505.03672: **Statistical geochemical constraints on present-day water outgassing as a source of secondary atmospheres on the TRAPPIST-1 exoplanets** *by Trent B. Thomas et al.*

astro-ph/2505.03701: **Young Planets around Young Accreting Stars: I. Migration and Inner Stalling Orbits** *by Arturo Cevallos Soto, Zhaohuan Zhu*

astro-ph/2505.03723: **Effects of transient stellar emissions on planetary climates of tidally-locked exo-earths** *by Howard Chen et al.*

astro-ph/2505.03881: **Minimizing Star Spot Contamination of Exoplanet Transit Spectroscopy Using Alternate Normalization** *by Drake Deming et al.*

astro-ph/2505.03994: **The Sonora Substellar Atmosphere Models. V: A Correction to the Disequilibrium Abundance of CO_2 for Sonora Elf Owl** *by Nicholas F. Wogan et al.*

astro-ph/2505.04767: **First Detection of Molecular Activity in the Largest Known Oort Cloud Comet: ALMA Imaging of C/2014 UN271 (Bernardinelli-Bernstein) at 16.6 au from the Sun** *by Nathan X. Roth et al.*

astro-ph/2505.04699: **Star formation and accretion rates within 500 pc as traced by Gaia DR3 XP spectra** *by L. Delfini et al.*

astro-ph/2505.04618: **Linear Thermal Instability of a Condensing Gas-Particle Mixture** *by Kecheng Stephon Qian, Eugene Chiang*

astro-ph/2505.04506: **Main-oval auroral emission from a T6 brown dwarf: observations, modeling, and astrometry** *by J. C. Guirado et al.*

astro-ph/2505.04398: **Double Hot Jupiters Through ZLK Migration** *by Yurou Liu et al.*

astro-ph/2505.04399: **Collisional Fragmentation Support in TRACE** *by Tiger Lu et al.*

astro-ph/2505.04343: **Atmospheric loss during giant impacts: mechanisms and scaling of near- and far-field loss** *by Matthew J. Roche et al.*

astro-ph/2505.04106: **The Eccentricity Distribution of Warm Sub-Saturns in TESS** *by Tyler R. Fairnington et al.*

astro-ph/2505.04413: **A Detailed Investigation of HD 209458 b HST & JWST Transmission Spectra with SANSAR** *by Avinash Verma et al.*

astro-ph/2505.04233: **Dust enrichment and growth in the earliest stages of protoplanetary disk formation** *by E. I. Vorobyov et al.*

astro-ph/2505.05680: **Peekaboo: Secular Resonances from Evolving Stellar Oblateness Impede Transit Detection** *by Thea Faridani et al.*

astro-ph/2505.05578: **The survivorship bias of protoplanetary disc populations** *by Lorenzo Alessio Malanga et al.*

astro-ph/2505.05260: **No Planet around the K Giant Star 42 Draconis** *by Artie P. Hatzes et al.*

astro-ph/2505.05571: **Effects of Jump Detection and Ramp Fitting Algorithms on NIRISS/SOSS Exoplanet Time-Series Observations** *by Aarynn Carter et al.*

astro-ph/2505.05093: **KMT-2022-BLG-1818Lb,c: A Cold Super-Jupiter with a Saturn Sibling** *by Hongyu Li et al.*

astro-ph/2505.06013: **Metal-Enriched Atmospheres in Warm (Super- and Sub-)Neptunes Induced by Extreme Atmospheric Escape** *by Amy Louca, Yamila Miguel*

astro-ph/2505.06044: **Shadow-Based Framework for Estimating Transition Disk Geometries** *by Ryuta Orihara, Munetake Momose*

astro-ph/2505.06093: **XUE. JWST spectroscopy of externally irradiated disks around young intermediate-mass stars** *by María Claudia Ramírez-Tannus et al.*

astro-ph/2505.06228: **A Machine-Learning Compositional Study of Exoplanetary Material Accreted Onto Five Helium-Atmosphere White Dwarfs with `cecilia`** *by Mariona Badenas-Agusti et al.*

astro-ph/2505.06358: **TESS Investigation – Demographics of Young Exoplanets (TI-DYE) III: an inner super-Earth in TOI-2076** *by Madyson G. Barber et al.*

astro-ph/2505.05948: **Search for Exoplanetary Ring Systems with TESS** *by Tsubasa Umetani et al.*

astro-ph/2505.06604: **Origin of moderately volatile elements in Earth inferred from mass-dependent Ge isotope variations among chondrites** *by Elias Wölfer et al.*

astro-ph/2505.06639: **N-body simulations of the Self-Confinement of Viscous Self-Gravitating Narrow Eccentric Planetary Ringlets** *by Joseph M. Hahn et al.*

astro-ph/2505.07091: **Hydrogen-rich hydrate at high pressures up to 104 GPa** *by Alexander F. Goncharov et al.*

astro-ph/2505.08107: **Hints of Disk Substructure in the First Brown Dwarf with a Dynamical Mass Constraint** *by Alejandro Santamaría Miranda et al.*

astro-ph/2505.08042: **Three-dimensional Orbit and Dynamical Masses of GJ 105 AC** *by Cayla M. Dedrick et al.*

astro-ph/2505.08002: **JWST Observations of Young protoStars (JOYS): overview of program and early results** *by E. F. van Dishoeck et al.*

astro-ph/2505.07937: **Origin of the asymmetric gas distribution near the co-orbital Lagrange points of an embedded planet** *by Agustin Heron et al.*

astro-ph/2505.07927: **A third star in the HAT-P-7 system, and a new dynamical pathway to misaligned hot Jupiters** *by Eritas Yang et al.*

astro-ph/2505.07760: **Clouds can enhance direct imaging detection of O2 and O3 on terrestrial exoplanets** *by Huanzhou Yang et al.*

astro-ph/2505.07684: **Short- and long-term variations of the high mass accretion rate classical T Tauri star DR Tau** *by Gabriella Zsidi et al.*

astro-ph/2505.07718: **The Effect of Luminosity Outbursts on the Abundance of Pebbles and Their Ice Mantles in Protoplanetary Disks** *by Anastasiia Topchieva et al.*

astro-ph/2505.07602: **WISE 12 micron search for exozodi candidates within 10 parsecs** *by Dong Huang et al.*

astro-ph/2505.07585: **The HOSTS Survey: Suspected variable dust emission and constraints on companions around θ Boo** *by G. Garreau et al.*

astro-ph/2505.07562: **The JDISC Survey: Linking the Physics and Chemistry of Inner and Outer Protoplanetary Disk Zones** *by Nicole Arulanantham et al.*

astro-ph/2505.07237: **Photometric analysis of asteroids in the Phocaea region** *by Xiaoyun Xu et al.*

astro-ph/2505.07723: **The observable impact of runaway OB stars on protoplanetary discs** *by Gavin A. L. Coleman et al.*

astro-ph/2505.08921: **Light Echoes of Time-resolved Flares and Application to Kepler Data** *by Austin J. King, Benjamin C. Bromley*

astro-ph/2505.10574: **Roman Observations Time Allocation Committee: Final Report and Recommendations** *by Roman Observations Time Allocation Committee, Core Community Survey Definition Committees*

astro-ph/2505.08947: **Searching for GEMS: Confirmation of TOI-5573b, a Cool, Saturn-like Planet Orbiting**

An M-dwarf *by Rachel B Fernandes et al.*

astro-ph/2505.08926: **Exoplanet atmospheres at high spectral resolution** *by Ignas Snellen*

astro-ph/2505.08883: **The atmospheres of rocky exoplanets III. Using atmospheric spectra to constrain surface rock composition** *by Oliver Herbort, Leon Sereinig*

astro-ph/2505.08540: **PoET: the Paranal solar ESPRESSO Telescope** *by Nuno C. Santos et al.*

astro-ph/2505.08863: **Water ice in the debris disk around HD 181327** *by Chen Xie et al.*

astro-ph/2505.08505: **An MHD-based model for wind-driven disc-planet interactions** *by Michael Hammer, Min-Kai Lin*

astro-ph/2505.08352: **CHEOPS Ground Segment: Systems and Automation for Mission and Science Operations** *by Alexis Heitzmann et al.*

astro-ph/2505.09066: **The Moon as a possible source for Earth's co-orbital bodies** *by R. Sfair et al.*

astro-ph/2505.09781: **Velocity shift and SNR limits for high-resolution spectroscopy of hot Jupiters using Keck/KPIC** *by Kevin S. Hong et al.*

astro-ph/2505.09754: **Diversity of Exoplanets** *by Diana Valencia et al.*

astro-ph/2505.09578: **The vertical structure of debris discs and the role of disc gravity** *by Antranik A. Sefilian et al.*

astro-ph/2505.09231: **Formation and Early Evolution of Protoplanetary Disks under Nonuniform Cosmic-Ray Ionization** *by Erika Nishio et al.*

astro-ph/2505.09185: **TASSIE: a TASmanian Search for Inclined Exoplanets** *by T. Plunkett et al.*

astro-ph/2505.09107: **Architecture of Tianyu Software: Relative Photometry as a Case Study** *by Yicheng Rui et al.*

astro-ph/2505.09307: **An Analytical Model of Wavelength-dependent Opposition Surge in Emittance and Reflectance Spectroscopy of Airless Rocky Exoplanets** *by Leonardos Gkouvelis*

astro-ph/2505.09933: **Open Source High-Resolution Exoplanet Atmosphere Retrievals with POSEIDON** *by Ruizhe Wang et al.*

astro-ph/2505.09937: **Resonance Capture of a Test Particle by an Eccentric Planet in the Presence of Externally-Driven Apsidal Precession** *by JT Laune, Dong Lai*

astro-ph/2505.09957: **"Ashfall" Induced by Molecular Outflow in Protostar Evolution. II. Analytical Study on the Maximum Size of Dust Grains Lifted by Outflows** *by Hayato Uchimura et al.*

astro-ph/2505.10076: **A new approach for predicting the stability of hierarchical triple systems – I. Coplanar Cases** *by Ryutaro Iwakura et al.*

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