ExoPlanet News
An Electronic Newsletter

No. 193, 8 July 2025

Editors: L. Schlarmann, J. Davoult, H. Wang, & T.-E. Riesen
NCCR PlanetS, Gesellschaftsstrasse 6, CH-3012 Bern, Switzerland

exoplanetnews@nccr-planets.ch
https://nccr-planets.ch/exoplanetnews

Contents

1 Editorial

Welcome to Edition 193 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, August 12th (with a submission deadline ending on Sun August 10th, 2025 CEST).

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

Leander Schlarmann
Haiyang Wang
Jeanne Davoult
Timm-Emanuel Riesen

2 Abstracts of refereed papers

Three hot Jupiters transiting K-dwarfs with significant heavy element masses

Y.G.C. Frensch[1], F. Bouchy[1], G. Lo Curto[2], S. Ulmer-Moll[3], S.G. Sousa[4], N.C. Santos[4,5], K.G. Stassun[6], C.N. Watkins[7], H. Chakraborty[1], et al. (a complete list of authors can be found on the publication)

[1] Observatoire de Genève, 51 Ch. Pegasi, 1290 Versoix, Switzerland
[2] European Southern Observatory, Karl-Schwarzschild-Strasse 3, 85748 Garching, Germany
[3] Leiden Observatory, Leiden University, Postbus 9513, 2300 RA Leiden, The Netherlands
[4] Instituto de Astrofisica e Ciencias do Espaco, Universidade do Porto, CAUP, Rua das Estrelas, 4150-762 Porto, Portugal
[5] Departamento de Fisica e Astronomia, Faculdade de Ciencias, Universidade do Porto, Rua do Campo Alegre, 4169-007 Porto, Portugal
[6] Department of Physics and Astronomy, Vanderbilt University, Nashville, TN 37235, USA
[7] Center for Astrophysics | Harvard & Smithsonian, 60 Garden Street, Cambridge, MA 02138, USA

A&A, in press (arXiv:2506.04923)

We report the confirmation and characterization of three giants transiting mid-K dwarfs. Within the TOI-2969 system, a giant planet of 1.16 ± 0.04 $M_{\rm Jup}$ with a radius of 1.10 ± 0.08 $R_{\rm Jup}$ orbits its K3V host in 1.82 days. The TOI-2989 system contains a 3.0 ± 0.2 $M_{\rm Jup}$ giant with a radius of 1.12 ± 0.05 $R_{\rm Jup}$, which orbits its K4V host in 3.12 days. The K4V star TOI-5300 hosts a giant of 0.6 ± 0.1 $M_{\rm Jup}$ with a radius of 0.88 ± 0.08 $R_{\rm Jup}$ and an orbital period of 2.3 days. The equilibrium temperatures of the companions range from 1001 to 1186 K, which classifies them as hot Jupiters. However, they do not exhibit radius inflation. The estimated heavy element masses in their interiors, inferred from the mass, radius, and evolutionary models, are 90 ± 30 $M_\oplus$, 114 ± 30 $M_\oplus$, and 84 ± 21 $M_\oplus$, respectively. These heavy element masses are significantly higher than most reported heavy elements for K-dwarf hot Jupiters.

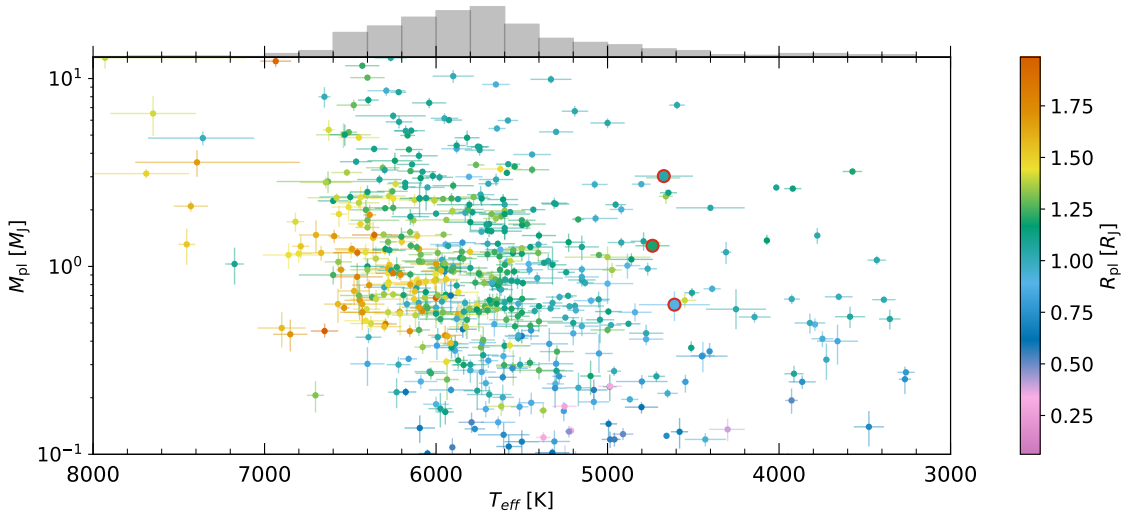

Figure 1: Overview of the presented companions (encircled in red) compared to known planets from the PlanetS catalog. The data are color coded by planetary radii. The histogram at the top shows the relative occurrence of the transiting gas giants with masses ranging from 0.1 to 13 $M_{\rm Jup}$. The low-mass star regime remains relatively poorly populated; our three mass characterizations contribute to this population.

Download/Website: `https://arxiv.org/abs/2506.04923`
Contact: `yolanda.frensch@unige.ch`

Feasibility of interferometric observations and characterization of planet-induced structures at sub au to au scales in protoplanetary disks

L. Hildebrandt [1] *, A. Krieger* [1] *, H. Klahr* [2] *, J. Kobus* [1] *, A. Bensberg* [1] *, S. Wolf* [1]

[1] Institute of Theoretical Physics and Astrophysics, University of Kiel, Leibnizstraße 15, 24118 Kiel, Germany
[2] Max-Planck-Institut für Astronomie, Königstuhl 17, 69117 Heidelberg, Germany

Astronomy & Astrophysics, published (2025A&A...698A..67H)

Interferometric observations of protoplanetary disks by VLTI and ALMA have greatly improved our understanding of the detailed structure of these planetary birthplaces. These observations have revealed a variety of large-scale disk substructures, including rings, gaps, and spirals, spanning tens to hundreds of au, supporting the predictions of planet formation models. Recent instruments, such as MATISSE at the VLTI, allow one to resolve and investigate the inner few au of protoplanetary disks in nearby star formation regions, shedding light on the traces of planet formation and evolution at these small scales. The aim of this work is to assess the feasibility of interferometric observations of small-scale planet-induced substructures in protoplanetary disks in nearby star-forming regions. We aim to characterize these substructures in multi-wavelength and multi-epoch observations and subsequently differentiate between simulation parameters. On the basis of 3D hydrodynamic simulations of embedded planetary companions and subsequent 3D Monte Carlo radiative transfer simulations, we calculated and analyzed interferometric observables, assuming observations with the VLTI in the K, L, M, and N bands. The hydrodynamic simulations exhibit mass-dependent planet-induced density waves that create observable substructures, most notably for the considered case of a 300 $M_\oplus$ planet. These substructures share similarities with observed large-scale structures and feature a prominent accretion region around the embedded planet. The visibilities show a detectable variability for multi-epoch VLTI/GRAVITY and VLTI/MATISSE observations, caused by the orbital motion of the planet, that are distinguishable from other sources of variability due to their unique combination of timescale and amplitude. Additionally, the non-uniform change of the visibilities at different baselines can be used to identify asymmetric structures. Furthermore, we show that multi-wavelength observations provide an approach to identify the fainter substructures and the signal of the accretion region.

Download/Website: `https://arxiv.org/abs/2506.17024`

Contact: `lhildebrandt@astrophysik.uni-kiel.de`

Saturns, but not super-Jupiters, occur more frequently in the presence of inner super-Earths

E. Lefèvre-Forján[1,2], *G. Mulders*[1]

[1] Facultad de Física, Pontificia Universidad Católica de Chile, Av. Vicuña Mackenna 4860, Macul, Santiago, Chile
[2] UFR Physique, Université Paris Cité, 4 Rue Elsa Morante, F-75013 Paris, France

The Astrophysical Journal, in press (arXiv:2506.21204)

Studies from recent years have reached different conclusions regarding how frequently super-Earths are accompanied by long period giant planets and vice versa. This relation has been predicted to be mass dependent by planet formation models. We investigate that as the origin of the discrepancy using a radial velocity sample: the California Legacy Survey. We perform detection completeness corrections in order to discard detection bias as a possible explanation to our results. After bias corrections, we find that cold Jupiters are $5.65^{+1.08}_{-2.57}$ times more massive when not in company of an inner super-Earth, while super-Earths are not significantly more massive while in company of an outer giant planet. We also report an occurrence enhancement for Saturns (median projected mass of $0.6M_J$) while in presence of a super-Earth by a factor of $\sim$4, and for super-Earths in presence of Saturns by the same factor. This positive correlation disappears for super-Jupiters (median projected mass of $3.1M_J$). These results show that while cold Jupiters are generally accompanied by inner super-Earths, this does not hold for the largest giant planets, such as those that will be discovered by Gaia, which will likely not be accompanied by transiting planets. The mass dependence, in combination with different detection limits of different surveys, may explain the discrepancies concerning occurrence relations between cold Jupiters and super-Earths.

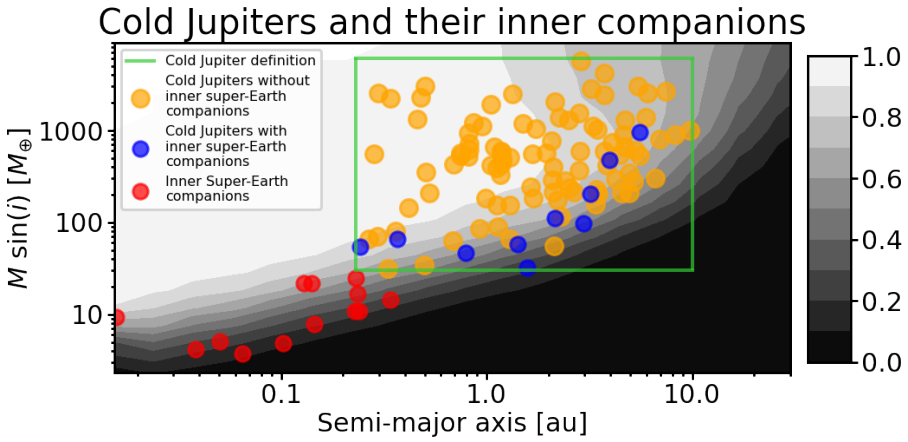

Figure 2: Cold Jupiters and their inner super-Earth companions. The contours correspond to the detection completeness of systems that host at least one cold Jupiter.

Download/Website: `https://arxiv.org/abs/2506.21204`

Contact: `etienne.lefevre.forjan@gmail.com`

3 Exoplanet Archives

June 2025 Updates at the NASA Exoplanet Archive

The NASA Exoplanet Archive team
Caltech/IPAC-NASA Exoplanet Science Institute, MC 100-22 Pasadena CA 91125

Pasadena CA USA, July 8, 2025

Note: Unless otherwise noted, all planetary and stellar data mentioned in the news are in the Planetary Systems Table, which provides a single location for all self-consistent planetary solutions, and its companion table the Planetary Systems Composite Parameters, which offers a more complete table of parameters combined from multiple references and calculations. Links to other tables and System Overview pages are embedded in the news text.

June 26, 2025

Five Planets and Eight Spectra

This week's release includes Kepler-725 c, a planet of 10 Earth masses located in its Sun-like star's optimistic habitable zone. Check out the media release and Nature paper for details. The other new planets are TOI-1117 b, c, & d and TOI-2407 b.

There are also eight new spectra for TRAPPIST-1 c, WASP-96 b, and the nearby sub-stellar object WISE J1049 b (a.k.a. Luhman 16 b). Access these in the Atmospheric Spectroscopy Table.

June 12, 2025

A Giant Planet Orbiting a Tiny Star

One of this week's four planets is TOI-6894 b, a sub-Saturn-mass planet orbiting a low-mass red dwarf-—the smallest known star to host a transiting giant planet. This discovery challenges some current planetary formation models and theories. Check out the University College London media release and the discovery paper.

The other new planets are TOI-2969 b, TOI-2989 b, and TOI-5300 b. There are also new parameters for seven planets: KELT-11 b, Kepler-10 b, c, & d, MASCARA-4 b, and TOI-1468 b, WASP-127 b. We also have seven more spectra for five planets: GJ 357 b, HAT-P-2 b, LHS 1140 c, LTT 1445 A b, and WASP-127 b. You can find these in the .

An ExoFOP Milestone: 1 Million Files and Counting!

The Exoplanet Follow-up Observing Program (ExoFOP), which was created in 2008 to help researchers collaborate and share observational data to confirm exoplanet candidates, has surpassed one million user-submitted data files. This incredible achievement is a testament to the dedication and collaboration of the exoplanet research community. Of the nearly 6,000 exoplanets confirmed thus far, data shared by the community through ExoFOP has contributed to approximately 4,000 of them.

From all of us at NExScI, thank you for your continued support and commitment to exoplanet science. This milestone would not have been possible without you. Read more about this exciting milestone in IPAC's media release.

June 5, 2025

It's Getting Spectra-ordinary Around Here

The archive has six new planets this week and 14 spectra, which inches us closer to another data milestone of 1,000 atmospheric spectra!

This week's update bumps up the Atmospheric Spectroscopy Table's spectra count to **979**, with new data for TOI-1468 b (4 spectra), WASP-43 b (1), TrES-4 b (2), WASP-15 b (4), and HD 219666 b (3).

Pro Tip: You can access the table from the planet's Planetary Parameters section in its System Overview page.

This week's new planets are TIC 434398831 b & c, KMT-2017-BLG-2197L b, KMT-2022-BLG-1790L b, KMT-2022-BLG-2076L b, and KMT-2023-BLG-2209L b.

We've also updated the disposition of 42 Dra b to False Positive Planet based on a published refutation. The object has been removed from the Planetary Systems and Planetary Systems Composite Parameters tables, but its data are still available on the System Overview page.

Our Accepted Paper is Now on arXiv!

We're happy to announce our latest paper, "The NASA Exoplanet Archive and Exoplanet Follow-up Observing Program: Data, Tools, and Usage," has been accepted by the *Planetary Science Journal* and is available in arXiv as Christiansen et al. (2025). This paper is an updated overview of the archive's data, services, and tools since Akeson et al. (2013), our initial publication.

Please use Christiansen et al. (2025) for all future citations. We will update the link to the paper on our Acknowledging the NASA Exoplanet Archive in Publications page once the paper is posted to ADS.

A Quick Update About Our Planetary Systems Composite Data Table

We've made a few changes to the Planetary Systems Composite Data (PSCompPars) table's underlying algorithms, which should improve the precision and accuracy of the displayed values. Users may notice new values for some parameters.

Download/Website: `https://exoplanetarchive.ipac.caltech.edu`
Contact: `mharbut@caltech.edu`

4 Jobs and Positions

Courtois Scientific Vanguard Fund UdeM FAS Postdoctoral Fellowship at the Trottier Institute for Research on Exoplanets (IREx)

Prof. René Doyon

Montréal, Canada, Starting date: January to September 2026

The Trottier Institute for Research on Exoplanets (IREx) at the Université de Montréal invites applications for the **Courtois Scientific Vanguard Fund of the Faculty of Arts and Sciences Postdoctoral Competition**. Candidates in experimental, observational, or theoretical astrophysics related to exoplanets or astronomical instrumentation are encouraged to apply.

Six (6) fellowships are available in the natural and formal sciences (including, but not limited to, astrophysics), for **3 years**, offering a salary of up to **CAD$76,000/year** and research funds up to **CAD$30,000/year**, subject to justification.

Deadline: September 23, 2025, 11:59 p.m. (ET)

Applicants must have obtained their Ph.D. within the last 5 years (6 with justification) and hold **Canadian citizenship**, **permanent residency**, or a **valid (or pending) work permit**.

The research proposal must be original and integrated with a Faculty of Arts and Science researcher in natural/formal sciences. A faculty member must confirm their willingness to supervise. **For that matter, astrophysicists working in exoplanet science should contact IREx director René Doyon at `irex-applications@umontreal.ca` as soon as possible.**

See full details online: `https://exoplanetes.umontreal.ca/en/job/courtois/`.

IREx (`https://exoplanetes.umontreal.ca/en/`) is a dynamic team of over 60 researchers across Quebec, Canada (UdeM, McGill, Bishop's, Université Laval, Montreal Planetarium) working on cutting-edge observational, theoretical, and instrumental projects related to exoplanets. The team is deeply involved in major international efforts, including the *James Webb Space Telescope*, SPIRou, and NIRPS, with privileged access to data from these instruments.

IREx also leads a strong science communication and outreach program, training researchers who excel both scientifically and as communicators.

We value diversity, equity, and inclusion, and strongly encourage applications from underrepresented groups in physics. Our EDI committee supports the integration of these individuals into our research environment.

Download/Website: `https://exoplanetes.umontreal.ca/en/job/courtois/\`
Contact: `irex-applications@umontreal.ca`

Postdoctoral Position on Exoplanet Demographics and Planet Formation

Gijs D. Mulders
Institute of Astrophysics, Pontificia Universidad Catolica, Santiago, Chile

Santiago, Chile, 2025 or early 2026

Applications are invited for a two-year postdoctoral position on the demographics and formation of exoplanets. The selected candidate will work in the group of Prof. Gijs Mulders at Pontificia Universidad Catolica (PUC) in Santiago, Chile on a project funded by the European Southern Observatory and the Government of Chile. The main focus of the project are the interactions between super-earths and giant planets, and is flexible to a more theoretical approach (planet formation simulations) or a more observational one (exoplanet demographics).

The Institute of Astrophysics at PUC is one of the leading astronomy centers in Latin America with 15 faculty, 20 postdocs, and 60 graduate students. While a resident at IA-PUC, the candidate has access to the Geryon 2 and 3 supercomputing faculties, and will be eligible for the 10% observing time on all telescopes in Chile. Postdocs at IA have the opportunity to teach undergraduate astronomy courses and mentor students.

The position is for 2 years, with a flexible starting date in 2025 or early 2026. Salary is 29.500.000 CLP/yr, commensurate with similar positions in the USA or Europe after cost of living adjustments. A budget for (international) travel, computing, and publications is available.

Applications should be uploaded by August 15th at https://form.jotform.com/251134649610049 and include:

- Cover letter
- CV
- Research statement describing past/current research
- Names of 2 or 3 references

Inquiries are welcome!

Download/Website: `https://form.jotform.com/251134649610049`
Contact: `gijs.mulders@uc.cl`

5 As seen on astro-ph

The following list contains exoplanet related entries appearing on astro-ph in June 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.

June 2025

astro-ph/2506.00091: **AGNI: A radiative-convective model for lava planet atmospheres** *by Harrison Nicholls et al.*
astro-ph/2506.00470: **Star-Planet Interactions: A Computational View** *by A. A. Vidotto*
astro-ph/2506.00669: **On Linking Planet Formation Models, Protoplanetary Disk Properties, and Mature Gas Giant Exoplanet Atmospheres** *by Adina D. Feinstein et al.*
astro-ph/2506.01132: **NLTE atmospheric modelling of the ultra-hot Jupiter WASP-178b and comparison with UV and optical observations** *by L. Fossati et al.*
astro-ph/2506.02199: **WASP-121b's transmission spectrum observed with JWST/NIRSpec G395H reveals thermal dissociation and SiO in the atmosphere** *by Cyril Gapp et al.*
astro-ph/2506.02188: **Interior redox state effects on the stability of secondary atmospheres and observational manifestations: LP 791-18 d as a case study for outgassing rocky exoplanets** *by Leonardos Gkouvelis et al.*
astro-ph/2506.02144: **A Pan-STARRS Search for Distant Planets: Part 1** *by Matthew J. Holman et al.*
astro-ph/2506.02253: **Stability of a cluster-disrupted mean-motion resonance (chain) in HR 8799 and PDS 70** *by Brent Maas et al.*
astro-ph/2506.01800: **A Precise Metallicity and Carbon-to-Oxygen Ratio for a Warm Giant Exoplanet from its Panchromatic JWST Emission Spectrum** *by Lindsey S. Wiser et al.*
astro-ph/2506.01771: **SiO and a super-stellar C/O ratio in the atmosphere of the giant exoplanet WASP-121b** *by Thomas M. Evans-Soma et al.*
astro-ph/2506.02934: **Eighteen Exoplanet Host Stars from the NPOI Data Archive** *by Ellyn K. Baines et al.*
astro-ph/2506.05392: **Exoplaneteers Keep Overestimating Sigma Significances** *by David Kipping, Björn Benneke*
astro-ph/2506.03299: **The NASA Exoplanet Archive and Exoplanet Follow-up Observing Program: Data, Tools, and Usage** *by Jessie L. Christiansen et al.*
astro-ph/2506.03248: **New Rotation Periods from the Kepler Bonus Background Light Curves** *by Zachary R. Claytor, Jamie Tayar*
astro-ph/2506.02886: **Stellar Magnetic Storm Induced Magnetospheric Polarity Reversals: Distinguishing between Unmagnetised and Magnetised Exoplanets** *by Sakshi Gupta et al.*
astro-ph/2506.02826: **Hot exozodiacal dust around Fomalhaut: The MATISSE perspective** *by Kevin Ollmann et al.*
astro-ph/2506.02748: **MINDS: The very low-mass star and brown dwarf sample. Detections and trends in the inner disk gas** *by A. M. Arabhavi et al.*
astro-ph/2506.02721: **Clues for Solar System Formation from Meteorites and their Parent Bodies** *by Bernard Marty et al.*
astro-ph/2506.04415: **Modelling shadows in scattered light observations as signals from companions in protoplanetary discs** *by Deniz Akansoy et al.*
astro-ph/2506.04348: **Planet Earth in reflected and polarized light: II. Refining contrast estimates for rocky exoplanets with ELT and HWO** *by Giulia Roccetti et al.*
astro-ph/2506.04199: **Abundance Effects from Protoplanetary Disk Outflows** *by Åke Nordlund*
astro-ph/2506.04440: **The Age and High Energy Environment of the Very Young Transiting Exoplanet TOI 1227b** *by Attila Varga et al.*

astro-ph/2506.03624: **Peering through the veil: Investigating protoplanetary disk outer edges using backside visibility** *by Joel George et al.*
astro-ph/2506.03511: **POLARIS: A High-contrast Polarimetric Imaging Benchmark Dataset for Exoplanetary Disk Representation Learning** *by Fangyi Cao et al.*
astro-ph/2506.04164: **A Resonant Beginning for the Solar System Terrestrial Planets** *by Shuo Huang et al.*
astro-ph/2506.05631: **The TESS Ten Thousand Catalog: 10,001 uniformly-vetted and -validated Eclipsing Binary Stars detected in Full-Frame Image data by machine learning and analyzed by citizen scientists** *by Veselin B. Kostov et al.*
astro-ph/2506.05521: **The TOI-1117 Multi-planetary System: 3 sub-Neptunes, 1 in both the Neptunian Desert and Radius Valley** *by Isobel S. Lockley et al.*
astro-ph/2506.05556: **DART-Vetter: A Deep LeARning Tool for automatic triage of exoplanet candidates** *by Stefano Fiscale et al.*
astro-ph/2506.04923: **Three Hot Jupiters transiting K-dwarfs with a significant heavy element mass** *by Y. G. C. Frensch et al.*
astro-ph/2506.04604: **Radio prospects of extrasolar aurorae polaris as a probe of planetary magnetism** *by Asaf Kaya, Tansu Daylan*
astro-ph/2506.05089: **Planets similar in size are often dissimilar in interior** *by E. Mamonova et al.*
astro-ph/2506.04605: **Searching for helium escape and a low density atmosphere around the 120 Myr old sub-Neptune HIP94235b using CRIRES+** *by Ava Morrissey et al.*
astro-ph/2506.05892: **Disk Evolution Study Through Imaging of Nearby Young Stars (DESTINYS): Evidence of planet-disk interaction in the 2MASSJ16120668-3010270 system** *by C. Ginski et al.*
astro-ph/2506.06195: **TOI-2407 b: a warm Neptune in the desert** *by C. Janó Muñoz et al.*
astro-ph/2506.06429: **Maximizing Ariel's Survey Leverage for Population-Level Studies of Exoplanets** *by Nicolas B. Cowan, Ben Coull-Neveu*
astro-ph/2506.06433: **Grand Design Spiral Arms in the Compact, Embedded Protoplanetary Disk of Haro 6-13** *by Jane Huang et al.*
astro-ph/2506.06445: **Multi-band, Multi-epoch Photometry of the Spot-crossing System TOI-3884: Refined System Geometry and Spot Properties** *by Mayuko Mori et al.*
astro-ph/2506.06865: **FAUST XXVI. The dust opacity spectral indices of protostellar envelopes bridge the gap between interstellar medium and disks** *by Luca Cacciapuoti et al.*
astro-ph/2506.07265: **Limb-Darkening Coefficients for the 4-Term and Power-2 Laws for the JWST Space Mission, Adopting PHOENIX Spherical Models at High Resolution** *by A. Claret et al.*
astro-ph/2506.08232: **A Multi-Species Atmospheric Escape Model with Excited Hydrogen and Helium: Application to HD209458b** *by Anna Ruth Taylor et al.*
astro-ph/2506.08177: **Constraining Ongoing Volcanic Outgassing Rates and Interior Compositions of Extrasolar Planets with Mass Measurements of Plasma Tori** *by V. Abby Boehm et al.*
astro-ph/2506.08088: **Planetesimal Scattering Efficiency of Cold Giant Planet Architectures** *by Stephen R. Kane, Emma L. Miles*
astro-ph/2506.07898: **Constraints on Quaoar's rings and atmosphere from JWST/NIRCam observations of a stellar occultation** *by Benjamin Proudfoot et al.*
astro-ph/2506.08014: **Why M-dwarf flares have limited impact on sub-Neptunes' atmospheric evaporation** *by Andrea Caldiroli et al.*
astro-ph/2506.07912: **A circularly polarized low-frequency radio burst from the exoplanetary system HD 189733** *by X. Zhang et al.*
astro-ph/2506.08078: **The Epoch of Giant Planet Migration Planet Search Program. III. The Occurrence Rate of Young Giant Planets Inside the Water Ice Line** *by Quang H. Tran et al.*
astro-ph/2506.07931: **A transiting giant planet in orbit around a 0.2-solar-mass host star** *by Edward M. Bryant et al.*
astro-ph/2506.08499: **Impact chronology of leftover planetesimals** *by R. Brasser*

astro-ph/2506.08798: **Characterization of the Visual Binary TOI-6883AB and its dynamical implications for the planetary companion TOI-6883Ab** *by G. Conzo et al.*
astro-ph/2506.08814: **SPECULOOS: five years hunting terrestrial planets around ultra-cool dwarfs** *by Sebastián Zúñiga-Fernández et al.*
astro-ph/2506.08969: **A New Spectral Class of Brown Dwarfs at the Bottom of the IMF in IC 348** *by K. L. Luhman, C. Alves de Oliveira*
astro-ph/2506.09201: **JWST Coronagraphic Images of 14 Her c: a Cold Giant Planet in a Dynamically Hot, Multi-planet System** *by Daniella C. Bardalez Gagliuffi et al.*
astro-ph/2506.09976: **MINDS: Detection of an inner gas disk caused by evaporating bodies around HD 172555** *by M. Samland et al.*
astro-ph/2506.11200: **DBNets2.0: simulation-based inference for planet-induced dust substructures in protoplanetary discs** *by A. Ruzza et al.*
astro-ph/2506.10969: **The Gap-Giant Association: Are Planets Hiding in the Gaps?** *by Caleb Lammers, Joshua N. Winn*
astro-ph/2506.10812: **Self-gravity in thin protoplanetary discs: 1. The smoothing-length approximation versus the exact self-gravity kernel** *by S. Rendon Restrepo et al.*
astro-ph/2506.10752: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): XII. Extreme millimetre variability detected in a Class II disc** *by James M. Miley et al.*
astro-ph/2506.10750: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): XI. Beam-corrected gas disk sizes from fitting 12CO moment zero maps** *by Leon Trapman et al.*
astro-ph/2506.10746: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): X. Dust Substructures, Disk Geometries, and Dust-disk Radii** *by Miguel Vioque et al.*
astro-ph/2506.10743: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): VIII. The impact of external photoevaporation on disk masses and radii in Upper Scorpius** *by Rossella Anania et al.*
astro-ph/2506.10742: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): VII. Testing accretion mechanisms from disk population synthesis** *by Benoît Tabone et al.*
astro-ph/2506.10738: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): V. Protoplanetary gas disk masses** *by Leon Trapman et al.*
astro-ph/2506.10740: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): VI. Comparison of Dust Evolution Models to AGE-PRO Observations** *by Nicolas T. Kurtovic et al.*
astro-ph/2506.10435: **On the Mass Budget Problem of Protoplanetary Disks: Streaming Instability and Optically Thick Emission** *by Daniel Godines et al.*
astro-ph/2506.10735: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): IV. Dust and Gas Disk Properties in the Upper Scorpius Star-forming Region** *by Carolina Agurto-Gangas et al.*
astro-ph/2506.10731: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): II. Dust and Gas Disk Properties in the Ophiuchus Star-forming Region** *by Dary A. Ruiz-Rodriguez et al.*
astro-ph/2506.10734: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): III. Dust and Gas Disk Properties in the Lupus Star-forming Region** *by Dingshan Deng et al.*
astro-ph/2506.10719: **The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO): I. Program Overview and Summary of First Results** *by Ke Zhang et al.*
astro-ph/2506.12144: **The Detection-vs-Retrieval Challenge: Titan as an Exoplanet** *by Prajwal Niraula et al.*
astro-ph/2506.11998: **Spot-Crossing Variations Confirm a Misaligned Orbit for a Planet Transiting an M Dwarf** *by Patrick Tamburo et al.*
astro-ph/2506.12140: **Hubble's Multi-Year Search for Exospheres in the TRAPPIST-1 System Reveals Frequent Microflares** *by David Berardo et al.*
astro-ph/2506.11709: **Inner disc and circumplanetary material in the PDS 70 system** *by Daniele Fasano et al.*
astro-ph/2506.11690: **The Diversity of Exoplanetary Environments and the Search for Signs of Life Beyond Earth** *by Sara Seager et al.*

astro-ph/2506.11726: **ALMA millimetre-wavelength imaging of HD 138965: New constraints on the debris dust composition and presence of planetary companions** *by J. P. Marshall et al.*
astro-ph/2506.12651: **Tides Tighten the Hycean Habitable Zone** *by Joseph R. Livesey et al.*
astro-ph/2506.12806: **Re-analysis of 10 Hot-Jupiter Atmospheres with disequilibrium chemistry retrieval** *by Deborah Bardet et al.*
astro-ph/2506.12956: **Heating, Excitation, Dissociation, and Ionization of Molecules by High-Energy Photons in Planetary Atmospheres** *by Antonio García Muñoz, Ewan Bataille*
astro-ph/2506.13459: **Breakthrough Listen: A Technosignature Search Around 27 Eclipsing Exoplanets Selected from the Transiting Exoplanet Survey Satellite Catalogue** *by R. Barrett et al.*
astro-ph/2506.13592: **Planetary waves can activate resonant drag instabilities in 3D dusty gaseous discs** *by Raúl O. Chametla et al.*
astro-ph/2506.13621: **Tidal dissipation and synchronization of the temperate exo-Earth LP 791-18d** *by Sylvio Ferraz-Mello et al.*
astro-ph/2506.13701: **Infall-driven gravitational instability in accretion discs** *by Cristiano Longarini et al.*
astro-ph/2506.13745: **Numerical approach to second-order canonical perturbation theory in the planetary 3-body problem. Application to exoplanets** *by Aya Alnajjarine et al.*
astro-ph/2506.13580: **Updated Mutual Inclination Measurement for 14 Her b and c** *by Guang-Yao Xiao, Fabo Feng*
astro-ph/2506.14615: **BEBOP VII. SOPHIE discovery of BEBOP-3b, a circumbinary giant planet on an eccentric orbit** *by Thomas A. Baycroft et al.*
astro-ph/2506.15022: **The Orbit of WASP-4 b is in Decay** *by Ö. Baştürk et al.*
astro-ph/2506.15508: **Dancing on the Grain: Variety of CO and its isotopologue fluxes as a result of surface chemistry and T Tauri disk properties** *by L. Zwicky et al.*
astro-ph/2506.15243: **Interaction of Trappist-1 exoplanets with coronal mass ejections: Joule heating, Poynting fluxes and the role of magnetic fields** *by Filip Elekes et al.*
astro-ph/2506.16060: **A Dichotomy of the Mass-Metallicity Relation of Exoplanetary Atmospheres Demarcated by their Birthplace** *by Kazumasa Ohno et al.*
astro-ph/2506.16063: **(Re)-Defining Planets – the Fundamental Plane of Planets** *by Madhu Kashyap Jagadeesh et al.*
astro-ph/2506.16232: **Osiris revisited: Confirming a solar metallicity and low C/O in HD 209458b** *by N. Bachmann et al.*
astro-ph/2506.16306: **Investigating Transit Timing Variations in the Ultra-short Period Exoplanet WASP-19b** *by Shraddha Biswas et al.*
astro-ph/2506.16481: **SO emission in the dynamically perturbed protoplanetary disks around CQ Tau and MWC 758** *by Francesco Zagaria et al.*
astro-ph/2506.16569: **Early Planet Formation in Embedded Disks (eDisk) XVII: A Compact but Structured Keplerian Disk and Large-scale Streamers Revealed in the Class I Protostellar System IRAS 04169+2702** *by Ilseung Han et al.*
astro-ph/2506.16597: **Exoplanet Classification through Vision Transformers with Temporal Image Analysis** *by Anupma Choudhary et al.*
astro-ph/2506.17399: **Planet formation in chemically diverse and evolving discs – I. Composition of planetary building blocks** *by E. Pacetti et al.*
astro-ph/2506.17024: **Feasibility of interferometric observations and characterization of planet-induced structures at sub au to au scales in protoplanetary disks** *by Lukas Hildebrandt et al.*
astro-ph/2506.17091: **Super-Earth formation in systems with cold giants** *by Claudia Danti et al.*
astro-ph/2506.16945: **Global magnetohydrodynamic simulations of the inner regions of protoplanetary discs. I. Zero-net flux regime** *by Matthew J. O. Roberts et al.*
astro-ph/2506.17550: **A High Geometric Albedo for LTT9779b Points Towards a Metal-rich Atmosphere and Silicate Clouds** *by Suman Saha et al.*

astro-ph/2506.17665: **Advanced Modeling for Exoplanet Detection and Characterization** *by Krishna Chamarthy*

astro-ph/2506.17843: **Planetary Obliquity Excitation Through Pre-Main Sequence Stellar Evolution** *by Sidhant Kumar Suar, Sarah C. Millholland*

astro-ph/2506.18200: **Multivariate Statistical Analysis of Exoplanet Habitability: Detection Bias and Earth Analog Identification** *by Caleb Traxler et al.*

astro-ph/2506.17861: **Searching for GEMS: TOI-7149 b an Inflated Giant Planet causing a 12% Transit of a Fully Convective M-dwarf** *by Shubham Kanodia et al.*

astro-ph/2506.18989: **Time-resolved p-mode oscillations for subgiant HD 142091 with NEID at WIYN** *by Jacob K. Luhn et al.*

astro-ph/2506.18860: **Analytical transit light curves for power-law limb darkening: a comprehensive framework via fractional calculus and differential equations** *by Farrukh A. Chishtie et al.*

astro-ph/2506.19193: **The HUSTLE Program: The UV to Near-IR Transmission Spectrum of the Hot Jupiter KELT-7b** *by Carlos Gascón et al.*

astro-ph/2506.18759: **A complete census of planet-hosting binaries** *by Philippe Thebault, Danilo Bonanni*

astro-ph/2506.18550: **TOI-1846b: A super-Earth in the radius valley orbiting a nearby M dwarf** *by Abderahmane Soubkiou et al.*

astro-ph/2506.18521: **Semiconvection unlocks dynamo action in stably-stratified regions of gaseous planets** *by Paul Pružina et al.*

astro-ph/2506.19931: **Measurements of three exo-planetesimal compositions: a planetary core, a chondritic body, and an icy Kuiper belt analogue** *by Jamie T. Williams et al.*

astro-ph/2506.20019: **Giant Outer Transiting Exoplanet Mass (GOT 'EM) Survey. VI: Confirmation of a Long-Period Giant Planet Discovered with a Single TESS Transit** *by Zahra Essack et al.*

astro-ph/2506.19985: **Hundreds of TESS exoplanets might be larger than we thought** *by Te Han et al.*

astro-ph/2506.19668: **HD 143006: Interferometric Confirmation of Misaligned Protoplanetary Disc with CHARA/MIRCX and VLTI/PIONIER** *by I. Codron et al.*

astro-ph/2506.19679: **Extreme Learning Machines for Exoplanet Simulations: A Faster, Lightweight Alternative to Deep Learning** *by Tara P. A. Tahseen et al.*

astro-ph/2506.19898: **Exoplanet exploration in the context of the PLATO mission: From detection to population studies** *by Amadeo Castro-González*

astro-ph/2506.19917: **Pushing the limits of eccentricity in planet-disc interactions** *by Callum W. Fairbairn, Alexander J. Dittmann*

astro-ph/2506.20654: **Comparing the Architectures of Multiplanet Systems from Kepler, K2, and TESS Data** *by Robert Royer III, Jason H. Steffen*

astro-ph/2506.20564: **The mass of the exo-Venus Gliese 12 b, as revealed by HARPS-N, ESPRESSO, and CARMENES** *by Daisy A. Turner et al.*

astro-ph/2506.20432: **The KELT-7b atmospheric thermal-inversion conundrum revisited with CHEOPS, TESS, and additional data** *by Z. Garai et al.*

astro-ph/2506.20316: **Can tidal evolution lead to close-in planetary bodies around white dwarfs II: volcanism and transits** *by Yuqi Li et al.*

astro-ph/2506.20301: **Can tidal evolution lead to close-in planetary bodies around white dwarfs I: Orbital period distribution** *by Yuqi Li et al.*

astro-ph/2506.20236: **Direct High-Resolution Imaging of Earth-Like Exoplanets** *by Slava G. Turyshev*

astro-ph/2506.20561: **An Earth-like Density for the Temperate Earth-sized Planet GJ 12b** *by Madison Brady et al.*

astro-ph/2506.21790: **Detecting Land with Reflected Light Spectroscopy to Rule Out Waterworld O2 Biosignature False Positives** *by Anna Grace Ulses et al.*

astro-ph/2506.21768: **Astrometric Accelerations of Provisional Targets for the Habitable Worlds Observatory** *by Katie E. Painter et al.*

astro-ph/2506.21667: **Resupplying planetary debris to old white dwarfs with supernova blast waves** *by Dimitri Veras*

astro-ph/2506.21459: **The ESPRESSO transmission spectrum of HD 189733 b : Extracting the planetary sodium and lithium signatures amid stellar contamination** *by D. Mounzer et al.*

astro-ph/2506.21351: **Characterizing Exoplanets for Assessing Their Potential Habitability** *by J. M. Rodríguez-Mozos, A. Moya*

astro-ph/2506.21224: **Metal Polluted White Dwarfs with 21 μm IR excesses from JWST/MIRI: Planets or Dust?** *by John H. Debes et al.*

astro-ph/2506.21204: **Saturns, but not super-Jupiters, occur more frequently in the presence of inner super-Earths** *by Etienne Lefevre-Forjan, Gijs D. Mulders*

astro-ph/2506.20914: **KMT-2022-BLG-0086: Another binary-lens binary-source microlensing event** *by Sun-Ju Chung et al.*

astro-ph/2506.20907: **A Ground-Based Transit Observation of the Long-Period Extremely Low-Density Planet HIP 41378 f** *by Juliana García-Mejía et al.*

astro-ph/2506.22399: **A high stellar multiplicity rate amongst TESS planet candidates in the Neptunian desert using Gaia DR3 astrometry** *by Fintan Eeles-Nolle, David J. Armstrong*

astro-ph/2506.22537: **Are Helium Atmospheres Hiding as Volatile-rich in Current Exoplanet Analysis Frameworks?** *by Julien de Wit et al.*

astro-ph/2506.22839: **Characterizing the Dynamics and Chemistry of Transiting Exoplanets with the Habitable World Observatory** *by Hannah R. Wakeford et al.*

astro-ph/2506.22747: **Polar alignment of a circumbinary disc around a brown dwarf binary** *by Jeremy L. Smallwood et al.*

astro-ph/2506.23704: **The NEID Earth Twin Survey. III. Survey Performance After Three Years on Sky** *by Arvind F. Gupta et al.*

astro-ph/2506.23795: **Simulation of images of protoplanetary disks after collision with free-floating planets** *by Tatiana Demidova, Vitaliy Grigoryev*

astro-ph/2506.23891: **Three-dimensional Transport-induced Chemistry on Temperate sub-Neptune K2-18b, Part I: the Effects of Atmospheric Dynamics** *by Jiachen Liu et al.*

astro-ph/2506.24004: **A planet-host ratio relation to synthesize microlensing and transiting exoplanet demography from Roman** *by Kathryn Edmondson, Eamonn Kerins*

astro-ph/2506.24100: **Tidal Inflation is Stronger for Misaligned Neptune-Sized Planets Than Aligned Ones** *by Ritika Sethi, Sarah Millholland*

astro-ph/2506.24129: **Studying Protoplanets and Protoplanetary Disks with the Habitable Worlds Observatory** *by Bin B. Ren*