ExoPlanet News
An Electronic Newsletter

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1 Editorial

Welcome to Edition 199 of ExoPlanet News – the first issue of 2026!

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 2026, we continue looking forward to your paper abstracts, job ads or meeting announcements. Also, special announcements are 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, February 10th (with a submission deadline ending on Sunday, February 8th, 2026 CET).

Haiyang Wang
Leander Schlarmann
Jeanne Davoult
Timm-Emanuel Riesen

2 Abstracts of refereed papers

N-body interactions and collisions in circumstellar disks for planar and inclined binary star configurations

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Monthly Notices of the Royal Astronomical Society, published 2025MNRAS.tmp.2112Z

The discovery of exoplanets in binary star systems—now numbering about 850 of the nearly 4,600 known exoplanet systems—raises questions about whether observational bias or stellar companions inhibit planet formation. While most studies on terrestrial planet formation assume planar configurations, wide binaries likely feature random inclinations, potentially disrupting planet-forming disks. This study explores the evolution of embryo-planetesimal disks in S-type motion in misaligned binary systems, focusing on the stage after the gas phase when terrestrial planet formation begins and gravitational interactions dominate. Using our GPU-accelerated N-body code GANBISS, we simulate disks with 2,000 planetesimals and 25 planetary embryos, studying the influence of the planetesimals on the evolution of the embryos and tracking their growth through collisions. After the simulations, we analyze collision outcomes with an analytical model. Moreover, for certain inclined binary configurations, we compare dynamically excited (perturbed by the secondary star) with cold disks in inclined configurations, as the distribution after the gas phase in misaligned binaries remains unclear. Our simulations reveal two key outcomes: (i) embryos migrate slightly inward in misaligned systems, and (ii) The initial large oscillations in embryos' inclinations and nodes around the respective values of the secondary star dampen over time. Collision analysis shows distinct differences: planar systems favour accretive collisions, while inclined configurations exhibit more destructive events. These findings underscore the sensitivity of planet formation dynamics to binary star alignment and initial disk conditions.

Download/Website: `https://doi.org/10.1093/mnras/staf2230`

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3 Exoplanet Archives

December 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, January 13, 2026

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.

December 18, 2025

Upload Your Published Data to the Archive

We're rolling out our new Published Data Upload tool today to help get your parameters into the archive quickly and accurately!

This new feature allows users to submit their stellar and planetary parameters directly to the archive after the data have been accepted by a peer-reviewed journal. There are specific prerequisites to submitting your data to us, so make sure you review the submission requirements listed on the page before uploading your files.

Priority will be given to data for newly discovered transiting and/or radial velocity planets. Please review the first question in our FAQ that provides the criteria for determining when parameters for previously announced transiting and radial velocity planets are added to the archive.

Uploading a file does not guarantee its contents will be ingested into the archive—but it does ensure your data will be considered as quickly as possible.

Four New Planets and Spectra for super-Earth TOI-561 b

Our final data update for 2025 includes four new planets, spectra for three planets, and new data for 27 planets!

The new spectra include eclipse emission observations from JWST for TOI-561 b, an ultra-short period exoplanet with a radius roughly 1.4 times Earth's. Read the NASA media release and the discovery paper, then check out the data in the Atmospheric Spectroscopy Table. There are also new spectra added for TRAPPIST-1 d and HAT-P-12 b.

The new planets that bring our total confirmed planet count to 6,065 are HIP 54515 b, TOI-6041 b & c, and WASP-108 b. The planets with new data are CoRoT-2 b, HAT-P-16 b, HAT-P-60 b, Kepler-1658 b, NGTS-6 b, NN Ser c & d, TRAPPIST-1 d, TrES-3 b, TrES-5 b, WASP-4 b, WASP-5 b, WASP-12 b, WASP-19 b, WASP-20 b, WASP-45 b, WASP-76 b, WASP-93 b, WASP-99 b, WASP-108 b, WASP-113 b, WASP-114 b, WASP-120 b, WASP-123 b, WASP-136 b, WASP-140 b, and XO-3 b.

Science Never Sleeps...But Our Team Takes a Holiday!

As 2025 draws to a close, the NASA Exoplanet Archive staff extend our sincere thanks to our community for your continued engagement and support. Your contributions, feedback, and use of the archive are what make this resource possible, and we are grateful to be part of the scientific work you advance throughout the year.

Please note our staff will be on a scheduled break from December 24, 2025 through January 4, 2026. During this time, responses to Helpdesk tickets, social media inquiries, and email will be delayed.

We wish you a restful holiday season and a bright start to the new year. And if you're attending the 247th meeting of the American Astronomical Society (AAS) in Phoenix in early January, stop by booth 201 in the Exhibit Hall and say hello!

December 11, 2025

Four Sub-Neptunes and Four Gas Giants = Eight New Planets!

This week's eight new planets bring our total planet count to *6,061*. There are also new parameters for six more planets.

The new planets are CD-35 2722 b, TOI-521 b, TOI-912 b, TOI-1472 c, TOI-1648 b, and TOI-7510 b, c, & d. There are also new parameters for HD 72659 b & c, HD 95338 b, TOI-1472 b, WASP-71 b, and WASP-76 b.

December 4, 2025

All of These Things Are Not Like the Others

This week's four planets highlight the broad diversity of exoplanets and include a wide-separation planet, a planet in a multi-system, a young and warm Saturn, and a planet in the Neptune desert.

The new planets are 2MASS J22501512+2325342 b, TOI-333 b, TOI-1422 c, and TOI-6448 b.

There are also new parameters for 37 planets: 8 UMi b, BD-06 1339 b, BD-08 2823 b, HD 7199 b, HD 7924 b, c, & d, HD 10180 c, d, & g, HD 28109 b, c, & d, HD 40307 b, c, & d, HD 80606 b, HD 87883 b, HD 125595 b, HD 141937 b, HD 154345 b, HD 175607 b, HD 176986 b & c, HD 179079 b, HD 181433 b, c, & d, HD 206893 b, HD 215152 b, c, d, & e, HD 215497 b, HIP 57274 b, and and KMT-2020-BLG-0414L b & c.

Other updates this week include new spectra for WASP-63 b and WASP-80 b in the Atmospheric Spectroscopy Table and updating the dispositions of 30 Ari B b, HD 6718 b, and HD 148427 b to False Positive Planet. FPP data have been removed from the Planetary Systems and Planetary Systems Composite Parameters tables, but are still available on the System Overview pages.

Happy Birthday...to Us!

The NASA Exoplanet Archive was launched 14 years ago tomorrow, on December 5, 2011, when the NASA Exoplanet Science Institute re-purposed the NASA Star and Exoplanet Database (NStED) to focus primarily on exoplanets and host stars.
There were around 500 confirmed exoplanets at the time and our primary datasets were from ESA's CoRoT and NASA's Kepler Space Telescope missions. But exciting things were afoot: news of a planet called Kepler-22 b orbiting a Sun-like star in the habitable zone had just been confirmed, making headlines around the world.

The discoveries kept coming and the archive kept growing, and we now serve data for more than 6,000 planets, as well as thousands more candidates waiting to be confirmed.

The staff of the NASA Exoplanet Archive extend our gratitude to those who have contributed to our growth in numerous ways, whether it's using our data to find planets (and refute them), citing us in your work, using our data plots in your presentations, contributing datasets, or simply suggesting improvements to our tools and services. We owe much of our longevity to the hard-working exoplanet community that uses and supports us, so thank YOU!

Download/Website: `https://exoplanetarchive.ipac.caltech.edu`

Contact: `mharbut@caltech.edu`

4 Conferences and Workshops

Massive Exoplanet MEME Exhibition - 6th Edition

The MEME organization committee

`https://www.youtube.com/live/fbTm_cClnFk`, *January 30th at 17:00 CET*

We are very excited to invite you all to the online Massive Exoplanet MEME Exhibition on the 30th of January 2026. So make a meme, send it to us, and join us in a laugh!

The MEME is an event where everyone can share and enjoy memes related to topics such as astrophysics, coding, academia, and life as a student.

These memes will be displayed at our online exhibition, where everyone can see them and vote for their favourites before the winners are announced when the exhibition closes after a week. Next year's MEME will be kickstarted with an event on the 30th of January 2026 at 17:00 CET, where in addition to seeing awesome memes we will also be joined by Adam Dipert and Anja C. Andersen who will share their experiences with where astrophysics meets society.

Would you like to submit a meme, laugh at the memes from previous years, see more about what we are doing, or maybe even join us on the MEME-team? Then feel free to follow us on Bluesky or Instagram (@exomemeevent), or check out our webpage.

The link for the MEME 2026 will be published on our webpage on the day of the event, or you can add it to your calendar, or sign up to receive a reminder for the event!

Download/Website: `https://massiveexoplanetmemeexhibition.com/editions`
Contact: `exoplanetmemes@gmail.com`

Debris Disk Workshop 2026

Ceren Kaser (on behalf of the SoC)

Cambridge, 13 - 17th July 2026

The abstract submission & registration forms for the Debris Disk Connections Workshop, Cambridge, 13 - 17 July 2026, are live now! We warmly encourage you to submit your work, by 22 March 2026.

You can find the list of updated confirmed speakers on the website. We're excited to welcome a fantastic group of contributors to the workshop.

To receive updates about the Debris Disk Connections workshop, please sign up for the mailing list.

Should you have any questions or require further information, feel free to contact us at ioa-debrisdisk@ast.cam.ac.uk

Download/Website: `https://www.ast.cam.ac.uk/debris-disk-connections`
Contact: `ioa-debrisdisk@ast.cam.ac.uk`

5 As seen on astro-ph

The following list contains exoplanet related entries appearing on astro-ph in January 2026.
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.

January 2026

astro-ph/2601.00059: **Sub-Neptune Memories I: Implications of Inefficient Mantle Cooling and Silicate Rain** *by Roberto Tejada Arevalo et al.*
astro-ph/2601.00057: **A free-floating-planet microlensing event caused by a Saturn-mass object** *by Subo Dong et al.*
astro-ph/2601.00325: **KMT-2024-BLG-0816/OGLE-2024-BLG-0519 – A Microlensing Event with Candidate Free-Floating Planet Lens and Blended Light** *by R. Poleski et al.*
astro-ph/2601.00412: **The Persistent Thermal Anomalies in Rocky Worlds** *by Zifan Lin, Tansu Daylan*
astro-ph/2601.00462: **The Solar Neighborhood LV: Spectral Characterization of an Equatorial Sample of 580 K Dwarfs** *by Hodari-Sadiki Hubbard-James et al.*
astro-ph/2601.00606: **Irradiated Atmosphere V: Effects of Vertical-Mixing induced Energy Transport on the Inhomogeneity** *by Wei Zhong et al.*
astro-ph/2601.00640: **Evidence for a Nonzero Eccentricity Superpuff Exoplanet WASP-107 b Using JWST Occultation Observation** *by Yunke Wu et al.*
astro-ph/2601.00786: **Callisto's Nonresonant Orbit as an Outcome of Circum-Jovian Disk Substructure** *by Teng Ee Yap, Konstantin Batygin*
astro-ph/2601.00949: **Observable Metal Pollution in Main-Sequence Stars: Simulations of Rocky Planets Engulfed by Stars in the 0.5 to 1.4 $\mathbf{M}_{\odot}$ Range** *by Kaitlyn T. Lane et al.*
astro-ph/2601.00962: **A comprehensive study of the relations between the properties of planetary systems and the chemical compositions of their host stars** *by Luan Ghezzi et al.*
astro-ph/2601.04232: **Exploring Metal Additive Manufacturing in Martian Atmospheric Environments** *by Zane Mebruer, Wan Shou*
astro-ph/2601.01177: **Exo-Geoscience Perspectives Beyond Habitability** *by Tilman Spohn et al.*
astro-ph/2601.01130: **Compensating Star-Trackers Misalignments with Adaptive Multi-Model Estimation** *by Ridma Ganganath et al.*
astro-ph/2601.01468: **Trajectory-Based Dust Evolution in Disks: First Results from the RAPID Simulation Code** *by D. Tarczay-Nehéz*
astro-ph/2601.01628: **The MUSCLES Extension for Atmospheric Transmission Spectroscopy: Spectral energy distributions for 20 exoplanet host stars that JWST observed in Cycle 1** *by David J. Wilson et al.*
astro-ph/2601.02593: **Isotopic Ratios in the Disk of HD 163296** *by Chunhua Qi et al.*
astro-ph/2601.02556: **The Lazuli Space Observatory: Architecture & Capabilities** *by Arpita Roy et al.*
astro-ph/2601.02548: **Dearth of Photosynthetically Active Radiation Suggests No Complex Life on Late M-Star Exoplanets** *by Joseph J. Soliz, William F. Welsh*
astro-ph/2601.02545: **Tracing Pebble Drift History in Two Protoplanetary Disks with CO Enhancement** *by Tayt Armitage et al.*
astro-ph/2601.02533:
astro-ph/2601.02527: **Scalable Gaussian Processes for Integrated and Overlapping Measurements Via Augmented State Space Models** *by Ryan A. Rubenzahl et al.*
astro-ph/2601.02324: **Hunting for "Oddballs" with Machine Learning: Detecting Anomalous Exoplanets Using a Deep-Learned Low-Dimensional Representation of Transit Spectra with Autoencoders** *by Alexander Roman et al.*

astro-ph/2601.02479: **Towards a global model for planet formation in layered MHD wind-driven discs: A population synthesis approach to investigate the impact of low viscosity and accretion layer thickness** *by Jesse Weder, Christoph Mordasini*

astro-ph/2601.02462: **Exposure-averaged Gaussian Processes for Combining Overlapping Datasets** *by Jacob K. Luhn et al.*

astro-ph/2601.02344: **Protoplanetary disk cavities with JWST-MIRI: a dichotomy in molecular emission** *by Patrick Mallaney et al.*

astro-ph/2601.02296: **Uncovering Hidden Systematics in Extreme-Precision Radial Velocity Measurements** *by Lily L. Zhao et al.*

astro-ph/2601.02156: **JWST/MIRI coronagraphic search for planets in systems with gapped exoKuiper belts and proper motion anomalies** *by R. Bendahan-West et al.*

astro-ph/2601.02486: **Models and Observational Predictions of Dust Traps in Protoplanetary Discs** *by Paola Pinilla*

astro-ph/2601.02171: **Vetting and False Positive Analysis of TOI 864.01: Evidence for a Likely Hierarchical Eclipsing Binary Masked by Dilution** *by Biel Escolà-Rodrigo*

astro-ph/2601.04255: **Charge Migration and Residual Non-Linearity in NIRSpec BOTS Observations** *by Munazza K. Alam et al.*

astro-ph/2601.02621: **Where does the simplified Stellar Contamination Model fail in Exoplanet Transmission Spectroscopy?** *by Viktor Y. D. Sumida et al.*

astro-ph/2601.02637: **Quantifying the Contamination of TESS Ecliptic-Plane Light Curves by Minor Planets** *by Ben Cassese et al.*

astro-ph/2601.02665: **TOI-4495: A Pair of Aligned, Near-Resonant Sub-Neptunes that Likely Experienced Overstable Migration** *by Mu-Tian Wang et al.*

astro-ph/2601.02995: **Mean opacity tables for probing the interior and atmosphere of giant planets** *by Louis Siebenaler, Yamila Miguel*

astro-ph/2601.03350: **The SOL *(Solar Origin and Life)* Project: Detailed characterization of candidates for the ZAMS and Subgiant stages** *by C. Eduardo-Oliveira S. et al.*

astro-ph/2601.03408: **Estimation of the tidal heating in the TRAPPIST-1 planets. Influence of the internal structure** *by Emeline Bolmont et al.*

astro-ph/2601.03539: **Perhaps there is no brown dwarf desert? A study of sub-stellar companions with Gaia DR3** *by A. L. Wallace, A. R. Casey*

astro-ph/2601.03820: **Disc fragmentation. II. Ejection of low mass Free Floating Planets from growing binary systems** *by Sergei Nayakshin et al.*

astro-ph/2601.03932: **The uncertainty in water mass fraction of wet planets** *by Michael Lozovsky*

astro-ph/2601.03951: **Broadband spectroscopy of astrophysical ice analogues: IV. Optical constants of N_2 ice in the terahertz and mid-infrared ranges** *by F. Kruczkiewicz et al.*

astro-ph/2601.03963: **Formation of multi-planetary systems via pebble accretion in externally photoevaporating discs in stellar clusters** *by Lin Qiao et al.*

astro-ph/2601.04032: **Two-source terrestrial planet formation with a sweeping secular resonance** *by Max Goldberg et al.*

astro-ph/2601.04091: **Dissecting the dust distribution and polarization around two B213 young stellar objects with ALMA** *by Asako Sato et al.*

astro-ph/2601.04140: **Secular Excitation of Polar Neptune Orbits in Pure Disk-Planet Systems** *by Luke B. Handley, Konstantin Batygin*

astro-ph/2601.04315: **Self-consistent Dynamical and Chaotic Tides in the REBOUNDx framework** *by Donald J. Liveoak et al.*

astro-ph/2601.04347: **The Impact of Robotic Telescopes on Time-Domain Astronomy** *by Yakubu Mu'allim et al.*

astro-ph/2601.03659: **Protonic thermoelectric effect of Superionic H2O and magnetic field generation in**

Uranus and Neptune *by Daohong Liu et al.*

astro-ph/2601.05387: **Paving the Road to the Habitable Worlds Observatory with High-Resolution Imaging I: New and Archival Speckle Observations of Potential HWO Target Stars** *by Zachary D. Hartman et al.*

astro-ph/2601.05313: **Overestimated Pressure Broadening Misleads Model Spectra in Cool M Dwarf Stars** *by Ana Glidden et al.*

astro-ph/2601.05090: **Surveying exogenous species in Saturn with ALMA I. Detecting and Mapping CO** *by Deborah Bardet et al.*

astro-ph/2601.04593: **Investigating the High-energy Radiation Environment of Planets in Sun-like Binary Systems** *by Patrick R. Behr et al.*

astro-ph/2601.04484: **Transit Photometry and Ephemeris Refinement of WASP-12 b Using TESS Data** *by Chinedu Jude Nnaji*

astro-ph/2601.05060: **Energetic particles accelerated via turbulent magnetic reconnection in protoplanetary discs - I. Ionisation rates** *by Valentin Brunn et al.*

astro-ph/2601.06263: **Ultraviolet observations of atmospheric escape in exoplanets with the Habitable Worlds Observatory** *by Leonardo A. Dos Santos, Eric D. Lopez*

astro-ph/2601.05976: **Distinct Rotational Evolution of Giant Planets and Brown Dwarf Companions** *by Chih-Chun Hsu et al.*

astro-ph/2601.05799: **Two temperate Earth- and Neptune-sized planets orbiting fully convective M dwarfs** *by Madison G. Scott et al.*

astro-ph/2601.06236: **Transiting exoplanets as the immediate future for population-level atmospheric science** *by Joanna K. Barstow et al.*

astro-ph/2601.06233: **Exoplanet characterization with NASA's Habitable Worlds Observatory** *by Joanna K. Barstow et al.*

astro-ph/2601.05480: **Stellar control on atmospheric carbon chemistry, CO runaway, and organic synthesis on lifeless Earth-like planets** *by Yoshiaki Endo et al.*

astro-ph/2601.05932: **On the orbital evolution of binaries with polar circumbinary disks** *by Cheng Chen et al.*

astro-ph/2601.06386: **NASA Decadal Astrobiology Research and Exploration Strategy (NASA-DARES 2025) White Paper – Habitable Worlds Observatory Living Worlds Science Cases: Research Gaps and Needs** *by Niki Parenteau et al.*

astro-ph/2601.06420: **Simulations of Electron Beam Interactions in Brown Dwarf Atmospheres** *by Anna Zuckerman et al.*

astro-ph/2601.06563: **High-order expansions of multi-revolution elliptic Halo orbits in the elliptic restricted three-body problem** *by Xiaoyan Leng, Hanlun Lei*

astro-ph/2601.07088: **On the 3D time evolution of the dust size distribution in protostellar envelopes** *by Maxime Lombart et al.*

astro-ph/2601.07080: **Magma Ocean Waves and Thermal Variability on Lava Worlds** *by Mohammad Farhat, Eugene Chiang*

astro-ph/2601.06759: **SPHEREx Re-Observation of Interstellar Object 3I/ATLAS in December 2025: Detection of Increased Post-Perihelion Activity, Refractory Coma Dust, and New Coma Gas Species** *by C. M. Lisse et al.*

astro-ph/2601.07414: **Characterization of two new transiting sub-Neptunes and a terrestrial planet around M-dwarf hosts** *by E. Poultourtzidis et al.*

astro-ph/2601.07457: **Functionalization of Benzene Ices by Atomic Oxygen** *by Elettra L. Piacentino et al.*

astro-ph/2601.07465: **Exoplanet transit search at the detection limit: detection and false alarm vetting pipeline** *by Jakob Robnik et al.*