ExoPlanet News
An Electronic Newsletter

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Contents

1 Editorial

Welcome to Edition 168 of the ExoPlanet News!

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 the next month we look 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 (`http://nccr-planets.ch/exoplanetnews/`).

The next issue will appear on July 11, 2023.

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

Haiyang Wang
Jeanne Davoult
Eleonora Alei
Daniel Angerhausen
Timm-Emanuel Riesen

2 Abstracts of refereed papers

Tidal evolution for any rheological model using a vectorial approach expressed in Hansen coefficients

A.C.M. Correia[1,2]*, E. F. S. Valente*[1]

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[2] IMCCE, Observatoire de Paris, PSL Université, 77 Av. Denfert-Rochereau, 75014 Paris, France

Celestial Mechanics and Dynamical Astronomy, published (2022CeMDA.134...24C)

We revisit the two body problem, where one body can be deformed under the action of tides raised by the companion. Tidal deformation and consequent dissipation result in spin and orbital evolution of the system. In general, the equations of motion are derived from the tidal potential developed in Fourier series expressed in terms of Keplerian elliptical elements, so that the variation of dissipation with amplitude and frequency can be examined. However, this method introduces multiple index summations and some orbital elements depend on the chosen frame, which is prone to confusion and errors. Here, we develop the quadrupole tidal potential solely in a series of Hansen coefficients, which are widely used in celestial mechanics and depend just on the eccentricity. We derive the secular equations of motion in a vectorial formalism, which is frame independent and valid for any rheological model. We provide expressions for a single average over the mean anomaly and for an additional average over the argument of the pericentre. These equations are suitable to model the long-term evolution of a large variety of systems and configurations, from planet-satellite to stellar binaries. We also compute the tidal energy released inside the body for an arbitrary configuration of the system.

Download/Website: `https://arxiv.org/abs/2306.03449`

Contact: `alexandre.correia@uc.pt`

In-situ enrichment in heavy elements of hot Jupiters

A. Morbidelli[1]*, K. Batygin*[2]*, E. Lega*[1]

[1] Département Lagrange, University of Nice – Sophia Antipolis, CNRS, Observatoire de la Côte d'Azur, Nice, France
[2] GPS Division, Caltech, Pasadena, California

Astronomy and Astrophysics, in press/arXiv:2306.01653)

Context: Radius and mass measurements of short-period giant planets reveal that many of these planets contain a large amount of heavy elements. Although the range of inferred metallicities is broad, planets with more than 100 $M_\oplus$ of heavy elements are not rare. This is in sharp contrast with the expectations of the conventional core-accretion model for the origin of giant planets. Aims: The proposed explanations for the heavy-element enrichment of giant planets fall short of explaining the most enriched planets. We look for additional processes that can explain the full envelope of inferred enrichments. Methods: We revisit the dynamics of pebbles and dust in the vicinity of giant planets using analytic estimates and published results on the profile of a gap opened by a giant planet, on the radial velocity of the gas with respect to the planet, on the Stokes number of particles in the different parts of the disk and on the consequent dust/gas ratio. Although our results are derived in the framework of a viscous α-disk we also discuss the case of disks driven by angular momentum removal in magnetized winds. Results: When giant planets are far from the star, dust and pebbles are confined in a pressure bump at the outer edge of the planet-induced gap. Instead, when the planets reach the inner part of the disk ($r_p \ll 2$ au), dust penetrates into the gap together with the gas. The dust/gas ratio can be enhanced by more than an order of magnitude if radial drift of dust is not impeded farther out by other barriers. Thus, hot planets undergoing runaway gas accretion can swallow a large amount of dust, acquiring $\sim 100 M_\oplus$ of heavy elements by the time they reach Jupiter-mass. Conclusions: Whereas the gas accreted by giant planets in the outer disk is very dust-poor, that accreted by hot planets can be extremely dust-rich. Thus, provided that a large fraction of the atmosphere of hot-Jupiters is accreted in situ, a large amount of dust can be accreted as well. We draw a distinction between this process and pebble accretion (i.e., the capture of dust without the accretion of gas), which is ineffective at small stellocentric radii, even for super-Earths. Giant planets farther out in the disk are extremely effective barriers against the flow of pebbles and dust across their gap. Saturn and Jupiter, after locking into a mutual mean motion resonance and reversing their migration could have accreted small pebble debris.

Download/Website: `https://arxiv.org/pdf/2306.01653.pdf`

Contact: `morby@oca.eu`

3 Jobs and Positions

PhD Opportunities in Interdisciplinary Space Science and Planetary Research

as part of YRP@Graz, Austria, 7 July 2023

As part of its Young Researcher Programme YRP @ Graz, the Space Research Institute (IWF) of the Austrian Academy of Sciences (OeAW), the Graz University of Technology, and the University of Graz jointly invite applications for

PHD STUDENT POSITIONs (F*M)

in interdisciplinary space science and planetary research with the possibility to work also in the field of space instrumentation. The YRP @ Graz is a collaboration between the IWF and the Graz University of Technology and the University of Graz. The successful candidates will benefit from joint supervision across at least two research groups of these institutions. The offered PhD projects and further information can be found here: *https://www.oeaw.ac.at/en/iwf/research/young-researcher-program/phd-students*

We seek excellent students with a strong background in natural sciences. Successful candidates must hold a Master's degree in physics, astrophysics, geoscience or equivalent or in engineering with focus on space instrumentation at the latest by the starting date of the position, namely in September 2023, but preferably at the time of application. Previous experience on aspects of astrophysics and related fields and a track record of team work will be important criteria for the selection, as will experience in computational coding.

The appointment can begin as early as September 1, 2023, and will be for min. 3.5 years.

The first stage of the application process is anonymised, the second stage takes the form of an interview.
To apply for this position, an anonymous questionnaire to be found on the above-mentioned webpage has to be filled out. No further documents have to be sent at this stage of the application process. This form includes questions about scientific skills and the candidate's master thesis/project, and asks for a statement of interest, a scientific proposal, and a statement regarding research integrity. Please, submit the form no later than July 7^{th}, 2023.

Inquiries about the YRP @ Graz position should be directed to Prof. Dr. Christiane Helling (christiane.helling@oeaw.ac.at) or Dr. Ruth-Sophie Taubner (ruth-sophie.taubner@oeaw.ac.at).

The Austrian Academy of Science, the Graz University of Technology, and the University of Graz pursue a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.

Download/Website: `https://www.oeaw.ac.at/en/iwf`
(`https://www.tugraz.at/en/home/` ; `https://www.uni-graz.at/en/`)

Contact: `ruth-sophie.taubner@oeaw.ac.at`

PostDoc Position in Exoplanet atmospheres – links to observations

Prof. Christiane Helling

Space Research Institute (IWF) of the Austrian Academy of Sciences (OeAW), as early as November 1st, 2023

The Space Research Institute (IWF) of the Austrian Academy of Sciences (OeAW), Austria's leading non-university research and science institution, is offering a

POSTDOC POSITION (F/M/X)
Exoplanet atmospheres – links to observations
(full-time, 40h per week)

The successful candidate will be part of Prof Christiane Helling's research group *Exoplanets: Weather & Climate* at the IWF which is part of the OeAW's effort to expand the theme of exoplanet research at the Space Research Institute (IWF) Graz.

Your profile

- PhD in the relevant fields of astrophysics
- Experiences in interpreting ground based and space instrumentation data
- Experiences in 3D retrieval, polarimetry and/or gas-cloud radiative transfer modelling
- Knowledge in scientific programming, publishing, and proposal writing

Your tasks

- Link complex modelling results (e.g., 3D atmospheres, cloud modelling) to observations
- Scientific data interpretation (e.g., CHEOPS) and preparation for PLATO, Ariel and other future missions
- Publication and proposal writing activities

The appointment begins as early as November 01st, 2023 and will be for three years.

Applications must include a cover letter in addition to (1) curriculum vitae, (2) list of publications, (3) statement of the applicant's research experience (max 2 page) and a research plan (max 1 pages), (4) certificates for full academic record, and (5) two references letters. Please send the application in one PDF file, mentioning Job ID: IWF051PD123 to cosima.muck@oeaw.ac.at **no later than July 20^{th}, 2023**. Inquiries about the position should be directed to Prof Dr Christiane Helling.

Download/Website: `https://www.oeaw.ac.at/fileadmin/Institute/iwf/pdf/jobs/IWF051PD123.pdf`

Contact: `cosima.muck@oeaw.ac.at` or `christiane.helling@oeaw.ac.at`

4 Conferences and Workshops

Two HoRSEs

Vardan Adibekyan, Megan Bedell, Maria Bergemann, Jayne Birkby, Matteo Brogi, Andrea Chiavassa, Laura Kreidberg, Mike Line, Megan Mansfield, Paul Mollière, Vivien Parmentier, Arthur Vigan

Harnack House, Berlin, Germany, 15-19 July 2024

Dear ~~colleagues~~ cowboys/cowgirls, saddle up and mark your calendar for

Two HoRSEs: High-Resolution Exoplanet Characterization today and in the ELT era

Rationale:

In the five (!) years since the first HoRSE workshop in Nice, the field of high resolution spectroscopy for exoplanet characterization has grown enormously, JWST has launched, and ELT first light is inching closer. To celebrate these developments, Two HoRSEs will bring together experts on planetary and stellar physics, data analysis, and modeling at high spectral resolution, for a week of talks and discussion in Berlin. Broad themes of the conference are synergies between ground- and space-based data, and laying the groundwork for science with 30m-class telescopes. Mark your calendars now, and pre-register on our meeting website if you want to stay informed about when registration opens. We are also soliciting logos for the conference, so have a look at the website if you want to participate in the logo contest.

Yeehaw!

Download/Website: `https://sites.google.com/view/two-horses/`

Contact: `molliere@mpia.de`

5 Others

Announcement of a new two-year Master programme on "Solar System Physics" at TU Braunschweig, Germany

J. Blum, Institute of Geophysics and Extraterrestrial Physics, TU Braunschweig, Germany

Braunschweig, Germany, June 14, 2023

For the winter term of 2023/2024, the TU Braunschweig will launch an English-language Master's degree programme on Solar System Physics. Students will acquire the necessary qualifications for studying the Solar System, participating in space missions, and conducting scientific analyses of the collected data. Graduates will have access to challenging career opportunities in the aerospace industry, space management, and research institutions.

Solar System Physics M. Sc.

Degree:	Master of Science
Standard duration:	4 semesters
Language:	English
Tuition:	free
Place:	TU Braunschweig, Germany
Start of programme:	winter and summer semester
Admission:	restricted admission (special admission requirements)
Application:	`www.tu-braunschweig.de/en/international-students/application`
More information:	`www.tu-braunschweig.de/en/prospective-students/solar-system-physics`

Exploring the Solar System has always been one of humanity's most fascinating endeavours, and it continues to pose great challenges. Scientists today study celestial bodies with the aid of modern ground- and space-based telescopes and use probes that venture deep into space. To successfully collect data about our Solar System, these space missions rely on countless, highly sophisticated technologies.

A profound understanding of the physics governing our Solar System is indispensable when aiming to delve more deeply into the mysteries of our cosmic neighbourhood, to advance existing space technologies and to pioneer the development of new ones. The Master's programme in Solar System Physics at TU Braunschweig prepares students for this challenge.

We look forward to receiving your application! Apply now!

Learn more!

Apply now!

6 Exoplanet Archives

May 2023 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, June 13, 2023

Note: Unless otherwise noted, all planetary and stellar data mentioned in the news are in the Planetary Systems Table (`https://bit.ly/PlanetarySystems`), which provides a single location for all self-consistent planetary solutions, and its companion table the Planetary Systems Composite Parameters (`https://bit.ly/PSCompPars`), which offers a more complete table of parameters combined from multiple references and calculations. Data may also be found in the Microlensing Planets Table (`https://bit.ly/newMicrolensing`) and the Direct Imaging Planets Table (`https://bit.ly/DirectImagingTable`).

May 18, 2023

72 New Planets, Including a World Covered in Volcanoes

We've added a whopping 72 planets this week, including LP 791-18 d, a world that may be as volcanically active as Jupiter's moon Io. This NASA article (`https://bit.ly/3MUER7T`) has more details on LP 791-18 d, which was discovered using data from TESS and NASA's Spitzer Space Telescope.

Most of this week's new planets—69 of them—are from Valizadegan et al. 2023 (`https://arxiv.org/pdf/2305.02470.pdf`). The authors employed the same machine learning method they used to validate 301 exoplanets for their 2021 paper, as described in this NASA story (`https://bit.ly/42mzfc9`). Two other two new planets that are not part of the Valizadegan paper are TOI-1221 b and TOI-244 b.

We've also added a new JWST spectrum of GJ 1214 b to the Emission Spectroscopy table (`https://bit.ly/2vOLcem`), based on Kempton et al. 2023 (`https://bit.ly/3Ndt2uW`).

May 4, 2023

A Microlensing Planet Found by...Kepler?

This week's nine new planets include a near-identical Jupiter twin found in archival Kepler/K2 data—the first bound microlensing exoplanet discovered with space-based data. Learn more about the discovery of K2-2016-BLG-0005L b in the University of Manchester media release (`https://bit.ly/3qv4UuU`) and the discovery paper (`https://bit.ly/3NhGu10`).

The eight other planets added this week are TOI-778 b, WISE J033605.05-014350.4 b, EPIC 229004835 b, OGLE-2018-BLG-1126L b, OGLE-2018-BLG-1647L b, OGLE-2018-BLG-1367L b, OGLE-2018-BLG-0932L b, and OGLE-2018-BLG-1212L b.

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

7 As seen on astro-ph

The following list contains exoplanet related entries appearing on astro-ph in May 2023.
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 2023

astro-ph/2305.00047: **On the radial distribution of giant exoplanets at Solar System scales** *by A. -M. Lagrange et al.*

astro-ph/2305.00440: **Stellar pulsations interfering with the transit light curve: configurations with false positive misalignment** *by A. Bókon et al.*

astro-ph/2305.00803: **Small Planets Around Cool Dwarfs: Enhanced Formation Efficiency of Super-Earths around M dwarfs** *by Yayaati Chachan, Eve J. Lee*

astro-ph/2305.00809: **Star-Planet Interaction at radio wavelengths in YZ Ceti: Inferring planetary magnetic field** *by Corrado Trigilio et al.*

astro-ph/2305.00829: **DREAM II. The spin-orbit angle distribution of close-in exoplanets under the lens of tides** *by O. Attia et al.*

astro-ph/2305.00861: **SHAMPOO: A stochastic model for tracking dust particles under the influence of non-local disk processes** *by M. Oosterloo et al.*

astro-ph/2305.00868: **High Tide or Riptide on the Cosmic Shoreline? A Water-Rich Atmosphere or Stellar Contamination for the Warm Super-Earth GJ 486b from JWST Observations** *by Sarah E. Moran et al.*

astro-ph/2305.00951: **Formation of Gaps in Self-gravitating Debris Disks by Secular Resonance in a Single-planet System. II. Towards a Self-consistent Model** *by Antranik A. Sefilian et al.*

astro-ph/2305.00988: **Joint Modeling of Radial Velocities and Photometry with a Gaussian Process Framework** *by Quang H. Tran et al.*

astro-ph/2305.01000: **Revised Properties and Dynamical History for the HD 17156 System** *by Stephen R. Kane et al.*

astro-ph/2305.01704: **Power-2 limb-darkening coefficients for the** $uvby$**,** $UBVRIJHK$**, SDSS** $ugriz$**, Gaia, Kepler, TESS, and CHEOPS photometric systems II. PHOENIX spherically symmetric stellar atmosphere models** *by A. Claret, J. Southworth*

astro-ph/2305.01684: **The maximum accretion rate of a protoplanet: how fast can runaway be?** *by Nick Choksi et al.*

astro-ph/2305.01679: **The Planetary Accretion Shock. III. Smoothing-free 2.5D simulations and calculation of H alpha emission** *by Gabriel-Dominique Marleau et al.*

astro-ph/2305.01493: **Using planet migration and dust drift to weigh protoplanetary discs** *by Yinhao Wu et al.*

astro-ph/2305.01250: **Interior-atmosphere modelling to assess the observability of rocky planets with JWST** *by Lorena Acuna et al.*

astro-ph/2305.01627: **Theoretical tidal evolution constants for stellar models from the pre-main sequence to the white dwarf stage Apsidal motion constants, moment of inertia, and gravitational potential energy** *by A. Claret*

astro-ph/2305.02338: **The edge-on protoplanetary disk HH 48 NE I. Modeling the geometry and stellar parameters** *by J. A. Sturm et al.*

astro-ph/2305.02362: **Instabilities in dusty non-isothermal proto-planetary discs** *by Marius Lehmann, Min-Kai Lin*

astro-ph/2305.02285: **Schedule optimization for transiting exoplanet observations with NASA's Pandora SmallSat mission** *by Trevor O. Foote et al.*

astro-ph/2305.02355: **The edge-on protoplanetary disk HH 48 NE II. Modeling ices and silicates** *by J. A. Sturm et al.*

astro-ph/2305.02262: **An Interferometric SETI Observation of Kepler-111 b** *by Kelvin Wandia et al.*
astro-ph/2305.02140: **Quantifying the Impact of the Dust Torque on the Migration of Low-mass Planets** *by Octavio M. Guilera et al.*
astro-ph/2305.01861: **Metallicity and age effects on lithium depletion in solar analogues** *by Giulia Martos et al.*
astro-ph/2305.02123: **`Wapiti`: a data-driven approach to correct for systematics in RV data – Application to SPIRou data of the planet-hosting M dwarf GJ 251** *by M. Ould-Elhkim et al.*
astro-ph/2305.02067: **Photosynthesis Under a Red Sun: Predicting the absorption characteristics of an extraterrestrial light-harvesting antenna** *by Christopher D. P. Duffy et al.*
astro-ph/2305.03104: **Let's Sweep: The Effect of Evolving J_2 on the Resonant Structure of a Three-Planet System** *by Thea H. Faridani et al.*
astro-ph/2305.02827: **Carbon dredge-up required to explain the Gaia white dwarf colour-magnitude bifurcation** *by Simon Blouin et al.*
astro-ph/2305.02551: **No Evidence for Additional Planets at GJ 3470 from TESS and Archival Radial Velocities** *by Thomas Tarrants, Andrew Li*
astro-ph/2305.02470: **Multiplicity Boost Of Transit Signal Classifiers: Validation of 69 New Exoplanets Using The Multiplicity Boost of ExoMiner** *by Hamed Valizadegan et al.*
astro-ph/2305.02465: **Non-detection of Helium in the Hot Jupiter WASP-48b** *by Katherine A. Bennett et al.*
astro-ph/2305.03789: **Spatially resolved imaging of the inner Fomalhaut disk using JWST/MIRI** *by Andras Gaspar et al.*
astro-ph/2305.03659: **The role of the drag force in the gravitational stability of dusty planet-forming disc – II. Numerical simulations** *by Cristiano Longarini et al.*
astro-ph/2305.03410: **Tidally Heated Exomoons around ε Eridani b: Observability and prospects for characterization** *by E. Kleisioti et al.*
astro-ph/2305.03417: **Chemical and physical properties of cometary dust** *by Cecile Engrand et al.*
astro-ph/2305.03392: **Extreme evaporation of planets in hot thermally unstable protoplanetary discs: the case of FU Ori** *by Sergei Nayakshin et al.*
astro-ph/2305.03255: **A search for stellar siblings of the 200 Myr TOI-251b planetary system** *by Qinghui Sun et al.*
astro-ph/2305.03562: **Forbidden planetesimals** *by Laurent Schönau et al.*
astro-ph/2305.04033: **Advanced life peaked billions of years ago according to black holes** *by David Garofalo*
astro-ph/2305.05076: **Laboratory demonstration of the wrapped staircase scalar vortex coronagraph** *by Niyati Desai et al.*
astro-ph/2305.04965: **Implementation of chemistry in the Athena++ code** *by Munan Gong et al.*
astro-ph/2305.05056: **Exoplanet Volatile Carbon Content as a Natural Pathway for Haze Formation** *by E. A. Bergin et al.*
astro-ph/2305.04922: **An unusually low-density super-Earth transiting the bright early-type M-dwarf GJ 1018 (TOI-244)** *by A. Castro-González et al.*
astro-ph/2305.04909: **On the nature of the planet-powered transient event ZTF SLRN-2020** *by Noam Soker*
astro-ph/2305.04911: **Origins of Life on Exoplanets** *by Paul B. Rimmer*
astro-ph/2305.04549: **Three-Dimensional Dust Stirring by a Giant Planet Embedded in a Protoplanetary Disk** *by Fabian Binkert et al.*
astro-ph/2305.05362: **RAM: Rapid Advection Algorithm on Arbitrary Meshes** *by Pablo Benítez-Llambay et al.*
astro-ph/2305.05395: **Beyond Mediocrity: How Common is Life?** *by Amedeo Balbi, Manasvi Lingam*
astro-ph/2305.05697: **The Hazy and Metal-Rich Atmosphere of GJ 1214 b Constrained by Near and Mid-Infrared Transmission Spectroscopy** *by Peter Gao et al.*
astro-ph/2305.05787: **Reproduction Experiments of Radial Pyroxene Chondrules using Gas-jet Levitation System under Reduced Condition** *by Kana Watanabe et al.*
astro-ph/2305.06263: **DMPP-3: confirmation of short-period S-type planet(s) in a compact eccentric binary star system, and warnings about long-period RV planet detections** *by Adam T. Stevenson et al.*

astro-ph/2305.06240: **A reflective, metal-rich atmosphere for GJ 1214b from its JWST phase curve** *by Eliza M. -R. Kempton et al.*

astro-ph/2305.05989: **A Bayesian Analysis of Technological Intelligence in Land and Oceans** *by Manasvi Lingam et al.*

astro-ph/2305.06014: **Observability of Photoevaporation Signatures in the Dust Continuum Emission of Transition Discs** *by Giovanni Picogna et al.*

astro-ph/2305.06206: **A 1.55 $R_\oplus$ habitable-zone planet hosted by TOI-715, an M4 star near the ecliptic South Pole** *by Georgina Dransfield et al.*

astro-ph/2305.07159: **Trajectories of Coronal Mass Ejection from Solar-type Stars** *by Fabian Menezes et al.*

astro-ph/2305.07057: **Statistics of Magrathea exoplanets beyond the Main Sequence. Simulating the long-term evolution of circumbinary giant planets with TRES** *by Gabriele Columba et al.*

astro-ph/2305.06950: **TOI-2498 b: A hot bloated super-Neptune within the Neptune desert** *by Ginger Frame et al.*

astro-ph/2305.06790: **The SNR of a Transit** *by David Kipping*

astro-ph/2305.06605: **Probable brown dwarf companions detected in binary microlensing events during the 2018-2020 seasons of the KMTNet survey** *by Cheongho Han et al.*

astro-ph/2305.06561: **HAZMAT. IX. An Analysis of the UV and X-Ray Evolution of Low-Mass Stars in the Era of Gaia** *by Tyler Richey-Yowell et al.*

astro-ph/2305.06931: **XUV emission of the young planet-hosting star V1298 Tau from coordinated observations with XMM-Newton and HST** *by A. Maggio et al.*

astro-ph/2305.07578: **CHEOPS's hunt for exocomets: photometric observations of 5 Vul** *by Isabel Rebollido et al.*

astro-ph/2305.07719: **Intercomparison of Brown Dwarf Model Grids and Atmospheric Retrieval Using Machine Learning** *by Anna Lueber et al.*

astro-ph/2305.07753: **Confirmation of sub-solar metallicity for WASP-77Ab from JWST thermal emission spectroscopy** *by Prune C. August et al.*

astro-ph/2305.07929: **High-resolution [O I] line spectral mapping of TW Hya supportive of magnetothermal wind** *by Min Fang et al.*

astro-ph/2305.07864: **Meridional Circulation driven by Planetary Spiral Wakes in Radiative and Magnetized Protoplanetary Discs** *by Marco Cilibrasi et al.*

astro-ph/2305.08165: **Thermal instabilities in accretion disks II: Numerical Experiments for the Goldreich-Schubert-Fricke Instability and the Convective Overstability in disks around young stars** *by Hubert Klahr et al.*

astro-ph/2305.08253: **Distinguishing Magnetized Disc Winds from Turbulent Viscosity through Substructure Morphology in Planet-forming Discs** *by Yinhao Wu et al.*

astro-ph/2305.08454: **Observing exoplanets from Antarctica in two colours: Set-up and operation of ASTEP+** *by François-Xavier Schmider et al.*

astro-ph/2305.08610: **Effect of Centrifugal Force on Transmission Spectroscopy of Exoplanet Atmospheres** *by Agnibha Banerjee et al.*

astro-ph/2305.08623: **Spectroscopic follow-up of Gaia exoplanet candidates: Impostor binary stars invade the Gaia DR3 astrometric exoplanet candidates** *by Marcus L. Marcussen, Simon H. Albrecht*

astro-ph/2305.08766: **Preparing an unsupervised massive analysis of SPHERE high contrast data with the PACO algorithm** *by A. Chomez et al.*

astro-ph/2305.08794: **Effect of the inclination in the passage through the 5/3 mean motion resonance between Ariel and Umbriel** *by Sérgio R. A. Gomes, Alexandre C. M. Correia*

astro-ph/2305.08893: **Astrophysical parameters of M dwarfs with exoplanets** *by Carlos Cifuentes*

astro-ph/2305.08836: **TOI-1994b: A Low Mass Eccentric Brown Dwarf Transiting A Subgiant Star** *by Emma Page et al.*

astro-ph/2305.09687: **Variability of Known Exoplanet Host Stars Observed by TESS** *by Emilie R. Simpson et*

al.

astro-ph/2305.09654: **Photochemical hazes dramatically alter temperature structure and atmospheric circulation in 3D simulations of hot Jupiters** *by Maria E. Steinrueck et al.*

astro-ph/2305.09596: **Identification and Classification of Exoplanets Using Machine Learning Techniques** *by Prithivraj G, Alka Kumari*

astro-ph/2305.09460: **Emission line variability of young 10-30 Mjup companions : I. The case of GQ Lup b and GSC 06214-00210 b** *by Dorian Demars et al.*

astro-ph/2305.09177: **A hot super-Earth planet in the WASP-84 planetary system** *by G. Maciejewski et al.*

astro-ph/2305.09693: **A Simple Code for Rotational Broadening of Broad Wavelength Range High-Dispersion Spectra** *by Adolfo S. Carvalho, Christopher M. Johns-Krull*

astro-ph/2305.09093: **On the interaction of pebble accreting embryos with the gaseous disc: importance of thermal forces** *by S. Cornejo et al.*

astro-ph/2305.09488: **The Period Distribution of Hot Jupiters is Not Dependent on Host Star Metallicity** *by Samuel W. Yee, Joshua N. Winn*

astro-ph/2305.09921: **Rotation reduces convective mixing in Jupiter and other gas giants** *by J. R. Fuentes et al.*

astro-ph/2305.10249: **Testing 2D temperature models in Bayesian retrievals of atmospheric properties from hot Jupiter phase curves** *by Jingxuan Yang et al.*

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