

# 2020年 9月 第4週 新着論文サーベイ

9月 21日 (月曜日)

[1] [arxiv:2009.08959](#)

Title: "Moderate-Resolution *K*-Band Spectroscopy of Substellar Companion  $\kappa$  Andromedae b"

Author: Kielan K. Wilcomb, Quinn M. Konopacky, Travis S. Barman, Christopher A. Theissen, Jean-Baptiste Ruffio, Laci Brock, Bruce Macintosh, Christian Marois

Comments: 23 pages, 18 figures. Accepted for publication in AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxiv:2009.08951](#)

Title: "Convex Shape and Rotation Model of Lucy Target (11351) Leucus from Lightcurves and Occultations"

Author: Stefano Mottola, Stephan Hellmich, Marc W. Buie, Amanda M. Zangari, Simone Marchi, Michael E. Brown, Harold F. Levison

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxiv:2009.08916](#)

Title: "WASP-117 b: an eccentric hot-Saturn as a future complex chemistry laboratory"

Author: Lara O. Anisman, Billy Edwards, Quentin Changeat, Olivia Venot, Ahmed F. Al-Refaie, Angelos Tsiaras, Giovanna Tinetti

Comments: Accepted for publication in AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxiv:2009.08881](#)

Title: "TOI-481 b & TOI-892 b: Two long period hot Jupiters from the Transiting Exoplanet Survey Satellite"

Author:Rafael Brahm, Louise D. Nielsen, Robert A. Wittenmyer, Songhu Wang, Joseph E. Rodriguez, Néstor Espinoza, Matías I. Jones, Andrés Jordán, Thomas Henning, Melissa Hobson, Diana Kossakowski, Felipe Rojas, Paula Sarkis, Martin Schlecker, Trifon Trifonov, Sahar Shahaf, George Ricker, Roland Vanderspek, David W. Latham, Sara Seager, Joshua N. Winn, Jon M. Jenkins, Brett C. Addison, Gáspár Á. Bakos, Waqas Bhatti, Daniel Bayliss, Perry Berlind, Allyson Bieryla, Francois Bouchy, Brendan P. Bowler, César Briceño, Timothy M. Brown, Edward M. Bryant, Douglas A. Caldwell, David Charbonneau, Karen A. Collins, Allen B. Davis, Gilbert A. Esquerdo, Benjamin J. Fulton, Natalia M. Guerrero, Christopher E. Henze, Aleisha Hogan, Jonathan Horner, Chelsea X. Huang

Comments: 19 pages, 10 figures, accepted for publication in AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxiv:2009.08749](#)

Title: "Heavy Positive Ion Groups in Titan's Ionosphere from Cassini Plasma Spectrometer IBS Observations"

Author:Richard P. Haythornthwaite, Andrew J. Coates, Geraint H. Jones, Anne Wellbrock, J. Hunter Waite, Veronique Vuitton, Panayotis Lavvas

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Space Physics (physics.space-ph)

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxiv:2009.08684](#)

Title: "Early evolution of the solar accretion disk inferred from Cr-Ti-O isotopes in individual chondrules"

Author:Jonas M. Schneider, Christoph Burkhardt, Yves Marrocchi, Gregory A. Brennecka, Thorsten Kleine

Comments: 1 Table 5 Figures Supplementary Materials: 1 Table, 1Figure

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[7] [arxiv:2009.08579](#)

Title: "Multi-orbital-phase and multi-band characterization of exoplanetary atmospheres with reflected light spectra"

Author: Mario Damiano, Renyu Hu, Sergi R. Hildebrandt

Comments: 11 pages, 4 figures, 2 tables, accepted for publication in AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[8] [arxiv:2009.08500](#)

Title: "RoadRunner: a fast and flexible exoplanet transit model"

Author: Hannu Parviainen

Comments: Accepted to MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[9] [arxiv:2009.08472](#)

Title: "ACCESS: Confirmation of no potassium in the atmosphere of WASP-31b"

Author: Chima D. McGruder, Mercedes Lopez-Morales, Nestor Espinoza, Benjamin V. Rackham, Daniel Apai, Andres Jordan, David J. Osip, Munazza K. Alam, Alex Bixel, Jonathan J. Fortney, Gregory W. Henry, James Kirk, Nikole K. Lewis, Florian Rodler, Ian C. Weaver

Comments: Accepted 14 September 2020 by AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[10] [arxiv:2009.08461](#)

Title: "MOA-2009-BLG-319Lb: A Sub-Saturn Planet Inside the Predicted Mass Desert"

Author: Sean K. Terry, Aparna Bhattacharya, David P. Bennett, Jean-Phillipe Beaulieu, Naoki Koshimoto, Joshua W. Blackman, Ian A. Bond, Andrew

A. Cole, Calen B. Henderson, Jessica R. Lu, Jean Baptiste Marquette,  
Clement Ranc, Aikaterini Vandonrou

Comments: 16 pages, 6 figures, submitted to AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[11] [arxiv:2009.08537](#)

Title: "Direct Imaging Discovery of a Young Brown Dwarf Companion to an A2V Star"

Author: Kevin Wagner, Dániel Apai, Markus Kasper, Melissa McClure, Massimo Robberto, Thayne Currie

Comments: Accepted for publication in ApJL

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

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9 月 22 日 (火曜日)

[1] [arxiv:2009.09965](#)

Title: "Going back to basics: accelerating exoplanet transit modelling using Taylor-series expansion of the orbital motion"

Author: Hannu Parviainen, Judith Korth

Comments: Accepted to MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxiv:2009.09962](#)

Title: "Using HCO<sup>+</sup> isotopologues as tracers of gas depletion in protoplanetary disk gaps"

Author: Grigorii V. Smirnov-Pinchukov, Dmitry A. Semenov, Vitaly V. Akimkin, Thomas Henning

Comments: 12 pages, 7 figures, Accepted for publication in Astronomy and Astrophysics

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxiv:2009.09912](#)

Title: "ALMA Observations of the Inner Cavity in the Protoplanetary Disk around Sz 84"

Author: Jun Hashimoto, Takayuki Muto, Ruobing Dong, Yasuhiro Hasegawa, Nienke van der Marel, Motohide Tamura, Michihiro Takami, Munetake Momose

Comments: 22 pages, 11 figures

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxiv:2009.09773](#)

Title: "On the interstellar origin of high-inclination Centaurs"

Author: Fathi Namouni, Maria Helena Moreira Morais

Comments: 7 pages, 1 figure

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxiv:2009.09746](#)

Title: "Theoretical vs. observational uncertainties: composition of giant exoplanets"

Author: Simon Müller, Maya Ben-Yami, Ravit Helled

Comments: 25 pages, 9 figures, 2 tables, accepted for publication in ApJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxiv:2009.09732](#)

Title: "A numerical method for computing optimum radii of host stars and orbits of planets, with application to Kepler-11, Kepler-90, Kepler-215, HD 10180, HD 34445, and TRAPPIST-1"

Author: Vassilis S. Geroyannis

Comments:

Preprint of an article submitted for consideration in the "International Journal of Modern Physics C"  
(this https URL); 23 pages

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2009.09512](#)

Title: "Transfer of Life Between Earth and Venus with Planet-Grazing Asteroids"

Author: Amir Siraj, Abraham Loeb

Comments: 3 pages, 1 figure; submitted for publication

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:2009.09444](#)

Title: "The composition of hot Jupiter atmospheres assembled within chemically evolved protoplanetary discs"

Author: Shota Notsu, Christian Eistrup, Catherine Walsh, Hideko Nomura

Comments: 18 pages, 7 figures, and 2 tables are contained in this paper. It was accepted for publication in MNRAS on September 18th, 2020

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[9] [arXiv:2009.09285](#)

Title: "TFAW survey. I. Wavelet-based denoising of K2 light curves. Discovery and validation of two new Earth-sized planets in K2 campaign 1"

Author: Daniel del Ser, Octavi Fors

Comments: 22 pages, 11 figures, 10 tables. Published in MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[10] [arXiv:2009.09276](#)

Title: "Dynamical Mass Estimates of the  $\beta$  Pictoris Planetary System Through Gaussian Process Stellar Activity Modelling"

Author: Thomas Vandal, Julien Rameau, René Doyon

Comments:

25 pages, 18 figures, Accepted to AJ, Typos Corrected

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[11] [arXiv:2009.09030](#)

Title: "A Significant Increase in Detection of High-Resolution Emission Spectra  
Using a Three-Dimensional Atmospheric Model of a Hot Jupiter"

Author: Hayley Beltz, Emily Rauscher, Matteo Brogi, Eliza M.-R. Kempton

Comments: 23 pages, 17 figures; Accepted for publication in AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:2009.09913](#)

Title: "Multistability and rare spontaneous transitions between climate and jet  
configurations in a barotropic model of the Jovian mid-latitude tropo-  
sphere"

Author: Eric Simonnet, Joran Rolland, Freddy Bouchet

Comments: Submitted to Journal of Atmospheric Science, 75 pages, 19 figures

Subjects: Atmospheric and Oceanic Physics (physics.ao-ph); Earth and Planetary Astrophysics (astro-ph.EP);  
Fluid Dynamics (physics.flu-dyn)

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:2009.09387](#)

Title: "A System-Level Engineering Approach for Preliminary Performance Anal-  
ysis and Design of Global Navigation Satellite System Constellations"

Author: Marco Nugnes, Camilla Colombo, Massimo Tipaldi

Comments: 19 pages, 21 figures

Subjects: Instrumentation and Methods for Astrophysics (astro-ph.IM); Earth and Planetary Astrophysics (astro-  
ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[14] [arXiv:2009.09254](#)

Title: "Possible Generation Mechanism for Compressional Alfvénic Spikes as Ob-  
served by Parker Solar Probe"



Author: Jiansen He, Xingyu Zhu, Liping Yang, Chuanpeng Hou, Die Duan, Lei Zhang, Ying Wang

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP); Plasma Physics (physics.plasm-ph); Space Physics (physics.space-ph)

[理論/観測/実験 etc....]

Comment!!!!

[15] [arXiv:2009.09242](#)

Title: "Phase A Science Case for MAVIS – The Multi-conjugate Adaptive-optics Visible Imager-Spectrograph for the VLT Adaptive Optics Facility"

Author: Richard M. McDermid, Giovanni Cresci, Francois Rigaut, Jean-Claude Bouret, Gayandhi De Silva, Marco Gullieuszik, Laura Magrini, J. Trevor Mendel, Simone Antonucci, Giuseppe Bono, Devika Kamath, Stephanie Monty, Holger Baumgardt, Luca Cortese, Deanne Fisher, Filippo Mannucci, Alessandra Migliorini, Sarah Sweet, Eros Vanzella, Stefano Zibetti, with additional contributions from the authors of the MAVIS White Papers.

Comments: 141 pages, 79 figures, 14Mb. Modified version of the Phase A Science Case submitted to ESO in April 2020 as part of the MAVIS Phase A design study

Subjects: Instrumentation and Methods for Astrophysics (astro-ph.IM); Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[16] [arXiv:2009.09114](#)

Title: "The Evolution of Disk Winds from a Combined Study of Optical and Infrared Forbidden Lines"

Author: I. Pascucci, A. Banzatti, U. Gorti, M. Fang, K. Pontoppidan, R. Alexander, G. Ballabio, S. Edwards, C. Salyk, G. Sacco, E. Flaccomio, G. A. Blake, A. Carmona, C. Hall, I. Kamp, H. U. Kaufl, G. Meeus, M. Meyer, T. Pauly, S. Steendam, M. Sterzik

Comments: Accepted for publication in The Astrophysical Journal

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA)

[理論/観測/実験 etc....]

Comment!!!!



[17] [arxiv:2009.09003](#)

Title: "Carbon, isotopic ratio  $^{12}\text{C}/^{13}\text{C}$  and nitrogen in solar twins: constraints for the chemical evolution of the local disc"

Author: Rafael Botelho, Andre Milone, Jorge Melendez, Alan Alves-Brito, Lorenzo Spina, Jacob Beans

Comments: Accepted for publication in MNRAS. The paper covers 20 pages, having 8 figures and 10 tables

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA)

[理論/観測/実験 etc....]

Comment!!!!

[18] [arxiv:2009.08991](#)

Title: "The Solar Wind Angular Momentum Flux as Observed by Parker Solar Probe"

Author: Adam J. Finley, Sean P. Matt, Victor Réville, Rui F. Pinto, Mathew Owens, Justin C. Kasper, Kelly E. Korreck, A. W. Case, Michael L. Stevens, Phyllis Whittlesey, Davin Larson, Roberto Livi

Comments: 11 pages + 6 figures, accepted for publication to ApJL

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

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9 月 23 日 (水曜日)

[1] [arxiv:2009.10620](#)

Title: "NGTS-12b: A sub-Saturn mass transiting exoplanet in a 7.53 day orbit"

Author: Edward M. Bryant, Daniel Bayliss, Louise D. Nielsen, Dimitri Veras, Jack S. Acton, David R. Anderson, David J. Armstrong, Francois Bouchy, Joshua T. Briegal, Matthew R. Burleigh, Juan Cabrera, Sarah L. Casewell, Alexander Chaushev, Benjamin F. Cooke, Szilard Csizmadia, Philipp Eigmuller, Anders Erikson, Samuel Gill, Edward Gillen, Michael R. Goad, Nolan Grieves, Maximilian N. Gunther, Beth Henderson, Aleisha Hogan, James S. Jenkins, Monika Lendl, James McCormac, Maximiliano Moyano, Didier Queloz, Heike Rauer, Liam Raynard, Alexis M. S. Smith, Rosanna H. Tilbrook, Stephane Udry, Jose I. Vines, Christopher A. Watson, Richard G. West, Peter J. Wheatley

Comments: Accepted for publication in MNRAS, 11 pages  
Subjects: Earth and Planetary Astrophysics (astro-ph.EP)  
[理論/観測/実験 etc....]  
Comment!!!!

[2] [arXiv:2009.10505](#)

Title: "Spirals, shadows & precession in HD 100453 – II. The hidden companion"  
Author: Rebecca Nealon, Nicolás Cuello, Jean-François Gonzalez, Gerrit van der Plas, Christophe Pinte, Richard Alexander, François Ménard, Daniel J. Price

Comments: Accepted for publication in MNRAS, 12 pages, 6 figures. Movie of simulations available at this [https URL](#)

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]  
Comment!!!!

[3] [arXiv:2009.10504](#)

Title: "Spirals, shadows & precession in HD 100453 – I. The orbit of the binary"  
Author: Jean-François Gonzalez, Gerrit van der Plas, Christophe Pinte, Nicolás Cuello, Rebecca Nealon, François Ménard, Alexandre Revol, Laetitia Rodet, Maud Langlois, Anne-Lise Maire

Comments: Accepted for publication in MNRAS. 21 pages, 28 figures

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Astrophysics of Galaxies (astro-ph.GA); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]  
Comment!!!!

[4] [arXiv:2009.10496](#)

Title: "Low-phase spectral reflectance and equivalent geometric albedo of meteorites powders"

Author: Pierre Beck, Bernard Schmitt, Sandra Potin, Antoine Pommerol, Olivier Brissaud

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]  
Comment!!!!

[5] [arXiv:2009.10448](#)

Title: "Validating N-body code Chrono for granular DEM simulations in reduced-gravity environments"

Author: Cecily Sunday, Naomi Murdoch, Simon Tardivel, Stephen R. Schwartz, Patrick Michel

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Soft Condensed Matter (cond-mat.soft)

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:2009.10438](#)

Title: "On The Compatibility of Ground-based and Space-based Data: WASP-96 b, An Example"

Author: Kai Hou Yip, Quentin Changeat, Billy Edwards, Mario Morvan, Katy L. Chubb, Angelos Tsaras, Ingo P. Waldmann, Giovanna Tinetti

Comments: 18 pages, 13 figures. Submitted to ApJ, currently under review

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2009.10432](#)

Title: "Discovery of a hot, transiting, Earth-sized planet and a second temperate, non-transiting planet around the M4 dwarf GJ 3473 (TOI-488)"

Author: J. Kemmer, S. Stock, D. Kossakowski, A. Kaminski, K. Molaverdikhani, M. Schlecker, J. A. Caballero, P. J. Amado, N. Astudillo-Defru, X. Bonfils, D. Ciardi, K. A. Collins, N. Espinoza, A. Fukui, T. Hirano, J. M. Jenkins, D. W. Latham, E. C. Matthews, N. Narita, E. Pallé, H. Parviainen, A. Quirrenbach, A. Reiners, I. Ribas, G. Ricker, J. E. Schlieder, S. Seager, R. V, J. N. Winn, J. M. Almenara, V. J. S. Béjar, P. Bluhm, F. Bouchy, P. Boyd, J. L. Christiansen, C. Cifuentes, R. Cloutier, K. I. Collins, M. Cortés-Contreras, I. J. M. Crossfield, N. Crouzet, J. P. de Leon, D. D. Della-Rose, X. Delfosse, S. Dreizler, E. Esparza-Borges, Z. Essack, Th. Forveille, P. Figueira, D. Galadí-Enríquez, T. Gan, A. Glidden, E. J. Gonzales, P. Guerra, H. HaraKawa, A. P. Hatzes, Th. Henning

Comments: 21 pages; accepted for publication in A&A

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:2009.10377](#)

Title: "Helios spacecraft data revisited: Detection of cometary meteoroid trails by in-situ dust impacts"

Author: Harald Krüger, Peter Strub, Max Sommer, Nicolas Altobelli, Hiroshi Kimura, Ann-Kathrin Lohse, Eberhard Grün, Ralf Srama

Comments: 13 pages, 9 Figures, 2 Tables, accepted for publication by Astronomy and Astrophysics

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[9] [arXiv:2009.10363](#)

Title: "How many suns are in the sky? A SPHERE multiplicity survey of exoplanet host stars I – Four new close stellar companions including a white dwarf"

Author: Christian Ginski, Markus Mugrauer, Christian Adam, Nikolaus Vogt, Rob van Holstein

Comments: 8 pages, 4 figures, accepted for publication by A&A

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[10] [arXiv:2009.10232](#)

Title: "Hundreds of new periodic signals detected in the first year of *TESS* with the weirddetector"

Author: Joheen Chakraborty, Adam Wheeler, David Kipping

Comments: Accepted to MNRAS, ref. MN-20-3245-MJ.R1. Data available at this [https URL](#) . 09/23/20: edited Table 1 and Section 2.1; eliminated several previously known signals from ASAS-SN and VSX catalogs

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[11] [arXiv:2009.10122](#)

Title: "HORuS transmission spectroscopy of 55 Cnc e"

Author: H. M. Tabernero, C. Allende Prieto, M. R. Zapatero Osorio, J. I. González

Hernández, C. del Burgo, R. García López, R. Rebolo, M. Abril-Abril, R. Barreto, J. Calvo Tovar, A. Diaz Torres, P. Fernández Izquierdo, M. F. Gómez-Reñasco, F. Gracia-Témich, E. Joven, J. Peñate Castro, S. Santana-Tschudi, F. Tenegi, H. D. Viera Martín

Comments: Accepted for publication in MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:2009.10100](#)

Title: "Could Uranus and Neptune form by collisions of planetary embryos?"

Author: Alice Chau, Christian Reinhardt, André Izidoro, Joachim Stadel, Ravit Helled

Comments: 15 pages, 10 figures, submitted to MNRAS, comments welcome

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:2009.10098](#)

Title: "AQUA: A Collection of H<sub>2</sub>O Equations of State for Planetary Models"

Author: Jonas Haldemann, Yann Alibert, Christoph Mordasini, Willy Benz

Comments: 20 pages, 12 Figures, Accepted for publication in A&A

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[14] [arXiv:2009.10093](#)

Title: "Chondrules as fallout from vaporizing impacts in the solar nebula"

Author: Nick Choksi, Eugene Chiang, Harold C. Connolly Jr., Zack Gainsforth, Andrew J. Westphal

Comments: Submitted to MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Geophysics (physics.geo-ph)

[理論/観測/実験 etc....]

Comment!!!!

[15] [arXiv:2009.10714](#)

Title: "Cloud Atlas: Unraveling the vertical cloud structure with the time-series

spectrophotometry of an unusually red brown dwarf”

Author: Ben W.P. Lew, Dániel Apai, Mark Marley, Didier Saumon, Glenn Schneider, Yifan Zhou, Nicolas B. Cowan, Theodora Karalidi, Elena Manjavacas, L. R. Bedin, Paulo A. Miles-Páez

Comments: accepted for publication in The Astrophysical Journal

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[16] [arXiv:2009.10555](#)

Title: ”Orbits of Five Triple Stars”

Author: Andrei Tokovinin, David Latham

Comments: Accepted by The Astronomical Journal. 10 pages, 12 figures, 6 tables

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

[17] [arXiv:2009.10473](#)

Title: ”A model of rotating convection in stellar and planetary interiors: II – gravito-inertial wave generation”

Author: K. C. Augustson, S. Mathis, A. Astoul

Comments: 18 pages, 6 figures, accepted in ApJ

Subjects: Solar and Stellar Astrophysics (astro-ph.SR); Earth and Planetary Astrophysics (astro-ph.EP); Fluid Dynamics (physics.flu-dyn)

[理論/観測/実験 etc....]

Comment!!!!

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## 9月24日(木曜日)

[1] [arXiv:2009.11114](#)

Title: ”Electrostatic lofting of dust grains from the surfaces of Thebe and Amalthea”

Author: Nikolay Borisov, Harald Krüger

Comments: 23 pages, 2 Figures, published in Planetary and Space Science, 2020

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Plasma Physics (physics.plasm-ph); Space Physics (physics.space-ph)

[理論/木星衛星]

木星の衛星のうちアマルテアとテーベは木星にとっても近い軌道 (2.5RJ, 3.1RJ) を回り、放射帯の中に入っている。そ



の影響でこの衛星の極地域の表面やダストが帯電し、斥力がはたらきダストが逃げていく効果を見積もったところ、木星のダストリング (1.7-1.8RJ) のダスト源の一部となりうることを示した。

[2] [arxiv:2009.10844](#)

Title: "Understanding the origin of white dwarf atmospheric pollution by dynamical simulations based on detected three-planet systems"

Author: R. F. Maldonado, E. Villaver, A. J. Mustill, M. Chávez, E. Bertone

Comments: 18 pages, 18 figures, accepted for publication in MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/白色矮星]

白色矮星に惑星が落下し大気を重元素で汚染する現象について、筆者らが2つの惑星を持つ系について過去に行った研究を3つの惑星を持つ系に拡張した。これまでに見つかった3惑星系について恒星が主系列を離れる過程での10億年スケールで軌道を計算したところ、8%の系が不安定になるとわかった。1.6%はロッシュ半径を通り、その半分は表面に衝突する。

[3] [arxiv:2009.10781](#)

Title: "TESS Observations of the Hot Jupiter Exoplanet XO-6b: No Evidence of Transit Timing Variations"

Author: Andrew R. Ridden-Harper, Jake D. Turner, Ray Jayawardhana

Comments: Accepted for publication in AJ. 16 pages, 8 figures

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[観測/TTVs]

地上からの観測でホットジュピターの XO-6b は450日周期で14分のTTVsが報告されていたが、TESSで7か月間の観測データを得て軌道要素をアップデートしたところ3 $\sigma$ で2.5分以上のTTVsを棄却することができた。10分程度のTTVsが報告されているホットジュピターは他にもあり、その制限をつけるのにTESSの観測データはとても強力である。

[4] [arxiv:2009.10768](#)

Title: "Dust trapping around Lagrangian points in protoplanetary disks"

Author: Matias Montesinos, Juan Garrido-Deutelmöser, Johan Olofsson, Cristian A. Giuppone, Jorge Cuadra, Amelia Bayo, Mario Sucerquia, Nicolas Cuello

Comments: 18 pages, 18 figures. Accepted for publication in Astronomy & Astrophysics

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/原始惑星系円盤]

原始惑星系円盤中で巨大ガス惑星のラグランジュポイントに相当する位置にダストが集積し、TrojanPlanetが形成されるかをシミュレーションした。ダストサイズはL4の方がL5より大きく、これはL5は惑星を後方から追いかける位置なのでよりかき乱されているからのよう。数月質量の天体ができるかもしれない。



[5] [arxiv:2009.10745](#)

Title: "The Origin of Systems of Tightly Packed Inner Planets with Misaligned, Ultra-Short-Period Companions"

Author: Juliette Becker, Konstantin Batygin, Daniel C. Fabrycky, Fred C. Adams, Gongjie Li, Andrew Vanderburg, Joseph E. Rodriguez

Comments: Accepted to AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/惑星軌道]

超短周期惑星のある系について、系の外側と内側の Misaligned がどうやって起こるかを 2 つの経路から考えた。

[6] [arxiv:2009.10738](#)

Title: "The evolution of large cavities and disc eccentricity in circumbinary discs"

Author: Enrico Ragusa, Richard Alexander, Josh Calcino, Kieran Hirsh, Daniel J. Price

Comments: 21 pages, 17 figures, 1 table, accepted for publication in MNRAS

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/周連星円盤]

連星系の軌道とその周りの円盤について、ギャップの構造や軌道離心率の相関を調べた。円盤の離心率が大きくなると連星の軌道離心率も少し大きくなり、円盤までのギャップは連星軌道の半径の 3.5 倍ほどまでに収束するらしい。

[7] [arxiv:2009.10813](#)

Title: "Launching the VASCO citizen science project"

Author: Beatriz Villarroel, Kristiaan Pelckmans, Enrique Solano, Mikael Laaksoharju, Abel Souza, Onyeuwaoma Nnaemeka Dom, Khaoula Laggoune, Jamal Mimouni, Lars Mattsson, Johan Soodla, Diego Castillo, Matthew E. Shultz, Rubby Aworka, Sébastien Comerón, Stefan Geier, Geoffrey Marcy, Alok C. Gupta, Josefine Bergstedt, Rudolf E. Bär, Bart Buelens, M. Almudena Prieto, Cristina Ramos-Almeida, Dismas Simiyu Wamalwa, Martin J. Ward

Comments: 13 pages, 7 figures, contribution to IAC 2020 conference

Subjects: Instrumentation and Methods for Astrophysics (astro-ph.IM); Earth and Planetary Astrophysics (astro-ph.EP); High Energy Astrophysical Phenomena (astro-ph.HE)

[観測]

1950 年の全天サーベイと現在の天体を比較し、70 年スパンでのアノマリーを発見しようという VASCO というキャンペーンについて天体の比較を一般人でもできるよう Citizen Science としてオープンにした。

9 月 25 日 (金曜日)

[1] [arxiv:2009.11831](#)

Title: "Stability Constrained Characterization of Multiplanet Systems"

Author: Daniel Tamayo, Christian Gilbertson, Daniel Foreman-Mackey

Comments: Submitted, feedback very welcome. Repository with notebooks to reproduce figures / for analysis of new systems at this [https URL](#)

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

発見されている多数惑星系は、密になっている。こういう環境だと、軌道が不安定になるが、実際に Kepler-23 の場合を調べて見た。

[2] [arxiv:2009.11725](#)

Title: "On the eccentricity distribution of giant planets and their relation to super-Earths in the pebble accretion scenario"

Author: Bertram Bitsch, Trifon Trifonov, Andre Izidoro

Comments: 25 pages, 18 figures, accepted by A&A

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測]

1AU 以遠を回っている木星型惑星を観測していると、ほぼすべてが離心率を持っている。これはガスが晴れ上がったあとに、惑星同士の散乱があった証拠ではないかと考えている。実際に円盤に惑星を埋め込んで、様子をシミュレートした。円盤の、離心率と軌道傾斜角の安定化の作用が強いと最終的な離心率はほとんどなくなり、減衰が有効ではないと離心率が大きい。実際に減衰が弱い場合はこれまで観測されているガス惑星の離心率を上手く説明出来るような値になっていた。単一の巨大惑星ではこうならないので、発見されているガス惑星は、他にも惑星がある、あったと考えて間違っていないさそう。

[3] [arxiv:2009.11323](#)

Title: "Born eccentric: constraints on Jupiter and Saturn's pre-instability orbits"

Author: Matthew S. Clement, Sean N. Raymond, Nathan A. Kaib, Rogerio Deienno, John E. Chambers, Andre Izidoro

Comments: 35 pages, 21 figures, 8 tables, accepted for publication in AJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

[理論]

太陽系の巨大惑星の軌道安定性について。不安定性のモデル化とそのモデル下での散乱される氷天体質量の見積。

[4] [arxiv:2009.11290](#)

Title: "On the Temperature Profiles and Emission Spectra of Mini-Neptune Atmospheres"

Author: Anjali A. A. Piette, Nikku Madhusudhan

Comments: Accepted for publication in ApJ, 25 pages, 11 figures

Subjects: Earth and Planetary Astrophysics (astro-ph.EP)

**[理論/観測]**

M 型星周りの mini ネプチューンについて、ある程度大きいので、温暖環境の低質量星を調べるのには適している。大気の構造と熱放射、対流などを考慮したモデルを構築して、観測と付き合わせた。K2-18b のハビタビリティについて、JWST をつかうと、今知られている GJ3407b よりも大気状態などについてより詳細な制限が与えられそう。

**[5] [arxiv:2009.11826](#)**

Title: "A Precursor Balloon Mission for Venusian Astrobiology"

Author: Andreas M. Hein, Manasvi Lingam, T. Marshall Eubanks, Adam Hibberd, Dan Fries, William Paul Blase

Subjects: Instrumentation and Methods for Astrophysics (astro-ph.IM); Earth and Planetary Astrophysics (astro-ph.EP); Space Physics (physics.space-ph)

**[装置]**

金星の大気中に PH<sub>3</sub> ホスフィンが発見されたことで、金星生命の可能性の議論が再燃している。金星環境は苛烈だが、高度 50-60km くらいに、ハビタブルゾーンがありそう。2023 年頃に探査機を打ち上げて、気球でその辺りを調べたい。どういうデータと装置が必要そうかの議論。

**[6] [arxiv:2009.11779](#)**

Title: "The impact of climate change on astronomical observations"

Author: Faustine Cantalloube, Julien Milli, Christoph Böhm, Susanne Crewell, Julio Navarrete, Kira Rehfeld, Marc Sarazin, Anna Sommani

Comments: Originated at EAS 2020 conference, sustainability session by this [https URL](#) - published in Nature Astronomy, September 2020. Free access this [https URL](#) (courtesy of Nature Astronomy)

Subjects: Instrumentation and Methods for Astrophysics (astro-ph.IM); Earth and Planetary Astrophysics (astro-ph.EP); Atmospheric and Oceanic Physics (physics.ao-ph); Geophysics (physics.geo-ph); Physics and Society (physics.soc-ph)

**[気候変動と天文観測の関係]**

気候変動が天文観測に与える影響を調べた。いろいろな気象パラメータの変化が、観測条件の変動に関わっている。気温、表層乱流、ジェット気流の風速、湿度にかんして、チリのパラナルのデータを調べた。調査がもっと必要。

**[7] [arxiv:2009.11633](#)**

Title: "The CHEOPS mission"

Author: Willy Benz, Christopher Broeg, Andrea Fortier, Nicola Rando, Thomas Beck, Mathias Beck, Didier Queloz, David Ehrenreich, Pierre Maxted, Kate Isaak, Nicolas Billot, Yann Alibert, Roi Alonso, Carlos António, Joel Asquier, Timothy Bandy, Tamas Bárczy, David Barrado, Susana Barros, Wolfgang Baumjohann, Anja Bekkelien, Maria Bergomi, Federico

Biondi, Xavier Bonfils, Luca Borsato, Alexis Brandeker, Martin-Diego Busch, Juan Cabrera, Virginie Cessa, Sébastien Charnoz, Bruno Chazelas, Andrew Collier Cameron, Carlos Corral Van Damme, David Cortes, Melvyn Davies, Magali Deleuil, Adrien Deline, Laetitia Delrez, Olivier Demangeon, Brice-Olivier Demory, Anders Erikson, Jacopo Farinato, Luca Fossati, Malcolm Fridlund, David Futyan, Davide Gandolfi, Antonio Garcia Munoz, Michaël Gillon

Comments: Submitted to Experimental Astronomy

Subjects: Instrumentation and Methods for Astrophysics (astro-ph.IM); Earth and Planetary Astrophysics (astro-ph.EP)

### [CHOEPS 望遠鏡]

2019 年に打ち上げられた CHEOPS について。惑星が既に確認されている明るい恒星の超高精度測光トランジット観測で、惑星サイズの精度を上げて、地上観測と組み合わせて、質量や密度を導出することが目的。ミッションは 3.5 年で観測中。

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Nature

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Science

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