

# 2020年 11月 第2週 新着論文サーベイ

11月9日(月曜日)

[1] [arxiv:2011.03489](#)

Title: "A Dust Trap in the Young Multiple System HD 34700"

Author: Peyton Benac, Luca Matra, David J. Wilner, Maria J. Jimenez-Donaire, John D. Monnier, Evan A. Rich, Tim J. Harries, Anna Laws, Qizhou Zhang

Comments: 12 pages, 5 figures, accepted to ApJ

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:2011.03484](#)

Title: "GLISSE: A GPU-optimized planetary system integrator with application to orbital stability calculations"

Author: Kevin Zhang, Brett J. Gladman

Comments: 21 pages, 16 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxiv:2011.03470](#)

Title: "Transmission spectroscopy for the warm sub-Neptune HD3167c: evidence for molecular absorption and a possible high metallicity atmosphere"

Author: Thomas Mikal-Evans, Ian J. M. Crossfield, Bjorn Benneke, Laura Kreidberg, Julie Moses, Caroline V. Morley, Daniel Thorngren, Paul Molliere, Kevin K. Hardegree-Ullman, John Brewer, Jessie L. Christiansen, David R. Ciardi, Diana Dragomir, Courtney Dressing, Jonathan J. Fortney, Varoujan Gorjian, Thomas P. Greene, Lea A. Hirsch, Andrew W. Howard, Steve B. Howell, Howard Isaacson, Molly R. Kosiarek, Jessica Krick, John H. Livingston, Joshua D. Lothringer, Farisa Y. Morales, Erik A. Petigura, Joshua E. Schlieder, Michael Werner

Comments: Accepted for publication in the Astronomical Journal

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:2011.03302](#)

Title: "Clouds in Exoplanetary Atmospheres"

Author: Christiane Helling

Comments: 6 pages with one figure; to appear as a book chapter in "ExoFrontiers: Big questions in exoplanetary science", Ed. N Madhusudhan (Bristol: IOP Publishing Ltd) AAS-IOP ebooks

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Atmospheric and Oceanic Physics (physics.ao-ph); Atomic and Molecular Clusters (physics.atm-clus)

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:2011.03221](#)

Title: "ARES IV: Probing the atmospheres of the two warm small planets HD 106315 c and HD 3167 c with the HST/WFC3 camera"

Author: Gloria Guilluy, Amélie Gressier, Sam Wright, Alexandre Santerne, Adam Y. Jaziri, Billy Edwards, Quentin Changeat, Darius Modirrousta-Galian, Nour Skaf, Ahmed Al-Refaie, Robin Baeyens, Michelle Fabienne Bieger, Doriann Blain, Flavien Kiefer, Mario Morvan, Lorenzo V. Mugnai, William Pluriel, Mathilde Poveda, Tiziano Tsingales, Niall Whiteford, Kai Hou Yip, Benjamin Charnay, Jérémy Leconte, Pierre Drossart, Alessandro Sozzetti, Emmanuel Marcq, Angelos Tsiaras, Olivia Venot, Ingo Waldmann, Jean-Philippe Beaulieu

Comments: Accepted for publication in AJ

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:2011.03053](#)

Title: "Predicting missing planets in multiplanet system populations via analytical assessments of dynamical packing"

Author: Ana Luisa Tió Humphrey, Elisa V. Quintana

Comments: 15 pages, 8 figures, submitted to ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2011.03478](#)

Title: "The future of astronomy with small satellites"

Author: Stephen Serjeant, Martin Elvis, Giovanna Tinetti

Comments: Nature Astronomy, in press. 2 figures. Smallsats special issue (with separate articles on problems/mitigations for ground-based/space astronomy)

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:2011.03391](#)

Title: "Measuring and characterizing the line profile of HARPS with a laser frequency comb"

Author: Fei Zhao, G. Lo Curto, L. Pasquini, J. I. González Hernández, J. R. De Medeiros, I. C. Leão, B. L. Canto Martins, R. Rebolo, A. Suárez Mascareño, M. Esposito, A. Manescau, T. Steinmetz, T. Udem, R. Probst, R. Holzwarth, G. Zhao

Comments: 9 pages, 6 figures, 3 tables, accepted

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arXiv:2011.03369](#)

Title: "Asteroid Resource Utilization: Ethical Concerns and Progress"

Author: Andrew S. Rivkin, Moses Milazzo, Aparna Venkatesan, Elizabeth Frank, Monica R. Vidaurri, Phil Metzger, Chris Lewicki

Comments: Submitted to Planetary Science Decadal Survey. 19 co-signers, with names listed on cover page

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

[理論/観測/実験 etc....]

Comment!!!!

[10] [arXiv:2011.03294](#)

Title: "Properties of von Zeipel-Lidov-Kozai oscillations in triple systems at the

quadrupole order: relaxing the test particle approximation”

Author: Adrian S. Hamers

Comments: Accepted for publication in MNRAS. 16 pages, 17 figures. Code can be found at this [https](https://github.com/AdrianS. Hamers/quad) URL

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

[理論/観測/実験 etc....]

Comment!!!!

---

## 11月10日(火曜日)

### [1] [arxiv:2011.04404](https://arxiv.org/abs/2011.04404)

Title: ”A Simplified Photodynamical Model for Planetary Mass Determination in Low-Eccentricity Multi-Transiting Systems”

Author: Gideon Yoffe, Aviv Ofir, Oded Aharonson

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

[理論/観測/実験 etc....]

低離心率、複数惑星系、低質量の惑星の質量を Transit のデータから求める新しい手法を開発した。この手法を用いて Kepler-36 b,c の質量を計算したところ先行研究と同じようなあたりが求められた。また、Kepler-79 b,c,d,e に適用したところ、質量に対する制限を狭めることができた。さらに、今まで制限を与えられていなかった Kepler-450 c と Kepler-595 b,c の質量に制限を与えることができた。

### [2] [arxiv:2011.03985](https://arxiv.org/abs/2011.03985)

Title: ”The Earths long-term climate changes and ice ages: a derivation of Milankovitch cycles from first principles”

Author: R. C. T. Rainey

Comments: 24 pages, 7 figures

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

[理論/観測/実験 etc....]

地球の自転軸の傾きの歳差運動による周期的な気候の変動のサイクル "Milankovitch cycle" はこれまでコンピューターを用いて数値的に計算されていたが、numerical drift によって結果が大きく変わってしまい、議論が絶えない。今回、コンピューターを用いずに第一原理から Milankovitch cycle を計算した。メインのサイクルは地球-金星系の歳差運動による約 41,000 年のサイクルであり、2次、及び3次のサイクルは 29,500 年、54,000 年のサイクルで、それぞれ木星、土星の歳差運動によるものであることがわかった。

### [3] [arxiv:2011.03903](https://arxiv.org/abs/2011.03903)

Title: ”Identifying Bound Stellar Companions to Kepler Exoplanet Host Stars Using Speckle Imaging”

Author: Nicole M. Colton, Elliott P. Horch, Mark E. Everett, Steve B. Howell, James W. Davidson, Jr., Brian J. Baptista, Dana I. Casetti-Dinescu

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

[理論/観測/実験 etc....]

34個の惑星を持つと考えられる連星系の伴星37個の運動を調べた(2連星:31、3連星:3)。34個の連星のうち18個が惑星系を持つことを確認し(3連星を一つ含む)、4つの連星がfalse positiveであることがわかった(残りの12個は未確定)。また、21個が共通の固有運動をする連星であり、4つが視線方向に運動する連星であるとわかった(残り12個は未確定)。共通の固有運動をし、かつ惑星系をもつ連星において、惑星は全て周期が110日以下で、主星と伴星の距離は、主星と惑星の距離より非常に大きかった。今回のサンプルでの周期-半径の相関は、全ての系外惑星のそれと明確な違いはなかった。

[4] [arxiv:2011.03889](https://arxiv.org/abs/2011.03889)

Title: "A Single-chord Stellar Occultation by the Extreme Trans-Neptunian Object (541132) Leleākūhonua"

Author: Marc W. Buie, Rodrigo Leiva, John M. Keller, Josselin Desmars, Bruno Sicardy, JJ Kavelaars, Terry Bridges, Robert Weryk, Dave Herald, Sean L. Haley, Ryder Strauss, Elizabeth Wilde, Robert Baker, Ken Conway, Bryan Dean, Mackenzie Dunham, James J Estes, Naemi Fiechter, Rima Givot, Cameron Glibbery, Bruce Gowe, Jennifer N. Hayman, Olivia L Ireland, Matthew Kehrli, Erik M. Moore, Matthew A. MacDonald, Delsie McCrystal, Paola Mendoza, Bruce Palmquist, Sherry Rennau, Ramsey Schar, Diana J. Swanson, Emma D. Terris, Holly Werts, J. A. Wise

Comments: 7 figures

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

[理論/観測/実験 etc....]

TNO 541132 の様々な特性に、観測結果からの制限を与えた。

[5] [arxiv:2011.03782](https://arxiv.org/abs/2011.03782)

Title: "Initial Visible and Mid-IR Characterization of P/2019 LD2 (ATLAS), an Active Transitioning Centaur Among the Trojans, with Hubble, Spitzer, ZTF, Keck, APO and GROWTH Imaging and Spectroscopy"

Author: Bryce T. Bolin, Yanga R. Fernandez, Carey M. Lisse, Timothy R. Holt, Zhong-Yi Lin, Josiah N. Purdum, Kunal P. Deshmukh, James M. Bauer, Eric C. Bellm, Dennis Bodewits, Kevin B. Burdge, Sean J. Carey, Chris M. Copperwheat, George Helou, Anna Y. Q. Ho, Jonathan Horner, Jan van Roestel, Varun Bhalerao, Chan-Kao Chang, Christine Chen, Chen-Yen Hsu, Wing-Huen Ip, Mansi M. Kasliwal, Frank J. Masci, Chow-Choong Ngeow, Robert Quimby, Rick Burruss, Michael Coughlin, Richard

Dekany, Alexandre Delacroix, Andrew Drake, Dmitry A. Duev, Matthew Graham, David Hale, Thomas Kupfer, Russ R. Laher, Ashish Mahabal, Przemyslaw J. Mróz, James D. Neill, Reed Riddle, Hector Rodriguez, Roger M. Smith, Maayane T. Soumagnac, Richard Walters, Lin Yan, Jeffrey Zolkower

Comments: 28 pages, 8 figures, 2 Tables, submitted to ApJL

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

[理論/観測/実験 etc....]

トロヤ群の P/2019 LD2 の可視光と中赤外線での撮像と測光を行った。P/2019 LD2 は、0.2 1.8 km でアルベドが 0.08 の核と、100 $\mu$ m のダストで構成された南西方向へ 1 m/s の、1 秒角のジェットを持つことがわかった。その他、質量損失や、 $Af\rho$ /cross-section、gas productionなどを詳細に求めた。(Af $\rho$  はダスト生成プロキシメーター。A:アルベド、f:filling factor、 $\rho$ :開口部の大きさ。)

[6] [arxiv:2011.03746](#)

Title: "Broadband transmission spectroscopy of HD209458b with ESPRESSO: Evidence for Na, TiO, or both"

Author: N. C. Santos, E. Cristo, O. Demangeon, M. Oshagh, R. Allart, S. C. C. Barros, F. Borsa, V. Bourrier, N. Casasayas-Barris, D. Ehrenreich, J. P. Faria, P. Figueira, J. H. C. Martins, G. Micela, E. Pallé, A. Sozzetti, H. M. Taberner, M. R. Zapatero Osorio, F. Pepe, S. Cristiani, R. Rebolo, V. Adibekyan, C. Allende Prieto, Y. Alibert, F. Bouchy, A. Cabral, H. Dekker, P. Di Marcantonio, V. D'Odorico, X. Dumusque, J. I. González Hernández, B. Lavie, G. Lo Curto, C. Lovis, A. Manescau, C.J.A.P. Martins, D. Mégevand, A. Mehner, P. Molaro, N. J. Nunes, E. Poretti, M. Riva, S. G. Sousa, A. Suárez Mascareño, S. Udry

Comments: Accepted for publication in A&A

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

[理論/観測/実験 etc....]

高精度の分光器 ESPRESSO で測定された HD209458b のスペクトルのデータを用いて、広帯域トランスミッションのスペクトルを精査した結果、観測されたシグナルは、Na のみ存在、TiO のみ存在、あるいはどちらも存在している場合に説明できることがわかった。chromatic Rossiter-MacLaughlin 法を用いると、ESPRESSO で地表から系外惑星の広帯域トランスミッションのスペクトルを得ることができた。

[7] [arxiv:2011.03621](#)

Title: "The Effect of Land Albedo on the Climate of Land-Dominated Planets in the TRAPPIST-1 System"

Author: Andrew J. Rushby, Aomawa L. Shields, Eric T. Wolf, Marysa Laguë, Adam Burgasser



Comments: 18 pages, 11 figures. Accepted for publication in the Astrophysical Journal (ApJ)

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

[理論/観測/実験 etc....]

Community Earth System Model を用いて、乾いた大気をもつ表面が岩石で覆われた惑星が TRAPPIST-1d,1e,1f の位置にあるときの、地表の組成とそのアルベドが惑星に気候に及ぼす影響を調べた。アルベドが高い物質の場合と低い物質の場合とでは、表面の平均温度 (50K 減少)、大気循環の特徴、赤道越熱流の量 (高アルベド<低アルベド) に差があることがわかった。このことより、岩石惑星の正確な気候を決定するには地表の草生とアルベドを決定することが重要である。

## [8] [arXiv:2011.03562](#)

Title: "Search for giant planets around seven white dwarfs in the Hyades cluster with the Hubble Space Telescope"

Author: Wolfgang Brandner, Hans Zinnecker, Taisiya Kopytova

Comments: 6 pages, 3 figures; this [https URL](#)

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

[理論/観測/実験 etc....]

HST を使ってヒアデス星団内の7つの白色矮星周りの自ら発行しているような巨大ガス惑星を高精度な直接撮像で探査したが、一つも見つからなかった。この結果より、高密度の星雲は惑星形成にはあまり良い環境ではないのかもしれない。

## [9] [arXiv:2011.03584](#)

Title: "Community Challenges in the Era of Petabyte-Scale Sky Surveys"

Author: Michael S. P. Kelley, Henry H. Hsieh, Colin Orion Chandler, Siegfried Eggl, Timothy R. Holt, Lynne Jones, Mario Juric, Timothy A. Lister, Joachim Moeyens, William J. Oldroyd, Darin Ragozzine, David E. Trilling

Comments: 7 pages, 1 figure, submitted to the Planetary Science and Astrobiology Decadal Survey 2023-2032 call for white papers

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

[理論/観測/実験 etc....]

Comment!!!!

---

# 11月11日(水曜日)

## [1] [arXiv:2011.05324](#)

Title: "Global Spiral Density Wave Modes in Protoplanetary Disks: Morphology of Spiral Arms"

Author: Enze Chen, Si-Yue Yu, Luis C. Ho

Comments: 17 pages, 11 figures, accepted for publication in ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arXiv:2011.05297](#)

Title: "Euclid: Identification of asteroid streaks in simulated images using StreakDet software"

Author: M. Pöntinen, M. Granvik, A.A. Nucita, L. Conversi, B. Altieri, N. Aurichio, C. Bodendorf, D. Bonino, M. Brescia, V. Capobianco, J. Carretero, B. Carry, M. Castellano, R. Cledassou, G. Congedo, L. Corcione, M. Cropper, S. Dusini, M. Frailis, E. Franceschi, M. Fumana, B. Garilli, F. Grupp, F. Hormuth, H. Israel, K. Jahnke, S. Kermiche, T. Kitching, R. Kohley, B. Kubik, M. Kunz, R. Laureijs, P. B. Lilje, I. Lloro, E. Maiorano, O. Marggraf, R. Massey, M. Meneghetti, G. Meylan, L. Moscardini, C. Padilla, S. Paltani, F. Pasian, S. Pires, G. Polenta, F. Raison, M. Roncarelli, E. Rossetti, R. Saglia, P. Schneider, A. Secroun, S. Serrano, G. Sirri, A.N. Taylor, I. Tereno, R. Toledo-Moreo, L. Valenziano, Y. Wang, M. Wetzstein, J. Zoubian

Comments: 12 pages, 5 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arXiv:2011.05265](#)

Title: "A Search for Technosignatures Around 31 Sun-like Stars with the Green Bank Telescope at 1.15-1.73 GHz"

Author: Jean-Luc Margot, Pavlo Pinchuk, Robert Geil, Stephen Alexander, Sparsh Arora, Swagata Biswas, Jose Cebalros, Sanjana Prabhu Desai, Benjamin Duclos, Riley Dunne, Kristy Kwan Lin, Shashwat Goel, Julia Gonzales, Alexander Gonzalez, Rishabh Jain, Adrian Lam, Briley Lewis, Rebecca Lewis, Grace Li, Mason MacDougall, Christopher Makarem, Ivan Manan, Eden Molina, Caroline Nagib, Kyle Neville, Connor O'Toole, Valerie Rockwell, Yoichiro Rokushima, Griffin Romanek, Carlyn Schmidgall, Samar Seth, Rehan Shah, Yuri Shimane, Myank Singhal, Armen Tokad-



jian, Lizvette Villafana, Zhixian Wang, In Yun, Lujia Zhu, Ryan S. Lynch

Comments: 20 pages, 8 figures, submitted to the Astronomical Journal on Sept. 9, 2020; reviews received Nov. 6; re-submitted Nov. 6

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxive:2011.04964](#)

Title: "Aqueous Alteration Studies on Mukundpura (MK) Carbonaceous Chondrite using FTIR, TGA and Raman spectroscopy and its CM classification"

Author: A. Dixit, R. P. Tripathi, Sudhanshu Kumar, Mohd. Azaj Ansari, K Sreenivas

Comments: Submitted to MAPS

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxive:2011.04791](#)

Title: "Radiogenic Heating and its Influence on Rocky Planet Dynamos and Habitability"

Author: Francis Nimmo, Joel Primack, Sandra M. Faber, Enrico Ramirez-Ruiz, Mohammadtaher Safarzadeh

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxive:2011.04737](#)

Title: "Study of Pluto's Atmosphere Based on 2020 Stellar Occultation Light Curve Results"

Author: Farzaneh Ahangarani Farahani, Atila Poro, Maryam Rezaee, Maryam Hadizadeh, Fatemeh Najafi kodini, Mahsa Seifi gargari, Fereshteh Mosavat

Comments: 3 figures, 2 tables, sent to the EPJ Plus journal

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2011.04703](#)

Title: "The Demographics of Exoplanets"

Author: B. Scott Gaudi, Jessie L. Christiansen, Michael R. Meyer

Comments: 25 pages, 3 figures. To appear as a book chapter in "ExoFrontiers: Big questions in exoplanetary science", Ed. N Madhusudhan (Bristol: IOP Publishing Ltd) AAS-IOP ebooks, this [https URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:2011.04683](#)

Title: "Hiding Signatures of Gravitational Instability in Protoplanetary Discs with Planets"

Author: Sahl Rowther, Farzana Meru, Grant M. Kennedy, Rebecca Nealon, Christophe Pinte

Comments: Accepted to ApJL. 9 pages, 5 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arXiv:2011.05270](#)

Title: "Identification and Mitigation of a Vibrational Telescope Systematic with Application to Spitzer"

Author: Ryan C. Challener, Joseph Harrington, James Jenkins, Nicolás T. Kurtovic, Ricardo Ramirez, Kathleen J. McIntyre, Michael D. Himes, Eloy Rodríguez, Guillem Anglada-Escudé, Stefan Dreizler, Aviv Ofir, Pablo A. Peña Rojas, Ignasi Ribas, Patricio Rojo, David Kipping, R. Paul Butler, Pedro J. Amado, Cristina Rodríguez-López, Enric Palle, Felipe Murgas

Comments: 18 pages, 12 figures, accepted for publication in PSJ

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

[理論/観測/実験 etc....]

Comment!!!!

[10] [arXiv:2011.04780](#)

Title: "A public code for astrometric microlensing with contour integration"

Author: Valerio Bozza, Elahe Khalouei, Etienne Bachelet

Comments: 9 pages, 6 figures

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

ph.EP); Astrophysics of Galaxies (astro-ph.GA)

[理論/観測/実験 etc....]

Comment!!!!

[11] [arXiv:2011.04759](#)

Title: "International Coordination and Support for SmallSat-enabled Space Weather Activities"

Author: Teresa Nieves-Chinchilla, Bhavya Lal, Robert Robinson, Amir Caspi, David R. Jackson, Therese Moretto Jørgensen, James Spann

Comments: Commentary submitted to Space Weather; accepted and in press

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:2011.04698](#)

Title: "AI Poincaré: Machine Learning Conservation Laws from Trajectories"

Author: Ziming Liu, Max Tegmark

Comments: 5 pages, 3 figs

Subjects: Machine Learning (cs.LG); Earth and Planetary Astrophysics (astro-ph.EP); Exactly Solvable and Integrable Systems (nlin.SI); Classical Physics (physics.class-ph)

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:2011.04653](#)

Title: "The influence of the secular perturbation of an intermediate-mass companion: I. Eccentricity excitation of disk stars at the Galactic center"

Author: Xiaochen Zheng, Douglas N. C. Lin, Shude Mao

Comments: 21 pages, 7 figures, accepted by ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

---

11月12日(木曜日)

[1] [arXiv:2011.05956](#)

Title:

”Evidence for geologically recent explosive volcanism in Elysium Planitia,  
Mars”

Author:David G. Horvath, Pranabendu Moitra, Christopher W. Hamilton, Robert  
A. Craddock, Jeffrey C. Andrews-Hanna

Comments: 41 pages, 11 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxive:2011.05832](#)

Title: ”Resolving period aliases for TESS monotransits recovered during the ex-  
tended mission”

Author:Benjamin F. Cooke, Don Pollacco, David R. Anderson, Daniel Bayliss,  
François Bouchy, Samuel Gill, Nolan Grieves, Monika Lendl, Louise D.  
Nielsen, Stéphane Udry, Peter J. Wheatley

Comments: 11 pages, 8 figures. Accepted for publication in MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxive:2011.05769](#)

Title: ”The fate of planetesimals formed at planetary gap edges”

Author:L.E.J. Eriksson, T. Ronnet, A. Johansen

Comments: Submitted to A&A. Comments welcome

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxive:2011.05696](#)

Title: ”Radio Observations of HD80606 Near Planetary Periastron: II. LOFAR  
Low Band Antenna Observations at 30-78 MHz”

Author:F. de Gasperin, T. J. W. Lazio, M. Knapp

Comments: 7 pages, 2 figures, accepted A&A

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:2011.05613](#)

Title: "Observability of ultraviolet N I lines in the atmosphere of transiting Earth-like planets"

Author: Mitchell E. Young, Luca Fossati, Colin Johnstone, Michael Salz, Herbert Lichtenegger, Kevin France, Helmut Lammer, Patricio E. Cubillos

Comments: Accepted for publication in Astronomische Nachrichten

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:2011.05495](#)

Title: "TESS Science Processing Operations Center FFI Target List Products"

Author: Douglas A. Caldwell, Peter Tenenbaum, Joseph D. Twicken, Jon M. Jenkins, Eric Ting, Jeffrey C. Smith, Christina L. Hedges, Michael M. Fausnaugh, Mark Rose, Christopher J. Burke

Comments: Submitted to RNAAS, Data are public at MAST as High Level Science Products

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!!!!

[7] [arXiv:2011.05388](#)

Title: "Amplitude Modulation of Short-Timescale Hot Spot Variability"

Author: Lauren I. Biddle, Joe Llama, Andrew Collier Cameron, Lisa A. Prato, Moira M. Jardine, Christopher M. Johns-Krull

Comments: Accepted for publication in ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

---

11月13日(金曜日)

[1] [arXiv:2011.06459](#)

Title: "Photometry of 10 Million Stars from the First Two Years of TESS Full Frame Images"

Author: Chelsea X. Huang, Andrew Vanderburg, András Pál, Lizhou Sha, Liang Yu, Willie Fong, Michael Fausnaugh, Avi Shporer, Natalia Guerrero,

Roland Vanderspek, George Ricker

Comments: This is the logical combination of two accepted RNAAS articles per arXiv's requirements. Data are available via MAST as a High Level Science Product. Appendix contains the detailed description of the data product

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

[TESS/パイプライン etc....]

TESSによる2年間の初回ミッションで14,777,000(南半球)と9,600,000(北半球)の光度曲線を得ることができた。光度曲線を得るために用いた測光方法や detrending の手法の説明。またノイズの性質を理論的予測と比較した結果を示した。光度曲線は公開している。

## [2] [arxiv:2011.06424](#)

Title: "Evidence of a Clear Atmosphere for WASP-62b: the Only Known Transiting Gas Giant in the JWST Continuous Viewing Zone"

Author: Munazza K. Alam, Mercedes Lopez-Morales, Ryan J. MacDonald, Nikolay Nikolov, James Kirk, Jayesh M. Goyal, David K. Sing, Hannah R. Wakeford, Alexander D. Rathcke, Drake L. Deming, Jorge Sanz-Forcada, Nikole K. Lewis, Joanna K. Barstow, Thomas Mikal-Evans, Lars A. Buchhave

Comments: 14 pages, 5 figures, accepted for publication in ApJL

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

[観測/大気/ホットジュピター etc....]

ホットジュピター WASP-62b に対して、Hubble/STIS と Spitzer/IRAC を用いて可視光から赤外線までの透過光スペクトル観測を行った。さらに、JWST で期待される観測の評価をするために、シミュレーションを行ったところ、JWST では Na, H<sub>2</sub>O, FeH, SiH が確実に検出できることがわかった。この WASP-62b は JWST の連続的な視野範囲に位置する唯一のトランジット巨大惑星なので、詳細な大気の特徴づけがなされる巨大惑星の基準となるだろう。

## [3] [arxiv:2011.06329](#)

Title: "An enhanced slope in the transmission spectrum of the hot Jupiter WASP-104b"

Author: G. Chen, E. Palle, H. Parviainen, H. Wang, R. van Boekel, F. Murgas, F. Yan, V. J. S. Bejar, N. Casasayas-Barris, N. Crouzet, E. Esparza-Borges, A. Fukui, Z. Garai, K. Kawauchi, S. Kurita, N. Kusakabe, J. P. de Leon, J. Livingston, R. Luque, A. Madrigal-Aguado, M. Mori, N. Narita, T. Nishiumi, M. Oshagh, M. Sanchez-Benavente, M. Tamura, Y. Terada, N. Watanabe

Comments: 17 pages, 14 figures, accepted for publication in MNRAS

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

[観測/ホットジュピター etc....]



Palomar 望遠鏡に搭載された DBSP 分光器を用いて、hot Jupiter WASP-104b の可視光での透過光スペクトル観測と、Carlos Sanchez 望遠鏡に搭載された MuSCAT2 による 14 回のトランジット観測を行った。K2 で観測された 45 回のトランジット観測も含めた結果、惑星系のパラメータや軌道要素をアップデートでき、TTV のシグナルは存在しないことを確認した。ベイズ推定により、観測されたスペクトルは、ヘイズの多い大気存在を示唆する一方で、星の黒点によるコンタミを完全に棄却することはできなかった。

[4] [arXiv:2011.06215](#)

Title: "Precise Dynamical Masses and Orbital Fits for  $\beta$  Pic b and  $\beta$  Pic c"

Author: G. Mirek Brandt, Timothy D. Brandt, Trent J. Dupuy, Yiting Li, Daniel Michalik

Comments: Supplementary tables are included with the latex source files

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

[観測 etc....]

15 年にわたる視線速度観測と、GRAVITY による相対位置の測定、Hipparcos と GAIA による絶対位置観測の結果と、 $\beta$  Pictoris A と b の相対視線速度観測などの観測結果を用いて、 $\beta$  Pictoris に存在する二つの惑星に対して、詳細な質量と軌道パラメータを導出した。

[5] [arXiv:2011.05996](#)

Title: "The influence of infall on the properties of protoplanetary discs"

Author: O. Schib, C. Mordasini, N. Wenger, G.-D. Marleau, R. Helled

Comments: 26 pages, 14 figures. Accepted to A&A

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

[理論/原始惑星系円盤 etc....]

最終的な星の質量が 0.05-5 太陽質量になる範囲での原始惑星系円盤の形成から拡散までを考慮した 1D シミュレーションを行った。その結果、原始惑星系円盤の形成初期の段階での円盤の質量はより重く、さらに寿命がより長いことがわかった。この結果は、惑星形成に利用できる質量がより多く存在することを示している。なので、惑星形成の研究をする際には、原始惑星系円盤の初期段階も考慮するべきである。

[6] [arXiv:2011.06145](#)

Title: "A non-energetic mechanism for glycine formation in the interstellar medium"

Author: S. Ioppolo, G. Fedoseev, K.-J. Chuang, H. M. Cuppen, A. R. Clements, M. Jin, R. T. Garrod, D. Qasim, V. Kofman, E. F. van Dishoeck, H. Linnartz

Comments: Preprint of the original submitted version

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); Chemical Physics (physics.chem-ph)

[実験/グリシン etc....]

ロゼッタ探査機によって、アミノ酸の一種であるグリシンとその前駆物質であるメチルアミンが 67P/Churyumov-

Gerasimenko 彗星発見されたが、このような複雑な有機分子が星や惑星形成の過程においていつどのように形成されるかはいまだに議論中である。そこで、冷たくて密な星間雲の条件下での原子のラジカル付加反応の実験を行い、その結果固体のグリシンが初めて検出された。

[7] [arxive:2011.06095](#)

Title: "Space-based Measurements of Neutron Lifetime: Approaches to Resolving the Neutron Lifetime Anomaly"

Author: David J. Lawrence, Jack T. Wilson, Patrick N. Peplowski

Comments: 33 pages; 9 figures; submitted to Nuclear Instruments and Methods in Physics Research, A

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

[理論/自由中性子の寿命 etc....]

自由中性子の寿命は実験室で大体 880s と測定されているが測定によって 10s ほどの不定性が存在している。この寿命の不訂正は様々な物理分野に影響を与える。そこで寿命を高精度で測定するために、金星や月などの宇宙上で測定することについて検討した

[8] [arxive:2011.06090](#)

Title: "An approximation to determine the source of the WOW! Signal"

Author: Alberto Caballero

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

[WOW! Signal etc....]

WOW! signal の起源を探るために、シグナルが示唆した領域にある 66 個の G 型星と K 型星を Gaia DR2 のカタログの中から選び、その中で半径・有効温度・光度が太陽に似た星を探した結果、唯一 2MASS 19281982- 2640123 を見つけることができた。しかし、それが本当に太陽に似ているかはさらに金属量や年齢や伴星の存在を調べる必要がある。

---

Nature

ない

---

Science

ない