

# 2020年 10月 第5週 新着論文サーベイ

10月26日(月曜日)

[1] [arXiv:2010.12520](#)

Title: "Automated crater detection with human level performance"

Author: Christopher Lee, James Hogan

Comments: 18 pages, 6 figures, 1 table. Accepted by Computers & Geosciences

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Machine Learning (cs.LG)

[理論/観測/実験 etc....]

Comment!!!!

[2] [arXiv:2010.12489](#)

Title: "Prestellar grain-surface origins of deuterated methanol in comet 67P/Churyumov-Gerasimenko"

Author: Maria N. Drozdovskaya, Isaac R. H. G. Schroeder, Martin Rubin, Kathrin Altwegg, Ewine F. van Dishoeck, Beatrice M. Kulterer, Johan De Keyser, Stephen A. Fuselier, Michael Combi

Comments: Accepted for publication in MNRAS; 29 pages, 8 figures, 4 tables

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:2010.12432](#)

Title: "Combined magnetic and gravity measurements probe the deep zonal flows of the gas giants"

Author: Eli Galanti, Yohai Kaspi

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:2010.12342](#)

Title: "Escape and evolution of Titan's N<sub>2</sub> atmosphere constrained by <sup>14</sup>N/<sup>15</sup>N isotope ratios"

Author:

N.V. Erkaev, M. Scherf, S.E. Thaller, H. Lammer, A.V. Mezentsev, V.A. Ivanov, K.E. Mandt

Comments: 16 pages, 6 figures. This is a pre-copyedited, author-produced PDF of an article accepted for publication in Monthly Notices of the Royal Astronomical Society (MNRAS) following peer review. The version of record [this [https URL](#)] is available online at: [this https URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:2010.12296](#)

Title: "Evolution of a migrating giant planet in the presence of an inclined binary companion"

Author: Arnaud Roisin, Anne-Sophie Libert

Comments: Accepted for publication in 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!!!!

[6] [arXiv:2010.12241](#)

Title: "Coexistence of CH<sub>4</sub>, CO<sub>2</sub> and H<sub>2</sub>O in exoplanet atmospheres"

Author: P. Woitke, O. Herbort, Ch. Helling, E. Stüeken, M. Dominik, P. Barth, D. Samra

Comments: accepted by A&A, 5 pages and 5 pages appendices, 10 figures, 3 tables

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2010.12202](#)

Title: "A single-armed spiral in the protoplanetary disk around HD34282 ?"

Author: J. de Boer, C. Ginski, G. Chauvin, F. Menard, M. Benisty, C. Dominik, K. Maaskant, J.H. Girard, G. van der Plas, A. Garufi, C. Perrot, T. Stolker, H. Avenhaus, A. Bohn, A. Delboulbe, M. Jaquet, T. Buey, O. Moller-Nilsson, J. Pragt, T. Fusco

Comments: 10 pages, 8 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!!!!

[8] [arXiv:2010.12120](#)

Title: "Convergence of a Periodic Orbit Family Close to Asteroids During a Continuation"

Author: Haokun Kang, Yu Jiang, Hengnian Li

Comments: 40 pages, 28 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arXiv:2010.11977](#)

Title: "Search for planets in hot Jupiter systems with multi-sector TESS photometry. I. No companions in planetary systems KELT-18, KELT-23, KELT-24, Qatar-8, WASP-62, WASP-100, WASP-119, and WASP-126"

Author: Gracjan Maciejewski

Comments: Revised version, submitted to Acta Astronomica

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

[理論/観測/実験 etc....]

Comment!!!!

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## 10月27日(火曜日)

[1] [arXiv:2010.13762](#)

Title: "A Framework for Relative Biosignature Yields from Future Direct Imaging Missions"

Author: Noah W. Tuchow, Jason T. Wright

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:2010.13745](#)

Title: "Spitzer's Solar System studies of asteroids, planets and the zodiacal cloud"

Author: David Trilling, Carey Lisse, Dale P. Cruikshank, Joshua P. Emery, Yanga Fernandez, Leigh N. Fletcher, Douglas P. Hamilton, Heidi B. Hammel, Alan Harris, Michael Mueller, Glenn S. Orton, Yvonne J. Pendleton, William T. Reach, Naomi Rowe-Gurney, Michael Skrutskie, Anne Verbitser

Comments: Published in Nature Astronomy, Volume 4, page 940. This arXiv version pre-dates the proofs corrections; the final published version is available at this [https URL](https://doi.org/10.1038/s41550-019-0488-4) [Updated on October 28 to get the right figures in this version]

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxiv:2010.13741](https://arxiv.org/abs/2010.13741)

Title: "Spitzer's Solar System Science Legacy: Studies of the Relics of Solar System Formation & Evolution. Part 1 - Comets, Centaurs, & Kuiper Belt Objects"

Author: Carey Lisse, James Bauer, Dale Cruikshank, Josh Emery, Yanga Fernandez, Estela Fernandez-Valenzuela, Michael Kelley, Adam McKay, William Reach, Yvonne Pendleton, Noemi Pinilla-Alonso, John Stansberry, Mark Sykes, David Trilling, Diane Wooden, David Harker, Robert Gehrz, Charles Woodward

Comments: Published in Nature Astronomy, Volume 4, page 930. This arXiv version pre-dates the proofs corrections; the final published version is available at this [https URL](https://doi.org/10.1038/s41550-019-0488-4)

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxiv:2010.13740](https://arxiv.org/abs/2010.13740)

Title: "Possible Transient Luminous Events observed in Jupiter's upper atmosphere"

Author: Rohini S. Giles, Thomas K. Greathouse, Bertrand Bonfond, G. Randall Gladstone, Joshua A. Kammer, Vincent Hue, Denis C. Grodent, Jean-Claude Gérard, Maarten H. Versteeg, Michael H. Wong, Scott J. Bolton, John E. P. Connerney, Steven M. Levin

Comments: Accepted in JGR: Planets. 28 pages, 8 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxiv:2010.13597](https://arxiv.org/abs/2010.13597)

Title: "Satellite observation of the dust trail of a major bolide event over the Bering Sea on December 18, 2018"

Author: J. Borovicka, M. Setvak, H. Roesli, J. K. Kerkmann

Comments: 15 pages, 20 figures, accepted for publication in A&A

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:2010.13379](#)

Title: "The detection of solid phosphorus and fluorine in the dust from the coma of comet 67P/Churyumov-Gerasimenko"

Author: Esko Gardner, Harry J. Lehto, Kirsi Lehto, Nicolas Fray, Anaïs Bardyn, Tuomas Lönnberg, Sihane Merouane, Robin Isnard, Hervé Cottin, Martin Hilchenbach

Comments: 5 pages, 1 figure, 1 table, supplementary 2 tables and 2 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2010.13218](#)

Title: "The common origin of family and non-family asteroids"

Author: Stanley F. Dermott, Apostolos A. Christou, Dan Li, Thomas J. J. Kehoe, J. Malcolm Robinson

Comments: 12 pages, 4 figures, includes Supplementary Info

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:2010.13181](#)

Title: "Dynamical evolution of a young planetary system: stellar flybys in coplanar orbital configuration"

Author: Raffaele Stefano Cattolico, Roberto Capuzzo-Dolcetta

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:2010.13051](#)

Title: "Light-Curve Evolution due to Secular Dynamics and the Vanishing Transits of KOI 120.01"

Author: Yair Judkovsky, Aviv Ofir, Oded Aharonson

Comments:

16 pages, 5 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[10] [arxive:2010.12745](#)

Title: "Phase Curves of Hot Neptune LTT 9779b Suggest a High-Metallicity Atmosphere"

Author: Ian J. M. Crossfield, Diana Dragomir, Nicolas B. Cowan, Tansu Daylan, Ian Wong, Tiffany Kataria, Drake Deming, Laura Kreidberg, Thomas Mikal-Evans, Varoujan Gorjian, James S. Jenkins, Bjoern Benneke, Karen A. Collins, Christopher J. Burke, Christopher E. Henze, Scott Mc-Dermott, Ismael Mireles, David Watanabe, Bill Wohler, George Ricker, Roland Vanderspek, Sara Seager, Jon M. Jenkins

Comments: 27 pages, 14 pages, 1 data table. ApJL in press. Companion paper to Dragomir et al. 2020

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

[理論/観測/実験 etc....]

Comment!!!!

## 10月27日(火後半曜日)

[11] [arxive:2010.12744](#)

Title: "Spitzer Reveals Evidence of Molecular Absorption in the Atmosphere of the Hot Neptune LTT 9979b"

Author: Diana Dragomir, Ian J. M. Crossfield, Bjoern Benneke, Ian Wong, Tansu Daylan, Matias Diaz, Drake Deming, Paul Molliere, Laura Kreidberg, James S. Jenkins, David Berardo, Jessie L. Christiansen, Courtney D. Dressing, Varoujan Gorjian, Stephen R. Kane, Thomas Mikal-Evans, Farisa Y. Morales, Michael Werner, George R. Ricker, Roland Vanderspek, S. Seager, Joshua N. Winn, Jon M. Jenkins, Knicole D. Colon, Willie Fong, Natalia Guerrero, Katharine Hesse, Hugh P. Osborn Mark E. Rose, Jeffrey C. Smith, Eric B. Ting

Comments: 12 pages, 5 figures; accepted to ApJ Letters

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

[理論/観測/実験 etc....]

secondary eclipse observation を用いて ultra-hot Neptune である LTT 9979b の大気中の分子による吸収を発見したという論文。この系外惑星は柱密度が大きいことから、大気を持っていることが前から示唆されていたが、本観測により CO 分子の吸収線をとらえることが出来たとのこと。スペクトルの特徴から大気の組成が分かったのは、この惑星

が初めてらしい。またホットジュピターで見られるような、温度の逆転層は無かったらしい。

[12] [arxiv:2010.12743](#)

Title: "Detection of Cyclopropenylidene on Titan with ALMA"

Author: Conor A. Nixon, Alexander E. Thelen, Martin A. Cordiner, Zbigniew Kisiel, Steven B. Charnley, Edward M. Molter, Joseph Serigano, Patrick G. J. Irwin, Nicholas A. Teanby, Yi-Jehng Kuan

Comments: 34 pages, 13 figures. 8 tables

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

[理論/観測/実験 etc....]

多分 twitter に上がったやつ? アルマ望遠鏡で土星の衛星タイタンをみたデータの解析から、大気中にシクロプロペニリデン (C<sub>3</sub>H<sub>2</sub>) なる分子が見つかったとのこと。結構不安定で地球上では実験室で人為的に作らない限り存在しない分子らしい。

[13] [arxiv:2010.12739](#)

Title: "Venus Observations at 40 and 90 GHz with CLASS"

Author: Sumit Dahal, Michael K. Brewer, John W. Appel, Aamir Ali, Charles L. Bennett, Ricardo Bustos, Manwei Chan, David T. Chuss, Joseph Cleary, Jullianna D. Couto, Rahul Datta, Kevin L. Denis, Joseph Eimer, Francisco Espinoza, Thomas Essinger-Hileman, Dominik Gothe, Kathleen Harrington, Jeffrey Iuliano, John Karakla, Tobias A. Marriage, Sasha Novack, Carolina Núñez, Ivan L. Padilla, Lucas Parker, Matthew A. Petroff, Rodrigo Reeves, Gary Rhoades, Karwan Rostem, Deniz A. N. Valle, Duncan J. Watts, Janet L. Weiland, Edward J. Wollack, Zhilei Xu

Comments: 7 pages, 3 figures, submitted to PSJ

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

[理論/観測/実験 etc....]

Cosmology Large Angular Scale Surveyor (CLASS) を用いて、金星の輝度温度を求めたという論文。

[14] [arxiv:2010.12722](#)

Title: "A set of orbital elements to fully represent the zonal harmonics around an oblate celestial body"

Author: David Arnas, Richard Linares

Comments: 38 pages, 7 figures

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Dynamical Systems (math.DS)

[理論/観測/実験 etc....]

扁球 (楕円をその短軸を回転軸として回転したときに得られる回転体) の形をした天体の周りの zonal harmonics (球



座標系で  $\phi$  方向の依存性がないようなポテンシャルの  $\theta$  依存性を取り出したやつ?) を記述するのに最適な軌道要素を考えましたよという論文。

[15] [arXiv:2010.12708](#)

Title: "Stellar occultations enable milliarcsecond astrometry for Trans-Neptunian objects and Centaurs"

Author: F. L. Rommel, F. Braga-Ribas, J. Desmars, J. I. B. Camargo, J. L. Ortiz, B. Sicardy, R. Vieira-Martins, M. Assafin, P. Santos-Sanz, R. Duffard, E. Fernández-Valenzuela, J. Lecacheux, B. E. Morgado, G. Benedetti-Rossi, A. R. Gomes-Júnior, C. L. Pereira, D. Herald, W. Hanna, J. Bradshaw, N. Morales, J. Brimacombe, A. Burtovoi, T. Carruthers, J. R. de Barros, M. Fiori, A. Gilmore, D. Hooper, K. Hornoch, C. Jacques, T. Janik, S. Kerr, P. Kilmartin, Jan Maarten Winkel, G. Naletto, D. Nardiello, V. Nascimbeni

Comments: 16 pages, 28 figures. The manuscript was accepted and is to be published

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

[理論/観測/実験 etc....]

Gaia DR2 のカタログを用いて新しく 19 個の TNOs と 4 個のケンタウルス族の小惑星の位置を求めたという論文。恒星の前を横切るときの減光を観測する occultations という方法を用いて見つけたとのこと。

[16] [arXiv:2010.12667](#)

Title: "A Characterization of the Circumstellar Gas around WD 1124-293 using Cloudy"

Author: Amy Steele, John Debes, Siyi Xu, Sherry Yeh, Patrick Dufour

Comments: Accepted for publication in The Astrophysical Journal, 13 pages, 9 figures, 4 tables

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

[理論/観測/実験 etc....]

全体の半分からの白色矮星の大気には、重元素が存在することが分かっている。原因として考えられるのは、半径の大きい領域にある惑星の摂動によって、微惑星の軌道が曲げられ、ロッシュ半径内に入って破壊されたものが大気中に取り込まれたということである。この論文では WD 1124-293 という白色矮星のスペクトルのデータを用いて、Ca Mg Fe の量に制限を付け、モデルとの比較をしたとのこと。

[17] [arXiv:2010.12657](#)

Title: "ALMA Survey of Lupus Class III Stars: Early Planetesimal Belt Formation and Rapid Disk Dispersal"

Author: J. B. Lovell, M. C. Wyatt, M. Ansdell, M. Kama, G. M. Kennedy, C.



F. Manara, S. Marino, L. Matrà, G. Rosotti, M. Tazzari, L. Testi, J. P. Williams

Comments: 30 pages, 20 figures. This is a pre-copyedited, author-produced PDF of an article accepted for publication in MNRAS following peer review

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

[理論/観測/実験 etc....]

クラス 3 stars は YSO のなかでも、原始惑星系円盤がなくなり、円盤があるときには生じる赤外超過がみえなくなったものだと考えられている。この研究ではアルマ望遠鏡を用いて 30 個の クラス 3 stars を観測し、そのうち 4 つでは星周ダストを見ることができたとのこと。ダストの質量を見積もったところ、先行研究より一桁程度小さい結果になったらしい。

[18] [arxiv:2010.12582](#)

Title: "Insights into the planetary dynamics of HD 206893 with ALMA"

Author: S. Marino, A. Zurlo, V. Faramaz, J. Milli, Th. Henning, G. M. Kennedy, L. Matrà, S. Pérez, P. Delorme, L. A. Cieza, A. M. Hughes

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

[理論/観測/実験 etc....]

HD 206893 周りのデブリ及び微惑星によるディスクをアルマ望遠鏡で観測した論文。

[19] [arxiv:2010.13726](#)

Title: "Lunar Gravitational-Wave Antenna"

Author: Jan Harms, Filippo Ambrosino, Lorella Angelini, Valentina Braitto, Marica Branchesi, Enzo Brocato, Enrico Cappellaro, Eugenio Coccia, Michael Coughlin, Roberto Della Ceca, Massimo Della Valle, Cesare Dionisio, Costanzo Federico, Michelangelo Formisano, Alessandro Frigeri, Aniello Grado, Luca Izzo, Augusto Marcelli, Andrea Maselli, Marco Olivieri, Claudio Pernechele, Andrea Possenti, Samuele Ronchini, Roberto Serafinelli, Paola Severgnini, Maila Agostini, Francesca Badaracco, Lorenzo Betti, Marta Maria Civitani, Christophe Collette, Stefano Covino, Simone Dall'Osso, Paolo D'Avanzo, Matteo Di Giovanni, Mauro Focardi, Carlo Giunchi, Joris van Heijningen, Nandita Khetan, Daniele Melini, Giuseppe Mitri, Conor Mow-Lowry, Luca Naponiello, Vladimiro Noce, Gor Oganessian, Emanuele Pace, Ho Jung Paik

Comments: 29 pages, 17 figures

Subjects: General Relativity and Quantum Cosmology (gr-qc); Earth and Planetary Astrophysics (astro-ph.EP); Instrumentation and Methods for Astrophysics (astro-ph.IM)

[理論/観測/実験 etc....]

Comment!!!!

[20] [arxiv:2010.13722](#)

Title: "Resolved molecular line observations reveal an inherited molecular layer in the young disk around TMC1A"

Author: Daniel Harsono, Matthijs van der Wiel, Per Bjerkerli, Jon Ramsey, Hannah Calcutt, Lars Kristensen, Jes Jørgensen

Comments: Accepted for publication on A 15 pages, 13 figures

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!!!!

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10月28日(水曜日)

[1] [arxiv:2010.14436](#)

Title: "TOI-954 b and EPIC 246193072 b: Short-Period Saturn-Mass Planets that Test Whether Irradiation Leads to Inflation"

Author: Lizhou Sha, Chelsea X. Huang, Avi Shporer, Joseph E. Rodriguez, Andrew Vanderburg, Rafael Brahm, Janis Hagelberg, Elisabeth C. Matthews, Carl Ziegler, John H. Livingston, Keivan G. Stassun, Duncan J. Wright, Jeffrey D. Crane, Néstor Espinoza, François Bouchy, Gáspár Á. Bakos, Karen A. Collins, George Zhou, Allyson Bieryla, Joel D. Hartman, Robert A. Wittenmyer, Louise D. Nielsen, Peter Plavchan, Daniel Bayliss, Paula Sarkis, Thiam-Guan Tan, Ryan Cloutier, Luigi Mancini, Andrés Jordán, Sharon Wang, Thomas Henning, Norio Narita, Kaloyan Penev, Johanna K. Teske, Stephen R. Kane, Andrew W. Mann, Brett C. Addison, Motohide Tamura, Jonathan Horner, Mauro Barbieri, Jennifer A. Burt, Matías R. Díaz, Ian J. M. Crossfield, Diana Dragomir, Holger Drass, Adina D. Feinstein

Comments: 28 pages, 9 figures, 11 tables, submitted to AJ, additional data available at this [https URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxiv:2010.14425](#)

Title: "Revisiting migration in a disc cavity to explain the high eccentricities of

warm Jupiters”

Author:F. Debras, C. Baruteau, J.-F. Donati

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxive:2010.14368](#)

Title: ”Destruction of eccentric planetesimals by ram pressure and erosion”

Author:Tunahan Demirci, Niclas Schneider, Jens Teiser, Gerhard Wurm

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxive:2010.14305](#)

Title: ”No phosphine in the atmosphere of Venus”

Author:Geronimo Villanueva, Martin Cordiner, Patrick Irwin, Imke de Pater, Bryan Butler, Mark Gurwell, Stefanie Milam, Conor Nixon, Statia Luszcz-Cook, Colin Wilson, Vincent Kofman, Giuliano Liuzzi, Sara Faggi, Thomas Fauchez, Manuela Lippi, Richard Cosentino, Alexander Thelen, Arielle Moullet, Paul Hartogh, Edward Molter, Steve Charnley, Giada Arney, Avi Mandell, Nicolas Biver, Ann Vandaele, Katherine de Kleer, Ravi Kopparapu

Comments:Submitted to Nature Astronomy "Matters Arising" on Oct/26/2020 - Submitted to arXiv on Oct/27/2020 as encouraged and recommended by the journal

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxive:2010.14275](#)

Title: ”Effects of early intense bombardment on megaregolith evolution and on lunar (and planetary) surface samples”

Author:William K. Hartmann, Alessandro Morbidelli

Comments:in press in Meteoritics and Planetary Science (MAPS)

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:2010.14213](#)

Title: "How planets grow by pebble accretion. III. Emergence of an interior composition gradient"

Author: Chris Ormel, Allona Vazan, Marc Brouwers

Comments: Submitted to A&A. Comments welcome

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2010.14101](#)

Title: "Modelling the atmosphere of lava planet K2-141b: implications for low and high resolution spectroscopy"

Author: T. Giang Nguyen, Nicolas B. Cowan, Agnibha Banerjee, John E. Moeres

Comments: 8 pages, 7 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:2010.13990](#)

Title: "Kinematical signs of dust trapping and feedback in a local pressure bump in the protoplanetary disk around HD 142527 revealed with ALMA"

Author: Hsi-Wei Yen, Pin-Gao Gu

Comments: 19 pages, 12 figures, Accepted by ApJ

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:2010.13907](#)

Title: "High Accuracy Planetary Orbit Integration"

Author: David M. Hernandez, Matthew J. Holman

Comments: 7 pages, 5 figures, submitted to MNRAS, comments welcome. Instructions on code usage available at this [https URL](#)

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!!!!

[10] [arXiv:2010.13885](#)

Title: "Surface Energy of the Titan Aerosol Analog "Tholin" "

Author: Xinting Yu, Sarah Horst, Chao He, Patricia McGuiggan, Kai Kristiansen,  
Xi Zhang

Comments: 27 pages, 6 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!!!!

[11] [arXiv:2010.13855](#)

Title: "Spectral characterisation of 14 V-type candidate asteroids from the MOVIS catalogue "

Author: Pavol Matlovič, Julia de Leon, Hissa Medeiros, Marcel Popescu, Juan Luis Rizo, Jad-Alexandru Mansour

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:2010.13791](#)

Title: "Exploring Trans-Neptunian Space with TESS: A Targeted Shift-Stacking Search for Planet Nine and Distant TNOs in the Galactic Plane "

Author: Malena Rice, Greg Laughlin

Comments: Accepted to Planetary Science Journal (PSJ). 23 pages, 8 figures, 2 tables

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

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:2010.14319](#)

Title: "Atmosphere Models of Brown Dwarfs Irradiated by White Dwarfs: Analogues for Hot and Ultra-Hot Jupiters "

Author: Joshua D. Lothringer, Sarah L. Casewell

Comments: 15 pages, 12 figures. 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!!!!

[14] [arXiv:2010.14311](#)

Title: "The large-scale magnetic field of Proxima Centauri near activity maximum"

Author: Baptiste Klein, Jean-François Donati, Élodie M. Hébrard, Bonnie Zaire, Colin P. Folsom, Julien Morin, Xavier Delfosse, Xavier Bonfils

Comments: 7 pages, 5 figures, accepted to MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[15] [arXiv:2010.13883](#)

Title: "Breve historia de la astrobiología en Argentina"

Author: Ximena C. Abrevaya

Comments: Preprint version (updated) in Spanish, without figures. To be published in Proceedings of the 2nd Latin American Congress of Astrobiology (Memorias del II Congreso Latinoamericano de Astrobiología)

Subjects: History and Philosophy of Physics (physics.hist-ph); Earth and Planetary Astrophysics (astro-ph.EP); Solar and Stellar Astrophysics (astro-ph.SR)

[理論/観測/実験 etc....]

Comment!!!!

[16] [arXiv:2010.13795](#)

Title: "Final Design and On-Sky Testing of the iLocater SX Acquisition Camera: Broadband Single-Mode Fiber Coupling"

Author: Jonathan Crass, Andrew Bechter, Brian Sands, David L. King, Ryan Ketterer, Matthew Engstrom, Randall Hamper, Derek Kopon, James Smous, Justin R. Crepp, Manny Montoya, Oli Durney, David Cavalieri, Robert Reynolds, Michael Vansickle, Eleanya Onuma, Joseph Thomes, Scott Mullin, Chris Shelton, Kent Wallace, Eric Bechter, Amali Vaz, Jennifer Power, Gustavo Rahmer, Steve Ertel

Comments: 18 pages, 17 figures. Accepted for publication in MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[17] [arXiv:2010.13786](#)

Title: "Excalibur: A Non-Parametric, Hierarchical Wavelength-Calibration Method for a Precision Spectrograph"



Author:L. L. Zhao, D. W. Hogg, M. Bedell, D. A. Fischer

Comments: 16 pages, 10 figures, presented here following first referee report

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

[理論/観測/実験 etc....]

Comment!!!!

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## 10月29日(木曜日)

### [1] [arxiv:2010.15094](#)

Title: "Effects of the stellar wind on the Ly-alpha transit of close-in planets"

Author:S. Carolan, A. A. Vidotto, C. Villarreal D'Angelo, G. Hazra

Comments: Recommended for publication in MNRAS

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

[シミュレーション、恒星風]

惑星の大気損失が恒星風によってどう変わるかを3次元流体シミュレーションでちゃんと調べた。HJとWNで調べ、恒星風が強くなると大気損失が抑制されることを示した。WNに比べてHJの方が抑制は大きい。

Ly-a線でのtransit観測で、恒星風による質量損失の減少を観測することも検討している。

### [2] [arxiv:2010.15091](#)

Title: "Hydrogen dominated atmospheres on terrestrial mass planets: evidence, origin and evolution"

Author:J. E. Owen, I.F. Shaikhislamov, H. Lammer, L. Fossati, M. L. Khodachenko

Comments: Accepted for publication in Space Science Reviews. Part of ISSI special collection on 'Understanding the Diversity of Planetary Atmospheres'

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

[レビュー]

地球質量惑星で水素ドミナントな大気を持つものが多数見ついている。そういうものの起源と進化に関するレビュー。

### [3] [arxiv:2010.15087](#)

Title: "Formation of Ultra-Short-Period Planets by Obliquity-Driven Tidal Runaway"

Author:Sarah Millholland, Christopher Spalding

Comments: 24 pages, 11 figures. Accepted to ApJ

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

[理論/長短周期惑星、マイグレーション]

Ultra-Short-Period Planetsはその場形成ではなく遠くまでマイグレーションしてきたと考えられている。この

移動の原因は潮汐であると考えられているがその発生源は不明。ここでは、Obliquity-Driven Tidal(斜め潮汐?)がその原因でないかと議論している。

[4] [arXiv:2010.15077](#)

Title: "Streaming instability on different scales. I. Planetesimal mass distribution variability"

Author: Josef Rucska, James Wadsley

Comments: Accepted to MNRAS, 12 pages, 7 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:2010.15053](#)

Title: "Tidally induced stellar oscillations: converting modelled oscillations excited by hot Jupiters into observables"

Author: Andrew Bunting, Caroline Terquem

Comments: 23 pages, 12 figures. Accepted for publication in MNRAS

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:2010.14973](#)

Title: "Physical conditions of gas components in debris disks of 49 Ceti and HD 21997"

Author: Aya E. Higuchi, Ágnes Kóspál, Attila Moór, Hideko Nomura, Satoshi Yamamoto

Comments: 25 pages, 5 figures, 9 tables, accepted for publication in ApJ

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

[観測/]

ALMA等で観測されたデブリディスクの解析。

[7] [arXiv:2010.14812](#)

Title: "The Occurrence of Rocky Habitable Zone Planets Around Solar-Like Stars from Kepler Data"

Author: Steve Bryson, Michelle Kunimoto, Ravi K. Kopparapu, Jeffrey L. Coughlin, William J. Borucki, David Koch, Victor Silva Aguirre, Christopher Allen, Geert Barentsen, Natalie M. Batalha, Travis Berger, Alan Boss,

Lars A. Buchhave, Christopher J. Burke, Douglas A. Caldwell, Jennifer R. Campbell, Joseph Catanzarite, Hema Chandrasekharan, William J. Chaplin, Jessie L. Christiansen, Jorgen Christensen-Dalsgaard, David R. Ciardi, Bruce D. Clarke, William D. Cochran, Jessie L. Dotson, Laurance R. Doyle, Eduardo Seperuelo Duarte, Edward W. Dunham, Andrea K. Dupree, Michael Endl, James L. Fanson, Eric B. Ford, Maura Fujieh, Thomas N. Gautier III, John C. Geary, Ronald L Gilliland, Forrest R. Girouard, Alan Gould, Michael R. Haas, Christopher E. Henze, Matthew J. Holman, Andrew Howard, Steve B. Howell

Comments: To appear in The Astronomical Journal

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

**[Occurrence rate]**

ケプラーで発見された惑星カタログとガイアの恒星データを使って小さい主系列星のハビタブルゾーン (HZ) における岩石惑星の発生率を計算した。有効温度 4800 K~6300K の恒星を HZ 内で周回する半径  $0.5\sim 1.5R_{\oplus}$  の惑星の発生率を計算した。Occurrence rate の値自体はサンプルが少なく誤差が大きいが、統計計算をおこなうと

G 型星と K 型星の周りに最も近い HZ 惑星は平均で約 6pc 離れており、G 型星と K 型星の周りには約 4 個の HZ 岩石惑星が太陽から 10pc 以内に存在することが、95 パーセントの信頼度で推定された。

**[8] [arxiv:2010.14743](#)**

Title: "Chains of Planets in Mean Motion Resonances Arising from Oligarchic Growth"

Author: Sarah J. Morrison, Rebekah I. Dawson, Mariah G. MacDonald

Comments: 13 pages, 3 tables, 9 figures, accepted for publication in the Astrophysical Journal on October 5, 2020

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

**[理論/観測/実験 etc....]**

Comment!!!!

**[9] [arxiv:2010.14717](#)**

Title: "EXPRES. II. Searching for Planets Around Active Stars: A Case Study of HD 101501"

Author: Samuel H. C. Cabot, Rachael M. Roettenbacher, Gregory W. Henry, Lily Zhao, Robert O. Harmon, Debra A. Fischer, John M. Brewer, Joe Llama, Ryan R. Petersburg, Andrew E. Szymkowiak

Comments: 25 pages, 16 figures, accepted to AJ

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:2010.14675](#)

Title: "An Integrated Analysis with Predictions on the Architecture of the tau Ceti Planetary System, Including a Habitable Zone Planet"

Author: Jeremy Dietrich, Dániel Apai

Comments: 15 pages, 4 figures, accepted to AJ

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

[理論/観測/実験 etc....]

Comment!!!!

[11] [arXiv:2010.14647](#)

Title: "Extra-Terrestrial Meteors"

Author: Apostolos Christou, Jeremie Vaubaillon, Paul Withers, Ricardo Hueso, Rosemary Killen

Comments: 3 tables, 7 figures, author version of Chapter 5 in: "Meteoroids: Sources of Meteors on Earth and Beyond", Cambridge University Press, 2019

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:2010.14521](#)

Title: "Resolving the outer ring of HD 38206 using ALMA and constraining limits on planets in the system"

Author: Mark Booth, Michael Schulz, Alexander V. Krivov, Sebastián Marino, Tim D. Pearce, Ralf Launhardt

Comments: 9 pages, 5 figures, accepted for publication in MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:2010.14867](#)

Title: "HADES RV Programme with HARPS-N at TNG XII. The abundance signature of M dwarf stars with planets"

Author: J. Maldonado, G. Micela, M. Baratella, V. D'Orazi, L. Affer, K. Biazzo, A. F. Lanza, A. Maggio, J. I. González Hernández, M. Perger, M. Pinamonti, G. Scandariato, A. Sozzetti, D. Locci, C. Di Maio, A. Bignamini, R. Claudi, E. Molinari, R. Rebolo, I. Ribas, B. Toledo-Adrón, E. Covino, S. Desidera, E. Herrero, J. C. Morales, A. Suárez-Mascareño, I. Pagano, A.

Petralia, G. Piotto, E. Poretti

Comments: Accepted for publication by Astronomy & Astrophysics

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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## 10月30日(金曜日)

### [1] [arXiv:2010.15746](#)

Title: "Investigation on a Doubly-Averaged Model for the Molniya Satellites Orbits"

Author: Tiziana Talu, Elisa Maria Alessi, Giacomo Tommei

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

[理論/観測/実験 etc....]

Comment!!!!

### [2] [arXiv:2010.15617](#)

Title: "Formation of Gaps in Self-Gravitating Debris Disks by Secular Resonance in a Single-planet System I: A Simplified Model"

Author: Antranik A. Sefilian, Roman R. Rafikov, Mark C. Wyatt

Comments: Submitted to AAS Journals: 24 Pages, 13 Figures, 1 Table, 3 Animations (see Ancillary files). Comments are welcome

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

[理論/観測/実験 etc....]

Comment!!!!

### [3] [arXiv:2010.15448](#)

Title: "Effects of capturing a wide-orbit planet on planetary systems: system stability and Habitable Zone bombardment rates"

Author: Giorgi Kokaia, Melvyn B. Davies, Alexander J. Mustill

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

[理論/観測/実験 etc....]

Comment!!!!

### [4] [arXiv:2010.15442](#)

Title: "Voluminous silica precipitated from martian waters during late-stage aqueous alteration"

Author:L. Pan, J. Carter, C. Quantin-Nataf, M. Pineau, B. Chauviré, N. Mangold,  
L. Le Deit, B. Rondeau, V. Chevrier

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:2010.15310](#)

Title: "Non-Keplerian spirals, a gas-pressure dust trap and an eccentric gas cavity  
in the circumbinary disc around HD 142527"

Author:Himanshi Garg, Christophe Pinte, Valentin Christiaens, Daniel Price, Jas-  
mina Lazendic, Yann Boehler, Simon Casassus, Sebastian Marino, Sebas-  
tian Perez, Andres Zuleta

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!!!!

[6] [arXiv:2010.15205](#)

Title: "WASP-186 and WASP-187: two hot Jupiters discovered by SuperWASP  
and SOPHIE with additional observations by TESS"

Author:N. Schanche, G. Hébrard, A. Collier Cameron, S. Dalal, B. Smalley, T. G.  
Wilson, I. Boisse, F. Bouchy, D.J.A Brown, O. Demangeon, C.A. Haswell,  
C. Hellier, U.C. Kolb, T. Lopez, P.F.L. Maxted, D.L. Pollacco, R.G. West,  
P.J. Wheatley

Comments: 7 pages, 2 appendices

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:2010.15188](#)

Title: "The statistical reliability of 267 GHz JCMT observations of Venus"

Author:M.A. Thompson

Comments: 4 pages, 5 figures. Submitted 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!!!!



[8] [arXiv:2010.15164](#)

Title: "Science Extraction from TESS Observations of Known Exoplanet Hosts"

Author: Stephen R. Kane, Jacob L. Bean, Tiago L. Campante, Paul A. Dalba, Tara Fetherolf, Teo Mocnik, Colby Ostberg, Joshua Pepper, Emilie R. Simpson, Margaret C. Turnbull, George R. Ricker, Roland Vanderspek, David W. Latham, Sara Seager, Joshua N. Winn, Jon M. Jenkins, Daniel Huber, William J. Chaplin

Comments: 12 pages, 7 figures, accepted for publication in PASP

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:2010.15152](#)

Title: "Temperature inversions on hot super-Earths: the case of CN in nitrogen-rich atmospheres"

Author: Mantas Zilinskas, Yamila Miguel, Yipeng Lyu, Morris Bax

Comments: Accepted for publication MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[10] [arXiv:2010.15147](#)

Title: "Survivor bias: divergent fates of the Solar System's ejected vs. persisting planetesimals"

Author: Sean N. Raymond, Nathan A. Kaib, Philip J. Armitage, Jonathan J. Fortney

Comments: ApJ Letters, in press. 6 pages, 4 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[11] [arXiv:2010.15143](#)

Title: "WASP-127b: A misaligned planet with a partly cloudy atmosphere and tenuous sodium signature seen by ESPRESSO"

Author: R. Allart, L. Pino, C. Lovis, S. G. Sousa, N. Casasayas-Barris, M. R. Zapatero Osorio, M. Cretignier, E. Pallé, F. Pepe, S. Cristiani, R. Rebolo,

N.C. Santos, F. Borsa, V. Bourrier, O.D.S. Demangeon, D. Ehrenreich, B. Lavie, J. Lillo-Box, G. Micela, M. Oshagh, A. Sozzetti, H. Taberner, V. Adibekyan, C. Allende Prieto, Y. Alibert, M. Amate, W. Benz, F. Bouchy, A. Cabral, H. Dekker, V. D’Odorico, P. Di Marcantonio, X. Dumusque, P. Figueira, R. Genova Santos, J. I. González Hernández, G. Lo Curto, A. Manescau, C.J.A.P. Martins, D. Mégevand, A. Mehner, P. Molaro, N. J. Nunes, E. Poretti, M. Riva, A. Suárez Mascareño, S. Udry, F. Zerbi

Comments: Accepted in A&A, 19 pages, 20 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:2010.15135](#)

Title: ”**A case of simultaneous star and planet formation**”

Author: Felipe O. Alves, L. Ilseidore Cleves, Josep M. Girart, Zhaohuan Zhu, Gabriel A. P. Franco, Alice Zurlo, Paola Caselli

Comments: 7 pages, 4 figures, Accepted for publication in ApJ Letters

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

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:2010.15425](#)

Title: ”**Detection of asteroid trails in Hubble Space Telescope images using Deep Learning**”

Author: Andrei A. Parfeni, Laurentiu I. Caramete, Andreea M. Dobre, Nguyen Tran Bach

Comments: 12 pages, 8 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[14] [arXiv:2010.15301](#)

Title: ”**Alignment and rotational disruption of dust**”

Author: A. Lazarian, Thiem Hoang

Comments: 32 pages, 14 figures. Resubmitted to ApJ after the first referee’s report

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!!!!

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Nature

ない

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Science

ない