

# 2018年 3月 第1週 新着論文サーベイ

2月26日(月曜日)

## [1] [arxiv:1802.08578](#)

Title: "Isocrater" impacts: Conditions and mantle dynamical responses for different impactor types"

Author: Thomas Ruedas, Doris Breuer

Comments: 32 pages, 12 figures

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

### [理論]

同じサイズのクレーターでも、それを形成したインパクターの大きさや材質は様々で、同じ大きさのクレーターを形成するような衝突の条件をスケールリング則から求めた。また、インパクターの違いが標的内部に与える影響についても調べた。結果、同じ大きさのクレーターでは、インパクターが小惑星的な方が彗星的なものよりもクレーターの汚染範囲が小さく、また、金星のように地殻循環や対流が活発な惑星ではインパクターの情報は長期的に失われてしまうことがわかった。

## [2] [arxiv:1802.08458](#)

Title: "Experimental study of heterogeneous organic chemistry induced by far ultraviolet light: Implications for growth of organic aerosols by CH<sub>3</sub> addition in the atmospheres of Titan and early Earth"

Author: Peng K. Hong, Yasuhito Sekine, Tsutoni Sasamori, Seiji Sugita

Comments: 55 pages, 11 figures, 1 table

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

### [実験]

タイタンや初期地球のようなメタンを含む大気中の光化学反応による有機エアロゾルの形成が観測されているが、有機物質形成の詳細や太陽からのFUVによるその後に進化はよくわかっていない。CH<sub>4</sub>-CO<sub>2</sub>大気中のFUVによる光化学反応を模した実験を行った。CH<sub>4</sub>/CO<sub>2</sub>比が低いほど有機フィルムの形成率は減少し、CH<sub>4</sub>/CO<sub>2</sub><1になると減少率が急になった。芳香族のような炭化水素気体の重合では有機フィルムの成長率を説明できないが、反応に有機フィルムにCH<sub>3</sub>ラジカルを加えることで説明できた。

## [3] [arxiv:1802.08385](#)

Title: "Chaotic Excitation and Tidal Damping in the GJ 876 System"

Author: Abhijit Puranam, Konstantin Batygin

Comments: 6 pages, 5 figures, accepted to AJ

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

### [理論]

GJ 876は複数の惑星を持つ最も近接した系で、惑星はカオス的なラプラス共鳴にある高離心率のスーパーアースであ

る。潮汐散逸に対抗して一番内側の惑星の離心率をどう維持するかを確率的永年摂動と N 体シミュレーションを行って調べた。

[4] [arxiv:1802.08320](#)

Title: "Eyes on K2-3: A system of three likely sub-Neptunes characterized with HARPS-N and HARPS"

Author: M. Damasso, A. S. Bonomo, N. Astudillo-Defru, X. Bonfils, L. Malavolta, A. Sozzetti, E. Lopez, L. Zeng, R. D. Haywood, J. M. Irwin, A. Mortier, A. Vanderburg, J. Maldonado, A. F. Lanza, L. Affer, J.-M. Almenara, S. Benatti, K. Biazzo, A. Bignamini, F. Borsa, F. Bouchy, L. A. Buchhave, A. C. Cameron, I. Carleo, D. Charbonneau, R. Claudi, R. Cosentino, E. Covino, X. Delfosse, S. Desidera, L. Di Fabrizio, C. Dressing, M. Esposito, R. Fares, P. Figueira, A. F. M. Fiorenzano, T. Forveille, P. Giacobbe, E. González-Álvarez, R. Gratton, A. Harutyunyan, J. Asher Johnson, D. W. Latham, G. Leto, M. Lopez-Morales, C. Lovis, A. Maggio, L. Mancini, S. Masiero, M. Mayor, G. Micela, E. Molinari, F. Motalebi, F. Murgas, V. Nascimbeni, I. Pagano, F. Pepe, D. F. Phillips, G. Piotto, E. Poretti, M. Rainer

Comments: 14 pages, 15 figures, accepted for publication in A&A

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

[理論/観測]

地球から 45pc にある M 型星 K2-3 は 3 つの惑星を持っていて、一番外側の惑星はハビタブルゾーンに近いところにいる。HARPS-N による RV 観測と HARPS のスペクトルを解析して K2-3 系の惑星の質量と密度を計算して、モンテカルロ計算で質量誤差を評価した。結果、K2-3b, c の質量は  $M_b = 6.6 \pm 1.1 M_\oplus$ ,  $M_c = 3.1_{-1.2}^{+1.3} M_\oplus$  となった。K2-3d のドップラーシグナルはまだ検出されていない。

[5] [arxiv:1802.08300](#)

Title: "Dimensionality and integrals of motion of the Trappist-1 planetary system"

Author: Johannes Floß, Hanno Rein, Paul Brumer

Comments: 6 pages, 6 figures, to be submitted to MNRAS

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

[理論]

Trappist-1 系の運動方程式の積分定数を求めたら、相互作用なしの 7 惑星系の場合と同じくらいの値になった。

[6] [arxiv:1802.08257](#)

Title: "Detection of a Millimeter Flare From Proxima Centauri"

Author: Meredith A. MacGregor, Alycia J. Weinberger, David J. Wilner, Adam

F. Kowalski, Steven R. Cranmer

Comments: 7 pages, 3 figures; Submitted to ApJL 2017 December 22; Accepted to ApJL 2018 February 5

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

[観測]

Proxima Centauri の ALMA による 12m と ACA による 233GHz(1.3mm) での観測から、2017/3/24 にフレアを起こしていたことが分かった。持続時間は 1 分、フラックスのピークは  $100 \pm 4 \text{mJy}$  で、増光率は静穏時の 1000 倍だった。12m で観測したフラックス密度は  $101 \pm 9 \mu\text{Jy}$  で、光球からのフラックス密度  $74 \pm 4 \mu\text{Jy}$  より少し大きく、これは小規模フレアの頻発によるコロナ加熱のせいだと考えられる。

[7] [arxiv:1802.08285](https://arxiv.org/abs/1802.08285)

Title: "Sites That Can Produce Left-Handed Amino Acids in the Supernova Neutrino Amino Acid Processing Model"

Author: Richard N. Boyd, Michael A. Famiano, Takashi Onaka, Toshitaka Kajino

Comments: Accepted to ApJL

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

[理論]

超新星からの電子と反ニュートリノと磁場からアミノ酸を選択的に破壊する The Supernova Neutrino Amino Acid Processing モデルを用いて L 型アミノ酸が生成される領域を調べた。

[8] [arxiv:1802.08284](https://arxiv.org/abs/1802.08284)

Title: "Dynamo induced by time-periodic force"

Author: Xing Wei

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

[理論]

回転する磁気流体が駆動するダイナモについて数値計算を行い、回転周期の影響を調べた。回転周期が共鳴に近ければダイナモが駆動できるが、共鳴から遠いと駆動できない。

[9] [arxiv:1802.08260](https://arxiv.org/abs/1802.08260)

Title: "Signature of Planetary Mergers on Stellar Spins"

Author: Ahmed Qureshi, Smadar Naoz, Evgenya Shkolnik

Comments: 7 pages, 3 figures, 1 table, submitted

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

[理論]

高離心率の惑星のマイグレーションでは惑星は主星に衝突することが予想されるが、それによる主星の自転の加速について調べた。太陽型星の場合、木星ほどの惑星が衝突すると自転速度が 60% 加速することがわかった。

2月27日(火曜日)

[1] [arxiv:1802.09508](#)

Title: "Image Reconstruction Techniques in Neutron and Gamma-Ray Spectroscopy: Improving Lunar Prospector Data"

Author: Jack T. Wilson, David J. Lawrence, Patrick N. Peplowski, Joshua T. S. Cahill, Vincent R. Eke, Richard J. Massey, Luis F. A. Teodoro

Comments: 17 pages, 12 figures, submitted to JGR-Planets

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:1802.09451](#)

Title: "Is the spiral morphology of the Elias 2-27 circumstellar disc due to gravitational instability?"

Author: Cassandra Hall, Ken Rice, Giovanni Dipierro, Duncan Forgan, Tim Harries, Richard Alexander

Comments: 12 pages, 5 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxiv:1802.09379](#)

Title: "Mapping of Jupiter's tropospheric NH<sub>3</sub> abundance using ground-based IRTF/TEXES observations at 5 μm"

Author: Doriann Blain, Thierry Fouchet, Thomas Greathouse, Thérèse Encrenaz, Benjamin Charnay, Bruno Bézard, Cheng Li, Emmanuel Lellouch, Glenn Orton, Leigh N. Fletcher, Pierre Drossart

Comments: 21 pages, 15 figures, 4 tables, preprint submitted to Icarus the 20 February 2018

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxiv:1802.09367](#)

Title: "The Detectability of Earth's Biosignatures Across Time"

Author: Enric Pallé

Comments: To appear in "Handbook of Exoplanets", eds. Deeg, H.J. & Belmonte, J.A, Springer (2018). arXiv  
admin note: text overlap with arXiv:astro-ph/0609398 by other authors

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:1802.09264](#)

Title: "Outgassing on stagnant-lid super-Earths"

Author: Caroline Dorn, Lena Noack, Antoine Rozel

Comments: Accepted for publication in A&A, 19 Figures, 20 pages

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:1802.09222](#)

Title: "Observable signatures of wind-driven chemistry with a fully consistent  
three dimensional radiative hydrodynamics model of HD 209458b"

Author: Benjamin Drummond, N. J. Mayne, James Manners, Aarynn L. Carter,  
Ian A. Boutle, Isabelle Baraffe, Eric Hebrard, Pascal Tremblin, David K.  
Sing, David S. Amundsen, Dave Acreman

Comments: Accepted for publication in ApJL

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:1802.09126](#)

Title: "Forming Different Planetary Architectures . I . Formation Efficiency of  
Hot Jupites from High-eccentricity Mechanisms"

Author: Ying Wang, Ji-lin Zhou, Liu hui-gen, Zeyang Meng

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:1802.09023](#)

Title: "OGLE-2017-BLG-1130: The First Binary Gravitational Microlens De-  
tected From Spitzer Only"

Author: Tianshu Wang, S. Calchi Novati, A. Udalski, A. Gould, Shude Mao, W.  
Zang, C. Beichman, G. Bryden, S. Carey, B. S. Gaudi, C. B. Hender-

son, Y. Shvartzvald, J. C. Yee, P. Mroz, R. Poleski, J. Skowron, M. K. Szymanski, I. Soszynski, S. Kozlowski, P. Pietrukowicz, K. Ulaczyk, M. Pawlak, M. D. Albrow, S.-J. Chung, C. Han, K.-H. Hwang, Y. K. Jung, Y.-H. Ryu, I.-G. Shin, W. Zhu, S.-M. Cha, D.-J. Kim, H.-W. Kim, S.-L. Kim, C.-U. Lee, D.-J. Lee, Y. Lee, B.-G. Park, R. W. Pogge

Comments: 14 pages, 5 figures

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:1802.09006](#)

Title: "Valuing life detection missions"

Author: Edwin S. Kite, Eric Gaidos, Tullis C. Onstott

Comments: Accepted by "Astrobiology."

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

[理論/観測/実験 etc....]

Comment!!!!

[10] [arXiv:1802.08945](#)

Title: "Validation and Initial Characterization of the Long Period Planet Kepler-1654 b"

Author: C. A. Beichman, H. A. C. Giles, R. Akeson, D. Ciardi, J. Christiansen, H. Isaacson, G. M. Marcy, E. Sinukoff, T. Greene, J. J. Fortney, I. Crossfield, R. Hu, A. W. Howard, E. A. Petigura, H. A. Knutson

Comments: accepted to Astronomical Journal

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:1802.08904](#)

Title: "Finding Long Lost Lexell's Comet: The Fate of the First Discovered Near-Earth Object"

Author: Quan-Zhi Ye, Paul A. Wiegert, Man-To Hui

Comments: AJ in press; animation version of Figure 2 at this [http URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arXiv:1802.08868](#)

Title: "Stability Limits of Circumbinary Planets: Is There a Pile-up in the Kepler CBPs?"

Author: Billy Quarles, Suman Satyal, Veselin Kostov, Nathan Kaib, Nader Haghhighipour

Comments: 18 pages, 8 figures, 4 tables; Accepted in Astrophysical Journal

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

[理論/観測/実験 etc....]

Comment!!!!

[13] [arXiv:1802.08865](#)

Title: "EPIC247098361b: a transiting warm Saturn on an eccentric  $P = 11.2$  days orbit around a  $V = 9.9$  star"

Author: Rafael Brahm, Néstor Espinoza, Andrés Jordán, Felipe Rojas, Paula Sarkis, Matías R. Díaz, Markus Rabus, Holger Drass, Régis Lachaume, Maritza G. Soto, James J. Jenkins, Matías I. Jones, Thomas Henning, Blake Pantoja, Maja Vcković

Comments: 11 pages, 10 figures, submitted to MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[14] [arXiv:1802.08697](#)

Title: "Photochemistry, mixing and transport in Jupiter's stratosphere constrained by Cassini"

Author: Vincent Hue, Franck Hersant, Thibault Cavalié, Michel Dobrijevic, James Sinclair

Comments: Received 13 October 2017 Revised 12 January 2018 Accepted 13 February 2018

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

[理論/観測/実験 etc....]

Comment!!!!

[15] [arXiv:1802.08693](#)

Title: "Populations of planets in multiple star systems"

Author: David V. Martin

Comments: Invited review chapter, accepted for publication in "Handbook of Exoplanets", ed. H. Deeg & J. A. Belmonte

Subjects:

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

[理論/観測/実験 etc....]

Comment!!!!

[16] [arXiv:1802.09306](#)

Title: "Detailed chemical compositions of the wide binary HD 80606/80607: revised stellar properties and constraints on planet formation"

Author: F. Liu, D. Yong, M. Asplund, S. Feltzing, A.J. Mustill, J. Meléndez, I. Ramírez, J. Lin

Comments: 11 pages, 9 figures, accepted for publication in A&A

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:1802.09280](#)

Title: "Probing midplane CO abundance and gas temperature with DCO<sup>+</sup> in the protoplanetary disk around HD 169142"

Author: M.T. Carney, D. Fedele, M.R. Hogerheijde, C. Favre, C. Walsh, S. Bruderer, A. Miotello, N.M. Murillo, P.D. Klaassen, Th. Henning, E.F. van Dishoeck

Comments: Accepted to Astronomy & Astrophysics

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:1802.09276](#)

Title: "A Serendipitous MWA Search for Narrow-band and Broad-band Low Frequency Radio Transmissions from 1I/2017 U1 'Oumuamua"

Author: S.J. Tingay, D.L. Kaplan, E. Lenc, S. Croft, B. McKinley, A. Beardsley, B. Crosse, D. Emrich, T.M.O. Franzen, B.M. Gaensler, L. Horsley, M. Johnston-Hollitt, D. Kenney, M.F. Morales, D. Pallot, K. Steele, C.M. Trott, M. Walker, R.B. Wayth, A. Williams, C. Wu

Comments: Nine pages, four figures. Accepted for publication in ApJ

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

[理論/観測/実験 etc....]

Comment!!!!



[19] [arxiv:1802.08695](#)

Title: "Short-lived radioisotopes in meteorites from Galactic-scale correlated star formation"

Author: Yusuke Fujimoto, Mark R. Krumholz, Shogo Tachibana

Comments: 11 pages, 8 figures. Submitted to MNRAS. Comments welcome. Simulation movies are available at this [https URL](#)

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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## 2月28日(水曜日)

[1] [arxiv:1802.10067](#)

Title: "OGLE-2017-BLG-0373Lb: A Jovian Mass-Ratio Planet Exposes A New Accidental Microlensing Degeneracy"

Author: J. Skowron, Y.-H. Ryu, K.-H. Hwang, A. Udalski, P. Mróz, S. Kozłowski, I. Soszyński, P. Pietrukowicz, M. K. Szymański, R. Poleski, K. Ulaczyk, M. Pawlak, K. Rybicki, P. Iwanek, M. D. Albrow, S.-J. Chung, A. Gould, C. Han, Y. K. Jung, I.-G. Shin, Y. Shvartzvald, J. C. Yee, W. Zang, R.W. Zhu, S.-M. Cha, D.-J. Kim, H.-W. Kim, S.-L. Kim, C.-U. Lee, D.-J. Lee, Y. Lee, B.-G. Park, R. W. Pogge

Comments: 22 pages, 6 figures, 3 tables. Submitted to Acta Astronomica

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

[観測]

マイクロレンズで新たな巨大ガス惑星を見つけた。データのカバリッジが少ないことによって質量比が決まらなくなる新たな縮退を見つけた。

[2] [arxiv:1802.10010](#)

Title: "Near-IR transmission spectrum of HAT-P-32 b using HST/WFC3"

Author: M. Damiano, G. Morello, A. Tsiaras, T. Zingales, G. Tinetti

Comments: 9 Pages, 5 Tables, 4 Figures, published in AJ

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

[観測]

Hot Jupiter HAT-P-32b の HST での近赤外での透過分光観測。解析ではパラメトリックな解析とノンパラメトリックな解析の両方で解析して、両方がコンシステントだった。他の Hot Jupiter と同様、水蒸気と雲の存在が検出された。

[3] [arXiv:1802.09960](#)

Title: "Challenges of identifying putative planetary-origin meteorites composed of non-igneous material"

Author: Yana Anfinogenova, John Anfinogenov

Comments: 21 pages, 5 figures, 73 references. arXiv admin note: substantial text overlap with arXiv:1706.06093, arXiv:1605.01892

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

[コンセプト]

惑星起源の火成岩ではない隕石を SNC 隕石と見分ける挑戦について。レビューと議論。(?)

[4] [arXiv:1802.09721](#)

Title: "Medium-resolution integral-field spectroscopy for high-contrast exoplanet imaging: Molecule maps of the  $\beta$  Pictoris system with SINFONI"

Author: H.J. Hoeijmakers, H. Schwarz, I.A.G. Snellen, R.J. de Kok, M. Bonnefoy, G. Chauvin, A.M. Lagrange, J.H. Girard

Comments: 11 pages, 10 figures. Submitted for publication in A&A

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

[画像解析]

ADI (Angular Differential Imaging) と SDI (Spectral Differential Imaging) はよく直接撮像で使われるが、主星近くの暗い伴星に適用するのはチャレンジングだ。VLT のアーカイブの  $\beta$  Pictoris の面分光画像 (元々 ADI) から主星の成分をモデルのスペクトルとの相互相関をとることで差し引いて、伴星 ( $\beta$  Pictoris b) の検出をした。ADI よりも良い SNR で検出できた。

[5] [arXiv:1802.09602](#)

Title: "Exoplanet Classification and Yield Estimates for Direct Imaging Missions"

Author: Ravi kumar Kopparapu, Eric Hebrard, Rus Belikov, Natalie M. Batalha, Gijs D. Mulders, Chris Stark, Dillon Teal, Shawn Domagal-Goldman, Avi Mandell

Comments: Accepted to Astrophysical Journal. 30 pages, 4 tables. Online tool for classification boundaries can be found at: [this http URL](#)

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

[新しい量]

将来の NASA のスペースミッションである、HabEx や LUVOIR で直接撮像できそう度合いによる惑星の分類の仕方を提案する。主星の明るさと、惑星のサイズ等で分類する。

[6] [arXiv:1802.09557](#)

Title: "Mass determination of the 1:3:5 near-resonant planets transiting GJ 9827"

(K2-135)”

Author: J. Prieto-Arranz, E. Palle, D. Gandolfi, O. Barragán, E.W. Guenther, F. Dai, M. Fridlund, T. Hirano, J. Livingston, P. Niraula, C.M. Persson, S. Redfield, S. Albrecht, R. Alonso, G. Antoniciello, J. Cabrera, W.D. Cochran, Sz. Csizmadia, H. Deeg, Ph. Eigmüller, M. Endl, A. Erikson, M. E. Everett, A. Fukui, S. Grziwa, A. P. Hatzes, D. Hidalgo, M. Hjorth, J. Korth, D. Lorenzo-Oliveira, F. Murgas, N. Narita, D. Nespral, G. Nowak, M. Pätzold, P. Montañés Rodríguez, H. Rauer, I. Ribas, A. M. S. Smith, V. Van Eylen, J.N. Winn

Comments: 15 pages, 10 Figures, 8 tables

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

[観測]

K2 のデータと RV のデータを合わせることで、GJ 9828 の 3 つの惑星全ての質量を 30% 以下の不定性で求めた。

[7] [arxiv:1802.09529](https://arxiv.org/abs/1802.09529)

Title: ”Identifying Young *Kepler* Planet Host Stars from Keck-HIRES Spectra of Lithium”

Author: Travis A. Berger, Andrew W. Howard, Ann Merchant Boesgaard

Comments: 22 pages, 15 figures, 3 tables. Accepted for publication in ApJ. For a brief video explaining this paper, see this [https URL](https://www.youtube.com/watch?v=...)

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

[観測]

Kepler 惑星の主星に対して、分光観測をしてリチウムの 670.8nm の二重線を使って、960 個の主星の年齢 (Li のアバダンス) を測った。その結果、若い星ほど、持っている惑星のサイズが大きい (AD 検定の p-value が 0.002) ことがわかった。これは、比較的若い時期に惑星の inflation/photoevaporation が起こったということと consistent だ。

[8] [arxiv:1802.09526](https://arxiv.org/abs/1802.09526)

Title: ”About 30% of Sun-like Stars Have Kepler-like Planetary Systems: A Study of their Intrinsic Architecture”

Author: Wei Zhu, Cristobal Petrovich, Yanqin Wu, Subo Dong, Jiwei Xie

Comments: 19 pages, 12 figures, submitted to AAS Journals, comments welcome

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

[Kepler の解析]

観測された Kepler 惑星のマルチプリシティと TTV をモデリング (?) した結果、太陽型星の  $30 \pm 3\%$  が Kepler 的な惑星 ( $R_p > R_\oplus$ , 周期 400 日以下) を持っていることがわかった。これは先行研究の 50% 以上とは大きく異なる。恒星一個あたり Kepler 惑星を持つ数は平均して  $3.0 \pm 0.3$  個。また、相互 inclination のばらつき、 $\sigma_{i,k}$  が惑星の数  $k$  によって大きく異なり、 $\sigma_{i,k} \propto k^\alpha$ 、 $-4 < \alpha < -2$  であることがわかった。数が少ないほど、ばらつく。

[9] [arXiv:1802.09812](#)

Title: "Aldebaran b's temperate past uncovered in planet search data"

Author: Will M. Farr, Benjamin J. S. Pope, Guy R. Davies, Thomas S. H. North, Timothy R. White, Jim W. Barrett, Andrea Miglio, Mikkel N. Lund, Victoria Antoci, Mads Fredslund Andersen, Frank Grundahl, Daniel Huber

Comments: 24 pages, 7 figures (including appendices); submitted to ApJL; paper text, figures, data, and code at this [https URL](#)

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

[観測]

Aldebaran は赤色巨星で、長い RV の観測結果からガス惑星を持つことで知られるが、その RV 変動には恒星の音響振動も含まれてて、その解析の結果、主星の質量は  $1.16 \pm 0.07 M_{\odot}$  と求められた。

[10] [arXiv:1802.09563](#)

Title: "OGLE-2016-BLG-1266: A Probable Brown-Dwarf/Planet Binary at the Deuterium Fusion Limit"

Author: M. D. Albrow, J. C. Yee, A. Udalski, S. Calchi Novati, S. Carey, C. B. Henderson, C. Beichman, G. Bryden, B. S. Gaudi, Y. Shvartzvald, M.K.Szymaniński, P.Mroź, J.Skowron, R.Poleski, I.Soszynski, S.Kozłowski, . Pietrukowicz, K. Ulaczyk, M. Pawlak, S.-J. Chung, A. Gould, C. Han, K.-H. Hwang, Y. K. Jung, Y.-H. Ryu, I.-G. Shin, W. Zhu, S.-M. Cha, D.-J. Kim, H.-W. Kim, S.-L. Kim, C.-U. Lee, D.-J. Lee, Y. Lee, B.-G. Park, R. W. Pogge

Comments: 23 pages, 7 figures, submitted to AAS Journals

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

[観測]

褐色矮星-褐色矮星連星をマイクロレンズで見つけた。地上とスピッツァーを組み合わせて質量も決められて、12MJ + 16MJ の系であることがわかった。

[11] [arXiv:1802.09536](#)

Title: "Astrophysics with New Horizons: Making the Most of a Generational Opportunity"

Author: Michael Zemcov, Iair Arcavi, Richard Arendt, Etienne Bachelet, Ranga Ram Chary, Asantha Cooray, Diana Dragomir, Richard C. Henry, Carey Lisse, Shuji Matsuura, Jayant Murthy, Chi Nguyen, Andrew R. Poppe, Rachel Street, Michael Werner

Comments: 25 pages, 10 figures, submitted to PASP

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

[観測提案]

New Horizon は太陽系の外側にいるので、地球近傍の環境ではできないような様々な science ができる。New Horizon の extended mission としてどういったことができるかという観測提案。

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## 3 月 1 日 (木曜日)

[1] [arXiv:1802.10445](#)

Title: "Changes in the metallicity of gas giant planets due to pebble accretion"

Author: Jack Humphries, Sergei Nayakshin

Comments: Accepted to MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arXiv:1802.10422](#)

Title: "Effect of Mars Atmospheric Loss on Snow Melt Potential in a 3.5-Gyr Mars Climate Evolution Model"

Author: Megan Mansfield, Edwin S. Kite, Michael A. Mischna

Comments: 12 pages, 8 figures, accepted to JGR Planets

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arXiv:1802.10421](#)

Title: "Late metal-silicate separation on the IAB parent asteroid: Constraints from combined W and Pt isotopes and thermal modelling"

Author: Alison C. Hunt, David L. Cook, Tim Lichtenberg, Philip M. Reger, Matthias Ek, Gregor J. Golabek, Maria Schönbächler

Comments: 11 pages, 8 figures, 2 tables; open access article under the CC BY-NC-ND license (see this [http URL](#))

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:1802.10380](#)

Title: "Note on the dynamical evolution of C/2017 K2 PANSTARRS"

Author: Małgorzata Królikowska, Piotr A. Dybczyński

Comments: 5 pages, 5 figures, 3 tables. Submitted to A&A  
Subjects: Earth and Planetary Astrophysics (astro-ph.EP)  
[理論/観測/実験 etc....]  
Comment!!!!

[5] [arxiv:1802.10287](#)

Title: "Particle Number Dependence of The  $N$ -Body Simulations of Moon Formation"

Author: Takanori Sasaki, Natsuki Hosono

Comments: 25 pages, 14 figures, 2 tables, accepted for publication in ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxiv:1802.10246](#)

Title: "KMT-2016-BLG-0212: First KMTNet-Only Discovery of a Substellar Companion"

Author: K.-H. Hwang, H.-W. Kim, D.-J. Kim, A. Gould, M. D. Albrow, S.-J. Chung, C. Han, Y. K. Jung, Y.-H. Ryu, I.-G. Shin, Y. Shvartzvald, J. C. Yee, W. Zang, W. Zhu, S.-M. Cha, S.-L. Kim, C.-U. Lee, D.-J. Lee, Y. Lee, B.-G. Park, R. W. Pogge

Comments: 9 pages, 8 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arxiv:1802.10158](#)

Title: "KELT: The Kilodegree Extremely Little Telescope, a Survey for Exoplanets Transiting Bright, Hot Stars"

Author: Joshua Pepper, Keivan Stassun, B. Scott Gaudi

Comments: 9 pages, 5 figures. Invited review chapter, to appear in "Handbook of Exoplanets", edited by H.J. Deeg and J.A. Belmonte

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arXiv:1802.10132](#)

Title: "Occurrence Rates from Direct Imaging Surveys"

Author: Brendan P. Bowler, Eric L. Nielsen

Comments: Invited review chapter

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arXiv:1802.10126](#)

Title: "Orbit and Dynamical Mass of the Late-T Dwarf Gl 758 B"

Author: Brendan P. Bowler, Trent J. Dupuy, Michael Endl, William D. Cochran, Phillip J. MacQueen, Benjamin J. Fulton, Erik A. Petigura, Andrew W. Howard, Lea Hirsch, Kaitlin M. Kratter, Justin R. Crepp, Beth A. Biller, Marshall C. Johnson, Robert A. Wittenmyer

Comments: AJ, accepted

Subjects: 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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## 3月2日(金曜日)

[1] [arXiv:1803.00538](#)

Title: "Inclined asymmetric librations in exterior resonances"

Author: G. Voyatzis, K. Tsiganis, K. I. Antoniadou

Comments: Accepted for publication in CeMDA

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arXiv:1803.00511](#)

Title: "Habitable Snowballs: Generalizing the Habitable Zone"

Author: Adiv Paradise, Kristen Menou, Diana Valencia, Christopher Lee

Comments: 7 pages, 4 figures. Typo fixed

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arXiv:1803.00238](#)

Title: "Shape model of the asteroid (2501) Lohja from long-term photometric observations"

Author: M. Husárik

Comments: 10 pages

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:1803.00226](#)

Title: "Simulating the cloudy atmospheres of HD 209458 b and HD 189733 b with the 3D Met Office Unified Model"

Author: S. Lines, N. J. Mayne, Ian A. Boutle, James Manners, Graham K.H. Lee, Ch. Helling, Benjamin Drummond, David S. Amundsen, Jayesh Goyal, David M. Acreman, Pascal Tremblin, Max Kerslake

Comments: 28 pages, 23 figures and accepted for publication in A&A

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:1803.00215](#)

Title: "The continued importance of habitability studies"

Author: Ramses M. Ramirez, Dorian S. Abbot, Vladimir Airapetian, Yuka Fujii, Keiko Hamano, Amit Levi, Tyler D. Robinson, Laura Schaefer, Eric T. Wolf, Robin D. Wordsworth

Comments: This is a white paper submitted to the National Academies 2018 "Exoplanet Science Strategy" call (6 pages total, including cover page). this http URL

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:1803.00072](#)

Title: "Analysis of the Herschel DEBRIS Sun-like star sample"

Author: B. Sibthorpe, G. M. Kennedy, M. C. Wyatt, J.-F. B. C. Matthews, G. Duchene

Comments: 16 pages, 8 figures, Accepted for publication

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:1803.00054](#)

Title: "Resolved Millimeter Observations of the HR 8799 Debris Disk"

Author: David J. Wilner, Meredith A. MacGregor, Sean M. Andrews, A. Meredith Hughes, Brenda Matthews, Kate Su

Comments: 18 pages, 7 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!!!!

[8] [arxiv:1803.00461](#)

Title: "Modeling the evolution and propagation of the 2017 September 9th and 10th CMEs and SEPs arriving at Mars constrained by remote-sensing and in-situ measurement"

Author: Jingnan Guo, Mateja Dumbović, Robert F. Wimmer-Schweingruber, Manuela Temmer, Henning Lohf, Yuming Wang, Astrid Veronig, Donald M. Hassler, Leila M. Mays, Cary Zeitlin, Bent Ehresmann, Oliver Witasse, Johan L. Freiherr von Forstner, Bernd Heber, Mats Holmström

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arxiv:1803.00153](#)

Title: "Drift and its mediation in terrestrial orbits"

Author: Jerome Daquin, Ioannis Gkolias, Aaron J. Rosengren

Comments: 20 pages, 10 figures, 1 table, 45 references. Comments and feedbacks greatly appreciated

Subjects: Chaotic Dynamics (nlin.CD); Earth and Planetary Astrophysics (astro-ph.EP)

[理論/観測/実験 etc....]

Comment!!!!

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Nature

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Science

ない

