

2017年 1月 第3週 新着論文サーベイ

1月16日(月曜日)

[1] [arXiv:1701.03776](#)

Title: "The discoveries of WASP-91b, WASP-105b and WASP-107b: two warm Jupiters and a planet in the transition region between ice giants and gas giants"

Author: D. R. Anderson, A. Collier Cameron, L. Delrez, A. P. Doyle, M. Gillon, C. Hellier, E. Jehin, M. Lendl, P. F. L. Maxted, N. Madhusudhan, F. Pepe, D. Pollacco, D. Queloz, D. Ségransan, B. Smalley, A. M. S. Smith, A. H. M. J. Triaud, O. D. Turner, S. Udry, R. G. West

Comments: 8 pages, 6 figures, submitted to A&A

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

[惑星観測/トランジット&RV]

warm Jupiter WASP-91b(1.34 木星質量、1.03 木星半径、軌道周期 2.8 日、主星: 金属 rich な K3 型星)、warm Jupiter WASP-105b(1.8 木星質量、0.96 木星半径、軌道周期 7.9 日、主星: 金属 rich な K2 型星)、warm super-Neptune/sub-Saturn WASP-107b(0.12 木星質量、0.94 木星半径、軌道周期 5.7 日、主星: 金属 rich な K6 型星) のトランジット法 & RV 法による観測報告。軌道要素など議論。

[2] [arXiv:1701.03761](#)

Title: "Compositional study of asteroids in the Erigone collisional family using visible spectroscopy at the 10.4 m GTC"

Author: David Morate, Julia de León, Mário De Prá, Javier Licandro, Antonio Cabrera-Lavers, Humberto Campins, Noemí Pinilla-Alonso, Víctor Alí-Lagoa

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

[小惑星観測/Erigone 衝突族]

10.4m Gran Telescopio (スペイン・カナリー諸島) の可視光分光観測で Erigone 衝突族の小惑星の組成を調査。101 天体の可視光スペクトルを取得。

87% は母天体 (163) Erigone と同様の始原的なスペクトルを持つ。また、50% は水質変成の証拠あり。

[3] [arXiv:1701.03539](#)

Title: "Follow-up and characterization of the TESS exoplanets with SOPHIE, SPIRou, and JWST"

Author: N. Crouzet, X. Bonfils, X. Delfosse, I. Boisse, G. Hébrard, T. Forveille,

J.-F. Donati, F. Bouchy, C. Moutou, R. Doyon, E. Artigau, L. Albert, L. Malo, A. Lecavelier des Etangs, A. Santerne

Comments: 5 pages, 3 figures, Proceedings of the Société Française d'Astronomie et d'Astrophysique (SF2A) 2016

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

[観測/TESS follow up]

TESS(2018年3月打ち上げ予定)で多数のトランジット系外惑星が発見される見通し。それに向けて、Observatoire de Haute-Provence(at フランス)の SOPHIE や CFHT の SPIRou などでの分光 follow up、および JWST でのフォローアップ観測に必要な時間、観測体制などを議論。前者2つの場合、SPIRouの方がより小さい惑星向き。

[4] [arxive:1701.03510](#)

Title: "The Origins of Asteroidal Rock Disaggregation: Interplay of Thermal Fatigue and Microstructure"

Author: Kavan Hazeli, Charles El Mir, Stefanos Papanikolaou, Marco Delbo, KT Ramesh

Comments: 23 pages, 7 figures

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Materials Science (cond-mat.mtrl-sci); Computational Physics (physics.comp-ph); Geophysics (physics.geo-ph)

[理論/小惑星レゴリスの生成過程]

イトカワのレゴリスの生成過程を例に、小惑星岩石の分裂過程を考える。内部でのコンドライトの熱疲労にともないひび割れ (crack) が広がっていく過程を議論。また、表面温度や微細構造の関数としてひび割れの進化過程を議論。

[5] [arxive:1701.03484](#)

Title: "Atmospheric waves and dynamics beneath Jupiter's clouds from radiowavelength observations"

Author: Richard Cosentino, Bryan Butler, Bob Sault, Raul Morales-Juberias, Amy Simon, Imke de Pater

Comments: 10 Figures, 3 Tables

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

[観測/木星の大気波]

VLA の 2cm の波長帯で木星を観測。アンモニア組成の変動に感度があり、高さは 0.5-2.0bar 程度 (可視雲中またはその下部)。

北緯 10 度付近の belt 構造に電波で見た hotspot feature が存在。波の伝播など議論。

[6] [arxive:1701.03475](#)

Title: "Habitability properties of circumbinary planets"

Author: Ivan I. Shevchenko

Comments: 22 pages

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

[理論/連星周りハビタビリティ]

連星周りの惑星のハビタビリティについて議論。軌道運動に伴う安定性や潮汐の影響も議論。

1月17日(火曜日)

[1] [arXiv:1701.04401](#)

Title: "Hints for hidden planetary companions to hot Jupiters in stellar binaries"

Author: Adrian S. Hamers

Comments: Accepted for publication in ApJL. 6 pages, 4 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arXiv:1701.04381](#)

Title: "Candidate Water Vapor Lines to Locate the H₂O Snowline through High-Dispersion Spectroscopic Observations II. The Case of a Herbig Ae Star"

Author: Shota Notsu, Hideko Nomura, Daiki Ishimoto, Catherine Walsh, Mitsuhiro Honda, Tomoya Hirota, T. J. Millar

Comments: 39 pages, 14 figures, and 2 tables are contained in this paper. It was received by The Astrophysical Journal (ApJ) on October 27th, 2016, and was accepted on January 13th, 2017

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arXiv:1701.04312](#)

Title: "Planetary rings and other astrophysical disks"

Author: Henrik N. Latter, Gordon I. Ogilvie, Hanno Rein

Comments: To appear in: Tiscareno & Murray Eds (2017), Planetary Ring Systems, Cambridge University Press

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:1701.04311](#)

Title: "A Librational Model for the Propeller Blériot in the Saturnian Ring System"

Author: M. Seiler, M. Seiß, H. Hoffmann, F. Spahn

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxiv:1701.04129](#)

Title: "Transit probability of precessing circumstellar planets in binaries and exomoons"

Author: David V. Martin

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

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxiv:1701.04063](#)

Title: "On the eccentricity of Proxima b"

Author: Robert A. Brown

Comments: In press, ApJ Pt.1

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arxiv:1701.03865](#)

Title: "Planetary scattering around low-mass stars: formation and evolution of icy body reservoirs"

Author: M. Zanardi, G. C. de Elía, R. P. Di Sisto, S. Naoz, G. Li, O. M. Guilera, A. Brunini

Comments: 13 pages, 14 figures, submitted to Astronomy & Astrophysics

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arxiv:1701.03811](#)

Title: "Two Small Transiting Planets and a Third Body Orbiting HD 106315"

Author: Ian J. M. Crossfield, David R. Ciardi, Howard Isaacson, Andrew W. Howard, Erik A. Petigura, Lauren M. Weiss, Benjamin J. Fulton, Evan Sinukoff, Joshua E. Schlieder, Dimitri Mawet, Garreth Ruane, Imke de Pater, Katherine de Kleer, Ashley G. Davies, Jessie L. Christiansen, Courtney D. Dressing, Lea Hirsch, Björn Benneke, Justin R. Crepp, Molly

Kosiarek, John Livingston, Erica Gonzales, Charles A. Beichman, Heather A. Knutson

Comments: 8 pages, 3 figures, ApJ submitted

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:1701.03807](#)

Title: "A Multi-Planet System Transiting the $V = 9$ Rapidly Rotating F-Star HD 106315"

Author: Joseph E. Rodriguez, George Zhou, Andrew Vanderburg, Jason D. Eastman, Laura Kreidberg, Phillip A. Cargile, Allyson Bieryla, David W. Latham, Jonathan Irwin, Michael L. Calkins, Gilbert A. Esquerdo, Jessica Mink

Comments: 9 pages, 5 figures, 3 tables, Submitted to the AAS Journals

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:1701.03795](#)

Title: "The Eccentric Kozai-Lidov mechanism for Outer Test Particle"

Author: Smadar Naoz, Gongjie Li, Macarena Zanardi, Gonzalo Carlos de Elía, Romina P. Di Sisto

Comments: submitted, 11 pages 12 figures

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:1701.04204](#)

Title: "Surface charging of thick porous water ice layers relevant for ion sputtering experiments"

Author: A. Galli, A. Vorburger, A. Pommerol, P. Wurz, B. Jost, O. Poch, Y. Brouet, M. Tulej, N. Thomas

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arxive:1701.03800](#)

Title: "Generation of toroidal magnetic fields in accretion disks"

Author: Mohammadtaher Safarzadeh, Smadar Naoz, Alexander Sadowski,
Lorenzo Sironi, Ramesh Narayan

Comments: 6 pages, 4 figures, submitted to MNRAS letters

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

[理論/観測/実験 etc....]

Comment!!!!

1月18日(水曜日)

[1] [arxive:1701.04706](#)

Title: "On the Detection of Extrasolar Moons and Rings"

Author: René Heller

Comments: invited review, 16 pages, 4 figures (3 col, 1 b/w)

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

[理論/観測/実験 etc....]

系外惑星周りの月やリングを観測的手法の原理をいくつか議論している。理論的、技術的に検知可能な段階まで到達しつつある。

[2] [arxive:1701.04641](#)

Title: "Hydrodynamic simulations of moonlet induced propellers in Saturn's rings:
Application to Bleriot"

Author: Martin Seiß, Nicole Albers, Miodrag Sremcevic, Jürgen Schmidt, Heikki Salo, Michael Seiler, Holger Hoffmann, Frank Spahn

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

[理論/観測/実験 etc....]

土星リング上に位置する小さい衛星 (moonlets) は S 字型の密度構造 (プロペラ) を形作る。N 体計算によりプロペラの形成を確認し、さらに S 字 gap が生まれることがわかってきた。今回土星の A リングに対し重力散乱・拡散を取り入れた流体計算を行った。N 体の結果とよく一致した。

[3] [arxive:1701.04627](#)

Title: "Global Evolution of an Accretion Disk with Net Vertical Field: Coronal
Accretion, Flux Transport, and Disk Winds"

Author: Zhaohuan Zhu, James M. Stone

Comments: 27 pages, 28 figures, Submitted to the AAS Journals

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

[理論/観測/実験 etc....]

垂直に磁場が貫く薄い降着円盤について、新たな理想 MHD シミュレーションを行った。

[4] [arXiv:1701.04621](#)

Title: "V-type candidates and Vesta family asteroids in the Moving Objects VISTA (MOVIS) Catalogue"

Author: J. Licandro, M. Popescu, J. de Leon, D. Morate

Comments: In press in Astronomy & Astrophysics. 9 pages, 9 figures

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

[理論/観測/実験 etc....]

VHS-VISTA survey で観測された 40000 ほどの小惑星の近赤外線データを用いて、新しい V-type の小惑星を確認し、整理した。Vesta 族より外側領域での V-type の候補が二倍になった。

[5] [arXiv:1701.04751](#)

Title: "The circumstellar disk response to the motion of the host star"

Author: Zs. Regaly, E. Vorobyov

Comments: 17 pages, 20 figures, accepted for publication in Astronomy & Astrophysics

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

[理論/観測/実験 etc....]

protostellar disks および protoplanetary disks の進化に対して、中心性の動きがどう影響を与えるか 2D 流体計算を行った。 protostellar disks では、質量降着率に適度に影響を与え円盤のサイズと質量がいくらか小さくなった。ただしエンベロープ崩壊に重大な影響を及ぼし、内側領域は非軸対称になった。 protoplanetary disk では、大質量惑星による gap 幅が小さくなり、惑星 migration rate が減少、粘性転移点での渦が強くなった。

[6] [arXiv:1701.04575](#)

Title: "Validity of Sound-Proof Approaches in Rapidly-Rotating Compressible Convection: Marginal Stability vs. Turbulence"

Author: Jan Verhoeven, Gary A. Glatzmaier

Comments: 22 pages, 7 figures

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

[理論/観測/実験 etc....]

速く回る渦に対して非弾性近似という手法が使えるよという話。

1 月 19 日 (木曜日)

[1] [arXiv:1701.05178](#)

Title: "Saturn's Ionosphere"

Author: Luke Moore, Marina Galand, Arvydas J. Kliore, Andrew F. Nagy, James

O'Donoghue

Comments: 34 pages, 17 figures, Chapter 8 of a forthcoming multi-volume work entitled "Saturn in the 21st Century"

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxiv:1701.05060](#)

Title: "Mercury's magnetic field in the MESSENGER era"

Author: Johannes Wicht, Daniel Heyner

Comments: 40 pages, 14 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxiv:1701.04892](#)

Title: "The Effect of Protoplanetary Disk Cooling Times on the Formation of Gas Giant Planets by Gravitational Instability"

Author: Alan P. Boss

Comments: 40 pages, 10 figures, 1 table, accepted by ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxiv:1701.04821](#)

Title: "The Radial Velocity of OGLE-2015-BLG-0966S"

Author: Samson A. Johnson, Jennifer C. Yee

Comments: 6 pages, 3 Tables, 2 Figures, submitted to PASP

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!!!!

[5] [arxiv:1701.04819](#)

Title: "Suprathermal electron strahl widths in the presence of narrow-band whistler waves in the solar wind"

Author: P. Kajdic, O. Alexandrova, M. Maksimovic, C. Lacombe, A. N. Fazakerley

Comments: Published in ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxiv:1701.04817](#)

Title: "AstroImageJ: Image Processing and Photometric Extraction for Ultra-Precise Astronomical Light Curves (Expanded Edition)"

Author: Karen A. Collins, John F. Kielkopf, Keivan G. Stassun, Frederic V. Hessman

Comments: AstroImageJ User Guide (Expanded Version of AJ Paper arXiv:1601.02622)

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

[理論/観測/実験 etc....]

Comment!!!!

1 月 20 日 (金曜日)

[1] [arxiv:1701.05541](#)

Title: "Asteroid 2014 YX49: a large transient Trojan of Uranus"

Author: C. de la Fuente Marcos, R. de la Fuente Marcos

Comments: 8 pages, 7 figures, 1 table. Accepted for publication in Monthly Notices of the Royal Astronomical Society Main Journal

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxiv:1701.05211](#)

Title: "Is there a circumbinary planet around NSVS 14256825?"

Author: Ilham Nasiroglu, Krzysztof Gozdziewski, Aga Slowikowska, Krzysztof Krzeszowski, Michal Zejmo, Staszek Zola, Huseyin Er, Waldemar Ogloza, Marek Drozd, Dorota Koziel-Wierzbowska, Bartlomiej Debski, Nazil Karaman

Comments: 17 pages, 9 figures, 4 tables, 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!!!!

[3] [arxiv:1701.05205](#)

Title: "Characterizing Exoplanets for Habitability"

Author: Tyler D. Robinson

Comments: invited review; comments and feedback welcome

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxiv:1701.05191](#)

Title: "Toward a Galactic Distribution of Planets. I. Methodology & Planet Sensitivities of the 2015 High-Cadence Spitzer Microlens Sample"

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

Comments: 31 pages, 19 figures, 2 tables; submitted to AAS Journals

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxiv:1701.05316](#)

Title: "A Formulation of Consistent Particle Hydrodynamics in Strong Form"

Author: Satoko Yamamoto, Junichiro Makino

Comments: 42 pages, 34 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxiv:1701.05189](#)

Title: "The Sizes and Depletions of the Dust and Gas Cavities in the Transitional Disk J160421.7-213028"

Author: Ruobing Dong, Nienke van der Marel, Jun Hashimoto, Eugene Chiang, Eiji Akiyama, Haoyu Baobab Liu, Takayuki Muto, Gillian R. Knapp, Takashi Tsukagoshi, Joanna Brown, Simon Bruderer, Shin Koyamatsu, Tomoyuki Kudo, Nagayoshi Ohashi, Evan Rich, Mayama Satoshi, Michi-

hiro Takami, John Wisniewski, Yi Yang, Zhaohuan Zhu, Motohide
Tamura

Comments: 34 pages (single column), 13 figures, ApJ in press

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

[理論/観測/実験 etc....]

Comment!!!!

Nature

ない

Science

ない