

2015年 7月 第5週 新着論文サーベイ

7月27日(月曜日)

[1] [arXiv:1507.06723](#)

Title: "Discovery and Validation of Kepler-452b: A 1.6-Re Super Earth Exoplanet in the Habitable Zone of a G2 Star"

Author: Jon M. Jenkins, Joseph D. Twicken, Natalie M. Batalha, Douglas A. Caldwell, William D. Cochran, Michael Endl, David W. Latham, Gilbert A. Esquerdo, Shawn Seader, Allyson Bieryla, Erik Petigura, David R. Ciardi, Geoffrey W. Marcy, Howard Isaacson, Daniel Huber, Jason F. Rowe, Guillermo Torres, Stephen T. Bryson, Lars Buchhave, Ivan Ramirez, Angie Wolfgang, Jie Li, Jennifer R. Campbell, Peter Tenenbaum, Dwight Sanderfer, Christopher E. Henze, Joseph H. Catanzarite, Ronald L. Gilliland, William J. Borucki

Comments: 19 pages, 16 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arXiv:1507.06719](#)

Title: "On planet formation in HL Tau"

Author: Giovanni Dipierro, Daniel Price, Guillaume Laibe, Kieran Hirsh, Alice Cerioli, Giuseppe Lodato

Comments: 5 pages, 4 figures. Accepted for publication in MNRAS Letters. The movie of the simulation is available at this [https URL](#) and this [https URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arXiv:1507.06650](#)

Title: "An empirical sequence of disk gap opening revealed by rovibrational CO"

Author: A. Banzatti, K.M. Pontoppidan

Comments: 16 pages, 10 figures, 4 tables, accepted for publication in the Astrophysical Journal

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:1507.06697](#)

Title: "A Pre-Gaia Census of Nearby Stellar Groups"

Author: Eric E. Mamajek

Comments: 6 pages, Proceedings IAU Symposium No. 314, Young Stars & Planets Near the Sun, 2015, J. H. Kastner, B. Stelzer, & S. A. Metchev, eds

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

[理論/観測/実験 etc....]

Comment!!!!

7月28日(火曜日)

[1] [arXiv:1507.07449](#)

Title: "Asteroid 2015 DB216: a recurring co-orbital companion to Uranus"

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

Comments: 9 pages, 12 figures, 1 table. Accepted for publication in Monthly Notices of the Royal Astronomical Society

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

[シミュ]

2015DB₂₁₆ について N 体計算で短時間での安定性を調べることで、天王星と temporary な軌道共鳴にある事がわかった (4 つ目の天体)。不安定ではあるが、繰り返し共鳴に入っており、少なくとも 1 万年の間非対称な馬蹄軌道をとっていたことが示唆されていた。

[2] [arXiv:1507.07383](#)

Title: "Equilibrium rotation of semiliquid exoplanets and satellites"

Author: Valeri V. Makarov

Comments: Accepted in ApJ

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

[シミュ]

準液体 (semiliquid, 剛性や粘度が地球型より小さい) な惑星の自転共鳴に関する研究。潮汐の波数 (潮汐周期を Maxwell 時間で割ったもの) と軌道離心率の値により、自転共鳴か疑似共鳴に入るが分かれる。

[3] [arXiv:1507.06998](#)

Title: "Modelling circumbinary protoplanetary disks: I. Fluid simulations of the Kepler-16 and 34 systems"

Author: S. Lines, Z. M. Leinhardt, C. Baruteau, S.-J. Paardekooper, P. J. Carter

Comments:

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

[理論/]

周連星惑星の形成についての流体シミュレーション。円盤の粘度、アスペクト比、内側の境界条件、表面密度勾配、自己重力を変えて円盤の離心率や平均密度がどうなるかを調べた。結果 α -viscosity や内側の境界条件の影響が小さい一方で、アスペクト比をかえると波の伝搬効果で離心率が大きく変わったり、円盤の自己重力が円盤の進化にあまり影響を与えないという事がわかった。

[4] [arxiv:1507.07009](#)

Title: "Dense Dark Matter Hairs Spreading Out from Earth, Jupiter and Other Compact Bodies"

Author: Gary Prezeau

Comments: 13 pages, 21 figures, 1 table

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

[理論/観測/実験 etc....]

実際の惑星の密度をいれて、解析モデル・数値シミュレーションでコンパクト天体を横切るダークマター流について調べた。(全然わかりませんでした)

[5] [arxiv:1507.06982](#)

Title: "Limits on Planet Formation Around Young Pulsars and Implications for Supernova Fallback Disks"

Author: Matthew Kerr, Simon Johnston, George Hobbs, Ryan M. Shannon

Comments: 5 pages, 4 figures, accepted to ApJL

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

[理論/観測/実験 etc....]

151 個の若いパルサーに関して、パルスの周期変動から惑星の有無を調べたが、惑星は見つからなかった。

7 月 29 日 (水曜日)

[1] [arxiv:1507.07906](#)

Title: "Sputtering of Oxygen Ice by Low Energy Ions"

Author: E. A. Muntean, P. Lacerda, T. A. Field, A. Fitzsimmons, C. A. Hunniford, R. W. McCullough

Comments: to be published in Surface Science (2015)

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

[実験]

星間ダストや天体の表層の氷は常に太陽風や宇宙線の ion の照射によって影響を受けている。その結果、新しい分子種が宇宙空間や惑星大気内にスパッタリングされて形成される可能性がある。今回は 1 価や 2 価の ion を 4 keV の運動

エネルギーで 10K の酸素氷に照射した時のスパッタリングさせて実験した。結果はスパッタリングされる量はすべての ion の種類において照射粒子の質量に比例することが分かった。また、同じイオンの種類であれば 1 価、2 価は関係ない。さらに、酸素イオンの場合をのぞいてはスパッタリングされる量は理論計算と一致した。

[2] [arxive:1507.07887](#)

Title: "The Euphrosyne family's contribution to the low albedo near-Earth asteroids"

Author: Joseph R. Masiero, V. Carruba, A. Mainzer, J. M. Bauer, C. Nugent

Comments: Accepted for publication in ApJ

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

[理論]

Main Belt にある Euphrosyne 族の小惑星は軌道進化をして NEA の軌道となったかもしれないことが分かった。また、NEA の中から彼らの計算で Euphrosyne 族かもしれない軌道要素を持つ天体を取り出すと、他の NEA よりもアルベドが低く、Euphrosyne よりも暗く、木星族彗星と同じぐらい暗かった。

[3] [arxive:1507.07746](#)

Title: "Collision and Annihilation of Relative Equilibrium Points Around Asteroids with a Changing Parameter"

Author: Yu Jiang, Hexi Baoyin, Hengnian Li

Comments: 25pages, 3 figures, accepted by MNRAS

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

[理論]

小惑星の相対的平衡点の分岐についての研究。

[4] [arxive:1507.07578](#)

Title: "High Precision Photometry for K2 Campaign 1"

Author: Chelsea X. Huang, K. Penev, J. D. Hartman, G.Á. Bakos, W. Bhatti, I. Domsa, M. de Val-Borro

Comments: submitted to MNRAS

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

[観測]

K2 datase から高精度の測光データを抜き出す新たなデータ整理 pipeline を作った。これによるトレンド除去された light curves は他のグループの同じ観測結果と比べて系統誤差がほとんどなかった。

[5] [arxive:1507.07913](#)

Title: "Know the Star, Know the Planet. V. Characterization of the Stellar Companion to the Exoplanet Host HD 177830"

Author: Lewis C. Roberts Jr., Rebecca Oppenheimer, Justin R. Crepp, Christoph

Baranec, Charles Beichman, Douglas Brenner, Rick Burruss, Eric Cady, Statia Luszcz-Cook, Richard Dekany, Lynne Hillenbrand, Sasha Hinkley, David King, Thomas G. Lockhart, Ricky Nilsson, Ian R. Parry, Laurent Pueyo, Anand Sivaramakrishnan, Remi Soummer, Emily L. Rice, Aaron Veicht, Gautam Vasisht, Chengxing Zhai, Neil T. Zimmerman

Comments: 6 pages, 5 figures

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

[観測]

HD 177830 には 2 つの惑星がある。また、測光撮像により late-type の伴星が見つかった。この系を PHARO near-IR camera と Project 1640 coronagraph で観測した結果、伴星のスペクトルタイプは $M4 \pm 1V$ であることがわかった。また、連星間の距離をしらべると、周期はおよそ 800 yr で軌道超半径は 100 - 200 AU であることが分かった。これは惑星の力学にあまり影響はしないらしい。

7 月 30 日 (木曜日)

[1] [arxiv:1507.08256](#)

Title: ”**Two Transiting Earth-size Planets Near Resonance Orbiting a Nearby Cool Star**”

Author: Erik A. Petigura, Joshua E. Schlieder, Ian J. M. Crossfield, Andrew W. Howard, Katherine M. Deck, David R. Ciardi, Evan Sinukoff, Katelyn N. Allers, William M. J. Best, Michael C. Liu, Charles A. Beichman, Howard Isaacson, Brad M. S. Hansen, Sébastien Lépine

Comments: 9 pages, 7 figures, submitted to ApJ

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxiv:1507.08215](#)

Title: ”**Building massive compact planetesimal disks from the accretion of pebbles**”

Author: John Moriarty, Debra Fischer

Comments: 10 pages, 11 figures, accepted for publication in The Astrophysical Journal

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxive:1507.08081](#)

Title: "Constraining planet structure from stellar chemistry: the cases of CoRoT-7, Kepler-10, and Kepler-93"

Author: N. C. Santos, V. Adibekyan, C. Mordasini, W. Benz, E. Delgado-Mena, C. Dorn, L. Buchhave, P. Figueira, A. Mortier, F. Pepe, A. Santerne, S. G. Sousa, S. Udry

Comments: A&A Letters, in press

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxive:1507.08070](#)

Title: "Using the chromatic Rossiter-McLaughlin effect to probe the broadband signature in the optical transmission spectrum of HD 189733b"

Author: E. Di Gloria, I. A. G. Snellen, S. Albrecht

Comments: 8 pages, 7 figures, accepted for publication on Astronomy and Astrophysics

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxive:1507.07967](#)

Title: "A hot Jupiter for breakfast? — Early stellar ingestion of planets may be common"

Author: Titos Matsakos, Arie H. Königl

Comments: Accepted for publication in ApJL

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arxive:1507.07945](#)

Title: "Detecting and Constraining N₂ Abundances in Planetary Atmospheres Using Collisional Pairs"

Author: Edward W. Schwieterman, Tyler D. Robinson, Victoria S. Meadows, Amit Misra, Shawn Domagal-Goldman

Comments: Accepted for publication in The Astrophysical Journal. 46 pages, 12 figures, 3 tables

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arxiv:1507.07933](#)

Title: "Curveballs in protoplanetary disks - the effect of the Magnus force on planet formation"

Author: John C. Forbes

Comments: MNRAS Accepted

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

[理論/観測/実験 etc....]

Comment!!!!

[8] [arxiv:1507.08125](#)

Title: "HD 80606: Searching the chemical signature of planet formation"

Author: C. Saffe, M. Flores, A. Buccino

Comments: 19 pages, 9 figures, A&A accepted

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arxiv:1507.07925](#)

Title: "The Effects of Self-Shadowing by a Puffed up Inner Rim in Scattered Light Images of Protoplanetary Disks"

Author: Ruobing Dong

Comments: 22 pages (single column), 1 table, 6 figures, ApJ in press

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

[理論/観測/実験 etc....]

Comment!!!!

7月31日(金曜日)

[1] [arxiv:1507.08551](#)

Title: "Evolution of an Early Titan Atmosphere: Comment"

Author: Robert E Johnson, Orenthal J. Tucker, Alexey N. Volkov

Comments: 6 pages

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

[理論/観測/実験 etc....]

Comment!!!!

[2] [arxive:1507.08544](#)

Title: "The molecular composition of the planet-forming regions of protoplanetary disks across the luminosity regime"

Author: Catherine Walsh, Hideko Nomura, Ewine F. van Dishoeck

Comments: 28 pages (including the Appendix); 23 figures (including 6 in the Appendix); accepted for publication in Astronomy & Astrophysics

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

[理論/観測/実験 etc....]

Comment!!!!

[3] [arxive:1507.08532](#)

Title: "The HARPS-N Rocky Planet Search I. HD219134b: A transiting rocky planet in a multi-planet system at 6.5 pc from the Sun"

Author: F. Motalebi, S. Udry, M. Gillon, C. Lovis, D. Segransan, L. A. Buchhave, B. O. Demory, L. Malavolta, C. D. Dressing, D. Sasselov, K. Rice, D. Charbonneau, A. Collier Cameron, D. Latham, E. Molinari, F. Pepe, L. Affer, A. S. Bonomo, R. Cosentino, X. Dumusque, P. Figueira, A. F. M. Fiorenzano, S. Gettel, A. Harutyunyan, R. D. Haywood, J. Johnson, E. Lopez, M. Lopez-Morales, M. Mayor, G. Micela, A. Mortier, V. Nascimbeni, D. Philips, G. Piotto, D. Pollacco, D. Queloz, A. Sozzetti, A. Vanderburg, C. A. Watson

Comments: Accepted for publication in A&A

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arxive:1507.08530](#)

Title: "Observational Signatures of Self-Destructive Civilisations"

Author: Adam Stevens, Duncan Forgan, Jack O'Malley-James

Comments: 35 pages, 2 figures, accepted for publication in the International Journal of Astrobiology

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arxive:1507.08459](#)

Title: "PF131010 Ciechanow fireball - the body possible related to Near Earth Asteroids 2010 TB54 and 2010 SX11"

Author: A. Olech, P. Zoladek, M. Wisniewski, R. Rudawska, J. Laskowski, K. Polakowski, M. Maciejewski, T. Krzyzanowski, T. Fajfer, Z. Tyminski

Comments: 7 pages, 8 figures, accepted for publication in MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:1507.08291](#)

Title: "Discovery of a Low-Mass Companion to the F7V star HD 984"

Author: T. Meshkat, M. Bonnefoy, E. E. Mamajek, S. P. Quanz, G. Chauvin, M. A. Kenworthy, J. Rameau, M. R. Meyer, A.-M. Lagrange, J. Lannier, P. Delorme

Comments: Accepted for publication in MNRAS, 10 pages, 5 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:1507.08285](#)

Title: "batman: BAsic Transit Model cAlculatioN in Python"

Author: Laura Kreidberg

Comments: 13 pages, 3 figures, submitted to PASP; v2 fixes typo in abstract

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

[理論/観測/実験 etc....]

Comment!!!!

Nature

[1] [0000](#)

Title: "タイトル"

Author: 著者

[理論, 観測, 実験 etc.]

コメント

Science

[1] [0000](#)

Title: "タイトル"

Author: 著者
[理論, 観測, 実験 etc.]
コメント