

# 2018年 5月 第3週 新着論文サーベイ

5月14日(月曜日)

[1] [arxiv:1805.04478](#)

Title: "Taxonomy and Light-Curve Data of 1000 Serendipitously Observed Main-Belt Asteroids"

Author: N. Erasmus, A. McNeill, M. Mommert, D. E. Trilling, A. A. Sicking, C. van Gend

Comments: arXiv admin note: text overlap with arXiv:1709.03305

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

[観測/小惑星]

小惑星帯に存在する小惑星 1003 個の多波長 (V,R,I) 測光観測を実施。タイプ分類、自転周期、形状などを議論。

[2] [arxiv:1805.04429](#)

Title: "Exoplanet recycling in massive white-dwarf debris discs"

Author: Rik van Lieshout, Quentin Kral, Sébastien Charnoz, Mark C. Wyatt, Andrew Shannon

Comments: 28 pages, 11 figures, accepted for publication in MNRAS

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

[理論/白色矮星周りのデブリ円盤]

惑星が破壊される事で白色矮星周りに形成されるデブリ円盤の進化過程を調査。

ダストがポインティングロバートソン効果などで集まり、共鳴軌道付近で惑星が際形成される可能性も議論。

[3] [arxiv:1805.04416](#)

Title: "Interferometric imaging of Titan's  $\text{HC}_3\text{N}$ ,  $\text{H}^{13}\text{CCCN}$  and  $\text{HCCC}^{15}\text{N}$ "

Author: M. A. Cordiner, C. A. Nixon, S. B. Charnley, N. A. Teanby, E. M. Molter, Z. Kisiel, V. Vuitton

Comments: Accepted for publication in ApJL, May 2018

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

[ALMA 観測/Titan]

ALMA Band 7 で  $\text{HC}_3\text{N}$ ,  $\text{H}^{13}\text{CCCN}$ ,  $\text{HCCC}^{15}\text{N}$  の空間分解観測を実施。南極側の方で  $\text{HC}_3\text{N}$  が増加しており、夏半球で  $\text{HC}_3\text{N}$  が光化学反応によって壊され、冬側で生成される描像と合っている。また、 $^{15}\text{N}$  が多い。

[4] [arxiv:1805.04326](#)

Title: "Azimuthal and Vertical Streaming Instability at High Dust-to-gas Ratios"

## and on the Scales of Planetesimal Formation”

Author: Andreas Schreiber, Hubert Klahr

Comments: Accepted for publication at ApJ

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

[理論/streaming instability]

高 dust/gas 比の元で方位角・高さ方向の streaming instability の発達過程を調査。

### [5] [arxiv:1805.04121](#)

Title: ”Two Thousand Kepler Phase Curves from Phasma”

Author: David Kipping, Emily Sandford, Tiffany Jansen

Comments: AAS Research Note. Phase curves available at this [https URL](#) + gallery available at this [http URL](#)  
and python code available at this [https URL](#)

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

[Kepler 観測/計算コード]

Kepler データの位相曲線を解析する新しいコード phasma の紹介。

### [6] [arxiv:1805.04115](#)

Title: ”The Reclassification of Asteroids from Planets to Non-Planets”

Author: Philip T. Metzger, Mark V. Sykes, Alan Stern, Kirby Runyon

Comments: 27 pages, 4 figures

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

[歴史/小惑星]

小惑星の中には昔惑星として誤認され、その後の詳細観測で小惑星と判定し直されたものが多数存在。  
今回は、その発見の歴史を議論。

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## 5 月 15 日 (火曜日)

### [1] [arxiv:1805.05244](#)

Title: ”Investigation of Thermal Inertia and Surface Properties for Near-Earth Asteroid (162173) 1999 JU3”

Author: Liangliang Yu, Jianghui Ji, Su Wang

Comments: 15 pages, 7 figures, published in Chinese Astronomy and Astrophysics

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

[理論/観測：はやぶさ2]

はやぶさ2 ミッションのターゲットである NEA (162173) 1999 JU3(リュウグウ?) について、とある熱物理的なモデルを用いて熱慣性分布を見積もり、小惑星表面の主成分を推測した。

[2] [arXiv:1805.05240](#)

Title: "A search for transiting planets in the  $\beta$  Pictoris system"

Author: M. Mol Lous, E. Weenk, M.A. Kenworthy, K. Zwintz, R. Kuschnig

Comments: 6 pages, 6 figures, 3 tables. Accepted for publication in A&A

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

[観測: $\beta$ Pictoris c?]

$\beta$ Pic には直接撮像で惑星 b が見つかったが、一つあるならもう一つあるやろと思った。b と同じ軌道面で 30 日周期以下の惑星があればトランジットで見えるはずなので観測してみたら、どうやらなさそうだった。

[3] [arXiv:1805.05045](#)

Title: "Dawn-dusk asymmetry induced by the Parker spiral angle in the plasma dynamics around comet 67P/Churyumov-Gerasimenko"

Author: E. Behar, B. Tabone, H. Nilsson

Comments: 6 pages, 3 figures

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

[理論/観測: 彗星と太陽風]

彗星からの電離した気体と太陽風はエネルギーや運動量の交換を行う。そこに地場がどれだけ影響するかをしらべ、67P/Churyumov-Gerasimenko の観測と比較した。

[4] [arXiv:1805.05016](#)

Title: "Modeling Martian Atmospheric Losses over Time: Implications for Exoplanetary Climate Evolution and Habitability"

Author: Chuanfei Dong, Yuni Lee, Yingjuan Ma, Manasvi Lingam, Stephen Bougher, Janet Luhmann, Shannon Curry, Gabor Toth, Andrew Nagy, Valeriy Tenishev, Xiaohua Fang, David Mitchell, David Brain, Bruce Jakosky

Comments: 6 pages, 4 figures, 1 table, accepted for publication in ApJ Letters

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

[理論: 火星大気散逸]

火星の大気散逸の過程を調べるため、上層大気の 3D グローバル計算を行った。40 億年前では今より強い太陽風や高い紫外線フラックスのおかげで、イオンの大気流出率が非常に高かった可能性がある。現在の火星は光化学的な散逸がメインだが、昔はイオンによる大気散逸もきいていただろう。

[5] [arXiv:1805.04932](#)

Title: "Comparison of the orbital properties of Jupiter Trojan asteroids and Trojan dust"

Author: Xiaodong Liu, Jürgen Schmidt

Comments: 10 figures. See blog post about this study in this [http URL](#)

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

**[理論：トロヤ群のダスト]**

トロヤ群には小惑星とそこから欠け落ちたダスト粒子が含まれる。先行研究の力学的なモデルを用いた解析の結果から、ダストと小惑星の軌道要素を比較した(?)。ダストは輻射圧を受けるので軌道長半径のピークなどがかわってくるらしい。

**[6] [arxiv:1805.04885](#)**

Title: "**Tidal Evolution of Kepler lower-mass Planets**"

Author: Yao Dong, Jianghui Ji, Su Wang

Comments: 14 pages, 10 figures, to appear in Chinese Astronomy and Astrophysics

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

**[理論：惑星の潮汐進化]**

低質量惑星が潮汐進化の結果どの位置に落ち着くか、力学的なモデルを用いて統計的に調べた。

**[7] [arxiv:1805.04774](#)**

Title: "**An 8 Mearth super-Earth in a 2.2 day orbit around the K5V star K2-216**"

Author: C.M. Persson, M. Fridlund, O. Barragán, F. Dai, D. Gandolfi, A.P. Hatzes, T. Hirano, S. Grziwa, J. Korth, J. Prieto-Arranz, L. Fossati, V. Van Eylen, A.Bo Justesen, J. Livingston, D. Kubyskhina, H.J. Deeg, E.W. Guenther, G. Nowak, J. Cabrera Ph. Eigmüller, Sz Csizmadia, A.M.S. Smith, A. Erikson, S. Albrecht R. Alonso Sobrino, W.D. Cochran, M. Endl, M. Esposito, A. Fukui, P. Heeren, D. Hidalgo, M. Hjorth, M. Kuzuhara, N. Narita, D. Nespral, E. Palle, M. Pätzold, H. Rauer, F. Rodler, J.N. Winn

Comments: 17 pages, 14 figures, submitted to Astronomy & Astrophysics

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

**[観測：スーパーアース発見]**

$8M_{\oplus}$  のスーパーアースをトランジットと RV で複数観測してコンファームした。

**[8] [arxiv:1805.04854](#)**

Title: "**Astrometric and photometric accuracies in high contrast imaging: The SPHERE speckle calibration tool (SpeCal)**"

Author: R. Galicher, A. Boccaletti, D. Mesa, P. Delorme, R. Gratton, M. Langlois, A.-M. Lagrange, A.-L. Maire, H. Le Coroller, G. Chauvin, B. Biller, F. Cantalloube, M. Janson, E. Lagadec, N. Meunier, A. Vigan, J. Hagelberg, M. Bonnefoy, A. Zurlo, S. Rocha, D. Maurel, M. Jaquet, T. Buey, L. Weber

Comments:

11 pages, 9 figures, 5 tables, accepted in A&A

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

[観測:便利ツール]

SPHERE/VLT にはいろんな観測に使えるやさしく便利な補償光学的な調整ができる道具 SpeCal があります。

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## 5 月 16 日 (水曜日)

### [1] [arxiv:1805.05925](#)

Title: "HATS-59b,c: A Transiting Hot Jupiter and a Cold Massive Giant Planet Around a Sun-Like Star"

Author: P. Sarkis, Th. Henning, J. D. Hartman, G. Á. Bakos, R. Brahm, A. Jordán, D. Bayliss, L. Mancini, N. Espinoza, M. Rabus, Z. Csubry, W. Bhatti, K. Penev, G. Zhou, J. Bento, T. G. Tan, P. Arriagada, R. P. Butler, J. D. Crane, S. Shectman, C. G. Tinney, D. J. Wright, B. Addison, S. Durkan, V. Suc, L. A. Buchhave, M. de Val-Borro, J. Lázár, I. Papp, P. Sári

Comments: 12 pages, 9 figures, submitted to AJ. For a short discussion, see this [https URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

### [2] [arxiv:1805.05921](#)

Title: "Measurement of the Oxidation state of Fe in the ISM using X-ray Absorption Spectroscopy"

Author: Andrew J. Westphal, Anna L. Butterworth, John A. Tomsick, Zack Gainsforth

Comments: 9 pages, 4 figures, submitted to ApJ

Subjects: Earth and Planetary Astrophysics (astro-ph.EP); Cosmology and Nongalactic Astrophysics (astro-ph.CO)

[理論/観測/実験 etc....]

Comment!!!!

### [3] [arxiv:1805.05868](#)

Title: "Formation of S-type planets in close binaries: scattering induced tidal capture of circumbinary planets"

Author: Yan-Xiang Gong, Jianguhui Ji

Comments: 12 pages, 6 figures, accepted for publication in MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[4] [arXiv:1805.05834](#)

Title: "Using Deep Space Climate Observatory Measurements to Study the Earth as An Exoplanet"

Author: Jonathan H. Jiang, Albert J. Zhai, Jay Herman, Chengxing Zhai, Renyu Hu, Hui Su, Vijay Natraj, Jiazheng Li, Feng Xu, Yuk L. Yung

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

[理論/観測/実験 etc....]

Comment!!!!

[5] [arXiv:1805.05825](#)

Title: "Vortex survival in 3D self-gravitating accretion discs"

Author: Min-Kai Lin, Arnaud Pierens

Comments: Accepted by MNRAS; full resolution article at this [https URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[6] [arXiv:1805.05768](#)

Title: "On the evolution of vortices in massive protoplanetary discs"

Author: Arnaud Pierens, Min-Kai Lin

Comments: Accepted in MNRAS

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

[理論/観測/実験 etc....]

Comment!!!!

[7] [arXiv:1805.05726](#)

Title: "Natural highways for end-of-life solutions in the LEO region"

Author: Elisa Maria Alessi, Giulia Schettino, Alessandro Rossi, Giovanni B. Valsecchi

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

[理論/観測/実験 etc....]

Comment!!!!



[8] [arxiv:1805.05645](#)

Title: "Orbital and spectral analysis of the benchmark brown dwarf HD 4747B"

Author: S. Peretti, D. Ségransan, B. Lavie, S. Desidera, A.-L. Maire, V. D'Orazi, A. Vigan, J.-L. Baudino, A. Cheetham, M. Janson, G. Chauvin, J. Hagelberg, F. Menard, K. Heng, S. Udry, A. Boccaletti, S. Daemgen, H. Le Coroller, D. Mesa, D. Rouan, M. Samland, T. Schmidt, A. Zurlo, M. Bonnefoy, M. Feldt, R. Gratton, A.-M. Lagrange, M. Langlois, M. Meyer, M. Carbillet, M. Carle, V. De Caprio, L. Gluck, E. Hugot, Y. Magnard, T. Moulin, A. Pavlov, J. Pragt, P. Rabou, J. Ramos, G. Rousset, A. Sevin, C. Soenke, E. Stadler, L. Weber, F. Wildi

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

[理論/観測/実験 etc....]

Comment!!!!

[9] [arxiv:1805.05594](#)

Title: "Two key parameters controlling particle clumping caused by streaming instability in the dead-zone dust layer of a protoplanetary disk"

Author: Minoru Sekiya, Isamu K. Onishi

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

[理論/観測/実験 etc....]

Comment!!!!

[10] [arxiv:1805.05590](#)

Title: "Mass-loading of the solar wind at 67P/Churyumov-Gerasimenko – Observations and modelling"

Author: E. Behar, J. Lindkvist, H. Nilsson, M. Holmström, G. Stenberg Wieser, R. Ramstad, C. Goetz

Comments: 9 pages, 7 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[11] [arxiv:1805.05587](#)

Title: "Mass loading at 67P/Churyumov-Gerasimenko: a case study"

Author: E. Behar, H. Nilsson, G. Stenberg Wieser, Z. Nemeth, T.W. Broiles, I. Richter

Comments:

6 pages, 3 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[12] [arxiv:1805.05355](https://arxiv.org/abs/1805.05355)

Title: "Discovery and Dynamical Analysis of an Extreme Trans-Neptunian Object with a High Orbital Inclination"

Author: J. C. Becker, T. Khain, S. J. Hamilton, F. Adams, D. W. Gerdes, L. Zullo, K. Franson, S. Millholland, G. M. Bernstein, M. Sako, P. Bernardinelli, K. Napier, L. Markwardt, Hsing Wen Lin, W. Wester, F. B. Abdalla, S. Allam, J. Annis, S. Avila, E. Bertin, D. Brooks, A. Carnero Rosell, M. Carrasco Kind, J. Carretero, C. E. Cunha, C. B. D'Andrea, L. N. da Costa, C. Davis, J. De Vicente, H. T. Diehl, P. Doel, T. F. Eifler, B. Flaugher, P. Fosalba, J. Frieman, J. Garcia-Bellido, E. Gaztanaga, D. Gruen, R. A. Gruendl, J. Gschwend, G. Gutierrez, W. G. Hartley, D. L. Hollowood, K. Honscheid, D. J. James, K. Kuehn, N. Kuropatkin, M. A. G. Maia, M. March, J. L. Marshall, F. Menanteau, R. Miquel, R. L. C. Ogando, A. A. Plazas, E. Sanchez, V. Scarpine, R. Schindler, I. Sevilla-Noarbe, M. Smith, R. C. Smith

Comments: submitted to AJ; observations available on MPC

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

[理論/観測/実験 etc....]

Comment!!!!

[13] [arxiv:1805.05653](https://arxiv.org/abs/1805.05653)

Title: "VBBinaryLensing: a public package for microlensing light curve computation"

Author: V. Bozza, E. Bachelet, F. Bartolić, T. Heintz, A. Hoag, M. Hundertmark

Comments: 12 pages, 7 figures

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

[理論/観測/実験 etc....]

Comment!!!!

[14] [arxiv:1805.05489](https://arxiv.org/abs/1805.05489)

Title: "Science Impacts of the SPHEREx All-Sky Optical to Near-Infrared Spec-



tral Survey II: Report of a Community Workshop on the Scientific Synergies  
Between the SPHEREx Survey and Other Astronomy Observatories”

Author:Olivier Doré, Michael W. Werner, Matthew L. N. Ashby, Lindsey E. Bleem, Jamie Bock, Jennifer Burt, Peter Capak, Tzu-Ching Chang, Jonás Chaves-Montero, David Charbonneau, Christine H. Chen, Francesca Civano, I. Ilesedore Cleaves, Asantha Cooray, Brendan Crill, Ian J. M. Crossfield, Michael Cushing, Sylvain de la Torre, Tiziana DiMatteo, Niv Dvory, Cora Dvorkin, Catherine Espaillat, Daniel Eisenstein, Simone Ferraro, Douglas Finkbeiner, Jenny Greene, Jackie Hewitt, David W. Hogg, Kevin Huffenberger, Hyun-Sung Jun, Olivier Ilbert, Woong-Seob Jeong, Jennifer Johnson, Minjin Kim, J.Davy Kirkpatrick, Theresa Kowalski, Phil Korngut, Jianshu Li, Carey M. Lisse, Meredith MacGregor, Eric E. Mamajek, Phil Mauskopf, Gary Melnick, Brice Ménard, Mark Neyrinck, Karin Öberg, Alice Pisani

Comments: 50 pages, 24 figures, more details at this [http URL](#)

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

[理論/観測/実験 etc....]

Comment!!!!

[15] [arXiv:1805.05425](#)

Title: ”Increases to Inferred Rates of Planetesimal Accretion Due to Thermohaline Mixing in Metal Accreting White Dwarfs”

Author:Evan B. Bauer, Lars Bildsten

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

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

[理論/観測/実験 etc....]

Comment!!!!

[16] [arXiv:1805.05394](#)

Title: ”Calibrating the metallicity of M dwarfs in wide physical binaries with F-, G-, and K- primaries - I: High-resolution spectroscopy with HERMES: stellar parameters, abundances, and kinematics”

Author:D. Montes, R. González-Peinado, H.M. Tabernero, J.A. Caballero, E. Marfil, F.J. Alonso-Floriano, M. Cortés-Contreras, J.I. González Hernández, A. Klutsch, C. Moreno-Jódar

Comments: accepted for publication in MNRAS, 49 pages, 11 figures and 10 tables

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

[理論/観測/実験 etc....]

Comment!!!!

[17] [arxive:1805.05379](#)

Title: "The Evolution of Protoplanetary Disks: Probing the Inner Disk of Very Low Accretors"

Author: Thanawuth Thanathibodee, Nuria Calvet, Gregory Herczeg, Cesar Briceno, Catherine Clark, Megan Reiter, Laura Ingleby, Melissa McClure, Karina Mauco, Jesus Hernandez

Comments: 13 pages, 3 figures. Accepted for publication in The Astrophysical Journal

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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## 5月17日(木曜日)

[1] [arxive:1805.06159](#)

Title: "The birth and growth of a solar wind cavity around a comet – Rosetta observations"

Author: E. Behar, H. Nilsson, M. Alho, C. Goetz, B. Tsurutani

Comments: 8 pages, 3 figures

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

[観測]

ロゼッタの観測で彗星 67P/CG の周りで太陽風のキャビティ成長が観測された。彗星起源のプラズマによる太陽風への摂動からどのようにキャビティが成長していくのかを調べた。

[2] [arxive:1805.05994](#)

Title: "Dynamical evolution and end states of active and inactive Centaurs"

Author: Julio A. Fernández, Michel Helal, Tabaré Gallardo

Comments: Paper presented at the Asteroids, Comets, Meteors meeting held in Montevideo, Uruguay, 2017

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

[理論]

ケンタウルス族の活動/非活動的な彗星の、木星–土星領域での力学進化について数値計算を行い、彗星の活動性による軌道の最終状態への影響を調べた。非活動的な彗星の方が、活動的な彗星よりも寿命が2倍近く長いことがわかり、木星–土星近くでは彗星の活動性が寿命に影響することが示唆された。

[3] [arxiv:1805.05947](#)

Title: "Detecting the Yarkovsky effect among near-Earth asteroids from astrometric data"

Author: Alessio Del Vigna, Laura Faggioli, Andrea Milani, Federica Spoto, Davide Farnocchia, Benoit Carry

Comments: 36 pages, 1 figure

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

[観測]

87個のNEAsについて、Yarkovsky効果による軌道移動をアストロメトリーから検出した。小惑星軌道への非重力的な摂動を考慮することでより正確な衝突予測が可能になる。

[4] [arxiv:1805.06304](#)

Title: "The dynamics of asteroid rotation, governed by YORP effect: the kinematic ansatz"

Author: Sergey V. Ershkov, Roman V. Shamin

Comments: 23 pages, 4 figures; Keywords: tidal dissipation, asteroid rotation, YORP effect; article is accepted for publication in "Acta Astronautica" (14 May 2018), DOI 10.1016/j.actaastro.2018.05.023

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

[理論]

小惑星は様々な摂動を受けてその自転が不安定化する。衝突や近接相互作用などの重力摂動に加え、非重力的なYORP効果を加味して小惑星の回転を調べた。

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## 5月18日(金曜日)

[1] [arxiv:1805.06722](#)

Title: "Polarization of Trappist-1 by the Transit of its Planets"

Author: Sujan Sengupta

Comments: LaTeX (AASTex6.0), 11 pages including 5 figures and 1 table. 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/TRAPPIST-1]

TRAPPIST-1は大気に雲を持っているため、雲のダスト粒子が光を散乱して偏光が生じる。偏光は、惑星がトランジットしているときに観測できて、トランジットが始まる時と終わる時にピークになる。TRAPPIST-1系の1つの惑星がトランジットするときの偏光の時間変化や、2つの惑星が同時にトランジットするときの偏光の時間変化を調べた。この偏光は今ある観測装置でも観測可能で、TRAPPIST-1のような星を時間分解撮像偏光観測することによって惑星を発見できる可能性がある。

[2] [arXiv:1805.06715](#)

Title: "Spectroscopic Observations of the Comet 29P/Schwassmann-Wachmann 1 at the SOAR Telescope"

Author: Oleksandra V. Ivanova, Enos Picazzio, Igor V. Luk'yanyk, Oscar Cavichia, Sergei M. Andrievsky

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

[観測/29P]

太陽から 5.9AU の位置にある彗星 29P を SOAR 望遠鏡で測光・分光観測した。そのうち分光観測の解析結果を載せている。CO<sup>+</sup>, N<sub>2</sub><sup>+</sup> の輝線があった。[N<sub>2</sub><sup>+</sup>]/[CO<sup>+</sup>] = 0.01 だった。

[3] [arXiv:1805.06710](#)

Title: "The optical characteristics of the dust of sungrazing comet C/2012 S1 (ISON) observed at large heliocentric distances"

Author: Oleksandra Ivanovaa, Volodymyr Reshetnyk, Yury Skorov, Jürgen Blum, Zuzana Seman Krišandová, Jan Svoreň, Pavlo Korsun, Viktor Afanasiev, Igor Luk'yanyk, Maxim Andreev

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

[観測/ISON 彗星]

ISON 彗星を、太陽からの距離が 6.21 – 4.81AU の時に測光・分光観測した。3600-7070 Å の範囲では輝線は見られなかった。また、ダスト放出率を見積もった。

[4] [arXiv:1805.06457](#)

Title: "The Millimeter Continuum Size-Frequency Relationship in the UZ Tau E Disk"

Author: Anjali Tripathi, Sean M. Andrews, Tilman Birnstiel, Claire J. Chandler, Andrea Isella, Laura M. Perez, Robert J. Harris, Luca Ricci, David J. Wilner, John M. Carpenter, Nuria Calvet, Stuartt. A. Corder, Adam T. Deller, Cornelis P. Dullemond, Jane S. Greaves, Thomas Henning, Woojin Kwon, T. Joseph W. Lazio, Hendrik Linz, Leonardo Testi

Comments: Accepted for publication in The Astrophysical Journal (13 pages, 8 figures)

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

[観測/UZ Tau]

UZ Tau E の周連星円盤を、6 – 340GHz の連続光で高空間分解な観測をした。波長によって明るさの半径方向の分布が異なり、高周波数の方が円盤の外側であまり暗くならない。そこからダストサイズと周波数の関係を議論して、ダストの成長や migration の話をしているらしい。(よく分かりませんでした)

[5] [arXiv:1805.06526](#)

Title: "Sun flux variation due to the effects of orbiting planets. Case of study of a non-compact planetary system"

Author: H. Barbier, E. D. López, B. Tipán, C. L. Vásconez

Comments: 12 pages. 3 figures, 3 tables

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

[理論]

惑星の光度曲線は、(1) 反射の効果、(2) 楕円体の効果、(3) ドップラービーミングの効果、によって明るさが変化する。太陽系の惑星を遠くから見たときの各効果の大きさを比べた。どの惑星に対しても、楕円体の効果は非常に小さい。水星と金星では反射の効果とドップラービーミングの効果が同じくらい大きい。それ以外の惑星ではドップラービーミングの効果が支配的。

[6] [arXiv:1805.06453](#)

Title: "A nonlinear and time-dependent visco-elasto-plastic rheology model for studying shock-physics phenomena"

Author: Dirk Elbeshausen, Jay Melosh

Comments: 20 pages 6 figures

Subjects: Geophysics (physics.geo-ph); Earth and Planetary Astrophysics (astro-ph.EP); Computational Engineering, Finance, and Science (cs.CE)

[理論/iSALE]

隕石が衝突して窪み地形を作るメカニズムを考える上で重要となる、粘弾塑性 (visco-elasto-plastic) のモデルを、iSALE で実装した。

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