

## 12 研究成果報告 (2018 年)

### 著者の所属先

(1) 京都大学・理・附属天文台, (2) 茨城大学, (3) 宇宙航空研究開発機構, (4) 大阪大学, (5) 尾道市立大学, (6) 金沢大学, (7) 北見工業大学, (8) 京都市立芸術大学, (9) 京都産業大学, (10) 京都大学, (11) 京都大学・宇宙総合学研究ユニット, (12) 京都大学・生存圏研究所, (13) 京都大学・総合生存学館, (14) 京都大学・理・宇宙物理学教室, (15) 京都大学・理・地磁気世界資料解析センター, (16) 九州大学・国際宇宙天気科学・教育センター, (17) 慶応大学, (18) 国立極地研究所, (19) 国立国文学研究所, (20) 国立天文台, (21) 情報通信研究機構, (22) 総合研究大学院大学, (23) 千葉大学, (24) 東京工業大学, (25) 東京大学, (26) 統計数理研究所, (27) 東北大学, (28) 名古屋大学・宇宙地球環境研究所, (29) 日本原子力研究開発機構, (30) 兵庫県立大学西はりま天文台, (31) 広島大学, (32) 仏教大学, (33) 防衛大学校, (34) 北海道大学, (35) 明星大, (36) アストロエアロスペース, (37) アストロバイオロジーセンター, (38) 大阪府立大学工業高等専門学校, (39) 京都市教育委員会, (40) なよろ市立天文台, (41) 株式会社ブロードバンドタワー, (42) 三菱みなとみらい技術館, (43) 中央研究院天文及天文物理研究所 (台湾), (44) Big Bear Solar Observatory (アメリカ), (45) Czech Academy of Sciences (チェコ), (46) Denver 大学 (アメリカ), (47) European Southern Observatory (ドイツ), (48) Leuven カトリック大学 (オランダ), (49) Nanjing 南京大学 (中国), (50) NASA Goddard Space Flight Center (アメリカ), (51) National Solar Observatory (アメリカ), (52) Russian Academy of Sciences (ロシア), (53) San Diego 州立大学 (アメリカ), (54) Sao Paulo 大学 (ブラジル), (55) ソウル大学 (韓国), (56) 雲南天文台 (中国), (57) Washington 大学 (アメリカ)

### 12.1 出版

2018 年に出版された査読論文 24 編

- (1) Aleman, I.<sup>54</sup> and 14 coauthors including Ostuka, M.<sup>1</sup>  
Herschel Planetary Nebula Survey (HerPlaNS). hydrogen recombination laser lines in Mz 3, 2018/07, MNRAS, 477, 4499.
- (2) Anan, T.<sup>1</sup>, Yoneya, T.<sup>2</sup>, Ichimoto, K.<sup>1</sup>, UeNo, S.<sup>1</sup>, Shiota, D.<sup>1</sup>, Nozawa, S.<sup>2</sup>, Takasao, S.<sup>1</sup>, Kawate, T.<sup>3</sup>,  
Measurement of vector magnetic field in a flare kernel with a spectropolarimetric observation in He I 10830 Å, 2018/12, PASJ, 70, 101.
- (3) Anan, T.<sup>1</sup>, Huang, Y.<sup>1</sup>, Nakatani, Y.<sup>1</sup>, Ichimoto, K.<sup>1</sup>, UeNo, S.<sup>1</sup>, Kimura, G.<sup>1</sup>, Ninomiya, S.<sup>1</sup>, Okada, S.<sup>1</sup>, Kaneda, N.<sup>1</sup>  
Developments of a multi-wavelength spectro-polarimeter on the Domeless Solar Telescope at Hida Observatory, 2018/12, PASJ, 70, 102.
- (4) Chen, P.F.<sup>49</sup>, Shibata, K.<sup>1</sup>, Matsumoto, R.<sup>23</sup>  
Recent progress in Asia-Pacific solar physics and astrophysics, 2018/12, RvMPP, 2, 5.

- (5) Kwon, Y. G.<sup>55</sup>, Ishiguro, M.<sup>55</sup>, Shinnaka, Y.<sup>9,20</sup>, Nakaoka, T.<sup>31</sup>, Kuroda, D.<sup>1</sup>, and 14 coauthors  
 High polarization degree of the continuum of comet 2P/Encke based on spectropolarimetric signals during its 2017 apparition, 2018/12 A&A, 620, A161.
- (6) Hasegawa, S.<sup>3</sup>, Kuroda, D.<sup>1</sup>, and 51 coauthors including Toda, H.<sup>1</sup>  
 Physical properties of near-Earth asteroids with a low delta-v: Survey of target candidates for the Hayabusa2 mission, 2018/12 PASJ, 70, 114.
- (7) Katsukawa, Y.<sup>20</sup>, Masada, Y.<sup>3</sup>, Shimizu, T.<sup>3</sup>, Sakai, S.<sup>3</sup>, Ichimoto, K.<sup>1</sup>  
 Pointing stability of Hinode and requirements for the next Solar mission Solar-C, 2018, SPIE, 10565E..28K.
- (8) Kawaguchi, T.<sup>5</sup>, Ozaki, S.<sup>20</sup>, Sugai, H.<sup>20</sup>, Matsubayashi, K.<sup>1</sup>, and 7 coauthors  
 A 100 pc-scale fast and dense outflow in the narrow-line Seyfert 1 galaxy IRAS 04576+0912, 2018/10 PASJ, 70, 93.
- (9) Hayakawa, H.<sup>4</sup>, Iwahashi, K.<sup>19</sup>, Tamazawa, H.<sup>1</sup>, Toriumi, S.<sup>20</sup>, Shibata, K.<sup>1</sup>  
 Iwahashi Zenbei's Sunspot Drawings in 1793 in Japan, 2018/01, Solar Physics, 293, 8.
- (10) Hayakawa, H.<sup>4</sup> and 11 coauthors including Shibata, K.<sup>1</sup>  
 The Great Space Weather Event during 1872 February Recorded in East Asia, 2018/07, ApJ, 862, 15.
- (11) Hayakawa, H.<sup>4</sup> and 9 coauthors including Tamazawa, H.<sup>1</sup> and Shibata, K.<sup>1</sup>  
 Sunspot drawings by Japanese official astronomers in 1749-1750, 2018/08, PASJ, 70, 63.
- (12) Hayakawa, H.<sup>4</sup> and 11 coauthors including Tamazawa, H.<sup>1</sup>, Kawamura, A.D.<sup>1</sup>  
 A great space weather event in February 1730, 2018/09, A&A, 616, 177.
- (13) Heinzl, P.<sup>45</sup>, Shibata, K.<sup>1</sup>  
 Can Flare Loops Contribute to the White-light Emission of Stellar Superflares?, 2018/06, ApJ, 859, 143.
- (14) Henze, M.<sup>53</sup>, and 72 coauthors including Maehara, H.<sup>1</sup>  
 Breaking the Habit: The Peculiar 2016 Eruption of the Unique Recurrent Nova M31N 2008-12a, 2018/04, ApJ, 857, 68.

- (15) Honda, S.<sup>30</sup>, Notsu, Y.<sup>1</sup>, Namekata K.<sup>1</sup>, Notsu, S.<sup>14</sup>, Maehara, H.<sup>20</sup>, Ikuta, K.<sup>14</sup>, Nogami, D.<sup>14</sup>, Shibata, K.<sup>1</sup>  
Time-resolved spectroscopic observations of an M-dwarf flare star EV Lacertae during a flare, PASJ/08, 2018, 70, 62.
- (16) Kimura, M.<sup>14</sup>, Kato, T.<sup>14</sup>, Maehara, H.<sup>1</sup>, and 35 coauthors  
On the nature of long-period dwarf novae with rare and low-amplitude outbursts, 2018/08, PASJ, 70, 78
- (17) Miura, N.<sup>7</sup>, Suzuki, T.<sup>7</sup>, Takahashi, S.<sup>7</sup>, Kuwamura, S.<sup>7</sup>, Baba, N.<sup>34</sup>, Oya, S.<sup>20</sup>, Ueno, S.<sup>1</sup>, Nakatani, Y.<sup>1</sup>, Ichimoto, K.<sup>1</sup>  
Experiments of GLAO using the domeless solar telescope of the Hida Observatory, 2018/07, SPIE 10703, 1070336.
- (18) Oh-ishi, A.<sup>7</sup>, Miura, N.<sup>7</sup>, Suzuki, T.<sup>7</sup>, Kuwamura, S.<sup>7</sup>, Ueno, S.<sup>1</sup>, Nakatani, Y.<sup>1</sup>, Ichimoto, K.<sup>1</sup>  
Solar SLODAR Technique for Measuring Height Profiles of Atmospheric Turbulence, 2018/06, 光学, 47(6), 262.
- (19) Quintero Noda, C.<sup>3</sup>, and 11 authors including Anan, T.<sup>1</sup> and Ichimoto, K.<sup>1</sup>  
Solar polarimetry in K I D<sub>2</sub> line: A novel possibility for a stratospheric balloon, 2018/03, A&A, 610, A79.
- (20) Sakaue, T.<sup>1</sup>, Tei, A.<sup>1</sup>, Asai, A.<sup>1</sup>, Ueno, S.<sup>1</sup>, Ichimoto, K.<sup>1</sup>, Shibata, K.<sup>1</sup>  
Observational study on the fine structure and dynamics of a solar jet. II. Energy release process revealed by spectral analysis, 2018/12, PASJ, 70, 99.
- (21) Suzuki, T.<sup>7</sup>, Miura, N.<sup>7</sup>, Kuwamura, S.<sup>7</sup>, Oya, S.<sup>20</sup>, Ueno, S.<sup>1</sup>, Nakatani, Y.<sup>1</sup>, Ichimoto, K.<sup>1</sup>  
Parallel processing of solar image restoration with phase diversity technique, 2018/07, SPIE, 10703, 1070332.
- (22) Tei, A.<sup>1</sup>, Sakaue, T.<sup>1</sup>, Okamoto, T. J.<sup>20</sup>, Kawate, T.<sup>3</sup>, Heinzel, P.<sup>45</sup>, UeNo, S.<sup>1</sup>, Asai, A.<sup>1</sup>, Ichimoto, K.<sup>1</sup>, Shibata, K.<sup>1</sup>  
Blue-wing enhancement of the chromospheric Mg II h and k lines in a solar flare, 2018/12, PASJ, 70, 100.
- (23) Walsh, J.R.<sup>47</sup> and 8 coauthors including Otsuka, M.<sup>1</sup>  
An Imaging Spectroscopic Survey of the Planetary Nebula NGC 7009 with MUSE, 2018/12, A&A, 620, 169

- (24) Wang J.,<sup>56</sup>, Yan, X.<sup>56</sup>, Qu,Z.<sup>56</sup>, UeNo,S.<sup>1</sup>, Ichimoto,K.<sup>1</sup>, Deng, L.<sup>56</sup>, Cao,W.<sup>44</sup>, Liu Z.<sup>56</sup>  
Formation of an Active Region Filament Driven By a Series of Jets, 2018/08, ApJ, 863, 180.

2018 年に受理された査読論文 6 編

- (1) Arimatsu,K.<sup>1,20</sup>, and 9 coauthors  
A kilometre-sized Kuiper belt object discovered by stellar occultation using amateur telescopes, 2019, Nature Astronomy, accepted.
- (2) Hayakawa, H.<sup>4</sup>, and 10 coauthors including Namekata, K.<sup>1</sup>, Sakaue, T.<sup>1</sup>, Takahashi, T.<sup>1</sup>, Shibata, K.<sup>1</sup>  
The Extreme Space Weather Event in September 1909, 2019, MNRAS, 3046, in press.
- (3) Namekata K.<sup>1</sup>, Maehara, H.<sup>20</sup>, Notsu, Y.<sup>1</sup>, Toriumi, S.<sup>20</sup>, Hayakawa, H.<sup>4</sup>, Ikuta, K.<sup>14</sup>, Notsu, S.<sup>14</sup>, Honda, S.<sup>30</sup>, Nogami, D.<sup>14</sup>, Shibata, K.<sup>1</sup>  
Lifetimes and Emergence/Decay Rates of Star Spots on Solar-type Stars Estimated by Kepler Data in Comparison with Those of Sunspots, ApJ, 2019, accepted on November 26, 2018 (arXiv:1811.10782)
- (4) Ohsawa, R.<sup>25</sup> and 36 coauthors including Arimatsu, K. and Maehara, H.<sup>1</sup>  
Luminosity Function of Faint Sporadic Meteors measured with a Wide-Field CMOS mosaic camera Tomo-e PM Planetary and Space Science; doi:10.1016/j.pss.2018.09.006
- (5) Otsuka, M.<sup>1</sup>  
Physical properties of the fullerene C60-containing planetary nebula SaSt2-3, 2019, MNRAS, 482, 2354
- (6) Seki, D.<sup>13</sup>, UeNo, S.<sup>1</sup>, Isobe, H.<sup>8</sup>, Otsuji, K.<sup>1</sup>, Cabezas, D. P.<sup>1</sup>, Ichimoto, K.<sup>1</sup>, Shibata, K.<sup>1</sup>  
Space Weather Prediction from the Ground: Case of CHAIN, Sun and Geosphere, BBC SWS Regional Network, 13, 2, 2018, arXiv:1808.06295

2018 年に出版された国際会議集録など 8 編

- (1) Aoki, S.<sup>1</sup>  
Millennium Trail of Astronomy in Kyot, Outreach Activity: an Astronomical Walking Tour with Historical Features and Lectures, Book of Proceedings Communicat- ing Astronomy with the Public Conference, 2018/07, NAOJ, pp220-221

- (2) Airapetian, V. S.<sup>50</sup> and 48 coauthors including Shibata, K.<sup>1</sup>  
 The white paper submitted to the US National Academy of Sciences call on Exoplanet Science Strategy Exploring Extreme Space Weather Factors of Exoplanetary Habitability, 2018/03, arXiv180303751A.
- (3) Ichimoto, K.<sup>1</sup>, Hara, H.<sup>20</sup>, Katsukawa, Y.<sup>20</sup>, Ishikawa, R.<sup>20</sup>,  
 From Hinode to the Next-Generation Solar Observation Missions, in “First Ten Years of Hinode Solar On-Orbit Observatory”, 2018, 449, 231
- (4) Kojima, Y.<sup>25</sup>, and 38 coauthors including Maehara, H.<sup>1</sup>  
 Evaluation of large pixel CMOS image sensors for the Tomo-e Gozen wide field camera, Proceedings of the SPIE, Volume 10709, id. 107091T
- (5) Naito, H.<sup>41</sup> and 15 coauthors including Maehara, H.<sup>1</sup>  
 Optical Photometric Observations of M31N 2008-12a: Pre- and Post-maximum of the 2017 Eruption, The Astronomer’s Telegram, No. 11133
- (6) Namekata, K.<sup>1</sup>, Sakaue, T.<sup>1</sup>, Watanabe, K.<sup>33</sup>, Asai, A.<sup>1</sup>, Maehara, H.<sup>1</sup>, Notsu, Y.<sup>1</sup>, Notsu, S.<sup>14</sup>, Honda, S.<sup>30</sup>, Ishii, T.T.<sup>1</sup>, Ikuta, K.<sup>14</sup>, ato hutari  
 Statistical Study of Solar White-light Flares and Comparison with Superflares on Solar-type Stars 2018 arXiv180407122N 04/2018
- (7) Sako, S.<sup>25</sup>, Ohsawa, R.<sup>25</sup>, Ichiki, M.<sup>25</sup>, Maehara, H.<sup>1</sup>, Morii, M.<sup>26</sup>, Tanaka, M.<sup>20</sup>  
 Detection of 10-msec scale optical flares in the black-hole binary candidate MAXI J1820+070 (ASASSN-18ey), The Astronomer’s Telegram, No. 11426
- (8) Sako, S.<sup>25</sup>, and 38 coauthors including Maehara, H.<sup>1</sup>  
 The Tomo-e Gozen wide field CMOS camera for the Kiso Schmidt telescope, Proceedings of the SPIE, Volume 10702, id. 107020J

## 12.2 研究会報告

145 件

**Workshop Celebrating the 60 Years of Dr. Mutsumi Ishitsuka in Peru:  
 Achievements on Solar Physics and Astrophysics (National Ica University, Peru) 1 月 29 日**

- (1) Shibata, K.<sup>1</sup>  
 Congratulation from Japan
- (2) UeNo, S.<sup>1</sup>  
 CHAIN Project