

11 研究成果報告

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) 大阪教育大学, (5) 大阪府立大学, (6) 海洋研究開発機構, (7) 鹿児島大学, (8) 北見工業大学, (9) 京都産業大学, (10) 京都大学・宇宙総合学研究ユニット, (11) 京都大学・学際融合教育研究推進センター, (12) 京都大学・生存圏研究所, (13) 京都大学・総合博物館, (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, (17) 九州大学・国際宇宙天気科学・教育センター, (18) 国立極地研究所, (19) 国立情報学研究所, (20) 国立天文台, (21) 東海大学, (22) 東京工業大学, (23) 東京大学, (24) 東京大学・国際高等研究所・カブリ数物連携宇宙研究機構, (25) 東京大学・理・地球惑星, (26) 東北大学・理・惑星プラズマ・大気研究センター, (27) 名古屋大学, (28) 名古屋大学・太陽地球環境研究所, (29) 広島大学, (30) 北海学園大学, (31) 北海道大学, (32) 明星大学, (33) 理化学研究所, (34) 和歌山大学, (35) 高校, (36) 公共天文台, (37) VSNET, (38) Al-Azhar 大学 (エジプト), (39) Andalucía 天体物理研究所 (スペイン), (40) Alabama 州立大学 Huntsville 校 (アメリカ), (41) Chinese Academy of Sciences (中国), (42) ヨーロッパ南天天文台 (ESO), (43) Harvard-Smithsonian 天体物理センター (アメリカ), (44) High Altitude 観測所 (アメリカ), (45) Ica 国立大学 (ペルー), (46) Imperial 単科大学 (イギリス), (47) インド天体物理学研究所 (インド), (48) インド理科大学院 (インド), (49) Inter-University 天文センター (インド), (50) Korea Astronomy and Space Science Institute (KASI) (韓国), (51) Kyung Hee 大学 (韓国), (52) Lockheed Martin 太陽研究所 (アメリカ), (53) Max Plank Institute 太陽系研究所, (54) Macquarie 大学 (オーストラリア), (55) Massachusetts 工科大学 (アメリカ), (56) Michigan 州立大学 (アメリカ), (57) 中国国家天文台 (中国), (58) アメリカ国立光学天文台 (アメリカ), (59) Northumbria 大学 (イギリス), (60) Padua 大学 Asiago 天文台 (イタリア), (61) Peru 地球物理学研究所 (ペルー), (62) Potsdam ドイツ地球科学研究センター (ドイツ), (63) Sheffield 大学・太陽宇宙プラズマ研究センター (イギリス), (64) Uppsala 大学 (スウェーデン), (65) 雲南天文台 (中国)

11.1 出版

2013 年に出版された査読論文

- (1) Asai, A.¹⁰, Kiyohara, J.¹, Takasaki, H.¹, Narukage, N.³, Yokoyama, T.²⁵, Masuda, S.²⁸, Shimojo, M.²⁰, Nakajima, H.²⁰
Temporal and Spatial Analyses of Spectral Indices of Nonthermal Emissions Derived from Hard X-Rays and Microwaves, 2013/02, ApJ, 763, 87.
- (2) Aoki, W.²⁰, Beers, T.C.⁵⁸, Lee, Y.S.⁵⁶, Honda, S.¹, Ito, H.³⁶, Takada-Hidai, M.²¹, Frebel, A.⁵⁵, Suda, T.²⁰, Fujimoto, M.Y.³¹, Carollo, D.⁵⁴, Sivarani, T.⁴⁷
High-resolution Spectroscopy of Extremely Metal-poor Stars from SDSS/SEGUE. I. Atmospheric Parameters and Chemical Compositions, 2013/01, AJ, 145, 13.
- (3) Gandhi, P.³, Yamanaka, M.^{1,29}, Tanaka, M.²⁴, Nozawa, T.²⁴, Kawabata, K. S.²⁹, Saviane, I.⁴², Maeda, K.²⁴, Moriya, T. J.²⁴, Hattori, T.²⁰, Sasada, M.²⁹, Itoh, R.²⁹
SN 2009js at the crossroads between normal and subluminescent Type IIP supernovae: optical and mid-infrared evolution, 2013/04, ApJ, 767, 166.
- (4) Hayashi, H.¹², and 14 coauthors including Ueno, S.¹, Kaneda, N.¹
Inter-university Upper atmosphere Global Observation NETwork (IUGONET), 2013, Data Science Journal, 12, 179.

- (5) Hillier, A.¹, van Ballegooijen, A.⁴³
On the Support of Solar Prominence Material by the Dips of a Coronal Flux Tube, 2013/04, ApJ, 766, 126.
- (6) Hillier, A.¹, Morton, R. J.⁵⁹, Erdélyi, R.⁶³
A Statistical Study of Transverse Oscillations in a Quiescent Prominence, 2013/12, ApJL, 799, L16.
- (7) Imada, A.²⁰, Izumiura, H.²⁰, Kuroda, D.²⁰, Yanagisawa, K.²⁰, Omodaka, T.⁷, Miyanoshita, R.⁷, Kawai, N.²², Nogami, D.¹
OAO/MITSuME Photometry of Dwarf Novae. I. SU Ursae Majoris, 2013/08, PASJ, 65, 87
- (8) Ishii, T.T.¹, Kawate, T.¹, Nakatani, Y.¹, Morita, S.²⁰, Ichimoto, K.¹, Masuda, S.²⁸
High Speed Imaging System for Solar Flare Research at Hida Observatory, 2013/04, PASJ, 65, 391.
- (9) Itoh, R.²⁹ and 28 coauthors including Yamanaka, M.¹
A Study of the Long-Term Spectral Variations of 3C 66A Observed with the Fermi and Kanata Telescopes, 2013/02, PASJ, 65, 18.
- (10) Itoh, R.²⁹ and 37 coauthors including Yamanaka, M.¹
Dense Optical and Near-infrared Monitoring of CTA 102 during High State in 2012 with OISTER: Detection of Intra-night "Orphan Polarized Flux Flare", 2013/05, ApJL, 768, L24.
- (11) Kato, T.¹⁴, Hambach, F.-J.³⁷, Maehara, H.¹, and 84 coauthors
Survey of Period Variations of Superhumps in SU UMa-Type Dwarf Novae. IV: The Fourth Year (2011-2012), 2013/06, PASJ, 64, 63.
- (12) Kawate, T.¹, Imada, S.²⁸
The Relationship between Extreme Ultraviolet Non-thermal Line Broadening and High-energy Particles during Solar Flares 2013/10, ApJ, 775, 122.
- (13) Kitai, R.¹, UeNo, S.¹, Maehara, H.¹, Shirakawa, S.¹, Katoda, M.¹, Hada, Y.¹, Tomita, Y.¹⁴, Hayashi, H.¹², Asai, A.¹⁰, Isobe, H.¹⁰, Goto, H.¹³, Yamashita, S.¹³
The Digital Database of Long-Term Solar Chromospheric Variation, 2013, Data Science Journal, 12, 213.
- (14) Krishna Prasad, S.⁴⁷, Singh, Jagdev⁴⁷, Ichimoto, K.¹
Thermal Structure of Coronal Loops as Seen with Norikura Coronagraph, 2013/03, ApJ, 765L, 46.
- (15) Lee, K.-S.⁵¹, Innes, D. E.⁵³, Moon, Y.-J.⁵¹, Shibata, K.¹, Lee, Jin-Yi⁵¹, Park, Y.-D.⁵⁰
Fast EUV Dimming Associated with a Coronal Jet Seen in Multi-Wavelength and Stereoscopic Observations, 2013/03, ApJ, 766, 1.
- (16) Lites, B.⁴⁴, Ichimoto, K.¹
The SP_PREP Data Preparation Package for the Hinode Spectro-Polarimeter, 2013/04, Solar Phys., 283, 601.

- (17) Lites, B. W.⁴⁴, and 18 coauthors including Ichimoto, K.¹
The Hinode Spectro-Polarimeter, 2013/04, Solar Phys., 283, 579.
- (18) Maeda, K.²⁴ and 17 coauthors including Yamanaka, M.¹
Properties of Newly Formed Dust Grains in the Luminous Type II_n Supernova 2010jl, 2013/10, ApJ, 776, 5.
- (19) Masuda, S.²⁸, Shimojo, M.²⁰, Kawate, T.¹, Ishikawa, S.²⁰, Ohno, M.²⁹
Extremely Microwave-Rich Solar Flare Observed with Nobeyama Radioheliograph 2013/12, PASJ, 65, S1.
- (20) Miura, N.⁸, Oh-ishi, A.⁸, Shionoya, S.⁸, Watanabe, K.⁸, Kuwamura, S.⁸, Baba, N.³¹, Ueno, S.¹, Ichimoto, K.¹
Solar scintillation detection and ranging (SCIDAR) technique for measuring turbulent-layer heights, 2013/09, MNRAS, 434, 1205.
- (21) Moritani, Y.²⁹, Nogami, D.¹, Okazaki, A.T.³⁰, Imada, A.²⁰, Kambe, E.²⁰, Honda, S.³⁶, Hashimoto, O.³⁶, Mizoguchi, S.³⁶, Kanda, Y.⁴, Sadakane, K.⁴, Ichikawa, K.¹⁴
Precessing Warped Be Disk Triggering the Giant Outbursts in 2009 and 2011 in A0535+262/V725Tau, 2013/08, PASJ, 65, 83.
- (22) Nakata, C.¹⁴, Ohshima, T.¹⁴, Kato, T.¹⁴, Nogami, D.¹, and 24 coauthors
WZ Sge-Type Dwarf Novae with Multiple Rebrightenings: MASTER OT J211258.65+242145.4 and MASTER OT J203749.39+552210.3, 2013/12, PASJ, 65, 117
- (23) Nishida, K.¹, Nishizuka, N.³, Shibata, K.¹
The Role of a Flux Rope Ejection in Three-dimensional Magnetohydrodynamic Simulation of a Solar Flare, 2013/10, ApJL, 775, L39.
- (24) Nishizuka, N.³, Shibata, K.¹
Fermi Acceleration in Plasmoids Interacting with Fast Shocks of Reconnection via Fractal Reconnection, 2013/02, Phys. Rev. Lett., 110, 051101.
- (25) Notsu, Y.¹⁴, Shibayama, T.¹⁴, Maehara, H.²³, Notsu, S.¹⁴, Nagao, T.¹⁴, Honda, S.³⁶, Ishii, T.T.¹, Nogami, D.¹, Shibata, K.¹
Superflares on Solar-type Stars Observed with Kepler II. Photometric Variability of Superflare-generating Stars: A Signature of Stellar Rotation and Starspots, 2013/07, ApJ, 771, 127.
- (26) Notsu, S.¹⁴, Honda, S.³⁶, Notsu, Y.¹⁴, Nagao, T.¹⁴, Shibayama, T.¹⁴, Maehara, H.²³, Nogami, D.¹, Shibata, K.¹
High-Dispersion Spectroscopy of the Superflare Star KIC 6934317, 2013/10, PASJ, 65, 112.
- (27) Sakimoto, K.²⁹, Uemura, M.²⁹, Sasada, M.^{29,14}, Kawabata, K.S.²⁹, Fukazawa, Y.²⁹, Yamanaka, M.^{29,1}, Itoh, R.²⁹, Ohsugi, T.²⁹, Yoshida, M.²⁹, Akitaya, H.²⁹, Sato, S.²⁷, Kino, M.²⁷
Photopolarimetric Monitoring of the Blazar BL Lac in the Optical and Near-Infrared Bands: Decay of the Long-Lived Component, 2013/04, PASJ, in press.
- (28) Shaltout, A. M. K.³⁸, Beheary, M. M.³⁸, Bakry, A.³⁸, Ichimoto, K.¹
The abundance of silicon in the solar atmosphere, 2013/04, MNRAS, 430, 2979.

- (29) Shen, Y.^{1,65}, Liu, Y.⁶⁵, Su, J.⁴¹, Li, H.⁴¹, Zhao, R.⁶⁵, Tian, Z.⁶⁵, Ichimoto, K.¹, Shibata, K.¹,
Diffraction, Refraction, and Reflection of an Extreme-ultraviolet Wave Observed during Its Interactions with Remote Active Regions, 2013/08, ApJ, 773, 33.
- (30) Shibata, K.¹, Isobe, H.¹¹, Hillier, A.¹, Choudhuri, A.R.⁴⁸, Maehara, H.²³, Ishii, T.T.¹, Shibayama, T.¹⁴, Notsu, S.¹⁴, Notsu, Y.¹⁴, Nagao, T.¹⁴, Honda, S.³⁶, Nogami, D.¹
Can Superflares Occur on Our Sun?, 2013/06, PASJ, 65, 49.
- (31) Shibayama, T.¹⁴, Maehara, H.²³, Notsu, S.¹⁴, Notsu, Y.¹⁴, Nagao, T.¹⁴, Honda, S.³⁶, Ishii, T.T.¹, Nogami, D.¹, Shibata, K.¹
Superflares on Solar-type Stars Observed with Kepler. I. Statistical Properties of Superflares, 2013/10, ApJS, 209, 5.
- (32) Takasao, S.¹, Isobe, H.¹¹, Shibata, K.¹
Numerical Simulations of Solar Chromospheric Jets Associated with Emerging Flux, 2013/06, PASJ, 65, 62.
- (33) Takaki, K.²⁹, Kawata, K.S.²⁹, Yamanaka, M.¹, and 15 coauthors
A Luminous and Fast-expanding Type Ib Supernova SN 2012au, 2013/08, ApJL, 772, L17.
- (34) Takeda, Y.²⁰, Honda, S.¹, Ohnishi, T.³⁶, Ohkubo, M.¹⁴, Hirata, R.¹⁴, Sadakane, K.⁴
Lithium, Carbon, and Oxygen Abundances of Hyades F-G Type Stars, 2013/06, PASJ, in press.
- (35) Watanabe, K.³, Shimizu, T.³, Masuda, S.²⁸, Ichimoto, K.¹, Ohno, M.²⁹
Emission Height and Temperature Distribution of White-light Emission Observed by Hinode/SOT from the 2012 January 27 X-class Solar Flare, 2013/10, ApJ, 776, 123.
- (36) Zhang, Y.^{1,57}, Ichimoto, K.¹
Properties of sunspot penumbral grains observed with Hinode, 2013/12, A&A, 560, 77.
- (37) 田中良昌¹⁸, 新堀淳樹¹², 梅村宜生²⁸, 堀智昭²⁸, 阿部修司¹⁷, 小山幸伸¹⁵, 林寛生¹², 上野悟¹, 佐藤由佳¹⁸, 谷田貝垂紀代¹², 小川泰信¹⁸, 三好由純²⁸, 関華奈子²⁸, 宮下幸長¹⁷, 川朋紀¹⁷
IUGONET 解析 ソフトウェアの現状と今後の発展, 2013, 宇宙科学情報解析論文誌, 第 2 号, pp.63-70.
- (38) 堀智昭²⁸, 梅村宜生²⁸, 阿部修司¹⁷, 小山幸伸¹⁵, 田中良昌¹⁸, 林寛生¹², 上野悟¹, 新堀淳樹¹², 佐藤由佳¹⁸, 八木学²⁶
IUGONET メタデータ登録・管理システムの処理性能評価, 2013, 宇宙科学情報解析論文誌, 第 2 号, pp.71-78.

2013 年に受理された査読論文

- (1) Nagata, S.¹, Morita, S.²⁰, Ichimoto, K.¹, Nishida, K.¹, Nakatani, Y.¹, Kimura, G.¹, Kaneda, N.¹, Kitai, R.¹, UeNo, S.¹, Ishii, T.T.¹
Tandem Etalon Magnetograph for Solar Magentic Activity Research Telescope (SMART) at Hida Observatory, 2014, PASJ, in press. (accepted: 2013/12/25)

- (2) Takeda, Y.²⁰, UeNo, S.¹

Empirical Investigation on the Impact of Hydrogen Collisions for the Formation of C I 1.07 μm Lines Based on the Solar Center-to-Limb Variation, 2014, PASJ, in press. (accepted: 2013/10/30)

2013 年に出版された国際会議集録論文

- (1) Hillier, A.¹, Berger, T.⁵², Shibata, K.¹, Isobe, H.¹¹

Simulations of the Dynamics of the Magnetic Rayleigh-Taylor Instability in Solar Prominences, in Proc. of Numerical Modeling of Space Plasma Flows (ASTRONUM2012), 2013, ASP, 147.

- (2) Naito, H.²⁷, Mizoguchi, S.³⁶, Arai, A.³⁶, Tajitsu, A.^{NHAO-S}, Narusawa, S.³⁶, Yamanaka, M.¹, Fujii, M.³⁶, Iijima, T.⁶⁰, Kinugasa, K.²⁰, Kurita, M.¹⁴, Nagayama, T.²⁷, Yamaoka, H.¹⁶, Sadakane, K.⁴

Observational study of the extremely slow nova V1280 Scorpii 2013, Stella Novae: Future and Past Decades, arXiv1306.3667

- (3) Tanaka, Y.¹⁸, Shinbori, A.¹², Hori, T.²⁸, Koyama, Y.¹⁵, Abe, S.¹⁷, Umemura, N.²⁸, Sato, Y.¹⁸, Yagi, M.²⁶, UeNo, S.¹, Yatagai, A.¹², Ogawa, Y.¹⁸, Miyoshi, Y.²⁸

Analysis software for upper atmospheric data developed by the IUGONET project and its application to polar science, Adv. Polar Sci., 24, 231-240, doi: 10.3724/SP.J.1085.2013.00231, 2013.

- (4) Ueno, S.¹, Shibata, K.¹, Morita, S.²⁰, Kimura, G.¹, Asai, A.¹⁰, Kitai, R.¹, Nagata, S.¹, Ishii, T.T.¹, Nakatani, Y.¹, Yamaguchi, M.¹ and coauthors

International Collaboration and Academic Exchange of the CHAIN Project in this Three Years (ISWI Period), 2014, Sun and Geosphere, Vol.9, pp.97-103 (printing).

- (5) Yamanaka, M.^{Hiro,1}, Kawabata, K. S.²⁹, Maeda, K.²⁴, Tanaka, M.²⁴, Yoshida, M.²⁹, Hattori, T.²⁰, Nomoto, K.²⁴, Komatsu, T.²⁹, Okushima, T.²⁹

Late-Phase Observations of a Super-Chandrasekhar SN Ia, 2013, IAUS, 281, 319

速報、サーキュラーなど

- (1) Moritani, Y.²⁹, Takaki, K.²⁹, Kawabata, K. S.²⁹, Akitaya, H.²⁹, Ebisuda, N.²⁹, Kawaguchi, K.²⁹, Mori, K.²⁹, Ohashi, Y.²⁹, Ueno, I.²⁹, Sasada, M.¹⁴, Yamanaka, M.¹

Supernova 2013bu in NGC 7331 = Psn J22370217+3424052 2013, CBET, 3498, 2

- (2) Takaki, K.²⁹, Kawaguchi, K.²⁹, Kawabata, K. S.²⁹, Yamanaka, M.¹

Supernova 2013cg in NGC 2891 = Psn J09265677-2446596 2013, CBET, 3517, 2

- (3) Takaki, K.²⁹, Moritani, Y.²⁹, Kawabata, K. S.²⁹, Yamanaka, M.¹,

Supernova 2013fb in IC 221 = Psn J02224207+2816012 2013, CBET, 3643, 3

- (4) Takaki, K.²⁹, Moritani, Y.²⁹, Kawabata, K. S.²⁹, Yamanaka, M.¹

Supernova 2013gy in NGC 1418 = Psn J03421688-0443185 2013, CBET, 3743, 4

- (5) Ueno, I.²⁹, Itoh, R.²⁹, Kawabata, K. S.²⁹, Yamanaka, M.¹

Supernova 2013gn in NGC 5557 = Psn J14182850+3630244 2013, CBET, 3727, 2

- (6) Ueno, I.²⁹, Kawaguchi, K.²⁹, Takaki, K.²⁹, Kawabata, K. S.²⁹, Yamanaka, M.¹
Supernova 2013gv in IC 1890 = Psn J03095731+1912492 2013, CBET, 3739, 2
- (7) Ueno, I.²⁹, Ebisuda, N.²⁹, Kawaguchi, K.²⁹, Takaki, K.²⁹, Mori, K.²⁹, Kawabata, K. S.²⁹,
Yamanaka, M.¹
Supernova 2013hg = Psn J12095569+2953513 2013, CBET, 3753, 4
- (8) Yamanaka, M.¹, Takaki, K.²⁹, Moritani, Y.²⁹, Kawabata, K. S.²⁹
Supernova 2013cs in ESO 576-17 = Psn J13151481-1757556 2013, CBET, 3533, 3
- (9) Yamanaka, M.¹, Takaki, K.²⁹, Moritani, Y.²⁹, Kawabata, K. S.²⁹
Supernova 2013fa in NGC 6956 = Psn J20435357+1230517 2013, CBET, 3641, 3
- (10) Yamanaka, M.¹, Moritani, Y.²⁹, Itoh, R.²⁹, Kawabata, K. S.²⁹
Supernova 2013gb in UGC 4700 = Psn J08585252+4135001 2013, CBET, 3698, 2

11.2 研究会報告

宇宙科学シンポジウム (宇宙科学研究所) 1月8日-9日

- (1) 一本 潔¹、木村剛¹、篠田一也²⁰、原弘久²⁰、末松芳法²⁰、清水敏文³
Solar-C 光学磁場診断望遠鏡 (SUVIT) の検討状況 (ポスター)
- (2) 萩野正興¹、一本 潔¹、木村剛¹、永田伸一¹、仲谷善一¹、原弘久²⁰、篠田一也²⁰、末松芳法²⁰、清水敏文³
太陽観測衛星搭載にむけた可視-近赤外狭帯域チューナブルフィルターの開発

プラズマの素過程研究と分光診断の展望 (核融合科学研究所, 岐阜) 1月24日-25日

- (3) 阿南徹¹、一本 潔¹、Robert Casini⁴⁴
太陽黒点近傍のジェットの高電場の上限値と磁場の測定

第6回 宇宙総合学ユニットシンポジウム「人類はなぜ宇宙へ行くのか 4」 (京都大学百周年時計台記念館) 2月2日-3日

- (4) 柴田一成¹
人類はスーパーフレアを生き延びられるのか
- (5) 磯部洋明¹⁰
京の宇宙総合学
- (6) 浅井歩¹⁰
生存圏としての太陽地球環境

MAGNETIC FIELDS IN THE UNIVERSE IV: From Laboratory and Stars to Primordial Structures (カンクン, メキシコ) 2月4日-8日

- (7) Nogami, D.¹,
Superflares on the Solar-Type Stars (invited)