

## Curriculum Vitae

Name: **Hiroyuki HIRASHITA**

Date and place of birth: 2 August 1973, Yatsushiro (Kumamoto Pref.), Japan

Nationality: Japanese

### Contact

Institute of Astronomy and Astrophysics, Academia Sinica

P.O. Box 23-141, Taipei 10617, Taiwan

TEL: +886-2-2366-5447

FAX: +886-2-2367-7849

E-mail: hirashita@asiaa.sinica.edu.tw

### Education

- 1998.4 – 2001.3 Department of Astronomy, Kyoto University, Japan  
PhD (Science) obtained
- 1996.4 – 1998.3 Department of Astronomy, Kyoto University, Japan  
master's degree obtained
- 1992.4 – 1996.3 Faculty of Science, Kyoto University, Japan  
bachelor's degree obtained

### Positions

- 2014.7 – Research Fellow  
(Institute of Astronomy & Astrophysics, Academia Sinica,  
Taiwan)
- 2009.10 – 2014.7 Associate Research Fellow  
(Institute of Astronomy & Astrophysics, Academia Sinica,  
Taiwan)
- 2008.3 – 2009.9 Visiting Assistant Research Fellow  
(Institute of Astronomy & Astrophysics, Academia Sinica,  
Taiwan)
- 2005.3 – 2008.3 Assistant Professor (for three-year term)  
(Center for Computational Sciences, University of Tsukuba,  
Japan)
- 2003.4 – 2005.3 Postdoctoral Fellow of the Japan Society for the Promotion of  
Science for Young Scientists  
(Nagoya University, Japan / SISSA, Italy)
- 2001.4 – 2003.3 Postdoctoral Fellow of the Japan Society for the Promotion of  
Science for Research Abroad  
(Arcetri Observatory, Italy)

## Grants

- 2016 – 2019 Ministry of Science and Technology Grant, Taiwan  
(105-2112-M-001-027-MY3) (3,897,000 TWD  $\simeq$  130,000 USD)
- 2013 – 2016 National Science Council Grant, Taiwan  
(102-2119-M-001-006-MY3) (1,869,000 TWD  $\simeq$  60,000 USD)
- 2011 – 2013 National Science Council Grant, Taiwan  
(99-2112-M-001-006-MY3) (1,085,000 TWD  $\simeq$  35,000 USD)
- 2006 – 2007 Grant-in-Aid for Scientific Research of the Ministry of Education,  
Culture, Sports, Science and Technology, Japan (No. 18740097)  
(1,900,000 Yen  $\simeq$  24,000 USD)
- 2006 – 2007 Grant-in-Aid for Scientific Research of the Ministry of Education,  
Culture, Sports, Science and Technology, Japan (No. 18026002)  
(2,400,000 Yen  $\simeq$  30,000 USD)

## Honors

- 2003.4 – 2005.3 Postdoctoral Fellow of the Japan Society for the Promotion of  
Science for Young Scientists
- 2001.4 – 2003.3 Postdoctoral Fellow of the Japan Society for the Promotion of  
Science for Research Abroad
- 1998.4 – 2001.3 Research Fellow of the Japan Society for the Promotion of  
Science for Young Scientists

## External Committees and Service (International)

- 2018 Guest Editor of the Publications of the Astronomical Society of Japan  
(Special Issue for AKARI)
- 2018 Scientific Organizing Committee for “Challenges in Panchromatic  
Modelling with Next Generation Facilities”  
(IAU Symposium; Osaka, Japan, 2018.11.12–16)
- 2017 PhD Thesis Referee for Mattia Mancini  
(Università di Roma La Sapienza, Italy)
- 2014 Master Thesis Referee for Paola Paruta  
(Politecnico di Milano, Italy)
- 2013 Local Organizing Committee for “The Life Cycle of Dust in the Universe:  
Observations, Theory, and Laboratory Experiments”  
(Taipei, Taiwan, 2013.11.18–22)
- 2013 Scientific Organizing Committee for “SKA Science Workshop in East Asia”  
(Nagoya, Japan, 2013.6.5–7)
- 2010 PhD Thesis Evaluation Committee for Christa Gall  
(Dark Cosmology Centre, Denmark)

## Invited Talks at Major International Conferences

1. “Dust Growth in the Interstellar Medium”  
in Cosmic Dust and Magnetism, Daejeon, Korea (2018.10.31–11.2)

2. “The Life-cycle of Interstellar Dust”  
in Dust across the Universe (European Week of Astronomy and Space Science 2017), Prague, Czech (2017.6.26–30)
3. “Dust Processing in the Interstellar Medium”  
in It is a Dusty Universe: the Many Roles of Dust in the Chemistry and Physics in Diverse Environments in Space (the 40th COSPAR Scientific Assembly), Moscow, Russia (2014.8.2–10)
4. “Dust Processing in the Interstellar Medium”  
in the Life Cycle of Dust in the Universe: Observations, Theory and Laboratory Experiments, Taipei, Taiwan (2013.11.18–22)
5. “Observational features of interaction between dust and plasma in galaxies”  
in 12th Workshop on Fine Particle Plasmas, Toki, Japan (2011.11.26–27)
6. “Dust processing and turbulence in galaxies”  
in 10th Workshop on Fine Particle Plasmas, Toki, Japan (2009.11.26–27)
7. “Grain shattering and coagulation in the interstellar medium”  
in Current Problems in Extragalactic Dust, Copenhagen, Denmark (2009.6.29–7.3)
8. “Mass - Luminosity - Abundance Relation of Dwarf Spheroidals”  
in the Chemical Evolution of Dwarf Galaxies - Present Status and Perspective Ringberg, Germany (2002.7.28–8.2)

### **Mentoring/Supervising Students**

2016–2017	Li-Hsin Chen (undergraduate): 1 paper
2015–2017	Wei-Chen Wang (undergraduate): 1 paper
2014–2018	Kuan-Chou Hou (PhD): 2 papers
2014–2016	Yi Hang Valerie Wong (undergraduate): 1 paper
2014–2015	Po-Sheng Ou (undergraduate)
2013–2014	Wei-Leong Tee (undergraduate): 1 contribution to a white paper
2011–2013	Tzu-Ming Kuo (undergraduate): 3 papers
2010–2011	Ai-Lei Sun (undergraduate): 1 paper
2007–2009	Tomohiro Ichikawa (master): 1 paper
2005–2007	Miho Nagaoka (master)

### **Mentoring Postdocs (as the First Advisor)**

2017–	Shohei Aoyama
2012–2014	Ji Yeon Seok: 2 papers

## **Institute Management**

2018– Theory Group Principal Investigator (Manager)  
2017– Computing Committee Chair  
2015–2017 Colloquium Committee Chair  
2012–2013 Faculty Lunch Meeting Organizer  
2012–2013 Journal Club Organizer  
2011–2014 Computing Committee Chair  
2009–2010 Lunch Talk Organizer

## List of Publications

### Refereed Journals

98 refereed journal papers with 1912 citations (H-index = 25)

51 first-author refereed journal papers with 1060 citations (H-index = 19)

1. Shohei Aoyama, Kuan-Chou Hou, Hiroyuki Hirashita, Kentaro Nagamine, Ikkoh Shimizu  
“Cosmological simulation with dust formation and destruction”  
*Monthly Notices of the Royal Astronomical Society*, in press (2018)
2. Hiroyuki Hirashita, Chih-Yu Lin  
“Dust abundance and grain size in galaxy halos”  
*Planetary and Space Science*, in press (2018)
3. Li-Hsin Chen, Hiroyuki Hirashita, Kuan-Chou Hou, Shohei Aoyama, Ikkoh Shimizu, Kentaro Nagamine  
“Populating H<sub>2</sub> and CO in galaxy simulation with dust evolution”  
*Monthly Notices of the Royal Astronomical Society*, **474**, 1545–1563 (2018)
4. Hiroyuki Hirashita, Takaya Nozawa  
“Dust evolution with active galactic nucleus feedback in elliptical galaxies”  
*Planetary and Space Science*, **149**, 45–55 (2017)
5. Hiroyuki Hirashita, Denis Burgarella, Rychard J. Bouwens  
“Dust masses of  $z > 5$  galaxies from SED fitting and ALMA upper limits”  
*Monthly Notices of the Royal Astronomical Society*, **472**, 4587–4597 (2017)
6. Andrea Ferrara, Hiroyuki Hirashita, Seiji Fujimoto, Masami Ouchi  
“The infrared-dark dust content of high redshift galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **471**, 5018–5024 (2017)
7. Kuan-Chou Hou, Hiroyuki Hirashita, Kentaro Nagamine, Shohei Aoyama, Ikkoh Shimizu  
“Evolution of dust extinction curves in galaxy simulation”  
*Monthly Notices of the Royal Astronomical Society*, **469**, 870–885 (2017)
8. Hiroyuki Hirashita, Nanase Harada  
“Effects of dust evolution on the abundances of CO and H<sub>2</sub>”  
*Monthly Notices of the Royal Astronomical Society*, **467**, 699–714 (2017)
9. Nanase Harada, Yasuhiro Hasegawa, Yuri Aikawa, Hiroyuki Hirashita, Haoyu Baobab Liu, Naomi Hirano  
“Effects of Grain Growth on Molecular Abundances in Young Stellar Objects”  
*The Astrophysical Journal*, **837**, 78 (2017)

10. Shohei Aoyama, Kuan-Chou Hou, Ikkoh Shimizu, Hiroyuki Hirashita, Keita Todoroki, Jun-Hwan Choi, Kentaro Nagamine  
“Galaxy Simulation with Dust Formation and Destruction”  
*Monthly Notices of the Royal Astronomical Society*, **466**, 105–121 (2017)
11. Wen-Chen Wang, Hiroyuki Hirashita, Kuan-Chou Hou  
“Dust evolution processes in normal galaxies at  $z > 6$  detected by ALMA”  
*Monthly Notices of the Royal Astronomical Society*, **465**, 3475–3482 (2017)
12. Kuan-Chou Hou, Hiroyuki Hirashita, Michał Michałowski  
“Dust evolution processes constrained by extinction curves in nearby galaxies”  
*Publications of the Astronomical Society of Japan*, **68**, 94 (2016)
13. Yi Hang Valerie Wong, Hiroyuki Hirashita, Zhi-Yun Li  
“Millimeter-sized grains in the protostellar envelopes: where do they come from?”  
*Publications of the Astronomical Society of Japan*, **68**, 67 (2016)
14. Hiroyuki Hirashita, Takaya Nozawa, Ryosuke S. Asano, Typhoon Lee  
“Revisiting the lifetime estimate of large presolar grains in the interstellar medium”  
*Planetary and Space Science*, **133**, 17–22 (2016)
15. Hiroyuki Hirashita, Patrick M. Koch, Satoki Matsushita, *et al.*  
“First-generation science cases for ground-based terahertz telescopes”  
*Publications of the Astronomical Society of Japan*, **68**, R141 (2016)
16. Hiroyuki Hirashita, Takaya Nozawa, Alexa Villaume, Sundar Srinivasan  
“Dust processing in elliptical galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **454**, 1620–1633 (2015)
17. Kenji Bekki, Hiroyuki Hirashita, Takuji Tsujimoto  
“The origin of dust extinction curves with or without the 2175 Å bump in galaxies: The case of the Magellanic Clouds”  
*The Astrophysical Journal*, **810**, 39 (2015)
18. Ji Yeon Seok, Bon-Chul Koo, Hiroyuki Hirashita  
“Dust Cooling in Supernova Remnants in the Large Magellanic Cloud”  
*The Astrophysical Journal*, **807**, 100 (2015)
19. Yuji Urata, Kuiyun Huang, Keiichi Asada, Hiroyuki Hirashita, Makoto Inoue, Paul T. P. Ho  
“A new era of sub-millimeter GRB afterglow follow-ups with the Greenland Telescope”  
*Advances in Astronomy*, 165030 (2015)
20. Hiroyuki Hirashita  
“Two-size approximation: a simple way of treating the evolution of grain size distribution in galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **447**, 2937–2950 (2015)

21. Takaya Nozawa, Ryosuke S. Asano, Hiroyuki Hirashita, Tsutomu T. Takeuchi  
“Evolution of grain size distribution in high-redshift dusty quasars: integrating large amounts of dust and unusual extinction curves”  
*Monthly Notices of the Royal Astronomical Society*, **447**, L16–L20 (2015)
22. N. Naslim, ..., Hiroyuki Hirashita, *et al.*  
“Molecular hydrogen emission in the interstellar medium of the Large Magellanic Cloud”  
*Monthly Notices of the Royal Astronomical Society*, **446**, 2490–2504 (2015)
23. Nikolai V. Voshchinnikov, Hiroyuki Hirashita  
“Effects of grain growth on the interstellar polarization curve”  
*Monthly Notices of the Royal Astronomical Society*, **445**, 301–308 (2014)
24. Hiroyuki Hirashita, Andrea Ferrara, Pratika Dayal, Masami Ouchi  
“Constraining dust formation in high-redshift young galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **443**, 1704–1712 (2014)
25. Makoto Inoue, ..., Hiroyuki Hirashita, *et al.*  
“Greenland telescope project: Direct confirmation of black hole with sub-millimeter VLBI”  
*Radio Science*, **49**, 564–571 (2014)
26. Raffaella Schneider, Rosa Valiante, Paolo Ventura, Flavia dell’Agli, Marcella Di Criscienzo, Hiroyuki Hirashita, Francisca Kemper  
“The dust production rate of AGB stars in the Magellanic Clouds”  
*Monthly Notices of the Royal Astronomical Society*, **422**, 1440–1450 (2014)
27. Hiroyuki Hirashita, Ryosuke S. Asano, Takaya Nozawa, Zhi-Yun Li, Ming-Chang Liu  
“Dense molecular cloud cores as a source of micrometer-sized grains in galaxies”  
*Planetary and Space Science*, **100**, 40–45 (2014)
28. Yasuhiro Hasegawa, Hiroyuki Hirashita  
“Planet Traps and First Planets: The Critical Metallicity for Gas Giant Formation”  
*The Astrophysical Journal*, **788**, 62 (2014)
29. Ryosuke S. Asano, Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takaya Nozawa  
“Evolution of extinction curves in galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **440**, 134–142 (2014)
30. Ji Yeon Seok, Hiroyuki Hirashita, Ryosuke S. Asano  
“Formation History of Polycyclic Aromatic Hydrocarbons in Galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **439**, 2186–2196 (2014)

31. Hiroyuki Hirashita, Nikolai Voshchinnikov  
“Effects of grain growth mechanisms on the extinction curve and the metal depletion in the interstellar medium”  
*Monthly Notices of the Royal Astronomical Society*, **437**, 1636–1645 (2014)
32. Yutaka Fujita, Nobuhiro Okabe, Kosuke Sato, Takayuki Tamura, Satoki Matsushita, Hiroyuki Hirashita, *et al.*  
“Discovery of an Outstanding Disk in the cD Galaxy of the Hydra A Cluster”  
*Publications of the Astronomical Society of Japan*, **65**, L15 (2013)
33. Tzu-Ming Kuo, Hiroyuki Hirashita, Tayyaba Zafar  
“Evolution of dust content in galaxies probed by gamma-ray burst afterglows”  
*Monthly Notices of the Royal Astronomical Society*, **436**, 1238–1244 (2013)
34. Hiroyuki Hirashita, Zhi-Yun Li  
“Condition for the formation of micron-sized dust grains in dense molecular cloud cores”  
*Monthly Notices of the Royal Astronomical Society*, **434**, L70–L74 (2013)
35. Ryosuke S. Asano, Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takaya Nozawa  
“What determines the grain size distribution in galaxies?”  
*Monthly Notices of the Royal Astronomical Society*, **432**, 637–652 (2013)
36. Hiroyuki Hirashita, Hiroshi Kobayashi  
“Evolution of dust grain size distribution by shattering in the interstellar medium: robustness and uncertainty”  
*Earth, Planets, and Space*, **65**, 1083–1094 (2013)
37. Hiroyuki Hirashita  
“Properties of free-free, dust, and CO emissions in the starbursts of blue compact dwarf galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **429**, 3390–3401 (2013)
38. Ryosuke S. Asano, Tsutomu T. Takeuchi, Hiroyuki Hirashita, Akio K. Inoue  
“Dust formation history of galaxies: a critical role of metallicity for the dust mass growth by accreting materials in the interstellar medium”  
*Earth, Planets, and Space*, **65**, 213–222 (2013)
39. Hiroyuki Hirashita, Takaya Nozawa  
“Synthesized grain size distribution in the interstellar medium”  
*Earth, Planets, and Space*, **65**, 183–192 (2013)
40. Tzu-Ming Kuo, Hiroyuki Hirashita  
“Impact of grain size distributions on the dust enrichment in high-redshift quasars”  
*Monthly Notices of the Royal Astronomical Society*, **424**, L34–L38 (2012)



41. Hiroyuki Hirashita  
“Dust growth in the interstellar medium: how do accretion and coagulation interplay?”  
*Monthly Notices of the Royal Astronomical Society*, **422**, 1263–1271 (2012)
42. Hiroyuki Hirashita  
“Central free-free dominated 880- $\mu\text{m}$  emission in II Zw 40”  
*Monthly Notices of the Royal Astronomical Society*, **418**, 828–837 (2011)
43. Minsung Jang, Myungshin Im, Induk Lee, Yuji Urata, Kuiyun Huang,  
Hiroyuki Hirashita, Xiaohui Fan, Linhua Jiang  
“Dust Properties in the Afterglow of GRB 071025 at  $z \sim 5$ ”  
*The Astrophysical Journal*, **741**, L20 (2011)
44. Hiroyuki Hirashita, Tzu-Ming Kuo  
“Effects of grain size distribution on the interstellar dust mass growth”  
*Monthly Notices of the Royal Astronomical Society*, **416**, 1340–1353 (2011)
45. Daisuke Yamasawa, Asao Habe, Takashi Kozasa, Takaya Nozawa,  
Hiroyuki Hirashita, Hideyuki Umeda, Ken’ichi Nomoto  
“The Role of Dust in the Early Universe I : Protogalaxy Evolution”  
*The Astrophysical Journal*, **735**, 44 (2011)
46. Kimiaki Kawara, Hiroyuki Hirashita, et al.  
“Supernova dust for the extinction law in a young infrared galaxy at  $z \sim 1$ ”  
*Monthly Notices of the Royal Astronomical Society*, **412**, 1070–1080 (2011)
47. Ai-Lei Sun, Hiroyuki Hirashita  
“Importance of far-infrared mapping in a spiral galaxy: AKARI observation of M81”  
*Monthly Notices of the Royal Astronomical Society*, **411**, 1707–1715 (2011)
48. Tamon Suwa, Hiroyuki Hirashita, Yoichi Tamura  
“A simple approach to the high-redshift sub-millimeter galaxies”  
*Astrophysics and Space Science*, **330**, 219–226 (2010)
49. Hiroyuki Hirashita  
“Shattering by turbulence as a production source of very small grains”  
*Monthly Notices of the Royal Astronomical Society*, **407**, L49–L53 (2010)
50. Hiroyuki Hirashita, Takaya Nozawa, Huirong Yan, Takashi Kozasa  
“Effects of grain shattering by turbulence on extinction curves in starburst galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **404**, 1437–1448 (2010)
51. Pratika Dayal, Hiroyuki Hirashita, Andrea Ferrara  
“Detecting Lyman alpha emitters in the submillimetre”  
*Monthly Notices of the Royal Astronomical Society*, **403**, 620–624 (2010)

52. Leslie K. Hunt, Hiroyuki Hirashita  
“The size-density relation of extragalactic H II regions”  
*Astronomy & Astrophysics*, **507**, 1327–1343 (2009)
53. Hiroyuki Hirashita, Kazuyuki Omukai  
“Dust coagulation in star formation with different metallicities”  
*Monthly Notices of the Royal Astronomical Society*, **399**, 1795–1801 (2009)
54. Hiroyuki Hirashita, Tomohiro T. Ichikawa  
“Effects of dust abundance on the far-infrared colours of blue compact dwarf galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **396**, 500–510 (2009)
55. Hiroyuki Hirashita, Huirong Yan  
“Shattering and coagulation of dust grains in interstellar turbulence”  
*Monthly Notices of the Royal Astronomical Society*, **391**, 1061–1074 (2009)
56. Hiroyuki Hirashita, Hidehiro Kaneda, Takashi Onaka, Toyoaki Suzuki  
“Far-Infrared Properties of Blue Compact Dwarf Galaxies Observed with AKARI/Far-Infrared Surveyor (FIS)”  
*Publications of the Astronomical Society of Japan*, **60**, S477–S488 (2008)
57. Hiroyuki Hirashita, Takaya Nozawa, Tsutomu T. Takeuchi, Takashi Kozasa  
“Extinction curves flattened by reverse shocks in supernovae”  
*Monthly Notices of the Royal Astronomical Society*, **384**, 1725–1732 (2008)
58. Atsunori Yonehara, Hiroyuki Hirashita, Philipp Richter  
“Origin of chromatic features in multiple quasars: Variability, dust, or microlensing”  
*Astronomy & Astrophysics*, **478**, 95–109 (2008)
59. Hiroyuki Hirashita, Yasunori Hibi, Hiroshi Shibai  
“Far-infrared dust properties in the Galaxy and the Magellanic Clouds”  
*Monthly Notices of the Royal Astronomical Society*, **379**, 974–984 (2007)
60. Hiroyuki Hirashita, Leslie K. Hunt  
“The evolution of the radio continuum of young starbursts: The importance of synchrotron radiation”  
*Astronomy & Astrophysics*, **460**, 67–81 (2006)
61. Yasunori Hibi, Hiroshi Shibai, Mitsunobu Kawada, Takafumi Ootsubo, Hiroyuki Hirashita  
“Common Correlations between 60, 100 and 140  $\mu\text{m}$  Intensities in the Galactic Plane and Magellanic Clouds”  
*Publications of the Astronomical Society of Japan*, **58**, 509–519 (2006)

62. Hiroyuki Hirashita, Hiroshi Shibai, Tsutomu T. Takeuchi  
“Search for high column density systems with gamma ray bursts”  
*Astronomy & Astrophysics*, **452**, 481–485 (2006)
63. Ilian T. Iliev, Hiroyuki Hirashita, Andrea Ferrara  
“Fate of clumps in damped Ly $\alpha$  systems”  
*Monthly Notices of the Royal Astronomical Society*, **368**, 1885–1892 (2006)
64. Tsutomu T. Takeuchi, Takako T. Ishii, Takaya Nozawa, Takashi Kozasa,  
Hiroyuki Hirashita  
“A model for the infrared dust emission from forming galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **362**, 592–608 (2005)
65. Hiroyuki Hirashita, Takaya Nozawa, Takashi Kozasa, Takako T. Ishii,  
Tsutomu T. Takeuchi  
“Extinction curves expected in young galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **357**, 1077–1087 (2005)
66. Hiroyuki Hirashita, Andrea Ferrara  
“Molecular hydrogen in damped Ly $\alpha$  systems: clues to interstellar physics at high redshift”  
*Monthly Notices of the Royal Astronomical Society*, **356**, 1529–1541 (2005)
67. Hiroyuki Hirashita, Leslie K. Hunt  
“The role of dust in ‘active’ and ‘passive’ low-metallicity star formation”  
*Astronomy & Astrophysics*, **421**, 555–570 (2004)
68. Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takako T. Ishii, Leslie K. Hunt,  
Andrea Ferrara  
“Infrared spectral energy distribution model for extremely young galaxies”  
*Monthly Notices of the Royal Astronomical Society*, **343**, 839–850 (2003)
69. Hiroyuki Hirashita, Veronique Buat, Akio K. Inoue  
“Star formation rate in galaxies from UV, IR, and H $\alpha$  estimators”  
*Astronomy & Astrophysics*, **410**, 83–100 (2003)
70. Hiroyuki Hirashita, Andrea Ferrara, Keiichi Wada, Philipp Richter  
“Molecular hydrogen in damped Ly $\alpha$  systems: spatial distribution”  
*Monthly Notices of the Royal Astronomical Society*, **341**, L18–L22 (2003)
71. Hiroyuki Hirashita, Andrea Ferrara  
“Effects of dust grains on early galaxy evolution”  
*Monthly Notices of the Royal Astronomical Society*, **337**, 921–937 (2002)
72. Hiroyuki Hirashita, Yuka Y. Tajiri, Hideyuki Kamaya  
“Dust-to-gas ratio and star formation history of blue compact dwarf galaxies”  
*Astronomy & Astrophysics*, **388**, 439–445 (2002)

73. Hiroyuki Hirashita, Leslie K. Hunt, Andrea Ferrara  
“Dust and hydrogen molecules in the extremely metal-poor dwarf galaxy SBS 0335–052”  
*Monthly Notices of the Royal Astronomical Society*, **330**, L19–L23 (2002)
74. Hiroshi Shibai, Tsutomu T. Takeuchi, T. N. Rengarajan, Hiroyuki Hirashita  
“Absorption Measurement of Hydrogen Molecules in the Early Universe”  
*Publications of the Astronomical Society of Japan*, **53**, 589–593 (2001)
75. Akio K. Inoue, Hiroyuki Hirashita, Hideyuki Kamaya  
“Effect of Dust Extinction on Estimating Star Formation Rate of Galaxies”  
*The Astrophysical Journal*, **555**, 613–624 (2001)
76. Hideyuki Kamaya, Hiroyuki Hirashita  
“H<sub>2</sub> Formation in Low-Metallicity Galaxies”  
*Publications of the Astronomical Society of Japan*, **53**, 483–488 (2001)
77. Tsutomu T. Takeuchi, Ryohei Kawabe, Kotaro Kohno, Koichiro Nakanishi, Takako T. Ishii, Hiroyuki Hirashita, Kohji Yoshikawa  
“Impacts of Future Submillimeter and Millimeter Large Facilities on the Studies of Galaxy Formation and Evolution: Prospects for the ASTE and the ALMA/LMSA”  
*Publications of the Astronomical Society of the Pacific*, **113**, 586–606 (2001)
78. Hiroyuki Hirashita, Andreas Burkert, Tsutomu T. Takeuchi  
“Chemical Evolution of the Galaxy Based on the Oscillatory Star Formation History”  
*The Astronomical Journal*, **552**, 591–600 (2001)
79. Naoyuki Tamura, Hiroyuki Hirashita, Tsutomu T. Takeuchi  
“Mass-Metallicity Relation for the Local Group Dwarf Spheroidal Galaxies: A New Picture for the Chemical Enrichment of Galaxies in the Lowest Mass Range”  
*The Astrophysical Journal*, **552**, L113–L116 (2001)
80. Tsutomu T. Takeuchi, Takako T. Ishii, Hiroyuki Hirashita, Kohji Yoshikawa, Hideo Matsuhara  
“Exploring Galaxy Evolution from Infrared Number Counts and Cosmic Infrared Background”  
*Publications of the Astronomical Society of Japan*, **53**, 37–52 (2001)
81. Hiroyuki Hirashita, Akio K. Inoue, Hideyuki Kamaya, Hiroshi Shibai  
“Emission from dust in galaxies: Metallicity dependence”  
*Astronomy & Astrophysics*, **366**, 83–90 (2001)
82. Akio K. Inoue, Hiroyuki Hirashita, Hideyuki Kamaya  
“Star Formation Efficiency in the Central 1 kpc Region of Early Spiral Galaxies”  
*The Astronomical Journal*, **120**, 2415–2422 (2000)

83. Tsutomu T. Takeuchi, Hiroyuki Hirashita  
“Testing Intermittence of the Galactic Star Formation History along with the Infall Model”  
*The Astrophysical Journal*, **540**, 217–223 (2000)
84. Hiroyuki Hirashita  
“Dust Growth Timescale and Mass Function of Molecular Clouds in the Galaxy”  
*Publications of the Astronomical Society of Japan*, **52**, 585–588 (2000)
85. Hiroyuki Hirashita, Hideyuki Kamaya  
“Application of the Limit-Cycle Model to Star Formation Histories in Spiral Galaxies: Variation among Morphological Types”  
*The Astronomical Journal*, **120**, 728–732 (2000)
86. Akio K. Inoue, Hiroyuki Hirashita, Hideyuki Kamaya  
“Conversion Law of Infrared Luminosity to Star Formation Rate for Galaxies”  
*Publications of the Astronomical Society of Japan*, **52**, 539–543 (2000)
87. Hiroyuki Hirashita  
“Cyclic Changes in Dust-to-Gas Ratio”  
*The Astrophysical Journal*, **531**, 693–700 (2000)
88. Hiroyuki Hirashita  
“Intermittent Star-Formation Activities of Dwarf Irregular Galaxies”  
*Publications of the Astronomical Society of Japan*, **52**, 107–112 (2000)
89. Naoyuki Tamura, Hiroyuki Hirashita  
“Observational Test of Environmental Effects on the Local Group Dwarf Spheroidal Galaxies”  
*The Astrophysical Journal Letters*, **525**, L17–L20 (1999)
90. Hiroyuki Hirashita  
“Dust-to-Gas Ratio and Metallicity in Dwarf Galaxies”  
*The Astrophysical Journal*, **522**, 220–224 (1999)
91. Hiroyuki Hirashita  
“Evolution of Interstellar Clouds in Local Group Dwarf Spheroidal Galaxies in the Context of their Star Formation Histories”  
*The Astrophysical Journal*, **520**, 607–612 (1999)
92. Hiroyuki Hirashita, Hideyuki Kamaya, Tsutomu T. Takeuchi  
“Implication of Dark Matter in Dwarf Spheroidal Galaxies”  
*Publications of the Astronomical Society of Japan*, **51**, 375–381 (1999)
93. Hiroyuki Hirashita  
“Dust-to-Gas Ratio and Phase Transition of Interstellar Medium”  
*Astronomy & Astrophysics*, **344**, L87–L89 (1999)

94. Tsutomu T. Takeuchi, Hiroyuki Hirashita, Kouji Ohta, Takashi G. Hattori, Takako T. Ishii, Hiroshi Shibai  
“The *IRIS* Far-Infrared Galaxy Survey: Expected Number Count, Redshift, and Perspective”  
*Publications of the Astronomical Society of the Pacific*, **111**, 288–305 (1999)
95. Hiroyuki Hirashita, Tsutomu T. Takeuchi, Kouji Ohta, Hiroshi Shibai  
“Optical Number Count Estimation of IRIS Far-Infrared Survey of Galaxies”  
*Publications of the Astronomical Society of Japan*, **51**, 81–90 (1999)
96. Hiroyuki Hirashita  
“Global Law for Dust-to-Gas Ratio of Spiral Galaxies”  
*The Astrophysical Journal Letters*, **510**, L99–L102 (1999)
97. Hiroyuki Hirashita, Tsutomu T. Takeuchi, Naoyuki Tamura  
“Physical Interpretation of the Mass-Luminosity Relation of Dwarf Spheroidal Galaxies”  
*The Astrophysical Journal Letters*, **504**, L83–L86 (1998)
98. Hiroyuki Hirashita, Hideyuki Kamaya, Shin Mineshige  
“The influence of galactic wind upon the star formation histories of Local Group galaxies”  
*Monthly Notices of Royal Astronomical Society*, **290**, L33–L35 (1997)

### Review Articles and White Papers

1. Tsutomu T. Takeuchi, ..., Hiroyuki Hirashita, *et al.*  
“Formation, Evolution, and Revolution of Galaxies by SKA: Activities of SKA-Japan Galaxy Evolution Sub-SWG”  
arXiv:1603.01938 (2016)
2. Tsutomu T. Takeuchi, Hiroyuki Hirashita  
“Infrared dust emission from forming galaxies”  
in Recent Research Development of Astronomy and Astrophysics, (Research Signpost: Kerala) **2**, 119–152 (2004)

### Conference Proceedings

1. Steven J. Gibson, Hiroyuki Hirashita, *et al.*  
“Exploring the Dust Population in Cold Diffuse Clouds”  
in The Cosmic Wheel and the Legacy of the AKARI Archive: From Galaxies and Stars to Planets and Life, in press

2. Hiroyuki Hirashita, Andrea Ferrara, Pratika Dayal, Masami Ouchi  
“Constraining the First Dust Enrichment by Supernovae in Ly $\alpha$  Emitters”  
in *Revolution in Astronomy with ALMA: The Third Year*, ASP Conference Series, Vol. 499, ed. D. Iono *et al.*, (Astronomical Society of the Pacific, San Francisco), 67–68 (2015)
3. Hiroyuki Hirashita  
“Dust Processing in the Interstellar Medium”  
in *The Life Cycle of Dust in the Universe: Observations, Theory, and Laboratory Experiments*, Proceedings of Science, ed. A. Andersen *et al.*, (SISSA, Trieste), id.27 (2014)
4. Ji Yeon Seok, Hiroyuki Hirashita, Ryosuke S. Asano  
“Formation History of Polycyclic Aromatic Hydrocarbons in Galaxies”  
in *The Life Cycle of Dust in the Universe: Observations, Theory, and Laboratory Experiments*, Proceedings of Science, ed. A. Andersen *et al.*, (SISSA, Trieste), id.34 (2014)
5. Naslim Neelamkodan, ..., Hiroyuki Hirashita, *et al.*  
“Dust and Gas in diffuse interstellar medium of the Large Magellanic Cloud”  
in *The Life Cycle of Dust in the Universe: Observations, Theory, and Laboratory Experiments*, Proceedings of Science, ed. A. Andersen *et al.*, (SISSA, Trieste), id.81 (2014)
6. Ryosuke S. Asano, Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takaya Nozawa  
“How do the extinction curves in galaxies evolve?”  
in *The Life Cycle of Dust in the Universe: Observations, Theory, and Laboratory Experiments*, Proceedings of Science, ed. A. Andersen *et al.*, (SISSA, Trieste), id.105 (2014)
7. Hiroyuki Hirashita  
“Evolution of Grain Size Distribution in Starburst Galaxies”  
in *Galaxy Mergers in an Evolving Universe*, ASP Conference Proceedings, Vol. 477, ed. W.-H. Sun *et al.*, (ASP: San Francisco), 279–280 (2013)
8. Hiroyuki Hirashita  
“Evolution of dust abundance and grain size distribution at high redshift”  
in *First Stars IV – From Hayashi to the Future*, AIP Conference Proceedings Vol. 1480, ed. M. Umemura, K. Omukai, (AIP: New York) 119–122 (2012)
9. Daisuke Yamasawa, Asao Habe, Kazuyuki Omukai, Takashi Kozasa, Takaya Nozawa, Hiroyuki Hirashita  
“The role of dust in the early universe: The nature of cosmological reionization sources”  
in *First Stars IV – From Hayashi to the Future*, AIP Conference Proceedings Vol. 1480, ed. M. Umemura, K. Omukai, (AIP: New York) 448–450 (2012)

10. Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, Ken'ichi Nomoto, Nozomu Tominaga, Daisuke Yamasawa, Asao Habe, Hiroyuki Hirashita “Supernovae as sources of dust in the early universe” *Memorie della Societa Astronomica Italiana* (Proc. of Supernovae as sources of dust in the early universe, ed. F. Giovannelli & L. Sabau-Graziati ), **83**, 77–81 (2012)
11. Hiroyuki Hirashita “Evolution of grain size distribution traced with gamma ray burst host galaxies” *Memorie della Societa Astronomica Italiana Supplementi* (Proc. of GRBs as Probes: From the Progenitor’s Environment to the High Redshift Universe, ed. S. Campana, P. D’Avanzo, & A. Melandri), **21**, 131–134 (2012)
12. Ryosuke Asano, Tsutomu T. Takeuchi, Hiroyuki Hirashita, Akio K. Inoue “Dust Formation History of Galaxies: Dependence on the Sources of Dust Production” in *Why Galaxies Care about AGB Stars II: Shining Examples and Common Inhabitants*, ed. F. Kerschbaum, T. Lebzelter, & R.F. Wing, (ASP: San Francisco), 523 (2011)
13. Tsutomu T. Takeuchi, Ryosuke S. Asano, Takako T. Ishii, Takaya Nozawa, Hiroyuki Hirashita, Takashi Kozasa “Dust SED Model of Very Young Galaxies with AGB-Star Dust” in *Why Galaxies Care about AGB Stars II: Shining Examples and Common Inhabitants*, ed. F. Kerschbaum, T. Lebzelter, & R.F. Wing, (ASP: San Francisco), 551 (2011)
14. Tsutomu T. Takeuchi, Takako T. Ishii, Hiroyuki Hirashita, Takaya Nozawa, Takashi Kozasa “Infrared SED Model for Young Galaxies: Effect of Supernova Reverse Shock and Shattering on Dust Grains” in *Hunting for the Dark: The Hidden Side of Galaxy Formation*, ed. V. P. Debattista & C. C. Popescu, AIP Conf. Proc., Vol. 1240, (AIP: New York), 91–93 (2010)
15. Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Hiroyuki Hirashita, et al. “Origin and Nature of Dust in the Early Universe” in *Cosmic Dust - Near and Far*, ed. T. Henning et al. (ASP: San Francisco), 247–265 (2009)
16. Hiroyuki Hirashita, Leslie K. Hunt “The size-density relation of H II regions in blue compact dwarf galaxies” in *Low-Metallicity Star Formation: From the First Stars to Dwarf Galaxies*, Proc. IAU Symposium No. 255, ed. L. K. Hunt, S. Madden, R. Schneider (ASP: San Francisco), 361–365 (2008)



17. Hiroyuki Hirashita, Takaya Nozawa, Takashi Kozasa, Tsutomu T. Takeuchi  
“Extinction Curves as a Probe of High-Redshift Metal Enrichment”  
in Panoramic Views of Galaxy Formation and Evolution, ed. T. Kodama, T. Yamada, K. Aoki (ASP: San Francisco), 201–202 (2008)
18. Hiroyuki Hirashita, Yasunori Hibi, Hiroshi Shibai  
“Common Far-Infrared Properties of the Galactic Disk and Nearby Galaxies”  
in Formation and Evolution of Galaxy Disks, ed. Funes, J. G. & Corsini, E. M. (ASP: San Francisco) 71–72 (2008)
19. Hiroyuki Hirashita, Leslie K. Hunt  
“Radio–Far-infrared Spectral Energy Distribution of Young Starbursts”  
in Mapping the Galaxy and Nearby Galaxies, ed. K. Wada & F. Combes (Springer: New York) 333 (2008)
20. Hiroyuki Hirashita  
“Star Formation and Molecular Clouds in Damped Ly $\alpha$  Systems”  
in Fabulous Destiny of Galaxies: Bridging Past and Present, ed. S. Arnouts, et al. (Frontier Group: Paris) 341–345 (2006)
21. Hiroyuki Hirashita, Naoyuki Tamura, Tsutomu T. Takeuchi  
“The Local Group Dwarf Spheroidal Galaxies: A Key to Building Blocks in the Universe”  
in IAU Symp. 201, New Cosmological Data and the Values of the Fundamental Parameters, ed. A. Lasenby & A. Wilkinson (ASP: San Francisco), 469–470 (2005)
22. Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takako T. Ishii, Leslie K. Hunt, Andrea Ferrara  
“Model for Infrared Properties of Extremely Young Galaxies”  
in IAU Symp. 217, Recycling intergalactic and interstellar matter, ed. P.-A. Duc, et al. (ASP: San Francisco), 214 (2004)
23. Hiroyuki Hirashita, Andrea Ferrara, Keiichi Wada, Philipp Richter  
“Molecules in Damped Lyman $\alpha$  Systems: Spatial Distribution”  
in IAU Symp. 217, Recycling intergalactic and interstellar matter, ed. P.-A. Duc, et al. (ASP: San Francisco), 270 (2004)
24. Hiroyuki Hirashita, Andrea Ferrara, Keiichi Wada, Philipp Richter  
“Spatial distribution of Molecules in Damped Ly $\alpha$  Clouds”  
in Multiwavelength Cosmology, ed. M. Plionis & I. Georgantopoulos (Kluwer: Dordrecht), in CD (2003)
25. Hiroyuki Hirashita, Leslie K. Hunt, Andrea Ferrara  
“Modeling of Dust and Gas in Low-Metallicity Galaxies”  
in RevMexAA (Serie de Conferencias) 17, Galaxy Evolution: Theory and Observations, ed. V. Avila-Reese et al., 97 (2002)

26. Hideyuki Kamaya, Hiroyuki Hirashita, Akio K. Inoue, Hiroshi Shibai  
“Emission from Dust in Galaxies and Cosmic Star-formation History”  
in ASP Conf. Ser. 283, A New Era in Cosmology, ed. N. Metcalfe & T. Shanks  
(ASP: San Francisco), 341 (2002)
27. Hiroyuki Hirashita, Andrea Ferrara, Leslie K. Hunt  
“Modeling of Dust and Gas in Low-Metallicity Galaxies”  
in ASP Conf. Ser. 283, A New Era in Cosmology, ed. N. Metcalfe & T. Shanks  
(ASP: San Francisco), 394–395 (2002)
28. Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takako T. Ishii, Leslie K. Hunt, An-  
drea Ferrara  
“A Far-Infrared SED Model of Extremely Young Low Metallicity Galaxies”  
in the Proc. of the IAU 8th Asian-Pacific Regional Meeting, Vol. II, ed. S. Ikeuchi,  
J. Hearnshaw, T. Hanawa (the Astronomical Society of Japan: Tokyo), 297–298  
(2002)
29. Akio K. Inoue, Hiroyuki Hirashita  
“Star Formation Rate from Infrared Luminosity and Galaxy Evolution”  
in the Proc. of the IAU 8th Asian-Pacific Regional Meeting, Vol. II, ed. S. Ikeuchi,  
J. Hearnshaw, T. Hanawa (Astronomical Society of Japan: Tokyo), 257–258  
(2002)
30. Hiroyuki Hirashita, Yuka Y. Tajiri, Hideyuki Kamaya  
“Dust Destruction and Intermittent Star Formation History in Blue Compact  
Dwarf Galaxies”  
in Infrared and Submillimeter Space Astronomy, ed. M. Giard et al. (EDP Sci-  
ence: Les Ulis), 363–367 (2002)
31. Hiroyuki Hirashita, Yuka Y. Tajiri, Hideyuki Kamaya  
“Dust Destruction and Intermittent Star Formation History in Blue Compact  
Dwarf Galaxies”  
in Proceeding of the 17th IAP Colloquium, Gaseous Matter in Galaxies and  
Intergalactic Space, ed. R. Feylet & M. Lemoine (Frontier Group: Paris), 223–  
224 (2001)
32. Hiroyuki Hirashita, Akio K. Inoue, Hideyuki Kamaya  
“Chemical Evolution and Far-Infrared Emission of Galaxies”  
in ASP Conf. Ser., The Physics of Galaxy Formation, ASP Conf. Ser. 222, ed.  
M. Umemura & H. Susa (ASP: San Francisco), 315–318 (2001)
33. Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takako T. Ishii, Kohji Yoshikawa  
“Galaxy Evolution in the Infrared: Number Counts and the Cosmic Infrared  
Background”  
in IAU Sump. 204, The Extragalactic Infrared Background and its Cosmological  
Implications, ed. M. Hauser & M. Harwit (ASP: San Francisco), 303 (2001)

34. Hiroyuki Hirashita, Akio K. Inoue, Hideyuki Kamaya  
“Cosmic Star Formation Rate at  $z = 3$  — Metallicity Effect”  
in IAU Sump. 204, *The Extragalactic Infrared Background and its Cosmological Implications*, ed. M. Hauser & M. Harwit (ASP: San Francisco), 415 (2001)
35. Hiroyuki Hirashita  
“Intermittent Star Formation Histories of Dwarf Irregular Galaxies”  
in *Birth and Evolution of the Universe*, ed. K. Sato & M. Kawasaki, 357–358 (2001)
36. Hiroyuki Hirashita, Akio K. Inoue, Hideyuki Kamaya  
“Chemical Evolution and Far-Infrared Emission of Galaxies”  
in *Mid- and Far-infrared Astronomy and Future Space Missions*, ed. T. Matsumoto & H. Shibai, 115–122 (2000)
37. Hideyuki Kamaya, Hiroyuki Hirashita  
“Limit-Cycle Scenario of Star Formation History in Spiral Galaxies”  
in *Proc. of ESLAB Symp., Star Formation from the Small to the Large Scale*, ed. F. Favata, A. A. Kaas, & A. Wilson, 429 (2000)
38. Hiroyuki Hirashita  
“Intermittent Star Formation Activities of Dwarf Irregular Galaxies”  
in *Proc. of ESLAB Symp., Star Formation from the Small to the Large Scale*, ed. F. Favata, A. A. Kaas, & A. Wilson, 399–402 (2000)
39. Hiroyuki Hirashita  
“Dust-to-Gas Ratio and Multi-Phase Interstellar Medium”  
in *Star Formation 1999*, ed. T. Nakamoto et al. (Nobeyama Radio Observatory, Nobeyama), 405–406 (1999)
40. Tsutomu T. Takeuchi, Hiroyuki Hirashita  
“Two Species of Local Group Dwarf Spheroidals”  
in *Proc. of IAU Symp. No. 192, The Stellar Content of Local Group Galaxies, IAU Symposium*, ed. P. Whitelock & R. Cannon (Kluwer, Dordrecht), 451 (1999)
41. Hiroyuki Hirashita, Tsutomu T. Takeuchi, Hideyuki Kamaya  
“Implication of Dark Matter Content in Dwarf Spheroidal Galaxies”  
in *Proc. of IAU Symp. No. 192, The Stellar Content of Local Group Galaxies, IAU Symposium*, ed. P. Whitelock & R. Cannon (Kluwer, Dordrecht), 402–408 (1999)
42. Tsutomu T. Takeuchi, Hiroyuki Hirashita, Takashi G. Hattori, Koji Ohta, Hiroshi Shibai  
“Far-IR Galaxy Counts Expected in the IRIS Survey”  
in *Proc. of IAU Symp. 186, Galaxy Interactions at Low and High Redshift*, ed. J. E. Barnes, & D. B. Sanders (Kluwer, Dordrecht), 486 (1999)

43. Hiroyuki Hirashita, Shin Mineshige, Kazunari Shibata, Ryoji Matsumoto  
“The Supply of Magnetic Fields from a cD Galaxy to Intra-Cluster Space”  
in Proc. of IAU Symp. 188, The Hot Universe, ed. K. Koyama, S. Kitamoto, &  
M. Itoh (Kluwer, Dordrecht), 306–307 (1998)