# MASAMUNE OGURI

Curriculum Vitae
(as of December 28, 2021)

## CONTACT INFORMATION


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|---|---|
| **Address** | Department of Physics, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan |
| **Room** | School of Science Bldg. 1 #909 |
| **Phone** | +81-3-5841-4191 |
| **E-mail** | masamune.oguri@ipmu.jp, masamune.oguri@phys.s.u-tokyo.ac.jp |
| **Webpage** | https://oguri.github.io |


## EDUCATION

**University of Tokyo, Tokyo, Japan** *Apr 2002 – Jul 2004*
Ph.D. in Physics, July, 2004
Dissertation: "Strong Gravitational Lenses in a Cold Dark Matter Universe"
Adviser: Yasushi Suto

**University of Tokyo, Tokyo, Japan** *Apr 2000 – Mar 2002*
M.S. in Physics, March, 2002
Dissertation: "Resolving the Central Density Profile of Dark Matter Halos with Gravitational Lensing Statistics"
Adviser: Yasushi Suto

**University of Tokyo, Tokyo, Japan** *Apr 1996 – Mar 2000*
B.A. in Physics, March, 2000

## PROFESSIONAL EXPERIENCE

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| May 2014 – present | Assistant Professor (with tenure) | Research Center for the Early Universe, University of Tokyo |
| Oct 2013 – present | Associate Scientist | Kavli Institute for the Physics and Mathematics of the Universe, University of Tokyo |
| Aug 2013 – present | Assistant Professor (with tenure) | Department of Physics, University of Tokyo |
| Apr 2011 – Aug 2013 | Assistant Professor | Kavli Institute for the Physics and Mathematics of the Universe, University of Tokyo |
| Jul 2009 – Apr 2011 | Postdoctoral Fellow | National Astronomical Observatory of Japan |
| Jul 2006 – Jun 2009 | Research Associate | Kavli Institute for Particle Astrophysics and Cosmology, Stanford University |
| Sep 2005 – Jun 2006 | Postdoctoral Fellow | Department of Astrophysical Sciences, Princeton University |
| Sep 2004 – Aug 2005 | Visiting Research Fellow | Department of Astrophysical Sciences, Princeton University |
| Apr 2004 – Aug 2005 | JSPS Research Fellow | Department of Physics, University of Tokyo |

## RESEARCH INTERESTS

Cosmology, Astrophysics, Cosmological Structure Formation, Gravitational Lensing

## PROFESSIONAL SOCIETIES

· Astronomical Society of Japan
· Physical Society of Japan
· Association of Japanese Theoretical Astronomy and Astrophysics
· Group of Optical and Infrared Astronomers
· International Astronomical Union

## PRIZES AND AWARDS

Mar 2019 Hayashi Chushiro Prize, Astronomical Society of Japan
Mar 2009 Young Scientist Award, Physical Society of Japan
Feb 2006 Inoue Research Award for Young Scientists
Mar 2005 President's Prize of the University of Tokyo

## PRIZES AND AWARDS (CO-RECIPIENT)

Mar 2021 PASJ Excellent Paper Award, Astronomical Society of Japan (for Hikage, Oguri, et al. 2019)

## TEACHING EXPERIENCE

**University of Tokyo**

· Course on *Exercise in Physics* (quantum mechanics, analytic mechanics) in FY2014–FY2017, FY2019–FY2021
· Course on *Senior Projects in Theoretical Physics* (astrophysics) in FY2014–FY2016, FY2018, FY2020
· Teaching assistant (general relativity, astrophysics) in FY2002, FY2003

**Invited Lectures**

· Lecture on weak lensing given in summer school at ITB, Bandung, West Java, Indonesia (Sep 2020)
· Intensive lecture on weak lensing cosmology given in winter school at KEK (Jan 2020)
· Intensive lecture on gravitational lensing given at Kyoto University (Mar 2017)
· Intensive lecture on gravitational lensing given in summer school at Beijing Normal University (Jul 2012)

**External Examining**

· Examined Master's theses at Univ. of Hong Kong (2018, 2021), PCU of Chile (2013)

## GRADUATE STUDENTS SUPERVISED

· Xiangchong Li (Univ. of Tokyo, Ph.D. in Physics in 2021, as a co-supervisor)
· Ryoma Murata (Univ. of Tokyo, Ph.D. in Physics in 2020)
· Taizo Okabe (Univ. of Tokyo, Ph.D. in Physics in 2020, as a co-supervisor)
· Akinari Hamabata (Univ. of Tokyo, M.S. in Physics in 2018)
· Ryota Kawamata (Univ. of Tokyo, Ph.D. in Astronomy in 2018, as a co-supervisor)
· Masafumi Ishigaki (Univ. of Tokyo, M.S. in Physics in 2015, as a co-supervisor)
· Shohei Omote (Univ. of Tokyo, M.S. in Physics in 2015)
· Cristian E. Rusu (Univ. of Tokyo, Ph.D. in Astronomy in 2014)
· Yuichi Higuchi (Univ. of Tokyo, Ph.D. in Astronomy in 2014)
· Yozo Kawano (Nagoya University, Ph.D. in Physics in 2006)

## UNDERGRADUATE STUDENTS SUPERVISED

· Kai-Feng Chen (National Taiwan Univ., B.Sc. in Physics and Math in 2020, went to MIT for Ph.D.)

## POSTDOCTORAL RESEARCHERS MENTORED

· Kenneth C. Wong (Univ. of Tokyo, 2018–2021, now a staff scientist at NAOJ, Japan)
· Anupreeta More (Univ. of Tokyo, 2012–2018, now a reseach faculty at IUCAA, Pune, India)

## EXTERNAL GRANTS

**Ongoing**

· Co-I (PI: S. Miyazaki), 152,750,000 JPY, Grant-in-Aid for Transformative Research Areas (A), FY2020–FY2024
· Co-I (PI: S. Miyazaki), 44,200,000 JPY, Grant-in-Aid for Scientific Research (A), FY2020–FY2022
· PI, 2,600,000 JPY, Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area), FY2020–FY2021
· Co-I (PI: N. Okabe), 16,510,000 JPY, Fund for the Promotion of Joint International Research (Fostering Joint International Research (B)), FY2019–FY2024
· PI, 4,420,000 JPY, Grant-in-Aid for Scientific Research (C), FY2018–FY2021

**Finished**

· PI, 2,340,000 JPY, Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area), FY2018–FY2019

· Co-I (PI: S. Miyazaki), 127,790,000 JPY, Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area), FY2015–FY2019
· PI, 3,640,000 JPY, Grant-in-Aid for Young Scientists (B), FY2014–FY2017
· PI, 4,290,000 JPY, Grant-in-Aid for Young Scientists (B), FY2011–FY2013
· Science PI (Budget PI: R. Blandford), 49,063 USD, Chandra grant, FY2010

## SERVICE

2013–2018 Library Committee, Univ. of Tokyo
2013–2017 Editorial Board, The Astronomical Herald, Astronomical Society of Japan

## PEER REVIEWS

· Regular referee of papers submitted to ApJ, MNRAS, A&A, JCAP, PTEP, PASJ, PRL, PRD, Nature Astronomy (140+ papers)
· Reviewer of grant proposals for NSF (USA), FNRS (Belgium), NCN (Poland), FWF (Austria), NWO (Netherlands)
· Reviewer of observing proposals for HST, Subaru, CFHT

## CONFERENCES, WORKSHOPS, AND MEETINGS ORGANIZED

2021 SOC, "Euclid Consortium Meeting 2021", Lausanne, Switzerland, May 25–28, 2021
2021 SOC co-chair, "Time-domain cosmology with strong gravitational lensing", Kavli IPMU, Jan 25–Feb 2, 2021
2019 SOC, "Gravity meets Plasma", Yunnan, China, August 19–21, 2019
2019 SOC, "Panchromatic Panoramic Studies of Galaxy Clusters: from HSC to PFS and ULTIMATE", ASIAA, Taiwan, March 11–13, 2019
2018 SOC, "Shedding Light on the Dark Universe with Extremely Large Telescopes at Trieste", Trieste, Italy, July 2–6, 2018
2018 SOC, "Shedding Light on the Dark Universe with Extremely Large Telescopes at UCLA", UCLA, USA, April 2–6, 2018
2017 SOC, "Shedding Light on the Dark Universe with Extremely Large Telescopes at Lanzhou", Lanzhou, China, August 30–September 2, 2017
2016 LOC, "HSC collaboration meeting 2016 August", Kavli IPMU, August 23–25, 2016
2015 SOC, "The Frontier Fields: Transforming our understanding of cluster and galaxy evolution", Honolulu, USA, August 5–7, 2015
2014 LOC chair/SOC, "Galaxy and Cosmology in Light of Strong Lensing", Kavli IPMU, November 17–21, 2014
2014 LOC, "HSC collaboration meeting 2014 August", Hiroshima, August 25–26, 2014
2014 LOC, "HSC collaboration meeting 2014 March", Hilo, USA, March 9–10, 2014
2013 LOC, "HSC collaboration meeting 2013 August", NAOJ, August 30–September 1, 2013
2013 LOC, "4th PFS collaboration meeting", Kavli IPMU, March 25–28, 2013
2012 LOC, "2nd PFS collaboration meeting", Kavli IPMU, January 8–12, 2012
2010 LOC, "CL J2010: from Massive Galaxy Formation to Dark Energy", Kavli IPMU, June 28–July 2, 2010

## MAJOR INVOLVEMENT IN LARGE PROJECTS

**Euclid satellite mission**

· Member, Euclid Consortium Board (2021–present)
· Lead, Japanese Euclid Consortium (2021–present)
· PI, WISHES (an intensive program of Subaru telescope for Euclid) (2020–present)
· Member, Steering Group of UNIONS (consortium of Subaru, CFHT, and Pan-STARRS) (2020–present)

**Hyper Suprime-Cam Subaru Strategic Program (HSC-SSP)**

· 'Builder' status (2014–present)
· Co-chair, Cluster Working Group (2009–2017)
· Co-chair, Strong Lensing Working Group (2015–2017, 2021–present)

· Member, eROSITA_DE–HSC-SSP Collaboration Board (2018–present)

**Sloan Digital Sky Survey (SDSS)**

· Co-PI, SDSS Quasar Lens Search (SQLS, a survey of gravitationally lensed quasars in SDSS) (2002–2012)

## MAJOR CODE DEVELOPMENTS

**GLAFIC** 2008 – present

· Public software for analyzing gravitational lensing. It is available at https://www.slac.stanford.edu/~oguri/glafic/ and is widely used in the community.

**CAMIRA** 2014 – present

· Code for optical cluster finding and is used in SDSS and HSC-SSP.

## PUBLICATIONS

As of December 2021, more than 250 papers are published in international peer-reviewed journals, and the total number of citations to these papers is approximately 14,000 according to ADS. The h-index is 65. These publications include 51 first-author papers, and the total number of citations to my first-author papers is approximately 3,500, again according to ADS. Check https://oguri.github.io/paper.html for the latest status. The full list is provided separately.

## PRESENTATIONS AT CONFERENCES, WORKSHOPS, AND MEETINGS

As of December 2021, more than 30 invited talks at international conferences and workshops are given. The full list is provided separately.

## PRESS RELEASES

2021 "ALMA Discovers Rotating Infant Galaxy with Help of Natural Cosmic Telescope", Apr 22, 2021
2020 "More than Meets the Eye: Complete Imaging of a Cluster Collision", Nov 12, 2020
2020 "Can Black Hole Fire Up Cold Heart of the Phoenix?", Aug 30, 2020
2020 "Rare Encounters between Cosmic Heavyweights", Aug 27, 2020
2020 "Artificial Intelligence tool developed to predict the structure of the Universe", Feb 5, 2020
2019 "Subaru Telescope helps determine that dark matter is not made up of tiny primordial black holes", Apr 2, 2019
2019 "Astronomers Discover 83 Supermassive Black Holes in the Early Universe", Mar 13, 2019
2018 "Cosmological constraints from the first-year Subaru Hyper Suprime-Cam survey", Sep 26, 2018
2018 "The Farthest Star Ever Seen", Apr 3, 2018
2018 "Unprecedentedly Wide and Sharp Dark Matter Map", Mar 1, 2018
2016 "Ancient Eye in the Sky", Jul 26, 2016
2015 "Dark Matter Map Begins to Reveal the Universe's Early History", Jul 2, 2015
2015 "ALMA uses 'Natural Telescope' to Image Monstrous Galaxy near the Edge of the Universe", Jun 9, 2015
2014 "Confirming a 3-D Structural View of a Quasar Outflow ∼Conclusions drawn from additional observations∼", Oct 28, 2014
2014 "Cosmic Illusion Revealed: Gravitational Lens Magnifies Supernova", Apr 25, 2014
2013 "'Standard Candle' Supernova Extraordinarily Magnified by Gravitational Lensing", Apr 23, 2013
2013 "3-D Observations of the Outflow from an Active Galactic Nucleus", Feb 19, 2013
2012 "'Cosmic Mirages' Confirm Accelerated Cosmic Expansion", Apr 10, 2012
2012 "Precise measurement of dark matter distribution with strong and weak gravitational lensing", Jan 17, 2012
2011 "Laser Guide Star Adaptive Optics Sharpens Subaru Telescope's Eyesight and Opens a New Vision of the Distant Universe", July 6, 2011
2010 "Research Illuminates the Shape of Dark Matter's Distribution", April 26, 2010
2009 "Mysterious Space Blob Discovered at Cosmic Dawn", April 22, 2009
2007 "Distant quasars live in massive dark matter halos", Feb 9, 2007
2006 "Hubble captures a 1five-star' rated gravitational lens", May 23, 2006
2003 "Visual 'Mirages' Probe Distribution of Dark Matter", Dec 18, 2003