CV of Eiichiro Komatsu

Professional Preparation

Tohoku University, Sendai, Japan	Astronomy	B.Sc. 1997
Tohoku University, Sendai, Japan	Astronomy	M.Sc. 1999
Tohoku University, Sendai, Japan	Astronomy	Ph.D. 2001
Princeton University, NJ	Cosmology	Postdoc, Sep.1, 2001 – Dec.31, 2003

Appointments

Sep 2008 – present	Associate Professor	University of Texas at Austin, TX
Sep 2003 – Aug 2008	Assistant Professor	University of Texas at Austin, TX
Sep 2001 – Aug 2003	*WMAP* Postdoctoral Research Fellow	Princeton University, NJ
Sep 2000 – Aug 2001	Visiting Member	Institute for Advanced Study, NJ
Sep 1999 – Aug 2000	Visiting Student Research Collaborator	Princeton University, NJ
Apr 1997 – Mar 1998	Teaching Assistant	Tohoku University, Sendai, Japan

Honors and Awards

2008	The International Union of Pure and Applied Physics (IUPAP) Young Physicist's Prize
2007	NASA Group Achievement Award (for WMAP)
2007	College of Natural Sciences Teaching Excellence Award
2006	Morita Memorial Award
2005 – present	Alfred P. Sloan Research Fellow
2004	The Astronomical Society of Japan Young Astronomer Award
2004	NASA Group Achievement Award (for WMAP)
1999 – 2001	Japan Society for the Promotion of Science Fellow
2000	Aoba Society of Promotion of Science Prize

External Funding Awarded

Running total: $1,113,449 (PI: $882,678)

2008 $327,918, *Theory of Large-Scale Structure: Understanding Non-linearities, Bias, and Systematics in the Baryon Acoustic Oscillations as a Probe of Dark Energy*, NSF/Astronomy & Astrophysics, 10/1/2008–9/30/2011.

2008 $90,000, *The Physics of Inflation: Non-Gaussianity, Reheating and Preheating*, NSF/Theoretical Physics, 10/1/2008–9/30/2011.

2008 $146,325, *Inflation Studies with One- and a Two-Channel CIP*, the Smithsonian Astrophysical Observatory, 6/1/2008–4/15/2009. [With Co-Is Karl Gebhardt and Dan Jaffe]

2008 $344,761, *Modeling the Power Spectrum in High-Redshift Surveys*, NASA/ATFP (Astrophysics Theory and Fundamental Physics), 6/1/2008–5/31/2011. [With Co-Is Volker Bromm and Avi Loeb]

2007 $74,999, *Anisotropy in the Cosmic Near Infrared Background: Simulations vs Observations*, California Institute Of Technology, & Jet Propulsion Laboratory, 10/1/2007–9/31/2008. [With Co-Is Paul R. Shapiro and Elizabeth R. Fernandez]

2007 $51,379, *Mission Operations Oversight, Data Analysis, Systematic Error Analysis, Foreground Analysis, and Other Principal Investigator Functions for the Wilkinson Microwave Anisotropy Probe*, Johns Hopkins University, 6/1/2007–5/31/2008

2006 $33,066, *Mission Operations Oversight, Data Analysis, Systematic Error Analysis, Foreground Analysis, and Other Principal Investigator Functions for the Wilkinson Microwave Anisotropy Probe*, Johns Hopkins University, 6/1/2006–5/31/2007

2005 $45,000, *Alfred P. Sloan Research Fellowship*, Alfred P. Sloan Foundation, 9/16/2005–9/15/2009

In addition, my work has been supported partially by private funding through the HETDEX (Hobby-Eberly Dark Energy Experiment) project as well as by NASA through the CIP (Cosmic Inflation Probe) project.

Teaching Experience

2008, Fall	AST376	"Cosmology"	undergraduate (science majors)
2008, Spring	AST309R	"Galaxies, Quasars, & Universe"	undergraduate (non-science majors)
2007, Fall	AST376	"Cosmology"	undergraduate (science majors)
2007, Spring	AST309R	"Galaxies, Quasars, & Universe"	undergraduate (non-science majors)
2006, Fall	AST376	"Cosmology"	undergraduate (science majors)
2006, Spring	AST309R	"Galaxies, Quasars, & Universe"	undergraduate (non-science majors)
2005, Fall	AST376	"Cosmology"	undergraduate (science majors)
2005, Spring	AST309R	"Galaxies, Quasars, & Universe"	undergraduate (non-science majors)
2004, Fall	AST301	"Introduction to Astronomy"	undergraduate (non-science majors)

Ph.D. Students Supervised

1. Elizabeth Fernandez, Astronomy, obtained Ph.D. in 2008
   - "The Cosmic Near Infrared Background: Remnant Light from Early Stars," Astrophysical Journal, 646, 703-718 (2006 August 1)
   - "Mass-to-light Ratio of Lyα Emitters: Implications of Lyα Surveys at Redshifts $z = 5.7$, 6.5, 7, and 8.8," Monthly Notices of the Royal Astronomical Society, 384, 1363-1376 (2008 March 15)
2. Yuki Watanabe, Physics, anticipated Ph.D. 2009
   - "Improved Calculation of the Primordial Gravitational Wave Spectrum in the Standard Model," Physical Review D 74, 123515 1-18 (2006 June 12)
   - "Reheating of the Universe After Inflation with $f(\phi)R$ Gravity," Physical Review D 75, 061301(R) 1-5 (2007 March 7)
   - "Gravitational Inflaton Decay and The Hierarchy Problem," Physical Review D 77, 043514 1-6 (2008 February 14)
3. Donghui Jeong, Astronomy, anticipated Ph.D. 2010
   - "Perturbation Theory Reloaded: Analytical Calculation of Non-linearity in Baryonic Oscillations in the Real Space Matter Power Spectrum," Astrophysical Journal, 651, 619-626 (2006 November 10)
   - "Perturbation Theory Reloaded II: Non-linear Bias, Baryon Acoustic Oscillations and Millennium Simulation in Real Space," To Appear in the Astrophysical Journal, arXiv:0805.2632
4. Masatoshi Shoji, Astronomy, anticipated Ph.D. 2011
   - "Extracting Angular Diameter Distance and Expansion Rate of the Universe from Two-dimensional Galaxy Power Spectrum at High Redshifts: Baryon Acoustic Oscillation Fitting versus Full Modeling," To Appear in the Astrophysical Journal, arXiv:0805.4238

Undergraduate Students Supervised

- Farhan S. Amanullah (2006), "Cosmology Website"
- Galen C Carter-Jeffrey (2006), "Cosmology Website"
- Chad W. Gardner (2006–2007), "Mass Function of Dark Matter Halos"
- Joyce B. Byun (2007–present), "Baryon Acoustic Oscillations"
- Sung Ju Kang (2007), "WMAP Cold Spot and Void"
- Brianne C. Herrera (2007–2008), "Scalar Field Dark Energy"

Departmental Committees

- Recruiter, Graduate Admissions Committee (2004–2008)
- Astrophysics Theory Group Chair (2006–present)
- Faculty Evaluation Committee (2007–present)

Major Involvement in Large-scale Projects

- Wilkinson Microwave Anisotropy Probe [PI: Charles L. Bennett, Johns Hopkins University]
- Hobby-Eberly Telescope Dark Energy Project (HETDEX) [PI: Gary J. Hill, the University of Texas at Austin]
- Cosmic Inflation Probe (CIP) [PI: Gary Melnick, the Smithsonian Astronomical Observatory]

Other Activities

1. Organized "Texas Cosmology Network Meeting," September 15, 2006. Information about the meeting may be found at http://www.as.utexas.edu/texascosmo/
2. Interdisciplinary activities: Gave many seminars in the other departments at UT, including Theory Group in the Physics Department; High Energy Group in the Physics Department; Acoustics Program in the Mechanical Engineering Department.
3. Scientific Organizing Committee, the Frank N. Bash Symposium 2007, "New Horizons in Astronomy," October 14–16, 2007. Information about the symposium may be found at http://www.as.utexas.edu/new_horizons/.
4. Scientific Organizing Committee, 3rd Biennial Leopoldina Conference, "Dark Energy," October 7–11, 2008
5. Scientific Organizing Committee, Institute of Physics and Mathematics of the Universe Conference, "Dark Energy," June 22–26, 2009

Selected List of Invited Lectures/Talks/Colloquia Since 2004

2008 Colloquium, University of Nevada, Las Vegas
2008 Colloquium, Space Telescope Science Institute
2008 Colloquium, Princeton University
2008 Invited Lecture, The 12th Paris Cosmology Colloquium
2008 Colloquium, University of California, Davis
2008 Colloquium, Iowa State University
2008 Plenary Talk, The Interconnection Between Particle Physics and Cosmology, University of New Mexico
2008 Plenary Talk, Novel Theories of the Early Universe, Perimeter Institute
2008 Colloquium, University of Oklahoma
2007 Invited Presentation on the Future of Cosmology, Science Council of Japan
2007 Colloquium, Kyoto University
2007 Invited Lecture, String Theory and Cosmology, Kavli Institute for Theoretical Physics, Chinese Academy of Science, Beijing, China
2007 Plenary Talk, XI Mexican Workshop on Particles and Fields 2007, Tuxtla Gutierrez, Mexico
2007 Plenary Talk, Cosmology and Strings, the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy
2007 Colloquium, Carnegie Observatory
2007 Colloquium, Columbia University
2007 Public Lecture, The Academy of Medicine, Engineering and Science of Texas
2006 Public Lecture, Austin Astronomical Society
2006 Public Lecture, Natural Sciences Council, University of Texas
2006 Plenary Talk, XXIII Texas Symposium on Relativistic Astrophysics, University of Melbourne, Australia
2006 Plenary Talk, TeV Particle Astrophysics II, University of Wisconsin
2006 Plenary Talk, Non-Gaussianity from Inflation, University of Cambridge
2006 Colloquium, University of Florida
2006 Colloquium, University of Minnesota
2006 Colloquium, Fermilab
2006 Colloquium, University of Texas at San Antonio
2005 Plenary Talk, The Next Chapter in Einstein's Legacy, Kyoto University
2005 Colloquium, University of Illinois at Urbana-Champaign
2005 Colloquium, Tohoku University
2004 Invited Lecture, International Summer School, Background Microwave Radiation and Intracluster Cosmology (Varenna, Lake Como, Italy)
2004 Colloquium, Universita di Roma "Tor Vergata"

Collaborators

K.Ahn (Univ. of Texas), M.A.Alvarez (Stanford), S.Ando (Caltech), A.J.Banday (NASA/JPL), N.Bartolo (Univ. of Sussex), R.Bean (Cornell), C.L.Bennett (JHU), P.Cabella (Univ. of Rome, Tor Vergata), O.Dore (CITA), E.R.Fernandez (Univ. of Texas), T.Futamase (Tohoku Univ.), K.Gebhardt (Univ. of Texas), B.Gold (JHU), K.M.Górski (NASA/JPL), M.Halpern (UBC), F.D.Hansen (Univ. of Oslo), M.Hattori (Tohoku Univ.), G.J.Hill (Univ. of Texas), G.Hinshaw (NASA/GSFC), C.Hikage (Nagoya Univ.), K.T.Inoue (Kinki Univ.), N.Jarosik (Princeton), R.Kawabe (NRO), T.Kitayama (Toho Univ.), N.Kogo (Tokyo), A.J.Kogut (NASA/GSFC), K.Kohno (NRO), N.Kuno (NRO), D.Larson (JHU), M.Liguori (Cambridge), M.Limon (NASA/GSFC), H.Matsuo (NAOJ), S.Matarrese (INFN/Padova), T.Matsubara (Nagoya Univ.), S.S.Meyer (Univ. of Chicago), T.Narumoto (Kyoto Univ.), M.R.Nolta (CITA), N.Odegard (NASA/GSFC), N.Ota (Riken), L.Page (Princeton), H.Peiris (Chicago), U.-L.Pen (CITA), A.Refregier (CEA Saclay), A.Riotto (INFN/Padova), N. Sugiyama (Nagoya Univ.), S.Schindler (Univ. of Innsbruck), E.Sefusatti (Fermilab), U.Seljak (Princeton), P.R.Shapiro (Univ. of Texas) D.N.Spergel (Princeton), Y.Suto (Tokyo Univ.), R.Takahashi (Nagoya Univ.), M.Takada (Tohoku Univ.), T.Totani (Kyoto Univ.), G.S.Tucker (Brown), L.Verde (Univ. of Pennsylvania), B.D.Wandelt (UIUC), J.Weiland (NASA/GSFC), E.Wollack (NASA/GSFC), E.L.Wright (UCLA), A.P.S.Yadav (UIUC), N.Yoshida (Nagoya Univ.), K.Yoshikawa (Tokyo Univ.)

Graduate and Postdoctoral Advisors

Graduate: Toshifumi Futamase (Tohoku Univ.) and David N. Spergel (Princeton)
Postdoctral: David N. Spergel (Princeton) and Uros Seljak (Princeton)