

Kazuyuki TAMURA

CONTACT INFORMATION

Arizona State University
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RESEARCH INTERESTS

- Observational cosmology, nearby and high-redshift galaxies.
- Galaxy formation and evolution, star formation history, and secular evolution.
- Galaxy structure, dust extinction, morphology, and stellar populations.
- Interdisciplinary studies, image analysis with medical applications.
- Interdisciplinary studies, environmental science.
- Education, development and improvement of educational materials.

CURRENT POSITION

Postdoctoral Scholar (December 2009 – present)
School of Earth and Space Exploration, Arizona State University, Tempe, Arizona, USA

EDUCATION

Arizona State University, Tempe, Arizona, USA

Ph.D., Physics, December 2009

- Dissertation Topic: “Pixel-Based Dust-Extinction Mapping in Nearby Late-Type Galaxies”
- Thesis Advisors: Prof. Rogier A. Windhorst & Dr. Rolf A. Jansen

M.S., Physics, December 2003

University of Washington, Seattle, Washington, USA

B.S., Physics, Astronomy, June 2001

B.A., Anthropology, June 2001

SKILLS

Operating Systems: Linux, Mac OS X, Microsoft (MS) Windows.

Data Processing: Interactive Data Language (IDL), Image Reduction and Analysis Facility (IRAF), Source Extractor (SExtractor), SuperMONGO (SM), MS Excel.

Word Processing: L^AT_EX, MS Word.

Presentation: Powerpoint, HTML.

Language: Japanese (Native fluency).

PUBLICATIONS:
ACCEPTED

- “Pixel-based dust extinction mapping in nearby galaxies: A new approach to lifting the veil of dust”
Tamura, K., Ph.D. dissertation, Arizona State University, July, 2010.
- “Lifting the Veil of Dust from NGC 959: the Importance of a Pixel-Based Two-Dimensional Extinction Correction”
Tamura, K., Jansen, R. A., Eskridge, P. B., Cohen, S. H., & Windhorst, R. A., 2010, *Astronomical Journal*, 139, 2557-2565.
- “A Semi-automated analysis method of small sensory nerve fibers in human skin-biopsies”
Tamura, K., Mager, V. A., Burnett, L. A., Olson, J. H., Brower, J. B., Casano, A. R., Baluch, D. P., Targovnic, J. H., Windhorst, R. A., & Herman, R. M., 2010, *Journal of Neuroscience Methods*, 185, 325–337.
- “Mapping the Spatial Distribution of Dust Extinction in NGC 0959 using Broadband Visible and Mid-Infrared Filters”
Tamura, K., Jansen, R. A., & Windhorst, R. A., 2009, *Astronomical Journal*, 138, 1634–1654.

PUBLICATIONS:
IN PREPARATION

- “Two-Dimensional Distribution of Dust-Extinction in 40 Nearby Late-Type Galaxies.”
Tamura, K., Jansen, R. A., Eskridge, P. B., Cohen, S. H., & Windhorst, R. A., 2010, *ApJ*, in prep.

CONFERENCE
ABSTRACTS AND
CIRCULARS

- “Revealing the Stellar Populations Underlying the Dust Extinction in NGC 0959”
Tamura, K., Jansen, R. A., Eskridge, P. B., Cohen, S. H., & Windhorst, R. A., 2010, 215th AAS Meeting, *Bulletin of the AAS*, 42, 368 (Abstract 432.12).
- “Mapping the Spatial Distribution of Dust Extinction within NGC 0959”
Tamura, K., Jansen, R. A., & Windhorst, R. A., 2009, 213th AAS Meeting, *Bulletin of the AAS*, 41, 218 (Abstract 412.09).
- “Multi-color Pixel-based Analysis of Late-type Nearby Galaxies”
Tamura, K., Windhorst, R. A., & Jansen, R. A., 2008, 211th AAS Meeting, *Bulletin of the AAS*, 39, 906 (Abstract 097.13).
- “Supernova 2005bk in MCG +07-33-27 (CGCG 223-029)”
Jansen, R. A., **Tamura, K.**, Grogin, N. A., 2005, IAUC no. 8512 (this SN was confirmed and typed in IAUC no. 8514 by Ganeshalingam et al.).

PRESENTED TALKS

- “Using Hubble Object Finding and Classification Software to Measure Cancer Cell Spreading and Diabetes Type 2 Markers in an Early Stage”, SkySong/Arizona State University (Scottsdale, AZ), October, 2010.
- “LaTeX–What you can do with LaTeX”, Arizona State University (Tempe, AZ), April, 2010 & October, 2010.
- “Extinction Mapping with *V* and mid-IR images: A Prelude to *HST*/WFC3 and *JWST* Era”, Arizona State University (Tempe, AZ), January 2010.

PRESENTED TALKS

- “Pixel-Based Dust-Extinction Mapping in Nearby Galaxies: A New Approach to Lifting the Veil of Dust”, Arizona State University (Tempe, AZ), November 2009.
- “Penetrating the Dust: Revealing the True Stellar Populations in NGC 959”, Arizona State University (Tempe, AZ), April 2009.

PROFESSIONAL AND ACADEMIC AFFILIATIONS

- American Astronomical Society (AAS): 2005–present

CONFERENCES, MEETINGS, AND WORKSHOPS

January, 2011

217th Meeting of the American Astronomical Society, Seattle, WA USA

January, 2010

215th Meeting of the American Astronomical Society, Washington, DC USA

January, 2009

213th Meeting of the American Astronomical Society, Long Beach, CA USA

January, 2008

211th Meeting of the American Astronomical Society, Austin, TX USA

January, 2007

209th Meeting of the American Astronomical Society, Seattle, WA USA

May, 2006

Workshop on “Making the Most of the Great Observatories”, Pasadena, CA USA

October, 2002

Lowell Observatory Workshop on “The outer regions of galaxies”, Flagstaff, AZ USA

RESEARCH AND ACADEMIC EXPERIENCE

Arizona State University

School of Earth and Space Exploration
As Postdoctoral Scholar

December, 2009 – present

Tempe, AZ

- Working on 2D extinction mapping and multi-color (Far-UV–Optical–Mid-IR) stellar population analysis in larger sample of ~ 40 late-type galaxies. Also, studying how this method can be applied with the *HST* (optical) and *JWST* (mid-IR) for higher redshift galaxies.
- Applying the pixel-based method to conduct a multi-wavelength test of Seyfert galaxy unification and the AGN/Star-formation connection.

Arizona State University

Department of Physics & School of Earth and Space Exploration
As Ph.D. Candidate

August, 2006 – December 2009

Tempe, AZ

- **Research Associate:** (Advisor: Dr. Rolf Jansen & Dr. Rogier Windhorst)

June 2007–December 2009

Worked on multi-color images from *GALEX*, ground based telescope (VATT), and *Spitzer* (Far-UV–Optical–Mid-IR), to study two-dimensional distribution of dust extinction and underlying stellar populations within 27 nearby late-type galaxies.

Arizona State University **August, 2006 – December 2009**
Department of Physics & School of Earth and Space Exploration Tempe, AZ
As Ph.D. Candidate

- **Teaching Associate:** (Physics II : Electricity and Magnetism, Astrophysics II: Cosmology)
August 2006–May 2007
Served as instructor and grader for undergraduate and graduate courses.
- **Research Associate:** (Advisor: Dr. Rogier Windhorst & Dr. Richard Herman)
August 2005–May 2007
Worked on image analysis for detecting intra-epidermal nerve fibers inside human skin membrane for type II diabetes screening: Interdisciplinary study using astronomical image analysis tools.

Arizona State University **August, 2001 – July, 2006**
Department of Physics and Astronomy Tempe, AZ
As Beginning Ph.D. and Master Level Student

- **Research Assistant:** (Advisor: Dr. Rolf Jansen & Dr. Rogier Windhorst)
September 2003–May 2005
Worked on reduction and analysis of ground-based observational data of H-alpha images of star-formation regions in nearby galaxies.
- **Teaching Assistant:** (Physics I & II: Mechanics & Electricity and Magnetism.)
August 2001–July 2006
Served as instructor of recitations and labs for Physics I & II: Mechanics, Electricity and Magnetism.

University of Washington **September, 1999 – June, 2001**
Department of Physics Seattle, WA
As Senior Undergraduate Student

- **Teaching Assistant:** (Physics I, II, & III: Mechanics, Electricity and Magnetism, & Waves.)
Served as co-instructor of tutorial sections for introductory physics classes for engineers and scientists.
- **Teaching Assistant:** (Physics Study Center)
Taught introductory physics materials at Physics Study Center.
- **ATLAS Project:** (Supervisor: Dr. Tianchi Zhao)
Built detector components for ATLAS project (particle physics experiment at the Large Hadron Collider at CERN).

Department of Astronomy Seattle, WA
As Senior Undergraduate Student

- **Teaching Assistant:** (Introductory Astronomy)
Served as Co-instructor and grader for introductory astronomy lectures and labs for non-science major students.

Department of Anthropology Seattle, WA
As Senior Undergraduate Student

- **Teaching Assistant:** (Dr. Benjamin Fitzhugh's Laboratory)
Served as lab instructor for students who newly started working in the archaeology research lab.

A Multi-wavelengths Test of Seyfert Galaxy Unification and the AGN/Star-Formation Connection.

- P.I.: Dr. Rogier Windhorst, Co-I.: Dr. Kazuyuki Tamura, Hwi Hyun Kim, Michael Rutkowski
- Archival project using *Chandra*, XMM-Optical Monitor, *GALEX*, *HST*/WFPC2 & ACS, SDSS, 2MASS, and *Spitzer*/IRAC & MIPS observations.
- May 2010–present

A Multi-wavelength Study of Nearby Late-type Galaxies: Benchmarks for High Redshift Studies and Reionization.

- P.I.: Dr. Rogier Windhorst, Co-I.: Dr. Rolf Jansen, Dr. Seth Cohen, Dr. Kazuyuki Tamura
- Archival project using *GALEX* FUV/NUV—ground based optical—2MASS NIR—*Spitzer*/IRAC MIR observations.
- May 2007–present

Measuring the Ages of Stellar Populations along the Bar in NGC 1073 and NGC 2273: Estimating the Age of the Bar Itself.

- P.I.: Kazuyuki Tamura, Co-I.: Dr. Rolf Jansen, Rogier Windhorst
- Kitt Peak 90-inch Telescope with B & C Spectrograph, Kitt Peak National Observatory, AZ
- 2 nights in March, 2007

Quantifying Star Formation in a Dusty Universe: Deep H α surface photometry of Galaxies observed with *HST* in F300W and H α .

- P.I.: Dr. Rolf Jansen, Co-I.: Kazuyuki Tamura
- 1.8-meter Vatican Advanced Technology Telescope, Mt. Graham International Observatory, AZ
- September 2003–April 2005, a total of 24 nights

Telescope Maintenance, Operation, & Public Outreach

- Telescope Engineer: Dr. Jeff Morgan
- 30-inch Telescope Manastash Ridge Observatory (University of Washington), WA
- Installation of re-aluminized primary mirror.
- Testing newly installed Spectrograph.
- Public Open Night at MRO, demonstrating how telescope works.
- Spring 2000–Fall 2000

Follow-up on Discovered Supernova Remnants in Nearby Spiral Galaxies.

- P.I.: Dr. Guillermo Gonzalez, Co-I.: Kazuyuki Tamura, Dan Starr, Matt Huish
- 3.5-meter Astrophysical Research Consortium Telescope, Apache Point Observatory, NM
- 2 nights in Fall 1999

Undergraduate project: Searching for Supernova Remnants in Nearby Spiral Galaxies.

- P.I.: Kazuyuki Tamura, Dan Starr, Matt Huish
- 30-inch Telescope Manastash Ridge Observatory (University of Washington), WA
- Summer 1999–Fall 2000, a total of 14 nights

IN THE NEWS

- “Supernova Discovered on the VATT.” *Science News* item in the Fall 2005 Vatican Observatory Newsletter. p. 5.
- “Possible VATT supernova.” In the Astronomy.com *astro byte* on supernova 2005bk by Francis Reddy, April 14, 2005.
- “A Supernova Discovery at VATT.” In the *Research Highlights* on Vatican Observatory web page.

SERVICE

- Open house activities at Department of Physics & Astronomy, Arizona State University, Tempe, AZ (Fall 2002–Spring 2003): Showing planets and Moon with telescopes.
- Public open night of 30-inch telescope at Manastash Ridge Observatory, Ellensburg, WA (Summer 2000): Showing how the actual telescope works.
- Vice President of the Society of Physics Students (SPS), Department of Physics, University of Washington, Seattle, WA (July, 2000–June,2001).