

MICHAEL W. RICHMOND

CURRICULUM VITAE

Current Address

Department of Physics
Rochester Institute of Technology
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Education

<i>Ph.D., Astronomy</i>	November 1992
University of California at Berkeley	
Thesis: “The Supernova Rate in Starburst Galaxies”	
Advisor: Alexei V. Filippenko	
<i>M.A., Astronomy</i>	May 1989
University of California at Berkeley	
<i>B.A., Astrophysics, Magna Cum Laude</i>	June 1986
Princeton University	
Thesis: “An Application of Self-Consistent Field Theory to Close Binary Polytropes”	
Advisor: Jeremiah P. Ostriker	

Employment

Professor, Rochester Institute of Technology	2010 –
Associate Professor, Rochester Institute of Technology	2003 – 2010
Assistant Professor, Rochester Institute of Technology	1997 – 2003
Research Staff Member, Princeton University	1995 – 1997
Research Associate, Princeton University	1992 – 1995
Research Assistant, UC Berkeley	1989 – 1992
Graduate Student Instructor, UC Berkeley	1988 – 1989
Teaching Assistant, UC Berkeley	1986 – 1988
Consultant, Princeton University Computer Center	1985 – 1986
Programmer, Massachusetts Computer Corporation	Summer 1985

Honors and Awards

Japanese Society for the Promotion of Science Bridge Fellowship	2015
Japanese Society for the Promotion of Science Fellowship	2011
Japanese Society for the Promotion of Science Fellowship	2008
Outstanding Graduate Student Instructor, U.C. Berkeley	1988 – 1989
Earl C. Anthony Fellowship, U.C. Berkeley	1986 – 1987

Service to RIT

Institute

Institute Council	2012
Eisenhart Awards Committee	2011 – 2012
Academic Senate	2010 – 2013
Institute Academic Conduct Committee	2010 – 2013
Metalworks Club Faculty Advisor	2007 - 2013
Kendo Club Faculty Advisor	2001 - 2013
Anime Club Faculty Advisor	1999 - 2013

College

COS Academic Conduct Committee	2006 – 2007
COS Computer Committee	1998 – 2005

Department

AST Curriculum Committee	2009 – 2011
Physics Computer Committee	2009 – 2013
Physics Curriculum Committee	2008 – 2013
Physics Resources and Facilities Committee	1999 – 2005
Physics Advising, Recruitment and Public Relations	1997 – 2002
Physics Pedagogy and Instructional Technology	1997 – 1998

Teaching Experience at RIT

- College Physics I, II, III and associated labs
- University Physics I, II, III and associated labs
- Introductory Astronomy lectures and labs
- University Astronomy
- Sophomore Physics Seminar
- Introduction to Computational Physics
- Modern Physics
- Extragalactic Astronomy and Cosmology (undergraduate)
- Astrophysics
- Observational Astronomy
- Experiments in Modern Physics I and II
- Advanced Computational Physics
- Capstone Project
- Astronomy Graduate Seminar
- Graduate Extragalactic Astronomy
- Graduate Extrasolar Planets

Service to the Community

Public Nights at the RIT Observatory	1998-2015
Talks to local schools and groups	1998-2015
Genesee Valley Girl Scouts Astronomy Camps	2006-2009
Instructor, Project CLEA: Summer Workshop on Astronomical Research Techniques in the Introductory Laboratory	2003-2010
Mentor for Athena High School (Greece, NY) student projects	2007 - 2011
Mad Scientist Network volunteer	2001-2003
Strasenbergh Planetarium volunteer	1999-2001
Science-By-Mail volunteer	1991-1993, 1995-1997
New Jersey Regional Science Bowl moderator	1996, 1997
Mentor, Learning Through Collaborative Visualization (CoVis) Project	1996-1997
Delaware Valley Science Fair judge	1995, 1997
Instructor, Project RTUFSO: Research Techniques for Undergraduate Faculty at Small Observatories	July 1995
NASA Astrophysics Data Program review panel	1995, 1996

Affiliations

American Association of Variable Star Observers
Astronomical Society of the Pacific
Rochester Academy of Sciences, Astronomy Section
Telescope Scientist, WIYN 0.9m Consortium

Observing Experience

Optical Direct Imaging:

30 nights, 0.9-m, Kitt Peak National Observatory
~200 nights, 0.25-m Telescope, RIT Observatory
42 nights, 1-m Nickel Telescope, Lick Observatory
~400 nights, 0.5-m Telescope, Leuschner Observatory
~150 nights, 0.76-m Telescope, Leuschner Observatory
24 nights, 3.5-m ARC Telescope, Apache Point Observatory
~10 nights, 0.05-m TASS triplet, First Settler Observatory

Optical Spectroscopy:

4 nights, 1-m Nickel Telescope, Lick Observatory
2 nights, 3-m Shane Telescope, Lick Observatory

Radio Interferometry:

~10 days, Hat Creek Radio Observatory
~1 day, Very Large Array (with I. de Pater)

Research Interests

Supernovae, supernova rates, starburst galaxies, variable stars, asteroids, telescope automation and remote observing, optical instrumentation, data analysis.

Refereed Publications

- Richmond, M. W., and Knapp, G. R., 1986, *Astron. Jour.*, **91**, 517. “Molecules in galaxies. II. The disk of NGC 4565.”
- de Pater, I., and Richmond, M. W., 1989, *Icarus*, **80**, 1. “Neptune’s Microwave Spectrum from 1 mm to 20 cm.”
- Treffers, R. R., and Richmond, M. W., 1989, *Pub. Astr. Soc. Pacific*, **101**, 725. “PCVISTA: A Library of Astronomical Image Processing Programs for the IBM-PC.”
- Peterson, B. M. *et al.*, 1991, *Ap. J.*, **368**, 119. “Steps toward Determination of the Size and Structure of the Broad-line Region in Active Galactic Nuclei. II. An Intensive Study of NGC 5548 at Optical Wavelengths.”
- Filippenko, A. V. *et al.*, 1992, *Ap. J. Lett.*, **384**, L15. “The Peculiar Type Ia SN 1991T: Detonation of a white dwarf?”
- Filippenko, A. V. *et al.*, 1992, *Astron. Jour.* **104**, 1543. “The Subluminous, Spectroscopically Peculiar Type Ia Supernova 1991bg in the Elliptical Galaxy NGC 4374.”
- Ford, C. H. *et al.*, 1993, *Astron. Jour.* **106**, 1101. “CCD Photometry of Three Type Ia Supernovae: V, R and I Light Curves.”
- Tyson, N. D. *et al.*, 1993, *Astron. and Astrophys.* **275**, 630. “On the Possibility of a Major Impact on Uranus in the Past Century.”
- Richmond, M. W. *et al.*, 1993, *Pub. Astr. Soc. Pac.* **105**, 1164. “The Berkeley Automatic Imaging Telescope.”
- Dietrich, M. *et al.*, 1993. *Ap. J.* **408**, 416. “Steps toward Determination of the Size and Structure of the Broad-line Region in Active Galactic Nuclei. IV. Intensity Variations of the Optical Emission Lines of NGC 5548.”
- Aldering, G. *et al.*, 1994. *Astron. Jour.*, **107**, 662. “SN 1993J: The Optical Properties of its Progenitor.”
- Richmond, M. W. *et al.*, 1994. *Astron. Jour.*, **107**, 1022. “UBVRI Photometry of SN 1993J in M81: The First 120 Days.”
- Wells, L. A. *et al.*, 1994, *Astron. Jour.*, **108**, 2233. “The Type Ia Supernova 1989B in NGC 3627 (M 66).”
- Richmond, M. W. *et al.*, 1995, *Astron. Jour.*, **109**, 2121. “UBVRI Photometry of the Type Ia SN 1994D in NGC 4526.”
- Richmond, M. W. *et al.*, 1996, *Astron. Jour.*, **111**, 327. “UBVRI Photometry of the Type Ic SN 1994I in M51.”
- Barth, A. J. *et al.*, 1996, *Astron. Jour.*, **111**, 2047. “The environments of supernovae in archival Hubble Space Telescope images.”
- Richmond, M. W. *et al.*, 1996, *Astron. Jour.*, **112**, 732. “UBVRI Photometry of SN 1993J in M81: Days 3 to 365.”
- M. W. Richmond *et al.*, 1998, *Astron. Jour.*, **110**, 553. “The Supernova Rate in Starburst Galaxies.”
- Li, W. D. *et al.*, 1999, *Astron. Jour.*, **117**, 2709. “The Type Ia Supernova 1997br in ESO 576-G40.”
- X. Fan *et al.*, 1999, *Astron. Jour.*, **118**, 1. “High-Redshift Quasars Found in Sloan Digital Sky Survey Commissioning Data.”
- Newberg, H. J. *et al.*, 1999, *Astrophys. Jour. Suppl. Ser.*, **123**, 377. “Catalog of Four-Color Photometry of Stars, Galaxies, and QSOS Using SDSS Filters.”

- Richmond, M. W. *et al.*, 2000, *Publ. Ast. Soc. Pac.*, **112**, 397. “TASS Mark III Photometric Survey of the Celestial Equator.”
- York, D. G. *et al.*, 2000, *Astron. Jour.*, **120**, 1579. “The Sloan Digital Sky Survey: Technical Summary.”
- Van Dyk, S. D. *et al.*, 2000, *Publ. Ast. Soc. Pac.*, **112**, 1352. “SN 1997bs in M66: Another Extragalactic eta Carinae Analog?”
- Richards, G. T. *et al.*, 2001, *Astron. Jour.*, **121**, 2308. “Colors of 2625 Quasars at $0 < z < 5$ Measured in the Sloan Digital Sky Survey Photometric System.”
- Macri, L. M. *et al.*, 2001, *Astrophys. Jour.*, **559**, 243. “The Discovery of Cepheids and a New Distance to NGC 2841 Using the Hubble Space Telescope.”
- Eisenstein, D. J. *et al.*, 2001, *Astron. Jour.*, **122**, 2267. “Spectroscopic Target Selection for the Sloan Digital Sky Survey: The Luminous Red Galaxy Sample.”
- Ho, W. C. G. *et al.*, 2001, *Publ. Ast. Soc. Pac.*, **113**, 1349. “BVRI Photometry of Supernovae.”
- Richmond, M. W., 2002, *Intl. Bull. Var. Stars.*, **5221**. “GSC 01621-02192: A New W UMa Eclipsing Binary.”
- Stoughton, C. *et al.*, 2002, *Astron. Jour.*, **123**, 485. “Sloan Digital Sky Survey: Early Data Release.”
- Ishioka, R. *et al.*, 2002, *Astron. and Astrophys.*, **381L**, 41. “First Detection of the Growing Superhumps at the Rapidly Rising Stage of Dwarf Novae AL Com and WZ Sge.”
- Smith, J. A. *et al.*, 2002, *Astron. Jour.*, **123**, 2121. “The u’g’r’i’z’ Standard-Star System.”
- Tegmark, M. *et al.*, 2002, *Astrophys. Jour.*, **571**, 191. “The Angular Power Spectrum of Galaxies from the Early Sloan Digital Sky Survey Data.”
- Patterson, J. *et al.*, 2002, *Publ. Ast. Soc. Pac.*, **114**, 721. “The 2001 Outburst of WZ Sagittae.”
- Strauss, M. A. *et al.*, 2002. *Astron. Jour.*, **124**, 1810. “Spectroscopic Target Selection in the Sloan Digital Sky Survey: The Main Galaxy Sample.”
- Abazajian, K. *et al.*, 2003. *Astron. Jour.*, **126**, 2081. “The First Data Release of the Sloan Digital Sky Survey.”
- Anderson, S. F. *et al.*, 2003. *Astron. Jour.*, **126**, 2209. “A Large, Uniform Sample of X-Ray-Emitting AGNs: Selection Approach and an Initial Catalog from the ROSAT All-Sky and Sloan Digital Sky Surveys.”
- Anderson, S. F. *et al.*, 2003. *Astron. Jour.*, **126**, 2209. “A Large, Uniform Sample of X-Ray-Emitting AGNs: Selection Approach and an Initial Catalog from the ROSAT All-Sky and Sloan Digital Sky Surveys.”
- Schneider, D. P. *et al.*, 2003. *Astron. Jour.*, **126**, 2579. “The Sloan Digital Sky Survey Quasar Catalog. II. First Data Release.”
- Tegmark, M. *et al.*, 2004. *Astrophys. Jour.*, **606**, 702. “The Three-Dimensional Power Spectrum of Galaxies from the Sloan Digital Sky Survey.”
- Tegmark, M. *et al.*, 2004. *Phys. Rev. D*, **69**, 103501. “Cosmological parameters from SDSS and WMAP.”
- Abazajian, K. *et al.*, 2004. *Astron. Jour.*, **128**, 502. “The Second Data Release of the Sloan Digital Sky Survey.”
- Kastner, J. H. *et al.*, 2004. *Nature*, **430**, 429. “An X-ray outburst from the rapidly accreting young star that illuminates McNeil’s nebula.”

- Finkbeiner, D. P. *et al.*, 2004. *Astron. Jour.*, **128**, 2577. “Sloan Digital Sky Survey Imaging of Low Galactic Latitude Fields: Technical Summary and Data Release.”
- McGehee, P. M. *et al.*, 2004. *Astrophys. Jour.*, **616**, 1058. “The V1647 Orionis (IRAS 05436-0007) Protostar and Its Environment.”
- Abazajian, K. *et al.*, 2005. *Astron. Jour.*, **129**, 1755. “The Third Data Release of the Sloan Digital Sky Survey.”
- Grosso, N. *et al.*, 2005. *Astron. Astrophys.*, **438**, 159. “Enhanced X-ray variability from V1647 Ori, the young star in outburst illuminating McNeil’s Nebula.”
- Anderson, S. F. *et al.*, 2005. *Astron. Jour.*, **130**, 2230. “Ultracompact AM Canum Venaticorum Binaries from the Sloan Digital Sky Survey: Three Candidates Plus the First Confirmed Eclipsing System.”
- Eisenstein, D. J. *et al.*, 2005. *Astrophys. Jour.*, **633**, 560. “Detection of the Baryon Acoustic Peak in the Large-Scale Correlation Function of SDSS Luminous Red Galaxies.”
- Richmond, M. W. *et al.*, 2005. *Pub. Astron. Soc. Japan*, **57**, 969. “Properties of Stars in the Subaru Deep Field.”
- Adelman-McCarthy, J. K. *et al.*, 2006. *Astrophys. Jour. Suppl.*, **162**, 38. “The Fourth Data Release of the Sloan Digital Sky Survey.”
- Kastner, J. H. *et al.*, 2006. *Astrophys. Jour.*, **648**, 43. “V1647 Orionis: The X-Ray Evolution of a Pre-Main-Sequence Accretion Burst.”
- Droege, T. F. *et al.*, 2006. *Pub. Astr. Soc. Pacific*, **118**, 1666. “TASS Mark IV Photometric Survey of the Northern Sky.”
- Tegmark, M. *et al.*, 2006. *Phys. Rev. D*, **74**, 123507. “Cosmological constraints from the SDSS luminous red galaxies.”
- Anderson, S. F. *et al.*, 2007. *Astron. Jour.*, **133**, 313. “A Large, Uniform Sample of X-Ray-emitting Active Galactic Nuclei from the ROSAT All Sky and Sloan Digital Sky Surveys: The Data Release 5 Sample.”
- Adelman-McCarthy, J. K. *et al.*, 2007. *Astrophys. Jour. Suppl.*, **172**, 634. “The Fifth Data Release of the Sloan Digital Sky Survey.”
- Sesar, B. *et al.*, 2007. *Astron. Jour.*, **134**, 2236. “Exploring the Variable Sky with the Sloan Digital Sky Survey.”
- Frieman, J. A. *et al.*, 2008. *Astron. Jour.*, **135**, 338. “The Sloan Digital Sky Survey-II Supernova Survey: Technical Summary.”
- Sako, M. *et al.*, 2008. *Astron. Jour.*, **135**, 348. “The Sloan Digital Sky Survey-II Supernova Survey: Search Algorithm and Follow-Up Observations.”
- Morokuma, T. *et al.*, 2008. *Astrophys. Jour.*, **676**, 163. “The Subaru/XMM-Newton Deep Survey (SXDS). V. Optically Faint Variable Object Survey.”
- Adelman-McCarthy, J. K. *et al.*, 2008. *Astrophys. Jour. Suppl.*, **175**, 297. “The Sixth Data Release of the Sloan Digital Sky Survey.”
- Zheng, C. *et al.*, 2008. *Astron. Jour.*, **135**, 1766. “First-Year Spectroscopy for the Sloan Digital Sky Survey-II Supernova Survey.”
- Anderson, S. F. *et al.*, 2008. *Astron. Jour.*, **135**, 2108. “Two More Candidate AM Canum Venaticorum (am CVn) Binaries from the Sloan Digital Sky Survey.”
- Dilday, B. *et al.*, 2008. *Astrophys. Jour.*, **682**, 262. “A Measurement of the Rate of Type Ia Supernovae at Redshift $z < 0.1$ from the First Season of the SDSS-II Supernova Survey.”
- Holtzman, J. A. *et al.*, 2008. *Astron. Jour.*, **136**, 2306. “The Sloan Digital Sky Survey-II: Photometry and Supernova Ia Light Curves from the 2005 Data.”

- Richmond, M. W. *et al.*, 2009. *Pub. Astr. Soc. Japan*, **61**, 97. “Proper Motions with Subaru I. Methods and a First Sample in the Subaru Deep Field.”
- Pastorello, A. *et al.*, 2009. *Mon. Not. Roy. Astr. Soc.*, **394**, 2266. “SN 2005cs in M51 - II. Complete evolution in the optical and the near-infrared.”
- Abazajian, K. N. *et al.*, 2009. *Astrophys. Jour. Suppl.*, **182**, 543. “The Seventh Data Release of the Sloan Digital Sky Survey.”
- Sollerman, J. *et al.*, 2009. *Astrophys. Jour.*, **703**, 1374. “First-Year Sloan Digital Sky Survey-II (SDSS-II) Supernova Results: Constraints on Nonstandard Cosmological Models.”
- Kessler, R. *et al.*, 2009. *Astrophys. Jour. Suppl.*, **185**, 32. “First-Year Sloan Digital Sky Survey-II Supernova Results: Hubble Diagram and Cosmological Parameters.”
- Kato, T. *et al.*, 2009. *Pub. Astron. Soc. Japan*, **61**, 395. “Survey of Period Variations of Superhumps in SU UMa-Type Dwarf Novae.”
- Plotkin, R. M. *et al.*, 2010. *Astron. Jour.*, **139**, 390. “Optically Selected BL Lacertae Candidates from the Sloan Digital Sky Survey Data Release Seven.”
- Bhatti, W. A. *et al.*, 2010. *Astrophys. Journ. Suppl.*, **186**, 233. “Variable Point Sources in Sloan Digital Sky Survey Stripe 82. I. Project Description and Initial Catalog (0 hr \leq t \leq 4 hr).”
- Lampeitl, H. *et al.*, 2010. *Monthly Notices Royal Astr. Soc.*, **401**, 2331. “First-year Sloan Digital Sky Survey-II supernova results: consistency and constraints with other intermediate-redshift data sets.”
- Richmond, M. W. *et al.*, 2010 *Publ. Astron. Soc. Japan*, **62**, 91. “Proper Motions with Subaru II. A Sample in the Subaru/XMM-Newton Deep Survey Field.”
- Hamaguchi, K. *et al.*, 2010. *Astron. Jour.*, **714**, 16. “Suzaku Observation of Strong Fluorescent Iron Line Emission from the Young Stellar Object V1647 ORI During its New X-ray Outburst.”
- Grosso, N. *et al.*, 2010 *Astron. Astrophys.*, **522**, 56. “A few days before the end of the 2008 extreme outburst of EX Lupi: accretion shocks and a smothered stellar corona unveiled by XMM-Newton.”
- Kato, T. *et al.*, 2010 *Publ. Astron. Soc. Japan*, **62**, 1525. “Survey of Period Variations of Superhumps in SU UMa-Type Dwarf Novae. II The Second Year.”
- Olech, A. *et al.*, 2011 *Astron. Astrophys.*, **532**, 64. “SDSS J162520.29+120308.7 - a new SU Ursae Majoris star in the period gap.”
- Richmond, M. W., 2011 *Jour. AAVSO*, **39**, 201. “A Search for Eclipsing Binary Light Curve Variations Among MACHO Project Light Curves of 3,256 Fundamental- Mode RR Lyrae Variables in the Galactic Bulge.”
- Davis, T. M. *et al.*, 2011 *Astrophys. Jour.*, **741**, 67. “The Effect of Peculiar Velocities on Supernova Cosmology.”
- Teets, W. K. *et al.*, 2011 *Astrophys. Jour.*, **741**, 83. “X-Ray Production by V1647 Ori during Optical Outbursts.”
- Hamaguchi, K. *et al.*, 2012 *Astrophys. Jour.*, **754**, 32. “X-Raying the Beating Heart of a Newborn Star: Rotational Modulation of High-energy Radiation from V1647 Ori.”
- Richmond, M. W. & Smith, H. A., 2012 *Jour. AAVSO*, **40**, 872. “BVRI Photometry of SN 2011fe in M101.”
- Teets, W. *et al.*, 2012 *Astrophys. Jour.*, **760**, 89. “Detection of a Cool, Accretion-shock-generated X-Ray Plasma in EX Lupi during the 2008 Optical Eruption.”

- Campbell, H. *et al.*, 2013 *Astrophys. Jour.*, **763**, 88. “Cosmology with Photometrically Classified Type Ia Supernovae from the SDSS-II Supernova Survey.”
- Kato, T. *et al.*, 2014 *Publ. Astron. Soc. Japan*, **66**, 30. “Survey of period variations of superhumps in SU UMa-type dwarf novae. V. The fifth year (2012-2013).”
- Principe, D. A. *et al.*, 2014 *Astrophys. Jour. Suppl. Ser.*, **213**, 4. “Star Formation in Orion’s L1630 Cloud: An Infrared and Multi-epoch X-Ray Study from the SDSS-II Supernova Survey.”
- Betoule, M. *et al.*, 2014 *Astron. Astrophys.*, **568**, 22. “Improved cosmological constraints from a joint analysis of the SDSS-II and SNLS supernova samples.”
- Taylor, M. *et al.*, 2014 *Astrophys. Jour.*, **792**, 135. “The Core Collapse Supernova Rate from the SDSS-II Supernova Survey.”
- Tanaka, M. *et al.*, 2014 *Astrophys. Jour.*, **793**, 26. “Discovery of Dramatic Optical Variability in SDSS J1100+4421: A Peculiar Radio-loud Narrow-line Seyfert 1 Galaxy?”
- Kato, T. *et al.*, 2014 *Publ. Astron. Soc. Japan*, **66**, 90. “Survey of period variations of superhumps in SU UMa-type dwarf novae. VI. The sixth year (2013-2014).”
- Richmond, M. W., 2014 *Jour. AAVSO*, **42**, 333. “BVRI Photometry of SN 2013ej in M101.”
- Morokuma, T. *et al.*, 2014 *Publ. Astron. Soc. Japan*, **66**, 114. “Kiso Supernova Survey (KISS): Survey strategy.”
- Smith, J. E., *et al.*, 2015 *Astrophys. Jour.*, **800**, 93. “Wide Field Multiband Imaging of Low Redshift Quasar Environments.”
- Vazquez, B., *et al.*, 2015 *Astrophys. Jour.*, **801**, 127. “Spitzer Space Telescope Measurements of Dust Reverberation Lags in the Seyfert 1 Galaxy NGC 6418.”