

Curriculum Vitae - Jason Kalirai

Personal Information:

Name: Jasonjot Singh Kalirai
Birth: April 01, 1978 (Quesnel BC, Canada)

Address: Space Telescope Science Institute
3700 San Martin Drive
Baltimore MD, USA, 21218

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Education:

PhD, Astrophysics, University of British Columbia (2004)
MSc, Astrophysics, University of British Columbia (2001)
BSc, Honours Physics & Astronomy, University of British Columbia (2000)

Research Experience:

Assistant Astronomer (2008-present) / JWST Deputy Project Scientist (2010-present)
Space Telescope Science Institute

Hubble Fellow (2005-2008)
University of California Observatories/Lick Observatory, University of California at Santa Cruz

Postdoctoral Researcher (2004-2005)
University of California Observatories/Lick Observatory, University of California at Santa Cruz

Doctoral Student (2001-2004)
Department of Physics & Astronomy, University of British Columbia
Advisor: Dr. Harvey B. Richer
Dissertation: Astrophysics with White Dwarfs
- other research involved studying properties of open and globular star clusters.

Summer Student (2004 - for two weeks)
University of Montreal - *Host: Dr. Pierre Bergeron*
Purpose: Collaboration to fit model white dwarf spectra to observations.

Summer Student (2001)
Osservatorio Astronomico di Roma - *Host: Dr. Francesca D'Antona*
Purpose: Collaboration to fit theoretical models to the major sequences of four open star clusters.

Masters Student (2000-2001)
Department of Physics & Astronomy, University of British Columbia
Advisor: Dr. Harvey B. Richer
Dissertation: The CFHT Open Star Cluster Survey.

Summer Student (2000)

Canada France Hawaii Telescope Corporation - *Host: Dr. Gregory G. Fahlman*

Purpose: Photometry and data reduction of a large imaging survey of star clusters.

Summer Fellow (1999)

Department of Physics, University of Toronto - *Host: Dr. James Drummond*

Purpose: Investigate possibilities of a mission to perform remote sounding experiments of the atmosphere of Mars.

Awards and Scholarships:

- Henry Norris Russell Fellowship – Princeton University (2008, declined)
- Riccardo Giacconi Fellowship – STScI (2008, declined)
- Hubble Fellowship – STScI Grant HST-HF-01185.01-A (2005-2008)
- Natural Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Research Fellowship (2005, declined)
- Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate scholarship (PGS-B) (2002 - 2004) - NSERC PGS-B Grant (2003-2004)
- Canadian Astronomical Society - Best graduate student oral presentation award (2003)
- Canadian Astronomical Society - Best graduate student poster presentation award (2002)
- Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate scholarship (PGS-A) (2000 - 2002) – NSERC PGS-A Grant (2001-2002)
- Canadian Astronomical Society - Best graduate student poster presentation award (2000)
- University of BC Undergraduate Scholar Program Scholarship (1999 - 2000)
- Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Student Research Award (1999)
- University of BC Scholarship (1998 - 1999)

Publications:

Refereed Contributions:

- 56.) Tollerud et al. 2012, *ApJ*, submitted (arXiv1112.1067) – *The SPLASH Survey: Spectroscopy of 15 M31 Dwarf Spheroidal Galaxies*
- 55.) Woodley et al. 2012, *AJ*, in press (arXiv1112.1425) – *The Spectral Energy Distributions of White Dwarfs in 47 Tucanae: The Distance to the Cluster*
- 54.) Kalirai et al. 2012, *AJ*, **143**, 11 – *A Deep, Wide-Field, and Panchromatic View of 47 Tuc and the SMC with HST: Observations and Data Analysis Methods*
- 53.) Foley et al. 2012, *ApJ*, **744**, 38 – *Very Early Ultraviolet and Optical Observations of the Type Ia Supernova 2009ig*
- 52.) Gosnell et al. 2012, *ApJ*, **745**, 57 – *An Unexpected Discovery in the Rich Open Cluster NGC 6819 Using XMM-Newton*
- 51.) Tanaka et al. 2011, *ApJ*, **738**, 150 – *Structure and Population of the NGC 55 Stellar Halo from a Subaru/Suprime-Cam Survey*
- 50.) Bohlin et al. 2011, *AJ*, **141**, 173 – *Absolute Flux Calibration of the IRAC Instrument on the Spitzer Space Telescope Using Hubble Space Telescope Flux Standards*
- 49.) Jeffery et al. 2011, *AJ*, **141**, 171 – *HST/ACS Observations of RR Lyrae Stars in Six Ultra-Deep Fields of M31*
- 48.) Kalirai et al. 2010, *ApJ*, **711**, 671 – *The SPLASH Survey: Internal Kinematics, Chemical Abundances, and Masses of the Andromeda I, II, III, VII, X, and XIV Dwarf Spheroidal Galaxies.*
- 47.) Geha et al. 2010, *ApJ*, **711**, 361 – *Local Group Dwarf Elliptical Galaxies. II. Stellar Kinematics to Large Radii in NGC 147 and NGC 185*
- 46.) Tremblay et al. 2010, *ApJ*, **712**, 1345 – *New Insights into the Problem of the Surface Gravity Distribution of Cool DA White Dwarfs.*
- 45.) Kalirai & Richer 2010, *Philosophical Transactions of the Royal Society A, Invited Review*, **368**, 755 – *Star Clusters as Laboratories for Stellar Evolution.*
- 44.) Tanaka et al. 2010, *ApJ*, **708**, 1168 – *Structure and Population of the Andromeda Stellar Halo From a Subaru/Suprime-Cam Survey.*
- 43.) Kalirai et al. 2009, *ApJ*, **705**, 1043 – *The SPLASH Survey: A Spectroscopic Analysis of the Metal-Poor Low-Luminosity*

M31 dSph Satellite Andromeda X.

- 42.) Kalirai et al. 2009, *ApJ*, **705**, 408 – *The Masses of Population II White Dwarfs.*
- 41.) Gilbert et al. 2009, *ApJ*, **705**, 1275 – *The SPLASH Survey: A Spectroscopic Portrait of Andromeda's Giant Southern Stream.*
- 40.) Davis et al. 2009, *ApJ*, **705**, 398 – *The Spectral Types of White Dwarfs in M4.*
- 39.) Fittingoff et al. 2009, *MNRAS*, **399**, 728 – *A Survey of Ultraviolet-Bright Sources Behind the Halo of M31.*
- 38.) Brown et al. 2009, *ApJS*, **184**, 152 – *Deep Optical Photometry of Six Fields in the Andromeda Galaxy.*
- 37.) Shields et al. 2009, *ApJ*, **707**, 936 – *The Quasar SDSS J105041.35+345631.3: Black Hole Recoil or Extreme Double-Peaked Emitter?*
- 36.) Hartman et al. 2009, *ApJ*, **695**, 336 – *Deep MMT Transit Survey of the Open Cluster M37 IV: Limit on the Fraction of Stars with Planets as Small as 0.3 R_J.*
- 35.) Hartman et al. 2009, *ApJ*, **691**, 342 – *Deep MMT Transit Survey of the Open Cluster M37 III: Stellar Rotation at 550 Myr.*
- 34.) Brown et al. 2008, *ApJL*, **685**, 121 – *The Extended Star Formation History of the Andromeda Spheroid at 35 kpc on the Minor Axis.*
- 33.) Kalirai et al. 2008, *ApJL*, **682**, 37 – *A Glimpse into the Past: The Recent Evolution of Globular Clusters.*
- 32.) Kalirai et al. 2008, *ApJ*, **676**, 594 – *The Initial-Final Mass Relation: Direct Constraints at the Low Mass End.*
- 31.) Davis et al. 2008, *AJ*, **135**, 2155 – *Deep Advanced Camera for Surveys Imaging in the Globular Cluster NGC 6397: The Binary Fraction.*
- 30.) Richer et al. 2008, *AJ*, **135**, 2141 – *Deep Advanced Camera for Surveys Imaging in the Globular Cluster NGC 6397: The Cluster Color Magnitude Diagram and Luminosity Function.*
- 29.) Hurley et al. 2008, *AJ*, **135**, 2129 – *Deep Advanced Camera for Surveys Imaging in the Globular Cluster NGC 6397: Dynamical Models.*
- 28.) Anderson et al. 2008, *AJ*, **135**, 2114 – *Deep Advanced Camera for Surveys Imaging in the Globular Cluster NGC 6397: Reduction Methods.*
- 27.) Cignoni et al. 2008, *MNRAS*, **386**, 2235 – *Disentangling the Galaxy at Low Galactic Latitudes.*
- 26.) Hartman et al. 2008, *ApJ*, **675**, 1254 – *Deep MMT Transit Survey of the Open Cluster M37 II: Variable Stars.*
- 25.) Hartman et al. 2008, *ApJ*, **675**, 1233 – *Deep MMT Transit Survey of the Open Cluster M37 I: Observations and Cluster Parameters.*
- 24.) Davis et al. 2008, *MNRAS*, **383**, L20 – *On the Radial Distribution of White Dwarfs in the Globular Cluster NGC 6397.*
- 23.) Kalirai et al. 2007, *ApJ*, **671**, 748 – *Stellar Evolution in NGC 6791: Mass Loss on the Red Giant Branch and the Formation of Low Mass White Dwarfs.*
- 22.) Hansen et al. 2007, *ApJ*, **671**, 380 – *The White Dwarf Cooling Sequence of NGC 6397.*
- 21.) Majewski et al. 2007, *ApJL*, **670**, 9 – *Discovery of Andromeda XIV: A Dwarf Spheroidal Dynamical Rogue in the Local Group?*
- 20.) Gilbert et al. 2007, *ApJ*, **668**, 245 – *Stellar Kinematics in the Complicated Inner Spheroid of M31: Discovery of Substructure Along the Southeastern Minor Axis and its Relationship to the Giant Southern Stream.*
- 19.) Brown et al. 2007, *ApJL*, **658**, 95 – *The Extended Star Formation History of the Andromeda Spheroid at 21 kpc on the Minor Axis.*
- 18.) Kalirai et al. 2007, *ApJL*, **657**, 93 – *The Space Motion of the Globular Cluster NGC 6397.*
- 17.) Gilbert et al. 2006, *ApJ*, **652**, 1188 – *A New Method for Isolating M31 Red Giant Branch Stars: The Discovery of Stars Out to a Radial Distance of 165 kpc.*
- 16.) Kalirai et al. 2006, *ApJ*, **648**, 389 – *The Metal-Poor Halo of the Andromeda Spiral Galaxy (M31).*
- 15.) Richer et al. 2006, *Science*, **313**, 936 – *Probing the Faintest Stars in a Globular Star Cluster.*
- 14.) Prochaska et al. 2006, *ApJ*, **642**, 989 – *The Galaxy Hosts and Large Scale Environments of Short-Hard Gamma Ray Bursts.*
- 13.) Kalirai et al. 2006, *ApJ*, **641**, 268 – *Kinematics and Metallicity of M31 Red Giants: The Giant Southern Stream and Discovery of a Second Cold Component at R = 20 kpc.*
- 12.) Kalirai et al. 2005, *ApJ Letters*, **618**, 129 – *The Dearth of Massive, Helium-Rich White Dwarfs in Young Open Star Clusters.*
- 11.) Kalirai et al. 2005, *ApJ Letters*, **618**, 123 – *The Initial-Final Mass Relationship: Spectroscopy of White Dwarfs in NGC 2099 (M37).*
- 10.) Kalirai & Tosi 2004, *MNRAS*, **351**, 649 – *Interpreting the Color-Magnitude Diagrams of Open Star Clusters through Numerical Simulations.*
- 9.) Richer et al. 2004, *AJ*, **127**, 2904 – *Concerning the White Dwarf Cooling Age of M4: A Reply to De Marchi et al. on "A Different Interpretation of Recent Deep HST Observations".*

- 8.) Richer et al. 2004, *AJ*, **127**, 2771 – *Hubble Space Telescope Observations of the Main Sequence of M4.*
- 7.) Kalirai et al. 2004, *ApJ*, **601**, 277 – *The Galactic Inner Halo: Searching for White Dwarfs and Measuring the Fundamental Galactic Constant, V_0/R_0 .*
- 6.) Ferdman et al. 2004, *AJ*, **127**, 380 – *Searching for Variability in the Globular Cluster Messier 4.*
- 5.) Kalirai et al. 2003, *AJ*, **126**, 1402 – *The CFHT Open Star Cluster Survey. IV. Two Rich, Young Open Star Clusters: NGC 2168 (M35) and NGC 2323 (M50).*
- 4.) Richer et al. 2002, *ApJ*, **574**, L151 – *The Lower Main Sequence and Mass Function of the Globular Cluster Messier 4.*
- 3.) Kalirai et al. 2001, *AJ*, **122**, 3239 – *The CFHT Open Star Cluster Survey. III. The White Dwarf Cooling Age of the Rich Open Star Cluster NGC 2099 (M37).*
- 2.) Kalirai et al. 2001, *AJ*, **122**, 266 – *The CFHT Open Star Cluster Survey. II. Deep CCD Photometry of the Old Open Star Cluster NGC 6819.*
- 1.) Kalirai et al. 2001, *AJ*, **122**, 257 – *The CFHT Open Star Cluster Survey. I. Cluster Selection and Data Reduction.*

Non-refereed Author Contributions:

- 20.) The Near-Infrared Sky Surveyor – *The Near-Infrared Sky Surveyor*, arXiv:1008.3563
- 19.) LSST Science Collaborations – *LSST Science Book, Version 2.0*, arXiv:0912.0201
- 18.) Kalirai et al. 2011, *European Astronomical Society Publication Series* **48**, 329 – *The SPLASH Survey: Milky Way vs M31 dSphs*
- 17.) Kalirai 2010, *IAU Symposium* **266**, 312 – *A New Method to Measure Stellar Mass Loss Rates*
- 16.) Kalirai 2009, *IAU Symposium*, **258**, 299 – *White Dwarfs as Astrophysical Probes.*
- 15.) Richer et al. 2009, *IAU Symposium*, **258**, 315, – *Towards a Precise White Dwarf Cooling Age of a Globular Cluster.*
- 14.) Ivezić et al. 2008, arXiv:0805.2366 – *LSST: From Science Drivers to Reference Design and Anticipated Data Products.*
- 13.) Kalirai et al. 2008, *ASP Conference Series*, **399**, 465 – *A Spectroscopic Study of M31 dSph Galaxies.*
- 12.) Kalirai 2008, *Memorie della Societa, Astronomica Italiana*, **79**, 2 – *Measuring Stellar Mass Loss in Different Environments.*
- 11.) Kalirai et al. 2008, *Springer Proceedings on Galaxies in the Local Volume Conference in Sydney, Australia*, --, -- – *A Spectroscopic Survey of M31 Dwarf Spheroidal Galaxies.*
- 10.) Kalirai 2007, *ASP Conference Series*, **372**, 91 – *Mass Loss on the Red Giant Branch of NGC 6791: The Case for Helium Core White Dwarfs.*
- 9.) Kalirai 2006, *ASP Conference Series*, **352**, 249 – *White Dwarfs and Stellar Evolution.*
- 8.) Kalirai 2006, *Bulletin of the Astronomical Society of India*, **34**, 141 – *Probing Stellar Evolution with Open Star Clusters.*
- 7.) Guhathakurta et al. 2005, astro-ph/0502366 – *Discovery of an Extended Halo of Stars in the Andromeda Spiral Galaxy.*
- 6.) Kalirai et al. 2005, *ASP Conference Proceedings on Resolved Stellar Populations Conference in Cancun, Mexico*, eds D. Valls-Gabaud and M. Chavez – *Kinematics and Metallicity of the Andromeda Giant Southern Stream.*
- 5.) Kalirai & Richer 2005, *Gemini Newsletter*, **25**, 23 – *Gemini Tackles a Key Problem in Stellar Evolution.*
- 4.) Kalirai et al. 2005, *ASP Conference Series*, **334**, 9 – *Spectroscopy of Faint White Dwarfs: The DA/DB Ratio and the Initial-Final Mass Relation.*
- 3.) Kalirai 2002, *ASP Conference Proceedings*, **274**, 362 – *Using White Dwarfs as Chronometers in Star Clusters.*
- 2.) Kalirai et al. 2001A, *CFHT Bulletin Series*, **43**, 5 – *White Dwarfs in NGC 6819.*
- 1.) Kalirai et al. 2000B, *CFHT Bulletin Series*, **42**, 8 – *CFHT Reductions using PSFex.*

White Papers and Others:

- 6.) Kalirai et al. 2009, *The Astronomy and Astrophysics Decadal Survey, Science White Paper*, **147** – *White Dwarfs as Astrophysical Probes.*
 - 5.) Kalirai et al. 2009, *The Astronomy and Astrophysics Decadal Survey, Science White Paper*, **146** – *Resolved Stellar Populations in the Milky Way.*
 - 4.) Kirby et al. 2009, *The Astronomy and Astrophysics Decadal Survey, Science White Paper*, **156** – *The Role of Dwarf Galaxies in Building Large Stellar Halos.*
 - 3.) Covey et al. 2009, *The Astronomy and Astrophysics Decadal Survey, Science White Paper*, **57** – *Measuring Stellar Ages and the History of the Milky Way.*
 - 2.) Ferguson et al. 2009, *The Astronomy and Astrophysics Decadal Survey, R.F.I.* – *The Scientific Opportunities of a General Astrophysics Program Associated with a Dark Energy Mission.*
 - 1.) Stern et al. 2009, *The Astronomy and Astrophysics Decadal Survey, R.F.I.* – *The Near Infrared Sky Surveyor.*
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Grants:

- Space Telescope Science Institute Collaborative Research Grants HST-GO-12549.08 (2011-2012)
 - Space Telescope Science Institute Collaborative Research Grants HST-GO-12581.08 (2011-2012)
 - Space Telescope Science Institute Collaborative Research Grant HST-GO-12257.06 (2011-2012)
 - Space Telescope Science Institute Collaborative Research Grant HST-GO-12055.20 (2010-2012)
 - Space Telescope Science Institute Director's Discretionary Grant (2009)
 - Space Telescope Science Institute Collaborative Research Grant HST-GO-11677.14 (2009-2012)
 - National Aeronautics and Space Administration Collaborative XMM-Newton Grant A0-7-55351 (2008)
 - National Science Foundation Collaborative Research Grant NSF 05-608 (2006-2008)
 - Hubble Fellowship – STScI Grant HST-HF-01185.01-A (2005-2008)
 - Space Telescope Science Institute Collaborative Research Grant HST-GO-10850.10-A (2007)
 - Space Telescope Science Institute Collaborative Research Grant HST-GO-10816.08-A (2006)
 - National Aeronautics and Space Administration Collaborative GALEX Grant (2006)
 - Space Telescope Science Institute Collaborative Research Grant HST-GO-10424.12-A (2005)
-

Conference Presentations and Colloquia:

| <u>DATE</u> | <u>LOCATION</u> | <u>CONFERENCE TITLE / UNIVERSITY NAME</u> | <u>TYPE</u> | <u>TALK</u> |
|--------------------|------------------------|--|--------------------|--|
| Nov. 2011 | Cambridge, MA | MIT | Oral | Panchromatic Surveys of Resolved Stellar Populations |
| Oct. 2011 | Washington, DC | Astrophysics Subcommittee Meeting | Oral | Frontier Science with the James Webb Space Telescope |
| Oct. 2011 | Newark, DE | University of Delaware | Oral | A Deep, Panchromatic View of 47 Tuc and the SMC |
| Oct. 2011 | Beijing, China | Kavli Institute (KIAA) | Oral | A Deep, Panchromatic View of 47 Tuc and the SMC |
| Sep. 2011 | Toronto, Canada | University of Toronto | Oral | A Deep, Panchromatic View of 47 Tuc and the SMC |
| Sep. 2011 | Tucson, AZ | Big Boss Meeting | Oral | Big Boss and Stellar Archaeology |
| Jun. 2011 | Baltimore, MD | Very Wide Field Surveys in Light of Astro 2010 | Oral | Panchromatic Studies of Galactic Stellar Populations |
| Jun. 2011 | Baltimore, MD | Frontier Science Opportunities with JWST | Oral | Resolved Stellar Populations in the Near-IR |
| May 2011 | Irvine, CA | UC Irvine | Oral | A Deep Panchromatic View of 47 Tuc and the SMC |
| Apr. 2011 | Princeton, NJ | IAS Bahcall Lunch | Oral | A Deep Panchromatic View of 47 Tuc and the SMC |
| Apr. 2011 | Vancouver, Canada | University of British Columbia | Oral | Galaxy Formation and Evolution |
| Feb. 2011 | Baltimore, MD | STScI – Cool Sci Series | Oral | Hubble's Diamonds: Searching for the Oldest Stars in the Galaxy |
| Jan. 2011 | Houston, TX | Rice University | Oral | Mass Loss and the Death of Low Mass Stars |
| Nov. 2010 | Baltimore, MD | STScI STIC Meeting | Oral | Mass Loss and the Death of Low Mass Stars |
| Aug. 2010 | Tucson, AZ | LSST All Hands Meeting | Oral | Plenary Talk: Stellar Populations in the Milky Way and Nearby Galaxies |
| Jun. 2010 | Lyon, France | A Universe of Dwarf Galaxies | Oral | The SPLASH Survey: Comparing Kinematics, Abundances, and Dynamical Masses of Milky Way and M31 dSphs |
| Apr. 2010 | Princeton, NJ | Institute for Advanced Studies | Oral | Galaxy Formation and Evolution in the |

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| | | | | Next Decade |
| Apr. 2010 | New York, NY | Columbia University | Oral | Galaxy Formation and Evolution in the Next Decade |
| Mar. 2010 | Cambridge, UK | Institute of Astronomy | Oral | Galaxy Formation and Evolution in the Next Decade |
| Feb. 2010 | Washington, DC | American Association of Physics Teachers Annual Conference | Oral | Hubble's Diamonds: Searching for the Oldest Stars in the Galaxy |
| Jan. 2010 | Hanover, NH | Dartmouth College | Oral | Stellar Evolution, Mass Loss, and Dead Stars |
| Oct. 2009 | Charlottesville, VA | University of Virginia | Oral | Stellar Evolution, Mass Loss, and Dead Stars |
| Oct. 2009 | Cambridge, MA | CfA, Harvard University | Oral | Stellar Evolution, Mass Loss, and Dead Stars |
| Oct. 2009 | Cambridge, MA | CfA, Harvard University | Oral | The SPLASH Project |
| Aug. 2009 | Santa Barbara, CA | "Stellar Death and Supernova" Workshop | Oral | New Puzzles: Isolated Helium Core White Dwarfs |
| Aug. 2009 | Rio de Janeiro, Brazil | IAU XXVII General Assembly | Oral | A New Method to Measure Stellar Mass Loss |
| May 2009 | Toronto, Canada | Canadian Astronomical Society Annual Conference | Oral | A New Method to Measure Stellar Mass Loss |
| Apr. 2009 | New York, NY | American Museum of Natural History | Oral | The End Stages of Stellar Evolution |
| Mar. 2009 | Pasadena, CA | Caltech | Oral | The End Stages of Stellar Evolution |
| Feb. 2009 | Halifax, Canada | Saint Mary's University | Oral | Probing Stellar Mass Loss with White Dwarfs |
| Feb. 2009 | Strasbourg, France | Intermediate Mass Stars Workshop | Oral | Stellar Evolution at Intermediate Masses |
| Jan. 2009 | Washington, DC | Carnegie Institute of Washington – DTM | Oral | Stellar Remnants as Astrophysical Probes |
| Jan. 2009 | Baltimore, MD | CAS Seminar at Johns Hopkins University | Oral | Stellar Remnants as Astrophysical Probes |
| Oct. 2008 | Baltimore, MD | "Ages of Stars" IAU Symposium 258 | Oral | White Dwarfs in the Galactic Disk and Halo |
| Oct. 2008 | Princeton, NJ | Princeton University | Oral | The Stellar Populations of the Andromeda Spiral Galaxy |
| Apr. 2008 | San Francisco, CA | San Francisco State University | Oral | Stellar Remnants as Cosmological Probes |
| Apr. 2008 | Pasadena, CA | OCIW | Oral | Stellar Remnants as Cosmological Probes |
| Mar. 2008 | Edmonton, Canada | University of Alberta | Oral | Stellar Remnants as Cosmological Probes |
| Mar. 2008 | Baltimore, MD | Johns Hopkins University | Oral | The Stellar Populations of the Andromeda Spiral Galaxy |
| Mar. 2008 | Baltimore, MD | 2008 Hubble Fellows Symposium | Oral | White Dwarfs as Astrophysical Probes |
| Feb. 2008 | Madison, WI | University of Wisconsin – Madison | Oral | The Nearest and Most Distant Globular Clusters |
| Feb. 2008 | Madison, WI | University of Wisconsin – Madison | Oral | The Stellar Populations of the Andromeda Spiral Galaxy |
| Feb. 2008 | Livermore, CA | Lawrence Livermore National Labs | Oral | The Stellar Populations of the Andromeda Spiral Galaxy |
| Feb. 2008 | Baltimore, MD | Space Telescope Science Inst. | Oral | Stellar Remnants as Cosmological Probes |
| Jan. 2008 | Columbus, OH | Ohio State University | Oral | Stellar Remnants as Cosmological Probes |
| Jan. 2008 | La Serena, Chile | Gemini South Observatory | Oral | Stellar Remnants as Cosmological Probes |
| Jan. 2008 | Austin, TX | American Astronomical Society Annual Meeting | Oral | A Spectroscopic Survey of M31 dSphs – Kinematics, Chemical Abundances, and Radial Distributions |
| Dec. 2007 | Hayama, Japan | Panoramic Views of Galaxy | Poster | A Spectroscopic Survey of M31 dSphs |

| | | Formation and Evolution | | |
|------------|----------------------|---|--------|---|
| Dec. 2007 | Santa Barbara, CA | UC Santa Barbara | Oral | Stellar Remnants as Cosmological Probes |
| Nov. 2007 | Madison, WI | University of Wisconsin – Madison | Oral | Stellar Remnants as Cosmological Probes |
| Oct. 2007 | Tucson, AZ | University of Arizona / NOAO | Oral | Stellar Remnants as Cosmological Probes |
| Sep. 2007 | Santa Cruz, CA | M31 SPLASH Team Meeting | Oral | Primary Meeting Overview Talk + Several M31-Related Talks |
| Sep. 2007 | Pasadena, CA | 2007 Keck Science Meeting – Caltech | Oral | Stellar Evolution in Metal-Rich Environments |
| Aug. 2007 | Cefalu, Italy | “XXI Century Challenges for Stellar Evolution” Workshop | Oral | The Initial-Final Mass Relation: First Constraints at the Low Mass End |
| Aug. 2007 | Vancouver, Canada | University of British Columbia | Oral | Mass Loss in Metal-Rich Environments |
| Jul. 2007 | Sydney, Australia | “Galaxies in the Local Volume” Conference | Oral | A Spectroscopic Survey of M31 Dwarf Spheroidal Galaxies |
| Jun. 2007 | Santa Cruz, CA | FLASH – Lunch Talk Series, UC Santa Cruz | Oral | Mass Loss in Metal-Rich Environments |
| Jun. 2007 | Kingston, Canada | Canadian Astronomical Society Annual Conference | Oral | Stellar Evolution in NGC 6791: Evolving from Red Giants to White Dwarfs |
| Jun. 2007 | Princeton, NJ | Princeton University | Oral | The Stellar Populations of the Andromeda Spiral Galaxy |
| May 2007 | Cambridge, MA | CfA, Harvard University | Oral | The Stellar Populations of the Andromeda Spiral Galaxy |
| April 2007 | Baltimore, MD | 2007 Hubble Fellows Symposium | Oral | Globular Clusters: From the Nearest to the Furthest |
| Mar. 2007 | Rotorua, New Zealand | “A New Zeal for Old Galaxies” Conference | Poster | The Metallicity Gradient in the Andromeda Spiral Galaxy |
| Mar. 2007 | Swinburne, Australia | Swinburne University | Oral | The Stellar Halo of the Andromeda Spiral Galaxy |
| Mar. 2007 | Vancouver, Canada | University of British Columbia | Oral | A Kinematic Study of M31 |
| Mar. 2007 | Victoria, Canada | HIA/NRC | Oral | A Kinematic Study of M31 |
| Feb. 2007 | Santa Cruz, CA | FLASH – Lunch Talk Series, UC Santa Cruz | Oral | The Stellar Populations of M31 |
| Jan. 2007 | Seattle, WA | American Astronomical Society Annual Meeting | Poster | A Spectroscopic Study of M31 dSphs – Kinematics and Chemical Abundances in Andromeda I, II, III |
| Jan. 2007 | Seattle, WA | American Astronomical Society Annual Meeting | Oral | Globular Clusters in a Globular Cluster |
| Jan. 2007 | Seattle, WA | Press Conf. – American Astronomical Society Meeting | Oral | The Discovery of the Metal-Poor Stellar Halo of the Andromeda Spiral Galaxy |
| Dec. 2006 | Gainesville, FL | University of Florida | Oral | The Metal-Poor Halo of M31 |
| Nov. 2006 | Austin, TX | University of Texas | Oral | The Stellar Populations of Andromeda |
| Nov. 2006 | Hamilton, Canada | McMaster University | Oral | The Metal-Poor Halo of M31 |
| Nov. 2006 | Kingston, Canada | Queens University | Oral | The Metal-Poor Halo of M31 |
| Oct. 2006 | Pasadena, CA | OCIW | Oral | The Stellar Populations of M31 |
| Oct. 2006 | Irvine, CA | UC Irvine | Oral | The Stellar Populations of M31 |
| Aug. 2006 | Leicester, UK | “15 th Annual White Dwarf Workshop” | Oral | Masses of White Dwarfs in Old Clusters |
| Jun. 2006 | Calgary, CA | Canadian Astronomical Society Annual Conference | Oral | Kinematics and Chemical Composition of Stars in M31’s Bulge and Halo |
| Apr. 2006 | Baltimore, MD | Hubble Fellows Symposium | Oral | The Metal-Poor Halo of M31 |
| Feb. 2006 | Aspen, CO | “Local Group Cosmology” Conference | Oral | The Andromeda Spiral Galaxy |
| Jan. 2006 | Washington, DC | American Astronomical Society Annual Meeting | Oral | The Metal-Poor Halo of M31 |
| Oct. 2005 | Austin, TX | University of Texas | Oral | The Metal-Poor Halo of M31 |

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| Oct. 2005 | Austin, TX | “Bash Symposium 2005: New Horizons” Meeting | Poster | Probing Stellar Evolution with White Dwarfs |
| Oct. 2005 | Santa Barbara, CA | UC Santa Barbara | Oral | Stellar Evolution and Star Clusters |
| Oct. 2005 | Santa Cruz, CA | Presentation for Santa Cruz Lifelong Learners | Oral | White Dwarf Stars in the Milky Way |
| Sep. 2005 | Pasadena, CA | 2005 Keck Science Meeting – Caltech | Oral | The Metal-Poor Halo of M31 |
| Aug. 2005 | Santa Cruz, CA | “Nearly Normal Galaxies” Conference | Poster | A Spectroscopic Survey of M31 Red Giants with Keck/DEIMOS: The Giant Stream |
| Aug. 2005 | CFHT, Hawaii | CFHT Seminar Series | Oral | The CFHT Open Star Cluster Survey: Constraining Stellar Evolution |
| May 2005 | Montreal, Canada | Canadian Astronomical Society Annual Conference | Poster | The Discovery of a Second Stream in M31’s Halo |
| Apr. 2005 | Cozumel, Mexico | “Resolved Stellar Populations” Conference | Oral | Open Clusters as a Probe of Stellar Evolution |
| Apr. 2005 | Santa Cruz, CA | FLASH – Lunch Talk Series, Santa Cruz, CA | Oral | Studies of White Dwarfs: in the Field and in Open and Globular Star Clusters |
| Feb. 2005 | Nainital, India | “International Meeting on Star Clusters” | Oral | The CFHT Open Star Cluster Survey – Recent Progress |
| Feb. 2005 | Seattle, WA | University of Washington | Oral | The Initial-Final Mass Relation |
| Feb. 2005 | La Serena, Chile | CTIO/AURA Inc. | Oral | Astrophysics with White Dwarfs |
| Jan. 2005 | Berkeley, CA | LBL | Oral | The Progenitors of Type Ia Supernovae |
| Jan. 2005 | San Diego, CA | American Astronomical Society Annual Meeting | Oral | Dissertation: Astrophysics with White Dwarfs |
| Sep. 2004 | Los Angeles, CA | 2004 Keck Science Meeting – UCLA | Oral | The Chemical Properties of White Dwarfs and the DA/DB Ratio. |
| Jul. 2004 | Kiel, Germany | “14 th Annual White Dwarf Workshop” | Oral | The Initial-Final Mass Relationship |
| Jun. 2004 | Winnipeg, Canada | Canadian Astronomical Society Annual Conference | Oral | Spectroscopy of White Dwarfs in Open Star Clusters |
| Jun. 2004 | Montreal, Canada | University of Montreal | Oral | Studies of White Dwarfs: in the Field and in Open and Globular Star Clusters |
| May 2004 | Vancouver, Canada | “Gemini Science 2004” Conference | Oral | The White Dwarf Initial Final Mass Relationship: Spectroscopy of White Dwarfs in M37 |
| May 2004 | Vancouver, Canada | Graduate Student Seminar Series | Oral | The History of the Discovery of White Dwarfs |
| Jan. 2004 | Atlanta, GA | American Astronomical Society Annual Meeting | Oral | White Dwarfs in the Disk and Halo of our Galaxy |
| Jun. 2003 | Waterloo, Ontario | Canadian Astronomical Society Annual Conference | Oral | Searching for White Dwarfs in the Galactic Inner Halo and Measuring $\Omega_o = V_o/R_o$ |
| May 2003 | Baltimore, MD | “The Local Group as an Astrophysical Laboratory” Symposium | Poster | White Dwarfs in the Galactic Inner Halo |
| Jan. 2003 | Seattle, WA | American Astronomical Society Annual Meeting | Poster | Stars in the Galactic Inner Halo |
| Jun. 2002 | Penticton, Canada | Canadian Astronomical Society Annual Conference | Poster | Dynamics in Young Open Star Clusters |
| Jan. 2002 | Washington DC | American Astronomical Society Annual Meeting | Oral | The White Dwarf Cooling Age of NGC 2099 |
| Jul. 2001 | Coimbra, Portugal | “Observed HR Diagrams and Stellar Evolution” Conference | Oral | The CFHT Open Star Cluster Survey: First Results |
| May 2000 | Vancouver, Canada | Canadian Astronomical Society Annual Conference | Poster | The CFHT Open Star Cluster Survey |
| Aug. 1999 | Toronto, Canada | University of Toronto – | Oral | An Atmospheric Study of Mars |

Teaching Experience:

Undergraduate Course Lecture (2002-2004)

Department of Physics & Astronomy, University of British Columbia

Instructor: Dr. Peter Newbury

- Presented 2-3 lectures each year to over 100 students in an undergraduate Astronomy course.

Teaching Assistant (1999-2004)

Department of Physics & Astronomy, University of British Columbia

Instructors: Drs. Douglas Scott, Jaymie Matthews, Peter Newbury, and Harvey Richer

- Assistant for various undergraduate courses. Duties included occasional lecturing, organizing weekly labs and tutorials, leading discussion groups, administering exams, and marking.

Supervision:

Aaron Dotter (2010-2012)

- Postdoctoral Researcher

Julia Cruz (2011-2012)

- 10th Grade Student at Nyack High School in Nyack, NY
High school mentorship on star cluster imaging project.

Abhi Rajan (2009-2010)

- Space Telescope Science Institute Research and Instrument Analyst
Mentoring related to the photometric calibration of the new HST instrument WFC3.

Pier-Emmanuel Tremblay (2009)

- University of Montreal Graduate Student (Supervisor Pierre Bergeron)
Mentoring help for a Keck Telescope project related to cool He white dwarfs.

Mikito Tanaka (2008-2009)

- National Astronomical Observatory of Japan Graduate Student (Supervisor Masashi Chiba)
Mentoring related to a large Subaru imaging survey of the Andromeda Spiral Galaxy.

Joe Wolf (2008-current)

- UC Irvine Graduate Student (Supervisor James Bullock)
Mentoring related to a Keck/DEIMOS survey of M31's dSph population.

Karrie Gilbert, Kirsten Howley, Evan Kirby, Priya Kollipara, and Jedidah Isler (2005-current)

- UC Santa Cruz Graduate Students (Supervisor Puragra Guhathakurta)
Co-supervisor/mentor for various graduate student projects and thesis.

Basilio Yniguez (2007/2008)

- UC Santa Cruz Undergraduate Student
Thesis Completed: A Neural-Network Classification of Milky Way Dwarfs and M31 Red Giants

Carlos Sandoval (2007/2008)

- UC Santa Cruz Undergraduate Student (Supervision with Mike Bolte and Enrico Ramirez-Ruiz)
3rd Year Research Project Started: Photometric Variables and Binaries in NGC 6752

Elizabeth Chudwick (2006/2007)

- UC Santa Cruz Undergraduate Student
Thesis Completed: Wide Field Photometry and Astrometry of the Rich, Old Open Star Cluster NGC 6791

Johnathan Rice (2006/2007)

- UC Santa Cruz Undergraduate Student
Thesis Completed: A Photometric and Kinematic Study of Galactic Structure Along M31's Sightline

Andrew Fittinghoff (2006/2007)

- UC Santa Cruz Undergraduate Student
4th Year Research Project: A GALEX Imaging Study of the Andromeda Spiral Galaxy

Carynn Luine (2005/2006)

- UC Santa Cruz Undergraduate Student
Thesis Completed: Detailed Chemical Abundances of M31 Stars: Analysis of High Signal-to-Noise Coadded Spectra

Robert Eakin (2003/2004)

- University of British Columbia Undergraduate Student
Thesis Completed: Photometric Study of the Open Star Cluster NGC 7789

Doris Nian-Shiah Leong (2003/2004)

- University of British Columbia Undergraduate Student
Thesis Completed: A Deep Photometric Study of the Core of Old Open Cluster NGC 6791

General:**Research Journal, Telescope, and Fellowship Referee**

- Scientific referee for Nature, Science, The Astrophysical Journal, Astrophysical Journal Letters, Astronomical Journal, Monthly Notices of the Royal Astronomical Society, Astronomy & Astrophysics, Philosophical Transactions of the Royal Astronomical Society, and the Publications of the Astronomical Society of Japan.
- NOAO Telescopes Time Allocation Committee Member (2009-2011)
- Hubble Space Telescope Time Allocation Committee Member (Cycle 17).
- Giacconi Fellowship Committee Member (2009)
- Scientific referee for the Canada-France-Hawaii Telescope and Gemini Telescope.
- Scientific referee for the National Science Foundation.

Current Scientific Activities at STScI

- Deputy Project Scientist for JWST (2010-current).
- Chair, STScI colloquium (Fall 2009 and Spring 2010).
- Lead morning coffee with a summary of astro-ph papers from the previous day (daily, 2008-2010).
- Created and organized STScI's Astro-Jamboree (2009).
- Helped organized the Friday Science Journals Club (2008-2010).
- Created and organized STScI's Friday Seminar Series (2008-2010).

Professional Meetings and/or Seminar Series Organized and/or Chaired

- Scientific and local organizer for the "Frontier Science Opportunities with JWST" meeting (June 2011, Baltimore, MD).
- Chair of the 2010 STScI May Symposium, "Stellar Populations in the Cosmological Context".
- Scientific and local organizer for the "Beyond JWST: Next Steps in UV-O-NIR Space Astronomy" Workshop (Mar. 2009, Baltimore, MD).
- Local organizer for the "Ages of Stars" IAU Symposium 258 (Oct. 2008, Baltimore MD).
- Chair, local, and scientific organizer for the 1st California Postdoc Symposium (Aug. 2008, UC Santa Cruz).
- Scientific and local organizer for the 2008 Keck Science Meeting (Sept. 2008, UC Santa Cruz).

- Session chair at the 2007 “A New Zeal for Old Galaxies” Meeting.
- Co-created and organized the UC Santa Cruz Summer Friday Talk Series (2007—2008).
- Organized the UC Santa Cruz Tuesday Astro Lunch Kaleidoscope Series (2007-2008).
- Co-created and organized the UC Santa Cruz Postdoctoral Journals Club Series (2006—2008).
- Session chair at the 2006 207th AAS Meeting in Washington DC (Session 205: White Dwarfs).
- Co-created and organized the UBC Physics & Astronomy Graduate Student Seminar Series (2004).
- Local organizer for the “Gemini Science 2004” Conference (2004).

Involvement in Future Projects

- Member of the Wide Field Infrared Survey Telescope (WFIRST) Science Definition Team (2011-present).
- Member of the Large Synoptic Survey Telescope (LSST) “Stellar Populations” and “Milky Way” Science Teams (2008-present).
- Member of the Canada-France-Hawaii Telescope IMAKA Instrument Science Working Group (2008-present).
- Member of Thirty Meter Telescope Wide Field Optical Spectrograph (MOBIE) Team (2008-2009).
- Member of Thirty Meter Telescope Wide Field Optical Spectrograph Operational Concepts Definition Team (2006).

Outreach

- Active participant in education and outreach to visit and speak to local Baltimore elementary/middle schools kids.
 - Veterans Elementary School – December 02nd, 2011 (two talks).
 - Triadelphia Elementary School – June 17th, 2011
 - Holly Elementary School – May 16th, 2011
 - Martin Luther King Middle School – February 04th, 2011 (two talks).
 - Veterans Elementary School – November 18th, 2010 (two talks).
 - Towson University “Saturday Science” – September 11th, 2010 (two talks: 400 kids/parents)
 - St. Timothy’s School – October 26th, 2009.
 - Veterans Elementary School – October 22nd, 2009 (two talks).
 - Creative Kids Loch Raven Community Center – October 20th, 2009.
 - Midtown Academy Charter School – February 3rd, 2009 (two talks).
 - Veterans Elementary School – January 21st, 2009 (two talks).
- Regular contributor to “Speaking of Hubble” blog (2011, 2012).
- Speaker at STScI Evening Lecture Series (2011)
- Presentation to kids at Maryland Science Center’s JWST Full Scale Model Viewing (2011)
- Presentation at IAU Symposium, “Communicating Astronomy to the Public” (2011)
- Invited speaker at the AIAA Meeting’s “Education Alley” (2011)
- Judge at Afro-Academic, Cultural, Technological and Scientific Olympics – ACT-SO (2011).
- Article for the National Society of Black Engineers Bridge Magazine (2010)
- Speaker at the JHU Association of University Architects Convention (2010).
- Speaker at the NASA Family Science Night at Polytechnic Institute (2010).
- Judge at Afro-Academic, Cultural, Technological and Scientific Olympics – ACT-SO (2010).
- Presenter at Baltimore Polytechnic Institute Career Fair (2010).
- Presenter at Middleborough Elementary School Career Fair (2010).
- Judge at Centennial High School Science Fair (2010).
- Invited speaker at the annual American Association of Physics Teachers Conference in Washington DC (2010).
- Invited guest speaker at the Youth for Astronomy and Engineering Program “Parent and Son Evening Under the Stars” (2009).
- Expert Reader for National Geographic School of Publishing – 3rd Grade Science Textbook (2009-2010).
- “Meet the Scientist” Website Feature for the 2009 Year of Science, Origins Education Forum Division (2009).
- Participant in the Youth for Astronomy and Engineering (YAE) Workshop at STScI (2009).
- 1 hour presentation to North American Museum Professionals as a part of the Hubble Science Briefings (2009).
- “Be What I Want To Be” Maryland School Magazine Profile for the Maryland Business Roundtable for Education Teen Web Project (2009).
- Scientific advisor for the 2009-USA Today Case Study on the Hubble Space Telescope.
- NASA TV Interview for Asian Heritage Month (2009).
- STScI Astronomer at the Timonium Elementary School Annual Science Fair (2009).

- Participant in STScI “Visions of the Universe, 400 Years of Discovery” American Library Association (ALA) Public Program
- Participant as a speaker to grade 5 students in Surrey BC Canada elementary school (2008).
- Participant as a speaker to alternative education school in Santa Cruz, CA (2007).

Miscellaneous

- Press release on discovery of M31’s Stellar Halo (Jan. 2007).
- Press release on discovery of Most Distant System of Globular Clusters (Jan. 2007).
- Member of the American Astronomical Society (AAS), the Canadian Astronomical Society (CASCA), and the Astronomical Society of the Pacific (ASP).
- Member of the Golden Key National Honors Society.
- Written successful proposals and acquired data from HST, XMM, GALEX, Keck, Lick, Gemini North, Gemini South, Subaru, MMT, CFHT, KPNO, and DAO.

References:

Harvey Richer, University of British Columbia, (604) 822-4134, richer@phas.ubc.ca
Puragra Guhathakurta, University of California at Santa Cruz, (831) 459-5169, raja@ucolick.org
Jaymie Matthews, University of British Columbia, (604) 822-2696, matthews@astro.ubc.ca
Gregory Fahlman, Herzberg Institute of Astrophysics, (250) 363-0040, greg.fahlman@nrc-cnrc.gc.ca
Enrico Ramirez-Ruiz, University of California at Santa Cruz, (831) 459-3400, enrico@ucolick.org
