Sergio B. Dieterich

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Education

2013	**Ph. D. in Astronomy** **Georgia State University,** Atlanta, Georgia, USA Dissertation: **Characterization of the Stellar/Substellar Boundary** Advisor: Todd J. Henry
2013	**M. S. in Physics** **Georgia State University**
2003	**B. A. in Physics** **Johns Hopkins University**, Baltimore, Maryland, USA Thesis Advisors: Holland Ford and David Golimowski

Professional History

2014 – present	**NSF Astronomy and Astrophysics Postdoctoral Fellow** **Department of Terrestrial Magnetism, Carnegie Institution for Science**, Washington, DC, USA
2005 – 2014	**Teaching / Research Assistant**, **Georgia State University**, Atlanta, Georgia, USA
2003 – 2005	**High (Secondary) School Physics Teacher** **Holton-Arms Preparatory Girls' School** Bethesda, Maryland, USA
2001 – 2003	**Research Assistant** **Johns Hopkins University**, Baltimore, Maryland, USA
1999 – 2001	**Intern Data Analyst** **Space Telescope Science Institute,** Baltimore, Maryland, USA

Courses Taught

- Introduction to the Universe
  Georgia State University
- Introductory Stellar and Galactic Astronomy Laboratory
  Georgia State University
- Introductory Astronomy of the Solar System Laboratory
  Georgia State University

•Honors Trigonometry Based Physics (11th and 12th Grades)
Holton-Arms School
•Conceptual Physics (10th and 11th Grades)
Holton-Arms School
•Concepts of Physical Science (8th Grade)
Holton-Arms School

Research Experience

2005 - Present **Observational Survey Work for Ph. D. Dissertation**
Well versed in designing and executing optical and near infrared astrometric, photometric, and spectroscopic observations. Successfully applied for time and planned observing programs on SOAR, Gemini North, Gemini South, and the Hubble Space Telescope.

2001 – 2003 **Johns Hopkins University Center for Astrophysical Sciences**
Detailed analysis and characterization of HST/NICMOS stellar images

1999 – 2001 **Space Telescope Science Institute**
Work in the Instrument Support Division, performing daily monitoring of the HST/STIS CCDs, and contributed to the STIS / MAMA pipeline

1998 – 2001 **Fermilab Collaboration at Johns Hopkins University**
Performed electronic quality control testing in particle detectors that were later installed in Fermilab's CDF experiment (Collider Detector at Fermilab)

Refereed Publications

7. Winters, J. G., Henry, T. J., Lurie, J. C., Hambly, N. C., Jao, W. C., Bartlett, J. L., Boyd, M. R., **Dieterich, S. B.,** Finch, C. T., Hosey, A. D., Ianna, P. A., Riedel, A. R., Slatten, K. J., Subasavage, J. P., 2014, AJ, accepted.

6. Riedel, A. R., Finch, C. T., Henry, T. J., Subasavage, J. P., Jao, W. C., Malo, L., Rodriguez, D. R., White, R. J., Gies, D. R., **Dieterich, S. B.**, Winters, J. G., Davison, C. L., Nelan, E. P., Blunt, S. C., Cruz, K. L., Rice, E. L., Ianna, P. A., 2013, *The Solar Neighborhood XXXIII. Parallax Results from the CTIOPI 0.9m Program: Trigonometric Parallaxes of Nearby Low-Mass Active and Young Systems*, AJ, 147, 85

5. Dieterich, S. B., Henry, T. J. Jao, W. C., Winters, J. G., Hosey, A. D., Riedel, A. R., Subasavage, J. P., 2014, *The Solar Neighborhood XXXII. The Hydrogen Burning Limit,* AJ, 147, 94

4. Mamajek, E. E., Bartlett, J. L., Seifahrt, A., Henry, T. J., **Dieterich, S. B.**, Lurie, J. C., Kenworthy, M. A., Jao, W. C., Riedel, A. R., Subasavage, J. P., Winters, J. G., Finch, C. T., Ianna, P. A., Bean, J., 2013, *The Solar Neighborhood XXX. Fomalhaut C,* AJ, 146, 154

3. Dieterich, S. B., Henry, T. J., Golimowski, D. A., Krist, J. E., Tanner, A. M. 2012 *The Solar Neighborhood XXVIII: The Multiplicity Fraction of Nearby Stars from 5 to 70 AU and the Brown Dwarf Desert Around M Dwarfs*, AJ, 144,64

2. Gies, D. R., **Dieterich, S. B.,** Richardson, N. D. Riedel, A. R., Team, B. L., McAllister, H. A., Bagnuolo, W. G. Jr., Grundstrom, E. D., Stefl, S., Rivinius, Th., Baade, D. 2008, *A Spectroscopic Orbit for Regulus* ApJ, 682, L117

1. Golimowski, D. A., Henry, T. J., Krist, J. E., **Dieterich, S. B.,** Ford, H. C., Illingworth, G. D., Ardila, D. R., Clampin, M., Franz, O. G., Wasserman, L. H., Benedict, G. F. McArthur, B. E., Nelan, E. G. 2004 *The Solar Neighborhood IX. Hubble Space Telescope Detections of Companions to Five M and L Dwarfs within 10 Parsecs of the Sun.* AJ, 128, 1733

Conference Proceedings

1. **Dieterich, S. B.,** Henry, T. J., Jao, W. C., Riedel, A. R. 2012, *M and L Dwarf Dynamical Masses with One Adaptive Optics Observation*. 16th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun. ASP Conference Series, 448,849

Mentions in the Popular Press

4. *Sky and Telescope,* p. 12. April 2014, “New Cutoff for Star Sizes”
3. *BBC Sky at Night*, p. 106, March 2014, “Expert Interview: What I Really Want to Know is . . . When is a Star Not a Star?”
2. NASA, *Hubble 2009: Science Year in Review*, p. 71. K. Hartnett (ed.), NASA Pub. 2010-1-120-GSFC, Greenbelt, MD. USA.
1. *Sky and Telescope* 117, 4. p. 18. April 2009. "Not So Many Brown Dwarfs"

External Funding (as Principal Investigator)

2014 *Understanding the Boundary Between Stars and Substellar Objects in the Solar Neighborhood*

$267,000.00 NSF Astronomy and Astrophysics Postdoctoral Fellowship

2012 *Probing Fundamental Stellar Parameters with HST/STIS Spectroscopy of M Dwarf Binaries*
$70,760.00 from NASA / Space Telescope Science Institute in support of HST Cycle 20 General Observer Program 12938

Internal Funding – Georgia State University

2012 *Second Century Initiative (2CI) Fellow*
$33,000.00 - Full support graduate fellowship awarded by the office of the provost in support of the establishment of a center of excellence in stellar astronomy at GSU.

Peer-Reviewed Telescope Time Allocations (PI Only)

Hubble Space Telescope

1. *Probing Fundamental Stellar Parameters with HST/STIS Spectroscopy of M Dwarf Binaries*. 12 orbits in cycle 20 (2012-2013)

Gemini North

1. 41 hours of AO observations of nearby M dwarf binaries in queue mode through NOAO

Gemini South

1. 14 hours of high resolution spectroscopic observations of nearby M and L dwarfs in queue mode through NOAO
2. 50 hours of low resolution spectroscopic observations of nearby M and L dwarfs through the poor weather queue

SOAR Telescope

1. 17 nights of NOAO time for optical photometry of nearby M and L dwarfs

Talks and Colloquia

4. **Characterization of the Stellar / Substellar Boundary**. Ph.D. Thesis Defense, Atlanta, Georgia, November 18, 2013.

3. **The Moon as our Closest Celestial Neighbor.** The Carlos Museum of Emory University. Atlanta, Georgia, April 2012

2. **Characterizing the Stellar / Substellar Boundary.** University of California – San Diego. La Jolla, California, July 2011

1. **Using CTIO Telescopes to Characterize the Stellar / Substellar Boundary.** NOAO South headquarters, La Serena, Chile, February 2010