

# Nils Henning Turner

## General Information

### Address

Academic:

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Mount Wilson, CA 91023

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### Other

Date of Birth:  
Citizenship:

Available upon request  
United States

## Professional Information

### Education

Ph.D. Astronomy  
M.S. Physics  
B.S. Astronomy and Astrophysics

Georgia State University, 1998  
Georgia State University, 1997  
University of Wyoming, 1990

### Academic Awards

Phi Beta Kappa	1989
Carl A. Cinnamon Award, Department of Physics and Astronomy, University of Wyoming	1989
Phi Kappa Phi	1988
Honor Student Stipend, Wyoming Honors and Scholars, University of Wyoming	1987-88
Lucille Schopf Guy Award, Wyoming Honors and Scholars, University of Wyoming	1987
Music Scholarship (Viola Performance), Department of Music, University of Wyoming	1985-87

## Memberships

International Astronomical Union  
American Astronomical Society

## Research Fields

Speckle interferometry, binary star astrometry, michelson interferometry, interferometric beam combination techniques, uses of fiber optics in astronomy, adaptive optics

## Research Experience

Research Scientist II, Center for High Angular Resolution Astronomy, Georgia State University, The CHARA Array, Mount Wilson, CA	January 2009 to present
Research Scientist, Center for High Angular Resolution Astronomy, Georgia State University, The CHARA Array, Mount Wilson, CA	October 2003 to December 2008
Post-Doctoral Research Associate, Center for High Angular Resolution Astronomy, Georgia State University, The CHARA Array, Mount Wilson, CA	December 2000 to September 2003
Paul Gerstley Post-Doctoral Fellow, Mount Wilson Observatory, Mount Wilson, CA	January 1998 to November 2000
Graduate Student, Center for High Angular Resolution Astronomy, Georgia State University, Atlanta, GA	September 1990 to December 1997
Visiting Graduate Student, Infrared Optical Telescope Array (IOTA) Group, Fred Lawrence Whipple Observatory, Mount Hopkins, AZ	April 1993 to July 1993
Researcher, Gravitational Physics, NSF Research Experience for Undergraduates, University of Colorado – Boulder, Boulder, CO	May 1989 to August 1989
Technician, Infrared Michelson Array (IRMA) Group, University of Wyoming, Laramie, WY	September 1987 to December 1988
Researcher, Evolved Star Investigations, NSF Research Experience for Undergraduates, University of Wyoming, Laramie, WY	May 1987 to August 1987

## Teaching Experience

- Lab Sections of Astronomy 101, descriptive solar system astronomy,  
Georgia State University, Atlanta, GA  
(Academic Quarters) Fall 1996, Spring 1996, Spring 1995, Winter 1995, Fall 1994, Spring 1994,  
Winter 1994, Fall 1993, Winter 1993, Fall 1992, Summer 1992, Spring 1992, Fall 1991,  
Spring 1991, Winter 1991, Fall 1990
- Lab Sections of Astronomy 102, descriptive stellar and extragalactic astronomy,  
Georgia State University, Atlanta, GA  
(Academic Quarters) Winter 1996, Spring 1995, Winter 1995, Fall 1994, Winter 1994,  
Winter 1993, Spring 1992, Winter 1992, Fall 1991, Summer 1991, Spring 1991, Winter 1991,  
Fall 1990
- Lecture Sections of Astronomy 101, descriptive solar system astronomy,  
DeKalb College, Dunwoody, GA  
(Academic Quarters) Summer 1995, Fall 1994, Summer 1994
- Lab Sections of Astronomy 101, descriptive solar system astronomy,  
DeKalb College, Dunwoody, GA  
(Academic Quarters) Summer 1995, Fall 1994, Summer 1994

## Other Related Skills

Unix system administration (Linux, Ultrix, SunOS, NeXTStep, MacOS X), Linux kernel device driver programming, computer hardware diagnostics (Intel, SCSI, RAID), ANSI-C programming, MacOS X Carbon programming, LabWindows CVi programming, Bourne shell programming, IDL programming, Yorick programming, general machine shop skills, general CAD skills, general electronics skills

## Publications

### Refereed

- Zhao, M., Monnier, J. D., Pedretti, E., Thureau, N., Mérand, A., ten Brummelaar, T., McAlister, H., Ridgway, S. T., Turner, N., Sturmman, J., Sturmman, L., Goldfinger, P. J., and Farrington, C. (2009). Imaging and Modeling Rapidly Rotating Stars:  $\alpha$  Cephei and  $\alpha$  Ophiuchi. *Astrophysical Journal*, **701**: 209-224.
- Baines, E. K., McAlister, H. A., ten Brummelaar, T. A., Sturmman, J., Sturmman, L., Turner, N. H., and Ridgway, S. T. (2009). Eleven Exoplanet Host Star Angular Diameters from the CHARA Array. *Astrophysical Journal*, **701**: 154-162.
- Mazumdar, A., Mérand, A., Demarque, P., Kervella, P., Barban, C., Baudin, F., Coudé du Foresto, V., Farrington, C., Goldfinger, P. J., Goupil, M.-J., Josselin, E., Kuschnig, R., McAlister, H. A., Matthews, J., Ridgway, S. T., Sturmman, J., Sturmman, L., ten Brummelaar, T. A., and Turner, N. (2009). Asteroseismology and Interferometry of the Red Giant Star  $\epsilon$  Ophiuchi. *Astronomy & Astrophysics*, **503**: 521-531.
- Akeson, R. L., Ciardi, D. R., Millan-Gabet, R., Mérand, A., Folco, E. D., Monnier, J. D., Beichman, C. A., Absil, O., Aufdenberg, J., McAlister, H., ten Brummelaar, T., Sturmman, J., Sturmman, L., and Turner, N. (2009). Dust in the Inner Regions of Debris Disks around A Stars. *Astrophysical Journal*, **691**: 1896-1908.
- Boyajian, T. S., McAlister, H. A., Cantrell, J. R., Gies, D. R., ten Brummelaar, T. A., Farrington, C., Goldfinger, P. J., Sturmman, L., Sturmman, J., Turner, N. H., and Ridgway, S. (2009). Angular Diameters of the Hyades Giants Measured with the CHARA Array. *Astrophysical Journal*, **691**: 1243-1247.
- Raghavan, D., McAlister, H. A., Torres, G., Latham, D. W., Mason, B. D., Boyajian, T. S., Baines, E. K., Williams, S. J., ten Brummelaar, T. A., Farrington, C. D., Ridgway, S. T., Sturmman, L., Sturmman, J., and Turner, N. H. (2009). The Visual Orbit of the 1.1 Day Spectroscopic Binary  $\sigma^2$  Coronae Borealis from Interferometry at the CHARA Array. *Astrophysical Journal*, **690**: 394-406.
- Tannirkulam, A., Monnier, J. D., Harries, T. J., Millan-Gabet, R., Zhu, Z., Pedretti, E., Ireland, M., Tuthill, P., ten Brummelaar, T., McAlister, H., Farrington, C., Goldfinger, P. J., Sturmman, J., Sturmman, L., and Turner, N. (2008). A Tale of Two Herbig Ae Stars, MWC 275 and AB Aurigae: Comprehensive Models for Spectral Energy Distribution and Interferometry. *Astrophysical Journal*, **689**: 513-531.
- Zhao, M., Gies, D., Monnier, J. D., Thureau, N., Pedretti, E., Baron, F., Mérand, A., ten Brummelaar, T., McAlister, H., Ridgway, S. T., Turner, N., Sturmman, J., Sturmman, L., Farrington, C., and Goldfinger, P. J. (2008). First Resolved Images of the Eclipsing and Interacting Binary  $\beta$  Lyrae. *Astrophysical Journal*, **684**: L95-L98.
- Kervella, P., Mérand, A., Pichon, B., Thévenin, F., Heiter, U., Bigot, L., ten Brummelaar, T. A., McAlister, H. A., Ridgway, S. T., Turner, N., Sturmman, J., Sturmman, L., Goldfinger, P. J., and Farrington, C. (2008). The Radii of the Nearby K5V and K7V Stars 61 Cygni A & B. CHARA/FLUOR Interferometry and CESAM2k Modeling. *Astronomy & Astrophysics*, **488**: 667-674.

- Absil, O., Di Folco, E., Mérand, A., Augereau, J.-C., Coudé du Foresto, V., Defrère, D., Kervella, P., Aufdenberg, J. P., Desort, M., Ehrenreich, D., Lagrange, A.-M., Montagnier, G., Olofsson, J., ten Brummelaar, T. A., McAlister, H. A., Sturmann, J., Sturmann, L., and Turner, N. H. (2008). A Near-Infrared Interferometric Survey of Debris Disc Stars. II. CHARA/FLUOR Observations of Six Early-Type Dwarfs. *Astronomy & Astrophysics*, **487**: 1041-1054.
- Boyajian, T. S., McAlister, H. A., Baines, E. K., Gies, D. R., Henry, T., Jao, W.-C., O'Brien, D., Raghavan, D., Touhami, Y., ten Brummelaar, T. A., Farrington, C., Goldfinger, P. J., Sturmann, L., Sturmann, J., Turner, N. H., and Ridgway, S. (2008). Angular Diameters of the G Subdwarf  $\mu$  Cassiopeiae A and the K Dwarfs  $\sigma$  Draconis and HR 511 from Interferometric Measurements with the CHARA Array. *Astrophysical Journal*, **683**: 424-432.
- Turner, N. H., ten Brummelaar, T. A., Roberts, L. C., Mason, B. D., Hartkopf, W. I., and Gies, D. R. (2008). Adaptive Optics Photometry and Astrometry of Binary Stars. III. A Faint Companion Search of O-Star Systems. *Astronomical Journal*, **136**: 554-565.
- Baines, E. K., McAlister, H. A., ten Brummelaar, T. A., Turner, N. H., Sturmann, J., Sturmann, L., and Ridgway, S. T. (2008). The Search for Stellar Companions to Exoplanet Host Stars Using the CHARA Array. *Astrophysical Journal*, **682**: 577-585.
- Baines, E. K., McAlister, H. A., ten Brummelaar, T. A., Turner, N. H., Sturmann, J., Sturmann, L., Goldfinger, P. J., and Ridgway, S. T. (2008). CHARA Array Measurements of the Angular Diameters of Exoplanet Host Stars. *Astrophysical Journal*, **680**: 728-733.
- Tannirkulam, A., Monnier, J. D., Millan-Gabet, R., Harries, T. J., Pedretti, E., ten Brummelaar, T. A., McAlister, H., Turner, N., Sturmann, J., and Sturmann, L. (2008). Strong Near-Infrared Emission Interior to the Dust Sublimation Radius of Young Stellar Objects MWC 275 and AB Aurigae. *Astrophysical Journal*, **677**: L51-L54.
- Di Folco, E., Absil, O., Augereau, J.-C., Mérand, A., Coudé du Foresto, V., Thévenin, F., Defrère, D., Kervella, P., ten Brummelaar, T. A., McAlister, H. A., Ridgway, S. T., Sturmann, J., Sturmann, L., and Turner, N. H. (2007). A Near-Infrared Interferometric Survey of Debris Disk Stars. I. Probing the Hot Dust Content around  $\epsilon$  Eridani and  $\tau$  Ceti with CHARA/FLUOR. *Astronomy & Astrophysics*, **475**: 243-250.
- Mérand, A., Aufdenberg, J. P., Kervella, P., Coudé du Foresto, V., ten Brummelaar, T. A., McAlister, H. A., Sturmann, L., Sturmann, J., and Turner, N. H. (2007). Extended Envelopes Around Galactic Cepheids. III. Y Ophiuchi and  $\alpha$  Persei from Near-Infrared Interferometry with CHARA/FLUOR. *Astrophysical Journal*, **664**: 1093-1101.
- Monnier, J. D., Zhao, M., Pedretti, E., Thureau, N., Ireland, M., Muirhead, P., Berger, J.-P., Millan-Gabet, R., van Belle, G. T., ten Brummelaar, T. A., McAlister, H. A., Ridgway, S. T., Turner, N. H., Sturmann, L., Sturmann, J., and Berger, D. H. (2007). Imaging the Surface of Altair. *Science*, **317**: 342-345.
- Baines, E. K., van Belle, G. T., ten Brummelaar, T. A., McAlister, H. A., Swain, M., Turner, N. H., Sturmann, L., and Sturmann, J. (2007). Direct Measurement of the Radius and Density of the Transiting Exoplanet HD 189733b with the CHARA Array. *Astrophysical Journal*, **661**: L195-L198.

- Ciardi, D. R., van Belle, G. T., Boden, A. F., ten Brummelaar, T. A., McAlister, H. A., Bagnuolo, Jr., W. G., Goldfinger, P. J., Sturmman, J., Sturmman, L., Turner, N. H., Berger, D. H., Thompson, R. R., and Ridgway, S. T. (2007). The Angular Diameter of  $\lambda$  Boötis. *Astrophysical Journal*, **659**: 1623-1628.
- Roberts, Jr., L. C., Turner, N. H., and ten Brummelaar, T. A. (2007). Adaptive Optics Photometry and Astrometry of Binary Stars. II. A Multiplicity Survey of B Stars. *Astronomical Journal*, **133**: 545-552.
- Gies, D. R., Bagnuolo, Jr., W. G., Baines, E. K., ten Brummelaar, T. A., Farrington, C. D., Goldfinger, P. J., Grundstrom, E. D., Huang, W., McAlister, H. A., Mérand, A., Sturmman, J., Sturmman, L., Touhami, Y., Turner, N. H., Wingert, D. W., Berger, D. H., McSwain, M. V., Aufdenberg, J. P., Ridgway, S. T., Cochran, A. L., Lester, D. F., Sterling, N. C., Bjorkman, J. E., Bjorkman, K. S., and Koubský, P. (2007). CHARA Array K'-Band Measurements of the Angular Dimensions of Be Star Disks. *Astrophysical Journal*, **654**: 527-543.
- Aufdenberg, J. P., Mérand, A., Coudé du Foresto, V., Absil, O., Di Folco, E., Kervella, P., Ridgway, S. T., Berger, D. H., ten Brummelaar, T. A., McAlister, H. A., Sturmman, J., Sturmman, L., and Turner, N. H. (2006). Erratum: "First Results from the CHARA Array. VII. Long-Baseline Interferometric Measurements of Vega Consistent with a Pole-On, Rapidly Rotating Star." *Astrophysical Journal*, **651**: 617.
- Aufdenberg, J. P., Mérand, A., Coudé du Foresto, V., Absil, O., Di Folco, E., Kervella, P., Ridgway, S. T., Berger, D. H., ten Brummelaar, T. A., McAlister, H. A., Sturmman, J., Sturmman, L., and Turner, N. H. (2006). First Results from the CHARA Array. VII. Long-Baseline Interferometric Measurements of Vega Consistent with a Pole-On, Rapidly Rotating Star. *Astrophysical Journal*, **645**: 664-675.
- Mérand, A., Kervella, P., Coudé du Foresto, V., Perrin, G., Ridgway, S. T., Aufdenberg, J. P., ten Brummelaar, T. A., McAlister, H. A., Sturmman, L., Sturmman, J., Turner, N. H., and Berger, D. H. (2006). Extended Envelopes Around Galactic Cepheids. II. Polaris and delta Cephei from Near-Infrared Interferometry with CHARA/FLUOR. *Astronomy & Astrophysics*, **453**: 155-162.
- Berger, D. H., Gies, D. R., McAlister, H. A., ten Brummelaar, T. A., Henry, T. J., Sturmman, J., Sturmman, L., Turner, N. H., Ridgway, S. T., Aufdenberg, J. P., and Mérand, A. (2006). First Results from the CHARA Array. IV. The Interferometric Radii of Low-Mass Stars. *Astrophysical Journal*, **644**: 475-483.
- Absil, O., Di Folco, E., Mérand, A., Augereau, J.-C., Coudé du Foresto, V., Aufdenberg, J. P., Kervella, P., Ridgway, S. T., Berger, D. H., ten Brummelaar, T. A., Sturmman, J., Sturmman, L., Turner, N. H., and McAlister, H. A. (2006). Circumstellar Material in the Vega Inner System Revealed by CHARA/FLUOR. *Astronomy & Astrophysics*, **452**: 237-244.
- Bagnuolo, Jr., W. G., Taylor, S. F., McAlister, H. A., ten Brummelaar, T. A., Gies, D. R., Ridgway, S. T., Sturmman, J., Sturmman, L., Turner, N. H., Berger, D. H., and Gudehus, D. (2006). First Results from the CHARA Array. V. Binary Star Astrometry: The Case of 12 Persei. *Astronomical Journal*, **131**: 2695-2699.

- van Belle, G. T., Ciardi, D. R., ten Brummelaar, T. A., McAlister, H. A., Ridgway, S. T., Berger, D. H., Goldfinger, P. J., Sturmman, J., Sturmman, L., Turner, N. H., Boden, A. F., Thompson, R. R., and Coyne, J. (2006). First Results from the CHARA Array. III. Oblateness, Rotational Velocity, and Gravity Darkening of Alderamin. *Astrophysical Journal*, **637**: 494-505.
- Roberts, Jr., L. C., Turner, N. H., Bradford, L. W., ten Brummelaar, T. A., Oppenheimer, B. R., Kuhn, J. R., Whitman, K., Perrin, M. D., and Graham, J. R. (2005). Adaptive Optics Photometry and Astrometry of Binary Stars. *Astronomical Journal*, **130**: 2262-2271.
- ten Brummelaar, T. A., McAlister, H. A., Ridgway, S. T., Bagnuolo, Jr., W. G., Turner, N. H., Sturmman, L., Sturmman, J., Berger, D. H., Ogden, C. E., Cadman, R., Hartkopf, W. I., Hopper, C. H., and Shure, M. A. (2005). First Results from the CHARA Array. II. A Description of the Instrument. *Astrophysical Journal*, **628**: 453-465.
- McAlister, H. A., ten Brummelaar, T. A., Gies, D. R., Huang, W., Bagnuolo, Jr., W. G., Shure, M. A., Sturmman, J., Sturmman, L., Turner, N. H., Taylor, S. F., Berger, D. H., Baines, E. K., Grundstrom, E., Ogden, C., Ridgway, S. T., and van Belle, G. (2005). First Results from the CHARA Array. I. An Interferometric and Spectroscopic Study of the Fast Rotator Alpha Leonis (Regulus). *Astrophysical Journal*, **628**: 439-452.
- Mérand, A., Kervella, P., Coudé du Foresto, V., Ridgway, S. T., Aufdenberg, J. P., ten Brummelaar, T. A., Berger, D. H., Sturmman, J., Sturmman, L., Turner, N. H., and McAlister, H. A. (2005). The Projection Factor of Delta Cephei: A Calibration of the Baade-Wesselink Method Using the CHARA Array. *Astronomy & Astrophysics*, **438**: L9-L12.
- Turner, N. H., ten Brummelaar, T. A., McAlister, H. A., Mason, B. D., Hartkopf, W. I., Roberts, Jr., L. C. (2001). Search for Faint Companions to Nearby Solar-like Stars using the Adaptive Optics System at Mount Wilson Observatory. *Astronomical Journal*, **121**: 3254-3258.
- Hartkopf, W. I., Mason, B. D., McAlister, H. A., Roberts, Jr., L. C., Turner, N. H., ten Brummelaar, T. A., Prieto, C. M., Ling, J. F., Franz, O. G. (2000). ICCD Speckle Observations of Binary Stars. XXIII. Measurements During 1982-1997 from Six Telescopes, with 14 New Orbits. *Astronomical Journal*, **119**: 3084-3111.
- ten Brummelaar, T. A., Mason, B. D., McAlister, H. A., Roberts, Jr., L. C., Turner, N. H., Hartkopf, W. I., Bagnuolo, Jr., W. G. (2000). Binary Star Differential Photometry using the Adaptive Optics system at Mount Wilson Observatory. *Astronomical Journal*, **119**: 2403-2414.
- Gies, D. R., Kambe, E., Josephs, T. S., Bagnuolo, Jr., W. G., Choi, Y. J., Gudehus, D., Guyton, K. M., Hartkopf, W. I., Hildebrand, J. L., Kaye, A. B., Mason, B. D., Riddle, R. L., Sowers, J. W., Turner, N. H., Wilson, J. W., Xiong, Y. (1999). Ultraviolet and Optical Line Profile Variations in the Spectrum of Epsilon Persei. *Astrophysical Journal*, **525**: 420-433.
- Turner, N. H., ten Brummelaar, T. A., Mason, B. D. (1999). Adaptive Optics Observations of Arcturus using the Mount Wilson 100 Inch Telescope. *Publications of the Astronomical Society of the Pacific*, **111**: 556-558.
- Hartkopf, W. I., McAlister, H. A., Mason, B. D., ten Brummelaar, T. A., Roberts, Jr., L. C., Turner, N. H., Wilson, J. W. (1997). ICCD Speckle Observations of Binary Stars. XVII. Measurements During 1993-1995 from the Mount Wilson 2.5-m Telescope. *Astronomical Journal*, **114**: 1639-1656.

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Hartkopf, W. I., Mason, B. D., McAlister, H. A., Turner, N. H., Barry, D. J., Franz, O. G., and Prieto, C. M. (1996). ICCD Speckle Observations of Binary Stars. XIII. Measurements During 1989-1994 from the Cerro Tololo 4-m Telescope. *Astronomical Journal*, **111**: 936-945.

Hartkopf, W. I., McAlister, H. A., Mason, B. D., Barry, D. J., Turner, N. H., and Fu, H.-H. (1994). ICCD Speckle Observations of Binary Stars. XI. Measurements During 1991-1993 from the Kitt Peak 4-m Telescope. *Astronomical Journal*, **108**: 2299-2311.

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Benson, J. A., Turner, N. H., and Dyck, H. M. (1989). 10  $\mu$ m Speckle Interferometry Observations of Evolved Stars. *Astronomical Journal*, **97**: 1763-1765.

## Proceedings

Ridgway, S. T., McAlister, H. A., ten Brummelaar, T., Mérand, A., Sturmman, J., Sturmman, L., and Turner, N. (2008). Adaptive Optics for the CHARA Array. In Schöller, M., Danchi, W. C., and Delplancke, F., editors, *Proceedings of the SPIE*, volume 7013, page 70133B-70133B-7.

Ireland, M. J., Mérand, A., ten Brummelaar, T. A., Tuthill, P. G., Schaefer, G. H., Turner, N. H., Sturmman, J., Sturmman, L., and McAlister, H. A. (2008). Sensitive Visible Interferometry with PAVO. In Schöller, M., Danchi, W. C., and Delplancke, F., editors, *Proceedings of the SPIE*, volume 7013, page 701324-701324-10.

Mourard, D., Perraut, K., Bonneau, D., Clause, J. M., Stee, P., Tallon-Bosc, I., Kervella, P., Hughes, Y., Marcotto, A., Blazit, A., Chesneau, O., Domiciano de Souza, A., Foy, R., Hénault, F., Mattei, D., Merlin, G., Roussel, A., Tallon, M., Thiebaut, E., McAlister, H., ten Brummelaar, T., Sturmman, J., Sturmman, L., Turner, N., Farrington, C., and Goldfinger, P. J. (2008). VEGA: A New Visible Spectrograph and Polarimeter on the CHARA Array. In Schöller, M., Danchi, W. C., and Delplancke, F., editors, *Proceedings of the SPIE*, volume 7013, page 701323-701323-12.

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Mérand, A., Kervella, P., Coudé du Foresto, V., Ridgway, S. T., Aufdenberg, J., ten Brummelaar, T., Berger, D., Sturmman, J., Sturmman, L., Turner, N., and McAlister, H. A. (2008). Cepheids Observations Using CHARA/FLUOR:  $\alpha$  UMi and  $\delta$  Cep. In *The Power of Optical/IR Interferometry: Recent Scientific Results and 2nd Generation Instrumentation*, ESO Astrophysics Symposia, page 99, Springer, ISBN 978-3-540-74253-1.

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