Curriculum Vitae

Nathan De Lee

Personal Information:

Date/Place of Birth: November 2 1979, Rice Lake, WI, USA

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Department of Physics and Astronomy
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Education:

Michigan State University 2002 - Present
Ph. D in Astronomy & Astrophysics
Ph. D Advisors: Horace Smith & Timothy Beers
Thesis: *RR Lyrae in the SDSS-II SN Survey*
Ph. D Expected: Summer 2008

Michigan State University 2006
M.S. in Astronomy & Astrophysics
M.S. Advisor: Horace Smith
Thesis: *The Strange Case of the Metal-Rich Cluster NGC 6304*

University of Kansas 1998 - 2002
B.S. in both Astronomy (with honors) and Physics
B.S. Advisors: Bruce Twarog & Barbara Anthony-Twarog
Thesis: *CCD uvbyCaHβ Photometry of Clusters. III. The Most Metal-Rich Open Cluster, NGC 6253*

Research Interests:

- The internal processes of intrinsically variable stars and how that relates to their environment.
- Galactic formation history and the structure of the galactic halo.
- Dwarf spheroidal galaxies and their relationship to the formation history of the Local Group.
- Development of software for the detection and characterization of large numbers of variable stars for surveys.

Research Experience:

Observing:

- Michigan State University 24inch telescope 2002 - present
  Purpose: Photometry of Type-II Cepheid lightcurves in globular clusters and RR Lyrae lightcurves in the g, r, and i.
- Kitt Peak YALO 0.9m with the S2KB imager Nov 2005; Mar, Apr, Oct 2007
  Purpose: Stellar parameter determination using UBV and BVRI photometry.
- SOAR 4-m telescope with the OSIRIS infrared spectrograph Oct 2007
  Purpose: Determining the oxygen abundance of carbon enhanced metal poor stars.
- Blanco 4-M telescope with the RC spectrograph Aug/Sept 2007
  Purpose: Determination of Radial Velocities and Metallicities for halo SDSS RR Lyrae stars
- SOAR 4-m telescope with the SOAR Optical Imager Feb-Mar 2006; Mar, Apr, May, Jun 2007 *Purpose*: Photometric variable surveys of SDSS dwarf spheroidals and of globular clusters.
- CTIO 0.9m with the QUAD CCD May 2005
  Purpose: Stellar parameter determination using UBV and BVRI photometry.
- Blanco 4-m telescope with the Mosaic imager Nov 2004
  Purpose: Variable star survey of the Fornax Dwarf Spheroidal galaxy.

Software Design:

- Created the primary image transfer scripts for the SOAR telescope remote observing.
- Wrote one of the reduction pipelines for SOAR optical imager.
- Designed the instrument setup and night report web pages for SOAR.

Computer Expertise:

- **Languages:** C/C++, Perl, Fortran 77, PHP, MYSQL, and HTML.
- **Environments:** IRAF, IDL, Linux and Sun systems.

Teaching Experience:

- Dimensions summer camp, Astronomy section. June 2007
- ISP 205 Astronomy Lab 2003-2004

Professional Organizations:

American Astronomical Society

Awards:

- Graduate Student Research Enhancement Award 2006
- College of Natural Science Recruiting Fellowship 2002

References:

Prof. Horace Smith
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Prof. Stephen Zepf
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3258 Biomedical Physical Sciences, East Lansing, MI 48824-2320
Telephone: (517)-355-9200 ext. 2417 Fax: (517)-432-8802
Email: *zepf@pa.msu.edu*

Publications:

Sesar, Branimir, Ivezic, Zeljko, Lupton, Robert H., Juric, Mario, Gunn, James E., Knapp, Gillian R., De Lee, Nathan, Allyn Smith, J., Miknaitis, Gajus, Lin, Huan, et al., 2007, AJ, 134, 2236, *Exploring the Variable Sky with the Sloan Digital Sky Survey*

Greco, C., Clementini, G., Catelan, M., Held, E. V., Poretti, E., Gullieuszik, M., Maio, M., Rest, A., De Lee, N., Smith, H. A., Pritzl, B. J., 2007, ApJ, 670, 332, *Variable stars in the Fornax dSph Galaxy. I. The Globular Cluster Fornax 4*

Beers, Timothy C., Flynn, Chris, Rossi, Silvia, Sommer-Larsen, Jesper, Wilhelm, Ronald, Marsteller, Brian, Lee, Young Sun, De Lee, Nathan, Krugler, Julie, Deliyannis, Constantine P., et al., 2007, ApJ, 168, 128, *Broadband $UBVR_CI_C$ Photometry of Horizontal-Branch and Metal-poor Candidates from the HK and Hamburg/ESO Surveys. I.*

Twarog, Bruce A., Anthony-Twarog, Barbara J., De Lee, Nathan, 2003, AJ, 125, 138, *CCD uvbyCaHβ Photometry of Clusters. III. The Most Metal-Rich Open Cluster, NGC 6253.*

Posters:

Greco, C., Clementini, G., Catelan, M., Poretti, E., Held, E. V., Gullieuszik, M., Maio, M., Rest, A., De Lee, N., Smith, H. A., Pritzl, B. J. 2007, IAU Symposium, 241, 343, *The Oosterhoff types of the Fornax dSph Globular Clusters*

Randall, J. M., Rabidoux, K., Smith, H. A., De Lee, N., Pritzl, B., & Osborn, W. 2007, AAS, 209, *Period Changes of Type II Cepheids in the Globular Cluster M5*

De Lee, N. M., Smith, H. A., Beers, T. C., Bramich, D. M., Vidrih, S., Zucker, D. B., & Ivezic, Z. 2006, Bulletin of the American Astronomical Society, 38, 1126, *RR Lyrae Stars in the SDSS-II Supernova Survey*

Kuehn, C. A., III, Taylor, L., Smith, H. A., Catelan, M., Pritzl, B. J., & De Lee, N. 2006, Bulletin of the American Astronomical Society, 38, 942, *Variable Stars in the LMC Globular Cluster NGC 1754*

Clementini, G., Greco, C., Held, E. V., Poretti, E., Catelan, M., Dell'Arciprete, L., Gullieuszik, M., Maio, M., Rizzi, L., Smith, H. A., Pritzl, B. J., Rest, A., De Lee, N.,2006, Memorie della Societa Astronomica Italiana, 77, 249, *The Fornax Project*

Poretti, E., Dell'Arciprete, L., Clementini, G., Held, E. V., Greco, C., Gullieuszik, M., Maio, M., Rizzi, L., Catelan, M., Smith, H. A., Pritzl, B., De Lee, N., Rest, A., 2006, Memorie della Societa Astronomica Italiana, 77, 219, *A large and homogeneous sample of SX Phe stars in the Fornax dwarf spheroidal galaxy*

Catelan, M., Smith, H. A., Pritzl, B. J., Borissova, J., Cacciari, C., Contreras, R., Corwin, T. M., De Lee, N., Escobar, M. E., Layden, A. C., et al., 2006, Memorie della Societa Astronomica Italiana, 77, 202, *Completing the census of (bright) variable stars in galactic globular clusters*

De Lee, N., Catelan, M., Layden, A., Pritzl, B., Smith, H., Sweigart, A., & Welch, D. L. 2006, Memorie della Societa Astronomica Italiana, 77, 117, *NGC 6304: a metal rich cluster with RR Lyrae?*

De Lee, N., Beers, T. C., Smith, H. A., Marsteller, B., Krugler, J., Lee, Y., Wilhelm, R., Terndrup, D. 2005, AAS, 207, *BVRI and UBV Photometry of Metal-Poor and Horizontal-Branch Candidates in the Galactic Halo*

Rabidoux, K., Smith, H. A., Wells, K., Randall, J., Hartley, D., LaCluyze, A., De Lee, N., Ingber, M., Ireland, M., Kinemuchi, K., et al., 2005, Bulletin of the American Astronomical Society, 37, 1364, *Light Curves for Type II Cepheids in M3 and M5*

Catelan, M., Contreras, R., Salinas, R., Escobar, M. E., Smith, H. A., De Lee, N., Pritzl, B. J., Borissova, J., 2004, AAS, 205, *RR Lyrae Variables in Galactic Globular Clusters*

Lee, Y., De Lee, N., Beers, T. C., Smith, H., Wilhelm, R., Allende Prieto, C., Yanny, B., Rockosi, C., Newberg, H. J., 2004, AAS, 205, *SDSS ugriz Color-Magnitude Diagrams and Spectroscopy of Galactic Globular Clusters*

Smith, H. A., Pritzl, B. J., Catelan, M., Sweigart, A. V., De Lee, N., Contreras, R., 2003, AAS, 203, *RR Lyrae Stars: Period-Luminosity Relations and Oosterhoff Groups*

Twarog, B. A., Anthony-Twarog, B. J., & De Lee, N. M. 2002, Bulletin of the American Astronomical Society, 34, 949, *uvbyCaHβ CCD Photometry of NGC 6253 - The Most Metal-Rich Open Cluster?*

Talks:

RR Lyrae stars: A look at variability in the SDSS-II Supernova Survey, Stellar Pulsation & Cycles of Discovery: New Tools, New Variables, New Astrophysics, University of British Columbia, Vancouver, Canada, July 2007

RR Lyrae Stars in the SDSS-II Supernova Stripe, MSU Variable Stars Meeting, East Lansing, MI March 2007

Variable Stars in NGC 6304, BGSU Variable Stars Meeting, Bowling Green, OH April 2004