

- Hello world! I am a Ph.D. candidate in the Stellar Ages & Galactic Evolution (SAGE) group at the Max Planck Institute for Solar System Research and the Department of Astronomy at Yale University, where I am advised by Saskia Hekker and Sarbani Basu.
- My research focuses on measuring fundamental aspects of our universe, such as its age and its size, through the study of variable stars.
- My interests include asteroseismology, astrostatistics, scientific computing, machine learning, artificial intelligence, and the history and philosophy of science. I am an advocate for open source and open science.
- I enjoy teaching and have had the privilege to assist in teaching courses at SUNY Oswego, Indiana University, and the University of Göttingen. In my free time, I like to compose music and play the guitar and drums.

EDUCATION

Ph.D. Computer Science

2015–present *Georg-August-Universität Göttingen, Germany*
Advised by Dr. ir. Saskia Hekker and Prof. Dr. Sarbani Basu
Thesis Topic: [Asteroseismic Inversions of Solar-like Oscillators](#)

M.Sc. Computer Science with a minor in Bioinformatics

2012–2014 *Indiana University, Bloomington, IN, USA*
Advised by Prof. Dr. Predrag Radivojac and Prof. Dr. Haixu Tang
Fellow of the National Physical Science Consortium
GPA: 3.94/4.0

B.Sc. Computer Science with a concentration in Artificial Intelligence

B.Sc. Applied Mathematics with a concentration in Scientific Computing
2008–2012 *State University of New York at Oswego, USA*
Advised by Prof. Dr. Shashi Kanbur and Prof. Dr. Steven Reyner
Honors Thesis: [Multiphase Relations of Magellanic Cloud Cepheids](#)
GPA: 3.81/4.0 (*summa cum laude*, Outstanding Computer Science Senior)

EXPERIENCE

Research

Yale University Asteroseismic inversions of solar-like stars
2016–2017 *Yale Department of Astronomy, New Haven, CT, USA*

Max Planck Institute Fundamental stellar parameters in an instant with machine learning
2015–2018 *Stellar Ages & Galactic Evolution Group, Göttingen, Germany*

Indiana University Protein inference and quantification from tandem mass spectrometry
2013–2015 *Proteomics Laboratory, Bloomington, IN, USA*

NIST HydratiCA Information Discoverer, a data mining tool for 3D chemical simulations
2013–2014 *National Institute of Standards and Technology, Gaithersburg, MD, USA*

NII Asynchronous updating in elementary cellular automata with stochastic perturbations
2013 *National Institute of Informatics, Tokyo, Japan*

NASA CASSIUS, a communication tool for the Cassini mission to Saturn
2012 *Jet Propulsion Laboratory, Pasadena, CA, USA*

UFAL Dynamics of interacting electrons in disordered systems
2011 *Federal University of Alagoas, Maceió, Brazil*

LNAS Chimera: an automated observatory system
2010 *National Laboratory of Astrophysics, Itajubá, Brazil*

Teaching

- ASTR 550** Teaching Assistant, [Stellar Astrophysics](#)
Spring 2017 *Yale University*
- M.Phy.55x.3C** Assistant, [Numerical Experiments in Stellar Physics](#)
Summer 2016 *Georg-August-Universität Göttingen*
- CSCI-C211/A591** Associate Instructor, [Introduction to Computer Science](#) (Honors section)
Fall 2012 *Indiana University*
- HON 150** Seminar Leader, [Introduction to Honors](#)
Fall 2010 *SUNY Oswego*

LANGUAGES

- Expertise** R, Python2/3, Bash, CLISP, Scheme, Java, MATLAB, \LaTeX , SQL, HTML, CSS
10k+ LOC
- Familiarity** ActionScript, Assembly, BASIC, C, C++, FORTRAN 77/90/95, Haskell, Javascript, Mathe-
some experience matica, ML, Perl, PHP, Prolog, Ruby
- Natural** English (native), German, Portuguese, Spanish

PUBLICATIONS

Refereed Articles

- [5] **Bellinger, E. P.**, Angelou, G., Hekker, S., Basu, S., Ball, W., Guggenberger, E. (2016). Fundamental Parameters of Main-Sequence Stars in an Instant with Machine Learning. *The Astrophysical Journal*, accepted.
- [4] Guggenberger, E., Hekker, S., Basu, S., **Bellinger, E. P.** (2016). Significantly improving stellar mass and radius estimates: A new reference function for the $\Delta\nu$ scaling relation. *Monthly Notices of the Royal Astronomical Society*, 461 (2), doi: 10.1093/mnras/stw1326.
- [3] Glover, M., **Bellinger, E. P.**, Radivojac, P., Clemmer, D. (2015). Penultimate Proline in Neuropeptides. *Analytic Chemistry*, 87 (16), 8466–8472, doi: 10.1021/acs.analchem.5b01889.
- [2] Ji, C., Li, Y. F., **Bellinger, E. P.**, Li, S., Arnold, R. J., Radivojac, P., Tang, H. (2015, September). A maximum-likelihood approach to absolute protein quantification in mass spectrometry. In *Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics* (pp. 296-305).
- [1] Ngeow, C. C., Kanbur, S. M., **Bellinger, E. P.**, Marconi, M., Musella, I., Cignoni, M., & Lin, Y. H. (2012). Period-luminosity relations for Cepheid variables: from mid-infrared to multi-phase. *Astrophysics and Space Science*, 341(1), 105-113, doi: 10.1007/s10509-012-1018-5.

Conference Proceedings

- [5] **Bellinger, E. P.**, Wysocki, D., Kanbur, S. M. (2015). Measuring amplitudes of harmonics and combination frequencies in variable stars. *Communications from the Konkoly Observatory of the Hungarian Academy of Sciences*, 105.
- [4] **Bellinger, E. P.**, Kanbur, S. M., & Ngeow, C. C. (2012). New insights into the Cepheid PL Relation through the use of multiphase relations. *Proceedings of the 20th Stellar Pulsations Conference*.
- [3] Reyner, S., **Bellinger, E. P.**, & Kanbur, S. M. (2012). The approximation of RR Lyrae and eclipsing binary light curves using cubic polynomials. *Proceedings of the 20th Stellar Pulsations Conference*.
- [2] **Bellinger, E. P.** (2012). Multiphase Relations of Magellanic Cloud Cepheids. *Proceedings of the 2012 National Conference on Undergraduate Research*.
- [1] **Bellinger, E. P.**, Kanbur, S. M., & Ngeow, C. C. (2011). Multiphase Comparison of Period-Luminosity Relations for Magellanic Cloud Cepheids. *Proceedings of the 9th Pacific Rim Conference on Stellar Astrophysics* (Vol. 451, p. 311).

Technical Reports

- [1] **Bellinger, E. P.**, Conner, D., Mittman, D., Magee, K., & Heventhal, B. (2012). CASSIUS: the Cassini Uplink Scheduler. *Jet Propulsion Laboratory: National Aeronautics and Space Administration*, hdl:2014/43122.

SELECTED TALKS

Astronomy

- October 2015 *Resolving combination frequency amplitudes of multi-mode pulsators*
RR Lyrae 2015, Visegrád, Hungary
- January 2015 *Optimal Model Discovery of Periodic Variable Stars*
American Astronomical Society, Seattle, WA, USA
- January 2015 *Calibrating the Cepheid Distance Scale*
Delhi Workshop on Variable Stars, Delhi, India
- January 2014 *Automated Supervised Classification of Variable Stars*
Kerala Workshop on Stellar Astrophysics, Kerala, India
- March 2012 *Multiphase Relations of Cepheid Variable Stars in the Magellanic Clouds*
National Conference on Undergraduate Research, Ogden, UT, USA

Other Talks

- April 2013 *Asynchronous Updating in 1D Cellular Automata with Stochastic Perturbations*
KUBIC-NII Joint Seminar on Bioinformatics, Kyoto, Japan
- April 2012 *Dynamics of Interacting Electrons in Disordered Systems*
Quest Global Laboratory, Oswego, NY, USA
- April 2012 *Synapsolution: Producing Prodigies of Problem Solving*
Quest Neural Networks, Oswego, NY, USA

CONFERENCE POSTERS

- July 2016 *Fundamental Parameters of Main-Sequence Stars in an Instant with Machine Learning*
Joint TASC2 & KASC9 Workshop – SPACEINN & HELAS8 Conference, Angra do Heroísmo, Terceira-Açores, Portugal
- June 2015 *GarsGen: An in-situ optimization algorithm for GARSTEC and ADIPLS stellar physics codes*
The KASC8/TASC1 Workshop, Aarhus, Denmark
- September 2011 *New insights into the Cepheid PL Relation through the use of multiphase relations*
20th Stellar Pulsation Conference, Granada, Spain
- April 2011 *Multiphase Comparison of PL and PW Relations for Magellanic Cloud Cepheids*
Sigma Xi Northeastern Research Symposium, Stony Brook, NY, USA
- January 2011 *Multiphase Comparison of PL/PC Relations*
American Astronomical Society, Seattle, WA, USA

MISC

Volunteering

- St. Baldrick's Foundation**
2010-2011 Helped raise over \$50,000 for research to find cures for childhood cancers.
Oswego, NY, USA
- Easy Street Horse & Barnyard Rescue**
2006-2010 Provided care for horses with this IRS approved 501(c)(3) family-run charitable organization.
Amsterdam, NY, USA

Music

- MegaGauß**
2015-2016 Band leader and electric bass player of 12-member ensemble
- Well-Read Citizens**
2012 Composer, co-producer, instrumentalist, and vocalist on 10-track LP
“Is This The Morning When We Wake Up?” (*Tyler Hall Records*)
- The Occupants**
2012 Electric bass on 2-track EP
“The Occupied EP” (*Tyler Hall Records*)

AWARDS & HONORS

- NPSC Fellowship** National Physical Science Consortium Graduate Fellowship
2012-2014
- Outstanding Senior** Oebele Van Dyk Outstanding Computer Science Senior Award
2012
- Chancellor's Award** SUNY Chancellor's Award for Student Excellence
2012
- SFCC Grant** SUNY Oswego Student/Faculty Collaborative Challenge Grant
2012
- RBE Scholarship** Robert Brian Ellis Scholarship
2011
- NYSFHB Scholarship** New York State Federation of Home Bureau Scholarship
2011
- NSF REU** National Science Foundation International Research Experience for Undergraduates / SUNY
2010-2011 Oswego Global Laboratory Scholarship (*awarded twice*)
- SMART Grant** National Science and Mathematics Access to Retain Talent (SMART) Grant (*awarded twice*)
2010-2011
- AC Grant** National Academic Competitiveness Grant (*awarded twice*)
2008
- Presidential Scholarship** SUNY Oswego Presidential Scholarship (*awarded four times*)
2008-2012