Earl Patrick Bellinger, Ph.D.

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Yale University
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Pulsating Stars ★ Stellar Evolution ★ Galactic Archaeology ★ Machine Learning/AI

Position

2024 – *Assistant Professor*
Department of Astronomy, Yale University
Yale Institute for Foundations of Data Science

Group Leader
Yale AstroML (YAML) Research Group

Education

2015 – 2018 Ph.D. Computer Science / Astrophysics
- Max Planck Institute for Solar System Research, Germany
- Department of Astronomy, Yale University, USA
- Institute of Computer Science, University of Göttingen, Germany

2012 – 2014 M.Sc. Computer Science, minor: Bioinformatics
School of Informatics & Computing, Indiana University, USA
Graduate Fellow of the National Physical Science Consortium

2008 – 2012 B.Sc. Computer Science, concentration: Artificial Intelligence
B.Sc. Applied Mathematics, concentration: Scientific Computing
State University of New York at Oswego, USA
GPA: 3.81/4.0, summa cum laude
Rank #1 overall in Department of Computer Science

Postdoctoral Positions

2021 – 2023 *Postdoctoral Research Fellow*
Max Planck Institute for Astrophysics, Garching, Germany

2018 – 2021 *Postdoctoral Research Fellow*
Stellar Astrophysics Centre, Aarhus University, Denmark

06/2018 – 08/2018 *Postdoctoral Researcher*
Max Planck Institute for Solar System Research, Göttingen, Germany

Research Positions

2019 – 2020 *Visiting Fellow*
School of Physics, UNSW Sydney, Australia

2016 – 2017 *Visiting Assistant in Research*
Department of Astronomy, Yale University, USA

2015 – 2018 *Research Assistant / Doktorand*
Max Planck Institute for Solar System Research, Germany

2013 – 2015 *Research Assistant & Associate Instructor*
School of Informatics and Computing, Indiana University, USA

2013 – 2014 *Guest Researcher*
National Institute of Standards and Technology (NIST), USA

2013 *Research Student*
National Institute of Informatics, Tokyo, Japan

2012 *Research Fellow*
NASA Jet Propulsion Laboratory, USA

2011 *IRES/NSF Research Student*
Federal University of Alagoas, Brazil

2010 *IRES/NSF Research Student*
Federal University of Santa Catarina, Brazil

Teaching

2024 – 2025 Assistant Professor, Department of Astronomy, Yale University
ASTR 330 — *Scientific Computing in Astrophysics*
ASTR 356/556 — *Astrostatistics & Data Mining*
Guest teaching: ASTR 180, ASTR 255, PHYS 040, MUSI 032, HIST 181

2018 – 2021 Assistant, Department of Physics and Astronomy, Aarhus University
E20 — *Advanced Stellar Structure and Evolution*
F19 — *Advanced Projects in Stellar Evolution*

2017 Assistant, Department of Astronomy, Yale University
ASTR 550 — *Stellar Astrophysics*

2016 Assistant, Institut für Astrophysik, Georg-August-Universität Göttingen
M.Phy.552 — *Numerical Experiments in Stellar Physics*

2012 Associate Instructor, School of Informatics and Computing, Indiana University
CSCI-C211/A591 — *Introduction to Computer Science*

2010 Seminar Leader, Honors Program, SUNY Oswego
HON 150 — *Introduction to Honors*

Other Teaching Activities

2025 Lecturer, Yale Warrior Scholar Program
2025 Teaching assistant, MESA Summer School, KU Leuven, Belgium
2023 Organizer, MESA Summer School, Konkoly Observatory, Hungary
2022 Organizer & Lecturer, MESA Summer School, UC Santa Barbara
2022 Invited tutorial, MESA & GYRE, TASC6/KASC13
2022 Invited instructor, MESA@ESO workshop
2023 Research advisor, Kavli summer astrophysics program, MPA (2 students)
2022 Research advisor, MPA internship (3 students)

2021 Research advisor, Kavli summer astrophysics program, virtual (COVID)

2016 Research advisor, MPS internship

Presentations

Invited Talks

2026 AAS 247 — AI Meets Stars
Phoenix, AZ

2026 International Space Science Institute (ISSI)
Bern, Switzerland

2025 Stellar Variability: Taking the Pulse of the Universe
"Deciphering the Galactic Halo with RR Lyrae Stars"
Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India

2025 Black Holes & Cosmology 2025
"The Sun's Dark Core: Constraints on a Compact Solar Center"
University of Iceland

2024 IAIFI Summer Workshop
"Asteroseismic Probes of Far-Ranging Physics with Big Data & Machine Learning"
MIT

2024 Black Holes & Cosmology
"The Search for Hawking Stars: low-mass stars powered by a primordial black hole"
University of The Bahamas

2023 11th Applied Inverse Problems Conference
"Progress in Asteroseismology: Where We Stand and Where We'll Go"
Göttingen, Germany

2022 TASC6/KASC13 – TESS/Kepler Asteroseismic Science Consortium
"MESA & GYRE: Stellar models for asteroseismology"
KU Leuven, Belgium

2019 TASC5/KASC12 – TESS/Kepler Asteroseismic Science Consortium
"Experimental tests of stellar pulsation and evolution with TESS and SONG"
MIT

2019 Dynamics of the Sun & Stars: Honoring the Life & Work of Michael Thompson
"Inverse analysis of asteroseismic data: a review"
High Altitude Observatory, USA

Invited Seminars/Colloquiua

2026 University of California, Los Angeles (UCLA)

2026 The Ohio State University

2025 Flatiron Center for Computational Astrophysics (CCA)
"Probing the Galactic Halo with Variable Stars"

2025 Max Planck Institute for Astrophysics
"Deciphering the Galactic Halo with RR Lyrae Stars"

2025 Yale Data Science x Physics Seminar
"Probing the Galactic Halo with Variable Stars"

2024 Harvard ITC

"The Search for Hawking Stars"

2024 Harvard ITC
"What can asteroseismology do for astrophysics?"

2024 University of Illinois Urbana-Champaign
"Asteroseismic probes of far-ranging physics with big data & machine learning"

2024 Illinois State University
"Asteroseismic probes of far-ranging physics with big data & machine learning"

2024 Yale Foundations of Data Science Institute Seminar
"Asteroseismic probes of far-ranging physics with big data & machine learning"

2023 Heidelberg Institute for Theoretical Studies, Heidelberg, Germany
"Black holes and asteroseismology"

2022 Czech Academy of Sciences, Prague, Czechia
"Asteroseismic probes of stellar evolution and fundamental physics"

2021 KU Leuven, Belgium
"Asteroseismic probes of stellar evolution and fundamental physics"

2021 University of Victoria, British Columbia, Canada
"What Can Asteroseismology Do for Astrophysics?"

2021 Max Planck Institute for Astrophysics
"What Can Asteroseismology Do for Astrophysics?"

2020 Macquarie University, Sydney, Australia
"What Can Asteroseismology Do for Astrophysics?"

2020 Monash University, Melbourne, Australia
"What Can Asteroseismology Do for Astrophysics?"

2019 University of Sydney, Australia
"What Can Asteroseismology Do for Astrophysics?"

2018 Stellar Astrophysics Centre, Aarhus University, Denmark
"Determining Stellar Structure with Asteroseismology Using Novel Techniques"

2017 University of Wisconsin–Madison
"From Starlight to Stellar Ages with Asteroseismology"

2013 Kyoto University, Japan
"Asynchronous Updating in 1D Cellular Automata with Stochastic Perturbations"

Contributed Talks

2023 MIAPbP: Stellar Astrophysics in the Era of Gaia, Spectroscopic, and Asteroseismic Surveys
"Black holes and asteroseismology"

2023 Black Hole & Gravitational Wave Day, Garching, Germany
"Asteroseismic Constraints on the Stochastic Gravitational Wave Background"

2023 VLT-FLAMES Tarantula Survey (VFTS) Collaboration Meeting, Garching, Germany
"Massive Star Asteroseismology with TESS and PLATO"

2022 European Astronomical Society, Valencia, Spain
"Asteroseismic insights into solar evolution"

2022 Fundamental stellar parameters from asteroseismology, Aarhus, Denmark
"An asteroseismic expedition for the missing physics in stellar evolution"

2019 Stars in Melbourne, Monash University, Melbourne, Australia
"What Can Asteroseismology Do for Astrophysics?"

2019 Annual Danish Astronomy Meeting (ADAM) 2019, Nyborg, Denmark
"Seismic evidence against the standard picture of stellar evolution"

2018 TESS Asteroseismic Science Consortium 4, Aarhus University, Denmark
"Testing stellar physics with asteroseismic inversions for the core structures of solar-type stars"

2017 ERES-III: Emerging Researchers in Exoplanet Science, Yale University, USA
"Fundamental Parameters of Exoplanet Host Stars with Asteroseismology"

2015 RR Lyrae 2015, Visegrád, Hungary
"Resolving combination frequency amplitudes of multi-mode pulsators"

2015 American Astronomical Society, Washington, USA
"Optimal Model Discovery of Periodic Variable Stars"

Workshops (*Invited talk)

2025 *PLATO HOW#5
"Selection and validation for the PLATO mission"

2023 *Flatiron Sun-as-a-star Workshop
"Searching for long-period oscillations in stacked solar spectrographs"

2021 *PLATO WP122 Liege Workshop #4
"Consistency checks and selection for the PLATO mission"

2021 *MPA–Potsdam Workshop on Hot Subdwarfs, Garching, Germany
"Asteroseismic inference of internal stellar structure in solar-like oscillators"

2020 *TESS Ninja 3, University of Sydney, Australia
"A novelty and anomaly detector"

2019 8th Aarhus Red Giants Workshop, Astronomical Observatory of Catania, Italy

2017 7th Aarhus Red Giants Workshop, Max Planck Institute for Astrophysics

2016 *6th Aarhus Red Giants Workshop, Max Planck Institute for Solar System Research
"Stellar Parameters in an Instant with Machine Learning"

2015 *Indo-US Science Workshop on Variable Stars, Delhi University, Delhi, India
"Calibrating the Cepheid Distance Scale"

2014 *Indo-US Science Workshop on Variable Stars, St. Thomas College, Kerala, India
"Automated Supervised Classification of Variable Stars"

Awards & Funding

2025 Principal Investigator, Yale AI Seed Grant ($100,000)
2025 D. Allan Bromley Fellowship (Naomi Gluck)
2025 Rosenfeld Science Scholar Fellowship (Kyra Bettwy)
2024 Yale College First-Year Summer Research Fellowship (Andrés Luengo)
2024 Yale Dean's Research Fellowship (KJ McConnell)
2023 Flanders Research Foundation Postdoctoral Fellowship (KU Leuven, deferred)
2021 Max Planck Institute for Astrophysics Postdoctoral Fellowship
2018 NVIDIA GPU Grant
2018 Stellar Astrophysics Centre Postdoctoral Fellowship

2012 National Physical Science Consortium Graduate Fellowship
2012 SUNY Chancellor's Award for Student Excellence
2012 Oebele Van Dyk Outstanding Computer Science Senior Award
2008 SUNY Oswego Presidential Scholarship

Professional Activities

Associations

2025 – Executive Committee, Center for Nuclear Astrophysics across Messengers (CeNAM)

2024 – Co-investigator, International Space Science Institute international team: EXploiting Precision AstroNomical Distance INdicators in the Gaia (EXPANDING) Universe

2020 – Developer, MESA Stellar Evolution Code

2019 – Junior Member, International Astronomical Union

Observing Time

2018 δ Eridani – the first SONG-TESS simultaneous target (P.I.)
Instrument: SONG telescope (50 nights)

2018 Simultaneous observations of oscillations in Procyon with SONG and TESS (co-P.I.)
Instrument: SONG telescope (30 nights)

Refereeing

The Astrophysical Journal Letters
The Astronomical Journal
Astronomy & Astrophysics
Monthly Notices of the Royal Astronomical Society
Frontiers in Astronomy and Space Sciences

Scientific Organizing

2023 Scientific Organizer, MESA Summer School 2023, Konkoly, Hungary

2022 Organizer and Lecturer, MESA Summer School 2022, UC Santa Barbara

2022 Scientific Organizer, European Astronomical Society 2022 Special Session
"Stellar characterization, large data sets, and Machine Learning"

2022 Organizer and Leader, MPA Hackathon, MPI for Astrophysics

2022 – Organizer, Seminar on Stellar Astrophysics (SESTAS), MPI for Astrophysics

2019 – 2021 Organizer, Stellar Astrophysics Centre Seminar, Aarhus University

2015 – 2018 Organizer, SAGE Seminar Series, Max Planck Institute for Solar System Research

Languages

Human	English (native) German (B2/near fluent) Spanish (A2) Portuguese (A2)
Computer	Expert: Python, R, Bash, LaTeX, CLISP, Scheme, Java, MATLAB

Proficient: C, Javascript, HTML, CSS, Perl, SQL, FORTRAN 77/95/08

Familiar: ActionScript, Assembly, BASIC, C++, Haskell, Mathematica, ML, PHP, Prolog, Ruby, VB

Publications

Number of publications = 70 || first author = 21 || citations = 1766 || h-index = 23
Google Scholar: https://scholar.google.com/citations?user=Woj_Tu4AAAAJ

Publications in peer-reviewed scientific journals
(52, first author = 13, single author = 2, student-led = 19)

1. **Bellinger, E. P.** & Caplan, M. E. (2025). The Sun's Dark Core: Helioseismic and neutrino flux constraints on a compact solar center. *The Astrophysical Journal*.

2. **Bellinger, E. P.**, de Mink, S. E., van Rossem, W. E., Justham, S. (2024). The Potential of Asteroseismology to Resolve the Blue Supergiant Problem. *The Astrophysical Journal Letters*.

3. **Bellinger, E. P.**, Caplan, M. E., Ryu, T., Bollimpalli, D., Ball, W. H., Kühnel, F., Farmer, R., de Mink, S. E., Christensen-Dalsgaard, J. (2023). Solar evolution models with a central black hole. *The Astrophysical Journal*.

4. **Bellinger, E. P.** & Christensen-Dalsgaard, J. (2022). Towards solar measurements of nuclear reaction rates. *Monthly Notices of the Royal Astronomical Society*.

5. **Bellinger, E. P.**, Basu, S., Hekker, S., Christensen-Dalsgaard, J., Ball, W. (2021). Asteroseismic Inference of the Central Structure in a Subgiant Star. *The Astrophysical Journal*.

6. **Bellinger, E. P.** (2020). A seismic scaling relation for stellar age II. The red giant branch. *MNRAS Letters*.

7. **Bellinger, E. P.**, Kanbur, S. M., Bhardwaj, A., Marconi, M. (2020). When a Period Is Not a Full Stop: Light Curve Structure Reveals Fundamental Parameters of Cepheid and RR Lyrae Stars. *Monthly Notices of the Royal Astronomical Society*.

8. **Bellinger, E. P.** & Christensen-Dalsgaard, J. (2019). Asteroseismic constraints on the cosmic-time variation of the gravitational constant from an ancient main-sequence star. *The Astrophysical Journal Letters*.

9. **Bellinger, E. P.,** Basu, S., Hekker, S., Christensen-Dalsgaard, J. (2019). Testing stellar evolution with asteroseismic inversions of a main sequence star harboring a small convective core. *The Astrophysical Journal*.

10. **Bellinger, E. P.** (2019). A seismic scaling relation for stellar age. *Monthly Notices of the Royal Astronomical Society*.

11. **Bellinger, E. P.**, Hekker, S., Angelou, G. C., Stokholm, A., Basu, S. (2019). Stellar ages, masses and radii from asteroseismic modeling are robust to systematic errors in spectroscopy. *Astronomy & Astrophysics*.

12. **Bellinger, E. P.**, Basu, S., Hekker, S., Ball, W. (2017). Model-independent Measurement of Internal Stellar Structure in 16 Cygni A and B. *The Astrophysical Journal*.

13. **Bellinger, E. P.**, Angelou, G. C., Hekker, S., Basu, S., Ball, W., Guggenberger, E. (2016). Fundamental Parameters of Main-Sequence Stars in an Instant with Machine Learning. *The Astrophysical Journal*.

* *denotes the paper was led by a student or postdoc*

14. *Buchele, L., **Bellinger, E. P.**, Hekker, S., Basu, S. (2025). Linearity of Structure Kernels in Main-sequence and Subgiant Solar-like Oscillators. *The Astrophysical Journal*.

15. *Buchele, L., **Bellinger, E. P.**, Hekker, S., Basu, S. (2025). Asteroseismic Structure Inversions of Main-Sequence Solar-like Oscillators with Convective Cores. *The Astrophysical Journal*.

16. *Ahlborn, F., Ong, J. J. M., Van Beeck, J., **Bellinger, E. P.**, Hekker, S., Basu, S. (2025). Impact of near-degeneracy effects on linear rotational inversions for red-giant stars. *Astronomy & Astrophysics*.

17. *Stone-Martinez, A. et al. incl. **Bellinger, E. P.** (2025). StarFlow: Leveraging Normalizing Flows for Stellar Age Estimation in SDSS-V DR19. *The Astrophysical Journal*.

18. *Grichener, A. et al. incl. **Bellinger, E. P.** (2025). Nuclear Neural Networks: Emulating Late Burning Stages in Core Collapse Supernova Progenitors. *The Astrophysical Journal Supplement Series*.

19. *Ma, L., Johnston, C., **Bellinger, E. P.**, de Mink, S. E. (2024). Variability of Blue Supergiants in the LMC with TESS. *The Astrophysical Journal*.

20. *Deka, M., **Bellinger, E. P.**, Kanbur, S. M., Deb, S., Bhardwaj, A., Randall, R. H., Kalici, S., Das, S. (2024). Bridging theory and observations in stellar pulsations: The impact of convection and metallicity on the instability strips of Classical and Type-II Cepheids. *Monthly Notices of the Royal Astronomical Society*.

21. *Farag, E., Fontes, C. J., Timmes, F.X., **Bellinger, E. P.** et al. (2024). An Expanded Set of Los Alamos OPLIB Tables in MESA: Type-1 Rosseland-mean Opacities and Solar Models. *The Astrophysical Journal*.

22. *Bhuyan, G., Deb, S., Kanbur, S. M., **Bellinger**, E. P., Deka, M., Bhardwaj, A. (2024). Geometry of the LMC based on multi-phase analysis of multi-wavelength Cepheid light curves using OGLE-IV and Gaia DR3 data. *Monthly Notices of the Royal Astronomical Society*.

23. *Buchele, L., **Bellinger, E. P.**, Hekker, S., Basu, S., Ball, W., Christensen-Dalsgaard, J. (2024). Asteroseismic Inversions for Internal Sound Speed Profiles of Main-sequence Stars with Radiative Cores. *The Astrophysical Journal*.

24. *Wagg, T., Johnston, C., **Bellinger, E. P.**, Renzo, M., Townsend, R., de Mink, S. E. (2024).

The Asteroseismic Imprints of Mass Transfer: A Case Study of a Binary Mass Gainer in the SPB Instability Strip. *Astronomy & Astrophysics*.

25. *Santarelli, A. D., Caplan, M. E., **Bellinger, E. P.** (2024). Formation of Sub-Chandrasekhar Mass Black Holes and Red Stragglers via Hawking Stars in Ultra-Faint Dwarf Galaxies. *The Astrophysical Journal*.

26. *Ahlborn, F., **Bellinger, E. P.**, Hekker, S., Basu, S., Mokrytska, D (2024). The robustness of inferred envelope and core rotation rates of red-giant stars from asteroseismology. *Astronomy & Astrophysics*.

27. Caplan, M. E., **Bellinger, E. P.**, Santarelli, A. D. (2024). Is there a black hole in the center of the Sun? *Astrophysics & Space Science* invited article.

28. Lund, Mikkel N. et al. including **Bellinger, E. P.** (2024). The K2 Asteroseismic KEYSTONE sample of Dwarf and Subgiant Solar-Like Oscillators. I: Data and Asteroseismic parameters. *Astronomy & Astrophysics*.

29. *Vanlaer, V., Aerts, C., **Bellinger, E. P.**, Christensen-Dalsgaard, J. (2023). On the feasibility of structure inversions for gravity-mode pulsators. *Astronomy & Astrophysics*.

30. *Wilson, T. A., Casey, A. R., Mandel, I., Ball, W. H., **Bellinger, E. P.**, Davies, G. R. (2023). Constraining the Rotation Profile in a Low-Luminosity Subgiant with a Surface Rotation Measurement. *Monthly Notices of the Royal Astronomical Society*.

31. Farmer, R., Renzo, M., Götberg, Y., **Bellinger**, E. P., Justham, S., de Mink, S. E. (2023). Observational predictions for Thorne-Żytkow objects. *Monthly Notices of the Royal Astronomical Society*.

32. *Ahlborn, F., **Bellinger, E. P.**, Hekker, S., Basu, S., Mokrytska, D (2022). Improved asteroseismic inversions for red-giant surface rotation rates. *Astronomy & Astrophysics*.

33. *Deka, Kanbur, Deb, Das, Kurbah, **Bellinger**, Bhardwaj (2022). Period-Colour and Amplitude-Colour relations for OGLE δ Scuti stars in the Galactic Bulge and LMC. *Monthly Notices of the Royal Astronomical Society*.

34. *Vynatheya, P., Hamers, A. S., Mardling, R. A., **Bellinger, E. P.** (2022). Algebraic and machine learning approach to hierarchical triple-star stability. *Monthly Notices of the Royal Astronomical Society*.

35. Jermyn, Bauer, Schwab, Farmer, Ball, **Bellinger**, et al. (2022). Modules for Experiments in Stellar Astrophysics (MESA): Time-Dependent Convection, Energy Conservation, Automatic Differentiation, and Infrastructure. *The Astrophysical Journal Supplement Series*.

36. Caplan, M. E., Freeman, I. F., Horowitz, C. J., Cumming, A., **Bellinger, E. P.** (2021). Cooling Delays from Iron Sedimentation and Iron Inner Cores in White Dwarfs. *The Astrophysical Journal Letters*, 919 (1).

37. Grunblatt, S. et al. including **Bellinger, E. P.** (2021). Age-Dating Red Giant Stars Associated with Galactic Disk and Halo Substructures. *The Astrophysical Journal*, 916 (2).

38. Plachy, E. et al. including **Bellinger, E. P.** (2021). TESS observations of Cepheid stars: first light results. *The Astrophysical Journal Supplement Series*, 253 (1).

39. *Hon, M., **Bellinger, E. P.**, Hekker, S., Stello, D., Kuszlewicz, J. S. (2020). Asteroseismic Ages of Subgiant Stars with Deep Learning, *Monthly Notices of the Royal Astronomical Society*, 499 (2).

40. *Ahlborn, F., **Bellinger, E. P.**, Hekker, S., Basu, S., Angelou, G. C. (2020). On the asteroseismic sensitivity to internal rotation along the red-giant branch. *Astronomy & Astrophysics*, 639, A98.

41. Angelou, G. C., **Bellinger, E. P.**, Hekker, S., Mints, A., Elsworth, Y., Basu, S., Weiss, A. (2020). Convective boundary mixing in low- and intermediate-mass stars I. Core properties from pressure-mode asteroseismology. *Monthly Notices of the Royal Astronomical Society*, 493 (4).

42. Angelou, G. C., **Bellinger, E. P.**, Hekker, S., Basu, S. (2017). On the Statistical Properties of the Lower Main Sequence. *The Astrophysical Journal*, 839 (2), 116.

43. Glover, M., **Bellinger, E. P.**, Radivojac, P., Clemmer, D. (2015). Penultimate Proline in Neuropeptides. *Analytical Chemistry*, 87 (16), 8466–8472.

44. *Das, S., Kanbur, S. M., **Bellinger, E. P.**, Bhardwaj, A., Singh, H. P., Meerdink, B., Proietti, N., Chalmers, A., Jordan, R. (2020). The stellar photosphere-hydrogen ionization front interaction in Classical Pulsators: a theoretical explanation for observed period-colour relations. *Monthly Notices of the Royal Astronomical Society*, 493 (1).

45. Bo Nielsen, M. et al. including **Bellinger, E. P.** (2020). TESS asteroseismology of the known planet host star λ^2 Fornacis, *Astronomy & Astrophysics*, 641, A25.

46. Christensen-Dalsgaard, J. et al. including **Bellinger, E. P.** (2020). The Aarhus Red Giants Challenge II: Stellar oscillations in the red giant branch phase. *Astronomy & Astrophysics*, 635, A165.

47. Silva Aguirre, V. et al. including **Bellinger, E. P.** (2020). The Aarhus Red Giants Challenge I: Stellar structures in the red giant branch phase. *Astronomy & Astrophysics*, 635, A164.

48. Tang, Y., Basu, S., Davies, G. R., **Bellinger, E. P.**, Gai, Ning (2018). Asteroseismology of KIC 8263801: Is it a member of NGC 6866 and a red clump star? *The Astrophysical Journal*, 866 (1), 59.

49. Guggenberger, E., Hekker, S., Basu, S., Angelou, G. C., **Bellinger, E. P.** (2017). Mitigating the mass dependence in the $\Delta\nu$ scaling relation of red-giant stars. *Monthly Notices of the Royal Astronomical Society*, 470 (2).

50. 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).

51. Ji, C., Li, Y. F., **Bellinger, E. P.**, Li, S., Arnold, R. J., Radivojac, P., Tang, H. (2015). A maximum-likelihood approach to absolute protein quantification in mass spectrometry. In refereed proceedings of *the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics* (pp. 296-305).

52. 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 & Space Science*, 341(1), 105-113.

Publications in conference proceedings
(13, first author = 6)

53. **Bellinger, E. P.**, Basu, S., Hekker, S. (2020). Inverse analysis of asteroseismic data: a review. *Dynamics of the Sun & Stars*.

54. **Bellinger, E. P.**, Angelou, G. C., Hekker, S., Basu, S., Ball, W., Guggenberger, E. (2017). Fundamental Parameters in an Instant with Machine Learning: Application to Kepler LEGACY Targets. *Seismology of the Sun and Distant Stars*, EPJ Web of Conferences, Volume 160, id.05003.

55. **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.

56. **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*.

57. **Bellinger, E. P.** (2012). Multiphase Relations of Magellanic Cloud Cepheids. *Proceedings of the 2012 National Conference on Undergraduate Research*.

58. **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*, 451, 311.

59. Bhardwaj, A., **Bellinger, E. P.**, Kanbur, S. M., Marconi, M. (2022). Predicting Physical Parameters of Cepheid and RR Lyrae variables in an Instant with Machine Learning. *Proceedings of the IAU GA: Machine Learning in Astronomy*.

60. Kanbur, S. M., **Bellinger, E. P.**, Bhardwaj, A., Marconi, M. (2020). Light Curve Structure Reveals Fundamental Parameters of Cepheid and RR Lyrae Stars. Proceedings of *RR Lyrae 2019*.

61. *Das, S., Kanbur, S. M., **Bellinger, E. P.**, Bhardwaj, A., Singh, H. P. (2020). A study of the

stellar photosphere-hydrogen ionisation front interaction in pulsating variables using period-color relations. *ASP Conference Series*, 529.

62. *Ahlborn, F., **Bellinger, E. P.**, Hekker, S., Basu, S., Angelou, G. C. (2020). Rotational inversions along the lower part of the red-giant branch. *Stars and their Variability Observed from Space*.

63. 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*.

64. Bhardwaj, A., Kanbur, S. M., Marconi, M., Das, S., **Bellinger, E. P.**, Singh, H. P., Rejkuba, M., Ngeow, C.-C. (2018). Time-series analyses of Cepheid and RR Lyrae variables in the wide-field variability surveys. *IAUS347: Early Science with ELTs*.

65. Hekker, S., Elsworth, Y., Basu, S., **Bellinger, E. P.** (2017). Evolutionary states of red-giant stars from grid-based modelling. *Seismology of the Sun and Distant Stars*, EPJ Web of Conferences, Volume 160, id.04006.

Additional publications

(total = 5, first author = 3)

66. Heike Rauer et al. including **Bellinger, E. P.** (2024). The PLATO Mission.

67. The MSE Science Team et al. including **Bellinger, E. P.** (2019). The Detailed Science Case for the Maunakea Spectroscopic Explorer.

68. **Bellinger, E. P.** (2019). An idea to an image: the prediction and confirmation of black holes. Invited book review, *Metascience*, 29 (1), Cambridge: Harvard University Press.

69. **Bellinger, E. P.** (2018). Inverse Problems in Asteroseismology. Doctoral thesis, *International Max Planck Research School*.

70. **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.