

# Terese Thidemann Hansen

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## Employment

- 2021- Researcher, Department of Astronomy, Stockholm University
- 2018-2021 Postdoctoral Research Associate, Department of Physics and Astronomy, Texas A&M University
- 2015-2018 Postdoctoral Research Associate, The Observatories of the Carnegie Institution for Science

## Education

- 2015 Ph.D, Heidelberg University  
Title: "An Observational Study of Metal-Poor Stars"  
Supervisor: Prof. Norbert Christlieb ([N.Christlieb@lws.uni-heidelberg.de](mailto:N.Christlieb@lws.uni-heidelberg.de))
- 2011 M.Sc, Copenhagen University  
Title: "Formation of the Heavy Elements in the Early Galaxy"  
Supervisor: Prof. Johannes Andersen
- 2008 B.Sc, Dark Cosmology Center, Copenhagen University  
Title: "Characterization of Dark Matter by X-ray"  
Supervisor: Director DTU space Kristian Pedersen ([kp@space.dtu.dk](mailto:kp@space.dtu.dk))

## Grants

- P.I. Swedish Research Council Starting Grant, VR 2021-05556: SEK 4,000,000 (2022-2025)
- P.I., NASA *Hubble Space Telescope* GO-15951: \$27,157, total= \$147,794 (2020-2023)
- Texas A&M University System National Laboratories Office travel mini-grant \$1,500 (2020)
- Heidelberg Graduate School of Fundamental Physics travel grant: €1,276 (2012)

## Honors and Awards

- Mitchell Astronomy Fellow, Texas A&M University (2018-2021)

## Successful P.I. Observing Proposals

- Nordic Optical Telescope , Spain, 4 nights (2022-23), Instruments: FIES
- Las Campanas Observatory, Chile, du Pont Telescope: 52 nights (2016-2019), Instruments: Echelle spectrograph

Las Campanas Observatory, Chile, Magellan Telescopes: 18 nights (2016-2019), Instruments: MIKE, M2FS

McDonald Observatory, US, Harlan J. Smith Telescope: 46 nights (2019-2021), Instruments: Cross-Dispersed Echelle Spectrograph

Hubble Space Telescope, cycle 27, 17 orbits (2020), Instrument: STIS

## Selected Successful Co.I. Observing Proposals

NOIRLab, GS-2025A-Q-229: 8h50m (GHOST), 2020A-0280: 1.6n (GMOSS)

European Southern Observatory, 115.287H: 31h (UVES), 105.20GK: 5h48m (FLAMES), 107.22SZ: 01h34m (CRIRES)

## Professional Activities

Co-founder and leader of R-Process Alliance Collaboration (RPA [website](#))

Nordic Optical Telescope Observing Programme Committee Chair 2024- (member from 2022)

External collaborator of the Dark Energy Survey

Member of GHOUls, S5, and Maglites Collaborations

Manuscript referee for Nature, the AAS Journals, Astronomy & Astrophysics, Astronomy Nature, Publications of the Astronomical Society of Japan, and Monthly Notices of the Royal Astronomical Society

NASA proposal reviewer (HST and ADAP)

Organizer of Joint Nuclear and Astronomy Seminar at Texas A&M University (2019 - 2021)

Initiator and organizer of Astronomy Postdoc meetings at Texas A&M University (2020 - 2021)

Scientific organizing committee, "R-Process Alliance Workshop", Boston, US, November 2019

Scientific organizing committee, "CEMP Stars as Probes of First-Star Nucleosynthesis, the IMF, and Galactic Assembly", Geneva, Switzerland, September 2019

Scientific organizing committee, "Astronomdagarna", Lund, Sweden, October 2024

## Graduate Student Mentoring

Fall 2023 - present John Dixon, Texas A&M University, secondary advisor

May 2023 - present Mila Racca, Stockholm University, primary advisor

Fall 2020 - present Kaitlin Webber, Texas A&M University, secondary advisor

## Undergraduate Student Mentoring

- Feb - Oct 2023 Oivind Harket, Stockholm University, Master Project, 'Abundance analysis of  $r$ -process enhanced stars'
- Jun - Dec 2022 Gabriela Miranda Romero, Stockholm University, Bachelor project, 'Chemical analysis of the V4 Helmi stream'
- Spring 2021 Elyse Harman, Texas A&M University, 'Binary properties of CEMP-no stars'
- 2020 - 2021 Jared Cathey, Texas A&M University, Honors Thesis, 'Radial velocity properties of CEMP-r/s binary stars.', afterwards Doctoral student at University of Florida
- 2020 - 2021 Daniel Huerta, Texas A&M University, 'Metallicities of mdwarf binary companions.'
- 2020 - 2021 Jordan Hosein, Texas A&M University, 'Stellar parameters for mdwarf binary companions.'
- Fall 2020 Ryan Albert, Texas A&M University, 'Location of  $\alpha$ -knee in dwarf galaxies.'
- 2019 - 2020 Jessica Myron, Texas A&M University, Undergraduate Thesis, 'How universal is the universal  $r$ -process abundance pattern?', currently Doctoral student at University of Montana
- 2019 - 2020 Brittany Vamvakias, Texas A&M University, 'Abundances of limited  $r$ -process enhanced stars'
- 2019 - 2020 Isobel Austin, Texas A&M University, 'Radial velocities of mdwarf binary companions.'
- June, July 2019 Carla Quintero, Humboldt State University, REU program, 'Characterizing the neutron-capture element abundances of CEMP stars.'
- June, July 2018 Tiger Lu, Caltech, Carnegie summer student program, 'Investigating the slow neutron capture process in the early Universe.', afterwards Doctoral student at Yale University

## Teaching Experience

- Spring 2022, 2023, 2024, 2025 Observational Astrophysics II, Stockholm University (Course webpage)
- Oct 2024 NEON Observing School tutor (Course webpage)
- Fall 2024 Guest lecturer, FY535 – Astrophysics & basic cosmology, University of Southern Denmark
- 2016 - Present Training of undergraduate and graduate students during multiple observing runs at Las Campanas observatory, McDonald observatory, and The Nordic Optical Telescope.
- October 2020 Order of Magnitude graduate class (1 lesson) Texas A&M University
- June 2019 REU summer students: introduction lecture on galactic chemical evolution
- July 2017 Carnegie summer students: poster workshop.
- July 2016 Carnegie summer students: introduction lecture on galactic chemical evolution.
- April - July 2012 Teaching Assistant, Exercises for the lecture Introduction to Astronomy II, University of Heidelberg.

## Teaching Development

Courses taken at the Centre for the Advancement of University Teaching at Stockholm University on professional development in higher education teaching and learning for university teachers.

Spring 2025 Supporting doctoral students' writing workshop

Fall 2023 Professional development course 2, Teaching and Learning in the Science Academic Area (7.5 ECTS)

Spring 2023 Professional development course 1, Teaching and Learning (7.5 ECTS)

Fall 2022 Introduction to teaching science (3 ECTS)

Spring 2022 Research Supervision — theory and practice (3 ECTS)

## Invited Conferences and Workshops

June 2025 s, i & r Element Nucleosynthesis (sirEN), Giulianova, Italy  
Review talk on observations of *r*-process enriched stars.

March 2025 American Physical Society, Global Physics Summit 2025, Anaheim, USA  
"R-Process Alliance - Abundances of >2000 metal-poor stars"

Nov 2023 The Milky Way as seen through Neutron-Capture Elements, Lund, Sweden  
"Recent results from the R-Process Alliance"

May 2023 Chemical Abundances from Non-LTE Radiative Transfer, Chicago, USA  
"Light R-Process Elements"

Oct 2022 Astronomdagarna, Gothenburg, Sweden  
"The R-Process Alliance - mapping the *r*-process with stellar abundances"

June 2022 NOT - a telescope for the future, La Palma, Spain  
"Observational Astrophysics II at Stockholm University"

June 2022 NOT - a telescope for the future, La Palma, Spain  
"Stellar Archaeology with the NOT"

Dec 2020 JINA Horizons, Online  
"R-Process Alliance: Observations of Stellar Abundances"

January 2020 Chemical Evolution of Galaxies: The Next 25 Years, Sexten, Italy  
"The Galaxy that has it all"

May 2019 The Radiating Universe, Shanghai, China  
"The R-Process Alliance - a New Spectroscopic Search for R-Process Enhanced Stars"

February 2019 Massively multiplexed spectroscopy with MSE, Tucson, US  
"Report from SWG2: Chemical Nucleosynthesis"

July 2018 The Metal-Poor Galaxy, Ringberg, Germany  
"New Search for R-Process Enhanced Stars"

June 2018 Stellar Abundances in Dwarf Galaxies, AAS 232, Denver, US  
"CEMP Stars in Dwarf Galaxies"

December 2017 GW170817: The First Double Neutron Star Merger, Santa Barbara, US  
 “Rapid Neutron-Capture Process -Clues From Metal-Poor Stars”

June 2017 Fifty-One Erg 2017, Corvallis, US  
 “Exploring Nucleosynthesis in the Early Universe with Extremely Metal-Poor Stars”

March 2016 JINA-CEE Frontiers in Nuclear Astrophysics, South Bend, US  
 “Recent Observational Results for Metal-Poor Stars”

## Contributed Conferences and Workshops

June 2025 EAS, Cork, IE  
 Talk: "Mapping the Heavy Element Formation in the Universe"  
 Talk: "Comparison between kilonovae and r-process enriched stars"

May 2025 , DFS, Lyngby, DK  
 Talk: "Hunting for gold with the R-Process Alliance"

September 2024 NPA XI, Dresden, DE  
 Talk: "The R-Process Alliance: Hunting for Gold (or, maybe just, uranium)"

June 2024 CeNAM Frontiers, South Bend, US  
 Talk: "Chemical Diversity on Small Scales"

September 2023 BRIDGCE, Edinburgh, UK  
 Talk: "The R-Process Alliance - mapping the *r*-process with stellar abundances"

May 2023 *i*-process Nucleosynthesis Workshop & School, Cyprus  
 Talk: "CEMP-*i* stars in the Carina dwarf spheroidal galaxy."

May 2022 JINA Frontiers, South Bend, US  
 Talk: "Indus: an r-process enhanced stream"

February 2020 Precision Spectroscopy workshop, Online  
 Talk: "A Chemodynamical Link Between Gjöll and NGC 3201"

March 2019 *R*-process Sources in the Universe, Phoenix, US  
 Talk: "The R-Process Alliance - a New Search for *R*-Process Enhanced Stars"

November 2017 A Celebration of CEMP and Gala of GALAH, Melbourne, Australia  
 Talk: "CEMP Stars in Dwarf Galaxies"

July 2017 Electromagnetic Signatures of *r*-process Nucleosynthesis in Neutron Star Binary Mergers, INT workshop, Seattle, USA

February 2017 APOGEE collaboration meeting, Pasadena, US  
 Talk: "Chemically Peculiar Metal-Poor Stars"

February 2017 The Galactic Renaissance symposium, Pasadena, US

January 2017 Neutron star mergers: From gravitational waves to nucleosynthesis, Hirscheegg 2017 workshop, Austria  
 Talk: "R-Process-Enhanced Metal-Poor Stars in the Milky Way Halo and its Satellites"

August 2015 IAU symposium 317, The General Assembly of Galaxy Halos: Structure, Origin and Evolution, IAU General Assembly, Honolulu, Hawaii, US  
 Talk: "Exploring the Early Universe with Extremely Metal-Poor Stars"

- August 2014 Nucleosynthesis and Chemical Evolution: Recent Progress and Future Directions, INT workshop, Seattle, USA  
Talk: "An Observational Study of Extremely Metal-Poor Stars"
- July 2014 XIII International Symposium on Nuclei in the Cosmos, Debrecen, Hungary  
Talk: "New Abundances from Very Old Stars"
- November 2013 German Women in Physics, Heidelberg, Germany  
Talk: "The Origin of Carbon-Enriched Stars in the Early Galaxy"
- May 2013 Nuclear Physics in Astrophysics VI, Lisbon, Portugal  
Talk: "Abundance Analysis of Extremely Metal-Poor Stars"
- August 2012 XII International Symposium on Nuclei in the Cosmos, Cairns, Australia  
Poster: "Formation of the Heavy Elements in the Early Universe"
- May 2012 Open Questions in Galactic Chemical Evolution, Heidelberg, Germany
- March 2012 9th Russbach Workshop on Nuclear Astrophysics, Russbach, Austria  
Poster: "Formation of the Heavy Elements in the Early Universe"
- June 2011 Danish Physical Society Meeting, Nyborg, Denmark  
Talk: "Heavy Element Enrichment in the Early Universe"
- March 2011 Nordic Physics Meeting, Helsinki, Finland  
Poster: "Formation of the Heavy Elements in the Early Universe"

## Seminar and Colloquium Talks

- May 2025 Astronomy Seminar, SDU, DK
- October 2024 Astronomy Seminar, IAASARS, GR
- March 2024 Astronomy Seminar, Texas A&M University, US
- November 2023 Astronomy Seminar, University of Surrey, UK (online)
- September 2023 School of Physics Colloquium University of New South Wales (Online)
- October 2022 NASA Cosmic Origins Program Stars Science Interest Group Seminar (Online)
- September 2022 Astronomy Seminar, Uppsala University, SE
- May 2022 Oscar Klein Center Colloquium, Stockholm University, SE
- April 2021 Astronomy Seminar, Ohio University, US (Online)
- April 2021 Astronomy Seminar, University of Sao Paulo, BR (Online)
- April 2021 Astronomy Seminar, University of Notre Dame, US (Online)
- December 2020 Astronomy Colloquium, Stockholm University, SE (cancelled due to covid)
- November 2020 IReNA Online Seminar
- May 2020 Astronomy Colloquium, University of Florida, US (Online)
- March 2020 Astronomy Seminar, Los Alamos National Lab (cancelled due to covid)

May 2019 Astronomy Seminar, Universidad Diego Portales, CL  
February 2019 Astronomy Seminar, Texas A&M University, US  
October 2018 Astronomy Colloquium, Carnegie Observatories, US  
January 2018 Astronomy Seminar, Geneva Observatory, CH  
July 2017 Astronomy Seminar, Texas A&M University, US  
June 2014 SFB Seminar, Heidelberg University, GE  
March 2014 IMPRS Seminar, Heidelberg University, GE  
June 2013 IMPRS Seminar, Heidelberg University, GE

## Outreach and Public Talks

April 2025 Danish science festival - book a scientist  
November 2024 Talk at Nyborg Rotary Club  
April 2024 Swedish Qualifiers for the International Olympiad on Astronomy and Astrophysics (IOAA) tour of Stockholm Astronomy department and talk  
March 2021 WISE (Women In Science and Engineering) talk at Jerry Knight STEM Career Week and event on rainbows for St. Patrick's day  
September 2019 Talk at Brazos Valley Astronomy Club, College Station, TX  
*Grus II the Galaxy that has it All.*  
May 2019 Talk at public viewing night at McDonald Observatory  
*The Origin of the Elements*  
February 2019 Astronomy on tap, College Station, TX  
October 2017 Talk at Santa Monica Astronomical Society  
*Galactic Chemical Evolution.*  
October 2016, 2017, 2018 Carnegie Open House - Ask an astronomer.  
Answer questions from the public on all things related to astronomy.  
April 2016 TechSavvy, Pasadena City College, Astronomy workshop - build your own telescope

## Computational Skills

Python, IDL, MOOG, LaTeX, IRAF, DS9

## ORCID identifier

0000-0001-6154-8983