

Yvette Nora Cendes

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EDUCATION

Ph.D. in Astronomy

Leiden, The Netherlands

Leiden Observatory, University of Leiden

conferred: May 2020

With predoctoral research conducted at the University of Amsterdam (The Netherlands) and the Dunlap Institute for Astronomy & Astrophysics, University of Toronto (Canada)

Thesis title: *Time Domain Imaging of Transient and Variable Radio Sources*

M.Sc. in Physics

Cleveland, OH, USA

Case Western Reserve University (CWRU)

conferred: August 2011

Thesis title: *An Extended Study on the Effects of Incorrect Coordinates on Surface Detector Timing For the Pierre Auger Observatory*

B.Sc. in Physics

Cleveland, OH, USA

Case Western Reserve University

conferred: January 2009

Thesis title: *On the Test, Analysis, and Feasibility of a Cherenkov Radiation Detector for the Auger North Observatory*

RESEARCH EXPERIENCE

Postdoctoral Fellow of Astronomy

2019-present

- Research on astronomical transients in X-ray and radio frequencies, primarily on exoplanets and Tidal Disruption Events (TDEs). (Supervisor: Prof. Edo Berger)

Graduate Research Assistant

2011-2019

- Research towards a Ph.D. in astronomy with thesis topics covering LOFAR transient surveys, RFI mitigation in transient searches, SN 1987A observations with ATCA, and Type Ia SNe observations and analysis with VLA and JVLA data. (Supervisors: Prof. Bryan Gaensler and Dr. Maria Drout (Toronto), Promoter: Prof. Alexander Tielens (Leiden))

Research Assistant- CWRU

2010-2011

- Research towards a M.Sc. in Physics involving GPS timing calibration and testing for surface detectors in the Pierre Auger Observatory (Supervisor: Dr. Corbin Covault)

Laboratory Assistant- CWRU

2006-2009

- Analyzed atmospheric data for the gamma ray detector STACEE, designed computer algorithms to analyze STACEE data in a preliminary Optical SETI survey, designed and tested a Cherenkov radiation detector for the Pierre Auger Observatory (Supervisor: Dr. Corbin Covault)

REU Experience- SETI Institute

2008

- Conducted RFI analysis and compiled an error database for the Allen Telescope Array (ATA) (Supervisor: Dr. Jill Tarter)

RESEARCH PUBLICATIONS

Refereed Publications (7 first author, 7 co-author, 1 proceeding, 6 telegrams)

First Author:

1. A Mildly Relativistic Outflow Launched Two Years after Disruption in the Tidal Disruption Event AT 2018hyz. **Y. Cendes** et al. 2022, ApJ, *in press*. [arxiv:2206.14297]
2. A Pilot Radio Search for Magnetic Activity in Directly Imaged Exoplanets. **Y. Cendes** et al. 2022, AJ, 163, 1. [arxiv:2011.00074]
3. Radio Observations of an Ordinary Outflow from the Tidal Disruption Event AT2019dsg. **Y. Cendes** et al. 2021, ApJ, 919, 2. [arxiv: 2103.06299]
4. Radio Monitoring of the Tidal Disruption Event Swift J164449.3+573451. IV. Continued Fading and Non-Relativistic Expansion. **Y. Cendes** et al. 2021, ApJ, 908, 2. [arxiv:2011.00074]
5. Thirty Years of Radio Observations of Type Ia SN 1972E and SN 1895B: Constraints on Circumstellar Shells. **Y. Cendes** et al. 2020, ApJ, 894, 39. [arxiv:2001.03558]
6. The Re-Acceleration of the Shockwave in the Radio Remnant of SN 1987A. **Y. Cendes** et al. 2018, ApJ, 867, 65. [arxiv: 1809.02364]
7. RFI flagging implications for short-duration transients. **Cendes, Y.** et al. 2018, *Astronomy and Computing*, 23, p. 103-114. [arxiv: 1804:04708]

Coauthor:

8. The Emergence of a new source of X-rays from the binary neutron star merger GW170817. Hajela, A. & 36 others including **Cendes, Y.** 2022, ApJ, 927, 1. [arxiv: 2104:02070]
9. Identifying transient and variable sources in radio images. Rowlinson, A. & 18 others including **Y. Cendes**. *Astronomy and Computing*, April 2019 [arxiv: 1808.07781]
10. New methods to constrain the radio transient rate: results from a survey of four fields with LOFAR. Carbone, D. & 25 authors including **Cendes, Y. N.** 2016, MNRAS, 459, Issue 3, p. 1361-3174 [arxiv: 1411:7928]

11. Low-radio-frequency eclipses of the redback pulsar J2215+5135 observed in the image plane with LOFAR. Broderick, J. W. & 33 coauthors including **Cendes, Y.** 2016, MNRAS, 459, 3, p. 2681-2689 [arxiv: 1604:05722]
12. LOFAR MSSS: Detection of a low-frequency radio transient in 400 hrs of monitoring of the North Celestial Pole. Stewart, A.J. & 102 coauthors including **Y. Cendes.** 2016, MNRAS, 456, 3, p. 2321-2343 [arxiv: 1512:00014]
13. The LOFAR Multifrequency Snapshot Sky Survey (MSSS) I. Survey description and first results. G. H. Heald & 140 authors including **Y. Cendes.** 2015, A&A, 582, id.A123. [arxiv: 1509.01257]
14. The LOFAR Transients Pipeline. Swinbank, John D. & 27 authors including **Cendes, Yvette.** 2015, Astronomy and Computing, 11, p. 25-48 [arxiv: 1503.01526]

Other Publications

Proceedings:

15. Astronomy on Reddit: Outreach Using the Front Page of the Internet. **Cendes, Yvette N.** 2018, Proceedings of the International Conference CAP2018, 327.

Telegrams (7 total):

16. Radio detection of the tidal disruption event ZTF20achpcvt/AT2020vwl. The Astronomer's Telegram, March 2021. Goodwin, Adelle & 17 authors including **Cendes, Yvette**
17. Radio detections of TDEs AT2020ksf and AT2020zso. Transient Name Server AstroNote, January 2021. Alexander, K.D. & 17 authors including **Cendes, Y.**
18. Supernova 2015Q in NGC 3888 = Psn J11473508+5558147, Central Bureau Electronic Telegrams, 4128, 1 (2015). Wiggins, P. & 49 authors including **Cendes, Y.**
19. ASASSN-15lu is a Type Ia Supernova, The Astronomer's Telegram, #7707 (2015) Leonard, D. C. & 47 others including **Cendes, Y.**
20. Optical Spectroscopy of PSN J15044078+1237436, The Astronomer's Telegram, #7690 (2015) Leonard, D. C. & 47 others including **Cendes, Y.**
21. PSN J11473508+5558147 is a Type Ib Supernova Near Maximum Light, The Astronomer's Telegram, #7680 (2015) Leonard, D. C. & 47 others including **Cendes, Y.**
22. ASASSN-15lo is a Post-Maximum Normal Type Ia Supernova, The Astronomer's Telegram, #7675 Leonard, D. C. & 47 others including **Cendes, Y.**

OBSERVING/ TELESCOPE PROJECTS

Principal Investigator: 145 hours on 4 telescopes (radio), 15ksec (X-ray)

Principal Investigator, MeerKAT 2022

MKT-22085, proposal, “Probing the Origin of Late-Time Radio Emission in TDEs” (17 hours)

Principal Investigator, VLA 2022

22B-205, proposal, “Unveiling the Origin of Delayed Radio Emission in Tidal Disruption Events” (33 hours)

Principal Investigator, MeerKAT 2022

22A-458, DDT proposal, “Probing the Origin of Late-Time Emission in TDEs” (10 hours)

Principal Investigator, Chandra 2022

DDT proposal, “Late-Time Emission in a Tidal Disruption Event” (15 ksec, \$18,521)

Principal Investigator, VLA 2022

22A-458, DDT proposal, “Continued Observations of a Delayed Relativistic Outflow in a TDE” (3 hours)

Principal Investigator, ATCA 2022

proposal, “Probing the Origin of Late-Time Emission in TDEs” (37.5 hours)

Principal Investigator, VLA 2021

21B-360, DDT proposal, “Investigation in Late-Time Emission of TDEs” (8.5 hours)

Principal Investigator, VLA 2021

21B-357, DDT proposal, “Investigation in Late-Time Emission of TDE AT2018hyz” (2 hours)

Principal Investigator, MeerKAT 2021

MKT-20119, proposal, “Measuring the True Occurrence Rate of Jets in TDEs via Late-Time MeerKAT Observations” (12 hours)

Principal Investigator, VLA 2020

20B-249 proposal, “Follow-Up of Potential Exoplanet Radio Emission from the 51 Eri System (3 hours)

Principal Investigator, VLA 2020

21A-349 proposal, “Follow-Up of Emission from a Very Young M-Dwarf Discovered in VLASS” (3 hours)

Principal Investigator, VLA 2018

19A-398 proposal, “VLA Observations for Intermediate Aged Type Ia SNe” (13 hours)

Principal Investigator, LOFAR 2016

Cycle 5 proposal, “Imaging the Pulsars in Globular Cluster M13” (3 hours)

Co-Investigator: 409 hours total on 3 instruments (radio)

Co-Investigator, ALMA 2021

2021.1.01210.T proposal, “A Systematic Investigation of Radio Tidal Disruption Events” (32 hours)

Co-Investigator, VLA 2020

21A-303 proposal, “Measuring the True Occurrence Rate of Jets in TDEs” (26 hours)

Co-Investigator, VLA 2020

20B-377 Large proposal, “A Systematic Investigation of Radio Tidal Disruption Events” (300 hours)

Co-Investigator, VLA 2020

20A-492 DDT proposal, “Measuring the True Occurrence Rate of Jets in TDEs” (15 hours)

Co-Investigator, VLA 2020

20A-324 proposal, “Pinpointing the Radio Emission from NS Mergers in LIGO/Virgo's 3rd Observing Run” (28 hours)

Co-Investigator, ATCA 2017-2021

Semester 2018OCTS, 2017OCTS, 2017 APRS, 2020OCTS, “Supernova 1987A” (8 hours)

PRESENTATIONS AND MEETINGS

Invited Talks: (7 colloquia, 4 seminars)

Colloquium, Southern Denmark University Denmark (expected)

Transient Science 450 Years After SN 1577A 11/2022

Colloquium, The Ohio State University Columbus, OH (expected)

Discoveries in Late-Time Emission from Tidal Disruption Events (TDEs) 10/2022

Seminar, MIT “Brown Bag” Seminar Series Cambridge, MA

New Discoveries in Late-Time Emission from Tidal Disruption Events (TDEs) 3/2022

Seminar, UC-Berkeley SETI Group Berkeley, CA

Searching for Emission from Directly Imaged Exoplanets 11/2021

Colloquium, University of Massachusetts- Amherst Amherst, MA, USA

Tidal Disruption Events: Using a Violent Demise to Study Extreme Environments 10/2021

Colloquium, Case Western Reserve University Cleveland, OH, USA

Tidal Disruption Events: Using a Violent Demise to Study Extreme Environments 9/2021

Colloquium, Smithsonian Astrophysical Observatory REU Program virtual

The Cosmic Zoo of Radio Transients 6/2021
Colloquium, University of Texas- Arlington virtual
Cosmic Explosions: Radio Transients from Supernovae to Tidal Disruption Events 3/2021
Colloquium, University of Texas- Dallas virtual
Tidal Disruption Events: Using a Violent Demise to Study Extreme Environments 3/2021
Astronomy Seminar, University of Pittsburgh virtual
Observing Slow Radio Transients, from Intermediate-Aged SNe to TDEs 9/2020
Seminar: Center for Astrophysics | Harvard & Smithsonian Cambridge, MA
Ongoing Monitoring of the Tidal Disruption Event Swift J1644+57 2/2020

Conference Presentations: (15 talks, 4 posters)

Very Large Array Sky Survey (VLASS) Science Socorro, NM
New Discoveries in Late-Time Radio Emission from Tidal Disruption Events 9/2022
Transient Domain Science Meeting (TDAMM) Annapolis, MD
New Discoveries in Late-Time Radio Emission from Tidal Disruption Events 8/2022

URSI- 3rd Atlantic Radio Science Meeting Las Palmas, Spain
New Discoveries in Late-Time Radio Emission from Tidal Disruption Events 5/2022

HEAD19 Pittsburgh, PA

New Discoveries in Late-Time Radio Emission from Tidal Disruption Events 3/2022

VLA at 40 virtual

A Pilot Radio Search for Magnetic Activity in Directly Imaged Exoplanets 8/2021

VLA at 40 virtual

Poster: VLA and ALMA Observations of an Ordinary Outflow from AT2019dsg 8/2021

Spoken-WERRD Symposium virtual

Observations of an Ordinary Outflow from Tidal Disruption Event AT2019dsg 3/2021

Chandra Frontiers in Time-Domain Science virtual

Ongoing Monitoring of the Tidal Disruption Event Swift J1644+57 10/2020

HEAD Seminar Series virtual

Ongoing Monitoring of the Tidal Disruption Event Swift J1644+57 7/2020

223rd American Astronomical Society Meeting Seattle, WA, USA

Radio Observations of Nearby Intermediate Aged Supernovae 5/2019

Shocking Supernovae Stockholm, Sweden

The Re-Acceleration of the Shockwave from SN 1987A	5/2018
IAU- Communicating Astronomy with the Public 2018	Fukuoka, Japan
Reddit Astronomy: Outreach Using the Front Page of the Internet	3/2018
Aspen 2017 Winter Conference on Fast Radio Bursts	Aspen, CO, USA
Poster: RFI Flagging Implications for Short-Duration Transients	2/2017
Netherlands Astronomy Conference 2016	Dalfsen, The Netherlands
Tuning in the Transient Sky with AARTFAAC	5/2016
LOFAR Science 2016	Zandvoort, The Netherlands
The first Transient Survey with AARTFAAC	5/2016
Science at Low Frequencies II	Albuquerque, NM, USA
Tuning in the Low Frequency Transient Radio Sky with AARTFAAC	12/2015
LOFAR Science 2015	Assen, The Netherlands
2 nd LOFAR Users Meeting- Transients KSP Speaker	5/2015
LOFAR Transients Key Science Project Meeting	Jodrell Bank Observatory, UK
Observations of Swift J1644+57 and Implications for Short Duration Transients	9/2014
Transients Key Science Project Meeting	Amsterdam, The Netherlands
A Modified RFI Flagger for Transient Radio Signals	1/2014
The Universe @ Ger's (wave)-length	Groningen, The Netherlands
A Modified RFI Flagger for Transient Radio Signals	11/2013
Explosive Transients: Lighthouses of the Universe	Santorini, Greece
LOFAR Observations of Tidal Disruption Candidate Swift J1644+57	9/2013
Netherlands Astronomy Conference 2014	Lommel, Belgium
Poster: A Modified RFI Flagging Strategy for Transients	5/2013
LOFAR Science Workshop	Dalfsen, The Netherlands
Poster- A Modified RFI Flagger for Transient Radio Signals	3/2013
AAS Meeting #219	Austin, TX, USA
Poster- The AARTFAAC Project: Searching for Transient Radio Signals with LOFAR	1/2012

Other Department Seminars

Seminar: Berkeley Radio Astronomy Laboratory	Berkeley, CA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	11/2018
NOAO FLASH Seminar	Tucson, AZ USA
Radio Observations of Nearby Intermediate Aged Supernovae	11/2018

Seminar: NRAO- Socorro	Socorro, NM, USA
Radio Observations of Nearby Intermediate Aged Supernovae	11/2018
Seminar: NASA- Goddard Space Flight Center	Greenbelt, MD, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
Seminar: University of Maryland	College Park, MD, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
Seminar: George Washington University	Washington, DC, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
Seminar: Naval Research Laboratory	Washington, DC, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
Seminar: NRAO- Charlottesville	Charlottesville, VA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
Seminar: Harvard- Center for Astrophysics	Cambridge, MA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
Seminar: Oxford University	Oxford, UK
The Life and Times of SN 1987A	1/2018
Seminar: West Virginia University	Morgantown, WV, USA
The Life and Times of SN 1987A	12/2017
Interstellar Medium Seminar: Leiden Observatory	Leiden, The Netherlands
Recent Radio Observations of SN 1987A	9/2017
G2000 seminar, University of Toronto	Toronto, ON, Canada
First Transient Survey with AARTFAAC	1/2017
Seminar: API	Amsterdam, The Netherlands
How to Be a Science Writer	9/2014
Seminar: API	Amsterdam, The Netherlands
A Modified RFI Flagging for Transient Radio Signals	9/2013

SERVICE (SELECTED)

- **NRAO Proposal Science Review Panel (SRP)**, (2021-present)
- **CfA Seminar Committee**, (2022-present)
- **Referee**, Monthly Notices of the Royal Astronomical Society (2021-present)
- **Social and Recreational Committee**, Harvard CfA (2020-present)

- **Chair of Postdoc Committee**, CFA Director Search (2021)
- **Admissions Committee**, Dunlap Instrumentation Summer School (2018)
- **Volunteer**, Astrotours and Astronomy on Tap, University of Toronto (2017-2018)
- **Contributor and Editor**, Astrobites (2013-2015)
- **Hiring Committee**, Astrobites (2014-2015)
- **Member**, American Astronomical Society (AAS) (2011-present)

TEACHING AND ADVISING EXPERIENCE

Co-supervisor, Graduate Student 2021-present

- Co-supervising graduate student Kevin Ortiz on a project relating to radio emission from exoplanets

Principal Supervisor, Research Experience for Undergraduates Program 2020

- Supervised Jafr Tayar-Shabazz on a project on radio survey data which resulted in a VLA proposal. Now pursuing a medical physics M.Sc. at Duke University

Harvard Science Mentoring Workshop Series 2022

- Attended and participated in a series of workshops on topics relating to undergrad supervision, such as designing undergraduate-friendly research projects, setting expectations, effective communication, and supporting student writing

Counselor, University of Arizona Advanced Astronomy Camp 2005-present

- Lecturer and supervisor (six camps, with increasing supervision responsibilities to present) overseeing high school student projects using telescope facilities on Mt. Graham, Kitt Peak National Observatory, and Mount Lemmon Observatory

Co-Supervisor, Bachelor Student Project 2016

- Assisted in two final year bachelor student projects to distinguish and categorize meteor scatter signals in LOFAR data

Teaching Assistant- University of Amsterdam 2010-2013

- Led recitations and provided observing assistance for the courses “3rd Year Practicum,” “Astrofysica,” “M.Sc. Practicum”

Teaching Assistant- Case Western Reserve University 2009-2010

- Laboratory assistant for “Introductory Physics I,” “Advanced Laboratory Physics II”

AWARDS

Case Western Reserve University Young Alumni Award 2022

OUTREACH

Astronomy Consultant- *Guinness World Records* 2021-present

Updating and adding astronomy-related records for the print edition of GWR

Reddit account, “/u/Andromeda321” 2014-present

Top 100 Reddit account, known for informative astronomy posts and comments that begin with the tagline “astronomer here!” Over 3 million upvotes on content, 20,000+ followers on account and dedicated subreddit

20+ Public Science Lectures 2016-present

For groups including but not limited to Astronomy on Tap/ Café Scientifique events, libraries, high school students, public observing nights at CfA and UofT, Society of Physics Students, and others

50+ news articles with quotes including *The Washington Post*, *Science*, *Nature*, *Nautilus*, *Forbes*, *Astronomy*, *Universe Today*, *Science Alert*, *Inverse*, and others

Scientific Writing- Selected Publications

- “Gravitational-Wave Observatory Obtains Mass of Discoveries.” *Discover*, July/August 2022 issue
- “Researchers Spy a Fast Radio Burst with a Periodic Signal.” *Astronomy* website, July 28, 2022
- “How do Black Holes Swallow Stars?” *Astronomy*, December 2021 issue
- “What Does the Future of Astronomy Hold? We’ll Find Out Soon.” *Discover*, September/October 2020 issue
- “Hot ‘Blob’ points to a neutron star in Supernova 1987A.” *Astronomy* website, August 6, 2020
- “Astronomers Think they can Find the Sun’s Lost Siblings.” *Astronomy*, July 2020
- “Riding Along with a Stratospheric Telescope.” *Scientific American* blog, March 2020
- “Cosmic Firecrackers: The Mystery of Fast Radio Bursts.” *Astronomy* (cover article), February 2018.
- “The Standard Model of Physics at 50.” *Scientific American* blog, 2018.
- “Didn’t Scientists Already Know Where Cosmic Rays Come From?” *Scientific American* blog, September 2017.
- “When will it be ‘Game Over’ for the Universe?” *Discover*, March 2017.
- “Stuff Physicists Don’t Understand: Sonoluminescence” *Scientific American* blog, Oct 2016.
- “Untangling the Magnetic Universe.” *Astronomy*, April 2016.
- “The Weirdest Star in the Universe.” *Astronomy*, September 2015.

- “Anomaly from Above.” *Discover*, June 2015.
- “The Telescope at the End of the World.” *Astronomy*, February 2015.
- “The Secret Lives of Supermassive Stars.” *Astronomy*, May 2014.
- “Tuning in to Radio Jupiters.” *Sky & Telescope*, January 2014.
- “A New Eye on the Violent Universe.” *Astronomy*, March 2013- cover article, nominated for the American Institute of Physics Science Communication Awards
- “Tales from the Dwingeloo Radio Observatory.” *Sky & Telescope*, January 2013.

Public Lectures

- “Cosmic Explosions” Salem Brewery Science Night, December 2021
- “Cosmic Explosions” Rhode Island Skyscrapers, November 2021
- “Cosmic Explosions” CfA public Observing Night, October 2021
- “Cosmic Explosions” Rose City Astronomy Club, April 2021
- “Supernovae: Witnessing Cosmic Explosions Firsthand.” Astronomy on Tap- Bonn, March 2021.
- “Black Holes and Tidal Disruption Events” Astronomy on Tap- Dallas, November 2020
- “Supernovae: Witnessing Cosmic Explosions Firsthand.” Norwood High School virtual talk
- “Supernovae: Witnessing Cosmic Explosions Firsthand.” Astronomy on Tap- Boston, March 2020.
- “The Life And Times of Supernovae.” Brentwood Library, Toronto, July 2018.
- “Is Anybody Out There?” panel discussion, Astronomy & Space Exploration Society, University of Toronto, March 2018
- “Supernovae: Witnessing Cosmic Explosions Firsthand.” Astronomy on Tap Toronto, November 2017.
- The Life and Times of SN 1987A.” Astrotours, University of Toronto, May 2017
- “Capturing Cosmic Ray Monsters.” Science Café Cleveland, 2010.

Other Media Appearances

- “Local Astronomers React to James Webb Space Telescope Images,” *Morning Edition*, WGBH, July 13, 2022
- “Stellar Destruction with Dr. Yvette Cendes,” Starts with a Bang Podcast, January 2022
- “Astronomy Year in Review,” Television Interview, CP 24 Toronto, December 2017.
- “Is Star Wars allemaal fantasie, of leven er toch ergens Wookiees?” radio appearance, Amsterdam FM (December 2015)

- Various radio Appearances, “English Breakfast Radio,” Wereld 99.4FM- Amsterdam (2014)
- Reddit “Ask Me Anything” (AMA) Events- November 2017, October 2015, September 2014
- Radio Appearance, “The Sound of Ideas,” WCPN (NPR station) 90.3FM- Cleveland, OH (2010)
- Various amateur (“Ham”) radio activities and promotions (licensed since 2002, callsign KB3HTS)

REFERENCES

Prof. Edo Berger, eberger@cfa.harvard.edu
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