

# Yvette Nora Cendes

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## EDUCATION

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### 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

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### Postdoctoral Fellow of Astronomy

2019-present

- Research focusing on astronomical transients in X-ray and radio frequencies, primarily on 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. Alexander Tielens (Leiden), Prof. Bryan Gaensler (Toronto))

### 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)

**PRESENTATIONS AND MEETINGS**

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*Invited Talks:*

<b>Colloquium, University of Texas- Arlington</b>	virtual
Tuning in to Cosmic Radio Explosions	3/2021
<b>Colloquium, University of Texas- Dallas</b>	virtual
Tuning in to Cosmic Radio Explosions	3/2021
<b>Astronomy Seminar, University of Pittsburgh</b>	virtual
Observing Slow Radio Transients, from Intermediate-Aged SNe to TDEs	9/2020
<b>Astronomy Seminar, University of Pittsburgh</b>	virtual
Observing Slow Radio Transients, from Intermediate-Aged SNe to TDEs	9/2020
<b>Seminar: Center for Astrophysics   Harvard &amp; Smithsonian</b>	Cambridge, MA, USA
Ongoing Monitoring of the Tidal Disruption Event Swift J1644+57	2/2020

*Conference Presentations: (12 talks, 4 posters)*

<b>HEAD Seminar Series</b>	virtual
Ongoing Monitoring of the Tidal Disruption Event Swift J1644+57	7/2020
<b>223<sup>rd</sup> American Astronomical Society Meeting</b>	Seattle, WA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	5/2019
<b>Shocking Supernovae</b>	Stockholm, Sweden
The Re-Acceleration of the Shockwave from SN 1987A	5/2018
<b>IAU- Communicating Astronomy with the Public 2018</b>	Fukuoka, Japan
Reddit Astronomy: Outreach Using the Front Page of the Internet	3/2018
<b>Aspen 2017 Winter Conference on Fast Radio Bursts</b>	Aspen, CO, USA
Poster: RFI Flagging Implications for Short-Duration Transients	2/2017
<b>Netherlands Astronomy Conference 2016</b>	Dalfsen, The Netherlands
Tuning in the Transient Sky with AARTFAAC	5/2016
<b>LOFAR Science 2016</b>	Zandvoort, The Netherlands
The first Transient Survey with AARTFAAC	5/2016

<b>Science at Low Frequencies II</b>	Albuquerque, NM, USA
Tuning in the Low Frequency Transient Radio Sky with AARTFAAC	12/2015
<b>LOFAR Science 2015</b>	Assen, The Netherlands
2 <sup>nd</sup> LOFAR Users Meeting- Transients KSP Speaker	5/2015
<b>LOFAR Transients Key Science Project Meeting</b>	Jodrell Bank Observatory, UK
Observations of Swift J1644+57 and Implications for Short Duration Transients	9/2014
<b>Transients Key Science Project Meeting</b>	Amsterdam, The Netherlands
A Modified RFI Flagger for Transient Radio Signals	1/2014
<b>The Universe @ Ger's (wave)-length</b>	Groningen, The Netherlands
A Modified RFI Flagger for Transient Radio Signals	11/2013
<b>Explosive Transients: Lighthouses of the Universe</b>	Santorini, Greece
LOFAR Observations of Tidal Disruption Candidate Swift J1644+57	9/2013
<b>Netherlands Astronomy Conference 2014</b>	Lommel, Belgium
Poster: A Modified RFI Flagging Strategy for Transients	5/2013
<b>LOFAR Science Workshop</b>	Dalfsen, The Netherlands
Poster- A Modified RFI Flagger for Transient Radio Signals	3/2013
<b>AAS Meeting #219</b>	Austin, TX, USA
Poster- The AARTFAAC Project: Searching for Transient Radio Signals with LOFAR	1/2012
<i>Department Seminars/Colloquia</i>	
<b>Seminar: Berkeley Radio Astronomy Laboratory</b>	Berkeley, CA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	11/2018
<b>NOAO FLASH Seminar</b>	Tucson, AZ USA
Radio Observations of Nearby Intermediate Aged Supernovae	11/2018
<b>Seminar: NRAO- Socorro</b>	Socorro, NM, USA
Radio Observations of Nearby Intermediate Aged Supernovae	11/2018
<b>Seminar: NASA- Goddard Space Flight Center</b>	Greenbelt, MD, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
<b>Seminar: University of Maryland</b>	College Park, MD, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
<b>Seminar: George Washington University</b>	Washington, DC, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
<b>Seminar: Naval Research Laboratory</b>	Washington, DC, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018

<b>Seminar: NRAO- Charlottesville</b>	Charlottesville, VA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
<b>Seminar: Harvard- Center for Astrophysics</b>	Cambridge, MA, USA
Radio Observations of Nearby Intermediate Aged Supernovae	10/2018
<b>Seminar: Oxford University</b>	Oxford, UK
The Life and Times of SN 1987A	1/2018
<b>Seminar: West Virginia University</b>	Morgantown, WV, USA
The Life and Times of SN 1987A	12/2017
<b>Interstellar Medium Seminar: Leiden Observatory</b>	Leiden, The Netherlands
Recent Radio Observations of SN 1987A	9/2017
<b>G2000 seminar, University of Toronto</b>	Toronto, ON, Canada
First Transient Survey with AARTFAAC	1/2017
<b>Seminar: API</b>	Amsterdam, The Netherlands
How to Be a Science Writer	9/2014
<b>Seminar: API</b>	Amsterdam, The Netherlands
A Modified RFI Flagger for Transient Radio Signals	9/2013

## **PROPOSALS**

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<b>Principal Investigator, MeerKAT</b>	2021
MKT-20119 proposal, “Measuring the True Occurance Rate of Jets in TDEs via Late-Time MeerKAT Observations”	
<b>Principal Investigator, VLA</b>	2020
21A-349 proposal, “Follow-Up of Emission from a Very Young M-Dwarf Discovered in VLASS”	
<b>Principal Investigator, VLA</b>	2020
20B-249 proposal, “Follow-Up of Potential Exoplanet Radio Emission from the 51 Eri System	
<b>Principal Investigator, VLA</b>	2018
• 19A-398 proposal, “VLA Observations for Intermediate Aged Type Ia SNe”	
<b>Principal Investigator, LOFAR</b>	2016
• Cycle 5 proposal, “Imaging the Pulsars in Globular Cluster M13”	
<b>Co-Investigator, ATCA</b>	2017-2018
• Semester 2018OCTS, 2017OCTS, 2017 APRS, “Supernova 1987A”	

## SERVICE

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- Social and Recreational Committee, Harvard CfA (2020-present)
- Admissions Committee, Dunlap Instrumentation Summer School (2018)
- Volunteer, Astrotours and Astronomy on Tap, University of Toronto (2017-2018)
- Assistant, Ph.D. Recruitment, Anton Pannekoek Institute (2013-2015)
- Astrobites Contributor and Editor (2013-2015)
- Astrobites hiring committee (2014-2015)
- Member, American Astronomical Society (AAS) (2011-present)

## TEACHING AND ADVISING EXPERIENCE

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### **Principal Supervisor, Research Experience for Undergraduates Program 2020**

- Supervised Jafr Tayar-Shabazz (Florida International University) on a project on radio survey data which resulted in a VLA proposal

### **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 “3<sup>rd</sup> Year Practicum,” “Astrofysica,” “M.Sc. Practicum”

### **Teaching Assistant- Case Western Reserve University** 2009-2010

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

## OUTREACH

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### *Selected Publications*

- “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*

- “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*

- “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)

## **RESEARCH PUBLICATIONS**

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### **Refereed Publications**

#### *First Author:*

1. Radio Monitoring of the Tidal Disruption Event Swift J164449.3+573451. IV. Continued Fading and Non-Relativistic Expansion. **Y. Cendes** et al. 2021, ApJ, *in press*. [arxiv:2011.00074]
2. 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]

3. The Re-Acceleration of the Shockwave in the Radio Remnant of SN 1987A. **Y. Cendes** et al. 2018, ApJ, 867, 65. [arxiv: 1809.02364]
4. RFI flagging implications for short-duration transients. **Cendes, Y.** et al. 2018, Astronomy and Computing, 23, p. 103-114. [arxiv: 1804:04708]  
*Coauthor:*
5. Identifying transient and variable sources in radio images. Rowlinson, A. & 18 others including **Y. Cendes**. *submitted to Astronomy and Computing*. [1808.07781]
6. 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]
7. 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]
8. 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]
9. 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]
10. 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:*

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

#### *Telegrams:*

12. Supernova 2015Q in NGC 3888 = Psn J11473508+5558147, Central Bureau Electronic Telegrams, 4128, 1 (2015). Wiggins, P. & 49 authors including **Cendes, Y.**
13. ASASSN-15lu is a Type Ia Supernova, The Astronomer's Telegram, #7707 (2015) Leonard, D. C. & 47 others including **Cendes, Y.**
14. Optical Spectroscopy of PSN J15044078+1237436, The Astronomer's Telegram, #7690 (2015) Leonard, D. C. & 47 others including **Cendes, Y.**

15. 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.**
16. ASASSN-15lo is a Post-Maximum Normal Type Ia Supernova, The Astronomer's Telegram, #7675  
Leonard, D. C. & 47 others including **Cendes, Y.**

## REFERENCES

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Dr. Maria Drout, [maria.drout@utoronto.ca](mailto:maria.drout@utoronto.ca)  
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