

# Chi H. Nguyen

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## Education

- 2015 - Present **Ph.D. in Astrophysical Sciences and Technology** *Expected 2021*  
The Rochester Institute of Technology, Rochester, NY.  
Advisor: Michael Zemcov  
Dissertation: *The Cosmic Infrared Background Experiments (CIBER): Probing Large-Scale Structure Formation Using Near-Infrared Sounding Rocket Payloads*
- 2011 - 2015 **B.Sc. with Honors in Astronomy** *Magna Cum Laude*  
The University of Arizona, Tucson, AZ.  
Advisor: Daniel Marrone  
Thesis: *Receiver Selection and Calibration Unit for Event Horizon Telescope (EHT) – South Pole Telescope (SPT) (RESCUES)*.

## Appointments

- 2016 - Present Graduate Research Assistant, The Rochester Institute of Technology, NY
- Designed, integrated, and characterized CIBER-2 payload and detectors.
  - Built software to control ground equipment and livestream telemetered data.
  - Developed reduction pipeline for CIBER-2 and noise models of CIBER-1.
- 2017 - 2019 CIBER-2 Visiting Student Researcher, The California Institute of Technology, CA
- 2015 - 2016 Graduate Teaching Assistant, The Rochester Institute of Technology, NY
- 2013 - 2015 Telescope Operator, The University of Arizona, AZ
- 2012 - 2015 Undergraduate Research Assistant, The University of Arizona, AZ
- Designed a mirror mount and a thermal calibration system for a radio cryostat.
  - Reduced exoplanet transit light curves from *Kepler*, ground-based observations.
  - Studied ultrasonic wave diagnostic in non-destructive structural monitoring.

## Grants, Fellowships, and Awards

- 2020 Breakthrough Prize in Fundamental Physics, *shared with the EHT Collaboration*
- 2017 - 2020 NASA Earth and Space Sciences Fellowship
- 2018 Chambliss Astronomy Achievement Award, The American Astronomical Society
- 2015 Excellence in Undergraduate Astronomy Research, The University of Arizona
- 2013 Galileo Circle Scholarship, The University of Arizona
- 2012 - 2015 Department of Astronomy and Steward Observatory Scholarships
- 2012 - 2013 Honors College Research Grant
- 2011 - 2015 International Tuition Award
- 2011 - 2014 Dean's List, The University of Arizona

## Relevant Skills

- Analytical: Fourier analysis, time-stream and image-space reduction & calibration.
- Programming: Matlab, C/C++, Qt, Python, GNU Bash, IDL, HTML/CSS, Unix/Linux.
- Software: SolidWorks/Autodesk Inventor; familiar with rocket telemetry data protocol.
- Experienced in designing & operating cryogenic instruments, automating hardware operation, developing lab apparatus & safety procedure, handling detectors.
- Experienced in mentoring a team of interdisciplinary undergraduate and graduate students.

## Synergetic Activities

2020 - Present	AST Diversity, Equity, and Inclusivity Working Group
2019 - Present	Astronomy Ambassador, The American Astronomical Society
2018 - Present	RIT College of Science Student Advisory Board
2017 - Present	RIT Graduate Student Advisory Council, co-chair in 2018 - 2019
2016 - Present	RIT Women in Science Volunteer
2020	RIT COVID-19 Fall Re-opening Community Readiness Review Committee
2019	12th Great Lakes Cosmology Workshop Local Organizing Committee
2017	Conference for Undergraduate Women in Physics Local Organizing Committee
2014 - 2015	University of Arizona Physics Outreach Discovery Team
2012 - 2015	University of Arizona Astronomy Club
2012 - 2015	Tucson Women in Astronomy
2012 - 2014	Summer Engineering Workshop Volunteer, The University of Arizona
2012 - 2013	Global Ambassador/Peer Integrator, The University of Arizona

## Selected Talks and Posters

2019	<i>Probing Structure Formation with the Cosmic Infrared Background Experiment 2</i> NASA Earth and Space Science Fellowship - Astrophysics Division Forum Talk, The 233rd Meeting of the American Astronomical Society
2018	<i>Integration and Instrument Characterization of the Cosmic Infrared Background Experiment 2 (CIBER-2)</i> Poster, SPIE Astronomical Telescopes + Instrumentation
2018	<i>The Science and Prospect of Astrophysical Observations with New Horizon</i> Poster, The 231st Meeting of the American Astronomical Society
2015	<i>Receiver Selection and Calibration Units for EHT-SPT (RESCUES)</i> Talk, The University of Arizona Department of Astronomy Senior Symposium

## List of Publications

### Refereed

- Event Horizon Telescope Collaboration, et al. 2019. “First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole.” *ApJ*, 875(1):L1.  
Contribution: instrumentation of the South Pole Telescope cryostat.
- Event Horizon Telescope Collaboration, et al. 2019, “First M87 Event Horizon Telescope Results. II. Array and Instrumentation.” *ApJ*, 875(1):L2.  
Contribution: instrumentation of the South Pole Telescope cryostat.
- M. Zemcov, I. Arcavi, R. Arendt, E. Bachelet, et al. 2018, “Astrophysics with New Horizons: Making the Most of a Generational Opportunity.” *PASP*, 130(993):115001.  
Contribution: selected *New Horizons* data sets to measure the extragalactic background light.
- J. Kim, D. P. Marrone, A. L. Roy, et al. 2018, “The 1.4 mm Core of Centaurus A: First VLBI Results with the South Pole Telescope.” *ApJ*, 861(2):129, July 2018.  
Contribution: instrumentation of the South Pole Telescope cryostat.
- M. Zemcov, P. Immel, **C. Nguyen**, et al. 2017, “Measurement of the cosmic optical background using the long range reconnaissance imager on New Horizons.” *Nat. Comm.*, 8:15003.  
Contribution: reduced LORRI data to measure the extragalactic background light.

### Proceedings

- C. H. Nguyen**, B. Stewart, S.-C. Bang, et al. 2018, “Integration and instrument characterization of the cosmic infrared background experiment 2 (CIBER-2).” *Proc. SPIE*, 106984J.
- W.-K. Park, S.-C. Bang, J. Battle, et al. 2018, “Development of data storage system and GSE for cosmic infrared background experiment 2 (CIBER-2).” *Proc. SPIE*, 1069849.  
Contribution: designed CIBER-2 payload.
- J. Kim, D. P. Marrone, C. Beaudoin, et al. 2018, “A VLBI receiving system for the South Pole Telescope.” *Proc. SPIE*, 107082S.  
Contribution: instrumentation of the South Pole Telescope cryostat.