

# Logan Paul Selph

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## Education

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### **BS, Astrophysics; Honors Laureate, Highest Honors**

University of North Carolina at Chapel Hill (UNC), May 2024

Senior Thesis: "Algorithm and Tool Development for Skynet's New Multi-Wavelength and Multi-Messenger Curriculum"

PI: Dr. Daniel E. Reichart

## Research/Work Experience

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### **Undergraduate Research Assistant, SKYNET UNC, August 2021 - Present**

- Joined the SKYNET astrophysics research group in fall of 2021. Here I have been involved in many of the groups projects since then including: travelling to the Cerro Tololo Inter-American Observatory in Chile to repair and upgrade telescope equipment, completing the gravitational wave modeling tool (Gravity-mancer) for use in the MWU! educational curriculum, aiding in completing other MWU! educational tools, creating a robust statistical cosmetic correction algorithm for use in SKYNET's data processing software Afterglow, and creating another color scaling algorithm in Afterglow that gives true human eye RGB color scaling to radio images.

### **Educational Research in Radio Astronomy, August 2022**

- Attended the ERIRA program coordinated by University of North Carolina-Chapel Hill at Green Bank Observatory (GBO). Gained direct experience operating the 12-meter radio telescope, the 20-meter radio telescope, and PROMPT array remotely. Worked in focus groups to complete research projects that recreated some of the most important radio astronomy findings of the past century, which were then presented to the collective group.

## Leadership & Outreach

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### **Educational Research in Radio Astronomy, August 2023**

- Attended the ERIRA program coordinated by University of North Carolina-Chapel Hill as a radio astronomy educator. Assisted student led groups in achieving their research goals through observations conducted using the 12- and 20-meter radio telescopes at the GBO.

### **Students for the Exploration and Development of Space (SEDS), August 2023 - Present**

- President/Founder of SEDS: Responsible for organizing meetings, planning events, and promoting UNC's new SEDS club. Also responsible for conducting bi-weekly general body and executive board meetings with the focus of teaching students more about the clubs focus, this semester being aerospace engineering and model rocketry.

### **Morehead Planetarium Observatory Guest Nights, August 2022 - Present**

- Volunteer guest night operator, responsible for teaching our public participants about our Observatory, what astronomy research is like, and letting them observe themselves both on the Morehead 24-inch telescope and on SKYNET's own PROMPT telescopes in Chile.

### **Society of Physics Students (SPS), 2022 - Present**

- Treasurer of SPS: Responsible for communicating with the UNC Physics Department to allocate our yearly budget as well as maintaining and tracking the use of our resources for meetings, outreach events, and other activities. I was also responsible for attending weekly executive board meetings to prepare for future general body meetings and events.

## NC Star Party, April 2018 - August 2019

- Volunteer at educational booths during the annual NC Star Party. Here I helped teach the public about the more complex topic associated with the theme of the year, and answer any questions they would have about astronomy and research.

## Presentations & Publications

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**Selph, Logan P.**; Keohane, Michael; Freed, Rachel; Torian, John; Reichart, Daniel E.; Moffett, David; Keohane, Jonathan. "Skynet Astromancer Suite: Gravitymancer" *Astronomy Education Journal*, Accepted for Publication May 2024.

**Selph, Logan P.**; Reichart, Daniel E.; Kouprainov, Vladimir. "Development of Different Skynet Systems for Astronomy Education and Gravitational Wave Research" Poster Presentation at the NC Space Symposium, North Carolina State University, Raleigh, North Carolina. April 2023.

**Selph, Logan P.**; Reichart, Daniel E.; Kouprainov, Vladimir. "Development of Different Skynet Systems for Astronomy Education and Gravitational Wave Research" Poster Presentation at the UNC Celebration of Undergraduate Research, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. April 2023.

## Grants & Funded Research

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### NC Space Grant Undergraduate Recipient, Summer 2023 - Summer 2024

- An \$8,000 NC State and NASA funded research grant continuing their support for another full year of research. Along with this students are responsible for doing a full report on their research and presenting a poster at their annual NC Space Grant Symposium.

### NC Space Grant Undergraduate Recipient, Summer 2022 - Summer 2023

- An \$8,000 NC State and NASA funded research grant providing support to a full year of research under a chosen faculty member at the students university. Along with this students are responsible for doing a full report on their research and presenting a poster at their annual NC Space Grant Symposium.

### UNC SURF Grant Undergraduate Recipient, Summer 2022

- A \$4,000 UNC funded research grant provided to students to allow them to continue research with a professor over the summer. Following research students are also required to provide a final report on their research, and present their findings at UNC's annual Celebration of Undergraduate Research.

## Affiliations & Awards

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University of North Carolina at Chapel Hill Honors Laureate, May 2024: Distinction for being accepted to, and completing, the UNC Honors Carolina program.

Robert N. Shelton Award for Outstanding Research, May 2023: awarded by the department of physics at the University of North Carolina at Chapel Hill recognizing significant achievements in research.

Col John H Robinson Scholarship, Fall 2020 - Spring 2024: A \$40,000 merit based scholarship covering the full cost of tuition and fees at UNC over 4 years.

The Dayton Amateur Radio Association Scholarship, Fall 2020 - Spring 2021: An ARRL affiliated amateur radio club merit based scholarship for the 2020-2021 academic year awarding \$1,500, and matched fully by another grant from Amateur Radio Digital Communications, Inc.

Student Member, SPS National, October 2021 - Present

Junior Member, American Physical Society, November 2021 - Present

## Skills

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### Coding Languages

- Python
- JavaScript and TypeScript
- HTML / CSS
- LaTeX
- MATLAB

### Instrumentation

- CAD and 3D printing experience
- 0.41- and 0.6-meter optical telescope operating experience, including maintenance and repair
- 12- and 20-meter radio telescope operating experience