

# Chase Masao Urasaki - Curriculum Vitae

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chasemu@hawaii.edu

chase-urasaki.github.io

## Education

### University of Hawai'i at Manoa

M.S. in Electrical Engineering (Electrophysics Track), 2021 - Present

B.S. in Astrophysics, 2015 - 2019

B.S. in Mathematics, 2015 - 2019

## Research Experience

### Graduate Research Assistant (Aug 2022 - Present)

University of Hawai'i - Hawai'i Space Flight Laboratory

Hyperspectral Thermal Imager (HyTI) with Dr. Frances Zhu & Dr. Michael Bottom

- Developing an optical method to measure and characterize micro-vibrations in the HyTI CubeSat.
- Analyze the micro-vibrations caused by the reaction control system and payload.
- Determine the effects on pointing accuracy and extrapolate results for future CubeSats made for astronomical observations.

### Graduate Research Assistant (Jan 2021 - Aug 2022)

University of Hawai'i Institute for Astronomy (IfA)

699 Research Project with Dr. Karen Meech

- Used a sublimation model to investigate the activity of C/2014 S2.
- Concluded this is a dynamically old long period comet with H<sub>2</sub>O and CO<sub>2</sub> driven activity.
- Preparing results for publication in the *Planetary Science Journal*.

### Undergraduate Research Assistant (Jan 2019 - Dec 2019)

University of Hawai'i IfA

Diffraction Limited Near Infrared Spectropolarimeter (DL-NIRSP) with Peter Onaka

- Used Python to estimate the thermal background from optical configuration for the DL-NIRSP on the Daniel K. Inouye Solar Telescope (DKIST) as part of senior research project.
- Used this to help address excess radiation outside of the sensor's reported sensitivity cutoff.
- Simulated the effect on a spectral line measurement incorporating facility optics.

### Intern at Daniel K. Inouye Solar Telescope (Jun 2019 - Aug 2019)

Daniel K. Inouye Solar Telescope - Akamai Workforce Initiative

Atmospheric Transmission Update to DKIST Flux Budget with Dr. David Harrington & Dr. Andre Fehlmann

- Conducted a variable assessment of the impacts of the atmosphere on solar observation.
- Used MODTRAN and Python to model atmospheres using the results of the assessment.
- Created a database of models to be used in the Flux Budget and instrument performance modeling.

### Digital Data Management Assistant (May 2017 - Aug 2018)

University of Hawai'i IfA

Cosmicflows4 Distance Measurements with Dr. Ehsan Kourkchi

- Conducted photometric measurements of galaxies to deduce their distances in order to map the large scale structure of the Local universe.
- Helped to develop the Python prototype of the Galaxy Inclination Zoo, a GUI tool made to estimate the inclinations of galaxies which were previously unknown.
- Used inclinations from the Galaxy Inclination Zoo to adjust magnitude and line width measurements to calculate their approximate distances.

### Lab Assistant (Aug 2016 - Aug 2017)

University of Hawai'i High Energy Physics Group

NuLat Project with Dr. Jelena Maricic

- Performed measurements to determine the optimum configuration of light guides and the photomultiplier tubes to maximize integrated charge yield to be used in the optical lattice of the NuLat detector for sterile neutrinos.
- Prepared reports and updates to the project team.

## Publications & Papers

### Refereed Contributing Author

Slemp, L., et al. (including Urasaki, C.), “Possible Activity in 468861 (2013 LU28)”, *PSJ*, 3, 34.

Kourkchi, E., et al. (including Urasaki, C.), “Cosmicflows-4: The Catalog of  $\sim 10000$  Tully-Fisher Distances”, *ApJ*, 902:145, Oct. 2020

### In Prep and Others

Urasaki, C., Meech, K., et al., “Comet C/2014 S2 (PANSTARRS)”,  
*Preparing manuscript for publication in PSJ*

Urasaki, C., “Using MODTRAN to Create an Extensive Spectral Database for the DKIST Flux Budget”,  
*Submitted as a technical note*

## Presentations & Conferences

### Talks

54<sup>th</sup> Division of Planetary Sciences Meeting - Oct. 2022  
*Activity of Comet C/2014 S2 (PANSTARRS)*

## Programming Skills

### Proficient

Python, L<sup>A</sup>T<sub>E</sub>X, Linux

### Novice

MATLAB, Bash, Julia, C++

## Teaching, Outreach, & Service

### Graduate Teaching Assistant (Jan 2022 - Present)

University of Hawai'i Department of Physics and Astronomy

- PHYS 151L: College Physics Lab I
- PHYS 170L: General Physics I Lab

*Nominated for Frances Davis Award for Excellence in Undergraduate Teaching for 2022 - 2023*

### Committee Clerk (Jan 2020 - May 2021)

Hawai'i State House of Representatives

Representative Justin Woodson - Committee on Education

- Coordinate meetings and public hearings for the committee in accordance within the legislative timetable.
- Analyze legislation, review testimony, and handle inquires from the general public and other legislators.

### Tutor (Aug 2016 - Dec 2019)

University of Hawai'i Learning Assistance Center

- Facilitated learning for students in the areas of math, physics, and chemistry.
- Practiced interpersonal communication and empathy with students from various levels of understanding and background.
- Learned about and implemented multiple educational psychology theories in order to help students succeed.

### Associated Students of the University of Hawai'i (May 2016 - Dec 2019)

University of Hawai'i at Manoa Undergraduate Student Government

- Represented and advocated for peers in regards to issues surrounding the University at the administrative level and at the state legislature.