

FEDERICA CHITI

Astronomy PhD Candidate, University of Hawaii at Mānoa

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Education

Institute for Astronomy, University of Hawai‘i at Mānoa PhD, Astronomy — Advisor: Jennifer van Saders	2023 - Present Honolulu, USA
Institute for Astronomy, University of Hawai‘i at Mānoa MSc, Astronomy	2021 - 2023 Honolulu, USA
University of Dundee BSc (Hons), Physics with Astrophysics — Advisor: Aurora Sicilia-Aguilar	2017 - 2021 Dundee, UK

Research Experience

Graduate Research Assistant University of Hawai‘i at Mānoa	2022-2023 Honolulu, USA
• Project: Anchoring Rotational Evolutionary Models at the Fully Convective Boundaries using Wide Binary Systems	
Graduate Researcher University of Hawai‘i at Mānoa	2021-2022 Honolulu, USA
• Project: IRTF/iSHELL High-resolution Spectroscopy of Protoplanetary Disks	
Carnegie Vacation Scholar University of Pisa, University of Dundee	2020 Italy, UK
• Project: Testing Spectrophotometry as a Tool for Hot Jupiters Transit Detection	
Cormarck Undergraduate Vacation Scholar University of Dundee	2019 Dundee, UK
• Project: Investigating the Effect of Electric Current in The Solar Corona through Magnetic Null Points of Stellar Magnetic Fields	
Undergraduate DEBRA Researcher University of Dundee	2018 Dundee, UK
• Project: Cooling footwear technology for Pachyonychia Congenita Patients.	

Grants & Awards

NSF Astronomy and Astrophysics Research Grant, Collaborative Research Key Person	2025
Aloha Data: AI Hackathon for Hawai‘i’s Resilience, UH First Place	2025
Hannah Liebreich Merit Based Award for Excellence in Teaching, , UH	2023
East-West Center Fellowship	2023
Chambliss Astronomy Achievement Award, 241st AAS meeting, Seattle, WA Honorable Mention	2023
British Association 1939 Prize, UoD Top graduating undergraduate in the Faculty of Science & Engineering	2021
Peter Le Comber Prize, UoD Top graduating physics undergraduate	2021
James Durham Bursary, UoD Top junior physics student	2020
Winifred Mackie Smith Prize, UoD Top sophomore physics student	2019
Royal Society of Edinburgh Award Top RSE Cormarck Vacation Scholar	2019
Enterprise Challenge - Best Business Idea at UoD First Place	2018
School of Science & Engineering Award, UoD Top freshman physics student	2018
Rotary Club Outstanding Committment Award, Italy	2017

Telescope Time

“Constraints on the Magnetic Morphology of K-dwarfs During Spin-Down Stalling” LBT (Co-PI, 16 hours)	2025
“Probing Surface Activity of K-dwarfs in the Hyades During Stalled Braking” CFHT/SPIRou (PI, 12 hours)	2025
“Probing the Magnetic Field Morphology of the Grand Minimum Star...” CFHT/ESPaDOnS, SPIRou (PI, 11 hours)	2025
“Organic Inventory of Protoplanetary Disks” NASA IRTF/iSHELL (Co-PI, 11.5 hours)	2023

Publications

First Author

1. **Chiti F.**, van Saders J. L., Kochukhov O., Metcalfe T. S., Spectropolarimetric Constraints on the Maunder Minimum Analog HD 166620: Evidence for Weakened Magnetic Braking, 2026, Submitted to ApJL.
2. **Chiti F.**, Kochukhov O., van Saders J. L., Metcalfe T. S., [Zeeman Doppler Imaging of \$\tau\$ Ceti: The Weakest Magnetic Field Detected in a Sun-like Star](#), 2025, ApJL, 991, L13.
3. **Chiti F.**, van Saders J. L., Heintz T. M., Hermes J. J. et al., [Rotation at the Fully Convective Boundary: Insights from Wide WD + MS Binary Systems](#), 2024, ApJ, 977, 15.

Co-Author

1. Lee R., Dai F., Price E.M. et al. including **Chiti F.**, Revisiting the Exo-Mercury Candidate GJ 367 b with ESPRESSO and a Self-Consistent Tidal Distortion Model, 2025 (submitted to ApJ).
2. Pallister R., Wyper P.F., Pontin D. I. et al. including **Chiti F.** [Spatially Separated Electron and Proton Beams in a Simulated Solar Coronal Jet](#), 2021, ApJ, 923, 163.

Software

1. **Chiti F.**, [Null Finder](#), 2020, Zenodo.

Advising

Advisor , Reina Mae Lana HI STAR Research, Baldwin High School	June 2025
Advisor , Lyngel Pague HI STAR Research, Baldwin High School	June 2025
Advisor , Anthony Phillips HI STAR Research, Montessori School of Maui	June 2025
Advisor , Jahnea Ordona Maunakea Scholars & NASA Earth System Project Award	October 2022 - May 2023

Teaching & Outreach

Graduate Teaching Assistant ASTR 300L/301 Observational Astronomy, University of Hawaii	2021-2022
Undergraduate Teaching Assistant PH21002 Introduction to Programming, University of Dundee	2019-2021
“Search for Habitable Worlds”, Public lecture, Da Shop Honolulu	September 2023
Institute for Astronomy Open House, Honolulu	April 2022/23/25
AstroDay at Prince Kuhio Plaza, Maunakea Observatories	May 2022/24
Hawaii Geek Meet	September 2022

Service & Leadership

LOC Member, TESS/Kepler Asteroseismic Science Consortium, University of Hawaii	2023
Graduate Representative of the Undergraduate Students, University of Hawai‘i at Mānoa	2022-2023
Student Voice Support Officer, University of Dundee	2019 - 2021

Talks

Invited Talks

“The Power and Puzzles of Stellar Rotation as a Chronometer”, Seminar at Uppsala University, Sweden	2025
“The Power and Puzzles of Stellar Rotation as a Chronometer”, Seminar at Stockholm University, Sweden	2025

Contributed Talks

“The Impact of Magnetic Field Morphology on Stellar...”, Dissertation Proposal, University of Hawai‘i	September 2024
“Stellar spin-down and Magnetic Activity at the Fully Convective...”, Cool Stars 22, University of San Diego	June 2024
“Rotation at the Fully-Convective Boundary: New Insights from...”, TASC7 / KASC14, University of Hawai‘i	July 2023
“Gyrochronology Challenges at the Fully-Convective Boundary:...”, University of Hawai‘i	May 2023
“High-Resolution Infrared Spectroscopy of Organics...”, University of Hawai‘i	September 2022

Posters

“IRTF/iSHELL High-Resolution Spectroscopy of Organics in Protoplanetary Disks”, AAS 241, Seattle, WA	2023
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Certifications

Fundamentals of Deep Learning, NVIDIA	2025
Applications of AI for Anomaly Detection, NVIDIA	2025