VICTORIA SOFÍA CATÁN VALENZUELA

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PERSONAL SUMMARY

As a second-year MSc student, my primary focus is how galaxies evolve over cosmic time. I study the galaxy's molecular gas characteristics using CO as a tracer and investigate how these characteristics change at different redshifts. I am driven by a strong passion for research and learning, with my main goal being to contribute significant scientific research to the field of extragalactic astrophysics.

EDUCATION

Astrophysics Masters Degree **2024 – Present**
Pontificia Universidad Católica de Chile
Current Grade average (Chilean): 6.73/7
Current Grade average (Official GPA): 4.0/4.0

Astronomy Bachelors Degree **2019 – 2023**
Pontificia Universidad Católica de Chile
Grade average (Chilean): 6.28/7
Grade Average (Official GPA): 3.9/4.0
Ranking: 5/26

RESEARCH EXPERIENCE

MSc Thesis **2024 – PRESENT**
The Extended Mapping Obscuration to Reionization with ALMA (Ex-MORA) Survey: molecular gas content
Under supervision of Dr. Jorge Gonzáles López and Dr. Manuel Aravena

BS Thesis **2022 – 2023**
Molecular gas budget of strongly magnified low-mass star-forming galaxies
Under supervision of Dr. Luis Felipe Barrientos and Dr. Jorge Gonzáles López

ALMA Internship **July 2022**
Automatization of ALMA's proposal handling
Under the supervision of Dr. John Carpenter and MSc Andrea Corvillon

Research Project **2021 – 2022**
QSO classification with probabilistic random forests
Under supervision of Dr. Luis Felipe Barrientos

Summer Internship **January 2021**
Nuclear transients in ALERCE/ZTF
Under supervision of Dr. Franz Bauer

PUBLICATIONS

Molecular gas budget of strongly magnified low-mass star-forming galaxies at cosmic noon
A&A 692, A215 (2024); doi:10.1051/0004-6361/202451892

CONFERENCES & OBSERVATIONS

Talk at SOCHIAS (Sociedad Chilena de la Astronomía) Meeting 2024 **12 Nov. 2024**
Molecular gas budget of strongly magnified low-mass star-forming galaxies at cosmic noon

ASADOS project observations **2025**
APEX observatory with Kevin Harrington, C-0114.F-9703C-2024

TEACHING AND OUTREACH

- **Teaching Assistantships:** Experimental astrophysics (2 terms), Astronomy (6 terms), Santa Martina Teaching Observatory (1 term), A Journey through the Universe (1 term), Physics for kinesiology (1 term), Dynamics workshop (2 terms).
- **Outreach Activities:** PUC-IA outreach Activities (2025), CATA outreach Activities (2025), Manuel Foster Historic Observatory (2022–2023), Física Itinerante (2019–2021).

STUDENT LEADERSHIP

- **Academic Student Council Co-Chair:** **2023**
  - Led a revampment of the Python Graphing Workshop
  - Created the Study Group Initiative for undergrad students after the Pandemic, with the goal of promoting student cohesion and the bettering of study habits.
  - Led the LaTeX workshop for undergrad students
- **Academic Student Council Team Member:** **2021**
  - Created and led the Python Graphing Workshop
  - Designed and implemented mental health workshops

SKILLS, LANGUAGES & INTERESTS

- **Skills:** Python (advanced), LaTeX (basic), CASA/CARTA (intermediate)
- **Languages:** Spanish (Native), English (Advanced), French (B1 level)
- **Research Interests:** Molecular Gas in galaxies, Galaxy evolution, High-redshift galaxies, Data Science