

María Teresa Valdivia Mena

Curriculum Vitae

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Education

- March 2018 - **Master of Science in Astronomy**, *Universidad de Chile*, Santiago, Chile, **Currently enrolled.**
- March 2014 - **Bachelor of Science in Astronomy**, *Universidad de Chile*, Santiago, Chile, Graduated with Highest Distinction.
December 2017
- March 2016 - **Minor in Scientific Computing**, *Universidad de Chile*, Santiago, Chile.
December 2017
- March 2012 - **International Baccalaureate (IB) Diploma**, *Santiago College School*, Santiago, Chile.
December 2013 High Level: Physics, Mathematics and English (Literature). Standard Level: Spanish (Language and Literature), Biology and Psychology

Research Experience

Since 2017, I have been part of Dr. Mónica Rubio's research team at the Department of Astronomy in Universidad de Chile. My research area is Interstellar Medium in low-metallicity environments, in particular, within the Magellanic Clouds. I have analyzed the physical properties of molecular clouds in low-metallicity environments, such as the Magellanic Clouds, using line emissions from the rotational transitions of carbon monoxide and the ^{13}CO isotopologue and also dust continuum emission in the far-infrared and submillimeter regime. I have used far-infrared and millimeter data from the Atacama Large Millimeter/Submillimeter Array (ALMA) and Atacama Pathfinder Explorer (APEX) telescopes, together with archival far-infrared data from the Herschel and Spitzer telescopes.

Proceedings

- August 2019 **Molecular Clouds resolved with ALMA ^{12}CO J=1-0 and J=2-1 observations towards the Magellanic Bridge**, *Valdivia, M. T., Muñoz, M., Rubio, M. and Saldaño, H.*, Boletín de la Asociación Argentina de Astronomía, 61, 134-136.

Conferences and Workshops

- October 14th - 18th, 2018 **ALMA2019: Science Results and Cross-Facility Synergies**, *T-Hotel Cagliari, Cagliari, Italy*, **Poster (Co-Authored with M. Rubio: Cold Gas Survives near R136 in 30 Doradus.**
- October 7th - 11th, 2019 **European Radio Interferometry School 2019**, *Quality Hotel Panorama, Onsala Space Observatory, Gothenburg, Sweden.*
- October 7th - 12th, 2018 **Second Binational AAA-SOCHIAS Meeting**, *Hotel Club La Serena, La Serena, Chile*, **Poster: Molecular Clouds Resolved in $^{12}\text{CO}(1-0)$ and $^{12}\text{CO}(2-1)$ in the Magellanic Bridge.**

- October 1st - 5th, 2018 **II International Astrochemistry School**, *Universidad Autónoma de Chile*, Santiago, Chile.
- August 20-29th, 2018 **La Serena School for Data Science: Applied Tools for Data Driven Sciences**, *Association of Universities for Research in Astronomy (AURA) Campus*, La Serena, Chile, **Project:** *Global Obesity Prevalence: Important Factors and Characteristics*.
- August 9-12th, 2017 **III Congreso de Estudiantes de Ciencias Físicas y Astronómicas**, *Universidad de La Serena*, La Serena, Chile.
- March 6-7th, 2017 **Workshop de Estudiantes de Astronomía**, *Observatorio Astronómico Nacional*, Santiago, Chile, **Talk:** *Characterizations of CO Emissions in MagBridgeC*.

Observing Experience

I have been a Chilean time observer at the Atacama Pathfinder Experiment (APEX) telescope in three occasions: June 2017 (2017A), April 2018 (2018A) and May 2019 (2019A). Together with M. Rubio and A. Bolatto, with me as PI, we have been granted observing time at APEX for period C104 (2019B) to observe cold gas and dust in selected molecular clouds of the Magellanic Bridge. The observations are scheduled for October 20-25th and December 3-8th, 2019.

Teaching Experience

- September 2018 - Present **Teaching Assistant for the course "Experimental Astronomy"**, *Universidad de Chile*, Includes giving classes, marking and supervising activities, Undergraduate course.
- March 2019 - July 2019 **Teaching Assistant for the course "Introduction to Cosmology"**, *Universidad de Chile*, Includes giving classes and marking, Undergraduate course.
- January 2019 **Teaching Assistant for Universidad de Chile's Summer School**, *Escuela de Verano, Universidad de Chile*, Course: Planetary Sciences, High School level.
- September 2017 - October 2017 **Teaching Assistant for the Data Visualization Diploma**, *Pontificia Universidad Católica de Chile*, Diploma Course.
- March 2017 - July 2017 **Teaching Assistance for the course "Mechanics"**, *Universidad de Chile*, Includes giving classes and marking, Undergraduate Course.

Funding and Awards

- July 2018 **Adelina Gutierrez Grant**, *Sociedad Chilena de Astronomía*, The grant funded the assistance to the Second Binational AAA-SOCHIAS Meeting.
- March 2018 **Scholarship for National Master Studies**, *Comisión Nacional de Investigación en Ciencia y Tecnología (CONICYT)*, Chile, The scholarship funds master studies done in Chilean universities.
- 2016-2017 **Outstanding Student in the Bachelor of Science in Astronomy**, *Universidad de Chile*.

Outreach Experience

- July 2018 - Present **Member of "Cazadoras de Estrellas" Project**, *DIRVEX, Universidad de Chile*, This outreach project is lead by a group of female graduate students from the Astronomy Department. The goal is to give high school girls a hands-on experience with astronomical data and meet female astronomers so that they can solve any vocational doubts about this career.

- June 27th 2019 **"Eclipses: Luces y Sombras en el Universo"**, *Public talk, Middle School level*, Municipalidad de El Bosque, Santiago, Chile.
- April 9th, 2019 **"Astroinformática para principiantes"**, *Public talk, High School level*, DUOC UC Puente Alto, Santiago, Chile.
- March 21st, 2019 **"Astroinformática para principiantes"**, *Public talk, General Audience level*, Centro de Extensión de la Universidad de Talca, Talca, Chile.
- June 2018 - November 2018 **Scientific Counselor**, *Liceo Polivalente San José de Maipo*, Festival de Teatro y Ciencias (FETYC), Par Explora Sur Oriente, CONICYT.
The FETYC is a theatre competition organized by the National Commission of Scientific and Technologic Investigation (CONICYT) where several schools prepare a play around a scientific inquiry. The Scientific Counselor guides the scientific content of the plays.
- March 2018 - August 2018 **Tourist Guide**, *National Astronomical Observatory, Departamento de Astronomía, Universidad de Chile*.

Skills and Qualifications

- Languages** English (TOEFL iBT: 113/120), Spanish (Native)
- Programming** Python, Java, C, Matlab/Octave, R, HTML
- Astronomy** CASA (Common Astronomy Software Applications), GILDAS, SAOImage DS9
- Version** GitHub, Google Drive
- Controlling Tools**

Service and Leadership

- April 2019 - Present **Graduate Student Representative**, *Departamento de Astronomía, Universidad de Chile*, Santiago, Chile.
- March 2012 - March 2013 **Social Service Commission Director**, *Student Council*, Santiago College, Santiago, Chile.
- 2005-2012 **Scout Member**, *Miembro del Grupo de Guías y Scouts del Santiago College*, Distrito Los Leones, Santiago, Chile.

References

Prof. Mónica Rubio, *Ph.D in Astrophysics*, Full Professor, Departamento de Astronomía, Universidad de Chile.
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Mauricio Vargas, *Data Analyst*, Datawheel LLC, Cambridge, USA.
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