

# Valeria Olivares

I am an early career researcher in observational astrophysics who uses multi-wavelength observations to study the life-cycle of gas and AGN feedback of central galaxies in clusters and groups.

## CONTACT DETAILS

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## RESEARCH EXPERIENCE & EDUCATION

- 2020 – Current **Postdoctoral Researcher**, *University of Kentucky (US)*.  
2017 – 2020 **Ph.D in Astronomy and Astrophysics**, *Observatoire de Paris (FR)*.  
"Unveiling the origin of filamentary structures around central galaxies in groups and clusters".  
2014 – 2016 **Master in Science, mention Physics**, *Universidad de Concepción (CL)*.  
"High-Resolution Spatially Resolved Spectroscopy of Sub-mm Galaxies at high redshift".  
2010 – 2014 **Major: Astronomy**, *Universidad de Concepción (CL)*.  
2010 – 2013 **Bachelor in Astronomy**, *Universidad de Concepción (CL)*.

## EXPERIENCE

### MENTORING

- 2021 – Current PhD co-supervisor, University of Kentucky, USA.  
"Looking at the properties of the isolated elliptical galaxies using MUSE and *Chandra* observations"

### OBSERVING EXPERIENCE

- 2022 - IRAM 30m telescope, PolyFix, 3 days in remote mode.  
2017 - IRAM 30m telescope, PolyFix, 2 nights in remote mode.  
2016 - Australia Telescope National Facility, Australia Telescope Compact Array (ACTA), 12 nights.  
2015 - Atacama Pathfinder EXperiment (APEX) telescope, bolometer arrays (LABOCA), 10 days.

### GRANTED OBSERVING PROPOSALS

- 2022 – 110.2405.001/110-A/2022, VLT, MUSE, 20 hrs (PI)  
2022 – 084-22/winter/2022, IRAM30m, 24 hrs, grade B (co-PI)  
2022 – 030-22/summer/2022, IRAM30m, 11.5 hrs, grade A (PI)  
2022 – 2022.1.01488.S/cycle9/2022, ALMA, 10 hrs, grade A (PI)  
2021 – 2021.1.01626.S/cycle8/2021, ALMA, ACA, 7 hrs, grade B (co-PI)  
2021 – 2021.1.00776.S/cycle8/2021, ALMA+ACA, 23 hrs, grade B (PI)  
2021 – 23800288/2021, Chandra, 115.00ks (co-PI)  
2021 – 090162/2021, XMM-Newton 155ks (co-PI)  
2020 – 088208/2020, XMM-Newton, 65ks (co-PI)  
2020 – S20BD/Summer/2020, IRAM 30m, PolyFiX, 25.6 hours (co-PI)  
2019 – 2019.2.00122.S/cycle 7/2019, ALMA, ACA instrument, 22.5 hrs (co-PI)  
2019 – 2019.1.01665.S/cycle 7/2019, ALMA, 23 hrs no observed (co-PI)  
2019 – 193-19/Winter/2019, IRAM 30m, PolyFiX, 13 hrs (co-PI)  
2019 – 065-19/Summer/2019, IRAM 30m, PolyFiX, 25 hrs (co-PI)  
2019 – 0102.A-0442/102-A/2019, VLT, MUSE, 8 hrs. (co-PI)

### SERVICES

- Referee of the Astrophysical Journal (ApJ)  
Referee of the Astronomy & Astrophysics (A&A) journal  
Referee of ESO proposals  
Referee of ALMA proposals  
Referee of the IRAM conference proceedings of 2022 Full member of AAS

- 2014 – 2016 Former member of Astronomical Outreach Team (Equipo de divulgacion Astronomica, Universidad de Concepcion, CL)

### TEACHING

- 2015 – 2015 Teaching Assistant for Software and Astronomical data Analysis Classes, *Universidad de Concepción*. Responsibilities include grading and tutorials.
- 2014 – 2014 Teaching Assistant for Programming Classes, *Universidad de Concepción*. Responsibilities include grading and tutorials
- 2013 – 2013 Teaching Assistant for Stellar Astrophysics Classes, *Universidad de Concepción*. Responsibilities include tutorials and lectures.

## OUTREACH

- 2014 – 2016 Advisor at the "Astronomical School Congress", *Universidad de Concepción (Conicyt project)*. Role: Tutor for the participants from elementary and middle schools for 7 scholar projects.
- 2016 Tutor at the "Astronomical School for Professors", *Universidad de Concepción (Conicyt project)*. Role: Lectures for professors from middle and high schools.
- 2014 – 2016 Various outreach activities and lectures with elementary and middle school students.

## TRAINING & SCIENCE VISITS

- 01/2022 - 05/2022 Training – "Leadership and Management in Action Program", *University of Kentucky and University of Washington, US*.  
Comments: Leadership and Management in Action Program, introduce postdocs to the interpersonal and psychological foundations of leading teams and managing people
- 10/2021 - 11/2021 Training – "Postdoc Mentoring Training", *University of Kentucky, US*.  
Comments: Program designed to guide postdocs through some of the challenges and concerns that mentees and mentors encounter in mentoring relationships
- 10/2018 Training – "10th IRAM millimeter interferometry school", *Grenoble, FR*.  
Comments: Workshop to acquire a knowledge of interferometry and data reduction techniques at millimeter wavelengths, with a emphasis on the NOEMA interferometer and its new capabilities
- 02/2016 - 02/2017 Science visit, *Leiden Observatory, NL*.  
Comment: Research collaboration to develop a pipeline to do the data reduction and calibration of ~200 hours of S-Band JVLA data (one pointing)
- 06/2016 Training – "15th Synthesis Imaging Workshop", *NRAO and New Mexico Institute of Mining and Technology, Socorro, US*.  
Comments: The workshop comprised of a week of lectures on aperture synthesis theory and techniques.
- 10/2016 Training – "NOVA fall Academy", *Netherlands Institute for Radio Astronomy (ASTRON), Dwingeloo, NL*.
- 09/2015 Training – "Third La Serena School of Data Science", *AURA Campus, CL*.  
Workshop focused on applied tools for handling big astronomical data. At the end of the workshop a short science project was done: Looking for supermassive black hole binaries in CRTS data.

## PRESS RELEASES & NEWS

- 06/2022 "Black Hole Activity not Evolving in Central Cluster Galaxies".  
from [University of Kentucky](#), from [News Wise](#), and from [Astrobites](#)

## CONTRIBUTED AND INVITED CONFERENCE TALKS

- 01/2023 - AAS241 meeting, Seattle, US (Contributed talk, to come)
- 12/2022 - MMC2022: Multi-phase, Multi-temperature and Complex, ESO Garching, Germany (Contributed talk, to come)
- 07/2022 - NAM2022, UK (via zoom) (Invited talk)
- 06/2022 - AAS240 meeting, Pasadena, US (Invited conference press talk)
- 06/2022 - AAS240 meeting, Pasadena, US (Contributed talk)
- 06/2022 - Multiphase AGN Feeding & Feedback II, Sesto, IT (Invited talk)
- 04/2022 - LYRICS meeting, Paris, FR (Seminar talk)
- 04/2022 - Multi-line Diagnostics of the Interstellar Medium, Nice, FR (Contributed talk)
- 01/2022 - XVII SOCHIAS Meeting, Santiago, CL (via zoom) (Contributed talk)
- 11/2021 - The 1st KIAA Forum on Gas in Galaxies for Early Career Scientists, China (zoom) (Contributed talk)
- 11/2021 - KAS 2021 Annual Meeting, Kentucky, USA (via zoom) (Contributed talk)

06/2021 - Galaxy Cluster Formation II, ESO, Germany (via zoom) (Poster presentation)  
 04/2021 - Kentucky Area Astronomical Society (KAAS) meeting, USA (via zoom) (Contributed talk)  
 01/2021 - Astronomy seminar, University of Kentucky, USA (via zoom) (Invited seminar)  
 09/2020 - Galaxy Cluster group meeting, CfA, USA (via Zoom) (Invited seminar)  
 03/2020 - Galaxy Journal Club, Institut d'Astrophysique de Paris (IAP), FR (Invited talk)  
 03/2020 - IAU Symposium 359, Bento Gonçalves, BR (Invited talk)  
 07/2019 - Tracing Cosmic Evolution with Clusters of Galaxies, Sesto, IT (Contributed talk)  
 06/2019 - EWASS 2019 symposium, Lyon, FR (Contributed talk)  
 10/2018 - IRAM Interferometry School 2018, Grenoble, FR (Poster presentation)  
 09/2018 - 48th YERAC Young European Radio Astronomers Conference, ASTRON, NL (Contributed talk)  
 05/2017 - Paris Observatory, FR (Invited seminar)  
 10/2016 - NOVA fall School for Astronomy, ASTRON, NL (Contributed talk)  
 10/2015 - Lunch Talk, Leiden Observatory, NL (Invited seminar) 07/2015 - Galaxy Evolution Group, Universidad de Concepción, CL (Invited talk)  
 03/2015 - Unveiling the AGN/Galaxy Evolution Connection 2015, Puerto Varas, CL (Poster presentation)

## GRANTS, HONORS & AWARDS

- 2021 – 2024 NSF grant (co-PI), 278,074 USD *Collaborative Research: A Systematic and Comprehensive Study of Black Hole-Driven Turbulence in Massive Galactic Systems*, n. 2107711.
- 2017 – 2020 l'Ecole Doctorale Astronomie et Astrophysique dlle-de-France (ED 127) , 52,92 EUR, for doctoral studies, FR.
  - 2020 IAU travel grant, 500 EUR, awarded to participate of the IAU Symposium 359.
  - 2018 Ecole Doctorale de Paris travel funding, 500 EUR, for attending Interferometry School, FR.
  - 2016 Leids Kerkhoven-Bosscha Fonds (LKBF) (Netherlands), 1,000 EUR, for attending 15th Synthesis Imaging Workshop, US.
  - 2016 Universidad de Concepción prize for Academic Excellence.
- 2014 – 2015 Fellowship for Master Studies, 15,000 USD, Universidad de Concepcion, CL.

## SKILLS

### PROGRAMMING

Python, IDL/GDL, Cluster computing

### DATA REDUCTION & ANALYSIS

- Chandra Imaging and spectra analysis using CIAO and PyXSPEC & Sherpa
- ALMA Calibration and analysis using various versions of CASA.
- Disk modeling Using <sup>3D</sup>Barolo.
- NOEMA/IRAM Calibration and analysis using various using Gildas (MAPPING and CLASS).
- MUSE/SINFONI Data reduction and analysis using various ESOREX, PpXF, Platefit, & ZAP.
- JVLA Data calibration of 3GHz (S-Band) continuum survey (1 pointing, 190 hrs of data), using the JVLA pipeline, CASA, and Python.