

Cristóbal Sifón

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Research Interests

I am an observational astrophysicist. My research focuses on galaxy cluster physics including observable–mass scaling relations for cosmological analyses, brightest cluster galaxies, the mass content of cluster galaxies and diffuse radio emission. I am also interested in intrinsic galaxy alignments, both as contaminants for cosmic shear and as a physical mechanism in their own right. I use various tools and techniques to study these phenomena, including weak gravitational lensing, spectroscopy, the exploitation of optical surveys in general, and most recently analyses involving hydrodynamical simulations.

Collaborations: Atacama Cosmology Telescope (ACT) — Canadian Cluster Comparison Project (CCCP) — Galaxy Cluster Mass Reconstruction Project — Hyper-Suprime Cam survey (HSC) — Kilo-Degree Survey (KiDS) — Large Synoptic Survey Telescope Dark Energy Science Collaboration (LSST-DESC) — Multi-Epoch Nearby Cluster Survey (MENeCS).

Employment and Education

[2016 – Present] Postdoctoral Research Associate, Princeton University, USA
[2012 – 2016] Ph.D. Astrophysics, Universiteit Leiden, The Netherlands
[2010 – 2012] M.Sc. Astrophysics, P. Universidad Católica de Chile, Chile
[2005 – 2010] B.Sc. Astronomy, P. Universidad Católica de Chile, Chile

Internships

[2011] Science Intern, Gemini South Observatory
[2011] Internship, Rutgers University
[2009] Science Intern, Gemini South Observatory (*B.Sc. thesis*)

Teaching & Mentoring

Student Mentoring

[2017 – Present] Naomi Robertson, Oxford University (UK): PhD thesis project co-advising.
[2018 – Present] Malik Walker, Princeton University: Undergraduate Summer Research Program and Junior Project.
[2013] Joshua Albert, Universiteit Leiden: co-advised MSc thesis project.

Teaching Assistant

[Leiden] Stellar dynamics
[U. Católica] Extragalactic astrophysics; Experimental astrophysics; Laboratory of thermodynamics and kinetic theory

Successful Observing Proposals (as PI)

Gemini South – 24 h for imaging and spectroscopy of massive high-redshift galaxy clusters

Giant Metrewave Radio Telescope – 44 h to search for diffuse radio emission in massive galaxy clusters

VLT Survey Telescope – 6 h for weak lensing observations of a massive galaxy cluster

Observing Experience: I have spent roughly 180 hours observing in optical (Gemini South) and near-infrared (La Silla-2.2m) telescopes performing both imaging and spectroscopy of galaxy clusters.

Technical skills

I am an experienced python programmer, and I also have some experience with IRAF/PyRAF. I have written *pygmos*, a Python/PyRAF pipeline to reduce Gemini-GMOS spectra which is available [here](#). Other codes I have written are posted at my [github](#) page.

Community Activity

I have served as a referee for A&A, ApJ, MNRAS, and Nature Astronomy.

Informal courses

[2016] *Making Better Figures*, Universiteit Leiden, <http://bit.ly/2NTznxW>

Outreach

[2018] *Public Astronomical Observations in Spanish*, Princeton University.

[2012] *Astronomy Course for Seniors*, U. Católica.

[2011] *Stars Night*, observation nights for elementary and middle school students in social risk organized by ESO-Santiago.

[2010] Invited talk on board the “FFG14 Almirante Latorre” Chilean Navy ship, Valparaiso, Chile.

[2010] *The Universe*, series of talks for elementary school students in social risk organized by U. Católica.

Other Work Experience

[2007 – 2008] Ski instructor at Homewood Mountain Ski Resort in Lake Tahoe, CA. Obtained the certification as Level I ski instructor by the Professional Ski Instructors of America (PSIA).

[2006 – 2007] Ski lift operator at Sun Valley Resort, Sun Valley, ID.

References

- Prof. Henk Hoekstra (*PhD advisor*)
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 - Prof. L. Felipe Barrientos (*MSc advisor*)
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