# 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 its own right. I use various tools and techniques to study these phenomena, including weak gravitational lensing, spectroscopy, and the exploitation of optical surveys in general. I have presented my work at various conferences, workshops and seminars in Chile, Europe and the US.

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

## Employment and Education

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

## Student Mentoring

*2018* – Undegraduate Summer Research Program, Princeton University
*2017 — Present* – Naomi Robertson, PhD student, Oxford University (UK). Mentoring one of her thesis projects combining data from ACT and KiDS.

## Successful Observing Proposals (as PI)

*Gemini-South Telescope* – 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 (ESO-NTT) 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, and Nature Astronomy.

### Teaching Assistant Experience

*2013-B* – Stellar Dynamics (Leiden, Prof. S. Portegies Zwart)
*2012-A* – Extragalactic Astrophysics (PUC, Prof. L. F. Barrientos)
*2011-A* – Extragalactic Astrophysics (PUC, Prof. L. F. Barrientos)
*2011-A* – Laboratory of Thermodynamics and Kinetic Theory (PUC, Prof. U. Volkmann)
*2010-B* – Experimental Astrophysics (PUC, Prof. L. F. Barrientos)

### 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* – Lift operator at Sun Valley Resort, Sun Valley, ID.

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## References


- Prof. Henk Hoekstra (*PhD advisor*)
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- Prof. John P. Hughes
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