

# Cristóbal Sifón

Postdoctoral Research Associate  
Department of Astrophysical Sciences  
Princeton University  
Peyton Hall, 4 Ivy Ln, Princeton, NJ 08544

E-mail: [sifon@astro.princeton.edu](mailto:sifon@astro.princeton.edu)  
Phone: +1 (609) 258 0026  
<http://www.astro.princeton.edu/~sifon/>  
<https://github.com/cristobal-sifon/>

---

## 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.

### 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, Peyton Hall, 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 at 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*)  
Leiden Observatory, Universiteit Leiden  
Niels Bohrweg 2, NL-2333 CA Leiden, The Netherlands  
Phone: +31 (71) 527 5594  
E-mail: [hoekstra@strw.leidenuniv.nl](mailto:hoekstra@strw.leidenuniv.nl)
  - Prof. David N. Spergel  
Department of Astrophysical Sciences, Princeton University  
4 Ivy Ln, Princeton, NJ 08544, USA  
Phone: +1 (609) 258 3589  
E-mail: [dns@astro.princeton.edu](mailto:dns@astro.princeton.edu)
  - Prof. John P. Hughes  
Department of Physics and Astronomy, Rutgers University  
136 Frelinghuysen Rd., Piscataway, NJ 08854, USA  
Phone: +1 (848) 445 8878  
E-mail: [jph@physics.rutgers.edu](mailto:jph@physics.rutgers.edu)
  - Prof. L. Felipe Barrientos (*MSc advisor*)  
Instituto de Astrofísica, P. Universidad Católica de Chile  
Casilla 306, Santiago 22, Chile  
Phone: +56 (2) 2354 4941  
E-mail: [barrientos@astro.uc.cl](mailto:barrientos@astro.uc.cl)
  - Dr. Felipe Menanteau  
Department of Astronomy, University of Illinois at Urbana-Champaign  
1002 W. Green St., Urbana, IL 61801, USA  
Phone: +1 (217) 244 6297  
E-mail: [felipe@illinois.edu](mailto:felipe@illinois.edu)
-