Corentin Schreiber

I am an avid researcher who enjoys writing software to understand the world around me.

address: Oostdwarsgracht 2B
2312PP, Leiden,
Netherlands
nationality: French
mobile: +316 23 22 10 00
e-mail: cschreib@orange.fr
 cschreib.github.io

EDUCATION

2012 – 2015: Ph.D. degree, ★ Springer prize.
 Title: A statistical and multi-wavelength study of star formation in galaxies,
 Service d'Astrophysique, CEA Saclay, France.
2011 – 2012: Master 2 of theoretical physics, *École Normale Supérieure*, Paris, France.
2010 – 2011: Master 1 of fundamental physics, *Université Pierre et Marie Curie*, Paris, France.
2007 – 2010: Physics licence (bachelors), *Université de Nantes*, France.

WORK EXPERIENCE

2015 – Post-doctoral contract at *Leiden Observatory,* Netherlands, 3 years.
2012 – Ph.D. in astrophysics (statistics of galaxies) at *CEA*, France, 3 years.
2012 – Internship in quantum gravity at *CPT*, Marseille, France, 8 weeks.
2011 – Internship in condensed matter at *LPTMC*, Paris, France, 6 weeks.
2010 – Internship in plasma physics at *Subatech*, Nantes, France, 4 weeks, ★ JANUS grant.
2010 – Internship in nuclear physics at *Subatech*, Nantes, France, 3 weeks.
2009 – Stocker and salesman at BricoDépot (DIY), Nantes, France, 2 months.

AWARDS / GRANTS (★)

2016 – Springer/Nature prize for outstanding Ph.D. research.
2010 – JANUS summer project grant from CNRS (France).

SCIENTIFIC AND ORGANIZATIONAL SKILLS

- **Fitting** multi-dimensional data with models, linear and non-linear fits.
- **Image manipulation** including stacking, regridding, resampling, filtering, decomposition …
- **Pipeline programming** from raw data to final product.
- **Simulating images** with instrumental effects.
- **Extracting information** in confused, low resolution images.
- **Managing and visualizing** large data sets, catalogs and images.
- **Critical review** of scientific literature.
- **Scientific writing** resulting in 19 peer-reviewed publications, of which 2 published as 1st author.
- **Project design** for highly competitive telescope time, 3 approved projects.
- **Collaborative programming** on github, contributed to 4 projects.

PROGRAMMING SKILLS

Languages: • C++03-14 (expert) • IDL (expert) • C (good) • Lua (good)
 • Fortran, Python, Bash (basic).

Operating systems: Knowledge of Windows and Linux; aims for OS-agnostic programming.

Techniques: • Object-oriented design • Functional programming • Multithreading and multi-process • GPU shader programming (GLSL & HLSL) • Code versioning (git & SVN) • Cmake.

Libraries: • C++ STL • Qt (4 & 5) • OpenGL • DirectX • SFML • LuaBind • Boost • GSL • Intel TBB.

SELECTED PERSONAL PROGRAMMING PROJECTS (LOC = lines of code)

phy++: library for fast and friendly data analysis in C++. 40k LOC | cschreib.github.io/phypp
egg: tool to simulate realistic deep images of the night sky. 8k LOC | cschreib.github.io/egg
cobalt: turn-based strategy multiplayer video game. 20k LOC | github.com/cschreib/cobalt

GENERAL SKILLS

Spoken languages: • French (native) • English (fluent) • Spanish, Dutch (basic).

SELECTED PUBLICATIONS (citation count in brackets, sorted by date and relevance)

- **First author:**

2016: **[4]** C. Schreiber, M. Pannella, R. Leiton, et al., The ALMA Redshift 4 Survey (AR4S): I – the massive end of the z=4 main sequence of galaxies, arXiv:1606.06252 (resubmitted).
[10] C. Schreiber, D. Elbaz, M. Pannella, et al., Observational evidence of a slow downfall of star formation efficiency in massive galaxies during the past 10 Gyr, A&A, 589, 35.
[1] C. Schreiber, D. Elbaz, M. Pannella, et al., EGG: hatching a mock Universe from empirical prescription, arXiv:1606.05354 (resubmitted).

2015: **[96]** C. Schreiber, M. Pannella, D. Elbaz, et al., The Herschel view of the dominant mode of galaxy growth from z=4 to the present day, A&A, 575, 74.

- **Co-author:**

2016: **[3]** T. Wang et al., Infrared color selection of massive galaxies at z>3, ApJ, 816, 84.
[2] X.W. Shu, et al., Identification of z>2 Herschel 500um sources using color deconfusion, ApJS, 222, 4.
[2] N. Bourne et al., Evolution of cosmic star formation in the SCUBA-2 cosmology legacy survey, arXiv:1607.04283.
[27] A. Tomczak et al., The SFR-M* relation and empirical star-formation histories from ZFOURGE at 0.5<z<4, ApJ, 817, 118.
[7] T. Wang et al., Discovery of a galaxy cluster with a violently starbursting core at z=2.506, ApJ, 828, 56.

2015: **[46]** M. Pannella et al., GOODS-Herschel: star formation, dust attenuation and the FIR-radio correlation on the main sequence of star-forming galaxies up to z=4, ApJ, 807, 141
[45] M. Béthermin et al., Evolution of the dust emission of massive galaxies up to z=4 and constraints on their dominant mode of star formation, A&A, 573, 113.
[6] R. Leiton et al., GOODS-Herschel: identification of the individual galaxies responsible for the 80-290um cosmic infrared background, A&A, 579, 93.
[30] E. Merlin et al., T-PHOT: a new code for PSF-matched, prior-based, multiwavelength extragalactic deconfusion photometry, A&A, 582, 15.

SELECTED OBSERVING PROGRAMS ([instrument, observing time] title)

- **Principal investigator:**

2016: **[ALMA, 2h DDT]** On or Off? Resolving the surprising submm emission from a record-breaking "quiescent" galaxy at z=3.717.
[ALMA, 6h] When the Very Large Telescope is not large enough: spectroscopic identification of z~4 massive galaxies.

2015: **[ALMA, 3h]** Unveiling a population of massive, dark ALMA galaxies at z=6.

- **Co-investigator:**

2016: **[ALMA, 4h]** A. Muzzin. Unveiling the dustiest galaxies in the Universe.
[ALMA, 5h] I. Labbé. Obscured star formation of the brightest galaxies at z=8-10.

2015: **[ALMA, 4h]** T. Wang. Are the most massive z>4 galaxies hidden form HST?
[ALMA, 22h] D. Elbaz. Towards a census of star formation since z~6 with ALMA-1.1mm.
[KMOS, 20h] R. Leiton. The ALMA-VLT synergy: unveiling the main mode of star formation in the early universe.

2014: **[JVLA, 50h]** M. Pannella. A deep continuum JVLA survey in the UDS-CANDELS field.
[KMOS, 20h] R. Leiton. A survey to unveil the dust obscured star formation at z>3.
[VIMOS, 181n] L. Pentericci. VANDELS: A deep survey of the CANDELS Fields.

2013: **[ALMA, 6h]** R. Leiton. Unveiling the main mode of star formation in the early Universe.

INVITED AND CONTRIBUTED TALKS

2017 – Sesto "The growth of galaxies in the early Universe" (invited).
2016 – Oxford University (invited), Lorentz Center "Physical characteristics of normal galaxies at z>2" (invited), Nanjing University (invited), Sesto "The early growth of galaxies".
2015 – UC Berkeley (invited), Leiden University (invited), Groningen University (invited), Sesto "The spectral energy distribution of high-z galaxies".
2014 – ESTEC "Star formation across space and time", Cefalù "The unquiet Universe".
2013 – Paphos "A panchromatic view of galaxy evolution 30 years after IRAS".