Andrea Afruni

Curriculum Vitae

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Personal details

Name	Andrea
Nationality	Italy
Birth place	Forlì (FC), Italy
Birth date	14/08/1992
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Current Position

Postdoctoral researcher in astronomy, *Universidad de Chile*, Departamento de Astronomía, PI: Sebastian Lopez.

Education

December 2021 **PhD in astronomy**, *Uiversity of Groningen*, Kapteyn Astronomical Institute, Supervisors: Prof. Filippo Fraternali, Dr. Gabriele Pezzulli.
Thesis title: The origin and dynamics of the cool circumgalactic gas around low-redshift galaxies

March 2017 **Master degree in Astrophysics and Cosmology**, *University of Bologna*, *110/110 cum laude*.
Thesis title: Kinematics of the circumgalactic medium in early-type galaxies

September 2014 **Bachelor degree in Astronomy**, *University of Bologna*, *110/110 cum laude*.
Thesis title: Main characteristics of the emission of spiral galaxies

July 2011 **High school degree**, *Scientific high school Fulcieri Paulucci di Calboli, Forlì*.

Publications

First author papers

May 2019 **Cool circumgalactic gas of passive galaxies from cosmological inflow**, *A. Afruni, F. Fraternali, G. Pezzulli*, accepted for publication in A&A, A&A 625, A11 (2019).
doi:10.1051/0004-6361/201835002

March 2021 **Most of the cool CGM of star-forming galaxies is not produced by supernova feedback**, *A. Afruni, F. Fraternali, G. Pezzulli*, accepted for publication in MNRAS, MNRAS,501,5575.
doi:10.1093/mnras/staa3759

February 2022 **Inflow of low-metallicity cool gas in the halo of the Andromeda galaxy**, *A. Afruni, G. Pezzulli, F. Fraternali*, accepted for publication in MNRAS, MNRAS,509,4849.
doi: 10.1093/mnras/stab3237

Co-authored papers

September 2022 **Orientation effects on cool gas absorption from gravitational-arc tomography of a $z = 0.77$ disc galaxy**, *Fernandez-Figueroa et al.*, accepted for publication in MNRAS, arXiv:2209.14134.
Contribution: I significantly helped in defining the likelihood used to compare models and data.

Contribution to recent conferences and meetings

September 2019 KIAA forum on gas in galaxies, *Beijing, China*, Contributed talk.

September 2019 GMT community science meeting - The Cosmic Baryon Cycle, *Carlsbad, USA*, Contributed talk.

July 2020 EAS - European astronomical society annual meeting 2020, *Leiden, The Netherlands (Virtual meeting)*, Contributed talk.

November 2020 NOVA (Netherlands Research School for Astronomy) NW1 zoom meeting, Contributed talk.

March 2021 Thunch talk (online), *Princeton University, New Jersey*, Invited talk.

February 2022 Galaxy evolution seminar (online), *Oxford, United Kingdom*, Invited talk.

September 2022 What matters around galaxies, *Champoluc, Italy*, Contributed talk.

Schools and workshops

April 2019 ASTERICS-OBELICS International school, *Annecy, France*.

January–March 2021 KITP Program: Fundamentals of Gaseous Halos, *UC Santa Barbara, California*, Online workshop.

Super computing grants

January 2022–December 2022 **Grant EINF-2381 (PI), 1 million CPU hours**, *Snellius supercluster, The Netherlands*, Project title: The fate of gas falling towards galaxies from the surrounding environment

Observational programs with awarded time

ESO cycle P109 **MUSE**, *Proposal ID: 109.233L*, Solving the puzzle of cool gas around massive quiescent galaxies
Co-Investigator (PI: Sebastian Lopez)

ESO cycle P110 **MUSE**, *Proposal ID: 110.242U*, What is the fate of the cool gas around massive quiescent galaxies?
Co-Investigator (PI: Sebastian Lopez)

Teaching and supervising experiences

February–March 2019 **Teaching assistant**, *Kapteyn Astronomical Institute*, Lecture: Interstellar Medium, Lecturer: Inga Kamp

Spring 2019/2020 **Bachelor thesis co-supervisor**, *Kapteyn Astronomical Institute*, Main supervisor: Filippo Fraternali,

Thom Essen	Exploring the Transfer of Momentum in the Galactic Fountain Cycle
Lorraine Putman	Survival of cold gas clouds in hot halos
Thomas Fortuin	Survival of cold gas clouds in the halos of Milky Way-like galaxies

September 2020–July 2021 **Master thesis co-supervisor**, *Kapteyn Astronomical Institute*, Main supervisor: Filippo Fraternali,

Mark van der Keijl	Numerical investigation of the survival of cold gas clouds in low-z ETGs

June 2022– **PhD co-supervisor**, *Universidad de Chile*, Other supervisor: Sebastian Lopez,

Pratyush Anshul	The fate of enriched cool gas around early-type galaxies

Computing skills

Python	Main libraries: numpy, scipy, matplotlib, astropy, galpy, emcee, dynesty
Other programming languages	*C++, C, Fortran 90*
Astronomical softwares and codes	PLUTO, ATHENA, CLOUDY, GALFIT

Additional information

Outreach experience

November 2020 **Astronomy on Tap Groningen**, *Online talk*, How to feed a galaxy: main ingredients of galaxy formation and evolution

Languages

Italian	Native
English	Fluent
Spanish	Intermediate
Dutch	Basic