

PERSONAL INFORMATION

Dr. Antonino Marasco (he/him/his)

Staff Researcher

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**PROFESSIONAL EXPERIENCE**

03/2023 – ongoing: Staff Researcher, INAF-OAPd (Padova, IT)
05/2022 – 03/2023: Post-doctoral Researcher, INAF-OAPd (Padova, IT)
09/2019 – 04/2022: Post-doctoral Researcher, INAF-OAA (Firenze, IT)
07/2016 – 08/2019: Post-doctoral Researcher, ASTRON (Dwingeloo, NL)
03/2013 – 06/2016: Post-doctoral Researcher, Kapteyn Institute (Groningen, NL)

EDUCATION

25/02/2013: PhD in Astronomy, University of Bologna (IT)
Thesis title: The gaseous halo of the Milky Way
Supervisor: Prof. Filippo Fraternali
10/2009: Master degree (*cum laude*) in Astrophysics and Cosmology, University of Bologna (IT)
Thesis title: Cinematica del gas extra-planare nella Via Lattea (Kinematics of the extra-planar gas in the Milky Way). Supervisor: Prof. Filippo Fraternali
11/2006: Bachelor degree (*cum laude*) in Astronomy, University of Bologna (IT)
Thesis title: Soluzione numerica di equazioni di continuità in ambito astrofisico (Numerical solutions for continuity equations in astrophysics). Supervisor: Prof. Antonio Messina

SCIENTIFIC INTERESTS

Galaxy formation and evolution - Data modelling - Image processing - Numerical simulations

PRIZES AND AWARDS

17/10/2015: *Livio Gratton Prize*, for the best PhD thesis in Astronomy in Italy in the period 2012/2013-2013/2014; INAF, Roma (IT)
19/05/2014: Lions Club “*Claudio Bonivento*” Prize, for the best PhD thesis on a scientific subject at University of Bologna in the period 2012-2013; University of Bologna (IT)

RESEARCH RESPONSIBILITIES**Supervising and mentoring activities**

01/2026-ongoing: Co-supervisor of the master thesis of Kristina Klopic, Univ. of Padova, IT
Thesis title: A multi-wavelength study of gas circulation in nearby late-type galaxies
02/2025-ongoing: **PhD co-advisor** of Luka Matijevic, University of Zagreb, HR. Thesis title: Environmental effects on the physical and chemical properties of NGC2276 on small spatial scales
11/04/2024-11/07/2024: Co-supervisor of the bachelor thesis of Stefan Eduard, Kapteyn Institute, NL.
Thesis title: Properties of the Galactic Wind of ESO484-036 from MUSE@VLT observations
11/09/2023-14/12/2023: Co-supervisor of the bachelor thesis of Csilla Tijssen, Kapteyn Institute, NL.
Thesis title: A kinematic model of the extraplanar ionised gas in ESO120-016
2019-31/01/2023: **PhD co-advisor** of Anqi Li, Kapteyn Institute, University of Groningen, NL.
Thesis title: Investigating the origin of gas flows at the disc-halo interface of local galaxies
01/03/2019-10/07/2019: Co-supervisor of the bachelor thesis of Janke Prins, Kapteyn Institute, NL.
Thesis title: The radial growth of disc galaxies at $z=1$
01/04/2018-06/07/2018: Co-supervisor of the bachelor thesis of Manou Ijtsma, Kapteyn Institute, NL.
Thesis title: The specific angular momentum in galaxies at $z=1$
01/04/2018-06/07/2018: Co-supervisor of the bachelor thesis of Lotte Elzinga, Kapteyn Institute, NL.

Thesis title: Hydrostatic equilibrium in the Milky Way
01/09/2012-15/03/2013: Co-supervisor of the master thesis of Martina Valleri, University of Bologna (IT),
Thesis title: Extraplanar gas in nearby disc galaxies

Fundings

2023-2024: INAF mini-grant “The quest for gas accretion: modelling the dynamics of extra-planar gas in nearby galaxies” (12.000 €)
13/08/2017: Leiden Kerkhoven-Bosscha traveling fund, subsidy number 17.0.043 (452 €)
2011: Marco Polo program for mobility of PhD students, 3 months granted (3450 €)

Talk and seminar managements

2024-2025: Organiser of the joint extragalactic group meetings at INAF-OAPd
2023-ongoing: Co-organiser of seminars and colloquia at INAF-OAPd
2020-2022: Organiser of weekly lunch talk (Astrobignè) at INAF-OAA
2020-2022: Organiser of the extragalactic group meeting and journal club at INAF-OAA
2013-2015: Co-organiser of the Blaauw Professors’ “wine and cheese lectures” at the Kapteyn Institute (NL)
2013-2015: Co-organiser of the weekly “Monday lunch talks” at the Kapteyn Institute (NL)

Membership and scientific affiliations

2020 – ongoing: MORFEO, MAVIS, WEAVE-Apertif, MHONGOOSE, GECKOS (science team member)
2019 – ongoing: IAU junior member
2016 – 2018: APOSTLE, HALOGAS

Refereeing

2013-ongoing: Regular refereeing for Nature, MNRAS, A&A, ApJ, PASJ with more than 25 papers reviewed.

TEACHING ACTIVITIES

25/02/2025: Lecture on Galaxy formation and evolution for the EDUCADO PhD Training School, INAF-OAPd
03/2023 : PCTO2023, lecture on stellar populations for high school students, INAF-OAPd
11/05/2016: lecture on the HI properties of the Milky Way for the class “Physics of galaxies”, Kapteyn Institute, University of Groningen (NL)

DISSEMINATION ACTIVITIES

Outreach articles

12/2015: *Il gas d'alone della via Lattea*, di A. Marasco; Giornale di Astronomia, Fabrizio Serra Editore, Vol. 41/4, pp. 56

Outreach talks

01/03/2024: Antonio Tegon Honorary lecture 2024, Liceo Scientifico Ugo Morin (Mestre, IT)
2022-ongoing: Seminar (in Italian) “*La Gravità*”, campo scuola Alpini, Bosco di Nanto (Vicenza, IT)
04/2021: Seminar (in Italian) “*Inspirazione ed espirazione: il ciclo di gas nelle galassie*” for “Astronomiamo” association.
<https://www.astronomiamo.it/DivulgazioneAstronomica/Diretta-Streaming/inspirazione-ed-espirazione-ciclo-di-gas-galattico>

12/2019: Presentation at the Arcetri Open-day for bachelor and master students (INAF-OAA)

Press releases

08/2021: *Così si parlano galassie, materia oscura e buchi neri*, published on the INAF electronic newspaper.
<https://www.media.inaf.it/2021/08/23/relazione-galassie-aloni-buchi-neri/>

10/2019: *La misteriosa origine delle galassie ultra-diffuse*, published on the INAF electronic newspaper.
<https://www.media.inaf.it/2019/10/29/origine-galassie-ultra-diffuse/>

06/2015: *Tien miljard jaar aan ster-evolutie doorgerekend*, published on the electronic newspaper of the University of Groningen (NL).
<https://www.rug.nl/research/kapteyn/news/2015/tien-miljard-jaar-aan-ster-evolutie-doorgerekend>

Event organisation

07/2024: Organiser of the EAS 2024 special session “Gas accretion onto nearby galaxies: new insights from observations and simulations” (SS11), Padova, 2nd July 2024

05/2024: Member of the LOC for GASPISA 2024, Pisa, Italy
<https://sites.google.com/inaf.it/gaspisa2024/home-page>

05/2022: Member of the LOC for the Italian meeting “AGN XIV”, Florence (IT).

PATENTS and LICENSES

2022: National Scientific qualification (“Abilitazione Scientifica Nazionale”) as associate in the Academic Recruitment Field 02/C – Astronomy, astrophysics, Earth and planetary physics. Valid until 31/01/2031.

PUBLICATIONS

Overview

76 publications in peer review journals
of which 19 first author’s paper, 11 second/third author’s papers
Total number of citations: 2737, H-index: 32 (source: NASA/ADS)

Publications in peer-reviewed journals

First-author’s papers:

2026: Modelling the photometric and morphological evolution of disc galaxies in the cluster environment, **A. Marasco** et al., A&A in press

2025: HI within and around observed and simulated galaxy discs, **A. Marasco** et al., A&A, 697, A86

2025: Photometric versus dynamical stellar masses and their impact on scaling relations in nearby disc galaxies, **A. Marasco** et al. A&A, 695, L23

2023: The morphological transformation of ram pressure stripped galaxies: a pathway from late to early galaxy types, **A. Marasco** et al., MNRAS, 525, pp. 5359-5377

2023: Shaken, but not expelled: Gentle baryonic feedback from nearby starburst dwarf galaxies, **A. Marasco** et al. A&A 670, A92

2022: Intermediate- and high-velocity clouds in the Milky Way – II. Evidence for a Galactic fountain with collimated outflows and diffuse inflows, **A. Marasco** et al., MNRAS 515, pp.4176-4190

2021: A universal relation between the properties of supermassive black holes, galaxies, and dark matter halos, **A. Marasco** et al., MNRAS 507, pp.4274-4293

2020: Galaxy-scale ionised winds driven by ultra-fast outflows in two nearby quasars; **A. Marasco** et al., A&A 644, A15.

2020: Massive disc galaxies too dominated by dark matter in cosmological hydrodynamical simulations, **A. Marasco**, L. Posti, K. Oman, B. Famaey, G. Cresci, and F. Fraternali, A&A 640, A70.

2019: HALOGAS: the properties of extraplanar HI in disc galaxies; **A. Marasco** et al., A&A 631, A50.

2019: The angular momentum of disc galaxies at $z=1$; **A. Marasco**, F. Fraternali, L. Posti, M. Ijtsma, E. M. Di Teodoro, and T. Oosterloo; A&A 621, L6.

2018: Bars in dark-matter-dominated dwarf galaxy discs; **A. Marasco**, K. A. Oman, J. F. Navarro, C. S. Frenk, and T. Oosterloo; MNRAS 476 pp. 2168–2176.

2017: Distribution and kinematics of atomic and molecular gas inside the solar circle; **A. Marasco**, F. Fraternali, J. M. van der Hulst, and T. Oosterloo; A&A 607, A106.

2017: The Galactic fountain as an origin for the Smith Cloud; **A. Marasco** and F. Fraternali; MNRAS 464 pp. L100–L104.

2016: The environmental dependence of HI in galaxies in the EAGLE simulations; **A. Marasco**, R. A. Crain, J. Schaye, Y. M. Bahé, T. van der Hulst, T. Theuns, and R. G. Bower; MNRAS 461 pp. 2630–2649.

2015: The effect of stellar feedback on a Milky Way-like galaxy and its gaseous halo; **A. Marasco**, V. P. Debattista, F. Fraternali, T. van der Hulst, J. Wadsley, T. Quinn, and R. Roškar; MNRAS 451 pp. 4223–4237.

2013: On the origin of the warm-hot absorbers in the Milky Way’s halo; **A. Marasco**, F. Marinacci, and F. Fraternali; MNRAS 433 pp. 1634–1647.

2012: Supernova-driven gas accretion in the Milky Way; **A. Marasco**, F. Fraternali, and J. J. Binney; MNRAS 419 pp. 1107–1120.

2011: Modelling the H I halo of the Milky Way; **A. Marasco** and F. Fraternali; A&A 525, A134.

Second/third-author’s papers:

2023: Fountain-driven gas accretion feeding star formation over the disc of NGC 2403, A. Li, F. Fraternali, **A. Marasco** et al., MNRAS, 520, pp. 147-160

2022: Intermediate- and high-velocity clouds in the Milky Way – I. Covering factors and vertical heights, N. Lehner, C. Howk, **A. Marasco** and F. Fraternali, MNRAS, 513, pp.3228-3240

2021: A Kinematic Analysis of Extraplanar Ionised Gas in the DiskMass H α Sample; A. Li, **A. Marasco** et al., MNRAS, 504, pp. 3013-3028

2021: Connecting X-ray nuclear winds with galaxy-scale ionised outflows in two $z \sim 1.5$ lensed quasars; G. Tozzi, G. Cresci, **A. Marasco** et al., A&A, 648, A99

2020: Pushing point-spread function reconstruction to the next level: application to SPHERE/ZIMPOL; O. Beltramo-Martin, **A. Marasco** et al., MNRAS 494 pp.775-778

2020: Successful application of PSF-R techniques to the case of the globular cluster NGC 6121 (M 4); D. Massari, **A. Marasco**, O. Beltramo-Martin, J. Milli, G. Fiorentino, E. Tolstoy, F. Kerber; A&A 634, L5

2019: Galaxy disc scaling relations: a tight linear galaxy-halo connection challenges abundance matching; L. Posti, **A. Marasco**, F. Fraternali and B. Famaey, A&A 629, A59.

2019: Peak star formation efficiency and no missing baryons in massive spirals; L. Posti, F. Fraternali, and **A. Marasco**; A&A 626 pp. A56. 2019

2019: Non-circular motions and the diversity of dwarf galaxy rotation curves; K. A. Oman, **A. Marasco**, J. F. Navarro, C. S. Frenk, J. Schaye, and A. Benítez-Llambay; MNRAS 482 pp. 821-847. 2019

2015: Galactic hail: the origin of the high-velocity cloud complex C; by F. Fraternali, **A. Marasco**, L. Armillotta, and F. Marinacci; MNRAS 447 pp. L70-L74. 2015

2013: Ionized absorbers as evidence for supernova-driven cooling of the lower galactic corona; F. Fraternali, **A. Marasco**, F. Marinacci, and J. Binney; ApJ 764, L21 p. L21. 2013

Co-author of additional 46 papers.

PRESENTATIONS AT CONFERENCES AND WORKSHOPS

As an invited speaker:

2026: *(Review talk) The cycle of baryons in the nearby Universe.* Giornate INAF RSN1, INAF-OACN (IT)

2026: *(Review talk) Observing HI in and around simulated galaxies.* Sweden SKA Science day, Stockholm (SW)

2025: *Gas accretion in galaxies.* Our Evolving View on Gas Dynamics and Galaxy Evolution, Groningen (NL)

2024: *(Summary talk), GASPISA2024 conference, Pisa (IT)*

2023: *Dark matter in low- and high-mass simulated galaxy discs*, Fiat Lux workshop, Castel Gandolfo, Rome (IT)

2022: *Collimated outflows and diffuse inflows traced by ionised HVCs and IVCs*, GBO HVC2022 workshop, Green Bank Observatory, West Virginia (US)

2022: *Dark matter in low- and high-mass simulated galaxy discs*, IFPU workshop “The Nature of Dark Matter”, Trieste (IT)

2021: *Correlation between the tiny BH and the big galaxy*, AGN Tourneys 2021, INAF (by remote)

2018: *(Review talk) Breathing in and out, the cycle of gas in galaxies.* EWASS 2018, Liverpool (UK).

2014: *Galaxies in different environments: theory vs observations.* PHISCC 2014, ASTRON, Dwingeloo (NL)

As a contributed speaker:

2022: *Shaken, not blown: the gentle stellar feedback of nearby starburst dwarfs*, A holistic view of stellar feedback and galaxy evolution, 11-15 July 2022, Ascona (CH)

2021: *Assessing the performances of image analysis packages using AO-assisted synthetic observations*, AO4ASTRO2, Marseille (FR)

2020: *A new software for photometry and astrometry in the AO era.* AO2020, Accademia dei Lincei, Roma (IT)

2019: *A new software for photometry and astrometry in the AO era.* Science with Mavis, Firenze (IT)

2019: *Stellar-to-halo mass relation and missing baryons in spiral galaxies: a lesson from the study of rotation curves.* GEE6, Trieste (IT)

2019: *HALOGAS: the properties of extraplanar HI in disc galaxies.* MIAPP, ESO Garching (DE)

2019: *A new software for photometry and astrometry in the AO era.* AO4ASTRO, Marseille (FR)

2018: *Environmental HI stripping in the EAGLE simulations.*
The HI/Story of the Nearby Universe, Groningen (NL)

2017: *Dark bars and non-circular motions in simulated dwarf galaxies.*
The role of gas in galaxy dynamics, Valletta (MT)

2015: *Disk-corona gas cycle in simulated Milky-Way like galaxies.* Life cycle of gas in galaxies, Dwingeloo (NL)

2015: *On the origin of the high-velocity features in the halo of the Milky Way.* IGM@50, Abbazia di Spineto (IT)

2015: *Hot-mode mass assembly in Milky Way-like galaxies.* PHISCC 2015, New Brunswick, New Jersey (US)

2014: *The formation of the high-velocity clouds of the Milky Way.* The Periphery of disks, Sydney (AU)

2013: *Ionized absorbers in the MW's halo: the footprint of the disk-corona interplay.*
Waves and Particles, Multi-Messengers from the Universe, Tubingen (DE)

2012: *Fountain-driven gas accretion in the Milky Way.* EWASS 2012, Roma (IT)

COLLOQUIA

2023: INAF OAPd (IT) - “Positive” feedback in nearby disc galaxies

2020: Strasbourg Observatory (FR) - *High- and low-mass simulated galaxy discs* (by remote)

2015: Kapteyn Institute (NL) - *Fountain-driven gas accretion onto the Milky Way*.

2015: University of Central Lancashire, Preston (UK) - *Supernova-driven gas accretion in the Milky Way*.

2014: Macquarie University, Sydney (AU) - *Supernova-driven gas accretion in the Milky Way*.

Padova, 16/02/2026