

CURRICULUM VITAE

PERSONAL DETAILS

Name **Filippo Fraternali**
Born 15th March 1973, Sant'Angelo in Vado, PU, Italy
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Nationality Italian



EDUCATION

1998–2002 **PhD in Astronomy** “*Hot and cold gas in the disk and halo of the spiral galaxy NGC 2403*”, University of Bologna (I), Supervisors: R. Sancisi, T. Oosterloo, R. Fanti.
1992–1998 Master in Astronomy *cum laude* “*Study of Radio Galaxies with the Hubble Space Telescope*” (in Italian), University of Bologna, Supervisors: R. Fanti, H. de Ruiter.

EMPLOYMENT

Sep 2019 – present **Full Professor**, Kapteyn Astronomical Institute, University of Groningen, The Netherlands.
Nov 2017– Aug 2019 Associate Professor, Kapteyn Astronomical Institute, University of Groningen, The Netherlands.
Nov 2006 – Oct 2017 Assistant Professor, Astronomy Department, University of Bologna, Italy.
Mar 2004 – Mar 2006 **Marie-Curie Fellow**, Department of Theoretical Physics, Oxford University, UK.
Feb 2003 – Mar 2004 Post-doc, ASTRON, Dwingeloo (NL).
Feb 2002 – Jan 2003 Post-doc, Kapteyn Astronomical Institute, Groningen.
Oct 1998 – Feb 2002 PhD research grant, Astronomy Department, University of Bologna.

SUPERVISION OF PHD STUDENTS

Sept 2018–present Pavel Mancera-Piña, “*Apertif with Barolo: kinematics and dynamics of thousands of galaxies*”, University of Groningen.
Nov 2017–present Andrea Afruni, “*Gas flows from and to galaxies: understanding the circumgalactic medium*”, University of Groningen.

Oct 2016–present	Cecilia Bacchini, <i>“Gas cycle in spiral galaxies: from accretion to star formation and back”</i> , University of Bologna/Groningen, double PhD.
2014 – 2018	Giuliano Iorio, <i>“Dynamics and evolution of Local Group dwarf galaxies”</i> , University of Bologna, co-advisor.
2013 – 2016	Lucia Armillotta, <i>“The origin and fate of the multiphase circumgalactic medium of galaxies via high-resolution hydrodynamical simulations”</i> , University of Bologna. Currently post-doc at Mount Stromlo Observatory, Canberra, AU.
2012 – 2015	Gabriele Pezzulli, <i>“Accretion and evolution of galaxy discs”</i> , University of Bologna, defended in December 2015. Now post-doc at ETH, Zurich, CH. <u>This thesis won the Lions Prize for the best thesis of the University of Bologna.</u>
2012 – 2015	Enrico Di Teodoro, <i>“Dynamics of galaxies through the modelling of emission-line datacubes”</i> , University of Bologna, defended in December 2015. Now post-doc at Mount Stromlo Observatory, Canberra, AU.
2010 – 2014	Federico Lelli, <i>“Starbursts and gas dynamics in low mass galaxies”</i> , University of Groningen, defended in December 2013 cum laude (conferred on the top 5% of the students). Now ESO-fellow in Garching, Germany.
2010 – 2013	Antonino Marasco, <i>“The gaseous halo of the Milky Way”</i> , University of Bologna, defended in February 2013. Now Post-doc at the University of Groningen, NL. <u>This thesis won the Gratton Prize for the best Italian thesis of the years 2013-2014 and the Lions Prize for the best thesis of the University of Bologna.</u>
2008 – 2011	Federico Marinacci, <i>“Dynamics of the halo gas in disc galaxies”</i> , University of Bologna, co-advisor, defended April 2011. Now Post-doc at MIT, Cambridge, MA, USA.

SUPERVISION OF MASTER STUDENTS

1. Richard Kooij, expected in June 2020.
2. Andrea Afruni, graduated cum laude in March 2017.
3. Marco Canducci, graduated in March 2017, will start a PhD in machine learning for astronomy at the University of Birmingham.
4. Federica Loiacono, first advisor: Andrea Cimatti, graduated cum laude in March 2017, she will start a PhD in Bologna in October.
5. Cecilia Bacchini, graduated cum laude in September 2016, currently my PhD student.
6. Francesca Rizzo, graduated cum laude in July 2016, now PhD student at the Max Planck Institute for Astrophysics, Munich, Germany.
7. Francesco Bringoli, in collaboration with ASTRON (NL), graduated in March 2016.
8. Robin Gopala Treß, in collaboration with Heidelberg University, graduated in March 2016, now PhD student at Heidelberg University, Germany.
9. Giuliano Iorio, graduated cum laude in September 2014, currently my PhD student.
10. Lucia Armillotta, graduated in March 2013, now post-doc at Mount Stromlo, Canberra, AU.

11. Filippo Marcello Maccagni, first advisor: Andrea Cimatti, graduated cum laude in March 2013, now PhD student at the University of Groningen, NL.
12. Martina Valleri, University of Bologna, graduated in March 2013.
13. Gabriele Pezzulli, graduated cum laude in July 2012, now Post-doc at the ETH, Zurich, CH.
14. Andrea Gatto, graduated cum laude in March 2012, PhD at the University of Munich, Germany.
15. Enrico Di Teodoro, graduated cum laude in March 2012, now at Mount Stromlo Observatory, Canberra, AU.
16. Antonio Garufi, in collaboration with Groningen University, graduated in December 2011, now post-doc in Madrid, Spain.
17. Debora Pelliccia, graduated in March 2011, now PhD student at the University of Marseille, France.
18. Matteo Tomassetti, graduated cum laude December 2010, PhD at the University of Heidelberg, Germany.
19. Nicola Clementel, in collaboration with Leiden University, graduated in December 2009.
20. Antonino Marasco, graduated cum laude in October 2009, now Post-doc at ASTRON, Dwingeloo, NL.
21. Federico Lelli, graduated cum laude in October 2009, now ESO Fellow, Garching, Germany.
22. Matteo Barnabè, first advisor: Luca Ciotti, graduated cum laude in 2004, now ESO fellow.
23. Claudia Barbieri, Univ. of Milano, first advisor: Giuseppe Bertin, graduated in February 2004.
24. Giuseppina Battaglia, first advisor: Renzo Sancisi, graduated cum laude in March 2003, now Ramon y Cajal post-doc at Instituto de Astrofísica de Canarias, Tenerife, Spain.

UNIVERSITY LECTURES

- 2018–2019 **Bachelor course *Astrophysical Hydrodynamics***, University of Groningen (32+16 hrs). Taught every year, a course that I re-designed. It deals with Hydrodynamics and MHD of ideal and non-ideal fluids.
- 2012–present **Master course *Gas flows in galaxies***, University of Groningen, 3ETCs (16 hrs). Taught every second year, a course based on literature readings that changes every year.
- 2008–2017 **Master course *Gas dynamics in galaxies***, University of Bologna (48 hrs). Taught every year, a new course that I designed from scratch made of three parts: 1) Hydrodynamics and MHD of ideal and non-ideal fluids, 2) Star formation, 3) Stellar feedback.
- Sept. 2008 Lectures for graduate students *Disc galaxies and their ISM*, Astronomy Department, University of Bologna.
- 2007–present Contributed lectures for the following courses at the University of Bologna: Formation and Evolution of Galaxies (Master), Diffuse Matter (Master), Clusters of galaxies (Master) Elements of Programming (Bachelor) and Calculus for Astronomy (Bachelor).

March 2005 Lectures for graduate students *Structure and dynamics of disc galaxies*, Astrophysics Department, Oxford University.

INSTITUTIONAL RESPONSIBILITIES AND OTHER ACTIVITIES

2019-present Coordinator of the Master's theses (University of Groningen).
2017-present Member of Board of Admissions, Master in Astronomy (University of Groningen).
2017-present Member of Programme Committee Astronomy (University of Groningen).
2017–2019 Organizer astrophysical colloquia (University of Groningen).
2010–2017 Master thesis committee (University of Bologna).
2010–2017 Responsible for professionalization activities for Master students (University of Bologna).
2013 Member of the committee for the selection of PhD students (University of Bologna).
2012 Member of the committee for Postdoc positions at the ALMA regional centre, Bologna.
2008–2010 Bachelor thesis committee (University of Bologna).
2007–2009 Organizer of astrophysics talks (University of Bologna).

COMMISSIONS OF TRUST AND REFEREEING

2019: Panel member of the Observing Programmes Committee (OPC) of the European Southern Observatory (ESO).
2019: PhD Thesis reading committee, Jorrit Hagen, University of Groningen.
2018: Member of the LOFAR Netherlands Astronomy Consortium (NL-LAC), committee that advises the Board of the International Lofar Telescope.
2017: PhD Thesis reading committee, Jingjing Shi, SISSA, Italy.
2016: PhD Thesis reading committee, Anastasia Ponomareva, University of Groningen.
2015: Reviewer for the Austrian Science Fund (FWF).
2015: Reviewer for the South Africa's National Research Foundation (NRF).
2015: Reviews requested for ERC Starting-Grant, Natural Sciences and Engineering Research Council of Canada and Swiss National Science Foundation. I had to decline due to other commitments.
2014: Request for ESO OPC panel member P95, I had to decline due to other commitments.
2013: Committee member for the selection of PhD students for the University of Bologna, Italy.
2012: Reviewer for the Deutsche Forschungsgemeinschaft (DFG).
2012: Reviewer for the Anglo-Australian Telescope.

2012: Committee member, Postdoc selection for the ALMA regional centre, Italy.

I regularly referee papers for all major Astrophysical Journals: ApJ, MNRAS, A&A and AJ. I have also refereed papers for Science the Journal of Plasma Physics.

FUNDING AND AWARDS

2019: Astronomy teacher of the year, education prize, University of Groningen.

2019: **NWO Klein-1** grant, PI, € 300K.

2019: Second place in the Best PhD supervisor prize of the Faculty of Science and Engineering of the University of Groningen.

2018: **NOVA Postdoc Grant**, PI, € 220K.

2017: **NOVA PhD Grant** co-funded by ASTRON, PI, € 220K.

2017: PhD startup Grant from the University of Groningen, PI.

2017: *Abilitazione Scientifica Nazionale* di Prima e Seconda fascia per Settore Concorsuale 02/C1: Astronomia, Astrofisica, Fisica della Terra e dei Pianeti

This qualification is granted by a national committee and certifies that the holder of it is at the level of Full Professor. The holder of one of these qualifications can be hired at the corresponding level at Italian Universities.

2008-2016: 6 PhD grants from the University of Bologna, assigned by departmental competitions between the students (typically 2-3 positions a year), total of € ~300K.

2015: Honorary professorship of Evolution of gas in galaxies - Faculty of Mathematics and Natural Sciences, University of Groningen, The Netherlands

2012: PRIN, Italian Ministry of University & Research, co-I, € 800K, 3-year research funding.

2008: PRIN, Italian Ministry of University & Research, co-I, € 100K, 2-year research funding.

2004: Marie-Curie Post-doctoral Fellowship, FP6, PI, € ~100K, 2-year personal fellowship

2002: Ubbo Emmius scholarship, University of Groningen.

ACCEPTED PROPOSALS AND OBSERVATIONAL EXPERIENCE

I have obtained a large amount of data at the **VLA**, **VLT** (Flames, FORS, MUSE), **Chandra**, **WHT**, **GMRT**, **Spitzer**, **HST**, **INT**, **ALMA** data both as PI and co-I (sometimes with my PhD students as PI) and I have been observing at the WHT.

I have been co-I of numerous successful proposals at the Westerbork Synthesis Radio Telescope (**WSRT**) including the deep survey of NGC891 (200 hrs) and the HALOGAS international team.

My group has been awarded several million hours of computing time at the Bologna **CINECA** supercomputers (FERMI IBM-Blue Gene/Q).

LARGE COLLABORATIONS AND MEMBERSHIPS

- Member of the International Astronomical Union (IAU)
- Member of the European Astronomical Society (EAS)
- Member of the Square Kilometre Array (**SKA**) HI science group (www.skatelescope.org/)
- HALOGAS: search for gas in the halos of nearby galaxies with WSRT (www.astron.nl/halogas/).
- medium-deep HI survey with **Apertif** (focal-plane array at the WSRT, a SKA-pathfinder).
- MHONGOOSE: Large Survey Project with **MeerKAT** (South African SKA Precursor).
- **EUCLID** consortium (www.euclid-ec.org/).

ONGOING & RECENT INTERNATIONAL COLLABORATIONS:

- James J. Binney, *Galactic fountains and gas accretion*, University of Oxford, UK
- Justin I. Read, *Dark matter in dwarf galaxies*, University of Surrey, UK
- Luca Ciotti & Carlo Nipoti, *Baroclinic model for the halo gas*, University of Bologna, Italy
- Michele Bellazzini, *Evolution of dwarf galaxies*, Astronomical Observatory, Bologna, Italy
- Federico Marinacci, *Simulations of gas mixing*, MIT, Cambridge, USA
- Vasily Belokurov, *GAIA stars in Galactic halo and Magellanic Clouds*, IoA, Cambridge, UK
- Jason X. Prochaska & Jessica Werk, *Origin of the COS-halos*, UC Santa Cruz, USA

INVITED TALKS AT MAJOR INTERNATIONAL MEETINGS

1. *Fountain circulations as a source of sustaining star formation in nearby galaxies* at “Cosmic Baryon Cycle: impact on galaxy evolution”, The Seventh Annual GMT Community Science Meeting, 19-21 Sept **2019**, Carlsbad, California, USA.
2. *Fountain circulations as a source of sustaining star formation in nearby galaxies* at “Cosmic Baryon Cycle: impact on galaxy evolution”, The Seventh Annual GMT Community Science Meeting, 19-21 Sept **2019**, Carlsbad, California, USA.
3. *Structures and dynamics of the ISM in galaxies* at “Probing the Activities and Power Engines from Local to Distant Universe”, the Second Forum on Gas in Galaxies, Multiple-phase Interstellar medium, 9-13 Sept **2019**, China.
4. *The other side of feedback* at “Feedback and its Role in Galaxy Formation”, Spetses, 25-29 June **2019**, Greece.
5. *How the CGM accretes onto galaxies* at “What matter(s) between galaxies: Unraveling the knots in the Cosmic Web”, Abbazia di Spineto, 3-7 June **2019**, Italy.
6. *The theoretical perspective of HI in galaxies* at “The HI/Story of the Nearby Universe”, 10-12 September 2018, Groningen and Dwingeloo, The Netherlands.
7. *Accretion physics and scaling laws of AM in galaxies* at “Galactic Angular Momentum”, XXX IAU General Assembly, Vienna, Austria, 20-22 August 2018.
8. *Understanding the fountain-corona interaction* at “The role of feedback in galaxy formation: from small-scale winds to large-scale outflows”, Leibniz Institute for Astrophysics Potsdam, Germany, 3-7 September 2018 (**plenary talk**).
9. *Theoretical and observational aspects of gas circulation in galaxies* at “The Role of Gas in Galaxy Dynamics”, Valletta, Malta, 2-6 October 2017 (**review**).

10. In & Out. What rules the Baryon Cycle? - MIAPP Programme, Munich, Germany, 3-14 July 2017.
11. *Physical processes that shape the CGM* at "What Matter(s) Around Galaxies", Durham, UK, 19-23 June 2017.
12. *Rotation curves across the Hubble time* at "Bright and dark Universe", Napoli, Italy, 29 Jan - 2 Feb 2017.
13. *Indirect and direct inflow evidence of gas accretion into galaxies* at "The galaxy life-cycle", Venezia, Italy, 24-28 October 2016 (**review**).
14. *Gas accretion and its impact on the evolution of the Milky Way* at "The Milky Way and its environment: gaining insights into the drivers of galaxy formation and evolution", Institut d'Astrophysique de Paris, France, 5-9 September 2016.
15. *Accretion from feedback* at "Feedback and reaccretion in galaxy formation", Observatoire de Paris, Paris, France, 5-6 November 2015.
16. *Will we ever see gas accretion?* Talk & discussion lead at "Life-cycle of gas in galaxies: A Local Perspective", ASTRON, Dwingeloo, NL, 31 Aug – 4 Sept 2015.
17. *Gas flows at the interface between galaxies and the IGM* at "IGM@50: Is the InterGalactic Medium Driving Star Formation?", Abbazia di Spineto, Italy, 8-12 June 2015.
18. *Fountain driven accretion* at "The formation and evolution of exponential disks in galaxies", Flagstaff, Arizona, US, 5-9 October 2014.
19. *Gas accretion and extraplanar gas in galaxies* at "The Role of Hydrogen in the Evolution of Galaxies", Kuching, Malaysia, 15-19 September 2014.
20. *How does the Milky Way accrete gas?* at "Good Sense and Dominant Ideology in Galaxy and Planet Formation and Evolution", Ascona, CH, 6-11 July 2014.
21. *Supernova feedback and gas accretion in galaxies* at the European Week of Astronomy and Space Science, "Star formation in galaxies: from small to large scales", Geneva, CH, 30 June – 2 July 2014.
22. *Disk-halo connection and gas accretion into galaxies* at "HI studies with SKA Pathfinders: simulations and visualisation", Dwingeloo, NL, 17-19 March 2014 (**review**).
23. *The angular momentum of the accreting gas* at "Multi-spin galaxies", Napoli, Italy, Sept-Oct 2013.
24. *The origin of the gas component* at "Dynamics of disk galaxies", Seoul, South Korea, 21-24 October 2013.
25. *Gaseous galactic halos in the context of galaxy evolution* at the Astronomische Gesellschaft, Tuebingen, Germany, 24-27 September 2013.
26. *How can star formation be sustained* at "Setting the scene for Gaia and LAMOST", IAU Symposium 298, Lijiang, China, 20-24 May 2013 (**review**).
27. *Supernova driven gas accretion* at "Magnetic fields of galaxies", workshop, Bonn, Germany, Mar 2013.
28. *The fate of the gas: The connection between star formation and gas accretion* at the European Week of Astronomy and Space Science, Roma, Italy, 2-6 July 2012.
29. *Disk-halo connection and gas accretion* at "Global Properties of HI in Galaxies: a Workshop in honor of the 35th anniversary of the discovery of the Tully-Fisher relationship", Greenbank, WV, USA, 1-3 April 2012.

30. *Impact of the Galactic fountain on the HI datacube* at “The Interstellar medium in three dimensions with Gaia”, Leiden, NL, 11–14 July 2011.
31. *Missing baryons in the Local Group* at “Problematik”, Oxford, UK, 8-14 August 2010 (**review**)
32. *Galaxy Formation and Gas Circulation* at “Hunting for the dark: the hidden side of galaxy formation”, Malta, 19-23 October 2009 (**review**).
33. *Gas accretion onto galaxies: models vs past and future observations* at “Pancromatic Radio Astronomy”, Groningen, NL, 2-5 June 2009.
34. *Modelling the gas kinematics* at “The Role of Disk-halo Interaction in Galaxy Evolution: Outflow vs Inflow?”, Espinho, Portugal, 18-22 August 2008.
35. *Extra-planar gas at low and high redshifts* at “Gas and stars in galaxies: a multi-wavelength 3D perspective”, Garching, Germany, 10-13 June 2008.
36. *Halo gas accretion onto disk galaxies* at “The Galaxy Disk in a Cosmological Context”, IAU Symposium 254, Copenhagen, Denmark, 9-13 June 2008.
37. *Extra-planar gas in spiral galaxies* at “Gas accretion and Star Formation in Galaxies”, Garching, Germany, 10-14 September 2007.

CONTRIBUTED TALKS AT MAJOR INTERNATIONAL MEETINGS

1. *The impact of galactic fountains on the global evolution of galaxy disks* at “The interplay between local and global processes in galaxies”, Cozumel, México, April 2016
2. *Gas cooling at the interface between galactic disks and coronae* at EWASS, S8, Tenerife, Spain, June 2015
3. *The impact of galactic fountains on the growth of galaxy disks* at EWASS, Sp18, Tenerife, Spain, June 2015
4. *Supernova driven accretion: how disc galaxies grow* at “The Origin of the Hubble Sequence”, Paris, France, June 2013
5. *Supernova feedback and gas accretion* at “The Physical Link between Galaxies and their Halos”, Garching, Germany, June 2013
6. *Infall of baryons into galaxy discs* at “Whereabouts, physical state and metallicity of the missing baryons”, Cervia, Italy, May 2012
7. *Bringing missing baryons into galaxy disks* at The Cosmic Odyssey of Baryons: accreting, outflowing and hiding, Marseille, France, June 2011
8. *Bulge dominated galaxies, a challenge for MOND?* at Modified Gravity Approaches to the Dark Sector, Strasbourg, France, June 2010
9. *The gaseous halos of disc galaxies* at HI Survival through Cosmic Times, Abbazia Spineto, Saertano, Italy, June 2007
10. *Gaseous halos: linking galaxies to the IGM* at Galaxy Evolution across the Hubble Time, IAU General Assembly, Symp. 235, Prague, Czech Republic, August 2006
11. *Gaseous halos: linking galaxies to the IGM* at The Fate of Gas in Galaxies, Dwingeloo, NL, July 2006
12. *The vertical edges of disc galaxies* at The edges of disk galaxies, Leiden, NL, October 2005
13. *The gaseous halos of spiral galaxies* at Island Universes, Terschelling, NL, July 2005
14. *The gaseous halos of spiral galaxies* at The formation of disk galaxies, Ascona, CH, June 2005

15. *Gas in the halos of spiral galaxies* at The Environments of Galaxies: from Kiloparsecs to Megaparsecs, Chania, Crete, Greece, August, 2004
16. *Extra-planar gas in NGC891: observations and modeling* at Extra-planar gas, Dwingeloo, NL, June, 2004
17. *High velocity gas in the halos of spiral galaxies* at Recycling intergalactic & interstellar matter, IAU General Assembly, Symp. 217, Sydney, AU, July 2003
18. *The HI halos of spiral galaxies* at From Observations to Self-Consistent Modelling of the ISM in Galaxies, JENAM 2002, Porto, Portugal, Sept. 2002
19. *Anomalous HI in spiral galaxies* at Seeing Through the Dust, Penticton, British Columbia, Canada, October 2001

COLLOQUIA

1. University of Leiden, Leiden (NL), 2019
2. University of Surrey, Guilford (UK), 2019
3. International School for Advanced Studies, SISSA, Trieste (I), 2017
4. Trieste Astrophysical Observatory, Trieste (I), 2017
5. Institute of Astronomy, ETH-Zurich (CH), 2016
6. University of Surrey, Guilford (UK), 2015
7. University of Zurich, Zurich (CH), 2014
8. Strasbourg University-Astronomical Observatory, Strasbourg (F), 2014
9. Arcetri Astrophysical Observatory, Firenze (I), 2014
10. Institute of Astronomy, ETH-Zurich (CH), 2012
11. Columbia University, New York (USA), 2012
12. Munich Joint Astronomy Colloquium, ESO-MPA-MPE-USM, Garching (D), 2010
13. GEPI, Observatoire de Paris, Meudon (F), 2009
14. Brera Observatory, Merate, Milano (I)
15. ASTRON, Dwingeloo (NL), 2008
16. Observatory of Paris, Paris (F), 2007
17. Institute of Radio Astronomy, Bologna (I), 2006
18. Astronomical Observatory, INAF, Bologna (I), 2006
19. Kapteyn Astronomical Institute of Groningen (NL), 2006
20. Institute of Astronomy, ETH-Zurich (CH), 2005
21. Department of Physics, University of Milano (I), 2004
22. ESTEC, Noordwijk (NL), 2003
23. Institute for Astronomy, University of Bonn (D), 2002
24. ASTRON, Dwingeloo (NL), 2002

ORGANIZATION OF CONFERENCES AND SCHOOLS

- SOC member, *Linking gas and star formation throughout cosmic time*, EWASS 2020 Symposium S3, June 29 - July 3, 2020, Leiden, The Netherlands.
- SOC member, *Galactic and extragalactic high velocity clouds*, May 18 - 20, 2020, Athens, Georgia, USA.

- SOC member, *Galaxy Assembly: The Emergence of Bars and Bulges*, IAU Symposium, proposal submitted the IAU.
- **SOC (chair)**, *Crossing the Rubicon: the fate of gas flows in galaxies*, September 2016, Santarcangelo di Romagna, Italy.
- SOC member, *The Periphery of Disks*, October 2014, Sydney, Australia.
- School for graduate students, *Baryons in the Universe*, Bologna, Italy, October 2011.
- SOC member, *Dark matter in galaxies & clusters of galaxies* (workshop), June 2007, Bologna
- SOC member, *A man for all galaxies*, one day meeting in honour of Prof. R. Sancisi, June 2007, Bologna.
- LOC member, *Extra-planar Gas*, 7-11 June 2004, Dwingeloo, The Netherlands.

POPULAR LECTURES AND OUTREACH

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| Nov 2019 | Lecture on “La Nostra Galassia” (Our Galaxy) at the Zuccari theatre, Sant’Angelo in Vado, Italy. |
| 2019 | Author of the outreach book “La Nostra Galassia” (in Italian), edited by RCS MediaGroup – Corriere della Sera, one of the major Italian newspapers |
| 2010–2013 | A tourist guide to the Milky Way (in Italian), Specola conferences and Piazza G. Verdi, Bologna |
| 2009 | Realization of the documentary: “Tutto è fatto di atomi” (Everything is made of atoms), 10’. Shown daily at the one-month exhibition of the Year of Astronomy. |
| 2009 | Realization of the biographical short film: “Curious Giorgio” 8’, script writer, director and editor. Shown for the retirement celebration of Prof. Giorgio Palumbo, head of the Astronomy Department of the Univ. of Bologna. |
| 2009 | I organized a film festival on “Cinema and Astronomy” in collaboration with the Cineteca di Bologna. |

Interviews by magazines, TV and radio, including physicsworld.com, Sky & Telescope and New Scientist.