

NICOLA BORGHİ

Contact
Information

- From Renazzo (Ferrara), Italy, 22 May 1996
 Dipartimento di Fisica e Astronomia “Augusto Righi”
 University of Bologna, via Piero Gobetti 93/2, Bologna, Italy
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EDUCATION

University
degrees

- Ph.D. in Astrophysics** 11/2020 – Present
 Department of Physics and Astronomy “Augusto Righi”, University of Bologna, Italy
 Project: “Cosmology with gravitational waves and combination with other probes”
 Advisors: Dr. Michele MORESCO & Prof. Andrea CIMATTI
- Laurea magistrale in Astrophysics and Cosmology (cum laude)** 9/2018 – 10/2020
 University of Bologna, Italy
 Advisors: Prof. Andrea CIMATTI & Dr. Michele MORESCO
- Laurea triennale in Astronomy (cum laude)** 9/2015 – 7/2018
 University of Bologna, Italy
- Scientific High School Diploma** 9/2010 – 7/2015
 ISIT Bassi Burgatti, Cento (FE), Italy

Other
activities

- Visiting Ph.D. student at Université de Genève (Marco Polo program)** 4-6/2022
 Project: statistical methods for cosmology with gravitational waves and galaxy catalogs
 (with Prof. Michele MAGGIORE & Dr. Michele MANCARELLA)
- ISAPP Summer School on Gravitational Waves** 6/2021
 Topics: gravitational wave theory, sources and detectors (current and upcoming)
- Asiago Multi-Messenger Astrophysics School, University of Padova** 1/2020
 Topics: astrophysical neutrinos, GWs, cosmic rays and detectors
- SperimEstate - Summer Internship at INAF OAS Bologna** 6/2014
 Project: study of soft γ -ray selected giant radio galaxies (see Bassani et al. 2016)

RESEARCH [ORCID](#) [ADS](#)First-author
publications

1. Nicola Borghi, Michele Moresco, Andrea Cimatti, Alexandre Huchet, Salvatore Quai, and Lucia Pozzetti. Toward a better understanding of cosmic chronometers: Stellar population properties of passive galaxies at intermediate redshift. *The Astrophysical Journal*, 927(2):164, March 2022a. doi: 10.3847/1538-4357/ac3240. URL <https://ui.adsabs.harvard.edu/abs/2022ApJ...927..164B>
2. Nicola Borghi, Michele Moresco, and Andrea Cimatti. Toward a Better Understanding of Cosmic Chronometers: A New Measurement of $H(z)$ at $z \sim 0.7$. *The Astrophysical Journal Letters*, 928(1):L4, March 2022b. doi: 10.3847/2041-8213/ac3fb2. URL <https://ui.adsabs.harvard.edu/abs/2022ApJ...928L...4B>

Other
publications

1. Elcio Abdalla et al. Cosmology intertwined: A review of the particle physics, astrophysics, and cosmology associated with the cosmological tensions and anomalies. *Journal of High Energy Astrophysics*, 34:49–211, June 2022. doi: 10.1016/j.jheap.2022.04.002. URL <https://ui.adsabs.harvard.edu/abs/2022JHEAp..34...49A>

2. Kang Jiao, Nicola Borghi, Michele Moresco, and Tong-Jie Zhang. A New Observational $H(z)$ Data from Full-Spectrum Fitting of Cosmic Chronometers in the LEGA-C Survey. *arXiv e-prints*, art. arXiv:2205.05701, May 2022

Contributed talks	☞ EAS2022 Valencia - Galaxies as cosmological tracers	7/2022
	☞ EAS2022 Valencia - ESO@60: A stairway to the Universe	7/2022
	☞ Université de Genève - Cosmology group meetings	6/2022
	☞ Hypatia Colloquium 2022: Early Career Astronomer series at ESO	4/2022
	☞ Sixteenth Marcel Grossmann Meeting	7/2021
	☞ Massively Parallel Large Area Spectroscopy from Space	6/2021

TEACHING ACTIVITY

Teaching assistant	Co-supervision of two master degree theses (E. Tomasetti, M. Shutz) A.Y. 2021–2023
	Master Degree Course, Astrophysics and Cosmology, DIFA, University of Bologna
	Astrophysics Laboratory (optical/near-IR module) A.Y. 2021–2022
	Master Degree Course, Astrophysics and Cosmology, DIFA, University of Bologna

OUTREACH ACTIVITY

Public engagement	“Astroversi” - university podcast since 2021
	Department of Physics and Astronomy “Augusto Righi”, University of Bologna
	☞ Science outreach podcast structured in four different programs covering general and more advanced astrophysical topics, with a focus on the Ph.D. life, state-of-the-art research, and spin-offs. Role: pre & post-production. Listen on Spotify .
	Public lectures and stargazing events since 2016
	Gruppo Astrofili Persicetani, San Giovanni in Persiceto and surrounding areas
	☞ Lecturer at the Planetarium (20+ talks, see the topics) and stargazing nights (20+)
	Press & Media
	☞ “Cronometri cosmici per la costante di Hubble” MEDIA INAF , 08/04/2022

Schools	Museo del Cielo e della Terra - FisicLab since 2017
	Agen.Ter., San Giovanni in Persiceto (BO), Italy
	☞ Laboratory activities for high school students
	University’s “Third-Mission”
	Department of Physics and Astronomy “Augusto Righi”, University of Bologna
	☞ Officina Laboratorio 2021, 2022 - <i>Earth’s motions and the concept of time</i>
	☞ Piano Lauree Scientifiche 2022 - <i>Measuring the Universe</i>
	☞ Fisica Experience museum - Scientific advisor with Prof. Nicola Semprini

OTHER INFORMATION

Extra-curricular activities	Regional Commissaire, Italian Cycling Federation	since 2017
	Volunteer amateur astronomer, Gruppo Astrofili Persicetani (www.gapers.it)	since 2016
Awards	Best MS Thesis prize, DIFA, University of Bologna	2021
	Best poster prize at the ISAPP Summer School on Gravitational Waves	2021
	Riconoscimento “Francesco Viviani”, Ferrara, Italy	2015

Italian Astronomy Olympiad, Macerata, Italy (finalist in the national competition) 2012

Languages

ENGLISH · Fluent (C1)
IELTS Academic 8 (listening 8.5, reading 9, writing 6.5, speaking 7)
ITALIAN · Native speaker
FRENCH · Basic user

IT Skills

Python (advanced) · **Julia** · **FORTRAN** · **C++** · **RStudio** · **Linux/Unix OS**
HTML5 & CSS · **LaTeX** · **OpenOffice** · **MS Office & Visual Studio** · **Mathematica**
Single-Board Computers & Microcontrollers (Arduino) **Adobe Creative Cloud**

Interests

Observational Cosmology · **Gravitational Waves** · **Cosmic Chronometers** · **Galaxy Evolution** · Theoretical Cosmology · Multi-messenger Astronomy · Computer Science & Electronics · Stargazing · Photography · Science Outreach · Travelling · Cooking