

# Martina Rossi | Curriculum Vitae

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## Professional Experience

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**1/07/2023- Present: Postdoctoral Position**, Department of Physics and Astronomy, University of Bologna, Bologna, *Italy*.

**Project:** Chemical evolution of Nitrogen in the Milky Way.  
**Advisors:** Donatella Romano, Alessio Mucciarelli

## Education

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### Ph.D

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**2019 - 2023: PhD student**, Department of Physics and Astronomy, University of Florence, Florence, *Italy*.

**Ph.D Thesis Title:** “*First stars and dwarf galaxies*”

**Advisor:** Professor Stefania Salvadori and Dottor Ása Skúladóttir, University of Florence

**Project:** Funded by ERC project “NEar FiEld cosmology: Re-Tracing Invisible Times” (NEFERTITI)

**Vote:** Excellent

### Master’s Degree

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**2016–2019: Master’s Degree in Physics and Astrophysics**, University of Florence, Florence, *Italy*. **Curriculum:** Astrophysics

**Title:** “*Constraining The Low-Mass end of the First Stars*”

**Advisor:** Professor Stefania Salvadori, University of Florence

**Vote:** 110/100 cum laude

### Bachelor’s Degree

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**2013 – 2016: Bachelor’s Degree in Physics and Astrophysics**, *The University of Florence*, Florence, *Italy*.

**Title:** “*Cosmological Evolution of Black Holes with Montecarlo’s Method*”

**Advisor:** Professor Alessandro Marconi, University of Florence

**Vote:** 103/110

### High School

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**2008 – 2013: Liceo Scientifico Niccolò Rodolico PNI**, Florence, *Italy*.

**Vote:** 100/100

### Career Breaks

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**07/21-12/21: Maternity Leave**

## International conferences and workshop:

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Talks:.....

**20-23 May 2024: International Conference- "FIRST STARS VII"**, NYC, NY,  
lightning talk: *UFDs Chronicles: Unveiling Pop III Star Descendants*

**5 March 2024: OAS SEMINARS-** Bologna italy,  
Astrophysics Talk: *First stars and ultra-faint dwarf galaxies*

**29 Jan-3 Feb 2024: Conference-** "THE MILKY WAY IS NOT AN ISLAND: THE HALO OF THE GALAXY AND ITS SATELLITES", Sexten, Italy,

Contributed Talk: *Ultra Faint Dwarf galaxies: revealing the secrets of the first stars*

**13-17 Nov 2023: Conference-** "METALS 2023", Santiago, Chile,

Contributed Talk: *Ultra Faint Dwarf galaxies: revealing the secrets of the first stars*

**26-29 June 2023: Conference-** "PHASES OF GALACTIC EVOLUTION AS TRACED BY STELLAR POPULATIONS AND STAR CLUSTERS", Sesto val pusteria, Italy,

Contributed Talk: *Unveiling the secrets of the first stars through Ultra Faint Dwarfs*

**23 Oct 2020: Talk-** SAZERAC-SIP: "THE FIRST STARS", On-line

Contributed Talk: *Strong constraints on the mass distribution of the first stars using Ultra Faint Dwarf Galaxies*

**1-6 Mar 2020: International Conference-** "FIRST STARS VI", Concepcion, Chile,

Contributed Talk: *Constraining the low-mass of the first stars*

Posters:.....

**Nov 2023: Rossi M., Salvadori S., Skúladóttir, A.:** " UNDERSTANDING THE ORIGIN OF CEMP-NO STARS THROUGH ULTRA-FAINT DWARFS", METALS 2023, Santiago (Chile)

**March 2023: Rossi M., Salvadori S., Skúladóttir, A.,** *Poster with Short Presentation:* " ULTRA-FAINT DWARF GALAXIES: UNVEILING THE SECRETS OF THE FIRST STARS", PhD Day, Florence (Italy)

**July 2022: Rossi M., Salvadori S., Skúladóttir, A.,** " DECIPHERING THE FIRST STARS SIGNATURES IN ULTRA FAINT DWARF GALAXIES", EAS 2022, Valencia (Spain)

**July 2022: Rossi M., Salvadori S., Skúladóttir, A.,** *Poster with Short Presentation:* " ULTRA-FAINT DWARF GALAXIES: UNVEILING THE SECRETS OF THE FIRST STARS", EAS 2022, Valencia (Spain)

## Publications:

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**Mar 2024: Rossi M., Salvadori S., Skúladóttir, A., Vanni I.** " HIDDEN POP III DESCENDANTS IN ULTRA-FAINT DWARF GALAXIES" (submitted to ApJ)

**Oct 2023: Vanni I., Salvadori S., Skúladóttir, A., Rossi M.** " CHARACTERISING THE TRUE DESCENDANTS OF THE FIRST STARS" MNRAS, Volume 526, Issue 2, pp.2620-2644, [ARXIV](#)

**Aug 2023: Koutsouridou I., Salvadori S., Skúladóttir, A., Rossi M., Vanni I., Pagnini G.,** " THE ENERGY DISTRIBUTION OF FIRST SUPERNOVAE" MNRAS, Volume 525, Issue 1, [ARXIV](#)

**Feb 2023: Rossi M., Salvadori S., Skúladóttir, A., Vanni I.** " UNDERSTANDING THE ORIGIN OF CEMP-NO STARS THROUGH ULTRA FAINT DWARFS" MNRAS Letter, Volume 522, Issue 1 (11 citations), [ARXIV](#)

**Mar 2023: Pagnini G., Salvadori S., Rossi M., Aguado D., Koutsouridou I., Skúladóttir, A.** " ON THE DEARTH OF

CEMP STARS IN THE GALACTIC BULGE" MNRAS, Volume 521, Issue 4, [ARXIV](#)

**Mar 2021: Rossi M., Salvadori S., Skúladóttir, A.** "ULTRA-FAINT DWARF GALAXIES: UNVEILING THE MINIMUM MASS OF THE FIRST STARS" MNRAS, Volume 503, Issue 4, June 2021, Pages 6026–6044,(32 citations), [ARXIV](#)

## Successful Observational Proposal:

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**Accepted Proposal:** 4MOST SURVEY - "4MOST survey of dwarf galaxies and their stellar streams (4DWARFS): Small but fundamental" PI: Skúladóttir, A.  
(520'000 fibre hours)

**Involved in Scientific Case of:** SPIA KID- PI: Bonifacio, P. - GEPI, Observatoire de Paris

## Astrophysics School

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**18-21 Jun 2018: Summer School,** "HANDS-ON MULTI-PROBE MASS MEASUREMENTS IN GALAXY CLUSTERS", Milan.

**12-23 July 2020: International Summer School,** "ISM OF GALAXIES FROM THE EPOCH OF REIONIZATION TO THE MILKY WAY" Online

## Seminar and Lectures attended

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**5-11 Dec 2019: Lectures on "Metallicity and Feedback in Galaxies",** Florence.

**Prof. Roberto Maiolino,** (University of Cambridge)

**27 Sep-1 Oct 2018: Advanced Lectures on Astrophysics and Gas Dynamics,** for the internationalization program of the University of Florence, Florence.

**Prof. Nick Gnedin,** (Chicago University):

- Basic Introduction of Computational Gas Dynamics
- Numerical Methods and Existing Codes
- Examples of Modern Applications

**15-17 Nov 2017: Workshop Galaxy Evolution and Environment,** (GEE5), Florence.

I only attended some selected talks on the topic of:

- Star formation and Galaxy evolution, *Luca Graziani*;
- Spatially resolved stellar population of nearby galaxies, *Stefano Zibetti*;
- The origins of first stars, galaxies and massive black holes, *Umberto Maio*

## Observational experience

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**26-29 Apr 2017: The Galileo National Telescope (TNG),** Roque de los Muchachos Observatory, Canary Islands.

Observations at the Galileo national telescope with the course of astronomy complements.

Through H $\alpha$  emission and the imaging of two galaxies NGC3370 and NGC3899, it was possible to determine the recession velocity of the galaxies and their distance and in addition, the Hubble law was verified.

**Mar 2017: The Cassini Telescope,** Loiano, Italy.

Observation at Loiano Astronomical Observatory.

## Awards

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**2020: C.R.A.L. (Circolo Ricreativo Assistenziale Lavoratori) Scholarship.**

Merit scholarship financed by the municipality of Florence for University students.

2013: C.R.A.L. (Circolo Ricreativo Assistenziale Lavoratori) Scholarship.

Merit scholarship financed by the municipality of Florence for High School students.

## Outreach

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2023: I am co-author of the book

"Tutto quello che avreste voluto sapere sul cielo (ma non avete mai osato chiedere). Aspetti poco noti di astronomia, astrofisica ed astronautica" Apice Libri

## Computer skills

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Programming.....

**Advanced:** PYTHON, FORTRAN

**Intermediate:** MATHLAB,C

Operative Systems.....

LINUX, MICROSOFT WINDOWS

Other.....

L<sup>A</sup>T<sub>E</sub>X, OPENOFFICE, POWER POINT, EXCELL, WORD.

## Languages

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**Mothertongue:** Italian

**Advanced:** Spanish :

*Conversationally fluent*

**Advanced:** English :

*B2 level certificate achieved at University of Florence*

**Basic:** French :

*Basic words and phrases only*

## Additional Information

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**Memberships:** I am a member of the Italian Association of Physics Students (AISF).

**Professional Activities:** Private tutoring in mathematics and physics for high school and university students.

## Interests

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Professional.....

- Theoretical Astrophysical Models
- First Stars
- Dwarf Galaxies
- Programming
- Logo creator. Here the two logos I designed
- Galaxy Simulation
- Feedback Processes
- Primordial BHs
- Montecarlo's Methods



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