CURRICULUM VITÆ ET STUDIORUM

PERSONAL INFORMATION:

Stefania Salvadori
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EDUCATION:

10/2009 **PhD in Astrophysics**, International School for Advanced Studies, Trieste, Italy Thesis: *Stellar Archaeology: from first stars to dwarf galaxies*.

10/2005 Admitted to the PhD course of SISSA/ISAS with written and oral examination.

09/2005 Master Degree in Physics, University of Florence, Florence, Italy.

Thesis: The merger history and stellar fossils of the Milky Way

3-7/2003 **European Erasmus Grant Program**, Theoretical Physics department, Universidad Autonoma and Universidad Complutense de Madrid, Madrid, Spain

POSITIONS:

05/2019— **Associate Professor**, Physics & Astronomy Department, Florence University 05/2017–05/2019 **Assistant Professor & Montalcini Fellow**, Physics & Astronomy Department, Florence University, Italy.

09/2016–05/2017 Marie Sklodowska-Curie Fellow, GEPI, Observatoire de Paris, France.

11/2015–09/2016 **Observatoire de Paris Fellow**, GEPI, Observatoire de Paris, France.

11/2012–11/2015 **VENI Fellow**, Kapteyn Institute, Groningen, The Netherlands.

11/2009–11/2012 **NOVA Fellow**, Kapteyn Institute, Groningen, The Netherlands.

11/2005–10/2009 PhD student, SISSA/ISAS, Trieste, Italy.

CAREER BREAKS:

01/2017-05/2017 Maternity Leave

PRIZES AND HONOURS:

- 06/2019 **Fiorino d'oro 2019:** major recognition by the City of Florence awarded for her achievements in research
- 04/2019 **PRIN grant Local Coordinator:** 3-years grant of ~180.000 euro awarded by the Italian MIUR for the project "The Quest for the First Stars".
- 07/2018 **ERC starting:** 5-years grant of 1.2 Million euro awarded by the European Research Council for the project NEFERTITI: Near-FiEld cosmology Re-Tracing Invisible TImes
- 03/2018 Awarded the Italian National Scientific Qualification for Associate Professor
- 07/2016 **Rita Levi Montalcini Prize**: 3-years Tenure Track Professorship granted by the Italian Ministry for Research and Education to bring back to Italy young promising researchers
- 05/2014 **Padrielli Prize 2014** (ex-aequo): Italian (INAF/SAIt) honour for young Italian woman in Astronomy (3.000 €)
- 05/2012 Speaker in Prof. Smoot's Master Class during the 62nd Nobel Laureate Meeting
- 03/2012 Selected by the Royal Netherlands Academy of Arts and Science and the Scientific Lindau Council to attend the 62nd Nobel Laureate Meeting dedicated to Physics
- 09/2011 **Gratton Prize 2011:** best Italian PhD Thesis in Astrophysics during 2009/10 evaluated by an international committee (7.500 €).

INDIVIDUAL GRANTS AND FELLOWSHIPS AWARDED:

- 11/2016 **AstroFit 2016**: 3-years independent Fellowship granted by the Marie Skłodowska-Curie COFUND action and the Italian National Institute for Astrophysics (INAF) *declined* -
- 01/2016 **Marie Sklodowska-Curie Fellowship 2016**: 2-years personal grant funded by the European Commission to work at the Paris Observatory (<u>173.000</u> €)
- 01/2015 Observatoire de Paris Fellowship 2015, Paris, France: 2-years independent Fellow
- 07/2012 **VENI grant 2012:** 3-years independent grant founded by the Netherlands Organization for scientific Research to work at the Kapteyn Institute of Groningen, NL (250.000 €)
- 07/2012 **AstroFit 2012**: 2-years independent grant co-founded by the <u>Marie Curie Actions</u> and the Italian National Institute for Astrophysics (INAF) *declined* -
- 02/2009 NOVA postdoctoral Fellowship 2009: 3-years independent grant (≈ 235.000 €)
- 02/2009 **Sophie and Tycho Brahe Fellowship 2009:** 3-years independent fellow co-founded by the DARK Centre of Copenhagen and the University of Berkley *declined* -
- 02/2009 Max Planck Fellowship 2009, Garching: 3-years independent fellow declined –

OTHER GRANTS AWARDED AS CO-I:

07/2016 ANR: 4-years grant funded by the French National Agency of Research (PI: S. Vergani) 01/2015 KNAW and NOVA grants for conference organization (6.000 € and 5.500 € as PI)

CONFERENCES ORGANISATION:

- 01/2023 **Co-proposer** with Dr. D'Odorico, Molaro, Cescutti, of the *IFPU Focus week:* "Enigmatic first stars and where to find them", May 2023, Trieste, Italy
- 12/2022 **Invited SOC member for the ESO workshop:** *Metal Production and Distribution in a Hierarchical Universe II*", Santiago, Chile, Nov 27 Dec 1 2023
- 09/2019 **Invited SOC member**, CEMP Stars as Probes of First-Star Nucleosynthesis, the IMF, and Galactic Assembly 9-13 September 2019, Geneva, Switzerland
- 07/2018 **Invited SOC member**, *The Metal-poor Galaxy* 3-7 July 2018, Ringberg, Germany (55 participants by invitation only)
- 11/2017 **Invited SOC member**, *Titans of the Early Universe*20-24 November 2017, Monash University Prato Centre, Italy (55 participants)
- 06/2015 **CHAIR of the SOC and the LOC**, *First stars, galaxies, and black holes: now and then* 15-19 June 2015, Groningen University, Netherlands (115 participants) http://www.astro.rug.nl/archeocosmic/
- 07/2013 **CO-CHAIR of the SOC** with Dr. M. Monelli, *Local Group, Local Cosmology* Symposium V of the European Week of Astronomy and Space Science 2013, 3-5 July 2013, Turku, Finland (40 participants) http://www.iac.es/congreso/local2013/

OVERVIEW OF PUBLICATIONS:

79 publications in total among which:

61 refereed papers in peer review journals, 3 submitted papers and **1 edited volume**. Refereed publications include:

41 papers without the PhD supervisor

12 first author's papers,

17 second/third author's papers with advised PhD/Master or post-docs

30 papers with < 5 authors.

Citations > 2900 H-index: 30

SELECTED INVITED TALKS:

- 06/2023 Phases of Galactic evolution as traced by stellar populations and star clusters Sexten Center for Astrophysics, Italy
- 07/2021 **The mass of the first stars: Big vs Small?** Higgs Forum Centre, Edinburgh, UK remote due to Covid-19. Introductory talk and chair of the discussion
- 03/2020 **FIRST STARS VI,** Conception, Chile. Highlight talk: *Dwarf galaxies as a potential probe of the early Universe*
- 09/2019 CEMP Stars as Probes of First-Star Nucleosynthesis, the IMF, and Galactic Assembly Geneva, Switzerland. Invited talk: *Empirical probe of the first star IMF*
- 05/2019 **LXIII Conference of the Italian Astronomical Society**, Rome, Italy. **Review**: Stellar Archaeology at the service of Cosmology
- 03/2019 MOSAIC 2019: Science and Surveys with the ELT Multi-Object Spectrograph, Heidelberg, Germany. Invited talk: *First stars and first galaxies*
- 03/2019 **15th Russbach School on Nuclear Astrophysics,** Salzburg, Austria. **Invited Lecturer**. Talk: *Signatures of PopIII stars: from chemical abundances to gravitational waves*
- 12/2018 **Stellar Archaeology as a Time Machine to the First Stars,** Tokyo, Japan. Invited Focus talk: *Dwarf galaxies*
- 07/2018 **The Metal-poor Galaxy,** Ringberg, Germany.

Talk: Identifying the descendants of (very) massive first stars

11/2017 **Titans of the Early Universe,** Prato, Italy.

Review: Local constraints on the high-z Universe

- 09/2017 Italian conference of the astronomical Society, Padova, Italy.
 - Talk: Stellar Archaeology in and around the Milky Way
- 08/2016 First Stars V, Heidelberg, Germany.

Review: The Local Fossils of the First Stars and Galaxies.

- 06/2016 **The Cold Universe**, Kavli Institute for Theoretical Physics (KITP) workshop, S. Barbara, US. Talk: *Hints on early cosmic star-formation from Galactic archaeology*
- 04/2016 **Cosmic Reionization**, workshop at the Munich Institute for Astro- and Particle Physics, Garching, DE. Talk: *Dwarf galaxies: now and during reionization*.
- 07/2015 **The metal enrichment of diffuse gas in the Universe**, Sexten, Italy. Talk: *Metal enrichment in the Local Group*.
- 04/2015 **The life and death of satellite galaxies**, Lorentz Centrum, Netherlands. Talk: *Dwarf galaxies: metal polluters and reionization sources*.
- 10/2013 **Star-formation (laws) in galaxies**, Blaauw Symposium 2013, Groningen, NL. Talk: *Metal-poor dwarf galaxies and DLAs: probing early cosmic star-formation*.
- 07/2013 From Dwarfs to Giants: Mike Irwin's travels in the Local Group and beyond, Sexten, Italy. Talk: Dwarf galaxies: now and then
- 05/2012 First Stars IV conference, Kyoto, Japan.

Talk: Ultra-faint dwarfs: fossil relics of the first galaxies

12/2011 **Joint Theoretical Physics meeting**, University of Groningen, Netherlands.

Talk: First stars signatures in the Milky Way

09/2010 JENAM 2010 Lisbon, Portugal Stellar archaeology: a cosmological view of dwarfs

INVITED SEMINARS AT INTERNATIONAL INSTITUTES:

10/2022 Bologna University and Observatory, Bologna, Italy.

Talk: Near-Field Cosmology and the first stars

10/2021 **Trieste Observatory**, Trieste, Italy.

Talk: Near-Field Cosmology and the first stars

01/2020 Paris Observatory, Meudon, France.

Talk: Near-Field Cosmology and the mass distribution of the first stars

05/2016 Cambridge University, Cambridge, United Kingdom.

Talk: Early galaxy formation processes: clues from Near-Field Cosmology

02/2016 Stockholm University, Stockholm, Sweden.

Talk: First stars and galaxies: clues from Near-Field Cosmology

02/2016 **Trieste Observatory**, Trieste, Italy.

Talk: Early cosmic star-formation and metal enrichment

04/2015 Arcetri Observatory, Florence, Italy.

Talk: Looking for the chemical signatures of the first stars

04/2012 ASTRON/JIVE, Dwingeloo, Netherlands

Talk: The Milky Way laboratory: from Near- to Far-field Cosmology

04/2012 Kapteyn Astronomical Institute, Groningen, Netherlands

Talk: Near-field Cosmology and the infant Milky Way

09/2011 Rome Observatory, Rome, Italy

Talk: Stellar Archaeology in the Milky Way system

10/2010 Astronomical Institute, Utrecht, Netherlands

Talk: Feedback imprints in the Milky Way system

11/2009 Arcetri Observatory, Florence, Italy.

Talk: Stellar Archaeology: from first stars to dwarf galaxies

TEACHING ACTIVITY:

2020- **Master course for students in Physics and Astrophysics**: Cosmology I Physics Department, Florence University, Florence, Italy (48 hours)
Profs: Marconi [The Cosmological Model], Salvadori [Structure Formation]

2018- **Bachelor course for students in Pharmacy**: *Physics*,
Pharmacy Department, Florence University, Florence, Italy (48 hours)
Profs: Verdini [Mechanics, Fluids], Salvadori [Thermodynamic, Electro Magnetism]

2017- Master course for students in Physics and Astrophysics: Cosmology II: from recombination to the present days,

Physics Department, Florence University, Florence, Italy (48 hours)

2016/20 **Invited lectures for PhD students**: *Stellar Archaeology*, during the course "New Frontiers in Cosmology" by Prof. Andrei Mesinger and Prof. Andrea Ferrara, Scuola Normale Superiore, Pisa, Italy (*4 hours*)

04/2015 **PhD course** (for both PhD students in Astronomy and Physics):

Near-field cosmology: first stars and dark matter, Florence University,

Italy. Teachers: E. Corbelli [dark matter] and S. Salvadori [first stars] (12 hours)

2013/11 **Lectures for Master and PhD students**: First galaxies and feedback processes, during the "Galaxy formation & evolution" by Prof. Tolstoy, Kapteyn Institute, NL (6 hours)

SUPERVISION OF PhD STUDENTS:

11/2022 **Co-supervision** (with Dr. Haywood) of a PhD student, Alice Mori, University of Florence and Paris Observatory.

Role: co-project creator

11/2021- **Supervision** of the PhD student Irene Vanni, Florence University, Italy.

2019-23 Supervision of the PhD student Martina Rossi, Florence University, Italy.
 Status: 2 papers published as first author, 1 as third, 2 papers in prep.
 Role: project creator and supervisor – in collaboration with Dr. Asa Skuladottir

2019-23 **Supervision** of the PhD student Viola Gelli, Florence University, Italy. **Role**: **project creator and supervisor** – in collaboration with Dr. Pallottini (SNS) Status: 5 published papers (3 as first author + 1 submitted). PhD Title: *Dwarf satellite galaxies at high-z: physical understanding and JWST predictions*

2013-16 Co-supervision (with Dr. Schneider) of a PhD student, Matteo de Bennassuti,
 Rome Observatory and Sapienza University, Italy. 4 paper published.
 Role: co-project creator and external supervisor. (3 months visit in Groningen).

PhD Thesis: Early cosmic star-formation in the Milky Way environment

SUPERVISION OF MASTER STUDENTS:

- Supervision of the Master student Elka Rusta, Florence University, Italy.

 Master Thesis: Can JWST observed the high-z analogues of the Local Group progenitors
- 2023 **Supervision** of the Master student Lapo Querci, Florence University, Italy. Co-supervisor: Dr. Andrea Pallottini (SNS, Pisa)

 Master Thesis: *The stellar halo of present-day dwarf galaxies*
- Supervision of the Master student Stefano Ciabattini, Florence University, Italy. Master Thesis: *The first habitable galaxies*. Defended on April 2023:
- 2021 **Supervision** of the Master student Irene Vanni, Florence University, Italy. Master Thesis: *The origin of extremely metal-poor stars*. Defended on July 2021: 110/110 Cum Laude. Now PhD student @ UNIFI
- Supervision of the Master student Andrea Saccardi, Florence University, Italy.
 Co-supervisor: Dr. Valentina d'Odorico (INAF/Trieste Observatory)
 Master Thesis: Chasing the signature of the first stars in high-z Lyman Limit systems.
 Defended on July 2021: 110/110 Cum Laude. Now PhD student @ Paris Observatory
 Honourable Mention for the Geppina Coppola Prize 2022
- Supervision of the Master student Giulia Pagnini, Florence University, Italy.

 Master Thesis: *The dearth of C-Enhanced metal-poor stars in the Galactic Bulge*.

 Defended on April 2021: 110/110. Now PhD student @ Paris Observatory
- Supervision of the Master student Martina Rossi, Florence University, Italy.
 Co-supervisor: Dr. Asa Skuladottir (UNIFI)
 Master Thesis: Constraining the IMF of the first stars.
 Defended on October 2019: 110/110 Cum Laude Now PhD student @ UNIFI
- 2019 Supervision of the Master student Viola Gelli, University of Florence, Italy.
 Co-supervisor: Dr. Andrea Pallottini (SNS, Pisa)
 Master Thesis: The stellar populations of high-z dwarf galaxies.
 Defended on September 2019: 110/110 Cum Laude Now PhD student @ UNIFI
 Awarded the first Geppina Coppola Prize 2021 for the best Italian Master Thesis in
 Astrophysics (out of 50 participants)

INSTITUTIONAL RESPONSIBILITIES:

- 2023- Member of the PhD School, Florence University, Physics Department, Italy
- 2022- **Internal member of the PhD Committee 2022**, Florence University, Physics and Astronomy Department, Italy
- 2019- **PhD student advisor (4 in total),** Florence University, Physics and Astronomy Department, Italy
- 2019- **Graduate student advisor (8 in total),** Florence University, Physics and Astronomy Department, Italy
- 2019 **Magini's Prize committee member** to evaluate for the best Master Thesis in Astrophysics awarded in an Italian University
- 2016 **PhD Thesis committee**, Chemical evolution of galaxies: from the Local Group to the Local Universe, Candidate: F. Vincenzo, Advisor: Prof. F. Matteucci, Trieste University, Italy. Referees: Dr. M. Marconi and Dr. S. Salvadori
- 2013 **Master Thesis committee**, *Origin of Super-massive Black Holes*, Candidate: C. Van Borm, Advisor: Prof. Dr. M. Spaans, Kapteyn Institute, Netherlands.
- 2012 **Bachelor Thesis committee**, *Primordial Disk Evolution, a timescale analysis*, Candidate: E. Schallig, Advisor: Prof. Dr. M. Spaans, Kapteyn Institutes, Netherlands.
- 2010-12 **Co-organizer** (with Prof. Spaans, Dr. Cazaux, Dr. Podio) of the Monday Lunch Talk at the Kapteyn Astronomical Institute of Groningen, The Netherlands

PROFESSIONAL EXPERIENCE:

- 2022 Member of the international **ANDES** team for ELT WG2: Stars and Stellar populations and WG3: Galaxy formation and evolution and the intergalactic medium
- 2022 Member and co-proposer of the international **4DWARFS** survey
- 2016 Member of the Galactic Archaeology Survey Team for WEAVE_spectrograph
- 2015 Associated Member, INAF/Arcetri Observatory, Italy
- 2011 Associated researcher at the Cosmology Group, Scuola Normale Superiore (SNS), Italy
- 05-15 Member of the Dark Ages VIrtual Department (DAVID)

REVIEWING ACTIVITIES

- 2023 Reviewer for faculty promotion, Stockholm University, Physics Department, SE
- 2022 Reviewer for faculty promotion, United Arab Emirates University, Physics Department UAE
- 2021 Reviewer for the French National Agency of Research (ANR), FR
- 2021 Editorial Board, Science Assistant Editor, Memorie della Società Astronomical Italiana, IT
- 2009 Peer reviewer for: MNRAS, A&A, ApJ, PASJ.

CO-I SHIP IN SUCCESSFUL OBSERVATIONAL PROPOSALS:

- 2023 Aguado (PI), Skuladottir, **Salvadori** et al. UVES/VLT (10 hours): *Unveiling the Chemical Imprint of Pair-Instability Supernova*
- 2023 Jacobsson (PI), Aguado, Skuladottir, **Salvadori** et al. FIES/NOT (2 nights): *PISN-explorer* hunting the descendants of massive first stars.
- 2022 Skuladottir (PI), **Salvadori** et al. VLT/UVES (7.0 hours): *C-enhanced metal-poor star in the Sculptor dSph galaxy*
- 2021 Carniani (PI) et al. including **Salvadori**, JWST Cycle 1 (21.3 Primary Spacecraft hours): Galaxy assembly at z > 6: unraveling the origin of the spatial offset between the UV and FIR Emission.
- 2020 Skuladottir (PI), Amarsi, and **Salvadori** VLT/UVES (6 nights): *Are CEMP stars carbon-enhanced? First stars revisited in light of 3D non-LTE*
- 2018 Tolstoy (PI) et al., (including **Salvadori**) VLT/FLAMES-XShooter (12 nights): *VLT follow-up of individual RGB stars with Gaia DR2 proper motion in 4 nearby dwarfs*
- 2017 Monelli M. (PI) et al. including **Salvadori**, <u>HST</u> Cycle 25 General Observer time: *Challenge to dSph formation models: are the most isolated Local Group dSph galaxies truly old?*
- 2016 Skuladottir (PI), Tolstoy, **Salvadori**, Hill, ESO FLAMES (28 h): *The unexplored halo of the Sculptor dwarf Spheroidal galaxy*
- 2016 François (PI) et al. ESO UVES: First Stars and their chemical fingerprint
- 2016 Spite (PI), Caffau, Spite, **Salvadori**, Françoise, ESO X-Shooter 12h: A CEMP star in the Pisces II dwarf galaxy: pristine CEMP-no or result of an AGB evolution?
- 2015 Gallart (PI) et al. <u>Hubble Space Telescope</u> Cycle 23 General Observer time: *The lowest mass galaxies with extended star formation history: a new cosmological challenge*
- 2014 Karman (PI), Diaz, Ryan-Weber, Caputi, Crighton, **Salvadori**, Ouchi, MUSE, *The origin of intergalactic metal absorption at 4.7*<*z*< 6 with MUSE: 11 systems in one shot
- 2014 Skùladottìr (PI), Tolstoy, Shetrone, Starkenburg, **Salvadori**, Hill, Jablonka, VLT/X-Shooter, *A census of C-enhanced metal-poor stars in the Sculptor dSph galaxy*
- 2013 Tolstoy (PI), Hill, Skùladottìr, Starkenburg, Pettini, **Salvadori**, VLT/UVES 3h, *The first carbon-rich metal-poor star in the Sculptor dSph?*
- 2013 Tolstoy (PI), Hill, Pettini, **Salvadori**, Skùladottìr, ESO VLT/FLAMES 20h, *Connecting present-day dwarf galaxies and high-redshift DLAs*
- 2012 **Salvadori** (**PI**), Tolstoy, Ferrara, VLT/UVES, Missing baryons:searching for hidden gas in the faintest dwarf galaxy
- 2011 Tolstoy (PI), Hill, Pettini, **Salvadori**, Skùladottìr, Lemasle, VLT/FLAMES, *Dwarf Galaxies: Making the Connection to DLAs*.

LONG-TERM VISITS IN INTERNATIONAL INSTITUTES:

- 04/2018 Munich Institute for Astro Particles Physics (MIAPP): The Interstellar Medium of high-z galaxies, Garching, Germany (2 weeks) declined due to overlapping teaching activity
- 06/2016 Kavli Institute for Theoretical Physics: The Cold Universe, S. Barbara, US (4 weeks)
- 04/2016 MIAPP: Cosmic Reionization, Garching, Germany (2 weeks)
- 2013-15 Osservatorio Astronomico di Roma, Italy (regular visitor, 1 week every 2/3 months)
- 03/2012 KITP, program: First Galaxies and faint dwarfs, S. Barbara, US (4 weeks)
- 2011- Scuola Normale Superiore, Pisa, Italy (associate researcher: regular visitor)
- 11/2008 Kapteyn Astronomical Institute, University of Groningen, NL (4 weeks)
- 07/2006 Institute of Nuclear Theory, University of Washington, Seattle, US (2 weeks)

PUBLIC OUTREACH:

- 03/2023 Invited seminar for the Italian Astronomical Society of Tuscany. Topic of the talk: "Stellar archaeology: a journey 13 billion years long" (only in italian)
- 01/203 Interview for the national tv during the "<u>Tg Leonardo</u>". Talking about the star SMSS1605-1443, a truly second-generation object dwelling in a binary system.
- 10/2022 Invited seminar at the Chianti observatory (online public event). Topic of the talk: "Cosmic fossils"
- 09/2022 Invited speaker for the public outreach event BRIGHT "sfide della ricerca"
- 09/2021 Invited seminar for the public outreach organization "<u>AstronomiAmo</u>". Topic of the talk (only in italian) "A caccia di fossili stellari (Hunting the first star fossils)
- 08/2021 Invited interview on the topic "Le prime stelle" on the public outreach podcast Co.Scienze
- 05/2021 Co-author of the paper *A caccia di galassie nane all'alba dell'Universo* for the outreach book "Il colle di galileo". Authors: Viola Gelli & Stefania Salvadori
- 09/2020 Speaker during the summer outreach event "Le notti d'estate (summer nights)" at the Arcetri Observatory. Topic of the event: The first stars postponed due to Covid-19
- 08/2020 Invited lecturer for the "Summer School Heraeus 2020" aimed for high-school students Topic of the lecture: *The formation of the first galaxies*
- 09/2019 Speaker during the public outreach event "Bright the night of researchers in Tuscany": Stellar Archaeology and the formation of the first stars
- 09/2019 <u>Radio interview</u> (in Italian) at Controradio to talk about Stellar Archaeology and promote Bright the night of researchers in Tuscany https://www.controradio.it/podcast/bright-2019-stefania-salvadori/
- 06/2018 Invited author of the book, *Prime Stelle*, for the series *Viaggio nell'Universo* published in 2019 by the Italian newspaper, *Il corriere della sera*
- 03/2014 Testimonial of the campaign, *Leader per la pelle*, an Italian initiative to promote woman leadership (https://vimeo.com/90317724)
- 10/2013 Grants Week Groningen, University of Groningen, Netherlands, *How to successfully apply for a VENI grant*? (invited speaker)
- 09/2011 Ceremony of the Gratton Prize Award, Frascati, Rome, Italy *Archeologia stellare:* dalle prime stelle alle galassie nane

LANGUAGES

Italian (native), English (fluent), Spanish (very good), French (good).