

## PERSONAL INFORMATION

## Andrea Pastorello



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Gender Male | Date of birth February 23, 1969 | Nationality Italian

## RESEARCH INTERESTS

Observational and theoretical studies of stellar transients: Search for supernovae in galaxy fields – Supernovae produced by the gravitational collapse of the cores of massive stars (hydrogen-rich supernovae, and their progenitors; pre-supernova variability; electron-capture supernovae; fall-back supernova candidates; supernovae produced by stars lacking a hydrogen envelope; super-luminous supernovae; supernovae interacting with a circumstellar medium) – (Pulsational) pair-instability events – Peculiar thermonuclear supernovae (calcium-rich supernovae, Iax supernovae, Ia supernovae in a circumstellar medium) – Giant eruptions of luminous blue variable stars (LBVs), and non-terminal outbursts of massive stars – Stellar coalescence events (luminous red novae) – Rare stellar transients with rapid photometric evolution (e.g., fast blue optical transients, kilonovae) – Tidal disruption events of stars – Electromagnetic counterparts of gravitational wave sources and neutrino fluxes.

## WORK EXPERIENCE

Jan 2024 – Present **First Researcher**

INAF – Astronomical Observatory of Padua, Padua, Italy

Oct 2011 – Dec 2023 **Research Staff Member**

INAF – Astronomical Observatory of Padua, Padua, Italy

Apr 2011 – Sep 2011 **Fixed-term Researcher**

“Rita Levi Montalcini” Program, University of Padua, Padua, Italy

Jun 2006 – Mar 2011 **Postdoctoral Researcher**

Astrophysics Research Centre, Queen's University Belfast, Northern Ireland, UK

Oct 2004 – May 2006 **Postdoctoral Researcher**

Max Planck Institute for Astrophysics, Garching, Germany

Apr 2004 – Sep 2004 **Postdoctoral Research Fellow**

Arcetri Astrophysical Observatory, Florence, Italy

Jun 2000 – Oct 2000 **Research Contractor**  
Astronomical Observatory of Padua, Padua, Italy

Jun 1999 – May 2000 **Research Fellow**  
Astronomical Observatory of Padua, Padua, Italy

## EDUCATION

Nov 2000 – Feb 2004 **Ph.D. in Astronomy**  
University of Padua, Italy  
*Thesis: “H-Rich Core-Collapse Supernovae”*  
Visiting student at University of Oklahoma, supervised by Prof. D. Branch.

Oct 1998 **Degree in Astronomy**  
University of Padua, Italy  
*Thesis: “SN 1995G: Evidenza d’interazione con il mezzo circumstellare”.*

## CERTIFICATIONS

27 Dec 2013 **National Scientific Qualification 2012**  
*“02/C1 - Astronomy, Astrophysics, Physics of the Earth and Planets”*; Second level.  
License validity: 11 years (until 27 December, 2025).

## FUNDED RESEARCH PROJECTS

Sep 13, 2022 **INAF – PRIN 2022**  
P.I.: A. Pastorello; the project has been funded with 167 kEuro  
Project title: *“Shedding light on the nature of gap transients: from the observations to the models”.*

May 25, 2017 **INAF – PRIN 2017**  
Co-I; P.I.: M. Giroletti; the project has been funded with 480 kEuro  
Project title: *“Towards the SKA and CTA era: discovery, localisation, and physics of transient sources”.*

Feb 17, 2015 **INAF – PRIN 2014**  
P.I.: A. Pastorello; the project was funded with 135 kEuro  
Project title: *“Transient Universe: unveiling new types of stellar explosions with PESSTO”.*

Feb 8, 2012 **INAF – PRIN 2011**  
Co-I; P.I. S. Benetti; the project was funded with 122 kEuro  
Project title: *“Transient Universe: from ESO Large to PESSTO”.*

Nov 10, 2010 **Program for young researchers “Rita Levi Montalcini” 2009**  
P.I.: A. Pastorello; My project, carried out at the University of Padua, was funded with 181.1 kEuro  
Project title: *“Death of Massive Stars: Studying the Most Unusual Transients Discovered by Panoramic Surveys”.*

## EDUCATIONAL EXPERIENCES

## Supervisory responsibilities

## Fixed-term research fellows

- Irene Salmaso (INAF – Astronomical Observatory of Padua), starting from April 2024 for a period of one year.
- Giorgio Valerin (INAF – Astronomical Observatory of Padua), starting from May 2023 for a period of two years.
- Nancy Elias-Rosa (INAF – Astronomical Observatory of Padua), from October 2015 to March 2017.
- Matteo Miluzio (INAF – Astronomical Observatory of Padua), from November 2014 to January 2015.

## Ph.D. students

- Mingxia Huang (University of Padua; Cicle XL; 2024–expected 2028). Supervisor: A. Pastorello; Advisors: L. Tomasella, G. Carraro. Ph.D. thesis title: *“Supernovae interacting with the circumstellar medium”*.
- Andrea Reguitti (Universidad Andrés Bello; 2019–2023). Supervisor: G. Pignata; Advisor A. Pastorello. Ph.D. thesis title: *“Exploring the final stages of massive stars through Type II In Supernova precursors and LBV variability”*.
- Giorgio Valerin (University of Padua; Cicle XXXV; 2019–2023). Supervisor: A. Pastorello. Ph.D. thesis title: *“Expanding the sample of electron-capture supernova candidates”*.
- Yongzhi Cai (University of Padua; Cicle XXXII; 2016–2019). Supervisor: A. Pastorello. Ph.D. thesis title: *“Intermediate-Luminosity Optical Transients”*.
- Leonardo Tartaglia (University of Padua; Cicle XXVIII; 2013–2016). Supervisor: A. Pastorello. Ph.D. thesis title: *“Bright supernovae and supernova impostors”*.

## M.Sc. Students

- Francesco Guidolin (Department of Physics and Astronomy, University of Padua; 2024). Supervisor: G. Carraro; co-supervisors: A. Pastorello, G. Valerin. Thesis title: *“The multi-wavelength evolution of luminous red nova AT2021aess”*.
- Irene Salmaso (Department of Physics and Astronomy, University of Padua; 2020). Supervisor: S. Ciroi; co-supervisors: A. Pastorello. Thesis title: *“Characterisation of a nuclear transient in NGC 6315”*.
- Giorgio Valerin (Department of Physics and Astronomy, University of Padua; 2019). Supervisor: P. Marigo; co-supervisors: A. Pastorello. Thesis title: *“NGC 300 2008OT-1: Stellar Outburst or Electron Capture Supernova?”*.
- Andrea Reguitti (Department of Physics and Astronomy, University of Padua; 2018). Supervisor: S. Ciroi; co-supervisors: A. Pastorello. Thesis title: *“The peculiar SN 2013gc: Evidence of an eruptive phase before the explosion”*.
- Sabrina Vanni (Department of Astronomy, University of Padua; 2012). Supervisor: G. Piotto; co-supervisors: A. Pastorello, M. Turatto. Thesis title: *“Studio fotometrico e spettroscopico di SN 2012ab, una supernova di tipo II in molto luminosa”*.
- Massimo Ramina (Department of Astronomy, University of Padua; 2003). Supervisor: R. Barbon; co-supervisors: L. Zampieri, A. Pastorello. Thesis title: *“Parametri fisici delle supernovae di tipo II-plateau: confronto fra modello e osservazioni”*.

## Training internships for undergraduates and graduate students

- Irene Salmaso (University of Padua); 3 months, spring 2020.
- Andrea Reguitti (University of Padua); 3 months, summer 2018.
- Fang Huang (Beijing Normal University); 5 months, From Sep 2014 to Jan 2015.

Teaching activities **PhD courses**

- Monographic courses for PhD students (six cycles, each of them lasting ten hours) on “*Supernovae*”, in the framework of educational program offered by the PhD School in Astronomy of the University of Padua:
  - from October 25 to 28, 2011;
  - from October 29 to November 6, 2012;
  - from May 5 to 14, 2014;
  - from April 18 to 22, 2016;
  - from March 1 to 9, 2021;
  - from May 22 to 26, 2023.
- Lecturer at the Doctoral School of Astrophysics “*Francesco Lucchin*” 2016, which was held at the Capodimonte Astronomical Observatory (Naples, Italy) from 23 to 27 May 2016. Title of the lectures: “*Core-collapse supernovae*”.

## PROFESSIONAL SERVICE

Referee/evaluator activity **International scientific journals and books**

- Referee for the following international scientific journals:
  1. Nature
  2. Science
  3. Astrophysical Journal
  4. Astrophysical Journal Letters
  5. Astronomy & Astrophysics
  6. The Astronomical Journal
  7. Monthly Notices of the Royal Astronomical Society
  8. Galaxies
- Referee for the book: “*Supernova Explosions*” (Astronomy and Astrophysics Library), 2017. Authors: David Branch & J. Craig Wheeler, Editor: Springer-Verlag GmbH (ISBN: 978-3-662-55054-0).

**Scientific proposals for international institutions**

- *European Southern Observatory (ESO) Observing Programmes Committee (OPC)* panelist in periods P92 and P93.
- *Time Allocation Committee (TAC)* member for the *Las Cumbres Observatory Global Telescope (LCOGT) network* in period 2014A.
- Evaluator of observational proposals for the Gemini Telescope, the Liverpool Telescope and the VLT Survey Telescope – *OPTICON proposal* evaluator.
- Evaluator of funding requests for research projects submitted to the *Israel Science Foundation*, on the *Joint NSFC-ISF Research Grants* (years 2021 and 2024); and the *Dorothy Hodgkin Fellowships*, year 2024 of the *Royal Society*.
- Evaluator for the candidacies for an assistant staff scientist position at the Faculty of Physics of the *Weizmann Institute of Science* (Israel), and for a promotion to Scientist-“E” in Pay Level-13 as per 7<sup>th</sup> CPC (equivalent to Associate Professor) at the *Aryabhata Research Institute of Observational Sciences* (ARIES, Uttarakhand, India).

## M.Sc. and Ph.D. theses

- **Emilio Hueichapán** (April 2026 (expected); Ph.D. in Astronomy, Facultad de Ingeniería y Ciencias, Universidad Diego Portales – Supervisor: J. L. Prieto).
- **Valentina Canton** (June 2024; M.Sc. degree, Department of Physics and Astronomy, University of Padua – Supervisor: S. Ciroi; co-supervisor: M. Orio).
- **Francesco Iraci** (October 2022; M.Sc. degree, Department of Physics and Astronomy, University of Padua – Supervisor: M. Mapelli).
- **Marco De Pascale** (October 2014; Ph.D. in Astronomy, University of Padua – Supervisor: A. Baruffolo).
- **Igor Di Cataldo** (October 2010; M.Sc. degree, Department of Astronomy, University of Padua – Supervisor: A. Bianchini; co-supervisor: L. Zangrilli).

## Committee membership/panelist

## Organisation of workshops/conferences/meetings

- Member of the *Local Organizing Committee* (LOC) of the conference *An extra-ordinary Journey into the Transient Sky*, held in Padua (Italy), 2025 April 1 to 4.
- Member of the *Science Organising Committee* (SOC) of the Symposium “*Supernova diversity: prospects and challenges for next-generation surveys*”, EWASS 2018, held in Liverpool (UK), 2018 April 3 to 6.
- Member of the *Local Organising Committee* (LOC) to the meetings of the NUTS2 (October 17 – 18, 2019; and September 7 – 8, 2023) and PESSTO (April 29 – 30, 2013) collaborations, held in Padua (Italy).
- Organizational and logistical support activities for the *RAS National Astronomy Meeting*, held from 31 March to 4 April 2008 at Queen’s University Belfast (Northern Ireland, UK).

## NATIONAL AND INTERNATIONAL RESEARCH TEAMS AND WORKING GROUPS

### 2016 – in progress **SOXS**

INAF is the leading institution (50 %) of the international consortium that has built the *Son Of X-Shooter* spectrograph (SOXS; P.I. S. Campana; *Schipani et al. 2016, SPIE, 9908, 41*), which has been installed on the 3.56-m New Technology Telescope (NTT) at ESO’s La Silla Observatory. I am both the deputy leader of the working group dedicated to “Intermediate Brightness Optical Transients” and an active member of other science working groups within the SOXS collaboration, including those studying “Fast and Extreme Transients (and Super-Luminous Supernovae)”, “Core-collapse Supernovae”, and “Classification of New Transients”.

### Sep 2016 – present **VRO-LSST**

I am the leader of the scientific project entitled “*Studying peculiar supernovae, supernova impostors and stellar mergers*” approved by INAF in the context of the *Legacy Survey of Space and Time* (LSST) at the *Vera C. Rubin Observatory* (VRO). I am a member of the “*Transients and Variable Stars*” (TVS; <https://lsst-tvssc.github.io/>) collaboration, where I have contributed to prepare a few papers, including the *LSST-VRO TVS RoadMap paper* (*Hambleton et al. 2023, PASP, p.105002, 102*). I am currently a delegate for *Data Preview 0.2*. I participate in the INAF working group on *Community Alert Brokers* for LSST–VRO (2018–2019). I am currently coordinating a team of researchers interested in studying peculiar stellar transients provided by the forthcoming VRO-LSST survey that includes L. Tartaglia, G. Valerin, A. Reguitti and I. Salmaso.

Mar 2018 – present **ENGRAVE**

I am a member of the “*Electromagnetic counterparts of gravitational wave sources at the Very Large Telescope*” (ENGRAVE; chaired by S. J. Smartt and A. Levan) collaboration, aimed at studying the electromagnetic counterparts of gravitational wave sources at the Very Large Telescope (VLT). The project involves the use of several instruments mounted on the VLT modules: X-Shooter, FORS, HAWK-I and MUSE. The collaboration, consisting of over 300 scientists from all over the world, has a multi-period Large Program approved at VLT, in *Target-of-Opportunity* mode. I have been part of the ENGRAVE operations team that has the responsibility of reacting in real time when a gravitational wave detection is reported.

Apr 2016 – present **NUTS/NUTS2**

I am one of the founders of the collaboration named “*NOT Unbiased Transient Survey*” (NUTS; active between April 2016 and March 2019), which consists of more than 40 researchers from Italy, Spain, Ireland, Sweden, Finland, and Denmark. The scientific goal of the collaboration is the optical and near-infrared study of peculiar transients discovered in the Northern Hemisphere. An extension of the project has been approved at least until October 2025 (NUTS2), with 12 half-nights per semester at the 2.56-m Nordic Optical Telescope (NOT) in *Service* mode with the infrared camera NOTCam, plus 75 hours in *Target-of-Opportunity* mode in the optical domain with ALFOSC. I have also been a member of the scientific council that oversees the survey for 5 years.

Apr 2012 – October 2025 **PESSTO/ePESSTO**

I am one of the founding members of the “*Public ESO Spectroscopic Survey of Transient Objects*” (PESSTO; P. I.: Stephen J. Smartt). The survey has been managed by a collaboration of about 200 researchers, and has been conceived to follow up and study in detail supernovae and other types of stellar transients in optical and infrared photometry and spectroscopy with the 3.56-m ESO-NTT (equipped with EFOSC2 and SOFI). This *Large Program* (running for an average of about 90 nights per year), was originally intended to last five years. Due to its success, the program was subsequently extended several times (e-PESSTO; P. I.: Cosimo Inserra). I led the “*Target & Alert Team*” for the first two years of the survey. I then spent three years as a member of the steering committee that oversees the survey, and eventually became the leader of the “*Interacting Transients*” working group.

Apr 2009 - Mar 2012 **“Supernova variety and nucleosynthesis yields” – ESO Large Program**

This Large Program at ESO-NTT (184.D1140, P.I.: S. Benetti) was designed to study the production of chemical elements in both classical thermonuclear supernovae and supernovae produced by the gravitational collapse of the stellar core. The project had a budget of about 30 nights per year. The scientific community participating in the project became the core team of the future PESSTO survey. In this program, I led the alert team that was responsible for selecting objects for follow-up, coordinating the observational strategies.

2002 - 2006 **“The Physics of Type Ia Supernova Explosions: A new European Research and Training Network”**

European astronomers and researchers at the Max-Planck-Institute for Astrophysics (MPA) joined a EU-funded Research and Training Network (*European Community's Human Potential Programme under contract HPRN-CT-2002-00303*, P.I. W. Hillebrandt) to perform systematic and detailed observations of nearby Type Ia supernovae. The aim of the project was a better understanding of the nature of these stellar explosions and the use of very distant supernovae for determining the structure of our Universe. Along with other young researchers, I was recruited as a postdoctoral fellow at the MPA, Garching bei München, to study nearby Type Ia supernovae.



## PUBLICATIONS SUMMARY

- I have published 33 first-author papers on refereed journals, with more than 3000 citations [source: *Astrophysics Data System* (ADS)]. These papers are available at the following link to the ADS library: [First-author papers on refereed journals](#).
- 196 published (or accepted for publications) articles on refereed journals as a co-author. These papers have gathered more than 17600 citations, and can be viewed and downloaded through this ADS library: [Co-authored papers on refereed journals](#).
- Approximately 1280 unrefereed publications (circulars and electronic telegrams, conference proceedings, data archives), which have been cited nearly 1570 times, read over 35600 times, and downloaded nearly 11900 times. These publications are available at the following link to the ADS library: [Un-refereed publications](#).
- My publications have gathered almost 22300 citations, and determine a **H-index 78**. In total, these publications have collected almost 280k reads, and 135k downloads (source ADS). The ADS library that includes all my publications (with or without peer review process) is available at the following link: [List of all publications](#).

## Invited articles

- 1 Dec 2008 Invited “News & Views” article (co-authored by F. Patat) for the journal **Nature**, with title [“Echo from an ancient supernova”](#)
- 7 Aug 2019 Invited comment paper (co-authored by M. Fraser) for the journal **Nature Astronomy**, entitled [“Supernova impostors and other gap transients”](#)

## CONTRIBUTIONS AS INVITED SPEAKER AT INTERNATIONAL AND NATIONAL CONFERENCES

### Invited talks at conferences, symposia and workshops

- 4 Jul 2022 “Gap transients: their phenomenology and classes in relation to more common/normal transients”, invited talk at the workshop: “Gap Transients: Giant Eruptions or Stellar Mergers?”, 4 – 8 July 2022, Sexten (Bolzano), Italy
- 19 Nov 2021 “Gap transients, and their connection with supernovae interacting with circumstellar material”, invited talk at the **SuperVirtual 2021** conference: “From common to exotic transients - A virtual conference on supernovae and related transients”, 15 – 19 November 2021
- 21 Oct 2019 “Gap transients and interacting supernovae”, invited talk at the workshop: “Anisotropies in core-collapse supernovae explosions”, 21 – 23 October 2019, Palermo, Italy
- 11 Dec 2018 “Ejecta-CSM interacting transients”, invited talk at the First Italian SOXS Conference, 10 – 12 December 2018, Pavia, Italy
- 30 May 2018 “The observational variety of Type Ibn supernovae”, invited talk at the conference: “Shocking Supernovae: surrounding interactions and unusual events”, 28 May – 1 June 2018, Stockholm, Sweden

- 3 May 2018 “The death of massive stars: new observational constraints”, invited talk at the LXII SAI conference: “L’astronomia multi-messenger: didattica, ricerca, cultura e sviluppo del territorio”, 2 – 5 May 2018, Teramo, Italy
- 7 Sep 2017 “Beyond the Traditional Core-Collapse Supernovae: New Insights from the Observations”, invited talk at the conference: “The Amazing Life of Stars”, 4 – 8 September 2017, Cefalù, Italy
- 2 Mar 2017 “Studies of peculiar transients with TNG: Past results and future perspectives”, invited talk at the workshop: “La missione e le prospettive scientifiche di TNG nell’astrofisica del 2020”, 1 – 3 March 2017, Padua, Italy
- 25 Aug 2016 “Mass loss and interacting supernovae: pre-supernova outbursts”, review talk at the MIAPP 2016 workshop: “The Physics of Supernovae”, 22 August – 16 September 2016, Garching bei München, Germany
- 6 Jul 2016 “Unusual stellar explosions”, invited talk at the Symposium 16 of EWASS 2016: “Frontiers of massive-star evolution and core-collapse supernovae”, 4 – 8 July 2016, Athens, Greece
- 10 Jul 2013 “Impostors and interacting supernova connection”, invited talk at the Symposium 8 of EWASS 2013: “Deaths of massive stars as supernovae and gamma-ray bursts”, 8 – 13 July 2013, Turku, Finland
- 14 Jun 2013 “Explosions of massive stars: new types of transients”, invited talk at the scientific ICRANet 2013 meeting on the “50th anniversary of the Kerr solution of the Einstein’s equations”, 3 – 21 June 2013, Pescara, Italy
- 13 Jun 2013 “Observational properties of classical supernovae”, invited talk at the scientific ICRANet 2013 meeting on the “50th anniversary of the Kerr solution of the Einstein’s equations”, 3 – 21 June 2013, Pescara, Italy
- 2 Jul 2012 “Real supernovae and supernova impostors”, invited talk at the Symposium 7 of EWASS 2012: “Theory and Observations of Core-Collapse Supernovae: From the explosion mechanism to the building up of the remnant”, 2 – 6 July 2012, Rome, Italy
- 10 Aug 2011 “Peculiar supernovae and their progenitors”, invited review talk at the workshop: “Explosive Ideas about Massive Stars - from Observations to Modeling”, 10 – 13 August 2011, Stockholm, Sweden
- 20 Jun 2011 “Observed diversity of core-collapse supernovae: focus on new supernova types”, invited talk at the conference: “Supernovae and their Host Galaxies”, 20 – 24 June 2011, Sydney, Australia
- 20 Oct 2010 “Observations of unusual supernovae - Preliminary results with X-Shooter”, invited talk at the workshop: “The First Year of Science with X-Shooter”, 18 – 22 October 2010, Como, Italy
- 28 Jun 2010 “Supernova classification - Focus on new supernova types”, invited review talk at the XXVI IAP Annual Colloquium: “Progenitors and Environments of Stellar Explosions”, 28 June – 2 July 2010, Paris, France
- 4 May 2010 “Supernova taxonomy - New supernova types”, invited review talk at the LIV SAI conference: “L’astronomia italiana - prospettive per la prossima decade”, 4 – 7 May 2010, Naples, Italy
- 17 Sep 2008 “Unusual Supernovae”, invited review talk at the international astronomical meeting: “Probing Stellar Populations out to the Distant Universe”, 8 – 19 September 2008, Cefalù, Italy



10 Nov 2006 “*Observations of low-luminosity, Ni-poor II-P SNe: low or high mass progenitors?*”, invited talk at the *Specialist Discussion Meeting – Royal Astronomical Society*, 10 November 2006, London, United Kingdom

## Selection of contributed talks at conferences, symposia and workshops

26 Jun 2024 “*Ejecta-CSM interacting Gap Transients (ILOTs)*”, contributed talk at the meeting of the SOXS consortium held at the Astronomical Observatory of Capodimonte, 24–27 Jun 2024, Naples, Italy

23 Jul 2018 “*Luminous Red Novae*”, contributed talk at the *e-PESSTO* meeting held at the CNR headquarters, 23–24 July 2018, Rome, Italy

14 Sep 2016 “*Type Ibn SN variety*”, contributed talk at the thematic *MIAPP 2016* workshop: “*Supernovae: The Outliers*”, 12 – 16 September 2016, Garching bei München, Germany

30 Apr 2013 “*Type Ibn supernovae discovered by La Silla-QUEST and OGLE-IV*”, contributed talk at the Padua *PESSTO* meeting, 29 – 30 Aprile 2013, Padua, Italy

20 Sep 2012 “*Type Ibn Supernovae - The contribution of PESSTO*”, contributed talk at the IEEC *PESSTO* meeting, 20 – 21 September 2012, Barcelona, Spain

27 Jun 2011 “*Faint supernovae or supernova impostors?*”, contributed talk at the *Anglo-Australian Observatory workshop: “From Starburst to Supernova”*, 27 – 28 June 2011, Sydney, Australia

1 Sep 2010 “*The discovery of ultra-luminous supernovae in 3Pi and Medium Deep Field*”, contributed talk at the meeting of the *Pan-STARRS Science Consortium*, 30 August – 1 September 2010, Belfast, Northern Ireland, United Kingdom

2 Oct 2006 “*SN 2005cs in M51: the Enigma of the Low-Luminosity SNe II Plateau*”, contributed talk at the *EARA Workshop 2006*, 2 – 4 October 2006, IAP, Paris, France

14 Sep 2005 “*ESC Observations of SN 2004eo: Typical Thermonuclear Supernova or 1991bg-like Event?*”, contributed talk at the meeting dell’*EU RTN* meeting “*The Physics of Type Ia Supernova Explosion*”, September 2005, Garching bei München, Germany

19 Jun 2004 “*Optical and Infrared Observations of SN 1995N - Energy Catalogue*”, contributed talk at the international conference: “*1604 – 2004 Supernovae as cosmological lighthouses*”, 16 – 19 June 2004, Padua, Italy

23 Apr 2003 “*Observational Properties of Type II-P Supernovae*”, contributed talk at the *IAU Colloquium 192: “Supernovae: 10 Years of SN 1993J”*, 22 – 26 April 2003, Valencia, Spain

Mar 2003 “*Spectro-photometric properties of Type II-plateau supernovae*”, contributed talk at the *RTN Workshop and Winter School: “The Physics of Type Ia Supernova Explosions”*, 10-15 March 2003, Ringberg Castle, Tegernsee, Germany

Jul 2002 “*Faint Core-Collapse Supernovae*”, contributed talk at the Summer workshop organized by ESO/MPA/MPE: “*From Twilight to Highlight, The Physics of Supernovae*”, 29 – 31 July 2002, Garching bei München, Germany

## Institute seminar selection

- 9 Jun 2021 “Gap transients, and connections with supernovae interacting with circumstellar material”, virtual seminar of the *Astromeeeting* series, INAF – Astronomical Observatory of Capodimonte; Naples, Italy
- 1 Feb 2017 “The dying breath of massive stars”, institute seminar, INAF – Astronomical Observatory of Trieste; Trieste, Italy
- 17 Nov 2011 “Transients in the gap and ultra-bright supernovae”, institute seminar, INAF – Astronomical Observatory of Padua; Padua, Italy
- 20 Oct 2011 “New types of stellar explosions”, institute seminar, INAF – Observatory of Astrophysics and Space Science of Bologna; Bologna, Italy
- 1 Dec 2009 “Faint supernovae and SN impostors - Transients in the luminosity gap between novae and supernovae”, seminar at the Armagh Observatory; Armagh, Northern Ireland, United Kingdom
- 21 Feb 2008 “Core-collapse explosions in He-rich circumstellar environments”, institute seminar at the AlbaNova University Center; Stockholm, Sweden
- 25 Sep 2007 “Weird Supernovae: core-collapse explosions in He-rich circumstellar environments”, ESO Auditorium Lunch Talk; Garching bei München, Germany
- 12 Sep 2006 “The Enigma of underluminous SNe II plateau”, institute seminar at the Astrophysical Research Centre, Queen’s University Belfast; Belfast, Northern Ireland, United Kingdom
- 9 Jun 2005 “Hydrogen-Rich Core-Collapse Supernovae”, institute seminar at the Max-Planck-Institut für Astrophysik; Garching bei München, Germany
- 1 Apr 2004 “Physical Properties of H-Rich core-collapse Supernovae”, institute seminar at the Astrophysical Observatory of Arcetri; Florence, Italy
- 11 Mar 2004 “Observed Evidences of Mass Loss in Progenitors of CC-SNe: II Events”, institute seminar at the Astronomical Observatory of Collurania; Teramo, Italy
- 10 Mar 2004 “H-rich Core-Collapse Supernovae”, institute seminar at the Astronomical Observatory of Collurania; Teramo, Italy
- May 2002 “Faint Type II Supernovae”, institute seminar at the Department of Astrophysics of INAOE, Puebla, Mexico

## OUTREACH ACTIVITY

### Public outreach talks

- 22 Nov 2019 “L’Universo degli Oggetti Transienti: non solo Supernovae”, public talk held at the Sala Civica Barbarani, San Bonifacio (Verona), Italy
- 18 Mar 2016 “Esplosioni di supernovae, sorgenti degli element pesanti del cosmo”, public talk held at the Sala Ex-Circostrizione, Forlì, Italy

- 12 Dec 2015 “*Supernovae - L’epilogo della vita delle stella massicce*”, public talk held at the *Auditorium Fonato* of Thiene (Vicenza), Italy
- 4 Oct 2015 “*Transienti Interagenti*”, public talk at the amateur astronomy meeting of the *Italian Supernovae Search Project*, *Casa della Comunità L. Martin*, Ponte di Piave (Treviso), Italy
- 23 Nov 2012 “*Evoluzione stellare e fenomeni transienti*”, public talk at the *Planetarium Nicolò Cusano*, Cortina d’Ampezzo (Belluno), Italy
- 27 Mar 2012 “*Quasi Supernovae*”, public talk at the amateur astronomy meeting of the *Italian Supernovae Search Project*, *Foro Boario*, Forlì, Italy
- 24 Jan 2012 “*Studi di supernovae*”, public talk at the amateur astronomy meeting of the *Italian Supernovae Search Project*, *Astronomical Observatory of Montarrenti*, Sovicille (Siena), Italy
- 15 Jan 2012 “*Nuovi tipi di esplosioni stellari*”, public talk at the amateur astronomy meeting of the *Italian Supernovae Search Project*, *Astronomical Observatory of Montarrenti*, Sovicille (Siena)

### Selection of press releases and contributions for *Media INAF*

- 14 Jun 2019 “*L’universo primordiale di Webb è esplosivo*” – Media INAF
- 19 Dec 2019 “*Stelle perdute nel tempo*” – Media INAF
- 21 Feb 2018 “*Spettro d’ipernova a distanza di record*” – Media INAF
- 7 Jul 2017 “*Quando esplodono le stelle*” – Media INAF
- 19 Mar 2015 “*Le supernovae subito in gran spolvero*” – Media INAF
- 12 Jun 2014 “*La stella imbrogliona che si finge supernova*” – Media INAF
- 4 Dec 2008 “*Ancient supernova mystery solved*” – BBC
- 3 Dec 2009 “*Light echoes solve mystery of famous supernova*” – NewScientist
- 14 Jun 2007 “*The double death star*” – The Telegraph
- 13 Jun 2007 “*Monster star goes out with two bangs*” – NBC News
- 13 Jun 2007 “*Dual explosions marked death of huge distant star*” – Reuter

## Other outreach experiences

I have contributed to the realization of numerous initiatives of scientific outreach, briefly summarized here:

- Numerous active collaborations with Italian and foreign amateur astronomers, which led to the organization of coordinated observational campaigns of astrophysical transient events, whose data were published in scientific journals.
- Podcast addressed to a non-expert audience focused on the results reported in the Nature article entitled “*A giant outburst two years before the core-collapse of a massive star*”.
- Interview given to *NHK* Japanese state broadcaster for the documentary “*Itagaki, the Supernova Hunter*”.
- Interview granted for an article in Science dedicated to the well-known Japanese amateur astronomer Koichi Itagaki, entitled “*The Star Watcher*”.
- Speaker and/or support activity for a number of editions of the *European Researchers’ Night*, held at the Astronomical Observatory of Padua and at the Department of Physics and Astronomy of the University of Padua.
- Author of a chapter in the popular volume produced by Media INAF, with title: “*Glossario del Cielo*”.

## OBSERVATIONAL AND TECHNICAL SKILLS

### Observational proposals

I have successfully submitted proposals for observing time at many telescopes as a *Principal Investigator* or *Co-Investigator*, on stellar transient science topics. The proposals, including several *Large/Long-term Program* approved at different times, have been awarded observing time at the following facilities: Hubble Space Telescope, Spitzer Space Telescope, Swift Spacecraft, 10.4 m Gran Telescopio Canarias, 8.4 m Large Binocular Telescope, 8.2 m ESO-Very Large Telescope, 8.1 m Gemini North and South, 4.2 m William Herschel Telescope, 3.6 m Devasthal Optical Telescope, 3.58 m New Technology Telescope (included a few *Large Program*) and other ESO-La Silla telescopes, 3.56 m Telescopio Nazionale Galileo (including numerous *Large e Long-Term Programs*), 3 m Shane Telescope (Lick Observatory), 2.56 m Nordic Optical Telescope, 2.2 m MPG/ESO Telescope, 2 m Liverpool Telescope, 0.6 m Rapid Eye Mount Telescope, in addition to the telescopes of the Asiago Astrophysical Observatory, the Observatory of Calar Alto and the Las Cumbres Observatory Global Telescope Network.

### Observational experiences at the telescope

I made direct observational experiences at the following telescopes, equipped with instruments for optical and/or near-infrared photometry and spectroscopy: 1.82 m Telescopio Copernico + AFOSC (Cima Ekar), 1.22 m Telescopio Galileo + B&C (Asiago), ESO Dutch 0.92 m telescope, 1.54 m Danish Telescope + DFOSC, 2.2 m MPG/ESO telescope + WFI, 3.6 m ESO telescope + EFOSC2, 3.58 m New Technology Telescope + SOFI.

### Remote observations, and use of data reduction tools

I led observation campaigns of many variable stellar sources, managing tools for the selection of stellar sources to observe, remote web interfaces for the submission of observation blocks to various telescopes (e.g., ESO-VLT, Gemini Telescope, Telescopio Nazionale Galileo, Liverpool Telescope and the Asiago/Cima Ekar telescopes), as well as pipelines and other programs for data reduction in the *IRAF* and *PyRAF* environments.

## OTHER SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	B2	C1	C2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user  
[Common European Framework of Reference for Languages](#)

## Interpersonal communication skills

- **Teamwork:** I have worked and interacted with a number of research groups, from small teams within the institutions that hosted me, to larger international collaborations composed by hundreds of researchers.
- **Mediation skills:** As an astronomer, I use to working with both highly experienced university staff and researchers, and with young students at the beginning of their career. In particular, I believe the scientific interaction with the latter is very rewarding. I provide my students the knowledge and tools essential for the initial steps of their career as researchers.
- **Intercultural skills:** Since I worked (or have been hosted) at European and American research institutes, I gained the appropriate experience to supervise work packages in projects of international dimension. I learned to relate with people having a cultural background and an approach to scientific challenges different from mine. This wealth of experience is an essential support when I operate in the context of large international scientific collaborations, or when I follow students coming from non-Italian universities.

## Computing/digital skills

Basic to advanced knowledge of operative systems (Mac OS X, Windows, Linux, Unix, Android) – Programming languages (Python, HTML, MySQL, LaTeX, SuperMongo) – Data analysis packages (IRAF, PyRAF) – Data storage/management platforms (DropBox, Google Drive, WeTransfer) – Graphics and presentation tools (Microsoft Powerpoint, Keynote, OpenOffice, Pages, Gimp) – Spreadsheets (Numbers, Excel) – Web browsing programs (Chrome, Safari, Firefox, Internet Explorer) – Editing programs (Emacs, Nedit, Microsoft Word) – Viewing programs (Ghostview, Acrobat Reader, Mac Preview) – Social networking (Twitter, Mastodon, Bluesky, Facebook) – Communication tools (E-mail, Skype, WhatsApp, Zoom, Google Meet).

The information contained in this “**curriculum vitae and studiorum**” is provided under the personal responsibility of the undersigned, pursuant to articles 46 and 47 of the Presidential Decree of 28 December 2000, number 445, and subsequent amendments and additions, aware of the criminal liability provided for by article 76 of the same Decree for the cases of falsity in documents and false declarations.

Padua, May 21, 2025

