

Giada Casali

Curriculum Vitae

Research Interests

- Galactic archaeology: Milky Way structure and chemical evolution
- High-resolution spectroscopy
- Star clusters & field stars
- Stellar age (chemical clocks, asteroseismology, isochrone fitting)

Professional Experience

- 2024 - Present **Research Fellow**, *Research school of Astronomy and Astrophysics (RSAA)*, The Australian National University (ANU), Canberra, Australia.
Level B from 1 January 2026
Supervisor: A/Prof. Luca Casagrande
Extra affiliation: INAF-OAS Bologna
- 2021 - 2023 **Postdoctoral Fellow**, *Department of Physics and Astronomy*, University of Bologna, (BO) Italy.
Project: ERC - Asterochronometry; Supervisor: Prof. Andrea Miglio

Education

- 2017 - 2021 **PhD in Physics and Astronomy**, *University of Florence*, Italy, Defence: 9/03/2021.
Abroad: Stay of 6 months at Monash University, Melbourne, AUS
○ Thesis: *Galactic Archaeology with ages based on chemical clocks*
○ Supervisors: Dr. Laura Magrini (INAF-OAA) and Prof. Stefania Salvadori (UniFI)
- 2014 - 2017 **Master's Degree in Physics, Astronomy and Astrophysics**, *University of Pisa*, Italy.
○ Thesis: *Near-Infrared Photometry of the Galactic Globular Cluster M30 (NGC 7099)*
○ Supervisors: Prof. Pier Giorgio Prada Moroni (UniPI) and Prof. Giuseppe Bono (Uni-Roma2)
- 2010 - 2014 **Bachelor's Degree in Physics**, *University of Pisa*, Italy.
○ Thesis: *The fluctuation-dissipation theorem and its application to thermal noise in the EGO-VIRGO interferometer.*
○ Supervisor: Dr. Giancarlo Cella (INFN-Pisa)

Grants and Funding

- 2024 **ANU ECR Travel Grant**, PI, \$ 3,000.
- 2023 **Telescope Time**, *HARPSN@TNG*: *A47TAC_9*, PI, 23h of allocated time ~ €21,000.
- 2022 **Telescope Time**, *UVES@VLT*: *0110.D-4228(A)*, PI, 50h ~ €310,000.
- 2022 **INAF Mini Grant**, *CHECS (CHEmical ClockS)*, co-PI, €20,000.
- 2022 **Telescope Time**, *FIES@NOT*: *P65-006*, (co-)PI, 11h ~ €8,000.
- 2022 **Telescope Time**, *HARPSN@TNG*: *A45TAC_22*, PI, 36h ~ €32,000.
- 2022 **Telescope Time**, *UVES@VLT*: *0109.D-0486(A)*, PI, 50h ~ €310,000.
- 2020 **Telescope Time**, *UVES@VLT*: *0106.D-0537(A)*, co-PI, 50h ~ €310,000.

- 2020 **Telescope Time**, *UVES@VLT*: [0105.D-0191\(A\)](#), co-PI, 50h ~ €310,000.
2019 **Telescope Time**, *UVES@VLT*: [0104.D-0617\(A\)](#), co-PI, 50h ~ €310,000.

Academic Awards and Recognitions

- Highlights Casali et al. 2019, *A&A*, 629, A62 – [Nature](#), [Nature Physics](#), [A&A](#)
Press releases Casali et al. 2019, *A&A*, 629, A62 – [Media INAF](#), [AstroPa INAF](#)
Casali et al. 2020, *A&A*, 639, A127 – [ESO Blog](#), [Media INAF](#)
Casali et al. 2020, *A&A*, 643, A12 – [TNG news](#)

Leadership and Service

Seminars, Conferences and Meetings Organisation

- 2027 ✳ SOC Chair, IAU GA Symposium S417 *"Gauging the Ages of the Cosmos"* in Rome (IT).
2027 ✳ Organiser of the Conference *"Stellar Ages as Cosmic Clocks: From the Milky Way to the Universe"* in Benasque (Spain).
2025 ✳ SOC Chair, EAS Symposium S9 *"Stellar Ages Across the Cosmos"* in Cork (IE).
2024–Present ✳ Co-chair, GASP group meetings (RSAA).
2021–2022 ✳ Chair, *Asterochronometry Seminars* (University of Bologna).
2018–2021 ✳ Co-chair, S.P.O.K. meetings (*INAF–OAA*).

Refereeing and Panel Review

- 2024–Present ✳ Member, ANU 2.3-meter Telescope Allocation Committee.
2021–2025 ✳ Referee for *Astronomy & Astrophysics* and *The Astrophysical Journal*.
2025 ✳ Reviewer, undergraduate project at ANU (SCNC3101, Vernica Mehta).
2024 ✳ Reviewer, Honours thesis at ANU (Patrick O'Connor).

Institutional Service and Outreach

- 2024–Present ✳ Member, RSAA Postdoc Committee.
2020–Present ✳ Member of *GAM – Gruppo Astrofili Massesi* (public outreach).

Observing Experience

- 2018–2025 ✳ Visiting astronomer for *Veloce@AAT*, *HARPS-N* & *GIARPS@TNG*, *SOFI* & *EFOSC2@NTT*, *DFOSC@Danish*, *HARPS@ESO 3.6m*.

Collaborations and Working Groups

- 2018–Present ✳ Member of the following collaborations:
 - GALAH Survey
 - Gaia-ESO Survey
 - SPA, Large Observing Programme at the TNG telescope
 - WST Working Group (Exoplanet, Stellar & Galactic Science)
 - HRMOS Working Group (Cluster Science)
 - ARIEL Working Group (Stellar Characterisation)
 - PLATO Working Group (Asteroseismic Science, MSteSci2)
 - HAYDN Consortium (ESA M8 proposal)

Invited Talks, Seminars and Colloquia

- 2026, Oct 13 **AIP MWLV meeting**, *Talk*, Leibniz-Institut für Astrophysik Potsdam (DE).
2026, May 13 **ASA ECR Symposium**, *Seminar*, University of New South Wales (AUS).

- 2026, Apr 13-17 **Synergistic Research of Stellar Clusters and Asteroseismology in the Era of Space-Based Telescopes**, *Conference talk*, ISSI-Beijing (China).
- 2025, Dec 12 **SPA-OC 2 Workshop "High resolution spectroscopy of open clusters"**, *Conference talk*, Rome (IT).
- 2025, May 27 **Ursa Minor astronomy seminars**, *Seminar*, University of Lund (SE).
- 2022, Nov 15 **Astrophysics Talk**, *Seminar*, INAF Bologna (IT).
- 2021, Mar 29 **KES: Knowledge Exchange Series**, *Seminar*, ESO Garching (DE).
- 2021, Mar 22 **Asterochronometry Seminars**, *Seminar*, University of Birmingham (UK).
- 2020, Nov. 27 **SPOK meeting**, *Talk*, INAF - Osservatorio Astrofisico di Arcetri, (IT).
- 2019, Aug. 6 **SINS meeting**, *Talk*, MoCA, Monash University, Melbourne (AUS).
- 2019, Nov. 26 **Astrobignè**, *Seminar*, INAF - Osservatorio Astrofisico di Arcetri, (IT).
- 2019, Oct. 11 **SPOK meeting**, *Talk*, INAF - Osservatorio Astrofisico di Arcetri, (IT).
- 2018, May 31 **PhDday⁹**, *Seminar*, Polo Scientifico, Sesto Fiorentino, (IT).

Contributed Talks at Conferences and Workshops

- 2026, Jul 6 - 10 **ASA Annual Scientific Meeting**, Canberra (AUS).
- 2026, Feb 1 - 7 **Exploring the evolution of CNOPS elements from Earth and space**, Sesto (IT).
- 2025, Nov 17 - 19 **Stars in Newcastle**, Newcastle (AUS).
- 2025, June 16 - 20 **Stars II - current challenges, upcoming solutions**, Bologna (IT).
- 2025, June 9 - 13 **s, i & r Element Nucleosynthesis (sirEN)**, Giulianova (IT).
- 2024, July 22 - 26 **When stars meet planets: exploiting high-resolution observations**, Sexten (IT).
- 2024, July 15 - 19 **8th TESS/15th Kepler Asteroseismic Science Consortium Workshop**, Porto (PT).
- 2024, May 27 - 31 **The Milky Way Assembly Tale**, Bologna (IT).
- 2023, Oct 16 - 20 **Stars I - Across the Universe**, Naples (IT).
- 2023, Sept 4 - 8 **Spectral Fidelity**, Florence (IT).
- 2022, Jun 19 - 24 **The 13th Torino workshop on AGB stars**, Perugia (IT).
- 2022, Mar 21 - 25 **Abundance gradients to trace Galaxy formation and evolution**, Sexten (IT).
- 2021, Oct 18 - 22 **HRMOS science workshop**, Florence (IT).
- 2021, Jun 28-Jul 2 **EAS 2021**, Leiden (NL).
- 2021, Feb 1 - 3 **Precision Spectroscopy. Stellar connections: from Galaxy evolution to exoplanets**, Sao Paulo (BR).
- 2019, Sept 24 - 27 **GES2019: The legacy of the Gaia-ESO survey**, Florence (IT).
- 2018, Sept 3 - 7 **Workshop ESO: A revolution in stellar physics with Gaia and large surveys**, Warsaw (PL), Poster presentation.

Teaching

- 2026 **Teaching Assistant**, *Winter School*, RSAA, Canberra (AUS).
- 2022 **Teaching Assistant**, *PLS Laboratory "Measuring the Universe: Stars and Planets"*, University of Bologna (IT).

Mentoring and Supervision

- 2025 ✳ Supervisor of a PhB undergraduate student at ANU (LJ Spriggs).
- 2025 ✳ Co-supervisor of an Advanced Master student at ANU (Anne Xie).
- 2024–2025 ✳ Mentor of a PhD student (Ben Lowe) and a PhB undergraduate student (Maurice Baxter) at ANU.

2021–2023 ✱ Co-supervisor of two PhD students at the University of Bologna (Massimiliano Mattuzzi, Jeppe Sinkbaek Thomsen).

Publications

Links [List of publications](#) [ORCID](#) [Google Scholar](#) [Scopus](#)

[Citation metrics in Google Scholar](#) – Total citations: 1689, H-index: 25

- Refereed ✱ **Casali**, Casagrande, Vincenzo, et al 2026, "Stellar ages from [C/N] in giant stars: applicability and limitations", *MNRAS*, **552**, [stag1787](#).
- ✱ **Casali** and Molero 2026, "Modelling s-process chemical clocks: insights from high-precision Kepler data", *MNRAS*, **551**, [stag1554](#).
- ✱ Willett, Miglio, Khan, (**Casali incl.**), et al., 2026, "Asteroseismic ages for 17,000 stars in Kepler, K2 and TESS", *MNRAS*, **500**, [stag259](#).
- ✱ Tautvaisiene, Drazdauskas, Mikolaitis, (**Casali incl.**), et al., 2025, "Carbon and nitrogen as indicators of stellar evolution and age. A homogeneous sample of 44 open clusters from the Gaia-ESO Survey", *A&A*, **703**, [A4](#).
- ✱ Brogaard, Miglio, Arentoft, (**Casali incl.**), et al., 2025, "Attempting an accurate age estimate of the open cluster NGC 6633 using CoRoT and Gaia", *A&A*, **702**, [A265](#).
- ✱ **Casali**, Montalbán, Miglio, et al., 2025, "Tracing the Milky Way: Calibrating chemical ages with high-precision Kepler data", *MNRAS*, **541**, [2631](#).
- ✱ Tsantaki, Magrini, Danielski, (**Casali incl.**), et al., 2025, "Ariel stellar characterisation. Fast rotators and new FGK stars in the Ariel Mission Candidate Sample", *A&A*, **697**, [A102](#).
- ✱ Thomsen, Miglio, Brogaard, (**Casali incl.**), et al., 2025, "Advancing accuracy in age determinations of old-disk stars using an oscillating red giant in an eclipsing binary", *A&A*, **699**, [A152](#).
- ✱ Molero, Magrini, Palla, (**Casali incl.**), et al., 2025, "Modelling chemical clocks. Theoretical evidences of the space and time evolution of $[s/\alpha]$ in the Galactic disc with Gaia-ESO survey", *A&A*, **694**, [A274](#).
- ✱ Plotnikova, Spina, Ratcliffe, (**Casali incl.**), et al., 2024, "The chemical evolution of the Milky Way thin disk using solar twins", *A&A*, **691**, [A298](#).
- ✱ da Silva, Danielski, Delgado Mena, (**Casali incl.**), et al., 2024, "Ariel stellar characterisation. II. Chemical abundances of carbon, nitrogen, and oxygen for 181 planet-host FGK dwarf stars", *A&A*, **688**, [A193](#).
- ✱ Grisoni, Chiappini, Miglio, (**Casali incl.**), et al., 2024, "K2 results for "young" α -rich stars in the Galaxy", *A&A*, **683**, [12](#).
- ✱ Willett, Miglio, Mackereth, (**Casali incl.**), et al., 2023, "The evolution of the Milky Way's thin disc radial metallicity gradient with K2 asteroseismic ages", *MNRAS*, **526**, [2141](#).
- ✱ Brogaard, Arentoft, Miglio, **Casali**, et al., 2023, "Asteroseismic age estimate of the open cluster NGC 6866 using Kepler and Gaia", *A&A*, **679**, [A23](#).
- ✱ Anders, Gispert, Ratcliffe, (**Casali incl.**), et al., 2023, "Spectroscopic age estimates for APOGEE red-giant stars: Precise spatial and kinematic trends with age in the Galactic disc", *A&A*, **678**, [A158](#).
- ✱ **Casali**, Grisoni, Miglio, et al., 2023, "Time evolution of Ce as traced by APOGEE using giant stars observed with the Kepler, TESS and K2 missions", *A&A*, **677**, [A60](#).
- ✱ Matteuzzi, Montalbán, Miglio, (**Casali incl.**), et al., 2023, "Red horizontal branch stars: An asteroseismic perspective", *A&A*, **671**, [A53](#).

- * Magrini, Viscasillas Vazquez, Spina, (**Casali incl.**), et al., 2023, "The Gaia-ESO survey: mapping the shape and evolution of the radial abundance gradients with open clusters", *A&A* 669, A119.
- * Zhang, Lucatello, Bragaglia, (**Casali incl.**), et al., 2022, "Stellar Population Astrophysics (SPA) with the TNG. α -elements, lithium, sodium and aluminum in 16 open clusters", *A&A*, 667A, 103Z.
- * Tailo, Corsaro, Miglio, (**Casali incl.**), et al., 2022, "Asteroseismology of the multiple stellar populations in the Globular Cluster M4", *A&A*, 662, L7.
- * Magrini, Danielski, Bossini, (**Casali incl.**), et al., 2022, "Ariel stellar characterisation: I – homogeneous stellar parameters of 187 FGK planet host stars Description and validation of the method", *A&A*, 663, A161.
- * Spina, Magrini, Sacco, **Casali**, et al., 2022, "The Gaia-ESO Survey: Chemical tagging in the thin disk. Open clusters blindly recovered in the elemental abundance space", *A&A*, 668, 16.
- * Brucalassi, Tsantaki, Magrini, (**Casali incl.**), et al., 2022, "Determination of stellar parameters for Ariel targets: a comparison analysis between different spectroscopic methods.", *Exp Astron*, 53, 511-532.
- * Danielski, Brucalassi, Benatti, **Casali**, et al., 2022, "The homogeneous characterisation of Ariel host stars", *Exp Astron*, 53, 473-510.
- * Viscasillas Vazquez, Magrini, **Casali**, et al., 2022, "The Gaia-ESO Survey: the age-chemical clock relations spatially resolved in the Galactic disc", *A&A*, 660, A135.
- * Magrini, Viscasillas Vazquez, **Casali**, et al., 2022, "The Abundance of S-Process Elements: Temporal and Spatial Trends from Open Cluster Observations", *Univ.*, 8(2), 64, Review.
- * Baratella, D'Orazi, Sheminova, (**Casali incl.**), et al., 2021, "The Gaia-ESO Survey: a new approach to chemically characterising young open clusters. II. Abundances of the neutron-capture elements Cu, Sr, Y, Zr, Ba, La, and Ce", *A&A*, 653, A67.
- * Alonso-Santiago, Frasca, Catanzaro, (**Casali incl.**), et al., 2021, "Stellar Population Astrophysics (SPA) with the TNG Stock 2, a little-studied open cluster with an eMSTO", *A&A*, 656, A149.
- * Magrini, Smiljanic, Franciosini, (**Casali incl.**), et al., 2021, "The Gaia-ESO survey: Lithium abundances in open cluster Red Clump stars", *A&A*, 655, A23.
- * Romano, Magrini, Randich, **Casali**, et al., 2021, "The Gaia-ESO Survey: Galactic evolution of lithium from iDR6", *A&A*, 653, A72.
- * Zhang, Lucatello, Bragaglia, (**Casali incl.**), et al., 2021, "Stellar Population Astrophysics (SPA) with TNG Atmospheric parameters of members of 16 unstudied open clusters", *A&A*, 654, A77.
- * Magrini, Lagarde, Charbonnel, (**Casali incl.**), et al., 2021, "The Gaia-ESO survey: Mixing processes in low-mass stars traced by lithium abundance in cluster and field stars", *A&A*, 651, A84.
- * Magrini, Vescovi, **Casali**, et al., 2021, "Magnetic-buoyancy-induced mixing in AGB Stars: a theoretical explanation of the non-universal [Y/Mg]-age relation", *A&A*, 646, L2.
- * **Casali**, Magrini, Frasca et al., 2020, "Stellar population astrophysics (SPA) with the TNG. The old open clusters: Collinder 350, Gulliver 51, NGC 7044, Ruprecht 171", *A&A*, 643, A12.
- * **Casali**, Spina, Magrini, et al., 2020 "The Gaia-ESO survey: the non-universality of the age-chemical-clocks-metallicity relations in the Galactic disc", *A&A*, 639, A127.

* Spina, Nordlander, Casey, (**Casali incl.**), et al. 2020 "How Magnetic Activity Alters What We Learn from Stellar Spectra", *ApJ*, 895, 52S.

* D'Orazi, Oliva, Bragaglia, (**Casali incl.**), et al., 2020, "Stellar population astrophysics (SPA) with the TNG. Revisiting the metallicity of Praesepe (M 44)", *A&A*, 633, A38.

* Frasca, Alonso-Santiago, Catanzaro, (**Casali incl.**), et al., 2019, "Stellar population astrophysics (SPA) with the TNG. Characterization of the young open cluster ASCC 123", *A&A*, 632, A16.

* **Casali**, Magrini, Tognelli et al., 2019, "The Gaia-ESO survey: Calibrating a relationship between age and the [C/N] abundance ratio with open clusters", *A&A*, 629, A62.

* Magrini, Vincenzo, Randich, (**Casali incl.**), et al., 2018, "The Gaia-ESO Survey: The N/O abundance ratio in the Milky Way", *A&A*, 618, A102.

White Papers * Magrini, Bensby, Randich, (**Casali incl.**), et al., 2026, "HRMOS: A High-Resolution Multi-Object Spectrograph for the VLT", White Paper for the HRMOS instrument, [arXiv:2607.04916](#).

* Viscasillas-Vazquez, **Casali**, Magrini, et al., 2025, "Mapping the Ages of Stars with Chemistry", White Paper under the ESO Expanding Horizons call, [arXiv:2512.13145](#).

* Bergemann, Kordopatis, **Casali**, et al., 2025, "Milky Way Disc & Bulge in-situ populations", White Paper under the ESO Expanding Horizons call, [arXiv:2512.15812](#).

* Manieri, Anderson, Brinchmann, (**Casali incl.**), et al., 2024, "The Wide-field Spectroscopic Telescope (WST) Science White Paper", [arXiv:2403.05398](#).

* Magrini, Bensby, Brucalassi, (**Casali incl.**), et al., 2024, "HRMOS White Paper: Science Motivation", [arXiv:2312.08270](#).

* Tinetti, Eccleston, Haswell, (**Casali incl.**), et al., 2021, "Ariel: Enabling planetary science across light-years", [arXiv:2104.04824](#).

* Prisinzano, Magrini, Damiani, **Casali** et al., 2018, "Investigating the population of Galactic star formation regions and star clusters within a Wide-Fast-Deep Coverage of the Galactic Plane", White Paper of LSST, [arXiv:1812.03025v1](#).

* Magrini, Randich, **Casali**, et al., 2018, "Tracing the chemical evolution of nearby galaxies with star clusters", White Paper of MAVIS, [pdf](#).

Skills

Programming Python, SQL, IDL, R (basic), C (really basic knowledge)

Tools DAOPHOT/ALLFRAME, DAOSPEC/DOOp, MOOG/FAMA, q2, IRAF, Korg, PySME

Technical Statistical analysis of big data (Gaia, spectroscopic and photometric surveys); Spectral analysis using EWs and synthesis; High-resolution differential spectroscopy; Markov Chain Monte Carlo modelling; Comparison between observations and stellar/Galactic evolution models; Infrared PSF photometry (seeing-limited and adaptive-optics); Development of data analysis pipelines.

Languages

Italian Mother tongue

English Fluent

Referees

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