

# Roberto Silvotti

## *Curriculum vitae et studiorum*

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### Education

- 1991 (July): Degree in Astronomy at the Bologna University (110/110 “*Summa cum laude*”); supervisor Prof. C. Bartolini, referee Prof. A. Renzini.
- 1995 (November): PhD in Astronomy at the Bologna University; thesis on “Post-AGB pulsating stars”; supervisor Prof. C. Bartolini, co-supervisors Dr. Letizia Stanghellini and Dr. Frank Pijpers.
- \* Known languages: italian, english, french

### Professional experience and training periods

- 1983-1987: [technical designer in a private company (design and construction of industrial and commercial cold storage)].
- 1988-1996: [teacher in mathematics and physics in various italian public high schools].
- ★ 1994 (April-July): training period on non-adiabatic pulsation models at the Uppsala Astronomical Observatory, Sweden.
- ★ 1995 (July): advanced school on “*Stellar Seismology with the Whole Earth Telescope*” at the Iowa State University, Ames.
- ★ 1996-1999: post-doc position at the Astron. Obs. of Capodimonte (INAF–OAC), Napoli.
- ★ 1999-2003: researcher (4 years contract) at INAF–OAC, Napoli.
- ★ 2003-2009: researcher (permanent position) at INAF–OAC, Napoli.
- since August 2009: researcher (permanent position) at INAF–OATo, Pino Torinese.
- ★ 2014 (January): enabled for a position of Associate Professor at Italian Universities (*Abilitazione Scientifica Nazionale per Professore di seconda fascia*).

### Research topics

- Late-stage stellar evolution: from horizontal-branch stars to white dwarfs
- Asteroseismology of evolved compact pulsators, hot subdwarf B stars and white dwarfs
- Extra-solar planets: detection/characterization of evolved (post-RGB) planetary systems

## Student's supervision

- ★ March 2008: external referee for the PhD thesis of Silvia Catalan Ruiz on “Testing the Initial-Final Mass Relationship of White Dwarfs” at the Universitat Politècnica de Catalunya (Barcelona).
- ★ September 2008: external referee for the PhD thesis of Valérie Van Grootel on “Etude des étoiles de la branche horizontale extrême par l’astérosismologie” at the Université Toulouse III - Paul Sabatier (Toulouse).
- ★ March 2009: co-supervisor of the master degree thesis in Physics of Paolo de Pascale on “Studi di fattibilità per la ricerca di transienti astrometrici e fotometrici con VST” at the Federico II University (Napoli).
- ★ 2011: technical advice for the PhD thesis of Ronny Lutz on “The search for substellar companions to subdwarf B stars in connection with evolutionary aspects” at the Georg-August-Universität Göttingen.  
See [http://www.mps.mpg.de/3389027/Dissertation\\_2011\\_Lutz\\_Ronny1.pdf](http://www.mps.mpg.de/3389027/Dissertation_2011_Lutz_Ronny1.pdf) and next item on *Scientific committees, project coordination, management tasks* for more details.
- ★ October 2016: external referee for the PhD thesis of Weikai Zong on “Amplitude and frequency modulations of oscillation modes in hot B subdwarf and white dwarf stars from Kepler photometry” at the Université Toulouse III - Paul Sabatier (Toulouse).

## Successful proposals and observing experience

Successful proposals and observing runs at several major optical observing facilities in La Palma, Canary Islands (NOT 2.5m, TNG 3.6m, WHT 4.2m, GTC 10.4m); at the European Southern Observatory in Chile (2.2m, NTT 3.5m, 3.6m and VLT 8.2m); in Russia (SAO 6m); at Mount Graham, Arizona (2x8.4m LBT).

Approved proposals and approved targets with the Kepler/K2 and TESS NASA space telescopes.

Several runs at different small 1m-class ground-based telescopes.

## Astronomical Societies and Networks Membership

- Since 1996: member of the Whole Earth Telescope (<http://www.physics.udel.edu/darc/wet/>).
- Since 2003: member of the International Astronomical Union (Div.III/Comm.53 on Extrasolar Planets and Div.V/Comm.27 on Variable Stars).
- Since 2005: member of the HELAS european consortium for helio-asteroseismology (<https://www.helas-project.eu/>).
- Since 2007: member of the Kepler Asteroseismic Science Consortium (KASC) for asteroseismic analysis of the Kepler data (<http://kasoc.phys.au.dk/>).
- Since 2016: member of the TESS Asteroseismic Science Consortium (TASC) for asteroseismic analysis of the TESS data (<https://tasoc.dk/>).

## Scientific committees, project coordination, management tasks

- ▷ 1997-2000: Responsible for the realization of the TTCP three channel photometer, still available at the Loiano Observatory.
- 2001 (September 10-14, Munich): SOC member of the Mini-Symposium on “Hot Subdwarfs and White Dwarfs” at the meeting “JENAM 2001”.
- 2002 (June 20–24, Naples): co-Chair of the SOC of the NATO Advanced Research Workshop on White Dwarfs, as well as local organiser of the meeting.

- 2004 (July 19–23, Kiel): SOC member of the 14th European Workshop on White Dwarfs.
- 2006 (August 7–11, Leicester): SOC member of the 15th European Workshop on White Dwarfs.
- ▷ 2002-2009: coordinator of the italian node of Astro-Wise in Napoli.  
Astro-Wise (<http://www.astro-wise.org>) is an european consortium (funded by the EU FP5 contract HPRI-CT-2001-50029) for the realization and maintenance of an integrated multi-node system to reduce, analyze and store wide-field imaging data, particularly from VST/OmegaCAM (<http://vstportal.oacn.inaf.it/>).
- ▷ Since 2008: scientific co-I of the 2nd generation VLT instrument ULTRAPHOT (PI F. Roques, LESIA - Paris Observatory).
- ▷ Since 2008: coordinator and co-PI together with Sonja Schuh (Göttingen Univ.) of the project EXOTIME (<http://www.na.astro.it/silvotti/exotime/>).  
The PhD thesis of Ronny B. Lutz (Göttingen Univ., dissertation in 2011) was based on this project.
- ▷ Since March 2009: chair of the Kepler-KASC sub-WG11 on “Analysis of phase variations and long term variations in frequencies for compact pulsators” (Compact Pulsator WG11’s chair Steve Kawaler).
- 2010 (August 11–14, Bamberg): SOC member of the Conference on “Planetary Systems beyond the Main Sequence”.
- 2010 (August 16–20, Tübingen): SOC member of the 17th European Workshop on White Dwarfs.
- ▷ Since November 2014: chair of the PLATO PSM (PLATO Science Management) WP 112 400 on “Other Detection Methods”, WP 112 430 on “Phase Variations in Pulsating Stars”, WP 112 210 on “Irregular transits due to asteroid/planet remnants in front of WDs”.
- ▷ Since February 2017: member of the TESS TSWG (Target Selection Working Group).
- ▷ Since ~2018: chair of the TASC WG8.5 on “Transits and other variabilities”.
- ▷ October 2017–November 2019: member of the Council of the Torino Astrophysical Observatory.

## Publications

- Refereed articles (from ADS): 104 papers (24 as 1st author) published in A&A, MNRAS, ApJ, Nature, AJ, etc.
- Proceedings and non-refereed articles (from ADS): 77 papers (25 as 1st author).
- H-index 32, total number of citations 3849 (from ADS).
- A few selected articles:
  - ★ Silvotti R., Schaffenroth V., Heber U. et al. 2021, “*EPIC 216747137: a new HW Vir eclipsing binary with a massive sdOB primary and a low-mass M-dwarf companion*”, Monthly Notices of the Royal Astronomical Society 500, 2461
  - ★ Silvotti R., Uzundag M., Baran A.S. et al., 2019, “*High-degree gravity modes in the single sdB star HD 4539*”, Monthly Notices of the Royal Astronomical Society 489, 4791
  - ★ Silvotti R., Schuh S., Kim S.-L. et al., 2018, “*The sdB pulsating star V391 Peg and its putative giant planet revisited after 13 years of time-series photometric data*”, Astronomy & Astrophysics 611, A85

- ★ Silvotti R., Charpinet S., Green E. et al., 2014, “*Kepler detection of a new extreme planetary system orbiting the subdwarf-B pulsator KIC 10001893*”, *Astronomy & Astrophysics* 570, A130
  - ★ Silvotti R., Østensen R.H., Bloemen S. et al., 2012, “*Orbital properties of an unusually low-mass sdB star in a close binary system with a white dwarf*”, *Monthly Notices of the Royal Astronomical Society* 424, 1752
  - ★ Charpinet S., Fontaine G., Brassard P., Green E. M., Van Grootel V., Randall S. K., Silvotti R. et al., 2011, “*A compact system of small planets around a former red-giant star*”, *Nature* 480, 496
  - ★ Silvotti R., Fontaine G., Pavlov M. et al., 2011, “*Search for p-mode oscillations in DA white dwarfs with VLT-ULTRACAM. I. Upper limits to the p-modes*”, *Astronomy & Astrophysics* 525, A64
  - ★ Østensen R.H., Silvotti R., Charpinet S. et al., 2010, “*First Kepler results on compact pulsators - I. Survey target selection and the first pulsators*”, *Monthly Notices of the Royal Astronomical Society* 409, 1470
  - ★ Silvotti R., Schuh S., Janulis R. et al., 2007, “*A giant planet orbiting the ‘extreme horizontal branch’ star V391 Pegasi*”, *Nature* 449, 189
- Books: co-editor of the volume “*White Dwarfs*”, Kluwer Academic Publishers, NATO Science Series II - Mathematics, Physics and Chemistry, vol.105, 2003.
  - Referee reports for international journals: MNRAS, ApJ, Nature, A&A, Open Astronomy.
  - Referee reports for funding agencies: “National Research, Development and Innovation Office”, Hungary; “National Science Center”, Poland; “Deutsche Forschungsgemeinschaft, Germany.
  - Press-releases: Nature and INAF press releases.
  - Public outreach: several seminars in high schools and other public/private structures. Author of articles/interviews in various national/international media, mostly related to the discovery of the planet V391 Pegasi b, orbiting a post-RGB star (Silvotti et al. 2007). Articles/interviews were published on several international media, including New York Times, BBC, Scientific American, National Geographic, Economist, Figaro, Telegraph, Die Welt, Corriere della Sera, RAI radio3, and others.
- V391 Peg b was selected for the cover of:
- “l’Astronomia” (the main italian journal of popular astronomy), issue of Dec. 2007;
  - “Astronomi” (journal of the Norwegian Astronomical Society), issue of January 2008;
  - “Astronomische Nachrichten”, volume 331, issue 5, June 2010.