

Pietro Leonardi

Curriculum Vitae

Department of Physics and Astronomy 'G. Galilei'
Università degli Studi di Padova
Vicolo dell'Osservatorio 3, Padova, Italy
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Research interest

Exoplanet detection & characterization – Transit timing techniques — Extremely precise radial velocities — Ground- and space-based transit photometry — Tidal orbital decay – Apsidal Precession

Education

- November 2022-present **PhD in Space Science and Technology**, *University of Trento*, Trento (TN)
Preliminary thesis title:
Characterization of exoplanetary systems through transit timing techniques and Radial velocities: from secular perturbations to mass measurement
Supervised by Prof. Giampaolo Piotto, Dr. Valerio Nascimbeni and Dr. Luca Borsato
- 2019-2021 **Master's degree in Astrophysics and Cosmology**, *University of Padova*, Padova (PD)
Thesis project: **"A ground-based study of transit time variations in the hot Jupiter WASP-12b"**
Supervised by Prof. Giampaolo Piotto, Dr. Valerio Nascimbeni and Dr. Valentina Granata.
- 2016-2019 **Bachelor's degree in Astronomy**, *University of Bologna*, Bologna (BO)

Visiting Periods

- Feb-Oct 2024 **Space Research Institute - Institut für Weltraumforschung (IWF)**, *Graz, Austria*,
Research visiting period at the Space Research institute (Austrian Academy of Sciences, ÖAW), under the supervision of Dr. Luca Fossati, as part of my PhD.

Memberships

- CHEOPS Science Team Collaborator
- GAPS (Global Architecture of Planetary Systems) Collaboration
- TASTE program

First-Author publications (1)

1. *TASTE V. A new ground-based investigation of orbital decay in the ultra-hot Jupiter WASP-12b*
Leonardi, P., V.Nascimbeni, V. Granata, L. Malavolta, L. Borsato, K. Biazzo, A. F. Lanza, S. Desidera, G. Piotto, D. Nardiello, M.Damasso, A. Cunial and L. G. Bedin, 2024, *A&A*, 686 (A84). doi: 10.1051/0004-6361/202348363
2. *Dynamical characterization of HIP 41378 b & c: CHEOPS confirms a hidden non-transiting planet*
Leonardi, P., in preparation for submission early 2025

Co-author publications (5)

1. *Characterizing a world within the hot-neptune desert: Transit observations of LTT 9779 b with the Hubble space telescope/WFC3*. Edwards et al. (inc. **Leonardi**), 2021, *The Astronomical Journal* 166 (4), 158
2. *The K2-24 planetary system revisited by CHEOPS*. V. Nascimbeni, L. Borsato, **Leonardi, P** et al. 2024, *Astronomy & Astrophysics* 690, A349
3. *Architecture of TOI-561 planetary system*. G Piotto, T. Zingales, L. Borsato et al. (inc. **Leonardi, P.**), 2024, *Monthly Notices of the Royal Astronomical Society*, 535, 3
4. *Hints of a close outer companion to the ultra-hot Jupiter TOI-2109 b* J.-V Harre et al. (inc. **Leonardi, P.**), 2024, *Astronomy & Astrophysics*, 692, A254

5. *A joint effort to discover and characterize two resonant mini Neptunes around TOI-1803 with TESS, HARPS-N and CHEOPS* T. Zingales, L. Malavolta, L. Borsato et al. (inc. **Leonardi, P.**), 2025, Accepted in A&A

Talk & Poster Presentations

Conference Posters

- **ASES 4: Advanced School on Exoplanetary Science**
Title A new ground-based investigation of orbital decay in the Ultra hot Jupiter WASP-12b
- **TOE III 2023**, Centro de Astrofisica Univ. Porto (Porto, Portugal)
Title A new ground-based investigation of orbital decay in the Ultra hot Jupiter WASP-12b

Teaching experience

Teaching assistant - Università degli studi di Padova

- 2023-2024 **Astrophysics Laboratory 2**, *Master degree course in Astrophysics and Cosmology*,
Lecturer Prof. Luca Malavolta
- 2024-2025 **Astrophysics Laboratory 2**, *Master degree course in Astrophysics and Cosmology*,
Lecturer Prof. Luca Malavolta

Observing Proposals (*) MARKS PI and (**) LEAD CO-I

CHEOPS GTO Programme

- (*) Orbital Waltz: Looking for Precession in eccentric hot Jupiters. **190 Orbits**

CHEOPS Guest Observers Programme

- (*) Transit timing variations of V1298 Tau b: a step forward to decipher the elusive architecture of the infant multi-planet system V1298 Tau. (**60 orbits**, GO 0033)

INAF AOT49 call

- (*) The search for orbital decay around three TESS hot Jupiters (**100hrs** of REM, 49-63)

INAF AOT51 call

- (*) (Submitted) Confirming and exploring the potential of a long period Sub-Neptune ideal for atmospheric studies (10 hrs of HARPS-N)

NEOSSat Science Guest Observation (GO) Program Cycle 7

- (**) Uncovering the true period of the enigmatic V1298Tau e (PI Christopher Mann)

Workshops & Other experiences

- **Sagan Exoplanet Summer Hybrid Workshop** on "Exoplanet Science in the Gaia Era"
- **OPR 2023 Proposal Writing School**
- **EANA 2024 Student LOC member**

Skills

Languages

- Italian Native
- English IELTS 7 (CEFR LEVEL: C1)
- Espanol Basic

Astronomical data analysis softwares

- TopCat
- SAO Image DS9

Public Outreach

- Night of the researchers (Notte dei ricercatori) -Veneto Night 2022**, Padova Italy
- Night of the researchers (Notte dei ricercatori) -Veneto Night 2023**, Padova Italy