

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

- 2022 - 2025 **PhD in Space Science and Technology**, University of Trento, Trento (TN)
2019-2021 **Master's degree in Astrophysics and Cosmology**, University of Padova, Padova (PD)
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

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. *Transit Timing Variations in HIP 41378: CHEOPS and TESS observations confirm a non-transiting sixth planet in the system* **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, Astronomy & Astrophysics 695, A273

Talk & Poster

Seminars & Colloquia

- **INAF-OATo, Torino (2025-April)**

Title: Characterization of exoplanetary systems through transit timing techniques: from secular perturbations to mass measurements

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

- **Exoplanets in Italy: status and perspective**

Title: V1298 Tau: Insights into the Orbital Architecture of a Young Planetary System

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

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

CHEOPS GTO Programme

- (*) Orbital Waltz: Looking for Precession in eccentric hot Jupiters. (**190 Orbits**, PR150089)

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 AOT51 call

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

INAF AOT49 call

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

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**

Grants and awards

- **Financial Support to attend the conference 'PLATO ESP2025—Planets throughout the habitable zone**, Marseille, euros 800€

Public Outreach

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

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