

Pierre Vernazza

Birth date: 03/06/1979

Laboratoire d'Astrophysique de Marseille

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Professional experience

- 01/2013 – Present Researcher at CNRS, Laboratoire d'Astrophysique de Marseille, FR.
- 05/2011 – 12/2012 Research Fellow at the European Southern Observatory, DE.
- 12/2010 – 04/2011 Postdoc at Laboratoire d'Astrophysique de Marseille, FR.
- 12/2007 – 11/2010 Research Fellow at the European Space Agency (ESTEC), NL.
- 01/2007 – 04/2007 Visiting scientist at Massachusetts Institute of Technology, Cambridge, USA.
- 09/2006 – 11/2007 Teaching and research assistant, Paris VII University, FR.

Education

- 2015 – 2016 Habilitation (HDR), Aix-Marseille University (LAM). Defense: may 17th, 2016.
- 2003 – 2006 Ph.D. in Astronomy, Paris Observatory (LESIA). Defense: september 29th, 2006.
Subject: *Study of the physical properties of Asteroids*. Supervisor: M. Fulchignoni.

Research theme

My research has so far mainly consisted in characterizing - via telescopic and space mission observations - the distribution of the composition of small bodies throughout the solar system and to identify the extraterrestrial analogues, if any (meteorites, IDPs), of the different classes of small bodies. Such approach has allowed me to provide new constraints on the origin, formation and evolution of solar system small bodies and more generally to models of solar system formation.

Publications

Author or co-author of 118 papers among which 24 papers as first author (including 2 letters in Nature, 1 letter in Nature Astronomy and 3 book chapters) and 17 papers as second author (including 5 papers behind one of my PhD students). My first author papers have more than 1090 citations.

Scientific activities/responsibilities

- 2022 – Scientific associate of the SIMBIO-SYS instrument onboard the ESA/JAXA Bepi-Colombo mission.
- 2020 – Co-I of the MIRS instrument onboard the JAXA MMX mission.
- 2019 – PI of the NavCams onboard the MMX rover.
- 2019 PI of a white paper (*Sample Return of Primitive Matter from the Outer Solar System*) in response to the ESA call for ideas for future missions, covering the 2035-2050 period.
- 2018 – Co-I of the MERTIS instrument onboard the ESA/JAXA BepiColombo mission.
- 2014 – Co-PI of the FRIPON network. The aim of FRIPON is to determine the source regions of meteorites and to recover meteorites just after their fall.
- 2015 PI of a mission proposal on asteroid science (*Nautilus*) in response to the ESA call for the M4 mission (more than 180 supporters).

2013	PI of a white paper on asteroid science (<i>Insider</i>) in response to the ESA call for ideas for future L-class missions. We proposed to explore the interior of primordial asteroids and the origin of Earth's water. The white paper was selected for presentation in Paris.
2010	Co-PI of a mission proposal with P. Lamy on Trojan science (<i>Trojan's odyssey</i>) in response to the ESA call for the M3 mission (see Lamy et al. 2012).
2004 – 2023	PI of more than 30 successful observing proposals on the largest ground based telescopes (VLT, NTT, TNG, IRTF, CFHT), the airborne telescope SOFIA and the JWST. This also include being the PI of an ESO Large Programme on VLT/SPHERE (152h in service mode between 2017 and 2019).
2004 – 2016	PI of several laboratory experiments i) to simulate the effect of the solar wind irradiation on various minerals and meteorites and ii) to simulate the ablation process of meteorites during atmospheric entry using a plasma wind tunnel.

Supervision of PhD and undergraduate students, postdocs, engineers

Main supervisor of 3 PhD students: M. Marsset (2013-2016), A. Drouard (2016-2019), M. Ferrais (2019-2022); Co-supervisor of 1 PhD student: T. Ronnet (2015-2018). Supervisor of 5 undergraduate students (2015-). Supervisor of 1 postdoc: S. Anderson (2023-). Supervisor of 1 engineer: C. Pimorin (2022-).

Management activities/responsibilities

2021 – 2023	Deputy director of the Institut Origines (AMU).
2021 –	Responsible for the Service national d'observation (SNO) FRIPON.
2020 – 2024	Team lead of the planetary science group at LAM.
2019 – 2024	Member of the scientific council at LAM.
2018 – 2023	Member of the follow-up committee for the MAORY and MICADO ELT instruments.
2017 – 2018	Member of a CNES mission group to evaluate which instruments should be present on the CNES/DLR rover onboard the JAXA MMX mission.

Teaching activities

2013 – 2023	M2 and Doctoral schools (20 h).
2006 – 2007	Statistics (96 hours; first year of University Paris VII).
2004 – 2005	Astrophysics (20 hours; second year of University Pierre and Marie Curie (Paris VI)).

Others

Rapporteur of 5 PhD thesis, examinateur of 4 PhD thesis
 More than 15 invited talks
 Referee for A&A, ApJ, AJ, Icarus, Nature Astronomy, P&SS and various research grants (ERC, ANR, Swiss National Science Foundation)
 In July 2008, the asteroid 20607 was named Vernazza
 My research led to more than 20 press releases (ESA, ESO, MIT, CNRS, CNES, Paris Observatory)
 I give two to three public talks per year