Dr. Loïc Rossi

Curriculum Vitae

Born 1989-04-19 in Avignon, France.

Education

2015 **PhD in astronomy and astrophysics**, *Study of Venus cloud layers by polarimetry using data from SPICAV-IR onboard Venus Express*, under the supervision of Franck Montmessin and Emmanuel Marcq, University of Versailles Saint-Quentin-en-Yvelines (UVSQ).

2010–2012 **Masters in Astronomy and Astrophysics**, *Magistère de Physique Fondamentale*, University Paris 11/Paris Observatory.
Including one year as an Erasmus student at the University of Glasgow, Scotland.

2009–2010 **Licence in Fundamental Physics**, *Magistère de Physique Fondamentale*, University Paris 11, Orsay.

2007–2009 **Preparatory Classes student**, *MPSI - MP*, Lycée Paul Cézanne, Aix-en-Provence.

Research

Positions

2018– **Researcher**, LATMOS/CNRS.
Modelling of HDO in the martian atmosphere

2015–2018 **Researcher**, *Faculty of Aerospace Engineering, Delft University of Technology, The Netherlands*.
Spectropolarimetry of exoplanets

2012–2015 **PhD Student**, LATMOS/*University Versailles St-Quentin-en-Yvelines*, Guyancourt.

2012 **Masters Internship**, LESIA, Meudon Observatory, 3 months.
"Study of Venus during the 2012 transit" under the supervision of Thomas Widemann

2011 **Masters Internship**, APC, Paris 7 University, 2 months.
"Study of the effect of aberration on the CMB" under the supervision of Cyrille Rosset

2011–2012 **Year project**, *University of Glasgow*.
"Plasma parameters in solar prominences" under the supervision of Nicolas Labrosse

2010 **Licence Internship**, IAS, Paris 11 University, 2 months.
"Analysis of spectral data from OMEGA/MEx" under the supervision of François Poulet

Observations/Proposals

2018 **Observation time**, *ESO VLT/SPHERE*, Sylvestre M., Teanby N., Rossi L., Seignovert B., Vinatier S., Lagadec E., Proposal 0101.C-0881.
Polarimetric study of Titan's aerosols during its northern summer

Teaching

2012–2015 **Online course redaction**, *Project "Sciences pour les Exoplanètes et les Systèmes Planétaires"*, LabEx ESEP.

2014 **Teaching assistant in Physics**, *Medecine first year*, PACES, UVSQ.

2012-2013 **Teaching assistant in physics**, *Physics first year*, Lab sessions, UVSQ.

2012 **Lab session supervision**, *Physics first year*, UVSQ.

Students

2016- **Gourav Mahapatra**, *Polarimetry of Venus*, PhD thesis, TU Delft.
co-supervisor with D.M. Stam

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2018 **Ashwyn Groot**, *The Earth as an exoplanet*, MSc thesis, TU Delft.

2017 **Javier Berzosa Molina**, *Detectability of exomoons in polarization*, MSc thesis, TU Delft.

2016 **Michael Hogenboom**, *Circular polarisation of Earth-like exoplanets*, MSc thesis, TU Delft.

2015 **Nicolas Bott**, *Polarimetry of Venus clouds in the CO_2 absorption band*, MSc internship, Paris Obs..

Publications

Peer-reviewed

2018 **Berzosa-Molina, Rossi and Stam**, *Traces of exomoons in computed flux and polarization phase curves of starlight reflected by exoplanets* , in Astronomy & Astrophysics, Vol. 618, A162.
`https://doi.org/10.1051/0004-6361/201833320`

2018 **Rossi et al.**, *PyMieDAP: a radiative transfer tool with polarization*, in Astronomy & Astrophysics, Vol. 616, A147.
`https://doi.org/10.1051/0004-6361/201832859`

2018 **Rossi and Stam**, *Circular polarization signals of cloudy (exo)planets*, in Astronomy & Astrophysics, Vol. 616, A117.
`https://doi.org/10.1051/0004-6361/201832619`

2017 **Rossi et al.**, *Using polarimetry to retrieve the cloud coverage of Earth-like exoplanets*, in Astronomy & Astrophysics, Vol. 607, A57.
`https://doi.org/10.1051/0004-6361/201730586` or `https://arxiv.org/abs/1708.07009`

2017 **Fauchez, Rossi and Stam**, *The O_2 A-Band in Fluxes and Polarization of Starlight Reflected by Earth-Like Exoplanets*, in ApJ, Vol. 842, 41.
`https://doi.org/10.3847/1538-4357/aa6e53` or `https://arxiv.org/abs/1704.06247`

2015 **Rossi et al.**, *Preliminary study of Venus cloud layers with polarimetric data from SPICAV/VEx*, in Planetary and Space Science, Vol. 113-114; pp. 159-168.
`http://dx.doi.org/10.1016/j.pss.2014.11.011`

Communications

Oral presentations

Sept. 2018 EPSC, Berlin, Germany; *Investigating cloud cover variability on Earth-like exoplanets using polarimetry*

Sept. 2017 EPSC, Riga, Latvia; *Using polarimetry to retrieve the cloud coverage of Earth-like exoplanets*

May. 2017 JpGU/AGU meeting, Chiba, Japan; **Invited talk**; *Using polarimetry to retrieve the cloud coverage of Earth-like exoplanets*

Apr. 2015 Venus Conference, Oxford, UK; *Latitudinal and temporal variability of venus clouds and hazes observed by polarimetry with SPICAV-IR*

Sept. 2015 EPSC, Nantes, France; *Retrieval of Venus' clouds and hazes properties with polarimetric data from SPICAV/VEx*

Sept. 2015 Future of polarimetry, Brussels; **Invited talk**; *Modeling the polarization of Venus*

Sept. 2014 EPSC, Estoril, Portugal; *Polarimetric study of Venus' cloud layers with SPICAV/VEx*

July 2014 SPICAM/SPICAV Team Meeting, Poros, Greece

May 2014 EGU, Vienna, Austria; *Study of Venus cloud layers with polarimetric data from SPICAV/VEx*

Sept. 2013 EPSC, London, UK; *Study of Venus' cloud layers by polarimetry with SPICAV/VEx*

June 2013 SPICAM/SPICAV Team Meeting, Catania, Sicily

Posters/PICO

Sept. 2018 EPSC, Berlin, Germany; *Modeling of HDO in the Martian atmosphere*

April 2016 EGU; PICO; *Using polarimetry to retrieve the cloud coverage of Earth-like exoplanets*

October 2016 DPS/EPSC; *Characterization of cloud coverage on Earth-like exoplanets with polarimetry*

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April 2016 EGU; PICO; *Pymiedap: a versatile radiative transfer code with polarization for terrestrial (exo)planets*

April 2015 EGU; *Retrieval of Venus' clouds parameters with polarization using SPICAV-IR onboard Venus Express*

May 2014 Astronomical Polarimetry 2014, Grenoble, France

June 2013 International Venus Workshop, Catania, Italy; *Study of Venus' cloud layers by polarimetry using SPICAV/VEx*

April 2013 EGU; *Study of Venus' cloud layers by polarimetry using SPICAV/VEx*

Computer skills

Op. Systems GNU/Linux, Microsoft Windows

Languages Python, Fortran, LaTeX, Beamer, IDL, C, Bash

Software Vim, Git, SVN, LibreOffice suite, Matlab, Gnuplot

Responsabilities

EGU 2017 **Session Convener**, *Polarimetry as an invaluable tool to study the solar system and beyond*, PS1.4, AS4.45, ST1.11.

2014–Present **Twitter Community Manager**, on behalf of EGU Planetary and Solar System sciences division, @EGU_PS.

2013, 2014 **Elbereth conference organiser**, member of the LOC of the Elbereth conference, for PhD students in astronomy and astrophysics in Île-de-France.

Reviewer for journals, *The Astrophysical Journal, Icarus*.

Reviewer for funding bodies, *French Remote Sensing Program (PNTS)*.

Outreach

2017- **Responsible for astronomy section**, *International Esperantist Science Association (ISAE)*, promotion of science and astronomy in the language Esperanto.

2017- **YouTube videos**, *D-ro Loĉjo*, science communication about astronomy and planetary science, videos in Esperanto.
Link to channel

Languages

CEFR C2 French (Mothertongue), English, Esperanto

CEFR C1 German

CEFR A1 Dutch

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