

## PERSONAL INFORMATION

## Maurizio Pajola



📍 Vicolo Osservatorio 5, 35122 Padova – Italia

✉ [maurizio.pajola@inaf.it](mailto:maurizio.pajola@inaf.it)

Sex Male | Date and Place of birth 13/07/1986, Venezia | Nationality Italian

## WORK EXPERIENCE

- 01/11/2017 – Present **INAF-OAPD Researcher**  
National Institute for Astrophysics – Astronomical Observatory of Padova – Padova - Italy  
Theoretical and empirical studies of planetary surfaces: Mars, Mercury
- 30/10/2015 – 30/10/2017 **NASA Post-Doctoral Fellowship**  
National Aeronautics and Space Administration – Ames Research Center – Moffett Field, CA - USA  
Theoretical and empirical studies of planetary surfaces: Phobos
- 01/03/2014 – 29/10/2015 **CISAS-UPD Post-Doctoral Fellowship**  
Center for Studies and Activities for Space “G. Colombo” – University of Padova, Italy  
ESA-Rosetta OSIRIS observation planning and 67P-comet data analysis
- 02/01/2011 – 31/12/2013 **PhD Fellowship**  
Center for Studies and Activities for Space “G. Colombo” – University of Padova, Italy & NASA Jet Propulsion Laboratory, California  
Sciences Technologies and Measures for Space, field Astronautics and Satellite Sciences
- 22/05/2012 – 15/10/2013 **Visiting Scientist – NASA, National Aeronautics and Space Administration**  
Jet Propulsion Laboratory, CALTECH – Pasadena, California, USA  
Mars drainage networks analysis under the supervision of Coradini, Dr Marcello and Pieri, Dr David
- 09/03/2013 – 25/03/2013 **Visiting Scientist – ESA, European Space Agency**  
European Space Astronomy Centre, Madrid, Spain  
Mars limb clouds analysis under the supervision of Kueppers, Dr Michael and Moissl, Dr Richard
- 23/05/2010 – 12/06/2010 **Visiting Student – ESA, European Space Agency**  
ESA European Space Astronomy Centre, Madrid, Spain  
IDL-widgit routines production to analyse Earth, Mars, Moon, Phobos, Steins and Lutetia asteroids  
OSIRIS images under the supervision of Kueppers, Dr Michael
- 12/09/2009 – 03/10/2009 **Visiting Student – ESA, European Space Agency**  
ESA European Space Astronomy Centre, Madrid, Spain  
IDL mosaic routines production to analyse Mars OSIRIS images under the supervision of Kueppers, Dr Michael

## EDUCATION AND TRAINING

- 11/07/2018 – 11/07/2024 **National Academic Qualification as Associate Professor in Astronomy, Astrophysics, Earth and Planetary Physics**
- 02/01/2011 – 16/04/2014 **PhD in Astronautics and Satellite Sciences**

Center for Studies and Activities for Space “G. Colombo” – University of Padova, Italy  
Planetary Surface Processes and Analysis, Surface Spectrophotometry, Geomorphology,  
Paleohydrology, Geographic Information Systems

- 20/10/2008 – 15/10/2010 **Master Degree in Astronomy – 110 *cum laude* (out of 110)**  
Department of Physics and Astronomy – University of Padova, Italy  
Astrophysics, Astronomy, Physics, Mathematics, Chemistry, Informatics
- 16/09/2005 – 14/10/2008 **Bachelor Degree in Astronomy**  
Department of Physics and Astronomy – University of Padova, Italy  
Mathematics, Physics Astronomy, Chemistry
- 10/09/2000 – 08/07/2005 **Scientific Certificate, Italian Secondary School Diploma – 98 (out of 100)**  
Giovanni Battista Quadri High School – Vicenza, Italy

#### GRANTS - AWARDS

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##### **Mohammed Bin Rashid Space Settlement Challenge Grant (60000 AED) – Dubai Future Foundation, Government of Dubai**

Winner of the Mohammed Bin Rashid Space Settlement Challenge. Proposal title: “Mars Human Landing Sites: Resources, Safety and Science Return, MBR005”. Grant no. MBR005 (60000 AED), issued by the Dubai Future Foundation, Government of Dubai, in June, 12, 2018.

##### **OSIRIS-REx Grant (30000 €) – ASI, Italian Space Agency**

Winner of the NASA OSIRIS-REx Participating Scientist Call. Proposal title: “Boulders size-frequency distributions: the signature of Bennu’s past and present surface processes, coupled with landing site safety accomplishment, 17-ORPSP17\_2-0026”. Grant no. 2017-37-H.O. (30000 €), issued by the Italian Space Agency in November, 9, 2017.

##### **Hic Labor Medal of Honour – Accademia Olimpica, Italy**

Medal of Honour for the second best scientific PhD Thesis, issued by the Accademia Olimpica of Vicenza, Italy in June, 23, 2018.

##### **Giuseppe Lorenzoni Prize – SAlt, Italian Astronomical Society**

Prize for the best astrophysical paper published between 01/01/2015 and 31/12/2017, title :”The pristine interior of comet 67P revealed by the combined outburst and cliff collapse”, Nature Astronomy, issued by the Italian Astronomical Society in May, 2, 2018.

##### **Rosetta Mission Award– ESA, European Space Agency**

Award in recognition of my outstanding contribution to the ESA Rosetta Mission issued by the European Space Agency in September, 30, 2016.

##### **Rocco Petrone Prize – ASI, Italian Space Agency**

Prize for the best Master Thesis concerning “Planetary mission study: Moon, Asteroids and Mars”, issued by the Italian Space Agency in June, 9, 2014.

#### SPACE MISSIONS INVOLVEMENT

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- 11/07/2018 – Present **ESA/HERA Core Team Member**. PI: Dr. Ian Carnelli (European Space Agency - EU).
- 09/11/2017 – Present **Co – Investigator, NASA/OSIRIS-REx** – Origins Spectral Interpretation Resource Identification Security Regolith Explorer: third NASA New Frontier Mission, PI: Lauretta, Dr. Dante (University of Arizona, Arizona - USA).
- 06/11/2017 – Present **Associate Scientist**, ESA/BepiColombo Simbio-Sys Camera, PI: Cremonese, Dr. Gabriele (INAF-Astronomical Observatory of Padova, Italy).

- 11/03/2016 – Present **Associate Scientist**, ESA/ExoMars CaSSIS Camera, PI: Thomas, Dr. Nicolas (University of Bern, Switzerland).
- 18/02/2015 – 18/02/2016 **Co – Investigator**, NASA/PADME – Phobos And Deimos & Mars Environment: a NASA Discovery Mission, PI: Lee, Dr. Pascal (NASA Ames, SETI & Mars Institute, California, USA).
- 10/10/2014 – Present **Associate Scientist**, ESA/Rosetta OSIRIS Camera, PI: Sierks, Dr. Holger (Max Plank Institute, Goettingen, Germany).
- 25/02/2007 – 10/10/2014 **Associate Scientist Assistant**, ESA/Rosetta OSIRIS Camera.

#### INTERNATIONAL INVOLVEMENT

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- 05-22/11/2018 Planning Lead of the CaSSIS Medium Term Planning no.11, STP41 and 42: Scientific targets on the surface of Mars.
- 11/03/2016 Science Theme Lead: Mars past, present and future landing sites. ExoMars/CaSSIS Camera
- 26/03/2014 Lead Proposer of the ExoMars 2020 landing site “Simud Vallis floor: a deep look into a Martian alluvial environment”, one of the eight accepted finalists by ESA  
<http://exploration.esa.int/mars/53944-proposed-landing-sites-for-exomars-2018-mission/>
- 04/08/2015 Lead Proposer of the NASA Mars 2020 landing site “Eridania Basin: studying the sedimentary sequence of an ancient paleolake with the Mars 2020 rover”, one of the finalists selected by NASA  
[http://marsnext.jpl.nasa.gov/workshops/wkshp\\_2015\\_08.cfm](http://marsnext.jpl.nasa.gov/workshops/wkshp_2015_08.cfm)
- 12/2018 Co – Investigator (Co-I) of the proposal “Spectrometer and Imagers for Moon Integrated Observatory System” for the ESA call: Request for Information, on Lunar Exploration Campaign Science and Technology Payloads, HERAKLES.
- 16-21/09/2018 Co-Convener of the SB13/MT18 Session “Sample return missions: lessons learned and future perspectives” at the European Planetary Science Conference – EPSC, Berlin, Germany 2018.
- 16-21/09/2018 Co-Convener of the TP4 Session “ExoMars – First results from the TGO and plans for the 2020 Rover and Surface Platform” at the European Planetary Science Conference – EPSC, Berlin, Germany 2018.
- 22/08/2018 Member and Signatory of the International Research Group preparing the White Paper: “The case for Landed Mercury Exploration and the timely need for a mission concept study”, published on 26 August 2018. <https://www.lpi.usra.edu/NASA-academies-resources/White-Paper-Landed-Mercury-Science.pdf>
- 10/07/2018 Member and Signatory of the International Research Group preparing the White Paper: “Outer Solar System exploration: A compelling and Unified Dual Mission Decadal Strategy for Exploring Uranus, Neptune, Triton, Dwarf Planets and small KBOs and Centaurs” published on 8 August 2018. <https://arxiv.org/abs/1807.08769>
- 04/07/2018 Member of the International Phobos/Deimos Landing Site Working Group lead by Dr. Prof. Thomas Duxbury, Physics and Astronomy Dept., George Mason University, Fairfax, VA-USA.
- 01/02/2018 Collaborator of the European project PLANetary MAPping project (PLANMAP) – HORIZON2020, lead by Prof. Matteo Massironi, Geosciences Dept., University of Padova, Italy.
- 06/11/2017 Member of the BepiColombo Working Group Surface and Composition.
- 06/11/2017 Member of the BepiColombo Young Scientist Working Group.
- 24/08/2017 Member and Signatory of the Pluto and Kuiper belt Exploration Group preparing the White paper: “Pluto Follow On Missions: Background, Rationale, and New Mission Recommendations”,

published on 12 March 2018. [https://data.boulder.swri.edu/ksinger/PKEG/PFO\\_WhitePaper-V4.pdf](https://data.boulder.swri.edu/ksinger/PKEG/PFO_WhitePaper-V4.pdf)

- 20/05/2016 Member of the COST international call “Impact Cratering – Physics, Statistics and Implications” lead by Dr. Cathy Quantin.
- 21/03/2016 Member of the International Space Science Institute (ISSI) international group “Physical properties of cometary nuclei assessed from the development of 67P CG’s activity” lead by Dr. Yuri Skorov. <http://www.issibern.ch/program/teams.html>
- 11/03/2014 Member of International Academy of Astronautics Study Group 1.12 on “Virtual Reality – Virtual Exploration of Planets”, lead by Dr. Enrico Flamini. <http://iaaweb.org/iaa/Scientific%20Activity/Study%20Groups/SG%20Commission%201/sq112/sq112sr0315.pdf>
- 20/10/2014 Co-Proposer of the ESA ExoMars 2018 final landing site “Oxia Planum: the landing site for ExoMars 2018” lead by C. Quantin, Laboratoire de Géologie de Lyon, ERC eMars Team, France. <http://www.hou.usra.edu/meetings/lpsc2016/pdf/2863.pdf>

## REVIEW EXPERTISE

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- 06/06/2019 External Reviewer for the Solar System Workings Program – NASA NSPIRES NNH18ZDA001N-SSW.
- 30/05/2016 - Present Member of the 2016 Review Panel of the Agence National de la Recherche/ANR-France.
- 30/05/2015 Expert for the 2015 Review Process of the Agence National de la Recherche/ANR-France.
- 21/12/2015 Expert Reviewer for the Astronomy & Astrophysics Journal
- 10/11/2016 Expert Reviewer for the Nature Communications Journal
- 10/04/2017 Expert Reviewer for the Monthly Notices of the Royal Astronomical Society Journal

## INVITED TALKS

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- 29/06/2018 NASA Jet Propulsion Laboratory (JPL), Pasadena, California-USA. Invited by Dr. Mathieu Choukroun, NASA/Rosetta Team Member.  
Title: “The ESA/Rosetta Mission: OSIRIS discoveries on Comet 67P Churyumov-Gerasimenko”.
- 06/06/2018 European Space Operation Centre (ESOC), European Space Agency, Darmstadt, Germany. Invited by Dr. Andrea Accomazzo, Head of the Solar and Planetary Missions Division.  
Title: “The ESA/Rosetta Mission: unlocking the secrets of Comet 67P Churyumov-Gerasimenko”.
- 24/04/2018 National Institute for Astrophysics-Institute for Astrophysics and Planetology, Rome, Italy. Invited by Dr. Anna Milillo.  
Title: “The OSIRIS-REx mission: Boulders size-frequency distributions on Asteroid (101955) Bennu. The Italian participation in the NASA sample return mission”.
- 23/03/2018 Rosetta Science Working Team Meeting #49, Rhodes, Greece. Invited by Dr. Matt Taylor, ESA Rosetta Project Scientist.  
Title: “Insights into the morphology of comet 67P, highlighting evolution and erosion depths”.
- 24/11/2017 University of Verona, Department of Informatics, Verona, Italy. Invited by Professor Dr. Giandomenico Orlandi, Head of Mathematics/Informatics Department.  
Title: “Scientific data analysis of the Rosetta/OSIRIS, ExoMars/CaSSIS and OSIRIS-REx/OCAMS high resolution images”.
- 24/01/2017 Technische Universität Braunschweig, Braunschweig, Germany.

Invited by Professor Dr. Jürgen Blum.

Title: "Global and localized boulder size-frequency distributions on the surface of comet 67P/Churyumov-Gerasimenko: Possible implications on the boulder formation processes".

- 04/04/2016 3<sup>rd</sup> IEEE International Workshop on Metrology for AeroSpace, Florence, Italy.  
Invited by Professors Dr. Enrico Flamini and Dr. Marcello Coradini.  
Title: "The Rosetta Mission: OSIRIS discoveries on Comet 67P Churyumov-Gerasimenko".

## TEACHING EXPERIENCE

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- 22/05/2019 5 hours lesson at the CISAS-University of Padova PhD School STMS, course "Exploring the Solar System and its environment" (20 hours total). Academic Year 2018/2019.
- 04/12/2018 2 hours lesson at the University of Padova, Dept. of Geosciences, course "Geology and exploration of the planets" directed by Prof. Matteo Massironi. Title: "Mars rover landing sites: scientific and engineering constraints fulfillment".
- 01/10/2018-Present Co-supervisor of the PhD Thesis in Astronomy at the University of Padova (Italy), Dept. Physics and Astronomy by Giovanni Munaretto. Title: "Study of transient processes on the surfaces of Mars and Mercury".
- 02-10/2018 Co-supervisor of the Master Thesis in Astronomy at the University of Padova (Italy), Dept. Physics and Astronomy by Giovanni Munaretto. Dissertation day: 28 September 2018. Thesis title: "Study of Recurring Slope Lineae on the Martian surface".
- 13/04/2018 2 hours lesson at the University of Padova, Dept. of Physics and Astronomy, course "Astrophysics of the Solar System" directed by Prof. Monica Lazzarin. Title: "Mars ancient paleohydrology and rover landing sites. Phobos mineralogical modeling in the Vis-NIR wavelength range".
- 04-05/04/2018 5 hours lesson at the CISAS-University of Padova PhD School STMS, course "Exploring the Solar System and its environment" (20 hours total). Academic Year 2017/2018.
- 02-08/2017 External Supervisor of the Master Thesis in Geographical Information Systems (GIS) at the University of Aberdeen (Scotland), College of Physical Sciences by Andrea Zannella. Dissertation day: 16 August 2017. Thesis title: "Galilaei crater: a possible rover landing site on Mars?".
- 26/07/2016 1 hour lesson at the Stanford University, Palo Alto, California, course "Mars Planetary Science" directed by Dr. Eldar Noe Dobrea. Title: "Cometary Science: OSIRIS data analysis on 67P Churyumov-Gerasimenko".
- 18/03/2016 2 hours lesson at the University of Padova, Dept. of Physics and Astronomy, course "Astrophysics of the Solar System" directed by Dr. Monica Lazzarin. Title: "What to do with planetary surfaces data, three examples: comet 67P, Mars satellite Phobos, ExoMars landing site".
- 17/03/2015 3 hours lesson at the University of Padova, Dept. of Physics and Astronomy, Masterclass directed by Prof. Cesare Barbieri. Title: "Rosetta in orbit around comet Churyumov-Gerasimenko 67P".
- 27/02-07/03/2013 Tutor at the IDPASC Winter PhD School on "Very High Time and Space Resolution Astrophysics 2013" held in Asiago, Italy.

## SCIENTIFIC RESEARCH

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- 12/06/2019 ORCID ID: 0000-0002-3144-1277  
H index: 28  
Researchgate index: 41.15  
i-10 index: 56  
Total Citations: 2320
- 99 Refereed Publications (15 as a first name)  
142 International Meeting Abstract/Conference Proceedings

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
German	B2	B2	B2	B2	B1
French	B2	B2	B1	B1	A2
Spanish	A2	A2	A2	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

Social skills and competences

Good team spirit learned in the ten years of competitive basketball in Vicenza Basket Giovane team. Ability to adapt to multicultural environments due to the repeated frequency in foreign schools (4 Certificate of Attendances - Schulbesuchbestätigung obtained in July 2001, July 2002, June 2003, and June 2004 at the Jakob-Brucker-Gymnasium, Neugablonzer Strasse, 38, 87600 Kaufbeuren (Germany)

Organisational / managerial skills

Sense of organization learned during the career training and accentuated by the rapid timing for obtaining the Bachelor, Master Degree and the PhD.  
Leadership (currently responsible for a team of 7 people working on Mars landing sites for the ESA-ExoMars and NASA-Mars 2020 rovers).

Computer skills

IDL + widget programming, Matlab-Octave, NAIF, Python, ENVI, Arcgis10, Excel, Access, Word, LaTeX, Pinnacle Studio10, Powerpoint, Internet Explorer, Managing Files. European Computer Driving Licence (ECDL).  
Operating systems: Windows, Unix, MacOS X.

Driving licence

European Driving Licence A (motorcycles), B (vehicles), C (total vehicles mass exceeding 3.5 t).  
United States California Class C (vehicles) Driving Licence.  
International Sailing license without limit from the coast with or without the auxiliary motor.  
Limited certificate for Ship radiotelephony.  
International Diving Licence Open Water Diver Scuba Schools International (SSI).  
International Diving Licence Advanced Open Water Diver Scuba Nitrox Safety International (SNSI).  
International Diving Licence Nitrox Diver Scuba Nitrox Safety International (SNSI).

ADDITIONAL INFORMATION

PhD Thesis Title "Geological Characterization and Surface Spectroscopy of Mars Drainage Networks"  
Master Thesis Title "Spectrophotometric Data Analysis from OSIRIS Instrument aboard Rosetta Spacecraft"

REFERRED PUBLICATIONS, ABSTRACTS/CONFERENCE PROCEEDINGS, ATTENDANCE AT CONFERENCES and PUBLIC OUREACH/ INTERVIEWS see ANNEXES

Curriculum Vitae updated in June 2019