Olga Prieto-Ballesteros

List of Publications by Year
in descending order

75 papers	2,664 citations	236925 25 h-index	189892 50 g-index
76 all docs	76 docs citations	76 times ranked	2830 citing authors

#	Article	IF	Citations
1	JUpiter ICy moons Explorer (JUICE): An ESA mission to orbit Ganymede and to characterise the Jupiter system. Planetary and Space Science, 2013, 78, 1-21.	1.7	455
2	Europa's Crust and Ocean: Origin, Composition, and the Prospects for Life. Icarus, 2000, 148, 226-265.	2.5	392
3	Spectral comparison of heavily hydrated salts with disrupted terrains on Europa. Icarus, 2005, 177, 472-490.	2.5	152
4	Viable cyanobacteria in the deep continental subsurface. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 10702-10707.	7.1	124
5	Stability of liquid saline water on present day Mars. Geophysical Research Letters, 2009, 36, .	4.0	93
6	Rheological and Thermal Properties of Icy Materials. Space Science Reviews, 2010, 153, 273-298.	8.1	87
7	Underground Habitats in the RÃo Tinto Basin: A Model for Subsurface Life Habitats on Mars. Astrobiology, 2008, 8, 1023-1047.	3.0	85
8	TandEM: Titan and Enceladus mission. Experimental Astronomy, 2009, 23, 893-946.	3.7	77
9	Evaluation of the possible presence of clathrate hydrates in Europa's icy shell or seafloor. Icarus, 2005, 177, 491-505.	2.5	63
10	SOLID2: An Antibody Array-Based Life-Detector Instrument in a Mars Drilling Simulation Experiment (MARTE). Astrobiology, 2008, 8, 987-999.	3.0	63
11	Interglacial clathrate destabilization on Mars: Possible contributing source of its atmospheric methane. Geology, 2006, 34, 149.	4.4	56
12	Martian hydrogeology sustained by thermally insulating gas and salt hydrates. Geology, 2007, 35, 975.	4.4	52
13	The 2005 MARTE Robotic Drilling Experiment in RÃo Tinto, Spain: Objectives, Approach, and Results of a Simulated Mission to Search for Life in the Martian Subsurface. Astrobiology, 2008, 8, 921-945.	3.0	52
14	Penetrators for in situ subsurface investigations of Europa. Advances in Space Research, 2011, 48, 725-742.	2.6	51
15	Protection of chemolithoautotrophic bacteria exposed to simulated Mars environmental conditions. Icarus, 2010, 209, 482-487.	2.5	47
16	Prokaryotic communities and operating metabolisms in the surface and the permafrost of Deception Island (Antarctica). Environmental Microbiology, 2012, 14, 2495-2510.	3.8	44
17	SuperCam Calibration Targets: Design and Development. Space Science Reviews, 2020, 216, 138.	8.1	44
18	Thermal state and complex geology of a heterogeneous salty crust of Jupiter's satellite, Europa. Icarus, 2005, 173, 212-221.	2.5	39

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19	LAPLACE: A mission to Europa and the Jupiter System for ESAâ€™s Cosmic Vision Programme. Experimental Astronomy, 2009, 23, 849-892.	3.7	38
20	Effects of the CO2 Guest Molecule on the sI Clathrate Hydrate Structure. Materials, 2016, 9, 777.	2.9	33
21	Identification of the subsurface sulfide bodies responsible for acidity in RÃo Tinto source water, Spain. Earth and Planetary Science Letters, 2014, 391, 36-41.	4.4	30
22	A chamber for studying planetary environments and its applications to astrobiology. Measurement Science and Technology, 2006, 17, 2274-2280.	2.6	29
23	Some Ecological Mechanisms to Generate Habitability in Planetary Subsurface Areas by Chemolithotrophic Communities: The RÃo Tinto Subsurface Ecosystem as a Model System. Astrobiology, 2008, 8, 157-173.	3.0	29
24	pH and Salinity Evolution of Europa's Brines: Raman Spectroscopy Study of Fractional Precipitation at 1 and 300 Bar. Astrobiology, 2013, 13, 693-702.	3.0	29
25	Biomarker Profiling of Microbial Mats in the Geothermal Band of Cerro Caliente, Deception Island (Antarctica): Life at the Edge of Heat and Cold. Astrobiology, 2019, 19, 1490-1504.	3.0	27
26	RÃo Tinto sedimentary mineral assemblages: A terrestrial perspective that suggests some formation pathways of phyllosilicates on Mars. Icarus, 2011, 211, 114-138.	2.5	26
27	Coogoon Valles, western Arabia Terra: Hydrological evolution of a complex Martian channel system. Icarus, 2017, 293, 27-44.	2.5	25
28	Classification of Modern and Old RÃo Tinto Sedimentary Deposits Through the Biomolecular Record Using a Life Marker Biochip: Implications for Detecting Life on Mars. Astrobiology, 2011, 11, 29-44.	3.0	24
29	Carbonate precipitation under bulk acidic conditions as a potential biosignature for searching life on Mars. Earth and Planetary Science Letters, 2012, 351-352, 13-26.	4.4	23
30	Analog environments for a Europa lander mission. Advances in Space Research, 2011, 48, 689-696.	2.6	21
31	Quantitative Raman spectroscopy as a tool to study the kinetics and formation mechanism of carbonates. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2013, 116, 26-30.	3.9	21
32	TÃrez Lake as a Terrestrial Analog of Europa. Astrobiology, 2003, 3, 863-877.	3.0	20
33	Raman Laser Spectrometer (RLS) calibration target design to allow onboard combined science between the RLS and MicrOmega instruments on the ExoMars rover. Journal of Raman Spectroscopy, 2020, 51, 1718-1730.	2.5	19
34	Strategies for detection of putative life on Europa. Advances in Space Research, 2011, 48, 678-688.	2.6	17
35	Critical Assessment of Analytical Techniques in the Search for Biomarkers on Mars: A Mummified Microbial Mat from Antarctica as a Best-Case Scenario. Astrobiology, 2017, 17, 984-996.	3.0	17
36	Review of Exchange Processes on Ganymede in View of Its Planetary Protection Categorization. Astrobiology, 2013, 13, 991-1004.	3.0	16

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37	The Complex Molecules Detector (CMOLD): A Fluidic-Based Instrument Suite to Search for (Bio)chemical Complexity on Mars and Icy Moons. Astrobiology, 2020, 20, 1076-1096.	3.0	16
38	The environment of early Mars and the missing carbonates. Meteoritics and Planetary Science, 2011, 46, 1447-1469.	1.6	15
39	Constraining the preservation of organic compounds in Mars analog nontronites after exposure to acid and alkaline fluids. Scientific Reports, 2020, 10, 15097.	3.3	15
40	Fingerprinting molecular and isotopic biosignatures on different hydrothermal scenarios of Iceland, an acidic and sulfur-rich Mars analog. Scientific Reports, 2020, 10, 21196.	3.3	15
41	Joint Europa Mission (JEM): a multi-scale study of Europa to characterize its habitability and search for extant life. Planetary and Space Science, 2020, 193, 104960.	1.7	15
42	Conspicuous assemblages of hydrated minerals from the H2Oâ€"MgSO4â€"CO2 system on Jupiterâ€™s Europa satellite. Geochimica Et Cosmochimica Acta, 2014, 125, 466-475.	3.9	14
43	Fractal properties of isolines at varying altitude revealing different dominant geological processes on Earth. Journal of Geophysical Research, 2008, 113, .	3.3	13
44	Raman spectroscopy as a tool to study the solubility of CO2 in magnesium sulphate brines: application to the fluids of Europa's cryomagmatic reservoirs. European Journal of Mineralogy, 2014, 25, 735-743.	1.3	13
45	The Subsurface Geology of RÃo Tinto: Material Examined During a Simulated Mars Drilling Mission for the Mars Astrobiology Research and Technology Experiment (MARTE). Astrobiology, 2008, 8, 1013-1021.	3.0	12
46	Spiders: Water-Driven Erosive Structures in the Southern Hemisphere of Mars. Astrobiology, 2006, 6, 651-667.	3.0	11
47	Guestâ€"host interactions in gas clathrate hydrates under pressure. High Pressure Research, 2015, 35, 49-56.	1.2	9
48	The COSPAR Panel on Planetary Protection Role, Structure and Activities. Space Research Today, 2019, 205, 14-26.	0.1	9
49	Time-Integrative Multibiomarker Detection in Triassicâ€"Jurassic Rocks from the Atacama Desert: Relevance to the Search for Basic Life Beyond Earth. Astrobiology, 2021, 21, 1421-1437.	3.0	9
50	Subsurface Geomicrobiology of the Iberian Pyritic Belt. Soil Biology, 2008, , 205-223.	0.8	8
51	Salting-out phenomenon induced by the clathrate hydrates formation at high-pressure. Journal of Physics: Conference Series, 2017, 950, 042042.	0.4	8
52	The Raman laser spectrometer ExoMars simulator (RLS Sim): A heavyâ€duty Raman tool for ground testing on ExoMars. Journal of Raman Spectroscopy, 2022, 53, 382-395.	2.5	8
53	Characterization of Salting-Out Processes during CO₂-Clathrate Formation Using Raman Spectroscopy: Planetological Application. Spectroscopy Letters, 2012, 45, 407-412.	1.0	5
54	Experimental Petrology to Understand Europa's Crust. Journal of Geophysical Research E: Planets, 2019, 124, 2660-2678.	3.6	5

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55	Detection of Potential Lipid Biomarkers in Oxidative Environments by Raman Spectroscopy and Implications for the ExoMars 2020-Raman Laser Spectrometer Instrument Performance. Astrobiology, 2020, 20, 405-414.	3.0	5
56	Molecular and isotopic biogeochemistry on recently-formed soils on King George Island (Maritime) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 142662.	8.0	5
57	Geomicrobiological Heterogeneity of Lithic Habitats in the Extreme Environment of Antarctic Nunataks: A Potential Early Mars Analog. Frontiers in Microbiology, 2021, 12, 670982.	3.5	5
58	Characterization of NH4-montmorillonite under conditions relevant to Ceres. Applied Clay Science, 2021, 209, 106137.	5.2	4
59	Thermal Properties of the H₂Oâ€"CO₂â€"Na₂CO₃/CH₃OH/NH₃ Systems at Low Temperatures and Pressures up to 50 MPa. ACS Earth and Space Chemistry, 2021, 5, 2626-2637.	2.7	4
60	Raman spectroscopic peculiarities of Icelandic poorly crystalline minerals and their implications for Mars exploration. Scientific Reports, 2022, 12, 5640.	3.3	4
61	Reply to the Comment on â€œIdentification of the subsurface sulfide bodies responsible for acidity in RÃo Tinto source water, Spainâ€•(Earth Planet. Sci. Lett. 391 (2014) 36â€"41). Earth and Planetary Science Letters, 2014, 403, 459-462.	4.4	3
62	Can Halophilic and Psychrophilic Microorganisms Modify the Freezing/Melting Curve of Cold Salty Solutions? Implications for Mars Habitability. Astrobiology, 2020, 20, 1067-1075.	3.0	2
63	Fluvial Bedform Generation by Biofilm Activity in the Berrocal Segment of RÃo Tinto: Acidic Biofilms and Sedimentation. Cellular Origin and Life in Extreme Habitats, 2010, , 483-498.	0.3	2
64	Thermal conductivity measurements of macroscopic frozen salt ice analogues of Jovian icy moons in support of the planned JUICE mission. Monthly Notices of the Royal Astronomical Society, 2022, 510, 4166-4179.	4.4	2
65	The Raman Laser Spectrometer: A performance study using ExoMars representative crushed samples. Journal of Raman Spectroscopy, 2022, 53, 396-410.	2.5	2
66	Interiors of Icy Moons from an Astrobiology Perspective: Deep Oceans and Icy Crusts. , 2015, , 459-487.		1
67	High Pressure Serpentinization Catalysed by Awaruite in Planetary Bodies. Journal of Physics: Conference Series, 2017, 950, 042041.	0.4	1
68	Characterizing Interstellar Medium, Planetary Surface and Deep Environments by Spectroscopic Techniques Using Unique Simulation Chambers at Centro de Astrobiologia (CAB). Life, 2019, 9, 72.	2.4	1
69	Theoretical Characterization of the High Pressure Nonclathrate CO₂ Hydrate. ACS Earth and Space Chemistry, 2020, 4, 2121-2128.	2.7	1
70	Geomorphology of the southwest Sinus Sabaeus region: evidence for an ancient hydrological cycle on Mars. Journal of Maps, 2021, 17, 512-518.	2.0	1
71	Interpreting Molecular and Isotopic Biosignatures in Methane-Derived Authigenic Carbonates in the Light of a Potential Carbon Cycle in the Icy Moons. Astrobiology, 2022, 22, 552-567.	3.0	1
72	Astrobiological Field Campaign to a Volcanosedimentary Mars Analogue Methane Producing Subsurface Protected Ecosystem: Imuruk Lake (Alaska). Advances in Astronomy, 2011, 2011, 1-8.	1.1	0

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73	Preservation Windows for Paleobiological Traces in the Mars Geological Record. Cellular Origin and Life in Extreme Habitats, 2009, , 491-512.	0.3	0
74	Rheological and Thermal Properties of Icy Materials. Space Sciences Series of ISSI, 2010, , 271-295.	0.0	0
75	Low-Temperature High-Pressure Chemistry of Ammonia and Methanol Aqueous Solutions in the Presence of Different Carbon Sources: Application to Icy Bodies. ACS Earth and Space Chemistry, 2022, 6, 1482-1494.	2.7	0