HervÃ© Cottin

List of Publications by Year
in descending order

101 papers	3,493 citations	136950 32 h-index	144013 57 g-index
105 all docs	105 docs citations	105 times ranked	2763 citing authors

#	Article	IF	Citations
1	Prebiotic chemicalsâ€"amino acid and phosphorusâ€"in the coma of comet 67P/Churyumov-Gerasimenko. Science Advances, 2016, 2, e1600285.	10.3	393
2	Carbon-rich dust in comet 67P/Churyumov-Gerasimenko measured by COSIMA/Rosetta. Monthly Notices of the Royal Astronomical Society, 2017, 469, S712-S722.	4.4	177
3	Comet 67P/Churyumov-Gerasimenko sheds dust coat accumulated over the past four years. Nature, 2015, 518, 216-218.	27.8	144
4	Cosima â€" High Resolution Time-of-Flight Secondary Ion Mass Spectrometer for the Analysis of Cometary Dust Particles onboard Rosetta. Space Science Reviews, 2007, 128, 823-867.	8.1	139
5	Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. Astrophysical Journal, 2003, 590, 874-881.	4.5	133
6	Cometary organic chemistry: a review from observations, numerical and experimental simulations. Planetary and Space Science, 1999, 47, 1141-1162.	1.7	125
7	High-molecular-weight organic matter in the particles of comet 67P/Churyumovâ€"Gerasimenko. Nature, 2016, 538, 72-74.	27.8	124
8	Bibliographic review and new measurements of the infrared band strengths of pure molecules at 25 K: H2O, CO2, CO, CH4, NH3, CH3OH, HCOOH and H2CO. Monthly Notices of the Royal Astronomical Society, 2015, 451, 2145-2160.	4.4	123
9	<i>Darwin</i>â€"A Mission to Detect and Search for Life on Extrasolar Planets. Astrobiology, 2009, 9, 1-22.	3.0	112
10	The origin of the CN radical in comets: A review from observations and models. Planetary and Space Science, 2005, 53, 1243-1262.	1.7	105
11	Cometary Dust. Space Science Reviews, 2018, 214, 1.	8.1	88
12	COMET 67P/CHURYUMOVâ€"GERASIMENKO: CLOSE-UP ON DUST PARTICLE FRAGMENTS. Astrophysical Journal Letters, 2016, 816, L32.	8.3	84
13	Evidence of ammonium salts in comet 67P as explanation for the nitrogen depletion in cometary comae. Nature Astronomy, 2020, 4, 533-540.	10.1	79
14	Darwinâ€"an experimental astronomy mission to search for extrasolar planets. Experimental Astronomy, 2009, 23, 435-461.	3.7	74
15	Earth as a Tool for Astrobiologyâ€"A European Perspective. Space Science Reviews, 2017, 209, 43-81.	8.1	68
16	Production of Hexamethylenetetramine in Photolyzed and Irradiated Interstellar Cometary Ice Analogs. Astrophysical Journal, 2001, 561, L139-L142.	4.5	66
17	Astrobiology and the Possibility of Life on Earth and Elsewhereâ€¦. Space Science Reviews, 2017, 209, 1-42.	8.1	66
18	Origin of cometary extended sources from degradation of refractory organics on grains: polyoxymethylene as formaldehyde parent molecule. Icarus, 2004, 167, 397-416.	2.5	57

#	Article	IF	Citations
19	Distributed Sources in Comets. Space Science Reviews, 2008, 138, 179-197.	8.1	55
20	Space as a Tool for Astrobiology: Review and Recommendations for Experimentations in Earth Orbit and Beyond. Space Science Reviews, 2017, 209, 83-181.	8.1	54
21	An experimental study of the photodegradation of polyoxymethylene at 122, 147 and 193 nm. Journal of Photochemistry and Photobiology A: Chemistry, 2000, 135, 53-64.	3.9	52
22	Investigating the Photostability of Carboxylic Acids Exposed to Mars Surface Ultraviolet Radiation Conditions. Astrobiology, 2009, 9, 543-549.	3.0	50
23	Very high resolution mass spectrometry of HCN polymers and tholins. Faraday Discussions, 2010, 147, 495.	3.2	49
24	Nitrogen-to-carbon atomic ratio measured by COSIMA in the particles of comet 67P/Churyumovâ€"Gerasimenko. Monthly Notices of the Royal Astronomical Society, 2017, 469, S506-S516.	4.4	49
25	Orbitrap mass analyser for in situ characterisation of planetary environments: Performance evaluation of a laboratory prototype. Planetary and Space Science, 2016, 131, 33-45.	1.7	47
26	Polyoxymethylene as Parent Molecule for the Formaldehyde Extended Source in Comet Halley. Astrophysical Journal, 2001, 556, 417-420.	4.5	46
27	Heliocentric evolution of the degradation of polyoxymethylene: Application to the origin of the formaldehyde (H2CO) extended source in Comet C/1995 O1 (Haleâ€"Bopp). Icarus, 2006, 184, 239-254.	2.5	46
28	UVolution: Compared photochemistry of prebiotic organic compounds in low Earth orbit and in the laboratory. Planetary and Space Science, 2010, 58, 1327-1346.	1.7	45
29	Importance of thermal reactivity for hexamethylenetetramine formation from simulated interstellar ices. Astronomy and Astrophysics, 2013, 551, A128.	5.1	42
30	Distributed glycine in comet 67P/Churyumov-Gerasimenko. Astronomy and Astrophysics, 2019, 630, A32.	5.1	42
31	Heterogeneous solid/gas chemistry of organic compounds related to comets, meteorites, Titan, and Mars: Laboratory and in lower Earth orbit experiments. Advances in Space Research, 2008, 42, 2019-2035.	2.6	38
32	Inferring the interplanetary dust properties. Astronomy and Astrophysics, 2007, 473, 641-649.	5.1	35
33	The PROCESS Experiment: Amino and Carboxylic Acids Under Mars-Like Surface UV Radiation Conditions in Low-Earth Orbit. Astrobiology, 2012, 12, 436-444.	3.0	33
34	UVolution, a Photochemistry Experiment in Low Earth Orbit: Investigation of the Photostability of Carboxylic Acids Exposed to Mars Surface UV Radiation Conditions. Astrobiology, 2010, 10, 449-461.	3.0	30
35	The PROCESS Experiment: An Astrochemistry Laboratory for Solid and Gaseous Organic Samples in Low-Earth Orbit. Astrobiology, 2012, 12, 412-425.	3.0	28
36	Variations in cometary dust composition from<i>Giotto</i>to<i>Rosetta</i>, clues to their formation mechanisms. Monthly Notices of the Royal Astronomical Society, 2016, 462, S323-S330.	4.4	28

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37	On the prospective detection of polyoxymethylene in comet 67P/Churyumovâ€"Gerasimenko with the COSIMA instrument onboard Rosetta. Planetary and Space Science, 2012, 65, 83-92.	1.7	25
38	Organic samples produced by ion bombardment of ices for the EXPOSE-R2 mission on the International Space Station. Planetary and Space Science, 2015, 118, 211-220.	1.7	23
39	Formation of analogs of cometary nitrogen-rich refractory organics from thermal degradation of tholin and HCN polymer. Icarus, 2015, 250, 53-63.	2.5	23
40	Gas chromatography for in situ analysis of a cometary nucleus: characterization and optimization of diphenyl/dimethylpolysiloxane stationary phases. Journal of Chromatography A, 1999, 863, 157-169.	3.7	22
41	Compositional and structural investigation of HCN polymer through high resolution mass spectrometry. International Journal of Mass Spectrometry, 2013, 354-355, 193-203.	1.5	22
42	The AMINO experiment: exposure of amino acids in the EXPOSE-R experiment on the International Space Station and in laboratory. International Journal of Astrobiology, 2015, 14, 89-97.	1.6	22
43	H/C elemental ratio of the refractory organic matter in cometary particles of 67P/Churyumov-Gerasimenko. Astronomy and Astrophysics, 2019, 630, A27.	5.1	22
44	Photodegradation of hexamethylenetetramine by VUV and its relevance for CN and HCN extended sources in comets. Advances in Space Research, 2002, 30, 1481-1488.	2.6	21
45	The PROCESS Experiment: Exposure of Amino Acids in the EXPOSE-E Experiment on the International Space Station and in Laboratory Simulations. Astrobiology, 2012, 12, 426-435.	3.0	21
46	Experimental study of the degradation of polymers: Application to the origin of extended sources in cometary atmospheres. Meteoritics and Planetary Science, 2004, 39, 581-587.	1.6	20
47	Mechanical and electrostatic experiments with dust particles collected in the inner coma of comet 67P by COSIMA onboard Rosetta. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160255.	3.4	19
48	Comets: Potential Sources of Prebiotic Molecules for the Early Earth. Advances in Astrobiology and Biogeophysics, 2005, , 289-352.	0.6	18
49	Identification of organic molecules with a laboratory prototype based on the Laser Ablation-CosmOrbitrap. Planetary and Space Science, 2019, 170, 42-51.	1.7	18
50	Experimental and theoretical photochemistry: application to the cometary environment and Titanâ€™s atmosphere. Planetary and Space Science, 2000, 48, 437-445.	1.7	17
51	HMT production and sublimation during thermal process of cometary organic analogs. Implications for its detection with the ROSETTA instruments. Icarus, 2013, 226, 541-551.	2.5	16
52	COSIMA calibration for the detection and characterization of the cometary solid organic matter. Planetary and Space Science, 2015, 105, 1-25.	1.7	16
53	The Photochemistry on Space Station (PSS) Experiment: Organic Matter under Mars-like Surface UV Radiation Conditions in Low Earth Orbit. Astrobiology, 2019, 19, 1037-1052.	3.0	16
54	New experimental results on the degradation of polyoxymethylene: Application to the origin of the formaldehyde extended source in comets. Journal of Geophysical Research, 2004, 109, .	3.3	15

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55	67P/Churyumovâ€“Gerasimenkoâ€™s dust activity from pre- to post-perihelion as detected by Rosetta/GIADA. Monthly Notices of the Royal Astronomical Society, 2020, 496, 125-137.	4.4	15
56	Triple Fâ€”a comet nucleus sample return mission. Experimental Astronomy, 2009, 23, 809-847.	3.7	14
57	Preparation of the Biochip experiment on the EXPOSE-R2 mission outside the International Space Station. Advances in Space Research, 2013, 52, 2168-2179.	2.6	14
58	VUV and mid-UV photoabsorption cross sections of thin films of adenine: Application on its photochemistry in the solar system. Planetary and Space Science, 2014, 90, 90-99.	1.7	14
59	CARBON DIOXIDE INFLUENCE ON THE THERMAL FORMATION OF COMPLEX ORGANIC MOLECULES IN INTERSTELLAR ICE ANALOGS. Astrophysical Journal Letters, 2015, 809, L18.	8.3	13
60	EXPOSE-R2 on the International Space Station (2014â€“2016): Results from the PSS and BOSS Astrobiology Experiments. Astrobiology, 2019, 19, 975-978.	3.0	13
61	OPTIMIZATION OF A SOLAR SIMULATOR FOR PLANETARY-PHOTOCHEMICAL STUDIES. Astrophysical Journal, Supplement Series, 2015, 218, 19.	7.7	11
62	Photolysis of Cometary Organic Dust Analogs on the EXPOSE-R2 Mission at the International Space Station. Astrobiology, 2019, 19, 1018-1036.	3.0	11
63	D/H in the refractory organics of comet 67P/Churyumov-Gerasimenko measured by <i>Rosetta</i>/COSIMA. Monthly Notices of the Royal Astronomical Society, 2021, 504, 4940-4951.	4.4	11
64	VUV and Mid-UV Photoabsorption Cross Sections of Thin Films of Guanine and Uracil: Application on Their Photochemistry in the Solar System. Astrobiology, 2015, 15, 268-282.	3.0	9
65	UVolution, a photochemistry experiment in low earth orbit: Investigation of the photostability of carbonates exposed to martian-like UV radiation conditions. Planetary and Space Science, 2010, 58, 1617-1624.	1.7	8
66	The AMINO experiment: a laboratory for astrochemistry and astrobiology on the EXPOSE-R facility of the International Space Station. International Journal of Astrobiology, 2015, 14, 67-77.	1.6	8
67	Experimental and theoretical studies on the gas/solid/gas transformation cycle in extraterrestrial environments. Journal of Geophysical Research, 2001, 106, 33325-33332.	3.3	7
68	The AMINO experiment: methane photolysis under Solar VUV irradiation on the EXPOSE-R facility of the International Space Station. International Journal of Astrobiology, 2015, 14, 79-87.	1.6	7
69	Dimerization of Uracil in a Simulated Mars-like UV Radiation Environment. Astrobiology, 2020, 20, 1363-1376.	3.0	7
70	Window contamination on Expose-R. International Journal of Astrobiology, 2015, 14, 33-45.	1.6	6
71	Photochemistry on the Space Stationâ€”Aptamer Resistance to Space Conditions: Particles Exposure from Irradiation Facilities and Real Exposure Outside the International Space Station. Astrobiology, 2019, 19, 1063-1074.	3.0	6
72	Photochemistry on the Space Stationâ€”Antibody Resistance to Space Conditions after Exposure Outside the International Space Station. Astrobiology, 2019, 19, 1053-1062.	3.0	6

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73	The detection of solid phosphorus and fluorine in the dust from the coma of comet 67P/Churyumovâ€“Gerasimenko. Monthly Notices of the Royal Astronomical Society, 2020, 499, 1870-1873.	4.4	5
74	S.E.M.A.Ph.Or.E COMETAIRE, a tool for the study of the photochemical decomposition of probable large organic molecules in comets. first application: Polyoxymethylene. Physics and Chemistry of the Earth, Part C: Solar, Terrestrial and Planetary Science, 1999, 24, 597-602.	0.2	4
75	AMBITION â€“ comet nucleus cryogenic sample return. Experimental Astronomy, 2022, 54, 1077-1128.	3.7	4
76	The AMINO experiment: RNA stability under solar radiation studied on the EXPOSE-R facility of the International Space Station. International Journal of Astrobiology, 2015, 14, 99-103.	1.6	3
77	VUV Spectral Irradiance Measurements in H₂/He/Ar Microwave Plasmas and Comparison with Solar Data. Astrophysical Journal, Supplement Series, 2019, 240, 7.	7.7	2
78	Photochemistry and Photoreactions of Organic Molecules in Space. Advances in Astrobiology and Biogeophysics, 2019, , 205-222.	0.6	2
79	Electrical properties of cometary dust particles derived from line shapes of TOF-SIMS spectra measured by the ROSETTA/COSIMA instrument. Planetary and Space Science, 2020, 182, 104758.	1.7	2
80	Distributed Sources in Comets. Space Sciences Series of ISSI, 2008, , 179-197.	0.0	2
81	Expose. , 2011, , 558-560.		2
82	HCN formation under electron impact: Experimental studies and application to Neptune's atmosphere. Advances in Space Research, 1997, 19, 1135-1144.	2.6	1
83	Significance of variables for discrimination: Applied to the search of organic ions in mass spectra measured on cometary particles. Journal of Chemometrics, 2018, 32, e3001.	1.3	1
84	EXPOSE. , 2015, , 812-814.		1
85	COSIMA data analysis using multivariate techniques. Geoscientific Instrumentation, Methods and Data Systems, 2015, 4, 45-56.	1.6	1
86	UV Studies Related to the Physico-Chemistry of Planetary and Cometary Environments. Highlights of Astronomy, 2002, 12, 88-91.	0.0	0
87	Astrochemistry on the EXPOSE/ISS and BIOPAN/Foton experiments. Proceedings of the International Astronomical Union, 2009, 5, 684-685.	0.0	0
88	Synthesis of analogues of cometary organic matter: thermochemical evolution and preparation of in-situ observations. BIO Web of Conferences, 2014, 2, 03007.	0.2	0
89	Composition of cometary particles collected during two periods of the Rosetta mission: multivariate evaluation of mass spectral data. Journal of Chemometrics, 2020, 34, e3218.	1.3	0
90	EURECA. , 2011, , 512-512.		0

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91	Deep Impact. , 2011, , 414-414.		0
92	Rosetta (Spacecraft). , 2011, , 1479-1482.		0
93	Comet, Churyumov-Gerasimenko. , 2011, , 342-342.		0
94	Polyoxymethylene. , 2011, , 1325-1325.		0
95	Philae Missions. , 2011, , 1225-1225.		0
96	Polyoxymethylene. , 2014, , 1-2.		0
97	EXPOSE. , 2014, , 1-3.		0
98	Rosetta Spacecraft. , 2014, , 1-5.		0
99	Polyoxymethylene. , 2015, , 1998-1999.		0
100	Rosetta Spacecraft. , 2015, , 2213-2216.		0
101	Comets, Titan and Mars: Astrobiology and Space Projects. , 2007, , 347-428.		0