

HervÃ© Cottin

List of Publications by Year in descending order

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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	AMBITION “ comet nucleus cryogenic sample return. <i>Experimental Astronomy</i> , 2022, 54, 1077-1128.	3.7	4
2	D/H in the refractory organics of comet 67P/Churyumov-Gerasimenko measured by Rosetta/COSIMA. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 504, 4940-4951.	4.4	11
3	Electrical properties of cometary dust particles derived from line shapes of TOF-SIMS spectra measured by the ROSETTA/COSIMA instrument. <i>Planetary and Space Science</i> , 2020, 182, 104758.	1.7	2
4	Dimerization of Uracil in a Simulated Mars-like UV Radiation Environment. <i>Astrobiology</i> , 2020, 20, 1363-1376.	3.0	7
5	The detection of solid phosphorus and fluorine in the dust from the coma of comet 67P/Churyumov-Gerasimenko. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 499, 1870-1873.	4.4	5
6	67P/Churyumov-Gerasimenko’s dust activity from pre- to post-perihelion as detected by Rosetta/GIADA. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 496, 125-137.	4.4	15
7	Composition of cometary particles collected during two periods of the Rosetta mission: multivariate evaluation of mass spectral data. <i>Journal of Chemometrics</i> , 2020, 34, e3218.	1.3	0
8	Evidence of ammonium salts in comet 67P as explanation for the nitrogen depletion in cometary comae. <i>Nature Astronomy</i> , 2020, 4, 533-540.	10.1	79
9	EXPOSE-R2 on the International Space Station (2014-2016): Results from the PSS and BOSS Astrobiology Experiments. <i>Astrobiology</i> , 2019, 19, 975-978.	3.0	13
10	The Photochemistry on Space Station (PSS) Experiment: Organic Matter under Mars-like Surface UV Radiation Conditions in Low Earth Orbit. <i>Astrobiology</i> , 2019, 19, 1037-1052.	3.0	16
11	Photolysis of Cometary Organic Dust Analogs on the EXPOSE-R2 Mission at the International Space Station. <i>Astrobiology</i> , 2019, 19, 1018-1036.	3.0	11
12	VUV Spectral Irradiance Measurements in H ₂ /He/Ar Microwave Plasmas and Comparison with Solar Data. <i>Astrophysical Journal, Supplement Series</i> , 2019, 240, 7.	7.7	2
13	Identification of organic molecules with a laboratory prototype based on the Laser Ablation-CosmOrbitrap. <i>Planetary and Space Science</i> , 2019, 170, 42-51.	1.7	18
14	Photochemistry on the Space Station – Aptamer Resistance to Space Conditions: Particles Exposure from Irradiation Facilities and Real Exposure Outside the International Space Station. <i>Astrobiology</i> , 2019, 19, 1063-1074.	3.0	6
15	Photochemistry on the Space Station – Antibody Resistance to Space Conditions after Exposure Outside the International Space Station. <i>Astrobiology</i> , 2019, 19, 1053-1062.	3.0	6
16	Distributed glycine in comet 67P/Churyumov-Gerasimenko. <i>Astronomy and Astrophysics</i> , 2019, 630, A32.	5.1	42
17	H/C elemental ratio of the refractory organic matter in cometary particles of 67P/Churyumov-Gerasimenko. <i>Astronomy and Astrophysics</i> , 2019, 630, A27.	5.1	22
18	Photochemistry and Photoreactions of Organic Molecules in Space. <i>Advances in Astrobiology and Biogeophysics</i> , 2019, , 205-222.	0.6	2

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19	Significance of variables for discrimination: Applied to the search of organic ions in mass spectra measured on cometary particles. <i>Journal of Chemometrics</i> , 2018, 32, e3001.	1.3	1
20	Cometary Dust. <i>Space Science Reviews</i> , 2018, 214, 1.	8.1	88
21	Astrobiology and the Possibility of Life on Earth and Elsewhere. <i>Space Science Reviews</i> , 2017, 209, 1-42.	8.1	66
22	Mechanical and electrostatic experiments with dust particles collected in the inner coma of comet 67P by COSIMA onboard Rosetta. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2017, 375, 20160255.	3.4	19
23	Nitrogen-to-carbon atomic ratio measured by COSIMA in the particles of comet 67P/Churyumov-Gerasimenko. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 469, S506-S516.	4.4	49
24	Earth as a Tool for Astrobiology—A European Perspective. <i>Space Science Reviews</i> , 2017, 209, 43-81.	8.1	68
25	Space as a Tool for Astrobiology: Review and Recommendations for Experimentations in Earth Orbit and Beyond. <i>Space Science Reviews</i> , 2017, 209, 83-181.	8.1	54
26	Carbon-rich dust in comet 67P/Churyumov-Gerasimenko measured by COSIMA/Rosetta. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 469, S712-S722.	4.4	177
27	Variations in cometary dust composition from Giotto to Rosetta, clues to their formation mechanisms. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 462, S323-S330.	4.4	28
28	High-molecular-weight organic matter in the particles of comet 67P/Churyumov-Gerasimenko. <i>Nature</i> , 2016, 538, 72-74.	27.8	124
29	Orbitrap mass analyser for in situ characterisation of planetary environments: Performance evaluation of a laboratory prototype. <i>Planetary and Space Science</i> , 2016, 131, 33-45.	1.7	47
30	Prebiotic chemicals—amino acid and phosphorus—in the coma of comet 67P/Churyumov-Gerasimenko. <i>Science Advances</i> , 2016, 2, e1600285.	10.3	393
31	COMET 67P/CHURYUMOV-GERASIMENKO: CLOSE-UP ON DUST PARTICLE FRAGMENTS. <i>Astrophysical Journal Letters</i> , 2016, 816, L32.	8.3	84
32	The AMINO experiment: RNA stability under solar radiation studied on the EXPOSE-R facility of the International Space Station. <i>International Journal of Astrobiology</i> , 2015, 14, 99-103.	1.6	3
33	The AMINO experiment: methane photolysis under Solar VUV irradiation on the EXPOSE-R facility of the International Space Station. <i>International Journal of Astrobiology</i> , 2015, 14, 79-87.	1.6	7
34	The AMINO experiment: exposure of amino acids in the EXPOSE-R experiment on the International Space Station and in laboratory. <i>International Journal of Astrobiology</i> , 2015, 14, 89-97.	1.6	22
35	Organic samples produced by ion bombardment of ices for the EXPOSE-R2 mission on the International Space Station. <i>Planetary and Space Science</i> , 2015, 118, 211-220.	1.7	23
36	COSIMA calibration for the detection and characterization of the cometary solid organic matter. <i>Planetary and Space Science</i> , 2015, 105, 1-25.	1.7	16

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37	Comet 67P/Churyumov-Gerasimenko sheds dust coat accumulated over the past four years. <i>Nature</i> , 2015, 518, 216-218.	27.8	144
38	Window contamination on Expose-R. <i>International Journal of Astrobiology</i> , 2015, 14, 33-45.	1.6	6
39	The AMINO experiment: a laboratory for astrochemistry and astrobiology on the EXPOSE-R facility of the International Space Station. <i>International Journal of Astrobiology</i> , 2015, 14, 67-77.	1.6	8
40	Bibliographic review and new measurements of the infrared band strengths of pure molecules at 25 K: H ₂ O, CO ₂ , CO, CH ₄ , NH ₃ , CH ₃ OH, HCOOH and H ₂ CO. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 451, 2145-2160.	4.4	123
41	OPTIMIZATION OF A SOLAR SIMULATOR FOR PLANETARY-PHOTOCHEMICAL STUDIES. <i>Astrophysical Journal, Supplement Series</i> , 2015, 218, 19.	7.7	11
42	VUV and Mid-UV Photoabsorption Cross Sections of Thin Films of Guanine and Uracil: Application on Their Photochemistry in the Solar System. <i>Astrobiology</i> , 2015, 15, 268-282.	3.0	9
43	CARBON DIOXIDE INFLUENCE ON THE THERMAL FORMATION OF COMPLEX ORGANIC MOLECULES IN INTERSTELLAR ICE ANALOGS. <i>Astrophysical Journal Letters</i> , 2015, 809, L18.	8.3	13
44	Formation of analogs of cometary nitrogen-rich refractory organics from thermal degradation of tholin and HCN polymer. <i>Icarus</i> , 2015, 250, 53-63.	2.5	23
45	EXPOSE. , 2015, , 812-814.		1
46	COSIMA data analysis using multivariate techniques. <i>Geoscientific Instrumentation, Methods and Data Systems</i> , 2015, 4, 45-56.	1.6	1
47	Polyoxymethylene. , 2015, , 1998-1999.		0
48	Rosetta Spacecraft. , 2015, , 2213-2216.		0
49	Synthesis of analogues of cometary organic matter: thermochemical evolution and preparation of in-situ observations. <i>BIO Web of Conferences</i> , 2014, 2, 03007.	0.2	0
50	VUV and mid-UV photoabsorption cross sections of thin films of adenine: Application on its photochemistry in the solar system. <i>Planetary and Space Science</i> , 2014, 90, 90-99.	1.7	14
51	Polyoxymethylene. , 2014, , 1-2.		0
52	EXPOSE. , 2014, , 1-3.		0
53	Rosetta Spacecraft. , 2014, , 1-5.		0
54	Preparation of the Biochip experiment on the EXPOSE-R2 mission outside the International Space Station. <i>Advances in Space Research</i> , 2013, 52, 2168-2179.	2.6	14

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55	Compositional and structural investigation of HCN polymer through high resolution mass spectrometry. <i>International Journal of Mass Spectrometry</i> , 2013, 354-355, 193-203.	1.5	22
56	HMT production and sublimation during thermal process of cometary organic analogs. Implications for its detection with the ROSETTA instruments. <i>Icarus</i> , 2013, 226, 541-551.	2.5	16
57	Importance of thermal reactivity for hexamethylenetetramine formation from simulated interstellar ices. <i>Astronomy and Astrophysics</i> , 2013, 551, A128.	5.1	42
58	The PROCESS Experiment: Amino and Carboxylic Acids Under Mars-Like Surface UV Radiation Conditions in Low-Earth Orbit. <i>Astrobiology</i> , 2012, 12, 436-444.	3.0	33
59	The PROCESS Experiment: Exposure of Amino Acids in the EXPOSE-E Experiment on the International Space Station and in Laboratory Simulations. <i>Astrobiology</i> , 2012, 12, 426-435.	3.0	21
60	The PROCESS Experiment: An Astrochemistry Laboratory for Solid and Gaseous Organic Samples in Low-Earth Orbit. <i>Astrobiology</i> , 2012, 12, 412-425.	3.0	28
61	On the prospective detection of polyoxymethylene in comet 67P/Churyumov-Gerasimenko with the COSIMA instrument onboard Rosetta. <i>Planetary and Space Science</i> , 2012, 65, 83-92.	1.7	25
62	Expose. , 2011, , 558-560.		2
63	EURECA. , 2011, , 512-512.		0
64	Deep Impact. , 2011, , 414-414.		0
65	Rosetta (Spacecraft). , 2011, , 1479-1482.		0
66	Comet, Churyumov-Gerasimenko. , 2011, , 342-342.		0
67	Polyoxymethylene. , 2011, , 1325-1325.		0
68	Philae Missions. , 2011, , 1225-1225.		0
69	UVolution: Compared photochemistry of prebiotic organic compounds in low Earth orbit and in the laboratory. <i>Planetary and Space Science</i> , 2010, 58, 1327-1346.	1.7	45
70	UVolution, a photochemistry experiment in low earth orbit: Investigation of the photostability of carbonates exposed to martian-like UV radiation conditions. <i>Planetary and Space Science</i> , 2010, 58, 1617-1624.	1.7	8
71	UVolution, a Photochemistry Experiment in Low Earth Orbit: Investigation of the Photostability of Carboxylic Acids Exposed to Mars Surface UV Radiation Conditions. <i>Astrobiology</i> , 2010, 10, 449-461.	3.0	30
72	Very high resolution mass spectrometry of HCN polymers and tholins. <i>Faraday Discussions</i> , 2010, 147, 495.	3.2	49

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73	Investigating the Photostability of Carboxylic Acids Exposed to Mars Surface Ultraviolet Radiation Conditions. <i>Astrobiology</i> , 2009, 9, 543-549.	3.0	50
74	Triple "a comet nucleus sample return mission. <i>Experimental Astronomy</i> , 2009, 23, 809-847.	3.7	14
75	Darwin"an experimental astronomy mission to search for extrasolar planets. <i>Experimental Astronomy</i> , 2009, 23, 435-461.	3.7	74
76	<i>Darwin</i>"A Mission to Detect and Search for Life on Extrasolar Planets. <i>Astrobiology</i> , 2009, 9, 1-22.	3.0	112
77	Astrochemistry on the EXPOSE/ISS and BIOPAN/Foton experiments. <i>Proceedings of the International Astronomical Union</i> , 2009, 5, 684-685.	0.0	0
78	Distributed Sources in Comets. <i>Space Science Reviews</i> , 2008, 138, 179-197.	8.1	55
79	Heterogeneous solid/gas chemistry of organic compounds related to comets, meteorites, Titan, and Mars: Laboratory and in lower Earth orbit experiments. <i>Advances in Space Research</i> , 2008, 42, 2019-2035.	2.6	38
80	Distributed Sources in Comets. <i>Space Sciences Series of ISSI</i> , 2008, , 179-197.	0.0	2
81	Cosima " High Resolution Time-of-Flight Secondary Ion Mass Spectrometer for the Analysis of Cometary Dust Particles onboard Rosetta. <i>Space Science Reviews</i> , 2007, 128, 823-867.	8.1	139
82	Inferring the interplanetary dust properties. <i>Astronomy and Astrophysics</i> , 2007, 473, 641-649.	5.1	35
83	Comets, Titan and Mars: Astrobiology and Space Projects. , 2007, , 347-428.		0
84	Heliocentric evolution of the degradation of polyoxymethylene: Application to the origin of the formaldehyde (H ₂ CO) extended source in Comet C/1995 O1 (Hale" Bopp). <i>Icarus</i> , 2006, 184, 239-254.	2.5	46
85	The origin of the CN radical in comets: A review from observations and models. <i>Planetary and Space Science</i> , 2005, 53, 1243-1262.	1.7	105
86	Comets: Potential Sources of Prebiotic Molecules for the Early Earth. <i>Advances in Astrobiology and Biogeophysics</i> , 2005, , 289-352.	0.6	18
87	Origin of cometary extended sources from degradation of refractory organics on grains: polyoxymethylene as formaldehyde parent molecule. <i>Icarus</i> , 2004, 167, 397-416.	2.5	57
88	New experimental results on the degradation of polyoxymethylene: Application to the origin of the formaldehyde extended source in comets. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	15
89	Experimental study of the degradation of polymers: Application to the origin of extended sources in cometary atmospheres. <i>Meteoritics and Planetary Science</i> , 2004, 39, 581-587.	1.6	20
90	Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. <i>Astrophysical Journal</i> , 2003, 590, 874-881.	4.5	133

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91	UV Studies Related to the Physico-Chemistry of Planetary and Cometary Environments. Highlights of Astronomy, 2002, 12, 88-91.	0.0	0
92	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
93	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
94	Production of Hexamethylenetetramine in Photolyzed and Irradiated Interstellar Cometary Ice Analogs. Astrophysical Journal, 2001, 561, L139-L142.	4.5	66
95	Polyoxymethylene as Parent Molecule for the Formaldehyde Extended Source in Comet Halley. Astrophysical Journal, 2001, 556, 417-420.	4.5	46
96	Experimental and theoretical photochemistry: application to the cometary environment and Titan's atmosphere. Planetary and Space Science, 2000, 48, 437-445.	1.7	17
97	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
98	Cometary organic chemistry: a review from observations, numerical and experimental simulations. Planetary and Space Science, 1999, 47, 1141-1162.	1.7	125
99	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
100	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
101	HCN formation under electron impact: Experimental studies and application to Neptune's atmosphere. Advances in Space Research, 1997, 19, 1135-1144.	2.6	1