

# Alberto G FairÃ©n

## List of Publications by Year in descending order

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Version: 2024-02-01

119  
papers

7,069  
citations

76326

40  
h-index

58581

82  
g-index

127  
all docs

127  
docs citations

127  
times ranked

4311  
citing authors

#	ARTICLE	IF	CITATIONS
1	The Atacama Desert in Northern Chile as an Analog Model of Mars. <i>Frontiers in Astronomy and Space Sciences</i> , 2022, 8, .	2.8	21
2	Fluvial Depositional Systems of the African Humid Period: An Analog for an Early, Wet Mars in the Eastern Sahara. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	3.6	2
3	Fundamental Science and Engineering Questions in Planetary Cave Exploration. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	3.6	8
4	Deep Trek: Science of Subsurface Habitability & Life on Mars. , 2021, 53, .		3
5	Salty Environments: The importance of evaporites and brine environments as habitats and preservers of biosignatures. , 2021, 53, .		3
6	Deep Trek: Mission Concepts for Exploring Subsurface Habitability & Life on Mars – A Window into Subsurface Life in the Solar System. , 2021, 53, .		0
7	The Mars Environmental Dynamics Analyzer, MEDA. A Suite of Environmental Sensors for the Mars 2020 Mission. <i>Space Science Reviews</i> , 2021, 217, 48.	8.1	57
8	A roadmap for planetary caves science and exploration. <i>Nature Astronomy</i> , 2021, 5, 524-525.	10.1	19
9	Long-lasting habitable periods in Gale crater constrained by glauconitic clays. <i>Nature Astronomy</i> , 2021, 5, 936-942.	10.1	11
10	Geomicrobiological Heterogeneity of Lithic Habitats in the Extreme Environment of Antarctic Nunataks: A Potential Early Mars Analog. <i>Frontiers in Microbiology</i> , 2021, 12, 670982.	3.5	5
11	Evaluating the Microbial Habitability of Rogue Planets and Proposing Speculative Scenarios on How They Might Act as Vectors for Panspermia. <i>Life</i> , 2021, 11, 833.	2.4	2
12	Geomorphology of the southwest Sinus Sabaeus region: evidence for an ancient hydrological cycle on Mars. <i>Journal of Maps</i> , 2021, 17, 512-518.	2.0	1
13	Extraformational sediment recycling on Mars. , 2020, 16, 1508-1537.		20
14	Crystalline water in gypsum is unavailable for cyanobacteria in laboratory experiments and in natural desert endolithic habitats. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 27786-27787.	7.1	5
15	Deposits from giant floods in Gale crater and their implications for the climate of early Mars. <i>Scientific Reports</i> , 2020, 10, 19099.	3.3	6
16	Can Halophilic and Psychrophilic Microorganisms Modify the Freezing/Melting Curve of Cold Salty Solutions? Implications for Mars Habitability. <i>Astrobiology</i> , 2020, 20, 1067-1075.	3.0	2
17	The Complex Molecules Detector (CMOLD): A Fluidic-Based Instrument Suite to Search for (Bio)chemical Complexity on Mars and Icy Moons. <i>Astrobiology</i> , 2020, 20, 1076-1096.	3.0	16
18	Constraining the preservation of organic compounds in Mars analog nontronites after exposure to acid and alkaline fluids. <i>Scientific Reports</i> , 2020, 10, 15097.	3.3	15

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19	Inhabited subsurface wet smectites in the hyperarid core of the Atacama Desert as an analog for the search for life on Mars. <i>Scientific Reports</i> , 2020, 10, 19183.	3.3	21
20	Organic chemistry on a cool and wet young Mars. <i>Nature Astronomy</i> , 2020, 4, 446-447.	10.1	4
21	Origin and composition of three heterolithic boulder- and cobble-bearing deposits overlying the Murray and Stimson formations, Gale Crater, Mars. <i>Icarus</i> , 2020, 350, 113897.	2.5	11
22	Biomarker Profiling of Microbial Mats in the Geothermal Band of Cerro Caliente, Deception Island (Antarctica): Life at the Edge of Heat and Cold. <i>Astrobiology</i> , 2019, 19, 1490-1504.	3.0	27
23	Aeolian transport of viable microbial life across the Atacama Desert, Chile: Implications for Mars. <i>Scientific Reports</i> , 2019, 9, 11024.	3.3	36
24	A Test in a High Altitude Lake of a Multi-Parametric Rapid Methodology for Assessing Life in Liquid Environments on Planetary Bodies: A Potential New Freshwater Polychaete Tubeworm Community. <i>Frontiers in Environmental Science</i> , 2019, 7, .	3.3	1
25	Microbiology and Nitrogen Cycle in the Benthic Sediments of a Glacial Oligotrophic Deep Andean Lake as Analog of Ancient Martian Lake-Beds. <i>Frontiers in Microbiology</i> , 2019, 10, 929.	3.5	22
26	Planetary Protection and the astrobiological exploration of Mars: Proactive steps in moving forward. <i>Advances in Space Research</i> , 2019, 63, 1491-1497.	2.6	11
27	FLOOD-DEPOSITED RHYTHMITES IN GALE CRATER, MARS. , 2019, , .		0
28	SPECTACULAR OUTCROPS OF THE CLAY-BEARING UNIT, GALE CRATER, MARS. , 2019, , .		0
29	RAPID INUNDATION OF GALE CRATER, MARS. , 2019, , .		0
30	Surface clay formation during short-term warmer and wetter conditions on a largely cold ancient Mars. <i>Nature Astronomy</i> , 2018, 2, 206-213.	10.1	105
31	Is Searching for Martian Life a Priority for the Mars Community?. <i>Astrobiology</i> , 2018, 18, 101-107.	3.0	8
32	Unprecedented rains decimate surface microbial communities in the hyperarid core of the Atacama Desert. <i>Scientific Reports</i> , 2018, 8, 16706.	3.3	54
33	Low Hesperian $\text{CO}_2$ constrained from in situ mineralogical analysis at Gale Crater, Mars. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 2166-2170.	7.1	59
34	Long-lived volcanism within Argyre basin, Mars. <i>Icarus</i> , 2017, 293, 8-26.	2.5	8
35	The Modern Near-Surface Martian Climate: A Review of In-situ Meteorological Data from Viking to Curiosity. <i>Space Science Reviews</i> , 2017, 212, 295-338.	8.1	153
36	Mineralogy of an ancient lacustrine mudstone succession from the Murray formation, Gale crater, Mars. <i>Earth and Planetary Science Letters</i> , 2017, 471, 172-185.	4.4	247

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37	Redox stratification of an ancient lake in Gale crater, Mars. <i>Science</i> , 2017, 356, .	12.6	209
38	Centimeter to decimeter hollow concretions and voids in Gale Crater sediments, Mars. <i>Icarus</i> , 2017, 289, 144-156.	2.5	12
39	Quantifying Fenton reaction pathways driven by self-generated H <sub>2</sub> O <sub>2</sub> on pyrite surfaces. <i>Scientific Reports</i> , 2017, 7, 43703.	3.3	46
40	Icy Mars lakes warmed by methane. <i>Nature Geoscience</i> , 2017, 10, 717-718.	12.9	12
41	Searching for Life on Mars Before It Is Too Late. <i>Astrobiology</i> , 2017, 17, 962-970.	3.0	61
42	Mineral paragenesis on Mars: The roles of reactive surface area and diffusion. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1855-1879.	3.6	5
43	Habitability on Early Mars and the Search for Biosignatures with the ExoMars Rover. <i>Astrobiology</i> , 2017, 17, 471-510.	3.0	371
44	Interiors and Surfaces of Terrestrial Planets and Major Satellites. , 2017, , 1-25.		0
45	Fluidized-sediment pipes in Gale crater, Mars, and possible Earth analogs. <i>Geology</i> , 2017, 45, 7-10.	4.4	18
46	THE LAST RECORDED DELTAIC DEPOSITION IN GALE CRATER BEFORE MARS WENT COLD: EVIDENCE FROM THE RUGGED TERRAIN UNIT IN THE CURIOSITY ROVER'S LANDING ELLIPSE. , 2017, , .		1
47	DEPOSITIONAL ENVIRONMENTS OF THE MURRAY FORMATION AT THE PAHRUMP HILLS LOCALITY, GALE CRATER, MARS: SEDIMENTATION ON A LAKE-FLOOR FAN DRIVEN BY CLIMATIC-RELATED LAKE-LEVEL FLUCTUATIONS. , 2017, , .		0
48	SEDIMENTOLOGICAL FRAMEWORK, SEQUENCE STRATIGRAPHY, AND RELATIVE DATING OF GEOLOGICAL EVENTS IN THE LANDING ELLIPSE OF THE CURIOSITY ROVER, GALE CRATER, MARS. , 2017, , .		0
49	A MAGNIFICENT OUTCROP IN THE KIMBERLEY REGION OF GALE CRATER, MARS. , 2017, , .		0
50	Potassium-rich sandstones within the Gale impact crater, Mars: The APXS perspective. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 1981-2003.	3.6	51
51	Origin and significance of decameter-scale polygons in the lower Peace Vallis fan of Gale crater, Mars. <i>Icarus</i> , 2016, 277, 56-72.	2.5	15
52	Fluids during diagenesis and sulfate vein formation in sediments at Gale crater, Mars. <i>Meteoritics and Planetary Science</i> , 2016, 51, 2175-2202.	1.6	50
53	A global Mars dust composition refined by the Alpha-Particle X-ray Spectrometer in Gale Crater. <i>Geophysical Research Letters</i> , 2016, 43, 67-75.	4.0	95
54	Tsunami waves extensively resurfaced the shorelines of an early Martian ocean. <i>Scientific Reports</i> , 2016, 6, 25106.	3.3	121

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55	The Argyre Region as a Prime Target for <i>in situ</i> Astrobiological Exploration of Mars. <i>Astrobiology</i> , 2016, 16, 143-158.	3.0	4
56	Light and variable $^{37}\text{Cl}/^{35}\text{Cl}$ ratios in rocks from Gale Crater, Mars: Possible signature of perchlorate. <i>Earth and Planetary Science Letters</i> , 2016, 438, 14-24.	4.4	39
57	Groundwater flow induced collapse and flooding in Noctis Labyrinthus, Mars. <i>Planetary and Space Science</i> , 2016, 124, 1-14.	1.7	18
58	MINERALOGY OF MUDSTONE AT GALE CRATER, MARS: EVIDENCE FOR DYNAMIC LACUSTRINE ENVIRONMENTS. , 2016, , .		1
59	LONG-LIVED DEEP LAKES IN EARLY MARS: SEDIMENTOLOGICAL EVIDENCE FROM THE CURIOSITY ROVER AT GALE CRATER. , 2016, , .		0
60	Organic molecules in the Sheepbed Mudstone, Gale Crater, Mars. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 495-514.	3.6	375
61	Martian outflow channels: How did their source aquifers form and why did they drain so rapidly?. <i>Scientific Reports</i> , 2015, 5, 13404.	3.3	29
62	Tracking the weathering of basalts on Mars using lithium isotope fractionation models. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 1172-1197.	2.5	12
63	Did the martian outflow channels mostly form during the Amazonian Period?. <i>Icarus</i> , 2015, 257, 387-395.	2.5	27
64	Geological and hydrological histories of the Argyre province, Mars. <i>Icarus</i> , 2015, 253, 66-98.	2.5	24
65	Evidence for indigenous nitrogen in sedimentary and aeolian deposits from the <i>Curiosity</i> rover investigations at Gale crater, Mars. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 4245-4250.	7.1	172
66	New insights into the Late Amazonian zonal shrinkage of the martian south polar plateau. <i>Icarus</i> , 2015, 248, 407-411.	2.5	6
67	Models of Formation and Activity of Spring Mounds in the Mechertate-Chrita-Sidi El Hani System, Eastern Tunisia: Implications for the Habitability of Mars. <i>Life</i> , 2014, 4, 386-432.	2.4	10
68	Mineralogy, chemistry and biological contingents of an early-middle Miocene Antarctic paleosol and its relevance as a Martian analogue. <i>Planetary and Space Science</i> , 2014, 104, 253-269.	1.7	8
69	Assessing the Possibility of Biological Complexity on Other Worlds, with an Estimate of the Occurrence of Complex Life in the Milky Way Galaxy. <i>Challenges</i> , 2014, 5, 159-174.	1.7	48
70	Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. <i>Science</i> , 2014, 343, 1245-1247.	12.6	323
71	Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. <i>Science</i> , 2014, 343, 1243-1248.	12.6	508
72	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. <i>Science</i> , 2014, 343, 1244-1247.	12.6	246

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73	Ancient Aqueous Environments at Endeavour Crater, Mars. <i>Science</i> , 2014, 343, 1248097.	12.6	176
74	Evidence for Middle Amazonian catastrophic flooding and glaciation on Mars. <i>Icarus</i> , 2014, 242, 202-210.	2.5	22
75	Groundwater influence on the aeolian sequence stratigraphy of the Mechertateâ€“Chritaâ€“Sidi El Hani system, Tunisian Sahel: Analogies to the wetâ€“dry aeolian sequence stratigraphy at Meridiani Planum, Terby crater, and Gale crater, Mars. <i>Planetary and Space Science</i> , 2014, 95, 56-78.	1.7	15
76	A cold hydrological system in Gale crater, Mars. <i>Planetary and Space Science</i> , 2014, 93-94, 101-118.	1.7	34
77	Diagenetic origin of nodules in the Sheepbed member, Yellowknife Bay formation, Gale crater, Mars. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 1637-1664.	3.6	80
78	Characterization of the acidic cold seep emplaced jarositic Golden Deposit, NWT, Canada, as an analogue for jarosite deposition on Mars. <i>Icarus</i> , 2013, 224, 382-398.	2.5	16
79	Drastic environmental change and its effects on a planetary biosphere. <i>Icarus</i> , 2013, 225, 775-780.	2.5	28
80	The Icebreaker Life Mission to Mars: A Search for Biomolecular Evidence for Life. <i>Astrobiology</i> , 2013, 13, 334-353.	3.0	104
81	The overprotection of Mars. <i>Nature Geoscience</i> , 2013, 6, 510-511.	12.9	25
82	Martian Fluvial Conglomerates at Gale Crater. <i>Science</i> , 2013, 340, 1068-1072.	12.6	326
83	Evidence for Hesperian glaciation along the Martian dichotomy boundary. <i>Geology</i> , 2013, 41, 755-758.	4.4	59
84	Locally Targeted Ecosynthesis: A Proactive <i>in situ</i> Search for Extant Life on Other Worlds. <i>Astrobiology</i> , 2013, 13, 674-678.	3.0	16
85	Infiltration of Martian outflow channel floodwaters into lowland cavernous systems. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	19
86	Glacial paleoenvironments on Mars revealed by the paucity of hydrated silicates in the Noachian crust of the Northern Lowlands. <i>Planetary and Space Science</i> , 2012, 70, 126-133.	1.7	6
87	Weathering rinds on clasts: Examples from Earth and Mars as short and long term recorders of paleoenvironment. <i>Planetary and Space Science</i> , 2012, 73, 243-253.	1.7	27
88	Reduced albedo on early Mars does not solve the climate paradox under a faint young Sun. <i>Astronomy and Astrophysics</i> , 2012, 540, A13.	5.1	20
89	The Biological Oxidant and Life Detection (BOLD) mission: A proposal for a mission to Mars. <i>Planetary and Space Science</i> , 2012, 67, 57-69.	1.7	32
90	Meteorites at Meridiani Planum provide evidence for significant amounts of surface and nearâ€“surface water on early Mars. <i>Meteoritics and Planetary Science</i> , 2011, 46, 1832-1841.	1.6	17

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91	A Two-Tiered Approach to Assessing the Habitability of Exoplanets. <i>Astrobiology</i> , 2011, 11, 1041-1052.	3.0	117
92	A large sedimentary basin in the Terra Sirenum region of the southern highlands of Mars. <i>Icarus</i> , 2011, 212, 579-589.	2.5	21
93	Secondary chaotic terrain formation in the higher outflow channels of southern circum-Chryse, Mars. <i>Icarus</i> , 2011, 213, 150-194.	2.5	17
94	Cold glacial oceans would have inhibited phyllosilicate sedimentation on early Mars. <i>Nature Geoscience</i> , 2011, 4, 667-670.	12.9	75
95	Evidence for Hesperian impact-induced hydrothermalism on Mars. <i>Icarus</i> , 2010, 208, 667-683.	2.5	127
96	Noachian and more recent phyllosilicates in impact craters on Mars. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 12095-12100.	7.1	73
97	Hygroscopic Salts and the Potential for Life on Mars. <i>Astrobiology</i> , 2010, 10, 617-628.	3.0	138
98	<i>Astrobiology through the Ages of Mars: The Study of Terrestrial Analogues to Understand the Habitability of Mars. Astrobiology</i> , 2010, 10, 821-843.	3.0	141
99	A cold and wet Mars. <i>Icarus</i> , 2010, 208, 165-175.	2.5	143
100	New Priorities in the Robotic Exploration of Mars: The Case for <i>In Situ</i> Search for Extant Life. <i>Astrobiology</i> , 2010, 10, 705-710.	3.0	31
101	New evidence for a magmatic influence on the origin of Valles Marineris, Mars. <i>Journal of Volcanology and Geothermal Research</i> , 2009, 185, 12-27.	2.1	31
102	Stability against freezing of aqueous solutions on early Mars. <i>Nature</i> , 2009, 459, 401-404.	27.8	124
103	Evidence for Amazonian acidic liquid water on Mars—A reinterpretation of MER mission results. <i>Planetary and Space Science</i> , 2009, 57, 276-287.	1.7	36
104	GRS evidence and the possibility of paleooceans on Mars. <i>Planetary and Space Science</i> , 2009, 57, 664-684.	1.7	107
105	Recent geological and hydrological activity on Mars: The Tharsis/Elysium corridor. <i>Planetary and Space Science</i> , 2008, 56, 985-1013.	1.7	92
106	A new hypothesis for the origin and redistribution of sulfates in the equatorial region of western Mars. <i>Geophysical Research Letters</i> , 2008, 35, .	4.0	7
107	The case for life on Mars. <i>International Journal of Astrobiology</i> , 2008, 7, 117-141.	1.6	37
108	The Biological Oxidant and Life Detection (BOLD) mission: an outline for a new mission to Mars. <i>Proceedings of SPIE</i> , 2007, , .	0.8	2

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109	Exploration of hydrothermal targets on Mars. <i>Icarus</i> , 2007, 189, 308-324.	2.5	140
110	Extreme environments as Mars terrestrial analogs: The Rio Tinto case. <i>Planetary and Space Science</i> , 2007, 55, 370-381.	1.7	166
111	Possible ancient giant basin and related water enrichment in the Arabia Terra province, Mars. <i>Icarus</i> , 2007, 190, 74-92.	2.5	39
112	Seas under ice: Stability of liquid-water oceans within icy worlds. <i>Earth, Moon and Planets</i> , 2006, 97, 79-90.	0.6	4
113	Extraterrestrial hydrogeology. <i>Hydrogeology Journal</i> , 2005, 13, 51-68.	2.1	23
114	Control of impact crater fracture systems on subsurface hydrology, ground subsidence, and collapse, Mars. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	44
115	Scenarios for the evolution of life on Mars. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	48
116	Inhibition of carbonate synthesis in acidic oceans on early Mars. <i>Nature</i> , 2004, 431, 423-426.	27.8	169
117	Marine target craters on Mars? An assessment study. <i>Meteoritics and Planetary Science</i> , 2004, 39, 333-346.	1.6	39
118	Episodic flood inundations of the northern plains of Mars. <i>Icarus</i> , 2003, 165, 53-67.	2.5	167
119	Active ground patterns near Mars' equator in the Glen Torridon region of Gale Crater. <i>Journal of Geophysical Research E: Planets</i> , 0, , .	3.6	3