Ralf Gellert

List of Publications by Year
in descending order

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121 papers	17,028 citations	15001 68 h-index	23841 115 g-index
128 all docs	128 docs citations	128 times ranked	5738 citing authors

#	Article	IF	Citations
1	Jarosite and Hematite at Meridiani Planum from Opportunity's MÃ¶ssbauer Spectrometer. Science, 2004, 306, 1740-1745.	6.0	733
2	A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1242777.	6.0	687
3	Mars Science Laboratory Mission and Science Investigation. Space Science Reviews, 2012, 170, 5-56.	3.7	650
4	Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1243480.	6.0	508
5	Provenance and diagenesis of the evaporite-bearing Burns formation, Meridiani Planum, Mars. Earth and Planetary Science Letters, 2005, 240, 95-121.	1.8	506
6	Deposition, exhumation, and paleoclimate of an ancient lake deposit, Gale crater, Mars. Science, 2015, 350, aac7575.	6.0	471
7	Detection of Silica-Rich Deposits on Mars. Science, 2008, 320, 1063-1067.	6.0	399
8	Chemistry of Rocks and Soils at Meridiani Planum from the Alpha Particle X-ray Spectrometer. Science, 2004, 306, 1746-1749.	6.0	370
9	Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. Science, 2013, 341, 1238937.	6.0	367
10	Identification of Carbonate-Rich Outcrops on Mars by the Spirit Rover. Science, 2010, 329, 421-424.	6.0	358
11	Chemistry and mineralogy of outcrops at Meridiani Planum. Earth and Planetary Science Letters, 2005, 240, 73-94.	1.8	349
12	An integrated view of the chemistry and mineralogy of martian soils. Nature, 2005, 436, 49-54.	13.7	348
13	Alpha Particle X-Ray Spectrometer (APXS): Results from Gusev crater and calibration report. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	342
14	X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. Science, 2013, 341, 1238932.	6.0	327
15	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	6.0	326
16	Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1245267.	6.0	323
17	MÃ¶ssbauer mineralogy of rock, soil, and dust at Gusev crater, Mars: Spirit's journey through weakly altered olivine basalt on the plains and pervasively altered basalt in the Columbia Hills. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	314
18	Chemistry of Rocks and Soils in Gusev Crater from the Alpha Particle X-ray Spectrometer. Science, 2004, 305, 829-832.	6.0	291

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19	Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. Science, 2013, 341, 1239505.	6.0	280
20	Mineralogy at Gusev Crater from the Mossbauer Spectrometer on the Spirit Rover. Science, 2004, 305, 833-836.	6.0	279
21	Windâ€driven particle mobility on Mars: Insights from Mars Exploration Rover observations at â€œEl Doradoâ€•and surroundings at Gusev Crater. Journal of Geophysical Research, 2008, 113, .	3.3	255
22	Mineralogy of an ancient lacustrine mudstone succession from the Murray formation, Gale crater, Mars. Earth and Planetary Science Letters, 2017, 471, 172-185.	1.8	247
23	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1244734.	6.0	246
24	Basaltic Rocks Analyzed by the Spirit Rover in Gusev Crater. Science, 2004, 305, 842-845.	6.0	244
25	Water alteration of rocks and soils on Mars at the Spirit rover site in Gusev crater. Nature, 2005, 436, 66-69.	13.7	240
26	Geochemical and mineralogical indicators for aqueous processes in the Columbia Hills of Gusev crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	234
27	Characterization and petrologic interpretation of olivine-rich basalts at Gusev Crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	227
28	MÃ¶ssbauer mineralogy of rock, soil, and dust at Meridiani Planum, Mars: Opportunity's journey across sulfate-rich outcrop, basaltic sand and dust, and hematite lag deposits. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	225
29	In Situ Radiometric and Exposure Age Dating of the Martian Surface. Science, 2014, 343, 1247166.	6.0	224
30	Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. Science, 2013, 341, 1238670.	6.0	215
31	Athena MIMOS II MÃ¶ssbauer spectrometer investigation. Journal of Geophysical Research, 2003, 108, .	3.3	210
32	Redox stratification of an ancient lake in Gale crater, Mars. Science, 2017, 356, .	6.0	209
33	The new Athena alpha particle X-ray spectrometer for the Mars Exploration Rovers. Journal of Geophysical Research, 2003, 108, .	3.3	200
34	Ancient Impact and Aqueous Processes at Endeavour Crater, Mars. Science, 2012, 336, 570-576.	6.0	176
35	Ancient Aqueous Environments at Endeavour Crater, Mars. Science, 2014, 343, 1248097.	6.0	176
36	Pyroclastic Activity at Home Plate in Gusev Crater, Mars. Science, 2007, 316, 738-742.	6.0	174

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37	Evolved gas analyses of sedimentary rocks and eolian sediment in Gale Crater, Mars: Results of the Curiosity rover's sample analysis at Mars instrument from Yellowknife Bay to the Namib Dune. Journal of Geophysical Research E: Planets, 2017, 122, 2574-2609.	1.5	168
38	Geochemical properties of rocks and soils in Gusev Crater, Mars: Results of the Alpha Particle Xâ€Ray Spectrometer from Cumberland Ridge to Home Plate. Journal of Geophysical Research, 2008, 113, .	3.3	162
39	Iron mineralogy and aqueous alteration from Husband Hill through Home Plate at Gusev Crater, Mars: Results from the MÃ¶ssbauer instrument on the Spirit Mars Exploration Rover. Journal of Geophysical Research, 2008, 113, .	3.3	162
40	Mineralogy, provenance, and diagenesis of a potassic basaltic sandstone on Mars: CheMin Xâ€ray diffraction of the Windjana sample (Kimberley area, Gale Crater). Journal of Geophysical Research E: Planets, 2016, 121, 75-106.	1.5	159
41	Silicic volcanism on Mars evidenced by tridymite in high-SiO ‹sub›2‹/sub› sedimentary rock at Gale crater. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 7071-7076.	3.3	158
42	Soils of Eagle Crater and Meridiani Planum at the Opportunity Rover Landing Site. Science, 2004, 306, 1723-1726.	6.0	153
43	Clay mineral diversity and abundance in sedimentary rocks of Gale crater, Mars. Science Advances, 2018, 4, eaar3330.	4.7	150
44	Overview of the Opportunity Mars Exploration Rover Mission to Meridiani Planum: Eagle Crater to Purgatory Ripple. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	149
45	Alkaline volcanic rocks from the Columbia Hills, Gusev crater, Mars. Journal of Geophysical Research, 2006, 111, .	3.3	148
46	Multiple stages of aqueous alteration along fractures in mudstone and sandstone strata in Gale Crater, Mars. Earth and Planetary Science Letters, 2017, 471, 186-198.	1.8	137
47	Mineralogy and geochemistry of sedimentary rocks and eolian sediments in Gale crater, Mars: A review after six Earth years of exploration with Curiosity. Chemie Der Erde, 2020, 80, 125605.	0.8	137
48	The Petrochemistry of Jake_M: A Martian Mugearite. Science, 2013, 341, 1239463.	6.0	134
49	Hydrothermal processes at Gusev Crater: An evaluation of Paso Robles class soils. Journal of Geophysical Research, 2008, 113, .	3.3	129
50	Spirit Mars Rover Mission: Overview and selected results from the northern Home Plate Winter Haven to the side of Scamander crater. Journal of Geophysical Research, 2010, 115, .	3.3	127
51	Indication of drier periods on Mars from the chemistry and mineralogy of atmospheric dust. Nature, 2005, 436, 62-65.	13.7	125
52	Geochemical diversity in first rocks examined by the Curiosity Rover in Gale Crater: Evidence for and significance of an alkali and volatileâ€rich igneous source. Journal of Geophysical Research E: Planets, 2014, 119, 64-81.	1.5	113
53	Oxidation of manganese in an ancient aquifer, Kimberley formation, Gale crater, Mars. Geophysical Research Letters, 2016, 43, 7398-7407.	1.5	110
54	Opportunity Mars Rover mission: Overview and selected results from Purgatory ripple to traverses to Endeavour crater. Journal of Geophysical Research, 2011, 116, .	3.3	106

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55	Calibration of the Mars Science Laboratory Alpha Particle X-ray Spectrometer. Space Science Reviews, 2012, 170, 319-340.	3.7	105
56	Spirit Mars Rover Mission to the Columbia Hills, Gusev Crater: Mission overview and selected results from the Cumberland Ridge to Home Plate. Journal of Geophysical Research, 2008, 113, .	3.3	99
57	Mineralogy of an active eolian sediment from the Namib dune, Gale crater, Mars. Journal of Geophysical Research E: Planets, 2017, 122, 2344-2361.	1.5	98
58	Mineralogy of volcanic rocks in Gusev Crater, Mars: Reconciling MÃ¶ssbauer, Alpha Particle Xâ€Ray Spectrometer, and Miniature Thermal Emission Spectrometer spectra. Journal of Geophysical Research, 2008, 113, .	3.3	96
59	A global Mars dust composition refined by the Alphaâ€Particle Xâ€ray Spectrometer in Gale Crater. Geophysical Research Letters, 2016, 43, 67-75.	1.5	95
60	Chemistry, mineralogy, and grain properties at Namib and High dunes, Bagnold dune field, Gale crater, Mars: A synthesis of Curiosity rover observations. Journal of Geophysical Research E: Planets, 2017, 122, 2510-2543.	1.5	95
61	Crystal chemistry of martian minerals from Bradbury Landing through Naukluft Plateau, Gale crater, Mars. American Mineralogist, 2018, 103, 857-871.	0.9	94
62	In Situ Compositional Measurements of Rocks and Soils with the Alpha Particle X-ray Spectrometer on NASA's Mars Rovers. Elements, 2015, 11, 39-44.	0.5	91
63	Diagenetic silica enrichment and lateâ€stage groundwater activity in Gale crater, Mars. Geophysical Research Letters, 2017, 44, 4716-4724.	1.5	87
64	Mineralogy of Vera Rubin Ridge From the Mars Science Laboratory CheMin Instrument. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006306.	1.5	86
65	Evidence for montmorillonite or its compositional equivalent in Columbia Hills, Mars. Journal of Geophysical Research, 2007, 112, .	3.3	81
66	High manganese concentrations in rocks at Gale crater, Mars. Geophysical Research Letters, 2014, 41, 5755-5763.	1.5	81
67	Meteorites on Mars observed with the Mars Exploration Rovers. Journal of Geophysical Research, 2008, 113, .	3.3	75
68	Hydrothermal origin of halogens at Home Plate, Gusev Crater. Journal of Geophysical Research, 2008, 113, .	3.3	71
69	Desiccation cracks provide evidence of lake drying on Mars, Sutton Island member, Murray formation, Gale Crater. Geology, 2018, 46, 515-518.	2.0	71
70	Nickel on Mars: Constraints on meteoritic material at the surface. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	65
71	Sorting out compositional trends in sedimentary rocks of the Bradbury group (Aeolis Palus), Gale crater, Mars. Journal of Geophysical Research E: Planets, 2017, 122, 295-328.	1.5	64
72	APXSâ€derived chemistry of the Bagnold dune sands: Comparisons with Gale Crater soils and the global Martian average. Journal of Geophysical Research E: Planets, 2017, 122, 2623-2643.	1.5	62

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73	Veneers, rinds, and fracture fills: Relatively late alteration of sedimentary rocks at Meridiani Planum, Mars. Journal of Geophysical Research, 2008, 113, .	3.3	57
74	High concentrations of manganese and sulfur in deposits on Murray Ridge, Endeavour Crater, Mars. American Mineralogist, 2016, 101, 1389-1405.	0.9	55
75	Composition of conglomerates analyzed by the Curiosity rover: Implications for Gale Crater crust and sediment sources. Journal of Geophysical Research E: Planets, 2016, 121, 353-387.	1.5	53
76	Sand Mineralogy Within the Bagnold Dunes, Gale Crater, as Observed In Situ and From Orbit. Geophysical Research Letters, 2018, 45, 9488-9497.	1.5	52
77	Mars Science Laboratory Observations of Chloride Salts in Gale Crater, Mars. Geophysical Research Letters, 2019, 46, 10754-10763.	1.5	52
78	Brine-driven destruction of clay minerals in Gale crater, Mars. Science, 2021, 373, 198-204.	6.0	52
79	Potassiumâ€rich sandstones within the Gale impact crater, Mars: The APXS perspective. Journal of Geophysical Research E: Planets, 2016, 121, 1981-2003.	1.5	51
80	Classification scheme for sedimentary and igneous rocks in Gale crater, Mars. Icarus, 2017, 284, 1-17.	1.1	46
81	Evidence for Multiple Diagenetic Episodes in Ancient Fluvialâ€Lacustrine Sedimentary Rocks in Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006295.	1.5	45
82	Deconvolution of distinct lithology chemistry through oversampling with the Mars Science Laboratory Alpha Particle Xâ€Ray Spectrometer. X-Ray Spectrometry, 2016, 45, 155-161.	0.9	44
83	Zinc and germanium in the sedimentary rocks of Gale Crater on Mars indicate hydrothermal enrichment followed by diagenetic fractionation. Journal of Geophysical Research E: Planets, 2017, 122, 1747-1772.	1.5	42
84	Quantitative in situ determination of hydration of bright highâ€sulfate Martian soils. Journal of Geophysical Research, 2008, 113, .	3.3	40
85	Context of ancient aqueous environments on Mars from in situ geologic mapping at Endeavour Crater. Journal of Geophysical Research E: Planets, 2015, 120, 538-569.	1.5	37
86	Mars Exploration Rovers: chemical composition by the APXS. , 2008, , 58-102.		34
87	The Rosetta Alpha Particle X-Ray Spectrometer (APXS). Space Science Reviews, 2007, 128, 383-396.	3.7	33
88	Elemental Composition and Chemical Evolution of Geologic Materials in Gale Crater, Mars: APXS Results From Bradbury Landing to the Vera Rubin Ridge. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006536.	1.5	33
89	Bounce Rockâ€”A shergottiteâ€like basalt encountered at Meridiani Planum, Mars. Meteoritics and Planetary Science, 2011, 46, 1-20.	0.7	32
90	Constraints on the Mineralogy and Geochemistry of Vera Rubin Ridge, Gale Crater, Mars, From Mars Science Laboratory Sample Analysis at Mars Evolved Gas Analyses. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006309.	1.5	32

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91	Overview of the magnetic properties experiments on the Mars Exploration Rovers. Journal of Geophysical Research, 2009, 114, .	3.3	31
92	APXSâ€Derived Compositional Characteristics of Vera Rubin Ridge and Murray Formation, Gale Crater, Mars: Geochemical Implications for the Origin of the Ridge. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006319.	1.5	31
93	Mars Reconnaissance Orbiter and Opportunity observations of the Burns formation: Crater hopping at Meridiani Planum. Journal of Geophysical Research E: Planets, 2015, 120, 429-451.	1.5	30
94	Modeling and mitigation of sample relief effects applied to chemistry measurements by the Mars Science Laboratory Alpha Particle X-ray Spectrometer. X-Ray Spectrometry, 2017, 46, 229-236.	0.9	28
95	Diverse Lithologies and Alteration Events on the Rim of Noachianâ€Aged Endeavour Crater, Meridiani Planum, Mars: In Situ Compositional Evidence. Journal of Geophysical Research E: Planets, 2018, 123, 1255-1306.	1.5	28
96	The Mars Science Laboratory APXS calibration target: Comparison of Martian measurements with the terrestrial calibration. Nuclear Instruments & Methods in Physics Research B, 2014, 323, 49-58.	0.6	26
97	Overview of Mars surface geochemical diversity through Alpha Particle Xâ€Ray Spectrometer data multidimensional analysis: First attempt at modeling rock alteration. Journal of Geophysical Research, 2008, 113, .	3.3	25
98	Field reconnaissance geologic mapping of the Columbia Hills, Mars, based on Mars Exploration Rover Spirit and MRO HiRISE observations. Journal of Geophysical Research, 2011, 116, .	3.3	24
99	Chemical Diversity of Sands Within the Linear and Barchan Dunes of the Bagnold Dunes, Gale Crater, as Revealed by APXS Onboard Curiosity. Geophysical Research Letters, 2018, 45, 9460-9470.	1.5	21
100	Formation of Tridymite and Evidence for a Hydrothermal History at Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006569.	1.5	21
101	Depth selective MÃ¶ssbauer spectroscopy: Analysis and simulation of 6.4 keV and 14.4 keV spectra obtained from rocks at Gusev Crater, Mars, and layered laboratory samples. Journal of Geophysical Research, 2008, 113, .	3.3	20
102	Properties and distribution of paired candidate stony meteorites at Meridiani Planum, Mars. Journal of Geophysical Research, 2010, 115, .	3.3	19
103	Esperance: Multiple episodes of aqueous alteration involving fracture fills and coatings at Matijevic Hill, Mars. American Mineralogist, 2016, 101, 1515-1526.	0.9	19
104	Statistical Analysis of APXSâ€Derived Chemistry of the Clayâ€Bearing Glen Torridon Region and Mount Sharp Group, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	15
105	Mineralogy and chemistry of cobbles at Meridiani Planum, Mars, investigated by the Mars Exploration Rover Opportunity. Journal of Geophysical Research, 2010, 115, .	3.3	14
106	MSL-APXS titanium observation tray measurements: Laboratory experiments and results for the Rocknest fines at theCuriosityfield site in Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2014, 119, 1046-1060.	1.5	13
107	Mars Science Laboratory Alpha Particle X-ray spectrometer trace elements: Situational sensitivity to Co, Ni, Cu, Zn, Ga, Ge, and Br. Acta Astronautica, 2019, 165, 32-42.	1.7	13
108	Retrieval of Compositional Endâ€Members From Mars Exploration Rover Opportunity Observations in a Soilâ€Filled Fracture in Marathon Valley, Endeavour Crater Rim. Journal of Geophysical Research E: Planets, 2018, 123, 278-290.	1.5	11

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109	Empirical simulations for further characterization of the Mars Science Laboratory Alpha Particle X-ray Spectrometer: An introduction to the ACES program. Nuclear Instruments & Methods in Physics Research B, 2019, 441, 79-87.	0.6	11
110	Particle Induced X-ray Emission spectrometry (PIXE) of Hawaiian volcanics: An analogue study to evaluate the APXS field analysis of geologic materials on Mars. Icarus, 2020, 345, 113708.	1.1	9
111	FIDO science payload simulating the Athena Payload. Journal of Geophysical Research, 2002, 107, FIDO 5-1-FIDO 5-19.	3.3	7
112	Visible and nearâ€infrared multispectral analysis of geochemically measured rock fragments at the Opportunity landing site in Meridiani Planum. Journal of Geophysical Research, 2010, 115, .	3.3	7
113	New insights into the mineralogy and weathering of the Meridiani Planum meteorite, Mars. Meteoritics and Planetary Science, 2011, 46, 21-34.	0.7	7
114	Seasonal Atmospheric Argon Variability Measured in the Equatorial Region of Mars by the Mars Exploration Rover Alpha Particle Xâ€Ray Spectrometers: Evidence for an Annual Argonâ€Enriched Front. Journal of Geophysical Research E: Planets, 2018, 123, 544-558.	1.5	6
115	Geology and Geochemistry of Noachian Bedrock and Alteration Events, Meridiani Planum, Mars: MER Opportunity Observations. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006915.	1.5	6
116	Elemental Analyses of Mars from Rovers Using the Alpha-Particle X-Ray Spectrometer. , 2019, , 555-572.		5
117	Mars Exploration Rover Opportunity. , 2019, , 285-328.		5
118	Constraining the chemical depth profile of a manganese-rich surface layer in Gale crater, Mars. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2022, 191, 106410.	1.5	4
119	LOCALIZED AND AREALLY EXTENSIVE ALTERATIONS IN MARATHON VALLEY, ENDEAVOUR CRATER RIM, MARS. , 2016, , .		3
120	Alteration Processes in Gusev Crater, Mars. , 2019, , 329-368.		2
121	F-56 in Situ Measurement of Hydration of Martian Soils and Rocks Using the Scatter Component of the XRF Spectrum. Powder Diffraction, 2007, 22, 175-175.	0.4	0