Robert M Hazen

List of Publications by Year
in descending order

230 papers	16,339 citations	13099 68 h-index	19749 117 g-index
238 all docs	238 docs citations	238 times ranked	11043 citing authors

#	Article	IF	Citations
1	Mineral evolution. American Mineralogist, 2008, 93, 1693-1720.	1.9	569
2	Superconductivity in the high-TcBi-Ca-Sr-Cu-O system: Phase identification. Physical Review Letters, 1988, 60, 1174-1177.	7.8	567
3	Crystal structure and isothermal compression of Fe2O3, Cr2O3, and V2O3 to 50 kbars. Journal of Applied Physics, 1980, 51, 5362.	2.5	510
4	Chiral selection on inorganic crystalline surfaces. Nature Materials, 2003, 2, 367-374.	27.5	439
5	100-K superconducting phases in the Tl-Ca-Ba-Cu-O system. Physical Review Letters, 1988, 60, 1657-1660.	7.8	407
6	Primordial Carbonylated Iron-Sulfur Compounds and the Synthesis of Pyruvate. Science, 2000, 289, 1337-1340.	12.6	392
7	Selective adsorption of L- and D-amino acids on calcite: Implications for biochemical homochirality. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 5487-5490.	7.1	355
8	Crystallographic description of phases in the Y-Ba-Cu-O superconductor. Physical Review B, 1987, 35, 7238-7241.	3.2	298
9	High-pressure crystal chemistry of scheelite-type tungstates and molybdates. Journal of Physics and Chemistry of Solids, 1985, 46, 253-263.	4.0	267
10	Eight new high-temperature superconductors with the 1:2:4 structure. Physical Review B, 1989, 39, 7347-7350.	3.2	263
11	Mineral Surfaces, Geochemical Complexities, and the Origins of Life. Cold Spring Harbor Perspectives in Biology, 2010, 2, a002162-a002162.	5.5	262
12	High-Pressure crystal chemistry of spinel (MgAl2O4) and magnetite (Fe3O4): Comparisons with silicate spinels. Physics and Chemistry of Minerals, 1986, 13, 215-220.	0.8	243
13	Microbially Induced Sedimentary Structures Recording an Ancient Ecosystem in theca.3.48 Billion-Year-Old Dresser Formation, Pilbara, Western Australia. Astrobiology, 2013, 13, 1103-1124.	3.0	231
14	A new window into Early Archean life: Microbial mats in Earth's oldest siliciclastic tidal deposits (3.2) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	4.4	229
15	Abiotic nitrogen reduction on the early Earth. Nature, 1998, 395, 365-367.	27.8	216
16	Bulk moduli and high-pressure crystal structures of rutile-type compounds. Journal of Physics and Chemistry of Solids, 1981, 42, 143-151.	4.0	215
17	Mineralâ€“organic interfacial processes: potential roles in the origins of life. Chemical Society Reviews, 2012, 41, 5502.	38.1	205
18	Microbial Activity at Gigapascal Pressures. Science, 2002, 295, 1514-1516.	12.6	203

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19	WÃ¼stite (Fe_{1â€x} O): A review of its defect structure and physical properties. Reviews of Geophysics, 1984, 22, 37-46.	23.0	198
20	Crystal structure and compression of ruby to 46 kbar. Journal of Applied Physics, 1978, 49, 5823-5826.	2.5	185
21	Highâ€pressure and highâ€temperature crystal chemistry of beryllium oxide. Journal of Applied Physics, 1986, 59, 3728-3733.	2.5	185
22	Evolution of uranium and thorium minerals. American Mineralogist, 2009, 94, 1293-1311.	1.9	176
23	Equation of state of solid hydrogen and deuterium from single-crystal x-ray diffraction to 26.5 GPa. Physical Review B, 1990, 42, 6458-6470.	3.2	167
24	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.	3.6	159
25	Silicic volcanism on Mars evidenced by tridymite in high-SiO ₂ sedimentary rock at Gale crater. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 7071-7076.	7.1	158
26	Clay mineral diversity and abundance in sedimentary rocks of Gale crater, Mars. Science Advances, 2018, 4, eaar3330.	10.3	150
27	Synchrotron X-ray Diffraction Measurements of Single-Crystal Hydrogen to 26.5 Gigapascals. Science, 1988, 239, 1131-1134.	12.6	149
28	Structure and compression of crystalline argon and neon at high pressure and room temperature. Applied Physics Letters, 1981, 39, 892-894.	3.3	143
29	Life's Rocky Start. Scientific American, 2001, 284, 76-85.	1.0	138
30	Earth's earliest microbial mats in a siliciclastic marine environment (2.9 Ga Mozaan Group, South) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	4.4	136
31	An actualistic perspective into Archean worlds â€“ (cyanoâ€)bacterially induced sedimentary structures in the siliciclastic Nhlazatse Section, 2.9 Ga Pongola Supergroup, South Africa. Geobiology, 2008, 6, 5-20.	2.4	133
32	The origin and implications of clay minerals from Yellowknife Bay, Gale crater, Mars. American Mineralogist, 2015, 100, 824-836.	1.9	122
33	Paleomineralogy of the Hadean Eon: A preliminary species list. Numerische Mathematik, 2013, 313, 807-843.	1.4	119
34	Presidential Address to the Mineralogical Society of America, Salt Lake City, October 18, 2005: Mineral surfaces and the prebiotic selection and organization of biomolecules. American Mineralogist, 2006, 91, 1715-1729.	1.9	117
35	Mineral Evolution: Mineralogy in the Fourth Dimension. Elements, 2010, 6, 9-12.	0.5	117
36	Clay mineral evolution. American Mineralogist, 2013, 98, 2007-2029.	1.9	112

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37	Calcium fluoride as an internal pressure standard in high-pressure cyrstallography. Journal of Applied Crystallography, 1981, 14, 234-236.	4.5	106
38	Functional information and the emergence of biocomplexity. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 8574-8581.	7.1	100
39	Structure, Bonding, and Mineralogy of Carbon at Extreme Conditions. Reviews in Mineralogy and Geochemistry, 2013, 75, 47-77.	4.8	100
40	Mineralogy of an active eolian sediment from the Namib dune, Gale crater, Mars. Journal of Geophysical Research E: Planets, 2017, 122, 2344-2361.	3.6	98
41	Comparative compressibility of end-member feldspars. Physics and Chemistry of Minerals, 1988, 15, 313-318.	0.8	96
42	Gypsum, bassanite, and anhydrite at Gale crater, Mars. American Mineralogist, 2018, 103, 1011-1020.	1.9	96
43	Crystal chemistry of martian minerals from Bradbury Landing through Naukluft Plateau, Gale crater, Mars. American Mineralogist, 2018, 103, 857-871.	1.9	94
44	Temperature, pressure and composition: Structurally analogous variables. Physics and Chemistry of Minerals, 1977, 1, 83-94.	0.8	93
45	Zeolite Molecular Sieve 4A: Anomalous Compressibility and Volume Discontinuities at High Pressure. Science, 1983, 219, 1065-1067.	12.6	93
46	Correlation of pH-dependent surface interaction forces to amino acid adsorption: Implications for the origin of life. American Mineralogist, 2004, 89, 1048-1055.	1.9	93
47	Carbon Mineralogy and Crystal Chemistry. Reviews in Mineralogy and Geochemistry, 2013, 75, 7-46.	4.8	91
48	Comparative Compressibilities of Silicate Spinels: Anomalous Behavior of (Mg,Fe)2SiO4. Science, 1993, 259, 206-209.	12.6	90
49	Effects of pressure on order-disorder reactions. American Mineralogist, 1996, 81, 1021-1035.	1.9	88
50	Highâ€temperature diamondâ€anvil pressure cell for singleâ€crystal studies. Review of Scientific Instruments, 1981, 52, 75-79.	1.3	86
51	Mineralogy of Vera Rubin Ridge From the Mars Science Laboratory CheMin Instrument. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006306.	3.6	86
52	Borate Minerals and Origin of the RNA World. Origins of Life and Evolution of Biospheres, 2011, 41, 307-316.	1.9	81
53	Quantifying ecological impacts of mass extinctions with network analysis of fossil communities. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5217-5222.	7.1	81
54	Structure and compression of crystalline methane at high pressure and room temperature. Applied Physics Letters, 1980, 37, 288-289.	3.3	80

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55	Superconductivity in the Tl-Sr-Ca-Cu-O system. Physical Review B, 1988, 38, 7074-7076.	3.2	80
56	Crystal chemistry of phase B and an anhydrous analogue: implications for water storage in the upper mantle. Nature, 1989, 341, 140-142.	27.8	79
57	Effects of cation substitution and order-disorder on P-V-T equations of state of cubic spinels. American Mineralogist, 1999, 84, 1956-1960.	1.9	79
58	Crystal chemistry of six-coordinated silicon: a key to understanding the earth's deep interior. Acta Crystallographica Section B: Structural Science, 1991, 47, 561-580.	1.8	78
59	Perovskites. Scientific American, 1988, 258, 74-80.	1.0	77
60	Devonian landscape heterogeneity recorded by a giant fungus. Geology, 2007, 35, 399.	4.4	76
61	On the Origins of Deep Hydrocarbons. Reviews in Mineralogy and Geochemistry, 2013, 75, 449-465.	4.8	76
62	Crystals at High Pressure. Scientific American, 1985, 252, 110-117.	1.0	75
63	High-pressure crystal chemistry of chrysoberyl, Al2BeO4: Insights on the origin of olivine elastic anisotropy. Physics and Chemistry of Minerals, 1987, 14, 13-20.	0.8	75
64	Crystallography, chemistry and structural disorder in the new high- Tc Biâ€“Caâ€“Srâ€“Cuâ€“O superconductor. Nature, 1988, 332, 334-337.	27.8	75
65	MINERAL ECOLOGY: CHANCE AND NECESSITY IN THE MINERAL DIVERSITY OF TERRESTRIAL PLANETS. Canadian Mineralogist, 2015, 53, 295-324.	1.0	75
66	Compressibility of zeolite 4A is dependent on the molecular size of the hydrostatic pressure medium. Journal of Applied Physics, 1984, 56, 1838-1840.	2.5	74
67	Ediacaran biozones identified with network analysis provide evidence for pulsed extinctions of early complex life. Nature Communications, 2019, 10, 911.	12.8	74
68	A silica-rich sodium pyroxene phase with six-coordinated silicon. Nature, 1988, 335, 156-158.	27.8	73
69	Attachment of <scp>l</scp>-Glutamate to Rutile (Î±-TiO₂): A Potentiometric, Adsorption, and Surface Complexation Study. Langmuir, 2009, 25, 12127-12135.	3.5	72
70	High-pressure crystal chemistry of phenakite (Be2SiO4) and bertrandite (Be4Si2O7(OH)2). Physics and Chemistry of Minerals, 1986, 13, 69-78.	0.8	71
71	Rhenium variations in molybdenite (MoS2): Evidence for progressive subsurface oxidation. Earth and Planetary Science Letters, 2013, 366, 1-5.	4.4	71
72	Spatial and temporal distribution of microbially induced sedimentary structures: A case study from siliciclastic storm deposits of the 2.9Ga Witwatersrand Supergroup, South Africa. Precambrian Research, 2006, 146, 35-44.	2.7	69

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73	Mercury (Hg) mineral evolution: A mineralogical record of supercontinent assembly, changing ocean geochemistry, and the emerging terrestrial biosphere. American Mineralogist, 2012, 97, 1013-1042.	1.9	69
74	Crystal structure of DyBa2Cu4O8: A new 77 K bulk superconductor. Applied Physics Letters, 1989, 54, 1057-1059.	3.3	68
75	Compressibility and crystal structure of sillimanite, Al 2 SiO 5 , at high pressure. Physics and Chemistry of Minerals, 1997, 25, 39-47.	0.8	68
76	Ferrian saponite from the Santa Monica Mountains (California, U.S.A., Earth): Characterization as an analog for clay minerals on Mars with application to Yellowknife Bay in Gale Crater. American Mineralogist, 2014, 99, 2234-2250.	1.9	67
77	Deciphering Biosignatures in Planetary Contexts. Astrobiology, 2019, 19, 1075-1102.	3.0	66
78	Bismuth Vanadate: A High-Pressure, High-Temperature Crystallographic Study of the Ferroelastic-Paraelastic Transition. Science, 1982, 216, 991-993.	12.6	65
79	Evaluating Glutamate and Aspartate Binding Mechanisms to Rutile (Î±-TiO₂) via ATR-FTIR Spectroscopy and Quantum Chemical Calculations. Langmuir, 2011, 27, 1778-1787.	3.5	65
80	Mineral Species Frequency Distribution Conforms to a Large Number of Rare Events Model: Prediction of Earthâ€™s Missing Minerals. Mathematical Geosciences, 2015, 47, 647-661.	2.4	65
81	On the mineralogy of the â€œAnthropocene Epochâ€. American Mineralogist, 2017, 102, 595-611.	1.9	65
82	Evidence for 4fâ€shell delocalization in praseodymium under pressure. Journal of Applied Physics, 1981, 52, 4572-4574.	2.5	64
83	Adsorption of Nucleic Acid Components on Rutile (TiO₂) Surfaces. Astrobiology, 2010, 10, 311-323.	3.0	64
84	Why Deep Carbon?. Reviews in Mineralogy and Geochemistry, 2013, 75, 1-6.	4.8	64
85	High-pressure behavior of LaNbO4. Acta Crystallographica Section B: Structural Science, 1985, 41, 179-184.	1.8	63
86	Network analysis of mineralogical systems. American Mineralogist, 2017, 102, 1588-1596.	1.9	63
87	Crystal Chemistry of Silicon--Oxygen Bonds at High Pressure: Implications for the Earth's Mantle Mineralogy. Science, 1978, 201, 1122-1123.	12.6	62
88	Comparative compressibilities of majorite-type garnets. Physics and Chemistry of Minerals, 1994, 21, 344.	0.8	61
89	Compressibility and crystal structure of kyanite, Al₂SiO₅, at high pressure. American Mineralogist, 1997, 82, 467-474.	1.9	61
90	Needs and opportunities in mineral evolution research. American Mineralogist, 2011, 96, 953-963.	1.9	61

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91	Structural change associated with the incommensurate-normal phase transition in akermanite, Ca 2 MgSi 2 O 7 , at high pressure. Physics and Chemistry of Minerals, 1997, 24, 510-519.	0.8	58
92	Nondestructive, in situ, cellular-scale mapping of elemental abundances including organic carbon in permineralized fossils. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 5970-5974.	7.1	58
93	Beryllium mineral evolution. American Mineralogist, 2014, 99, 999-1021.	1.9	58
94	How old are bacteria from the Permian age?. Nature, 2001, 411, 155-155.	27.8	57
95	Evolution of Structural Complexity In Boron Minerals. Canadian Mineralogist, 2016, 54, 125-143.	1.0	57
96	Principles of Comparative Crystal Chemistry. Reviews in Mineralogy and Geochemistry, 2000, 41, 1-33.	4.8	56
97	How many boron minerals occur in Earthâ€™s upper crust?. American Mineralogist, 2017, 102, 1573-1587.	1.9	56
98	High-Pressure Framework Silicates. Science, 1996, 272, 1769-1771.	12.6	55
99	Comparative high-pressure crystal chemistry of wadsleyite, Î²-(Mg_{1â€“x}Fe_x)₂SiO₄, withx= 0 and 0.25. American Mineralogist, 2000, 85, 770-777.	1.9	55
100	The Deep-Time Digital Earth program: data-driven discovery in geosciences. National Science Review, 2021, 8, nwab027.	9.5	55
101	Earthâ€™s â€œmissingâ€•minerals. American Mineralogist, 2015, 100, 2344-2347.	1.9	54
102	Compressibilities and highâ€•pressure phase transitions of sodium tungstate perovskites (NaxWO3). Journal of Applied Physics, 1984, 56, 311-313.	2.5	53
103	Adsorption of l-aspartate to rutile (Î±-TiO2): Experimental and theoretical surface complexation studies. Geochimica Et Cosmochimica Acta, 2010, 74, 2356-2367.	3.9	53
104	An evolutionary system of mineralogy. Part I: Stellar mineralogy (>13 to 4.6 Ga). American Mineralogist, 2020, 105, 627-651.	1.9	53
105	Sand Mineralogy Within the Bagnold Dunes, Gale Crater, as Observed In Situ and From Orbit. Geophysical Research Letters, 2018, 45, 9488-9497.	4.0	52
106	Brine-driven destruction of clay minerals in Gale crater, Mars. Science, 2021, 373, 198-204.	12.6	52
107	Catalytic peptide hydrolysis by mineral surface: Implications for prebiotic chemistry. Geochimica Et Cosmochimica Acta, 2010, 74, 5852-5861.	3.9	51
108	Adsorption and Surface Complexation Study of L-DOPA on Rutile (Î±-TiO₂) in NaCl Solutions. Environmental Science & Technology, 2011, 45, 3959-3966.	10.0	49

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109	Boron isotopes in tourmaline from the ca. 3.7â€“3.8Ga Isua supracrustal belt, Greenland: Sources for boron in Eoarchean continental crust and seawater. Geochimica Et Cosmochimica Acta, 2015, 163, 156-177.	3.9	48
110	Chiral indices of crystalline surfaces as a measure of enantioselective potential. Journal of Molecular Catalysis A, 2004, 216, 273-285.	4.8	47
111	Structural and chemical complexity of minerals: correlations and time evolution. European Journal of Mineralogy, 2018, 30, 231-236.	1.3	47
112	Data-Driven Discovery in Mineralogy: Recent Advances in Data Resources, Analysis, and Visualization. Engineering, 2019, 5, 397-405.	6.7	47
113	Increased Compressibility of Pseudobrookite-Type MgTi2O5Caused by Cation Disorder. Science, 1997, 277, 1965-1967.	12.6	46
114	Crystal Chemistry of Cation Orderâ€“Disorder in Pseudobrookite-Type MgTi2O5. Journal of Solid State Chemistry, 1998, 138, 238-244.	2.9	46
115	Statistical analysis of mineral diversity and distribution: Earth's mineralogy is unique. Earth and Planetary Science Letters, 2015, 426, 154-157.	4.4	46
116	Carbon mineral ecology: Predicting the undiscovered minerals of carbon. American Mineralogist, 2016, 101, 889-906.	1.9	46
117	A model for late Archean chemical weathering and world average river water. Earth and Planetary Science Letters, 2017, 457, 191-203.	4.4	46
118	Single-crystal x-ray diffraction ofn-H2at high pressure. Physical Review B, 1987, 36, 3944-3947.	3.2	45
119	Evidence for Multiple Diagenetic Episodes in Ancient Fluvialâ€Lacustrine Sedimentary Rocks in Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006295.	3.6	45
120	UV irradiation of biomarkers adsorbed on minerals under Martian-like conditions: Hints for life detection on Mars. Icarus, 2018, 313, 38-60.	2.5	44
121	Chiral Crystal Faces of Common Rock-Forming Minerals. , 2004, , 137-151.		43
122	Cobalt mineral ecology. American Mineralogist, 2017, 102, 108-116.	1.9	43
123	High pressure and the origin of life. Journal of Physics Condensed Matter, 2002, 14, 11489-11494.	1.8	41
124	Data-driven abductive discovery in mineralogy. American Mineralogist, 2014, 99, 2165-2170.	1.9	41
125	An evolutionary system of mineralogy: Proposal for a classification of planetary materials based on natural kind clustering. American Mineralogist, 2019, 104, 810-816.	1.9	41
126	Relationships between unit-cell parameters and composition for rock-forming minerals on Earth, Mars, and other extraterrestrial bodies. American Mineralogist, 2018, 103, 848-856.	1.9	40

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127	Glutamate Surface Speciation on Amorphous Titanium Dioxide and Hydrous Ferric Oxide. Environmental Science & Technology, 2008, 42, 6034-6039.	10.0	39
128	Carbon Mineral Evolution. Reviews in Mineralogy and Geochemistry, 2013, 75, 79-107.	4.8	39
129	Cycling phosphorus on the Archean Earth: Part II. Phosphorus limitation on primary production in Archean ecosystems. Geochimica Et Cosmochimica Acta, 2020, 280, 360-377.	3.9	39
130	Comparative Crystal Chemistry of Dense Oxide Minerals. Reviews in Mineralogy and Geochemistry, 2000, 41, 157-186.	4.8	36
131	An evolutionary system of mineralogy, part II: Interstellar and solar nebula primary condensation mineralogy (> 4.565 Ga). American Mineralogist, 2020, 105, 1508-1535.	1.9	36
132	Cycling phosphorus on the Archean Earth: Part I. Continental weathering and riverine transport of phosphorus. Geochimica Et Cosmochimica Acta, 2020, 273, 70-84.	3.9	36
133	Genesis: Rocks, Minerals, and the Geochemical Origin of Life. Elements, 2005, 1, 135-137.	0.5	35
134	On the nature and significance of rarity in mineralogy. American Mineralogist, 2016, 101, 1245-1251.	1.9	35
135	High-pressure single-crystal X-ray diffraction and infrared spectroscopic studies of the C2/m-P2₁/m phase transition in cummingtonite. American Mineralogist, 1998, 83, 288-299.	1.9	34
136	Carbon in Earth's interior: Storage, cycling, and life. Eos, 2012, 93, 17-18.	0.1	34
137	Structural and chemical complexity of minerals: an update. Mineralogical Magazine, 2022, 86, 183-204.	1.4	34
138	Anab initiostudy of adsorption of alanine on the chiral calcite surface. Molecular Simulation, 2007, 33, 343-351.	2.0	33
139	Inorganic Nitrogen Reduction and Stability under Simulated Hydrothermal Conditions. Astrobiology, 2008, 8, 1113-1126.	3.0	33
140	Geochemical and mineralogical evidence that Rodinian assembly was unique. Nature Communications, 2017, 8, 1950.	12.8	33
141	Speciation of <scp>l</scp>-DOPA on Nanorutile as a Function of pH and Surface Coverage Using Surface-Enhanced Raman Spectroscopy (SERS). Langmuir, 2012, 28, 17322-17330.	3.5	32
142	Microbes, Mineral Evolution, and the Rise of Microcontinentsâ€"Origin and Coevolution of Life with Early Earth. Astrobiology, 2015, 15, 922-939.	3.0	31
143	Chromium mineral ecology. American Mineralogist, 2017, 102, 612-619.	1.9	31
144	On the paragenetic modes of minerals: A mineral evolution perspective. American Mineralogist, 2022, 107, 1262-1287.	1.9	31

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145	Compression, nonstoichiometry and bulk viscosity of wÃ¼stite. Nature, 1983, 304, 620-622.	27.8	29
146	Debating Evidence for the Origin of Life on Earth. Science, 2007, 315, 937c-939c.	12.6	29
147	Cooperative and Competitive Adsorption of Amino Acids with Ca²⁺ on Rutile (Î±-TiO₂). Environmental Science & Technology, 2014, 48, 9358-9365.	10.0	29
148	Sanidine: Predicted and Observed Monoclinic-to-Triclinic Reversible Transformations at High Pressure. Science, 1976, 194, 105-107.	12.6	28
149	Crystal structure of the high-pressure form of BiVO₄. Phase Transitions, 1986, 6, 165-173.	1.3	28
150	Compressibility mechanisms of alkali feldspars; new data from reedmergnerite. American Mineralogist, 1999, 84, 333-340.	1.9	28
151	Shielding biomolecules from effects of radiation by Mars analogue minerals and soils. International Journal of Astrobiology, 2017, 16, 280-285.	1.6	28
152	Analysis and visualization of vanadium mineral diversity and distribution. American Mineralogist, 2018, 103, 1080-1086.	1.9	28
153	Attachment of Ribonucleotides on Î±-Alumina as a Function of pH, Ionic Strength, and Surface Loading. Langmuir, 2015, 31, 240-248.	3.5	27
154	Using Visual Exploratory Data Analysis to Facilitate Collaboration and Hypothesis Generation in Cross-Disciplinary Research. ISPRS International Journal of Geo-Information, 2017, 6, 368.	2.9	27
155	The Paleomineralogy of the Hadean Eon Revisited. Life, 2018, 8, 64.	2.4	27
156	Phosphorus mineral evolution and prebiotic chemistry: From minerals to microbes. Earth-Science Reviews, 2021, 221, 103806.	9.1	26
157	High-temperature crystal chemistry of sodium zirconium phosphate (NZP). Journal of Materials Research, 1987, 2, 329-337.	2.6	25
158	Bayesian Estimation of Earthâ€™s Undiscovered Mineralogical Diversity Using Noninformative Priors. Mathematical Geosciences, 2019, 51, 401-417.	2.4	25
159	High-temperature crystal chemistry of phenakite (Be2SiO4) and chrysoberyl (BeAl2O4). Physics and Chemistry of Minerals, 1987, 14, 426-434.	0.8	24
160	Themes and Variations in Complex Systems. Elements, 2010, 6, 43-46.	0.5	24
161	Mobility of nutrients and trace metals during weathering in the late Archean. Earth and Planetary Science Letters, 2017, 471, 148-159.	4.4	24
162	Geological and Chemical Factors that Impacted the Biological Utilization of Cobalt in the Archean Eon. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 743-759.	3.0	24

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163	Lithium mineral evolution and ecology: comparison with boron and beryllium. European Journal of Mineralogy, 2019, 31, 755-774.	1.3	23
164	A Review of the Phyllosilicates in Gale Crater as Detected by the CheMin Instrument on the Mars Science Laboratory, Curiosity Rover. Minerals (Basel, Switzerland), 2021, 11, 847.	2.0	23
165	Crystal structure and compositional variation of Angra dos Reis fassaite. Earth and Planetary Science Letters, 1977, 35, 357-362.	4.4	22
166	Chance, necessity and the origins of life: a physical sciences perspective. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160353.	3.4	22
167	Global earth mineral inventory: A data legacy. Geoscience Data Journal, 2021, 8, 74-89.	4.4	21
168	Comparative high-pressure crystal chemistry of karrooite, MgTi₂O₅, with different ordering states. American Mineralogist, 1999, 84, 130-137.	1.9	20
169	Statistical analysis of mineral evolution and mineral ecology: The current state and a vision for the future. Applied Computing and Geosciences, 2019, 1, 100005.	2.2	20
170	X-ray diffraction and electronic band structure study of the organic superconductor Ï°-(ET)2Cu[N(CN)2]. Physica C: Superconductivity and Its Applications, 1994, 234, 300-306.	1.2	19
171	The effects of temperature, pH and redox state on the stability of glutamic acid in hydrothermal fluids. Geochimica Et Cosmochimica Acta, 2014, 135, 66-86.	3.9	19
172	An evolutionary system of mineralogy, Part IV: Planetesimal differentiation and impact mineralization (4566 to 4560 Ma). American Mineralogist, 2021, 106, 730-761.	1.9	19
173	Historical natural kinds and mineralogy: Systematizing contingency in the context of necessity. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	19
174	The Founding of Geology in America: 1771 to 1818. Bulletin of the Geological Society of America, 1974, 85, 1827.	3.3	18
175	The emergence of patterning in lifes origin and evolution. International Journal of Developmental Biology, 2009, 53, 683-692.	0.6	18
176	Binding of Nucleic Acid Components to the Serpentinite-Hosted Hydrothermal Mineral Brucite. Astrobiology, 2018, 18, 989-1007.	3.0	18
177	Cluster Analysis of Presolar Silicon Carbide Grains: Evaluation of Their Classification and Astrophysical Implications. Astrophysical Journal Letters, 2021, 907, L39.	8.3	18
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