Andrew H Knoll

List of Publications by Year
in descending order

127 papers	14,436 citations	29928 54 h-index	34704 99 g-index
138 all docs	138 docs citations	138 times ranked	12102 citing authors

#	Article	IF	Citations
1	The Evolution of Modern Eukaryotic Phytoplankton. Science, 2004, 305, 354-360.	20.9	1,320
2	Estimating the timing of early eukaryotic diversification with multigene molecular clocks. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13624-13629.	7.6	778
3	STROMATOLITES IN PRECAMBRIAN CARBONATES: Evolutionary Mileposts or Environmental Dipsticks?. Annual Review of Earth and Planetary Sciences, 1999, 27, 313-358.	11.0	742
4	Paleophysiology and end-Permian mass extinction. Earth and Planetary Science Letters, 2007, 256, 295-313.	4.4	588
5	Biomarker evidence for green and purple sulphur bacteria in a stratified Palaeoproterozoic sea. Nature, 2005, 437, 866-870.	36.2	522
6	Statistical analysis of iron geochemical data suggests limited late Proterozoic oxygenation. Nature, 2015, 523, 451-454.	36.2	518
7	The Multiple Origins of Complex Multicellularity. Annual Review of Earth and Planetary Sciences, 2011, 39, 217-239.	11.0	449
8	Morphological and ecological complexity in early eukaryotic ecosystems. Nature, 2001, 412, 66-69.	36.2	408
9	Devonian rise in atmospheric oxygen correlated to the radiations of terrestrial plants and large predatory fish. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 17911-17915.	7.6	353
10	Paleobiological Perspectives on Early Eukaryotic Evolution. Cold Spring Harbor Perspectives in Biology, 2014, 6, a016121-a016121.	5.4	311
11	The Ediacaran Period: a new addition to the geologic time scale. Lethaia, 2006, 39, 13-30.	1.4	302
12	Calcified metazoans in thrombolite-stromatolite reefs of the terminal Proterozoic Nama Group, Namibia. Paleobiology, 2000, 26, 334-359.	2.7	296
13	Testate amoebae in the Neoproterozoic Era: evidence from vase-shaped microfossils in the Chuar Group, Grand Canyon. Paleobiology, 2000, 26, 360-385.	2.7	280
14	Secular Change in Chert Distribution: A Reflection of Evolving Biological Participation in the Silica Cycle. Palaios, 1989, 4, 519.	1.4	262
15	Early photosynthetic eukaryotes inhabited low-salinity habitats. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E7737-E7745.	7.6	255
16	GEOLOGY: A New Period for the Geologic Time Scale. Science, 2004, 305, 621-622.	20.9	252
17	Controls on development and diversity of Early Archean stromatolites. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9548-9555.	7.6	241
18	The Meaning of Stromatolites. Annual Review of Earth and Planetary Sciences, 2013, 41, 21-44.	11.0	232

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19	TEM evidence for eukaryotic diversity in mid-Proterozoic oceans. Geobiology, 2004, 2, 121-132.	2.6	222
20	Strontium isotopic variations of Neoproterozoic seawater: Implications for crustal evolution. Geochimica Et Cosmochimica Acta, 1991, 55, 2883-2894.	3.9	208
21	Anatomical and ecological constraints on Phanerozoic animal diversity in the marine realm. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 6854-6859.	7.6	204
22	The timetable of evolution. Science Advances, 2017, 3, e1603076.	10.9	203
23	Evolutionary Trajectories and Biogeochemical Impacts of Marine Eukaryotic Phytoplankton. Annual Review of Ecology, Evolution, and Systematics, 2004, 35, 523-556.	8.6	201
24	MACROSCOPIC CARBONACEOUS COMPRESSIONS IN A TERMINAL PROTEROZOIC SHALE: A SYSTEMATIC REASSESSMENT OF THE MIAOHE BIOTA, SOUTH CHINA. Journal of Paleontology, 2002, 76, 347-376.	1.0	198
25	Macroscopic carbonaceous compressions in a terminal Proterozoic shale: A systematic reassessment of the Miaohe biota, south China. Journal of Paleontology, 2002, 76, 347-376.	1.0	184
26	Evolution caused by extreme events. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20160146.	4.2	181
27	Phosphatized multicellular algae in the Neoproterozoic Doushantuo Formation, China, and the early evolution of florideophyte red algae. American Journal of Botany, 2004, 91, 214-227.	1.9	162
28	VASE-SHAPED MICROFOSSILS FROM THE NEOPROTEROZOIC CHUAR GROUP, GRAND CANYON: A CLASSIFICATION GUIDED BY MODERN TESTATE AMOEBAE. Journal of Paleontology, 2003, 77, 409-429.	1.0	160
29	The geological consequences of evolution. Geobiology, 2003, 1, 3-14.	2.6	157
30	The Geological Succession of Primary Producers in the Oceans. , 2007, , 133-163.		154
31	Vase-shaped microfossils from the Neoproterozoic Chuar Group, Grand Canyon: A classification guided by modern testate amoebae. Journal of Paleontology, 2003, 77, 409-429.	1.0	152
32	Evolution of developmental potential and the multiple independent origins of leaves in Paleozoic vascular plants. Paleobiology, 2002, 28, 70-100.	2.7	147
33	Large spinose microfossils in Ediacaran rocks as resting stages of early animals. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 6519-6524.	7.6	146
34	Divergence time estimates and the evolution of major lineages in the florideophyte red algae. Scientific Reports, 2016, 6, 21361.	3.4	143
35	Decimetre-scale multicellular eukaryotes from the 1.56-billion-year-old Gaoyuzhuang Formation in North China. Nature Communications, 2016, 7, 11500.	13.2	140
36	Cyanobacteria and biogeochemical cycles through Earth history. Trends in Microbiology, 2022, 30, 143-157.	7.7	131

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37	Biomineralization: Integrating mechanism and evolutionary history. Science Advances, 2022, 8, eabl9653.	10.9	118
38	Micropaleontology of the lower Mesoproterozoic Roper Group, Australia, and implications for early eukaryotic evolution. Journal of Paleontology, 2017, 91, 199-229.	1.0	117
39	The Ecological Physiology of Earth's Second Oxygen Revolution. Annual Review of Ecology, Evolution, and Systematics, 2015, 46, 215-235.	8.6	114
40	Life: the first two billion years. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150493.	4.2	108
41	Clay mineralogy, organic carbon burial, and redox evolution in Proterozoic oceans. Geochimica Et Cosmochimica Acta, 2010, 74, 1579-1592.	3.9	98
42	Character diversification and patterns of evolution in early vascular plants. Paleobiology, 1984, 10, 34-47.	2.7	97
43	Neoproterozoic microfossils from the northeastern margin of the East European Platform. Journal of Paleontology, 2009, 83, 161-196.	1.0	94
44	Neoproterozoic origin and multiple transitions to macroscopic growth in green seaweeds. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 2551-2559.	7.6	92
45	Micropaleontology across the Precambrianâ€"Cambrian boundary in Spitsbergen. Journal of Paleontology, 1987, 61, 898-926.	1.0	79
46	Biomineralization by particle attachment in early animals. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 17659-17665.	7.6	79
47	Si isotope variability in Proterozoic cherts. Geochimica Et Cosmochimica Acta, 2012, 91, 187-201.	3.9	78
48	Plastid phylogenomics with broad taxon sampling further elucidates the distinct evolutionary origins and timing of secondary green plastids. Scientific Reports, 2018, 8, 1523.	3.4	75
49	A coupled model of episodic warming, oxidation and geochemical transitions on early Mars. Nature Geoscience, 2021, 14, 127-132.	11.9	74
50	Ediacaran reorganization of the marine phosphorus cycle. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 11961-11967.	7.6	67
51	Oxygen and animals in Earth history. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 3907-3908.	7.6	66
52	Needs and opportunities in mineral evolution research. American Mineralogist, 2011, 96, 953-963.	2.4	64
53	The Global Iron Cycle. , 2012, , 65-92.		62
54	Iron minerals within specific microfossil morphospecies of the 1.88â€‰Ga Gunflint Formation. Nature Communications, 2017, 8, 14890.	13.2	61

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55	A bottom-up perspective on ecosystem change in Mesozoic oceans. Proceedings of the Royal Society B: Biological Sciences, 2016, 283, 20161755.	2.8	60
56	A persistently low level of atmospheric oxygen in Earthâ€™s middle age. Nature Communications, 2021, 12, 351.	13.2	59
57	A physiologically explicit morphospace for tracheid-based water transport in modern and extinct seed plants. Paleobiology, 2010, 36, 335-355.	2.7	58
58	Paleobiological Perspectives on Early Microbial Evolution. Cold Spring Harbor Perspectives in Biology, 2015, 7, a018093.	5.4	58
59	Veneers, rinds, and fracture fills: Relatively late alteration of sedimentary rocks at Meridiani Planum, Mars. Journal of Geophysical Research, 2008, 113, .	3.3	57
60	High concentrations of manganese and sulfur in deposits on Murray Ridge, Endeavour Crater, Mars. American Mineralogist, 2016, 101, 1389-1405.	2.4	56
61	Bacterial Biomineralization. , 2012, , 105-130.		55
62	Nacre tablet thickness records formation temperature in modern and fossil shells. Earth and Planetary Science Letters, 2017, 460, 281-292.	4.4	54
63	Carbonates before skeletons: A database approach. Earth-Science Reviews, 2020, 201, 103065.	9.4	53
64	Modeling fluid flow in <i>Medullosa</i>, an anatomically unusual Carboniferous seed plant. Paleobiology, 2008, 34, 472-493.	2.7	52
65	Non-Skeletal Biomineralization by Eukaryotes: Matters of Moment and Gravity. Geomicrobiology Journal, 2010, 27, 572-584.	1.9	52
66	Thermal performance of the European flat oyster, Ostrea edulis (Linnaeus, 1758)â€”explaining ecological findings under climate change. Marine Biology, 2020, 167, 1.	1.5	52
67	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	47
68	Scale microfossils from the mid-Neoproterozoic Fifteenmile Group, Yukon Territory. Journal of Paleontology, 2012, 86, 775-800.	1.0	46
69	Active Ooid Growth Driven By Sediment Transport in a High-Energy Shoal, Little Ambergris Cay, Turks and Caicos Islands. Journal of Sedimentary Research, 2018, 88, 1132-1151.	1.7	46
70	Archean photoautotrophy: Some alternatives and limits. Origins of Life and Evolution of Biospheres, 1979, 9, 313-327.	0.6	44
71	Stratigraphic evolution of the Neoproterozoic Callison Lake Formation: Linking the break-up of Rodinia to the Islay carbon isotope excursion. Numerische Mathematik, 2015, 315, 881-944.	1.5	44
72	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	41

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73	Surface processes recorded by rocks and soils on Meridiani Planum, Mars: Microscopic Imager observations during Opportunity's first three extended missions. Journal of Geophysical Research, 2008, 113, .	3.3	40
74	Grazers and Phytoplankton Growth in the Oceans: an Experimental and Evolutionary Perspective. PLoS ONE, 2013, 8, e77349.	2.5	40
75	Model for the Formation of Singleâ€Thread Rivers in Barren Landscapes and Implications for Preâ€Silurian and Martian Fluvial Deposits. Journal of Geophysical Research F: Earth Surface, 2019, 124, 2757-2777.	2.8	39
76	Food for early animal evolution. Nature, 2017, 548, 528-530.	36.2	38
77	11. Biomineralization and Evolutionary History. , 2003, , 329-356.		37
78	The Sedimentary Geochemistry and Paleoenvironments Project. Geobiology, 2021, 19, 545-556.	2.6	30
79	The Great Oxygenation Event as a consequence of ecological dynamics modulated by planetary change. Nature Communications, 2021, 12, 3985.	13.2	29
80	Aluminosilicate haloes preserve complex life approximately 800 million years ago. Interface Focus, 2020, 10, 20200011.	3.2	27
81	Patterns of evolution in the Archean and Proterozoic Eons. Paleobiology, 1985, 11, 53-64.	2.7	26
82	New window on Proterozoic life. Nature, 1989, 337, 602-603.	36.2	26
83	The Global Carbon Cycle: Geological Processes. , 2012, , 20-35.		25
84	The Global Nitrogen Cycle. , 2012, , 36-48.		23
85	Biomarkers: Informative Molecules for Studies in Geobiology. , 2012, , 269-296.		23
86	The Global Sulfur Cycle. , 2012, , 49-64.		22
87	The Rhynie chert. Current Biology, 2019, 29, R1218-R1223.	4.0	21
88	A morphospace of planktonic marine diatoms. I. Two views of disparity through time. Paleobiology, 2015, 41, 45-67.	2.7	20
89	Testate Amoebae in the 407-Million-Year-Old Rhynie Chert. Current Biology, 2019, 29, 461-467.e2.	4.0	20
90	Sands at Gusev Crater, Mars. Journal of Geophysical Research E: Planets, 2014, 119, 941-967.	3.6	19

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91	A Geobiological View of Weathering and Erosion. , 2012, , 205-227.		18
92	Skeletons and Ocean Chemistry: The Long View. , 2011, , .		16
93	Microstructures in metasedimentary rocks from the Neoproterozoic Bonahaven Formation, Scotland: Microconcretions, impact spherules, or microfossils?. Precambrian Research, 2013, 233, 59-72.	2.9	14
94	The Fossil Record of Microbial Life. , 2012, , 297-314.		13
95	Precambrian-Cambrian Boundary: the spike is driven and the monolith crumbles. Paleobiology, 1983, 9, 199-206.	2.7	12
96	Geobiology of the Proterozoic Eon. , 2012, , 371-402.		12
97	The Global Oxygen Cycle. , 2012, , 93-104.		11
98	A tale of two eras: Phytoplankton composition influenced by oceanic paleochemistry. Geobiology, 2018, 16, 498-506.	2.6	11
99	Deep Carbon through Deep Time. , 2019, , 620-652.		11
100	The coevolution of life and environments. Rendiconti Lincei, 2009, 20, 301-306.	2.2	10
101	Non-lithifying microbial ecosystem dissolves peritidal lime sand. Nature Communications, 2021, 12, 3037.	13.2	10
102	Lynn Margulis, 1938â€“2011. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 1022-1022.	7.6	9
103	Reply to Nakov et al.: Model choice requires biological insight when studying the ancestral habitat of photosynthetic eukaryotes. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E10608-E10609.	7.6	9
104	Early impacts of climate change on a coastal marine microbial mat ecosystem. Science Advances, 2022, 8, .	10.9	9
105	Stable Isotope Geobiology. , 2012, , 250-268.		7
106	Mineralogical Coâ€Evolution of the Geosphere and Biosphere. , 2012, , 333-350.		6
107	Geobiology of the Archean Eon. , 2012, , 351-370.		6
108	A morphospace of planktonic marine diatoms. II. Sampling standardization and spatial disparity partitioning. Paleobiology, 2015, 41, 68-88.	2.7	6

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109	Plants and Animals as Geobiological Agents. , 2012, , 188-204.		5
110	Geobiology of the Anthropocene. , 2012, , 425-436.		5
111	Earth's Earliest Biosphere: Its Origin and Evolution, J. William Schopf, editor. Princeton University Press; Princeton, New Jersey. 1983. xxv + 543 pp. $93.00 (cloth); $42.50 (paper).. Paleobiology, 1984, 10, 286-292.	2.7	4
112	What is Geobiology?. , 2012, , 1-4.		4
113	Geochemical Origins of Life. , 2012, , 315-332.		4
114	Molecular Biology's Contributions to Geobiology. , 2012, , 228-249.		4
115	The Global Carbon Cycle: Biological Processes. , 2012, , 5-19.		3
116	Eukaryotic Skeletal Formation. , 2012, , 150-187.		3
117	Mineralâ€“Organicâ€“Microbe Interfacial Chemistry. , 2012, , 131-149.		2
118	A Tribute to Martin D. Brasier: Palaeobiologist and Astrobiologist (April 12, 1947â€“December 16, 2014). Astrobiology, 2015, 15, 940-948.	3.1	2
119	Appearance and disappearance rates of Phanerozoic marine animal paleocommunities. Geology, 2022, 50, 341-345.	4.3	2
120	An expanded diversity of oomycetes in Carboniferous forests: Reinterpretation of Oochytrium lepidodendri (Renault 1894) from the Esnost chert, Massif Central, France. PLoS ONE, 2021, 16, e0247849.	2.5	1
121	Reply to Butterfield: The Devonian radiation of large predatory fish coincided with elevated atmospheric oxygen levels. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E29-E29.	7.6	0
122	Geobiology of the Phanerozoic. , 2012, , 403-424.		0
123	Presentation of the 2015 Schuchert Award of the Paleontological Society to Jonathan Payne. Journal of Paleontology, 2017, 91, 1341-1341.	1.0	0
124	The Botanical Museum of Harvard University in Its 125th Year 1858-1983. Botanical Museum Leaflets, Harvard University, 1984, 30, 1-62.	0.0	0
125	Sustained increases in atmospheric oxygen and marine productivity in the Neoproterozoic and Palaeozoic eras. Nature Geoscience, 0, , .	11.9	0
126	Early Pennsylvanian LagerstÃtte reveals a diverse ecosystem on a subhumid, alluvial fan. Nature Communications, 2024, 15, .	13.2	0

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127	Chronology of Ediacaran sedimentary and biogeochemical shifts along eastern Gondwanan margins. Communications Earth & Environment, 2024, 5, .	6.7	0