Andrew H Knoll

List of Publications by Citations

122 papers	10,520 citations	47 h-index	102 g-index
131 ext. papers	12,240 ext. citations	9.6 avg, IF	6.64 L-index

#	Paper	IF	Citations
122	The evolution of modern eukaryotic phytoplankton. *Science*, **2004**, 305, 354-60	33.3	1054
121	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, 13624-9	11.5	594
120	Stromatolites in Precambrian carbonates: evolutionary mileposts or environmental dipsticks?. *Annual Review of Earth and Planetary Sciences*, **1999**, 27, 313-58	15.3	565
119	Paleophysiology and end-Permian mass extinction. *Earth and Planetary Science Letters*, **2007**, 256, 295-313	5.3	496
118	Biomarker evidence for green and purple sulphur bacteria in a stratified Palaeoproterozoic sea. *Nature*, **2005**, 437, 866-70	50.4	412
117	Statistical analysis of iron geochemical data suggests limited late Proterozoic oxygenation. *Nature*, **2015**, 523, 451-4	50.4	365
116	Morphological and ecological complexity in early eukaryotic ecosystems. *Nature*, **2001**, 412, 66-9	50.4	311
115	The Multiple Origins of Complex Multicellularity. *Annual Review of Earth and Planetary Sciences*, **2011**, 39, 217-239	15.3	296
114	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, 17911-5	11.5	278
113	Calcified metazoans in thrombolite-stromatolite reefs of the terminal Proterozoic Nama Group, Namibia. *Paleobiology*, **2000**, 26, 334-359	2.6	240
112	The Ediacaran Period: a new addition to the geologic time scale. *Lethaia*, **2006**, 39, 13-30	1.3	235
111	Testate amoebae in the Neoproterozoic Era: evidence from vase-shaped microfossils in the Chuar Group, Grand Canyon. *Paleobiology*, **2000**, 26, 360-385	2.6	234
110	Paleobiological perspectives on early eukaryotic evolution. *Cold Spring Harbor Perspectives in Biology*, **2014**, 6,	10.2	217
109	Geology. A new period for the geologic time scale. *Science*, **2004**, 305, 621-2	33.3	209
108	Secular Change in Chert Distribution: A Reflection of Evolving Biological Participation in the Silica Cycle. *Palaios*, **1989**, 4, 519	1.6	200
107	Controls on development and diversity of Early Archean stromatolites. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 9548-55	11.5	191
106	Strontium isotopic variations of Neoproterozoic seawater: implications for crustal evolution. *Geochimica Et Cosmochimica Acta*, **1991**, 55, 2883-94	5.5	182

105	TEM evidence for eukaryotic diversity in mid-Proterozoic oceans. *Geobiology*, **2004**, 2, 121-132	4.3	177
104	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, 6854-9	11.5	164
103	Macroscopic carbonaceous compressions in a terminal Proterozoic shale: A systematic reassessment of the Miaohe biota, south China. *Journal of Paleontology*, **2002**, 76, 347-376	1.1	163
102	Early photosynthetic eukaryotes inhabited low-salinity habitats. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E7737-E7745	11.5	158
101	The Meaning of Stromatolites. *Annual Review of Earth and Planetary Sciences*, **2013**, 41, 21-44	15.3	153
100	Evolutionary Trajectories and Biogeochemical Impacts of Marine Eukaryotic Phytoplankton. *Annual Review of Ecology, Evolution, and Systematics*, **2004**, 35, 523-556	13.5	151
99	Vase-shaped microfossils from the Neoproterozoic Chuar Group, Grand Canyon: A classification guided by modern testate amoebae. *Journal of Paleontology*, **2003**, 77, 409-429	1.1	132
98	Macroscopic carbonaceous compressions in a terminal Proterozoic shale: A systematic reassessment of the Miaohe biota, south China. *Journal of Paleontology*, **2002**, 76, 347-376	1.1	132
97	Phosphatized multicellular algae in the Neoproterozoic Doushantuo Formation, China, and the early evolution of florideophyte red algae. *American Journal of Botany*, **2004**, 91, 214-27	2.7	131
96	The geological consequences of evolution. *Geobiology*, **2003**, 1, 3-14	4.3	127
95	Evolution of developmental potential and the multiple independent origins of leaves in Paleozoic vascular plants. *Paleobiology*, **2002**, 28, 70-100	2.6	127
94	Vase-shaped microfossils from the Neoproterozoic Chuar Group, Grand Canyon: A classification guided by modern testate amoebae. *Journal of Paleontology*, **2003**, 77, 409-429	1.1	124
93	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, 6519-24	11.5	118
92	The timetable of evolution. *Science Advances*, **2017**, 3, e1603076	14.3	115
91	The Geological Succession of Primary Producers in the Oceans **2007**, 133-163		111
90	Evolution caused by extreme events. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2017**, 372,	5.8	102
89	Divergence time estimates and the evolution of major lineages in the florideophyte red algae. *Scientific Reports*, **2016**, 6, 21361	4.9	102
88	Character diversification and patterns of evolution in early vascular plants. *Paleobiology*, **1984**, 10, 34-472.6		86

87	Decimetre-scale multicellular eukaryotes from the 1.56-billion-year-old Gaoyuzhuang Formation in North China. *Nature Communications*, **2016**, 7, 11500	17.4	84
86	Life: the first two billion years. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2016**, 371,	5.8	81
85	Neoproterozoic microfossils from the northeastern margin of the East European Platform. *Journal of Paleontology*, **2009**, 83, 161-196	1.1	80
84	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	11.5	78
83	The Ecological Physiology of Earth's Second Oxygen Revolution. *Annual Review of Ecology, Evolution, and Systematics*, **2015**, 46, 215-235	13.5	76
82	Micropaleontology of the lower Mesoproterozoic Roper Group, Australia, and implications for early eukaryotic evolution. *Journal of Paleontology*, **2017**, 91, 199-229	1.1	74
81	Clay mineralogy, organic carbon burial, and redox evolution in Proterozoic oceans. *Geochimica Et Cosmochimica Acta*, **2010**, 74, 1579-1592	5.5	67
80	Micropaleontology across the Precambrian□Cambrian boundary in Spitsbergen. *Journal of Paleontology*, **1987**, 61, 898-926	1.1	63
79	Si isotope variability in Proterozoic cherts. *Geochimica Et Cosmochimica Acta*, **2012**, 91, 187-201	5.5	59
78	Oxygen and animals in Earth history. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 3907-8	11.5	50
77	A physiologically explicit morphospace for tracheid-based water transport in modern and extinct seed plants. *Paleobiology*, **2010**, 36, 335-355	2.6	50
76	Veneers, rinds, and fracture fills: Relatively late alteration of sedimentary rocks at Meridiani Planum, Mars. *Journal of Geophysical Research*, **2008**, 113,		48
75	Biomineralization by particle attachment in early animals. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 17659-17665	11.5	45
74	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	11.5	44
73	Modeling fluid flow in Medullosa, an anatomically unusual Carboniferous seed plant. *Paleobiology*, **2008**, 34, 472-493	2.6	43
72	Iron minerals within specific microfossil morphospecies of the 1.88 Ga Gunflint Formation. *Nature Communications*, **2017**, 8, 14890	17.4	42
71	Archean photoautotrophy: some alternatives and limits. *Origins of Life and Evolution of Biospheres*, **1979**, 9, 313-27		42
70	Non-Skeletal Biomineralization by Eukaryotes: Matters of Moment and Gravity. *Geomicrobiology Journal*, **2010**, 27, 572-584	2.5	41

69	A bottom-up perspective on ecosystem change in Mesozoic oceans. *Proceedings of the Royal Society B: Biological Sciences*, **2016**, 283,	4.4	41
68	Paleobiological Perspectives on Early Microbial Evolution. *Cold Spring Harbor Perspectives in Biology* , **2015**, 7, a018093	10.2	40
67	Plastid phylogenomics with broad taxon sampling further elucidates the distinct evolutionary origins and timing of secondary green plastids. *Scientific Reports*, **2018**, 8, 1523	4.9	40
66	High concentrations of manganese and sulfur in deposits on Murray Ridge, Endeavour Crater, Mars. *American Mineralogist*, **2016**, 101, 1389-1405	2.9	40
65	Scale microfossils from the mid-Neoproterozoic Fifteenmile Group, Yukon Territory. *Journal of Paleontology*, **2012**, 86, 775-800	1.1	39
64	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	5.3	36
63	Nacre tablet thickness records formation temperature in modern and fossil shells. *Earth and Planetary Science Letters*, **2017**, 460, 281-292	5.3	35
62	Needs and opportunities in mineral evolution research. *American Mineralogist*, **2011**, 96, 953-963	2.9	34
61	Bacterial Biomineralization **2012**, 105-130		33
60	Grazers and phytoplankton growth in the oceans: an experimental and evolutionary perspective. *PLoS ONE*, **2013**, 8, e77349	3.7	32
59	11. Biomineralization and Evolutionary History **2003**, 329-356		28
58	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	2.1	24
57	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,		23
56	Patterns of evolution in the Archean and Proterozoic Eons. *Paleobiology*, **1985**, 11, 53-64	2.6	21
55	Ediacaran reorganization of the marine phosphorus cycle. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 11961-11967	11.5	21
54	A persistently low level of atmospheric oxygen in Earth's middle age. *Nature Communications*, **2021**, 12, 351	17.4	21
53	Carbonates before skeletons: A database approach. *Earth-Science Reviews*, **2020**, 201, 103065	10.2	20
52	A coupled model of episodic warming, oxidation and geochemical transitions on early Mars. *Nature Geoscience*, **2021**, 14, 127-132	18.3	20

51	The Global Iron Cycle **2012**, 65-92		19
50	Biomarkers: Informative Molecules for Studies in Geobiology **2012**, 269-296		19
49	Model for the Formation of Single-Thread Rivers in Barren Landscapes and Implications for Pre-Silurian and Martian Fluvial Deposits. *Journal of Geophysical Research F: Earth Surface*, **2019**, 124, 2757-2777	3.8	16
48	The Global Sulfur Cycle **2012**, 49-64		16
47	Cyanobacteria and biogeochemical cycles through Earth history. *Trends in Microbiology*, **2021**,	12.4	16
46	Cycling phosphorus on the Archean Earth: Part I. Continental weathering and riverine transport of phosphorus. *Geochimica Et Cosmochimica Acta*, **2020**, 273, 70-84	5.5	15
45	Sands at Gusev Crater, Mars. *Journal of Geophysical Research E: Planets*, **2014**, 119, 941-967	4.1	15
44	A Geobiological View of Weathering and Erosion **2012**, 205-227		15
43	A morphospace of planktonic marine diatoms. I. Two views of disparity through time. *Paleobiology*, **2015**, 41, 45-67	2.6	14
42	Aluminosilicate haloes preserve complex life approximately 800 million years ago. *Interface Focus*, **2020**, 10, 20200011	3.9	14
41	The Global Carbon Cycle: Geological Processes **2012**, 20-35		14
40	Cycling phosphorus on the Archean Earth: Part II. Phosphorus limitation on primary production in Archean ecosystems. *Geochimica Et Cosmochimica Acta*, **2020**, 280, 360-377	5.5	14
39	The Global Nitrogen Cycle **2012**, 36-48		13
38	Testate Amoebae in the 407-Million-Year-Old Rhynie Chert. *Current Biology*, **2019**, 29, 461-467.e2	6.3	12
37	Precambrian-Cambrian Boundary: the spike is driven and the monolith crumbles. *Paleobiology*, **1983** , 9, 199-206	2.6	12
36	Thermal performance of the European flat oyster, Ostrea edulis (Linnaeus, 1758)Explaining ecological findings under climate change. *Marine Biology*, **2020**, 167, 1	2.5	11
35	Geobiology of the Proterozoic Eon **2012**, 371-402		11
34	The Global Oxygen Cycle **2012**, 93-104		10

33	The Fossil Record of Microbial Life **2012**, 297-314		10
32	Microstructures in metasedimentary rocks from the Neoproterozoic Bonahaven Formation, Scotland: Microconcretions, impact spherules, or microfossils?. *Precambrian Research*, **2013**, 233, 59-72	3.9	10
31	Response to Comment on "The Evolution of Modern Eukaryotic Phytoplankton". *Science*, **2004**, 306, 2191c-2191c	33.3	10
30	The Rhynie chert. *Current Biology*, **2019**, 29, R1218-R1223	6.3	10
29	The coevolution of life and environments. *Rendiconti Lincei*, **2009**, 20, 301-306	1.7	9
28	Skeletons and Ocean Chemistry: The Long View **2011**,		9
27	The Sedimentary Geochemistry and Paleoenvironments Project. *Geobiology*, **2021**, 19, 545-556	4.3	7
26	Deep Carbon through Deep Time **2019**, 620-652		6
25	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	11.5	6
24	Lynn Margulis, 1938-2011. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 1022	11.5	6
23	A morphospace of planktonic marine diatoms. II. Sampling standardization and spatial disparity partitioning. *Paleobiology*, **2015**, 41, 68-88	2.6	5
22	Geobiology of the Archean Eon **2012**, 351-370		5
21	Geobiology of the Anthropocene **2012**, 425-436		5
20	The Great Oxygenation Event as a consequence of ecological dynamics modulated by planetary change. *Nature Communications*, **2021**, 12, 3985	17.4	5
19	A tale of two eras: Phytoplankton composition influenced by oceanic paleochemistry. *Geobiology*, **2018**, 16, 498-506	4.3	5
18	Biomineralization: Integrating mechanism and evolutionary history.. *Science Advances*, **2022**, 8, eabl9653	14.3	5
17	Mineralogical Co-Evolution of the Geosphere and Biosphere **2012**, 333-350		4
16	Geochemical Origins of Life **2012**, 315-332		4

15	Stable Isotope Geobiology **2012**, 250-268		4
14	Earth's Earliest Biosphere: Its Origin and Evolution, J. William Schopf, editor. Princeton University Press; Princeton, New Jersey. 1983. xxv + 543 pp. 42.50 (paper).. *Paleobiology*, **1984**, 10, 286-292	2.6	4
13	Plants and Animals as Geobiological Agents **2012**, 188-204		3
12	Eukaryotic Skeletal Formation **2012**, 150-187		3
11	What is Geobiology? **2012**, 1-4		2
10	Mineral–Organic–Microbe Interfacial Chemistry **2012**, 131-149		2
9	Non-lithifying microbial ecosystem dissolves peritidal lime sand. *Nature Communications*, **2021**, 12, 3037	17.4	2
8	A Tribute to Martin D. Brasier: Palaeobiologist and Astrobiologist (April 12, 1947-December 16, 2014). *Astrobiology*, **2015**, 15, 940-8	3.7	1
7	The Global Carbon Cycle: Biological Processes **2012**, 5-19		1
6	Molecular Biology's Contributions to Geobiology **2012**, 228-249		1
5	The Riddle of the Sands. *Astrobiology*, **2011**, 11, 90-91	3.7	1
4	Neoproterozoic origin and multiple transitions to macroscopic growth in green seaweeds		1
3	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	3.7	1
2	Presentation of the 2015 Schuchert Award of the Paleontological Society to Jonathan Payne. *Journal of Paleontology*, **2017**, 91, 1341-1341	1.1	
1	Geobiology of the Phanerozoic **2012**, 403-424		