Joseph L Kirschvink

List of Publications by Year
in descending order

133 papers	9,944 citations	20817 60 h-index	36028 97 g-index
137 all docs	137 docs citations	137 times ranked	6154 citing authors

#	Article	IF	Citations
1	Magnetite biomineralization in the human brain.. Proceedings of the National Academy of Sciences of the United States of America, 1992, 89, 7683-7687.	7.1	541
2	The Paleoproterozoic snowball Earth: A climate disaster triggered by the evolution of oxygenic photosynthesis. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 11131-11136.	7.1	474
3	Biogenic magnetite as a basis for magnetic field detection in animals. BioSystems, 1981, 13, 181-201.	2.0	388
4	Magnetite-based magnetoreception. Current Opinion in Neurobiology, 2001, 11, 462-467.	4.2	332
5	Bees Have Magnetic Remanence. Science, 1978, 201, 1026-1028.	12.6	320
6	Uniform magnetic fields and double-wrapped coil systems: Improved techniques for the design of bioelectromagnetic experiments. Bioelectromagnetics, 1992, 13, 401-411.	1.6	304
7	The identification and biogeochemical interpretation of fossil magnetotactic bacteria. Earth-Science Reviews, 2008, 86, 42-61.	9.1	293
8	Elongated prismatic magnetite crystals in ALH84001 carbonate globules:. Geochimica Et Cosmochimica Acta, 2000, 64, 4049-4081.	3.9	284
9	Abrupt and Gradual Extinction Among Late Permian Land Vertebrates in the Karoo Basin, South Africa. Science, 2005, 307, 709-714.	12.6	281
10	Pigeons have magnets. Science, 1979, 205, 1027-1029.	12.6	273
11	Magnetotactic bacteria and single-domain magnetite in hemipelagic sediments. Nature, 1986, 321, 849-851.	27.8	219
12	Carbon-isotope events across the Precambrian/Cambrian boundary on the Siberian Platform. Nature, 1986, 320, 258-259.	27.8	200
13	Manganese-oxidizing photosynthesis before the rise of cyanobacteria. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 11238-11243.	7.1	189
14	Records of an ancient Martian magnetic field in ALH84001. Earth and Planetary Science Letters, 2002, 201, 449-463.	4.4	159
15	The magnetic sense and its use in long-distance navigation by animals. Current Opinion in Neurobiology, 2002, 12, 735-744.	4.2	157
16	Ferromagnetic resonance and low-temperature magnetic tests for biogenic magnetite. Earth and Planetary Science Letters, 2004, 224, 73-89.	4.4	147
17	Ultrafine-grained magnetite in deep-sea sediments: Possible bacterial magnetofossils. Geology, 1984, 12, 559.	4.4	144
18	A high-quality mid-Neoproterozoic paleomagnetic pole from South China, with implications for ice ages and the breakup configuration of Rodinia. Precambrian Research, 2000, 100, 313-334.	2.7	138

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19	A Candidate Magnetic Sense Organ in the Yellowfin Tuna, Thunnus albacares. Science, 1984, 224, 751-753.	12.6	134
20	Magnetofossils from Ancient Mars: a Robust Biosignature in the Martian Meteorite ALH84001. Applied and Environmental Microbiology, 2002, 68, 3663-3672.	3.1	126
21	Magnetite in human tissues: A mechanism for the biological effects of weak ELF magnetic fields. Bioelectromagnetics, 1992, 13, 101-113.	1.6	125
22	Rapid, precise, and highâ€sensitivity acquisition of paleomagnetic and rockâ€magnetic data: Development of a lowâ€noise automatic sample changing system for superconducting rock magnetometers. Geochemistry, Geophysics, Geosystems, 2008, 9, .	2.5	115
23	Bats Use Magnetite to Detect the Earth's Magnetic Field. PLoS ONE, 2008, 3, e1676.	2.5	113
24	Palaeoproterozoic ice houses and the evolution of oxygen-mediating enzymes: the case for a late origin of photosystem II. Philosophical Transactions of the Royal Society B: Biological Sciences, 2008, 363, 2755-2765.	4.0	105
25	Evidence From Strandings for Geomagnetic Sensitivity in Cetaceans. Journal of Experimental Biology, 1986, 120, 1-24.	1.7	105
26	Magnetite biomineralization and geomagnetic sensitivity in higher animals: An update and recommendations for future study. Bioelectromagnetics, 1989, 10, 239-259.	1.6	101
27	Precambrian/Cambrian boundary problem: Carbon isotope correlations for Vendian and Tommotian time between Siberia and Morocco. Geology, 1991, 19, 847.	4.4	99
28	Production of hydrogen peroxide in the atmosphere of a Snowball Earth and the origin of oxygenic photosynthesis. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 18896-18899.	7.1	98
29	Magnetic characterization of isolated candidate vertebrate magnetoreceptor cells. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 12022-12027.	7.1	98
30	Origin of microbial biomineralization and magnetotaxis during the Archean. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2171-2176.	7.1	98
31	Formation of tabular single-domain magnetite induced by Geobacter metallireducens GS-15. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 16121-16126.	7.1	97
32	Extinction patterns, Î´18 O trends, and magnetostratigraphy from a southern high-latitude Cretaceousâ€“Paleogene section: Links with Deccan volcanism. Palaeogeography, Palaeoclimatology, Palaeoecology, 2012, 350-352, 180-188.	2.3	96
33	A quantitative assessment of torque-transducer models for magnetoreception. Journal of the Royal Society Interface, 2010, 7, S273-89.	3.4	95
34	Earthquake Prediction by Animals: Evolution and Sensory Perception. Bulletin of the Seismological Society of America, 2000, 90, 312-323.	2.3	91
35	Chains, clumps, and strings: Magnetofossil taphonomy with ferromagnetic resonance spectroscopy. Earth and Planetary Science Letters, 2006, 247, 10-25.	4.4	91
36	Magnetofossil dissolution in a palaeomagnetically unstable deep-sea sediment. Nature, 1989, 339, 203-206.	27.8	89

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37	Experimental observation of magnetosome chain collapse in magnetotactic bacteria: Sedimentological, paleomagnetic, and evolutionary implications. Earth and Planetary Science Letters, 2006, 245, 538-550.	4.4	86
38	Transduction of the Geomagnetic Field as Evidenced from alpha-Band Activity in the Human Brain. ENeuro, 2019, 6, ENEURO.0483-18.2019.	1.9	86
39	The Precambrian-Cambrian boundary problem: paleomagnetic directions from the Amadeus Basin, Central Australia. Earth and Planetary Science Letters, 1978, 40, 91-100.	4.4	83
40	Microwave absorption by magnetite: A possible mechanism for coupling nonthermal levels of radiation to biological systems. Bioelectromagnetics, 1996, 17, 187-194.	1.6	83
41	Magnetostratigraphic dating of shallow-water carbonates from San Salvador, Bahamas. Geology, 1988, 16, 8.	4.4	81
42	Comment on â€˜â€˜Constraints on biological effects of weak extremely-low-frequency electromagnetic fieldsâ€™â€™. Physical Review A, 1992, 46, 2178-2184.	2.5	81
43	Magnetic tests for magnetosome chains in Martian meteorite ALH84001. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 8281-8284.	7.1	81
44	Biophysics of magnetic orientation: strengthening the interface between theory and experimental design. Journal of the Royal Society Interface, 2010, 7, S179-91.	3.4	77
45	Magnetostratigraphy of lower Cambrian strata from the Siberian Platform: a palaeomagnetic pole and a preliminary polarity time-scale. Geological Magazine, 1984, 121, 189-203.	1.5	75
46	Biogenic magnetite as a primary remanence carrier in limestone deposits. Physics of the Earth and Planetary Interiors, 1987, 46, 289-303.	1.9	75
47	Homing in on vertebrates. Nature, 1997, 390, 339-340.	27.8	75
48	Magnetofossil spike during the Paleoceneâ€Eocene thermal maximum: Ferromagnetic resonance, rock magnetic, and electron microscopy evidence from Ancora, New Jersey, United States. Paleoceanography, 2007, 22, .	3.0	72
49	Timescales of Oxygenation Following the Evolution of Oxygenic Photosynthesis. Origins of Life and Evolution of Biospheres, 2016, 46, 51-65.	1.9	72
50	Gigantism in unique biogenic magnetite at the Paleoceneâ€“Eocene Thermal Maximum. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 17648-17653.	7.1	69
51	Biogenic magnetite in stromatolites. II. Occurrence in ancient sedimentary environments. Precambrian Research, 1989, 43, 305-315.	2.7	68
52	Is Geomagnetic Sensitivity Real? Replication of the Walker-Bitterman Magnetic Conditioning Experiment in Honey Bees. American Zoologist, 1991, 31, 169-186.	0.7	68
53	Paleomagnetic evidence for fossil biogenic magnetite in western Crete. Earth and Planetary Science Letters, 1982, 59, 388-392.	4.4	66
54	Paleomagnetic measurement of nonbrittle coseismic deformation across the San Andreas Fault at Pallett Creek. Journal of Geophysical Research, 1992, 97, 12457-12470.	3.3	66

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55	Magnetite-based magnetoreception in birds: the effect of a biasing field and a pulse on migratory behavior. Journal of Experimental Biology, 2002, 205, 3031-3037.	1.7	66
56	A methane fuse for the Cambrian explosion: carbon cycles and true polar wander. Comptes Rendus - Geoscience, 2003, 335, 65-78.	1.2	65
57	Magnetic domain state and coercivity predictions for biogenic greigite (Fe₃S₄): A comparison of theory with magnetosome observations. Journal of Geophysical Research, 1992, 97, 17309-17315.	3.3	63
58	Particle-Size Considerations for Magnetite-Based Magnetoreceptors. Topics in Geobiology, 1985, , 243-254.	0.5	62
59	SQUIDâ€“SIMS is a useful approach to uncover primary signals in the Archean sulfur cycle. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 5468-5473.	7.1	62
60	Ferromagnetic resonance spectroscopy for assessment of magnetic anisotropy and magnetostatic interactions: A case study of mutant magnetotactic bacteria. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	61
61	Sclerite formation in the hydrothermal-vent â€œscaly-footâ€•gastropodâ€”possible control of iron sulfide biomineralization by the animal. Earth and Planetary Science Letters, 2006, 242, 39-50.	4.4	60
62	Magnetite-based magnetoreception in birds: the effect of a biasing field and a pulse on migratory behavior. Journal of Experimental Biology, 2002, 205, 3031-7.	1.7	54
63	The horizontal magnetic dance of the honeybee is compatible with a single-domain ferromagnetic magnetoreceptor. BioSystems, 1981, 14, 193-203.	2.0	53
64	`Fixed-axis' magnetic orientation by an amphibian: non-shoreward-directed compass orientation, misdirected homing or positioning a magnetite-based map detector in a consistent alignment relative to the magnetic field?. Journal of Experimental Biology, 2002, 205, 3903-3914.	1.7	53
65	Crystal morphology of MV-1 magnetite. American Mineralogist, 2002, 87, 1727-1730.	1.9	50
66	Ferromagnetism and EMFs. Nature, 1995, 374, 123-123.	27.8	49
67	Sensitivity and evolution of sea-turtle magnetoreception: observations, modelling and constraints from geomagnetic secular variation. Terra Nova, 1997, 9, 203-207.	2.1	49
68	Birds, bees and magnetism. Trends in Neurosciences, 1982, 5, 160-167.	8.6	47
69	Sedimentary iron cycling and the origin and preservation of magnetization in platform carbonate muds, Andros Island, Bahamas. Earth and Planetary Science Letters, 2007, 259, 581-598.	4.4	47
70	On the origin of microbial magnetoreception. National Science Review, 2020, 7, 472-479.	9.5	46
71	Geomagnetic field inclinations for the past 400 kyr from the 1-km core of the Hawaii Scientific Drilling Project. Journal of Geophysical Research, 1996, 101, 11655-11663.	3.3	45
72	Pervasive remagnetization of detrital zircon host rocks in the Jack Hills, Western Australia and implications for records of the early geodynamo. Earth and Planetary Science Letters, 2015, 430, 115-128.	4.4	44

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73	Reexamination of 2.5-Ga â€œwhiffâ€•of oxygen interval points to anoxic ocean before GOE. Science Advances, 2022, 8, eabj7190.	10.3	42
74	Early dolomitization of platform carbonates and the preservation of magnetic polarity. Journal of Geophysical Research, 1993, 98, 7977-7986.	3.3	37
75	A sea-level test for inertial interchange true polar wander events. Geophysical Journal International, 1999, 136, F5-F10.	2.4	37
76	Observations of Magnetosome Organization, Surface Structure, and Iron Biomineralization of Undescribed Magnetic Bacteria: Evolutionary Speculations. , 1991, , 97-115.		36
77	Magnetoreception and Electromagnetic Field Effects: Sensory Perception of the Geomagnetic Field in Animals and Humans. Advances in Chemistry Series, 1995, , 367-394.	0.6	33
78	Studies of Inorganic Crystals in Biological Tissue: Magnetic in Human Tumor.. Funtai Oyobi Fummatsu Yakin/Journal of the Japan Society of Powder and Powder Metallurgy, 1997, 44, 294-300.	0.2	32
79	A ferromagnetic model for the action of electric and magnetic fields in cryopreservation. Cryobiology, 2014, 68, 163-165.	0.7	30
80	Manganese enrichment in the Gowganda Formation of the Huronian Supergroup: A highly oxidizing shallow-marine environment after the last Huronian glaciation. Earth and Planetary Science Letters, 2011, 307, 201-210.	4.4	29
81	Challenging the sensitivity limits of Paleomagnetism: Magnetostratigraphy of weakly magnetized Guadalupianâ€“Lopingian (Permian) Limestone from Kyushu, Japan. Palaeogeography, Palaeoclimatology, Palaeoecology, 2015, 418, 75-89.	2.3	29
82	Possible Biogenic Magnetite Fossils from the Late Miocene Potamida Clays of Crete. Topics in Geobiology, 1985, , 647-669.	0.5	28
83	A negative fold test on the Lorrain Formation of the Huronian Supergroup: Uncertainty on the paleolatitude of the Paleoproterozoic Gowganda glaciation and implications for the great oxygenation event. Earth and Planetary Science Letters, 2005, 232, 315-332.	4.4	28
84	Physical and genetic characterization of the genome of Magnetospirillum magnetotacticum , strain MS-1. Gene, 2001, 264, 257-263.	2.2	27
85	Electrostatic enhancement of industrial drying processes. Industrial & Engineering Chemistry Process Design and Development, 1986, 25, 1027-1030.	0.6	26
86	Evidence for two types of subunits in the bacterioferritin of Magnetospirillum magnetotacticum. Gene, 1997, 201, 31-36.	2.2	26
87	Biogenic magnetite in stromatolites. I. Occurrence in modern sedimentary environments. Precambrian Research, 1989, 43, 295-304.	2.7	25
88	A Paleogeographic Model for Vendian and Cambrian Time. , 1992, , 567-582.		25
89	Detection and Use of the Earthâ€™s Magnetic Field by Aquatic Vertebrates. , 2003, , 53-74.		21
90	Paleomagnetic constraints on fault motion in the Hilina Fault System, south flank of Kilauea Volcano, Hawaii. Journal of Volcanology and Geothermal Research, 1999, 94, 233-249.	2.1	20

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91	Magnetic control of heterogeneous ice nucleation with nanophase magnetite: Biophysical and agricultural implications. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5383-5388.	7.1	18
92	The upper Olduvai geomagnetic field reversal from Death Valley, California: a fold test of transitional directions. Earth and Planetary Science Letters, 1995, 133, 475-491.	4.4	17
93	New superconducting-quantum-interference-device-based constraints on the abundance of magnetic monopoles trapped in matter: An investigation of deeply buried rocks. Physical Review A, 1986, 33, 1183-1187.	2.5	16
94	Was the Cambrian explosion both an effect and an artifact of true polar wander?. Numerische Mathematik, 2015, 315, 945-957.	1.4	15
95	A Late Cretaceous true polar wander oscillation. Nature Communications, 2021, 12, 3629.	12.8	15
96	Alteration of the Magnetic Properties of Aquaspirillum magnetotacticum by a Pulse Magnetization Technique. Applied and Environmental Microbiology, 1991, 57, 3248-3254.	3.1	15
97	Magnetoreception and Biomineralization of Magnetite Fish. Topics in Geobiology, 1985, , 417-437.	0.5	14
98	Magnetic Stratigraphy and a Test for Block Rotation of Sedimentary Rocks within the San Andreas Fault Zone, Mecca Hills, Southeastern California. Quaternary Research, 1987, 27, 30-40.	1.7	14
99	Detection, Extraction, and Characterization of Biogenic Magnetite. Topics in Geobiology, 1985, , 155-166.	0.5	13
100	Atoll magnetostratigraphy: calibration of their eustatic records. Terra Nova, 1991, 3, 35-40.	2.1	13
101	Radio waves zap the biomagnetic compass. Nature, 2014, 509, 296-297.	27.8	13
102	A first test of the hypothesis of biogenic magnetite-based heterogeneous ice-crystal nucleation in cryopreservation. Cryobiology, 2016, 72, 216-224.	0.7	13
103	Mid Campanianâ€Lower Maastrichtian magnetostratigraphy of the James Ross Basin, Antarctica: Chronostratigraphical implications. Basin Research, 2019, 31, 562-583.	2.7	13
104	Iron Biomineralization. Topics in Geobiology, 1985, , 3-15.	0.5	12
105	Late Cretaceous paleogeography of the Antarctic Peninsula: New paleomagnetic pole from the James Ross Basin. Journal of South American Earth Sciences, 2019, 91, 131-143.	1.4	12
106	Coniacian-Campanian magnetostratigraphy of the Marambio Group: The Santonian-Campanian boundary in the Antarctic Peninsula and the complete Upper Cretaceous â€“ Lowermost Paleogene chronostratigraphical framework for the James Ross Basin. Palaeogeography, Palaeoclimatology, Palaeoecology, 2020, 555, 109871.	2.3	11
107	Magnetic microscopy promises a leap in sensitivity and resolution. Eos, 2001, 82, 513-513.	0.1	10
108	Paleomagnetic studies on single crystals separated from the middle Cretaceous Iritono granite. Earth, Planets and Space, 2018, 70, .	2.5	10

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109	Geomagnetic Sensitivity in Cetaceans: An Update With Live Stranding Records in the United States. , 1990, , 639-649.		10
110	Rock magnetism linked to human brain magnetite. Eos, 1994, 75, 178.	0.1	9
111	Iron mineralogy and redox conditions during deposition of the mid-Proterozoic Appekunny Formation, Belt Supergroup, Glacier National Park. Special Paper of the Geological Society of America, 2016, , 221-242.	0.5	8
112	Biomagnetic geomagnetism. Reviews of Geophysics, 1983, 21, 672-675.	23.0	8
113	Reply to Jones and Crowe: Correcting mistaken views of sedimentary geology, Mn-oxidation rates, and molecular clocks. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E4119-20.	7.1	8
114	The Effect of Magnetotactic Bacteria on the Magnetic Properties of Marine Sediments. , 1989, , 497-506.		7
115	Anomalous negative excursion of carbon isotope in organic carbon after the last Paleoproterozoic glaciation in North America. Geochemistry, Geophysics, Geosystems, 2010, 11, .	2.5	7
116	Magnetostratigraphy of the Rabot Formation, Upper Cretaceous, James Ross Basin, Antarctic Peninsula. Cretaceous Research, 2017, 72, 172-187.	1.4	7
117	Midâ€Proterozoic Ferruginous Conditions Reflect Postdepositional Processes. Geophysical Research Letters, 2019, 46, 3114-3123.	4.0	7
118	Paleomagnetism of sedimentary rocks from and near the DOSECC Cajon Pass Well, southern California. Geophysical Research Letters, 1988, 15, 1065-1068.	4.0	4
119	Investigating the duration and termination of the Early Paleozoic Moyero Reversed Polarity Superchron: Middle Ordovician paleomagnetism from Estonia. Palaeogeography, Palaeoclimatology, Palaeoecology, 2017, 485, 673-686.	2.3	4
120	Magnetoreception. Fish Physiology, 2006, 25, 337-376.	0.8	3
121	Reply to Wang and Chen: An ancient origin of magnetotactic bacteria. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5019-E5020.	7.1	3
122	New evidence of a Campanian age for the Cretaceous fossil-bearing strata of Cape Marsh, Robertson Island, Antarctica. Cretaceous Research, 2020, 108, 104313.	1.4	3
123	Characterizing the Geomagnetic Field at High Southern Latitudes: Evidence From the Antarctic Peninsula. Journal of Geophysical Research: Solid Earth, 2021, 126, .	3.4	3
124	<title>Formation of magnetite and iron-rich carbonates by thermophilic iron-reducing bacteria</title>. , 1997, 3111, 61.		2
125	From Mesmer to animal magnetism. Nature, 1997, 390, 340-340.	27.8	2
126	Evolution of a Habitable Planet. , 2012, , 115-131.		2

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127	Biogenic Magnetite (Fe3O4): A Ferromagnetic Mineral in Bacteria, Animals, and Man. , 1982, , 135-138.		2
128	An Attempt to Replicate the Spinning Chair Experiment. Topics in Geobiology, 1985, , 605-608.	0.5	1
129	Rock and Mineral Magnetism. Physics of the Earth and Planetary Interiors, 1985, 40, 71-72.	1.9	1
130	Kirschvink receives 2011 William Gilbert Award: Response. Eos, 2012, 93, 158-158.	0.1	0
131	4. Rock and Paleomagnetism. , 1981, , 109-132.		0
132	REDOX CONDITIONS IN ENVIRONMENTS WITH EARLY EUKARYOTES FROM THE 1.4 GA BELT BASIN, USA DETERMINED FROM IRON MINERALOGY. , 2016, , .		0
133	EASTERN GRAND CANYON PROVENANCE FOR ORTHOQUARTZITE CLASTS IN LOWER MIOCENE CONGLOMERATES OF THE SESPE FORMATION NEAR MALIBU, CA. , 2018, , .		0