

Joseph L Kirschvink

List of Publications by Year in descending order

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133
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citations

20759

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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.	3.3	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.	3.3	474
3	Biogenic magnetite as a basis for magnetic field detection in animals. BioSystems, 1981, 13, 181-201.	0.9	388
4	Magnetite-based magnetoreception. Current Opinion in Neurobiology, 2001, 11, 462-467.	2.0	332
5	Bees Have Magnetic Remanence. Science, 1978, 201, 1026-1028.	6.0	320
6	Uniform magnetic fields and double-wrapped coil systems: Improved techniques for the design of bioelectromagnetic experiments. Bioelectromagnetics, 1992, 13, 401-411.	0.9	304
7	The identification and biogeochemical interpretation of fossil magnetotactic bacteria. Earth-Science Reviews, 2008, 86, 42-61.	4.0	293
8	Elongated prismatic magnetite crystals in ALH84001 carbonate globules:. Geochimica Et Cosmochimica Acta, 2000, 64, 4049-4081.	1.6	284
9	Abrupt and Gradual Extinction Among Late Permian Land Vertebrates in the Karoo Basin, South Africa. Science, 2005, 307, 709-714.	6.0	281
10	Pigeons have magnets. Science, 1979, 205, 1027-1029.	6.0	273
11	Magnetotactic bacteria and single-domain magnetite in hemipelagic sediments. Nature, 1986, 321, 849-851.	13.7	219
12	Carbon-isotope events across the Precambrian/Cambrian boundary on the Siberian Platform. Nature, 1986, 320, 258-259.	13.7	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.	3.3	189
14	Records of an ancient Martian magnetic field in ALH84001. Earth and Planetary Science Letters, 2002, 201, 449-463.	1.8	159
15	The magnetic sense and its use in long-distance navigation by animals. Current Opinion in Neurobiology, 2002, 12, 735-744.	2.0	157
16	Ferromagnetic resonance and low-temperature magnetic tests for biogenic magnetite. Earth and Planetary Science Letters, 2004, 224, 73-89.	1.8	147
17	Ultrafine-grained magnetite in deep-sea sediments: Possible bacterial magnetofossils. Geology, 1984, 12, 559.	2.0	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.	1.2	138

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19	A Candidate Magnetic Sense Organ in the Yellowfin Tuna, <i>Thunnus albacares</i> . <i>Science</i> , 1984, 224, 751-753.	6.0	134
20	Magnetofossils from Ancient Mars: a Robust Biosignature in the Martian Meteorite ALH84001. <i>Applied and Environmental Microbiology</i> , 2002, 68, 3663-3672.	1.4	126
21	Magnetite in human tissues: A mechanism for the biological effects of weak ELF magnetic fields. <i>Bioelectromagnetics</i> , 1992, 13, 101-113.	0.9	125
22	Rapid, precise, and high-sensitivity acquisition of paleomagnetic and rock-magnetic data: Development of a low-noise automatic sample changing system for superconducting rock magnetometers. <i>Geochemistry, Geophysics, Geosystems</i> , 2008, 9, .	1.0	115
23	Bats Use Magnetite to Detect the Earth's Magnetic Field. <i>PLoS ONE</i> , 2008, 3, e1676.	1.1	113
24	Palaeoproterozoic ice houses and the evolution of oxygen-mediating enzymes: the case for a late origin of photosystem II. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2008, 363, 2755-2765.	1.8	105
25	Evidence From Strandings for Geomagnetic Sensitivity in Cetaceans. <i>Journal of Experimental Biology</i> , 1986, 120, 1-24.	0.8	105
26	Magnetite biomineralization and geomagnetic sensitivity in higher animals: An update and recommendations for future study. <i>Bioelectromagnetics</i> , 1989, 10, 239-259.	0.9	101
27	Precambrian/Cambrian boundary problem: Carbon isotope correlations for Vendian and Tommotian time between Siberia and Morocco. <i>Geology</i> , 1991, 19, 847.	2.0	99
28	Production of hydrogen peroxide in the atmosphere of a Snowball Earth and the origin of oxygenic photosynthesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 18896-18899.	3.3	98
29	Magnetic characterization of isolated candidate vertebrate magnetoreceptor cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 12022-12027.	3.3	98
30	Origin of microbial biomineralization and magnetotaxis during the Archean. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 2171-2176.	3.3	98
31	Formation of tabular single-domain magnetite induced by <i>Geobacter metallireducens</i> GS-15. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 16121-16126.	3.3	97
32	Extinction patterns, $\delta^{18}O$ trends, and magnetostratigraphy from a southern high-latitude Cretaceous-Paleogene section: Links with Deccan volcanism. <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> , 2012, 350-352, 180-188.	1.0	96
33	A quantitative assessment of torque-transducer models for magnetoreception. <i>Journal of the Royal Society Interface</i> , 2010, 7, S273-89.	1.5	95
34	Earthquake Prediction by Animals: Evolution and Sensory Perception. <i>Bulletin of the Seismological Society of America</i> , 2000, 90, 312-323.	1.1	91
35	Chains, clumps, and strings: Magnetofossil taphonomy with ferromagnetic resonance spectroscopy. <i>Earth and Planetary Science Letters</i> , 2006, 247, 10-25.	1.8	91
36	Magnetofossil dissolution in a palaeomagnetically unstable deep-sea sediment. <i>Nature</i> , 1989, 339, 203-206.	13.7	89

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37	Experimental observation of magnetosome chain collapse in magnetotactic bacteria: Sedimentological, paleomagnetic, and evolutionary implications. <i>Earth and Planetary Science Letters</i> , 2006, 245, 538-550.	1.8	86
38	Transduction of the Geomagnetic Field as Evidenced from alpha-Band Activity in the Human Brain. <i>ENeuro</i> , 2019, 6, ENEURO.0483-18.2019.	0.9	86
39	The Precambrian-Cambrian boundary problem: paleomagnetic directions from the Amadeus Basin, Central Australia. <i>Earth and Planetary Science Letters</i> , 1978, 40, 91-100.	1.8	83
40	Microwave absorption by magnetite: A possible mechanism for coupling nonthermal levels of radiation to biological systems. <i>Bioelectromagnetics</i> , 1996, 17, 187-194.	0.9	83
41	Magnetostratigraphic dating of shallow-water carbonates from San Salvador, Bahamas. <i>Geology</i> , 1988, 16, 8.	2.0	81
42	Comment on "Constraints on biological effects of weak extremely-low-frequency electromagnetic fields". <i>Physical Review A</i> , 1992, 46, 2178-2184.	1.0	81
43	Magnetic tests for magnetosome chains in Martian meteorite ALH84001. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 8281-8284.	3.3	81
44	Biophysics of magnetic orientation: strengthening the interface between theory and experimental design. <i>Journal of the Royal Society Interface</i> , 2010, 7, S179-91.	1.5	77
45	Magnetostratigraphy of lower Cambrian strata from the Siberian Platform: a palaeomagnetic pole and a preliminary polarity time-scale. <i>Geological Magazine</i> , 1984, 121, 189-203.	0.9	75
46	Biogenic magnetite as a primary remanence carrier in limestone deposits. <i>Physics of the Earth and Planetary Interiors</i> , 1987, 46, 289-303.	0.7	75
47	Homing in on vertebrates. <i>Nature</i> , 1997, 390, 339-340.	13.7	75
48	Magnetofossil spike during the Paleocene-Eocene thermal maximum: Ferromagnetic resonance, rock magnetic, and electron microscopy evidence from Ancora, New Jersey, United States. <i>Paleoceanography</i> , 2007, 22, .	3.0	72
49	Timescales of Oxygenation Following the Evolution of Oxygenic Photosynthesis. <i>Origins of Life and Evolution of Biospheres</i> , 2016, 46, 51-65.	0.8	72
50	Gigantism in unique biogenic magnetite at the Paleocene-Eocene Thermal Maximum. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 17648-17653.	3.3	69
51	Biogenic magnetite in stromatolites. II. Occurrence in ancient sedimentary environments. <i>Precambrian Research</i> , 1989, 43, 305-315.	1.2	68
52	Is Geomagnetic Sensitivity Real? Replication of the Walker-Bitterman Magnetic Conditioning Experiment in Honey Bees. <i>American Zoologist</i> , 1991, 31, 169-186.	0.7	68
53	Paleomagnetic evidence for fossil biogenic magnetite in western Crete. <i>Earth and Planetary Science Letters</i> , 1982, 59, 388-392.	1.8	66
54	Paleomagnetic measurement of nonbrittle coseismic deformation across the San Andreas Fault at Pallett Creek. <i>Journal of Geophysical Research</i> , 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. <i>Journal of Experimental Biology</i> , 2002, 205, 3031-3037.	0.8	66
56	A methane fuse for the Cambrian explosion: carbon cycles and true polar wander. <i>Comptes Rendus - Geoscience</i> , 2003, 335, 65-78.	0.4	65
57	Magnetic domain state and coercivity predictions for biogenic greigite (Fe ₃ S ₄): A comparison of theory with magnetosome observations. <i>Journal of Geophysical Research</i> , 1992, 97, 17309-17315.	3.3	63
58	Particle-Size Considerations for Magnetite-Based Magnetoreceptors. <i>Topics in Geobiology</i> , 1985, , 243-254.	0.6	62
59	SQUID-SIMS is a useful approach to uncover primary signals in the Archean sulfur cycle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 5468-5473.	3.3	62
60	Ferromagnetic resonance spectroscopy for assessment of magnetic anisotropy and magnetostatic interactions: A case study of mutant magnetotactic bacteria. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a.	3.3	61
61	Sclerite formation in the hydrothermal-vent "gastropod" possible control of iron sulfide biomineralization by the animal. <i>Earth and Planetary Science Letters</i> , 2006, 242, 39-50.	1.8	60
62	Magnetite-based magnetoreception in birds: the effect of a biasing field and a pulse on migratory behavior. <i>Journal of Experimental Biology</i> , 2002, 205, 3031-7.	0.8	54
63	The horizontal magnetic dance of the honeybee is compatible with a single-domain ferromagnetic magnetoreceptor. <i>BioSystems</i> , 1981, 14, 193-203.	0.9	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?. <i>Journal of Experimental Biology</i> , 2002, 205, 3903-3914.	0.8	53
65	Crystal morphology of MV-1 magnetite. <i>American Mineralogist</i> , 2002, 87, 1727-1730.	0.9	50
66	Ferromagnetism and EMFs. <i>Nature</i> , 1995, 374, 123-123.	13.7	49
67	Sensitivity and evolution of sea-turtle magnetoreception: observations, modelling and constraints from geomagnetic secular variation. <i>Terra Nova</i> , 1997, 9, 203-207.	0.9	49
68	Birds, bees and magnetism. <i>Trends in Neurosciences</i> , 1982, 5, 160-167.	4.2	47
69	Sedimentary iron cycling and the origin and preservation of magnetization in platform carbonate muds, Andros Island, Bahamas. <i>Earth and Planetary Science Letters</i> , 2007, 259, 581-598.	1.8	47
70	On the origin of microbial magnetoreception. <i>National Science Review</i> , 2020, 7, 472-479.	4.6	46
71	Geomagnetic field inclinations for the past 400 kyr from the 1-km core of the Hawaii Scientific Drilling Project. <i>Journal of Geophysical Research</i> , 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. <i>Earth and Planetary Science Letters</i> , 2015, 430, 115-128.	1.8	44

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73	Reexamination of 2.5-Ga $\delta^{13}\text{C}$ -of oxygen interval points to anoxic ocean before GOE. <i>Science Advances</i> , 2022, 8, eabj7190.	4.7	42
74	Early dolomitization of platform carbonates and the preservation of magnetic polarity. <i>Journal of Geophysical Research</i> , 1993, 98, 7977-7986.	3.3	37
75	A sea-level test for inertial interchange true polar wander events. <i>Geophysical Journal International</i> , 1999, 136, F5-F10.	1.0	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. <i>Advances in Chemistry Series</i> , 1995, , 367-394.	0.6	33
78	Studies of Inorganic Crystals in Biological Tissue: Magnetic in Human Tumor.. Funtai Oyobi Fummatu Yakin/Journal of the Japan Society of Powder and Powder Metallurgy, 1997, 44, 294-300.	0.1	32
79	A ferromagnetic model for the action of electric and magnetic fields in cryopreservation. <i>Cryobiology</i> , 2014, 68, 163-165.	0.3	30
80	Manganese enrichment in the Gowganda Formation of the Huronian Supergroup: A highly oxidizing shallow-marine environment after the last Huronian glaciation. <i>Earth and Planetary Science Letters</i> , 2011, 307, 201-210.	1.8	29
81	Challenging the sensitivity limits of Paleomagnetism: Magnetostratigraphy of weakly magnetized Guadalupianâ€“Lopingian (Permian) Limestone from Kyushu, Japan. <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> , 2015, 418, 75-89.	1.0	29
82	Possible Biogenic Magnetite Fossils from the Late Miocene Potamida Clays of Crete. <i>Topics in Geobiology</i> , 1985, , 647-669.	0.6	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. <i>Earth and Planetary Science Letters</i> , 2005, 232, 315-332.	1.8	28
84	Physical and genetic characterization of the genome of <i>Magnetospirillum magnetotacticum</i> , strain MS-1. <i>Gene</i> , 2001, 264, 257-263.	1.0	27
85	Electrostatic enhancement of industrial drying processes. <i>Industrial & Engineering Chemistry Process Design and Development</i> , 1986, 25, 1027-1030.	0.6	26
86	Evidence for two types of subunits in the bacterioferritin of <i>Magnetospirillum magnetotacticum</i> . <i>Gene</i> , 1997, 201, 31-36.	1.0	26
87	Biogenic magnetite in stromatolites. I. Occurrence in modern sedimentary environments. <i>Precambrian Research</i> , 1989, 43, 295-304.	1.2	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. <i>Journal of Volcanology and Geothermal Research</i> , 1999, 94, 233-249.	0.8	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.	3.3	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.	1.8	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.	1.0	16
94	Was the Cambrian explosion both an effect and an artifact of true polar wander?. Numerische Mathematik, 2015, 315, 945-957.	0.7	15
95	A Late Cretaceous true polar wander oscillation. Nature Communications, 2021, 12, 3629.	5.8	15
96	Alteration of the Magnetic Properties of <i>Aquaspirillum magnetotacticum</i> by a Pulse Magnetization Technique. Applied and Environmental Microbiology, 1991, 57, 3248-3254.	1.4	15
97	Magnetoreception and Biomineralization of Magnetite Fish. Topics in Geobiology, 1985, , 417-437.	0.6	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.	1.0	14
99	Detection, Extraction, and Characterization of Biogenic Magnetite. Topics in Geobiology, 1985, , 155-166.	0.6	13
100	Atoll magnetostratigraphy: calibration of their eustatic records. Terra Nova, 1991, 3, 35-40.	0.9	13
101	Radio waves zap the biomagnetic compass. Nature, 2014, 509, 296-297.	13.7	13
102	A first test of the hypothesis of biogenic magnetite-based heterogeneous ice-crystal nucleation in cryopreservation. Cryobiology, 2016, 72, 216-224.	0.3	13
103	Mid Campanian–Lower Maastrichtian magnetostratigraphy of the James Ross Basin, Antarctica: Chronostratigraphical implications. Basin Research, 2019, 31, 562-583.	1.3	13
104	Iron Biomineralization. Topics in Geobiology, 1985, , 3-15.	0.6	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.	0.6	12
106	Coniacian-Campanian magnetostratigraphy of the Marambio Group: The Santonian-Campanian boundary in the Antarctic Peninsula and the complete Upper Cretaceous – Lowermost Paleogene chronostratigraphical framework for the James Ross Basin. Palaeogeography, Palaeoclimatology, Palaeoecology, 2020, 555, 109871.	1.0	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, .	0.9	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.	9.0	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.	3.3	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, .	1.0	7
116	Magnetostratigraphy of the Rabot Formation, Upper Cretaceous, James Ross Basin, Antarctic Peninsula. Cretaceous Research, 2017, 72, 172-187.	0.6	7
117	Mid-Proterozoic Ferruginous Conditions Reflect Postdepositional Processes. Geophysical Research Letters, 2019, 46, 3114-3123.	1.5	7
118	Paleomagnetism of sedimentary rocks from and near the DOSECC Cajon Pass Well, southern California. Geophysical Research Letters, 1988, 15, 1065-1068.	1.5	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.	1.0	4
120	Magnetoreception. Fish Physiology, 2006, 25, 337-376.	0.2	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.	3.3	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.	0.6	3
123	Characterizing the Geomagnetic Field at High Southern Latitudes: Evidence From the Antarctic Peninsula. Journal of Geophysical Research: Solid Earth, 2021, 126, .	1.4	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.	13.7	2
126	Evolution of a Habitable Planet. , 2012, , 115-131.		2

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127	Biogenic Magnetite (Fe ₃ O ₄): 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.	0.6	1
129	Rock and Mineral Magnetism. Physics of the Earth and Planetary Interiors, 1985, 40, 71-72.	0.7	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