

Roger Buick

List of Publications by Year in descending order

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81
papers

10,851
citations

41323

49
h-index

60583

81
g-index

85
all docs

85
docs citations

85
times ranked

6220
citing authors

#	ARTICLE	IF	CITATIONS
1	Archean Molecular Fossils and the Early Rise of Eukaryotes. <i>Science</i> , 1999, 285, 1033-1036.	6.0	1,153
2	A Whiff of Oxygen Before the Great Oxidation Event?. <i>Science</i> , 2007, 317, 1903-1906.	6.0	822
3	Isotopic evidence for microbial sulphate reduction in the early Archean era. <i>Nature</i> , 2001, 410, 77-81.	13.7	599
4	Stromatolites 3,400–3,500 Myr old from the North Pole area, Western Australia. <i>Nature</i> , 1980, 284, 443-445.	13.7	446
5	Late Archean Biospheric Oxygenation and Atmospheric Evolution. <i>Science</i> , 2007, 317, 1900-1903.	6.0	327
6	The antiquity of oxygenic photosynthesis: evidence from stromatolites in sulphate-deficient Archean lakes. <i>Science</i> , 1992, 255, 74-77.	6.0	318
7	Abrupt and Gradual Extinction Among Late Permian Land Vertebrates in the Karoo Basin, South Africa. <i>Science</i> , 2005, 307, 709-714.	6.0	281
8	When did oxygenic photosynthesis evolve?. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2008, 363, 2731-2743.	1.8	278
9	The evolution of Earth's biogeochemical nitrogen cycle. <i>Earth-Science Reviews</i> , 2016, 160, 220-239.	4.0	269
10	A reconstruction of Archean biological diversity based on molecular fossils from the 2.78 to 2.45 billion-year-old Mount Bruce Supergroup, Hamersley Basin, Western Australia. <i>Geochimica Et Cosmochimica Acta</i> , 2003, 67, 4321-4335.	1.6	262
11	Record of emergent continental crust ~3.5 billion years ago in the Pilbara craton of Australia. <i>Nature</i> , 1995, 375, 574-577.	13.7	260
12	Evaporitic sediments of Early Archean age from the Warrawoona Group, North Pole, Western Australia. <i>Sedimentology</i> , 1990, 37, 247-277.	1.6	255
13	Preservation of Martian Organic and Environmental Records: Final Report of the Mars Biosignature Working Group. <i>Astrobiology</i> , 2011, 11, 157-181.	1.5	255
14	Stromatolite recognition in ancient rocks: an appraisal of irregularly laminated structures in an Early Archean chert-barite unit from North Pole, Western Australia. <i>Alcheringa</i> , 1981, 5, 161-181.	0.5	243
15	Reappraisal of hydrocarbon biomarkers in Archean rocks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 5915-5920.	3.3	230
16	Microfossil Recognition in Archean Rocks: An Appraisal of Spheroids and Filaments from a 3500 M.Y. Old Chert-Barite Unit at North Pole, Western Australia. <i>Palaios</i> , 1990, 5, 441.	0.6	229
17	Isotopic Evidence for an Aerobic Nitrogen Cycle in the Latest Archean. <i>Science</i> , 2009, 323, 1045-1048.	6.0	214
18	Redox state of the Archean atmosphere: Evidence from detrital heavy minerals in ca. 3250–2750 Ma sandstones from the Pilbara Craton, Australia. <i>Geology</i> , 1999, 27, 115.	2.0	213

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19	Isotopic evidence for biological nitrogen fixation by molybdenum-nitrogenase from 3.2ÂGyr. <i>Nature</i> , 2015, 520, 666-669.	13.7	213
20	Composition and syngeneity of molecular fossils from the 2.78 to 2.45 billion-year-old Mount Bruce Supergroup, Pilbara Craton, Western Australia. <i>Geochimica Et Cosmochimica Acta</i> , 2003, 67, 4289-4319.	1.6	211
21	The antiquity of microbial sulfate reduction. <i>Earth-Science Reviews</i> , 2004, 64, 243-272.	4.0	208
22	Evaluating the role of microbial sulfate reduction in the early Archean using quadruple isotope systematics. <i>Earth and Planetary Science Letters</i> , 2009, 279, 383-391.	1.8	173
23	Stable isotopic compositions of carbonates from the Mesoproterozoic Bangemall group, northwestern Australia. <i>Chemical Geology</i> , 1995, 123, 153-171.	1.4	169
24	Air density 2.7 billion years ago limited to less than twice modern levels by fossil raindrop imprints. <i>Nature</i> , 2012, 484, 359-362.	13.7	167
25	Evidence for reactive reduced phosphorus species in the early Archean ocean. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 10089-10094.	3.3	156
26	Earth's air pressure 2.7 billion years ago constrained to less than half of modern levels. <i>Nature Geoscience</i> , 2016, 9, 448-451.	5.4	132
27	A statistical analysis of the carbon isotope record from the Archean to Phanerozoic and implications for the rise of oxygen. <i>Numerische Mathematik</i> , 2015, 315, 275-316.	0.7	130
28	Contributions to late Archaean sulphur cycling by life on land. <i>Nature Geoscience</i> , 2012, 5, 722-725.	5.4	118
29	Geochronology of a Late Archaean flood basalt province in the Pilbara Craton, Australia: constraints on basin evolution, volcanic and sedimentary accumulation, and continental drift rates. <i>Precambrian Research</i> , 2004, 133, 143-173.	1.2	113
30	Growth and recycling of early Archaean continental crust: geochemical evidence from the Coonterunah and Warrawoona Groups, Pilbara Craton, Australia. <i>Tectonophysics</i> , 2000, 322, 69-88.	0.9	109
31	Oil preserved in fluid inclusions in Archaean sandstones. <i>Nature</i> , 1998, 395, 885-888.	13.7	105
32	Nitrogen isotope evidence for alkaline lakes on late Archean continents. <i>Earth and Planetary Science Letters</i> , 2015, 411, 1-10.	1.8	104
33	Removal of oceanic REE by authigenic precipitation of phosphatic minerals. <i>Earth and Planetary Science Letters</i> , 1998, 164, 135-149.	1.8	100
34	Biomarkers from Huronian oil-bearing fluid inclusions: An uncontaminated record of life before the Great Oxidation Event. <i>Geology</i> , 2006, 34, 437.	2.0	97
35	Preservation of hydrocarbons and biomarkers in oil trapped inside fluid inclusions for >2 billion years. <i>Geochimica Et Cosmochimica Acta</i> , 2008, 72, 844-870.	1.6	96
36	Release of bound aromatic hydrocarbons from late Archean and Mesoproterozoic kerogens via hydropyrolysis. <i>Geochimica Et Cosmochimica Acta</i> , 2003, 67, 1521-1530.	1.6	95

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37	Carbonaceous filaments from North Pole, Western Australia: Are they fossil bacteria in Archaean stromatolites?. <i>Precambrian Research</i> , 1984, 24, 157-172.	1.2	94
38	Did the Proterozoic ?Canfield Ocean? cause a laughing gas greenhouse?. <i>Geobiology</i> , 2007, 5, 97-100.	1.1	94
39	An extended organic carbon-isotope record across the Triassicâ€“Jurassic boundary in the Queen Charlotte Islands, British Columbia, Canada. <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> , 2007, 244, 290-296.	1.0	90
40	An Early Habitat of Life. <i>Scientific American</i> , 1981, 245, 64-73.	1.0	86
41	Modeling the signature of sulfur mass-independent fractionation produced in the Archean atmosphere. <i>Geochimica Et Cosmochimica Acta</i> , 2014, 141, 365-380.	1.6	80
42	The changing view of eukaryogenesis â€“ fossils, cells, lineages and how they all come together. <i>Journal of Cell Science</i> , 2016, 129, 3695-3703.	1.2	77
43	Selenium isotopes support free O ₂ in the latest Archean. <i>Geology</i> , 2015, 43, 259-262.	2.0	74
44	Pervasive aerobic nitrogen cycling in the surface ocean across the Paleoproterozoic Era. <i>Earth and Planetary Science Letters</i> , 2018, 500, 117-126.	1.8	70
45	Selenium isotopes record extensive marine suboxia during the Great Oxidation Event. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 875-880.	3.3	67
46	Spatial and temporal trends in Precambrian nitrogen cycling: A Mesoproterozoic offshore nitrate minimum. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 198, 315-337.	1.6	65
47	Differential metamorphic effects on nitrogen isotopes in kerogen extracts and bulk rocks. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 217, 80-94.	1.6	61
48	Geochronology and stratigraphic relationships of the Sulphur Springs Group and Strelley Granite: a temporally distinct igneous province in the Archaean Pilbara Craton, Australia. <i>Precambrian Research</i> , 2002, 114, 87-120.	1.2	59
49	The evolution of the global selenium cycle: Secular trends in Se isotopes and abundances. <i>Geochimica Et Cosmochimica Acta</i> , 2015, 162, 109-125.	1.6	59
50	Modeling N_2 through Geological Time: Implications for Planetary Climates and Atmospheric Biosignatures. <i>Astrobiology</i> , 2016, 16, 949-963.	1.5	53
51	Redox state of the Archean atmosphere: Evidence from detrital heavy minerals in ca. 3250â€“2750 Ma sandstones from the Pilbara Craton, Australia: Comment and Reply. <i>Geology</i> , 1999, 27, 1151.	2.0	47
52	Transient surface ocean oxygenation recorded in the ~4.66-Ga Jeerinah Formation, Australia. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 7711-7716.	3.3	46
53	Acritarchs and microfossils from the Mesoproterozoic Bangemall Group, northwestern Australia. <i>Journal of Paleontology</i> , 1999, 73, 744-764.	0.5	43
54	Carbonaceous filaments from North Pole, Western Australia: Are they fossil bacteria in archaean stromatolites? A reply. <i>Precambrian Research</i> , 1988, 39, 311-317.	1.2	42

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55	Ancient acritarchs. <i>Nature</i> , 2010, 463, 885-886.	13.7	40
56	Oily old ores: Evidence for hydrothermal petroleum generation in an Archean volcanogenic massive sulfide deposit. <i>Geology</i> , 2000, 28, 731.	2.0	39
57	Oil-bearing CO ₂ -CH ₄ -H ₂ O fluid inclusions: oil survival since the Palaeoproterozoic after high temperature entrapment. <i>Chemical Geology</i> , 2003, 194, 51-79.	1.4	39
58	Selenium isotope analysis of organic-rich shales: advances in sample preparation and isobaric interference correction. <i>Journal of Analytical Atomic Spectrometry</i> , 2013, 28, 1734.	1.6	34
59	Origin and significance of aromatic hydrocarbons in giant iron ore deposits of the late Archean Hamersley Basin, Western Australia. <i>Organic Geochemistry</i> , 2003, 34, 1161-1175.	0.9	33
60	Mercury abundance and isotopic composition indicate subaerial volcanism prior to the end-Archean $\delta^{13}C$ of oxygen. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	32
61	Selenium isotope ratios, redox changes and biological productivity across the end-Permian mass extinction. <i>Chemical Geology</i> , 2015, 410, 28-39.	1.4	30
62	Environmental control on microbial diversification and methane production in the Mesoarchean. <i>Precambrian Research</i> , 2018, 304, 64-72.	1.2	29
63	Environmental niches and metabolic diversity in Neoproterozoic lakes. <i>Geobiology</i> , 2017, 15, 767-783.	1.1	25
64	Atmospheric CO ₂ levels from 2.7 billion years ago inferred from micrometeorite oxidation. <i>Science Advances</i> , 2020, 6, eaay4644.	4.7	22
65	Life in the Archean. , 0, , 13-21.		20
66	Oil-bearing fluid inclusions from the Palaeoproterozoic: A review of biogeochemical results from time-capsules >2.0 Ga old. <i>Science in China Series D: Earth Sciences</i> , 2009, 52, 1-11.	0.9	15
67	Nitrogen isotope evidence for anoxic deep marine environments from the Mesoarchean Mosquito Creek Formation, Australia. <i>Precambrian Research</i> , 2019, 320, 281-290.	1.2	13
68	Basinal hydrographic and redox controls on selenium enrichment and isotopic composition in Paleozoic black shales. <i>Geochimica Et Cosmochimica Acta</i> , 2020, 287, 229-250.	1.6	12
69	Redox fluctuations, trace metal enrichment and phosphogenesis in the ~2.0 Ga Zoned Formation. <i>Precambrian Research</i> , 2020, 343, 105716.	1.2	12
70	Eolianite Grain Size Distributions as a Proxy for Large Changes in Planetary Atmospheric Density. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 2506-2526.	1.5	11
71	Comments and Replies on "Early Archean silicate spherules of probable impact origin, South Africa and Western Australia". <i>Geology</i> , 1987, 15, 180.	2.0	11
72	Ancient air caught by shooting stars. <i>Nature</i> , 2016, 533, 184-186.	13.7	10

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73	Records of geomagnetism, climate, and tectonics across a Paleoproterozoic erosion surface. <i>Earth and Planetary Science Letters</i> , 2015, 419, 1-13.	1.8	9
74	Exploring cycad foliage as an archive of the isotopic composition of atmospheric nitrogen. <i>Geobiology</i> , 2020, 18, 152-166.	1.1	9
75	Quantitative discrimination between geological materials with variable density contrast by high resolution X-ray computed tomography: An example using amygdale size-distribution in ancient lava flows. <i>Computers and Geosciences</i> , 2013, 54, 231-238.	2.0	6
76	Bias in carbon concentration and $\delta^{13}\text{C}$ measurements of organic matter due to cleaning treatments with organic solvents. <i>Chemical Geology</i> , 2018, 493, 405-412.	1.4	6
77	Revisiting the depositional environment of the Neoproterozoic Callanna Group, South Australia. <i>Precambrian Research</i> , 2019, 334, 105474.	1.2	6
78	Oily old ores: Evidence for hydrothermal petroleum generation in an Archean volcanogenic massive sulfide deposit. <i>Geology</i> , 2000, 28, 731-734.	2.0	6
79	Oxygen and life in the Precambrian. <i>Geobiology</i> , 2006, 4, 225-226.	1.1	4
80	Reply to the comment by Bolhar et al. on "Growth and recycling of early Archean continental crust: geochemical evidence from the Coonterunah and Warrawoona Groups, Pilbara Craton, Australia" by Green et al. [<i>Tectonophysics</i> 322 (2000) 69-88]. <i>Tectonophysics</i> , 2002, 344, 293-296.	0.9	0
81	Vesicle paleobarometry in the Pongola Supergroup: A cautionary note and guidelines for future studies. <i>South African Journal of Geology</i> , 2020, 123, 95-104.	0.6	0