Chris Ballentine

List of Publications by Year
in descending order

125 papers	7,162 citations	53939 47 h-index	71088 80 g-index
133 all docs	133 docs citations	133 times ranked	5054 citing authors

#	Article	IF	Citations
1	The principles of helium exploration. Petroleum Geoscience, 2022, 28, .	0.9	19
2	Structural geometry and evolution of the Rukwa Rift Basin, Tanzania: Implications for helium potential. Basin Research, 2022, 34, 938-960.	1.3	6
3	Earthâ€™s missing argon paradox resolved by recycling of oceanic crust. Nature Geoscience, 2022, 15, 85-90.	5.4	9
4	Kryptonâ€81 Dating Constrains Timing of Deep Groundwater Flow Activation. Geophysical Research Letters, 2022, 49, .	1.5	6
5	Primitive noble gases sampled from ocean island basalts cannot be from the Earthâ€™s core. Nature Communications, 2022, 13, .	5.8	6
6	86Kr excess and other noble gases identify a billion-year-old radiogenically-enriched groundwater system. Nature Communications, 2022, 13, .	5.8	10
7	The use of noble gas isotopes to trace subsurface boiling temperatures in Icelandic geothermal systems. Earth and Planetary Science Letters, 2021, 560, 116805.	1.8	14
8	Crustal Groundwater Volumes Greater Than Previously Thought. Geophysical Research Letters, 2021, 48, e2021GL093549.	1.5	24
9	Recycling of nitrogen and light noble gases in the Central American subduction zone: Constraints from 15N15N. Earth and Planetary Science Letters, 2021, 571, 117112.	1.8	7
10	Utility of natural and artificial geochemical tracers for leakage monitoring and quantification during an offshore controlled CO2 release experiment. International Journal of Greenhouse Gas Control, 2021, 111, 103421.	2.3	13
11	Determining the role of diffusion and basement flux in controlling 4He distribution in sedimentary basin fluids. Earth and Planetary Science Letters, 2021, 574, 117175.	1.8	11
12	Investigating the effect of enhanced oil recovery on the noble gas signature of casing gases and produced waters from selected California oil fields. Chemical Geology, 2021, 584, 120540.	1.4	6
13	Noble gas signatures constrain oil-field water as the carrier phase of hydrocarbons occurring in shallow aquifers in the San Joaquin Basin, USA. Chemical Geology, 2021, 584, 120491.	1.4	7
14	He, Ne, Ar and CO2 systematics of the Rungwe Volcanic Province, Tanzania: Implications for fluid source and dynamics. Chemical Geology, 2021, 586, 120584.	1.4	6
15	High ³ He/ ⁴ He in central Panama reveals a distal connection to the GalÃ¡pagos plume. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	12
16	Rapid microbial methanogenesis during CO2 storage in hydrocarbon reservoirs. Nature, 2021, 600, 670-674.	13.7	54
17	The use of noble gas isotopes to constrain subsurface fluid flow and hydrocarbon migration in the East Texas Basin. Geochimica Et Cosmochimica Acta, 2020, 268, 186-208.	1.6	22
18	An evaluation of the C/N ratio of the mantle from natural CO2-rich gas analysis: Geochemical and cosmochemical implications. Earth and Planetary Science Letters, 2020, 551, 116574.	1.8	38

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19	Identification of chondritic krypton and xenon in Yellowstone gases and the timing of terrestrial volatile accretion. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 13997-14004.	3.3	35
20	Heavy halogen geochemistry of martian shergottite meteorites and implications for the halogen composition of the depleted shergottite mantle source. American Mineralogist, 2020, 105, 289-306.	0.9	4
21	A Role for Subducted Oceanic Crust in Generating the Depleted Midâ€Ocean Ridge Basalt Mantle. Geochemistry, Geophysics, Geosystems, 2020, 21, e2020GC009148.	1.0	10
22	Hydrothermal 15N15N abundances constrain the origins of mantle nitrogen. Nature, 2020, 580, 367-371.	13.7	50
23	Occurrence and Sources of Radium in Groundwater Associated with Oil Fields in the Southern San Joaquin Valley, California. Environmental Science & Technology, 2019, 53, 9398-9406.	4.6	21
24	Mechanisms and rates of 4He, 40Ar, and H2 production and accumulation in fracture fluids in Precambrian Shield environments. Chemical Geology, 2019, 530, 119322.	1.4	31
25	A Novel Method for the Extraction, Purification, and Characterization of Noble Gases in Produced Fluids. Geochemistry, Geophysics, Geosystems, 2019, 20, 5588-5597.	1.0	8
26	Halogen Heterogeneity in the Lithosphere and Evolution of Mantle Halogen Abundances Inferred From Intraplate Mantle Xenoliths. Geochemistry, Geophysics, Geosystems, 2019, 20, 952-973.	1.0	8
27	Origins of the terrestrial Hf-Nd mantle array: Evidence from a combined geodynamical-geochemical approach. Earth and Planetary Science Letters, 2019, 518, 26-39.	1.8	26
28	Forearc carbon sink reduces long-term volatile recycling into the mantle. Nature, 2019, 568, 487-492.	13.7	97
29	Recycled Components in Mantle Plumes Deduced From Variations in Halogens (Cl, Br, and I), Trace Elements, and 3 He/ 4 He Along the Hawaiianâ€Emperor Seamount Chain. Geochemistry, Geophysics, Geosystems, 2019, 20, 277-294.	1.0	10
30	Dual in-aquifer and near surface processes drive arsenic mobilization in Cambodian groundwaters. Science of the Total Environment, 2019, 659, 699-714.	3.9	25
31	Noble gases in conventional and unconventional petroleum systems. Geological Society Special Publication, 2018, 468, 127-149.	0.8	21
32	He, Ne and Ar â€˜snapshotâ€™ of the subcontinental lithospheric mantle from CO2 well gases. Chemical Geology, 2018, 480, 116-127.	1.4	7
33	Tracing ancient hydrogeological fracture network age and compartmentalisation using noble gases. Geochimica Et Cosmochimica Acta, 2018, 222, 340-362.	1.6	53
34	Noble Gases in Deepwater Oils of the U.S. Gulf of Mexico. Geochemistry, Geophysics, Geosystems, 2018, 19, 4218-4235.	1.0	13
35	Halogen behaviour in subduction zones: Eclogite facies rocks from the Western and Central Alps. Geochimica Et Cosmochimica Acta, 2018, 243, 1-23.	1.6	15
36	Determining gas expulsion vs retention during hydrocarbon generation in the Eagle Ford Shale using noble gases. Geochimica Et Cosmochimica Acta, 2018, 241, 240-254.	1.6	28

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37	Tracing enhanced oil recovery signatures in casing gases from the Lost Hills oil field using noble gases. Earth and Planetary Science Letters, 2018, 496, 57-67.	1.8	29
38	End-Permian extinction amplified by plume-induced release of recycled lithospheric volatiles. Nature Geoscience, 2018, 11, 682-687.	5.4	55
39	South African crustal fracture fluids preserve paleometeoric water signatures for up to tens of millions of years. Chemical Geology, 2018, 493, 379-395.	1.4	22
40	Delineating sources of groundwater recharge in an arsenic-affected Holocene aquifer in Cambodia using stable isotope-based mixing models. Journal of Hydrology, 2018, 557, 321-334.	2.3	31
41	Noble Gases. Encyclopedia of Earth Sciences Series, 2018, , 1003-1008.	0.1	0
42	Helium. Techniques in Dentistry and Oral & Maxillofacial Surgery, 2018, , 1-4.	0.0	0
43	Noble gases fingerprint a metasedimentary fluid source in the Macraes orogenic gold deposit, New Zealand. Mineralium Deposita, 2017, 52, 197-209.	1.7	21
44	Tritium Tracers of Rapid Surface Water Ingression into Arsenic-bearing Aquifers in the Lower Mekong Basin, Cambodia. Procedia Earth and Planetary Science, 2017, 17, 845-848.	0.6	8
45	The relative abundances of resolved l2CH2D2 and 13CH3D and mechanisms controlling isotopic bond ordering in abiotic and biotic methane gases. Geochimica Et Cosmochimica Acta, 2017, 203, 235-264.	1.6	125
46	The origin, history and role of water in the evolution of the inner Solar System. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20170108.	1.6	5
47	Halogen variations through the quenched margin of a <scp>M</scp>ORB lava: Evidence for direct assimilation of seawater during eruption. Geochemistry, Geophysics, Geosystems, 2017, 18, 2413-2428.	1.0	5
48	Noble gases recycled into the mantle through cold subduction zones. Earth and Planetary Science Letters, 2017, 471, 65-73.	1.8	23
49	High resolution profile of inorganic aqueous geochemistry and key redox zones in an arsenic bearing aquifer in Cambodia. Science of the Total Environment, 2017, 590-591, 540-553.	3.9	32
50	The noble gas isotope record of hydrocarbon field formation time scales. Chemical Geology, 2017, 471, 141-152.	1.4	15
51	Rapid reactions between CO2, brine and silicate minerals during geological carbon storage: Modelling based on a field CO2 injection experiment. Chemical Geology, 2017, 468, 17-31.	1.4	29
52	Halogens in chondritic meteorites and terrestrial accretion. Nature, 2017, 551, 614-618.	13.7	58
53	Effect of water on the fluorine and chlorine partitioning behavior between olivine and silicate melt. Contributions To Mineralogy and Petrology, 2017, 172, 15.	1.2	15
54	Slab-derived halogens and noble gases illuminate closed system processes controlling volatile element transport into the mantle wedge. Earth and Planetary Science Letters, 2017, 457, 106-116.	1.8	28

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55	Determining fluid migration and isolation times in multiphase crustal domains using noble gases. Geology, 2017, 45, 775-778.	2.0	27
56	Noble Gases. Encyclopedia of Earth Sciences Series, 2017, , 1-6.	0.1	1
57	Sedimentary halogens and noble gases within Western Antarctic xenoliths: Implications of extensive volatile recycling to the sub continental lithospheric mantle. Geochimica Et Cosmochimica Acta, 2016, 176, 139-156.	1.6	46
58	Noble gases solubility models of hydrocarbon charge mechanism in the Sleipner Vest gas field. Geochimica Et Cosmochimica Acta, 2016, 194, 291-309.	1.6	65
59	Estimating the recharge properties of the deep ocean using noble gases and helium isotopes. Journal of Geophysical Research: Oceans, 2016, 121, 5959-5979.	1.0	21
60	Note: A dual temperature closed loop batch reactor for determining the partitioning of trace gases within CO2-water systems. Review of Scientific Instruments, 2016, 87, 016102.	0.6	0
61	Determination of halogen abundances in terrestrial and extraterrestrial samples by the analysis of noble gases produced by neutron irradiation. Chemical Geology, 2016, 437, 77-87.	1.4	32
62	The contribution of hydrothermally altered ocean crust to the mantle halogen and noble gas cycles. Geochimica Et Cosmochimica Acta, 2016, 183, 106-124.	1.6	64
63	Tracing organic matter composition and distribution and its role on arsenic release in shallow Cambodian groundwaters. Geochimica Et Cosmochimica Acta, 2016, 178, 160-177.	1.6	90
64	Disequilibrium degassing model determination of the 3He concentration and 3He/22Ne of the MORB and OIB mantle sources. Earth and Planetary Science Letters, 2015, 410, 128-139.	1.8	9
65	Determining noble gas partitioning within a CO2â€“H2O system at elevated temperatures and pressures. Geochimica Et Cosmochimica Acta, 2015, 159, 112-125.	1.6	26
66	Optimizing Noble Gasâ€“Water Interactions via Monte Carlo Simulations. Journal of Physical Chemistry B, 2015, 119, 14486-14495.	1.2	14
67	Experimental partitioning of F and Cl between olivine, orthopyroxene and silicate melt at Earth's mantle conditions. Chemical Geology, 2015, 416, 65-78.	1.4	62
68	Use of lithium tracers to quantify drilling fluid contamination for groundwater monitoring in Southeast Asia. Applied Geochemistry, 2015, 63, 190-202.	1.4	24
69	The contribution of the Precambrian continental lithosphere to global H2 production. Nature, 2014, 516, 379-382.	13.7	201
70	Drilling and sampling a natural CO2 reservoir: Implications for fluid flow and CO2-fluidâ€“rock reactions during CO2 migration through the overburden. Chemical Geology, 2014, 369, 51-82.	1.4	96
71	Pond-Derived Organic Carbon Driving Changes in Arsenic Hazard Found in Asian Groundwaters. Environmental Science & Technology, 2013, 47, 7085-7094.	4.6	106
72	Deep fracture fluids isolated in the crust since the Precambrian era. Nature, 2013, 497, 357-360.	13.7	148

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73	Scientific drilling and downhole fluid sampling of a natural CO₂ reservoir, Green River, Utah. Scientific Drilling, 2013, 16, 33-43.	1.0	28
74	Noble gas and carbon isotopic evidence for CO2-driven silicate dissolution in a recent natural CO2 field. Earth and Planetary Science Letters, 2012, 341-344, 10-19.	1.8	26
75	Using 3He/4He isotope ratios to identify the source of deep reservoir contributions to shallow fluids and soil gas. Chemical Geology, 2012, 304-305, 142-150.	1.4	22
76	Identifying and quantifying natural CO2 sequestration processes over geological timescales: The Jackson Dome CO2 Deposit, USA. Geochimica Et Cosmochimica Acta, 2012, 86, 257-275.	1.6	56
77	A dash of deep nebula on the rocks. Nature, 2012, 486, 40-41.	13.7	0
78	Constraining the timing of microbial methane generation in an organic-rich shale using noble gases, Illinois Basin, USA. Chemical Geology, 2011, 287, 27-40.	1.4	56
79	In search of a hidden long-term isolated sub-chondritic 142Nd/144Nd reservoir in the deep mantle: Implications for the Nd isotope systematics of the Earth. Geochimica Et Cosmochimica Acta, 2010, 74, 738-750.	1.6	45
80	Seawater-derived noble gases and halogens preserved in exhumed mantle wedge peridotite. Earth and Planetary Science Letters, 2010, 294, 163-172.	1.8	113
81	Meteorite Kr in Earthâ€™s Mantle Suggests a Late Accretionary Source for the Atmosphere. Science, 2009, 326, 1522-1525.	6.0	94
82	Solubility trapping in formation water as dominant CO2 sink in natural gas fields. Nature, 2009, 458, 614-618.	13.7	405
83	Insights into deep carbon derived from noble gases. Nature Geoscience, 2009, 2, 543-547.	5.4	39
84	A multiple-system study of the geochemical evolution of the mantle with force-balanced plates and thermochemical effects. Earth and Planetary Science Letters, 2008, 276, 1-13.	1.8	97
85	The noble gas geochemistry of natural CO2 gas reservoirs from the Colorado Plateau and Rocky Mountain provinces, USA. Geochimica Et Cosmochimica Acta, 2008, 72, 1174-1198.	1.6	208
86	Discovery of underground argon with a low level of radioactive³⁹Ar and possible applications to WIMP dark matter detectors. Journal of Physics: Conference Series, 2008, 120, 042015.	0.3	9
87	What CO ₂ well gases tell us about the origin of noble gases in the mantle and their relationship to the atmosphere. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 4183-4203.	1.6	39
88	The geochemical and isotopic composition of ground waters in West Bengal: tracing ground-surface water interaction and its role in arsenic release. Mineralogical Magazine, 2008, 72, 441-444.	0.6	15
89	Earth holds its breath. Nature, 2007, 449, 294-296.	13.7	9
90	4He dating of groundwater associated with hydrocarbon reservoirs. Chemical Geology, 2006, 226, 309-327.	1.4	70

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91	Seawater subduction controls the heavy noble gas composition of the mantle. Nature, 2006, 441, 186-191.	13.7	226
92	Neon isotopes constrain convection and volatile origin in the Earth's mantle. Nature, 2005, 433, 33-38.	13.7	145
93	Natural Geochemical Analogues for Carbon Dioxide Storage in Deep Geological Porous Reservoirs, a United Kingdom Perspective. Oil and Gas Science and Technology, 2005, 60, 33-49.	1.4	86
94	Noble gas tracing of groundwater/coalbed methane interaction in the San Juan Basin, USA. Geochimica Et Cosmochimica Acta, 2005, 69, 5413-5428.	1.6	128
95	Noble gas models of mantle structure and reservoir mass transfer. Geophysical Monograph Series, 2005, , 9-26.	0.1	4
96	Isotopic analysis of natural CO2 fieldsHow long has nature stored CO2 underground?. , 2005, , 1375-1379.		5
97	Selected isotope applications in cosmochemistry and geochemistry. Nuclear Physics News, 2003, 13, 22-27.	0.1	0
98	GEOCHEMISTRY: Tiny Tracers Tell Tall Tales. Science, 2002, 296, 1247-1248.	6.0	9
99	Numerical models, geochemistry and the zeroâ€“paradox nobleâ€“gas mantle. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2002, 360, 2611-2631.	1.6	61
100	Production, Release and Transport of Noble Gases in the Continental Crust. Reviews in Mineralogy and Geochemistry, 2002, 47, 481-538.	2.2	397
101	Tracing Fluid Origin, Transport and Interaction in the Crust. Reviews in Mineralogy and Geochemistry, 2002, 47, 539-614.	2.2	244
102	Models for Distribution of Terrestrial Noble Gases and Evolution of the Atmosphere. Reviews in Mineralogy and Geochemistry, 2002, 47, 411-480.	2.2	105
103	An Overview of Noble Gas Geochemistry and Cosmochemistry. Reviews in Mineralogy and Geochemistry, 2002, 47, 1-19.	2.2	90
104	Regional groundwater focusing of nitrogen and noble gases into the Hugoton-Panhandle giant gas field, USA. Geochimica Et Cosmochimica Acta, 2002, 66, 2483-2497.	1.6	137
105	13. Tracing Fluid Origin, Transport and Interaction in the Crust. , 2002, , 539-614.		218
106	Mantle Mixing: The Generation, Preservation, and Destruction of Chemical Heterogeneity. Annual Review of Earth and Planetary Sciences, 2002, 30, 493-525.	4.6	224
107	Noble Gases. , 2002, , .		34
108	12. Production, Release and Transport of Noble Gases in the Continental Crust. , 2002, , 481-538.		30

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109	A dynamical investigation of the heat and helium imbalance. Earth and Planetary Science Letters, 2001, 188, 421-434.	1.8	49
110	300-Myr-old magmatic CO2 in natural gas reservoirs of the west Texas Permian basin. Nature, 2001, 409, 327-331.	13.7	117
111	Noble Gases in Mantle Plumes. Science, 2001, 291, 2269a-2269.	6.0	25
112	The origin of air-like noble gases in MORB and OIB. Earth and Planetary Science Letters, 2000, 180, 39-48.	1.8	95
113	Determining paleotemperature and other variables by using an error-weighted, nonlinear inversion of noble gas concentrations in water. Geochimica Et Cosmochimica Acta, 1999, 63, 2315-2336.	1.6	120
114	Dynamical models of mantle volatile evolution and the role of phase transitions and temperature-dependent rheology. Journal of Geophysical Research, 1999, 104, 7137-7151.	3.3	99
115	Noble gases in the Cameroon line and the He, Ne, and Ar isotopic compositions of high Î¼ (HIMU) mantle. Journal of Geophysical Research, 1999, 104, 29509-29527.	3.3	86
116	Applications of Multiple Collector-ICPMS to Cosmochemistry, Geochemistry, and Paleoceanography. Geochimica Et Cosmochimica Acta, 1998, 62, 919-940.	1.6	256
117	Resolving the mantle He/Ne and crustal 21Ne/22Ne in well gases. Earth and Planetary Science Letters, 1997, 152, 233-249.	1.8	63
118	A Magnus opus: Helium, neon, and argon isotopes in a North Sea oilfield. Geochimica Et Cosmochimica Acta, 1996, 60, 831-849.	1.6	85
119	The use of natural He, Ne and Ar isotopes to study hydrocarbon-related fluid provenance, migration and mass balance in sedimentary basins. Geological Society Special Publication, 1994, 78, 347-361.	0.8	22
120	Helium and neon isotope systematics in carbon dioxide-rich and hydrocarbon-rich gas reservoirs. Geochimica Et Cosmochimica Acta, 1994, 58, 5279-5290.	1.6	49
121	Thermal constraints on crustal rare gas release and migration: Evidence from Alpine fluid inclusions. Geochimica Et Cosmochimica Acta, 1994, 58, 4333-4348.	1.6	48
122	Carbon, helium, neon and argon isotopes in a Po basin (northern Italy) natural gas field. Chemical Geology, 1993, 106, 429-440.	1.4	69
123	The use of natural He, Ne and Ar isotopes as constraints on hydrocarbon transport. Petroleum Geology Conference Proceedings, 1993, 4, 1339-1345.	0.7	3
124	The nature of mantle neon contributions to Vienna Basin hydrocarbon reservoirs. Earth and Planetary Science Letters, 1992, 113, 553-567.	1.8	57
125	Rare gas constraints on hydrocarbon accumulation, crustal degassing and groundwater flow in the Pannonian Basin. Earth and Planetary Science Letters, 1991, 105, 229-246.	1.8	178