Roberta L Rudnick

List of Publications by Year in Descending Order

117 papers	15,723 citations	57 h-index	122 g-index
122 ext. papers	17,367 ext. citations	7.1 avg, IF	6.63 L-index

#	Paper	IF	Citations
117	Zinc isotope evidence for carbonate alteration of oceanic crustal protoliths of cratonic eclogites. *Earth and Planetary Science Letters*, **2022**, 580, 117394	5.3	1
116	History of crustal growth in Africa and the Americas from detrital zircon and Nd isotopes in glacial diamictites. *Precambrian Research*, **2022**, 373, 106641	3.9	2
115	Homogenising the upper continental crust: The Si isotope evolution of the crust recorded by ancient glacial diamictites. *Earth and Planetary Science Letters*, **2022**, 591, 117620	5.3	0
114	Assessing molybdenum isotope fractionation during continental weathering as recorded by weathering profiles in saprolites and bauxites. *Chemical Geology*, **2021**, 566, 120103	4.2	3
113	Stuart Ross Taylor (1925–2021): A tribute to his life and scientific career. *Meteoritics and Planetary Science*, **2021**, 56, 1784-1791	2.8	
112	Zirconium isotopic composition of the upper continental crust through time. *Earth and Planetary Science Letters*, **2021**, 572, 117086	5.3	0
111	The origin of low-MgO eclogite xenoliths from Obnazhennaya kimberlite, Siberian craton. *Contributions To Mineralogy and Petrology*, **2020**, 175, 1	3.5	5
110	Potassium isotope fractionation during continental weathering and implications for global K isotopic balance. *Geochimica Et Cosmochimica Acta*, **2020**, 278, 261-271	5.5	34
109	Molybdenum isotope fractionation in glacial diamictites tracks the onset of oxidative weathering of the continental crust. *Earth and Planetary Science Letters*, **2020**, 534, 116083	5.3	12
108	Four-dimensional thermal evolution of the East African Orogen: accessory phase petrochronology of crustal profiles through the Tanzanian Craton and Mozambique Belt, northeastern Tanzania. *Contributions To Mineralogy and Petrology*, **2020**, 175, 1	3.5	4
107	Heterogeneous potassium isotopic composition of the upper continental crust. *Geochimica Et Cosmochimica Acta*, **2020**, 278, 122-136	5.5	37
106	Rapid mantle convection drove massive crustal thickening in the late Archean. *Geochimica Et Cosmochimica Acta*, **2020**, 278, 6-15	5.5	13
105	Molybdenum contents of sulfides in ancient glacial diamictites: Implications for molybdenum delivery to the oceans prior to the Great Oxidation Event. *Geochimica Et Cosmochimica Acta*, **2020**, 278, 30-50	5.5	3
104	How mafic was the Archean upper continental crust? Insights from Cu and Ag in ancient glacial diamictites. *Geochimica Et Cosmochimica Acta*, **2020**, 278, 16-29	5.5	20
103	Lithium isotopes may trace subducting slab signatures in Aleutian arc lavas and intrusions. *Geochimica Et Cosmochimica Acta*, **2020**, 278, 322-339	5.5	4
102	Reconciling the discrepancy between the dehydration rates in mantle olivine and pyroxene during xenolith emplacement. *Geochimica Et Cosmochimica Acta*, **2019**, 267, 179-195	5.5	14
101	Methanogenesis sustained by sulfide weathering during the Great Oxidation Event. *Nature Geoscience*, **2019**, 12, 296-300	18.3	20

100	Multidisciplinary Constraints on the Abundance of Diamond and Eclogite in the Cratonic Lithosphere. *Geochemistry, Geophysics, Geosystems*, **2018**, 19, 2062-2086	3.6	27
99	Tungsten-182 in the upper continental crust: Evidence from glacial diamictites. *Chemical Geology*, **2018**, 494, 144-152	4.2	27
98	Geochemistry of molybdenum in the continental crust. *Geochimica Et Cosmochimica Acta*, **2018**, 238, 36-54	5.5	24
97	Barium isotopic composition of the upper continental crust. *Geochimica Et Cosmochimica Acta*, **2018**, 233, 33-49	5.5	41
96	Lithium Isotope Geochemistry. *Reviews in Mineralogy and Geochemistry*, **2017**, 82, 165-217	7.1	94
95	The behavior of chalcophile elements during magmatic differentiation as observed in Kilauea Iki lava lake, Hawaii. *Geochimica Et Cosmochimica Acta*, **2017**, 210, 71-96	5.5	46
94	Multi-mode Li diffusion in natural zircons: Evidence for diffusion in the presence of step-function concentration boundaries. *Earth and Planetary Science Letters*, **2017**, 474, 110-119	5.3	28
93	6 Lithium Isotope Geochemistry **2017**,		4
92	Platinum-group element abundances and Re□Os isotopic systematics of the upper continental crust through time: Evidence from glacial diamictites. *Geochimica Et Cosmochimica Acta*, **2016**, 191, 1-16	5.5	43
91	Archean upper crust transition from mafic to felsic marks the onset of plate tectonics. *Science*, **2016**, 351, 372-5	33.3	250
90	Compositional evolution of the upper continental crust through time, as constrained by ancient glacial diamictites. *Geochimica Et Cosmochimica Acta*, **2016**, 186, 316-343	5.5	62
89	Insights into chemical weathering of the upper continental crust from the geochemistry of ancient glacial diamictites. *Geochimica Et Cosmochimica Acta*, **2016**, 176, 96-117	5.5	29
88	Evidence for high-temperature fractionation of lithium isotopes during differentiation of the Moon. *Meteoritics and Planetary Science*, **2016**, 51, 1046-1062	2.8	10
87	The behavior of magnesium isotopes in low-grade metamorphosed mudrocks. *Geochimica Et Cosmochimica Acta*, **2015**, 165, 435-448	5.5	30
86	Europium anomalies constrain the mass of recycled lower continental crust. *Geology*, **2015**, 43, 703-706	5	19
85	Processes controlling □Li in rivers illuminated by study of streams and groundwaters draining basalts. *Earth and Planetary Science Letters*, **2015**, 409, 212-224	5.3	51
84	Magnesium isotope evidence for a recycled origin of cratonic eclogites. *Geology*, **2015**, G37259.1	5	6
83	New perspectives on the Li isotopic composition of the upper continental crust and its weathering signature. *Earth and Planetary Science Letters*, **2015**, 428, 181-192	5.3	68

82	Deformation, hydration, and anisotropy of the lithospheric mantle in an active rift: Constraints from mantle xenoliths from the North Tanzanian Divergence of the East African Rift. *Tectonophysics*, **2015**, 639, 34-55	3.1	33
81	Big insights from tiny peridotites: Evidence for persistence of Precambrian lithosphere beneath the eastern North China Craton. *Tectonophysics*, **2015**, 650, 104-112	3.1	19
80	Determination of Ga, Ge, Mo, Ag, Cd, In, Sn, Sb, W, Tl and Bi in USGS Whole-Rock Reference Materials by Standard Addition ICP-MS. *Geostandards and Geoanalytical Research*, **2015**, 39, 371-379	3.6	18
79	Plume-cratonic lithosphere interaction recorded by water and other trace elements in peridotite xenoliths from the Labait volcano, Tanzania. *Geochemistry, Geophysics, Geosystems*, **2015**, 16, 1687-1710	3.6	27
78	Onset of oxidative weathering of continents recorded in the geochemistry of ancient glacial diamictites. *Earth and Planetary Science Letters*, **2014**, 408, 87-99	5.3	44
77	Sedimentary input to the source of Lesser Antilles lavas: A Li perspective. *Geochimica Et Cosmochimica Acta*, **2014**, 144, 43-58	5.5	35
76	Massive magnesium depletion and isotope fractionation in weathered basalts. *Geochimica Et Cosmochimica Acta*, **2014**, 135, 336-349	5.5	81
75	Granulite-Facies Xenoliths in Rift Basalts of Northern Tanzania: Age, Composition and Origin of Archean Lower Crust. *Journal of Petrology*, **2014**, 55, 1243-1286	3.9	18
74	Influence of chemical weathering on the composition of the continental crust: Insights from Li and Nd isotopes in bauxite profiles developed on Columbia River Basalts. *Geochimica Et Cosmochimica Acta*, **2013**, 115, 73-91	5.5	70
73	A reference Earth model for the heat-producing elements and associated geoneutrino flux. *Geochemistry, Geophysics, Geosystems*, **2013**, 14, 2003-2029	3.6	103
72	Heterogeneous magnesium isotopic composition of the lower continental crust: A xenolith perspective. *Geochemistry, Geophysics, Geosystems*, **2013**, 14, 3844-3856	3.6	32
71	Comparative Sr-Nd-Hf-Os-Pb isotope systematics of xenolithic peridotites from Yangyuan, North China Craton: Additional evidence for a Paleoproterozoic age. *Chemical Geology*, **2012**, 332-333, 1-14	4.2	16
70	Formation of cratonic lithosphere: An integrated thermal and petrological model. *Lithos*, **2012**, 149, 4-15	2.9	128
69	The behavior of lithium in amphibolite- to granulite-facies rocks of the Ivrea-Verbano Zone, NW Italy. *Chemical Geology*, **2011**, 289, 76-85	4.2	28
68	Mapping lithospheric boundaries using Os isotopes of mantle xenoliths: An example from the North China Craton. *Geochimica Et Cosmochimica Acta*, **2011**, 75, 3881-3902	5.5	107
67	A lithium isotopic study of sub-greenschist to greenschist facies metamorphism in an accretionary prism, New Zealand. *Earth and Planetary Science Letters*, **2011**, 301, 213-221	5.3	34
66	Thermal history and origin of the Tanzanian Craton from Pb isotope thermochronology of feldspars from lower crustal xenoliths. *Earth and Planetary Science Letters*, **2011**, 301, 493-501	5.3	22
65	GSD-1G and MPI-DING Reference Glasses for In Situ and Bulk Isotopic Determination. *Geostandards and Geoanalytical Research*, **2011**, 35, 193-226	3.6	94

64	Constraints on continental crustal mass loss via chemical weathering using lithium and its isotopes. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 20873-80	11.5	46
63	Evolution of the lithospheric mantle beneath the East African Rift in Tanzania and its potential signatures in rift magmas **2011**,		16
62	Processes controlling lithium isotopic distribution in contact aureoles: A case study of the Florence County pegmatites, Wisconsin. *Geochemistry, Geophysics, Geosystems*, **2010**, 11, n/a-n/a	3.6	22
61	Heterogeneous magnesium isotopic composition of the upper continental crust. *Geochimica Et Cosmochimica Acta*, **2010**, 74, 6867-6884	5.5	170
60	Processes controlling highly siderophile element fractionations in xenolithic peridotites and their influence on Os isotopes. *Earth and Planetary Science Letters*, **2010**, 297, 287-297	5.3	61
59	Contrasting lithium and magnesium isotope fractionation during continental weathering. *Earth and Planetary Science Letters*, **2010**, 300, 63-71	5.3	194
58	Temporal Evolution of the Lithospheric Mantle beneath the Eastern North China Craton. *Journal of Petrology*, **2009**, 50, 1857-1898	3.9	207
57	Interpreting ages from Re□Os isotopes in peridotites. *Lithos*, **2009**, 112, 1083-1095	2.9	145
56	Insights into Li and Li isotope cycling and sub-arc metasomatism from veined mantle xenoliths, Kamchatka. *Contributions To Mineralogy and Petrology*, **2009**, 158, 197-222	3.5	67
55	Origins of non-equilibrium lithium isotopic fractionation in xenolithic peridotite minerals: Examples from Tanzania. *Chemical Geology*, **2009**, 258, 17-27	4.2	54
54	Lithium isotopic systematics of A-type granites and their mafic enclaves: Further constraints on the Li isotopic composition of the continental crust. *Chemical Geology*, **2009**, 262, 370-379	4.2	78
53	Li and □Li in mudrocks from the British Caledonides: Metamorphism and source influences. *Geochimica Et Cosmochimica Acta*, **2009**, 73, 7325-7340	5.5	40
52	Sodic Pyroxene and Sodic Amphibole as Potential Reference Materials for In Situ Lithium Isotope Determinations by SIMS. *Geostandards and Geoanalytical Research*, **2008**, 32, 295-310	3.6	9
51	Tracking the lithium isotopic evolution of the mantle using carbonatites. *Earth and Planetary Science Letters*, **2008**, 265, 726-742	5.3	76
50	Recycling deep cratonic lithosphere and generation of intraplate magmatism in the North China Craton. *Earth and Planetary Science Letters*, **2008**, 270, 41-53	5.3	365
49	Lithium in Jack Hills zircons: Evidence for extensive weathering of Earth's earliest crust. *Earth and Planetary Science Letters*, **2008**, 272, 666-676	5.3	148
48	Lithium isotopic composition and concentration of the deep continental crust. *Chemical Geology*, **2008**, 255, 47-59	4.2	82
47	Li-Sr-Nd isotope signatures of the plume and cratonic lithospheric mantle beneath the margin of the rifted Tanzanian craton (Labait). *Contributions To Mineralogy and Petrology*, **2007**, 155, 79-92	3.5	64

46	The Li isotopic composition of Oldoinyo Lengai: Nature of the mantle sources and lack of isotopic fractionation during carbonatite petrogenesis. *Earth and Planetary Science Letters*, **2007**, 254, 77-89	5.3	63
45	Lithium elemental and isotopic disequilibrium in minerals from peridotite xenoliths from far-east Russia: Product of recent melt/fluid–rock reaction. *Earth and Planetary Science Letters*, **2007**, 256, 278-293	5.3	127
44	Re–Os evidence for the age and origin of peridotites from the Dabie–Sulu ultrahigh pressure metamorphic belt, China. *Chemical Geology*, **2007**, 236, 323-338	4.2	44
43	Limited lithium isotopic fractionation during progressive metamorphic dehydration in metapelites: A case study from the Onawa contact aureole, Maine. *Chemical Geology*, **2007**, 239, 1-12	4.2	56
42	Arrested kinetic Li isotope fractionation at the margin of the Ilímaussaq complex, South Greenland: Evidence for open-system processes during final cooling of peralkaline igneous rocks. *Chemical Geology*, **2007**, 246, 207-230	4.2	58
41	Lithium isotopic systematics of granites and pegmatites from the Black Hills, South Dakota. *American Mineralogist*, **2006**, 91, 1488-1498	2.9	91
40	Diffusion-driven extreme lithium isotopic fractionation in country rocks of the Tin Mountain pegmatite. *Earth and Planetary Science Letters*, **2006**, 243, 701-710	5.3	172
39	Highly siderophile element composition of the Earth's primitive upper mantle: Constraints from new data on peridotite massifs and xenoliths. *Geochimica Et Cosmochimica Acta*, **2006**, 70, 4528-4550	5.5	423
38	Microstructure, texture and seismic anisotropy of the lithospheric mantle above a mantle plume: Insights from the Labait volcano xenoliths (Tanzania). *Earth and Planetary Science Letters*, **2005**, 232, 295-314	5.3	106
37	Recycling lower continental crust in the North China craton. *Nature*, **2004**, 432, 892-7	50.4	1314
36	Petrology and geochemistry of spinel peridotite xenoliths from Hannuoba and Qixia, North China craton. *Lithos*, **2004**, 77, 609-637	2.9	451
35	Extreme lithium isotopic fractionation during continental weathering revealed in saprolites from South Carolina. *Chemical Geology*, **2004**, 212, 45-57	4.2	211
34	Lithium isotopic composition and concentration of the upper continental crust. *Geochimica Et Cosmochimica Acta*, **2004**, 68, 4167-4178	5.5	314
33	Standards for publication of isotope ratio and chemical data in Chemical Geology. *Chemical Geology* , **2003**, 202, 1-4	4.2	82
32	Extremely light Li in orogenic eclogites: The role of isotope fractionation during dehydration in subducted oceanic crust. *Earth and Planetary Science Letters*, **2003**, 208, 279-290	5.3	199
31	Osmium Isotope Constraints on Tectonic Evolution of the Lithosphere in the Southwestern United States. *International Geology Review*, **2002**, 44, 501-511	2.3	7
30	Geochemistry of xenolithic eclogites from West Africa, part 2: origins of the high MgO eclogites. *Geochimica Et Cosmochimica Acta*, **2002**, 66, 4325-4345	5.5	90
29	Re–Os evidence for replacement of ancient mantle lithosphere beneath the North China craton. *Earth and Planetary Science Letters*, **2002**, 198, 307-322	5.3	728

28	Re?Os and U?Pb geochronological constraints on the eclogite?tonalite connection in the Archean Man Shield, West Africa. *Precambrian Research*, **2002**, 118, 267-283	3.9	58
27	Preservation of ancient and fertile lithospheric mantle beneath the southwestern United States. *Nature*, **2001**, 411, 69-73	50.4	147
26	Monazite-Xenotime-Garnet Equilibrium in Metapelites and a New Monazite-Garnet Thermometer. *Journal of Petrology*, **2001**, 42, 2083-2107	3.9	273
25	Deep lithospheric dynamics beneath the Sierra Nevada during the Mesozoic and Cenozoic as inferred from xenolith petrology. *Geochemistry, Geophysics, Geosystems*, **2001**, 2, n/a-n/a	3.6	56
24	Geochemistry of xenolithic eclogites from West Africa, part I: A link between low MgO eclogites and archean crust formation. *Geochimica Et Cosmochimica Acta*, **2001**, 65, 1499-1527	5.5	179
23	A gravimetric K2OsCl6 standard: Application to precise and accurate Os spike calibration. *Geochimica Et Cosmochimica Acta*, **2001**, 65, 2113-2127	5.5	30
22	Rutile-bearing refractory eclogites: missing link between continents and depleted mantle. *Science*, **2000**, 287, 278-81	33.3	393
21	Petrologic and geochemical investigation of carbonates in peridotite xenoliths from northeastern Tanzania. *Contributions To Mineralogy and Petrology*, **2000**, 139, 470-484	3.5	71
20	Precise elemental and isotope ratio determination by simultaneous solution nebulization and laser ablation-ICP-MS: application to U?Pb geochronology. *Chemical Geology*, **2000**, 164, 281-301	4.2	298
19	Tracking the budget of Nb and Ta in the continental crust. *Chemical Geology*, **2000**, 165, 197-213	4.2	387
18	Hf?Nd isotopic evolution of the lower crust. *Earth and Planetary Science Letters*, **2000**, 181, 115-129	5.3	149
17	Osmium isotopic evidence for mesozoic removal of lithospheric mantle beneath the sierra nevada, california. *Science*, **2000**, 289, 1912-6	33.3	104
16	Re-Os systematics of mantle xenoliths from the East African Rift: age, structure, and history of the Tanzanian craton. *Geochimica Et Cosmochimica Acta*, **1999**, 63, 1203-1217	5.5	186
15	Re?Os isotope evidence for the composition, formation and age of the lower continental crust. *Nature*, **1998**, 393, 58-61	50.4	129
14	Geochemical Earth Reference Model (GERM): description of the initiative. *Chemical Geology*, **1998**, 145, 153-159	4.2	20
13	Thermal structure, thickness and composition of continental lithosphere. *Chemical Geology*, **1998**, 145, 395-411	4.2	404
12	Making continental crust. *Nature*, **1995**, 378, 571-578	50.4	996
11	Measured and calculated elastic wave speeds in partially equilibrated mafic granulite xenoliths: Implications for the properties of an underplated lower continental crust. *Journal of Geophysical Research*, **1995**, 100, 10211-10218		30

10	Nature and composition of the continental crust: A lower crustal perspective. *Reviews of Geophysics* , **1995**, 33, 267	23.1	2247
9	Trace elements in diamond inclusions from eclogites reveal link to Archean granites. *Earth and Planetary Science Letters*, **1994**, 128, 199-213	5.3	130
8	Carbonatite metasomatism in the northern Tanzanian mantle: Petrographic and geochemical characteristics. *Earth and Planetary Science Letters*, **1993**, 114, 463-475	5.3	613
7	Age diversity of the deep crust in northern Mexico. *Geology*, **1991**, 19, 1197	5	29
6	The Pb isotopic compositions of lower crustal xenoliths and the evolution of lower crustal Pb. *Earth and Planetary Science Letters*, **1990**, 98, 192-207	5.3	177
5	Dating the lower crust by ion microprobe. *Earth and Planetary Science Letters*, **1987**, 85, 145-161	5.3	72
4	Geochemical constraints on the origin of Archaean tonalitic-trondhjemitic rocks and implications for lower crustal composition. *Geological Society Special Publication*, **1986**, 24, 179-191	1.7	16
3	Rare earth element patterns in Archean high-grade metasediments and their tectonic significance. *Geochimica Et Cosmochimica Acta*, **1986**, 50, 2267-2279	5.5	144
2	Fluid inclusions in high-grade gneisses of the Kapuskasing structural zone, Ontario: metamorphic fluids and uplift/erosion path. *Contributions To Mineralogy and Petrology*, **1984**, 87, 399-406	3.5	36
1	Geochemistry and tectonic affinities of a Proterozoic bimodal igneous suite, west Texas. *Geology*, **1983**, 11, 352	5	15