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List of Publications by Year
in descending order

122 papers	15,779 citations	13827 67 h-index	16127 124 g-index
129 all docs	129 docs citations	129 times ranked	6117 citing authors

#	Article	IF	Citations
1	The deep carbon cycle and melting in Earth's interior. Earth and Planetary Science Letters, 2010, 298, 1-13.	1.8	772
2	A possible role for garnet pyroxenite in the origin of the "garnet signature" in MORB. Contributions To Mineralogy and Petrology, 1996, 124, 185-208.	1.2	721
3	The pMELTS: A revision of MELTS for improved calculation of phase relations and major element partitioning related to partial melting of the mantle to 3 GPa. Geochemistry, Geophysics, Geosystems, 2002, 3, 1-35.	1.0	670
4	Mantle solidus: Experimental constraints and the effects of peridotite composition. Geochemistry, Geophysics, Geosystems, 2000, 1, n/a-n/a.	1.0	640
5	WATER, MELTING, AND THE DEEP EARTH H2O CYCLE. Annual Review of Earth and Planetary Sciences, 2006, 34, 629-653.	4.6	513
6	Partial Melting Experiments of Peridotite + CO2 at 3 GPa and Genesis of Alkalic Ocean Island Basalts. Journal of Petrology, 2007, 48, 2093-2124.	1.1	508
7	Melting in the Earth's deep upper mantle caused by carbon dioxide. Nature, 2006, 440, 659-662.	13.7	462
8	Alkalic magmas generated by partial melting of garnet pyroxenite. Geology, 2003, 31, 481.	2.0	450
9	Compositions of near-solidus peridotite melts from experiments and thermodynamic calculations. Nature, 1995, 375, 308-311.	13.7	411
10	Deep global cycling of carbon constrained by the solidus of anhydrous, carbonated eclogite under upper mantle conditions. Earth and Planetary Science Letters, 2004, 227, 73-85.	1.8	395
11	High-pressure partial melting of garnet pyroxenite: possible mafic lithologies in the source of ocean island basalts. Earth and Planetary Science Letters, 2003, 216, 603-617.	1.8	378
12	Anhydrous Partial Melting Experiments on MORB-like Eclogite: Phase Relations, Phase Compositions and Mineral-Melt Partitioning of Major Elements at 2-3 GPa. Journal of Petrology, 2003, 44, 2173-2201.	1.1	361
13	Carbon-dioxide-rich silicate melt in the Earthâ€™s upper mantle. Nature, 2013, 493, 211-215.	13.7	290
14	Hydrogen partition coefficients between nominally anhydrous minerals and basaltic melts. Geophysical Research Letters, 2004, 31, .	1.5	275
15	Partial melting experiments on a MORB-like pyroxenite between 2 and 3 GPa: Constraints on the presence of pyroxenite in basalt source regions from solidus location and melting rate. Journal of Geophysical Research, 2003, 108, .	3.3	268
16	Storage capacity of H2O in nominally anhydrous minerals in the upper mantle. Earth and Planetary Science Letters, 2005, 236, 167-181.	1.8	263
17	Immiscible Transition from Carbonate-rich to Silicate-rich Melts in the 3â€‰GPa Melting Interval of Eclogite + CO2 and Genesis of Silica-undersaturated Ocean Island Lavas. Journal of Petrology, 2006, 47, 647-671.	1.1	257
18	Partial melt in the oceanic low velocity zone. Physics of the Earth and Planetary Interiors, 2010, 179, 60-71.	0.7	238

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19	Experimental determination of trace element partitioning between garnet and silica-rich liquid during anhydrous partial melting of MORB-like eclogite. Geochemistry, Geophysics, Geosystems, 2004, 5, n/a-n/a.	1.0	235
20	Dehydration melting of nominally anhydrous mantle: The primacy of partitioning. Physics of the Earth and Planetary Interiors, 2009, 176, 54-68.	0.7	233
21	Trace element partitioning between garnet lherzolite and carbonatite at 6.6 and 8.6ÂGPa with applications to the geochemistry of the mantle and of mantle-derived melts. Chemical Geology, 2009, 262, 57-77.	1.4	231
22	High-pressure Partial Melting of Mafic Lithologies in the Mantle. Journal of Petrology, 2004, 45, 2407-2422.	1.1	227
23	Hydrogen concentration analyses using SIMS and FTIR: Comparison and calibration for nominally anhydrous minerals. Geochemistry, Geophysics, Geosystems, 2003, 4, .	1.0	212
24	Aluminum coordination and the densification of high-pressure aluminosilicate glasses. American Mineralogist, 2005, 90, 1218-1222.	0.9	201
25	Partial melting experiments of bimineralic eclogite and the role of recycled mafic oceanic crust in the genesis of ocean island basalts. Earth and Planetary Science Letters, 2006, 249, 188-199.	1.8	191
26	The Effect of Alkalis on the Silica Content of Mantle-Derived Melts. Geochimica Et Cosmochimica Acta, 1998, 62, 883-902.	1.6	176
27	Calculation of Peridotite Partial Melting from Thermodynamic Models of Minerals and Melts. III. Controls on Isobaric Melt Production and the Effect of Water on Melt Production. Journal of Petrology, 1999, 40, 831-851.	1.1	169
28	High-resolution records of the late Paleocene thermal maximum and circum-Caribbean volcanism: Is there a causal link?. Geology, 1997, 25, 963.	2.0	167
29	The H/C ratios of Earth's near-surface and deep reservoirs, and consequences for deep Earth volatile cycles. Chemical Geology, 2009, 262, 4-16.	1.4	160
30	Calculation of Peridotite Partial Melting from Thermodynamic Models of Minerals and Melts, IV. Adiabatic Decompression and the Composition and Mean Properties of Mid-ocean Ridge Basalts. Journal of Petrology, 2001, 42, 963-998.	1.1	159
31	Calculation of Peridotite Partial Melting from Thermodynamic Models of Minerals and Melts. I. Review of Methods and Comparison with Experiments. Journal of Petrology, 1998, 39, 1091-1115.	1.1	156
32	Hydrogen partitioning between nominally anhydrous upper mantle minerals and melt between 3 and 5ÂGPa and applications to hydrous peridotite partial melting. Chemical Geology, 2009, 262, 42-56.	1.4	154
33	Experimental determination of C, F, and H partitioning between mantle minerals and carbonated basalt, CO 2 /Ba and CO 2 /Nb systematics of partial melting, and the CO 2 contents of basaltic source regions. Earth and Planetary Science Letters, 2015, 412, 77-87.	1.8	152
34	Experimentally determined mineral/melt partitioning of first-row transition elements (FRTE) during partial melting of peridotite at 3GPa. Geochimica Et Cosmochimica Acta, 2013, 104, 232-260.	1.6	145
35	Solubility of molecular hydrogen in silicate melts and consequences for volatile evolution of terrestrial planets. Earth and Planetary Science Letters, 2012, 345-348, 38-48.	1.8	139
36	Calibration of infrared spectroscopy by elastic recoil detection analysis of H in synthetic olivine. Chemical Geology, 2012, 334, 92-98.	1.4	137

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37	Tracing the ingredients for a habitable earth from interstellar space through planet formation. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8965-8970.	3.3	136
38	An analysis of variations in isentropic melt productivity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1997, 355, 255-281.	1.6	133
39	Intercalibration of FTIR and SIMS for hydrogen measurements in glasses and nominally anhydrous minerals. American Mineralogist, 2007, 92, 811-828.	0.9	133
40	Length scales of mantle heterogeneities and their relationship to ocean island basalt geochemistry. Geochimica Et Cosmochimica Acta, 2004, 68, 345-360.	1.6	125
41	Effect of variable carbonate concentration on the solidus of mantle peridotite. American Mineralogist, 2007, 92, 370-379.	0.9	121
42	The effect of bulk composition on the solidus of carbonated eclogite from partial melting experiments at 3ÂGPa. Contributions To Mineralogy and Petrology, 2005, 149, 288-305.	1.2	119
43	Experimental study of clinopyroxenite partial melting and the origin of ultra-calcic melt inclusions. Contributions To Mineralogy and Petrology, 2001, 142, 347-360.	1.2	113
44	Effect of structural transitions on properties of high-pressure silicate melts: 27Al NMR, glass densities, and melt viscosities. American Mineralogist, 2007, 92, 1093-1104.	0.9	111
45	Ventilation of CO2 from a reduced mantle and consequences for the early Martian greenhouse. Earth and Planetary Science Letters, 2008, 270, 147-155.	1.8	108
46	Magma ocean influence on early atmosphere mass and composition. Earth and Planetary Science Letters, 2012, 341-344, 48-57.	1.8	108
47	Comparative deep Earth volatile cycles: The case for C recycling from exosphere/mantle fractionation of major (H2O, C, N) volatiles and from H2O/Ce, CO2/Ba, and CO2/Nb exosphere ratios. Earth and Planetary Science Letters, 2018, 502, 262-273.	1.8	106
48	The composition of the incipient partial melt of garnet peridotite at 3 GPa and the origin of OIB. Earth and Planetary Science Letters, 2011, 308, 380-390.	1.8	104
49	Volatiles beneath mid-ocean ridges: Deep melting, channelised transport, focusing, and metasomatism. Earth and Planetary Science Letters, 2017, 464, 55-68.	1.8	104
50	Water follows carbon: CO2 incites deep silicate melting and dehydration beneath mid-ocean ridges. Geology, 2007, 35, 135.	2.0	102
51	Determination of Fe3+/Î£Fe of XANES basaltic glass standards by MÃ¶ssbauer spectroscopy and its application to the oxidation state of iron in MORB. Chemical Geology, 2018, 479, 166-175.	1.4	101
52	The effect of pressure-induced solid-solid phase transitions on decompression melting of the mantle. Geochimica Et Cosmochimica Acta, 1995, 59, 4489-4506.	1.6	95
53	Calculation of Peridotite Partial Melting from Thermodynamic Models of Minerals and Melts. II. Isobaric Variations in Melts near the Solidus and owing to Variable Source Composition. Journal of Petrology, 1999, 40, 297-313.	1.1	92
54	40Ar39Ar dating of the Skaergaard intrusion. Earth and Planetary Science Letters, 1997, 146, 645-658.	1.8	89

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55	A modified iterative sandwich method for determination of near-solidus partial melt compositions. II. Application to determination of near-solidus melt compositions of carbonated peridotite. Contributions To Mineralogy and Petrology, 2007, 154, 647-661.	1.2	89
56	Constraints on the early delivery and fractionation of Earthâ€™s major volatiles from C/H, C/N, and C/S ratios. American Mineralogist, 2016, 101, 540-553.	0.9	85
57	Correlation of seismic and petrologic thermometers suggests deep thermal anomalies beneath hotspots. Earth and Planetary Science Letters, 2007, 264, 308-316.	1.8	82
58	Activities of nickel, cobalt, and manganese silicates in magmatic liquids and applications to olivine/liquid and to silicate/metal partitioning. Geochimica Et Cosmochimica Acta, 1994, 58, 4109-4126.	1.6	80
59	The effect of titanium on the silica content and on mineral-liquid partitioning of mantle-equilibrated melts. Geochimica Et Cosmochimica Acta, 2001, 65, 2201-2217.	1.6	76
60	Water in Earthâ€™s mantle. Physics Today, 2012, 65, 40-45.	0.3	76
61	Speciation and solubility of reduced Câ€“Oâ€“Hâ€“N volatiles in mafic melt: Implications for volcanism, atmospheric evolution, and deep volatile cycles in the terrestrial planets. Geochimica Et Cosmochimica Acta, 2015, 171, 283-302.	1.6	75
62	Trace-element partitioning between vacancy-rich eclogitic clinopyroxene and silicate melt. American Mineralogist, 2002, 87, 1365-1376.	0.9	73
63	H2O storage capacity of olivine at 5â€“8GPa and consequences for dehydration partial melting of the upper mantle. Earth and Planetary Science Letters, 2012, 345-348, 104-116.	1.8	73
64	Library of Experimental Phase Relations (LEPR): A database and Web portal for experimental magmatic phase equilibria data. Geochemistry, Geophysics, Geosystems, 2008, 9, .	1.0	72
65	Experimental constraints on mantle sulfide melting up to 8 GPa. American Mineralogist, 2016, 101, 181-192.	0.9	71
66	Nitrogen and carbon fractionation during coreâ€“mantle differentiation at shallow depth. Earth and Planetary Science Letters, 2017, 458, 141-151.	1.8	71
67	The effect of Fe on olivine H2O storage capacity: Consequences for H2O in the martian mantle. American Mineralogist, 2011, 96, 1039-1053.	0.9	69
68	A composition-independent quantitative determination of the water content in silicate glasses and silicate melt inclusions by confocal Raman spectroscopy. Contributions To Mineralogy and Petrology, 2005, 150, 631-642.	1.2	68
69	Solubility of CH4 in a synthetic basaltic melt, with applications to atmosphereâ€“magma oceanâ€“core partitioning of volatiles and to the evolution of the Martian atmosphere. Geochimica Et Cosmochimica Acta, 2013, 114, 52-71.	1.6	67
70	The composition of KLB-1 peridotite. American Mineralogist, 2009, 94, 176-180.	0.9	66
71	Hydrogen partitioning between melt, clinopyroxene, and garnet at 3ÂGPa in a hydrous MORB with 6Âwt.% H2O. Contributions To Mineralogy and Petrology, 2008, 156, 607-625.	1.2	64
72	CO2 solubility in Martian basalts and Martian atmospheric evolution. Geochimica Et Cosmochimica Acta, 2011, 75, 5987-6003.	1.6	63

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73	H2O storage capacity of olivine and low-Ca pyroxene from 10 to 13 GPa: consequences for dehydration melting above the transition zone. Contributions To Mineralogy and Petrology, 2012, 163, 297-316.	1.2	61
74	(231Pa/235U)-(230Th/238U) of young mafic volcanic rocks from Nicaragua and Costa Rica and the influence of flux melting on U-series systematics of arc lavas. Geochimica Et Cosmochimica Acta, 2002, 66, 4287-4309.	1.6	60
75	Solubility of COH volatiles in graphite-saturated martian basalts. Geochimica Et Cosmochimica Acta, 2014, 129, 54-76.	1.6	59
76	The origin of volatiles in the <scp>E</scp>arth's mantle. Geochemistry, Geophysics, Geosystems, 2017, 18, 3078-3092.	1.0	57
77	The effect of H₂O on partial melting of garnet peridotite at 3.5 GPa. Geochemistry, Geophysics, Geosystems, 2012, 13, .	1.0	55
78	Influence of temperature, composition, silica activity and oxygen fugacity on the H2O storage capacity of olivine at 8ÂGPa. Contributions To Mineralogy and Petrology, 2008, 156, 595-605.	1.2	54
79	A first-principles investigation of hydrous defects and IR frequencies in forsterite: The case for Si vacancies. American Mineralogist, 2011, 96, 1475-1479.	0.9	53
80	New software models thermodynamics of magmatic systems. Eos, 1994, 75, 571.	0.1	51
81	Major element analysis of natural silicates by laser ablation ICP-MS. Journal of Analytical Atomic Spectrometry, 2010, 25, 998.	1.6	49
82	Effect of pressure on Fe3+/Î£Fe ratio in a mafic magma and consequences for magma ocean redox gradients. Geochimica Et Cosmochimica Acta, 2017, 204, 83-103.	1.6	48
83	Melting of the Earth's lithospheric mantle inferred from protactiniumâ€“ thoriumâ€“uranium isotopic data. Nature, 2000, 406, 293-296.	13.7	45
84	Equilibrium interface segregation in the diopsideâ€“forsterite system II: Applications of interface enrichment to mantle geochemistry. Geochimica Et Cosmochimica Acta, 2007, 71, 1281-1289.	1.6	43
85	H2O storage capacity of MgSiO3 clinoenstatite at 8â€“13ÂGPa, 1,100â€“1,400Â°C. Contributions To Mineralogy and Petrology, 2007, 154, 663-674.	1.2	36
86	Structural environment of iron and accurate determination of Fe3+/Î£Fe ratios in andesitic glasses by XANES and MÃ¶ssbauer spectroscopy. Chemical Geology, 2016, 428, 48-58.	1.4	36
87	Raman spectroscopy study of C-O-H-N speciation in reduced basaltic glasses: Implications for reduced planetary mantles. Geochimica Et Cosmochimica Acta, 2019, 265, 32-47.	1.6	33
88	Early volatile depletion on planetesimals inferred from Câ€“S systematics of iron meteorite parent bodies. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	31
89	Calibration of the infrared molar absorption coefficients for H in olivine, clinopyroxene and rhyolitic glass by elastic recoil detection analysis. Chemical Geology, 2009, 262, 78-86.	1.4	29
90	Thermodynamics of the amphiboles: Fe-Mg cummingtonite solid solution. American Mineralogist, 1995, 80, 502-519.	0.9	28

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91	The effects of K2O on the compositions of near-solidus melts of garnet peridotite at 3ÂGPa and the origin of basalts from enriched mantle. Contributions To Mineralogy and Petrology, 2013, 166, 1029-1046.	1.2	28
92	Nitrogen incorporation in silicates and metals: Results from SIMS, EPMA, FTIR, and laser-extraction mass spectrometry. American Mineralogist, 2019, 104, 31-46.	0.9	27
93	Earthâ€™s carbon deficit caused by early loss through irreversible sublimation. Science Advances, 2021, 7, .	4.7	27
94	Origin of the Transgressive granophyres from the Layered Series of the Skaergaard intrusion, East Greenland. Journal of Volcanology and Geothermal Research, 1992, 52, 185-207.	0.8	25
95	Carbon-saturated monosulfide melting in the shallow mantle: solubility and effect on solidus. Contributions To Mineralogy and Petrology, 2015, 170, 1.	1.2	25
96	Hydrogen isotopic evidence for early oxidation of silicate Earth. Earth and Planetary Science Letters, 2019, 526, 115770.	1.8	24
97	Crystal structure of P2₁/m ferromagnesian amphibole and the role of cation ordering and composition in the P2₁/m-C2/m transition in cummingtonite. American Mineralogist, 1995, 80, 916-922.	0.9	21
98	Zincian ilmenite-ecandrewsite from a pelitic schist, Death Valley, California, and the paragenesis of (Zn,Fe)TiO 3 solid solution in metamorphic rocks. Canadian Mineralogist, 1993, 31, 425-436.	0.3	19
99	CO2 solubility in primitive martian basalts similar to Yamato 980459, the effect of composition on CO2 solubility of basalts, and the evolution of the martian atmosphere. American Mineralogist, 2012, 97, 1841-1848.	0.9	19
100	Experimental determination of carbon solubility in Fe-Ni-S melts. Geochimica Et Cosmochimica Acta, 2018, 225, 66-79.	1.6	19
101	A modified iterative sandwich method for determination of near-solidus partial melt compositions. I. Theoretical considerations. Contributions To Mineralogy and Petrology, 2007, 154, 635-645.	1.2	16
102	Perspectives on Shallow Mantle Melting from Thermodynamic Calculations. Mineralogical Magazine, 1994, 58A, 418-419.	0.6	16
103	Ironing Out the Oxidation of Earth's Mantle. Science, 2009, 325, 545-546.	6.0	15
104	Accurate determination of Fe³⁺/âˆ'Fe of andesitic glass by MÃ¶ssbauer spectroscopy. American Mineralogist, 2015, 100, 1967-1977.	0.9	15
105	An experimental study of Feâ€“Ni exchange between sulfide melt and olivine at upper mantle conditions: implications for mantle sulfide compositions and phase equilibria. Contributions To Mineralogy and Petrology, 2018, 173, 1.	1.2	15
106	Magma oceans, iron and chromium redox, and the origin of comparatively oxidized planetary mantles. Geochimica Et Cosmochimica Acta, 2022, 328, 221-241.	1.6	14
107	Quests for low-degree mantle melts. Nature, 1996, 381, 286-286.	13.7	13
108	Thermodynamics of multicomponent olivines and the solution properties of (Ni,Mg,Fe)2SiO4 and (Ca,Mg,Fe)2SiO4olivineâ€"Reply. American Mineralogist, 2000, 85, 1548-1555.	0.9	12

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109	Iron-wÃ¼stite revisited: A revised calibration accounting for variable stoichiometry and the effects of pressure. Geochimica Et Cosmochimica Acta, 2021, 313, 74-84.	1.6	11
110	Structure and Speciation in Hydrous Silica Melts. 2. Pressure Effects. Journal of Physical Chemistry B, 2008, 112, 13015-13021.	1.2	10
111	Carbon storage in Fe-Ni-S liquids in the deep upper mantle and its relation to diamond and Fe-Ni alloy precipitation. Earth and Planetary Science Letters, 2019, 520, 164-174.	1.8	10
112	A wet mantle conductor?. Nature, 2006, 439, E3-E3.	13.7	9
113	Petrologic Structure of a Hydrous 410 Km Discontinuity. Geophysical Monograph Series, 2013, , 277-287.	0.1	9
114	Melt pathways in the mantle. Nature, 1995, 375, 737-738.	13.7	8
115	Constraints on volumes and patterns of asthenospheric melt from the spaceâ€time distribution of seamounts. Geophysical Research Letters, 2017, 44, 7203-7210.	1.5	8
116	Hydrogen incorporation in plagioclase. Geochimica Et Cosmochimica Acta, 2020, 277, 87-110.	1.6	8
117	Late orogenic mafic magmatism in the North Cascades, Washington: Petrology and tectonic setting of the Skymo layered intrusion. Bulletin of the Geological Society of America, 2008, 120, 531-542.	1.6	4
118	Structure and Speciation in Hydrous Silica Melts. 1. Temperature and Composition Effects. Journal of Physical Chemistry B, 2008, 112, 13005-13014.	1.2	3
119	Fe-carbonyl is a key player in planetary magmas. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 7967-7968.	3.3	3
120	Reading garnet's signature. Nature, 1996, 384, 215-217.	13.7	2
121	An analysis of variations in isentropic melt productivity. , 1999, , 39-66.		1
122	Acceptance of the Dana Medal of the Mineralogical Society of America for 2015:. American Mineralogist, 2015, 100, 1316-1316.	0.9	0