J P Brodholt

List of Publications by Year
in descending order

184 papers	8,100 citations	41323 49 h-index	60583 81 g-index
187 all docs	187 docs citations	187 times ranked	4963 citing authors

#	Article	IF	Citations
1	A seismologically consistent compositional model of Earthâ€™s core. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7542-7545.	3.3	263
2	Possible thermal and chemical stabilization of body-centred-cubic iron in the Earth's core. Nature, 2003, 424, 536-539.	13.7	249
3	First-principles constraints on diffusion in lower-mantle minerals and a weak Dâ€²â€² layer. Nature, 2010, 465, 462-465.	13.7	203
4	The elastic constants of MgSiO3 perovskite at pressures and temperatures of the Earth's mantle. Nature, 2001, 411, 934-937.	13.7	190
5	Efficacy of the post-perovskite phase as an explanation for lowermost-mantle seismic properties. Nature, 2005, 438, 1004-1007.	13.7	188
6	Thermal expansion and crystal structure of cementite, Fe3C, between 4 and 600â€…K determined by time-of-flight neutron powder diffraction. Journal of Applied Crystallography, 2004, 37, 82-90.	1.9	186
7	Analysis of the hydrogen-bonded structure of water from ambient to supercritical conditions. Journal of Chemical Physics, 1998, 108, 8528-8540.	1.2	175
8	The influence of potassium on core and geodynamo evolution. Geophysical Journal International, 2004, 156, 363-376.	1.0	174
9	Two-electron dissociation of single molecules by atomic manipulation at room temperature. Nature, 2005, 434, 367-371.	13.7	174
10	First-principles modelling of Earth and planetary materials at high pressures and temperatures. Reports on Progress in Physics, 2006, 69, 2365-2441.	8.1	152
11	Arsenic incorporation into FeS2 pyrite and its influence on dissolution: A DFT study. Geochimica Et Cosmochimica Acta, 2007, 71, 624-630.	1.6	149
12	Subducted banded iron formations as a source of ultralow-velocity zones at the coreâ€"mantle boundary. Nature, 2005, 434, 371-374.	13.7	144
13	Core formation and core composition from coupled geochemical and geophysical constraints. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12310-12314.	3.3	138
14	The effect of temperature on the seismic anisotropy of the perovskite and post-perovskite polymorphs of MgSiO3. Earth and Planetary Science Letters, 2005, 230, 1-10.	1.8	137
15	Pressure-induced changes in the compression mechanism of aluminous perovskite in the Earth's mantle. Nature, 2000, 407, 620-622.	13.7	134
16	Ab initio elasticity and thermal equation of state of MgSiO3 perovskite. Earth and Planetary Science Letters, 2001, 184, 555-560.	1.8	133
17	Mantle dynamics in super-Earths: Post-perovskite rheology and self-regulation of viscosity. Icarus, 2013, 225, 50-61.	1.1	115
18	Parameterizing a polarizable intermolecular potential for water. Molecular Physics, 1995, 86, 149-158.	0.8	112

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19	Comparative study of quasiharmonic lattice dynamics, molecular dynamics and Debye model applied to MgSiO3 perovskite. Physics of the Earth and Planetary Interiors, 2000, 122, 277-288.	0.7	108
20	The effect of ferromagnetism on the equation of state of Fe 3 C studied by first-principles calculations. Earth and Planetary Science Letters, 2002, 203, 567-575.	1.8	108
21	Simulations of the structure and thermodynamic properties of water at high pressures and temperatures. Journal of Geophysical Research, 1993, 98, 519-536.	3.3	107
22	In situ measurement of viscosity of liquids in the Fe-FeS system at high pressures and temperatures. American Mineralogist, 2000, 85, 1838-1842.	0.9	101
23	Molecular dynamics simulations of aqueous NaCl solutions at high pressures and temperatures. Chemical Geology, 1998, 151, 11-19.	1.4	95
24	Strong Premelting Effect in the Elastic Properties of hcp-Fe Under Inner-Core Conditions. Science, 2013, 342, 466-468.	6.0	95
25	Electronic spin transitions in iron-bearing MgSiO3 perovskite. Earth and Planetary Science Letters, 2007, 253, 282-290.	1.8	93
26	A test of alternative Caribbean Plate relative motion models. Journal of Geophysical Research, 1988, 93, 3041-3050.	3.3	91
27	Ab initio free energy calculations on the polymorphs of iron at core conditions. Physics of the Earth and Planetary Interiors, 2000, 117, 123-137.	0.7	89
28	An ab initio study of hydrogen in forsterite and a possible mechanism for hydrolytic weakening. Journal of Geophysical Research, 2000, 105, 18977-18982.	3.3	87
29	Elasticity of CaSiO3 perovskite at high pressure and high temperature. Physics of the Earth and Planetary Interiors, 2006, 155, 249-259.	0.7	84
30	Ab initio calculations on point defects in forsterite (Mg₂SiO₄) and implications for diffusion and creep. American Mineralogist, 1997, 82, 1049-1053.	0.9	75
31	Weakening of calcium iridate during its transformation from perovskite to post-perovskite. Nature Geoscience, 2009, 2, 794-797.	5.4	74
32	Phase relations and equation-of-state of aluminous Mg-silicate perovskite and implications for Earth's lower mantle. Earth and Planetary Science Letters, 2004, 222, 501-516.	1.8	73
33	Carbonâ€"fluid equilibria and the oxidation state of the upper mantle. Nature, 1991, 349, 321-324.	13.7	71
34	The long-term stability of a possible aqueous ammonium sulfate ocean inside Titan. Icarus, 2008, 197, 137-151.	1.1	69
35	The electrical conductivity of the lower mantle phase magnesiowÃ¼stite at high temperatures and pressures. Journal of Geophysical Research, 2000, 105, 531-538.	3.3	67
36	Calculated role of aluminum in the incorporation of ferric iron into magnesium silicate perovskite. American Mineralogist, 1998, 83, 947-951.	0.9	63

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37	The effect of nickel on the properties of iron at the conditions of Earth's inner core: Ab initio calculations of seismic wave velocities of Feâ€“Ni alloys. Earth and Planetary Science Letters, 2013, 365, 143-151.	1.8	62
38	Elastic anisotropy of FeSiO3end-members of the perovskite and post-perovskite phases. Geophysical Research Letters, 2006, 33, n/a-n/a.	1.5	59
39	The elastic properties of hcp-Fe alloys under the conditions of the Earth's inner core. Earth and Planetary Science Letters, 2018, 493, 118-127.	1.8	59
40	Analysis of the velocity autocorrelation function of water. Journal of Physics Condensed Matter, 1996, 8, 6139-6144.	0.7	57
41	Electronic structure of the antiferromagneticB1-structured FeO. Physical Review B, 2004, 70, .	1.1	57
42	Quantum Monte Carlo calculations of the structural properties and the B1-B2 phase transition of MgO. Physical Review B, 2005, 72, .	1.1	57
43	CaSiO3perovskite at lower mantle pressures. Geophysical Research Letters, 2005, 32, .	1.5	57
44	The Earthâ€™s core as a reservoir of water. Nature Geoscience, 2020, 13, 453-458.	5.4	56
45	A High-Temperature Electrical Conduction Mechanism in the Lower Mantle Phase (Mg,Fe)1-xO. Science, 1997, 275, 1779-1781.	6.0	55
46	Elastic properties of MgSiO3-perovskite under lower mantle conditions and the composition of the deep Earth. Earth and Planetary Science Letters, 2013, 379, 1-12.	1.8	55
47	Measurements of the PVT properties of water to 25 kbars and 1600Â°C from synthetic fluid inclusions in corundum. Geochimica Et Cosmochimica Acta, 1994, 58, 2143-2148.	1.6	53
48	Composition of the low seismic velocity <i>E</i>â€² layer at the top of Earth's core. Geophysical Research Letters, 2017, 44, 8303-8310.	1.5	53
49	Seismic velocities of CaSiO3 perovskite can explain LLSVPs in Earthâ€™s lower mantle. Nature, 2019, 572, 643-647.	13.7	52
50	Molecular dynamics of water at high temperatures and pressures. Geochimica Et Cosmochimica Acta, 1990, 54, 2611-2616.	1.6	50
51	Electronic spin transitions and the seismic properties of ferrous iron-bearing MgSiO3post-perovskite. Geophysical Research Letters, 2006, 33, .	1.5	50
52	High-pressure phase transformations of FeS: Novel phases at conditions of planetary cores. Earth and Planetary Science Letters, 2008, 272, 481-487.	1.8	50
53	Viscosity of liquid water from computer simulations with a polarizable potential model. Physical Review E, 2000, 62, 2971-2973.	0.8	49
54	High-pressure phases in the Al 2 SiO 5 system and the problem of aluminous phase in the Earth's lower mantle: ab initio calculations. Physics and Chemistry of Minerals, 2000, 27, 430-439.	0.3	48

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55	Variation of thermal conductivity and heat flux at the Earth's core mantle boundary. Earth and Planetary Science Letters, 2014, 390, 175-185.	1.8	48
56	The structure of iron under the conditions of the Earth's inner core. Geophysical Research Letters, 1999, 26, 1231-1234.	1.5	47
57	Hydrogen bonding in solid ammonia fromab initiocalculations. Journal of Chemical Physics, 2003, 118, 5987-5994.	1.2	47
58	Electronic spin state of ferric iron in Al-bearing perovskite in the lower mantle. Geophysical Research Letters, 2005, 32, .	1.5	47
59	Relationship of deep seismicity to the thermal structure of subducted lithosphere. Nature, 1991, 353, 252-255.	13.7	46
60	Phase stability of CaSiO3 perovskite at high pressure and temperature: Insights from ab initio molecular dynamics. Physics of the Earth and Planetary Interiors, 2006, 155, 260-268.	0.7	46
61	DFT study of migration enthalpies in MgSiO3 perovskite. Physics and Chemistry of Minerals, 2009, 36, 151-158.	0.3	46
62	Ab initio simulation of ammonia monohydrate (NH3â‹…H2O) and ammonium hydroxide (NH4OH). Journal of Chemical Physics, 2001, 115, 7006-7014.	1.2	44
63	Chemical versus thermal heterogeneity in the lower mantle: The most likely role of anelasticity. Earth and Planetary Science Letters, 2007, 262, 429-437.	1.8	43
64	Melting properties from <i>ab initio</i> free energy calculations: Iron at the Earth's inner-core boundary. Physical Review B, 2018, 98, .	1.1	43
65	Elasticity of (Mg, Fe)(Si, Al)O3-perovskite at high pressure. Earth and Planetary Science Letters, 2005, 240, 529-536.	1.8	42
66	Global systematics of unaveraged midâ€ocean ridge basalt compositions: Comment [on â€œGlobal correlations of ocean ridge basalt chemistry with axial depth and crustal thicknessâ€•by E. M. Klein and C. H. Langmuir]. Journal of Geophysical Research, 1989, 94, 4231-4239.	3.3	41
67	The incorporation of water into lower-mantle perovskites: A first-principles study. Earth and Planetary Science Letters, 2013, 364, 37-43.	1.8	41
68	Unsolved problems in the lowermost mantle. Geophysical Research Letters, 2006, 33, .	1.5	38
69	Light elements in the core: Effects of impurities on the phase diagram of iron. Geophysical Research Letters, 2008, 35, .	1.5	38
70	Molecular Dynamics simulation of aqueous ZnC12solutions. Molecular Physics, 2001, 99, 825-833.	0.8	37
71	Hydration of Sr2 +in Hydrothermal Solutions from ab Initio Molecular Dynamics. Journal of Physical Chemistry B, 2003, 107, 9056-9058.	1.2	37
72	A high-resolution neutron powder diffraction study of ammonia dihydrate (ND3â‹…2D2O) phase I. Journal of Chemical Physics, 2003, 119, 10806-10813.	1.2	37

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73	High temperature elastic anisotropy of the perovskite and post-perovskite polymorphs of Al2O3. Geophysical Research Letters, 2005, 32, .	1.5	37
74	Electronic Structure Study of the High-pressure Vibrational Spectrum of FeS2Pyrite. Journal of Physical Chemistry B, 2005, 109, 22067-22073.	1.2	36
75	Ferrous iron diffusion in ferro-periclase across the spin transition. Earth and Planetary Science Letters, 2011, 302, 393-402.	1.8	36
76	Parameterizing polarizable intermolecular potentials for water with the ice 1h phase. Molecular Physics, 1995, 85, 81-90.	0.8	34
77	Elasticity of Mg2SiO4 ringwoodite at mantle conditions. Physics of the Earth and Planetary Interiors, 2006, 157, 181-187.	0.7	34
78	The stability of bcc-Fe at high pressures and temperatures with respect to tetragonal strain. Physics of the Earth and Planetary Interiors, 2008, 170, 52-59.	0.7	34
79	The electrical conductivity and thermal profile of the Earth's mid-mantle. Geophysical Research Letters, 2000, 27, 2325-2328.	1.5	33
80	First-principles simulation of high-pressure polymorphs in MgAl2O4. Physics and Chemistry of Minerals, 2008, 35, 381-386.	0.3	32
81	Anisotropy as cause for polarity reversals of Dâ€³ reflections. Earth and Planetary Science Letters, 2011, 307, 369-376.	1.8	32
82	Stability and Reactions of CaCO₃ Polymorphs in the Earth's Deep Mantle. Journal of Geophysical Research: Solid Earth, 2018, 123, 6491-6500.	1.4	32
83	The ab initio simulation of the Earth's core. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2002, 360, 1227-1244.	1.6	31
84	The structure, ordering and equation of state of ammonia dihydrate (nh3 Â· 2h2o). Icarus, 2003, 162, 59-73.	1.1	30
85	Structural, vibrational and thermodynamic properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si566.gif" overflow="scroll"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Mg</mml:mtext></mml:mrow><mml:mrow><mml:mn>2</mm and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si567.gif" overflow="scroll"><mml:mrow><mml:msu. Physics of the Earth and Planetary Interiors, 2015, 240, 1-24.	0.7	30
86	Theoretical investigation of metastable Al2SiO5polymorphs. Acta Crystallographica Section A: Foundations and Advances, 2001, 57, 548-557.	0.3	29
87	Zinc Complexation in Hydrothermal Chloride Brines:Â Results from ab Initio Molecular Dynamics Calculations. Journal of Physical Chemistry A, 2003, 107, 1050-1054.	1.1	29
88	Strong shear softening induced by superionic hydrogen in Earth's inner core. Earth and Planetary Science Letters, 2021, 568, 117014.	1.8	29
89	Ab initio simulation of the ice II structure. Journal of Chemical Physics, 2003, 119, 4567-4572.	1.2	28
90	Structural and magnetic phase transitions in simple oxides using hybrid functionals. Molecular Simulation, 2005, 31, 367-377.	0.9	28

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91	Equation of state of hexagonal closed packed iron under Earthâ€™s core conditions from quantum Monte Carlo calculations. Physical Review B, 2009, 79, .	1.1	28
92	Elastic properties of ferropericlase at lower mantle conditions and its relevance to ULVZs. Earth and Planetary Science Letters, 2015, 417, 40-48.	1.8	28
93	Thermoelasticity of Fe₇C₃ under inner core conditions. Journal of Geophysical Research: Solid Earth, 2016, 121, 5828-5837.	1.4	28
94	Rheological control of Wadatiâ€Benioff zone seismicity. Geophysical Research Letters, 1988, 15, 1081-1084.	1.5	27
95	Ab Initio Molecular Dynamics Investigation of Molten Feâ€“Siâ€“O in Earth's Core. Geophysical Research Letters, 2019, 46, 6397-6405.	1.5	27
96	An ab initio study of the compressional behavior of forsterite. American Mineralogist, 1996, 81, 257-260.	0.9	26
97	Reconciling the post-perovskite phase with seismological observations of lowermost mantle structure. Geophysical Monograph Series, 2007, , 129-153.	0.1	26
98	Seismic anisotropy of post-perovskite and the lowermost mantle. Geophysical Monograph Series, 2007, , 171-189.	0.1	26
99	Dopant control over the crystal morphology of ceramic materials. Surface Science, 2007, 601, 4793-4800.	0.8	26
100	The effect of silicon impurities on the phase diagram of iron and possible implications for the Earth's core structure. Journal of Physics and Chemistry of Solids, 2008, 69, 2177-2181.	1.9	26
101	Dynamical properties of liquid water. Journal of Physics Condensed Matter, 1996, 8, 9269-9274.	0.7	25
102	A convenient method for measuring ferric iron in magnesiowustite (MgO-Fe (sub 1-x) O). American Mineralogist, 1998, 83, 794-798.	0.9	25
103	The elastic properties of hcp-Fe 1â^ˆx Si x at Earth's inner-core conditions. Earth and Planetary Science Letters, 2016, 451, 89-96.	1.8	25
104	Shear-induced material transfer across the core-mantle boundary aided by the post-perovskite phase transition. Earth, Planets and Space, 2005, 57, 459-464.	0.9	24
105	Ab initio molecular dynamics simulations for thermal equation of state of B2-type NaCl. Journal of Applied Physics, 2008, 103, 023510.	1.1	24
106	Structure and elasticity of hydrous ringwoodite: A first principle investigation. Physics of the Earth and Planetary Interiors, 2009, 177, 103-115.	0.7	23
107	Elastic, thermal and structural properties of platinum. Journal of Physics and Chemistry of Solids, 2011, 72, 169-175.	1.9	23
108	Ferrous iron partitioning in the lower mantle. Physics of the Earth and Planetary Interiors, 2016, 257, 12-17.	0.7	23

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109	Carbon Partitioning Between the Earth's Inner and Outer Core. Journal of Geophysical Research: Solid Earth, 2019, 124, 12812-12824.	1.4	23
110	Incorporation of Fe³⁺into forsterite and wadsleyite. American Mineralogist, 2000, 85, 1155-1158.	0.9	21
111	Experimental verification of the Stokes-Einstein relation in liquid Feâ€"FeS at 5 GPa. Molecular Physics, 2001, 99, 773-777.	0.8	21
112	Simulating Diffusion. Reviews in Mineralogy and Geochemistry, 2010, 71, 201-224.	2.2	21
113	Helium diffusion in olivine based on first principles calculations. Geochimica Et Cosmochimica Acta, 2015, 156, 145-153.	1.6	21
114	The use of a point polarizable dipole in intermolecular potentials for water. Molecular Physics, 1998, 94, 873-876.	0.8	21
115	Phase transitions of BaCO₃ at high pressures. Mineralogical Magazine, 2008, 72, 659-665.	0.6	20
116	Ab initio lattice dynamics calculations on the combined effect of temperature and silicon on the stability of different iron phases in the Earth's inner core. Physics of the Earth and Planetary Interiors, 2010, 178, 2-7.	0.7	20
117	Molecular dynamics study of the dielectric constant of water under high pressure and temperature conditions. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1994, 98, 906-911.	0.9	18
118	Lattice-preferred orientation of lower mantle materials and seismic anisotropy in the Dâ€³ layer. Geophysical Monograph Series, 2007, , 69-78.	0.1	18
119	Water distribution in the lower mantle: Implications for hydrolytic weakening. Earth and Planetary Science Letters, 2018, 484, 363-369.	1.8	18
120	Elasticity of hydrous ringwoodite at mantle conditions: Implication for water distribution in the lowermost mantle transition zone. Earth and Planetary Science Letters, 2021, 554, 116626.	1.8	18
121	Crystal morphology and surface structures of orthorhombic MgSiO3 perovskite. Physics and Chemistry of Minerals, 2005, 31, 671-682.	0.3	17
122	Computational mineral physics and the physical properties of perovskite. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2002, 360, 2507-2520.	1.6	16
123	Ab initio simulations of ironâ€"nickel alloys at Earth's core conditions. Earth and Planetary Science Letters, 2012, 345-348, 126-130.	1.8	16
124	The elastic properties and stability of fcc-Fe and fcc-FeNi alloys at inner-core conditions. Geophysical Journal International, 2015, 202, 94-101.	1.0	16
125	The pressure medium as a solid-state oxygen buffer. Geophysical Research Letters, 1999, 26, 259-262.	1.5	15
126	Elastic properties of the post-perovskite phase of Fe2O3 and implications for ultra-low velocity zones. Physics of the Earth and Planetary Interiors, 2008, 170, 260-266.	0.7	15

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127	Relative strength of the pyropeâ€“majorite solid solution and the flow-law of majorite containing garnets. Physics of the Earth and Planetary Interiors, 2010, 179, 87-95.	0.7	15
128	The phase diagrams of KCaF3 and NaMgF3 by ab initio simulations. Physics and Chemistry of Minerals, 2018, 45, 311-322.	0.3	15
129	Collaborative grid infrastructure for molecular simulations: TheeMinerals minigrid as a prototype integrated compute and data grid. Molecular Simulation, 2005, 31, 303-313.	0.9	14
130	The high-temperature elasticity of MgSiO3 post-perovskite. Geophysical Monograph Series, 2007, , 99-113.	0.1	14
131	Ab initio molecular dynamics study of elasticity of akimotoite MgSiO3 at mantle conditions. Physics of the Earth and Planetary Interiors, 2009, 173, 115-120.	0.7	14
132	Applications of Density Functional Theory in the Geosciences. MRS Bulletin, 2006, 31, 675-680.	1.7	13
133	The effect of cation-ordering on the elastic properties of majorite: An ab initio study. Earth and Planetary Science Letters, 2007, 256, 28-35.	1.8	13
134	Ab initio molecular dynamic simulation on the elasticity of Mg3Al2Si3O12 pyrope. Journal of Earth Science (Wuhan, China), 2011, 22, 169-175.	1.1	13
135	Ab-initiosimulations of magnetic iron sulphides. Molecular Simulation, 2005, 31, 379-384.	0.9	12
136	The isothermal equation of state of CaPtO3 post-perovskite to 40GPa. Physics of the Earth and Planetary Interiors, 2010, 182, 113-118.	0.7	12
137	Diffusion of aluminium in MgO from first principles. Physics and Chemistry of Minerals, 2012, 39, 503-514.	0.3	12
138	Elastic properties of ferrous bearing MgSiO3 and their relevance to ULVZs. Geophysical Journal International, 2015, 201, 496-504.	1.0	12
139	A computer simulation approach to the high pressure thermoelasticity of MgSiO3 perovskite. Physics of the Earth and Planetary Interiors, 1996, 98, 55-63.	0.7	11
140	Self diffusion of argon in flexible, single wall, carbon nanotubes. Molecular Simulation, 2005, 31, 385-389.	0.9	11
141	Influence of the post-perovskite transition on thermal and thermo-chemical mantle convection. Geophysical Monograph Series, 2007, , 229-247.	0.1	11
142	Modeling the melting of multicomponent systems: the case of MgSiO3 perovskite under lower mantle conditions. Scientific Reports, 2016, 6, 29830.	1.6	11
143	Post-Perovskite: The Last Mantle Phase Transition. Geophysical Monograph Series, 2007, , .	0.1	11
144	Thermoelastic properties and crystal structure of CaPtO₃post-perovskite from 0 to 9â€…GPa and from 2Âto 973â€…K. Journal of Applied Crystallography, 2011, 44, 999-1016.	1.9	10

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145	Equation of State of hcp Feâ€Câ€Si Alloys and the Effect of C Incorporation Mechanism on the Density of hcp Fe Alloys at 300ÂK. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB020159.	1.4	10
146	Sulfur isotopic signature of Earth established by planetesimal volatile evaporation. Nature Geoscience, 2021, 14, 806-811.	5.4	10
147	Electronic transitions and spin states in the lower mantle. Geophysical Monograph Series, 2007, , 47-68.	0.1	9
148	Prospecting for water in the transition zone: d ln(Vs)/d ln(Vp). Physics of the Earth and Planetary Interiors, 2011, 189, 117-120.	0.7	9
149	The effect of water on the post-spinel transition and evidence for extreme water contents at the bottom of the transition zone. Earth and Planetary Science Letters, 2021, 565, 116909.	1.8	9
150	Hydrous silicate melts and the deep mantle H2O cycle. Earth and Planetary Science Letters, 2022, 581, 117408.	1.8	9
151	Ab initio study of the phase separation of argon in molten iron at high pressures. Geophysical Research Letters, 2006, 33, .	1.5	8
152	Discovery of post-perovskite phase transition and the nature of Dâ€³ layer. Geophysical Monograph Series, 2007, , 19-35.	0.1	8
153	Structural phase transitions in IrO2at high pressures. Journal of Physics Condensed Matter, 2008, 20, 045202.	0.7	8
154	Deformation of olivine at 5GPa and 350â€“900Â°C. Physics of the Earth and Planetary Interiors, 2009, 172, 84-90.	0.7	8
155	Mg partitioning between solid and liquid iron under the Earthâ€™s core conditions. Physics of the Earth and Planetary Interiors, 2018, 274, 218-221.	0.7	8
156	Constraints on the presence or absence of post-perovskite in the lowermost mantle from long-period seismology. Geophysical Monograph Series, 2007, , 191-216.	0.1	7
157	Anisotropic diffusion creep in postperovskite provides a new model for deformation at the coreâˆ'mantle boundary. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 26389-26393.	3.3	7
158	High-pressure silica phase transitions: Implications for deep mantle dynamics and silica crystallization in the protocore. American Mineralogist, 2020, 105, 1014-1020.	0.9	7
159	Core values. Nature, 2002, 418, 489-491.	13.7	6
160	Crystal morphology and surface structures of orthorhombic MgSiO3 in the presence of divalent impurity ions. Physics and Chemistry of Minerals, 2005, 32, 379-387.	0.3	6
161	A computational study of the effect of Liâ€“K solid solutions on the structures and stabilities of layered silicate materialsâ€"an application of the use of Condor pools in molecular simulation. Molecular Simulation, 2005, 31, 339-347.	0.9	6
162	Primitive noble gases sampled from ocean island basalts cannot be from the Earthâ€™s core. Nature Communications, 2022, 13, .	5.8	6

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163	Grain-boundary enrichment of iron on magnesium silicate perovskite. European Journal of Mineralogy, 2007, 19, 617-622.	0.4	5
164	The dynamical influences from physical properties in the lower mantle and post-perovskite phase transition. Geophysical Monograph Series, 2007, , 249-270.	0.1	5
165	Deformation-induced mechanical instabilities at the core-mantle boundary. Geophysical Monograph Series, 2007, , 271-287.	0.1	4
166	Diffusion of noble gases in subduction zone hydrous minerals. Geochimica Et Cosmochimica Acta, 2020, 291, 50-61.	1.6	4
167	Structural evolution in a pyrolitic magma ocean under mantle conditions. Earth and Planetary Science Letters, 2022, 584, 117473.	1.8	4
168	10. Simulating Diffusion. , 2010, , 201-224.		3
169	The coupled effects of mantle mixing and a water-dependent viscosity on the surface ocean. Earth and Planetary Science Letters, 2020, 530, 115881.	1.8	3
170	Ferric iron in bridgmanite and implications for ULVZs. Physics of the Earth and Planetary Interiors, 2020, 306, 106505.	0.7	3
171	ElasT: A toolkit for thermoelastic calculations. Computer Physics Communications, 2022, 273, 108280.	3.0	3
172	The effect of water on the outer core transport properties. Physics of the Earth and Planetary Interiors, 2022, 329-330, 106907.	0.7	3
173	Effect of iron on the properties of post-perovskite silicate. Geophysical Monograph Series, 2007, , 37-46.	0.1	2
174	An introduction to post-perovskite: The last mantle phase transition. Geophysical Monograph Series, 2007, , 1-7.	0.1	2
175	Water may be a damp squib. Nature, 2013, 498, 181-182.	13.7	2
176	Incorporation of tetrahedral ferric iron into hydrous ringwoodite. American Mineralogist, 2021, 106, 900-908.	0.9	2
177	Thermodynamic Properties and Stability Field of MgSiO3 Post-Perovskite. Geophysical Monograph Series, 2007, , 79-97.	0.1	1
178	Habitable Planets: Interior Dynamics and Long-Term Evolution. Proceedings of the International Astronomical Union, 2012, 8, 339-349.	0.0	1
179	The discontinuous effect of pressure on twin boundary strength in MgO. Physics and Chemistry of Minerals, 2020, 47, 1.	0.3	1
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