

George Helffrich

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

95
papers

4,047
citations

37
h-index

61
g-index

108
ext. papers

4,388
ext. citations

8
avg, IF

5.73
L-index

#	Paper	IF	Citations
95	Phase transition Clapeyron slopes and transition zone seismic discontinuity topography. <i>Journal of Geophysical Research</i> , 1994 , 99, 15853		393
94	The Earth's mantle. <i>Nature</i> , 2001 , 412, 501-7	50.4	245
93	Topography of the transition zone seismic discontinuities. <i>Reviews of Geophysics</i> , 2000 , 38, 141-158	23.1	211
92	Dipping low-velocity layer in the mid-lower mantle: evidence for geochemical heterogeneity. <i>Science</i> , 1999 , 283, 1888-91	33.3	135
91	Outer-core compositional stratification from observed core wave speed profiles. <i>Nature</i> , 2010 , 468, 807-810	50.4	130
90	Crystallization of silicon dioxide and compositional evolution of the Earth's core. <i>Nature</i> , 2017 , 543, 99-102	50.4	120
89	Extended-Time Multitaper Frequency Domain Cross-Correlation Receiver-Function Estimation. <i>Bulletin of the Seismological Society of America</i> , 2006 , 96, 344-347	2.3	105
88	Subduction zone thermal structure and mineralogy and their relationship to seismic wave reflections and conversions at the slab/mantle interface. <i>Journal of Geophysical Research</i> , 1989 , 94, 753		104
87	Detection of lower mantle scatterers northeast of the Marianna subduction zone using short-period array data. <i>Journal of Geophysical Research</i> , 1998 , 103, 4825-4838		91
86	Precambrian crustal evolution: Seismic constraints from the Canadian Shield. <i>Earth and Planetary Science Letters</i> , 2010 , 297, 655-666	5.3	89
85	Topography of the 110 and 660 km seismic discontinuities in the Izu-Bonin Subduction Zone. <i>Geophysical Research Letters</i> , 1997 , 24, 1535-1538	4.9	85
84	Teleseismic shear wave splitting measurements in noisy environments. <i>Geophysical Journal International</i> , 1999 , 137, 821-830	2.6	82
83	How good are routinely determined focal mechanisms? Empirical statistics based on a comparison of Harvard, USGS and ERI moment tensors. <i>Geophysical Journal International</i> , 1997 , 131, 741-750	2.6	78
82	Depleted swell root beneath the Cape Verde Islands. <i>Geology</i> , 2006 , 34, 449	5	74
81	410 km discontinuity sharpness and the form of the olivine phase diagram: resolution of apparent seismic contradictions. <i>Geophysical Journal International</i> , 1996 , 126, F7-F12	2.6	70
80	Seismological constraints on core composition from Fe-O-S liquid immiscibility. <i>Science</i> , 2004 , 306, 2239-423	32.3	69
79	Hazard potential of volcanic flank collapses raised by new megatsunami evidence. <i>Science Advances</i> , 2015 , 1, e1500456	14.3	65

78	Tracers of uplift and subsidence in the Cape Verde archipelago. <i>Journal of the Geological Society</i> , 2010 , 167, 519-538	2.7	63
77	Emergence and evolution of Santa Maria Island (Azores) – The conundrum of uplifted islands revisited. <i>Bulletin of the Geological Society of America</i> , 2017 , 129, 372-390	3.9	62
76	Seismic discontinuities and subduction zones. <i>Physics of the Earth and Planetary Interiors</i> , 2001 , 127, 35-49	4.3	62
75	Shear-wave splitting variation over short spatial scales on continents. <i>Geophysical Journal International</i> , 1994 , 119, 561-573	2.6	62
74	The Seismic Analysis Code: A Primer and User's Guide 2013 ,		57
73	Frequency dependence of the visibility and depths of mantle seismic discontinuities. <i>Geophysical Research Letters</i> , 1994 , 21, 2613-2616	4.9	55
72	Subparallel dipping heterogeneities in the mid-lower mantle. <i>Journal of Geophysical Research</i> , 2003 , 108,		54
71	The stability of sodalite in the system NaAlSi ₃ O ₈ -NaCl. <i>Geochimica Et Cosmochimica Acta</i> , 1989 , 53, 1943-1954	5.4	54
70	Shear wave splitting around the northern Atlantic: frozen Pangaeian lithospheric anisotropy?. <i>Tectonophysics</i> , 1997 , 279, 135-148	3.1	51
69	Small scale heterogeneity in the mid-lower mantle beneath the circum-Pacific area. <i>Physics of the Earth and Planetary Interiors</i> , 2010 , 183, 91-103	2.3	50
68	Episodic swell growth inferred from variable uplift of the Cape Verde hotspot islands. <i>Nature Geoscience</i> , 2010 , 3, 774-777	18.3	49
67	Core-mantle boundary structure investigated using SKS and SKKSPolarization anomalies. <i>Geophysical Journal International</i> , 2006 , 165, 288-302	2.6	49
66	Slab low-velocity layer in the eastern Aleutian subduction zone. <i>Geophysical Journal International</i> , 1997 , 130, 640-648	2.6	46
65	Relationship of deep seismicity to the thermal structure of subducted lithosphere. <i>Nature</i> , 1991 , 353, 252-255	50.4	43
64	Vertical movements of ocean island volcanoes: Insights from a stationary plate environment. <i>Marine Geology</i> , 2010 , 275, 84-95	3.3	42
63	Precambrian plate tectonics: Seismic evidence from northern Hudson Bay, Canada. <i>Geology</i> , 2011 , 39, 91-94	5	41
62	Inner-core shear-wave anisotropy and texture from an observation of PKJKP waves. <i>Nature</i> , 2008 , 454, 873-6	50.4	41
61	Chemical versus thermal heterogeneity in the lower mantle: The most likely role of anelasticity. <i>Earth and Planetary Science Letters</i> , 2007 , 262, 429-437	5.3	41

60	Crustal structure beneath Hudson Bay from ambient-noise tomography: implications for basin formation. <i>Geophysical Journal International</i> , 2011 , 184, 65-82	2.6	40
59	Spatial and temporal constraints on sources of seismic anisotropy: Evidence from the Scottish highlands. <i>Geophysical Research Letters</i> , 2007 , 34,	4.9	38
58	Lithospheric deformation inferred from teleseismic shear wave splitting observations in the United Kingdom. <i>Journal of Geophysical Research</i> , 1995 , 100, 18195-18204		37
57	Lower mantle scattering profiles and fabric below Pacific subduction zones. <i>Earth and Planetary Science Letters</i> , 2009 , 282, 234-239	5.3	36
56	Implications of a simple mantle transition zone beneath cratonic North America. <i>Earth and Planetary Science Letters</i> , 2011 , 312, 28-36	5.3	34
55	A late Archaean radiating dyke swarm as possible clue to the origin of the Bushveld Complex. <i>Nature Geoscience</i> , 2011 , 4, 865-869	18.3	34
54	A scattering region near the core-mantle boundary under the North Atlantic. <i>Geophysical Journal International</i> , 2004 , 158, 625-636	2.6	34
53	Study of the structure of the slab-mantle interface using reflected and converted seismic waves. <i>Geophysical Journal International</i> , 1993 , 115, 14-40	2.6	34
52	Causes and consequences of outer core stratification. <i>Physics of the Earth and Planetary Interiors</i> , 2013 , 223, 2-7	2.3	32
51	Hydrous upwelling across the mantle transition zone beneath the Afar Triple Junction. <i>Geochemistry, Geophysics, Geosystems</i> , 2015 , 16, 834-846	3.6	32
50	Vp structure of the outermost core derived from analysing large-scale array data of SmKS waves. <i>Geophysical Journal International</i> , 2013 , 193, 1537-1555	2.6	31
49	A teleseismic shear-wave splitting study to investigate mantle flow around South America and implications for plate-driving forces. <i>Geophysical Journal International</i> , 2002 , 149, F1-F7	2.6	30
48	Estimate of inner core rotation rate from United Kingdom regional seismic network data and consequences for inner core dynamical behaviour. <i>Earth and Planetary Science Letters</i> , 2001 , 193, 523-537	5.3	27
47	Probing two low-velocity regions with PKPb-caustic amplitudes and scattering. <i>Geophysical Journal International</i> , 2009 , 178, 503-512	2.6	26
46	Outer core compositional layering and constraints on core liquid transport properties. <i>Earth and Planetary Science Letters</i> , 2014 , 391, 256-262	5.3	25
45	Scatter and bias in differential PKP travel times and implications for mantle and core phenomena. <i>Geophysical Research Letters</i> , 1994 , 21, 2167-2170	4.9	24
44	Seismic evidence of a regional sublithospheric low velocity layer beneath the Canary Islands. <i>Tectonophysics</i> , 2013 , 608, 586-599	3.1	23
43	Transition zone structure under a stationary hot spot: Cape Verde. <i>Earth and Planetary Science Letters</i> , 2010 , 289, 156-161	5.3	22

42	The thermal influence of the subducting slab beneath South America from 410 and 660 km discontinuity observations. <i>Geophysical Journal International</i> , 2001 , 147, 319-329	2.6	22
41	A local, crossing-path study of attenuation and anisotropy of the inner core. <i>Geophysical Research Letters</i> , 2002 , 29, 9-1	4.9	22
40	MOZART: A Seismological Investigation of the East African Rift in Central Mozambique. <i>Seismological Research Letters</i> , 2014 , 85, 108-116	3	21
39	Mapping fine-scale heterogeneities within the continental mantle lithosphere beneath Scotland: Combining active- and passive-source seismology. <i>Geology</i> , 2003 , 31, 477	5	21
38	Transition zone structure in a tectonically inactive area: 410 and 660 km discontinuity properties under the northern North Sea. <i>Geophysical Journal International</i> , 2003 , 155, 193-199	2.6	20
37	How light element addition can lower core liquid wave speeds. <i>Geophysical Journal International</i> , 2012 , 188, 1065-1070	2.6	18
36	Heterogeneity in the mantle: Its creation, evolution and destruction. <i>Tectonophysics</i> , 2006 , 416, 23-31	3.1	18
35	The Hudson Bay Lithospheric Experiment (HuBLE): insights into Precambrian plate tectonics and the development of mantle keels. <i>Geological Society Special Publication</i> , 2015 , 389, 41-67	1.7	17
34	Subducted Lithospheric Slab Velocity Structure: Observations and Mineralogical Inferences. <i>Geophysical Monograph Series</i> , 2013 , 215-222	1.1	16
33	Seismic activity at Cadamosto seamount near Fogo Island, Cape Verde formation of a new ocean island?. <i>Geophysical Journal International</i> , 2010 , 180, 552-558	2.6	16
32	Grid search inversion of teleseismic receiver functions. <i>Geophysical Journal International</i> , 2009 , 178, 513-523	2.3	15
31	Mars core structure: Concise review and anticipated insights from InSight. <i>Progress in Earth and Planetary Science</i> , 2017 , 4,	3.9	14
30	Sulfide melts and long-term low seismic wavespeeds in lithospheric and asthenospheric mantle. <i>Geophysical Research Letters</i> , 2011 , 38, n/a-n/a	4.9	14
29	Hydroacoustic detection of volcanic ocean-island earthquakes. <i>Geophysical Journal International</i> , 2006 , 167, 1529-1536	2.6	14
28	Physical contradictions and remedies using simple polythermal equations of state. <i>American Mineralogist</i> , 2009 , 94, 1616-1619	2.9	12
27	Nature of the Moho beneath the Scottish Highlands from a receiver function perspective. <i>Tectonophysics</i> , 2009 , 479, 214-222	3.1	11
26	Basal reflector under the Philippine Sea Plate. <i>Geophysical Journal International</i> , 2012 , 189, 659-668	2.6	10
25	Plume scar in the mantle lithosphere beneath the Seychelles revealed by seismic imaging. <i>Earth and Planetary Science Letters</i> , 2012 , 355-356, 20-31	5.3	10

24	Chemical and seismological constraints on mantle heterogeneity. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2002 , 360, 2493-505	3	10
23	Constraints on the structure of the crust and lithosphere beneath the Azores Islands from teleseismic receiver functions. <i>Geophysical Journal International</i> , 2018 , 213, 824-835	2.6	9
22	Core-Exsolved SiO ₂ Dispersal in the Earth's Mantle. <i>Journal of Geophysical Research: Solid Earth</i> , 2018 , 123, 176-188	3.6	9
21	Thermal variations in the mantle inferred from 660 km discontinuity topography and tomographic wave speed variations. <i>Geophysical Journal International</i> , 2002 , 151, 935-943	2.6	8
20	SPICeD: imaging the deep Earth. <i>Astronomy and Geophysics</i> , 2001 , 42, 3.26-3.29	0.2	8
19	Thermodynamical Modeling of Liquid Fe-Si-Mg-O: Molten Magnesium Silicate Release From the Core. <i>Geophysical Research Letters</i> , 2020 , 47, e2020GL089218	4.9	8
18	Melting Curve and Equation of State of Fe ₇ N ₃ : Nitrogen in the Core?. <i>Journal of Geophysical Research: Solid Earth</i> , 2019 , 124, 3448-3457	3.6	7
17	Geophysical Constraints on Mantle Composition 2014 , 41-65		7
16	A stacking approach to estimate VP/VS from receiver functions. <i>Geophysical Journal International</i> , 2010 , 182, 899-902	2.6	7
15	A finite strain approach to thermal expansivity's pressure dependence. <i>American Mineralogist</i> , 2017 , 102, 1690-1695	2.9	5
14	CAN-HK: An a Priori Crustal Model for the Canadian Shield. <i>Seismological Research Letters</i> , 2015 , 86, 1374-1382	5	5
13	Upper mantle anisotropy of southeast Arabia passive margin [Gulf of Aden northern conjugate margin], Oman. <i>Arabian Journal of Geosciences</i> , 2012 , 5, 925-934	1.8	5
12	Anisotropy at the Inner Core Boundary. <i>Geophysical Research Letters</i> , 2019 , 46, 11959-11967	4.9	4
11	Practical use of Suzuki's thermal expansivity formulation. <i>Physics of the Earth and Planetary Interiors</i> , 1999 , 116, 133-136	2.3	4
10	The chemical case for Mercury mantle stripping. <i>Progress in Earth and Planetary Science</i> , 2019 , 6,	3.9	4
9	Comment on Crustal thickness across the Trans-European Suture Zone from ambient noise autocorrelations by G. Becker and B. Knapmeyer-Endrun. <i>Geophysical Journal International</i> , 2019 , 217, 906-908	2.6	3
8	The hard sphere view of the outer core. <i>Earth, Planets and Space</i> , 2015 , 67,	2.9	3
7	Small-scale seismic heterogeneity and mantle structure. <i>Astronomy and Geophysics</i> , 2006 , 47, 1.20-1.26	0.2	2

6	GEBCO DIGITAL ATLAS. <i>Terra Nova</i> , 1996 , 8, 659-661	3	2
5	Isotopic signature of core-derived SiO ₂ . <i>American Mineralogist</i> , 2018 , 103, 1161-1164	2.9	2
4	J. Havskov & L. Ottemøller 2010. Routine Data Processing in Earthquake Seismology. xi + 347pp. Springer. Price £81.00, US \$120.00 (HB). ISBN 978 90 481 8696 9.. <i>Geological Magazine</i> , 2011 , 148, 507-507	2	1
3	Basic Principles of Electromagnetic and Seismological Investigation of Shallow Subduction Zone Structure. <i>Geophysical Monograph Series</i> , 2003 , 47-57	1.1	
2	Upper mantle anisotropy of Southeast Arabia passive margin [Gulf of Aden Northern conjugate margin], Oman. <i>Frontiers in Earth Sciences</i> , 2013 , 429-438	1.6	
1	Ground Truth. <i>Geophysical Monograph Series</i> , 2016 , 111-119	1.1	