Gael Choblet

List of Publications by Year
in descending order

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67 papers	2,477 citations	186265 28 h-index	214800 47 g-index
67 all docs	67 docs citations	67 times ranked	1986 citing authors

#	Article	IF	Citations
1	Macromolecular organic compounds from the depths of Enceladus. Nature, 2018, 558, 564-568.	27.8	282
2	Tidally heated convection: Constraints on Europa's ice shell thickness. Journal of Geophysical Research, 2003, 108, .	3.3	177
3	Powering prolonged hydrothermal activity inside Enceladus. Nature Astronomy, 2017, 1, 841-847.	10.1	158
4	Enceladus's internal ocean and ice shell constrained from Cassini gravity, shape, and libration data. Geophysical Research Letters, 2016, 43, 5653-5660.	4.0	141
5	3D thermal convection with variable viscosity: can transient cooling be described by a quasi-static scaling law?. Physics of the Earth and Planetary Interiors, 2000, 119, 321-336.	1.9	74
6	Interior structure of terrestrial planets: Modeling Mars' mantle and its electromagnetic, geodetic, and seismic properties. Journal of Geophysical Research, 2005, 110, .	3.3	68
7	Mantle upwelling and melting beneath slow spreading centers: effects of variable rheology and melt productivity. Earth and Planetary Science Letters, 2001, 184, 589-604.	4.4	67
8	Tidally-induced melting events as the origin of south-pole activity on Enceladus. Icarus, 2012, 219, 655-664.	2.5	60
9	Long-term stability of Enceladusâ€™ uneven ice shell. Icarus, 2019, 319, 476-484.	2.5	59
10	Present-day trends of vertical ground motion along the coast lines. Earth-Science Reviews, 2012, 110, 74-92.	9.1	54
11	Implications of Rotation, Orbital States, Energy Sources, and Heat Transport for Internal Processes in Icy Satellites. Space Science Reviews, 2010, 153, 317-348.	8.1	52
12	TIDALLY INDUCED THERMAL RUNAWAYS ON EXTRASOLAR EARTHS: IMPACT ON HABITABILITY. Astrophysical Journal, 2011, 728, 89.	4.5	50
13	Å’DIPUS: a new tool to study the dynamics of planetary interiors. Geophysical Journal International, 2007, 170, 9-30.	2.4	49
14	Two-phase convection in Ganymedeâ€™s high-pressure ice layer â€”Âmplications for its geological evolution. Icarus, 2018, 299, 133-147.	2.5	49
15	Heat transport in the high-pressure ice mantle of large icy moons. Icarus, 2017, 285, 252-262.	2.5	47
16	Coupling mantle convection and tidal dissipation: Applications to Enceladus and Earthâ€like planets. Journal of Geophysical Research, 2010, 115, .	3.3	46
17	Ice melting and downward transport of meltwater by twoâ€phase flow in Europa's ice shell. Journal of Geophysical Research E: Planets, 2014, 119, 532-549.	3.6	46
18	Timing of water plume eruptions on Enceladus explained by interior viscosity structure. Nature Geoscience, 2015, 8, 601-604.	12.9	41

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19	Thermally anomalous features in the subsurface of Enceladusâ€™s south polar terrain. Nature Astronomy, 2017, 1, .	10.1	41
20	High-resolution record of tectonic and sedimentary processes in growth strata. Marine and Petroleum Geology, 2009, 26, 1350-1364.	3.3	40
21	Structure and dynamics of Titanâ€™s outer icy shell constrained from Cassini data. Icarus, 2014, 237, 16-28.	2.5	40
22	Modelling thermal convection with large viscosity gradients in one block of the â€˜cubed sphereâ€™. Journal of Computational Physics, 2005, 205, 269-291.	3.8	36
23	Coupling of thermal evolution and despinning of early Iapetus. Icarus, 2010, 207, 959-971.	2.5	36
24	Water generation and transport below Europa's strike-slip faults. Journal of Geophysical Research E: Planets, 2016, 121, 2444-2462.	3.6	36
25	Tidally Induced Magmatic Pulses on the Oceanic Floor of Jupiter's Moon Europa. Geophysical Research Letters, 2021, 48, e2020GL090077.	4.0	36
26	Transâ€Dimensional Surface Reconstruction With Different Classes of Parameterization. Geochemistry, Geophysics, Geosystems, 2019, 20, 505-529.	2.5	35
27	Tidal dissipation in Enceladus' uneven, fractured ice shell. Icarus, 2019, 328, 218-231.	2.5	32
28	Consequences of large impacts on Enceladusâ€™ core shape. Icarus, 2016, 264, 300-310.	2.5	31
29	Tidally Heated Convection and the Occurrence of Melting in Icy Satellites: Application to Europa. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006248.	3.6	31
30	Cooling patterns in rotating thin spherical shells â€” Application to Titan's subsurface ocean. Icarus, 2020, 338, 113509.	2.5	28
31	Bayesian surface reconstruction of geodetic uplift rates: Mapping the global fingerprint of Glacial Isostatic Adjustment. Journal of Geodynamics, 2018, 122, 25-40.	1.6	26
32	Impact of tidal heating on the onset of convection in Enceladusâ€™s ice shell. Icarus, 2013, 226, 898-904.	2.5	25
33	On the long-lasting sequences of coral reef terraces from SE Sulawesi (Indonesia): Distribution, formation, and global significance. Quaternary Science Reviews, 2018, 188, 37-57.	3.0	24
34	Chemical Convection and Stratification in the Earth's Outer Core. Frontiers in Earth Science, 2019, 7, .	1.8	24
35	Giant impacts, heterogeneous mantle heating and a past hemispheric dynamo on Mars. Physics of the Earth and Planetary Interiors, 2015, 240, 114-124.	1.9	22
36	Does Titanâ€™s long-wavelength topography contain information about subsurface ocean dynamics?. Icarus, 2018, 310, 149-164.	2.5	22

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37	Preferred locations of weak surface field in numerical dynamos with heterogeneous coreâ€“mantle boundary heat flux: consequences for the South Atlantic Anomaly. Geophysical Journal International, 2019, 217, 1179-1199.	2.4	22
38	Mantle-driven geodynamo featuresâ€”effects of post-Perovskite phase transition. Earth, Planets and Space, 2009, 61, 1255-1268.	2.5	21
39	Thermal convection heated both volumetrically and from below: Implications for predictions of planetary evolution. Physics of the Earth and Planetary Interiors, 2009, 173, 290-296.	1.9	20
40	Topography and geoid induced by a convecting mantle beneath an elastic lithosphere. Geophysical Journal International, 2012, 189, 55-72.	2.4	20
41	Early transient cooling of Mars. Geophysical Research Letters, 2001, 28, 3035-3038.	4.0	19
42	Can large icy moons accrete undifferentiated?. Icarus, 2014, 237, 377-387.	2.5	18
43	Short lifespans of serpentinization in the rocky core of Enceladus: Implications for hydrogen production. Icarus, 2021, 364, 114461.	2.5	18
44	Viscoelastic relaxation of Enceladusâ€™s ice shell. Icarus, 2017, 291, 31-35.	2.5	17
45	Convective interactions between oceanic lithosphere and asthenosphere: Influence of a transform fault. Earth and Planetary Science Letters, 2008, 274, 301-309.	4.4	16
46	Mantle-driven geodynamo features â€“ Effects of compositional and narrow Dâ€³ anomalies. Physics of the Earth and Planetary Interiors, 2012, 190-191, 34-43.	1.9	16
47	Towards more realistic core-mantle boundary heat flux patterns: a source of diversity in planetary dynamos. Progress in Earth and Planetary Science, 2015, 2, .	3.0	16
48	Joint Europa Mission (JEM): a multi-scale study of Europa to characterize its habitability and search for extant life. Planetary and Space Science, 2020, 193, 104960.	1.7	15
49	On the scaling of heat transfer for mixed heating convection in a spherical shell. Physics of the Earth and Planetary Interiors, 2012, 206-207, 31-42.	1.9	14
50	Probabilistic surface reconstruction of coastal sea level rise during the twentieth century. Journal of Geophysical Research: Solid Earth, 2014, 119, 9206-9236.	3.4	14
51	Can eustatic charts go beyond first order? Insights from the Permianâ€“Triassic. Lithosphere, 2016, 8, 505-518.	1.4	14
52	A particle-in-cell method for studying double-diffusive convection in the liquid layers of planetary interiors. Journal of Computational Physics, 2017, 346, 552-571.	3.8	14
53	Exploration of Icy Ocean Worlds Using Geophysical Approaches. Planetary Science Journal, 2021, 2, 150.	3.6	14
54	Numerical dynamos with outer boundary heat flux inferred from probabilistic tomographyâ€”consequences for latitudinal distribution of magnetic flux. Geophysical Journal International, 2015, 203, 840-855.	2.4	13

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55	Geologically rapid aqueous mineral alteration at subfreezing temperatures in icy worlds. Nature Astronomy, 2022, 6, 554-559.	10.1	12
56	The Fate of Liquids Trapped During the Earth's Inner Core Growth. Geophysical Research Letters, 2020, 47, e2019GL085654.	4.0	10
57	Theoretical Considerations on the Characteristic Timescales of Hydrogen Generation by Serpentinization Reactions on Enceladus. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	10
58	Virtual Tide Gauges for Predicting Relative Sea Level Rise. Journal of Geophysical Research: Solid Earth, 2019, 124, 13367-13391.	3.4	9
59	Onset of convection in a basally heated spherical shell, application to planets. Physics of the Earth and Planetary Interiors, 2009, 176, 157-173.	1.9	8
60	Scaling of heat transfer in stagnant lid convection for the outer shell of icy moons: Influence of rheology. Icarus, 2020, 338, 113448.	2.5	8
61	Sublimation-driven convection in Sputnik Planitia on Pluto. Nature, 2021, 600, 419-423.	27.8	8
62	Predicting surface dynamic topographies of stagnant lid planetary bodies. Geophysical Journal International, 2013, 195, 1494-1508.	2.4	7
63	Despinning and shape evolution of Saturnâ€™s moon Iapetus triggered by a giant impact. Icarus, 2015, 252, 454-465.	2.5	5
64	Constraining mantle convection models with palaeomagnetic reversals record and numerical dynamos. Geophysical Journal International, 2016, 207, 1165-1184.	2.4	5
65	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. Experimental Astronomy, 2022, 54, 809-847.	3.7	5
66	Solid tides in Ioâ€™s partially molten interior. Astronomy and Astrophysics, 2021, 650, A72.	5.1	4
67	Implications of Rotation, Orbital States, Energy Sources, and Heat Transport for Internal Processes in Icy Satellites. Space Sciences Series of ISSI, 2010, , 315-346.	0.0	0