Powering prolonged hydrothermal activity inside Ence

Nature Astronomy

1, 841-847

DOI: 10.1038/s41550-017-0289-8

Citation Report

#	Article	IF	Citations
1	Keeping the ocean warm. Nature Astronomy, 2017, 1, 821-822.	10.1	0
2	Oneâ€Dimensional Convective Thermal Evolution Calculation Using a Modified Mixing Length Theory: Application to Saturnian Icy Satellites. Journal of Geophysical Research E: Planets, 2018, 123, 93-112.	3.6	8
3	The Habitability of Icy Ocean Worlds in the Solar System. , 2018, , 2855-2877.		2
4	How to Detect Life on Icy Moons. Astrobiology, 2018, 18, 843-855.	3.0	30
5	Tidal synchronization of close-in satellites and exoplanets. III. Tidal dissipation revisited and application to Enceladus. Celestial Mechanics and Dynamical Astronomy, 2018, 130, 1.	1.4	15
6	Dust Emission by Active Moons. Space Science Reviews, 2018, 214, 1.	8.1	3
7	Can libration maintain Enceladus's ocean?. Earth and Planetary Science Letters, 2018, 500, 41-46.	4.4	25
8	Tightly coupled navigation system of a differential magnetometer system and a MEMS-IMU for Enceladus. , 2018, , .		1
9	Enceladus: First Observed Primordial Soup Could Arbitrate Origin-of-Life Debate. Astrobiology, 2019, 19, 1263-1278.	3.0	26
10	Internal Energy Dissipation in Enceladus's Subsurface Ocean From Tides and Libration and the Role of Inertial Waves. Journal of Geophysical Research E: Planets, 2019, 124, 2198-2212.	3.6	34
11	Ocean Dynamics of Outer Solar System Satellites. Geophysical Research Letters, 2019, 46, 8700-8710.	4.0	66
12	Tidal Response of Mars Constrained From Laboratoryâ€Based Viscoelastic Dissipation Models and Geophysical Data. Journal of Geophysical Research E: Planets, 2019, 124, 2703-2727.	3.6	43
13	Low-mass nitrogen-, oxygen-bearing, and aromatic compounds in Enceladean ice grains. Monthly Notices of the Royal Astronomical Society, 2019, 489, 5231-5243.	4.4	98
14	Differentiation of Enceladus and Retention of a Porous Core. Astrophysical Journal, 2019, 882, 47.	4.5	14
15	Chemical Ionization Mass Spectrometry: Applications for the In Situ Measurement of Nonvolatile Organics at Ocean Worlds. Astrobiology, 2019, 19, 1196-1210.	3.0	9
16	Tidal dissipation in rubble-pile asteroids. Icarus, 2019, 321, 715-721.	2.5	19
17	Enceladus's crust as a non-uniform thin shell: II tidal dissipation. Icarus, 2019, 332, 66-91.	2.5	31
18	Modeling early Titan's ocean composition. Icarus, 2019, 333, 61-70.	2.5	16

#	Article	IF	Citations
19	Decomposition of amino acids in water with application to in-situ measurements of Enceladus, Europa and other hydrothermally active icy ocean worlds. Icarus, 2019, 329, 140-147.	2.5	24
20	Enceladus: Evidence and Unsolved Questions for an Ice-Covered Habitable World. , 2019, , 399-407.		1
21	Enceladus's ice shell structure as a window on internal heat production. Icarus, 2019, 332, 111-131.	2.5	77
22	Challenges of identifying putative planetary-origin meteorites of non-igneous material. Geoscience Frontiers, 2019, 10, 1879-1890.	8.4	1
23	Evolution of Saturnâ€™s mid-sized moons. Nature Astronomy, 2019, 3, 543-552.	10.1	58
24	Formation of the Cassini Division â€“ II. Possible histories of Mimas and Enceladus. Monthly Notices of the Royal Astronomical Society, 2019, 486, 2947-2963.	4.4	7
25	Tidal dissipation in Enceladus' uneven, fractured ice shell. Icarus, 2019, 328, 218-231.	2.5	32
26	Orbital evolution of Saturnâ€™s mid-sized moons and the tidal heating of Enceladus. Icarus, 2019, 317, 570-582.	2.5	15
27	Do tidally-generated inertial waves heat the subsurface oceans of Europa and Enceladus?. Icarus, 2019, 321, 126-140.	2.5	31
28	Long-term stability of Enceladusâ€™ uneven ice shell. Icarus, 2019, 319, 476-484.	2.5	59
29	Subsurface exolife. International Journal of Astrobiology, 2019, 18, 112-141.	1.6	33
30	The TRIPLE/nanoAUV initiative a technology development initiative to support astrobiological exploration of ocean worlds. CEAS Space Journal, 2020, 12, 115-122.	2.3	5
31	Cooling patterns in rotating thin spherical shells â€” Application to Titan's subsurface ocean. Icarus, 2020, 338, 113509.	2.5	28
32	Ceres: Astrobiological Target and Possible Ocean World. Astrobiology, 2020, 20, 269-291.	3.0	43
33	Cascading parallel fractures on Enceladus. Nature Astronomy, 2020, 4, 234-239.	10.1	18
34	Tectonics of Enceladusâ€™ South Pole: Block Rotation of the Tiger Stripes. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006471.	3.6	8
35	On the Habitability and Future Exploration of Ocean Worlds. Space Science Reviews, 2020, 216, 1.	8.1	36
36	Heat Production and Tidally Driven Fluid Flow in the Permeable Core of Enceladus. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006209.	3.6	18

#	Article	IF	Citations
37	Vigorous convection in porous media. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200111.	2.1	24
38	Key Technologies and Instrumentation for Subsurface Exploration of Ocean Worlds. Space Science Reviews, 2020, 216, 1.	8.1	18
39	Returning Samples From Enceladus for Life Detection. Frontiers in Astronomy and Space Sciences, 2020, 7, .	2.8	32
40	In Situ Formation of Monohydrocalcite in Alkaline Saline Lakes of the Valley of Gobi Lakes: Prediction for Mg, Ca, and Total Dissolved Carbonate Concentrations in Enceladusâ€™ Ocean and Alkaline-Carbonate Ocean Worlds. Minerals (Basel, Switzerland), 2020, 10, 669.	2.0	12
41	Stagnant lid convection with temperature-dependent thermal conductivity and the thermal evolution of icy worlds. Geophysical Journal International, 2020, 224, 1870-1889.	2.4	4
42	Discriminating Abiotic and Biotic Fingerprints of Amino Acids and Fatty Acids in Ice Grains Relevant to Ocean Worlds. Astrobiology, 2020, 20, 1168-1184.	3.0	38
43	The Insulating Effect of Methane Clathrate Crust on Titan's Thermal Evolution. Geophysical Research Letters, 2020, 47, e2020GL087481.	4.0	27
44	Spontaneous formation of geysers at only one pole on Enceladusâ€™s ice shell. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 14764-14768.	7.1	16
45	Resonance locking in giant planets indicated by the rapid orbital expansion of Titan. Nature Astronomy, 2020, 4, 1053-1058.	10.1	87
46	Hydrogen, Hydrocarbons, and Habitability Across the Solar System. Elements, 2020, 16, 47-52.	0.5	22
47	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
48	Internally Heated Porous Convection: An Idealized Model for Enceladus' Hydrothermal Activity. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006451.	3.6	10
49	Ice-Ocean Exchange Processes in the Jovian and Saturnian Satellites. Space Science Reviews, 2020, 216, 1.	8.1	43
50	Simulating Serpentinization as It Could Apply to the Emergence of Life Using the JPL Hydrothermal Reactor. Astrobiology, 2020, 20, 307-326.	3.0	22
51	Tides in subsurface oceans with meridional varying thickness. Icarus, 2020, 343, 113711.	2.5	10
52	Large Ocean Worlds with High-Pressure Ices. Space Science Reviews, 2020, 216, 1.	8.1	62
53	Experimental and Simulation Efforts in the Astrobiological Exploration of Exooceans. Space Science Reviews, 2020, 216, 9.	8.1	25
54	The Carbonate Geochemistry of Enceladus' Ocean. Geophysical Research Letters, 2020, 47, e2019GL085885.	4.0	64

#	Article	IF	Citations
55	Exo-Ocean Exploration with Deep-Sea Sensor and Platform Technologies. Astrobiology, 2020, 20, 897-915.	3.0	15
56	Influence of the nature of the gas phase on the degradation of RNA during fossilization processes. Applied Clay Science, 2020, 191, 105616.	5.2	8
57	The Autonomous Pinger Unit of the Acoustic Navigation Network in EnEx-RANGE: an autonomous in-ice melting probe with acoustic instrumentation. Annals of Glaciology, 2021, 62, 89-98.	1.4	5
58	Partitioning of Crystalline and Amorphous Phases During Freezing of Simulated Enceladus Ocean Fluids. Journal of Geophysical Research E: Planets, 2021, 126, .	3.6	21
59	Oxidation processes diversify the metabolic menu on Enceladus. Icarus, 2021, 364, 114248.	2.5	29
63	Isostasy with Love â€“ I: elastic equilibrium. Geophysical Journal International, 2021, 225, 2157-2193.	2.4	6
64	Identification of Possible Heat Sources for the Thermal Output of Enceladus. Planetary Science Journal, 2021, 2, 29.	3.6	1
65	Ceres, a wet planet: The view after Dawn. Chemie Der Erde, 2022, 82, 125745.	2.0	1
66	Editorial: Astrobiology of Mars, Europa, Titan and Enceladus - Most Likely Places for Alien Life. Frontiers in Astronomy and Space Sciences, 2021, 8, .	2.8	3
67	Titan's Interior Structure and Dynamics After the Cassini-Huygens Mission. Annual Review of Earth and Planetary Sciences, 2021, 49, 579-607.	11.0	17
68	A pole-to-equator ocean overturning circulation on Enceladus. Nature Geoscience, 2021, 14, 185-189.	12.9	29
69	Quantifying the extent of amide and peptide bond synthesis across conditions relevant to geologic and planetary environments. Geochimica Et Cosmochimica Acta, 2021, 300, 318-332.	3.9	11
70	Bayesian analysis of Enceladusâ€™s plume data to assess methanogenesis. Nature Astronomy, 2021, 5, 805-814.	10.1	29
71	High-Rayleigh-number convection in porousâ€“fluid layers. Journal of Fluid Mechanics, 2021, 920, .	3.4	9
72	The Science Case for a Return to Enceladus. Planetary Science Journal, 2021, 2, 132.	3.6	40
73	Exploration of Icy Ocean Worlds Using Geophysical Approaches. Planetary Science Journal, 2021, 2, 150.	3.6	14
74	Short lifespans of serpentinization in the rocky core of Enceladus: Implications for hydrogen production. Icarus, 2021, 364, 114461.	2.5	18
75	Ocean Circulation on Enceladus with a High- versus Low-salinity Ocean. Planetary Science Journal, 2021, 2, 151.	3.6	31

#	Article	IF	Citations
76	A Recipe for the Geophysical Exploration of Enceladus. Planetary Science Journal, 2021, 2, 157.	3.6	14
77	Tiger: Concept Study for a New Frontiers Enceladus Habitability Mission. Planetary Science Journal, 2021, 2, 195.	3.6	5
78	Solving the Laplace Tidal Equations using Freely Available, Easily Extensible Finite Element Software. Computers and Geosciences, 2021, 155, 104865.	4.2	1
79	Tidal Dissipation in Dual-body, Highly Eccentric, and Nonsynchronously Rotating Systems: Applications to Plutoâ€“Charon and the Exoplanet TRAPPIST-1e. Planetary Science Journal, 2021, 2, 4.	3.6	13
80	The Geochemistry of Icy Moons. , 2021, , 207-216.		2
81	Heating of Enceladus due to the dissipation of ocean tides. Icarus, 2020, 348, 113821.	2.5	16
82	Photometrically-corrected global infrared mosaics of Enceladus: New implications for its spectral diversity and geological activity. Icarus, 2020, 349, 113848.	2.5	10
83	Macromolecular organic compounds from the depths of Enceladus. Nature, 2018, 558, 564-568.	27.8	282
84	Serpentinite and the search for life beyond Earth. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20180421.	3.4	29
85	The Geochemistry of Enceladus: Composition and Controls. , 2018, , .		35
86	On the Origin of the Pluto System. , 2020, , 1-1.		4
87	Instantaneous Habitable Windows in the Parameter Space of Enceladus' Ocean. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006951.	3.6	10
88	The Habitability of Icy Ocean Worlds in the Solar System. , 2018, , 1-23.		0
89	Deep Ocean Passive Acoustic Technologies for Exploration of Ocean and Surface Sea Worlds in the Outer Solar System. Oceanography, 2020, 33, .	1.0	1
90	An investigation of libration heating and the thermal state of Enceladus's ice shell. Icarus, 2022, 373, 114769.	2.5	0
91	Habitable potentials. Nature Astronomy, 2021, 5, 1083-1085.	10.1	5
92	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. Experimental Astronomy, 2022, 54, 809-847.	3.7	5
93	Enceladus and Titan: emerging worlds of the Solar System. Experimental Astronomy, 0, , 1.	3.7	1

#	Article	IF	Citations
94	Saturnâ€™s icy satellites investigated by Cassini - VIMS. V. Spectrophotometry. Icarus, 2022, 375, 114803.	2.5	3
95	A numerical model of convective heat transfer in Titanâ€™s subsurface ocean. Icarus, 2022, 376, 114853.	2.5	14
96	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
97	Porosity-filling Metamorphic Brines Explain Ceresâ€™s Low Mantle Density. Planetary Science Journal, 2022, 3, 21.	3.6	8
98	The tidalâ€“thermal evolution of the Plutoâ€“Charon system. Icarus, 2022, 376, 114871.	2.5	5
100	The Lake Alchichica from an Astrobiological Perspective. , 2022, , 391-413.		0
101	Science Drivers for the Future Exploration of Ceres: From Solar System Evolution to Ocean World Science. Planetary Science Journal, 2022, 3, 64.	3.6	4
102	Science Objectives for Flagship-Class Mission Concepts for the Search for Evidence of Life at Enceladus. Astrobiology, 2022, 22, 685-712.	3.0	21
103	On the Structure and Long-term Evolution of Ice-rich Bodies. Astrophysical Journal, 2022, 927, 178.	4.5	5
104	Geologically rapid aqueous mineral alteration at subfreezing temperatures in icy worlds. Nature Astronomy, 2022, 6, 554-559.	10.1	12
105	Ceresâ€™ Internal Evolution. , 2022, , 159-172.		0
106	Exploring Ocean Circulation on Icy Moons Heated From Below. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	24
107	Interiors of Earth-Like Planets and Satellites of the Solar System. Surveys in Geophysics, 0, , 1.	4.6	5
108	The Tides of Enceladus' Porous Core. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	20
109	Is the Ocean of Enceladus in a Primitive Evolutionary Stage?. , 0, , .		0
110	Waterâ€“rock interactions within icy worlds. Nature Astronomy, 2022, 6, 525-526.	10.1	0
111	Seismic Detection of Euroquakes Originating From Europa's Silicate Interior. Earth and Space Science, 2022, 9, .	2.6	3
113	How does salinity shape ocean circulation and ice geometry on Enceladus and other icy satellites?. Science Advances, 2022, 8, .	10.3	31

#	Article	IF	Citations
114	Different Ice-shell Geometries on Europa and Enceladus due to Their Different Sizes: Impacts of Ocean Heat Transport. Astrophysical Journal, 2022, 934, 116.	4.5	12
115	Chemical Fractionation Modeling of Plumes Indicates a Gas-rich, Moderately Alkaline Enceladus Ocean. Planetary Science Journal, 2022, 3, 191.	3.6	15
116	The influence of heterogeneous seafloor heat flux on the cooling patterns of Ganymedeâ€™s and Titanâ€™s subsurface oceans. Icarus, 2023, 389, 115232.	2.5	5
117	Tidal insights into rocky and icy bodies: an introduction and overview. Advances in Geophysics, 2022, , 231-320.	2.8	12
118	Dynamics of a deforming planetary body. Icarus, 2023, 389, 115258.	2.5	0
119	Abundant phosphorus expected for possible life in Enceladusâ€™s ocean. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	16
120	Ocean dynamics and tracer transport over the south pole geysers of Enceladus. Monthly Notices of the Royal Astronomical Society, 2022, 517, 3485-3494.	4.4	9
121	Topographic response to ocean heat flux anomaly on the icy moons of Jupiter and Saturn. Icarus, 2023, 391, 115337.	2.5	2
122	The role of ocean circulation in driving hemispheric symmetry breaking of the ice shell of Enceladus. Earth and Planetary Science Letters, 2022, 599, 117845.	4.4	5
123	Moonraker: Enceladus Multiple Flyby Mission. Planetary Science Journal, 2022, 3, 268.	3.6	5
124	Predicting convection configurations in coupled fluidâ€“porous systems. Journal of Fluid Mechanics, 2022, 953, .	3.4	2
125	Putative Methanogenic Biosphere in Enceladus's Deep Ocean: Biomass, Productivity, and Implications for Detection. Planetary Science Journal, 2022, 3, 270.	3.6	10
126	Estimating the 3D structure of the Enceladus ice shell from Flexural and Crary waves using seismic simulations. Earth and Planetary Science Letters, 2023, 603, 117984.	4.4	1
127	Terrestrial analogs & submarine hydrothermal ventsâ€”their roles in exploring ocean worlds, habitability, andÂlife beyond earth. , 2023, , 311-358.		0
128	Could near-Earth watery asteroid Ceres be a likely ocean world and habitable?. , 2023, , 523-544.		0
129	Salty ocean and submarine hydrothermal vents on Saturnâ€™s Moon Enceladusâ€”Tall plume of gas, jets of water vapor & organic-enriched ice particles spewing from its south pole. , 2023, , 583-616.		0
130	Estimates for Tethys' Moment of Inertia, Heat Flux Distribution, and Interior Structure From Its Longâ€Wavelength Topography. Journal of Geophysical Research E: Planets, 2023, 128, .	3.6	1
131	Particle entrainment and rotating convection in Enceladusâ€™ ocean. Communications Earth & Environment, 2023, 4, .	6.8	4

#	Article	IF	Citations
132	Spectroscopic and Biophysical Methods to Determine Differential Saltâ€Uptake by Primitive Membraneless Polyester Microdroplets. Small Methods, 2023, 7, .	8.6	2
133	Detection of Short Peptides as Putative Biosignatures of Psychrophiles via Laser Desorption Mass Spectrometry. Astrobiology, 2023, 23, 657-669.	3.0	0
134	Mimas: Frozen Fragment, Ring Relic, or Emerging Ocean World?. Annual Review of Earth and Planetary Sciences, 2023, 51, 367-387.	11.0	3
135	Detection of phosphates originating from Enceladusâ€™s ocean. Nature, 2023, 618, 489-493.	27.8	23
136	Inferring the Mean Thickness of the Outer Ice Shell of Enceladus From Diurnal Crustal Deformation. Journal of Geophysical Research E: Planets, 2023, 128, .	3.6	4
137	Energetic Constraints on Ocean Circulations of Icy Ocean Worlds. Planetary Science Journal, 2023, 4, 117.	3.6	6
138	Iron reduction as a viable metabolic pathway in Enceladusâ€™ ocean. International Journal of Astrobiology, 2023, 22, 539-558.	1.6	3
139	Poroviscoelastic Gravitational Dynamics. Journal of Geophysical Research E: Planets, 2023, 128, .	3.6	3
140	The modulation effect of ice thickness variations on convection in icy ocean worlds. Monthly Notices of the Royal Astronomical Society, 2023, 525, 5251-5261.	4.4	3
141	Investigating the porosity of Enceladus. Monthly Notices of the Royal Astronomical Society, 2023, 525, 1246-1253.	4.4	0
142	A Review on Hypothesized Metabolic Pathways on Europa and Enceladus: Space-Flight Detection Considerations. Life, 2023, 13, 1726.	2.4	4
143	Global seismology in the interior of Enceladus. Icarus, 2024, 408, 115806.	2.5	0
144	Origin and Evolution of Enceladusâ€™s Tidal Dissipation. Space Science Reviews, 2023, 219, .	8.1	1
145	Prospects for the characterization of habitable planets. Comptes Rendus Physique, 2023, 24, 1-16.	0.9	0
146	The Physical Oceanography of Ice-Covered Moons. Annual Review of Marine Science, 2024, 16, 25-53.	11.6	2
147	New global topography of Enceladus: Hypsometry, basins, spherical harmonics, shell thickness, and true polar wander revisited. Icarus, 2024, 408, 115827.	2.5	2
148	Using Tidallyâ€Driven Elastic Strains to Infer Regional Variations in Crustal Thickness at Enceladus. Geophysical Research Letters, 2023, 50, .	4.0	1
149	Divergent Behavior of Hydrothermal Plumes in Fresh Versus Salty Icy Ocean Worlds. Journal of Geophysical Research E: Planets, 2023, 128, .	3.6	1

#	Article	IF	Citations
150	Impact of the Core Deformation on the Tidal Heating and Flow in Enceladus' Subsurface Ocean. Journal of Geophysical Research E: Planets, 2023, 128, .	3.6	0
151	Sustained and comparative habitability beyond Earth. Nature Astronomy, 2024, 8, 30-38.	10.1	1
152	Geysers' Dust Dynamics Inside the Hill Sphere of Enceladus. Geophysical Research Letters, 2024, 51, .	4.0	0
153	The Effect of Salinity on Ocean Circulation and Iceâ€“Ocean Interaction on Enceladus. Planetary Science Journal, 2024, 5, 13.	3.6	0
154	Nonsynchronous rotation of icy moon ice shells: The thermal wind perspective. Science Advances, 2024, 10, .	10.3	1
155	A recently formed ocean inside Saturnâ€™s moon Mimas. Nature, 2024, 626, 280-282.	27.8	2
156	Gravity Investigation to Characterize Enceladus's Ocean and Interior. Planetary Science Journal, 2024, 5, 40.	3.6	0
157	A light sail astrobiology precursor mission to Enceladus and Europa. Acta Astronautica, 2024, 218, 251-268.	3.2	0
158	Considerations for Detecting Organic Indicators of Metabolism on Enceladus. Astrobiology, 2024, 24, 328-338.	3.0	0