

Linda Elkins-Tanton

List of Publications by Year in descending order

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114
papers

8,831
citations

36271

51
h-index

45285

90
g-index

122
all docs

122
docs citations

122
times ranked

6365
citing authors

#	ARTICLE	IF	CITATIONS
1	Fractional crystallization and mantle-melting controls on calc-alkaline differentiation trends. Contributions To Mineralogy and Petrology, 2003, 145, 515-533.	1.2	623
2	Linked magma ocean solidification and atmospheric growth for Earth and Mars. Earth and Planetary Science Letters, 2008, 271, 181-191.	1.8	447
3	Magma Oceans in the Inner Solar System. Annual Review of Earth and Planetary Sciences, 2012, 40, 113-139.	4.6	392
4	The lunar magma ocean: Reconciling the solidification process with lunar petrology and geochronology. Earth and Planetary Science Letters, 2011, 304, 326-336.	1.8	376
5	Thermal and Magmatic Evolution of the Moon. Reviews in Mineralogy and Geochemistry, 2006, 60, 365-518.	2.2	372
6	Recent Hotspot Volcanism on Venus from VIRTIS Emissivity Data. Science, 2010, 328, 605-608.	6.0	270
7	Chondrites as samples of differentiated planetesimals. Earth and Planetary Science Letters, 2011, 305, 1-10.	1.8	247
8	Magma ocean fractional crystallization and cumulate overturn in terrestrial planets: Implications for Mars. Meteoritics and Planetary Science, 2003, 38, 1753-1771.	0.7	218
9	Stochastic Late Accretion to Earth, the Moon, and Mars. Science, 2010, 330, 1527-1530.	6.0	194
10	Widespread mixing and burial of Earth's Hadean crust by asteroid impacts. Nature, 2014, 511, 578-582.	13.7	187
11	Ocean Planet or Thick Atmosphere: On the Mass-Radius Relationship for Solid Exoplanets with Massive Atmospheres. Astrophysical Journal, 2008, 673, 1160-1164.	1.6	186
12	Magnesian andesite and dacite lavas from Mt. Shasta, northern California: products of fractional crystallization of H ₂ O-rich mantle melts. Contributions To Mineralogy and Petrology, 2005, 148, 542-565.	1.2	177
13	Ranges of Atmospheric Mass and Composition of Super-Earth Exoplanets. Astrophysical Journal, 2008, 685, 1237-1246.	1.6	177
14	Possible formation of ancient crust on Mars through magma ocean processes. Journal of Geophysical Research, 2005, 110, .	3.3	158
15	The lithosphere-asthenosphere boundary and cratonic lithospheric layering beneath Australia from Sp wave imaging. Earth and Planetary Science Letters, 2010, 300, 299-310.	1.8	158
16	Magnitude and consequences of volatile release from the Siberian Traps. Earth and Planetary Science Letters, 2012, 317-318, 363-373.	1.8	154
17	Acid rain and ozone depletion from pulsed Siberian Traps magmatism. Geology, 2014, 42, 67-70.	2.0	149
18	Effect of solid flow above a subducting slab on water distribution and melting at convergent plate boundaries. Journal of Geophysical Research, 2007, 112, .	3.3	148

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19	Continental magmatism, volatile recycling, and a heterogeneous mantle caused by lithospheric gravitational instabilities. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	143
20	Vertical mantle flow associated with a lithospheric drip beneath the Great Basin. <i>Nature Geoscience</i> , 2009, 2, 439-444.	5.4	143
21	Re-examination of the lunar magma ocean cumulate overturn hypothesis: melting or mixing is required. <i>Earth and Planetary Science Letters</i> , 2002, 196, 239-249.	1.8	142
22	The origin of eucrites, diogenites, and olivine diogenites: Magma ocean crystallization and shallow magma chamber processes on Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2333-2349.	0.7	121
23	Differentiated Planetesimals and the Parent Bodies of Chondrites. <i>Annual Review of Earth and Planetary Sciences</i> , 2013, 41, 529-560.	4.6	118
24	Melt intrusion as a trigger for lithospheric foundering and the eruption of the Siberian flood basalts. <i>Geophysical Research Letters</i> , 2000, 27, 3937-3940.	1.5	117
25	Early magnetic field and magmatic activity on Mars from magma ocean cumulate overturn. <i>Earth and Planetary Science Letters</i> , 2005, 236, 1-12.	1.8	111
26	Magnetism on the Angrite Parent Body and the Early Differentiation of Planetesimals. <i>Science</i> , 2008, 322, 713-716.	6.0	105
27	Water (hydrogen) in the lunar mantle: Results from petrology and magma ocean modeling. <i>Earth and Planetary Science Letters</i> , 2011, 307, 173-179.	1.8	99
28	Mars' Paleomagnetic Field as the Result of a Single-Hemisphere Dynamo. <i>Science</i> , 2008, 321, 1822-1825.	6.0	98
29	Magnetic evidence for a partially differentiated carbonaceous chondrite parent body. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 6386-6389.	3.3	97
30	Formation of early water oceans on rocky planets. <i>Astrophysics and Space Science</i> , 2011, 332, 359-364.	0.5	95
31	Hot, shallow mantle melting under the Cascades volcanic arc. <i>Geology</i> , 2001, 29, 631.	2.0	90
32	Compositions of Mercury's earliest crust from magma ocean models. <i>Earth and Planetary Science Letters</i> , 2009, 286, 446-455.	1.8	89
33	Coupled thermal-orbital evolution of the early Moon. <i>Icarus</i> , 2010, 208, 1-10.	1.1	89
34	Coreless Terrestrial Exoplanets. <i>Astrophysical Journal</i> , 2008, 688, 628-635.	1.6	87
35	Systemic swings in end-Permian climate from Siberian Traps carbon and sulfur outgassing. <i>Nature Geoscience</i> , 2018, 11, 949-954.	5.4	85
36	Escape of the martian protoatmosphere and initial water inventory. <i>Planetary and Space Science</i> , 2014, 98, 106-119.	0.9	83

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37	Magmatic effects of the lunar late heavy bombardment. <i>Earth and Planetary Science Letters</i> , 2004, 222, 17-27.	1.8	82
38	A SELF-CONSISTENT MODEL OF THE CIRCUMSTELLAR DEBRIS CREATED BY A GIANT HYPERVELOCITY IMPACT IN THE HD 172555 SYSTEM. <i>Astrophysical Journal</i> , 2012, 761, 45.	1.6	77
39	Experimental and petrological constraints on lunar differentiation from the Apollo 15 green picritic glasses. <i>Meteoritics and Planetary Science</i> , 2003, 38, 515-527.	0.7	76
40	The sustainability of habitability on terrestrial planets: Insights, questions, and needed measurements from Mars for understanding the evolution of Earth-like worlds. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 1927-1961.	1.5	72
41	4. Thermal and Magmatic Evolution of the Moon. , 2006, , 365-518.		70
42	Initiation of plate tectonics from post-magma ocean thermochemical convection. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 8538-8561.	1.4	69
43	Continental magmatism caused by lithospheric delamination. , 2005, , .		68
44	Origin of lunar ultramafic green glasses: constraints from phase equilibrium studies. <i>Geochimica Et Cosmochimica Acta</i> , 2000, 64, 2339-2350.	1.6	66
45	Giant meteoroid impacts can cause volcanism. <i>Earth and Planetary Science Letters</i> , 2005, 239, 219-232.	1.8	65
46	The accretion and impact history of the ordinary chondrite parent bodies. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 200, 201-217.	1.6	65
47	Origin of Earth's Water: Chondritic Inheritance Plus Nebular Ingassing and Storage of Hydrogen in the Core. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 2691-2712.	1.5	61
48	Observations, Meteorites, and Models: A Preflight Assessment of the Composition and Formation of (16) Psyche. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006296.	1.5	61
49	Evidence for deep melting of hydrous metasomatized mantle: Pliocene high-potassium magmas from the Sierra Nevadas. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	60
50	Mantle source volumes and the origin of the mid-Tertiary ignimbrite flare-up in the southern Rocky Mountains, western U.S.. <i>Lithos</i> , 2008, 102, 279-294.	0.6	60
51	Evolution of the East African rift: Drip magmatism, lithospheric thinning and mafic volcanism. <i>Geochimica Et Cosmochimica Acta</i> , 2016, 185, 418-434.	1.6	59
52	Origin, Internal Structure and Evolution of 4 Vesta. <i>Space Science Reviews</i> , 2011, 163, 77-93.	3.7	54
53	Coupled orbital-thermal evolution of the early Earth-Moon system with a fast-spinning Earth. <i>Icarus</i> , 2017, 281, 90-102.	1.1	54
54	ON THE EMERGENT SPECTRA OF HOT PROTOPLANET COLLISION AFTERGLOWS. <i>Astrophysical Journal</i> , 2009, 704, 770-780.	1.6	52

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55	A mechanism for low-extent melts at the lithosphere-asthenosphere boundary. <i>Geochemistry, Geophysics, Geosystems</i> , 2010, 11, .	1.0	52
56	Possible evidence for partial differentiation of asteroid Lutetia from Rosetta. <i>Planetary and Space Science</i> , 2012, 66, 137-146.	0.9	50
57	Crystals stirred up: 2. Numerical insights into the formation of the earliest crust on the Moon. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	49
58	The fate of magmas in planetesimals and the retention of primitive chondritic crusts. <i>Earth and Planetary Science Letters</i> , 2014, 390, 128-137.	1.8	48
59	Volcanism and volatile recycling on a one-plate planet: Applications to Venus. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	46
60	A laboratory model of splash-form tektites. <i>Meteoritics and Planetary Science</i> , 2003, 38, 1331-1340.	0.7	41
61	EFFECTS OF STELLAR FLUX ON TIDALLY LOCKED TERRESTRIAL PLANETS: DEGREE-1 MANTLE CONVECTION AND LOCAL MAGMA PONDS. <i>Astrophysical Journal</i> , 2011, 735, 72.	1.6	39
62	Sulfur isotopic evidence for sources of volatiles in Siberian Traps magmas. <i>Earth and Planetary Science Letters</i> , 2014, 394, 58-69.	1.8	39
63	Overview of the spacecraft design for the Psyche mission concept. , 2018, , .		35
64	Core solidification and dynamo evolution in a mantle-stripped planetesimal. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 2-20.	1.5	34
65	A basal magma ocean dynamo to explain the early lunar magnetic field. <i>Earth and Planetary Science Letters</i> , 2018, 492, 144-151.	1.8	32
66	The last lavas erupted during the main phase of the Siberian flood volcanic province: results from experimental petrology. <i>Contributions To Mineralogy and Petrology</i> , 2006, 153, 191-209.	1.2	31
67	Magmatic processes that produced lunar fire fountains. <i>Geophysical Research Letters</i> , 2003, 30, n/a-n/a.	1.5	30
68	It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	30
69	Timescale and morphology of Martian mantle overturn immediately following magma ocean solidification. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 454-467.	1.5	29
70	Effects of magma ocean crystallization and overturn on the development of ¹⁴² Nd and ¹⁸² W isotopic heterogeneities in the primordial mantle. <i>Earth and Planetary Science Letters</i> , 2014, 408, 319-330.	1.8	29
71	Geomagnetic Secular Variations at the Permian-Triassic Boundary and Pulsed Magmatism During Eruption of the Siberian Traps. <i>Geochemistry, Geophysics, Geosystems</i> , 2019, 20, 773-791.	1.0	28
72	Crystals stirred up: 1. Direct numerical simulations of crystal settling in nondilute magmatic suspensions. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	27

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73	The fate of water within Earth and super-Earths and implications for plate tectonics. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20150394.	1.6	27
74	THE EFFECT OF LOWER MANTLE METALLIZATION ON MAGNETIC FIELD GENERATION IN ROCKY EXOPLANETS. Astrophysical Journal Letters, 2013, 768, L30.	3.0	26
75	Magma oceans as a critical stage in the tectonic development of rocky planets. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20180109.	1.6	26
76	Expanding the application of the Eu-Oxybarometer to the Iherzolitic shergottites and nakhlites: Implications for the oxidation state heterogeneity of the Martian interior. Meteoritics and Planetary Science, 2009, 44, 725-745.	0.7	25
77	Field evidence for coal combustion links the 252 Ma Siberian Traps with global carbon disruption. Geology, 2020, 48, 986-991.	2.0	25
78	Coronae formation on Venus via extension and lithospheric instability. Journal of Geophysical Research E: Planets, 2014, 119, 2568-2582.	1.5	23
79	Carbonatites as a record of the carbon isotope composition of large igneous province outgassing. Earth and Planetary Science Letters, 2020, 535, 116076.	1.8	21
80	Tectonic and thermal evolution of Venus and the role of volatiles: Implications for understanding the terrestrial planets. Geophysical Monograph Series, 2007, , 45-71.	0.1	19
81	Hypervelocity Impact Experiments in Iron-Nickel Ingots and Iron Meteorites: Implications for the NASA Psyche Mission. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE005927.	1.5	18
82	Contraction or expansion of the Moon's crust during magma ocean freezing?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130240.	1.6	16
83	Effect of Reimpacting Debris on the Solidification of the Lunar Magma Ocean. Journal of Geophysical Research E: Planets, 2018, 123, 1168-1191.	1.5	16
84	Siberian Traps volcanoclastic rocks and the role of magma-water interactions. Bulletin of the Geological Society of America, 2015, 127, 1437-1452.	1.6	14
85	Composition of Solar System Small Bodies. , 2017, , 269-297.		14
86	Psyche: Journey to a Metal World. , 2016, , .		13
87	Distinguishing the Origin of Asteroid (16) Psyche. Space Science Reviews, 2022, 218, 17.	3.7	13
88	Massive impact-induced release of carbon and sulfur gases in the early Earth's atmosphere. Earth and Planetary Science Letters, 2016, 449, 96-104.	1.8	12
89	Occam's origin of the Moon. Nature Geoscience, 2013, 6, 996-998.	5.4	10
90	The Science of Exoplanets and Their Systems. Astrobiology, 2013, 13, 793-813.	1.5	10

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91	Evolutionary dichotomy for rocky planets. <i>Nature</i> , 2013, 497, 570-572.	13.7	10
92	The origin of gases that caused the Permian–Triassic extinction. , 0, , 147-163.		10
93	Signatures of Hit-and-run Collisions. , 2017, , 7-37.		9
94	HST UV Observations of Asteroid (16) Psyche. <i>Planetary Science Journal</i> , 2020, 1, 53.	1.5	9
95	Silicate Melting and Volatile Loss During Differentiation in Planetesimals. , 2017, , 115-135.		8
96	Space Weathering Effects in Troilite by Simulated Solar–Wind Hydrogen and Helium Ion Irradiation. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	1.5	8
97	Bottle–green microtektites from the South Tasman Rise: Deep–sea evidence for an impact event near the Miocene/Pliocene boundary. <i>Meteoritics and Planetary Science</i> , 2004, 39, 1921-1929.	0.7	7
98	The effects of bulk composition on planetesimal core sulfur content and size. <i>Icarus</i> , 2022, 380, 114976.	1.1	7
99	Reply to the comment by Mike R. James et al. on “It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity”. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	6
100	Magnetic Fields on Asteroids and Planetesimals. , 2017, , 180-203.		6
101	A Long–Lived Planetesimal Dynamo Powered by Core Crystallization. <i>Geophysical Research Letters</i> , 2021, 48, e2020GL091917.	1.5	6
102	Psyche Science Operations Concept: Maximize Reuse to Minimize Risk. , 2018, , .		5
103	Mars beat Earth in the race for habitable conditions. <i>Nature</i> , 2018, 558, 522-523.	13.7	5
104	Magnetic Mineralogy of Meteoritic Metal: Paleomagnetic Evidence for Dynamo Activity on Differentiated Planetesimals. , 2017, , 204-223.		4
105	A Brief History of Spacecraft Missions to Asteroids and Protoplanets. , 2018, , 1-57.		4
106	Magnetic gradiometry using frequency-domain filtering. <i>Measurement Science and Technology</i> , 0, , .	1.4	4
107	Asteroid 16 Psyche: NASA's 14th Discovery Mission. <i>Elements</i> , 2018, 14, 68-68.	0.5	2
108	Water on the Moon. <i>Physics Today</i> , 2011, 64, 74-75.	0.3	1

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109	The Taxonomy of Planetesimals: Consequences for Planets. , 0, , 365-375.		1
110	The Arizona State University Interplanetary Initiative: Envisioning and Creating Our Human Space Future. <i>New Space</i> , 2020, 8, 133-136.	0.4	1
111	Field evidence for coal combustion links the 252 Ma Siberian Traps with global carbon disruption: REPLY. <i>Geology</i> , 2021, 49, e518-e518.	2.0	1
112	Understanding Planetesimals. <i>Eos</i> , 2014, 95, 81-81.	0.1	0
113	Internal sources of water on Earth. <i>Proceedings of the International Astronomical Union</i> , 2015, 11, 407-410.	0.0	0
114	The "Frozen, Darkened Soul" Rises into Space: Travels in Siberia and the Plight of Life on Earth. <i>Leonardo</i> , 2021, 54, 149-156.	0.2	0