H Jay Melosh

List of Publications by Year
in descending order

62 papers	6,116 citations	109264 35 h-index	118793 62 g-index
66 all docs	66 docs citations	66 times ranked	3597 citing authors

#	Article	IF	Citations
1	Bombardment history of the Moon constrained by crustal porosity. Nature Geoscience, 2022, 15, 531-535.	5.4	7
2	Feasibility Study of a Highâ€Resolution Shallow Surface Penetration Radar for Space Application. Radio Science, 2021, 56, e2020RS007118.	0.8	1
3	Scaling laws for the geometry of an impact-induced magma ocean. Earth and Planetary Science Letters, 2021, 568, 116983.	1.8	25
4	Pluto's Antipodal Terrains Imply a Thick Subsurface Ocean and Hydrated Core. Geophysical Research Letters, 2021, 48, e2020GL091596.	1.5	9
5	Lunar lava tubes: Morphology to structural stability. Icarus, 2020, 338, 113442.	1.1	25
6	The Australasian tektite source crater: Found at last?. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1252-1253.	3.3	6
7	Why the lunar South Pole-Aitken Basin is not a mascon. Icarus, 2020, 352, 113995.	1.1	16
8	A nonlinear and timeâ€dependent viscoâ€elastoâ€plastic rheology model for studying shockâ€physics phenomena. Engineering Reports, 2020, 2, e12322.	0.9	7
9	Ceres Crater Degradation Inferred From Concentric Fracturing. Journal of Geophysical Research E: Planets, 2019, 124, 1188-1203.	1.5	15
10	Why the Moon is so like the Earth. Nature Geoscience, 2019, 12, 402-403.	5.4	2
11	Impact Fragmentation and the Development of the Deep Lunar Megaregolith. Journal of Geophysical Research E: Planets, 2019, 124, 941-957.	1.5	27
12	Deep Structure of the Lunar South Poleâ€Aitken Basin. Geophysical Research Letters, 2019, 46, 5100-5106.	1.5	22
13	HCN Production via Impact Ejecta Reentry During the Late Heavy Bombardment. Journal of Geophysical Research E: Planets, 2018, 123, 892-909.	1.5	30
14	Slow Impacts on Strong Targets Bring on the Heat. Geophysical Research Letters, 2018, 45, 2597-2599.	1.5	12
15	The Role of Breccia Lenses in Regolith Generation From the Formation of Small, Simple Craters: Application to the Apollo 15 Landing Site. Journal of Geophysical Research E: Planets, 2018, 123, 527-543.	1.5	21
16	Air penetration enhances fragmentation of entering meteoroids. Meteoritics and Planetary Science, 2018, 53, 493-504.	0.7	12
17	Controls on the Formation of Lunar Multiring Basins. Journal of Geophysical Research E: Planets, 2018, 123, 3035-3050.	1.5	19
18	Evidence of large empty lava tubes on the Moon using GRAIL gravity. Geophysical Research Letters, 2017, 44, 105-112.	1.5	52

#	Article	IF	Citations
19	Detection and characterization of buried lunar craters with GRAIL data. Icarus, 2017, 289, 157-172.	1.1	25
20	Detection of Intact Lava Tubes at Marius Hills on the Moon by SELENE (Kaguya) Lunar Radar Sounder. Geophysical Research Letters, 2017, 44, 10,155.	1.5	62
21	Impact geologists, beware!. Geophysical Research Letters, 2017, 44, 8873-8874.	1.5	8
22	The structural stability of lunar lava tubes. Icarus, 2017, 282, 47-55.	1.1	41
23	The reduction of friction in long runout landslides as an emergent phenomenon. Journal of Geophysical Research F: Earth Surface, 2016, 121, 881-889.	1.0	71
24	HCN production from impact ejecta on the early Earth. AIP Conference Proceedings, 2016, , .	0.3	3
25	Reply to comment by Iverson on â€œThe reduction of friction in long runout landslides as an emergent phenomenonâ€. Journal of Geophysical Research F: Earth Surface, 2016, 121, 2243-2246.	1.0	5
26	Formation of the Orientale lunar multiring basin. Science, 2016, 354, 441-444.	6.0	78
27	Gravity field of the Orientale basin from the Gravity Recovery and Interior Laboratory Mission. Science, 2016, 354, 438-441.	6.0	38
28	NOxproduction and rainout from Chicxulub impact ejecta reentry. Journal of Geophysical Research E: Planets, 2015, 120, 2152-2168.	1.5	19
29	Preimpact porosity controls the gravity signature of lunar craters. Geophysical Research Letters, 2015, 42, 9711-9716.	1.5	50
30	The fractured Moon: Production and saturation of porosity in the lunar highlands from impact cratering. Geophysical Research Letters, 2015, 42, 6939-6944.	1.5	63
31	Lunar impact basins revealed by Gravity Recovery and Interior Laboratory measurements. Science Advances, 2015, 1, e1500852.	4.7	173
32	Hydrocode simulation of Ganymede and Europa cratering trends â€" How thick is Europaâ€™s crust?. Icarus, 2014, 231, 394-406.	1.1	49
33	New approaches to the Moon's isotopic crisis. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130168.	1.6	33
34	The formation of lunar mascon basins from impact to contemporary form. Journal of Geophysical Research E: Planets, 2014, 119, 2378-2397.	1.5	57
35	Lunar interior properties from the GRAIL mission. Journal of Geophysical Research E: Planets, 2014, 119, 1546-1578.	1.5	185
36	Asymmetric Distribution of Lunar Impact Basins Caused by Variations in Target Properties. Science, 2013, 342, 724-726.	6.0	103

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37	Credit for Impact Theory. Science, 2013, 342, 1445-1446.	6.0	38
38	Ancient Igneous Intrusions and Early Expansion of the Moon Revealed by GRAIL Gravity Gradiometry. Science, 2013, 339, 675-678.	6.0	177
39	Gravity Field of the Moon from the Gravity Recovery and Interior Laboratory (GRAIL) Mission. Science, 2013, 339, 668-671.	6.0	389
40	The Crust of the Moon as Seen by GRAIL. Science, 2013, 339, 671-675.	6.0	726
41	Projectile remnants in central peaks of lunar impact craters. Nature Geoscience, 2013, 6, 435-437.	5.4	60
42	The Origin of Lunar Mascon Basins. Science, 2013, 340, 1552-1555.	6.0	174
43	Antipodal terrains created by the Rheasilvia basin forming impact on asteroid 4 Vesta. Journal of Geophysical Research E: Planets, 2013, 118, 1821-1834.	1.5	22
44	On the origin of graben and ridges within and near volcanically buried craters and basins in Mercury's northern plains. Journal of Geophysical Research, 2012, 117, .	3.3	30
45	Impact spherules as a record of an ancient heavy bombardment of Earth. Nature, 2012, 485, 75-77.	13.7	114
46	The Impact-Cratering Process. Elements, 2012, 8, 25-30.	0.5	66
47	Self-shielding of thermal radiation by Chicxulub impact ejecta: Firestorm or fizzle?. Geology, 2009, 37, 1135-1138.	2.0	57
48	A hydrocode equation of state for SiO₂. Meteoritics and Planetary Science, 2007, 42, 2079-2098.	0.7	256
49	Meteor Crater formed by low-velocity impact. Nature, 2005, 434, 157-157.	13.7	49
50	Modeling damage and deformation in impact simulations. Meteoritics and Planetary Science, 2004, 39, 217-231.	0.7	384
51	Shock viscosity and rise time of explosion waves in geologic media. Journal of Applied Physics, 2003, 94, 4320-4325.	1.1	13
52	Tectonics of mascon loading: Resolution of the strike-slip faulting paradox. Journal of Geophysical Research, 2001, 106, 20603-20620.	3.3	74
53	Hydrocode modeling of oblique impacts: The fate of the projectile. Meteoritics and Planetary Science, 2000, 35, 117-130.	0.7	187
54	Understanding Oblique Impacts from Experiments, Observations, and Modeling. Annual Review of Earth and Planetary Sciences, 2000, 28, 141-167.	4.6	236

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55	IMPACT CRATER COLLAPSE. Annual Review of Earth and Planetary Sciences, 1999, 27, 385-415.	4.6	428
56	Hydrocode simulation of the Chicxulub impact event and the production of climatically active gases. Journal of Geophysical Research, 1998, 103, 28607-28625.	3.3	182
57	Dynamic fragmentation in impacts: Hydrocode simulation of laboratory impacts. Journal of Geophysical Research, 1992, 97, 14735-14759.	3.3	270
58	The origin of the Moon and the single-impact hypothesis III. Icarus, 1989, 81, 113-131.	1.1	353
59	Drainage pits in cohesionless materials: Implications for the surface of Phobos. Journal of Geophysical Research, 1989, 94, 12433-12441.	3.3	61
60	Ejection of rock fragments from planetary bodies. Geology, 1985, 13, 144.	2.0	119
61	A simple mechanical model of Valhalla Basin, Callisto. Journal of Geophysical Research, 1982, 87, 1880-1890.	3.3	33
62	The mechanics of ringed basin formation. Geophysical Research Letters, 1978, 5, 985-988.	1.5	98