The LCROSS Cratering Experiment

Science

330, 468-472

DOI: 10.1126/science.1187454

Citation Report

#	Article	IF	Citations
1	Lunar Water: A Brief Review. Earth, Moon and Planets, 2010, 107, 65-73.	0.6	70
2	Detection of Water in the LCROSS Ejecta Plume. Science, 2010, 330, 463-468.	12.6	707
3	Diviner Lunar Radiometer Observations of the LCROSS Impact. Science, 2010, 330, 477-479.	12.6	68
4	Diviner Lunar Radiometer Observations of Cold Traps in the Moonâ€™s South Polar Region. Science, 2010, 330, 479-482.	12.6	385
5	Results from the NMSU-NASA Marshall Space Flight Center LCROSS observational campaign. Journal of Geophysical Research, 2011, 116, .	3.3	7
6	Modeling of the vapor release from the LCROSS impact: Parametric dependencies. Journal of Geophysical Research, 2011, 116, .	3.3	12
7	Electrical stress and strain in lunar regolith simulants. Planetary and Space Science, 2011, 59, 1744-1748.	1.7	19
8	Simulations of a comet impact on the Moon and associated ice deposition in polar cold traps. Icarus, 2011, 215, 1-16.	2.5	55
9	Surface Composition of Vesta: Issues and Integrated Approach. Space Science Reviews, 2011, 163, 117-139.	8.1	25
10	Wireless Sensor Networks â€“ A potential tool to probe for water on Moon. Advances in Space Research, 2011, 48, 601-612.	2.6	28
11	A ground-based observation of the LCROSS impact events using the Subaru Telescope. Icarus, 2011, 214, 21-29.	2.5	3
12	Locomotion modes for a hybrid wheeled-leg planetary rover. , 2011, , .		26
13	Further Development of an Aluminum and Water Solid Rocket Propellant. , 2011, , .		6
14	Excavation of the Subsurface by Hypervelocity Impacts: Insight from Experiments and Lessons from Missions. , 2012, , .		0
15	The Role of Synthetic Biology forIn SituResource Utilization (ISRU). Astrobiology, 2012, 12, 1135-1142.	3.0	48
16	Nuclear Planetology: Especially Concerning the Moon and Mars. Research in Astronomy and Astrophysics, 2012, 12, 1313-1380.	1.7	5
18	The present-day flux of large meteoroids on the lunar surfaceâ€”A synthesis of models and observational techniques. Planetary and Space Science, 2012, 74, 179-193.	1.7	46
19	Remote laserâ€induced breakdown spectroscopy (LIBS) for lunar exploration. Journal of Geophysical Research, 2012, 117, .	3.3	55

#	Article	IF	Citations
20	Modeling of the vapor release from the LCROSS impact: 2. Observations from LAMP. Journal of Geophysical Research, 2012, 117, .	3.3	23
21	Farâ€ultraviolet reflectance properties of the Moon's permanently shadowed regions. Journal of Geophysical Research, 2012, 117, .	3.3	115
22	Twoâ€dimensional distribution of volatiles in the lunar regolith from space weathering simulations. Geophysical Research Letters, 2012, 39, .	4.0	61
23	A QUANTITATIVE COMPARISON OF LUNAR ORBITAL NEUTRON DATA. Astrophysical Journal, 2012, 747, 6.	4.5	18
24	An Overview of the Lunar Crater Observation and Sensing Satellite (LCROSS). Space Science Reviews, 2012, 167, 3-22.	8.1	56
25	The Lunar Crater Observation and Sensing Satellite (LCROSS) Payload Development and Performance inÂFlight. Space Science Reviews, 2012, 167, 23-69.	8.1	26
26	LCROSS (Lunar Crater Observation and Sensing Satellite) Observation Campaign: Strategies, Implementation, and Lessons Learned. Space Science Reviews, 2012, 167, 93-140.	8.1	19
27	Locating the LCROSS Impact Craters. Space Science Reviews, 2012, 167, 71-92.	8.1	11
28	Scouring the surface: Ejecta dynamics and the LCROSS impact event. Icarus, 2012, 218, 654-665.	2.5	28
29	The selfâ€sputtered contribution to the lunar exosphere. Journal of Geophysical Research E: Planets, 2013, 118, 1934-1944.	3.6	16
30	The formation of molecular hydrogen from water ice in the lunar regolith by energetic charged particles. Journal of Geophysical Research E: Planets, 2013, 118, 1257-1264.	3.6	20
31	Numerical modelling of impact crater formation associated with isolated lunar skylight candidates on lava tubes. Planetary and Space Science, 2013, 86, 33-44.	1.7	12
32	Dynamic fragmentation of planetary materials: Ejecta length quantification and semi-analytical modelling. International Journal of Impact Engineering, 2013, 62, 219-228.	5.0	15
33	Evidence for water ice on the Moon: Results for anomalous polar craters from the LRO Miniâ€RF imaging radar. Journal of Geophysical Research E: Planets, 2013, 118, 2016-2029.	3.6	152
34	Redistribution of lunar polar water to mid-latitudes and its role in forming an OH veneer. Planetary and Space Science, 2013, 89, 15-20.	1.7	18
35	Recursive plasma wake formation on the Moon and its effect on polar volatiles. Icarus, 2013, 226, 992-998.	2.5	21
36	Deformation of dry and wet sandstone targets during hypervelocity impact experiments, as revealed from the MEMIN Program. Meteoritics and Planetary Science, 2013, 48, 71-86.	1.6	35
37	Characterization of the LCROSS impact plume from a ground-based imaging detection. Nature Communications, 2013, 4, 2620.	12.8	17

#	Article	IF	Citations
38	Water in a Land of False Seas. , 0, , 227-260.		0
39	Understanding the origin and evolution of water in the Moon through lunar sample studies. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130254.	3.4	35
40	Prospecting for Native Metals in Lunar Polar Craters. , 2014, , .		8
41	Experimental study of an uncooled microbolometer array for thermal mapping and spectroscopy of asteroids. Experimental Astronomy, 2014, 38, 381-400.	3.7	4
42	Production of neutral gas by micrometeoroid impacts. Icarus, 2014, 227, 89-93.	2.5	14
43	Examining the temporal evolution of hypervelocity impact phenomena via high-speed imaging and ultraviolet-visible emission spectroscopy. Journal of Applied Physics, 2014, 116, .	2.5	16
44	High-priority lunar landing sites for in situ and sample return studies of polar volatiles. Planetary and Space Science, 2014, 101, 149-161.	1.7	36
45	Volatiles in lunar regolith samples: A survey. Solar System Research, 2014, 48, 113-129.	0.7	19
46	Ultra-Stable RF-Over-Fiber Transport in NASA Antennas, Phased Arrays and Radars. Journal of Lightwave Technology, 2014, 32, 3440-3451.	4.6	40
47	HiRISE observations of new impact craters exposing Martian ground ice. Journal of Geophysical Research E: Planets, 2014, 119, 109-127.	3.6	98
48	Predictions for impactor contamination on Ceres based on hypervelocity impact experiments. Geophysical Research Letters, 2015, 42, 7890-7898.	4.0	28
49	Protein-Regolith Composites for Space Construction. , 2015, , .		8
50	Spillage of lunar polar crater volatiles onto adjacent terrains: The case for dynamic processes. Geophysical Research Letters, 2015, 42, 3160-3165.	4.0	17
51	The effect of craters on the lunar neutron flux. Journal of Geophysical Research E: Planets, 2015, 120, 1377-1395.	3.6	7
52	SMARTâ€1 end of life shallow regolith impact simulations. Meteoritics and Planetary Science, 2015, 50, 1436-1448.	1.6	9
53	Dielectric breakdown weathering of the Moon's polar regolith. Journal of Geophysical Research E: Planets, 2015, 120, 210-225.	3.6	26
54	Solar wind implantation into lunar regolith: Hydrogen retention in a surface with defects. Icarus, 2015, 255, 116-126.	2.5	64
55	Lunar exospheric argon modeling. Icarus, 2015, 255, 135-147.	2.5	28

#	Article	IF	Citations
56	Evolution of the dust and water ice plume components as observed by the LCROSS visible camera and UVâ€“visible spectrometer. Icarus, 2015, 254, 262-275.	2.5	14
57	Evidence for exposed water ice in the Moonâ€™s south polar regions from Lunar Reconnaissance Orbiter ultraviolet albedo and temperature measurements. Icarus, 2015, 255, 58-69.	2.5	188
58	Magmatic volatiles (H, C, N, F, S, Cl) in the lunar mantle, crust, and regolith: Abundances, distributions, processes, and reservoirs. American Mineralogist, 2015, 100, 1668-1707.	1.9	160
59	LRO-LAMP detection of geologically young craters within lunar permanently shaded regions. Icarus, 2016, 273, 114-120.	2.5	15
60	Survivability of copper projectiles during hypervelocity impacts in porous ice: A laboratory investigation of the survivability of projectiles impacting comets or other bodies. Icarus, 2016, 268, 102-117.	2.5	9
61	Thermal behavior of regolith at cold traps on the moon×³s south pole: Revealed by Chang×³E-2 microwave radiometer data. Planetary and Space Science, 2016, 122, 101-109.	1.7	10
62	A tale of two poles: Toward understanding the presence, distribution, and origin of volatiles at the polar regions of the Moon and Mercury. Journal of Geophysical Research E: Planets, 2017, 122, 21-52.	3.6	69
63	Scientific Objectives of Small Carry-on Impactor (SCI) and Deployable Camera 3 Digital (DCAM3-D): Observation of an Ejecta Curtain and a Crater Formed on the Surface of Ryugu by an Artificial High-Velocity Impact. Space Science Reviews, 2017, 208, 187-212.	8.1	44
64	The rate of dielectric breakdown weathering of lunar regolith in permanently shadowed regions. Icarus, 2017, 283, 352-358.	2.5	22
65	Experimental impact cratering: A summary of the major results of the <scp>MEMIN</scp> research unit. Meteoritics and Planetary Science, 2018, 53, 1543-1568.	1.6	25
66	The delivery of water by impacts from planetary accretion to present. Science Advances, 2018, 4, eaar2632.	10.3	31
67	Potential impact-induced water-solid reactions on the Moon. Planetary and Space Science, 2018, 162, 157-169.	1.7	14
68	SMART-1 technology, scientific results and heritage for future space missions. Planetary and Space Science, 2018, 151, 141-148.	1.7	13
69	The New Moon: Major Advances in Lunar Science Enabled by Compositional Remote Sensing from Recent Missions. Geosciences (Switzerland), 2018, 8, 498.	2.2	11
70	Calculation methods for estimating the prospects of a space experiment by means of impact by asteroid Apophis on the Moon surface. Journal of Physics: Conference Series, 2018, 946, 012078.	0.4	0
71	Imaging Plasma Density Structures in the Soft X-Rays Generated by Solar Wind Charge Exchange with Neutrals. Space Science Reviews, 2018, 214, 1.	8.1	47
72	Experiments Indicate Regolith is Looser in the Lunar Polar Regions Than at the Lunar Landing Sites. , 2018, , .		12
73	Examining the Potential Contribution of the Hokusai Impact to Water Ice on Mercury. Journal of Geophysical Research E: Planets, 2018, 123, 2628-2646.	3.6	23

#	Article	IF	Citations
74	Luna-5 (1965): Some Results of a Failed Mission to the Moon. Cosmic Research, 2018, 56, 276-282.	0.6	0
75	Seasonal Polar Temperatures on the Moon. Journal of Geophysical Research E: Planets, 2019, 124, 2505-2521.	3.6	80
76	Detection of impact-produced dust clouds near the lunar terminator. Planetary and Space Science, 2019, 177, 104689.	1.7	10
77	Pattern of Impact-induced Ejecta from Granular Targets with Large Inclusions. Astrophysical Journal Letters, 2019, 880, L30.	8.3	9
78	Making it Through the Lunar Night Using Chemicals: Internal Combustion Engine Solar Independent Propulsion. , 2019, , .		0
79	Evidence for ultra-cold traps and surface water ice in the lunar south polar crater Amundsen. Icarus, 2019, 332, 1-13.	2.5	19
80	Water Formation in the Lunar Regolith. Cosmic Research, 2019, 57, 79-84.	0.6	8
81	Analyses of Lunar Orbiter Laser Altimeter 1,064â€nm Albedo in Permanently Shadowed Regions of Polar Crater Flat Floors: Implications for Surface Water Ice Occurrence and Future In Situ Exploration. Earth and Space Science, 2019, 6, 467-488.	2.6	24
82	Effects of Space Weathering and Porosity on the Farâ€UV Reflectance of Amundsen Crater. Journal of Geophysical Research E: Planets, 2019, 124, 823-836.	3.6	16
83	Commercial lunar propellant architecture: A collaborative study of lunar propellant production. Reach, 2019, 13, 100026.	0.7	65
84	Constraining the Evolutionary History of the Moon and the Inner Solar System: A Case for New Returned Lunar Samples. Space Science Reviews, 2019, 215, 1.	8.1	41
85	Surface Water at Lunar Magnetic Anomalies. Geophysical Research Letters, 2019, 46, 14318-14327.	4.0	17
86	Impact Ejecta Plumes at the Moon. Geophysical Research Letters, 2019, 46, 534-543.	4.0	8
87	Benchmarking impact hydrocodes in the strength regime: Implications for modeling deflection by a kinetic impactor. Icarus, 2020, 338, 113446.	2.5	32
88	Improving the geometry of Kaguya extended mission data through refined orbit determination using laser altimetry. Icarus, 2020, 336, 113454.	2.5	8
89	DART mission determination of momentum transfer: Model of ejecta plume observations. Icarus, 2020, 352, 113989.	2.5	34
90	Characterizing the hydroxyl observation of the LCROSS UV-visible spectrometer: Modeling of the impact plume. Icarus, 2020, 343, 113626.	2.5	3
91	Key Technologies and Instrumentation for Subsurface Exploration of Ocean Worlds. Space Science Reviews, 2020, 216, 1.	8.1	18

#	Article	IF	Citations
92	Stratigraphy of Ice and Ejecta Deposits at the Lunar Poles. Geophysical Research Letters, 2020, 47, e2020GL088920.	4.0	32
93	Material remodeling and unconventional gaits facilitate locomotion of a robophysical rover over granular terrain. Science Robotics, 2020, 5, .	17.6	40
94	Geologic context and potential EVA targets at the lunar south pole. Advances in Space Research, 2020, 66, 1247-1264.	2.6	22
95	Using Boulder Tracks as a Tool to Understand the Bearing Capacity of Permanently Shadowed Regions of the Moon. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006157.	3.6	24
96	Assessing the survivability of biomarkers within terrestrial material impacting the lunar surface. Icarus, 2021, 354, 114026.	2.5	4
97	Water within a permanently shadowed lunar crater: Further LCROSS modeling and analysis. Icarus, 2021, 354, 114089.	2.5	17
98	Human habitats: prospects for infrastructure supporting astronomy from the Moon. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20190568.	3.4	11
99	Illumination conditions within permanently shadowed regions at the lunar poles: Implications for in-situ passive remote sensing. Acta Astronautica, 2021, 178, 432-451.	3.2	8
100	Low dispersion spectra of lunar impact flashes in 2018 Geminids. Planetary and Space Science, 2021, 195, 105131.	1.7	7
101	Smart Materials for Dynamic Thermal Radiation Regulation. Small, 2021, 17, e2100446.	10.0	71
102	Impacts on the Moon: Analysis methods and size distribution of impactors. Planetary and Space Science, 2021, 200, 105201.	1.7	10
103	Dynamical evolution and thermal history of asteroids (3200) Phaethon and (155140) 2005 UD. Icarus, 2021, 366, 114535.	2.5	25
104	Secondary Impact Burial and Excavation Gardening on the Moon and the Depth to Ice in Permanent Shadow. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006933.	3.6	14
105	Peering into lunar permanently shadowed regions with deep learning. Nature Communications, 2021, 12, 5607.	12.8	13
106	Impact Experiment on Asteroid (162173) Ryugu: Structure beneath the Impact Point Revealed by In Situ Observations of the Ejecta Curtain. Astrophysical Journal Letters, 2020, 899, L22.	8.3	19
107	Lunar Crater Observation and Sensing Satellite (LCROSS). , 2021, , 1-16.		0
108	Analyzing Surface Ruggedness Inside and Outside of Ice Stability Zones at the Lunar Poles. Planetary Science Journal, 2021, 2, 213.	3.6	12
109	Astronomers comb through Moon smash haul. Nature, 0, , .	27.8	0

#	Article	IF	Citations
110	Surface Composition of Vesta: Issues and Integrated Approach. , 2011, , 117-139.		0
111	Turbulent Chaos and Self-Organization in Cosmic Natural Media. Astrophysics and Space Science Library, 2013, , 1-144.	2.7	0
112	Defending Against and. , 2014, , 1-18.		0
114	Internal Combustion Engine Solar Independent Propulsion for the Exploration of Permanently Shaded Lunar Craters. , 2015, , .		0
115	Defending Against Asteroids and Comets. , 2015, , 733-754.		2
116	Impact Processes on the Moon. , 2015, , 1-5.		0
117	Scientific Objectives of Small Carry-on Impactor (SCI) and Deployable Camera 3 Digital (DCAM3-D): Observation of an Ejecta Curtain and a Crater Formed on the Surface of Ryugu by an Artificial High-Velocity Impact. , 2016, , 187-212.		0
118	Development of the LunaH-Map miniature neutron spectrometer. , 2017, , .		1
119	Volatiles on the Lunar Surface and Subsurface. , 2018, , 1-6.		1
120	Nature of and lessons learned from Lunar Ice Cube and the first deep space cubesat 'cluster'. , 2018, , .		2
121	Lunar Ice Cube: first generation deep space CubeSat with compact broadband IR spectrometer development story. , 2019, , .		2
123	In situ resource utilisation: The potential for space biomining. Minerals Engineering, 2022, 176, 107288.	4.3	13
124	Hypervelocity impact of anorthosite: Excavation, spallation and crater reconstruction. International Journal of Impact Engineering, 2022, 160, 104078.	5.0	4
125	A very high energy hadron collider on the Moon. New Journal of Physics, 0, , .	2.9	2
126	Resource potential of lunar permanently shadowed regions. Icarus, 2022, 377, 114874.	2.5	25
127	The case for a Themis asteroid family spacecraft mission. Planetary and Space Science, 2022, 212, 105413.	1.7	3
128	The Most Volatile Elements and Compounds. , 2022, , 271-297.		0
130	Spatial Distribution and Thermal Diversity of Surface Volatile Cold Traps at the Lunar Poles. Planetary Science Journal, 2022, 3, 39.	3.6	16

#	Article	IF	Citations
131	Simulating the diffusion of hydrogen in amorphous silicates: A â€˜jumpingâ€™ migration process and its implications for solar wind implanted lunar volatiles. Icarus, 2022, 379, 114979.	2.5	3
132	Volatile interactions with the lunar surface. Chemie Der Erde, 2022, 82, 125858.	2.0	26
133	PyNAPLE: Lunar Surface Impact Crater Detection. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	0
134	Statistical Significance of Mission Parameters on the Deflection Efficiency of Kinetic Impacts: Applications for the Next-generation Kinetic Impactor. Planetary Science Journal, 2022, 3, 186.	3.6	4
135	Effect of projectile shape and interior structure on crater size in strength regime. Earth, Planets and Space, 2022, 74, .	2.5	2
136	Surface Conditions and Resource Accessibility at Potential Artemis Landing Sites 007 and 011. Planetary Science Journal, 2022, 3, 224.	3.6	5
137	å°å©ä½“é˜²å¾¡é«˜é€Ÿæ’žå‡»æ•°å€¼æ¨¡æ‹Ÿç©¶. Zhongguo Kexue Jishu Kexue/Scientia Sinica Technologica, 2022, , .	2.2	0
138	Site selection, thermodynamics, environment and life support analysis for the PneumoPlanet inflatable lunar habitat concept. Planetary and Space Science, 2022, , 105595.	1.7	1
139	Effects of Impact and Target Parameters on the Results of a Kinetic Impactor: Predictions for the Double Asteroid Redirection Test (DART) Mission. Planetary Science Journal, 2022, 3, 248.	3.6	24
140	Time Series Analysis Methods and Detectability Factors for Ground-Based Imaging of the LCROSS Impact Plume. Remote Sensing, 2023, 15, 37.	4.0	0
141	Possible sites for a Chinese international lunar research station in the lunar south polar region. Planetary and Space Science, 2022, , 105623.	1.7	2
142	Lunar explorationsâ€”Discovering water, minerals, and underground caves andÂtunnel complexes. , 2023, , 399-452.		0
143	Detecting and characterizing the abundance and form of water-ice in permanently-shadowed regions of the moon using a three-band lidar system. Icarus, 2023, 400, 115540.	2.5	0
144	Research of Lunar Water-Ice and Exploration for Chinaâ€™s Future Lunar Water-Ice Exploration. Space: Science & Technology, 2023, 3, .	2.5	1
145	Buried Ice Deposits in Lunar Polar Cold Traps Were Disrupted by Ballistic Sedimentation. Journal of Geophysical Research E: Planets, 2023, 128, .	3.6	2
146	Volatiles on the Lunar Surface and Subsurface. , 2023, , 1244-1249.		0
147	Observation of Vertically Ejected Plumes Generated by the Impact of Hollow Projectiles at Various Velocities. Planetary Science Journal, 2023, 4, 82.	3.6	0
148	Impact Processes on the Moon. , 2015, , 325-329.		0

#	Article	IF	Citations
149	Lunar Crater Observation and Sensing Satellite (LCROSS). , 2023, , 506-520.		0
150	LCROSS, Lunar Diviner Instrument. , 2023, , 412-415.		0
151	SMART-1 Mission. , 2023, , 1106-1130.		0
152	Analysis of the permanently shadowed region of Cabeus crater in lunar south pole using orbiter high resolution camera imagery. Icarus, 2023, 406, 115762.	2.5	2
153	In Situ Optimized Substrate Witness Plates: Ground Truth for Key Processes on the Moon and Other Planets. Earth and Space Science, 2023, 10, .	2.6	0
154	Atlas of historical and proposed nuclear devices and power systems in the Earth-Moon System and wider Solar System. Progress in Nuclear Energy, 2023, 164, 104857.	2.9	0
155	Lunar Resources. Reviews in Mineralogy and Geochemistry, 2023, 89, 829-868.	4.8	5
156	The Dust, Atmosphere, and Plasma at the Moon. Reviews in Mineralogy and Geochemistry, 2023, 89, 563-609.	4.8	4
157	Lunar Surface Processes. Reviews in Mineralogy and Geochemistry, 2023, 89, 651-690.	4.8	4
158	Scientific objectives and payload configuration of the Chang'E-7 mission. National Science Review, 2024, 11, .	9.5	0
159	Development of icy regolith simulant for lunar permanently shadowed regions. Advances in Space Research, 2024, 73, 3222-3234.	2.6	0
160	Morphological and Spectral Characterization of Lunar Regolith Breakdown due to Water Ice. Planetary Science Journal, 2024, 5, 1.	3.6	0
161	The effects of the velocity distribution of impact generated water ice ejecta on exospheric escape from airless bodies. Icarus, 2024, 411, 115947.	2.5	0
162	Features of Degassing of the Murchison (CM2) Carbonaceous Chondrite in the Temperature Interval of 200â€“800Â°C. Solar System Research, 2023, 57, 581-591.	0.7	0
163	Features of Degassing of the Allende (CV3) Carbonaceous Chondrite in the Temperature Interval of 200â€“800Â°C. Solar System Research, 2023, 57, 592-602.	0.7	0
164	Cold-trapped ices at the poles of Mercury and the Moon. , 2024, , 1-29.		0
165	A Raman Geothermometer for Carbonaceous Chondrites. Doklady Physics, 2023, 68, 345-348.	0.7	0
166	Plumes of Water Ice/Gas Mixtures Observed in the Lunar Polar Region. Astrophysical Journal, 2024, 963, 124.	4.5	0

#	Article	IF	Citations
167	Radar Images of Permanently Shadowed Regions at the South Pole of the Moon. Solar System Research, 0, , .	0.7	0