Caleb Fassett

List of Publications by Year
in descending order

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101 papers	7,977 citations	44069 48 h-index	48315 88 g-index
105 all docs	105 docs citations	105 times ranked	3696 citing authors

#	Article	IF	Citations
1	A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1242777.	12.6	687
2	Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1243480.	12.6	508
3	Valley network-fed, open-basin lakes on Mars: Distribution and implications for Noachian surface and subsurface hydrology. Icarus, 2008, 198, 37-56.	2.5	385
4	The timing of martian valley network activity: Constraints from buffered crater counting. Icarus, 2008, 195, 61-89.	2.5	375
5	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	12.6	326
6	Clay minerals in delta deposits and organic preservation potential on Mars. Nature Geoscience, 2008, 1, 355-358.	12.9	293
7	Fluvial sedimentary deposits on Mars: Ancient deltas in a crater lake in the Nili Fossae region. Geophysical Research Letters, 2005, 32, n/a-n/a.	4.0	226
8	Flood Volcanism in the Northern High Latitudes of Mercury Revealed by MESSENGER. Science, 2011, 333, 1853-1856.	12.6	225
9	Global Distribution of Large Lunar Craters: Implications for Resurfacing and Impactor Populations. Science, 2010, 329, 1504-1507.	12.6	210
10	Assessing the mineralogy of the watershed and fan deposits of the Jezero crater paleolake system, Mars. Journal of Geophysical Research E: Planets, 2015, 120, 775-808.	3.6	193
11	Crater degradation on the lunar maria: Topographic diffusion and the rate of erosion on the Moon. Journal of Geophysical Research E: Planets, 2014, 119, 2255-2271.	3.6	162
12	Constraints on the volatile distribution within Shackleton crater at the lunar south pole. Nature, 2012, 486, 378-381.	27.8	159
13	Global resurfacing of Mercury 4.0â€“4.1 billion years ago by heavy bombardment and volcanism. Nature, 2013, 499, 59-61.	27.8	154
14	Sequence and timing of conditions on early Mars. Icarus, 2011, 211, 1204-1214.	2.5	140
15	An overfilled lacustrine system and progradational delta in Jezero crater, Mars: Implications for Noachian climate. Planetary and Space Science, 2012, 67, 28-45.	1.7	138
16	Hollows on Mercury: MESSENGER Evidence for Geologically Recent Volatile-Related Activity. Science, 2011, 333, 1856-1859.	12.6	136
17	Volcanism on Mercury: Evidence from the first MESSENGER flyby for extrusive and explosive activity and the volcanic origin of plains. Earth and Planetary Science Letters, 2009, 285, 227-242.	4.4	135
18	The variability of crater identification among expert and community crater analysts. Icarus, 2014, 234, 109-131.	2.5	135

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19	Mineralogy of the Nili Fossae region with OMEGA/Mars Express data: 1. Ancient impact melt in the Isidis Basin and implications for the transition from the Noachian to Hesperian. Journal of Geophysical Research, 2007, 112, .	3.3	130
20	Sedimentological evidence for a deltaic origin of the western fan deposit in Jezero crater, Mars and implications for future exploration. Earth and Planetary Science Letters, 2017, 458, 357-365.	4.4	128
21	Evidence for Young Volcanism on Mercury from the Third MESSENGER Flyby. Science, 2010, 329, 668-671.	12.6	118
22	Lunar impact basins: Stratigraphy, sequence and ages from superposed impact crater populations measured from Lunar Orbiter Laser Altimeter (LOLA) data. Journal of Geophysical Research, 2012, 117, .	3.3	114
23	Valleys on Hecates Tholus, Mars: origin by basal melting of summit snowpack. Planetary and Space Science, 2006, 54, 370-378.	1.7	108
24	An analysis of open-basin lake deposits on Mars: Evidence for the nature of associated lacustrine deposits and post-lacustrine modification processes. Icarus, 2012, 219, 211-229.	2.5	105
25	Unique chronostratigraphic marker in depositional fan stratigraphy on Mars: Evidence for ca. 1.25 Ma gully activity and surficial meltwater origin. Geology, 2009, 37, 207-210.	4.4	98
26	Widespread effusive volcanism on Mercury likely ended by about 3.5â€‰Ga. Geophysical Research Letters, 2016, 43, 7408-7416.	4.0	98
27	Classification and analysis of candidate impact crater-hosted closed-basin lakes on Mars. Icarus, 2015, 260, 346-367.	2.5	91
28	Supraglacial and proglacial valleys on Amazonian Mars. Icarus, 2010, 208, 86-100.	2.5	90
29	Caloris impact basin: Exterior geomorphology, stratigraphy, morphometry, radial sculpture, and smooth plains deposits. Earth and Planetary Science Letters, 2009, 285, 297-308.	4.4	84
30	Stratigraphy and paleohydrology of delta channel deposits, Jezero crater, Mars. Icarus, 2018, 301, 58-75.	2.5	83
31	Analysis of impact crater populations and the geochronology of planetary surfaces in the inner solar system. Journal of Geophysical Research E: Planets, 2016, 121, 1900-1926.	3.6	81
32	Sequestered glacial ice contribution to the global Martian water budget: Geometric constraints on the volume of remnant, midlatitude debris-covered glaciers. Journal of Geophysical Research E: Planets, 2014, 119, 2188-2196.	3.6	78
33	The global population of large craters on Mercury and comparison with the Moon. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	75
34	The transition from complex crater to peak-ring basin on the Moon: New observations from the Lunar Orbiter Laser Altimeter (LOLA) instrument. Icarus, 2011, 214, 377-393.	2.5	74
35	Insights into surface runoff on early Mars from paleolake basin morphology and stratigraphy. Geology, 2016, 44, 419-422.	4.4	72
36	The sustainability of habitability on terrestrial planets: Insights, questions, and needed measurements from Mars for understanding the evolution of Earthâ€like worlds. Journal of Geophysical Research E: Planets, 2016, 121, 1927-1961.	3.6	72

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37	Extent, age, and resurfacing history of the northern smooth plains on Mercury from MESSENGER observations. Icarus, 2015, 250, 602-622.	2.5	71
38	Thickness of proximal ejecta from the Orientale Basin from Lunar Orbiter Laser Altimeter (LOLA) data: Implications for multi-ring basin formation. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	68
39	Large impact basins on Mercury: Global distribution, characteristics, and modification history from MESSENGER orbital data. Journal of Geophysical Research, 2012, 117, .	3.3	68
40	Evidence for intrusive activity on Mercury from the first MESSENGER flyby. Earth and Planetary Science Letters, 2009, 285, 251-262.	4.4	67
41	Impact bombardment of the terrestrial planets and the early history of the Solar System. Nature Geoscience, 2013, 6, 520-524.	12.9	66
42	Mercury crater statistics from MESSENGER flybys: Implications for stratigraphy and resurfacing history. Planetary and Space Science, 2011, 59, 1960-1967.	1.7	64
43	Amazonianâ€aged fluvial valley systems in a climatic microenvironment on Mars: Melting of ice deposits on the interior of Lyot Crater. Geophysical Research Letters, 2009, 36, .	4.0	61
44	Patterns of accumulation and flow of ice in the mid-latitudes of Mars during the Amazonian. Icarus, 2012, 219, 723-732.	2.5	57
45	Valley formation on martian volcanoes in the Hesperian: Evidence for melting of summit snowpack, caldera lake formation, drainage and erosion on Ceraunius Tholus. Icarus, 2007, 189, 118-135.	2.5	56
46	Layered mantling deposits in northeast Arabia Terra, Mars: Noachianâ€Hesperian sedimentation, erosion, and terrain inversion. Journal of Geophysical Research, 2007, 112, .	3.3	55
47	Pacing early Mars river activity: Embedded craters in the Aeolis Dorsa region imply river activity spanned â‰³(1â€“20)Myr. Icarus, 2013, 225, 850-855.	2.5	49
48	Re-examining the main asteroid belt as the primary source of ancient lunar craters. Icarus, 2015, 247, 172-190.	2.5	49
49	The equilibrium size-frequency distribution of small craters reveals the effects of distal ejecta on lunar landscape morphology. Icarus, 2019, 326, 63-87.	2.5	49
50	Ancient Bombardment of the Inner Solar System: Reinvestigation of the â€œFingerprintsâ€•of Different Impactor Populations on the Lunar Surface. Journal of Geophysical Research E: Planets, 2018, 123, 748-762.	3.6	47
51	Constraints on the history of openâ€basin lakes on Mars from the composition and timing of volcanic resurfacing. Journal of Geophysical Research, 2012, 117, .	3.3	46
52	Evolution of the Rembrandt Impact Basin on Mercury. Science, 2009, 324, 618-621.	12.6	46
53	Heterogeneous impact transport on the Moon. Journal of Geophysical Research E: Planets, 2017, 122, 1158-1180.	3.6	41
54	Crater Statistics on the Darkâ€Toned, Mafic Floor Unit in Jezero Crater, Mars. Geophysical Research Letters, 2019, 46, 2408-2416.	4.0	40

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55	Formation of an eroded lava channel within an Elysium Planitia impact crater: Distinguishing between a mechanical and thermal origin. Icarus, 2010, 210, 626-634.	2.5	39
56	An extended period of episodic northern mid-latitude glaciation on Mars during the Middle to Late Amazonian: Implications for long-term obliquity history. Geology, 2014, 42, 763-766.	4.4	39
57	Matrix Effects in Quantitative Analysis of Laser-Induced Breakdown Spectroscopy (LIBS) of Rock Powders Doped with Cr, Mn, Ni, Zn, and Co. Applied Spectroscopy, 2017, 71, 600-626.	2.2	38
58	Recent high-latitude resurfacing by a climate-related latitude-dependent mantle: Constraining age of emplacement from counts of small craters. Planetary and Space Science, 2012, 69, 49-61.	1.7	36
59	Revised constraints on absolute age limits for Mercury's Kuiperian and Mansurian stratigraphic systems. Journal of Geophysical Research E: Planets, 2017, 122, 1010-1020.	3.6	34
60	Scaling relationships and concavity of small valley networks on Mars. Planetary and Space Science, 2013, 75, 105-116.	1.7	29
61	Evidence for rapid topographic evolution and crater degradation on Mercury from simple crater morphometry. Geophysical Research Letters, 2017, 44, 5326-5335.	4.0	28
62	Timescales of fluvial activity and intermittency in Milna Crater, Mars. Icarus, 2014, 241, 130-147.	2.5	26
63	An analytical model of crater count equilibrium. Icarus, 2017, 289, 134-143.	2.5	26
64	Incision of Licus Vallis, Mars, From Multiple Lake Overflow Floods. Journal of Geophysical Research E: Planets, 2018, 123, 405-420.	3.6	25
65	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.	3.6	21
66	Lunar impact history constrained by GRAIL-derived basin relaxation measurements. Icarus, 2018, 314, 50-63.	2.5	20
67	Incision of paleolake outlet canyons on Mars from overflow flooding. Geology, 2019, 47, 7-10.	4.4	20
68	Precipitation and aridity constraints from paleolakes on early Mars. Geology, 2020, 48, 1189-1193.	4.4	20
69	Ames stereo pipeline-derived digital terrain models of Mercury from MESSENGER stereo imaging. Planetary and Space Science, 2016, 134, 19-28.	1.7	19
70	Enhanced erosion rates on Mars during Amazonian glaciation. Icarus, 2016, 264, 213-219.	2.5	19
71	The importance of lake breach floods for valley incision on early Mars. Nature, 2021, 597, 645-649.	27.8	19
72	Age, Evolution, and Dispersion of the Loose Groups of Blue Stars in the Northeast Radio Lobe of Centaurus A. Astrophysical Journal, 2000, 538, 594-607.	4.5	19

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73	Valleys in pit craters on Mars: Characteristics, distribution, and formation mechanisms. Icarus, 2013, 225, 272-282.	2.5	16
74	No Change in the Recent Lunar Impact Flux Required Based on Modeling of Impact Glass Spherule Age Distributions. Geophysical Research Letters, 2018, 45, 6805-6813.	4.0	16
75	The relationship between radar scattering and surface roughness of lunar volcanic features. Journal of Geophysical Research E: Planets, 2014, 119, 2331-2348.	3.6	15
76	Candidate volcanic and impact-induced ice depressions on Mars. Icarus, 2017, 285, 185-194.	2.5	14
77	Evidence for paleolakes in Erythraea Fossa, Mars: Implications for an ancient hydrological cycle. Icarus, 2011, 213, 104-115.	2.5	13
78	History of tectonic deformation in the interior plains of the Caloris basin, mercury. Solar System Research, 2011, 45, 471-497.	0.7	12
79	Temporal Evolution of Sâ€Band Circular Polarization Ratios of Kilometerâ€Scale Craters on the Lunar Maria. Journal of Geophysical Research E: Planets, 2018, 123, 3133-3143.	3.6	11
80	Prolonged Rock Exhumation at the Rims of Kilometerâ€Scale Lunar Craters. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006897.	3.6	11
81	Star Formation Associated with the Xâ€Ray Jet in Centaurus A. Astrophysical Journal, 2002, 575, 712-720.	4.5	11
82	Impact Cratering of Mercury. , 2018, , 217-248.		10
83	Adviser: immersive field work for planetary geoscientists. IEEE Computer Graphics and Applications, 2006, 26, 46-54.	1.2	9
84	Age dating of an extensive thrust system on Mercury: implications for the planet's thermal evolution. Geological Society Special Publication, 2015, 401, 291-311.	1.3	9
85	Distribution and Characteristics of Boulder Halos at High Latitudes on Mars: Ground Ice and Surface Processes Drive Surface Reworking. Journal of Geophysical Research E: Planets, 2018, 123, 322-334.	3.6	9
86	Reâ€examination of the Population, Stratigraphy, and Sequence of Mercurian Basins: Implications for Mercury's Early Impact History and Comparison With the Moon. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006212.	3.6	9
87	Integrating advanced visualization technology into the planetary Geoscience workflow. Planetary and Space Science, 2011, 59, 1273-1279.	1.7	7
88	How Much of the Sediment in Gale Crater's Central Mound Was Fluvially Transported?. Geophysical Research Letters, 2019, 46, 5092-5099.	4.0	6
89	In Situ Geochronology for the Next Decade: Mission Designs for the Moon, Mars, and Vesta. Planetary Science Journal, 2021, 2, 145.	3.6	6
90	Modeling the Hydrodynamics, Sediment Transport, and Valley Incision of Outletâ€Forming Floods From Martian Crater Lakes. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006979.	3.6	6

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91	Modification of Caloris ejecta blocks by long-lived mass-wasting: A volatile-driven process?. Earth and Planetary Science Letters, 2020, 549, 116519.	4.4	5
92	Limits on Runoff Episode Duration for Early Mars: Integrating Lake Hydrology and Climate Models. Geophysical Research Letters, 2021, 48, e2021GL093523.	4.0	5
93	Rock Abundance on the Lunar Mare on Surfaces of Different Age: Implications for Regolith Evolution and Thickness. Geophysical Research Letters, 2022, 49, .	4.0	5
94	Constraining the formation of paleolake inlet valleys across crater rims. Icarus, 2022, 378, 114945.	2.5	5
95	Age relationships of large-scale troughs and impact basins on Vesta. Icarus, 2021, 366, 114512.	2.5	4
96	Friable Layered Deposits. , 2014, , 1-9.		0
97	Valley Network (Mars). , 2015, , 2226-2233.		0
98	Valley network (Mars). , 2014, , 1-10.		0
99	Valley Network (Mars). , 2014, , 1-10.		0
100	Glaciofluvial Valley. , 2015, , 868-870.		0
101	Friable Layered Deposits. , 2015, , 821-828.		0