

# Brian Hynek

## List of Publications by Year in descending order

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Version: 2024-02-01

59  
papers

3,804  
citations

201674

27  
h-index

155660

55  
g-index

61  
all docs

61  
docs citations

61  
times ranked

2319  
citing authors

#	ARTICLE	IF	CITATIONS
1	Ancient Geodynamics and Global-Scale Hydrology on Mars. <i>Science</i> , 2001, 291, 2587-2591.	12.6	453
2	Updated global map of Martian valley networks and implications for climate and hydrologic processes. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	364
3	Ancient ocean on Mars supported by global distribution of deltas and valleys. <i>Nature Geoscience</i> , 2010, 3, 459-463.	12.9	312
4	Geologic context of proposed chloride-bearing materials on Mars. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	204
5	Explosive volcanism in the Tharsis region: Global evidence in the Martian geologic record. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	200
6	Geologic setting and origin of Terra Meridiani hematite deposit on Mars. <i>Journal of Geophysical Research</i> , 2002, 107, 18-1.	3.3	168
7	Evidence for extensive denudation of the Martian highlands. <i>Geology</i> , 2001, 29, 407.	4.4	151
8	The volcanic history of Mars: High-resolution crater-based studies of the calderas of 20 volcanoes. <i>Icarus</i> , 2011, 211, 1179-1203.	2.5	149
9	New data reveal mature, integrated drainage systems on Mars indicative of past precipitation. <i>Geology</i> , 2003, 31, 757.	4.4	143
10	A volcanic environment for bedrock diagenesis at Meridiani Planum on Mars. <i>Nature</i> , 2005, 438, 1129-1131.	27.8	142
11	A new global database of Mars impact craters $\geq 1$ km: 1. Database creation, properties, and parameters. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	140
12	Large impact crater histories of Mars: The effect of different model crater age techniques. <i>Icarus</i> , 2013, 225, 173-184.	2.5	130
13	Formation timescales of large Martian valley networks. <i>Earth and Planetary Science Letters</i> , 2011, 312, 1-12.	4.4	123
14	Mantled and exhumed terrains in Terra Meridiani, Mars. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	92
15	Implications for hydrologic processes on Mars from extensive bedrock outcrops throughout Terra Meridiani. <i>Nature</i> , 2004, 431, 156-159.	27.8	84
16	Roaming zones of precipitation on ancient Mars as recorded in valley networks. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	76
17	The stratigraphy of Meridiani Planum, Mars, and implications for the layered deposits' origin. <i>Earth and Planetary Science Letters</i> , 2008, 274, 214-220.	4.4	67
18	A new global database of Mars impact craters $\geq 1$ km: 2. Global crater properties and regional variations of the simple-to-complex transition diameter. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	65

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19	Late-stage formation of Martian chloride salts through ponding and evaporation. <i>Geology</i> , 2015, 43, 787-790.	4.4	53
20	Geological context of water-altered minerals in Valles Marineris, Mars. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	48
21	Desert Research and Technology Studies (DRATS) 2010 science operations: Operational approaches and lessons learned for managing science during human planetary surface missions. <i>Acta Astronautica</i> , 2013, 90, 224-241.	3.2	37
22	Secondary crater fields from 24 large primary craters on Mars: Insights into nearby secondary crater production. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	35
23	Assessment of environmental controls on acid-sulfate alteration at active volcanoes in Nicaragua: Applications to relic hydrothermal systems on Mars. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 2083-2104.	3.6	35
24	The secondary crater population of Mars. <i>Earth and Planetary Science Letters</i> , 2014, 400, 66-76.	4.4	34
25	Positive identification of lake strandlines in Shalbatana Vallis, Mars. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	32
26	Experimental study of acid-sulfate alteration of basalt and implications for sulfate deposits on Mars. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 577-614.	3.6	32
27	Detection of iron substitution in natroalunite-natrojarosite solid solutions and potential implications for Mars. <i>American Mineralogist</i> , 2014, 99, 948-964.	1.9	32
28	The effects of sediment supply and concentrations on the formation timescale of martian deltas. <i>Icarus</i> , 2014, 228, 1-12.	2.5	25
29	Geological evidence for a migrating Tharsis plume on early Mars. <i>Earth and Planetary Science Letters</i> , 2011, 310, 327-333.	4.4	23
30	Distant secondary craters from Lyot crater, Mars, and implications for surface ages of planetary bodies. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	21
31	Lack of Microbial Diversity in an Extreme Mars Analog Setting: Poás Volcano, Costa Rica. <i>Astrobiology</i> , 2018, 18, 923-933.	3.0	21
32	Chemical and mineralogical trends during acid-sulfate alteration of pyroclastic basalt at Cerro Negro volcano and implications for early Mars. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 1719-1751.	3.6	20
33	Thermophysical properties of the MER and Beagle II landing site regions on Mars. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	19
34	Astrobiological implications of Mars' surface composition and properties. , 2008, , 599-624.		19
35	Utility of laser altimeter and stereoscopic terrain models: Application to Martian craters. <i>Planetary and Space Science</i> , 2013, 86, 57-65.	1.7	19
36	Laboratory simulations of acid-sulfate weathering under volcanic hydrothermal conditions: Implications for early Mars. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 679-703.	3.6	18

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37	Mercury's low-reflectance material: Constraints from hollows. <i>Icarus</i> , 2016, 277, 455-465.	2.5	18
38	Visible-near-infrared reflectance spectroscopy of volcanic acid-sulfate alteration in Nicaragua: Analogs for early Mars. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 2213-2233.	3.6	17
39	Characterization of terrestrial hydrothermal alteration products with Mars analog instrumentation: Implications for current and future rover investigations. <i>Icarus</i> , 2018, 307, 235-259.	2.5	17
40	Morphological comparison of blocks in chaos terrains on Pluto, Europa, and Mars. <i>Icarus</i> , 2021, 356, 113866.	2.5	15
41	Deltas and valley networks on Mars. , 2010, , 223-248.		14
42	RESEARCH FOCUS: The great climate paradox of ancient Mars. <i>Geology</i> , 2016, 44, 879-880.	4.4	11
43	Investigating target versus impactor influences on Martian crater morphology at the simple-complex transition. <i>Meteoritics and Planetary Science</i> , 2017, 52, 1722-1743.	1.6	11
44	Bedrock formation at Meridiani Planum (Reply). <i>Nature</i> , 2006, 443, E2-E2.	27.8	10
45	Testing Mars Exploration Rover-inspired operational strategies for semi-autonomous rovers on the moon II: The GeoHeuristic operational Strategies Test in Alaska. <i>Acta Astronautica</i> , 2014, 99, 24-36.	3.2	10
46	Geochemical data indicate highly similar sediment compositions for the Grasberg and Burns formations on Meridiani Planum, Mars. <i>Earth and Planetary Science Letters</i> , 2021, 557, 116729.	4.4	10
47	Surficial properties of landslides and surrounding units in Ophir Chasma, Mars. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	9
48	Ancient equatorial ice on Mars?. <i>Nature Geoscience</i> , 2009, 2, 169-170.	12.9	9
49	Widespread exposure of Noachian phyllosilicates in the Margaritifer region of Mars: Implications for paleohydrology and astrobiological detection. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 483-500.	3.6	9
50	Large-scale fluid-deposited mineralization in Margaritifer Terra, Mars. <i>Geophysical Research Letters</i> , 2017, 44, 6579-6588.	4.0	9
51	Sulfur Cycling and Mass Balance at Meridiani, Mars. <i>Geophysical Research Letters</i> , 2019, 46, 11728-11737.	4.0	7
52	Phosphorous Immobility During Formation of the Layered Sulfate Deposits of the Burns Formation at Meridiani Planum. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 1230-1254.	3.6	5
53	Ground truth from the Opportunity Rover for Mars thermal inertia data. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	4
54	Martian fan deposits: Insights on depositional processes and origin from mass balance survey. <i>Earth and Planetary Science Letters</i> , 2020, 533, 116049.	4.4	4

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55	Microbial Survival in an Extreme Martian Analog Ecosystem: Poás Volcano, Costa Rica. <i>Frontiers in Astronomy and Space Sciences</i> , 2022, 9, .	2.8	3
56	Uninhabitable martian clays?. <i>Nature Geoscience</i> , 2012, 5, 683-684.	12.9	2
57	Operational Conditions and In Situ Resources for Mars Surface Exploration. <i>New Space</i> , 2018, 6, 320-334.	0.8	2
58	INSIGHT INTO FORMATION PROCESSES OF LAYERED EJECTA CRATERS ON MARS FROM THERMOPHYSICAL OBSERVATIONS. <i>Journal of Geophysical Research E: Planets</i> , 0, , e2020JE006801.	3.6	1
59	Extraterrestrial digital elevation models: constraints on planetary evolution, with focus on Mars. <i>International Journal of Remote Sensing</i> , 2010, 31, 6259-6274.	2.9	0