

# Alan D Howard

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

141  
papers

10,287  
citations

54  
h-index

99  
g-index

149  
ext. papers

11,429  
ext. citations

8.2  
avg, IF

6.36  
L-index

#	Paper	IF	Citations
141	Modeling Planetary Landscapes <b>2021</b> ,		
140	The Global Distribution of Craters With Alluvial Fans and Deltas on Mars. <i>Geophysical Research Letters</i> , <b>2021</b> , 48, e2020GL091653	4.9	16
139	Century scale rainfall in the absolute Atacama Desert: Landscape response and implications for past and future rainfall. <i>Quaternary Science Reviews</i> , <b>2021</b> , 254, 106797	3.9	9
138	Modeling global-scale mass flows on the Lagrangian satellites of Dione and Tethys. <i>Icarus</i> , <b>2021</b> , 369, 114612	3.8	1
137	Inverted channel variations identified on a distal portion of a bajada in the central Atacama Desert, Chile. <i>Geomorphology</i> , <b>2021</b> , 393, 107925	4.3	1
136	The geology and geophysics of Kuiper Belt object (486958) Arrokoth. <i>Science</i> , <b>2020</b> , 367,	33.3	43
135	Reply to: Penitente formation is unlikely on Europa. <i>Nature Geoscience</i> , <b>2020</b> , 13, 20-21	18.3	0
134	Comment on "The volume of water required to carve the Martian valley networks: Improved constraints using updated methods" <i>Icarus</i> , <b>2020</b> , 336, 113321	3.8	1
133	Initial results from the New Horizons exploration of 2014 MU, a small Kuiper Belt object. <i>Science</i> , <b>2019</b> , 364,	33.3	80
132	Degradation of Endeavour Crater Based on Orbital and Rover-Based Observations in Combination With Landscape Evolution Modeling. <i>Journal of Geophysical Research E: Planets</i> , <b>2019</b> , 124, 1472-1494	4.1	3
131	Washboard and fluted terrains on Pluto as evidence for ancient glaciation. <i>Nature Astronomy</i> , <b>2019</b> , 3, 62-68	12.1	7
130	An Assessment of Regional Variations in Martian Modified Impact Crater Morphology. <i>Journal of Geophysical Research E: Planets</i> , <b>2018</b> , 123, 763-779	4.1	7
129	Bladed Terrain on Pluto: Possible origins and evolution. <i>Icarus</i> , <b>2018</b> , 300, 129-144	3.8	36
128	Great Expectations: Plans and Predictions for New Horizons Encounter With Kuiper Belt Object 2014 MU69 (Ultima Thule) <i>Geophysical Research Letters</i> , <b>2018</b> , 45, 8111-8120	4.9	11
127	GLOBAL DISTRIBUTION OF ALLUVIAL FANS AND DELTAS ON MARS <b>2018</b> ,		3
126	Formation of metre-scale bladed roughness on Europa's surface by ablation of ice. <i>Nature Geoscience</i> , <b>2018</b> , 11, 901-904	18.3	12
125	Constraints on the Noachian Paleoclimate of the Martian Highlands From Landscape Evolution Modeling. <i>Journal of Geophysical Research E: Planets</i> , <b>2018</b> , 123, 2958-2979	4.1	16

124	The Nature and Origin of Deposits in Uzboi Vallis on Mars. <i>Journal of Geophysical Research E: Planets</i> , <b>2018</b> , 123, 1842-1862	4.1	4
123	Geological mapping of Sputnik Planitia on Pluto. <i>Icarus</i> , <b>2017</b> , 287, 261-286	3.8	43
122	Modeling glacial flow on and onto Pluto's Sputnik Planitia. <i>Icarus</i> , <b>2017</b> , 287, 301-319	3.8	31
121	Pluto: Pits and mantles on uplands north and east of Sputnik Planitia. <i>Icarus</i> , <b>2017</b> , 293, 218-230	3.8	21
120	Topographic Constraints on the Evolution and Connectivity of Titan's Lacustrine Basins. <i>Geophysical Research Letters</i> , <b>2017</b> , 44, 11,745-11,753	4.9	36
119	Geomorphologic mapping of Titan's polar terrains: Constraining surface processes and landscape evolution. <i>Icarus</i> , <b>2017</b> , 282, 214-236	3.8	43
118	Sublimation as a landform-shaping process on Pluto. <i>Icarus</i> , <b>2017</b> , 287, 320-333	3.8	42
117	Present and past glaciation on Pluto. <i>Icarus</i> , <b>2017</b> , 287, 287-300	3.8	39
116	New Martian valley network volume estimate consistent with ancient ocean and warm and wet climate. <i>Nature Communications</i> , <b>2017</b> , 8, 15766	17.4	44
115	Formation of gravel pavements during fluvial erosion as an explanation for persistence of ancient cratered terrain on Titan and Mars. <i>Icarus</i> , <b>2016</b> , 270, 100-113	3.8	19
114	Reorientation of Sputnik Planitia implies a subsurface ocean on Pluto. <i>Nature</i> , <b>2016</b> , 540, 94-96	50.4	84
113	The formation of Charon's red poles from seasonally cold-trapped volatiles. <i>Nature</i> , <b>2016</b> , 539, 65-68	50.4	38
112	A cold-wet middle-latitude environment on Mars during the Hesperian-Amazonian transition: Evidence from northern Arabia valleys and paleolakes. <i>Journal of Geophysical Research E: Planets</i> , <b>2016</b> , 121, 1667-1694	4.1	39
111	Convection in a volatile nitrogen-ice-rich layer drives Pluto's geological vigour. <i>Nature</i> , <b>2016</b> , 534, 82-5	50.4	81
110	Alluvial Fan Morphology, distribution and formation on Titan. <i>Icarus</i> , <b>2016</b> , 270, 238-247	3.8	28
109	The atmosphere of Pluto as observed by New Horizons. <i>Science</i> , <b>2016</b> , 351, aad8866	33.3	164
108	Pluto's interaction with its space environment: Solar wind, energetic particles, and dust. <i>Science</i> , <b>2016</b> , 351, aad9045	33.3	52
107	The geology of Pluto and Charon through the eyes of New Horizons. <i>Science</i> , <b>2016</b> , 351, 1284-93	33.3	180

106	Modeling of ice pinnacle formation on Callisto. <i>Journal of Geophysical Research E: Planets</i> , <b>2016</b> , 121, 21-45	4.1	19
105	Fluvial erosion as a mechanism for crater modification on Titan. <i>Icarus</i> , <b>2016</b> , 270, 114-129	3.8	37
104	Paleohydrology of Eberswalde crater, Mars. <i>Geomorphology</i> , <b>2015</b> , 240, 83-101	4.3	50
103	Resolving the era of river-forming climates on Mars using stratigraphic logs of river-deposit dimensions. <i>Earth and Planetary Science Letters</i> , <b>2015</b> , 420, 55-65	5.3	22
102	Stratigraphy of Aeolis Dorsa, Mars: Stratigraphic context of the great river deposits. <i>Icarus</i> , <b>2015</b> , 253, 223-242	3.8	34
101	River meandering on Earth and Mars: A comparative study of Aeolis Dorsa meanders, Mars and possible terrestrial analogs of the Usuktuk River, AK, and the Quinn River, NV. <i>Geomorphology</i> , <b>2015</b> , 240, 102-120	4.3	70
100	The Pluto system: Initial results from its exploration by New Horizons. <i>Science</i> , <b>2015</b> , 350, aad1815	33.3	295
99	A progressive black top hat transformation algorithm for estimating valley volumes on Mars. <i>Computers and Geosciences</i> , <b>2015</b> , 75, 17-23	4.5	11
98	Geology before Pluto: Pre-encounter considerations. <i>Icarus</i> , <b>2015</b> , 246, 65-81	3.8	24
97	Introduction to the special issue: Planetary geomorphology. <i>Geomorphology</i> , <b>2015</b> , 240, 1-7	4.3	5
96	Sedimentology and climatic environment of alluvial fans in the martian Saheki crater and a comparison with terrestrial fans in the Atacama Desert. <i>Icarus</i> , <b>2014</b> , 229, 131-156	3.8	64
95	Origin and development of theater-headed valleys in the Atacama Desert, northern Chile: Morphological analogs to martian valley networks. <i>Icarus</i> , <b>2014</b> , 243, 296-310	3.8	14
94	Fresh shallow valleys in the Martian midlatitudes as features formed by meltwater flow beneath ice. <i>Journal of Geophysical Research E: Planets</i> , <b>2014</b> , 119, 128-153	4.1	27
93	The landscape of Titan as witness to its climate evolution. <i>Journal of Geophysical Research E: Planets</i> , <b>2014</b> , 119, 2060-2077	4.1	24
92	Modeling planform evolution of a mud-dominated meandering river: Quinn River, Nevada, USA. <i>Earth Surface Processes and Landforms</i> , <b>2014</b> , 39, 1365-1377	3.7	39
91	Outflow channels with deltaic deposits in Ismenius Lacus, Mars. <i>Icarus</i> , <b>2013</b> , 226, 385-401	3.8	51
90	The spiral troughs of Mars as cyclic steps. <i>Journal of Geophysical Research E: Planets</i> , <b>2013</b> , 118, 1835-1857	4.1	45
89	Fluvial features on Titan: Insights from morphology and modeling. <i>Bulletin of the Geological Society of America</i> , <b>2013</b> , 125, 299-321	3.9	69

88	Hydrology of early Mars: Valley network incision. <i>Journal of Geophysical Research E: Planets</i> , <b>2013</b> , 118, 1365-1387	4.1	46
87	Evidence for a short period of hydrologic activity in Newton crater, Mars, near the Hesperian-Amazonian transition. <i>Journal of Geophysical Research E: Planets</i> , <b>2013</b> , 118, 1082-1093	4.1	7
86	Sublimation-driven erosion on Hyperion: Topographic analysis and landform simulation model tests. <i>Icarus</i> , <b>2012</b> , 220, 268-276	3.8	16
85	Taking the measure of a landscape: Comparing a simulated and natural landscape in the Virginia Coastal Plain. <i>Geomorphology</i> , <b>2012</b> , 137, 27-40	4.3	6
84	Inverted fluvial features in the Aeolis-Zephyria Plana, western Medusae Fossae Formation, Mars: Evidence for post-formation modification. <i>Journal of Geophysical Research</i> , <b>2012</b> , 117, n/a-n/a		24
83	Drainage network development in the Keanakōiātephra, Kīlauea Volcano, Hawaii: Implications for fluvial erosion and valley network formation on early Mars. <i>Journal of Geophysical Research</i> , <b>2012</b> , 117, n/a-n/a		15
82	Topographic influences on development of Martian valley networks. <i>Journal of Geophysical Research</i> , <b>2011</b> , 116,		50
81	Hydrology of early Mars: Lake basins. <i>Journal of Geophysical Research</i> , <b>2011</b> , 116,		37
80	Late Hesperian to early Amazonian midlatitude Martian valleys: Evidence from Newton and Gorgonum basins. <i>Journal of Geophysical Research</i> , <b>2011</b> , 116,		42
79	Correction to "Are the basins of Titan's Hotei Regio and Tui Regio sites of former low latitude seas?" <i>Geophysical Research Letters</i> , <b>2011</b> , 38, n/a-n/a	4.9	3
78	Are the basins of Titan's Hotei Regio and Tui Regio sites of former low latitude seas?. <i>Geophysical Research Letters</i> , <b>2010</b> , 37, n/a-n/a	4.9	32
77	HiRISE views enigmatic deposits in the Sirenum Fossae region of Mars. <i>Icarus</i> , <b>2010</b> , 205, 53-63	3.8	17
76	Simulation of Stream Networks by Headword Growth and Branching*. <i>Geographical Analysis</i> , <b>2010</b> , 3, 29-50	2.9	95
75	Evidence for ancient lakes in the Hellas region <b>2010</b> , 195-222		7
74	How to make a meandering river. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2009</b> , 106, 17245-6	11.5	33
73	Pervasive aqueous paleoflow features in the Aeolis/Zephyria Plana region, Mars. <i>Icarus</i> , <b>2009</b> , 200, 52-76	3.8	121
72	A spatially explicit model of runoff, evaporation, and lake extent: Application to modern and late Pleistocene lakes in the Great Basin region, western United States. <i>Water Resources Research</i> , <b>2009</b> , 45,	5.4	37
71	Long-term precipitation and late-stage valley network formation: Landform simulations of Parana Basin, Mars. <i>Journal of Geophysical Research</i> , <b>2009</b> , 114,		86

70	Badlands and Gullying <b>2009</b> , 265-299		10
69	Rock Slopes <b>2009</b> , 189-232		10
68	Rock-Mantled Slopes <b>2009</b> , 233-263		5
67	Controls on the degree of fluvial incision of continental shelves. <i>Computers and Geosciences</i> , <b>2008</b> , 34, 1381-1393	4.5	7
66	Sublimation-driven erosion on Callisto: A landform simulation model test. <i>Geophysical Research Letters</i> , <b>2008</b> , 35,	4.9	20
65	Computer simulation of the role of groundwater seepage in forming Martian valley networks. <i>Journal of Geophysical Research</i> , <b>2008</b> , 113,		29
64	Catalogue of large alluvial fans in martian impact craters. <i>Icarus</i> , <b>2008</b> , 194, 101-110	3.8	47
63	Fluvial Valley Networks on Mars <b>2008</b> , 419-451		24
62	Formation of amphitheater-headed valleys by waterfall erosion after large-scale slumping on Hawai'i. <i>Bulletin of the Geological Society of America</i> , <b>2007</b> , 119, 805-822	3.9	103
61	Geomorphic and stratigraphic analysis of Crater Terby and layered deposits north of Hellas basin, Mars. <i>Journal of Geophysical Research</i> , <b>2007</b> , 112,		91
60	Simulating the development of Martian highland landscapes through the interaction of impact cratering, fluvial erosion, and variable hydrologic forcing. <i>Geomorphology</i> , <b>2007</b> , 91, 332-363	4.3	109
59	Can springs cut canyons into rock?. <i>Journal of Geophysical Research</i> , <b>2006</b> , 111,		124
58	Large alluvial fans on Mars. <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		155
57	An intense terminal epoch of widespread fluvial activity on early Mars: 1. Valley network incision and associated deposits. <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		235
56	An intense terminal epoch of widespread fluvial activity on early Mars: 2. Increased runoff and paleolake development. <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		280
55	Morphometric analysis of Martian valley network basins using a circularity function. <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		11
54	Interior channels in Martian valley networks: Discharge and runoff production. <i>Geology</i> , <b>2005</b> , 33, 489	5	121
53	Scarp-bounded benches in Gorgonum Chaos, Mars: Formed beneath an ice-covered lake?. <i>Geophysical Research Letters</i> , <b>2004</b> , 31,	4.9	20

52	Modeling fluvial erosion and deposition on continental shelves during sea level cycles. <i>Journal of Geophysical Research</i> , <b>2004</b> , 109,		32
51	Crater degradation in the Martian highlands: Morphometric analysis of the Sinus Sabaeus region and simulation modeling suggest fluvial processes. <i>Journal of Geophysical Research</i> , <b>2004</b> , 109,		106
50	Sedimentary resurfacing and fretted terrain development along the crustal dichotomy boundary, Aeolis Mensae, Mars. <i>Journal of Geophysical Research</i> , <b>2004</b> , 109,		38
49	Geomorphology of Ma'adim Vallis, Mars, and associated paleolake basins. <i>Journal of Geophysical Research</i> , <b>2004</b> , 109,		111
48	Role of debris flows in long-term landscape denudation in the central Appalachians of Virginia. <i>Geology</i> , <b>2003</b> , 31, 339	5	59
47	Tidal flow field in a small basin. <i>Journal of Geophysical Research</i> , <b>2003</b> , 108,		28
46	Ice-driven creep on Martian debris slopes. <i>Geophysical Research Letters</i> , <b>2003</b> , 30,	4.9	22
45	Martian Layered Fluvial Deposits: Implications for Noachian Climate Scenarios. <i>Geophysical Research Letters</i> , <b>2003</b> , 30,	4.9	147
44	Quaternary deposits and landscape evolution of the central Blue Ridge of Virginia. <i>Geomorphology</i> , <b>2003</b> , 56, 139-154	4.3	43
43	A large paleolake basin at the head of Ma'adim Vallis, Mars. <i>Science</i> , <b>2002</b> , 296, 2209-12	33.3	152
42	The case for rainfall on a warm, wet early Mars. <i>Journal of Geophysical Research</i> , <b>2002</b> , 107, 21-1-21-36		414
41	Drainage basin evolution in Noachian Terra Cimmeria, Mars. <i>Journal of Geophysical Research</i> , <b>2002</b> , 107, 10-1		88
40	An implicit finite difference method for drainage basin evolution. <i>Water Resources Research</i> , <b>2002</b> , 38, 21-1-21-5	5.4	13
39	The state and future of Mars polar science and exploration. <i>Icarus</i> , <b>2000</b> , 144, 210-42	3.8	83
38	The Role of Eolian Processes in Forming Surface Features of the Martian Polar Layered Deposits. <i>Icarus</i> , <b>2000</b> , 144, 267-288	3.8	137
37	Simulated degradation of lunar impact craters and a new method for age dating farside mare deposits. <i>Journal of Geophysical Research</i> , <b>2000</b> , 105, 20387-20401		62
36	Long Profile Development of Bedrock Channels: Interaction of Weathering, Mass Wasting, Bed Erosion, and Sediment Transport. <i>Geophysical Monograph Series</i> , <b>1998</b> , 297-319	1.1	77
35	Crater morphometry and modification in the Sinus Sabaeus and Margaritifer Sinus regions of Mars. <i>Journal of Geophysical Research</i> , <b>1997</b> , 102, 13321-13340		150

34	Badland Morphology and Evolution: Interpretation Using a Simulation Model. <i>Earth Surface Processes and Landforms</i> , <b>1997</b> , 22, 211-227	3-7	151
33	Simulation modeling and statistical classification of escarpment planforms. <i>Geomorphology</i> , <b>1995</b> , 12, 187-214	4-3	47
32	Early Development of Karst Systems: 2. Turbulent Flow. <i>Water Resources Research</i> , <b>1995</b> , 31, 19-26	5-4	67
31	Active Channel Geometry and Discharge Relations of U.S. Piedmont and Midwestern Streams: The Variable Exponent Model Revisited. <i>Water Resources Research</i> , <b>1995</b> , 31, 2353-2365	5-4	24
30	Minimum hydrochemical conditions allowing limestone cave development. <i>Water Resources Research</i> , <b>1994</b> , 30, 607-615	5-4	68
29	Modeling fluvial erosion on regional to continental scales. <i>Journal of Geophysical Research</i> , <b>1994</b> , 99, 13971-13986		540
28	A detachment-limited model of drainage basin evolution. <i>Water Resources Research</i> , <b>1994</b> , 30, 2261-2285	5-4	820
27	Early development of karst systems: 1. Preferential flow path enlargement under laminar flow. <i>Water Resources Research</i> , <b>1994</b> , 30, 2837-2846	5-4	105
26	Rock Slopes <b>1994</b> , 123-172		18
25	Rock-Mantled Slopes <b>1994</b> , 173-212		9
24	Badlands <b>1994</b> , 213-242		31
23	Multivariate characterization of meandering. <i>Geomorphology</i> , <b>1991</b> , 4, 161-186	4-3	63
22	Role of hypsometry and planform in basin hydrologic response. <i>Hydrological Processes</i> , <b>1990</b> , 4, 373-385	3-3	54
21	Theoretical model of optimal drainage networks. <i>Water Resources Research</i> , <b>1990</b> , 26, 2107-2117	5-4	119
20	Chapter 11. Spring sapping and valley network development. <i>Special Paper of the Geological Society of America</i> , <b>1990</b> , 235-266		46
19	Erosion of cohesionless sediment by groundwater seepage. <i>Water Resources Research</i> , <b>1988</b> , 24, 1659-1674	5-4	159
18	Application of a boundary-layer model to flow over an eolian dune. <i>Journal of Geophysical Research</i> , <b>1985</b> , 90, 10631-10640		23
17	Sufficient conditions for river meandering: A simulation approach. <i>Water Resources Research</i> , <b>1984</b> , 20, 1659-1667	5-4	177



16	Channel changes in badlands. <i>Bulletin of the Geological Society of America</i> , <b>1983</b> , 94, 739	3.9	572
15	Equilibrium and time scales in geomorphology: Application to sand-bed alluvial streams. <i>Earth Surface Processes and Landforms</i> , <b>1982</b> , 7, 303-325	3.7	105
14	Topography and stratigraphy of Martian polar layered deposits. <i>Icarus</i> , <b>1982</b> , 50, 140-160	3.8	63
13	Stratigraphic relationships within Martian polar cap deposits. <i>Icarus</i> , <b>1982</b> , 50, 161-215	3.8	111
12	Photoclinometric determination of the topography of the Martian north polar cap. <i>Icarus</i> , <b>1982</b> , 50, 245-258	3.8	31
11	Quasi-periodic climatic changes on Mars and Earth. <i>Eos</i> , <b>1981</b> , 62, 755	1.5	2
10	Geomorphology of the Colorado River in the Grand Canyon. <i>Journal of Geology</i> , <b>1981</b> , 89, 269-298	2	193
9	Sand transport model of barchan dune equilibrium. <i>Sedimentology</i> , <b>1978</b> , 25, 307-338	3.3	130
8	Origin of the stepped topography of the Martian poles. <i>Icarus</i> , <b>1978</b> , 34, 581-599	3.8	102
7	Structural control of the rapids and pools of the Colorado River in the Grand Canyon. <i>Science</i> , <b>1978</b> , 202, 629-31	3.3	104
6	Effect of slope on the threshold of motion and its application to orientation of wind ripples. <i>Bulletin of the Geological Society of America</i> , <b>1977</b> , 88, 853	3.9	59
5	Environmental management of the Colorado River within the Grand Canyon. <i>Environmental Management</i> , <b>1977</b> , 1, 391-400	3.1	7
4	Optimal Angles of Stream Junction: Geometric, Stability to Capture, and Minimum Power Criteria. <i>Water Resources Research</i> , <b>1971</b> , 7, 863-873	5.4	86
3	Simulation Model of Stream Capture. <i>Bulletin of the Geological Society of America</i> , <b>1971</b> , 82, 1355	3.9	63
2	Topological and Geometrical Properties of Braided Streams. <i>Water Resources Research</i> , <b>1970</b> , 6, 1674-1684	3.4	95
1	Processes of limestone cave development. <i>International Journal of Speleology</i> , <b>1964</b> , 1, 47-60	2	10